

# ACEC

AMERICAN COUNCIL OF ENGINEERING COMPANIES  
of Delaware

## MEMORANDUM

Date: April 5, 2010  
To: ACEC-DE Executive Committee  
From: Michael Riemann  
RE: **KENT COUNTY COMMITTEE MEETING MINUTES – DELDOT**

A Kent County Partnering meeting was held with the Delaware Department of Transportation on March 16, 2010 at the DelDOT Administration Building in Dover. The meeting was attended by Marc Cote of DelDOT, and seven (7) ACEC-DE member firm representatives. The following topics were discussed:

### 1. Changes to the DelDOT review process:

DelDOT recently implemented a new review process which effects subdivision and commercial entrance plan applications. The process consists of a defined review schedule and definitive submission deadlines and consolidates the internal DelDOT department's comments into one comment letter. The submission and review schedule can be found on the DelDOT website. Below is a brief summary for submissions for letters of no objection and also construction plans:

- a. The schedule varies based on County.
- b. The total review time is 42 days from submission of plans to receipt of comments.
- c. Two (2) paper sets and electronic PDF's should be submitted for review plus all appropriate checklists.
- d. Subsequent reviews will proceed through the same process. However, the final submission may not go through a plan review meeting depending on the extent of remaining comments.
- e. DelDOT will hold an internal plan review meeting with internal departments to review the project. Consultants and may be asked to attend depending on the complexity of the project. In addition, Consultants and representatives of municipalities can request to attend the meeting.
- f. Consultants should utilize the gate keeping checklist to ensure the proper information has been submitted. If the application is incomplete, DelDOT reserves the right to reject the submission. The Checklist is on-line and a Word® version should be added in the near future.
- g. In addition to the information above, Mr. Cote provided a series of handouts which expand on the above information.
- h. Consultants can submit for letter of no objection and construction plan reviews at the same time.

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**2. Revisions to the DelDOT Regulations:**

DelDOT recently revised the subdivision regulations. The revisions became effective on 2-15-2010. The final version of the revisions should be posted on the website. Projects which were submitted to the local land use agency for preliminary approval will be grandfathered from the revised regulations. At this point, DelDOT is considering the possibility of yearly updates. A summary of the revisions is attached as provided by Mr. Cote.

**3. Other Items of Discussion:**

a. Pre-Submittal Meeting:

- i. DelDOT is requiring a pre-submittal meeting for applications which exceed 200 ADT. See attached handout provided by Mr. Cote. The meeting is required even if the project goes through the PLUS process.

b. Site Distance Calculations:

- i. DelDOT recently added a calculation form which can be utilized to determine site distance for a project. It should be noted that previous versions of the Subdivision and Road Side Design Manual established the location of the decision point as 10' behind the stop bar. This is inaccurate and should reflect 14.5' – 18' as outlined by AASHTO. The recent revisions to the regulations reflect this change. Mr. Cote encourages consultants to submit the calculation form with their submission. Additional discussion took place about the calculation form with respect to its consistency with AASHTO guidelines.

c. Connectivity Ratio:

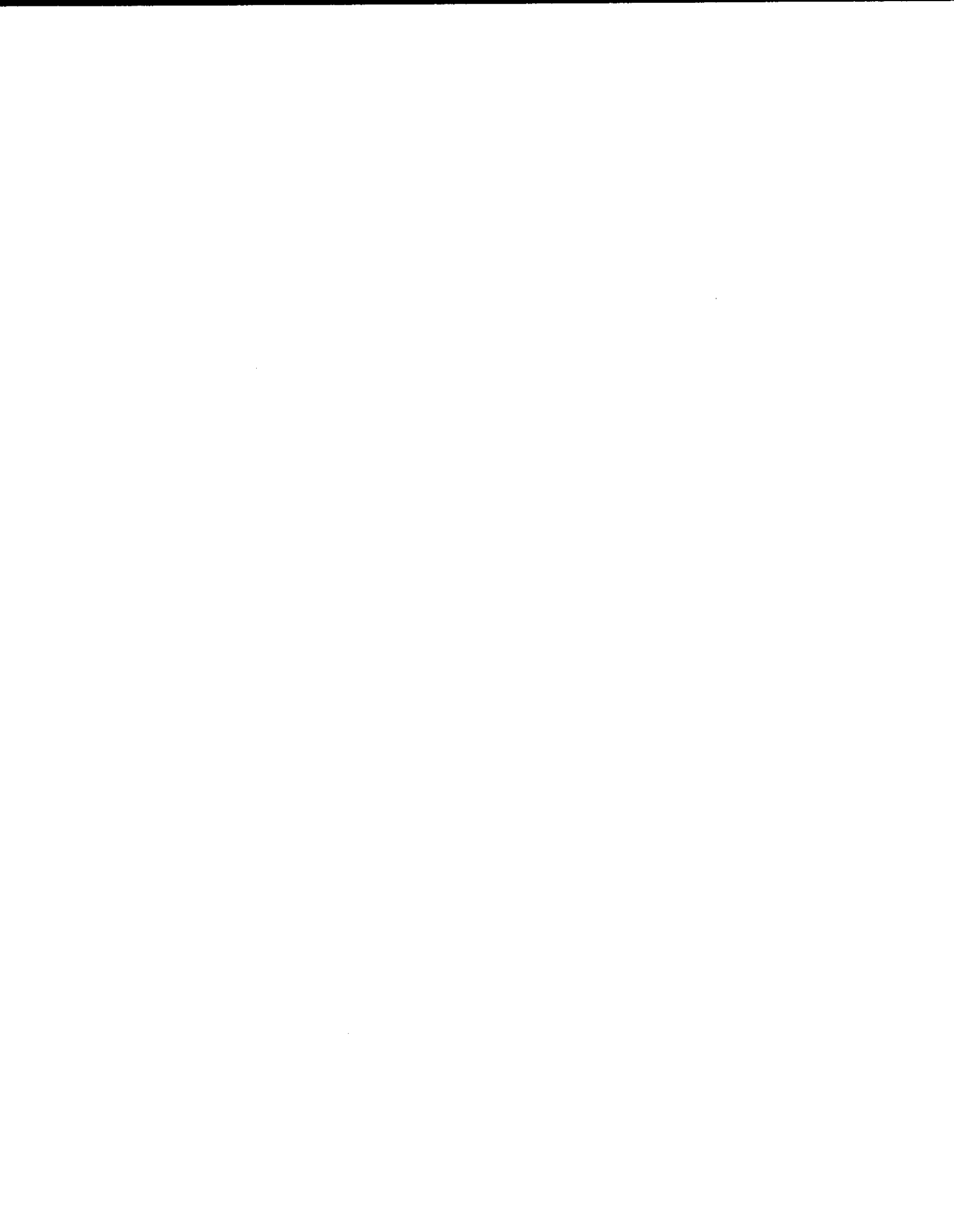
- i. DelDOT recently underwent training on calculating the connectivity ratio requirement for subdivision street design. At this time, DelDOT recognizes that the connectivity ratio requirement of the regulations may not be practical to meet and may waive the requirement. Consultants should confirm that their designs adhere to this requirement or consult with DelDOT.

d. DelDOT Catch Basin Design:

- i. Recently DelDOT has acknowledged that cover slabs are required on 34"x24" catch basins with Type A, D, and E top units. ACEC recommended that cover slabs not be required if the catch basin is located within a non traffic bearing area such as a yard. Mr. Cote will investigate.

e. DelDOT Details

- i. The standard construction details have recently been updated. Refer to the DelDOT website.



- f. Fee in Lieu of TIS.
  - i. When utilizing the Fee in Lieu of TIS provision, the manual states the fee is required at application. However, DeIDOT will require the fee to be submitted prior to final approval.
  
- g. SWM
  - i. DeIDOT is working with DNREC regarding Stormwater Management Review. At this point, consultants should refer to the DeIDOT ES2M manual regarding stormwater management requirements. The applicability of the ES2M requirements to subdivision street plans requires further clarification from DeIDOT.
- h. GIS App coming online
  - i. DeIDOT is in the process of creating a GIS app which can be utilized in connection with a flat panel TV for meetings with consultants.
- i. DeIDOT Website
  - i. Various design tools and information can be found at the following website; <http://www.deldot.gov/information/business/>



# Summary of the major revisions to the Subdivision Manual

## Revision #1

### Chapter 1

- Requires all applications to be sent to the Subdivision Engineer instead of the local District.
- Removes paying the NPDES fee to DeIDOT, applicants will pay fee to DNREC.

### Chapter 2

#### 2.2.5

- DeIDOT can require a new TIS if conditions change in the study area. A revised TIS, a new TIS or an operational analysis may be required prior to issuing an Letter of No Objection.

#### 2.3.2

- Area Wide Study fee changes from \$5/trip to \$10/trip. Payment of the fee in lieu of doing the TIS shifts from developer's option to DeIDOT's option.

#### 2.5.1

- Scoping Meeting Information Form – describes all of the information to be submitted to DeIDOT.
  - Scoping Meeting describes the scope confirmation letter is only valid for 12 months or until conditions change.

#### 2.9.11.6

- Level of Service Analysis – Method of calculation peak hour factors is changed.
- Guidance is provided on calculation of heavy vehicle percentages specified.
- Default Base Saturation Flow Rates – specified by location.
- DeIDOT will prepare Scoping Letters.
- Option B is a new process that has DeIDOT performing the TIS using out consultant instead of the Applicant preparing the TIS.

### Chapter 3

#### 3.4.1.1

- Defines minimum projected 10 year volumes as 20% greater than the existing volumes plus the site traffic.

### Chapter 4

- Reduces the internal review time for plans for off-site from 45 working day to 30 working days.

### Chapter 5

- Change various minor details on design standards .
- Turn lane warrant charts are dependent on 10 year projected volume instead of current ADT.
- Changes reference to the MUTCD to the Delaware MUTCD.

### Chapter 6

- Changes the security amount for entrances back to 150% from the old manual.
- Specifies that the entrance construction should start prior to the 1<sup>st</sup> certificate of occupancy.
- Change security amount on subdivision streets from 10% to 100%.

### Chapter 7

- Deleted Entrance Apron Detail, Figure 7-4 and turned it into a Standard Detail.

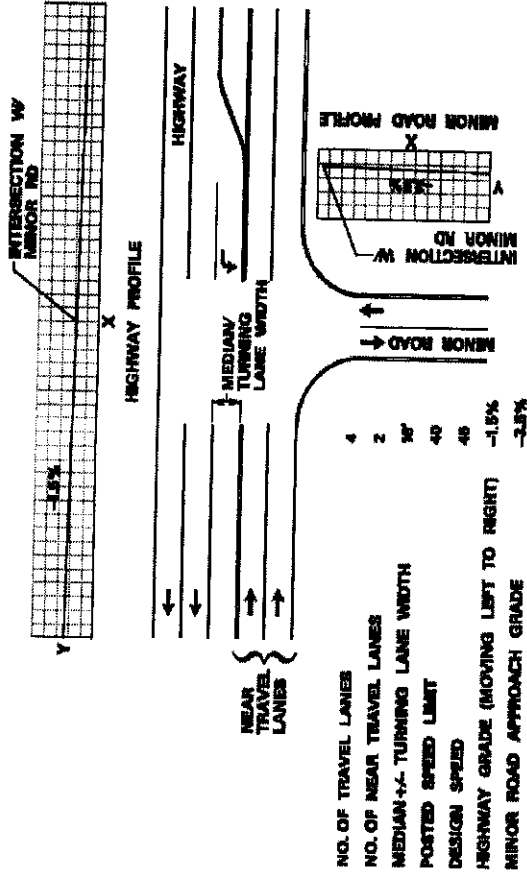
### Appendix C

- Updated the Initial Stage and Construction Stage Fee Forms.
- Created an Area Wide Study Fee Calculation Form.

Intersection Sight Distance	
Total Number of Travel Lanes	3
Number of Near Travel Lanes Crossed (Left Turn)*	1
Number of Travel Lanes Crossed (Right Turn)**	1
Median +/- or Turning Lane Width	0
Posted Speed Limit	35
Design Speed	40
Highway Grade (Moving Left to Right)	6%
Minor Road Approach Grade	6%

\* Include all travel lanes that are completely crossed

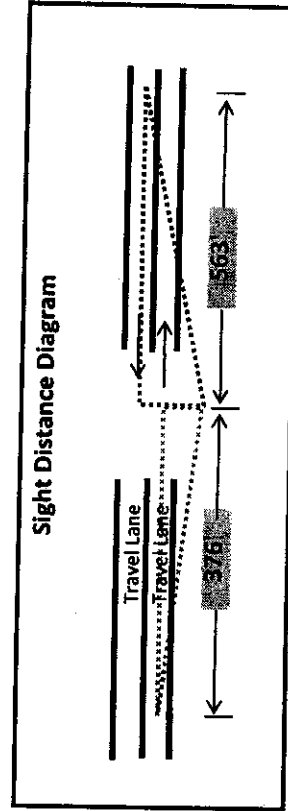
\*\*Typically only one lane for right turn



**EXAMPLE**

Left Turn from Minor Road (Case B1)	
From Chart	511.56
ISD = $1.47 \times V_{major} \times T_g$	0.00
Multi Lane Adjustment for $T_g$	1.2
Minor Road Approach Adjustment	1.10
Adjustment Factor	8.7
Time Gap	563
ISD With Adjustments	

Right Turn from Minor Road (Case B2)	
From Chart	417.48
ISD = $1.47 \times V_{major} \times T_g$	0.00
Multi Lane Adjustment for $T_g$	0.6
Minor Road Approach Adjustment	0.90
Adjustment Factor	7.1
Time Gap	376
ISD With Adjustments	



Minimum Cover / Maximum Angle Worksheet for HDPE & RCP

Project Name: \_\_\_\_\_ Date: November 3, 2009

Station	Pipe Material	Pipe Size (in.)	Inlet #	Top of Invention	Inlet Size	Inlet Wall Width (in.)	Maximum Angle Allowed	Kul Angle	Meets Max Angle	Coverage Required (in.)	Max. Invert Elevation	Top of Invention	Meets Min Cover	Temp Rebar Req'd <sup>1</sup>	Pavement Box Thickness (ft)	Top of Pipe Elevation	RCP/ERCP				HDPE			
																	Top of Pipe Elev. requiring Class III Pipe <sup>3</sup>	Top of Pipe Elev. requiring Class IV Pipe <sup>3</sup>	Top of Pipe Elev. requiring Class V Pipe <sup>3</sup>	Minimum Pipe Class Required	Depth required to Top of Pipe Local Roads	Meets Minimum for Local Road / Subdivision Streets	Depth required to Top of Pipe for Collector Roads	Meets Minimum for Collector Road or Higher
P0	RCP	24"x34"	0	10.00	48"x30"	96	53.30°	0.00°	Yes	18	8.10	8.41	No	N/A	0.0	10.79	≤ 9.00	≤ 9.00	≤ 10.00	Try Again	Try Again	Try Again	Try Again	
P1	RCP	12	0	0.00	34"x24"	0	#N/A	0.00°	#N/A	0	-1.15	0.00	No	N/A	0.0	2.31	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	
P2	RCP	12	0	0.00	0	0	#N/A	0.00°	#N/A	0	-1.17	0.00	No	N/A	0.0	1.17	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	
P3	RCP	12	0	0.00	0	0	#N/A	0.00°	#N/A	0	-1.17	0.00	No	N/A	0.0	1.17	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	
P4	RCP	12	0	0.00	0	0	#N/A	0.00°	#N/A	0	-1.17	0.00	No	N/A	0.0	1.17	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	
P5	RCP	12	0	0.00	0	0	#N/A	0.00°	#N/A	0	-1.17	0.00	No	N/A	0.0	1.17	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	
P6	RCP	12	0	0.00	0	0	#N/A	0.00°	#N/A	0	-1.17	0.00	No	N/A	0.0	1.17	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	
P7	RCP	12	0	0.00	0	0	#N/A	0.00°	#N/A	0	-1.17	0.00	No	N/A	0.0	1.17	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	
P8	RCP	12	0	0.00	0	0	#N/A	0.00°	#N/A	0	-1.17	0.00	No	N/A	0.0	1.17	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	
P9	RCP	12	0	0.00	0	0	#N/A	0.00°	#N/A	0	-1.17	0.00	No	N/A	0.0	1.17	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	
P10	RCP	12	0	0.00	0	0	#N/A	0.00°	#N/A	0	-1.17	0.00	No	N/A	0.0	1.17	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	
P11	RCP	12	0	0.00	0	0	#N/A	0.00°	#N/A	0	-1.17	0.00	No	N/A	0.0	1.17	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	
P12	RCP	12	0	0.00	0	0	#N/A	0.00°	#N/A	0	-1.17	0.00	No	N/A	0.0	1.17	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	
P13	RCP	12	0	0.00	0	0	#N/A	0.00°	#N/A	0	-1.17	0.00	No	N/A	0.0	1.17	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	
P14	RCP	12	0	0.00	0	0	#N/A	0.00°	#N/A	0	-1.17	0.00	No	N/A	0.0	1.17	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	
P15	RCP	12	0	0.00	0	0	#N/A	0.00°	#N/A	0	-1.17	0.00	No	N/A	0.0	1.17	≤ -1.00	≤ -0.50	0.00	Try Again	Try Again	Try Again	Try Again	

1. If YES, then a temporary reinforcement bar over the opening to stabilize the box during transportation and placement may be needed. Once the box is in place, the temporary reinforcement bar must be cut out. This should be clearly noted on the construction plans which inlets require the temporary reinforcement bar.  
 2. Pavement box thickness is defined as the thickness of the hot mix layers only. It does not include the depth of GABC.  
 3. Elevation represents the bottom of the pavement box measured from the bottom of inlets.

Input the T.G. Elevation to determine the minimum invert elevation

User Inputs  
 Output Fields

Your Search...



Phone Numbers    Mobile    Size    Email

**Subdivision Plan Review Schedules**

New Castle County    Kent County    Sussex County

Subdivision Plan Review Schedule Kent County			
Submission Deadline	Acceptance Determination	Plan Review Meeting	Comment Letter Mailed
12/16/09	12/24/09	01/21/10	01/28/10
01/04/10	01/12/10	02/09/10	02/16/10
01/18/10	01/26/10	02/23/10	03/02/10
02/01/10	02/09/10	03/09/10	03/16/10
02/15/10	02/23/10	03/23/10	03/30/10
03/01/10	03/09/10	04/06/10	04/13/10
03/15/10	03/23/10	04/20/10	04/27/10
03/29/10	04/06/10	05/04/10	05/11/10
04/12/10	04/20/10	05/18/10	05/25/10
04/26/10	05/04/10	06/01/10	06/08/10
05/10/10	05/18/10	06/15/10	06/22/10
05/24/10	06/01/10	06/29/10	07/06/10
06/07/10	06/15/10	07/13/10	07/20/10
06/21/10	06/29/10	07/27/10	08/03/10
07/05/10	07/13/10	08/10/10	08/17/10
07/19/10	07/27/10	08/24/10	08/31/10
08/02/10	08/10/10	09/07/10	09/14/10
08/16/10	08/24/10	09/21/10	09/28/10
08/30/10	09/07/10	10/05/10	10/12/10
09/13/10	09/21/10	10/19/10	10/26/10
10/04/10	10/12/10	11/09/10	11/16/10
10/18/10	10/26/10	11/23/10	11/30/10
11/01/10	11/09/10	12/07/10	12/14/10
11/15/10	11/23/10	12/21/10	12/28/10

**General Procedures and Helpful Hints:**

-Plans must be received by noon on the day of the Submission Deadline to be included for the next Plan Review Meeting. (If state offices are closed due to a holiday or weather, submissions must be received by 11am the following business day)

-The Developer and Engineer will be notified via email when the plans have been received and also on the status of the Acceptance Determination.

-To see which projects are scheduled for review on a Plan Review Meeting date, simply hover your mouse over the icon to the right of the meeting date.

-Additional Plan Review Meetings may be scheduled based on work volume. Check these Development Coordination Calendars often to get the latest information available.

**Public Feedback:**

DelDOT Public Relations  
302.760.2080  
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SharePoint Implementation Team  
Department of Transportation  
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## Subdivision Gate-Keeping Checklist - SITE PLAN

Project Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 County: \_\_\_\_\_

Required Items	Subdivision Manual Section	To be completed by engineer initial applicable box and submit with plans if N/A, provide comment	Comments	Gate-Keeper Verification
		Provided <input type="checkbox"/> N/A <input type="checkbox"/>		Y/N
Cover Letter		<input type="checkbox"/>		
Pre-submittal meeting		<input type="checkbox"/>		
Electronic (pdf) copy of record plan set	3.4	<input type="checkbox"/>		
Clean, clear easy to read plan set (2 hard copies)	3.4	<input type="checkbox"/>		
Electronic (pdf) copy of preliminary entrance plans	3.4, 4.3.7, 5.2, Fig. 5-9, 5-10 & 5-11	<input type="checkbox"/>		
Initial Stage Fee	Appendix C	<input type="checkbox"/>		
Initial Stage Fee Calculation form	Appendix C	<input type="checkbox"/>		
Completed record plan checklist	Appendix D	<input type="checkbox"/>		
Traffic Impact Study (TIS) recommendation letter (if applicable)		<input type="checkbox"/>		
TIS, RPC, TAC and DAC recommendations noted on plan	3.4.1.1	<input type="checkbox"/>		
Traffic generation diagram shown and correct	3.2.2	<input type="checkbox"/>		
Data Block	3.6.5	<input type="checkbox"/>		
Proper right-of-way dedication per frontage roadway classification		<input type="checkbox"/>		
Sight triangles, drawn correctly	5.4	<input type="checkbox"/>		
Subdivision Streets to be dedicated meeting design requirements (width and radii)	3.6.1, 5.1	<input type="checkbox"/>		
Correct typical section(s) of subdivision streets and frontage road(s)	Fig. 3-4, 5-22 & 5-23	<input type="checkbox"/>		
Mets, bounds, curve data and line charts	4.3.4	<input type="checkbox"/>		
Conceptual drainage plan(s) showing layout (to verify PE's)		<input type="checkbox"/>		
Photo showing proposed entrance location staked	4.1.1	<input type="checkbox"/>		
Calcs showing minimum connectivity ratio of 1.4 is met	3.5.6	<input type="checkbox"/>		
Misc.		<input type="checkbox"/>		

Additional Comments: \_\_\_\_\_

## Subdivision Gate-Keeping Checklist - CONSTRUCTION PLANS

Project Name: \_\_\_\_\_ Date: \_\_\_\_\_

County: \_\_\_\_\_

Required Items	Subdivision Manual Section	To be completed by engineer and submit with plans if N/A, provide comment		Comments	Gate-Keeper Verification
		Provided	N/A		
1 item missing = Submittal Rejection					Y/N
Cover Letter		<input type="checkbox"/>	<input type="checkbox"/>		
Electronic (pdf) copy of plan set		<input type="checkbox"/>	<input type="checkbox"/>		
Clean, clear easy to read plan set (2 hard copies)		<input type="checkbox"/>	<input type="checkbox"/>		
Construction Stage Fee	Chap. 4	<input type="checkbox"/>	<input type="checkbox"/>		
Construction Stage Fee Calculation Form	Appendix C	<input type="checkbox"/>	<input type="checkbox"/>		
Completed Subdivision Checklist	4.3, 4.4,	<input type="checkbox"/>	<input type="checkbox"/>		
Traffic Generation Diagram(s) shown and correct	Appendix D	<input type="checkbox"/>	<input type="checkbox"/>		
15' permanent easement and multi-use path provided across frontage(s)	3.4.1.1	<input type="checkbox"/>	<input type="checkbox"/>		
Sight triangles, drawn correctly	5.1.6	<input type="checkbox"/>	<input type="checkbox"/>		
Subdivision Streets to be dedicated meeting design requirements (width and radii)	5.4	<input type="checkbox"/>	<input type="checkbox"/>		
Correct typical section(s) of subdivision streets and frontage road(s)	3.6.1, 5.1	<input type="checkbox"/>	<input type="checkbox"/>		
Plans reference correct horizontal and vertical datum	Fig. 3-4, 5-22 & 5-23	<input type="checkbox"/>	<input type="checkbox"/>		
Spot elevations to verify ADA compliance and positive runoff	4.3.4	<input type="checkbox"/>	<input type="checkbox"/>		
Pipe, catch basin, flared-end section, curb, underdrain schedules	4.3.7, 4.4.2	<input type="checkbox"/>	<input type="checkbox"/>		
Stormwater management report and plans	Fig. 4.3 & 4.4	<input type="checkbox"/>	<input type="checkbox"/>		
Completed DelDOT ES <sub>2</sub> M Checklist	4.8, ES <sub>2</sub> M Sec. 1	<input type="checkbox"/>	<input type="checkbox"/>		
Drainage report with spread calcs, pipe cover/angle chart and HGL, E&S plans w/ sequence of construction	ES <sub>2</sub> M Sec. 1	<input type="checkbox"/>	<input type="checkbox"/>		
H&H calculations for ditches - Provide typical sections and shear stress calcs	5.7.2.8	<input type="checkbox"/>	<input type="checkbox"/>		
H&H calculations for culverts	5.8, ES <sub>2</sub> M Sec. 1	<input type="checkbox"/>	<input type="checkbox"/>		
DTC and/or school district contacted to determine if transit facilities are required	Fig. 3-4, 5.5.3, RDM Fig. 6-3, RDM 6.7.3	<input type="checkbox"/>	<input type="checkbox"/>		
Misc.	5.7.2.1, Fig. 5-28 & 5-29, RDM Fig. 6-1 & 6-3, RDM 6.9	<input type="checkbox"/>	<input type="checkbox"/>		
Additional Comments:	3.5.5.2	<input type="checkbox"/>	<input type="checkbox"/>		

## DeIDOT Subdivisions - Pre-Submittal Meeting

Meeting is required if buildout site ADT>200

Purpose: To meet with the developer and site engineer to discuss and comment on the following;

1. Conceptual site plan
2. Entrance location(s)
3. Auxiliary lane requirements at proposed entrances
4. Frontage road improvements
5. Basic plan design requirements prior to making a site plan submission
6. PLUS, DAC, TAC or RPC comments (if completed)
7. TIS letter recommendations (if applicable)

The following documents listed below must be submitted to DeIDOT Subdivisions at least two weeks prior to the meeting.

1. Conceptual Site Plan
2. List of unit types and number of units
3. Trip Generation Diagram(s)

### Basic Site Plan Requirements

1. Site plan meeting requirements in the following sections;
  - a. Section 3.4 – Plan (ROW requirements)
  - b. Section 3.4.1 - Site entrance (preliminary entrance plan)
  - c. Section 3.4.1.1 – Traffic Information
  - d. Section 3.4.1.2 – Adjacent Entrances
  - e. Section 3.4.1.3 – Existing Roadway Features
  - f. Section 3.4.1.4 – Gateway Feature Easements
  - g. Section 4.8 - SWM facility minimum 20' setback from ROW line
2. Bicycle and Pedestrian Spacing and Connectivity
  - a. Sidewalks provided per section 3.5.4.2
  - b. Walkway provided per section 3.5.4.3
  - c. Access-ways provided per section 3.5.4.4
3. Transit Facilities
  - a. Applicant shall contact DTC to determine if transit facilities are required and show their locations
4. Intra-Connectivity
  - a. Provide exhibit and calculations showing minimum connectivity ratio or 1.4 or greater is provided per section 3.5.6
5. Gate-Keeping Required Submittal Documents

## DeIDOT Subdivision Section – Meeting Request Form

In an effort to improve efficiency and prepare for meetings, please complete the information requested below and forward it via email to [subdivision@state.de.us](mailto:subdivision@state.de.us) or the Subdivision Manager reviewing the project.

1. Project Name:
2. New or Existing Project:
3. County:
4. Project Location (i.e. parcel no., frontage road):
5. Purpose of Meeting:
  
6. DeIDOT Subdivision Reviewer:
7. Additional Sections or DeIDOT Personnel Required:
8. External Attendees and email addresses (include yourself):
  
9. Anticipated Meeting Duration:
10. Dates Available to Meet:
11. Additional Comments:

## SUBDIVISION & ENTRANCE DESIGN TOP TEN MOST FREQUENTLY SEEN ERRORS

### 1. Proper R/W dedication

Solution – Link to functional classification map and chart for dedication based on functional classification.

Functional Classification Map -

[http://www.deldot.gov/information/pubs\\_forms/func\\_maps/pdf/functional\\_classification.pdf](http://www.deldot.gov/information/pubs_forms/func_maps/pdf/functional_classification.pdf)

Subdivision Manual - Section 3.6.5 Figure 3-3 *Minimum Standards for Total Roadway Right of Way.*

[http://www.deldot.gov/information/pubs\\_forms/manuals/subdivisions/pdf/subdivision\\_manual\\_bookmarked\\_100209.pdf#top\\_ten\\_11](http://www.deldot.gov/information/pubs_forms/manuals/subdivisions/pdf/subdivision_manual_bookmarked_100209.pdf#top_ten_11)

### 2. Outdated details

Solution – link to Design Resource Center and latest standard details page.

[http://www.deldot.gov/information/pubs\\_forms/const\\_details/2008/index.shtml](http://www.deldot.gov/information/pubs_forms/const_details/2008/index.shtml)

### 3. Turn lane striping

Solution – Subdivision Manual - link to page 99, figure 5-9 and page 101, figure 5-11.

[http://www.deldot.gov/information/pubs\\_forms/manuals/subdivisions/pdf/subdivision\\_manual\\_bookmarked\\_100209.pdf#top\\_ten\\_12](http://www.deldot.gov/information/pubs_forms/manuals/subdivisions/pdf/subdivision_manual_bookmarked_100209.pdf#top_ten_12)

[http://www.deldot.gov/information/pubs\\_forms/manuals/subdivisions/pdf/subdivision\\_manual\\_bookmarked\\_100209.pdf#top\\_ten\\_13](http://www.deldot.gov/information/pubs_forms/manuals/subdivisions/pdf/subdivision_manual_bookmarked_100209.pdf#top_ten_13)

### 4. Stone under or behind curb

Clarification – 6" minimum of GABC, Type B under curb and extends 6" behind back of curb. Working with Standards committee to add as a standard. Standard note placed on plans - Under the curb detail, it will need to be shown or noted that the curb is to be placed over 6-inches of GABC – Type B over proof rolled and compacted subgrade, 95 % ASTM D1557. The GABC – Type B will need to extend 6-inches from the back of curb.

### 5. Pavement thickness

Solution – There are minimum and maximum lift thickness for each type of hot-mix, see Fig. 5-25. page 121 Section 5.6 Pavement Sections.

Thickness of lift of Type C – 1 ¼" – 2"

Thickness of lift of Type B – 2 ¼"- 3"

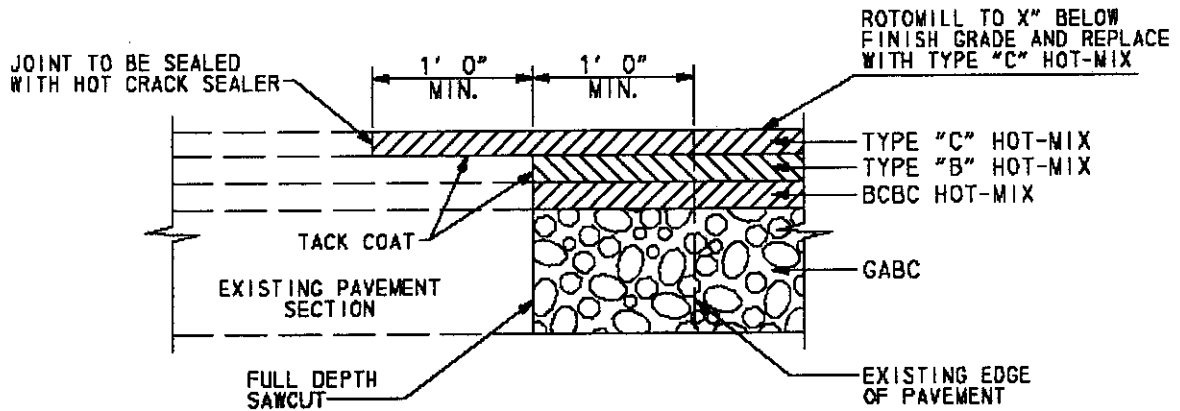
Thickness of lift of Type BCBC – 3"- 6"

Max lift thickness of GABC – 8"

[http://www.deldot.gov/information/pubs\\_forms/manuals/subdivisions/pdf/subdivision\\_manual\\_bookmarked\\_100209.pdf#top\\_ten\\_14](http://www.deldot.gov/information/pubs_forms/manuals/subdivisions/pdf/subdivision_manual_bookmarked_100209.pdf#top_ten_14)



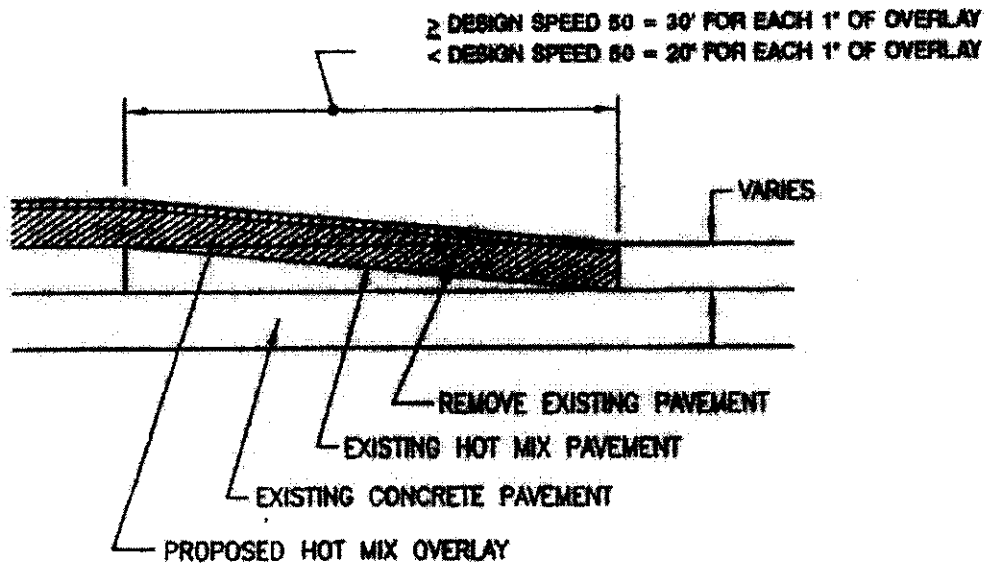
**9. Butt joint vs. pavement tie-in detail**  
 Solution – provide an example of each.



X= DEPTH OF TYPE "C" HOT-MIX

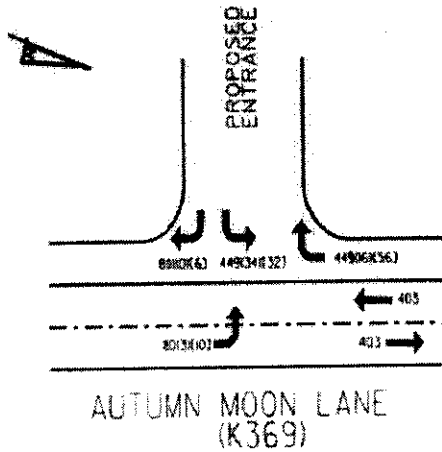
**TYPICAL PAVEMENT TIE-IN DETAIL**

NOT TO SCALE



**BUTT JOINT DETAIL**

TRIP GENERATION - AUTUMN MOON LANE (K369)  
(FULL MOVEMENT)



TRAFFIC GENERATION DIAGRAM

TRIPS PER DAY (VEHICLES IN A.M.) (P.M. PEAK HOUR)

ROAD TRAFFIC DATA:

FUNCTIONAL CLASSIFICATION - K-369 (AUTUMN MOON LANE) - LOCAL  
POSTED SPEED LIMIT - 50 mph  
AADT = 806 TRIPS (FROM 2008 DeIDOT TRAFFIC SUMMARY)  
10 YEAR PROJECTED AADT = 1.20 X 806 TRIPS = 967 TRIPS  
10 YEAR PROJECTED AADT+SITE ADT= 2,158 TRIPS  
DIRECTIONAL SPLIT = 50% / 50%  
PEAK HOUR = 13.70% X 2158 = 296 TRIPS  
5.36% TRUCKS & BUSES X 296 = 16

SITE TRIPS GENERATED:

SOURCE: ITE TRIP GENERATION MANUAL 8th EDITION.  
52 - SINGLE FAMILY DETACHED UNITS (210)  
96 TOWNHOUSE UNITS (230)  
ONE ENTRANCE - FULL MOVEMENT  
52 SINGLE FAMILY DETACHED UNITS X 9.57 = 570 TRIPS  
96 TOWNHOUSE UNITS X 5.81 = 621 TRIPS  
TOTAL ADT FOR SUBDIVISION = 1,191 TRIPS  
DIRECTIONAL DISTRIBUTION:  
85% TO AND FROM THE NORTH (898 TRIPS)(70 AM PK)(89 PM PK)  
15% TO AND FROM THE SOUTH (160)(13 AM PK)(16 PM PK)

8. Shared Use Path striping and placement

Solution - Subdivision Manual - Page 95 section 5.1.6 figure 5-8.

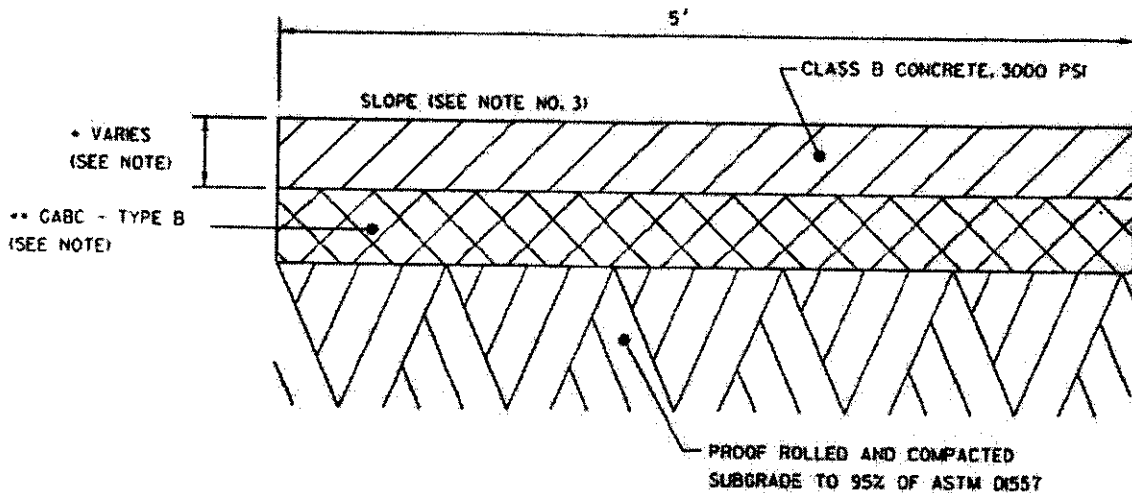
[http://www.deldot.gov/information/pubs\\_forms/manuals/subdivisions/pdf/subdivision\\_manual\\_bookmarked\\_100209.pdf#top\\_ten\\_15](http://www.deldot.gov/information/pubs_forms/manuals/subdivisions/pdf/subdivision_manual_bookmarked_100209.pdf#top_ten_15).

Standard Construction details - page 9 see detail M-3 for layout.

[http://www.deldot.gov/information/pubs\\_forms/const\\_details/2008/pdf/2008\\_standard\\_details\\_106-150.pdf?012909](http://www.deldot.gov/information/pubs_forms/const_details/2008/pdf/2008_standard_details_106-150.pdf?012909)

## 10. Sidewalk detail

Solution – provide an example.



- \* - STANDARD SIDEWALK SHALL BE 4" THICK. FOR DEPRESSED AND TRANSITION AREA, THE SIDEWALK SHALL BE 6" THICK.
- \*\* - STANDARD SIDEWALK OF 4" THICKNESS SHALL BE PLACED OVER 4" GABC – TYPE B. SIDEWALK FOR DEPRESSED AND TRANSITION AREAS OF 6" THICKNESS SHALL BE PLACED OVER 6" GABC – TYPE B.

### NOTES:

1. MARK IN 5' SQUARES, USE PREMOLDED EXPANSION JOINTS AT INTERVALS NOT GREATER THEN ~~15'~~ 20'
2. CONCRETE SIDEWALKS SHALL BE CONSTRUCTED AS PER DELDOT SPECIFICATIONS.
3. SIDEWALK TO BE CONSTRUCTED AT GRADE. SLOPE OF SIDEWALK SHALL BE AT A 1.5% SLOPE WITH A 2% MAX/1% MIN IN ORDER TO ASSURE POSITIVE DRAINAGE.

## SIDEWALK DETAIL

NOT TO SCALE

