



**DIVISION OF PLANNING AND PERMITTING**  
**FREDERICK COUNTY, MARYLAND**  
*Department of Permits and Inspections*

30 North Market Street • Frederick, Maryland 21701  
Phone (301) 600-2313 • Fax (301) 600-2309

**ZONING CERTIFICATE INFORMATION**  
**FOR AGRICULTURAL BUILDINGS AND FARM STANDS**

We have gone paperless!! This application should be submitted electronically via the citizen portal at  
<https://planningandpermitting.frederickcountymd.gov/>

This information is intended for a proposed agricultural building, farm stand, or structure that qualifies as EXEMPT FROM THE FREDERICK COUNTY BUILDING CODE, per local amendment to § 101.2, Exception 4: Agricultural Buildings and farm stands. To qualify for exemption from the Building Code, the construction must meet all of the following conditions:

**Agricultural Building:**

- It must be designed and constructed to house farm implements, hay, grain, poultry, livestock, or other horticultural products.
- It must not be a place of human habitation.
- It must not be a place of employment where agricultural products are processed, treated, or packaged.
- It must not be a place used by the public.

**Farm Stand:**

- Must not exceed 600 square feet.
- May be used to process, treat, or package agricultural products; the majority of which are produced on the farm.
- It must not be a place of human habitation.
- It must not be a place of employment.
- It must not be a place used by the public.

**SUBMITTAL REQUIREMENTS**

- 1. Standard Stormwater Management Plan for Agricultural Structures Application must be submitted and approved by Soil Conservation District for building impervious area between 5000- 7500 sq. ft. An approved Soil Conservation District plan must be provided with this submittal.
- 2. If the building impervious area is greater than 7500 sq. ft., a formal Standard Stormwater Management review will be required.
- 3. If the proposed structure is to be used in conjunction with an Agritourism Enterprise, a Zoning Verification Application will need to be submitted concurrent to the Zoning Certificate Application. Issuance of the Zoning Certificate is contingent on the Zoning Verification.
- 4. Copy of the plot plan or approved site plan. The following should be included on the plat /site plan:
  - Shape and size of the entire property. Indicate the acreage on the plot plan.
  - Road that the driveway comes off of. Label the name of the road
  - North direction arrow
  - Property Owner name(s)
  - Street address of property

- All existing dwellings and any other existing structures that are over 150 square feet in size
- Label all structures.
- All existing well and septic locations
- Location of proposed new use with four setbacks shown. The setbacks are the distances from the proposed new use to property lines or the nearest structure IN EACH DIRECTION. Four setbacks are required. Any setback over five hundred feet can be estimated; setbacks less than five hundred feet need to be as exact as possible.
- Provide a narrative description and map identifying the location of cemeteries and known historic and archaeological resources on the site. [Cemetery Protection Policy](#)

5. Elevation drawings of the proposed building/structure. The elevation drawings are required for Zoning review purposes; they are not for building code compliance purposes.

6. Floor plans to scale.

7. Payment of fees. Payment is due at the time of application. Check, cash, or credit cards are accepted. There is a service charge for credit card and debit card transactions.

\$ 32.00 Filing Fee

\$ 56.00 Zoning Review Fee

\$ 61.00 Building Review Fee

\$ 75.00 Health Department Review Fee

**If Over 7500 sq ft building impervious area, please add the fees below.** \$ 74.00 Stormwater Management Review Fee

These additional fees may be required:

\$ 97.00 New Driveway Apron  
 \$ 200.00 New Conventional Septic area *or*  
 \$ 300.00 New Sand Mound Septic *or*  
 \$ 60.00 Existing Septic

## PROCESS & PROCEDURES

### STEP ONE – APPLICATION FOR THE ZONING CERTIFICATE

Where to apply: Applications should be submitted electronically via the citizen portal at <https://planningandpermitting.frederickcountymd.gov/>.

When Applications Are Accepted: Applications can be submitted electronically 24/7 via the citizen portal.

Prior to application, if the building impervious area is between 5000- 7500 sq ft., the Standard Stormwater Management Plan must be submitted and approved by the Soil Conservation District. The application can be obtained at: Catoctin or Frederick Soil Conservation District, 92 Thomas Johnson Drive, Suite 230, Frederick, MD 21702.

Please contact Soil Conservation District for any applicable fees.

**If this is a National Resources Conservation Service (NRCS) approved project, an approval letter is required from NRCS.**

### STEP TWO – OBTAIN REVIEW APPROVALS

Intake staff will review your application submission, once accepted fees will be generated and applied to your portal account. If you wish to submit payment via cash or check you may make

payment via the Treasury drive-thru window located at 30 North Market Street, Frederick, MD 21701. (Fee payment **cannot** be accepted until your application has been processed and approved.)

During processing, the permit application will be reviewed by various agencies for their approval. It is important that you check status of the application and address any concerns or requests for additional information promptly.

*Plan Review Timeframes:*

- The review timeframe of the application by Plan Review is one week for their initial review comments for this type of application.

*Agency Review Status:* Review timeframes for agencies outside of the Division of Planning and Permitting may vary. If additional information is requested by any reviewing agency during processing, a notification is mailed to the applicant. Up-to-date review status may also be obtained via the Frederick County Government website.

<https://planningandpermitting.frederickcountymd.gov/> by using the lookup feature.

*Permit Issuance:*

- When all reviews are completed, the approved permit notifications will be sent via email to the applicant for download of the official issuance documentation, approved placard for posting onsite and approved set of plans.
- Additional information and inspection procedures can be found on our website at <https://www.frederickcountymd.gov/7974/Permits-and-Inspections>.

### STEP THREE – OBTAIN INSPECTION APPROVALS

*Inspections:* Inspections can be requested and tracked via the citizen portal.

*Certificate of Completion:* The end result of the permitting process is the issuance of the Certificate of Completion. The Certificate of Completion is issued when all final inspections have been approved and the construction has been approved for use. It will be available for download on the portal.

If there is any electrical or plumbing work involved, that work requires separate Electrical or Plumbing Permits and inspections. The separate Electrical and/or Plumbing Permits are considered Non-Residential and must be obtained by a licensed Electrician and/or Plumber. The exemption from the Building Code does not exempt the building/structure from the requirements of the Electrical and Plumbing Code, or any other codes.

### ADDITIONAL INFORMATION

- Zoning Certificates are non-transferable and non-assignable.
- Zoning Certificates are valid for one year. If the use is not established within one year, please contact the Zoning Reviewer phone number listed below.
- If the use of the approved building/structure changes, a new Zoning Certificate and/or a Building Permit may be required. Please contact the Zoning Reviewer for assistance, *PRIOR TO* the change of use.

## **CONTACT TELEPHONE NUMBERS**

Permits & Inspections Information Line .....	301-600-2313
Zoning Reviewer (plot plans, setbacks, use, flood plain, building height) .....	301-600-1143
Environmental Health (well and septic information; review) .....	301-600-1726
Manager of Permitting Services .....	301-600-6727
Office of Economic Development.....	301-600-3037
Soil Conservation District/ NRCS.....	301-695-2803

**DID YOU KNOW...** The Frederick County Office of Economic Development has designated agriculture as one of its industry focuses? The Division's website has a wealth of information specific to agriculture and provides links to many agricultural resources. Visit:

[http://www.discoverfrederickmd.com/industry\\_focus/agriculture](http://www.discoverfrederickmd.com/industry_focus/agriculture)

1'-0" VENTED SIDEWALL OVERHANGS  
1'-0" NON-VENTED ENDWALL OVERHANGS

7' 6" X 8' SINGLE  
SLIDING DOORS

7' 6" X 8' SINGLE  
SLIDING DOORS

7' 6" X 8' SINGLE  
SLIDING DOORS

24' X 16'  
DOUBLE END DOOR

24' X 16'  
DOUBLE END DOOR

HAY STORAGE

Equipment  
Storage

3068  
WALKDOOR

4' X 3'  
WINDOWS

15' X 16'  
DOUBLE SIDE DOOR

OFFICE

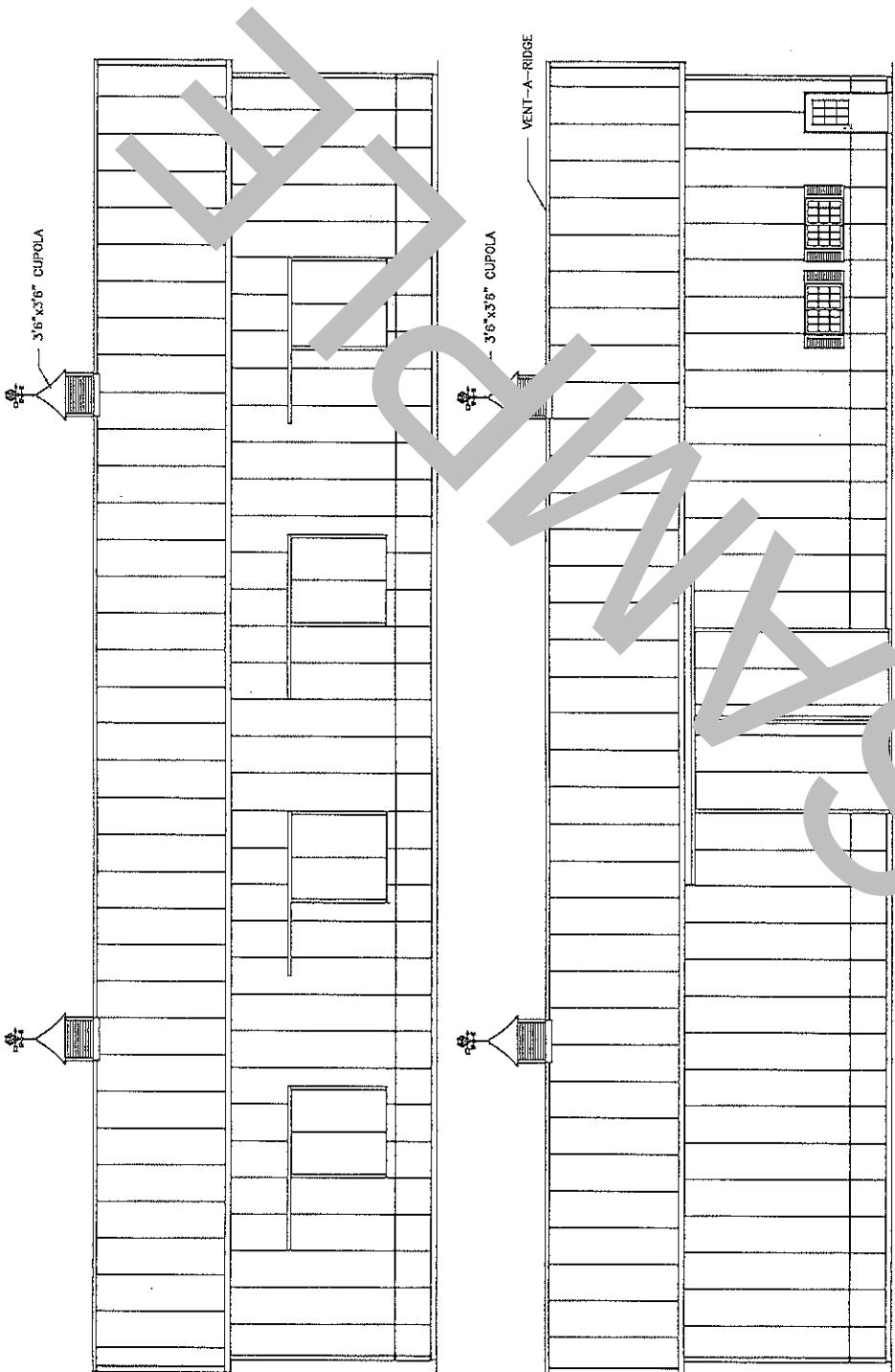
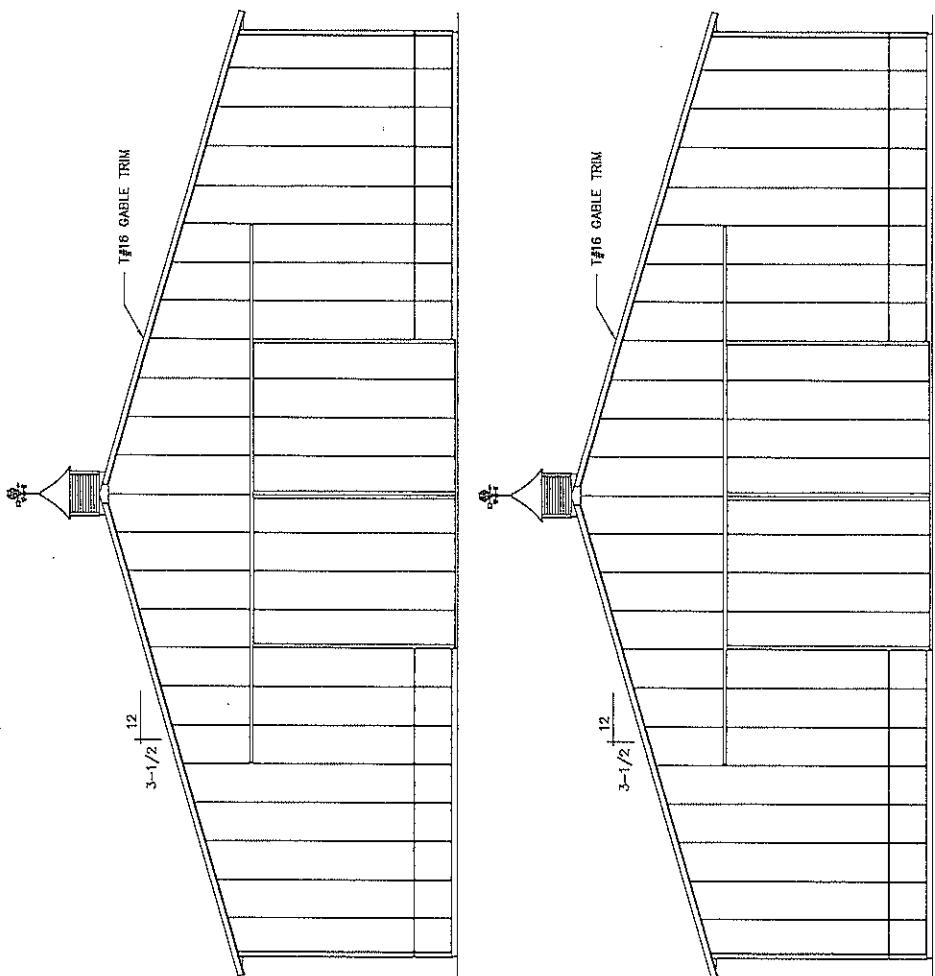
72'-0"

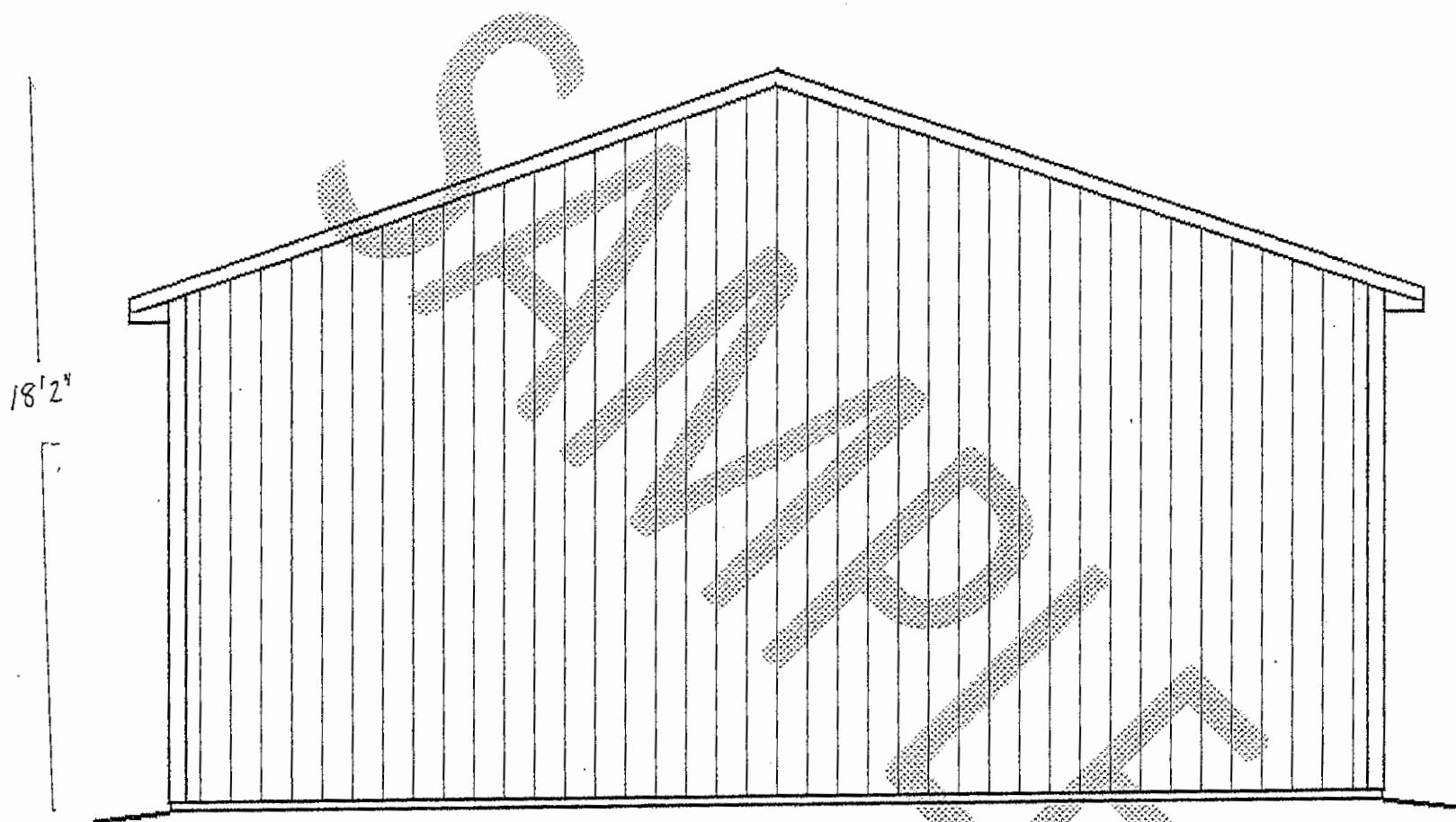
BUILDING HEIGHT 16'-0"

105'-0"

SCALE: 10 = 1'-0"

SCALE: 30' x 5' = 1'-0"





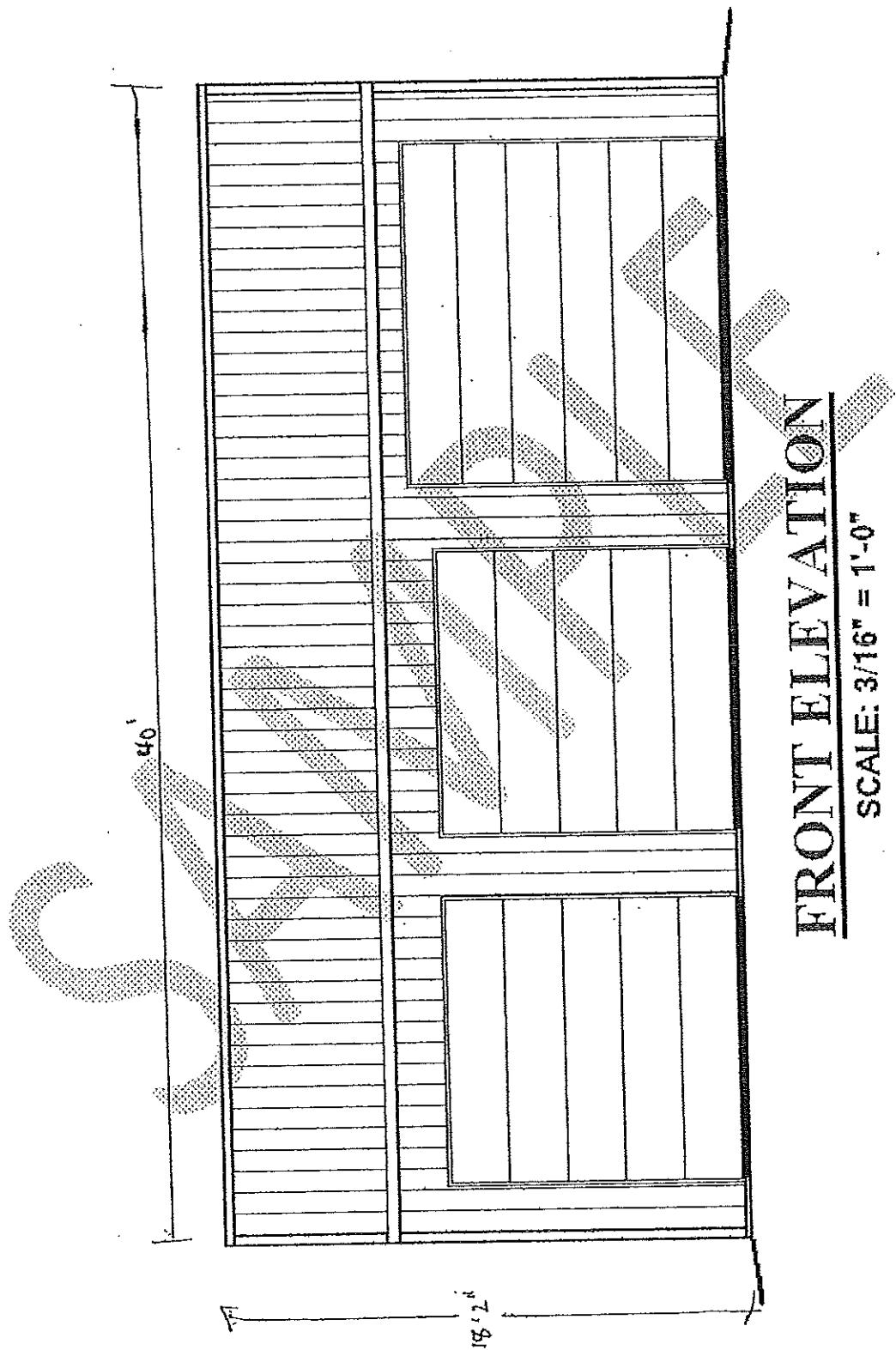
RIGHT ELEVATION

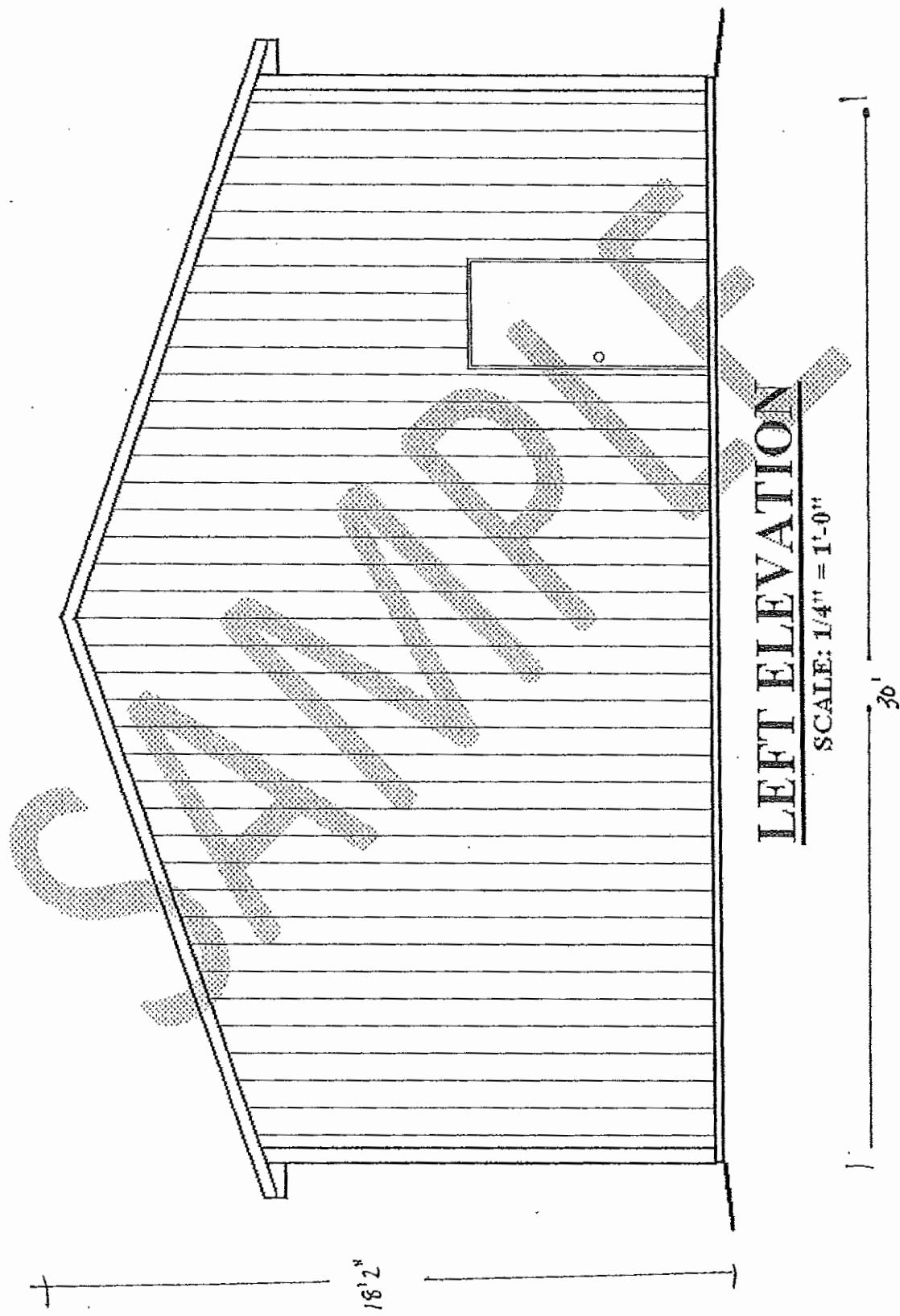
SCALE: 1/4" = 1'-0"

30'

**FRONT ELEVATION**

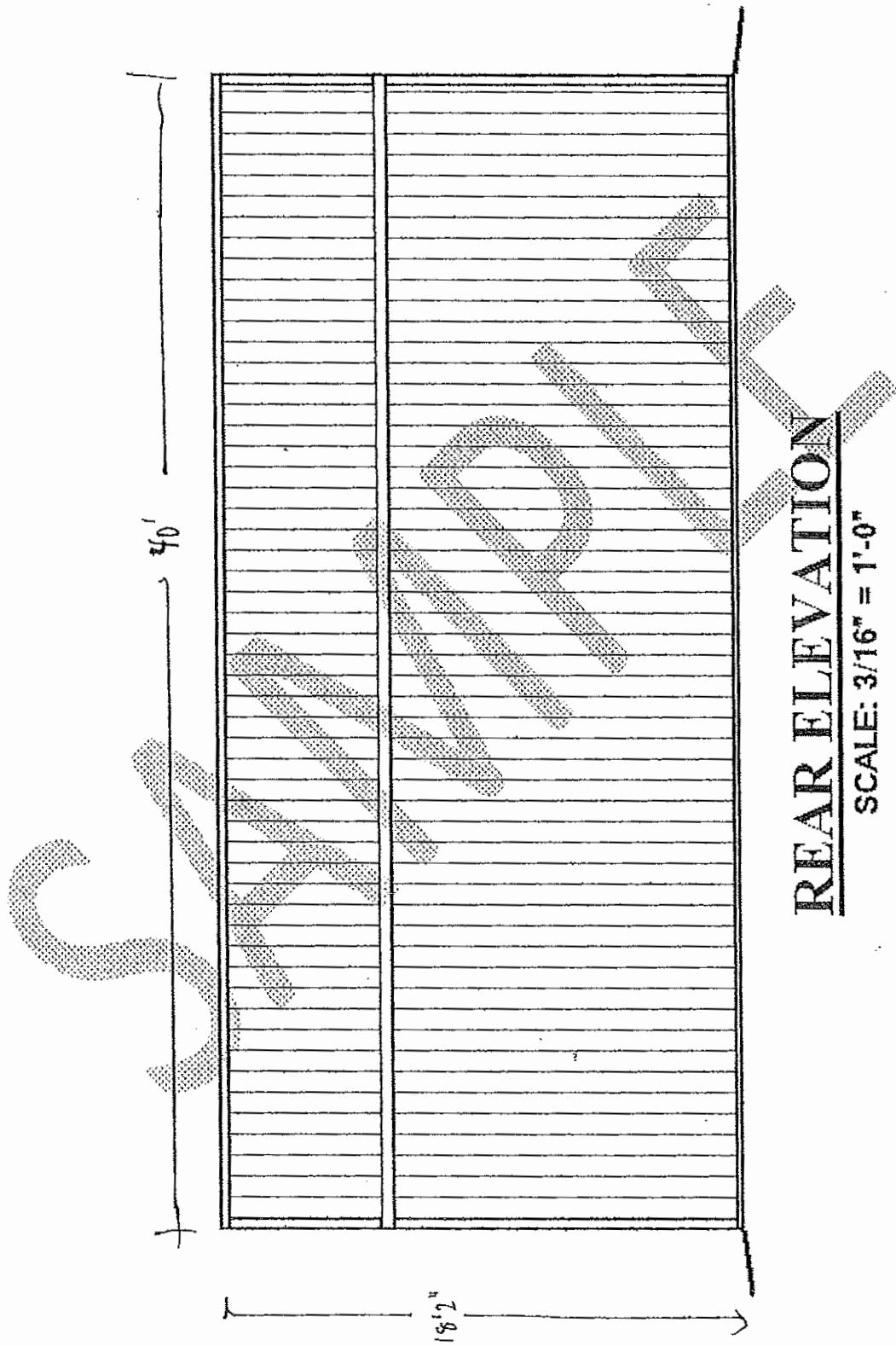
SCALE: 3/16" = 1'-0"





REAR ELEVATION

SCALE:  $3/16" = 1'-0"$





## FREDERICK COUNTY, MARYLAND DIVISION OF PLANNING AND PERMITTING

### Department of Permits and Inspections

30 North Market Street • Frederick, MD 21701  
Phone (301) 600-3507

## APPLICATION INFORMATION DRIVEWAY ENTRANCE APRON PERMIT

We have gone paperless!! This application should be submitted electronically via the citizen portal at  
<https://planningandpermitting.frederickcountymd.gov/>

### Submission Requirements

#### *Residential, Non Residential, Farm and Common Entrance*

- 1. Financial Security Requirements
  - 2-A. **A Financial Security IS NOT required IF:** The approval of a Building Permit or Project Review depends on the construction of an acceptable Driveway Entrance Apron.
    - The associated Building Permit may not receive a Use and Occupancy until the Driveway Entrance Apron is installed and passes inspection. *\*Building Construction cost must exceed \$3,675.00*
    - The pending project approval and/or plat recordation may not occur until the Driveway Entrance Apron is installed and passes inspection.
    - The proposed entrance apron is already secured as part of a current Public Improvement Agreement and permit.
  - 2-B. **A Financial Security IS required IF:** There is no Building Permit or Project Review approval that can be made subject to the acceptable Driveway Entrance Apron construction.
- 2. One copy of a plan: *(See Minimum Plan Requirements on Page #2)*
  - 3-A. **Residential and Farm Entrance Aprons** *(New Homes, Garages, Circle, Barns, Field etc.)*.
    - New Primary or Secondary Entrances and Upgraded *(Widened)* Existing Entrances: One copy of a Final Recorded Plat *(if available)*. If a record plat is not available a drawing that conforms to the minimum plan requirements on Page 2, may be used.
    - Common *(Shared)* Driveway - New Entrance: Proposed common driveway plan that is currently pending approval *\*Must reference the Project ID Number*).
  - 3-B. **Non-Residential Entrance Apron.**
    - New Primary or Secondary Entrances where shown on an approved Public Improvement Plan. A single sheet from the approved plan that shows the proposed entrance location(s) *\*Must reference the Project ID Number*.
    - New Entrance NOT shown on an approved Public Improvement Plan. A revised Site Plan and/or Improvement Plan may be required. Contact Development Review Engineering for determination.

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## DRIVEWAY ENTRANCE APRON PERMIT APPLICATION (Continued)

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### **Minimum Plan Requirements:**

<input type="checkbox"/> Property Owner name(s)	<input type="checkbox"/> Street Address of property
<input type="checkbox"/> Acreage of the property	<input type="checkbox"/> North direction arrow
<input type="checkbox"/> Proposed Entrance Apron clearly identified	<input type="checkbox"/> Existing Entrance Apron(s) clearly identified
<input type="checkbox"/> Shape and size of property, including all property lines (and property line dimensions if possible)	
<input type="checkbox"/> The visual site distance, left and right, of the proposed entrance (as viewed 7' back from the edge of the road in a seated position)	
<input type="checkbox"/> The location and distance of surrounding entrance aprons within 100 yards of the proposed entrance.	
<input type="checkbox"/> Provide a narrative description and map identifying the location of cemeteries and known historic and archaeological resources on the site. <a href="#"><u>Cemetery Protection Policy</u></a>	
<input type="checkbox"/> 3. Fees are due at the time of application. ( <i>Fees are non-refundable</i> )	
<input type="checkbox"/> Driveway Entrance Apron Fee ( <i>Residential &amp; Non-Residential</i> ) • Filing Fee ( <i>Each</i> ) ----- \$32.00	
• Review/Inspection Fee ( <i>Each</i> ) ----- \$97.00	
• Total Due ----- <b>\$129.00</b>	
<input type="checkbox"/> Security ( <i>If Required</i> ) shall be in the form of CASH or Check which will be deposited in the County Treasury in an escrow account.	
• Residential ----- \$3,675.00	
• Non-Residential ----- \$7,350.00	

**\*NOTE:**

- Upon receiving a *PASSING* inspection of the constructed entrance apron, a refund of the escrowed funds will be mailed to the applicant in about 30-days.
- The application will expire 6 months from the date of application unless the driveway permit has been issued or an extension has been requested, justified, paid for, and approved.
- The fee to extend a permit application or a driveway permit is the minimum permit fee. Each request to extend shall be made in writing with justification and received in advance of expiration date.
- This Entrance Apron permit does not authorize any earth disturbance over 5,000 square feet or cut/fill over 100 cubic yards. A separate grading permit is required if either of these limits are expected to be exceeded. Working without a Grading Permit can result in civil penalties.

## DRIVEWAY ENTRANCE APRON PERMIT APPLICATION (Continued)

### PROCEDURES

#### STEP ONE - APPLY FOR THE DRIVEWAY ENTRANCE APRON PERMIT

*Where to apply:* Applications should be submitted electronically via the citizen portal at <https://planningandpermitting.frederickcountymd.gov/>.

*When Applications Are Accepted:* Applications can be submitted electronically 24/7 via the citizen portal.

#### STEP TWO – OBTAIN REVIEW APPROVALS

The Entrance Apron application will be reviewed by Permits & Inspections Engineering staff. If additional information is required from you, you will receive a HOLD notice via email.

ISSUANCE: The approved Driveway Entrance Apron Permit will be emailed to the applicant usually within 24 hrs of approval.

#### STEP THREE – OBTAIN INSPECTION APPROVALS

INSPECTIONS:

- There is a non-mandatory pre-installation inspection, if desired.
- There is a mandatory Final Inspection following the completion of the Driveway Entrance Apron. If PASSED, any approvals subject to the successful construction will be satisfied.<sup>1</sup> If applicable, any associated security will be released.

<sup>1</sup> Driveway Entrance Aprons that were **not** subject to a monetary security will receive a CERTIFICATE OF COMPLETION as notice of approval and the closing of the permit.

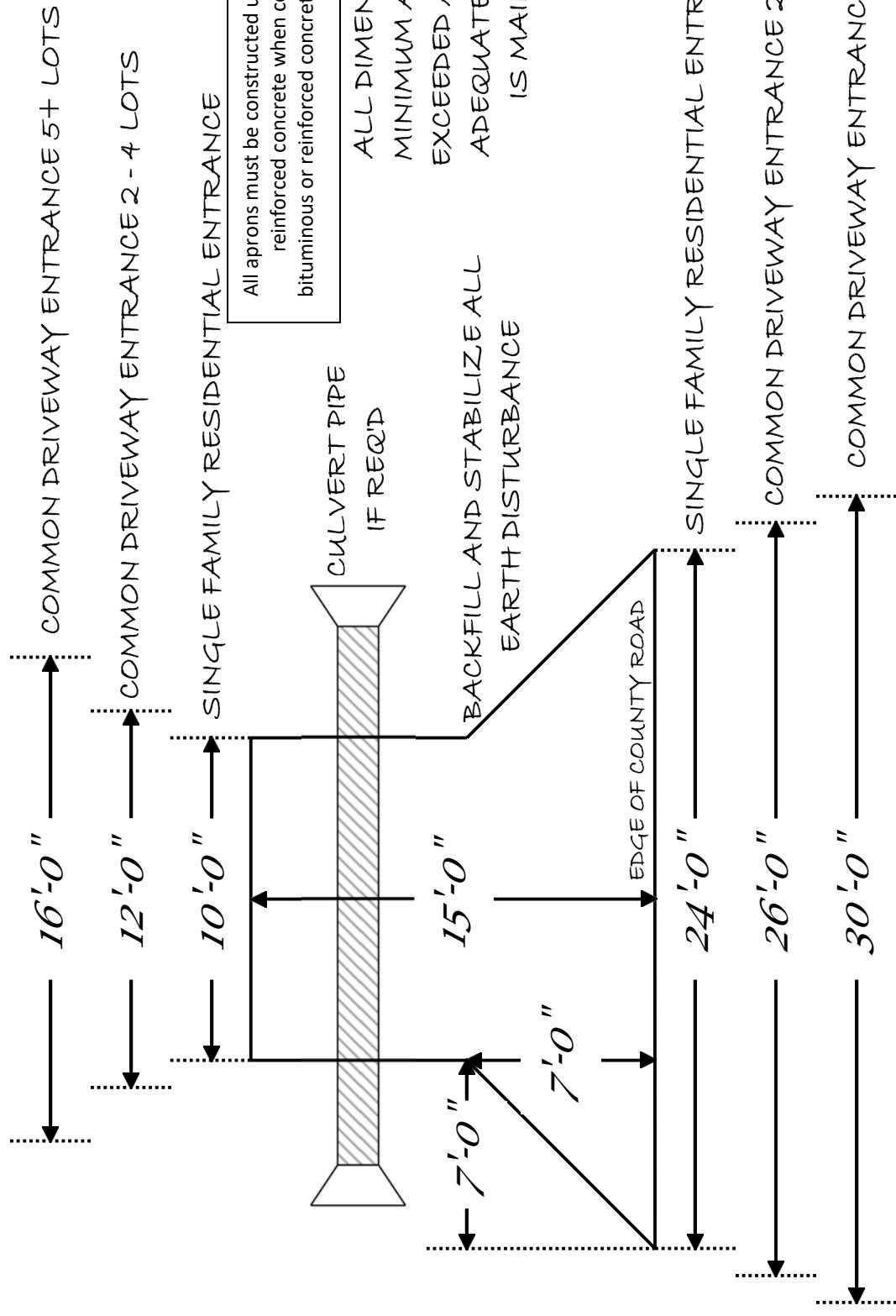
#### CONTACT INFORMATION

Inspections and General Information ----- (301) 600-3507

Permits & Inspections Engineering Staff ----- (301) 600-1560

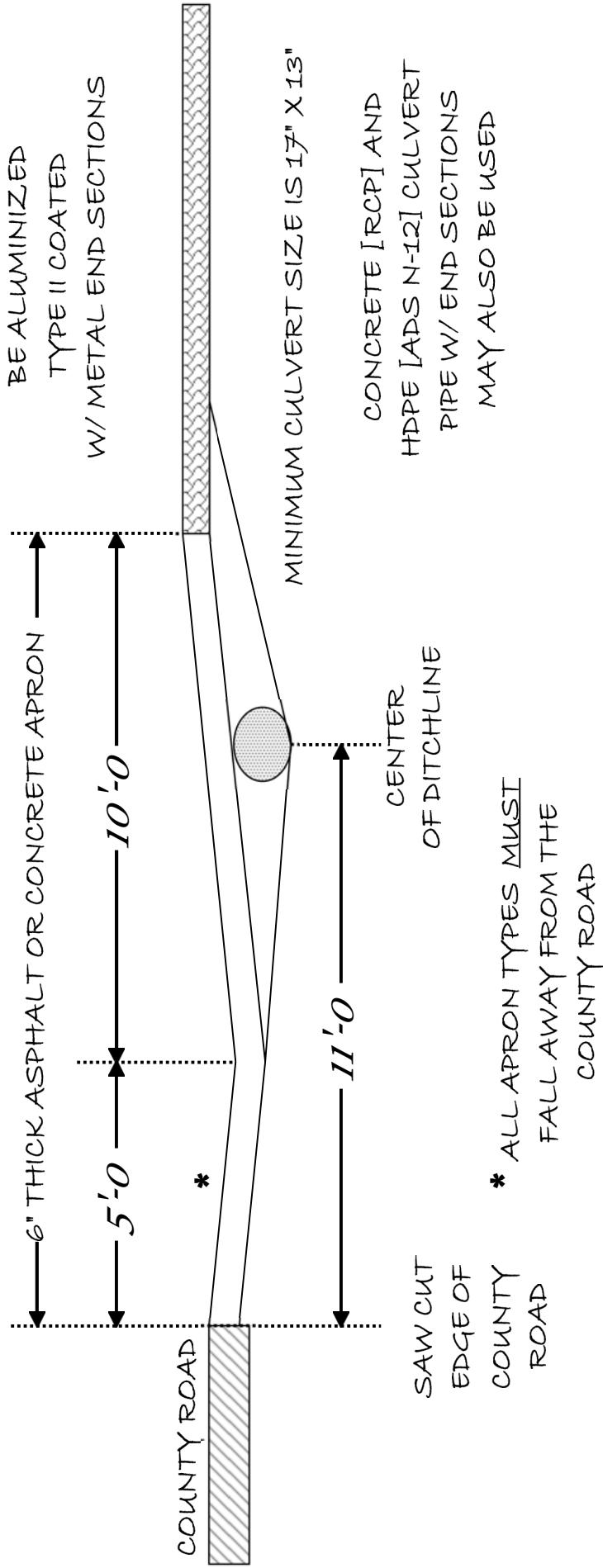
## OPEN SECTION (GRASSED DITCH-LINE) DRIVEWAY APRON CONSTRUCTION SPECIFICATIONS

The following drawings and specifications represent optimum conditions of the roadway ditchline. If conditions exist that will not allow you to follow these specifications, you MUST request a WAIVER (included with this package).



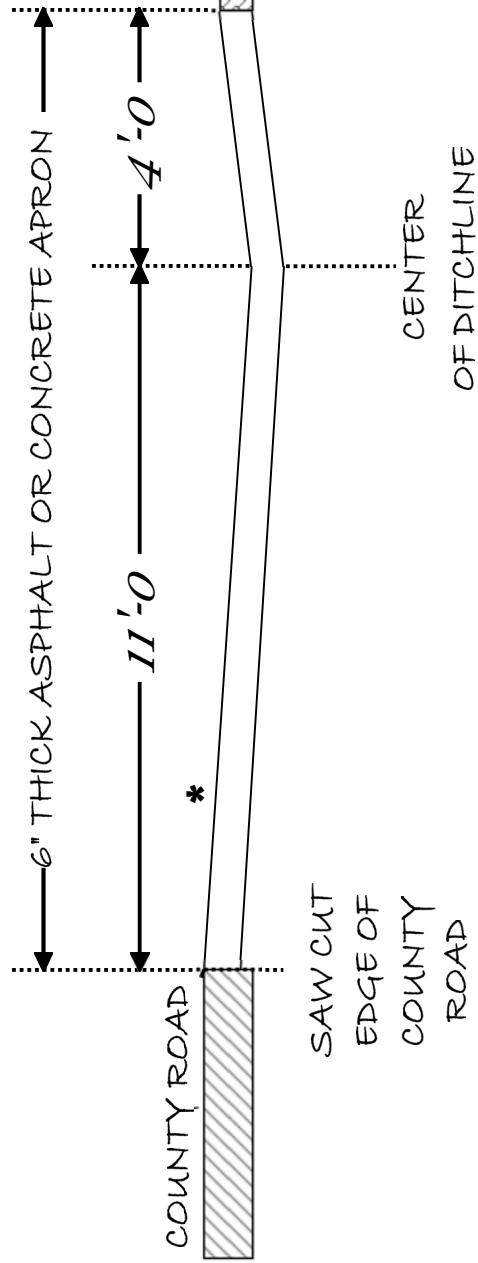
## CROSS SECTION USING CULVERT PIPE

**ALL METAL PIPES MUST  
BE ALUMINIZED  
TYPE II COATED  
W/ METAL END SECTIONS**



All aprons must be constructed using bituminous or reinforced concrete when connecting to a bituminous or reinforced concrete County roadway.

## CROSS SECTION USING SWALE





# DRIVEWAY ENTRANCE APRON

## REQUEST FOR WAIVER FROM STANDARDS

Permit No: \_\_\_\_\_

Request Date: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

Requestor's Name: \_\_\_\_\_

Submit Waiver Request To:  
Division of Public Works - Utility Coordinator  
355 Montevue Lane  
Frederick, MD 21702  
301-600-1669  
*UtilityCoordinator@FrederickCountyMD.Gov*

Contact Info: \_\_\_\_\_

Owner

Contractor

Other

Applicant requests a waiver from the standards and specifications for the driveway entrance apron...

Already Installed

-OR-

Proposed at the following location:

Location/Address:

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Reason for Request:

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*Additional description, drawings or pictures may be submitted with request*

### OFFICE USE ONLY

Highway Operations Representative: \_\_\_\_\_

Date Reviewed: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

WAIVER APPROVED: Due to extenuating circumstances, such as; existing road and/or drainage conditions, the aforementioned non-conforming existing or proposed driveway entrance apron is hereby acceptable by Frederick County Highway Operations.

WAIVER DIS-APPROVED: There is no viable reason to waiver from the standard driveway entrance profile or specifications.

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

## Residential Driveway Permit Applications

In reviewing applications for a residential driveway permit (not associated with a subdivision of land), the reviewer needs to balance the needs and wants of the applicant with the responsibility to provide a safe and efficient public street access. It is well documented that driveways with inadequate sight distance have a greater probability of crashes and the more the access points along a stretch of road, the greater the potential for crashes along that stretch.

The best approach a reviewer can take is to weigh the factors associated with the application and work collaboratively with the applicant to locate the optimal location(s). If this cannot be accomplished, then the reviewer, in consultation with key P&P staff and management, must impose a decision on the applicant as to the location for access.

It is important to know that all lots of record, unless specifically noted otherwise, and parcels, have a right to access the public street system. However, there is no legal right of a landowner to have full access (as opposed to limited, such as right-in/right-out) or more than one access. Should an applicant request a second point of access, the burden of proof is on the applicant to demonstrate the need.

Unless a residential access is to a low speed subdivision street, all driveways must have a turnaround area to prevent backing into or out of driveways. If this cannot reasonably be accomplished, say because of environmental, topographic, cost or space limitations, a circular/half-moon driveway with two access points may actually be preferred, to one access.

In reviewing requests for access, first and foremost, all driveways must achieve AASHTO (Chapter 3) intersection SSD standards. Every effort must be made to conform to County spacing guidelines (simplified chart attached from the unpublished Draft LDM), either providing driveways opposite each other or with sufficient distance from other nearby private or public intersections, but never to the detriment of causing inadequate or approaching inadequate SSD.

When an applicant requests more than one access, the following considerations need to be weighed:

- Adequate intersection SSD can be maintained
- Reasonability of an on-site turnaround
- Applicant's justification of need
- Facility type
- Road ADT (<400 considered low volume by AASHTO)
- Property frontage length
- Previous subdivision plat or site plan access restrictions, such as denied access locations, required shared drives/entrances, etc.

All multiple access points must be recommended for approval by the reviewer based on weighing the above factors, and approved by the Deputy Director or his/her designee.

Procedurally the process to accomplish the task is as follows:

**IN ALL CASES:**

- Provide pre-application feedback to the property owner to work out any issues/concerns/alternatives before they commit to paying fees and hiring consultants.

**FOR DRIVEWAY REQUESTS ON LOTS OF RECORD THAT HAVE NOT BEEN SUBJECT TO SUBDIVISION OR SITE PLAN REVIEW:**

- Permit Reviews will be accomplished by DRE/Zoning (to be added as new reviewer) in consultation with DRTE when needed
- Zoning will be reviewing for Planning related issues (pull plat, examine existing and approved use, denied access notes and spacing policy etc.)
- DRE will be reviewing for engineering related issues (Adequate SSD (or ISD) can be maintained, Reasonability of an on-site turnaround, Applicant's justification of need – generally for a circular driveway multiple uses, Facility type, Road ADT (<400 considered low volume by AASHTO), Property frontage length etc.)
- While Subdivisions and site plans must meet FCPC spacing policy, as discussed above, driveway permits would not be required to obtain FCPC mod approval, unless there are unusual circumstances that the staff and department director does not feel comfortable approving

**FOR DRIVEWAY REQUESTS ON LOTS THAT ARE SUBJECT TO PREVIOUS SUBDIVISION OR SITE PLAN REVIEW:**

- Zoning will be reviewing for Planning related issues (pull plat, examine existing and approved use, denied access notes and spacing policy etc.) In the case where the new entrance/driveway is contrary to the approved access layout (such as eliminating the use of a common drive/entrance, violates previously approved entrance spacing, located in an area labeled denied access, etc.) then a Correction Plat must be filed prior to the approval of the entrance/driveway permit.
- Permit Reviews will be accomplished by DRE/Zoning (to be added as new reviewer) in consultation with DRTE when needed
- DRE will be reviewing the permit for engineering related issues (Adequate intersection SSD can be maintained, Reasonability of an on-site turnaround, Applicant's justification of need – generally for a circular driveway multiple uses, Facility type, Road ADT (<400 considered low volume by AASHTO), Property frontage length etc.)
- Subdivisions and site plans must meet FCPC spacing policy. Changes to the previously approved access point(s) that do not meet all codes or policies may require FCPC approval.

**DIVISION OF PLANNING AND PERMITTING  
FREDERICK COUNTY, MARYLAND  
SIGHT DISTANCE ANALYSIS**

PROJECT NAME \_\_\_\_\_  
MAJOR ROAD \_\_\_\_\_  
MINOR ROAD(DRIVEWAY) \_\_\_\_\_  
INTERSECTION DRAWING:



VICINITY MAP

MAJOR ROAD POSTED SPEED \_\_\_\_\_

MAJOR ROAD SPEED \_\_\_\_\_ CALCULATED  ESTIMATED  85th PERCENTILE SPEED

ACTUAL (MEASURED) SIGHT DISTANCE \*\*: LEFT \_\_\_\_\_ FT., RIGHT \_\_\_\_\_ FT.

"MOST LIMITING -HORIZONTAL AND/OR VERTICAL

**INTERSECTION SIGHT DISTANCE (ISD)**

MINOR ROAD DRIVEWAY APPROACH GRADE \_\_\_\_\_

NUMBER OF LANES LEFT TURNING VEHICLE MUST CROSS \_\_\_\_\_

DESCRIPTION OF SUBSTANTIAL VOLUME OF MAJOR ROAD TRAFFIC MAKE-UP \_\_\_\_\_

REQUIRED (CALCULATED) SIGHT DISTANCE: LEFT \_\_\_\_\_ FT., RIGHT \_\_\_\_\_ FT.

Notes:

I, \_\_\_\_\_, certify that the proposed entrance described above meets AASHTO standards for intersection sight distance.

Signed \_\_\_\_\_ PE/PLS/ MD Reg. No. \_\_\_\_\_ Date \_\_\_\_\_

**STOPPING SIGHT DISTANCE (SSD)**

REQUIRED (CALCULATED) SIGHT DISTANCE: LEFT \_\_\_\_\_ FT.; RIGHT \_\_\_\_\_

Notes:

I, \_\_\_\_\_, certify that the proposed entrance described above meets AASHTO standards for intersection sight distance.

Signed \_\_\_\_\_ PE/PLS/ MD Reg. No. \_\_\_\_\_ Date \_\_\_\_\_

## SIGHT DISTANCE STANDARDS

(Applies to Full Movement Access on Undivided Highways with Nominal Truck Usage)

Actual Posted Speed (mph)	Assumed Design Speed (mph)	Stopping Sight Distance Required (ft)	Intersection Sight Distance Required (ft)		
			One Lane	Two Lanes Crossed	Three Lanes Crossed
25	35	250	390	415	440
30	40	305	445	475	500
35	45	360	500	530	565
40	50	425	555	590	625
45	55	495	610	650	690
50	60	570	665	710	750
55	65	645	720	765	815

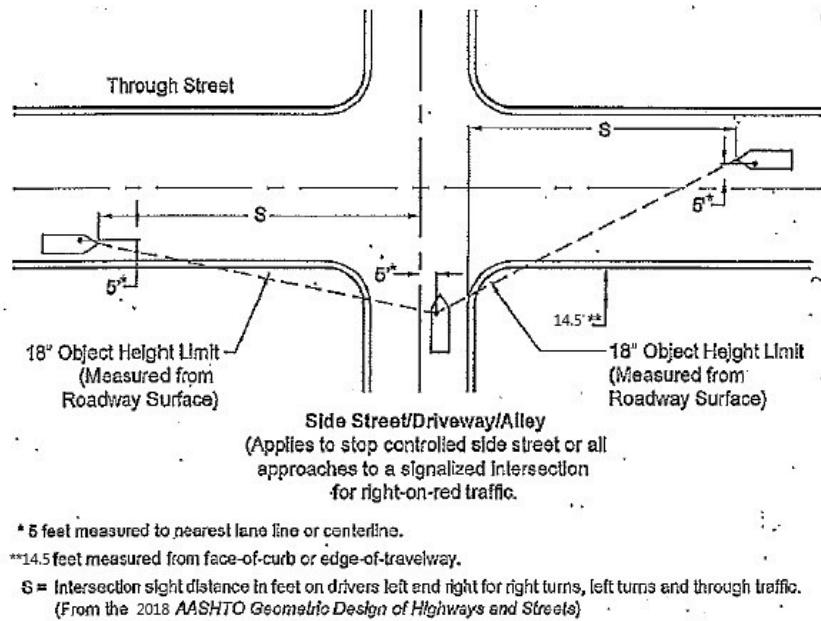
Notes:

1. *Values and methodology based on A Policy on Geometric Design of Highways and Streets, AASHTO, 2018 for the design speeds shown. Intersection sight distance values shown are governed by the left turn movement from the access point onto the state highway (Case B1, p. 9-44).*
2. **Assumes passenger vehicle for design purposes and level grade  $\pm 3\%$  maximum.**
3. *Refer to AASHTO guidelines to address different conditions (e.g. access limited to specific turning movements, more than two opposing lanes of traffic to be crossed, steep grade, median crossover, other design vehicles, etc.).*
4. *Sight distance measurement most conform to the AASHTO models.*
5. *Refer to p3-4 for discussion of sight distance requirements and any substandard conditions.*

## INTERSECTION AND DRIVEWAY SIGHT DISTANCE (ISD)

In order to provide the opportunity for vehicles at an intersection to safely cross or make left or right turns onto a through street, adequate sight distance must be provided. Sight distance should be based on the design speed for roadway. The sight distance requirements outlined below are required for all public street intersections and at all intersections of commercial driveways onto public streets generating more than 5 trips/hour. Internal driveway intersections on private property and residential driveways are excluded from these requirements.

The figure below depicts the technique used to determine the driver's eye location and an approaching vehicle; a line is then drawn to connect these 2 points. Continuous unobstructed line of sight must be provided along this and throughout the approach to the intersection, providing an unobstructed line of sight triangle to the side street driver. Sight lines are to be drawn on roadway and landscaping plans to represent the areas that must be free of all objects and topography in excess of 18 inches above the roadway surface, however, certain vegetation will be allowed. Vegetation placed within the sight triangle will be of a low variety that remains below 18 inches when mature. Trees within the triangle may be considered as long as the canopies are above 8 feet, they are a single trunk variety, and they are not spaced in a configuration that created a visually obstructive "picket fence" effect.



Intersection sight distance (ISD) is calculated as follows:

$$S = 1.47 * V_{major} * t_g; \quad \text{Where } t_g = \text{time gap for major road}$$

See AASHTO p9-44

$$V_{major} = 85^{\text{th}} \text{ percentile speed (mph)} **$$

$$t_g = 7.5/6.5 \text{ sec for Passenger Cars; left/right turn, respectively}$$

9.5 sec for Single Unit Trucks  
11.5 sec for Combination Trucks  
(add 0.5 sec for each extra lane traversed for passenger cars)

\*\* 85<sup>th</sup> percentile speed may be different in each direction due to grade, alignment, etc. Please calculate separately.

If grades are in excess of 3%, consult AASHTO for additional factors.

## STOPPING SIGHT DISTANCE (SSD)

The minimum stopping sight distance (SSD) is the roadway distance required by the driver of a vehicle, traveling at a given speed, to bring the vehicle to a stop after an object on the road becomes visible, in this case a vehicle crossing the roadway or stopped in the thru lane to make a left turn . Stopping sight distance is therefore measured from the driver's eyes, 3.5 feet above the pavement surface, to an object (another vehicle) 3.5 feet high on the roadway. If grades are in excess of 3%, consult AASHTO for additional factors.

SSD is calculated as follow:

$$S = 1.47 * V * t + 1.075 * \frac{V^2}{a}$$

Where:  $V = 85^{\text{th}}$  Percentile Speed

$t = 2.5 \text{ sec}$

$a = 11.2 \text{ ft/sec}^2$

See AASHTO p.3-5