

C. Appendix C – Sussex County Standard Design & Construction Details

Sussex County
Department of Engineering and Planning
Division of Engineering
Standard Design & Construction Details



Subject to Modification
Last Revised January 31, 2008

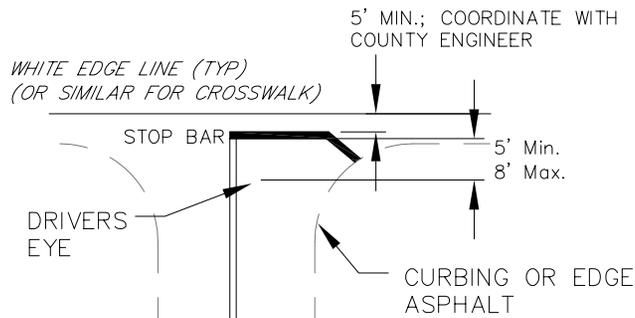
Forward

These details have been developed by the Sussex County Division of Engineering to augment, and as appropriate replace, the New Jersey Department of Transportation Standard Construction Details. Additionally, these details are intended to supplement the Sussex County Land Development Standards. The Sussex County Division of Engineering is dedicated to providing design and construction practices which optimize both public safety and resource investment. As such we are continually looking for new and more advanced design and construction techniques which would provide superior safety and serviceability for the public and their infrastructure investment.

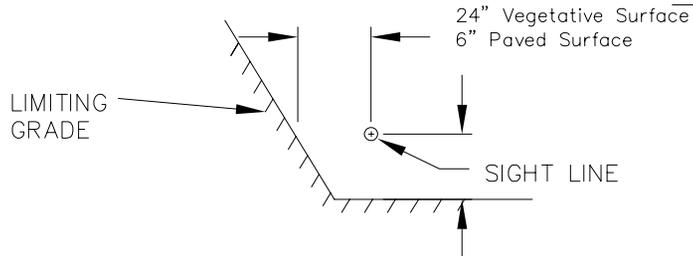
These details have been developed based upon our experiences and in consideration of providing an optimal benefit to the public. We will continue to promote this objective by incorporating advancements in design or construction methodology into these details.

To this end we welcome input which would serve to enhance or improve the public safety or optimize the public resource investment and maintenance.

Sussex County Standard Construction Details			
Detail ID	Detail Description	Revision Status	
SC-01	Intersection Access - Sight Distance Turning Out (used with Sight Distance Standards)	Dev 11/29/05 Rev 1/31/08	
SC-02	Intersection Access - Sight Distance Turning In (used with Sight Distance Standards)	Dev 9/26/06 Rev 1/28/08	
SC-03	Critical Sight Area at Intersection	Dev 11/29/05	
SC-04	Roadway Intersection Detail	Dev 11/29/05 Rev 11/16/07	
SC-05	Multifamily Residential and Commercial Entranceway Detail	Posted 11/29/05 Rev 11/16/07	
SC-05A	Residential Driveway	Dev 2/20/07 Rev 11/16/07	
SC-06	Typical Roadway Section	Dev 11/29/05 Rev 1/29/08	
SC-07	Restricted Entrance –Limited Movements	Dev 11/29/05 Rev 1/9/07	
SC-08	Stop Pavement Markings	Dev 11/29/05 Rev 1/31/08	
SC-09	9"x18" Concrete Vertical Curb	Dev 11/29/05	
SC-10	Depressed Curb Detail	Dev 11/29/05	
SC-11	Sidewalk Detail	Dev 11/29/05	
SC-12	10' Curb Transition Detail	Dev 11/29/05	
SC-13	Pavement Finish Details (Joints)	Dev 11/29/05 Rev 1/29/08	
SC-14	Trench Detail	Dev 11/29/05 Rev. 1/29/08	
SC-15	Timber Sign Post Detail	Dev 1/02/06	
SC-15.1	Sign Details – Sheet 1 of 3	Dev 1/11/05	
SC-15.2	Sign Details – Sheet 2 of 3	Dev 1/11/05	
SC-15.3	Sign Details – Sheet 3 of 3	Dev 1/11/05	
SC-16	Median Break Pavement Markings	Dev 2/27/06 Rev 11/16/07	
SC-17	Auxiliary Lane Layout	Dev 2/27/06 Rev 10/25/07	
SC-18	Auxiliary Lane Layout	Dev 2/27/06 Rev 10/25/07	
SC-19	Driveway Curb Flares	Dev 9/26/06 Rev 1/29/07	



03 SC1 **Driver Eye Location**
(Coordinate with County Engineer)



04 SC1 **Sight Line Buffer**
(Clear Area Between Obstruction and Sight Line)

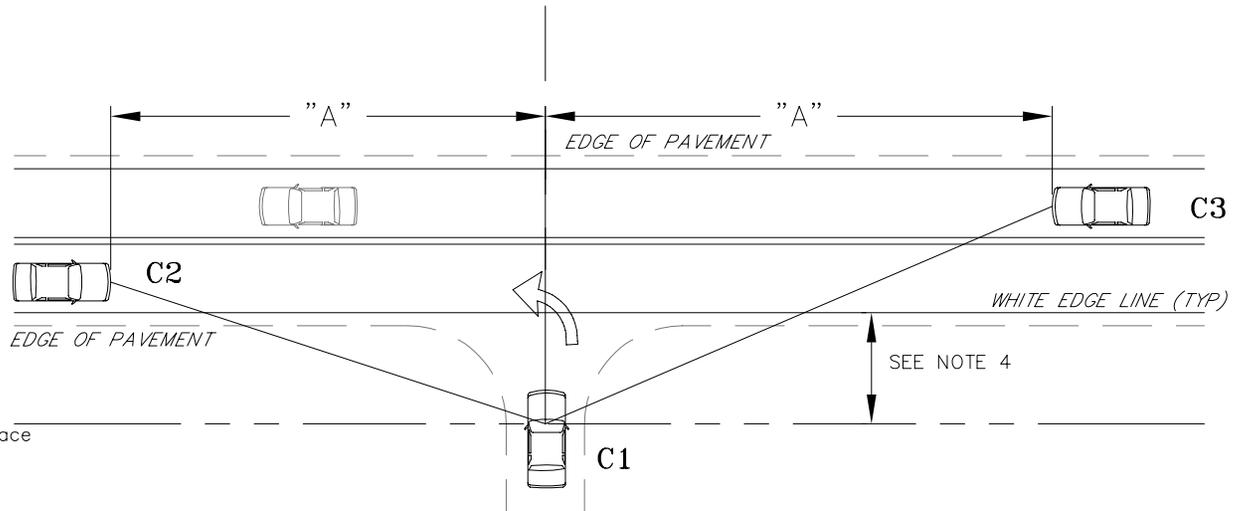
Legend:

- DS: Design Speed:
(85th Speed plus 10%) or when not available
(Posted Speed Modified per LDS V.C.3.b.ii)
- C1: Exiting vehicle
- C2: Left-hand approaching vehicle traveling at DS
- C3: Right-hand approaching vehicle traveling at DS
- C4: Right turn only exit vehicle
- Distance A: Intersection Sight Distance
Left Turning vehicle
- Distance E: Intersection Sight Distance
Right Turning Vehicle

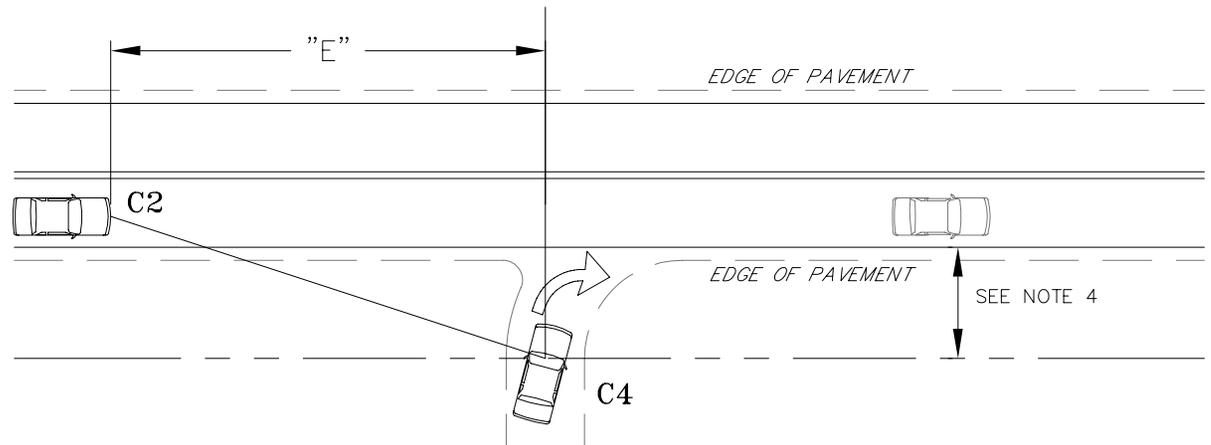
Design Notes:

1. Diagram used in conjunction with sight distance tables.
2. Car C4 exiting to the right.
3. Eye and Object height per AASHTO standards.
4. Sight distance is measured as follows:
Access without Stop Bars: within the range of 5 to 10 feet behind the white line
(white line is the edge of traveled way)
Access with Stop Bar: within a range of 5 to 8 feet behind Stop Bar, this point is typically located between 12 and 15 feet from the edge of traveled way. Coordinate with County Engineer.

Comments: Sight distance shall be measured nearest to location a driver will actually stop.
Sight distance shall be measured at the most restrictive location within the above range.



02 SC1 **Intersection Allowing Left Turns Out**
(Typically Will Control for turns out)



01 SC1 **Intersection - Right Turn Out**
(Right Turn Out Only)

SHEET DATE: 11/29/05

No.	REVISIONS	DATE	REV. BY	WWW.SUSSEX.NJ.US
1	Revised Sight Distance	4/4/06	WJK	ENGINEERING DIVISION SUSSEX COUNTY ADMINISTRATIVE CENTER ONE SPRING STREET NEWTON, NEW JERSEY 07860 TEL-973-579-0430 WWW.SUSSEX.NJ.US
2	Measurement Offset	5/9/06	WJK	
3	Revise Detail 03/SC1	4/26/06	WJK	
4	Add Detail 04/SC1	1/31/08	WJK	

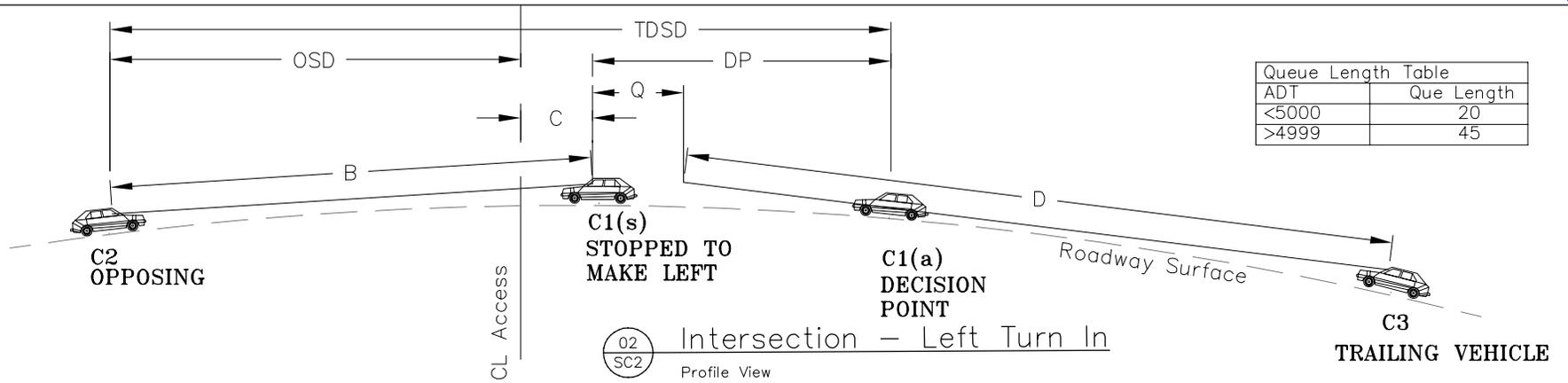


COUNTY OF SUSSEX
DEPARTMENT OF ENGINEERING AND PLANNING
STANDARD DETAILS

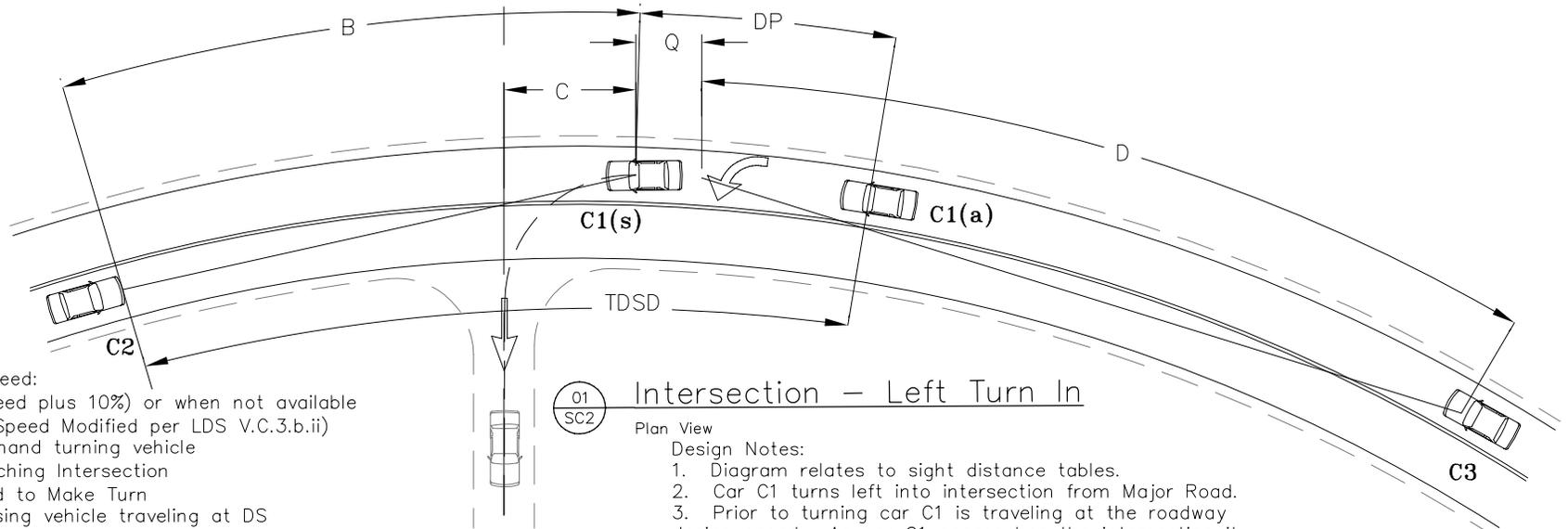
INTERSECTION ACCESS
SIGHT DISTANCE OUT

DETAIL

SC-1



02 SC2 Intersection - Left Turn In
Profile View



01 SC2 Intersection - Left Turn In
Plan View

Legend:
 DS: Design Speed:
 (85th speed plus 10%) or when not available
 (Posted Speed Modified per LDS V.C.3.b.ii)
 Car C1: Left-hand turning vehicle
 C1(a): Approaching Intersection
 C1(s): Stopped to Make Turn
 Car C2: Opposing vehicle traveling at DS
 Car C3: Trailing vehicle traveling at DS
 Distance C: Stop to Turn Location - 22' Access ingress
 CL plus 5' to Driver Eye

Analysis 1 (C1(s) Stopped to Make Left):
 Distance B: AASHTO Left Turn from Major Road Car C1 or
 Stopping Sight Distance Car C2
 Distance D: Stopping Sight Distance Car C3 at DS.
 Distance Q: Queue Length: See Table "Queue Length"
Analysis 2: (C1(a) Advancing to make Turn):
 Distance DP: Critical Decision Point
 (See COS Sight Distance Standards)
 Distance TDS: Turn Decision Sight Distance (see
 COS Sight Distance Standards).
 Distance OSD: Stopping sight distance for Car C3.

Design Notes:

1. Diagram relates to sight distance tables.
2. Car C1 turns left into intersection from Major Road.
3. Prior to turning car C1 is traveling at the roadway design speed. As car C1 approaches the intersection it decelerates to make the left-hand turn. See COS Sight Distance Manual for more data.
4. Car C3 requires Stopping Sight Distance from the last car in a left turn queue.
5. Car C2, traveling toward car C1 in the opposing lane requires ample stopping sight distance to avoid car C1 should car C1 turn unsafely.
6. Driver Eye and Object Height per AASHTO standards.
7. Car C1 requires ample Turn Decision Sight Distance over which it must see car C2 to evaluate the safety of executing the turn movement. See COS Sight Distance Manual.
8. Stopping Sight Distance is required continuously within the intersection area of influence for all commercial and street access points.
8. Distance "C" is the centerline intersection offset to where Car 1 will stop to make the left hand turn. Distance "C" will be 16 feet plus one-half the entry way lane width.

SHEET DATE: 11/29/05

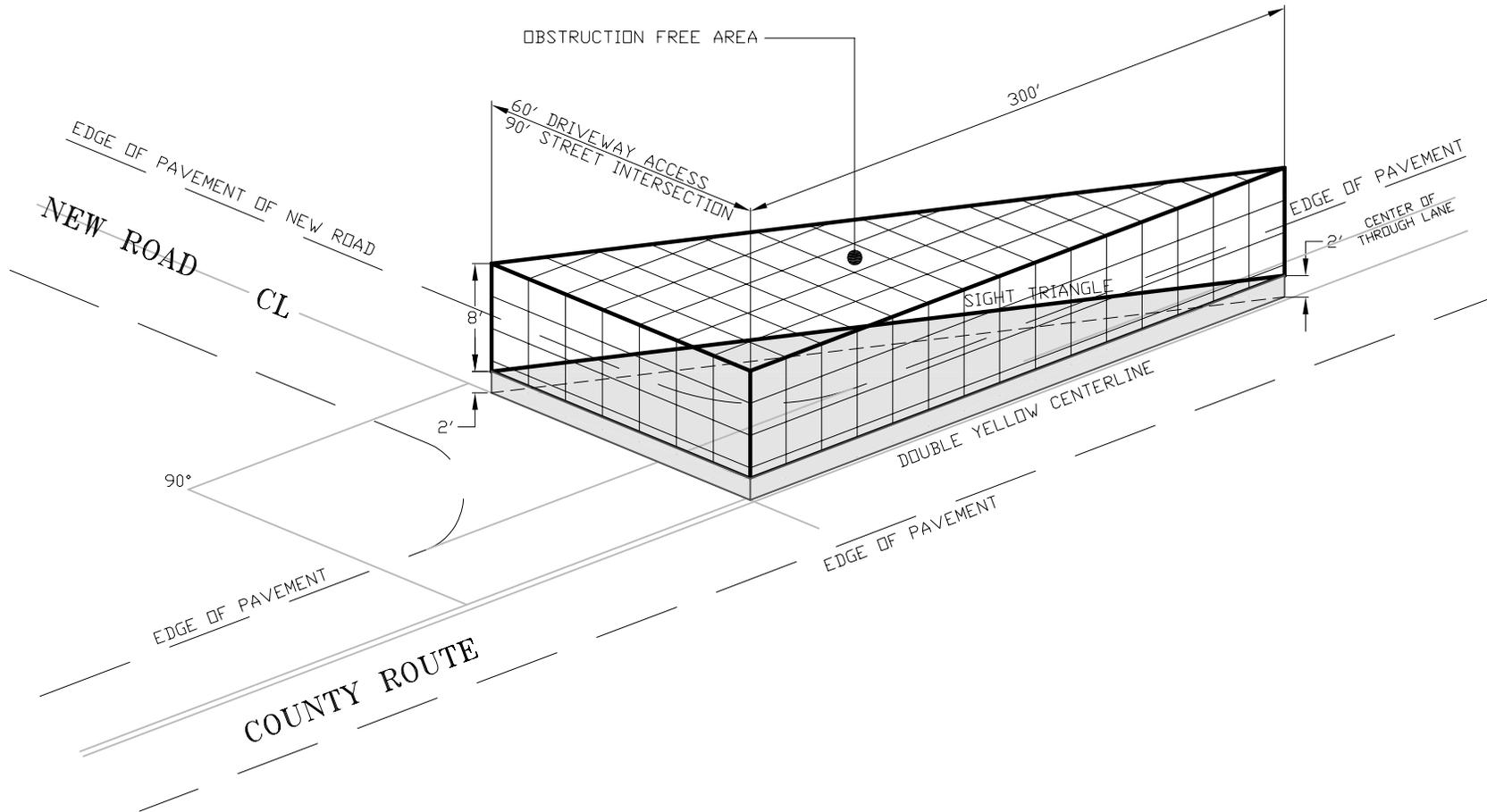
ENGINEERING DIVISION				
No.	REVISIONS	DATE	REV. BY	WWW. SUSSEX. NJ. US
1	LEFT TURN IN FROM MAJOR ROAD CRITERIA CONFORMANCE CHECK/UPDATE AGAINST AASHTO STANDARDS	10/27/06	Div Eng	SUSSEX COUNTY ADMINISTRATIVE CENTER ONE SPRING STREET NEWTON, NEW JERSEY 07860 TEL-973-579-0430
2	Mod. P. Speed Note to Land Dev. Std.	1/28/08	WJK	



COUNTY OF SUSSEX
 DEPARTMENT OF ENGINEERING AND PLANNING
 STANDARD DETAILS

INTERSECTION ACCESS
 SIGHT DISTANCE IN

DETAIL
 SC-2



INTERSECTION SIGHT TRIANGLE

60' DRIVEWAY ACCESS
 90° STREET INTERSECTION
 (REFER TO LDS SECTION V.D.2.d FOT TRANSECTS T-5 OR T-6)

SHEET DATE: 11/29/05

No.	REVISIONS	DATE	REV. BY

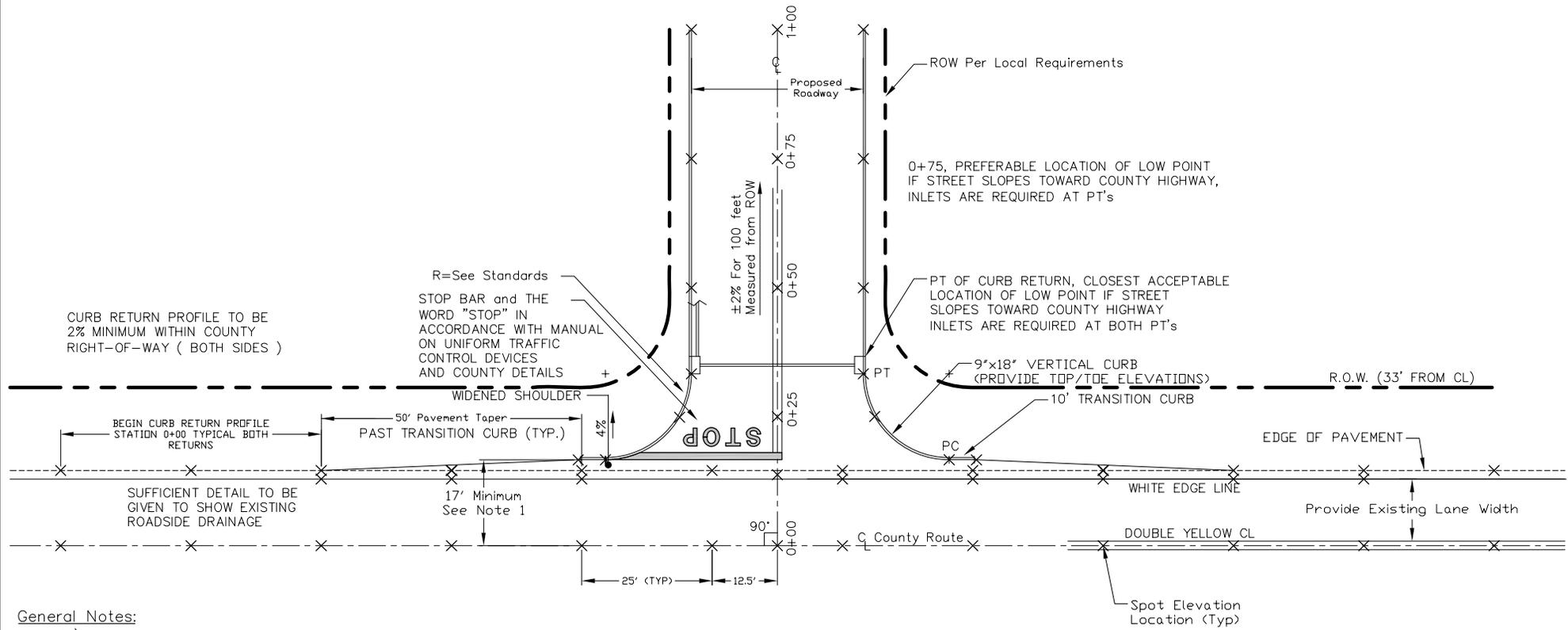
ENGINEERING DIVISION
 SUSSEX COUNTY ADMINISTRATIVE CENTER
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 NEWTON, NEW JERSEY 07860
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 WWW.SUSSEX.NJ.US



COUNTY OF SUSSEX
 DEPARTMENT OF ENGINEERING AND PLANNING
 STANDARD DETAILS

CRITICAL SIGHT AREA
 AT INTERSECTION

DETAIL
 SC-3



General Notes:

- 1.) Adjustment to curb setback may be required to obtain minimum slopes. Minimum CL offset based upon 12 ft lane, 5 ft shoulder, See Land Development Standards for other lane and shoulder configurations.
- 2.) Written justification will be required when low point is not located at PT of curb.
- 3.) Sight distance to be analyzed in accordance with County Standards.
- 4.) All signage shall be shown on plan and identified using MUTCD designations.
- 5.) Inlets may be omitted when positive drainage can be affected through curb cuts and stabilized swales.
- 6.) Details depicted here represent minimum requirements. All details pertinent to the functioning of the intersection shall be included on submittals.
- 7.) Guide rail shall be included as warranted.
- 8.) Cross sections and CL profile shall be provided for County Route when lane modifications are required.
- 9.) 90'x300' sight triangles shall be provided. Double Overlapping sight triangles may be required, see standards (Not shown this detail).
- 10.) Concrete curb shall be used within County ROW unless otherwise directed by the County Engineer.
- 11.) Proposed pavement box shall be continued to existing County Route white edge line. All existing asphalt between existing white edge line and proposed work shall be removed. Refer to Detail SC-13

Implementation Note:

This detail represents a generic access configuration. It is intended as a graphical representation of common design data needed to facilitate the County Application Review Process. Designers shall provide information similar to that depicted hereon applied to the specific access proposal. Site specific details shall be provided with the planning application at a scale of 1" = 20'. This detail should be used for informational purposes only.

SHEET DATE: 11/29/05

No.	REVISIONS	DATE	REV. BY
1	Update with Land Development Standards	1/30/07	ENG
2	Added Implementation Note	11/16/07	ENG

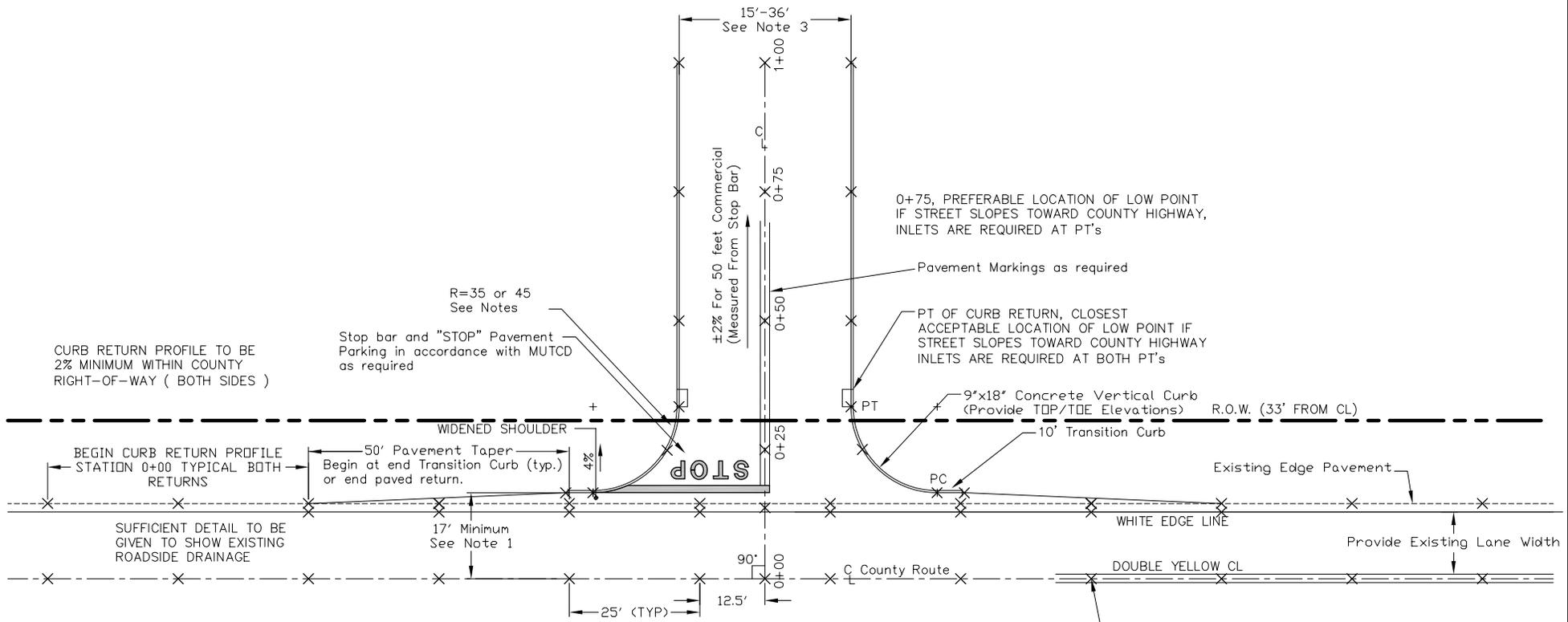
ENGINEERING DIVISION
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COUNTY OF SUSSEX
 DEPARTMENT OF ENGINEERING AND PLANNING
 STANDARD DETAILS

ROADWAY
 INTERSECTION DETAIL

DETAIL
 SC-4



General Notes:

- 1.) Adjustment to curb setback may be required to obtain minimum slopes. Minimum CL offset based upon 12 ft lane, 5 ft shoulder, refer to Land Development Standards for alternate lane/shoulder configurations.
- 2.) Written justification will be required when low point is located at PT of curb.
- 3.) Entranceway widths vary per County Standards dependent on use type and number of lanes.
- 4.) Sight distance to be analyzed in accordance with County Standards.
- 5.) All signage shall be shown on plan and identified using MUTCD designations.
- 6.) Inlets may be omitted when positive drainage can be effected through curb cuts and stabilized swales.
- 7.) Details depicted here represent minimum requirements All details pertinent to the functioning of the entranceway point of access shall be included on submittals.
- 8.) Guide rail shall be included as warranted.
- 9.) Cross sections and CL profile shall be provided for County Route when lane modifications are required.
- 10.) 60'x300' sight triangles shall be provided (not shown this detail).
- 11.) All curbing within the County ROW shall be concrete unless otherwise directed by the County Engineer.

- 12.) Proposed pavement box shall be continued to existing County Route white edge. All existing asphalt between existing white edge line and proposed work shall be removed. refer to Detail SC-13.
- 13.) Curb return radii may be varied by the designer to accommodate proposed design vehicles. See Land Development Standards for Alternate configurations.
- 14.) Proposal shall be designed to accommodate the SU design vehicle unless proposed use warrants larger vehicles.
- 15.) Applicant shall provide sight line profiles.

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SHEET DATE: 11/29/05

ENGINEERING DIVISION			
No.	REVISIONS	DATE	REV. BY
4	REMOVED SINGLE FAMILY RESIDENTIAL DATA	2/20/07	WJK
3	Update to Land Development Standards	1/29/07	ENG
2	REVISED APPROACH GRADE NOTES	3/1/06	WJK
1	ADAPTED FROM INTERSECTION DETAIL	9/20/05	DDR

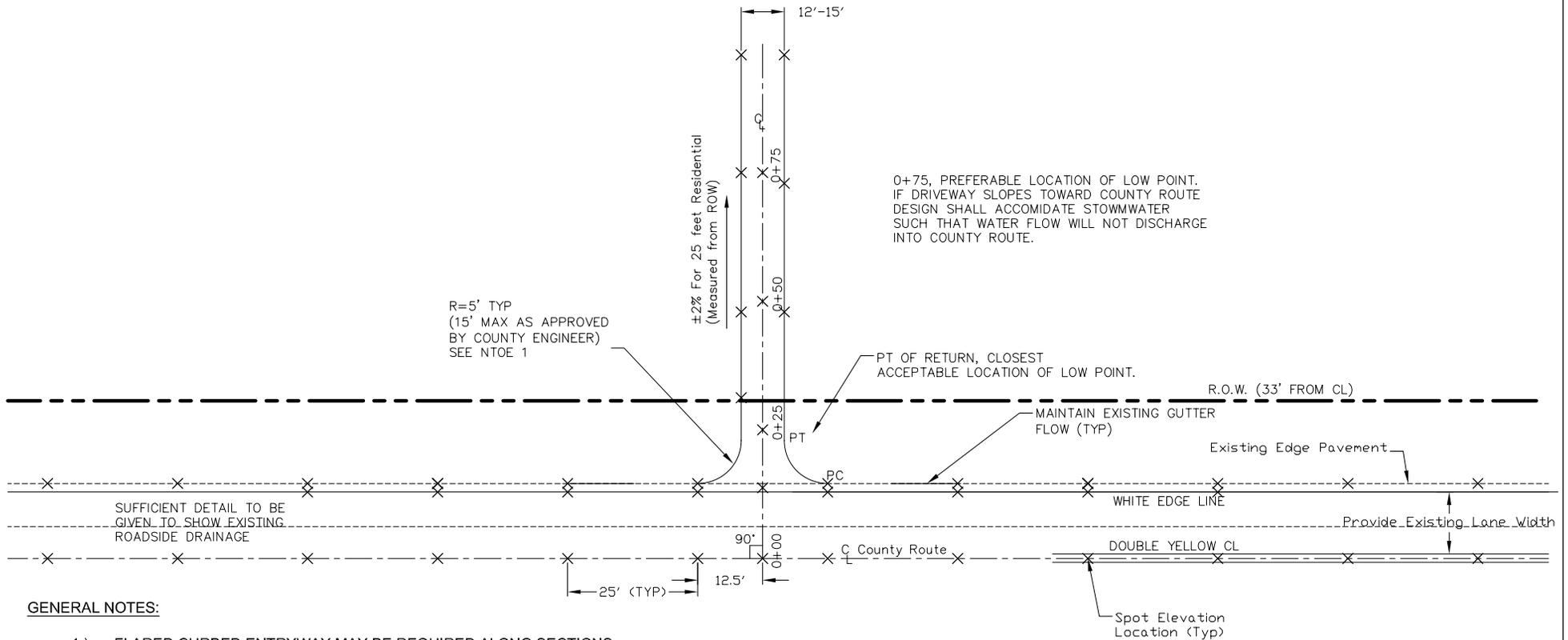


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COUNTY OF SUSSEX
 DEPARTMENT OF ENGINEERING AND PLANNING
 STANDARD DETAILS

MULTIFAMILY OR
 COMMERCIAL ENTRANCEWAY

DETAIL
 SC-5



GENERAL NOTES:

- 1.) FLARED CURBED ENTRYWAY MAY BE REQUIRED ALONG SECTIONS OF COUNTY ROUTES WHICH ARE CURBED. REFER TO STANDARD DETAIL SC-19 WRITTEN JUSTIFICATION WILL BE REQUIRED WHEN LOW POINT IS LOCATED AT PT OF CURB.
- 2.) SIGHT DISTANCE TO BE ANALYZED IN ACCORDANCE WITH COUNTY STANDARDS.
- 3.) ALL SIGNAGE SHALL BE SHOWN ON PLAN AND IDENTIFIED USING MUTCD DESIGNATIONS.
- 4.) INLETS AND OTHER DRAINAGE SYSTEMS ALONG COUNTY ROUTES SHALL BE SHOWN ON PLAN.
- 5.) ROADSIDE DRAINAGE SHALL NOT BE ALTERED BY PROPOSED DRIVEWAY.
- 6.) DETAILS DEPICTED HERE REPRESENT MINIMUM REQUIREMENTS ALL DETAILS PERTINENT TO THE FUNCTIONING OF THE ENTRANCEWAY POINT OF ACCESS SHALL BE INCLUDED ON SUBMITTALS.
- 7.) EXISTING GUIDE RAIL SHALL BE SHOWN ON THE PLAN, MODIFICATIONS DESIGNED AS WARRANTED.
- 8.) CROSS SECTIONS AND CL PROFILE SHALL BE PROVIDED FOR COUNTY ROUTE OR SPOT ELEVATIONS SUFFICIENT TO DEFINE DRAINAGE.
- 9.) ALL CURBING WITHIN THE COUNTY ROW SHALL BE CONCRETE UNLESS OTHERWISE DIRECTED BY THE COUNTY ENGINEER.
- 10.) PROPOSED PAVEMENT SHALL MEET EXISTING EDGE OF COUNTY ROUTE. REFER TO STANDARD DETAIL SC-13 FOR JOINING DETAILS.

Implementation Note:

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SHEET DATE: 2/16/07

ENGINEERING DIVISION			
SUSSEX COUNTY ADMINISTRATIVE CENTER ONE SPRING STREET NEWTON, NEW JERSEY 07860 TEL-973-579-0430 WWW.SUSSEX.NJ.US			
1	ADAPTED FROM SC-5	2-15-07	WJK
No.	REVISIONS	DATE	REV. BY



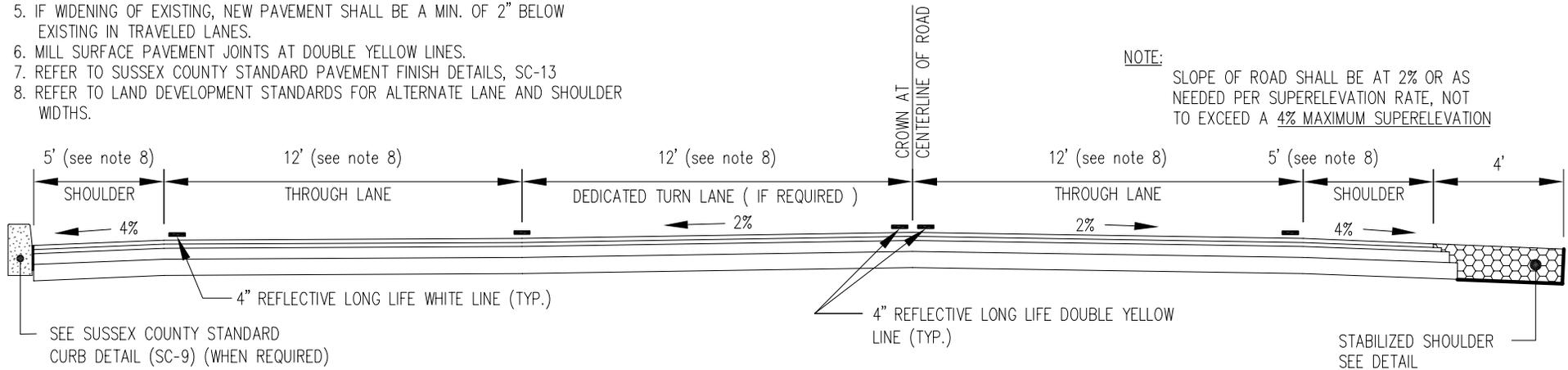
COUNTY OF SUSSEX
DEPARTMENT OF ENGINEERING AND PLANNING
STANDARD DETAILS

RESIDENTIAL
ACCESS

DETAIL
SC-5A

NOTE: TYPICAL ROADWAY SECTIONS

1. SLOPES GREATER THAN 2:1 SHALL BE STABILIZED WITH JUTE FABRIC.
2. TYPICAL SLOPES SHALL HAVE A MINIMUM OF (3:1) AND PREFERRED (10:1) IN LAWNS, ACTUAL SLOPES MAY VARY BASED ON EXISTING FIELD CONDITIONS.
3. CLEAN CUT START AND FINISH JOINTS.
4. MIN. 12" OVERLAP NEW PAVEMENT TO MEET EXISTING REMAINING.
5. IF WIDENING OF EXISTING, NEW PAVEMENT SHALL BE A MIN. OF 2" BELOW EXISTING IN TRAVELED LANES.
6. MILL SURFACE PAVEMENT JOINTS AT DOUBLE YELLOW LINES.
7. REFER TO SUSSEX COUNTY STANDARD PAVEMENT FINISH DETAILS, SC-13
8. REFER TO LAND DEVELOPMENT STANDARDS FOR ALTERNATE LANE AND SHOULDER WIDTHS.



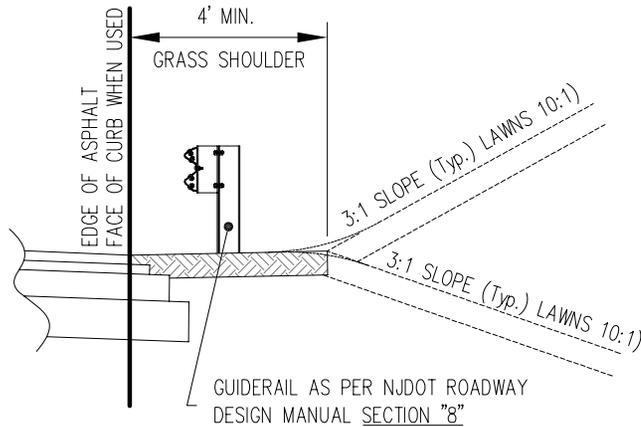
NOTE: SLOPE OF ROAD SHALL BE AT 2% OR AS NEEDED PER SUPERELEVATION RATE, NOT TO EXCEED A 4% MAXIMUM SUPERELEVATION

TYPICAL ROADWAY SECTION

NTS

NOTE: TYPICAL SLOPE DETAIL

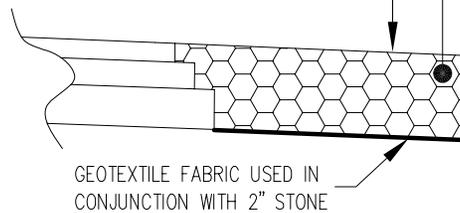
1. ALL SLOPES SHALL BE STABILIZED WITH 4" THICK TOP SOIL, SEEDING, AND MULCH.
2. SHOULDERS 4% OR LESS SHALL HAVE 4" THICK TOP SOIL, SEEDING, AND MULCH



TYPICAL SLOPE DETAIL

NTS

STABILIZED SHOULDER
 ROAD GRADE 4% OR GREATER ($D_{50} = 2"$)
 ROAD GRADE LESS THEN 4% (DENSE GRADED AGGREGATE)
 IF DGA IS USED, TOP SHOULD HAVE A VEGETATIVE STABILIZATION AND GEOTEXTILE FABRIC TO PREVENT LOSS OF FINER MATERIALS



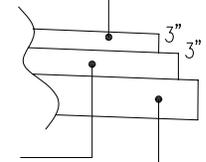
SHOULDER STABILIZATION DETAIL

NTS

2" THICK HOT MIX ASPHALT
 SURFACE COARSE MIX 12.5M64

5" THICK HOT MIX ASPHALT
 BASE COARSE MIX 19M64

6" THICK DENSE GRADED AGGREGATE



PAVEMENT STEPPING DETAIL

NTS

SHEET DATE: 11/29/05

No.	REVISIONS	DATE	REV. BY
2	UPDATE FOR SUPERPAVE	1/29/08	ENG
1	Update for Land Development Standards	1/29/07	ENG

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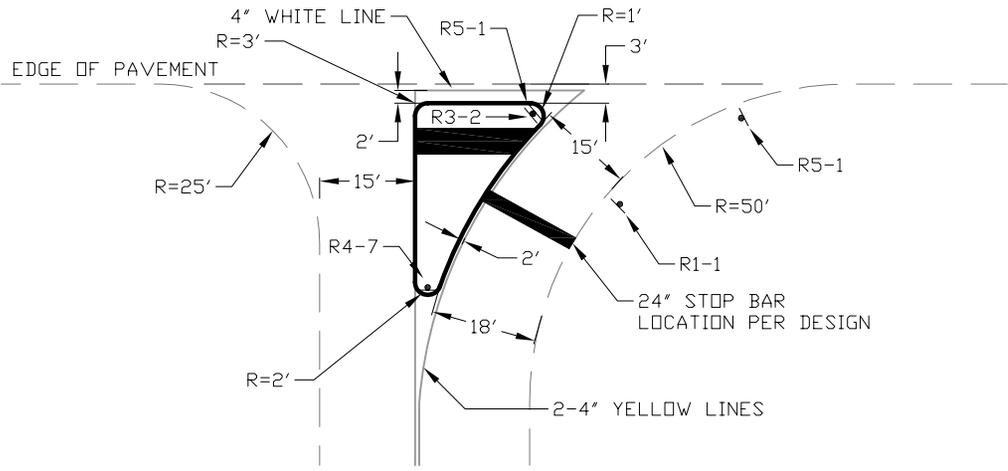


COUNTY OF SUSSEX
 DEPARTMENT OF ENGINEERING AND PLANNING
 STANDARD DETAILS

TYPICAL
 ROADWAY SECTION

DETAIL

SC-6



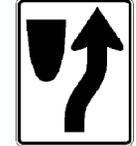
LEFT TURNS OUT PROHIBITED



R1-1
STOP



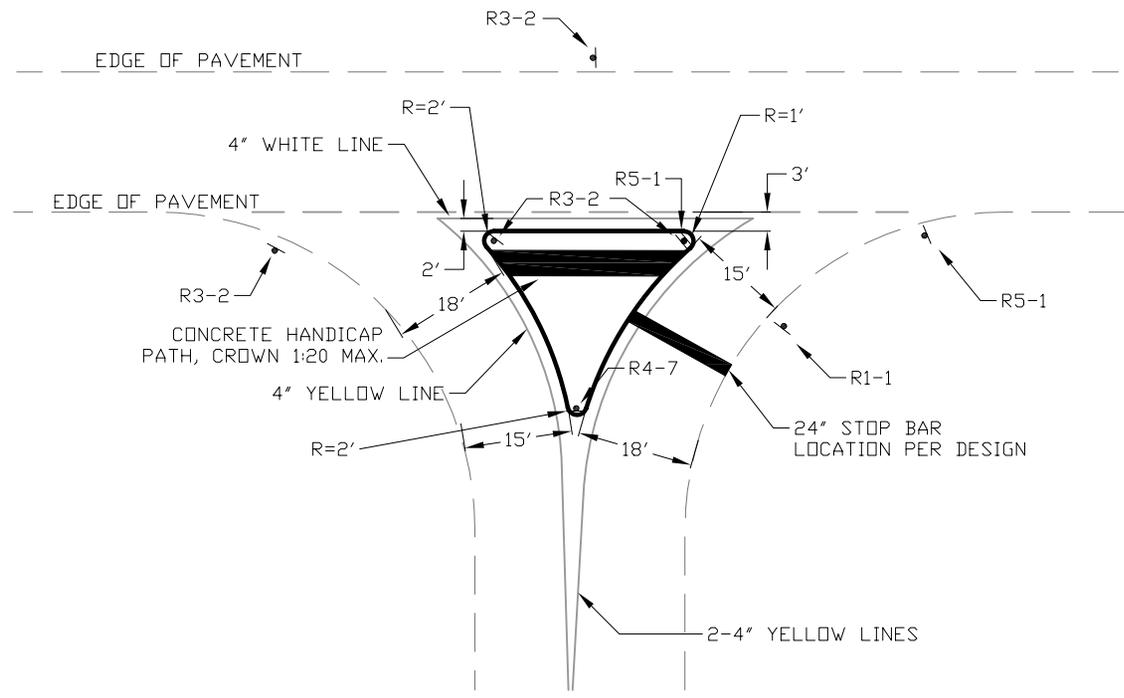
R5-1
DO NOT ENTER



R4-7
KEEP RIGHT



R3-2
NO LEFT TURN



RIGHT-IN AND RIGHT-OUT ONLY

NOTES:
TYPICAL RESTRICTED ENTRANCEWAY DETAILS BASED UPON SU DESIGN VEHICLE. DESIGNER SHOULD VERIFY ADEQUACY FOR SPECIFIC DESIGN VEHICLE AND ADJUST DIMENSIONS AS NEEDED TO ACCOMMODATE DESIGN VEHICLE.

DESIGN ELEMENTS SHOULD DETER RESTRICTED TURN MOVEMENTS TO THE MAXIMUM EXTENT POSSIBLE.

ADDITIONAL SIGNS MAY BE WARRANTED. SIGNAGE SHALL BE INSTALLED PER MUTCD.

MOUNTABLE CURB MAY BE USED AS APPROPRIATE.

SHEET DATE: 11/29/05

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No.	REVISIONS	DATE	REV. BY
1	UPDATE TO LAND DEVELOPMENT STANDARDS	1/29/07	ENG

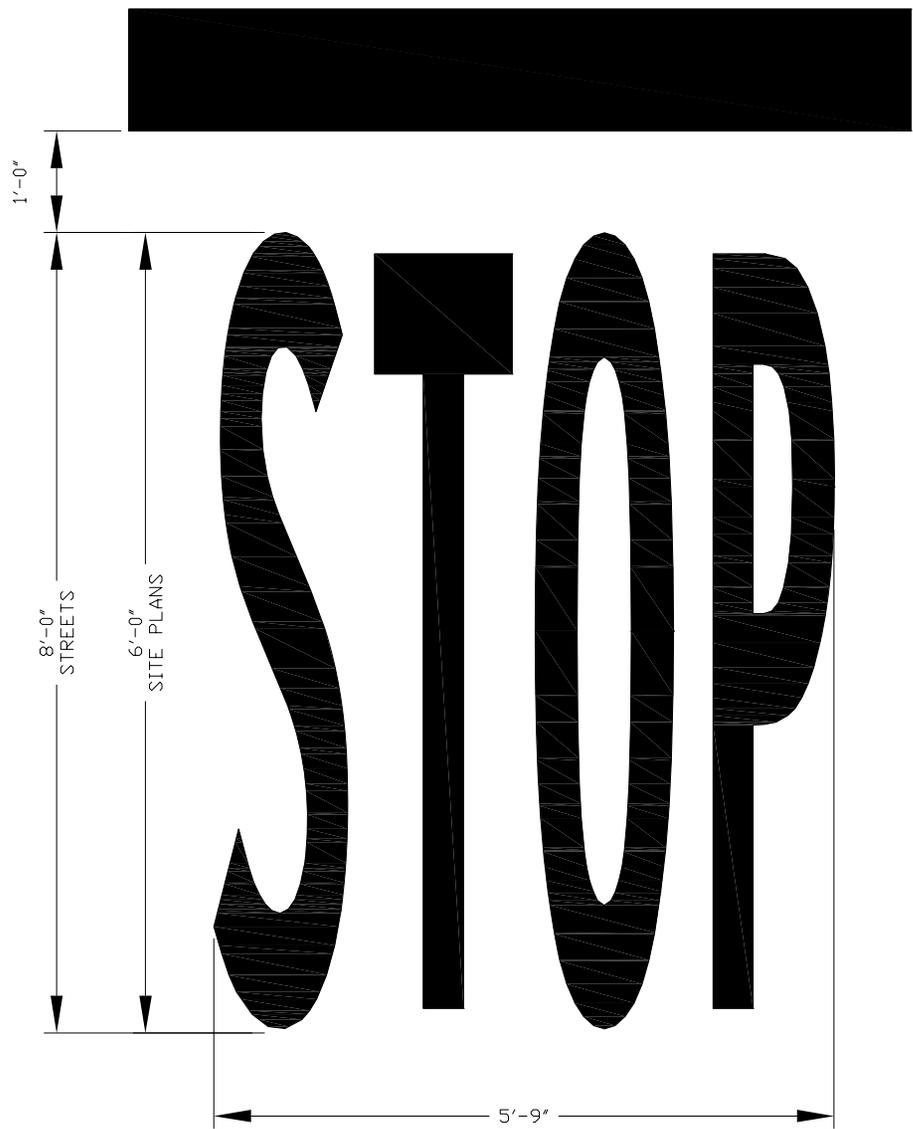


COUNTY OF SUSSEX
DEPARTMENT OF ENGINEERING AND PLANNING
STANDARD DETAILS

RESTRICTED ENTRANCE
LIMITED MOVEMENTS

DETAIL

SC-7



24" STREETS OR SITE PLANS
WITH 25 STALL OR GREATER,
18" SITE PLANS WITH
LESS THEN 25
PARKING STALLS

NOTE: STOP BAR SHALL BE LOCATED A MINIMUM OF 5 FEET BEHIND THE THROUGH STREET WHITE EDGE LINE. LOCATION SHALL BE COORDINATED ON A CASE BY CASE BASIS WITH THE COUNTY ENGINEER.

SHEET DATE: 11/29/05

No.	ADDED NOTE	1/31/08	ENG
	REVISIONS	DATE	REV. BY
1	ADDED NOTE	1/31/08	ENG

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COUNTY OF SUSSEX
 DEPARTMENT OF ENGINEERING AND PLANNING
 STANDARD DETAILS

STOP
 PAVEMENT MARKING

DETAIL

SC-8

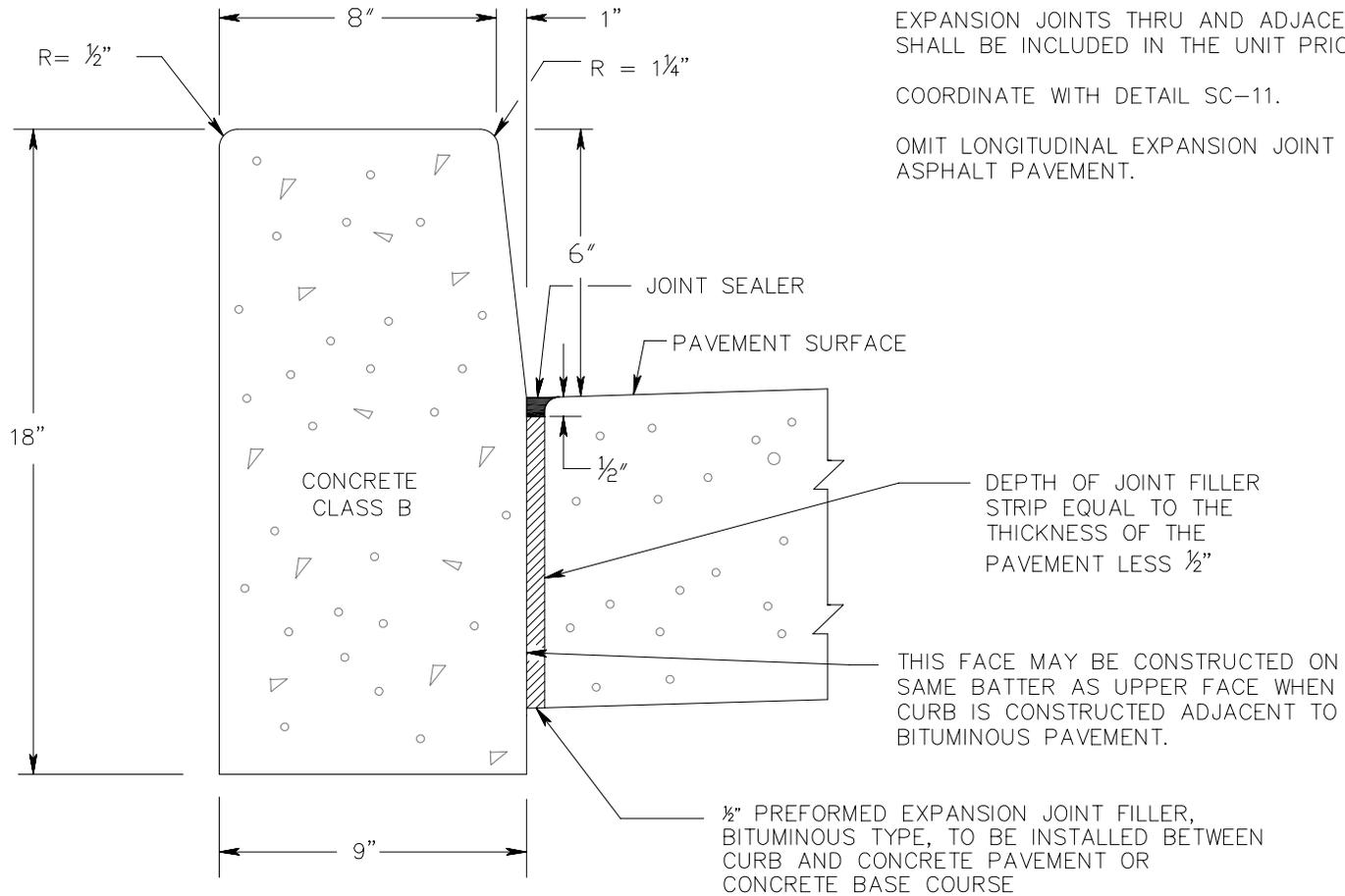
NOTES:

TRAVERSE JOINTS 1/2" WIDE SHALL BE INSTALLED IN THE CURB 20'-0" ON CENTER AND SHALL BE FILLED WITH BITUMINOUS IMPREGNATED FIBER JOINT FILLER RECESSED 1/4" IN FROM THE FRONT FACE AND TOP OF CURB

EXPANSION JOINTS THRU AND ADJACENT TO THE CURB SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CURB.

COORDINATE WITH DETAIL SC-11.

OMIT LONGITUDINAL EXPANSION JOINT FOR ASPHALT PAVEMENT.



SHEET DATE: 11/29/05

No.	REVISIONS	DATE	REV. BY

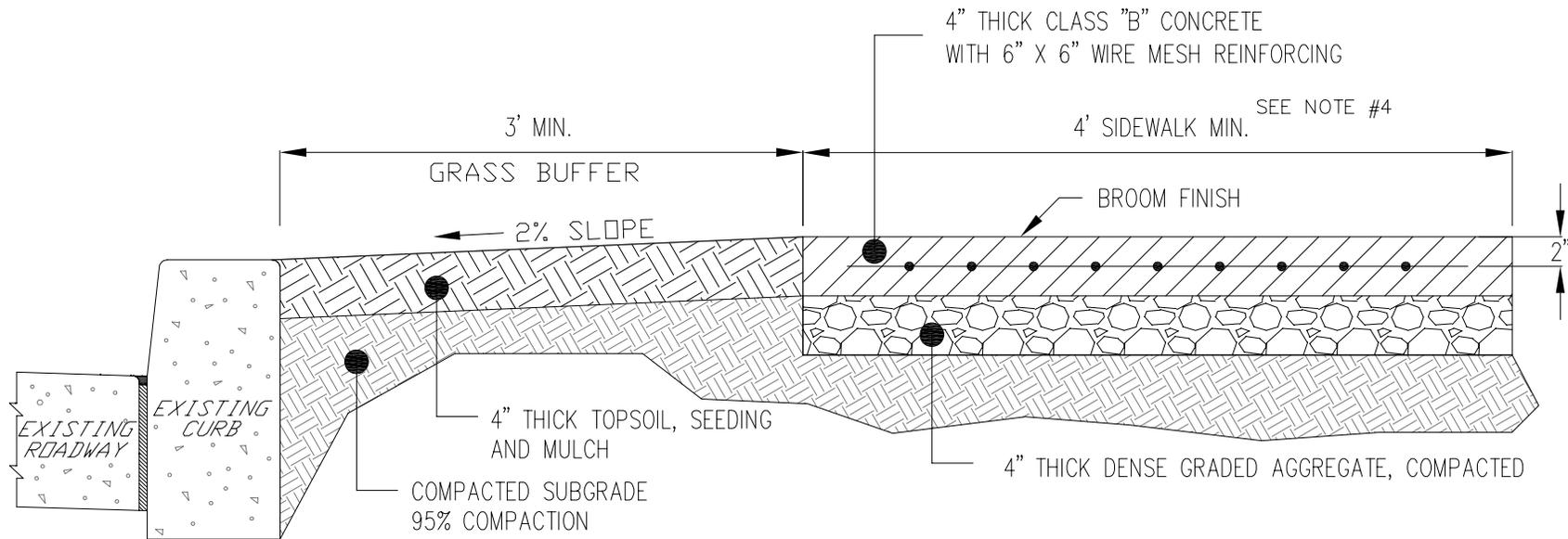
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COUNTY OF SUSSEX
 DEPARTMENT OF ENGINEERING AND PLANNING
 STANDARD DETAILS

9" X 18" CONCRETE
 VERTICAL CURB

DETAIL
 SC-9



METHOD FOR SIDEWALK/CURB BUFFER

NOTES:

N.T.S.

1. PROVIDE 1/2" EXPANSION JOINTS AT 20' O.C. AND AT ALL EXISTING STRUCTURES, AND PROVIDE CONTRACTION JOINTS AT 5' O.C., IN SIDEWALKS.
2. FIBER MESH MAY BE SUBSTITUTED FOR WWF AT A RATE OF 1.5 Lb. PER CY CONCRETE.
3. 3' GRASS BUFFER AREA SHALL HAVE A MINIMUM OF 4" THICK TOPSOIL, SEEDING, AND MULCH OR AS PER CURRENT LOCAL STANDARDS.
4. IF 3' GRASS BUFFER IS OMITTED THE CONCRETE SIDEWALK SHALL BE 5' MIN. IN WIDTH AND SHALL SLOPE TOWARDS THE ROADWAY.
5. ADA ACCESSIBLE RAMPS SHALL BE IN CONFORMANCE WITH CURRENT NJDOT STANDARD DETAILS.
6. ADA ACCESSIBLE RAMPS SHALL NOT OUTLET ONTO COUNTY ROUTE SHOULDERS IN THE ABSENCE OF COUNTY APPROVED PEDESTRIAN CROSSWALKS.

SHEET DATE: 11/29/05

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No.	REVISIONS	DATE	REV. BY



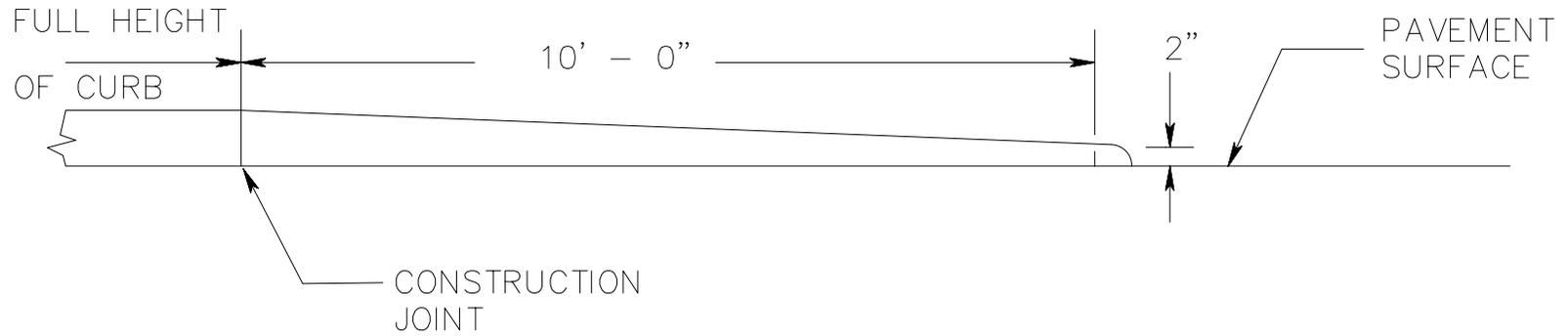
COUNTY OF SUSSEX
DEPARTMENT OF ENGINEERING AND PLANNING
STANDARD DETAILS

SIDEWALK/
CURB DETAIL

DETAIL

SC-11

CURB TRANSITION 2" FACE
TO FULL HEIGHT OF CURB



SHEET DATE: 11/29/05

No.	REVISIONS	DATE	REV. BY

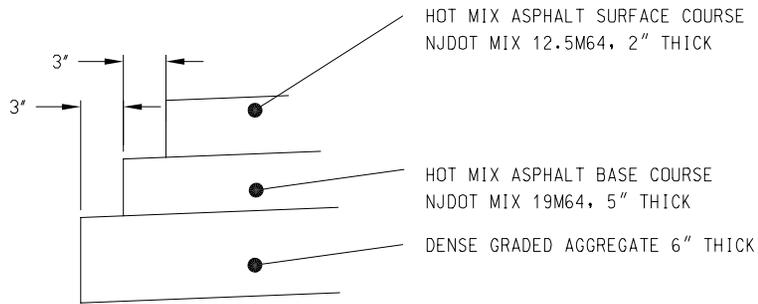
ENGINEERING DIVISION
 SUSSEX COUNTY ADMINISTRATIVE CENTER
 ONE SPRING STREET
 NEWTON, NEW JERSEY 07860
 TEL-973-579-0430
 WWW.SUSSEX.NJ.US



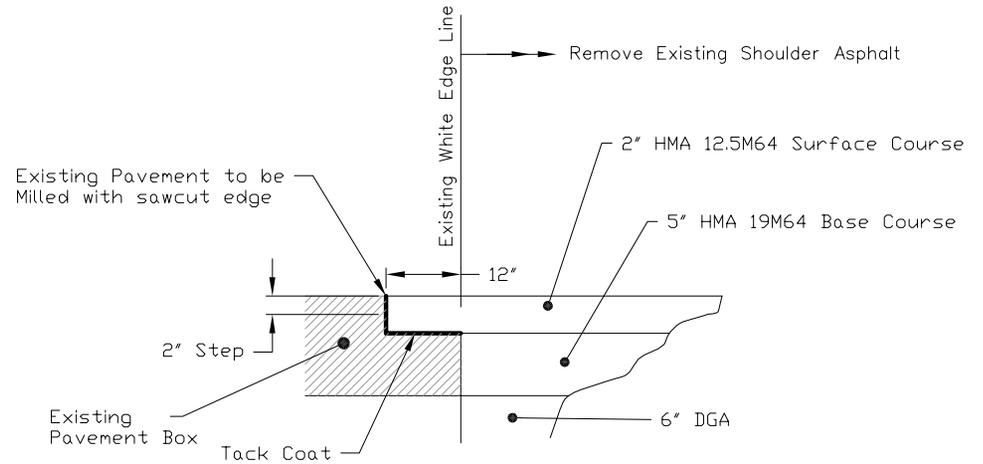
COUNTY OF SUSSEX
 DEPARTMENT OF ENGINEERING AND PLANNING
 STANDARD DETAILS

10' CURB
 TRANSITION

DETAIL
 SC-12

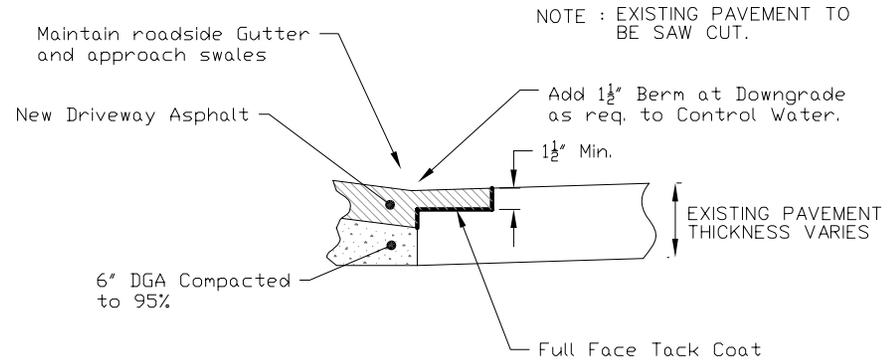


STEPPED PAVEMENT DETAIL



PAVEMENT JOINTING DETAIL

Used for Widened Pavment Sections



RESIDENTIAL DRIVEWAY JOINING DETAIL

Pavement Nomenclature			
Aggregate Size	NJDOT OLD	NJDOT NEW	Min Bit. Thickness
3/8"	HMA I-5	HMA 9.5MM64	1.5"
1/2"	HMA I-4	HMA 12.5M64	2"
3/4"	HMA I-2	HMA 19M64	3"
1"		HMA 25M64	4"
1 1/2"		HMA 37.5M64	6"

SHEET DATE: 11/29/05

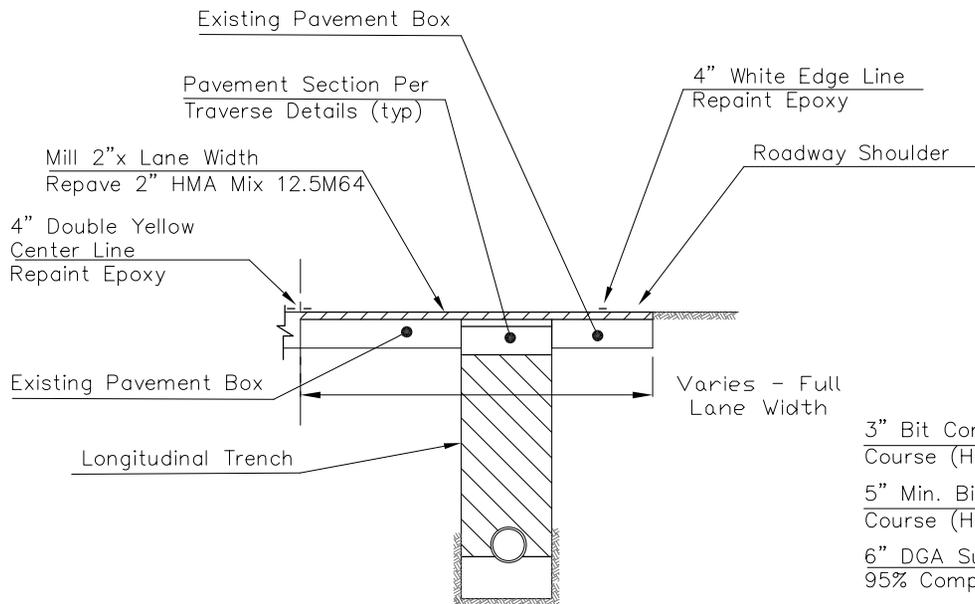
ENGINEERING DIVISION			
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No.	REVISIONS	DATE	REV. BY
1	UPDATE FOR SUPERPAVE	1/29/08	ENG



COUNTY OF SUSSEX
DEPARTMENT OF ENGINEERING AND PLANNING
STANDARD DETAILS

PAVEMENT
FINISH DETAILS

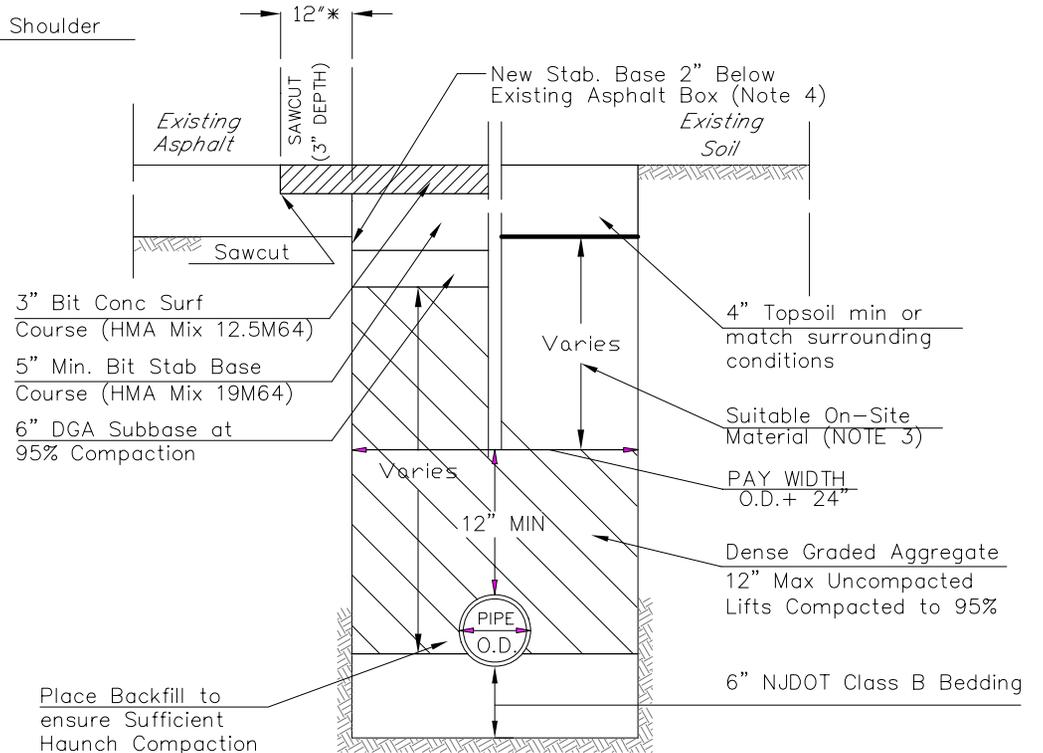
DETAIL
SC-13



Mill and Repave Travelway Lane Width along sections of County Routes where longitudinal trenches are constructed. Refer to typical roadway sections for minimum lane/shoulder widths and additional section data.

LONGITUDINAL TRENCH

1. Contractor shall provide sheeting or shoring as require
2. Contractor shall provide all dewatering. Dewatering shall comply with NJ Soil Conservation Standards.
3. On-site material shall only be permitted for use in trenches within open areas, i.e. fields and lawns.
4. Bituminous Stabilized Base Course shall be placed such that the bottom elevation extends 2" below the existing asphalt road box.
5. All asphalt joints shall be saw-cut



TRAVERSE TRENCH

* 12" shall be uniform traversely across the road measured from the widest part of the road opening.

SHEET DATE: 11/29/05

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2	UPDATE TO SUPERPAVE	1/29/08	ENG
1	Add reference to Typical Section	9/26/06	Eng. Stf
No.	REVISIONS	DATE	REV. BY

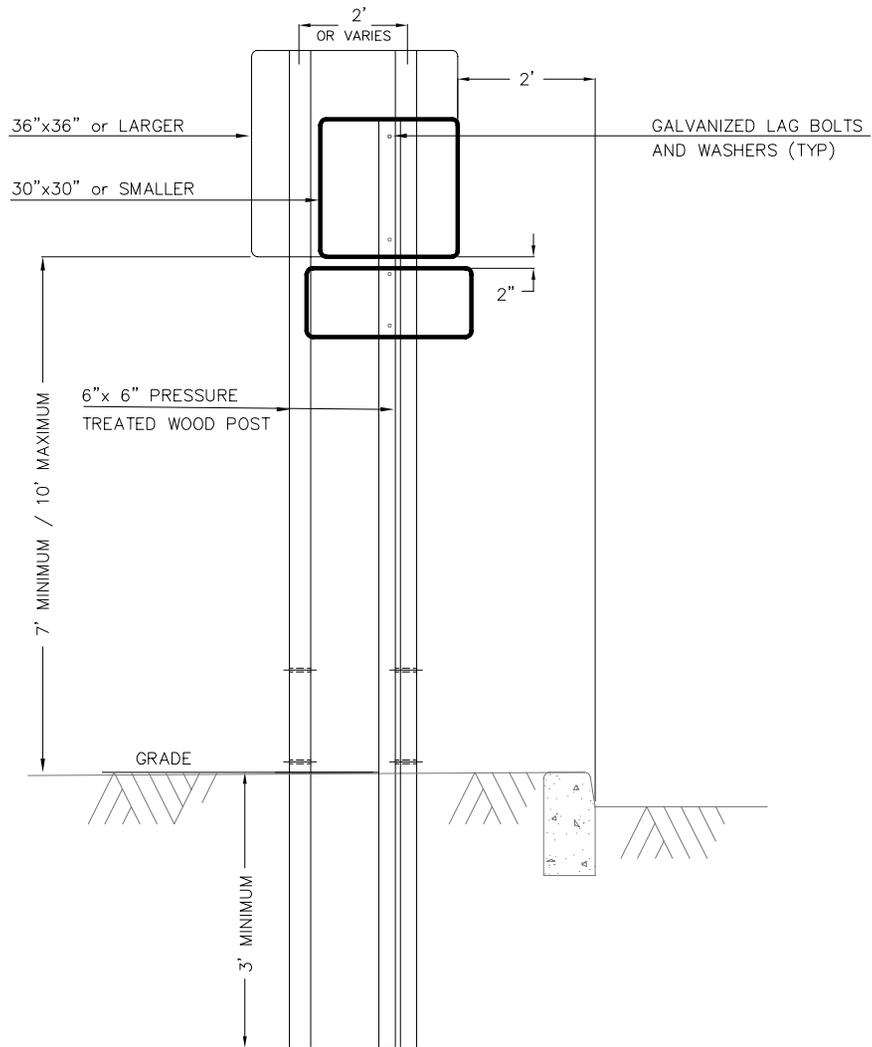


COUNTY OF SUSSEX
DEPARTMENT OF ENGINEERING AND PLANNING
STANDARD DETAILS

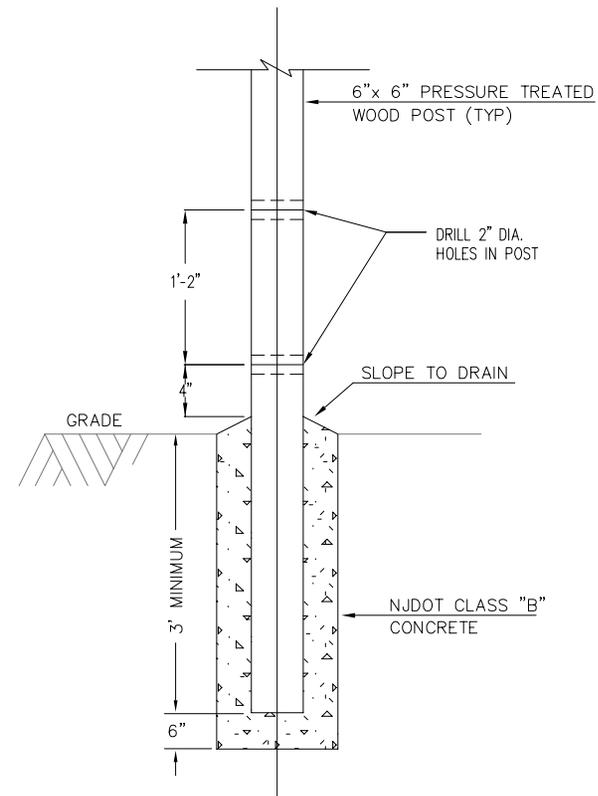
TYPICAL
TRENCH DETAIL

DETAIL

SC-14



SIGN POST DETAIL



TYPICAL POST FOUNDATION

TYPICAL WOOD SIGN POST

N.T.S.

SHEET DATE: 01/02/06

No.	REVISIONS	DATE	REV. BY

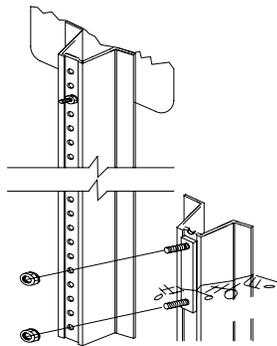
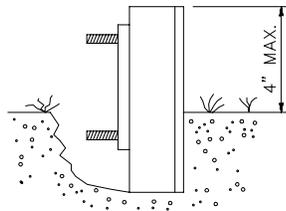
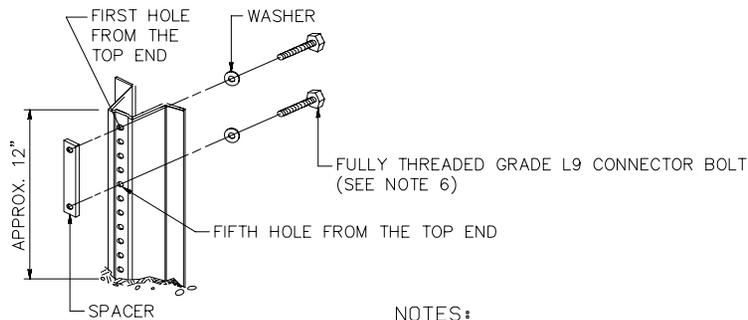
ENGINEERING DIVISION
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COUNTY OF SUSSEX
 DEPARTMENT OF ENGINEERING AND PLANNING
 STANDARD DETAILS

BREAKAWAY SIGN
 SIGN POST DETAIL

DETAIL
 SC-15



- NOTES:**
1. DRIVE ANCHOR POST ASSEMBLY TO WITHIN APPROXIMATELY 12 INCHES ABOVE GROUND LEVEL. PLACE BOLT AND WASHER IN FIRST AND FIFTH HOLES FROM THE TOP END, AND SECURELY TIGHTEN BOLTS ONTO THREADED SPACER.
 2. DRIVE ANCHOR POST ASSEMBLY TO WITHIN A MAXIMUM OF 4 INCHES ABOVE GROUND LEVEL.
 3. DIG OUT AROUND BACK OF ANCHOR POST ASSEMBLY TO ALLOW ROOM FOR TOP POST TO BE ATTACHED.
 4. NEST TOP POST ASSEMBLY ONTO PROTRUDING ANCHOR POST ASSEMBLY BOLTS, THROUGH THE FIRST AND FIFTH HOLES FROM THE BOTTOM OF THE TOP POST.
 5. PLACE AND TIGHTEN A SELF-LOCKING FLANGE NUT ON EACH BOLT. WHEN INSTALLATION IS COMPLETE, TOP OF GROUND POST SHALL NOT EXCEED 4 INCHES ABOVE GROUND LEVEL.
 6. SIZE OF CONNECTOR BOLT FOR TYPE 1, $\frac{3}{16}$ " x $1\frac{1}{2}$ "
SIZE OF CONNECTOR BOLT FOR TYPE 2, $\frac{3}{16}$ " x 2"

NOTE:
THE CONNECTOR BOLTS AND SPACERS SHALL BE FULLY THREADED. EACH CONNECTOR BOLT AND NUT SHALL BE CLEARLY STAMPED WITH MANUFACTURER'S IDENTIFYING MARK.

**ANCHOR POST ASSEMBLY
SIGN SUPPORTS**

CD-619-5.2

GENERAL NOTES:

1. ALL POSTS SHALL BE OF ADEQUATE LENGTH TO MEET THE REQUIREMENTS FOR ERECTION AS STATED IN THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AND AS INDICATED BELOW.
2. ALL SMALL SIGN SUPPORTS SHALL BE OF THE BREAKAWAY TYPE WITH EXCEPTION OF THOSE INSTALLED BEHIND GUIDE RAIL OR OTHER ROADSIDE BARRIER.
3. ALL STEEL POSTS AND BRACKETS SHALL BE CUT, BENT, AND HOLES PUNCHED AND DRILLED BEFORE GALVANIZING. GALVANIZING SHALL BE IN CONFORMANCE WITH CURRENT ASTM A123.
4. ALL STEEL U-POST SIGN SUPPORTS MUST BE INSTALLED FACING THE PREDOMINANT TRAFFIC FLOW. A MOUNTING BRACKET SHOULD BE USED ON SIDE MOUNTED SIGNS SUCH AS "ONE WAY" SIGNS INSTALLED IN MEDIANS.
5. SIGN PANEL SIZES SHALL DETERMINE POST TYPE AND NUMBER AS SHOWN ON THIS DETAIL.
6. BOLTS SHALL NOT PROTRUDE MORE THAN $\frac{3}{4}$ " BEYOND THE NUT WHEN TIGHT, BUT SHALL ENGAGE ALL THREADS IN THE NUT.
7. WHEN SIGNS ARE INSTALLED ON SLOPES 10H:1V OR FLATTER, THE MINIMUM VERTICAL CLEARANCE REQUIREMENTS FOR SIGNS ARE:

FOR SINGLE POST INSTALLATIONS - THE MINIMUM DISTANCE BETWEEN THE EDGE OF THE PAVEMENT AND THE BOTTOM OF ANY PANEL MUST BE 7 FEET, AND THE MINIMUM DISTANCE FROM EDGE OF PAVEMENT TO THE TOP OF ANY SIGN PANEL MUST BE 9 FEET.

FOR MULTI-POST INSTALLATIONS - THE MINIMUM DISTANCE BETWEEN THE EDGE OF PAVEMENT AND THE BOTTOM OF A MAJOR SIGN PANEL MUST BE 7 FEET.

SECONDARY SIGN PANELS (LAND SERVICE HIGHWAYS) - THE MINIMUM DISTANCE BETWEEN THE EDGE OF PAVEMENT AND THE BOTTOM OF A SECONDARY SIGN PANEL IS 6 FEET.

SECONDARY SIGN PANELS (INTERSTATE AND FREEWAYS) - THE BOTTOM OF THE MAJOR SIGN SHALL BE A MINIMUM OF 8 FEET AND THE SECONDARY SIGN PANEL A MINIMUM OF 5 FEET ABOVE THE EDGE OF PAVEMENT.

WHERE GRADING OF 10H:1V OR FLATTER CANNOT BE OBTAINED, OR WHERE CURB OR BERM IS GREATER THAN 4 INCHES, THE MINIMUM VERTICAL CLEARANCE WILL BE MEASURED FROM THE GROUND LINE TO THE BOTTOM OF THE SIGN.

8. PERMANENT SIGN SUPPORTS SHOULD NOT BE INSTALLED ON SLOPES GREATER THAN 10H:1V, EXCEPT WHERE GRADING OF 10H:1V CANNOT BE OBTAINED OR THE SIGN SUPPORTS WILL BE BEHIND A TRAFFIC BARRIER. THE SLOPE SHALL EXTEND A MINIMUM OF 3 FEET BEYOND THE OUTSIDE EDGE OF SIGN (SEE GRADING DETAIL FOR SLOPE TREATMENT).
9. EXTRUDED ALUMINUM SIGN PANELS ARE NOT PERMITTED FOR USE WITH STEEL U-POST SIGN SUPPORTS.
10. STEEL U-POST SIGN SUPPORTS SHALL NOT BE PLACED IN FRONT OF GUIDE RAIL AND THE POSTS MUST NOT STRADDLE GUIDE RAIL.
11. TO EXTEND THE HEIGHT OF A SIGN POST, A MAXIMUM OF ONE SPLICE MAY BE MADE AND MUST BE A MINIMUM OF 9 FEET FROM THE GROUNDLINE TO CENTER LINE OF SPLICE.

SHEET DATE: 1/11/005

				ENGINEERING DIVISION	
				SUSSEX COUNTY ADMINISTRATIVE CENTER ONE SPRING STREET NEWTON, NEW JERSEY 07860 TEL-973-579-0430 WWW.SUSSEX.NJ.US	
No.	REVISIONS	DATE	REV. BY		

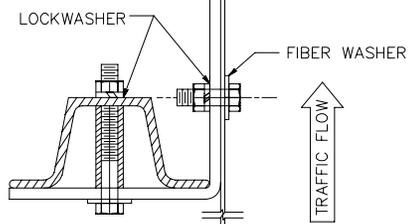
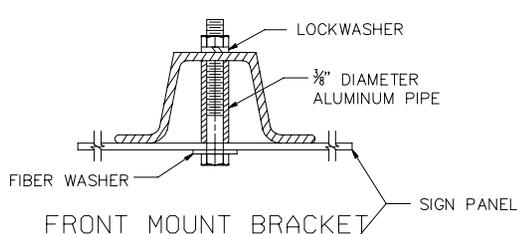


COUNTY OF SUSSEX
DEPARTMENT OF ENGINEERING AND PLANNING
STANDARD DETAILS

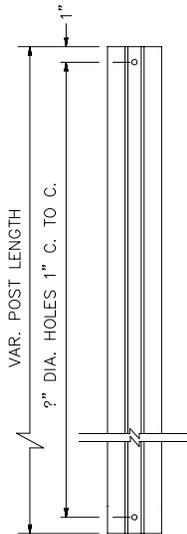
SIGN DETAILS
SHEET 1 OF 3

DETAIL
SC-15.1

NJDOT DETAILS EXTRACTED FROM SHEETS CD-619-4 AND CD 619-5
SEE SHEETS SC-15.1, SC-15.2 AND SC-15.3



SIDE MOUNT BRACKET

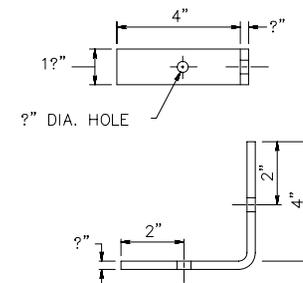


TOP POST U-POST

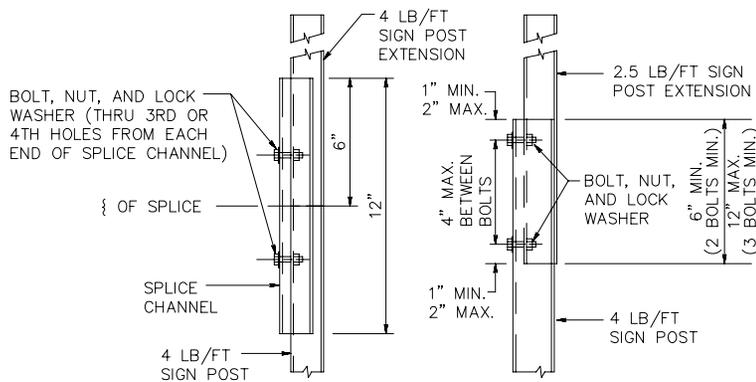
PANEL SIZE (W X H)	• OF POSTS	POST SIZE (LB/ FT)
18" x 18"	1	2.5
18" x 24"	1	2.5
24" x 24"	1	2.5
24" x 30"	1	2.5
24" x 36"	1	2.5
30" x 24"	1	2.5
30" x 30"	1	2.5
36" x 12"	2	2.5
36" x 36" x 36"	2	2.5
30" x 36"	1	4.0

PANEL SIZE (W X H)	• OF POSTS	POST SIZE (LB/ FT)
36" x 36"	2	2.5
36" x 48"	2	2.5
45" x 36"	2	2.5
48" x 24"	2	2.5
48" x 36"	2	2.5
48" x 48"	2	4.0
48" x 64" x 64"	2	2.5
60" x 36"	2	4.0
48" x 60"	2	4.0
60" x 30"	2	4.0

U-POST SELECTION TABLE
BREAKAWAY SIGN SUPPORT



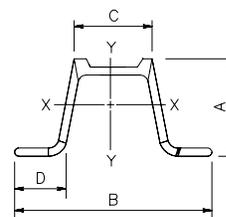
DETAIL OF BRACKET FOR SIDE MOUNTED SIGNS



SIGN POST EXTENSION SPLICE DETAILS

WEIGHT X LBS/FT.	DIMENSIONS (IN)				AREA IN ²	X-X AXIS X X		Y-Y AXIS	
	"A"	"B"	"C"	"D"		1(IN. ⁴)	S(IN. ³)	1(IN. ⁴)	S(IN. ³)
2.50	1.516	3.062	1.278	0.669	0.760	0.228	0.313	0.539	0.352
4.00	1.968	3.500	1.336	0.834	1.187	0.611	0.707	1.161	0.664

TYPE 1 STEEL U-POST PROPERTIES
x ± 5%
x *GOVERNING SECTION



TYPE 1 STEEL U-POST

NOTES:

1. ANCHOR POST AND TOP POST SHALL BE OF EQUAL WEIGHT/FEET.
2. SOIL ANCHOR PLATE SHALL BE ATTACHED TO ALL ANCHOR POSTS.
3. THE MATERIAL FOR THE SOIL ANCHOR PLATES SHALL BE CARBON SHEET STEEL.

NJDOT DETAILS EXTRACTED FROM SHEETS CD-619-4 AND CD 619-5
SEE SHEETS SC-15.1, SC-15.2 AND SC-15.3

SHEET DATE: 1/11/005

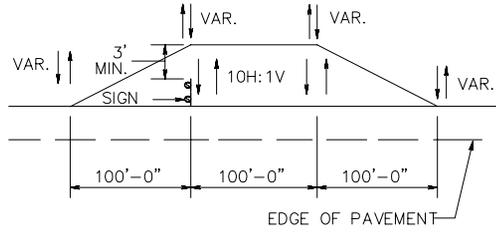
ENGINEERING DIVISION			
No.	REVISIONS	DATE	REV. BY
SUSSEX COUNTY ADMINISTRATIVE CENTER ONE SPRING STREET NEWTON, NEW JERSEY 07860 TEL-973-579-0430 WWW.SUSSEX.NJ.US			



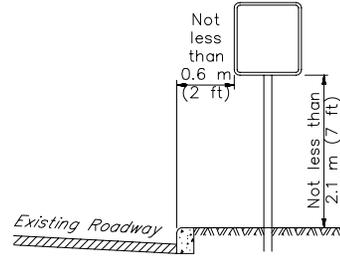
COUNTY OF SUSSEX
DEPARTMENT OF ENGINEERING AND PLANNING
STANDARD DETAILS

SIGN DETAILS
SHHET 2 OF 3

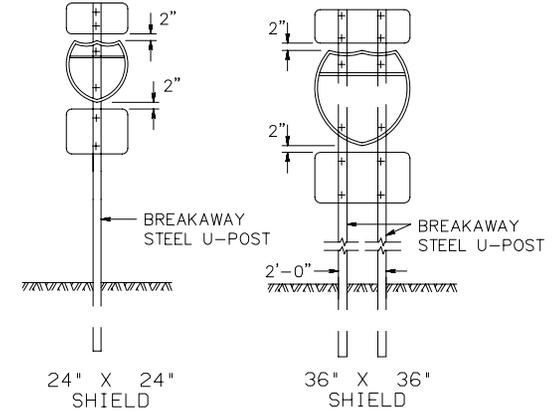
DETAIL
SC-15.2



STEEL U-POST GRADING DETAIL

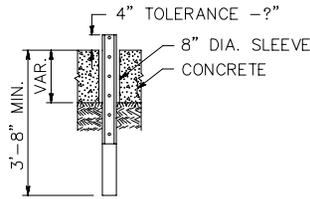


ROADSIDE SIGN
BUSINESS OR
RESIDENCE DISTRICT

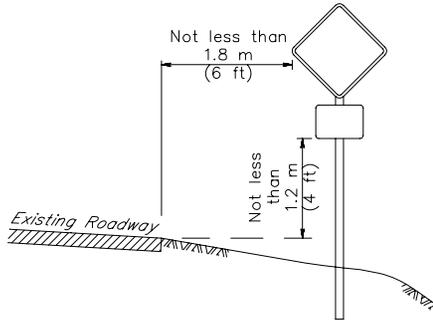


24" X 24"
SHIELD

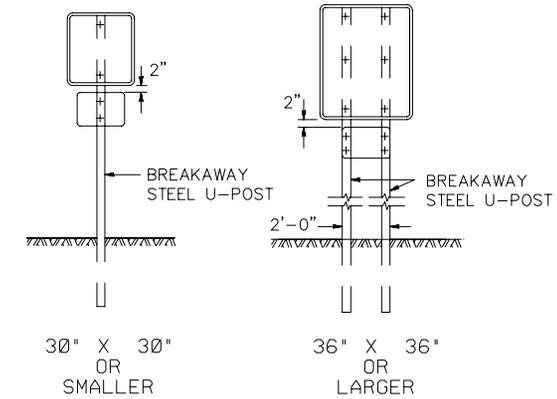
36" X 36"
SHIELD



CONCRETE
INSTALLATION

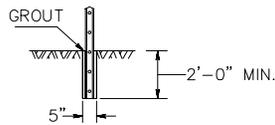


WARNING SIGN
WITH ADVISORY
SPEED PLAQUE
RURAL DISTRICT

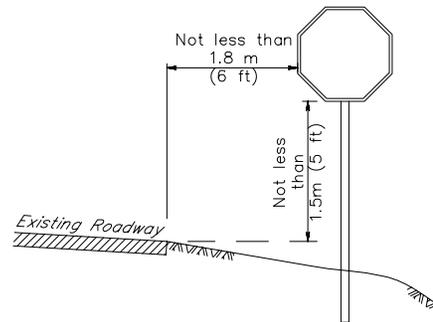


30" X 30"
OR
SMALLER

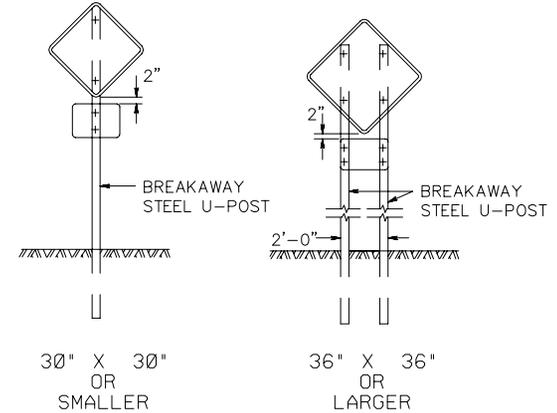
36" X 36"
OR
LARGER



ROCK
INSTALLATION

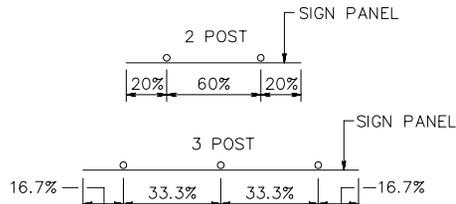


ROADSIDE SIGN
RURAL DISTRICT



30" X 30"
OR
SMALLER

36" X 36"
OR
LARGER



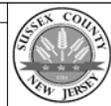
STEEL U-POST SPACING

NJDOT DETAILS EXTRACTED FROM SHEETS CD-619-4 AND CD 619-5
MUTCD INSTALLATION DIAGRAMS
SEE SHEETS SC-15.1, SC-15.2 AND SC-15.3

SHEET DATE: 1/11/005

No.	REVISIONS	DATE	REV. BY

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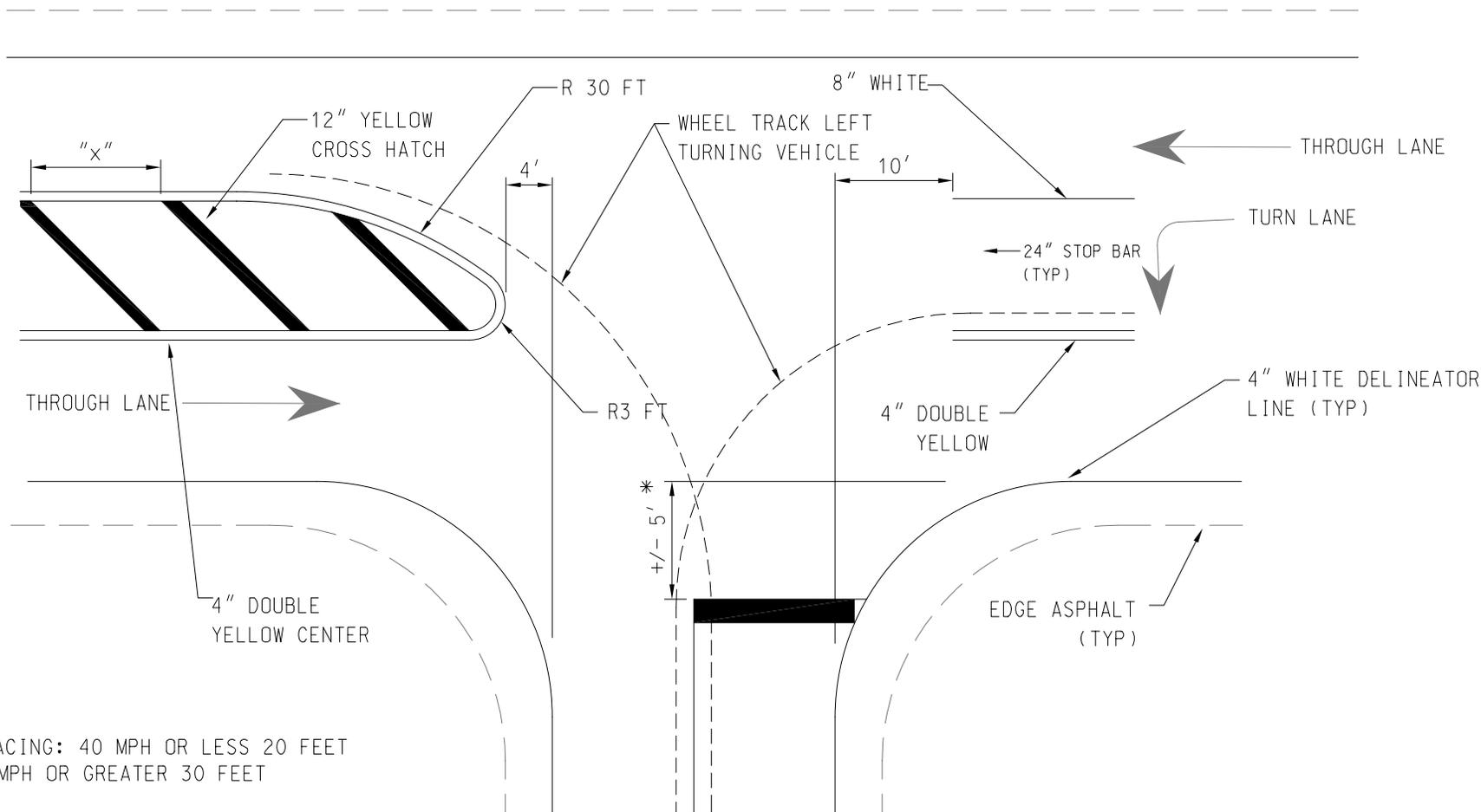


COUNTY OF SUSSEX
DEPARTMENT OF ENGINEERING AND PLANNING
STANDARD DETAILS

SIGN DETAILS
SHEET 3 OF 3

DETAIL

SC-15.3



"x" = SPACING: 40 MPH OR LESS 20 FEET
45 MPH OR GREATER 30 FEET

* REFER TO DETAILS SC-1, SC-4 AND SC-5 FOR RELATED DATA
COORDINATE WITH DETAIL SC-17 AND SC-18 FOR TURN LANE CONFIGURATION.
GRAPHICAL REPRESENTATION: DIMENSIONS SHOWN SHALL BE VERIFIED BY DESIGNER FOR SPECIFIC LANE AND SHOULDER WIDTHS.

DESIRABLE TURN LANE MARKING LAYOUT

NTS

SHEET DATE: 2/27/06

No.	REVISIONS	DATE	REV. BY
2	UPDATED NOTES	11/16/07	ENG
1	REMOVE STDP BAR, ADD 8" TURN LANE WL	10/25/07	WJK

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COUNTY OF SUSSEX
DEPARTMENT OF ENGINEERING AND PLANNING
STANDARD DETAILS

DESIRABLE MEDIAN BREAK
PAVEMENT MARKINGS

DETAIL

SC-16

MATCH EX. LANE -
SHOULDER WIDTH AND
CROSS SLOPES (TYP)

EX WHITE
EDGE LINE

WA

T1

AREA OF WIDENED ASPHALT

8" WHITE

PROPOSED PAVEMENT EDGE (TYP)

4" WHITE
EDGE LINE

EX YELLOW
CENTERLINE

R2

WHITE PAVEMENT
MARKINGS

4" DOUBLE YELLOW CENTER LINE

24" STOP BAR

AREA OF WIDENED ASPHALT
SEE SC-16 FOR INTERSECTION
MARKINGS

INTERSECTING
STREET

ABBREVIATIONS:

RC: REVERSE CURVE TAPER (FEET)

W: LANE WIDTH (FEET)

R: RADIUS (FEET)

DS: DESIGN SPEED (MPH)

WA: LANE WIDTH SHIFT ADJUSTMENT (FEET)

SL: STACK LENGTH: 50 FT MIN OR BY DESIGN

T1: TAPER LENGTH

DS>40: $T1=DS \times WA$

DS<45: $T1 = \frac{DS^2 \times WA}{60}$

EXISTING PAVEMENT EDGE (TYP)

R1

R2

REPAVE ROAD SECTION SUCH
THAT NEW CROWN FOLLOWS NEW CL
(MILLING MAY BE REQUIRED)

R2

NOTES:

- 1.) TYPICAL LAYOUT CONFIGURATION FOR TURN LANE CENTERED ONTO EXISTING ROADWAY.
- 2.) REFER TO OTHER COUNTY DETAILS FOR ADDITIONAL INFORMATION.
- 3.) REFER TO SC-16 FOR MEDIAN MARKINGS.

	R1	R2	RC
DS	Radius	Radius	Length
< 35	50	100	59
35-40	150	300	102
>40	300	600	149

SHEET DATE: 2/27/06

ENGINEERING DIVISION			
SUSSEX COUNTY ADMINISTRATIVE CENTER ONE SPRING STREET NEWTON, NEW JERSEY 07860 TEL-973-579-0430 WWW.SUSSEX.NJ.US			
1	REMOVE STOP BAR, ADD 8" TURN LANE WL	10/25/07	WJK
No.	REVISIONS	DATE	REV. BY

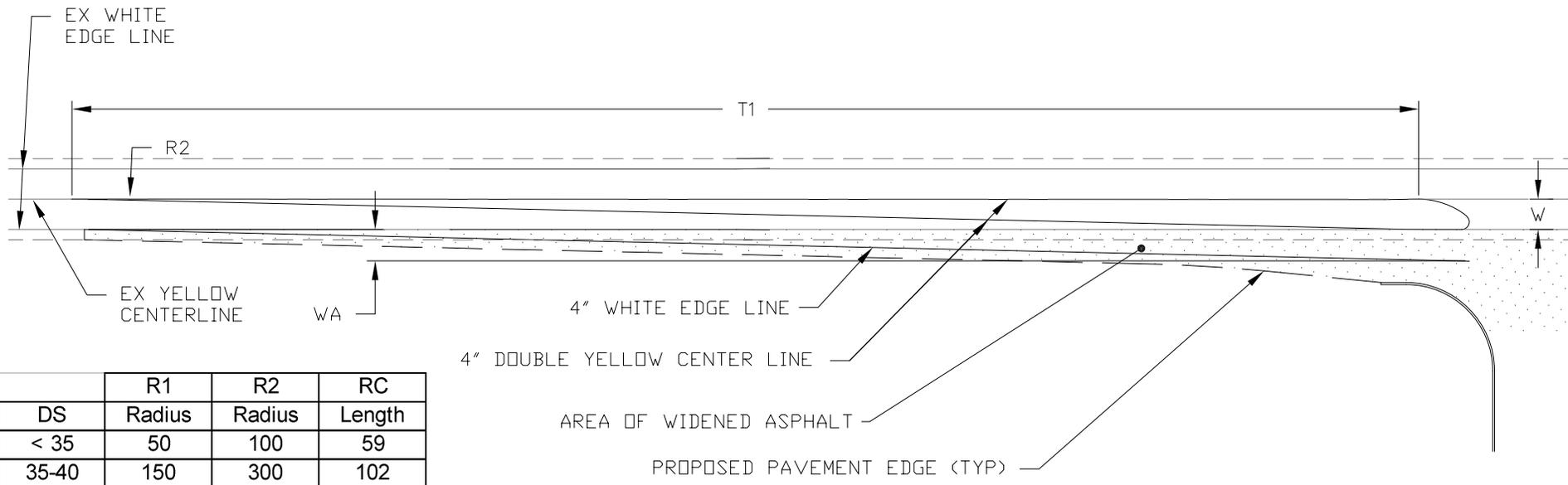


COUNTY OF SUSSEX
DEPARTMENT OF ENGINEERING AND PLANNING
STANDARD DETAILS

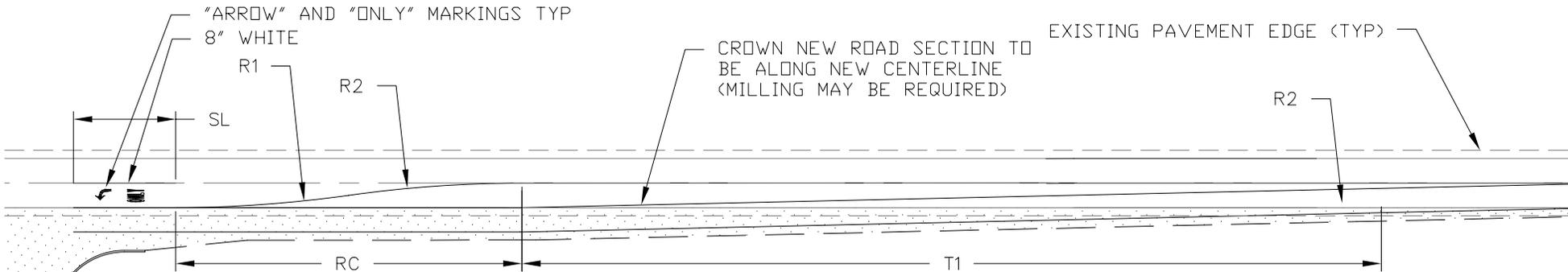
DESIRABLE AUXILIARY
LANE LAYOUT-CENTERED

DETAIL

SC-17



DS	R1 Radius	R2 Radius	RC Length
< 35	50	100	59
35-40	150	300	102
>40	300	600	149



ABBREVIATIONS:

- RC: REVERSE CURVE TAPER (FEET)
- W: LANE WIDTH (FEET)
- R: RADIUS (FEET)
- DS: DESIGN SPEED (MPH)
- WA: LANE WIDTH ADJUSTMENT (FEET)
- SL: STACK LENGTH: 50 FT MIN OR BY DESIGN

T1: TAPER LENGTH
 DS>40: $T1 = DS \times WA$
 DS<45: $T1 = \frac{DS^2 \times WA}{60}$

NOTES:

- 1.) TYPICAL LAYOUT CONFIGURATION FOR TURN LANE MAINTAINING ONE EDGE OF EXISTING ROADWAY.
- 2.) REFER TO OTHER COUNTY DETAILS FOR ADDITIONAL INFORMATION.
- 3.) COORDINATE WITH SC-17 FOR UNDEFINED DATA
- 4.) REFER TO SC-16 FOR MEDIAN MARKINGS.

SHEET DATE: 2/27/06

No.	REVISIONS	DATE	REV. BY
1	REMOVE STOP BAR, ADD 8' TURN LANE WL	10/25/07	WJK

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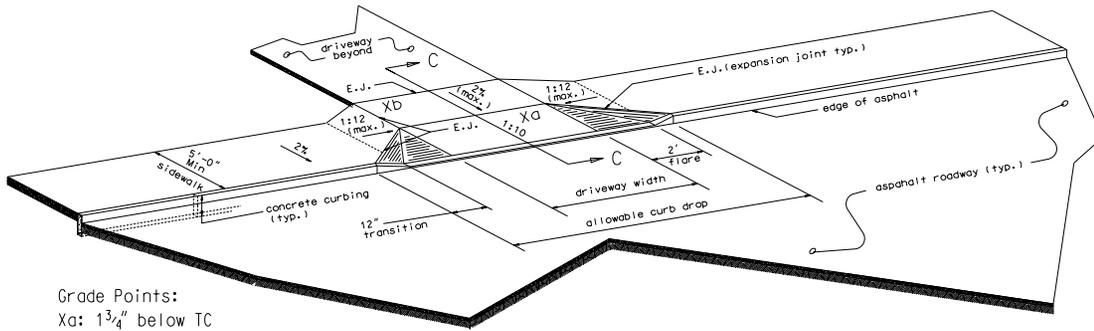


COUNTY OF SUSSEX
 DEPARTMENT OF ENGINEERING AND PLANNING
 STANDARD DETAILS

DESIRABLE AUXILIARY
 LANE LAYOUT-OFFSET

DETAIL

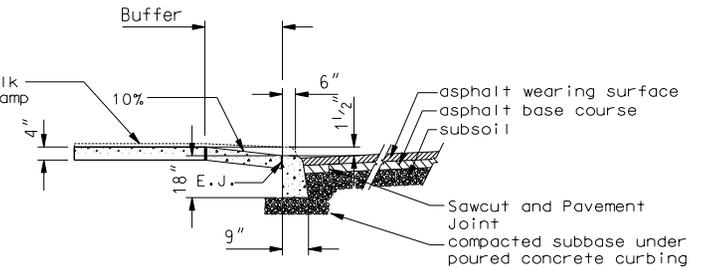
SC-18



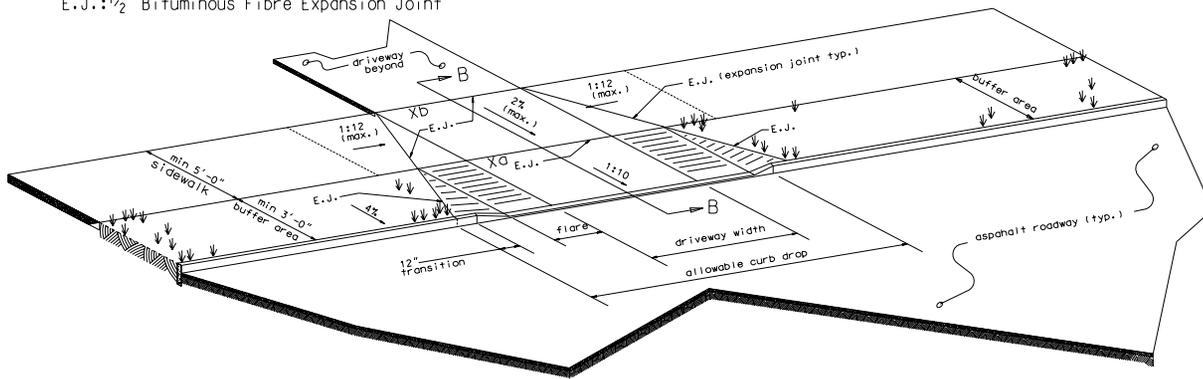
Grade Points:
 Xa: $1\frac{3}{4}$ " below TC
 Xb: $1\frac{1}{2}$ " below TC
 Slopes:
 1:10 = 10% = $1\frac{1}{4}$ " per 1'
 1:12 = 8% = 1" per 1'
 E.J.: $1\frac{1}{2}$ " Bituminous Fibre Expansion Joint

ISOMETRIC VIEW
 DRIVEWAY APRON DETAIL

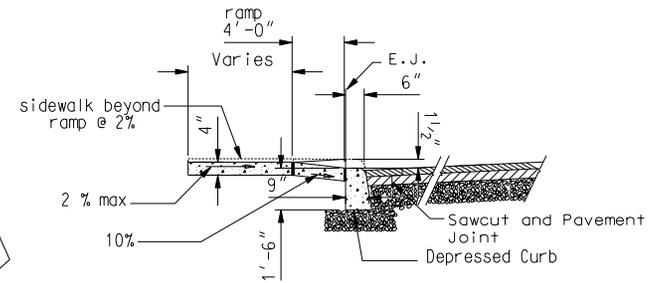
5'-0" walk beyond ramp @ 2%



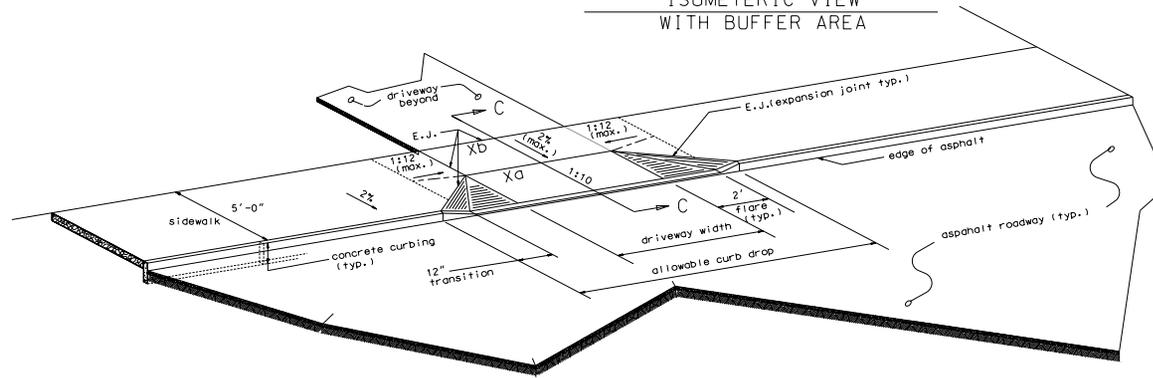
SECTION B-B
 MINIMUM DRIVEWAY APRON REQUIREMENTS
 SIDEWALK WITH BUFFER AREA



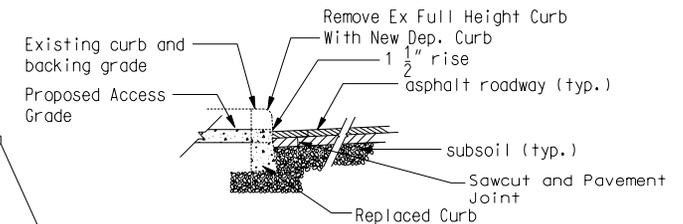
ISOMETRIC VIEW
 WITH BUFFER AREA



SECTION C-C
 SIDEWALK @ BACK OF CURB
 absolute minimum apron width due to r/w restrictions



ISOMETRIC VIEW
 DRIVEWAY APRON DETAIL



SECTION THRU DRIVEWAY INSTALLED
 WITH EXISTING CURB TO BE REMOVED

- Notes:
- 1) Sawcut roadway asphalt in conformance with other Sussex County Standard Details prior to curbe replacement.
 - 2) Applicable along curbed sections of County Roads and other locations only when approved by the County Engineer.
 - 3) High volume access points will warrant curb return radii.
 - 4) Refer to Sussex County Details CD-10 "Method of Depressing Curb at Driveways" and CD-9 "9"x18" Concrete Vertical Curb" for curb construction.
 - 5) Refer to Sussex County Detail CD-11 "Sidewalk/Curb Detail".

SHEET DATE: 9/26/06

ENGINEERING DIVISION			
SUSSEX COUNTY ADMINISTRATIVE CENTER ONE SPRING STREET NEWTON, NEW JERSEY 07860 TEL-973-579-0430 WWW.SUSSEX.NJ.US			
1	Update to SC Standards	1/29/07	eng
No.	REVISIONS	DATE	REV. BY



COUNTY OF SUSSEX
 DEPARTMENT OF ENGINEERING AND PLANNING
 STANDARD DETAILS

TYP DRIVEWAY ACCESS
 ALONG CURBED STREETS

DETAIL
 SC-19