

RULES AND REGULATIONS
FOR THE CONTROL OF ANY WORK WITHIN THE RIGHT OF WAY
OR BEING OTHERWISE DIRECTLY RELATED TO ANY COUNTY ROAD

ROCKLAND COUNTY
STANDARD SPECIFICATIONS

EFFECTIVE JANUARY 1, 1965
1st REVISION NOVEMBER 2005
2nd REVISION MAY 2018

These rules have been developed and designed for public safety and mobility, to provide uniformity of practice and to protect public roads.

ROCKLAND COUNTY HIGHWAY DEPARTMENT
Charles H. Vezzetti
Superintendent of Highways
23 New Hempstead Road
New City, NY 10956
845-638-5060

ACKNOWLEDGEMENTS

The Rockland County Highway Department is grateful for a number of authors, editors and reviewers who have contributed to the gradual development of these standard specifications as accurate as possible over the several years. In addition to those people, we would like to recognize and include a special note of thanks to Mr. J. Burch McMorran, Superintendent of Public Works of the State of New York, for his permission to quote from the publication of "Policy and Standards for Entrances to State Highways."

We also wish to acknowledge our indebtedness to many other people on whom we called for information and advice.

The materials this department used to create the County's Standard Specifications came from many of the important documents written over the last several years. Specifically though, we borrowed heavily from "Street Specifications for Subdivisions" originally proposed by the Highway Superintendents Associations of Rockland County and since adopted by a majority of the Towns in the County and the New York State Standard Specifications. The latest NYS Standard Specifications should be used for further illumination of the guidance in this book.

The purpose of the second revision of the standard specifications is to guide professionals through the existing rules, standards and procedures, permitting process, as well as to provide some background behind the guidelines and best practice of engineering applications.

AUTHORITY

The General Municipal Law of the State of New York provides for control of development affecting county roads and the Highway Law regulates works and structures in and upon county roads as follows:

GENERAL MUNICIPAL LAW

§ 239-f. Approval of building permits, curb cuts, and subdivision plats.

1. Rules and Regulations

The county superintendent of highways or the commissioner of public works in cooperation with the county planning board as well as the county building inspector, if any, shall promulgate rules and regulations governing the approval of building permits and curb cuts relating to elements contained in the county official map, including provision for direct application to him or her by prospective builders or by persons desiring to secure access to existing or proposed rights-of-way or to alter existing means of access. Any approval of such application shall be subject to all the provisions of law pertaining to the municipality affected.

2. Procedure

No subdivision plat or building permit shall be issued or approved by any municipality when there are proposed structures, proposed new streets, or proposed buildings which shall have frontage on, access to, or be otherwise directly related to any existing or proposed right-of-way or site shown on the county official map, except in accord with the following procedures.

(a) Notification

- (i) Upon receipt of an application for approval of a subdivision plat, the clerk of the municipal planning board shall notify the county planning board and the county superintendent of highways or commissioner of public works.
- (ii) Upon receipt of an application for a building permit the municipal building inspector or other authorized municipal official shall notify county officials. The county superintendent of highways or commissioner of public works shall

notify appropriate state or federal agencies affected. Such state and federal agencies shall have ten working days in which to file their objections to an application for a building permit.

(b) Report

- (i) The county planning board shall review a subdivision application insofar as proposed structures or new streets may be related to any existing or proposed right-of-way or site shown on the county official map. Within ten working days of receipt of notification of a subdivision plat application, the county planning board shall report to the municipality on its approval, disapproval, or approval subject to stated conditions.
- (ii) The county superintendent of highways or commissioner of public works shall review an application for a building permit insofar as proposed building, including curb cuts or other means of access, may be related to any existing or proposed right-of-way or site shown on the county official map. Within ten working days of receipt of a building permit application the county superintendent of highways or commissioner of public works may consult with the county planning board and shall report to the municipality on his or her approval, disapproval, or approval subject to stated conditions. If such superintendent or commissioner fails to make a report within ten working days of such reference, the county shall forfeit the right to suspend action.

(c) Considerations

In making such report the county planning board and the county superintendent of highways or commissioner of public works shall take into consideration the following:

- (i) the prospective character of the development;
- (ii) the design and frequency of access;
- (iii) the traffic which the development will generate and the effect of said traffic upon existing or proposed rights-of-way or sites shown on the county official map;
- (iv) the effect of this development upon drainage as related to drainage systems; and

- (v) the extent to which such development may impair the safety and traffic carrying capacity of existing and proposed rights-of-way affected.

(d) Approval

- (i) A subdivision plat may be approved by the municipality subject to stated conditions, notwithstanding such county planning board report, by a two-thirds vote of all the members.
- (ii) A building permit shall be issued in accord with and consistent with such report, provided that the board of appeals or other authorized board may vary the requirements of the report of the county superintendent of highways or the commissioner of public works by a two-thirds vote of all the members. Before issuing such building permit, a notice of public hearing on such permit shall be published in a newspaper of general circulation in the municipality at least ten working days prior to such hearing. Such notice shall be forwarded at least ten working days in advance by a registered letter to the superintendent of highways or commissioner of public works, to the clerk of the county legislative body, and to the county planning board, if any, and appropriate state and federal agencies affected.

**Permits for work within the County Road Right of Way
Under Highway Law, Section 136**

1. Except in connection with the construction, reconstruction, maintenance or improvement of a county road or operations of a corporation pursuant to the provisions of section twenty-seven of the transportation corporations law or sections twenty-one, eighty-nine, ninety-one, ninety-three, ninety-three-a and ninety-three-b of the railroad law, no person, firm, corporation or municipality shall construct or improve, within the county road right of way an entrance or connection to such road, or construct within the county road right of way any works, structure or obstruction, or any overhead or underground crossing thereof, or lay or maintain therein underground wires or conduits or drainage, sewer or water pipes, except in accordance with the terms and conditions of a work permit issued by the county superintendent or his duly designated agent, notwithstanding any consent or franchise granted by any town superintendent, or by any other municipal authority. Any municipal corporation may enter upon any county road for the

purpose of widening the pavement or for any other purpose authorized by this section, but only after securing a permit as provided herein.

Notwithstanding the limitations in any general or special law, every municipal corporation shall have and is hereby given authority to deposit with the county superintendent such a sum of money or a security bond as may be required as a condition precedent to the granting of the permit provided in this section.

2. The county superintendent shall establish regulations governing the issuance of highway work permits, including the fees to be charged therefore, a system of deposits of money or bonds guaranteeing the performance of the work and requirements of insurance to protect the interests of the county during performance of the work pursuant to a highway work permit. With respect to driveway entrance permits, the regulations shall take into consideration the prospective character of the development, the traffic which will be generated by the facility within the reasonably foreseeable future, the design and frequency of access to the facility, the effect of the facility upon drainage as related to existing drainage systems, the extent to which such facility may impair the safety and traffic carrying capacity of the existing county road and any proposed improvement hereto within the reasonably foreseeable future, and any standards governing access, nonaccess or limited access which have been established by the county superintendent.
3. Upon completion of the work within the county road right of way, authorized by the work permit, the person, firm, corporation, municipality, and his or its successors in interest, shall be responsible for the maintenance and repair of such work or portion of such work as set forth within the terms and conditions of the work permit.
4. An advertising sign, display or device, or any part thereof, erected in violation of this section shall be removed from the county road right of way by the owner or the party responsible for its erection. The county superintendent shall make a demand by mail, to the last known address of the owner, apparent owner or party responsible for the erection of such advertising sign, display or device, for its removal and, if it is not removed within twenty (20) days from the date of the mailing of such demand, the county superintendent may remove any such advertising sign, display or device, or any part thereof, from the county road right of way.
5. The term "county road right of way" shall, for the purposes of this section, mean the entire width between the boundary line of all property which has been purchased or appropriated by the county for county road purposes, all property over which the

county superintendent or his predecessors has assumed jurisdiction for county road purposes, all property over which the county superintendent has assumed jurisdiction during the period of construction, reconstruction or improvement and all property which has become part of the county road system through dedication or use.

6. Any person, firm or corporation violating this section shall be liable to a fine of not less than twenty-five dollars nor more than one thousand dollars for each day of violation, to be recovered by the county superintendent and paid in to the county treasury to the credit of the county road fund created under this article for the construction, reconstruction and maintenance of county roads on the county road system in accordance with the provisions of this article, and may also be removed therefrom as a trespasser by the county superintendent upon petition to the county court of the county or to the supreme court of the state.

Definitions

- Owner shall mean the owner of the property or his duly authorized agent or contractor.
- Right-of-way line shall mean the boundary line of the road as determined by usage, purchase or dedication.
- Official road line shall mean the boundary line at the road width as established by the Rockland County Official Map, Part I, County Roads, or by municipal ordinance, whichever is greater.
- The term "municipal corporation," as used in this specification, includes only a county, town, city and village. The term "governing board" includes the legislature of a county, the town board of a town, the common council of a city, and the board of trustees of a village.
- When used in this specification, unless the context or subject matter otherwise requires, the terms "state department of transportation," "state transportation department," "department of transportation," "transportation department," "department," "state commissioner of transportation," "commissioner of transportation," "commissioner," and "state engineer," shall each be deemed to refer to and to mean the state department of transportation and the state commissioner of transportation, respectively.
- The term "county engineer" or "county superintendent," when so used, shall mean the county engineer of highways or county superintendent of highways respectively.
- The term "town superintendent," when so used, shall mean the town superintendent of highways.
- The term "county" shall mean the Rockland County Highway Department and/or the Rockland County Superintendent of Highways.
- A highway within the meaning of this chapter shall be deemed to include necessary sluices, drains, ditches, waterways, embankments, retaining walls and culverts having a width of opening of twenty feet or less except as provided in section two hundred and thirty of Chapter 25, Article IX- Bridges, and also the approaches of any bridge or culvert beginning at the back of the abutments. The pavement over any such bridge or culvert may also be included as a part of the highway provided such pavement is separated from such structure by an earth fill.
- Construction shall include: the erection of buildings or other structures, or any part thereof or the connection of utilities to existing structures; the creation, modification or surfacing of driveways; the erection, modification or relocation of fences, walls, signs or lighting, the addition or modification of

drainage structures including footing or roof drains and the re-contouring of the property i.e.; filling or cutting of the grade of the land or the creation or modification of berms or ditches, or land clearing. Construction may also include the planting or removal of trees or shrubs if the planting or removal will re-contour the land surface or affect existing drainage or swales.

- A Drainage System is a system of swales, ditches, culverts, pipes, catch basins, and other structures that collect and convey surface water to a natural watercourse.
- Traffic management shall mean the control and management of traffic near and through a work zone. This may include the use of cones, barrels, barricades, signs, lights, flag persons or other necessary traffic control devices necessary to the safety of the public and to the maintenance of the efficient flow of traffic.
- Other definitions that are found in the New York State Department of Transportation Standard Specifications (current edition) will apply unless specifically outlined above.

Rockland County Highway Department Permits

The Rockland County Highway Department is responsible for operation and maintenance of the County Road System. The use of County Road Right of Way must be performed and completed in compliance with terms and conditions of a highway permit issued by the Rockland County Superintendent of Highway or his duly assigned agent, per the Highway Law, Section 136. The purpose of a highway permit is to safeguard the public safety and to protect the function of the roadway for the best interests of the traveling public as well as the permit applicant.

The Rockland County Highway Department will issue highway permits depending on the nature of work after all application requirements are met. The different types of permits issued by the Rockland County Highway Departments are listed below:

Road Work Permit

Any construction activity affecting County Roads require a road work permit from the Rockland County Highway Department. The categories of construction activities that require work permits include, but are not limited to:

- Construction of or additions to residential structures with frontage on County Roads even if there is no direct access to a County Road.
- Constructing an approach or access connection, such as a driveway, street, or temporary access to the County Road System.
- Construction activities within the County Road Right-of-Way, such as excavating for new structures, drainage, roof drain connection, landscaping projects, fences, driveway repairs, curbing, sidewalks and connections to catch basins, etc.
- The Rockland County Highway Department will review all proposed development, regardless of how small, on properties adjacent to or within 500 ft. distance of a County Road Right of Way to ensure the County's highway facilities are not impaired by private, commercial or industrial development.
- Installation of banners and nonstandard, supplemental/discretionary signs with the County Road Right of Way.

Fees related to road work permits:

The work permit application fee varies with the nature of work affecting County Roads. Besides the application, there is an inspection fee associated with each work permit. The fee will be based on number of inspections required or performed until

the completion of the work in the County's Right of Way. The application fee shall be paid in accordance with the current fee schedule.

A minimum drainage maintenance fee will be required as indicated in the fee schedule per legal tax lot related to development projects. This fee will be held to ensure that all aspects of the soil erosion prevention and protection of drainage systems affected by the proposed work being in place and functioning properly. It is to further ensure that all erosion from the site will be restored, should the protection and plans prove to be inadequate or failed. In the event that the developer/builder/owner fails to comply with the provisions of the permit regarding this section, the County will necessitate repairs or work to bring the permit in compliance and will impose a penalty besides the money held accordingly.

Road Opening Permit

Any road opening in County road right of way requires a road opening permit from the Rockland County Highway Department, whether it is for construction and installation of facilities, or for repairs and maintenance.

Requirements:

1. It shall be unlawful for any utility or Municipal Corporation to make an excavation in or disturb the surface of any County road without a permit in writing from the County Superintendent of Highways. A separate permit shall be required for each and every road opening.
2. To obtain a permit, an application must be made in writing on the form provided by the county, signed by a duly authorized officer of the utility or municipal corporation. The corporation may by resolution, a certified copy of which shall be filed with the County Superintendent of Highways, designate an agent or officer to execute applications for permits.
3. If, in the opinion of the County Superintendent of Highways or his representative, work is not being performed in accordance with these regulations, the Superintendent or his representative may in writing stop the work at any time and work shall not be resumed without the consent in writing of the County Superintendent of Highways. In the event of such work stoppage, the County will immediately notify the utility or municipal corporation of the stoppage and the cause thereof.

4. In making the excavation the permittee shall preserve the roadway from unnecessary destruction and shall complete the excavation, installation or repair of utility facilities, and backfilling in one continuous operation.
5. The permittee shall maintain safe crossing along the line of the opening and keep the same properly guarded by suitable barricades and warning signs during the day and by barricades and lights at night.
6. If the excavation extends the full width of the road, only one-half of the road shall be opened at a time. This is to be properly backfilled before the other half is opened, so as to permit the free flow of traffic. In some cases it may be possible to open on each side of the road and jack or drive a pipe from one opening to the other. This should be done whenever possible. The road must be kept open to traffic at all times and the utility or municipal corporation or its contractor shall take all necessary precautions for the safety of the traveling public, whenever necessary supplying flagmen, lights barricades, signs etc. A permit to close the road to traffic will only be issued in the most unusual circumstances.
7. Tunneling or mechanical methods of boring under the road for service installations may be permitted only on written approval of the County Superintendent of Highways, or his representatives.
8. Within the right-of-way lines (property lines) of a County Road only a utility corporation, or a contractor working directly for a utility corporation under contract with it, will be permitted to make road openings for the purpose of constructing or installing utility lines or facilities or for making connections to existing utility lines or facilities. Sewer mains may only be installed within the right-of-way lines (property line) of a County Road by a Municipal Corporation or a contractor working directly for a Municipal Corporation. House connections to sewer lines may be made by contractors working for private individuals provided a permit for each opening is obtained from the County Superintendent of Highways. Should a hazardous condition develop in connection with a permit issued to a utility or municipal corporation and the corporation or its contractor are not available or do not remedy the condition promptly, the County reserves the right to do, or to have done, such work as it deems necessary to eliminate the hazard and to bill the cost of such work to the utility or municipal corporation.
9. The utility or municipal corporation or its contractor shall restore all road openings in accordance with the methods and procedures set forth in these

regulations and thereafter maintain them during a period of not less than two years by doing such additional work as may be necessary to make good any deficiencies which may develop due to settlement, shrinkage or other causes. The two-year maintenance period shall start from the date of the bill to the utility or municipality on which the inspection charges for an opening appear.

10. Before any contractor may do any work within the right-of-way lines of a County Road, he must first be approved in accordance with regulations established by the County Superintendent of Highways. A list of approved contractors is on file in the office of the County Superintendent of Highways.
11. The permittee agrees, in accepting a permit to open a road, to save harmless the County of Rockland, its officers and servants from and against any injury, loss, damage, or legal action resulting from any negligence or fault of the permittee, its agents or servants in connection with the work covered by the permit.
12. Nothing contained herein shall prevent the County Superintendent of Highways from modifying or adding to these regulations, if, in his opinion, the best interests of the County will be served thereby.
13. On all matters pertaining to the interpretation of these regulations or to the quantity or quality of materials or workmanship called for by these regulations, the decision of the County Superintendent of Highways shall be final and binding.
14. This permit is issued pursuant to Section 136 of the Highway Law and Section 239-f of the General Municipal Law. Approval is granted to the Rules and Regulations for Control of Development issued by the County Superintendent of Highways, to any and all conditions listed hereon or attached hereto and/or on the plot plan which shall be considered a part hereof.

Fees related to road opening permits:

1. The application fee for a road opening permit is \$75.00. The Rockland County Highway Department may assign an inspector for each road opening permit. There is a fee of \$50.00 per inspection from the time the road is opened, until the final capping wearing course is applied and approved by the County. The fee of \$50.00 shall be paid for initial inspection when applying for a road opening permit. The applicant shall specify on the application the approximate date the

excavation is to be made. The actual work shall not be started without at least 24-hour notice to the Rockland County Highway Department. However, openings are not permitted on Saturdays, Sundays or Holidays, unless an emergency exists, such as a water leak, gas leak or sewer stoppage.

2. Before a road opening permit is issued, the applicant must deposit with the County, as security for the proper performance of the work, cash or a certified check in an amount to be determined by the County on the basis of the size, type and location of the opening. Upon completion and approval of the final wearing surface, this deposit will be refunded after deduction of the charges for inspections, future maintenance and any other charges incurred under these regulations.
3. In order to compensate the County for the cost of future maintenance of openings after the final surface has been completed and approved by the County, the following future maintenance charges will be made:
 - i. In pavement areas, for openings up to and including 30 sq. yds. in area
\$5.00 per sq. yd. (\$50.00 Minimum)
 - ii. In pavement areas, for that portion of the area in excess of 30 sq. yds.
\$4.00 per sq. yd.
 - iii. In shoulder areas, for openings up to and including 30 sq. yds. in area \$25.00
\$4.00 per sq. yd (\$25 Minimum)
 - iv. In shoulder areas, for that portion of the area in excess of 30 sq. yds.
\$3.00 per sq. yd.

Should a hazardous condition develop in connection with a road opening and the permittee is not available or does not remedy the condition promptly, the County reserves the right to do, or to have done, such work as it deems necessary to eliminate the hazard and charge the cost of such work to the Permittee.

Insurance:

1. Before any Road Opening Permit will be issued, both the utility or municipal corporation and its contractors will be required to file with the County adequate and satisfactory evidence that each is covered by public liability insurance in the limits of not less than \$1,000,000 - \$2,000,000 BODILY Injury and \$500,000 Property Damage and that under this coverage, or by separate policies in the above limits, the County of Rockland Highway Department, the County

Executive, and/or the Legislature of Rockland County and/or County Superintendent of Highways and County Engineer, are named and fully indemnified. In the event that the utility Company is self-insured, it may submit a letter in lieu of the insurance required above stating that the utility is self-insured and that it will guarantee to indemnify the parties named above.

2. The utility, or municipality if it is employing its own forces for the road opening covered by the permit, or its contractor, if the work is being done by contract, must file with the County adequate and satisfactory evidence of statutory coverage for Worker's Compensation and Disability Insurance.

Road Use/Close Permit

A road use/close permit is required for certain activities, such as special events and filming, when these activities are on or affects traffic on County Roads or facilities. A special event on a public road is an activity which disrupts some portion of state, county or local laws regarding use of the roads.

Special events, such as speed contests, parade, festival, etc., on a County Road or facility can be organized by a municipality or private entity. The applicant of a road use/close permit is always the entity that is organizing the event.

Fees related to road use/close permits:

The application fee for a road use/close permit is \$500.00 per a day. The application fee for a half-day road use permit is \$250.00.

Special Hauling Permit

Special Hauling Permits are required to move vehicles and/or loads on County Roads if the vehicles and/or loads are not in compliance with the size and weight limitations as provided in Section 14 of the New York State Vehicle and Traffic Law.

The Fee Schedule, which was adopted by the Rockland County Superintendent of Highways, is available upon request at the County Highway Department.

General Conditions

- No construction or development shall be undertaken on any property having frontage on, access to, or being otherwise directly related to a County Road without first securing a permit from the County Superintendent of Highways.
- No construction or utility work shall be undertaken within the right of way, under, around or being otherwise directly related to a County Road without first securing a permit from the County Superintendent of Highways.
- Since it is impossible to foresee all possible combinations of circumstances, these rules and regulations may be waived or modified by the Superintendent of Highways to meet unusual conditions.
- Unless specifically waived or modified by the terms of the permit, these regulations and conditions, including the drawings and maps, shall apply in full. In the event that any part of these regulations and conditions is modified or invalidated, the other portions shall remain in full force and effect.
- The County Superintendent of Highways reserves the right to revoke or annul the permit at any time should the owner fail to comply with the regulations and conditions upon which it is granted.
- The owner agrees in accepting the permit to save harmless the County of Rockland, its officers and servants from and against any injury, loss, damage or legal action resulting from negligence or fault of the owner, his agents or servants in connection with the work covered under the permit.
- The Owner is responsible for the mark out and protection of any underground or overhead utilities in the areas affected by the construction. The cost of any repairs to County owned facilities damaged during the construction, whether because of an emergency condition created by such damage or because of such damage being left unrepaired at the end of the construction, will be charged to the Owner.
- If there is a question as to where the Right-of-Way or easement line falls on the property in question it shall be the Owners responsibility to hire a Licensed Land Surveyor to determine the position of these lines in the field. Right-of-Way lines and easement lines shall be shown on any plans submitted and shall bear the original signature and seal of the Surveyor.
- The County Superintend of Highways reserves the right to have the County road closures performed under Section 104 of the Highway Law removed and traffic restored at any time deemed necessary by the Highway Department and/or the local enforcement agency. Failure to abide may result in trespassing and civil penalties.

DRAINAGE

1. A permit shall be required anytime any work affects an existing drainage channel, drainage system or drainage ditch which directly discharges water onto, through or under a County Road. No existing drainage channel or ditch affecting a County Road shall be blocked, altered or filled in and no changes shall be made in any existing stream, ditch, drainage channel or drainage structure unless specifically approved in the permit. No change in the direction or quantity of run-off to or from property as a result of any work within or affecting the County right of way shall be made unless specifically approved in the permit. Any deficiencies caused by the construction of drainage pipes and/or structures resulting in ponding of water, diverting watercourses or flooding the County right of way and/or adjacent property shall be the responsibility of the applicant to correct immediately.

2. If in the opinion of the Superintendent of Highways drainage plans will be required said plans shall be signed and sealed by a currently licensed and registered New York State Professional Engineer, Professional Land Surveyor or other professional recognized by the New York State Board of Regents capable of preparing drainage plans. The design grades, channel or pipe sizes/shapes, structures, materials and methods of construction so specified by the licensed professional and approved by the County Superintendent of Highways

3. Design grades, channel sizes, pipe sizes, pipe shapes, pipe types, structure sizes, structure types, along with construction methods, material specifications shall be reviewed and approved by the Rockland County Superintendent of Highways prior to the commencement of work. All design grades shall be accurately located in the field or area of work and constructed accurately according to the approved plans. The Rockland County Superintendent of Highways must specifically approve any deviations from the approved plans, material, construction methods or specifications beforehand or prior to construction.

4. Where no pipe is required, as directed by the County Highway Superintendent, a ditch or swale across the driveway shall be constructed as shown in the drawings or as specified in the permit. Said ditch or swale shall be constructed in a workmanlike manner to allow the free flow of water through the ditch or swale. Side slopes shall be those either approved on plans or as directed by the County Superintendent or his designated representative to create the least hardship to the adjoining pavement(s) within the County right-of-way.

5. The size of any drainage pipe required shall be as approved on the plan or specified in the permit. In no case shall the pipe be less than 18" diameter. Any change in specification to a smaller pipe size must be submitted by a currently licensed and registered New York State Professional Engineer, Professional Land Surveyor or other professional recognized by the New York State Board of Regents capable of preparing drainage plans for approval of the County Highway Superintendent.
6. The length of any drainage pipe shall be as shown on the drawings or as specified in the permit. Where designated or required by the Superintendent of Highways end sections shall be constructed according to the standard details of these specifications or approved on plans submitted.
7. Drainage pipes installed should be round unless physical conditions (i.e. utility conflicts, ground cover requirements, design parameters, etc...) prohibit their practical installation. The types of pipe material to be used can be those meeting the criteria listed in these standards. All pipe materials must be approved prior to any installation.

Construction Materials:

It is required that good sound engineering principles and practices will be followed in specifying drainage materials and construction methods to be utilized. All materials used for drainage and construction methods utilized in installing drainage structures, pipes and culverts shall conform to the New York State Department of Transportation standard specifications section 602 – Rehabilitation of Culvert and Storm Drain Pipe and section 603 – Culverts and Storm Drains. Any changes or substitutions must be approved in writing or made as a condition of the permit. All current safety regulations in effect from the State of New York are to be followed and strictly adhered to.

DRIVEWAYS

The American Association of State Highway and Transportation Officials defines a driveway as an access constructed within the public right of way, connecting the public roadway with adjacent property. AASHTO also considers driveways as intersections.

Rules for Driveway Location and Configuration:

1. Driveway facilities shall be provided so that cars would not need to back out into the road. This may be done by constructing a single driveway entrance with a turn-around area off the road. Normally there shall be no more than one driveway allowed to a property.
2. Off-street parking space for at least two cars per family unit must be provided outside the right-of-way line (not pavement Line). If no driveway is to be built, this space must still be provided.
3. If two roads are available, entrance shall be from the least heavily traveled as determined by the County Superintendent of Highways.
4. Driveway entrance shall not be closer than 35 feet to an intersection or five feet to a property line.
5. The recommended maximum grade within the highway right-of-way shall be 10% for commercial driveways and 12% for residential driveways. Driveway profiles should prevent vehicle under-carriage damage, facilitate entry and exiting maneuvers, minimize drainage onto the County roads and meet sidewalk requirements, if applicable.
6. Sight distance must be provided so that approaching traffic can be seen at a distance specified for the prevailing speed limit.
7. Width and construction of driveway shall be in accordance with the drawings from the edge of pavement to the right-of-way line (property line). Driveway shall be paved at least from edge of pavement to right-of-way line (property line) or 50 ft. whichever is greater. All driveway paving shall be made to meet existing surfaces and produce a smooth uniform transition to the paved portion of the county road. No driveway paving shall impede, redirect, hinder, cause ponding or prohibit the pre-existing flow of water over, under, around or through the location of said driveway.

Any driveway constructed that after installation causes water to present a dangerous or unsafe condition must be corrected immediately at no expense to the County. Final line and grades of all driveways within the right of way must be approved prior to construction.

8. No paving shall be done until drainage structures have been inspected and approved by the County Superintendent or his representative. Should the inspection disclose the need for additional drainage structures or regrading it shall be the responsibility of the applicant to remedy the deficiency. Failure to apply for a permit does not constitute grounds to waive any or all parts of these standards. 24-hour notice not including Saturdays, Sundays or holidays will be required before the start of paving.

Critical Driveway Dimensions:

The following critical dimensions are to be considered in designing a driveway to provide for safe and efficient movements:

- Radius – size of curved approach/exit of driveway
- Width – space for vehicles operating on driveway
- Driveway Distance – or spacing between driveways, intersections and property lines
- Angle – angle of driveway
- Sight Distance – length of road visible to the driver required for vehicles to make safe movements
- Driveway Location – position of driveway in relation to other traffic features such as intersections, neighboring driveways, and median openings
- Driveway Length – (also called “Driveway Throat Length”) distance needed into site to transition vehicles to the internal circulation system of the site
- Grade – slope of driveway
- Driveway Traffic Separators/Channelizing Islands – size and position of barrier separating traffic movements on the driveway

Objective of Driveway Design:

The following objectives should be kept in mind when applying any criteria in the design of driveways. The design should:

- Provide traffic lanes within the driveway to produce efficient traffic flow for vehicles entering and leaving the site.

- Provide a clear and safe environment for all road users (cars, applicable vehicle types, cyclists, bus patrons, and pedestrians, including the disabled).
- Minimize the difference in speed between turning vehicles and through traffic.
- Minimize encroachment of turning vehicles on adjacent lanes.
- Provide adequate sight distance for drivers using the driveway (entering, exiting and approaching traffic).
- Provide sufficient operational area for traffic entering the site to prevent a “spillback” queue onto the public street.

UTILITY TRENCHES

The work specified under this item shall include the excavation, necessary backfill and compaction, and surface restoration required for underground utility facilities.

Glossary

1. Pavement and shoulder areas are defined as follows:
 - (a) The "pavement area" shall include the full width of hard bituminous or concrete paved road surface plus an additional 12" on each side thereof. It shall also include any paved gutters within the right-of-way.
 - (b) The "shoulder area" shall include any ride-able area within the right-of-way outside the pavement area.
2. Shoulder openings shall be defined as excavation done completely within the shoulder area as defined above 1 (b).
3. The backfill is the portion of a fill section situated between the backfill foundation and the subgrade surface.
4. The backfill foundation is the surface upon which a backfill is constructed after all work in the trench has been completed and the surface on which the backfill to be placed shall be prepared with required compaction.
5. The subgrade surface is the surface of the road section upon which the subbase is placed.
6. The subgrade area is that portion of a backfill situated above the backfill foundation.
7. Subbase - The layer of specified granular material placed on subgrade to support a base course, typically 300 mm thick.
8. Surface Course - One or more layers of a pavement structure designed to accommodate the traffic load, the top layer of which resists skidding, traffic abrasion, and disintegrating effects of climate. The top layer of flexible pavements is sometimes called "wearing course."
9. Tack Coat - A bituminous emulsion placed between asphalt lifts for adhesion.

10. Base Course - The layer or layers of a specified designed thickness placed on a subbase to support surface and binder courses.

11. Binder Course - The asphalt layer between the top and base courses.

12. Underdrain - A drain located under the pavement, usually deeper than edge drains and intended to lower the groundwater by means of gravity flow.

Materials, Procedures and Maintenance

1. (a) Shoulder openings or trenches shall be backfilled with a pervious material well compacted to within 6" of the surface. The final 6" shall consist of shoulder stone, or approved equal, thoroughly rolled and compacted to the original grade of the shoulder and conforming to grade and crown of road pavement. In general, material excavated from shoulder openings may be reused as backfill unless this material is considered unsatisfactory by the County. Unsatisfactory material would include clay, organic material (swamp muck) etc. and shall be removed from the site and replaced with satisfactory materials acceptable to the County.
 - (b) Should settlement or washouts occur, or the shoulder area otherwise become not rideable due to trench excavation or restoration, the trench shall be brought up to grade by the addition of additional shoulder stone or approved equal which shall be re-rolled and compacted.
 - (c) Where steep grades or serious water conditions are encountered, the County, at its discretion may require that shoulder openings be wholly or partially back filled with 1 ½" crushed stone chinked with finer material and/or that the opening be topped with 4" of NYSDOT Item 403.13, Hot Mix Asphalt – Binder Course Type 3.
2. (a) When excavation falls within the defined pavement area the pavement shall be scored to prevent excessive and irregular breaking of the pavement. In the case of longitudinal trenches and small openings along the edge of the pavement, the scoring line shall be minimum of 18" from the edge of the pavement.
 - (b) The pavement area shall be saw cut prior to excavation.
 - (c) All unsuitable excavated material shall be removed from the site. The backfill material shall be the select granular fill or equivalent materials having no

particles greater than 6" in maximum dimension as specified in the Section 203-2.02 (Select Materials and Subgrade Area Material Requirements) of NYSDOT Standard Specifications. Upon which, 12" compacted thickness of subbase course Type 2 as specified in the Section 304-2.02 of NYSDOT Standard Specifications will be placed. The placement and compaction of a subbase course shall be in conformity with the grades, thickness and typical section shown on the plans, or as determined by field conditions and ordered by the County.

- (d) One exception to the backfill material is very deep sewer trench whereby backfill material must have prior approval of the County. Acceptable backfill material shall be sound, hard, durable, stone, run of bank gravel, sand or other acceptable granular material, the particles of which shall be of such a size that, of that portion passing the 4" square sieve not more than 70 per cent, by weight, shall pass the number 40 mesh sieve, and not more than 10 per cent, by weight, shall pass the number 200 mesh sieve, as determined by washing through the sieve in accordance with ASTM Designation: D422. No stone nominally over 8" in diameter will be allowed in the backfill. This does not preclude the use of excavated material which may meet these specifications. The County reserves the right to test any and all backfill material prior to its use.
- (e) Backfill shall be done in such a manner as to achieve a minimum density of 95 per cent of the maximum density of the soil as determined by the Standard Proctor Test (A.A.S.H.T.O. Designation T-99). The County reserves the right to perform this test at any time and also to make such field tests as are necessary to determine whether the proper degree of compaction has been achieved. Backfill shall be deposited in layers not to exceed 8" in depth before compaction. Equipment to be used for compaction may include vibrating tampers of the mechanical or pneumatic type, impact type rammers or trench rollers or any other type of equipment, which will produce the required degree of compaction. The County may require a field demonstration of compaction equipment before approving it for use. Rolling and compaction shall be done in the longitudinal direction of the trench. If the moisture content of the soil is outside of the limits required for achieving 95 percent of maximum compaction the County Superintendent of Highways will require the addition of water or the use of drier soil so that the required degree of compaction will be achieved. Puddling of water will not be permitted for compaction unless approved by the County. If pavement restoration is not to be made immediately, backfill shall be carried to the finished grade of the pavement, the final 4" to consist of shoulder stone or approved equal.

- (f) Within three calendar days after the opening is made a Hot Mix Asphalt Base Course Type 1 (NYSDOT item 403.11) shall be laid. Any places where the edge of the pavement has been broken outside of the neat scoring lines shall be squared up by re-scoring and removing the road material. The backfill material shall be removed to a depth sufficient to allow for the installation of the bituminous pavement. The subbase material is then fine graded and thoroughly rolled and compacted. The full-depth pavement replacement shall be as nearly as possible the thickness of the courses of the original pavement if such original pavement exceeds the thicknesses or as specified in the typical section of a trench opening in the paved area. Under certain conditions such as: when a thinner base course is required, the estimated traffic level is less, or maintaining traffic on the base course is a concern, the minimum of 4" compacted thickness of Hot Mix Asphalt Binder Course Type 3 (NYSDOT Item 403.13) may be used as a base layer. The base course or layer shall be thoroughly rolled or compacted with a vibrating, three wheel or trench roller in a longitudinal direction or, in the case of openings too small for such equipment, with other compaction equipment which will produce the same degree of compaction shall be utilized. The NYSDOT Standard Specifications Section 403-3.03 Compaction shall be applied. Care shall be taken that the roller wheels are entirely on the subgrade or the newly laid pavement and that they are not partially on the existing pavement and partially on the subgrade or new pavement. After initial rolling, the surface of the base course or layer shall be dusted with screenings or sand and re-rolled. Upon which, 2" thickness of the binder course, NYSDOT Item 403.13, shall be placed and compacted. The finished top of the binder course shall be as nearly as possible ½" below the abutting edge of existing pavement. In the case of longitudinal trenches or small openings along the edge of pavement the final wearing course shall be laid to a width 6" greater than the binder course and in no case, shall the trench width be less than 2 feet.
- (g) The final wearing course shall be applied within one month after the initial opening unless ordered to be laid sooner by the County. All wearing courses shall be completed before bituminous concrete plants close for winter. The binder course shall be thoroughly cleaned of all deleterious materials and a tack coat of approved bituminous material shall be applied to the base course surface and to the edges of the abutting existing pavement. The joint between the binder course and the existing pavement shall be filled with this bituminous material. The wearing course shall conform to NYSDOT Item 403.17 Asphalt Concrete-Type 6 Top Course. This course shall not be feathered over the

existing pavement unless directed by the County. The wearing course shall be thoroughly rolled with a vibrating, three-wheel, or trench roller or in the case of openings too small for such equipment, other compaction equipment which will produce the same degree of compaction and surface texture. The final wearing course shall conform as nearly as possible to the adjacent existing pavement grades and to the crown of the existing road. Joints between the existing and the new wearing courses shall then be sealed with the approved bituminous material.

- (h) Restoration of paved gutters shall be performed in accordance with the specifications outlined above for pavement replacement.
- 3. During the waiting period while base course only is in place, the utility or municipal corporation shall be responsible for maintaining this base course in a safe, rideable condition. Should any settlement or other defect develop, the utility or municipal corporation shall immediately protect the area with lights, barricades, signs or other safety devices as may be needed, and keep it protected until repairs have been made. Should a settlement of less than 4" occur, it shall be repaired within 24 hours by patching with additional base course. If excessive (over 4") settlements occur, indicating a failure of the foundation soil, the entire base course pavement in that area shall be removed, the foundation soil shall be recompact, or removed and replaced if necessary, and the base course shall be replaced. If settlements of over 1" occur in the final wearing course during the two-year in maintenance period; the entire wearing course in this area shall be removed and replaced. Patches over the failed wearing course will not be allowed.

LANE ADDITIONS AND WIDENINGS

- 1. Widening projects should use a pavement section that is consistent with the existing pavement design. Typically, this means that the thickness of each layer of the widened section should match the existing pavement. It is also important that the effectiveness and continuity of any existing drainage layers be maintained or enhanced. The top surface of the subbase of the widening should be no higher than the top surface of the existing pavement. At a minimum, a subbase material similar to the existing subbase should be used under the widened pavement. To better ensure adequate drainage, however, it is preferred practice to use the open graded subbase, crushed stone aggregate subbase course. The goal is to develop a widened section that responds the same to frost, traffic loads and other effects as the existing section does.

WINTER WORK

No road opening permits will be issued between November 15th and April 1st unless an emergency exists. In the event an emergency exists, a road opening permit is still necessary and the backfill of all trenches, including shoulder openings, shall be restored with Item 304.12, also known as subbase course Type 2, and compacted in 8" lift layers. Item 403.13, Dense Binder Course Hot Mix Asphalt will be placed 6" thick and flush with the road surface, instead of ½" low. No frozen dirt shall be placed in the trench as backfill. Notwithstanding anything which may appear to the contrary in this permit application and regulations, the applicant by accepting this permit assumes all responsibility for the safe maintenance of said openings from November 15th to April 1st and further assumes all liability for damages resulting from or in any way connected therewith during this period.

PENALTY

The Section 136 of Highway Law of the State of New York provides that no person, firm corporation or municipality shall enter upon or construct any works in or upon any county road, or construct any overhead or underground crossing thereof, or lay or maintain therein drainage, sewer, gas or water pipes underground, except under such conditions and regulations as may be prescribed by the County Superintendent of Highways, and that for a violation of said section a person, firm or corporation shall be liable to a fine of not less than one hundred dollars nor more than one thousand dollars for each day of such violation, and may also be removed from said county road as a trespasser.

BANNER REQUIREMENTS

1. Said banner(s) should be no more than 2 feet by 23 feet, will be constructed of non-conductive material and will have sufficient holes to create minimum wind resistance.
2. Permittee will exercise extreme care during the installation and removal of the banner(s), will supervise the operation, and will be responsible for the personnel installing and removing the banner(s).
3. Banner(s) must be a minimum of 16 feet above the road surface.
4. If the banner will be anchored to private property, approval from the property owner must be obtained. If utility poles are to be used, appropriate utility companies must also provide their approval.
5. The permittee will provide a plan locating the banner's position to the nearest intersection and showing the wording to be displayed.
6. A standard Rockland County Highway Department Road Work Permit must be obtained prior to the installation and the banner must be removed within 48 hours after the close of the event. The installation and removal dates must be provided on the permit application.
7. It will be the Permittee's responsibility to obtain Liability Insurance in amounts not less than \$ 1,000,000.00 wherein the County of Rockland, its agent, servants and employees will be defended, saved and held harmless from any and all claims or suits arising out of the installation and maintenance of said banner.
8. Notwithstanding any provision herein, the County Superintendent reserves the right to modify, change or otherwise alter the design of the banner, its placement/location, including but not limited to its removal from the County Right of Way at his discretion.
9. A Rockland County Highway Department Road Work Permit may not be required if permission can be obtained from an adjacent property owner to install the banner on private property so that it does not encroach upon the County Right of Way.

ROCKLAND COUNTY HIGHWAY SIGN POLICY

All signs placed within County Roadway Right of Way must conform to all applicable building and zoning regulations of the Municipality in which they will be located. The Rockland County Highway Department is also responsible to keep the roadway Right of Way clear and free of obstructions which could cause damage or injuries to the motoring public.

Since the County can be held liable for damages or injuries resulting from the placement of objects within County Right of Way, The Rockland County Highway Department adopted the following policy concerning nonstandard, traffic related, signs:

PERMITS AND PROCEDURE

A. The permit applicant must:

1. Submit a permit application to the County Superintendent of Highway's for approval. The application should include a brief description of the firm, business and /or enterprise, a copy of the sign or of the message that will appear on the sign and satisfactory evidence that there will be coverage by Liability Insurance in amounts not less than \$ 1,000,000.00 combined single limits and that The County of Rockland, it's agents, servants or employees be named as additional insured on the policy for the installation and maintenance of the erected sign(s).
2. Either by endorsement to the policy or by separate agreement, an indemnification agreement will be provided wherein the County of Rockland, it's agents, servants or employees will be defended, saved and held harmless from any and all claims or suits arising as a result of the installation and/or maintenance of said sign.

B. Permits covering the erection and maintenance of signs shall be used for that specific location and installation and for no other purpose. No additions or corrections to said sign(s) will be permitted unless first reviewed and approved by the Superintendent of Highways.

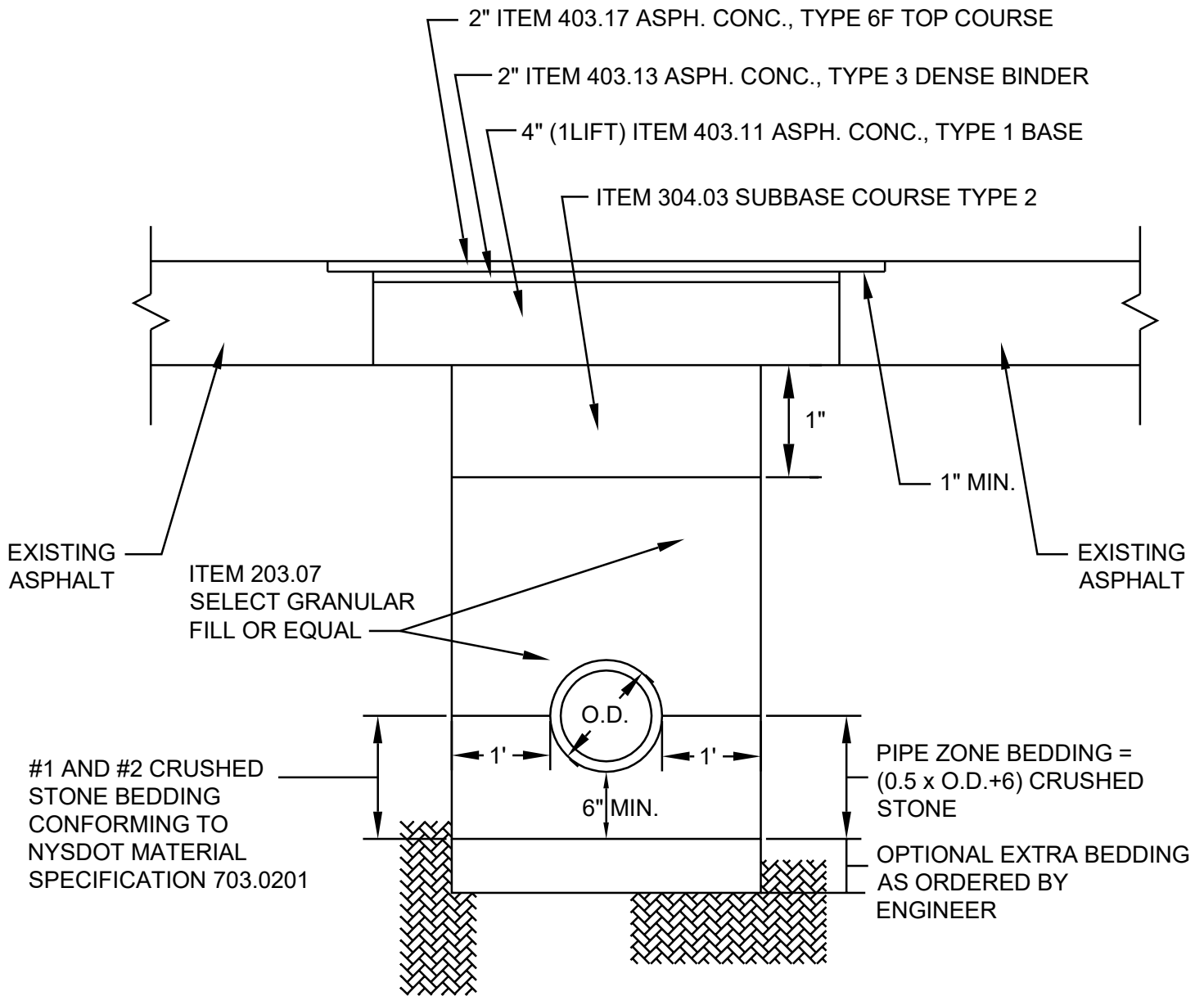
C. All sign permits may be canceled by the Superintendent of Highways on ten (10) day's written notice. Permits shall be automatically renewed for successive terms of one year each, provided that the necessary insurance requirements are maintained. The permittee may cancel the permit with thirty days written notice to the County.

D. The right to use and occupy County owned property for directional/ destination signing is non-exclusive and the County reserves the right to permit such other directional /destination or official signs as it determines to be necessary. The County also reserves the right to require the removal of the sign in the event the location must be utilized for additional future highway construction, reconstruction or maintenance. The granting of the sign permit conveys no other right, title or interest to the permit holder, within the Right of Way, other than permission to use and occupy a specified location for the approved purpose.

E. Right of Way:

1. The applicant shall furnish all necessary posts, sign panels and required hardware to meet specifications as designated by the County.
2. The applicant shall be responsible for the erection of the sign(s) at the approved location(s).
3. If the sign is not adequately maintained or is damaged by vandalism, theft, accident or other cause, the applicant is responsible for the repair, or replacement of the sign. If the sign does not present a hazard to the public or County property, notice will be given to repair or replace within thirty (30) days. Failure to comply will result in termination of the sign permit and removal of the sign(s). However, if the damaged sign presents a hazard to either the public or the County's property, it will be removed immediately without notice.

F. A Road Work Permit from the Rockland County Highway Department shall be obtained in advance for each entry on County Right of Way for the purpose of erection, removal, modification, repair, replacement or maintenance of any approved sign.



NOTES:

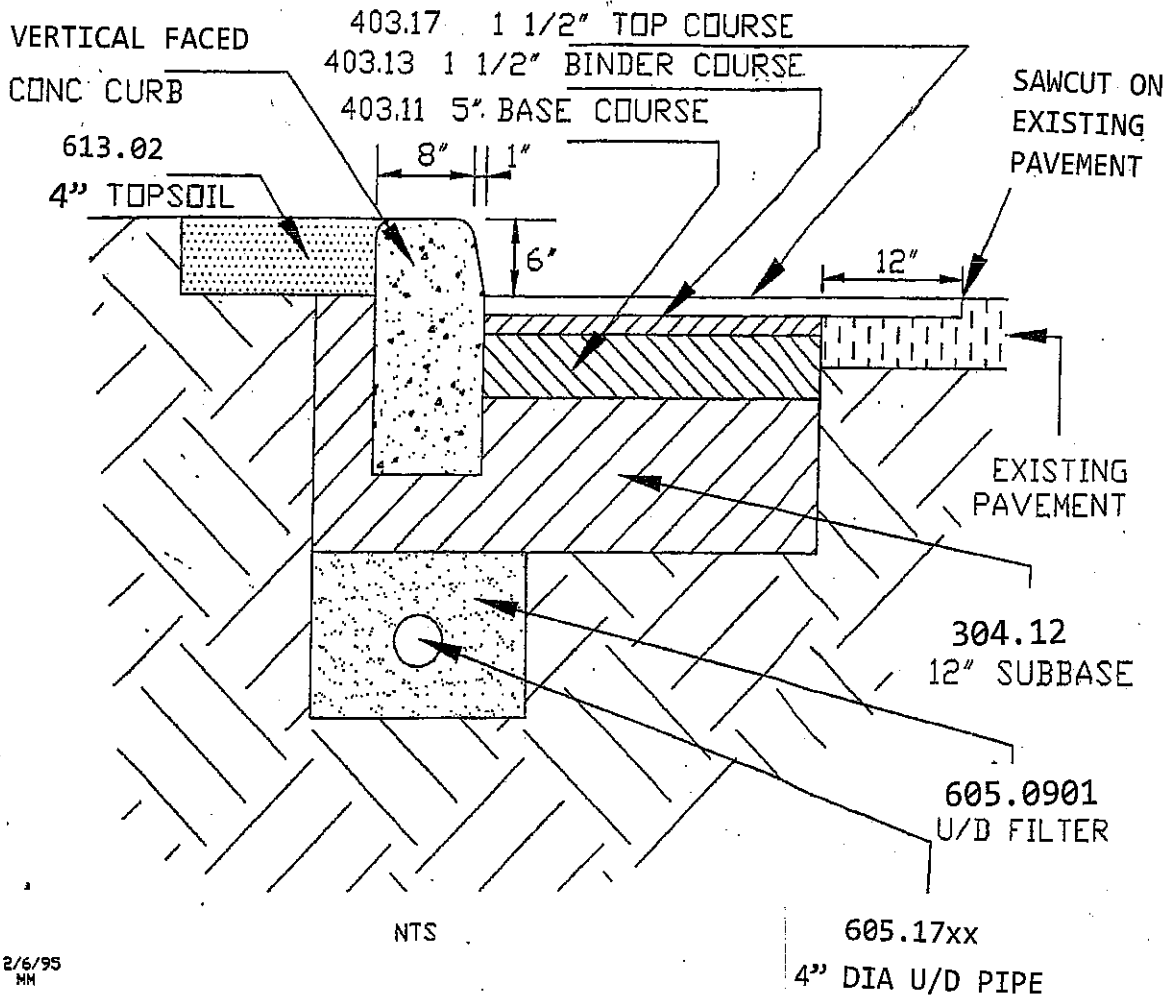
1. REMOVE EXISTING PAVEMENT AND PAVEMENT SUBBASE UNDER ITEM 203.02

TYPICAL TRENCH IN PAVED AREA

NOT TO SCALE

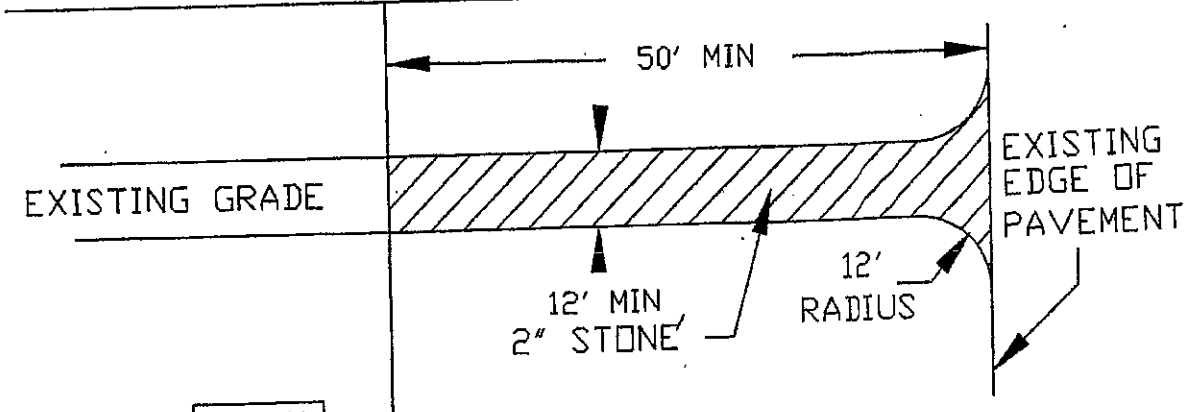
ROCKLAND COUNTY
HIGHWAY DEPARTMENT
CURB/PAVEMENT WIDENING
SECTION

608.0101 CONCRETE SIDEWALK - 4" THICK, 6" THICK @ COMMERCIAL DRIVEWAYS
 UNDERLAIN BY 304.12 SUBBASE- 6" THICK
 MAY BE REQUIRED

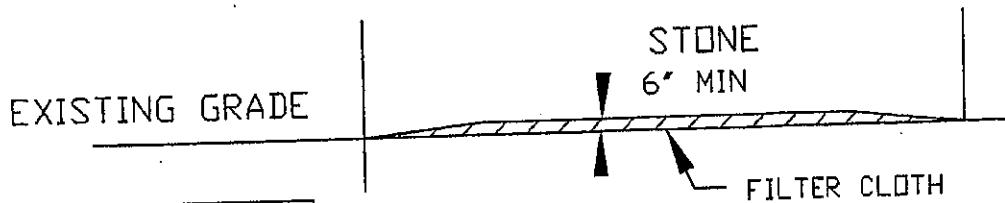


NO WORK IS PERMITTED ON COUNTY ROADS WITHOUT AN
 APPROVED ROCKLAND COUNTY HIGHWAY DEPARTMENT PERMIT.
 ALL WORK SHALL CONFORM TO NYS STANDARD SPECIFICATIONS
 CONSTRUCTION AND MATERIALS, DATED 05/01/08, AS AMENDED.

ROCKLAND COUNTY
HIGHWAY DEPARTMENT
TEMPORARY ACCESS



PLAN



SECTION

MM
2/7/95

NTS

PURPOSE : TO PREVENT TRACKING MUD ON EXISTING ROADS.

STONE : ITEM NO. 623 SIZE 2"

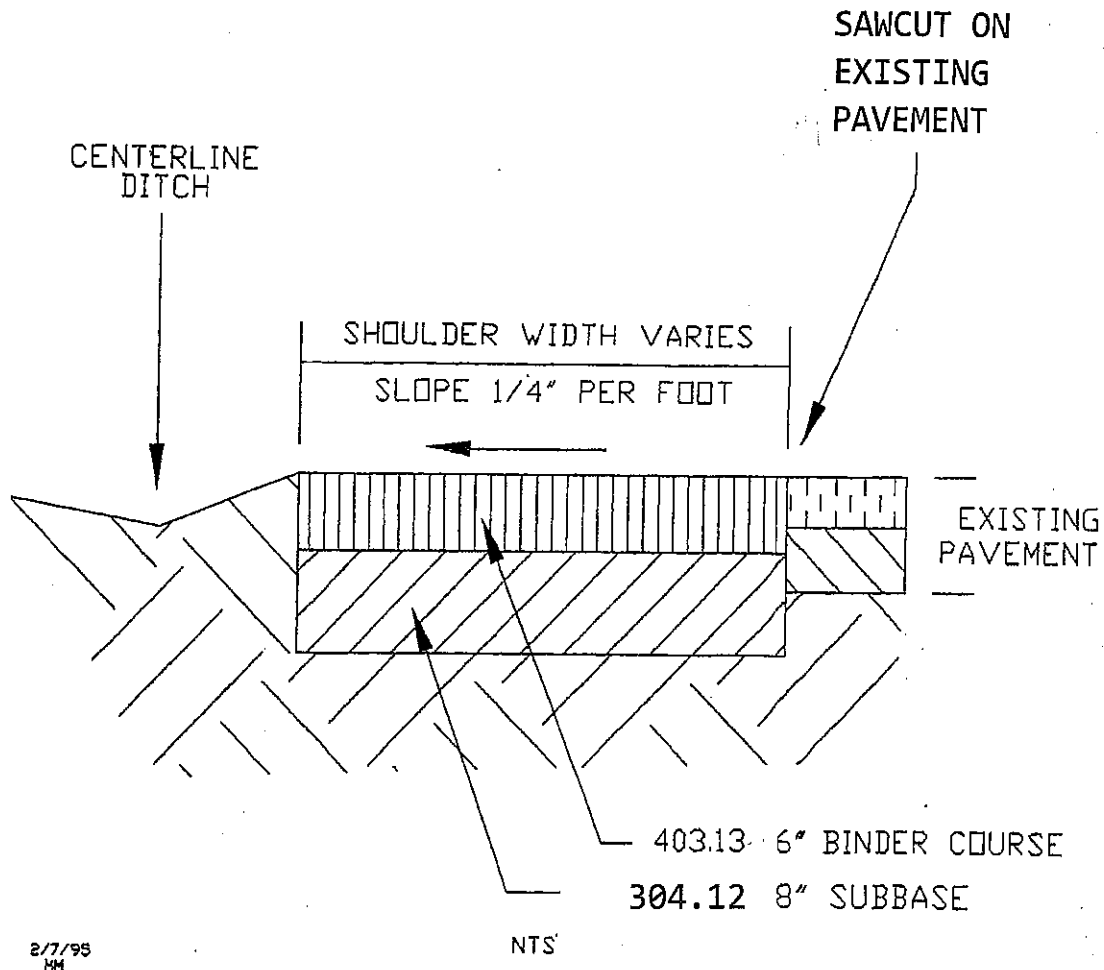
WATER : ALL SURFACES SHALL BE SLOPED AWAY FROM EXISTING OR TEMPORARY ROADWAYS.

PIPING ACROSS THE ENTRANCE MAY BE REQUIRED.

MAINTENANCE : PERIODIC CLEANING OF THE STONE PAD AS NECESSARY.

NO WORK IS PERMITTED ON COUNTY ROADS WITHOUT AN APPROVED ROCKLAND COUNTY HIGHWAY DEPARTMENT PERMIT. ALL WORK SHALL CONFORM TO NYS STANDARD SPECIFICATIONS CONSTRUCTION AND MATERIALS, DATED 05/01/08, AS AMENDED.

ROCKLAND COUNTY
HIGHWAY DEPARTMENT
PAVED SHOULDER
SECTION



NO WORK IS PERMITTED ON COUNTY ROADS WITHOUT AN APPROVED ROCKLAND COUNTY HIGHWAY DEPARTMENT PERMIT. ALL WORK SHALL CONFORM TO NYS STANDARD SPECIFICATIONS CONSTRUCTION AND MATERIALS, DATED 05/01/08, AS AMENDED.

DEFINITION OF TERMS:

- DRIVEWAY - ENERGY ENTRANCE OR EXIT USED BY VEHICULAR TRAFFIC TO AND FROM LANDS OR BUILDINGS ADJACENT TO A HIGHWAY.
- RESIDENTIAL DRIVEWAY - A DRIVEWAY SERVING FOUR OR FEWER PRIVATE HOMES OR AN APARTMENT BUILDING FOR FOUR OR FEWER FAMILY UNITS.
- COMMERCIAL DRIVEWAY - A DRIVEWAY SERVING A COMMERCIAL, EXHIBIT, BUSINESS, INDUSTRY, GOVERNMENTAL OR EDUCATIONAL INSTITUTION, PRIVATE UTILITY, HOSPITAL, CHURCH, APARTMENT BUILDING, OR OTHER COMPARABLE TRAFFIC GENERATOR.
- MAJOR COMMERCIAL DRIVEWAY - ANY COMMERCIAL DRIVEWAY WHERE THE ACTUAL OR ANTICIPATED TRAFFIC VOLUME ON A TYPICAL DAY IS DEFINED BY THE DRIVEWAY POLICY AS DEFINED IN THE HIGHWAY DESIGN MANUAL, BROW CHAPTER 5 APPENDIX 5A.
- MINOR COMMERCIAL DRIVEWAY - ANY COMMERCIAL DRIVEWAY WHERE THE ACTUAL OR ANTICIPATED TRAFFIC VOLUMES ON A TYPICAL DAY ARE LESS THAN THE VALUES STIPULATED FOR A MAJOR COMMERCIAL DRIVEWAY.
- FIELD ENTRANCE - A DRIVEWAY SERVING A FARMROAD, OR UNINCORPORATED FIELD, OR UNINCORPORATED CROPLED LAND NOT USED FOR INDUSTRIAL, COMMERCIAL, OR RESIDENTIAL PURPOSES.
- URBAN / RURAL - THE AREA CHARACTER BASED ON NYS DOT HIGHWAY DESIGN MANUAL CHAPTER 4, SECTION 2A.
- DRIVEWAY OFFSET - THE DISTANCE IN FEET MEASURED FROM THE INSIDE EDGE OF THE DRIVEWAY TO THE INSIDE EDGE OF THE DRIVEWAY. THE DRIVEWAY OFFSET AND THE DISTANCES IS EQUAL TO THE WIDTH OF THE OUTERMOST LANE AND THE WIDTH OF THE PAVED SHOULDER, OR CURB OFFSET.
- HIGHWAY EDGE OF PAVEMENT - THE OUTSIDE EDGE OF THE PAVED HIGHWAY SURFACE.
- SHOULDER WIDTH - THE WIDTH IN FEET OF PAVED SHOULDER INCLUDING A PARKING LANE, ONE LANE CURB OFFSET, OR OTHER PAVED AREA OUTSIDE OF THE TRAVEL LANE.
- MINIMUM PAVING LIMIT (MPL) - THE MINIMUM DISTANCE IN FEET MEASURED ALONG THE DRIVEWAY CENTERLINE FROM THE DRIVEWAY TO THE OUTERMOST TRAVEL LANE THAT A DRIVEWAY MUST BE PAVED INCLUDING THE SHOULDER WIDTH.
- PAVEMENT LENGTH (PL) - THE DISTANCE IN FEET MEASURED ALONG THE CENTERLINE OF A DRIVEWAY FROM THE HIGHWAY EDGE OF PAVEMENT TO THE END OF PROPOSED DRIVEWAY PAVEMENT.
- TRANSITION LENGTH (TL) - THE DISTANCE IN FEET MEASURED ALONG THE CENTERLINE OF A DRIVEWAY BEYOND THE DRIVEWAY PAVEMENT LENGTH (PL) TO THE END OF PROPOSED DRIVEWAY PAVEMENT. THE TRANSITION LENGTH (TL) IS ESPECIALLY USED FOR DRIVERS WHOSE DRIVEWAY IS IMPAVED.
- TRUCK STOP - A PHYSICAL DISTANCE SEPARATING THE PEDESTRIAN ACCESS ROUTE AND THE VEHICLE TRAVELED WAY. THE BUFFER ZONE BUFFERS PEDESTRIANS FROM TRAFFIC AND PROVIDES SPACE FOR SNOW STORAGE, UTILITIES, PLANTS, AND OTHER STREET APPURTENANCES. THE BUFFER ZONE MAY BE PAVED OR UNPAVED.
- SHARED-USE PATH (SUP) - A BI-CYCLE AND PEDESTRIAN FACILITY, TYPICALLY WITHIN THE DRIVEWAY, THAT IS SEPARATED FROM THE DRIVEWAY BY A CURB OR OTHER PHYSICAL BARRIER. SUPS ARE DESCRIBED IN THE NYS DOT HIGHWAY DESIGN MANUAL, CHAPTER 17 AND DEVELOPMENT OF BI-CYCLE FACILITIES FOR GUIDANCE ON BUFFER ZONE WIDTH AND SEPARATION OF SHARED USE PATHS FROM ROADWAYS.
- SIDEWALK - A SMOOTH, STABLE AND SLIP RESISTANT EXTERIOR PATHWAY INTENDED FOR PEDESTRIAN USE ALONG A VEHICULAR WAY SEPARATED WITH A CURB OFFSET.
- HMA - HOT MIX ASPHALT
- PCB - PORTLAND CEMENT CONCRETE

ELEMENT	DESIGN AND FIELD LAYOUT LIMIT		LIMIT FOR WORK ACCEPTANCE
	DESIGN	FIELD	
SIDEWALK CROSS SLOPE - SEE NOTE 12	1.5% MAX.	1.5% MAX.	2.0% MAX.
SIDEWALK CROSS (MINIMUM SLOPE) - SEE NOTE 11	4.5% MAX.	4.5% MAX.	5.0% MAX.
DRIVEWAY TRANSITION (MINIMUM SLOPE) - SEE NOTE 21	1.5% MAX.	1.5% MAX.	8.3% MAX.
BLENDED TRANSITION (MINIMUM SLOPE) - SEE NOTE 7	4.5% MAX.	4.5% MAX.	5.0% MAX.

ALL VALUES SHOWN ON THE 608-03 STANDARD SHEETS REFER TO STANDARD SHEET 608-01 SHEET 1 OF 9. NOTES REFERENCED IN THE TABLE ABOVE CAN BE FOUND ON STANDARD SHEETS REFER TO DESIGN AND FIELD LAYOUT LIMITS. FOR ADDITIONAL REQUIREMENTS AND TOLERANCES, SEE VERTICAL ELEMENTS FOR THE DESIGN, LAYOUT, AND FIELD LAYOUT LIMITS. FOR ADDITIONAL REQUIREMENTS AND TOLERANCES, SEE HORIZONTAL ELEMENTS FOR THE DESIGN, LAYOUT, AND FIELD LAYOUT LIMITS. FOR ADDITIONAL REQUIREMENTS AND TOLERANCES, SEE VERTICAL ELEMENTS FOR THE DESIGN, LAYOUT, AND FIELD LAYOUT LIMITS. FOR ADDITIONAL REQUIREMENTS AND TOLERANCES, SEE HORIZONTAL ELEMENTS FOR THE DESIGN, LAYOUT, AND FIELD LAYOUT LIMITS.

GENERAL NOTES FOR DRIVEWAY STANDARD SHEETS:

1. THE DRIVEWAY STANDARD SHEETS APPLY TO FIELD ENTRANCES, RESIDENTIAL DRIVEWAYS AND MINOR COMMERCIAL DRIVEWAYS. FIELD ENTRANCES AND RESIDENTIAL DRIVEWAYS ACCOMMODATE AN ARSITO PASSENGER OR LIGHT TRUCK VEHICLE. MINOR COMMERCIAL DRIVEWAYS ACCOMMODATE AN ARSITO SINGLE UNIT TRUCK DESIGN VEHICLE.
 2. DRIVEWAY PAVEMENT SHALL BE CONSTRUCTED ON AN EASEMENT OR A DRIVEWAY RELEASE. A DRIVEWAY RELEASE WILL REQUIRE A TEMPORARY EASEMENT MAP.
 3. IF COMMERCIAL PROPERTY DEVELOPMENT PLANS SHOW AN NEW OR MODIFIED ACCESS TO A STATE HIGHWAY A DRIVEWAY RELEASE WILL BE REQUIRED FOR THE DRIVEWAY. DRIVEWAY RELEASES SHALL BE SUBMITTED TO THE REGIONAL PERMIT COORDINATOR.
 4. SEE THE DRIVEWAY TABLE IN THE CONTRACT FOR USE SPECIFIED DRIVEWAY LOCATIONS, WIDTHS (PW), CROSS SECTIONS, LENGTHS, MINIMUM PAVING LIMITS, AND ENTRANCE TYPE.
 5. DETECTABLE WARNING SURFACES SHALL BE PROVIDED WHERE THE DRIVEWAY ENDS. DETECTABLE WARNING SURFACES SHALL BE PROVIDED WHERE THE DRIVEWAY ENDS. DETECTABLE WARNING SURFACES SHALL BE PROVIDED AT CROSSINGS OF UNCONTROLLED DRIVEWAY OPENINGS.
 6. THE UPPER METHOD IS GENERALLY NOT RECOMMENDED FOR DRIVEWAYS WITH A DRIVEWAY OFFSET LESS THAN 16 FEET, UNLESS IT CAN BE FIELD VERIFIED THAT THE DRIVEWAY ENTRANCE WIDTH WILL ACCOMMODATE THE VEHICLES THAT USE THE DRIVEWAY ON A REGULAR BASIS.
 7. TYPE 3 AND TYPE 4 DRIVEWAY ENTRANCES CAN BE USED WITHOUT CURB IF A TAPER STYLE ENTRANCE BETTER MATCHES THE HIGHWAY CORRIDOR AESTHETICS OR SPECIFIC SITE CONDITIONS THAN A RADIUS STYLE ENTRANCE.
 8. UP TO 10" OF PCB MAY BE REQUIRED FOR HEAVY TRUCKS PER CONTRACT DOCUMENTS.
 9. UP TO 9" OF PCB MAY BE REQUIRED FOR HEAVY TRUCKS PER CONTRACT DOCUMENTS.
 10. UP TO 12" OF SUBBASE MAY BE REQUIRED FOR HEAVY TRUCKS PER CONTRACT DOCUMENTS.
 11. THE DETAILS SHOW THE PAVEMENT LENGTH (PW) EXTENDING TO THE MINIMUM PAVING LIMIT (MPL). HOWEVER, THE PW CAN EXTEND BEYOND THE MPL AS SPECIFIED IN THE CONTRACT DOCUMENTS.
 12. THE DRIVEWAY TIP-UP SECTION SHOULD EXTEND TO A LOGICAL TERMINI EXAMPLE: SIDEWALK EDGE WHERE LENGTH FOR TAPERING THE TIP-UP SECTION BACK TO THE EDGE OF DRIVEWAY IS 3 TO 4 TIMES THE MINIMUM PAVING LIMIT. THE TIP-UP SECTION SHOULD BE USED TO PROVIDE A SMOOTH TRANSITION TO THE DRIVEWAY STANDARD SHEET 608-02 MISCELLANEOUS CURB DETAILS FOR THE CURB TRANSITION.
 13. TO DETERMINE THE LIMITS OF SHOULDER RECONSTRUCTION, REFER TO THE DRIVEWAY OPENING TABLES ON SHEET 4 FOR A SHOULDER OF OFFSET.
 14. FOR PCB SHOULDER, SEE STANDARD SHEET 508-02 FOR UNCONDITIONAL JOINT THE DETAILS.
 15. DIMENSIONS AND ANGLES MAY BE INTERPOLATED FOR VALUES OTHER THAN THOSE SHOWN IN THE TABLES.
 16. THE SHOULDER PAVEMENT THICKNESSES SHOWN ARE DEFAULT VALUES UNLESS OTHERWISE SHOWN IN THE PLANS. MATERIALS SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.
- WIDTH / LENGTH**
17. THESE ARE THE CONSTRAINTS THAT PRESENT THE CONSTRAINTS OF THE DRIVEWAY OPENING LIMITS. EITHER BY THE LAYOUT METHODS. THE ENGINEER MAY SPECIFY A SMALL CORNER CURB RADIUS OF 2' OR A 1/2" BULL NOSE CURB ALONG LOW SPEED HIGHWAYS, PROVIDED THE DRIVEWAY OPENING MEETS THE REQUIREMENTS OF THE "DRIVEWAY OPENING" TABLES ON SHEET 4.
 18. FOR RESIDENTIAL DRIVEWAYS, THE MINIMUM PAVING LIMIT SHALL BE 10' FROM THE OUTSIDE EDGE OF TRAVEL LANE OR 2' BEHIND ANY SIDEWALK, IF PRESENT, WHICHEVER IS GREATER. FOR MINOR COMMERCIAL DRIVEWAYS, THE MINIMUM PAVING LIMIT SHALL BE 10' FROM THE OUTSIDE EDGE OF TRAVEL LANE OR 2' BEHIND ANY SIDEWALK, IF PRESENT, WHICHEVER IS GREATER. THE MINIMUM PAVING LIMIT MAY EXTEND BEYOND THE MINIMUM PAVING LIMIT FOR NEW DRIVEWAYS AND TO TRANSITION TO THE DRIVEWAY STANDARD SHEET 608-02 MISCELLANEOUS CURB DETAILS FOR THE CURB TRANSITION.
 19. FOR FIELD AND OBSTRUCTION REQUIREMENTS OF TRANSITIONS FROM PAVED HMA TO EXISTING HMA DRIVEWAYS, REFER TO DETAIL 9 - "TRANSITION TO EXISTING DRIVEWAYS" ON SHEET 5A AND TABLE 3.
 20. FOR PCB DRIVEWAYS, REFER TO THE 608 SERIES STANDARD SHEETS FOR METAL REINFORCEMENT, JOINT TIES, SAWING AND SEALING, ETC.
 21. A 5' MINIMUM BUFFER ZONE SHALL BE USED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

SITE CONDITIONS SIDEWALK / CURB

22. ANY PCB SIDEWALK WHICH CROSSES A DRIVEWAY SHALL HAVE A MINIMUM THICKNESS OF 6" AND INCLUDE STEEL MESH REINFORCEMENT WITH 3" OF TOP COVER.
 23. FOR GRADE CHANGES REFER TO THE DRIVEWAY PROFILES ON SHEET 8. VERTICAL CURVES ARE RECOMMENDED TO CONNECT TANGENTS. SEE TABLE 5 - MINIMUM LENGTH OF VERTICAL CURVE ON SHEET 2 FOR TYPICAL VERTICAL CURVE LENGTHS "L".
 24. MATCH THE EXISTING GRADE OF THE DRIVEWAY PROFILE TO THE EXISTING DRIVEWAY PROFILE GRADE. WHERE THE EXISTING GRADE OF THE DRIVEWAY PROFILE IS LESS THAN OR EQUAL TO 2%, MATCH THE EXISTING GRADE OF THE DRIVEWAY PROFILE TO THE EXISTING DRIVEWAY PROFILE GRADE. WHERE THE EXISTING GRADE OF THE DRIVEWAY PROFILE EXCEEDS 2% SAW TO THE DRIVEWAY AND RECONSTRUCT A MINIMUM OF 2' ON BOTH SIDES OF THE SIDEWALK TO TRANSITION FROM THE EXISTING GRADE OF THE DRIVEWAY PROFILE TO THE SIDEWALK CROSS SLOPE.
 26. TO PREVENT DRIVEWAY GRADES FROM EXCEEDING THE VALUES IN TABLE 2 - MAXIMUM DRIVEWAY GRADES, THE DRIVEWAY GRADES SHALL BE THE LEAST RUNNING SLOPE PROSSES WITH A MAXIMUM DESIGN AND LAYOUT SLOPE OF 7.5%. THE RUNNING SLOPE FOR WORK ACCEPTANCE SHALL BE A MAXIMUM OF 8.3% WHERE EXISTING CONDITIONS DO NOT ALLOW THE RUNNING SLOPE TO BE EXCEEDED. THE RUNNING SLOPE SHALL NOT EXCEED 15'-3" FOR DESIGN AND LAYOUT. THE RAMP LENGTH SHALL NOT BE REQUIRED TO EXCEED 15'-3" FOR WORK ACCEPTANCE.
 27. WHERE DRAINAGE IS CARRIED ALONG THE CURB, CONSTRUCT THE DRIVEWAY WITH A SHORT UPGRADE TO PREVENT RUNOFF FROM TROWING AT THE DRIVEWAY ENTRANCE. PLANT DRIVEWAYS OR TO PROVIDE DRAINAGE ALONG THE DRIVEWAY. DRIVEWAYS WITH CURB SHALL HAVE DRAINAGE CURB ACROSS THE DRIVEWAY OPENING. TYPICALLY, CURB REVEAL WILL NOT BE CONSTRUCTED IN URBAN AREAS. CURB REVEAL IS SPECIFIED FOR A SPECIFIC DRIVEWAY. IT WILL BE NOTED IN THE DRIVEWAY TABLE OF THE CONTRACT PLANS IN THE COMMENTS COLUMN.
- ENTRANCE TYPE:**
28. THE ENGINEER MAY INTERCHANGE TYPE 1, TYPE 3 AND TYPE 4 RESIDENTIAL DRIVEWAYS TO BETTER MATCH THE EXISTING ENTRANCE TYPES ALONG THE HIGHWAY CORRIDOR. WHILE THE DRIVEWAY TYPE SHALL COMPLY WITH TABLE 1 - DRIVEWAY ENTRANCE TYPE SELECTION ON SHEET 2.
 29. FOR DRIVEWAYS WITH VARYING WIDTHS AND/OR CURVED ALIGNMENTS, DETERMINE THE DRIVEWAY WIDTH AND CORNER ANGLE 20'-0" FROM THE EDGE OF TRAVEL LANE.
 30. FOR A ONE-WAY DRIVEWAY ENTRANCE OR EXIT, THE DRIVEWAY ENTRANCE WIDTHING IS ONLY NECESSARY ON ONE SIDE OF THE DRIVEWAY TO ACCOMMODATE THE SHARPER TURNING MOVEMENT. ONE-WAY DRIVEWAYS WILL BE IDENTIFIED ON THE DRIVEWAY TABLE OF THE CONTRACT PLANS. DRIVEWAYS WITH TWO-WAY TRAFFIC SHALL BE IDENTIFIED ON THE DRIVEWAY TABLE OF 2' OR 1/2" BULL NOSE CURB ALONG LOW SPEED HIGHWAYS SHALL BE CONSTRUCTED TO ELIMINATE A SHARP CORNER BEND IN THE CURB LINE WHICH IS SAFER FOR SHOULDER OPERATIONS.
- MATERIALS**
31. FOR DRIVEWAY MATERIAL REQUIREMENTS, USE TABLE 3 - DRIVEWAY MATERIALS AND THICKNESS' ON SHEET 2.
 32. FOR FIELD ENTRANCES, THE MATERIAL WITHIN THE PAVEMENT LENGTH (PW) CAN CONSIST OF GRAVEL OR STONE AND BE CONCRETE TO THE EDGE OF THE HIGHWAY. SHOULDER WITHOUT REMOVING ANY OF THE EXISTING SHOULDER MATERIAL.

NEW YORK
Department of
Transportation

U.S. CUSTOMARY STANDARD SHEET

RESIDENTIAL AND MINOR COMMERCIAL DRIVEWAYS
(SHEET 1 OF 9)

APPROVED MARCH 07, 2016

/S/ RICHARD M. LEE, P.E.

DEPUTY CHIEF ENGINEER

DESIGN

ISSUED UNDER EB 16-012

608-03

**TABLE 3
DRIVEWAY MATERIALS AND THICKNESS**

PROPOSED OR EXISTING DRIVE	WITHIN DRIVEWAY PAVEMENT LENGTH (FPL*)		WITHIN TRANSITION LENGTH (TLM*)		THICKNESS FOR MINOR COMMERCIAL (IN)
	MATERIAL	THICKNESS FOR RESIDENTIAL (IN)	MATERIAL	THICKNESS FOR RESIDENTIAL (IN)	
DIRTY, GRAVEL, OR GRAVEL	HMA	3	4	6	9
	SUBBASE COURSE	6	8	6	9
STONE	HMA	3	4	6	11
	SUBBASE COURSE	6	8	6	11
HMA RESURFACING	HMA	1 1/2	1 1/2	1 1/2	NOT APPLICABLE - ALL WORK ON AN EXISTING PAVED DRIVEWAY IS WITHIN THE DRIVEWAY PAVEMENT LENGTH
	TRIPLE AND LEVING COURSE	AS NECESSARY	AS NECESSARY	AS NECESSARY	NOT APPLICABLE - ALL WORK ON AN EXISTING PAVED DRIVEWAY IS WITHIN THE DRIVEWAY PAVEMENT LENGTH
HMA RECONSTRUCTION	HMA	3	4 (SEE NOTE 8)	6	NOT APPLICABLE - ALL WORK ON AN EXISTING PAVED DRIVEWAY IS WITHIN THE DRIVEWAY PAVEMENT LENGTH
	SUBBASE COURSE	6	8 (SEE NOTE 10)	6	NOT APPLICABLE - ALL WORK ON AN EXISTING PAVED DRIVEWAY IS WITHIN THE DRIVEWAY PAVEMENT LENGTH
PCC	PCC	6	6 (SEE NOTE 9)	6	NOT APPLICABLE - ALL WORK ON AN EXISTING PAVED DRIVEWAY IS WITHIN THE DRIVEWAY PAVEMENT LENGTH
	SUBBASE COURSE	6	8 (SEE NOTE 10)	6	NOT APPLICABLE - ALL WORK ON AN EXISTING PAVED DRIVEWAY IS WITHIN THE DRIVEWAY PAVEMENT LENGTH

**TABLE 2
MAXIMUM DRIVEWAY SLOPE**

ROADWAY CLASSIFICATION	MINOR COMMERCIAL DRIVEWAY	RESIDENTIAL DRIVEWAY
RURAL	10%	12%
URBAN	6%	6%

**TABLE 1
RECOMMENDED DRIVEWAY WIDTH "W"**

DRIVEWAY CLASSIFICATION	PERMISSIBLE RANGE OF WIDTHS (FT) WITHIN 30 FT. OF POSTED 40 MPH OR LESS	PERMISSIBLE RANGE OF WIDTHS (FT) WITHIN 30 FT. OF POSTED 45 MPH OR MORE
RESIDENTIAL LESS THAN 50 FT. IN LENGTH MEASURED ALONG THE CENTERLINE	9 TO 12	10 TO 24
RESIDENTIAL GREATER THAN 50 FT. IN LENGTH MEASURED ALONG THE CENTERLINE	9 TO 12	10 TO 14
MINOR COMMERCIAL	22 TO 30	28 TO 35
MINOR COMMERCIAL DIVIDED OR ONE-WAY DRIVEWAY	12 TO 24	12 TO 24
MULTY-LANE DRIVEWAY	12 TO 15 EACH LANE	14 TO 16 EACH LANE

**TABLE 4
DRIVEWAY ENTRANCE TYPE SELECTION**

ENTRANCE TYPE	CONDITIONS FOR USE						RECOMMENDED USE
	DRIVEWAY CLASSIFICATION (NOTE 1)	CORNER ANGLE	TRAVEL LANE AND SHOULDER WIDTH	CURB	SIDEWALK	HIGHWAY DESIGN SPEED	
TYPE 1	RESIDENTIAL OR MINOR COMMERCIAL	60° TO 120°	ANY	USE WITH OR WITHOUT CURB	USE WITHOUT SIDEWALK	ANY SPEED	RECOMMENDED FOR ALL LOCATIONS EXCEPT FOR MINOR COMMERCIAL WITH CURB
TYPE 2	MINOR COMMERCIAL ONLY	60° TO 120°	ANY	USE ONLY WITH CURB	USE WITH OR WITHOUT SIDEWALK	ANY SPEED	RECOMMENDED ONLY FOR MINOR COMMERCIAL WITH CURB
TYPE 3	RESIDENTIAL OR MINOR COMMERCIAL	80° TO 100°	18' OR GREATER (SEE NOTE 6)	USE ONLY WITH CURB (SEE NOTE 6)	USE ONLY WITH SIDEWALK OR GREATER THAN THE EDGE OF PAVEMENT OR WITHOUT SIDEWALK	ONLY LOW SPEED (45 MPH OR LESS)	ALTERNATIVE ENTRANCE TYPE (TYPICALLY FOR URBAN AREA USE)
TYPE 4	RESIDENTIAL OR MINOR COMMERCIAL	80° TO 100°	15' OR GREATER (SEE NOTE 6)	USE ONLY WITH CURB (SEE NOTE 6)	USE ONLY WITH SIDEWALK OR GREATER THAN THE EDGE OF PAVEMENT	ONLY LOW SPEED (45 MPH OR LESS)	ALTERNATIVE ENTRANCE TYPE (TYPICALLY FOR URBAN AREA USE)


TABLE 4 ONLY APPLIES TO RESIDENTIAL AND MINOR COMMERCIAL DRIVEWAYS. FOR OTHER DRIVEWAY CLASSIFICATIONS MAJOR COMMERCIAL, FIELD ENTRANCE, ETC., REFER TO THE HHSOT HIGHWAY DESIGN MANUAL, CHAPTER 5, APPENDIX 5A - POLICY AND STANDARDS FOR THE DESIGN OF ENTRANCES TO STATE HIGHWAYS.

NOTE:
ALL GENERAL NOTES AND ABBREVIATIONS REFERENCED ON THIS SHEET CAN BE FOUND ON STANDARD SHEET 608-03, SHEET 1 OF 5.

**TABLE 5
MINIMUM LENGTH OF VERTICAL CURVE, L_v
FOR CHANGE IN GRADE IN DRIVEWAY PROFILE**

CHANGES IN GRADE AT 1' INTERVAL	CRIST. LC (FT)	SAG. LC (FT)
4-5%	6	6
5-6%	6	7
6-7%	6	8
7-8%	6	8
8-9%	6	8
9-10%	6	8
10-11%	6	8
11-12%	6	8
12-13%	6	8
13-14%	6	8
14-15%	6	8
15-16%	6	8
16-17%	6	8
17-18%	6	8
18-19%	6	8
19-20%	6	8

LENGTH OF VERTICAL CURVE BASED ON 35' CURVE RADIUS AND THE AASHTO PASSENGER VEHICLE AND SINGLE UNIT TRUCK CLEARANCES.



NEW YORK
STATE OF
OPPORTUNITY

**Department of
Transportation**

U.S. CUSTOMARY STANDARD SHEET

**RESIDENTIAL AND MINOR COMMERCIAL DRIVEWAYS
(SHEET 2 OF 5)**

APPROVED MARCH 07, 2016

J.S. RICHMOND W. LEE, P.E.
DEPUTY CHIEF ENGINEER
DESIGN

ISSUED UNDER EB 15-012

608-03

**TABLE 8
TAPER METHOD VALUES**

DRIVEWAY CLASSIFICATION	TAPER (1:FT)	LAYOUT DISTANCE
RESIDENTIAL	1:2	20'
MINOR COMMERCIAL	1 1/2"	41'

LAYOUT DISTANCE IS MEASURED FROM THE INSIDE EDGE OF OUTERMOST TRAVEL LANE TO THE LAYOUT LINE.

**TABLE 7
RADIUS METHOD - DISTANCE FROM INTERSECTION POINT TO ARC TANGENT POINT**

CORNER ANGLE	*X" FT.	
	RESIDENTIAL DRIVEWAY (R=18')	MINOR COMMERCIAL DRIVEWAY (R=33')
60°	27.7	22.5
65°	25.1	20.4
70°	22.8	18.6
75°	20.8	16.9
80°	19.1	15.5
85°	17.5	14.2
90°	16.0	13.0
95°	14.7	11.9
100°	13.4	10.9
105°	12.3	10.0
110°	11.2	9.1
115°	10.2	8.3
120°	9.2	7.5

SEE GENERAL NOTE 15.
*X" REFERS TO EITHER *X"_{IN} OR *X"_{OUT}. THE CORNER ANGLE FOR *X"_{IN} + *X"_{OUT} IS EQUAL TO 180°.

**TABLE 6
RADIUS METHOD - CORNER RADIUS**

DRIVEWAY CLASSIFICATION	"R"
RESIDENTIAL *R' ≤ 13'	18'
RESIDENTIAL *R' > 13'	13'
MINOR COMMERCIAL (ALL WIDTHS)	33'

DRIVEWAY OPENING LAYOUT.
THERE ARE TWO RECOMMENDED DRIVEWAY OPENING WIDENING METHODS:
1) THE RADIUS METHOD, WHICH UTILIZES A CIRCULAR ARC TO WIDEN THE DRIVEWAY, AND ESTABLISHED LANE RATE.
2) THE TAPER METHOD, WHICH UTILIZES A STRAIGHT TAPER WIDENING OUT AT AN ESTABLISHED LANE RATE.
THE RADIUS METHOD IS THE TYPICAL METHOD, ALTHOUGH THE TAPER METHOD IS A RECOMMENDABLE ALTERNATIVE FOR URBAN AREAS AND OTHER AREAS WHERE IT MIGHT BETTER MATCH THE HIGHWAY CORRIDOR AESTHETICS AND FUNCTIONALITY. SEE TABLE 4 - DRIVEWAY WIDENING TYPE SELECTION ON SHEET 2 FOR ADDITIONAL VARIABLES CONCERNING THE SELECTION OF A DRIVEWAY OPENING WIDENING METHOD.

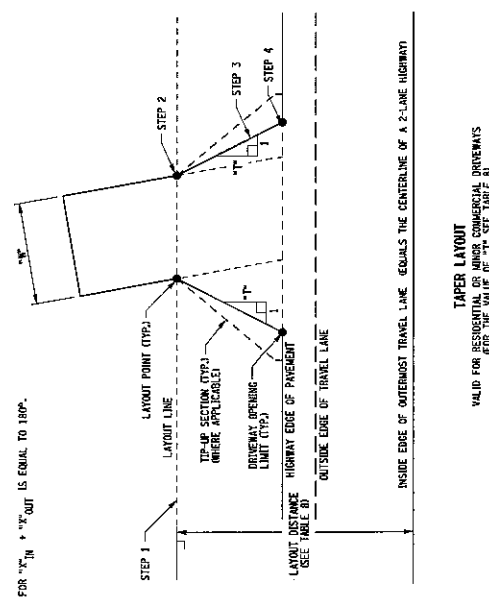
- RADIUS METHOD OF LAYOUT:**
- LOCATE AN OFFSET LINE 11' PARALLEL FROM THE INSIDE EDGE OF THE OUTERMOST TRAVEL LANE.
 - SCRIBE A LINE PARALLEL TO THE OFFSET LINE, OFFSET "R" FEET (SEE TABLE 6).
 - SCRIBE A LINE PARALLEL TO THE EDGE OF DRIVEWAY (NEAR SIDE), OFFSET "R" FEET.
 - FIND THE CENTER POINT OF THE CORNER RADIUS ARC, WHICH IS LOCATED AT THE INTERSECTION OF THE LINES FROM STEPS 2 AND 3.
 - FROM THE CENTER POINT, SCRIBE AN ARC WITH RADIUS "R", WHICH IS TANGENT TO BOTH LINES OF THE DRIVEWAY. LOCATE POINTS OF INTERSECTION OF THE ARC WITH THE LINES OF THE DRIVEWAY. THE DISTANCES FROM THE CENTER POINT TO THE EDGE OF TRAVEL LANES AND THE PROJECTED EDGE OF DRIVEWAY TO EITHER OF THE PROJECTED ENDS OF DRIVEWAY.
 - FIND THE DRIVEWAY OPENING LIMIT POINT WHICH IS WHERE THE ARC INTERSECTS THE HIGHWAY EDGE OF PAVEMENT.
 - REPEAT STEPS 1 - 6 FOR THE OTHER SIDE OF THE DRIVEWAY OPENING.

FIELD LAYOUT NOTES:
FOR THE RADIUS METHOD OF LAYOUT, IF OBSTRUCTIONS HINDER THE ABILITY TO SCRIBE THE CORNER ANGLE ARC FROM THE CENTER POINT, LOCATE POINTS ALONG THE DRIVEWAY OPENING LIMIT LINE AND VARIOUS DRIVEWAY OFFSETS ("X") IS MEASURED FROM THE PROJECTED EDGE OF DRIVEWAY TO THE ARC.

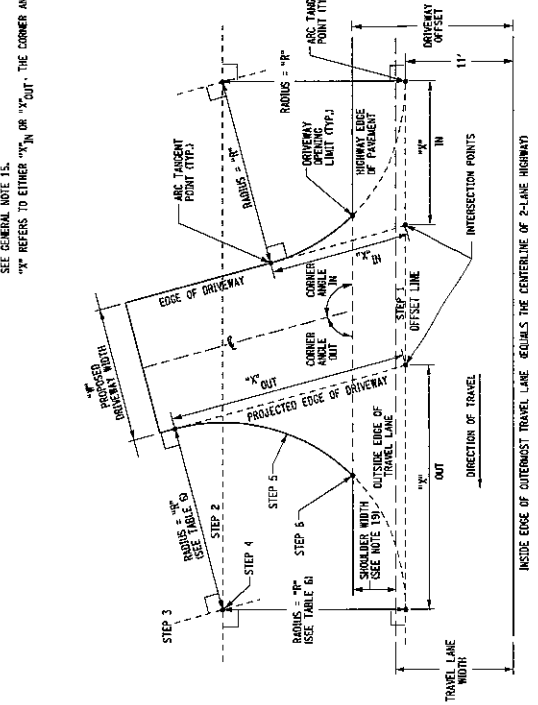
- TAPER METHOD OF LAYOUT:**
- TAPER METHOD OF LAYOUT IS NOT RECOMMENDED FOR DRIVEWAYS WITH CORNER ANGLES LESS THAN 90° OR GREATER THAN 120°. AND IS NOT RECOMMENDED FOR DRIVEWAYS WITH A DRIVEWAY OPENING WIDTH THAT IS GREATER THAN THE DRIVEWAY ENTHRANCE WIDTH. VEHICLES THAT USE THE DRIVEWAY ON A REGULAR BASIS.
- SCRIBE A LINE (LAYOUT LINES) OFFSET THE APPROPRIATE "LAYOUT DISTANCE" (SEE TABLE 8) FROM THE INSIDE EDGE OF THE OUTERMOST TRAVEL LANE.
 - LOCATE THE TAPER LAYOUT POINT, WHICH IS AT THE INTERSECTION OF THE EDGE OF DRIVEWAY AND THE LAYOUT LINE.
 - SCRIBE A 1:FT TAPER FROM THE LAYOUT POINT TO THE EDGE OF TRAVEL LANE, PARALLEL WITH "Y" BEING PERPENDICULAR TO THE EDGE OF TRAVEL LANE.
 - FIND THE DRIVEWAY OPENING LIMIT POINT WHICH IS WHERE THE TAPER INTERSECTS THE EDGE OF PAVEMENT.
 - REPEAT STEPS 1 - 4 FOR THE OTHER SIDE OF THE DRIVEWAY OPENING.

ALTERNATE TAPER METHOD OF LAYOUT:
FOLLOW THE STEPS 1 AND 2 ABOVE. TAPER LAYOUT METHOD, OFFSET FOR STEPS 3 AND 4. LOCATE THE DRIVEWAY OPENING LIMIT BY USING THE APPROPRIATE "LAYOUT DISTANCE" FROM EITHER TABLE 12 OR 13 ON SHEET 4. "Y" IS THE DISTANCE BETWEEN THE DRIVEWAY OPENING LIMIT POINT TO THE INTERSECTION POINT OF THE PROJECTED EDGE OF DRIVEWAY AND THE EDGE OF PAVEMENT.

NOTE:
ALL GENERAL NOTES AND ABBREVIATIONS REFERENCED ON THIS SHEET CAN BE FOUND ON STANDARD SHEET 608-03, SHEET 1 OF 5.



TAPER LAYOUT
VALID FOR RESIDENTIAL OR MINOR COMMERCIAL DRIVEWAYS
(FOR THE VALUE OF "Y" SEE TABLE 8)



RADIUS LAYOUT
VALID FOR RESIDENTIAL OR MINOR COMMERCIAL DRIVEWAYS
(FOR THE VALUES OF "R" AND "X" SEE TABLES 6 AND 7, RESPECTIVELY)

NEW YORK
STATE OF
OPPORTUNITY

**Department of
Transportation**

U.S. CUSTOMARY STANDARD SHEET

RESIDENTIAL AND MINOR COMMERCIAL DRIVEWAYS
(SHEET 3 OF 9)

APPROVED MARCH 01, 2016
/S/ RICHARD W. LEE, P.E.
DEPUTY CHIEF ENGINEER
(DESIGN)

ISSUED UNDER EB 15-012
608-03

TABLE 9
DRIVEWAY OPENING ** FT/L VALUES FOR TAPER METHOD
RESIDENTIAL DRIVEWAYS $\leq 13'$ WIDE (R-167)

CORNER ANGLE	DRIVEWAY OFFSET FROM INSIDE EDGE OF TRAVEL LANE OR OFFSET FROM OUTSIDE EDGE OF A 12' TRAVEL LANE											
	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'
60°	22.3	19.1	17.4	15.7	14.1	12.5	11.2	9.8	8.9	7.9	6.9	6.2
65°	19.7	17.1	15.1	13.5	11.8	10.5	9.2	8.2	7.2	6.2	5.2	4.2
70°	17.7	15.1	13.1	11.5	10.2	8.9	7.9	6.8	5.9	4.9	4.2	3.3
75°	15.7	13.1	11.5	9.8	8.5	7.2	6.2	5.2	4.6	3.9	3.3	2.6
80°	14.1	11.5	9.8	8.2	7.2	5.9	5.2	4.3	3.6	3.0	2.3	1.6
85°	12.5	10.2	8.5	6.9	5.9	4.9	4.3	3.3	2.6	2.0	1.6	1.0
90°	10.8	8.2	7.2	5.9	4.9	3.9	3.3	2.6	2.0	1.6	1.0	0.7
95°	9.5	7.5	6.5	5.2	4.3	3.3	2.6	2.0	1.6	1.0	0.7	0.3
100°	8.5	6.8	5.9	4.6	3.9	3.0	2.3	1.6	1.3	1.0	0.7	0.3
105°	7.2	5.8	4.9	3.9	3.0	2.3	1.6	1.3	1.0	0.7	0.3	0.0
110°	6.6	4.8	3.9	3.0	2.3	1.6	1.0	0.7	0.3	0.0	0.0	0.0
115°	5.6	3.6	2.6	1.6	1.0	0.7	0.3	0.0	0.0	0.0	0.0	0.0
120°	4.6	3.0	2.0	1.3	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0

TABLE 10
DRIVEWAY OPENING ** FT/L VALUES FOR RADIUS METHOD
RESIDENTIAL DRIVEWAYS $> 13'$ WIDE (R-167)

CORNER ANGLE	DRIVEWAY OFFSET FROM INSIDE EDGE OF TRAVEL LANE OR OFFSET FROM OUTSIDE EDGE OF A 12' TRAVEL LANE											
	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'
60°	17.4	14.8	12.8	11.2	9.8	8.5	7.2	6.2	5.2	4.5	3.8	3.2
65°	15.4	12.8	11.2	9.5	8.2	6.9	5.9	4.9	4.3	3.3	2.6	2.0
70°	13.5	11.2	9.5	8.2	6.9	5.6	4.6	3.9	3.3	2.3	1.6	1.0
75°	12.1	9.8	8.2	6.9	5.6	4.6	3.6	3.0	2.3	1.6	1.0	0.7
80°	10.8	8.5	6.9	5.6	4.6	3.6	3.0	2.3	1.6	1.3	1.0	0.7
85°	9.2	7.2	5.6	4.6	3.6	3.0	2.3	1.6	1.3	1.0	0.7	0.3
90°	8.2	6.2	4.9	3.9	3.0	2.3	1.6	1.3	1.0	0.7	0.3	0.0
95°	7.2	5.2	4.3	3.3	2.3	1.6	1.3	1.0	0.7	0.3	0.0	0.0
100°	6.2	4.2	3.3	2.3	1.6	1.3	1.0	0.7	0.3	0.0	0.0	0.0
105°	5.2	3.2	2.3	1.6	1.3	1.0	0.7	0.3	0.0	0.0	0.0	0.0
110°	4.2	2.2	1.6	1.0	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0
115°	3.2	1.6	1.0	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	2.2	1.0	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TABLE 11
DRIVEWAY OPENING ** FT/L VALUES FOR RADIUS METHOD
MINOR COMMERCIAL DRIVEWAYS (R-337)

CORNER ANGLE	DRIVEWAY OFFSET FROM INSIDE EDGE OF TRAVEL LANE OR OFFSET FROM OUTSIDE EDGE OF A 12' TRAVEL LANE											
	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'
60°	48.2	44.6	41.7	39.0	36.7	34.8	32.8	31.2	29.3	27.8	26.2	24.7
65°	43.5	39.4	36.1	34.1	32.2	30.3	28.2	26.5	24.9	23.6	22.3	21.0
70°	38.7	35.1	32.2	29.9	27.9	25.9	24.3	22.6	21.0	19.4	18.0	16.7
75°	34.2	31.2	28.5	26.3	24.3	22.6	21.0	19.4	18.0	16.7	15.7	14.7
80°	31.2	27.6	24.6	22.0	20.0	18.0	16.7	15.1	13.8	12.8	11.5	10.5
85°	27.9	24.6	21.4	18.8	17.4	15.7	14.1	12.8	11.5	10.5	9.5	8.5
90°	24.9	21.7	18.4	15.7	14.1	12.8	11.5	10.5	9.5	8.5	7.5	6.9
95°	22.9	19.0	16.7	14.8	12.8	11.2	9.8	8.9	7.5	6.8	5.9	5.2
100°	17.1	14.8	12.5	10.8	9.2	8.2	6.9	5.9	5.2	4.6	3.9	3.2
105°	15.4	12.5	10.2	8.9	7.5	6.6	5.6	4.6	3.9	3.3	2.6	2.0
110°	13.5	10.8	8.9	7.2	5.9	4.9	4.3	3.3	2.6	2.0	1.6	1.0
115°	11.5	8.9	7.2	5.6	4.6	3.6	3.0	2.3	1.6	1.3	1.0	0.7
120°	9.5	7.2	5.6	4.6	3.6	3.0	2.3	1.6	1.3	1.0	0.7	0.3

TABLE 12
DRIVEWAY OPENING ** FT/L VALUES FOR TAPER METHOD
RESIDENTIAL DRIVEWAYS

CORNER ANGLE	DRIVEWAY OFFSET FROM INSIDE EDGE OF TRAVEL LANE OR OFFSET FROM OUTSIDE EDGE OF A 12' TRAVEL LANE											
	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'
60°	11.2	10.5	9.8	9.2	8.5	7.9	7.2	6.6	6.0	5.2	4.5	3.9
65°	9.8	9.2	8.5	7.9	7.5	6.9	6.2	5.6	5.2	4.5	3.9	3.3
70°	8.2	7.8	7.2	6.8	6.2	5.9	5.2	4.8	4.3	3.9	3.3	2.6
75°	6.9	6.6	6.2	5.8	5.2	4.9	4.3	3.9	3.6	3.3	3.0	2.3
80°	5.6	5.2	4.8	4.6	4.3	3.9	3.6	3.3	3.0	2.6	2.3	1.6

TABLE 13
DRIVEWAY OPENING ** FT/L VALUES FOR TAPER METHOD
MINOR COMMERCIAL DRIVEWAYS

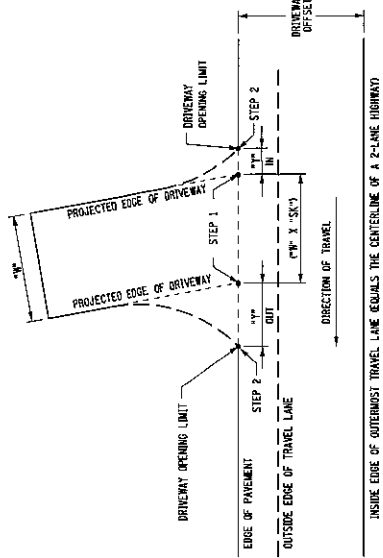
CORNER ANGLE	DRIVEWAY OFFSET FROM INSIDE EDGE OF TRAVEL LANE OR OFFSET FROM OUTSIDE EDGE OF A 12' TRAVEL LANE											
	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'
60°	24.5	24.3	24.3	23.6	23.7	23.0	22.0	21.4	18.4	17.4	16.7	16.7
65°	22.5	21.1	21.0	20.0	19.4	18.3	18.0	17.1	16.4	15.7	15.1	15.1
70°	19.7	19.0	18.4	17.7	17.1	16.4	15.7	15.1	14.4	13.8	13.3	13.3
75°	17.4	16.7	16.1	15.4	15.1	14.4	13.8	13.3	12.8	12.1	11.5	11.5
80°	14.8	14.1	13.8	13.1	12.8	12.1	11.8	11.2	10.8	10.2	9.8	9.8

TABLE 14
DRIVEWAY OPENING WIDTH = ** IN + $(^{**}$ IN \times ** IN) \times ** IN

CORNER ANGLE	60°/120°	65°/115°	70°/110°	75°/105°	80°/100°	85°/95°	90°
SKEN FACTOR ** IN	1.16	1.10	1.01	1.04	1.02	1.01	1.00

THE DRIVEWAY IS A ONE-WAY ENTRANCE OR EXIT, THEN ** IN OUT OR ** IN, RESPECTIVELY, IS NOT USED. THE DRIVEWAY IS A TWO-WAY ENTRANCE OR EXIT, THEN ** IN OUT OR ** IN, RESPECTIVELY, IS NOT USED. THE DRIVEWAY IS A ONE-WAY ENTRANCE OR EXIT, THEN ** IN OUT OR ** IN, RESPECTIVELY, IS NOT USED. THE DRIVEWAY IS A TWO-WAY ENTRANCE OR EXIT, THEN ** IN OUT OR ** IN, RESPECTIVELY, IS NOT USED. THE DRIVEWAY IS A ONE-WAY ENTRANCE OR EXIT, THEN ** IN OUT OR ** IN, RESPECTIVELY, IS NOT USED. THE DRIVEWAY IS A TWO-WAY ENTRANCE OR EXIT, THEN ** IN OUT OR ** IN, RESPECTIVELY, IS NOT USED.

NOTES SPECIFIC TO TABLES 9 THROUGH 14:
TABLES 9 THROUGH 14 ARE FOR PRELIMINARY CURB LINE LAYOUT OF THE DRIVEWAY OPENING WIDTHS. USE THE LAYOUT METHOD DESCRIBED ON SHEET 3 FOR FINAL DRIVEWAY LAYOUT. ALTHOUGH THE DRIVEWAY OPENING LIMITS SHOULD MATCH BETWEEN THE PRELIMINARY AND FINAL LAYOUT METHODS, THE DRIVEWAY OPENING WIDTHS DEPEND ON THE DRIVEWAY ENTRANCE WIDENING METHOD USED (RADIUS OR TAPER). THE TAPER METHOD GENERALLY WILL PROVIDE A MORE NARROW DRIVEWAY WIDTH.
 ** IN REFERS TO EITHER ** IN OR ** OUT.
SEE GENERAL NOTE 15.



PRELIMINARY DRIVEWAY OPENING LAYOUT
ALTHOUGH THE DETAIL ONLY SHOWS A RADIUS ENTRANCE TYPE, THE DETAIL APPLIES TO BOTH RADIUS AND TAPER METHODS OF LAYOUT. FOR THE VALUES OF ** IN, REFER TO TABLES 9 THROUGH 13. FOR THE VALUE OF ** IN, REFER TO TABLE 14.

NEW YORK
STATE OF
OPPORTUNITY

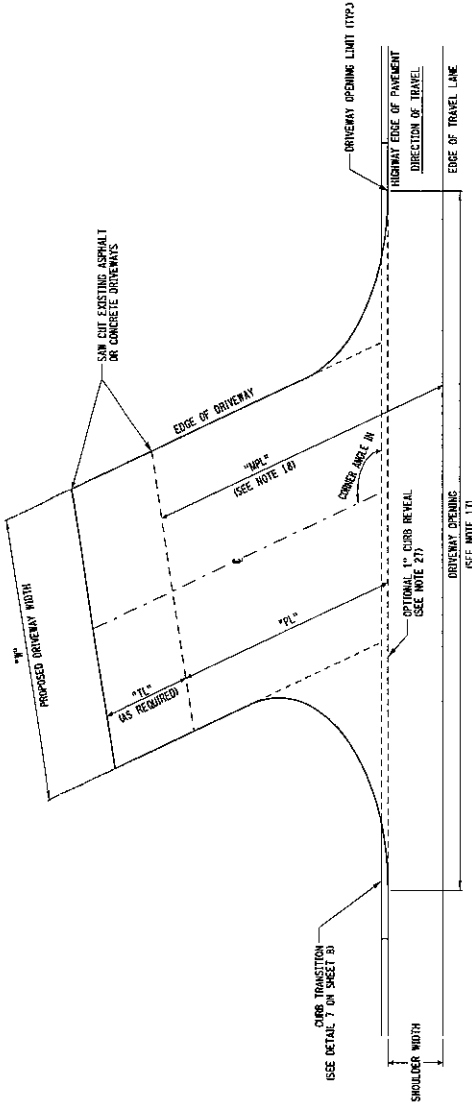
Department of Transportation

U.S. CUSTOMARY STANDARD SHEET

RESIDENTIAL AND MINOR COMMERCIAL DRIVEWAYS
(SHEET 4 OF 9)

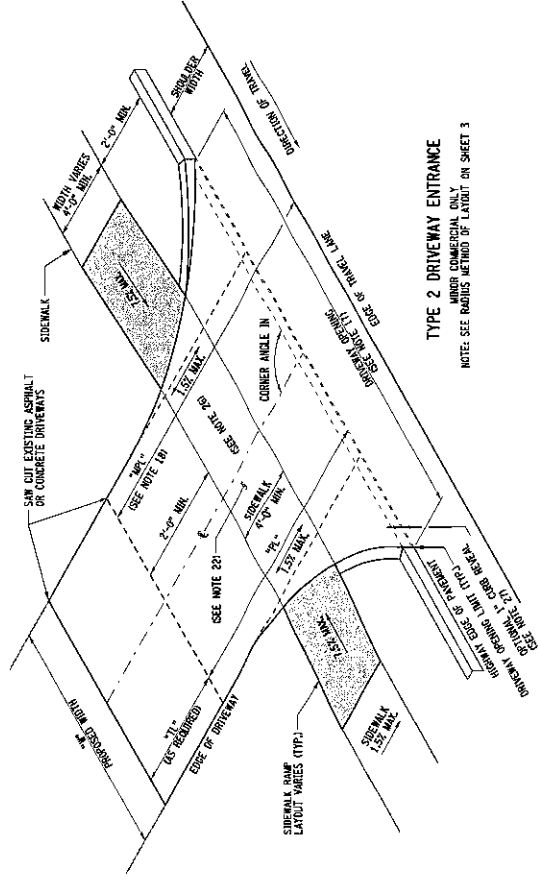
APPROVED MARCH 07, 2016
/S/ RICHARD W. LEE, P.E.
DEPUTY CHIEF ENGINEER (DESIGN)

ISSUED UNDER E6 16-012
608-03



TYPE 1 DRIVEWAY ENTRANCE

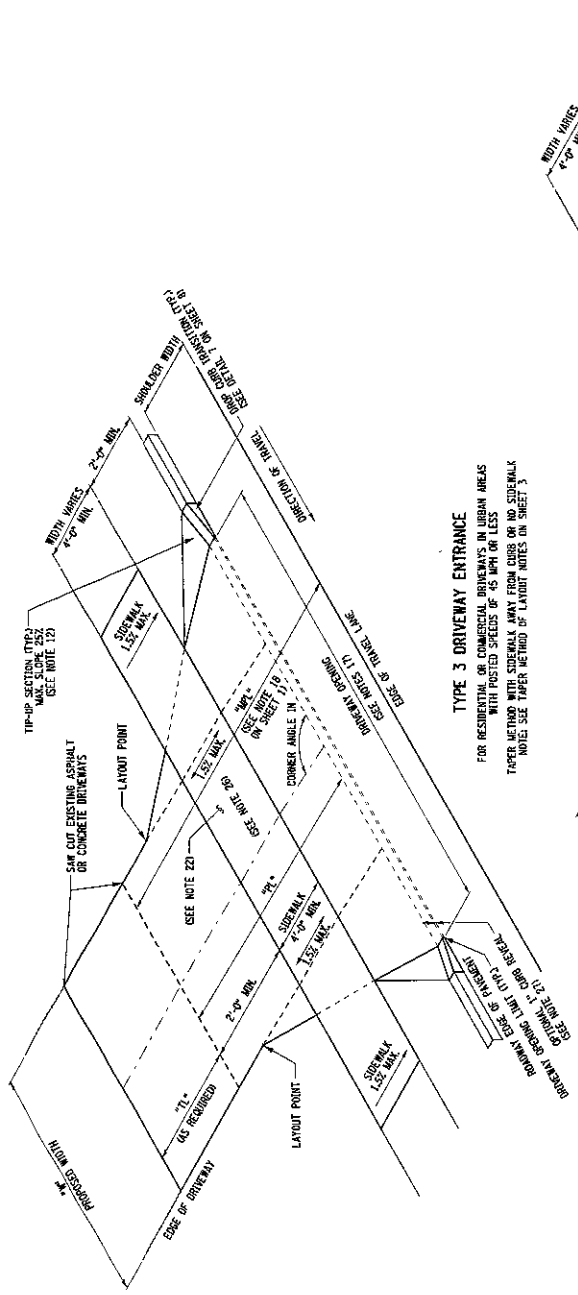
NOTE: SEE RADIUS METHOD OF LAYOUT ON SHEET 3



TYPE 2 DRIVEWAY ENTRANCE

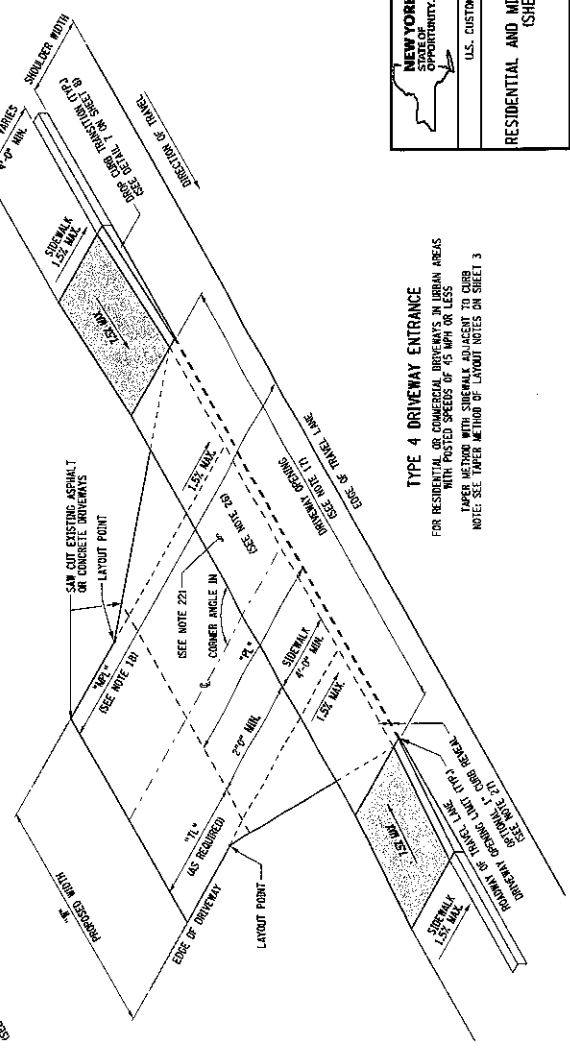
NOTE: SEE RADIUS METHOD OF LAYOUT ON SHEET 3

NOTE:
 ALL GENERAL NOTES AND ABREVIATIONS REFERENCED ON THIS SHEET CAN BE FOUND ON STANDARD SHEET 608-03, SHEET 1 OF 9.



TYPE 3 DRIVEWAY ENTRANCE

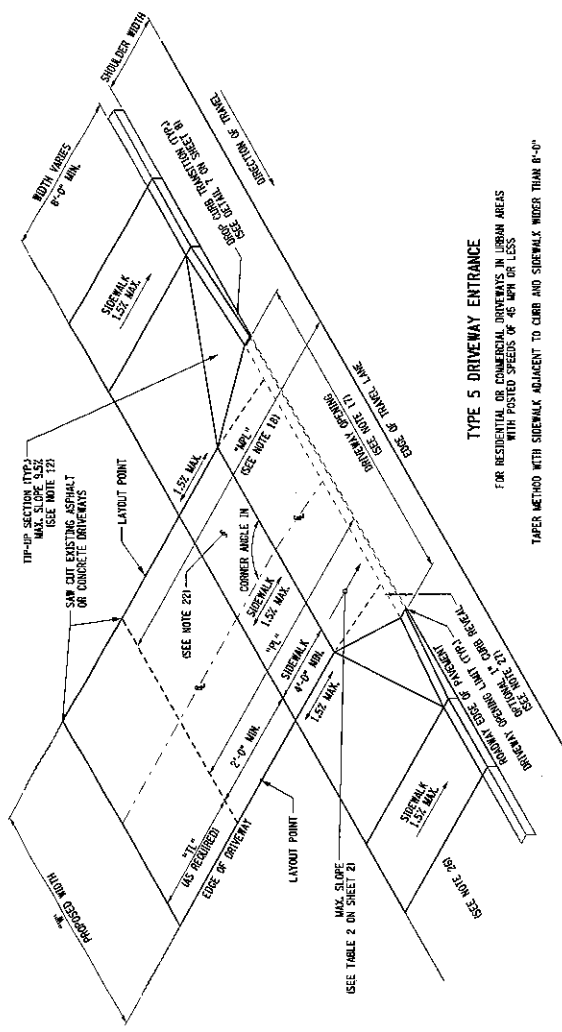
FOR RESIDENTIAL OR COMMERCIAL DRIVEWAYS IN URBAN AREAS WITH POSTED SPEEDS OF 45 MPH OR LESS
 TAPER METHOD WITH SIDEWALK AWAY FROM CURB OR NO SIDEWALK
 NOTES: SEE TAPER METHOD OF LAYOUT NOTES ON SHEET 3



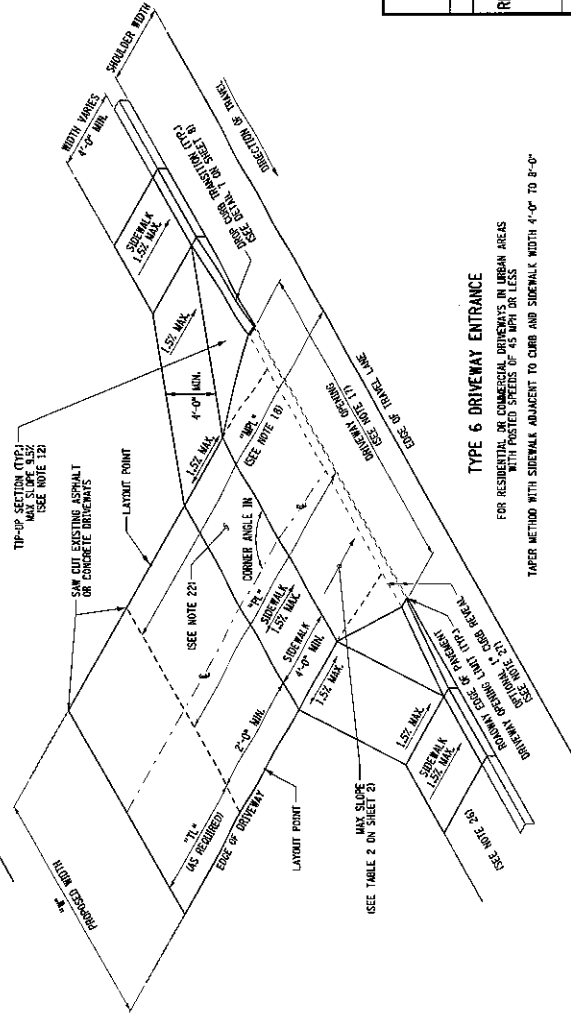
TYPE 4 DRIVEWAY ENTRANCE

FOR RESIDENTIAL OR COMMERCIAL DRIVEWAYS IN URBAN AREAS WITH POSTED SPEEDS OF 45 MPH OR LESS
 TAPER METHOD WITH SIDEWALK AWAY FROM CURB
 NOTES: SEE TAPER METHOD OF LAYOUT NOTES ON SHEET 3

NOTE:
 ALL GENERAL NOTES AND ABBREVIATIONS REFERENCED ON THIS SHEET CAN BE FOUND ON STANDARD SHEET 608-03, SHEET 1 OF 9.

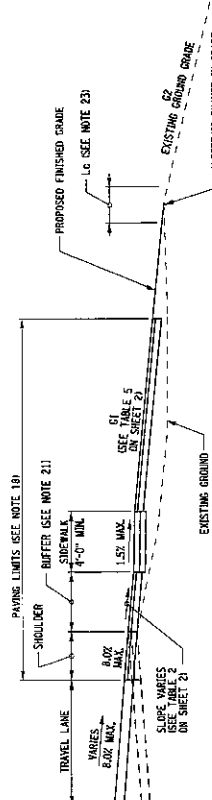


TYPE 5 DRIVEWAY ENTRANCE
FOR RESIDENTIAL OR COMMERCIAL DRIVEWAYS IN URBAN AREAS
WITH POSTED SPEEDS OF 45 MPH OR LESS
TAPER METHOD WITH SIDEWALK ADJACENT TO CURB AND SIDEWALK WIDER THAN 8'-0"

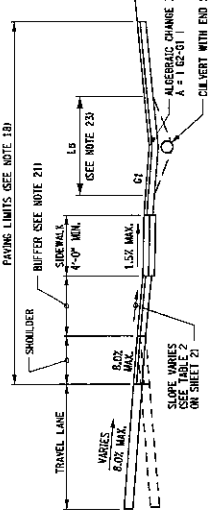


TYPE 6 DRIVEWAY ENTRANCE
FOR RESIDENTIAL OR COMMERCIAL DRIVEWAYS IN URBAN AREAS
WITH POSTED SPEEDS OF 45 MPH OR LESS
TAPER METHOD WITH SIDEWALK ADJACENT TO CURB AND SIDEWALK WIDTH 4'-0" TO 8'-0"

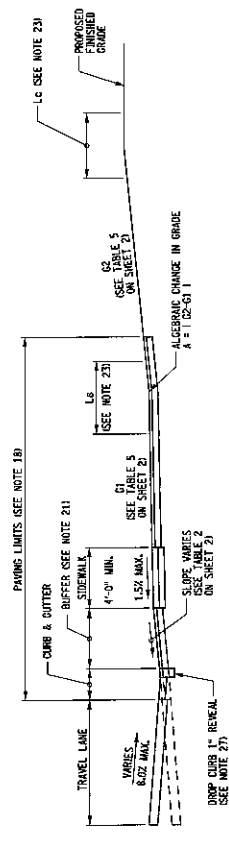
NOTE:
ALL GENERAL NOTES AND ABBREVIATIONS REFERENCED ON THIS SHEET
CAN BE FOUND ON STANDARD SHEET 608-03, SHEET 1 OF 9.



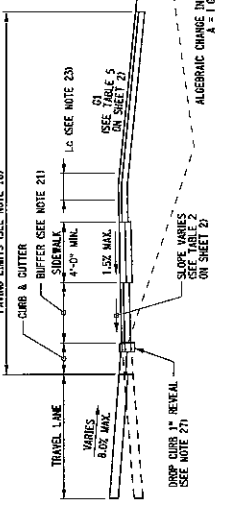
DETAIL 1
 DRIVEWAY PROFILE FOR UNCURBED HIGHWAY WITH SIDEWALK
 IN FILL SECTION WITHOUT ROADSIDE DITCH



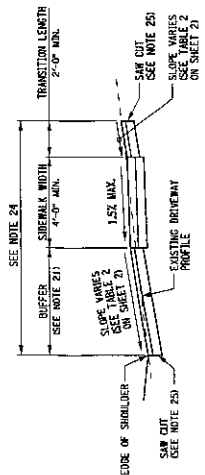
DETAIL 2
 DRIVEWAY PROFILE FOR UNCURBED HIGHWAY WITH SIDEWALK
 IN CUT SECTION WITH ROADSIDE DITCH



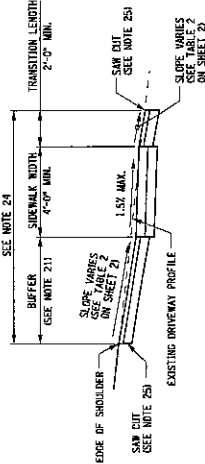
DETAIL 3
 DRIVEWAY PROFILE FOR CURBED SECTION
 WITH SIDEWALK IN CUT SECTION



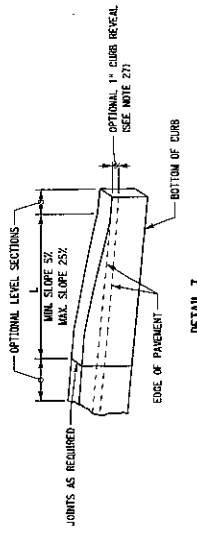
DETAIL 4
 DRIVEWAY PROFILE FOR CURBED HIGHWAY SECTION WITH SIDEWALK
 AND CLOSED DRAINAGE IN FILL SECTION



DETAIL 5
 DRIVEWAY RECONSTRUCTION PROFILE
 FOR NEW SIDEWALK CONSTRUCTION ACROSS EXISTING DRIVEWAY
 IN CUT SECTION OR WITH CURB AND CLOSED DRAINAGE



DETAIL 6
 DRIVEWAY RECONSTRUCTION PROFILE
 FOR NEW SIDEWALK CONSTRUCTION ACROSS EXISTING DRIVEWAY
 IN FILL SECTION WITHOUT CLOSED DRAINAGE



DETAIL 7
 DRIVEWAY DROP
 CURB TRANSITION

SEE STANDARD SHEET 608-02 FOR
 COMPLETE CURB TRANSITION DETAILS

NEW YORK
 STATE OF
 DEPARTMENT OF
 TRANSPORTATION

U.S. CUSTOMARY STANDARD SHEET

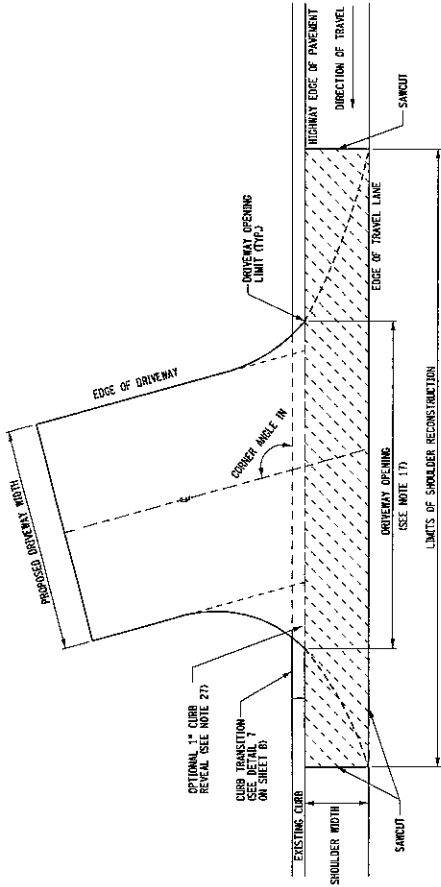
**Department of
 Transportation**

RESIDENTIAL AND MINOR COMMERCIAL DRIVEWAYS
 (SHEET 8 OF 9)

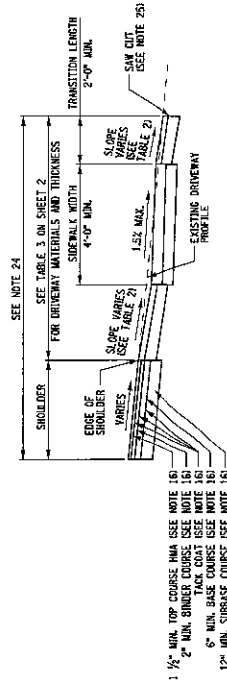
APPROVED MARCH 01, 2016
 /S/ RICHARD W. LEE, P.E.
 DEPUTY CHIEF ENGINEER
 (DESIGN)

ISSUED UNDER EB 16-012
 608-03

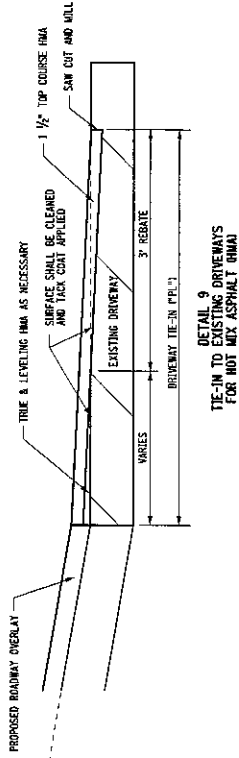
NOTES:
 ALL GENERAL NOTES AND ABBREVIATIONS REFERENCED ON THIS SHEET CAN BE FOUND ON STANDARD SHEET 608-03, SHEET 1 OF 9.
 DETAILS SHOWN ON THIS SHEET SHALL BE USED FOR RESIDENTIAL AND MINOR COMMERCIAL DRIVEWAYS ONLY. CURB RAMPS SHALL BE
 CONSTRUCTED IN ACCORDANCE WITH THE DEFINITION OF MAJOR AND MINOR COMMERCIAL DRIVEWAYS.
 FOR MAJOR COMMERCIAL DRIVEWAYS, PUBLIC HIGHWAYS, AND STATEWAYS, REFER TO SHEET 1 FOR THE DEFINITION OF MAJOR AND
 MINOR COMMERCIAL DRIVEWAYS.



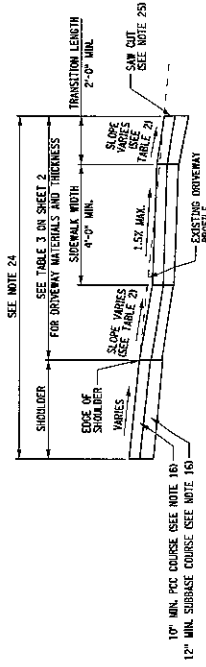
DETAIL 9
TYPICAL DRIVEWAY ENTRANCE
LIMITS OF SHOULDER RECONSTRUCTION



DETAIL 10
SHOULDER AND DRIVEWAY RECONSTRUCTION
PROFILE FOR HOT MIX ASPHALT (HMA) SHOULDER



DETAIL 9
TIE-IN TO EXISTING DRIVEWAYS
FOR HOT MIX ASPHALT (HMA)



DETAIL 11
SHOULDER AND DRIVEWAY RECONSTRUCTION
PROFILE FOR PCC SHOULDER

NOTE:
ALL GENERAL NOTES AND ABBREVIATIONS REFERENCED ON THIS SHEET CAN BE FOUND ON STANDARD SHEET 608-03, SHEET 1 OF 9.

	Department of Transportation U.S. CUSTOMARY STANDARD SHEET
	RESIDENTIAL AND MINOR COMMERCIAL DRIVEWAYS (SHEET 9 OF 9)
APPROVED: MARCH 07, 2016 /S/ RICHARD W. LEE, P.E. DEPUTY CHIEF ENGINEER	ISSUED UNDER EB 16-012 608-03