DESIGN CRITERIA

AND

CONSTRUCTION

SPECIFICATIONS

FOR

LAND DEVELOPMENT

TOWN OF PERINTON
DEPARTMENT OF PUBLIC WORKS
5TH EDITION - 2021

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INTRODUCTION

These Design Criteria and Construction Specifications have been prepared to serve as a guide for, and a control over, the development of property within the Town of Perinton.

While they assure proper design and construction of facilities that will be turned over to the Town for ownership and perpetual maintenance, they also assure proper design and construction of private facilities that affect the health and general welfare of the community and prevent overall depreciation of property values. Furthermore, these specifications assure that development is compatible with the long range Town development plans. It is recommended that developers and their engineers follow these guidelines for their own benefit in expediting approvals.

It is not the intent of these specifications to conflict with zoning policies or overall supervision of development by the Town Board and Planning Board; rather they are intended to supplement such policies by providing the technical details necessary to carry out general policy in a successful manner.

These specifications do not address building design or construction, as these are covered elsewhere by Town policy and ordinance.

The Town Design Criteria and Construction Specifications are organized into four general divisions:
1) Basic Procedures and Requirements
2) Design Criteria
3) Construction Specifications
4) Construction Details

Division 1 - Basic Procedures and Requirements (Sections 100 thru 150): general procedures to be followed to gain Planning Board approval. The intent is to provide a guide that assures expeditious review of development plans and that completed works to be turned over to the Town for dedication are of a high quality.

Division 2 - Design Criteria (Sections 200 thru 260): a guide of minimum requirements for the Developer's Engineers to conform to in the preparation of plans for development.

Division 3 - Construction Specifications (Section 300 thru 380): construction specifications for execution of the various items of work. Developers and their Engineers bear the responsibility of requiring their contractors and subcontractors to familiarize themselves with these specifications and to carry them out in order that maintenance-free utilities be constructed.

Division 4 - Construction Details: provide graphic illustrations and standard construction details to support the basic material in the Design Criteria and Construction divisions.

It is imperative that plans are submitted by the developer prior to the “cut-off” date posted by the Planning Board Clerk, which are approximately four (4) weeks prior to the Planning Board meeting. This time schedule is necessary to perform a thorough plan review and field investigation of the proposed submittal, and provide the Developer's Engineers with comments for revision where necessary.

For residential developments, once final approval of a subdivision has been granted by the Planning Board, the Developer shall be responsible for obtaining the signatures of approval from the Commissioner of Public Works, Town Engineer, Fire Chief, Town Clerk, Town Attorney and Planning Board Chairman, as well as Monroe County Pure Waters, Monroe County Water Authority and Monroe County Department of Health.

For commercial developments, once final approval of the site plans has been granted by the Planning Board, the Developer shall be responsible for obtaining the signature of approval of all of the same parties listed above, except the Town Clerk.

The Letter of Credit estimate shall be approved, Financial Guarantee established, and easements shall all be approved and filed, prior to obtaining signatures and filing the subdivision plat. After the approved plans and plats have been signed, the developer shall supply the Building and Codes Department with three complete sets of prints, and digital copies of all approved plans in PDF and TIFF format. It is the responsibility of the developer to file the approved plat map.

DIVISION 1: BASIC PROCEDURES AND REQUIREMENTS

SECTION 100
SEQUENCE OF PROCEDURES FOR DEVELOPMENT

Developers are required to retain NYS licensed engineers and legal counseling familiar with development planning to adequately comply with these procedures. The sequence of procedures for development within the Town of Perinton generally requires three-phases of Planning Board Approval as follows:

1) Concept Approval (if required)

2) Preliminary Approval

3) Final Approval

What follows is a brief summary of these phases. More detailed information is contained in the Town of Perinton Code book.

Concept approval is the initial presentation by the Developer of the general overall information and data showing how they intend to develop the property and the effect such development may have upon the adjoining property. This is usually the first opportunity the Planning Board has to see how a particular parcel of land is proposed for development. This knowledge permits the Planning Board to identify studies and determine what problems it must consider in granting subsequent approvals. The availability of utilities, the effect on natural resources and other environmental concerns as well as drainage concerns shall be addressed at this time. The Concept Approval step is not required for site plans depicting commercial developments or for residential developments that do not contain public roads.

At Preliminary Approval, a formal public hearing will be held at which time the Developer will make a public presentation of development intentions and plans regarding the property. Questions may be posed to the Developer from the public, Planning Board, Conservation Board and Town staff.

At Final Approval, the Developer submits all the remaining specific data and information required by the Planning Board, DPW and the local laws and regulations. Upon completion of this last phase, the Developer shall submit their plan for execution to Town Officials prior to filing the map at the Monroe County Clerk's Office.

The specific information needed and required to fulfill each of the above phases and provide the Planning Board with the necessary information is set forth in Chapter 182, Subdivision of Land, of the Town Code.

No earth disturbing activities shall be started without approved maps and easements being filed and financial guarantee established. Also, the Developer must schedule and conduct a preconstruction meeting with the Commissioner of Public Works, Town Engineer, and the appropriate utility agencies and the project contractors before any work begins.

SECTION 110
DEFINITIONS

Commissioner of Public Works: Commissioner of Public Works of the Town of Perinton, Monroe County, New York. Responsible for oversight and direction of the Department of Public Works.

Department of Public Works: Department of Public Works of the Town of Perinton, Monroe County, New York, comprised of, but not limited to, the following Divisions/Departments:

- Animal Control
- Building and Codes Department
- Engineering/Planning Department
- Highway Department
- Sewer Department

Town: Town of Perinton, Monroe County, New York (DPW), the municipality, comprised of any sewer districts or extensions thereunder, the Supervisor, Commissioner of Public Works and any and all employees or agents, designated to enforce the provisions of this code.

Infrastructure: Includes, but is not limited to all roads, sidewalks, gutters, drains, sewers, water mains, storm water management and appurtenances, either private or dedicated to the Town or other Agencies.

Developer: Applicant who brings plans forward for the development of a land parcel within the Town.

Financial Guarantee: Letter of Credit or Cash held in Trust and Agency Account

SECTION 120
AREAS OF RESPONSIBILITY

120-1 Commissioner of Public Works

- Review of all matters relative to Design Criteria, comprising but not limited to roads, sidewalks, bridges, sanitary and storm systems, stormwater retention, detention, drainage, erosion and sediment control, traffic, parking, contamination, limited development districts and public safety.
- Inspection of said roads and utilities, during construction and maintenance upon completion.
- Administers the National Floodplain Insurance Program (NFIP) and Chapter 138 of the Town Code, Floodplain Damage Prevention.
- Administers the Erosion and Sediment Control Law.
- Administers Storm Water Regulations.
- Signs Development Plans.
- By and under authority of the Town Board shall direct the actions of the Deputy Commissioner of Public Works Highway, Deputy Commissioner of Public Works Sewers, Director of Building and Codes Department, Town Engineer, and the Town Attorney in the implementation of this Criteria for Design and Construction.

120-2 Director of Building and Codes

- Receive plans from the developer on the Town's behalf and distributes plans to the Planning Board, Commissioner of Public Works, Town Engineer and Conservation Board. Coordinates and prepares agenda for Planning Board meeting.
- Place Legal Notices for Public hearing.
- Review plans and other application materials for compliance with Zoning.

120-3 Town Attorney

- Form necessary Improvement Districts.
- Review of necessary legal documents for road dedication, easements, and Financial Guarantee. Attends Planning Board meeting as directed by the Town Board.
- Signs Development Plans.

120-4 Director of Planning

- Liaison between development community and Town leadership to review development opportunities. Facilitates Planning Board applications and guides proposals through the review and approval process.
- Manages the Town’s Planning initiatives including, but not limited to Comprehensive Plan Updates, Active Transportation Planning, Transportation Planning, Capital Improvement Program Planning, and ADA Compliance Planning.

120-5 Town Engineer

- Reviews private development applications (subdivision and site plan) for conformance with Town Development Standards. Provides engineering recommendations and support to Commissioner of Public Works, Planning, Conservation and Zoning Boards.
- Review and approve Developer's Financial Guarantee, and coordinates releases of securities during construction.
- Signs development plans.
- Administers Floodplain Management Requirements.
- Manages capital projects
- Manages site inspection team.

120-6 Deputy Commissioner of Public Works Highway

- Responsible for day to day operation of the Highway Department.

120-7 Deputy Commissioner of Public Works Sewers

- Responsible for day to day operation of the Sewer Department.

120-8 Planning Board Secretary

- Coordinates Agenda for meeting, receive and distribute information, places ads for hearings, prepares meeting minutes.

120-9 Planning Board

- Responsibilities described in applicable Town Codes: Subdivision of land (Chapter 182) and Site Plan (Chapter 208-53).

120-10 Conservation Board

- Advises Lead Agency on SEQR determination and administers LDD law.

120-11 Historic Architectural Commission

- Administer Historic Preservation Law.

120-12 Zoning Board of Appeals

- Determine whether relief should be granted for aspects of projects that do not meet Zoning Code (Chapter 208).
- May grant Special Use Permits for projects whose uses need special approvals as indicated in Town Code (Chapter 208).

SECTION 130
GENERAL DEVELOPMENT

130-1 General
The development of property shall conform to Perinton's Zoning Code as established by the Town. It shall also conform with all regulations established herein and with other laws, rules and regulations established by all governing bodies having or claiming jurisdiction over various phases of the development.

130-2 Conflicts
Where a conflict arises between Town regulations and those of other agencies, the Developer shall make known to the conflicting agencies the area of conflict and endeavor to have such agencies resolve the issue before proceeding with development.

130-3 Layout and Utilities
The development should incorporate into the project design the natural slopes and grades of the land as much as possible. In other words, the design should conform to the land. Significant cutting and filling, the presence of excessive retaining walls, or attempts to change natural land features will often lead to denial of applications. Valuable tree stock should be incorporated in the design to provide an "aged" look to the development.

Utilities shall be designed to conform with the topography of the property and existing utilities on adjacent streets or property. Developers shall satisfy themselves through the preliminary investigation, and consultation with Town officials and involved agencies, as to the adequacy of infrastructure upon which their property must rely for service (e.g. roads, water mains, sanitary and storm sewers, pump stations and culverts). When deemed appropriate by the Commissioner, sanitary sewers shall extend to the extreme limits of the district or property being developed to be in conformance with the long range planning of the Town of Perinton. Gravity sewers shall be designed in lieu of pump stations whenever possible despite cost differential.

Standard sizing for required infrastructure shall be appropriate for the public use and demand anticipated upon full development, and shall be of sufficient size to accommodate development of adjacent areas, if said areas are considered by the Board to be logically served through the subject property.

130-4 Engineering
Developers bear the responsibility of providing sound engineering design of all infrastructure subject to the review and approval of the Town. The design shall be prepared by a professional engineer licensed to practice in the State of New York, who shall have had experience in the design of such utilities.

Review of plans by the Town and its Engineers are subject to reimbursement by the Developer if, in the opinion of the Commissioner of Public Works, such review requires expertise or detailed review that is outside typical review needs.

130-5 Sub-Surface Soil Conditions
The Developer's engineer shall determine subsurface soil conditions and the seasonal high ground

water table within proposed projects. Sufficient test holes (e.g. excavated test pits, hollow stem auger drill, split spoon samples, etc), ground water monitoring wells, and soils analysis must be performed and an engineering report submitted for each site development. The Developer's engineer shall coordinate with the Town Engineer regarding test hole locations and depth. Additional testing and reports by a geotechnical engineer may be required for more difficult/complex site or construction conditions.

Basement floor elevations shall be designed to be constructed one foot above the ground water table. Alternative designs to account for high ground water tables can be discussed with the DPW and Town Engineer. However, it is not the intent for the land to be significantly altered, cut, filled or the water table lowered to accommodate development of land with high water tables. The Town will not accept additional maintenance responsibilities to accommodate development in these areas.

130-6 Subdivision Regulations and Limited Development Districts (LDD)
The Developer shall thoroughly review Chapters 182 (Subdivision), 208-46 (Limited Development Districts (LDD)) and Chapter 208-53 (Site Plan) before beginning any layout.

130-7 State Environmental Quality Review (SEQR)
The Lead Agency is responsible for insuring that SEQR has been fully completed prior to any project approvals and construction. It is the Developer's responsibility to provide any and all data as required by the Lead Agency to make its determination.

130-8 Building Permits
Typically Building Permits for any permanent structure shall not be issued until site improvements have been substantially completed. This includes road construction completed through installation of the binder asphalt. Special consideration due to extenuating circumstances may be reviewed and approved by the Commissioner of the Department of Public Works.

130-9 Contractors
The interaction between the Town and the Developer in the field is usually through the Developer's contractor and/or engineer. The contractor is responsible to have copies of approved plans, specifications, Storm Water Pollution Prevention Plan (SWPPP), Notice of Intent (NOI), Inspection Reports, all applicable permits and the Town Design Criteria with them on the job at all times. It is the Developer's responsibility to have frequent contact with the contractor and the Town to assure that all facets of the development are in accordance with the approved plans and these documents.

130-10 Construction Schedule
As part of their plan submission to the Planning Board, the applicant shall indicate their proposed construction timetable in writing. This will include subdivision or site plan phasing, construction phasing details, methods of erosion and sediment control, earthmoving, offsite and onsite utilities, road construction, landscaping, restoration, etc.

130-11 Pre-Construction Meeting
The developer or their engineer shall schedule a pre-construction meeting with the Department of Public Works prior to any work taking place. All plans and easements must be signed, fees paid

and filed with the County Clerk's office, and financial guarantee established with the Town Clerk prior to this meeting. The developer, site contractor, design engineer and all affected utility companies shall be present for the meeting. The meeting will be held in the office of the Commissioner of Public Works and will be conducted with minutes prepared and circulated by the Town Engineer.

130-12 Safety and Health Conditions

The applicant and contractor shall comply with, and be solely responsible for implementing the NYS Safety Requirements (Code Rule 23 and other applicable codes) and the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act (OSHA) of 1970 (PL 91-596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL 91-54), or any later revisions thereto.

The contractor shall prepare their own site specific Health and Safety Plan satisfying the above referenced criteria. A copy of the Health and Safety Plan shall be available to the Town of Perinton DPW upon request, at the time of pre-construction meeting for the development project.

130-13 Construction Safety

The Town and its agents, will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, as they relate to safety precautions and programs in connection with the work.

130-14 Relationship to Other Agency Permit Requirements

It shall be the applicant's responsibility to obtain and to notify the Planning Board and Commissioner of Public Works of other agency development permits and permit conditions prior to approval of plans by the Planning Board, where possible. Where more detailed plans than those submitted to the Planning Board are necessary for other agency approval, the permits shall be obtained and provided to the Planning Board and Commissioner of Public Works, along with a list of permit conditions, before the Commissioner of Public Works will sign the plans.

SECTION 140
FINANCIAL GUARANTEES

140-1 Cost Estimates

Upon receiving final Planning Board approval of a particular subdivision, site plan, or other development type, the Developer's engineer shall submit a detailed Estimate of Construction for the proposed site improvements to the Town Engineer. The estimate shall be used to establish the amount of the Financial Guarantee to be posted by the developer. The estimate shall be itemized and consist of the following major sections:

(A) Watermains
(B) Sanitary Sewers
(C) Storm Sewers
(D) Pavements
(E) Mass Grading and Miscellaneous Site Preparation Items
(F) Erosion & Sediment Control
(G) Town Guarantees

Additional sections may be required as determined by the Commissioner of Public Works and Town Engineer.

The estimate shall be submitted to the Town Engineer along with the approved plans, and shall be in a format consistent with the Town's standard (provided in appendix Item A-1). Electronic version of the Town standard financial guarantee format will be provided to the developer upon request.

140-2 Financial Guarantee

All development projects in the Town of Perinton are subject to the Financial Guarantee provisions within this section. However, the Commissioner of Public Works may waive the need for a Financial Guarantee depending on the size and complexity of the development project.

The Developer is responsible for securing a Financial Guarantee as directed by the Commissioner of Public Works. The Financial Guarantee shall include, but not necessarily be limited to, the value of the following construction items:

- Water Mains
- Sanitary Sewers
- Storm Sewers
- Roads
- Mass Grading
- Clearing and Grubbing
- Stockpiling Topsoil
- Erosion and Sediment Control
- Landscaping & Outside Lighting
- Sidewalks
- Storm water Management Facilities
- Temporary Seeding & Mulching
- Spreading Topsoil and Fine Grading
- As Built Maps (Record Plan)
- Monumentation
- Street & Traffic Signs
- Engineering (3%)
- Inspection (2%)
- Contingencies (10%)
- Survey and Testing (as needed)
- Final Seeding & growth establishment within R.O.W.

140-3 Financial Guarantee Format
The Financial Guarantee shall be written to comply with the terms and conditions specified by the Town. A sample Financial Guarantee format, approved by the D.P.W. is available upon request. (See Section 140-5)

140-4 Issuer of Financial Guarantee
Such Financial Guarantee shall be issued by a financial institution (Letter of Credit) or by the owner/Developer (Savings Account) with security acceptable to the Commissioner of Public Works.

140-5 Withdrawal of Funds For Work Completed
At such times as the Developer and his contractor wish to have funds released to cover work completed, the Developer's engineer shall inspect the work site and prepare a Letter of Credit Release request statement as of the inspection date. The statement shall use the same format as shown in Appendix A-1. An electronic version of this document is available from the D.P.W. upon request.

140-6 Withdrawal of Funds For Non Performance
The Financial Guarantee shall be written to allow the Town to administratively and legally withdraw funds to facilitate the completion of any and all work if the Developer does not diligently, systematically and expeditiously perform the work in accordance with the Town standards, specifications or approved site plan. Certification from the Commissioner of Public Works or Town Engineer is required for fund withdrawal to insure reasonable cause.

The Town shall inform the Developer by written notice of such failure in this case. The Town reserves the right to stop work by the Developer or his agent, and/or to suspend Town inspections. The Developer shall have a reasonable time (not to exceed fifteen (15) calendar days) to properly perform or correct work as identified in such notice. If the Developer fails to correct and perform the work within the timeframe identified in the notice, the Town has the authority to perform or cause the proper completion of the items listed in the notice. The Town will be reimbursed for the cost of its work through withdrawals from the Developers Financial Guarantee. The Developer will provide for such authority in the Financial Guarantee.

The Developer's engineer, after preparing such statement, shall submit it for review, approval and signature by the Commissioner of Public Works. After the Commissioner of Public Works has signed the statement, it shall be transmitted to the Town Clerk. The Town Clerk will then direct, in writing to the financial institution, that the approved amount can be released from the Financial Guarantee.

140-7 Terms of Fund Release
The following describes the general approach to releasing funds from a Financial Guarantee. On each Statement of Work Completed, a percentage of the value of work, referred to as “Retainage”, will be held to cover the cost of clean-up, manhole frame adjustments, finish grading, lateral staking, etc. The value of retainage varies for each section as indicated below.

A. Watermains

The Town shall release from the Financial Guarantee **70%** of the value of watermain work upon satisfactory installation of proposed watermain. The remaining **30%** will be released upon completion of watermain testing and after an approval letter has been issued by the Monroe County Water Authority. No retainage will be held for watermain work.

B. Sanitary Sewer System

This includes but is not limited to sanitary sewer mains, laterals, cleanouts, manholes, pump stations, generators, testing and any other sanitary sewer. The Town shall release from the Financial Guarantee up to 70% (minus 10% retainage) the money allocated for these items upon their satisfactory installation. After testing is complete and approved and manhole inverts poured, the remaining **30%** (minus 10% retainage) of the money in the Financial Guarantee shall be released. Testing of sanitary sewers includes lamping, air, vacuum, mandrel testing as well as televising if required. Testing shall take place before the road box is ready for inspection. Retainage will be released after the Town has received the proper Maintenance Guarantee as described in Section 140-12.

The Town will inspect the sanitary sewer and appurtenances and provide the Developer a punch list of corrective work items within 6 months of the expiration date of the Maintenance Guarantee. The Developer shall complete all identified work items in a satisfactory manor prior to the expiration of the maintenance guarantee. If problems are identified during the Town inspection requiring the use of televising equipment, then said effort will be fully paid for by the Developer.

C. Storm Sewer System

This includes storm sewer mains, laterals, cleanouts, manholes, field inlets, and all required testing and any other work related to storm sewers. The Town shall release from the Financial Guarantee upon installation of the storm sewers, **70%** (minus10% retainage) of the money allocated for these items in the Financial Guarantee. After testing is completed and approved, the remaining **30%** (minus 10% retainage) of the money in the Financial Guarantee shall be released. **10%** retainage will be held for all completed and approved work. Retainage will be released after the Town has received the proper Maintenance Guarantee as described in Section 140-12.

The Town will inspect the storm sewer and appurtenances and provide the Developer a punch list of corrective work items within 6 months of the expiration date of the Maintenance Guarantee. The Developer shall complete all identified work items in a satisfactory manor prior to the expiration of the maintenance guarantee. If problems are identified during the Town inspection requiring the use of televising equipment, then said effort will be fully paid for by the Developer.

D. Road and sidewalk components

This includes road boxout, sub-base stone, all asphalt sections, gutters, curbs, catch basins, weep stone underdrain, compaction testing, sidewalks and any other work

related to the road system. The Town shall release from the Financial Guarantee upon satisfactory construction of said items **100%** (less **10%** retainage) of the money allocated for these items in the Financial Guarantee. Retainage shall be released when the Town has received the proper Maintenance Guarantee as described in Section 140-12.

E. Mass Grading and Miscellaneous

This includes clearing and grubbing, topsoil stripping and spreading, mass grading, ponds, any land to be dedicated to the Town, storm water management facilities erosion control facilities (both permanent and temporary), final sediment removal, landscaping, lighting and all appurtenances. The Town shall release **100%** of the value of items in this Section upon satisfactory construction of said items. A 10% retainage will be held for stormwater management facilities, landscaping and lighting. Retainage for these items will be released when the overall site work is substantially complete and site stabilized to the satisfaction of the Town.

F. Erosion and Sediment Control

This includes all erosion and sediment control measures required by Town Code Chapter 119, the SWPPP prepared for the project, or as directed by the Town D.P.W. until final stabilization has been established. This includes but is not limited to: stabilized construction entrance, silt fence, inlet protection, check dams, temporary seeding, mulch, final seeding of ROW, lot stabilization etc. The Town shall release from the Financial Guarantee **70%** of the value of erosion and sediment control items upon their satisfactory installation (less **10%** retainage). The remaining **30%** will be released upon proper final clean-up of these measures, the site has been permanently stabilized, a uniform vegetative cover has been obtained on the site and a Notice of Termination can be filed as appropriate.

G. Town Guarantees

This section shall include contingencies (10%), Town Inspection (2%), Town Engineering (3%), street signs, record maps and monuments. The Town shall release from the Financial Guarantee 100% upon completion of these items, except contingencies, which is explained below. Inspection and engineering percentage values will be released proportionally to the total value of work completed each period.

The contingency item (10%) is intended to cover unforeseen costs from any extras or changes in quantities or types of materials used on the project, transfer of the contract to another contractor for completion, or extra inspections. The Town shall release from the Financial Guarantee funds allocated to the contingency item when the risk of unknown construction has passed. All other releases will be made upon completion of the item.

The inspection item included in this section shall include sufficient funding for the Town inspection of facilities and improvements to be dedicated. If field conditions arise or sufficient design errors become known that force more frequent inspections or new reviews by the Town Engineer, the Town reserves the right to charge the

Developer for these costs. The contingency amount can be used at the Town's discretion to reimburse the inspection account or cover the cost of overruns or changes that occur on the project. Any additional inspection or engineering service charges related to the construction phase that have not accounted for from the Letter of Credit shall be charged directly to the Developer. Building Permits or Certificate of Occupancy shall not be issued by the Town until such charges have been paid to the Town in full.

140-11 Financial Guarantee Renewal

The Letter of Credit is to be renewed annually, and must contain an automatic renewal clause in the document. In other words, renewal is required one year from the date the letter is established, and each year thereafter that the project is active. Prior to each renewal date, the prices quoted in the letter shall be reviewed by the Town Engineer. If inflationary trends are significant enough that the contingency amount will not cover this increase, the Financial Guarantee dollar amount may require adjustment before renewal is permitted.

140-12 Maintenance Guarantee

Upon completion of the required work under the Financial Guarantee, a Maintenance Guarantee shall be established by the Developer. Maintenance Guarantees are only required for items that will be dedicated to the Town for perpetual maintenance.

All Maintenance Guarantees shall be for 10% of the original value of the dedicated improvements under the original Financial Guarantee or $5,000 (whichever is greater). Typical improvements covered by a Maintenance Guarantee include roads, sidewalks, sewers, drainage facilities, landscaping, lighting, site restoration, stormwater management facilities, permanent erosion control measures and final site stabilization.

Maintenance Guarantees need not be written to include all dedicated facilities and improvements in a single bond or other means of security. But no more than three (3) Maintenance Guarantees for one subdivision section will be acceptable. If the Developer chooses, Maintenance Guarantees may be established at the completion of the facilities or improvements listed below:

A. Sanitary Sewer System and Storm Sewer System.

B. Road and Sidewalk Components

All Maintenance Guarantees shall be in effect for a minimum of two years. The length of the Maintenance Guarantee period is determined by the Commissioner of Public Works based on, but not limited to, such factors as 1) soil conditions, 2) general site conditions, 3) construction methods, 4) project phasing and 5) impacts on surrounding neighborhoods. As weather conditions dictate practicality of performance as well as accessibility for appropriate inspection of the improvements, all Maintenance Guarantees shall commence no earlier than June 1st, and no later than October 1st, and shall expire, at a minimum, two (2) years thereafter.

The Commissioner of Public Works will decide on the type of Maintenance Guarantee. The Maintenance Guarantee may be in the form of a Bond, Letter of Credit, or savings account deposit.

140-13 Special Fees

Unless otherwise required by the Town, sidewalk contributions, recreation fees and engineering review fees must be paid to the Town prior to Town officials signing final plans. These items are not to be included in the financial guarantee.

Engineering review fees and/or the cost of town inspections included in the financial guarantee shall be paid directly to the Town.

140-14 Lot Restoration

For projects covered by a NYSDEC Stormwater Permit (SPDES), if a Developer wishes to file a Notice of Termination and close out the Letter of Credit, the entire site must have a minimum of 80% acceptable growth of a permanent seed mixture.

SECTION 150
MISCELLANEOUS CONSIDERATIONS & EASEMENTS

150-1 Easements and Right-of-Way (ROW)
All sanitary and storm sewers to be accepted by the Town for dedication shall be located within the Town Right-of-Way, utility easements, or a combination of both.

150-2 Inspections
During construction, the Department of Public Works shall inspect all infrastructure, erosion control measures, grading, sewer laterals, private roads and any other work that affects public safety to ensure conformance with the approved plans. The cost of all inspection work shall include; hourly pay rates, fringe benefit rates and equipment rates. These costs shall be charged to the Developer similar to other types of inspections performed by the Town. The rates used are established by the Town Board.

150-3 General Grading Considerations
The Town considers slopes that are 3 on 1 (3 feet horizontal and 1 foot vertical) or flatter to be mowable by homeowners. Steeper slopes for lawns should be avoided. Any slopes steeper than 3 on 1 shall be planted with maintenance free plantings and stabilized with erosion control blankets. Slopes steeper than 2 on 1 will require rock fill or retaining walls. Retaining walls greater than 3' tall will require a wall design with calculations stamped by a NYS Professional Engineer.

150-4 Stormwater
Stormwater Quantity and Quality Control shall be provided for all new land development and shall meet the latest New York State Department of Environmental Conservation (NYSDEC) stormwater regulations and Chapter 119 of the Perinton Town Code. Projects within the Irondequoit Creek watershed must also follow the most recent Irondequoit Creek Watershed Collaborative guidelines.

150-5 Erosion Control
In order to ensure that the land and watercourses will not be subjected to siltation or erosion, the Planning Board, in consultation with the Conservation Board and Commissioner of Public Works, shall require the Developer to implement specific erosion control practices as outlined in the latest version of the NYS Standards & Specifications for Erosion & Sediment Controls.

150-6 Property Line Verification
All Developers, builders and owners, shall, through their engineer or licensed land surveyor, verify property lines, First Floor and basement elevations at the time a building permit is applied for. Building permits shall not be issued until this information has been supplied and verified in the field. Field documentation shall require a lath stake be placed on each property line, sufficient to locate a structure that meets zoning and subdivision requirements. A survey elevation hub and a lath, one with the first floor elevation, the other with basement floor elevation (cut and actual elevation of F.F. & B.F.) labeled, shall be set on each lot prior to foundations and/or basement being dug.

Where Town land abuts the development, corner demarcations for each lot must be installed at common property corners to alert homeowners of where Town lands begin. These demarcations shall be installed per construction detail found in the Construction Details Section. Monuments and property corners are specified in Section 205-11, and shall be set upon completion of subdivision mass grading.

150-7 Final Approvals Required

No site preparations or construction shall commence until final approval has been granted by the Planning Board and all necessary Financial Guarantees, approvals and signatures have been secured from the Town Attorney, Town Engineer, Town Clerk, Commissioner of Public Works, Fire Chief and Chairman of the Planning Board. At the option of the Commissioner of Public Works, earth work and some site work may begin once the Commissioner has signed the final plans and financial guarantees are in place.

150-8 Pre-Construction

A pre-construction meeting shall be held prior to the start of construction. The Developer, through his engineer, shall arrange the meeting and will ensure that all utilities (i.e. gas, electric, water, sewers, cable TV, etc.) are represented as well as the necessary governmental agencies (i.e. state, town, village, county). The project engineer and contractor will also be represented. The Town Engineer shall conduct the meeting and distribute minutes to all involved.

150-9 Access to Facilities

Off-site infrastructure such as rear yard sewers and detention/siltation facilities may require additional accessibility that will be determined by the Department of Public Works during plan review. Accessibility may be in the form of a 15’ (minimum) wide strip of land dedicated to the Town, or in some cases, an access easement. In either instance, a “Sewer Access Road” shall be constructed to support the necessary maintenance equipment.

150-10 Easements

It shall be the responsibility of the Developer to furnish easements to the Town, as required, for the installation of and permanent maintenance/operation of sanitary and storm sewer mains, drainage ways, access roads when required, sidewalks and pedestrian access.

Developers' bear the responsibility for preparation of the easement map(s), assuring their transfer to the Town, and supplying the fee for recording with the Monroe County Clerk's Office. All easements shall be executed, recording fees paid and in the Town’s possession prior to the Commissioner of Public Works signing development plans.

Generally, sanitary and storm utilities should be located in the right-of-way. However, when sewer mains are adjacent to, or outside, the right-of-way limits, easements will be required. The design engineer shall provide other utilities with their own separate easement outside of Town easements and the road right-of-way.

Sidewalk easements shall be a minimum of 10' in width. All sanitary and storm utility easements shall be a minimum of 20' in width for sewers up to 10’ in depth. Thereafter, the width of the

utility easement shall be a minimum of double the depth of sewers. Final easement widths shall be determined by the Department of Public Works.

Easements across lots or centered on rear or side lot lines shall be provided for utilities where necessary and shall be a minimum of 20 feet in width. Where multiple utilities are present, the easement may be changed to 30 feet. Easements along common property lines should split evenly between lots.

The Town reserves the right to require easements for anticipated construction of future infrastructure where, in the opinion of the Commissioner of Public Works, such easements are justified to ensure the integrity of the Towns infrastructure systems.

150-11 Off-Site Restoration

When construction occurs in off-site areas (i.e. off-site improvements within easements), said areas shall be returned to, as nearly as practical, the conditions in which they existed prior to disturbance. Additional funds for restoration will be required in the Financial Guarantee.

Prior to any off-site construction, the Developer and contractor shall inform the affected parties as to the scope of the work, the extent of the restoration and the anticipated work schedule.

150-12 Restrictive Covenants

The Town may require restrictive covenants on environmentally sensitive lands (i.e. LDD) which prohibit any uses or activities that could negative impact the land.

150-13 Limited Development District

Where a development is traversed by a watercourse, drainage way, channel, stream or contains a pond which crosses a property line, the development shall be prepared in compliance with Town Code Chapter 208 Article VIII Limited Development District. In particular, a plan shall be prepared that displays all buffer areas, easements or restrictive to covenants required to preserve natural drainage ways and to accommodate the twenty-five year flood area of such watercourse. In no case shall the easement be less than 20 feet in width.

150-14 Land Dedication

Lands proposed to be transferred to Town ownership must be depicted on a map supplied by the developer. Any such land must be accepted by the Town Board and transferred to the Town prior to the Planning Board granting final approval to the proposed site or subdivision plan.

DIVISION 2: DESIGN CRITERIA

SECTION 200
MATERIALS

200-1 General

The following is a list of materials that have been pre-approved by the Perinton Department of Public Works for use in site development. All materials to be used on site must be specified on the site or subdivision plans. Alternate materials shall be specifically called out in the plan submission. Shop drawings must be submitted for approval by the DPW. All materials and their methods installation shall conform to the latest applicable standards of ASTM, AASHTO, NYSDOT, OSHA, MCDOH and Town of Perinton.

MATERIAL	DESCRIPTION/SPECIFICATION
Select Fill	Granular material free from organic matter with a well-mixed gradation, 100% passing a 1 ½ inch square opening. Material must be dry and capable of being compacted to 95% modified proctor.
Sanitary Sewer Main	PVC SDR-35(gasketed), meeting ASTM D-3034, D-3139 and F477. PVC SDR-21(gasketed), meeting ASTM D-2241, D-3212 and F477. Wye branches shall be the same material as the sewer main.
Sanitary Laterals	PVC SDR-21(gasketed). Provide GPK hub adaptor directly from SDR-35 wye to SDR-21 lateral. All bends & fittings are to be SDR-21. Fernco adaptors are not allowed.
Sanitary Cleanouts	PVC SDR-21, w/ ring tight joints matching size of pipe it is placed on. Cap shall be threaded ferrous metal with integral raised square nut on top, coated w/ graphite lubricant. In asphalt areas install cast iron frame and cover, Syracuse Castings #4155, lettered w/ "SEWER C.O".
Storm Sewer Main	Corrugated High Density Polyethylene (virgin material only for pipe and fittings), smooth lined with watertight gaskets meeting ASTM F2648 and AASHTO M294. Hancor HiQ, ADS N-12 or approved equal. PVC SDR-35(gasketed), meeting ASTM D-3034, D-3139 and F477. Reinforced Concrete Pipe shall be a minimum Class IV with design calculations by a licensed civil engineer justifying the design. Bedding shall be a modified Class B with total encasement of the pipe with stone. Joints shall be watertight o-ring meeting AASHTO M198 and ASTM C443. Design and installation shall conform to ASTM C76 for round and elliptical pipe and C506 for arch pipe. Box culverts shall conform to ASTM C 1443 with tongue and groove joints with mastic. Apply primer and joint sealant to joints.

Storm Laterals	PVC SDR-35(gasketed), meeting ASTM D-3034, D-3139 and F477.
Storm Cleanouts	PVC SDR-35, w/ ring tight joints matching size of pipe it is placed on. Cap shall be threaded ferrous metal with integral raised square nut on top, coated w/ graphite lubricant. In asphalt areas install cast iron frame and cover, Syracuse Castings #4155, lettered w/ "SEWER C.O".
Catch Basins	Precast reinforced concrete with 6" thick walls, 3500 psi, designed to support H-20 loading as manufactured by Kistner, Model CB315BS, 2' x 2', meeting ASTM C478 or approved equal.
Catch Basin Frame & Grate	Frame shall be galvanized NYSDOT 655F #9 with four (4) anchor tabs (655F-09WA4). Grate shall be galvanized NYSDOT 655-6 #9 rectangular (6556R1G-09). This frame and grate will fit on a 2' x 2' catch basin.
Weep Pipe	4" diameter corrugated perforated HDPE meeting NYSDOT 706-13 and AASHTO M252.
Asphalt	Refer to Page 2-4
Tack Coat / Crack Sealer	Midland Asphalt CSS-1H asphalt emulsion / Road Saver 221
Manholes	Precast reinforced concrete manhole bases, risers and flat top slabs meeting ASTM C478, 3500 psi, designed to support H-20 vehicular loading. Mortar shall meet ASTM C270 type M, and sanitary inverts shall be constructed with sewer brick meeting ASTM C32 grade MS (or ½ PVC SDR-35 pipe embedded in concrete with approval from DPW). Cast the proper size adaptor rubber boots into the sanitary manhole base during manufacturing for making watertight pipe connections. Joints between riser sections of both storm and sanitary manholes shall be tongue and groove with factory lubricated "O" ring seals meeting ASTM C443. Apply bitumastic coating on inside and outside of all manholes. Provide steps for all manholes.
Manhole Frames and Covers	Manhole frames and covers shall have machined horizontal bearing surfaces designed for H-20 loading. The design of each shall have 2" letters "PSD" into all sanitary covers. Storm manholes shall similarly have "STORM" stamped into them. Frames shall be round, cast iron, 7" high with a 22 ½" clear opening minimum.

Manhole Frames and Covers (Cont'd)	Covers shall be cast iron, 1 3/8" thick, reinforced or ribbed on the underside with perforations (storm), and without perforations (sanitary). The top surface shall be checked and provided with suitable lifting notches. Pick holes shall be concealed. Non-watertight covers shall be manufactured by Syracuse Castings, Model 1032 or Neenah foundry Model R-1726-A, with a minimum weight of 335 pounds. All covers shall be self sealing. Watertight sanitary frames and covers shall be Neenah, Model R-1555.
Topsoil	All imported topsoil shall be tested for PH, organic matter, heavy metals and contaminants and a sieve analysis, and approved before placement. Topsoil shall be free from refuse, material toxic or otherwise deleterious to plant growth, subsoil, wood vegetation and stumps, roots, brush, stones, clay clumps or similar objects, per NYSDOT Section 713-01. Sod and herbaceous growth such as grass and weeds need not be removed but shall be thoroughly broken up and mixed with the soil during the handling operations. The PH of the material shall be between 5.5 and 7.6. Organic content shall be between 4 and 20%.
Seed	For temporary seeding of disturbed areas: annual or perennial ryegrass at 45 lbs. per acre in the spring, summer and early fall; certified winter rye (cereal rye) at 100 lbs. per acre during the late fall early winter. For permanent seed shall be placed in loosened 6" topsoil bed. Seed shall be 63% Kentucky Bluegrass, 22% Red Fescue, and 15% perennial rye, 90% Pure Live Seed, spread at 160 lbs. per acre.
Silt Fence	Fabric shall be from the approved NYSDOT list which includes Mirafi 149N and Mutual Industries MISF 1777, buried 6". Stakes shall be 2"x2" x 4' long fir or pine posts installed every 6'.
Geotextile Fabric	For pipe bedding separation from unstable soils and sandy soils which may result in sink holes from soil migrating into the new stone use Mirafi 140N, or approved equal. For road base separation from unstable and sandy soils use Mirafi 500X, or approved equal. For Geogrid between stone base layers of roads to add strength use Mirafi BXG12, or approved equal.

CONCRETE MIXES

CONCRETE	MIX	TCM (lbs./cy)	POZZOLAN (FLYASH) (% of TCM)	WCR	SLUMP (In.)	AIR (%)
Slip Form Sidewalk & Driveway	NYSDOT J	680	20% (max)	0.44	0.5-1.5	4-8
Slip Form Gutter	NYSDOT J	680	20% (max)	0.44	0.5-1.5	4-8
Cast in Place Sidewalk & Driveway	NYSDOT D	725	20% (max)	0.44	2.5-3.5	6-9
Cast in Place Gutter	NYSDOT A	606	20% (max)	0.46	2.5-3.5	5-8
Cast in Place MH/CB Inverts	NYSDOT A	606	20% (max)	0.46	2.5-3.5	5-8

Note: Concrete for sidewalks shall have fiber added to the mix at a rate of 2 lbs/cy of concrete. No welded wire fabric is required.

ASPHALT MATERIALS
(Per NYSDOT 2008 Standard Specifications Section 403-2)

General. All materials for Hot Mix Asphalt (HMA) production such as aggregates, Performance Graded (PG) Binder, mineral filler shall meet NYSDOT requirements.

Composition of Mixtures. The HMA plant mix will generally be composed of a mixture of aggregate, filler if required, and PG Binder. For any HMA required by the plans, a job mix formula that satisfies the General Limits imposed in this section shall be provided. In addition, the formula will state the mineral aggregate sources, and the PG Binder used in the mixture. For Type 7F2 mixtures, determine the optimum asphalt content for the proposed gradation using the Marshall Mix Design Method (50 blows).

The resultant mixture shall meet the following Marshall Mix Properties:

Mix Property	Type 7F2
Air Voids, %	3.0 - 5.0
Voids in Mineral Agg. (VMA), % min	16
Voids Filled with Binder (VFB), %	65 - 78

Produce, deliver to the work site, and incorporate the mixture into the work within 20°F of the temperature specified by the Engineer but within the mixing and placing temperature range as noted in this section. The aggregates will be those noted in the job mix formulas. The PG Binder will be accepted on the basis of PG Binder supplier's certification.

Perform quality control tests during HMA production to ensure specification compliance. The plant mixed material will be accepted after blending and mixing at the plant. The pavement courses will be accepted after all paving operations are completed.

Aggregates. Fine aggregate will consist of materials conforming to the requirements of NYSDOT §703-01, Fine Aggregate. In addition, fine aggregate may consist of screenings, free from deleterious materials and manufactured from sources of stone, gravel, or slag meeting the requirements §703-02, Coarse Aggregate. Coarse aggregate will consist of crushed stone, crushed gravel, or crushed slag conforming to the requirements of §703-02, except for gradation.

When aggregates from approved natural fine sand sources are combined with coarse aggregates in the mixture, aggregate particles will meet additional requirements as follows:

- Particles in the No. 1A and No. 1 primary sizes will meet the quality requirements of §703-02 and will have a minimum of 85 percent, by weight, of the particles with at least two fractured faces.
- Particles in the No. 2, No. 3 and No. 3A primary sizes will meet the quality requirements of §703-02 and will have a minimum of 75 percent, by weight, of the particles with at least one fractured face.

Slag aggregate may be used only when an alternate pay item which takes the mix yield differential into account is included on the plans or in the itemized proposal. Aggregates for all mixtures specified in this section shall meet the requirements of §703-02, Coarse Aggregate. In addition, the aggregate requirements for Type 7F2 shall meet one of the following requirements based on the mix type specified on the approved plans:

1. Limestone, dolomite, or a blend of the two having an acid-insoluble residue content of not less than 20.0%.
2. Sandstone, granite, chert, traprock, ore tailings, slag or other similar non-carbonate materials.
3. Gravel, or a natural or manufactured blend of limestone, dolomite, gravel, sandstone, granite, chert, traprock, ore tailings, slag or other similar materials, meeting the following requirements (for Type 7F2 Mixes): Non-carbonate plus 1/8 inch particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 20.0% of plus 1/8 inch particles must be non- carbonate.

Composition of Hot Mix Asphalt Pavement Mixtures						
Mixture Requirements	**Base**		**Binder**		**Top**	
	Type 1		**Type 3**		**Type 7F2**	
Screen Sizes	**General limits % Passing**	**Job Mix Tol. %**	**General limits %Passing**	**Job Mix Tol. %**	**General limits % Passing**	**Job Mix Tol. %**
2 in	100	-	-	-	-	-
1 1/2 in	90 -100	-	100	-	-	-
1 in	78 - 95	±5	95 - 100	-	-	-
1/2 in	57 - 84	±6	70 - 90	±6	100	-
1/4 in	40 - 72	±7	48 - 74	±7	90 -100	-
1/8 in	26 - 57	±7	32 - 62	±7	45 - 70	±6
No. 20	12 - 36	±7	15 - 39	±7	15 - 40	±7
No. 40	8 - 25	±7	8 - 27	±7	8 - 27	±7
No. 80	4 -16	±4	4 - 16	±4	4 - 16	±4
No. 200	2 - 8	±2	2 - 8	±2	2 - 6	±2
PGB Content %	4.0 - 6.0	0.4	4.5 - 6.5	0.4	5.7 -8.0	NA
Mixing & Placing Temp. Range,°F	250 - 325		250 - 325		250 - 325	

NOTES:

1. All aggregate percentages are based on the total weight of the aggregate.
2. The asphalt content is based on the total weight of the mix. When using slag aggregates in the mix, increase the PGB content accordingly, a minimum of 25 percent for an all slag mix.
3. 7F2 mix types require friction coarse aggregates., and are required for mainline driving surface courses.
4. Introduce the PG Binder into the pugmill between 225°F and 350°F, or as recommended by the PG Binder supplier.

Mineral Filler. Mineral filler, if required in the mix to meet gradation requirements, will conform to the requirements of §703-08, Mineral Filler.

Performance-Graded Binder. The PG Binder will meet the requirements of NYSDOT §401-2.04, Performance Graded Binder. Use PG 64-22 unless a different type of PG Binder is specified on the approved plans.

STONE / BACKFILL

MATERIAL	DESCRIPTION/SPECIFICATION	SIEVE SIZE DESIGNATION	PERCENT PASSING BY WEIGHT
#1 Crusher Run	Hard durable crushed limestone meeting NYSDOT 703	1 inch ½ inch ¼ inch No. 40 No. 200	100 90-100 30-65 5-40 0-10
#2 Crusher Run	Hard durable crushed limestone meeting NYSDOT 703	2 inch ¼ inch No. 40 No. 200	100 30-65 5-40 0-10
Run of Bank Gravel	Run of bank gravel or other acceptable granular material free from organic matter meeting NYSDOT 703	1 ½ inch ¼ inch No. 200	100 30-65 10
Sand	Granular material free of organic matter meeting NYSDOT 703	3/8 inch No. 4 No. 8 No. 16 No. 30 No. 50 No. 100	100 90-100 80-100 50-85 25-60 10-30 2-10
1B Stone	Hard durable crushed limestone meeting NYSDOT 703	¼” 1/8” No. 200	100 90-100 0-15

STONE / BACKFILL

MATERIAL	DESCRIPTION/SPECIFICATION	SIEVE SIZE DESIGNATION	PERCENT PASSING BY WEIGHT
1A Stone	Hard durable crushed limestone meeting NYSDOT 703	½" ¼" ⅛"	100 90-100 0-15
1 ST Stone	Hard durable crushed limestone meeting NYSDOT 703	½" ¼"	100 0-15
#1 Crushed Stone	Hard durable washed crushed limestone meeting NYSDOT 703	1" ½" ¼"	100 90-100 0-15
#2 Crushed Stone	Hard durable washed crushed limestone meeting NYSDOT 703	1 ½" 1" ½"	100 90-100 0-15
Controlled Density Fill (CDF)	"K-Krete" or approved equal with a comprehensive strength of to 100 psi. Fly ash or other pozzolan containing materials will not be acceptable in the mix design. The consistency shall be suitable for pumping or flowing into the annual space between or casing pipe and a carrier pipe.		

BANK PROTECTION

MATERIAL	DESCRIPTION/SPECIFICATION	STONE SIZE	PERCENT OF TOTAL BY WEIGHT
Lightweight Rip Rap (Stone Fill)	Crushed hard stone meeting NYSDOT 620	<110 lbs >6" <1/2"	90-100 50-100 0-10
Medium Rip Rap (Stone Fill)	Crushed hard stone meeting NYSDOT 620	110 lbs <6"	50-100 0-10
Heavy Rip Rap (Stone Fill)	Crushed hard stone meeting NYSDOT 620	>660 lbs <6"	50-100 0-10

Bank Protection Notes:

1. Stone filling shall consist of well graded stone placed as protective material on stream banks, in channels and elsewhere, as required.

2. Rip rap shall consist of stone fitted and placed on stream banks or in channels in order to provide protection against erosion.

3. Grouted rip-rap shall consist of stone similar to dry rip-rap but with all spaces between the stones filled with cement grout. The grout shall consist of one part cement conforming to the requirements for Portland Cement Type 2, NYSDOT 701-1 and three parts fine aggregate, conforming to the requirements for Concrete Sand in NYSDOT 703-07.

4. Stone sizes, other than weights, refer to the average of the maximum and minimum dimensions of a stone particle as estimated by the engineer.

5. Materials shall contain a sufficient amount of stones smaller than the average stone size to fill in the spaces between the larger stones.

SECTION 205
ROAD DESIGN AND IMPROVEMENTS

205-1 General

Developers shall submit road designs in accordance with the following section, specifications applicable to municipal code regulations and geometric design policies set by AASHTO. Refer also to Section 320 of this manual.

For the purpose of these specifications, a road is defined as public right-of-way for vehicular traffic, whether referred to as a road, highway, thoroughfare, parkway, avenue, boulevard, lane, place, alley drive, circle or however otherwise named, but not including a private driveway serving a single property.

The Town has established road the following road designations:

- Arterial Road
- Collector Road
- Minor Road
- Rural Road
- Private Road
- Common Drive

Construction details are presented for each of these road designations in Division 4 of these Specifications.

A. ARTERIAL ROAD: A public road which is used or designed primarily for through or heavy traffic. Arterial roads are typically owned by the state or county, and as such no details are provided in these specifications.

B. COLLECTOR ROAD: A public road which carries traffic from minor roads to arterial roads. This includes the principal entrance roads to residential or industrial developments and roads used for circulation within such developments.

C. MINOR ROAD: A public road which is used primarily for access to the properties that abut it.

D. RURAL ROAD: A public road that serves less populated areas (12 homes or less) in Zoning Classification Residential Transition (RT) and Residential Sensitive (RS). This road type may be used in cluster zoning applications, based on review and approval by the Commissioner of Public Works.

E. PRIVATE ROAD: Non-dedicated road serving five or more residential or commercial/industrial properties.

F. COMMON DRIVE: Non-dedicated road serving 2-4 residential uses.

205-2 Road Design/Layout

The design of roads within residential developments must take into consideration the potential of cut-through traffic and speeds. Road layout shall make it difficult and inconvenient for commuters to use residential roads as a cut-through to arterial roads. Long straight-a-ways should be avoided. Innovative layouts using appropriate traffic calming practices are encouraged and may be permitted after careful consideration and comparison to design standards. Designers should refer to Chapter 208: Zoning Law of the Town of Perinton for access guidelines related to non-subdivision development.

Road systems shall be designed with regard to the need for traffic access, circulation, control and safety. Design consideration should also address access for emergency services, snow removal, road maintenance equipment, stormwater drainage and sewage disposal. Roads shall be designed to accommodate anticipated traffic volumes and laid out to separate through traffic from neighborhood traffic insofar as it is practicable.

The roads in contiguous developments shall be coordinated so as to comprise a convenient, but not easily traversed, system. Where a project adjoins undeveloped land, its roads shall be laid out so as to provide suitable future road connections with the adjoining land when the latter is subdivided. A road temporarily dead-ended shall be constructed to the property line and shall be provided with a temporary turnaround that possesses the same dimensions required for permanent dead-end roads with turnarounds. A notation shall be included on the project plans that provide for temporary turnaround easements until the road is extended. These same requirements shall apply at the discretion of the Commissioner of Public Works in those cases where the adjoining land is another section of the same project and is not scheduled for development at the same time.

Roads shall be designed taking into consideration existing topography, and in a manner that allows as many of the building sites as possible to be situated at or above the grade of the road. Road grade shall conform as closely as possible to the original topography. A combination of steep grades and sharp curves shall be avoided. Vertical curves that compromise sight distance from planned driveways should be avoided.

When residential development borders on, or contains, an existing or proposed arterial road, the Planning Board may require the use of minor access roads, reverse frontage with landscape screening, deep lots with or without rear service alleys, or other treatment as may be necessary for adequate protection of residential properties and to afford separation of through and local traffic.

When a subdivision borders or contains an existing or proposed railroad right-of-way or controlled access highway right-of-way, the Planning Board may require a road approximately parallel to and on each side of such right-of-way, at a distance suitable for the appropriate use of the adjacent land, as such parks in residential districts, or business, commercial, or industrial use in appropriate districts. Such distances shall also be determined with due regard for the requirements of approach grades and future grade separations.

Vertical curves resulting in blind driveways shall not be allowed. Developers and/or engineers must demonstrate that driveways near vertical curves have adequate sight distance in accordance with the criteria included in this section.

205-3 Dead Ends

When a road does not extend to the boundary of the subdivision and its continuation is not needed for access to an adjoining property, it shall be separated from such boundary by a distance sufficient to accommodate a lot meeting the requirements of the Zoning Classification. Reserve strips of land shall not be left between the end of a proposed road and an adjacent piece of property. However, the Planning Board may require the reservation of an easement 30' wide for pedestrian access or utilities.

For dedicated public roads, a cul-de-sac with a minimum right-of-way radius of sixty (60) feet shall be provided at the end of any permanent dead-end road. The length of permanent dead-end roads shall be determined by the Planning Board, but is generally a maximum of six times the minimum lot width for the zoning district. Dead end roads shall not exceed 1000' in length without prior approval from the Commissioner of Public Works.

Turn arounds constructed in compliance with the NYS Fire Code shall be provided for all private roads and common drives.

205-4 Standards for Road Design

The road structure shall be built to minimum specifications as shown in the Construction Details located in Division 4 of these specifications. The engineer must include in the engineering report the sub-grade soil conditions to ensure free draining properties. If soil particle distributions do not show adequate free draining properties, engineers shall submit an engineered system to avoid the trapping of water under the road. Soil borings or test pits to a depth of 6' deep or 2' below any proposed road or utility improvements (whichever is greater) will be required to determine if proper soil characteristics are present.

New developments shall not be allowed to reduce the Level of Service (LOS) for any existing intersections adjacent to the development below a LOS "C" as defined in the Transportation Research Boards "Highway Capacity Manual" and AASHTO's "A Policy on the Geometric Design of Highways and Streets".

All roads shall be designed and constructed to conform to the guidelines set forth in Table 205A "Road Design Geometric Standards".

Cul-de-sacs shall be constructed to the same depth and materials as the approach roadway. All grades should transition to a maximum center line road grade of 2% across the cul-de-sac. All plans should include a separate cul-de-sac detail showing elevations at eight equidistant points along the edge of gutter.

205-5 Intersections

Intersections on arterial roads shall be held to a minimum and spaced at least one thousand (1,000) feet apart. Intersections of collector roads by other roads shall be at least eight hundred (800) feet

apart. Intersecting roads shall be offset by at least one hundred fifty (150) feet, or aligned directly opposite each another if they will be signalized in the future. Within fifty (50) feet of an intersection, roads shall be approximately at right angles and in no case shall the angle of intersection be less than seventy-five degrees (75) without additional channelization.

Minimum gutter or curb radii shall be based on the intersecting road types as follows:

A. Arterial intersecting with any road: forty (40) feet.
B. Collector intersecting with collector: thirty-five (35) feet.
C. Minor intersecting with collector: thirty (30) feet.
D. Minor intersecting with minor: thirty (30) feet.

All right-of-ways at intersections shall be rounded with the radius center point of the right-of-way being the same point as the radius center point for the gutter or curb.

Adequate sight distance shall be provided at all non-signalized intersections by keeping a triangular area (with each leg measuring seventy-five (75) feet from the intersection) clear of landscaping, berms and/or any structures above three (3) feet tall. Clearing or regrading shall be completed as necessary to meet this requirement.

The road profile within an intersection shall not exceed two percent (2%), and shall not exceed three (3%) percent within fifty (50) feet of an intersection. Between fifty (50) feet to one hundred (100) feet from the intersection, grades shall not exceed four percent (4%). Refer to Table 205A for grades beyond one hundred (100) feet from the intersection.

Traffic calming measures (traffic circles, roundabouts, chicanes, diverters), channeling lanes, de-acceleration lanes, turning lanes, traffic signals or other traffic channeling islands may be required at intersections or in other areas where present or anticipated traffic conditions warrant their use for traffic control and/or safety. Design criteria for these elements shall be determined on a case by case basis by Commissioner of Public Works and Town Engineer.

205-6 Road Grading and Shoulders

Grass areas within road right-of-ways shall be graded as needed to eliminate any slopes steeper than one (1) foot vertical rise in three (3) feet of horizontal distance. To accommodate reasonable snow storage, ten (10) feet of ROW adjacent to pavement or gutter edges shall be graded to an elevation not more than 6 inches higher than the pavement or gutter edge. All unpaved areas within the road right-of-way shall be treated with 6 inches of topsoil and grass seed. Rural road shoulders shall not exceed a slope of six (6%) percent at right angles to the road centerline.

205-7 Sidewalks

Sidewalks shall be provided in any locations required by the Town Sidewalk Ordinance (Town Code 208-28), and where they are deemed by the Planning Board to be useful in the interest of public safety or convenience. The Planning Board may require sidewalk easements to be granted to the Town to facilitate construction of future sidewalks. All sidewalks shall be constructed using concrete. Specifications for sidewalks can be found in Sections 200 and 325.

TABLE 205A - ROAD DESIGN GEOMETRIC STANDARDS				
	Minor Road	**Collector Road**	**Private Road**	**Rural Road**
Min. Width of ROW	60 Feet	80 Feet	N/A	60 Feet
Min. Width of Pavement	20 Feet (10’ Travel Lanes)	20-32 Feet (10’-12’ Travel Lanes, 0’-4’ Shoulders)	Varies to 20’ (10’ Travel Lanes)	26 Feet (10’ Travel Lanes, 3’ Shoulders)
Drainage	Gutter Required	Gutter or Curbing Required	Gutter Preferred	3’ Shoulders to swale
Min. Radius of Horizontal Curves	150 Feet	150-300 Feet	N/A	150 Feet
Min. Length of Vertical Curves	100 Feet	200 Feet	N/A	100 Feet
Min. Length of Tangent Between Curves	100 Feet	200 Feet	N/A	100 Feet
Maximum Grade	8%	6%	10%	8%
Minimum Grade	0.75%	0.75%	0.5%	0.75%
Minimum Sight Distance (30 MPH Design Speed)	200 Feet	300 Feet	200 Feet	200 Feet
Maximum Cul-De-Sac Length	6 x minimum lot width (1000’ max or per DPW)	N/A	N/A	6 x minimum lot width (1000’ max or per DPW)

Notes:

1) Strict imposition of these standards could result in excessive demands upon the Developer. Therefore, the standards may be modified by the Planning Board, subject to the approval of the Commissioner of Public Works, and with necessary changes to ensure safe vehicular operation. Standards of the American Association of State Highway Officials (AASHTO) shall govern in determining safe operating speeds and signing requirements.
2) Collector roads which do not service an area containing at least 150 dwelling units under ultimate area development, may, at the discretion of the Commissioner of Public Works, be considered “Minor Roads” for purposes of design standards, or have collection road specifications modified. The service area of a collector includes those dwelling units on minor roads which feed into the collector. Sidewalks on both sides of the road are required on collector roads unless waived by the Commissioner of Public Works, under advice from the Planning Board.
3) Private roads shall provide access to a public road over a strip of land having a minimum width of 20' for each lot. The pavement for the private drive or road may be located on one or more of the lot access strips, with appropriate cross-easements granted to the other lot owners.
4) Rural roads shall service development in RT and RS zoning areas of less than 12 units on lots greater than 1 acre with minimum road frontage of 150'. This specification may be used for cluster zoning applications on a case-by-case basis.
5) Radius of horizontal curves shall be measured to the centerline of the road.
6) Sight distance shall be measured between two points along the centerline of the road on a straight line entirely within the right-of-way and clear of obstructions. One of the points shall be twenty-four (24") inches above the surface of the road, and the other three and one half (3 1/2') feet above the surface. More sight distance may be required based on the posted speed of the road.

TABLE 205B - MISCELLANEOUS GEOMETRIC STANDARDS			
Parking Requirements			
Parking Angle	**Space Dimensions (ft)**	**Two Way Drive Aisle Width (Min)**	**One Way Drive Aisle Width (Min)**
90°	9’ x 18’	24’	20’
45°	9’ x 18’	24’	16’
Minimum Drive Thru Window Requirements *(Design for Crew Cab Pick Up Truck)*			
Inside Curb Radius	14’		
Outside Curb Radius	30’		
Cab Overhang Radius	33’		
Lane Width	10’		
Lane Length	25’		
Cars Per Lane	10		
Turn Around			
Refer to NYS Fire Code for Geometry			
Fire Truck Design Vehicle Dimensions (AASHTO BUS-40 Design Vehicle)			
Inside Radius	28’		
Outside Radius	45’		
Cab Overhang Radius	48’		
Width	15’ Min		
Tractor Trailer Design Vehicle Dimensions (AASHTO WB-15 Design Vehicle)			
Inside Radius	17’		
Outside Radius	45’		
Cab Overhang Radius	46’		
Width	15’ Min		

205-8 Trees
The Developer shall take adequate measures to preserve desirable existing trees in suitable locations within the subdivision. In general, the right-of-way shall be cleared of existing trees, but occasionally if conditions warrant existing trees be preserved within the right-of-way if approved by the Planning Board and Commissioner of Public Works.

The Planning Board may require tree plantings in new home sites. New tree plantings shall be governed by Section 315.

205-9 Lighting
The Town may require lighting at intersections and within new developments. The Developer may elect to form lighting districts along dedicated roads in subdivisions. Lights shall be operational prior to the first home being occupied. The cost and maintenance of said system will be the developer's responsibility until the road is dedicated by the Town Board. This will which occur after the Maintenance Guarantee period expires. Design standards for lighting shall conform with the requirements of the electric company having jurisdiction in the service area and the Department of Public Works.

205-10 Road Names and Signs
All road shall be named, and such names shall be subject to the approval of the Planning Board and the Monroe County Office of Emergency Management. Names shall be different in sound and spelling from other existing road names in the town as well as those municipalities and post zones contiguous to the town to avoid confusion. A road which is a continuation of an existing road shall bear the same name. Relating road names to features of local historical, topographical or other natural interest is encouraged. Entrance roads to subdivisions shall bear the subdivision name.

The Commissioner of Public Works will determine what road name signs and traffic signs are warranted in a project and will erect said signs. The developer will pay for said signs and their installation by posting funds in the Financial Guarantee.

205-11 Monuments/Property Corners
Permanent survey monuments shall be set on the boundary of the right-of-way line at intersecting roads, and at the PC and PT of curves. The PI of short curves may be used where it is practical, at the discretion of the Commissioner of Public Works and/or the Town Engineer. Monuments shall be placed only on one (1) side of the road, and only at one (1) corner of intersecting roads. Monuments shall be visible from each adjacent monument location. Maximum spacing of ROW monuments shall be 800'.

Permanent survey monuments shall be set at all exterior corners and/or angles of the subdivision.

Monuments shall be tied into the New York State Coordinate System or other acceptable datum where practical, at the discretion of the Commissioner of Public Works and/or the Town Engineer. Monument location ties shall be shown on the final plans. Field notes of ties to monuments or a tie sheet shall be recorded on the monumentation as-built, which must be submitted with a

certificate provided by a licensed surveyor or professional engineer that certifies all monuments have been placed where shown on the approved subdivision site plan.

Monuments shall be of stone or concrete, shall not be less than four (4) inches in diameter or square, and shall not be less than forty-two (42) inches long. Concrete monuments shall be reinforced with steel rods. A plug, brass plate, or pin in the monument shall serve as the point of reference. Metal rods of stainless steel or aluminum may acceptable if approved by the Commissioner of Public Works. If subsurface stone, prevents monument installation a drilled hole shall serve as the point of reference and a magnetic rod or other suitable metal shall be placed adjacent to the monument to allow for recovery. Said monumentation shall be installed two (2) inches below finished grade.

For new subdivisions, the developer shall pin all individual lot corners with #5 rebar, forty-two (42") inches long.

205-12 General Road Improvements

In addition to the required improvements specifically referred to elsewhere in this chapter, subdivision and site plans shall provide for all other customary elements of road construction and utility service which may be appropriate in each locality as determined by the Planning Board upon consultation with the Commissioner of Public Works and the Town Engineer. Such elements may include, but shall not be limited to, road pavement, gutters, catch basins, inlets, manholes, curbs, sidewalks, lighting standards, water mains, fire hydrants, fire alarm signal devices and sanitary sewers.

Underground utilities within the road right-of-way shall be located as required by the Commissioner of Public Works and/or the Town Engineer. Underground service connections to the property line of each lot shall be installed before the road is paved. All road improvements and other construction features of the project shall conform to Town specifications (latest edition), and shall be subject to the approval of the Commissioner of Public Works and/or the Town Engineer as to design, specifications and construction.

Prior to installation of any underground utilities such as telephone, electric, gas, and cable TV, a distribution plan shall be submitted and approved by the Department of Public Works.

205-13 Highway Frontage

To promote and protect the public health, safety, and welfare it shall be the policy of the Town Board to control the number of entrances and exits onto and off from State, County and Town highways. Residential lots shall be served by a single driveway unless otherwise approved by the Department of Public Works.

To help minimize the number of access points on State, County and Town roads, the Planning Board may require that the applicant grant access easements to the Town that can be used to provide properties a common ingress/egress point to a public road onto a public highway.

205-14 Road Sections
The road section details provided in this document shall be used for all road types allowed in the Town.

205-15 Non-Residential Subdivisions
Standards for roads in non-residential subdivisions and other developments with an internal circulation network shall be appropriate for the use intended, and shall be established by the Planning Board upon advice by the Town Engineer and Department of Public Works.

205-16 Private Roads and Common Drives
Common drives serve two to four homes. Private roads serve five homes or more. Private driveways serve a single home.

The Planning Board in consultation with the Commissioner of Public Works and Town Engineer will review all private roads, driveways and common drives relative to access, sight distance, ability to support traffic loads, traffic circulation, drainage and maintenance. All private roads shall be named and marked with an approved sign to provide adequate identification for emergency and fire situations.

The conditions and standards for private roads and common drives are as follows:

A. General
Private roads and common drives are non-dedicated roads serving more than one property. The owners of the parcel to be developed which is to be served by a private road or common drive shall grant and convey to the Town of Perinton an access easement to allow movement of emergency vehicles (i.e., fire and ambulance) or Town equipment to reach dedicated Town owned infrastructure. The easement shall obligate the owner(s) to maintain the private access to a reasonable and safe driving condition. This easement shall be of an approved format as presently on file at the Town of Perinton offices.

Private roads and common drives shall be constructed according to the town regulations as outlined in Section 320, except as modified by the typical section, as seen in Division 4 of these specifications.

Private roads and common drives must be constructed in accordance with the approved subdivision or site plan, and be approved by the Perinton Department of Public Works prior to the issuance of any building permits.

B. Sub Base and Drainage
Prior to placing sub base material, the sub grade shall be cleared of all topsoil and root material and shall be proof rolled to insure proper compaction. If a question arises as to the soil bearing capacity of a particular area the developer shall retain the services of a licensed engineer and approved testing laboratory to determine if any additional design/construction specifications are required to ensure the adequate, long term integrity of the pavement.

Drainage provisions must be designed and implemented to insure continued stability of the road system. In general, private roads shall be constructed to comply with the basic sub base

and drainage criteria as is required for a public minor road except that 18" wide gutters may be utilized as shown in the details. Common drives can be constructed using reduced binder asphalt thickness as shown in the details. All private roads and common drives shall be crowned. Designs incorporating inverted crowns shall not be permitted. Swales may be required along the common drive to direct runoff and drain the sub-base.

C. Turn-Around Areas

Any private road, common drive or private driveway, 100 feet in length or greater as measured from the edge of pavement of the connecting public road, must contain a turn-around for large emergency vehicles. The size and design shall meet the NYS Fire Code. Intersections of common drives and/or private roads with individual private drives may satisfy this requirement with implementation of proper design standards.

D. Pullover (Passing) Lanes

Private roads or common drives equal to or greater than 500 feet in length, shall require a pullover (passing) lane. The maximum interval between pullover areas shall not exceed 500 feet. The passing lane shall meet the size, design detail, and design standards as established in this section, and shall be in conformance with NYS Fire Code. The construction specifications shall conform to the road cross section detail.

E. Driveway Culvert

When a private road or common drive intersects a public road with a roadside swale, installation of a culvert may be required to insure continuous flow of roadside drainage along the public road. The developer's engineer shall design the appropriate elevation and size of the culvert and supply supporting documentation. Culvert pipe materials are specified in Section 200. The developer shall install the new culvert under and adjacent to the new road/drive and clean or grade the existing drainage ditch frontage to maintain positive drainage in the ditch.

F. Typical Section

The developer's engineer shall supply the Town with design section details for all new roads, drives both public and private, in accordance with the minimum criteria shown on the typical sections included in Division 4 of these specifications.

G. Miscellaneous Design Criteria

All improvements must be accurately shown upon a site or subdivision plan and be approved by the Department of Public Works.

Where an unpaved driveway intersects with a paved private or dedicated road, the first 40 feet of the unpaved driveway must be surfaced with a minimum of 2 inches of binder asphalt.

The maximum acceptable private road profile shall be ten percent (10%). In addition:

a. For profiles greater than 8%, and/or when curve radii exceed the standards for dedicated roads, then curves shall be of a super elevated design.
b. For profiles greater than 5%, gutters shall be provided with catch basins connected to adjacent storm sewer.

c. Design shall consider soil composition, soil conditions, surrounding sloped areas and the overall drainage pattern of the development.

Cut and fill areas shall be minimized with respect to the surrounding topography and vegetation.

The use of retaining walls or structures shall be minimized, but are acceptable to minimize the amount of disturbed area. Design calculations and plans for walls shall be stamped by a New York State Licensed Professional Engineer and shall be reviewed by the Commissioner of Public Works and Town Engineer. At their discretion, limits maybe placed on the height of the structures, and geotechnical studies may be required.

H. Approvals, Covenants and Easements

Prior to Town granting Final Site or Subdivision plan approval, the applicant shall obtain the State Attorney General's approval or a no action letter for proposed private roads or common drives.

The developer shall file in the Monroe County Clerk's office, a declaration of covenants, restrictions and easements in a form acceptable to the Planning Board Attorney which shall at a minimum provide:

a. Reciprocal easements for use of the private road or common drive by each owner of the abutting lots.
b. A declaration or note on the subdivision plan that indicates the town has no responsibility for the maintenance of said private road or common drive. Maintenance of the private road or common drive is to be paid for by the owners of the lots. "Maintenance" shall include normal upkeep, reconstruction, drainage, snow plowing and any and all other costs which may be associated with such private road or common drive.
c. That no certificate of occupancy shall be issued until the road is installed in accordance with approved site or subdivision plans, conforms to the specifications in this Design Criteria, and has been approved by the Commissioner of Public Works/Town Engineer, Department of Public Works.

I. Maintenance

Where a homeowner’s association will be established, primary maintenance of private roads and common drives, storm water management facilities, private utilities, retaining walls, disturbed slopes and restored surfaces shall be the responsibility of the association. An access easement for inspection shall be granted to the Town. The cost of all maintenance shall be the responsibility of the association or the owners collectively.

Where no homeowner’s association has been established, the maintenance of private roads and common drives, storm water management facilities, private utilities, retaining walls, disturbed slopes and restored surfaces shall be the responsibility of the owners of the property collectively as specified by a condition in each property owner’s deed.

J. Restrictions

All areas of the private road and common drive, including any turn-arounds or passing lanes shall be considered fire lanes and parking of any vehicles at any time shall not be permitted. The Town of Perinton will not be responsible for snow removal or maintenance of any private road or common drive.

205-17 Watercourses

Where a watercourse separates a proposed road from an abutting property, provision shall be made for access to all lots by means of culverts or other structures approved by the Town Engineer and Commissioner of Public Works. Said improvements, maintenance and replacement of shall be the responsibility of owners.

205-18 Driveways

All residential lots shall be served by a single road cut unless otherwise approved by the Department of Public Works. Driveways in Residential Zoning Districts AA, A, B, C, Townhouses and Apartments shall be paved in their entirety. Driveways in Residential Zoning District RS and RT 1-2-5 shall be paved within the road right-of-way boundary with a minimum of 2" asphalt binder.

The Town of Perinton Commissioner of Public Works approves all requests for driveway modifications on Town roads. This modification can be requested through an application permit obtained at the DPW office.

SECTION 210
STORM DRAINAGE

210-1 General

It is the Town's policy to control both the quantity and quality of stormwater runoff. Facilities shall be designed to take run-off from roads, lawns, paved areas and roof areas. Engineering design shall include the collection and conveyance of storm water through the road drainage system, the storm sewer system, a system of back-lot-line drainage swales, and main drainage channels throughout the development

210-2 Natural Water Courses

The preservation of natural watercourses is preferable to the construction of drainage channels, and wherever practical such natural watercourses should be preserved. Developer shall follow Town Limited Development District requirements (Town Code 208-46 to 208-51) relative to natural watercourses, open space and to absorb pollutants associated with runoff. Restrictive covenants should also be considered in the preservation and protection of natural water courses.

210-3 Design of Storm Water Management Facilities

The detailed design of stormwater management facilities shall be in accordance with the NYSDEC Stormwater Design Manual and Town Code - Chapter 119 (the more stringent regulation shall apply).

Storm sewers shall be designed with the capacity to carry the post development 10 year rain storm, 24-hour peak discharge rates as defined by New York State Department of Conservation (NYSDEC). All other storm water management facilities (detention or retention) shall be designed to contain post development 100 year, 24-hour peak discharge rates and volumes.

Storm drains and channels shall be designed and provided to adequately convey the anticipated runoff from the development as well as all future development upstream or uphill from the development in question. However, the minimum size pipe used for storm sewer mains shall be 12 inches in diameter. The minimum size pipe for catch basin laterals shall be 8 inches in diameter.

<u>Developments Less than 1.0 acre:</u>

Runoff shall be calculated by the Rational Formula for 10 and 100 year storms. The rainfall intensity curve included in the Appendix shall be used for calculating anticipated rainfall. Justification of Time of Concentration and runoff coefficient will be required for pre and post development conditions.

<u>Developments 1.0 acre and greater:</u>

TR-55 and TR-20 (or approved equivalent) shall be used to determine pre and post development peak discharge rates for 1, 10 and 100 year, 24-hour rain storms. Procedures are defined in the NYS Stormwater Management Design Manual and Town Code - Chapter 119.

210-4 Water Quality
All developments within the Town of Perinton shall conform to approved methods of treatment and design as established in the NYS Stormwater Management Design Manual, Town Code - Chapter 119 and the Irondequoit Creek Watershed (IWC) guidelines.

210-5 Easements
Drainage easements shall be reserved where road runoff must cross private property. Easement width will vary and shall be established by the Town Engineer and the Commissioner of Public Works.

All stormwater management facilities serving residential developments shall be located on lands dedicated to and owned by the Town of Perinton. The property shall be large enough to provide for future maintenance and have sufficient access width to a public right-of-way as determined by the Commissioner of Public Works and Town Engineer

Additional easements may be required to maintain drainage ways where deemed necessary by the Commissioner of Public Works and Town Enigineer. Stormwater management facilities serving commercial properties, or in developments where HOA's exist, shall be owned and maintained by the property owner or HOA. In those circumstances the entity shall enter into a Stormwater Control Facility Maintenance Agreement with the Town.

210-6 Drainage Swales/Channels and Pipe Characteristics
In general, the Town will require drainage to be conveyed in a pipe having a maximum Manning's "N" value of 0.013, up to and including a size of 48" diameter or equivalent. Where open channels are used, the constructed side slopes shall not be steeper than 1 on 3. Developers and their engineers bear the responsibility of preparing technical design data that verifies these requirements. This data shall be submitted to the Town Engineer for approval.

210-7 Stormwater Pollution Prevention Plan
The Developer and their engineer shall be responsible for furnishing a Storm Water Pollution Prevention Plan (SWPPP) as part of the Planning Board plan submittal. The SWPPP shall include full and sufficient details of all hydraulic structures. This includes, but is not limited to, cross sections of drainage channels, details of head wall construction, erosion control measures, special manholes, stormwater facility control structures, berms, spillways, drainage area maps, time of concentration calculations and all other items as may be necessary to fully establish the methods and materials to be followed in construction. A cross section through each stormwater management facility will be required. The cross section shall pass through the primary inlet, the deepest section of the forebay and deep pool, the outlet control structure, outlet pipe and spillway. Water surface elevations shall be labeled for 1, 10 and 100 year storms. Refer to Town Code Chapter 119 for a description of minimum SWPPP requirements.

210-8 Design Elevation of Structures
The Developer and their engineer shall design the vertical control of their subdivision so that surcharge of storm drainage systems will not cause a back-up or flooding of basements.

Key elevations such as finished first floor, lowest architectural opening, basement floor elevations, sanitary sewer facilities, stormwater outlet structures, spillways, grading and road elevations shall be shown on the approved plans. Once approved, no modifications to these elevations will be permitted without prior written approval is received from the Town Engineer. If directed by the Town, the developer's engineer shall verify these key elevations after construction and certify they are consistent with approved plans, prior to the issuance of a Certificate of Occupancy.

Back check valves for all connections to storm sewer system shall be considered by the developer, in particular where a surcharge condition is anticipated in the storm sewer main.

Where a property has the potential for flooding, the Developer's Engineers shall indicate such on the site plans. Where critical elevations are required to ensure compliance with the National Flood Insurance Program, an NFIP Elevation Certificate (FEMA form 086-0-33 or latest edition) shall be produced by the developer's engineer and submitted to the Town prior to a C of O being issued.

210-9 Road Catch Basin and Manhole Location

Catch basins within gutters, sanitary manholes and storm manholes shall be placed at lot lines or at the center of lots so they do not lie within the vehicular traffic area of driveways or roadways. Every attempt shall be made to locate manholes in lawn areas and not the pavement, near side property lines.

210-10 Site Appraisal for Stormwater Infiltration System

The most important step in determining the suitability of land for subsurface stormwater infiltration is the appraisal of soil and site conditions on the property. Borings or test pits shall be made to determine subsurface conditions followed by soil infiltration tests to determine the ability of the soil to absorb water.

Observations should be made of soil type and conditions, the distance to groundwater, the distance to bedrock and other factors which might influence the system. The lowest level of an infiltration system shall be at least 2' above groundwater and 4' above rock or impervious strata.

All tests shall be made within the area to be occupied by the proposed location of the subsurface treatment system. At least two infiltration tests shall be made in separate test holes in representative locations.

The infiltration procedure shall be in accordance with NYSDEC Stormwater Management Design Manual – Appendix D.

SECTION 215
STORM WATER MANAGEMENT FACILITIES

215-1 General

All new land development shall include stormwater quantity and quality management components as required by the Commissioner of Public Works and the Town Engineer, when it is needed to provide runoff control, protect water quality and ensure compliance with the New York State Pollution Discharge Elimination System (SPDES) general permit and Town Code Chapter 119.

Details included in the approved plans shall show the Stormwater facility's location, size, inlet and outlet structures, and appropriate safety features (e.g. fencing, grating on outlet structure, etc.)

The developer's engineer shall submit a Stormwater Pollution Prevention Plan with preliminary plan submission that includes drainage calculations justifying the size of pipes, channels, detention basins and related structures.

Design of all Stormwater Management Facilities and their components shall conform to the NYSDEC's Stormwater Design Manual and Town Code Chapter 119.

215-2 Purpose

There are various reasons for requiring stormwater management facilities. These facilities provide water quality measures that treat most runoff-related contaminants. Contaminants (silt, nutrients, oil, etc.) are transported in the initial stages of the storm, particularly over impervious surfaces. Approved water quality practices can remove 70% to 95% of the contaminants of the runoff. Furthermore, continued development upstream in a watershed results in increased runoff that may exceed the capacity of downstream natural water courses and man-made drainage facilities. Ultimately, this can result in highly erosive velocities, flooding, overtopping of banks and other concerns downstream.

For these reasons, all new land development will incorporate some degree of stormwater management unless otherwise approved by the Commissioner of Public Works and Town Engineer. As such, the purpose of this regulation is:

1. To establish the basic general philosophy for these facilities.
2. To set forth a series of parameters or rules governing the design.

If the Town deems it desirable and appropriate to remedy a downstream flooding situation, they may, at their discretion require an impoundment area of a size and type which can assist in rectifying the downstream flooding situation. This downstream flooding situation might be a case where backyards flood rather frequently, or where downstream piping systems are overtaxed, possibly causing backup into basements, yards, etc. The cost of any excess facilities is subject to negotiations with the developer.

215-3 Principles

Parameters or rules regarding stormwater discharge are discussed in detail in Town Code Chapter 119 and stated in general as follows:

1. No new or re-development project shall discharge storm water into adjacent culverts and channels at a rate greater than what occurs under a natural undeveloped condition or prior to the site being redeveloped.
2. The flow capacity of channels and culverts located immediately downstream from a new development do not necessarily govern whether the total drainage system downstream has adequate capacity for the following reasons:
    a. Proceeding downstream in any given drainage basin, (and therefore from any given development) the area contributing to any drainage channel or culvert is increasing.
    b. Culverts and channels downstream from a development may be able to handle the runoff from said development alone, however that does not adequately guarantee that said channels and culverts can handle the total runoff to that location.
3. If downstream facilities are inadequate prior to development and tend to flood during certain rain events, increasing the frequency at which these facilities flood due to additional new development runoff will not be acceptable.
4. Storm water leaving any site shall be discharged to a recognized drainage course, via private easement or easement dedicated to the Town if the upstream stormwater management facility is Town owned/maintained.

215-4 Design

Stormwater Management Facilities (SMF) shall be designed and built to the standards contained in the latest version of the NYS DEC Storm Water Management Design Manual and Town Code Chapter 119.

215-5 Stormwater Infiltration

In areas where development does not offer positive surface storm water discharge, the Town may allow the construction of an infiltration basin if the soil conditions are favorable.

The Developer's Engineer should understand that these types of systems have constraints that limit their use. Some of the possible constraints include:

1. Discharge shall not take place into or within four (4) feet above bedrock or two (2) feet above the groundwater table.
2. Stormwater must be treated prior to discharge into infiltration basin.
3. The system will need periodic service to maintain the designed permeability and prevent failure. Specific and detailed design elements of these systems can be found in Town Code Chapter 119 and the NYS DEC's Stormwater Management Design Manual.

The Developer shall retain a geotechnical engineer to provide a detailed report and plan showing the quantitative and qualitative ability of the aquifer to receive ground water recharge. More specifically, the report shall include soil permeability data, geologic features, gradation and soil sampling data, and soil exploration and testing. Adequate logs of test pits and bore holes shall be provided to define the limits of the aquifer where recharge is proposed.

The infiltration facility shall include a pre-treatment practice where adequate settling of soils can occur, and storage can be provided. Other design data including landscaping, useful life of system, sizing calculations, soil data and infiltration piping are required and shall be included and made part of the SWPPP.

Once the contributing drainage area has been permanently stabilized, infiltration facilities and (other similar green infrastructure measures) shall be tested, with DPW witnessing, to ensure they work per design assumptions. The infiltration test consists of installing a witness stake within the basin, filling with clean water, marking the water surface elevation and then timing how long it takes to drop 1". If the water drops 1" in 2 hours or less, then the basin is satisfactory. If it takes longer than 2 hours to drop 1", the contractor shall take whatever action that is necessary to restore the facilities performance to the required standard. This may include but not be limited to replacing the upper level of media, cleaning underdrain pipes, etc. Once corrections have been made, the infiltration basin shall be retested. The DPW will determine whether water needs to be imported to perform the test, or if the testing can be taken after a rain event.

215-7 Engineering Report and Plans

The engineering report package shall include a SWPPP for review. It shall include the following information:

A. Report
   1. SMF sizing calculations
   2. Outlet control design calculations
   3. Stage-storage-discharge information for the pond and outlet structure
   4. Pond routing calculations for the design storm and lesser storms
   5. Emergency spillway sizing calculations
   6. Undeveloped and developed drainage area maps with the path used for time of concentration clearly delineated
   7. All other information required by Chapter 119 of the Perinton Town Code and the NYS DEC SPDES General Permit for construction site activities.

B. Plans
   1. Proposed grading of SMF
   2. Emergency spillway location and length
   3. Path of drainage from site to a bed and bank of receiving stream
   4. Details of pond, outlet structure, and spillway with all critical elevations labeled
   5. A section through the pond with berm side slopes, pipes, (may be incorporated with No. 4) and key elevations.
   6. All other information required by the Chapter 119 of the Perinton Town Code and the NYS DEC SPDES General Permit for construction site activities.

215-8 Flood Damage Prevention

Flood damage prevention shall include the control of erosion of land surfaces and drainage channels as well as the prevention of inundation and excessive ground water seepage. This shall be accompanied by comprehensive site grading and the establishment of elevations of buildings, building openings, and roadways that are higher than the observed, anticipated, or computed water levels of storm sewers, streams, channels, floodplains, detention basins and swales.

Particular attention shall be paid to development in the vicinity of creeks and floodplains. There shall be no alteration of stream buffer areas or floodplains without the specific approval of appropriate governing agencies (FEMA, DEC), including the Town of Perinton.

All development proposed within a Special Flood Hazard Area, as defined by the FEMA Flood Insurance Rate Maps (FIRM), shall comply with the various regulations set forth by the National Federal Insurance Program (NFIP), Town Code Chapter 138 (Flood Damage Prevention) and Town Code Chapter 208-46 (Limited Development District).

SECTION 220
EROSION AND SEDIMENT CONTROL

220-1 General

Erosion and Sediment control practices are to be designed and implemented as required by the Town's sediment control law (Town Code Chapter 119), and shall also conform with NYS Standards & Specifications for Erosion and Sediment Controls, as published by the NYSDEC. The Town of Perinton Department of Public Works reserve the right to modify or require periodic maintenance of said erosion control measures once implemented.

220-2 Administration

The Town Conservation Board, Commissioner of Public Works, and Town Engineer will act as advisors to the Town Planning Board in the review and approval of planning for erosion and sediment control practices. The developer and their engineer (in the case of land development) shall work with these advisors in developing an appropriate erosion and sediment control plan throughout the site plan or subdivision approval process.

220-3 Method

A Stormwater Pollution Prevention Plan, as described in Town Code Chapter 119, shall be prepared and submitted to the Planning Board coincident with the submission of the preliminary development plans. The developer's engineer shall design erosion and sediment control plans to adequately address the following stages of construction:

1. Land clearing/grubbing, mass grading (e.g. site access road, interceptor swales, perimeter controls, silt sinks, silt fence).
2. Utilities, road construction and final grading.
3. Individual lot development until final restoration is established for the entire site and Notice of Termination filed with the NYSDEC.

The plans must be detailed enough to allow the Planning Board to render a SEQR decision.

Prior to final subdivision or site plan approval, a final SWPPP shall be prepared by the developer and their engineer which will have considered and incorporated all the comments received at preliminary approval.

The details of construction, including sequence of erosion and sediment control installation, shall be included in the Stormwater Pollution Prevention Plan (SWPPP). Reference is made to Town Code Chapter 119 encouraging innovative design.

220-5 Control

Facilities shall be constructed in accordance with the approved SWPPP, using Best Management engineering and soil conservation practices, and as directed by the Commissioner of Public Works and Town Engineer.

220-6 Sequence of Work

The contractor shall clear the perimeter of the construction area and place erosion control measures around the perimeter of the project prior to commencing any site work. As earthwork progresses, erosion control measures shall be implemented and maintained. There shall be no stripping of vegetation or other ground cover until all sediment control devices are installed in accordance with NYSDEC standards. All slopes and disturbed areas are to be stabilized as soon possible by application of straw mulch, temporary seeding and/or other approved stabilization practice, in accordance with NYSDEC regulations.

220-7 Scope of Facilities

Adequate facilities to effectively accommodate the increased run-off caused by changed soil and surface conditions during and after development shall be provided by the developer and included on the approved plans. These facilities shall consist of sediment interceptor swales, sediment sinks/settling ponds and ancillary features as shown on the approved plans or as directed by the Commissioner of Public Works and Town Engineer. In order to improve performance, accommodate changes in the developer's construction sequence or procedures, or to correct for failure of the facilities, the developer may be required to modify the facilities as requested by the Department of Public Works.

220-8 Performance

Erosion caused by disturbance and/or removal of vegetation or other ground cover shall be contained within the construction site using approved erosion and sediment control practices outlined in the SWPPP and NYSDEC Standards & Specifications for Erosion & Sediment Controls.

Further, gross soil particles shall be retained on-site, and the passage of colloidal particles into the natural waters of the Town shall be minimized.

The contractor shall not discharge de-watering pumps or surface runoff from construction sites directly to storm sewers, culverts, streams, or ditches without being routed through an approved erosion and sediment control practice.

Because of the wide range of variables during land development (e.g. the worst return-frequency storm, the area of stripped ground cover, the presence or absence of completed storm drain systems, the amount of sediment stored in the sink at any given time, the variation in soil texture, or the presence of saturated or frozen ground) each sediment sink/entrapment facility shall include a filter media barrier to protect the discharge. Performance shall be measured by the ability of the facility to pass all runoff through the filter media at all times during construction. It is the responsibility of the developer to adequately maintain the filtering integrity of the facility and to repair or replace it when required.

Degenerating efficiency as evidenced by holes, rips, or tears in the media, or failure of the settling pond to drain after a storm because of filter media blinding, or the presence of highly turbid water downstream of the media, will require repair and/or replacement as soon as possible.

220-9 Sediment Control Best Practices

In order to extend the longevity of the erosion and sediment control practices, the following best practices are recommended on construction sites:

1. Minimize the area of stripped ground cover at any one time. Retain and protect natural vegetation whenever possible.
2. Design the development plan to the topography and soil types so as to minimize the erosion potential.
3. Provide a mulch "mat" on raw areas that must be exposed for extended periods. Either a straw mulch or mechanically applied mulch should be utilized.
4. Place stone check dams in areas of concentrated run-off, such as at culvert and catch basin inlets, and in swales, in an effort to reduce soil transport.
5. Wherever possible, leave temporary buffer strips of original ground cover vegetation to reduce the amount of soil migration.
6. Restore ground surface protection as soon as possible by utilizing temporary seed and mulch.
7. Seed and mulch the right-of-way area immediately after all road and utility construction is completed.

220-10 Dust and Mud Control

Recognizing that removal of vegetation, dry conditions, and periodic high winds will cause nuisance dust movement, the developer shall take steps to avoid such nuisance and damage potential to abutting properties and their occupants. Such steps may include, but not be limited to: wetting-down exposed soil areas, mulching, calcium chloride applications and re-vegetating disturbed areas. The developer shall have equipment or material available on site for use at any time in mitigating these items.

The developer is also responsible for minimizing "tracking" of mud onto existing roads. A stabilized stone entrance should be constructed to access the site, and at individual lots where residential homes are being built. Roads shall be scraped, swept and broomed clear of mud at the end of each working day as required and as directed by the Commissioner of Public Works and Town Engineer.

The Town reserves the right to include in the Letter of Credit an allowance to cover the estimated cost of such dust-and-mud control.

220-11 Temporary Cover Establishment

As a method to control erosion from any graded site, it may be necessary to grow or apply temporary cover as outlined in the NYSDEC's Standards and Specifications for Erosion and Sediment Control and Section 220-9 of this Design Criteria.

220-12 Topsoil Management Plan

A topsoil management plan shall be included in the SWPPP for all construction activities. The plan shall provide sufficient detail relative to the location of the topsoil stockpile, and how it is to be protected. Topsoil shall not be spread after the first killing frost nor before the ground becomes workable in the spring.

220-13 Removal of Excess Topsoil

Should an excess amount of topsoil be present on the site, the developer may remove the excess amount once the following is provided to the Commissioner of Public Works and Town Engineer for review and approval:

- Survey of the actual topsoil stock pile generated during the site earthwork
- Calculations that show amount of topsoil required to restore all unpaved portions of the site with 6" of topsoil
- Calculations that show the amount of top soil in excess of the amount needed to restore the site
- A detailed description of how topsoil will be removed from the site which is to include hours of operation, erosion control measures, final restoration of disturbed area

If topsoil will be sold for profit, additional information will be required including but not limited to specific hours of operation, site cleanup and erosion control concerns.

220-14 Slopes, Swales and Sodding

All slopes equal to or less than 1 on 3 shall be machine tracked initially before other restoration measures are implemented, and shall be jute meshed and hydroseeded with a tacifying mulch according to the manufacturer's recommendations. (Hand seeding will not be permitted.)

All slopes greater than 1 on 3 will be sodded and pinned in place. A watering schedule will be provided and approved by the Town.

All swales, ditches and relocated streams (banks) will be hydroseeded with tackifying mulch. Some swales will require jute mesh or sod pinned in place as directed by the Commissioner of Public Works/Town Engineer.

An erosion control blanket (Sedimat or approved equal) will be required downstream of all siltation basins at the time of seeding.

All stormwater management facility banks will be jute meshed and hydroseeded.

220-14 Termination of Erosion and Sediment Control Facilities

The Financial Guarantee shall include the value of construction of the Sediment Control Facilities as well as the maintenance and removal of these facilities. 30% retainage will be held until all temporary practices are no longer needed and permanent stabilization has taken place as determined by the Commissioner of Public Works.

The judgment as to appropriate time of termination of facilities rests with the Commissioner of Public Works and/or Town Engineer, and their decision shall be final and binding. Their evaluation will be based upon the criteria set forth in the latest version of the NYSDEC SPDES General Permit for storm water discharges from construction activities.

The primary performance criteria used in making the determination will be the point in time that all disturbed areas have achieved at least 80% permanent stabilization and the ground cover in the land development project has been sufficiently restored such that runoff through the swales and storm drain system is relatively soil-free. They may grant permission to divert flow through the

permanent storm water detention pond or such other drainage systems as are described on the approved plans.

The developer and his engineer are reminded that dependence on siltation facilities from one construction season to the next greatly increases the statistical possibility of incurring storms of greater intensity, resulting in greater runoff, erosion and subsequent overtaxing or failure of the facility. Therefore, the site shall be temporarily or permanently stabilized as quickly as possible.

SECTION 230
CONDUIT AND MANHOLE DESIGN

230-1 Materials

All materials shall conform to Section 200, 345 and 346, however materials selected shall be adapted to local conditions, such as: character of industrial wastes, possibility of septicity, soil characteristics; exceptionally heavy external loadings, abrasion, corrosion and similar problems.

Suitable couplings complying with ASTM specifications shall be used for joining dissimilar materials. Sewer joints shall be designed to be watertight and to prevent the entrance of roots throughout the life of the system.

All sewers shall be designed to prevent damage from superimposed live, dead and frost induced loads. Proper allowance for loads on the sewer shall be made for soil, potential groundwater conditions, and width and depth of trench. In all cases, #1 and #2 crushed stone encasement shall be installed as stone bedding for all storm and sanitary pipe. Where necessary, special bedding, haunching, select fill backfill, concrete cradle, or other special construction methods shall be used to withstand anticipated potential superimposed loading or loss of trench wall stability. See applicable ASTM specifications for pipe strength, bedding, and installation procedures.

Refer to Section 130 for utility layout and general engineering requirements.

Installation Specifications

Installation shall be in accordance with the criteria and standards established by the industry in its technical publications. Requirements shall be set forth in the specifications for the pipe and methods of bedding and backfilling thereof so as not to damage the pipe, impede cleaning operations and future tapping, nor to create excessive side fill pressures that cause pipe to deform.

Trenching

The width of the trench shall be ample to allow the pipe to be laid and jointed properly and to allow the bedding and haunching to be placed and compacted to adequately support the pipe. The trench sides shall be kept as nearly vertical as possible. When wider trenches or embankment beddings are specified, appropriate bedding class and pipe strength shall be approved by the Town Engineer and Commissioner of Public Works.

In supported, unstable soil, the size and stiffness of the pipe, stiffness of the embedment and insitu soil and depth of cover shall be considered in determining the minimum trench width necessary to adequately support the pipe.

Ledge rock, boulders and large stones shall be removed to provide a minimum clearance of 6” below and on each side of all pipe(s).

Bedding, Haunching & Initial Backfill

Using #1 and #2 crushed stone; a bedding envelope shall be installed in layers with haunching for all rigid and flexible pipe, provided that the proper strength pipe is used to support the anticipated load, based on the type soil encountered and potential ground water conditions.

All water entering the excavations or other parts of the work area shall be removed until all the work has been completed. No sanitary sewer shall be used for the disposal of trench water, unless specifically approved by the Commissioner of Public Works/Town Engineer.

Final Backfill

Final backfill shall be of a suitable material removed from excavation except where other material is specified. Debris, frozen material, large clods, stones, organic matter or other unsuitable materials shall not be used for final backfill within 2' of the top of the pipe.

Final backfill shall be placed in such a manner as not to disturb the alignment of the pipe. Backfill and compaction in 12" lifts to 95% modified proctor will be required under proposed pavement, gutters and sidewalks.

Deflection Test

Deflection tests shall be performed on all PVC sanitary sewer pipe. The test shall be conducted after the final backfill has been in place for at least 30 days.

No pipe shall exceed a deflection of 5%. If deflection exceeds 5%, replacement or correction shall be accomplished in accordance with requirements in the approved specifications.

The rigid ball or mandrel used for the deflection test shall have a diameter not less than 95% of the base inside diameter or average inside diameter of the pipe, depending on which is specified in the ASTM Specification, including the appendix, to which the pipe is manufactured. The pipe shall be measured in compliance with ASTM D 2122 Standard Test Method of Determining Dimensions of Thermoplastic Pipe and Fittings. The test shall be performed without mechanical pulling devices.

All sewers shall be designed in accordance with the standards of the New York State Department of Environmental Conservation, the Monroe County Department of Health and the Monroe County Pure Waters Agency. The entire sanitary sewer system must also conform with the rules and regulations of the Town of Perinton Sewer Use Ordinance.

230-2 Sewer Profiles

In designing sewer profiles, consideration shall be given to the relationship between the house elevation and the sewer elevation to assure that laterals can be installed on at least a 1% grade (1/8 inch per foot) for 6" diameter laterals and 2% grade (1/4 inch per foot) for 4" diameter laterals.

The sanitary sewer profile shall be designed so that there is a minimum of 0.1' drop (straight through), 0.3' drop (90º bend in flow) and a maximum of 0.3' drop within the manholes.

In the design of storm drainage piping systems, a maximum Mannings "N" of 0.013 shall be assumed for smooth pipe.

In general, sewers shall be extended to the proposed district boundary with manholes left at the boundary line for future sewer extensions unless otherwise directed by the Town.

230-3 Manhole Spacing
Manholes shall be spaced as required by the Department of Public Works and Town Engineer, however, maximum manhole spacing should not exceed 300'.

230-4 Manholes and Drainage Inlets
Manholes shall be of a diameter as shown on the standard drawing in the Construction Details found in this documents appendix. All three-way manholes shall have a 5' inside diameter or greater and inside drop manholes shall have a of 6' inside diameter or greater. The invert of a 3-way manhole shall have a minimum radius equal to 1/2 the diameter of the manhole. "T" intersections are not acceptable. Drainage inlet structures shall not contain more than two (2) main stormwater pipe connections (not including 4" weep drains).

230-5 Laterals
Laterals shall be designed and constructed in conformance with the specifications for main line sewers as described in Section 360. Connections to the main line sewer shall be made with a gasketed wye sewer fitting, matching the same pipe class as that of the main line sewer. The connection shall be encased in crushed stone.

Each sanitary lateral shall be fully extended, plugged and tested along with the main line sewer.

Cleanouts in lateral lines shall be installed at 90' intervals or less, or where a bend greater than 45˚ is used. Bends greater than 45˚ but less than or equal to 90˚ shall be accomplished with 45˚, 22 ½˚, or 11 ¼˚ bends fitted together.

The cleanout shall be capped and left at a minimum of 3 feet above the final proposed finish grade until the home is constructed. During final lot grading, the cleanout shall be lowered to be flush with the ground surface and a threaded ferrous metal cap with an integral raised square nut on top shall be installed.

Laterals shall not be installed at depths greater than 10' below finished grade unless approved or directed by the Department of Public Works. In the event the main line sewer is greater than 10' deep, a lateral riser shall be installed and encased in crushed stone as shown on the standard detail drawing.

Sewer main lines shall be located within cul-de-sac areas in a manner that allows lateral lines to be designed with as short a run as possible. The layout of all sewer lines within the cul-de-sac area shall be subject to the review of the Department of Public Works and Town Engineer.

When an existing sewer main needs to be tapped for a lateral connection, the Town prefers the use of an Inserta Tee connection. However, if the lateral diameter exceeds 50% of the sewer main diameter, a gasketed wye connector and repair coupling (GPK or approved equal) will be required. Refer to Construction details in Division 4. The final decision on lateral connection type shall be approved by the Commissioner of Public Works and Town Engineer.

SECTION 235
HOUSE AND LOT DRAINAGE

235-1 General
Provisions shall be made for draining the surface of each lot by implementing proper grading design as well as the construction of swales or installation of drainage inlets. This type of drainage items shall receive the same thorough level of design attention as the road drainage system.

235-2 Roof and Foundation Drains
Provisions shall be made for the transmission of roof and foundation drainage into the storm sewer system. This shall typically be accomplished with the use of storm sewer laterals. When positive gravity discharge from the cellar drain cannot be obtained, sump pumps with appropriate check valves shall be installed.

In special conditions, where topography allows, and no direct connection to the storm system is possible, foundation and roof drainage may be conveyed to rear lot drainage swales when no nuisance or adverse conditions will be created for abutting or downstream properties. This will require the approval of the Commissioner of Public Works and Town Engineer at the time of plan review. In such instances, the basement floor shall be designed to be above the level of the project design flood to assure no backup or flooding of the basement occurs.

Dry wells for disposing roof drainage shall be considered where storm sewers are not available and soil conditions are acceptable. The developer shall size the facility assuming a 1" rain event over all new impervious surfaces.

235-3 Waste Drainage
Laundry, sanitary sewer, kitchen wastes and garage floor drains shall not be discharged to a storm drainage system. Drain connections from garages shall be connected to the sanitary sewer system. If no sanitary sewer is available, garage floor drains shall be allowed to discharge to a rear or side yard swale with an appropriate trap or sump in the floor drain to minimize oil and sediment discharge to swale. Garage floor drains shall not be connected to septic systems.

235-4 Side Lot Drainage
Side and rear lot swales shall be installed on all new development lots to insure positive drainage to storm system in the ROW or adjacent natural conveyance channel, and not onto neighboring lots.

Storm drains conveying runoff to natural adjacent conveyance channel shall extend to the rear lot line or to the main channel to which the drain is discharging and not in the middle of the yard.

235-5 Cleanouts
Storm drain laterals shall have an outside clean out located within 10' of the house foundation.

235-7 Lot Grading
All lots shall be graded to insure positive drainage away from the structure is provided. Upland drainage from lots shall be conveyed across lower lots in a manner that does not pose a nuisance

or cause safety hazards to the downstream properties or structures. To ensure proper lot drainage, the following shall be adhered to:

1. Individual lot grading shall be approved by the Commissioner of Public Works/Town Engineer upon completion and prior to the issuance of a C of O. It is the developer's responsibility to contact the Town for final grade inspection.

2. If the developer wishes to modify the approved grading plan, the Department of Public Works must approve all of the changes before any changes in ground elevation are physically made.

3. All municipal storm sewer structures including; roadside catch basins, yard catch basins and manholes shall be raised to approved grade to ensure proper drainage. Modification of the drainage system may cause the cost of sewer structures to increase. The increased cost shall be borne by the developer or owner.

4. Surface drainage from a maximum of three (3) consecutive lots in any direction shall be collected in a yard drain and piped to the storm system.

SECTION 240
SANITARY SEWAGE FACILITIES

240-1 Location
Sanitary sewers shall be used whenever the proximity of the existing sewer system to the proposed project area makes it possible. The sewers shall be designed in accordance with the standards set forth by the New York State Department of Environmental Conservation, Monroe County Health Department, and Monroe County Pure Waters.

Downstream sewer system capacity and operation must be analyzed by the developer's engineer, and taken into consideration when designing the new developments system. The applicant shall be responsible for any necessary downstream upgrades.

Septic system design and approval is the responsibility of the Monroe County Health Department.

240-2 Material
Materials shall be as specified in Division 2 - Section 200 and Division 3 of this manual.

240-3 Profiles
Sewer profiles, shall be designed to allow for the use of 4" sanitary laterals with a minimum two percent (2.0%) grade (1/4 inch per foot). The use of 6" laterals, with a minimum of one percent (1.0%) grade (1/8 inch per foot), may be considered and must be approved by the Commissioner of Public Works/Town Engineer.

Sewer profile shall be designed so that there is no more than a 0.3 foot drop within manholes. The minimum drop across a straight through flow manhole shall be a minimum 0.1 feet and across a 90º manhole shall be 0.3 feet. The maximum change in direction of flow through any manhole shall be 90º. Profiles shall be provided for review and approval by the Town Engineer and Commissioner of Public Works with the preliminary plan submission during the approval process.

240-4 Manhole Spacing
Maximum spacing between manholes shall be no more than 300 feet.

240-5 Manholes
All three-way manholes shall be 5 feet in diameter or greater depending on size of pipe.
Minimum manhole size shall be no less than 4'.

The invert of three-way manholes shall have a minimum radius equal to one-half (1/2) the diameter of the manhole. "T" intersections are not permitted.

240-6 Special Design for Swimming Pools
All swimming pools that discharge into a sanitary sewer shall be designed with controls that limit discharge rates and methods to prevent over capacity from occurring when the pool is being drained. The adequacy of its control shall be reviewed and approved by the Commissioner of Public Works/Town Engineer prior to building permit issuance by the Town.

240-7 Grease, Oil and Solids, Separator Traps

The developer and/or owner shall read and comply with the provisions of the Sewer Use Ordinance, Town Code Chapter 171.

Grease, oil and grit separators shall be provided in accordance with the New York State Building Code when, in the opinion of the Commissioner of Public Works/Town Engineer, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts, flammable wastes, sand or other harmful ingredients.

The separator unit shall be designed to stop the discharge of flow from any fixtures it serves once it becomes filled with grease or solids. No separator bypass shall be permitted.

All separators shall be sized and installed according to the manufacturer's recommendations. All design calculations and assumptions shall be supplied to the Department of Public Works for review and approval prior to unit installation.

The separator unit shall be located so it is readily and easily accessible for inspection by the Building and Codes Department. It is the owner's responsibility to provide for the regular cleaning of the separator to insure its proper operation.

A maintenance instruction plate for the separator shall be permanently attached to its access cover or immediately adjacent thereto, to assure that anyone may easily and readily reference it for the proper maintenance of the separator.

All separators shall be of a type and capacity approved by the Building and Codes Department.

240-8 Sanitary Septic Systems

Where sanitary sewers are not available for a proposed development, a system consisting of septic tanks and leach beds may be permitted. Such facilities shall be designed in accordance with current policies and requirements of the NYSDEC, Monroe County Health Department and New York State Department of Health.

Leach bed design shall be based upon the results of percolation and deep hole tests. Such tests shall be conducted in accordance with the standards and methods approved by the NYS and Monroe County Health Department. Percolation tests shall be conducted on each lot proposed for development and shall be located in the area where the leach bed is proposed to be installed. Location of all percolation and deep test holes shall be included on the subdivision/site plan.

Concurrent with the submission of the preliminary plan the Applicant shall submit a data sheet stating the results of percolation and deep hole tests. This data sheet shall conform with the information required by the Monroe County Health Department. It shall contain an affidavit from the Applicant's Engineer stating that the percolation and deep hole tests were supervised and witnessed by said engineer and that he/she attests to the stated results.

Design of septic systems shall be in accordance with the latest standards of the New York State Department of Health and Monroe County Health Department, for lots with stabilized percolation rates of 60 minutes or less. Consideration may be given to approval of lots with percolation rates

exceeding 60 minutes if the Monroe County Health Department approves a specially designed system for sewage disposal. The Town reserves the right to require additional design features on such systems, on a case by case basis. Also, the Town may require stabilized rates during the wet season.

240-9 Soil Percolation Tests & Site Appraisal

The most important step in determining the suitability of land for an onsite wastewater treatment system is the appraisal of soil and site conditions on the property. Borings or test pits should be made to determine subsurface conditions followed by soil percolation tests to determine the ability of the soil to absorb sewage. Observations should be made of soil type and conditions, the distance to groundwater, the distance to bedrock and other factors which might influence the system.

All tests should be made within the area to be occupied by the proposed location of the subsurface sewage treatment system in accordance with the latest requirements of the NYSDOH and MCDOH. At least two soil percolation tests should be made in separate test holes in representative locations.

240-10 Dry Sewer System

Any residential development proposing private septic systems on lots less than one (1) acre in size, and not subject to the Limited Development District restrictions may be required to install a dry sewer to be served by future Town Sewer District Extension in addition to the individual septic systems.

A dry sewer system consists of a lateral within the house that is connected to a sanitary sewer system that may be tied to the municipal system in the future. The lateral within the house is capped for future use. Interior house piping shall align for this future connection.

This requirement may be waived by the Planning Board if sewer extension is not identified in the Sanitary Sewer Capital Improvement Program, or if circumstances are such that the requirement is infeasible or unreasonable.

SECTION 245
SANITARY SEWER PUMP STATIONS

245-1 General

Sanitary sewer pump stations shall be used only when gravity sanitary sewers are not physically possible or feasibly available. Use of pump stations must be approved by the Commissioner of Public Works. They should be designed in accordance with the standards set forth by the New York State Department of Health, Monroe County Department of Health, Ten State Standards, and the Town of Perinton.

Downstream sewer system capacity and operation must be analyzed by the applicant, and accounted for in the design. The applicant shall be responsible for any downstream upgrades required due to the proposed development.

All municipal pump stations shall be equipped with a natural gas fired emergency generator for back-up power. If natural gas is not available in the vicinity of the new pump station, then a diesel generator shall be provided.

The Town must approve all shop drawings and submittals on the pumps before any order is placed. The total cost for supplying all equipment is the responsibility of the developer.

245-2 Standardization

Pump stations shall be of a submersible type. The Town has standardized on ITT Flygt Corporation pumps. Other materials shall be as specified in the construction section of this manual.

The engineer shall submit the complete system head curve to the pump suppliers with the proposed pump model and coordinate with the manufacturer to ensure the most efficient pump to meet system requirements is being specified. The engineer shall review this information with the Commissioner of Public Works and Town Engineer.

245-3 Sizing

The pump station wet well and forcemain shall be sized with sufficient capacity to handle peak development of the entire drainage basin. A minimum of two pumps shall be installed per pump station with each individual pump being capable of handling the projected peak flow. Triplex (three pump) stations, with two pumps running together simultaneously capable of handling the projected peak flow, will be allowed with the approval of the Commissioner of Public Works/Town Engineer. Minimum flow velocity in the forcemain shall be 2.5' per second.

The wet well shall be sized for two hours, peak flow storage meeting NYSDOH Standards. The emergency generator shall be sized for 125% of the electric demand of the stations full operation (both pumps running).

The Town may determine that a pump station should be built to accommodate other potential development. In this case, the Town will negotiate cost shares for the station with the developer.

245-4 Pumps

All submersible pump motors shall be air cooled and designed to run continuously. The pumps shall be capable of handling raw, unscreened sewage. The design shall be such that the pump unit will be automatically and firmly connected to the discharge piping when lowered into place on its mating discharge connection that is permanently installed in the wet well. The pump shall be easily removable for inspection of service, requiring no bolts, nuts, or other fastenings to be disconnected. There shall be no need for personnel to enter the wet well for service inspection. Each pump shall be fitted with a stainless steel chain of adequate strength and length to permit raising and lowering of the pump for inspection and removal. The pump, with its appurtenances and cable, shall be capable of continuous submergence under water without loss of water tight integrity to a depth of 65'. Pumps shall be equipped with seal failure sensors.

All major pump parts, such as the stator casing, oil casing, sliding bracket, volute and the impeller shall be of grey cast iron. All surfaces coming in contact with sewage shall be protected by a coating resistant to sewage. All exposed bolt and nuts shall be of stainless steel.

A wear ring system shall be installed to provide a sufficient seal between the volute and the impeller. The impeller shall be fabricated of grey cast iron, and be a non-clogging design, capable of handling solids, fibrous material, heavy sludge and other matter found in normal sanitary sewage applications. The impeller shall be constructed with a long thrulet without acute turns. The impeller shall be dynamically balanced. Static and dynamic balancing of operations shall not deform or weaken it. The impeller shall be slip-fit to the shaft. Non-corroding fasteners shall be used.

245-5 Cable and Cord

Pump motor cable shall be suitable for submersible pump applications and this shall be indicated by a code or legend permanently embossed on the cable. Cable sizing shall conform to NEC specifications for pump motors and shall be of adequate size to allow motor voltage conversion without replacing the cable. Pump motor cable shall be of sufficient length to extend from the pump through the pump station wall, the conduit, the explosion proof junction box mounted below the control panel, and into the control panel. Electrical cords shall have 5’ of slack in wet well.

245-6 Testing and Warranty

Each pump shall be subjected to a running test by the manufacturer prior to shipment from the factory. This test shall include a complete mechanical and electrical test before and after submerged running for a minimum period of 30 minutes.

The Contractor shall provide a warranty from the pump manufacturer against defects in workmanship and materials for a period of five (5) years or 10,000 hours of operation under normal use, operation and service. In addition, the warranty shall cover the replacement of certain parts which shall become defective through normal use and wear on a progressive schedule of cost for a period of five (5) years; parts included are mechanical seal, impeller, pump housing, wearing ring, and ball bearings. The pump manufacturer must have a pump service center within 40 miles of the Town of Perinton.

245-7 Accessory Package and Spare Parts

The pump supplier shall furnish, at a minimum, pump and accessory packages as required. The supplier shall also be responsible for installation and start-up, and for supplying a written preventative maintenance program and two sets of O&M manuals. In addition, the following spare parts shall be supplied by the pump supplier:

1. One set of wearing rings for each pump.
2. One set of special tools required for maintenance of the pumps.
3. One motor repair kit for each pump.
4. One spare liquid level sensor.
5. One spare impeller.
6. One O-ring kit for each pump.
7. One set of alternator relays.
8. One MiniCAS.

245-8 Installation

All pumps shall be sized and installed according to the manufacturer's recommendations. Said recommendations shall be supplied to the Department of Public Works prior to unit installations so that a judgement as to adequacy for the intended purpose may be made by this office.

The equipment supplier shall have a representative available to aid in the proper installation of the pumps. After the installation is completed, and the station is ready for automatic operation, the qualified field service person shall check all adjustments and operation procedures and perform the final start up. Prior to final start up, pump suppliers shall inspect final alignment of the pumps and piping and submit a written report of their inspection to the Commissioner of Public Works/Town Engineer.

245-9 Painting

Painting of all above ground surfaces shall meet the approval of the Town of Perinton. Painting of interior surfaces of the wet well and valve vault are specified on the construction detail.

245-10 Electrical Components, Controls and Panels

The electrical components, controls and panel shall be as described or as directed by the Commissioner of Public Works/Town Engineer.

All equipment and accessories from the pump set up to and including all controls and the disconnect switch shall be provided by the pump set supplier. All equipment and accessories including the disconnect switch, to the permanent power source shall be supplied with the panel.

All installation shall be in compliance with latest edition of:

- National Electrical Code, NFPA-70, current edition
- OSHA Requirement
- Local ordinances
- NFPA

The Town Building and Codes Department will inspect the pump station and issue an inspection certificate for the Department of Public Works to retain on file.

Perform all operations required for complete testing of systems. Testing to be witnessed by representatives of the Town of Perinton.

Pump and emergency generator controls shall be capable of fully automatic operation. Controls shall convey a 230 volts, 3 phase, 60 hertz, 4 wire power source to each pump.

A 120-volt control circuit transformer with breaker and overload protector shall be included for the pump station. Overload units are to be pre-calibrated to match motor characteristics and shall be tamper-proof. All items shall be wired to terminal strips for connection to external wiring. The following shall be included in the pump controls:

Duplex Pump Station Panel Box Parts List	
Item	**Quantity**
3 Phase, 240 Volt, Square “D” Main Breaker	1 ea
3 Phase, 240 Volt, Square “D” Breakers (One Breaker Per Pump)	2 ea
3 Phase Motor Starters, Furnas	2 ea
3 Phase Overload Protection W/Manual Reset, Magnetic Relays	2 ea
Pepperl+Fuch Intrinsic Barriers (Ex-2) (Ex-1)	 1 ea 1 ea
Power Receptacle For Alarm Inside Panel	1 ea
Duplex 120v (20 Amp) Receptacle On Dead Front Panel With G.F.C.I.	1 ea
3 Position Switch: Hand, Off, Auto (Hand Oper. To Bypass Control)	2 ea
3 Position Float Test Switch: Hand, Off, Auto	3 ea
100 Watt Heater And Thermostat For Condensation Protection	1 ea
3 Phase 100 Amp Transfer Switch, Square “D” Otv-323nrb	1 ea
Hour Meters	2 ea
Re-Settable Counters (Starts)	2 ea
Pump Run Lights	2 ea
Seal Failure Lights	2 ea
Mini-Breakers (Control, Heat, Alarm)	3 ea
Alternator 120 Volt, 10 Amp, Furnas Pilot Control	1 ea
8" X 8" X 6" Junction Box And 2 Explosion Proof Fittings	1 ea
48" H X 36" W X 12" D - Panel Box With 24" Legs And Drip Edge, Nema 3r	1 ea
Generator Adaptor, 100 Amp Male Recessed, Crouse-Hinds Catalog # Area 10475-S22	1 ea
Alarm System, Ademco Cat #612 Model Chromalox Scb-50 Hr. With Battery Back-Up	1 ea

Pump stations shall be furnished with an internet enabled monitoring system manufactured by PhoenixSentry (FSI Systems). Contact DPW for specific requirements to ensure proper integration with the Town's existing pump station monitoring network.

The electrical equipment shall comply with Sections 32.35, 34.31, 34.32, 34.33 of the Ten State Standards. All electrical equipment and raw sewage wet wells shall comply with the National Electrical Code requirements for Class 1, Group D, Division 1, locations. Pump motor power cords shall be designed for flexibility and serviceability under conditions of extra hard usage and shall meet the requirement of the Mine Safety and Health administration for trailing cables. Din rail mounted intrinsically safe relays as manufactured by P&F ground fault interruption protection shall be used to de-energize the circuit in the event of any failure in the electrical integrity of the cable.

The control panel must have a weatherproof NEMA 3RT cover. The control panel is to be installed a minimum of 5' from wet well.

Ground fault interruption shall be provided for each motor power cord.

The service to panel shall be 120/240 volt, 3 phase, 4 wire delta.

The pump motor shall be 3 phase, 230 volt unless otherwise approved by the Deputy Commissioner of Public Works - Sewers.

245-11 Pump Station Wet Well

Pump station wet well will be designed for duplex or triplex configuration. Duplex pump stations will have a minimum inside diameter of 8 feet. Triplex stations will have a minimum inside diameter of 10 feet.

All metal parts inside wet well, excluding pumps, pump discharge, and piping, shall be stainless steel.

A ladder shall be installed in wet well to provide entrance. Ladder shall be constructed of either stainless steel or fiberglass.

Pump guide bars shall have an intermediate guide bar bracket if over 20' in length.

The pump station shall be equipped with an automatic flush valve. This valve shall operate from the pump discharge and shall not be electrically controlled.

245-12 Pump Station Valve Pit

A separate valve pit large enough to install 2 discharge lines, 2 quarter turn globe valves (the globe valves shall have the same inside diameter as the discharge line) 2 ball type check valves (Flygt HDL or equal) will be installed. The structure should have a drain line from the valve pit to the wet well with a check valve.

245-13 Emergency Storage

When a wet well is unable to be sized to provide the required 2 hours peak flow storage requirement, a concrete storage tank(s) shall be installed in case of a pump station failure. Upstream gravity lines and manholes shall not be included in storage capacity calculations.

Basement floor elevations must be taken into account when calculating emergency storage elevations. There shall be no risk of basement flooding during emergency storage.

245-14 Pump Station Site

The pump station, valve vault, emergency storage vaults, generator, all appurtenances and driveway shall be constructed on lands to be dedicated to the Town of Perinton. The area must be large enough for vehicles to enter the site for maintenance of the station.

An asphalt driveway will be installed to the pump station and valve pit. The driveway will be built to the same specifications as a minor road, without gutters. The width and turn-around configuration must be approved by the Commissioner of Public Works.

Landscaping should be designed into the plan. Pump station site should be landscaped to make the area look as natural as possible. Details should be discussed with the Deputy Commissioner of Public Works, Sewers.

245-15 Private Pump Stations

Private pump stations and force mains that serve a single home or business will be owned and maintained by the home or business owner. Prior to obtaining DPW approval on a private pump station, the pump station manufacturer's representative shall inspect the installation and provide a letter to the Commissioner of Public Works indicating the pump station was installed according to the manufacturer's recommendations.

SECTION 250
WATER SUPPLY

250-1 General
Water systems shall be designed to provide adequate fire protection and domestic service. Design and construction shall be subject to the approvals of the Monroe County Health Department and the Monroe County Water Authority.

250-2 Private Wells
Private wells shall be permitted only in instances where public water supply is not available. When private wells are used, the applicant must submit to the Town results of an approved water quality sample test from the Monroe County Health Department or a certified testing laboratory using Health Department standards prior to the issuance of any building permit. Results of well test pumping shall also be supplied to the Town. All development plans shall contain a note stating that the Town is not responsible for the quantity or quality of any well supply.

250-3 Municipal Services
During the planning stage for all developments, the applicant's engineer shall consult with the Monroe County Water Authority, the Town Engineer and Commissioner of Public Works regarding the sizing of water mains, valve spacing, hydrant locations, loop requirements and stubs for future extensions.

The proposed water distribution system shall be extended across the frontage of the development parcel or to other points on the border of the parcel to permit extension of the system in the future except where the Department of Public Works deems such extensions to be contrary to development guidelines and the text of the Comprehensive Plan.

Each new system shall be designed to obtain the required fire flow in the development while satisfying the average daytime domestic draw. Generally, the Insurance Service Office (I.S.O.) "Guide for Determination of Required Fire Flow" shall be used in calculating these required protective flows.

250-4 Hydrant Spacing
For single family residential developments, hydrant spacing shall not exceed five hundred (500) feet, along public or private roads.

For all other types of development, including multi-family, institutional, commercial and industrial, the spacing shall not exceed three hundred (300) feet, along public and private roads.

The local Fire District Chief or his authorized representative, the Town Engineer, Commissioner of Public Works and the Town Fire Marshall shall approve the location of all proposed fire hydrants. In addition, the proposed water system shall comply with the NYS Fire Prevention and Building Codes.

When a structure is to be located along a road containing a municipal water system but not having hydrants spaced to meet the above requirements, the developer shall install additional hydrants to comply with the above hydrant spacing and location criteria.

250-5 Special Town Requirements

Hydrants shall be located as closely as possible to property lines, and in general, within the road right-of-way between the road and sidewalk, 5' from any gutter or curb, and 2' from any sidewalk. Exact location shall be approved by the Commissioner of Public Works/Town Engineer.

All plans shall show the location and distance to the nearest existing fire hydrant.

The results of hydrant flow tests as well as calculations of available flows and pressures must be included on site plans.

250-6 Special Requirements for Private Developments

Fire hydrant systems and/or approved sprinkler systems shall be installed as required by NYS Fire Code Section 508 (latest edition) based on the distance between proposed structure and the nearest hydrant.

Consideration may be given to alternate sources of water supply, such as farm ponds or conservation lakes if permanent provisions for drafting of water for firefighting purposes can be installed adjacent to the private driveway. Engineering data will be required that demonstrates the adequacy and continuance of the water supply.

Where hydrants are to be provided, all water system facilities shall be constructed, tested and placed in service before any wood frame construction will be allowed to take place at the development site.

SECTION 260
SITE LIGHTING

260-1 Purpose

Non-residential and multi-family site plans shall be designed to provide safe, convenient, and efficient lighting for pedestrians and vehicles. Lighting shall be designed in a consistent and coordinated manner for the entire site. The lighting and lighting fixtures shall be integrated and designed so as to enhance the visual impact of the project on the community and to blend into the surrounding landscape. Lighting systems shall be designed and located so as not to cast direct rays of light upon adjoining premises or cause glare hazardous to pedestrians or vehicular traffic using adjacent public roads. Illumination shall not be used for the purpose of advertising or attracting attention to the property, except as permitted by Town Code Chapter 174 (Signs).

260-2 Applicability

A site lighting plan shall be required during review of any non-residential or multi-family site plan. The contents of the site lighting plan shall be coordinated with the Department of Public Works.

260-3 Site Lighting Design Requirements

Lighting shall be designed to provide safety within the project area and to accent key architectural elements of buildings and landscape features. Light fixtures shall be considered as an integral design element that complements the architectural elements of the project as well as the surrounding neighborhood. This can be accomplished through style, material and color. All lighting fixtures used to illuminate any portion of a site shall meet the following requirements:

1. Light Fixture (Luminaire): The light source (lamp) shall be concealed completely within the fixture. All lighting fixtures shall be cutoff fixtures that cast light downward.

2. Fixture Height: Lighting fixtures shall be a maximum of 16 feet in height (measured from ground to bottom of light source) within parking lots and pedestrian areas.

3. Light Source (Lamp): The same light source type shall be used for the same or similar types of lighting on any one site throughout any development.

4. Light Spillage: Site lighting shall be designed in such a manner that limits light intensity at the site property lines to no more than 0.5 foot candles in intensity.

5. Light Fixture Base: All bases for light poles shall be designed to be architecturally attractive as determined by the Planning Board.

6. Lighting Duration: Site/parking lot lighting systems shall be designed to incorporating the use of sensor technologies and/or timers that limit the active use of said systems to only those times when it will be needed during the hours of business operation. Lower intensity security lighting for use during “off hours” will be allowed.

260-4 Illumination Level
Illumination levels shall be measured in footcandles.

All site lighting shall be designed so that the average level of illumination, as measured in footcandles (fc), does not exceed the levels displayed in the table below.

Average Maintained Illuminance (AMI) is the overall, generalized ambient light level measured 5' above the ground surface. The AMI shall be calculated using only the area of the site receiving illumination.

Lighting Type	Average Maintained Illuminance (fc)	Uniformity (Avg/Min)
Architectural	1.0	6:1
Canopy Area	10.0	3:1
Multi Family Parking Lot	1.0	4:1
Non-Residential Parking Lot	5.0	4:1
Security	5.0	4:1
Vehicle Sales, Rental and Leasing	3.0	4:1
Walkways, landscaping or decorative	1.0	6:1

All outdoor lighting shall be designed and located such that the AMI at the property line does not exceed 0.5 fc.

No direct light source shall be visible at the property line from ground level or above.

Lighting shall not be oriented in such a way to direct glare or excessive illumination into adjacent homes to cause a nuisance or onto roads in a manner that may distract or interfere with the vision of drivers on such roads.

260-5 Lighting Abutting Residential Properties
Sites Adjacent to Residential Uses [Amended 1-16-07 by L.L. No. 2-2007]
All light fixtures shall be shielded so as to block light spill away from any residential use. This includes security lighting fixtures, both freestanding and wall mounted (i.e. wall packs).

AMI at the public right-of-way line shall not exceed 1 fc, when a residential use is located on the other side of the ROW.

Light fixtures located within 50 feet of an abutting residential property line shall not exceed 12 feet in height.

Canopy Area Lighting
All development that incorporates a canopy area that encompasses fuel islands, automated bank machine drive thru's or similar installations shall use a recessed lens that is flush with the bottom surface of the canopy that provides cutoff or shielded light distribution. Areas under a canopy

shall not exceed an average intensity of 10 foot candles as measured at ground level at the outside edge of the canopy.

Automated Teller Machines
An automated teller machine (ATM) shall be illuminated in accordance with the ATM Safety Act (NYS Banking Law, Article II-AA).

260-6 Prohibited Light Sources
Except as otherwise provided in this specification, the following light sources and light fixtures shall not be used within the Town.

1. Low pressure sodium and mercury vapor light sources.
2. Cobra-head-type fixtures having dished or drop lenses or refractors which house other than incandescent sources.
3. Searchlights and other high-intensity narrow-beam fixtures.
4. Lighting fixtures that produce flashing, rotating, moving pulsing or alternating light sources.

DIVISION 3: CONSTRUCTION SPECIFICATIONS

SECTION 300
GENERAL CONSIDERATIONS

300-1 General Requirements

Property development shall conform with the Town of Perinton zoning code and all regulations established in this document. Additionally, all appropriate laws, rules and regulations established by other governing bodies, having or claiming jurisdiction over various portions of the development, shall be adhered to.

When a conflict arises between any of the above referenced laws, rules and regulations, the Developer shall make known to the affected agencies the area of conflict and endeavor to have such agencies resolve their differences before proceeding with development.

The intent of this document is to assure that all infrastructure owned by the Town shall require minimal maintenance and provide maximum benefits to the Town residents. Failure of the Developer, his agents, employees or subcontractors to comply shall be considered sufficient cause for the Town to not accept ownership of the infrastructure or any portion thereof until all work is completed to the terms set forth herein.

The term "infrastructure" as used herein shall be defined as roads, gutters, sidewalks, storm water and sanitary sewers, manholes, catch basins, pump stations, ditches, culverts, permanent storm water management facilities (pond, wetlands, infiltration basins, etc.) and appurtenances thereto which will, upon approval by the Town, be accepted for ownership, maintenance and operation in perpetuity by the Town.

300-2 Inspection

All construction shall be subject to inspection at any time by the Town Board, their agents, representatives, and authorized employees. Such inspectors may stop the work when the developer or his contractor has no competent foreman in charge of the work, when provisions of this document are not being followed or when circumstances are such that continuance of the work would not be in the best interests of the Town. The inspector will immediately consult with the Commissioner of Public Works and obtain his/her authorization for issuance of a stop work order.

300-3 Work Quality

Failure of the Commissioner of Public Works, the Town Engineer, their agents, employees or representatives, to reject improper work or inferior material during construction shall not be construed as, nor imply, final acceptance. If subsequent inspection, operation, or other circumstances reveal defects, the developer shall take whatever action deemed necessary by the Town to determine cause of such defects. Such defects shall then be corrected to the satisfaction of the Town at the expense of the Developer.

300-4 Basis of Design

Developers bear the responsibility of providing sound engineering design of all infrastructure, subject to the approval of the Town. The design shall be prepared by a Professional Engineer/Architect licensed to practice in the State of New York who shall have had experience

in the design of such infrastructure. The design shall conform to the requirements set forth herein and as outlined in Section 200.

Infrastructure shall be designed to conform with the topography of the property and with existing infrastructure on adjacent streets or property. Developers shall satisfy themselves by preliminary investigation and consultation with appropriate Town officials, as to the adequacy of adjoining facilities upon which their property must rely for service; most particularly, water mains, storm water and sanitary sewers, drains, culverts and drainage ways.

The design of any development shall contain a layout that shall avoid placing appurtenances such as manholes, catch basins, laterals, cleanouts, monuments, etc. within driveway or road pavement areas.

Due to the problems associated with maintaining sewers located in the rear yards, all utility lines proposed in developments shall be located along roadways where they are more accessible. Any deviation from this requirement where land restrictions or configurations do not permit such a design must be reviewed and approved by the Commissioner of Public Works and Town Engineer.

300-5 Change Order Procedure

When departures from plans and specifications during construction in the Town of Perinton are proposed, such departure must be requested by ***written*** change order and approved by the Commissioner of Public Works.

Any request for a change shall be initiated by the Developer's Engineer in writing, with all appropriate drawings. This request is to be submitted to the Commissioner of Public Works for approval, prior to the work taking place.

300-6 Responsibility for Work

The developer is solely responsible to the Town for proper construction of infrastructure. It will normally be of benefit to both the developer and the Town to have Town representatives deal directly with the developer's contractors where such are employed, both as a matter of expediency and to avoid needless liaison. However, such action shall not be construed as relieving the developer of his prime responsibility to the Town.

300-7 Safeguarding Existing Infrastructure, Other Property & Persons

The developer, or his contractor where work and responsibility has been so delegated, shall locate all existing sewers, water mains, underground conduits, gas mains, or other utilities in the work area prior to commencing operations. Appropriate infrastructure officials shall receive prior notice of intent to start construction, and their recommendations and orders shall be followed.

Care shall be taken during all phases of construction to protect persons and property, as well as avoid potentially hazardous conditions or nuisances.

300-8 - Traffic Control

Traffic shall be controlled in a safe manner at all times until work is completed. Suitable safeguards must be provided to ensure a safe working environment and reduced potential for

property damage. State and county guidelines, and the National Manual on Uniform Traffic Control Devices (MUTCD) and 17 NYCRR Chapter V (NYS Supplement) shall be followed for proper maintenance and protection of traffic design and implementation.

300-9 - Working Hours

In all areas where people live in close proximity to a construction area, the contractor will not be able to operate equipment which may be a nuisance to the public before 7 a.m. and after 6 p.m., Monday through Friday. No weekend or holiday work times shall be allowed without pre-approval from the Commissioner of Public Works.

300-10 Warranty of Work and Materials

The developer shall warranty all work performed and materials furnished against defect, failure, inadequacy, or breakage for a period of two years from the date of final acceptance of the work. In the event of such defect, failure, inadequacy, or breakage during said warranty period, the developer shall make the necessary repairs or replacements within ten days (or another agreed upon time period) of the mailing of the written notice by the Commissioner of Public Works or Town Engineer.

Should the developer fail, neglect, or refuse to so comply within the specified time, the Town shall make or take action to cause the necessary repairs or replacements to be made. All repair costs shall be deducted from the developer's monies or securities being held by the Town as outlined in Sections 300-11 and 300-12.

300-11 Financial Guarantee

In order to guarantee satisfactory completion of all site or subdivision infrastructure improvements, the developer will be required to furnish the Town of Perinton with a financial guarantee. The guarantee amounts and materials to be covered are explained in Section 140. Acceptable forms of the financial guarantee are cash placed in a Town savings account or a Letter of Credit.

300-12 Maintenance Bond

The developer shall place with the town sufficient security to guarantee repairs or replacement during the warranty period. This security will be in the form of a maintenance bond or cash to remain with the Town during the warranty period. The amount and time period is determined based on Section 140.

300-13 Sequence of Construction

A Sequence of Construction must be provided for all of the components of a project. The Sequence of Construction identifies the components necessary to complete site and infrastructure work for a project, and establishes the order in which the work will be accomplished. This provides the developer, his engineer and contractors, and the Department of Public Works with a common understanding of how the work is to progress. A Sequence of Construction shall be included in plan set being submitted for site or subdivision approval by the Town. A sample is provided as follows:

Sequence of Construction (SAMPLE)

1. Pre-Construction meeting
2. Delineate the limits of construction disturbance, any LDD areas and property boundaries. The delineation is to be established by the applicant's engineer and verified by the Department of Public Works (DPW).
3. Install the stabilized construction entrance and staging area.
4. Commence clearing and grubbing measures, which are required to install the permanent and temporary erosion and sediment control devices, including swales, sediment traps and stone check dams, silt fence, etc, as specified on the construction drawings.
5. Complete clearing and grubbing operations.
6. Strip topsoil and stockpile at the location shown on the construction drawings.
7. Construct the stormwater management pond, including restoration with topsoil, seed and mulch.
8. Complete mass earthwork and confirm that the grading conforms to the proposed grading plan. This is to be done with the developer's engineer and the Department of Public Works (DPW).
9. Complete seeding, mulching and stabilization of all disturbed areas.
10. Commence construction of utilities; watermain, sanitary and storm sewers. Complete testing of utilities. Testing of the sanitary and storm sewer utilities may commence for those sections that have been installed for the required length of time prior to the completion of these utilities.
11. Upon completion of utility construction and testing, commence road box construction. All areas of the road box sub-grade, including weeps, are to be inspected and approved for correct grade elevations and stability. After a section is approved, weep stone may be placed prior to placing sub-base stone.
12. Conduct density testing required in fill areas. Density testing by a certified testing lab is required for fill areas within the road box. The schedule for testing is provided on the plans, specifying the depth and station locations at which the tests are to be conducted.
13. Complete road construction, including gutters, catch basin aprons and pavements.

300-14 Construction Stakeout

All construction work shall be properly staked-out by a NYS Licensed surveyor, in accordance with the approved plan. Such stake-out shall be in sufficient detail to assure correct elevations of tops of structures, proper crowns, slopes, and alignments. Evidence that stake out has produced errors may result in the Town Engineer being asked to spot verify the stakeout. When required, this expense will be borne by the developer. Where pavement base courses or sub-grades are left unfinished during the winter, they shall be re-staked in the spring and re-graded accordingly.

At the Town of Perinton DPW's request, the contractor shall provide an elevation stake at the time of basement excavation to verify the proposed finish floor elevation will be in close conformance with the approved plans.

300-15 Protection of Incomplete Work

Where work is left incomplete because of weather or other reasons, it shall be protected. Road beds shall be left well-drained, sanitary sewers (and storm drains where applicable) shall be so protected that surface water, mud, silt, and debris cannot enter. Sewer laterals, water services, and valves shall be suitably marked with stakes, and shall be protected.

300-16 As-Built Drawings

Prior to acceptance of the infrastructure by the Town, the developer shall submit an "as built" plan. This plan shall be drawn to scale and shall indicate by dimensions, angles and distances, as applicable, the location and depth of sanitary and storm sewer mains, laterals, cleanouts, Wye-branches, manholes, catch basins, hydrants, valves, curb shut-offs, stormwater management facility details (elevations of control structure, emergency spillways, top of berm, bottom of pond etc.), and monuments. As built plans from the Monroe County Water Authority (MCWA) shall be included with the developer's as-built plans to complete the complete set. A monumentation map is required only if monumentation locations have been revised from the plat drawing. Otherwise, a letter of compliance to the Department of Public Works from the contractor's land surveyor is adequate.

The developer shall provide two (2) complete sets of "As-Built" paper prints (full size), along with a digital copy of the complete set in PDF and TIFF format. Mylars are not required.

300-17 Full Completion of Work and Clean-up

Prior to acceptance of the infrastructure by the Town, the developer shall fully complete the work and leave the site in a neat and orderly condition. All excess material, including silt fence and other waste, brought onto site by contractor, as well as fallen trees, brush or debris at the edges of the site, must be removed. Slopes, drainage ways and other graded areas shall be fully cleaned and stabilized by planting grass or other vegetation or by other means acceptable to the Town. All undeveloped lots shall be graded per plan, topsoil added and seeded before final LOC is released and SWPPP Notice of Termination is filed.

300-18 Grading

Grading between adjacent lots as well as between lots and the street area shall have continuity without abrupt changes in elevation or unfinished ground surface.

All areas shall be graded so that run-off from higher-elevation lots does not create a nuisance on lower-elevation lots. To this extent, lots shall normally be graded to drain front-and-back with street gutters taking the front drainage and shallow storm sewer and rear lot drainage inlets swales taking the back-lot-line drainage.

300-19 Valve Boxes & Other Access Covers

Valve boxes, manhole covers, and curb shut-off boxes shall be left at the required plan elevation.

300-20 Permits

The developer shall obtain all necessary permits for building, blasting and construction from appropriate issuing entity.

300-21 Certificate of Occupancy

No Certificate of Occupancy shall be issued until all individual lot improvements and utility services have been completed as shown on approved plan. However, the Department of Public Works may waive this requirement if unforeseen difficulties arise which prohibit the completion of the work and the Developer requests relief from the Commissioner of Public Works.

SECTION 305
DPW CONSTRUCTION INSPECTION

305-1 General

The Perinton Department of Public Works (DPW) will conduct inspections to assure construction is proceeding according to plan, and to determine if plan modification or changes are required. Inspection costs will be billed to the developer on an hourly basis.

305-2 Clearing/Grubbing

Contractor must call before starting any work. During clearing and grubbing, the DPW will make spot inspections. After the clearing and grubbing has been completed, the contractor must call for final walk through.

All debris must be removed from the site and disposed of properly. On site burial pits for waste material will not be allowed.

305-3 Erosion Control

Contractor must install and maintain erosion control measures per the approved storm water pollution prevention plan or as directed by the Town of Perinton.

All erosion control measures must be complete prior to commencing any earth work, and must be maintained throughout the development process.

In areas where soil disturbing activities have temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within 7 days.

Maintenance of the erosion control network will be inspected periodically, including prior to winter shutdown. Any failure or repairs observed by the Town inspector or as noted on SWPPP inspection reports must be corrected immediately. Failure to address erosion and sediment control corrective measures can result in the stoppage of work, or the Town (or it's agent) performing necessary work, and being reimbursed from the Financial Guarantee.

305-4 Mass Earthwork

Contractor must contact the DPW prior to starting work. During mass earthwork the DPW will make spot inspections of items listed below:

1. Removal of topsoil from road areas
2. Stockpile topsoil per plan
3. Cut/fill per engineer's stakeout
4. Seed all disturbed areas

Before any utility work can start, the contractor's design engineer must walk the site with the inspector and verify all mass earthwork has been completed and all exposed earth temporarily stabilized.

305-5 Installation of Utilities

All utilities must be constructed in accordance with the latest edition of the Town of Perinton Design Criteria, New York State Department of Transportation Standard Specifications, and ASTM Standards.

Sanitary Sewer Installation

Inspections are required for main, laterals, force mains, pump stations and associated structures. The Contractor must notify the DPW 48 hours prior to work commencing. DPW will make spot inspections throughout the installation of the sanitary system.

Storm Sewer Installation

Inspections are required for main, laterals, associated structures, and stormwater management facilities. Contractor must notify the DPW 48 hours prior to work commencing. DPW will make spot inspections throughout the installation of the storm system.

Water System Installation

Water main installation including services from the main to the curb box are inspected by MCWA. Water services from the curb box to the building are inspected by the DPW by appointment. Inspection appointments must be requested 24 hours in advance.

Connection to Existing Utilities

Contractor must notify the DPW 48 hours prior to work commencing. The contractor is responsible for testing utilities before and after work has been completed.

Testing of Utilities

Before testing, the sanitary, storm and water systems must be completed in accordance with the approved plan. Types of testing to be performed include Vacuum testing, Low pressure air testing, Mandrel testing, Lamping, Pressurized water testing (requires MCWA approval) and Televising by Perinton DPW.

All utilities must be tested and accepted prior to making any individual lot connections.

305-6 Road Installation

Underground utility crossings shall be installed per plan and inspected by the DPW prior to commencing work on the road box.

Where areas of the road box are constructed on fill, compaction testing must be performed in accordance with the compaction schedule included on the approved plans. Compaction testing shall be performed in the subbase stone as required by the Town Engineer and Commissioner of Public Works.

Inspection is required before placing concrete for gutters, as well as during gutter installation. Mix design shall be submitted for approval at least 2 working days prior to installation. For gutter installed in dedicated ROW, the Contractor will be responsible for conducting one set of quality assurance tests for each 50 CY of gutter concrete placed. Each test shall consist of preparing two (2) compression test cylinders (broken at 14 days and 28 days), a slump test and an air content test.

The contractor shall provide all test results to the DPW for review.

The Contractor must notify the DPW at least 48 hours prior to paving any roads in dedicated ROW. During paving operations, inspection of the graded road is required before laying asphalt. Inspection is also required during installation of asphalt. The Contractor will be responsible for compaction testing during all binder and top course asphalt placement on any roads in dedicated ROW. The monitoring shall be as follows:

1. On the day of paving, the Contractor will obtain a Theoretical Maximum Density (TMD) (i.e. Rice Number) from the Asphalt Plant for asphalt mix being delivered and placed on the road that day.
2. At the paving site, a field inspector hired by the Contractor will coordinate with the roller operator(s), take nuclear gauge readings of the compacted asphalt and compare the density reading to the TMD provided by the plant. The average of three (3) readings (left edge, center and right edge of mat) will be compared to the TMD. The field inspector will coordinate with the roller operator to request additional passes and/or adjust the vibratory effort to develop a roller pattern that most effectively achieves the Town's minimum compaction goal of 93% of the TMD.
3. Compaction monitoring is only required for paving operations of 150 tons or more.
4. One set of nuclear gauge readings shall be taken every 500 feet of mat pull.

305-7 Road Cut

A 149 Highway Permit is required for all road cuts. Contractor must notify the Department of Public Works at least 48 hours prior to any work. Road cuts (patches) will be inspected using the same steps as listed for road installation, except that asphalt compaction testing will not be required.

Directional drilling, boring, or pushing shall be used in lieu of cutting when directed by the Commissioner of Public Works or Town Engineer.

305-8 Sidewalk Installation

Contractor must notify the DPW at least 48 hours prior to installing sidewalk. During sidewalk installation, Town will inspect the box out, stone lifts, asphalt lifts or concrete placement and sealer.

Contractor shall provide the sidewalk concrete mix design and catalog cut of sealer to DPW for review at least 48 hours prior to sidewalk placement. Contractor will be responsible for insuring that slump and air content tests for each 50 CY of sidewalk concrete placed. Contractor shall provide test results to DPW for review.

Sidewalk cuts (patches) will be inspected using the same steps as listed for sidewalk installation, except that slump and air content testing will not be required.

305-9 Individual Lot Inspection
Inspections are required and performed by appointment for sanitary laterals, storm laterals, water services, downspouts and final grading. Inspections must be scheduled 24 hours in advance.

All lateral services must be inspected from the main to the building. The trench must be kept safe for inspection purposes. All utilities and grading must be complete before a C of O can be issued.

305-10 Special Condition Inspections/Testing
Subdivision or site plan approvals may require full or part time inspection, and certification of construction per approved plans and specifications by the Design Engineer. Field testing as described above may also be required. These expenses are the responsibility of the applicant.

305-11 Close Out Inspection
Prior to signing the Notice of Termination (NYSDEC stormwater permit), DPW shall conduct an inspection of the site to ensure the site has achieved 80% minimum acceptable growth and is sufficiently stabilized, and that any outstanding items have addressed.

SECTION 310
GENERAL GRADING, CLEARING, RESTORATION AND RELATED WORK

310-1 General

The developer shall maintain the site in a neat and nuisance free condition.

All work shall be staked out by a licensed land surveyor in accordance with the approved plans. Stakeout shall be in sufficient detail to provide correct horizontal locations and elevations of structures, pipes, roads, and grading. Stakeout shall be performed as work progresses. Any stakeout that is disturbed shall be re-staked before continuing with the work.

310-2 Clearing and Grubbing

The developer's surveyor shall stake out the construction clearing limits and any other land features required by the approved plans (i.e.: LDD, wetlands, stands of trees, steam buffers). These stakes shall be field verified for correctness by the applicant's engineer and the Town DPW. The approved limits are to be protected with orange construction fence. The developer/contractor shall then clear the perimeter of the construction area and place erosion control measures around the perimeter of the project site prior to commencing work. These erosion control devices, clearing limits and LDD stakes shall be maintained by the contractor until ground cover has been established. Removal of these stakes shall not take place until approved by the Department of Public Works.

The remainder of the site is to be cleared and grubbed as indicated on the approved plans. No surface depression shall be left to collect pools of water. All debris shall be removed from the site by the developer. Desirable trees that are not in the way of utility and storm water facilities and house or roadway construction should remain.

310-3 Topsoil Stripping

All topsoil shall be stripped from all disturbed areas along the proposed road and house pad. The intent is to return site generated topsoil to all disturbed areas to be restored with vegetation (e.g. lawns, detention facilities, open space, ditches). The contractor is to perform the earthwork, making all cuts and fills as shown on approved plans and per field stakeout. As the earthwork progresses, erosion control measures shall be implemented as slopes are disturbed or created. These slopes shall be stabilized as soon as work on them is completed.

After topsoil is stripped, stored and inventoried, the developer shall determine whether excess topsoil will be available for sale or removal from the site. This shall be determined before the Town releases Letter of Credit monies for grading and/or makes final site earthwork approval. Topsoil cannot be taken off-site unless all lots and disturbed areas, including storm water detention facilities, have at least 6" of topsoil on them or calculations are provided to the Town DPW by the design engineer that show enough topsoil will remain stored on site to cover all disturbed areas with a 6" of topsoil.

The engineer must also track and document the removal of topsoil from the site to insure the

quantity of topsoil being removed from the site does not exceed the approved amount. Should the calculations be in error, or more topsoil is removed than authorized, then the developer is required to import Town approved topsoil to insure all disturbed areas receive 6" of topsoil coverage.

310-4 Open Excavation
Basement excavations shall not be left open for prolonged periods or be allowed to fill with water, and thereby create a hazard. All open excavations shall be properly fenced, barricaded, and road plated (if determined necessary). Trench excavations shall not be left open overnight.

310-5 Mud and Dust
Developers and their contractors will be responsible for keeping streets free of mud or dust, and the right-of-way free of construction material or debris. The contractor shall install a construction entrance pad, per standard detail, of #3 and #4 crushed stone to prevent the tracking of debris onto existing roads. Developers are required to install a 12' wide (min.) temporary stabilized construction entrance from the garage to the street following backfill of basement. Failure to implement these requirements will result in the Department of Public Works placing a stop work order on the project and/or ceasing inspections, until the violation has been brought into compliance. Roads shall be scraped and broomed clean of mud at the end of each work day or as directed by the DPW.

Dust control over the entire disturbed site must be considered and discussed at the pre-construction meeting. Developers must be prepared to use water and/or calcium chloride (for road areas only), for dust control and have such capability on site at all times.

310-6 Fill
Fill greater than 2 foot in right-of-way areas will require compaction in 8" lifts for the total fill area. Vibratory compaction equipment or sheepfoot rollers, with a minimum dynamic vibration force of 27,000 lbs. shall be used. All fill areas in the right-of-way will require compaction tests at pre-determined stations and elevations and shall be compacted to 95% modified proctor. The developer shall provide the Town with the results of certified compaction tests undertaken by a competent soils testing laboratory.

310-7 Utility Installation
All mass grading on the site shall be completed and field verified by the design engineer and DPW, prior to beginning the installation of any utilities.

310-8 Ditches and Swales
Where open storm drainage ditches or swales are constructed (or existing ones are to be used), any obstructions such as trees, brush, stumps, or other objectionable material, shall be removed and disposed of offsite. The drainage way shall be excavated or shaped to a line, grade and cross section as required to meet the criteria in the most current version of the New York State Standard and Specifications for Erosion and Sediment Control and be free of bank projections and other irregularities which will impede normal flow. The capacity of the drainage way shall be that required to confine the peak rate of runoff expected from a 10-year frequency rainfall event or a higher frequency corresponding to the hazard involved.

All drainage ways shall be constructed with a minimum of 2% slope and be immediately stabilized following their construction. For design velocities of less than 3.5 ft. per second, seed and mulch may be used for the establishment of vegetation. For design velocities of greater than 3.5 ft. per second, drainage ways shall be stabilized with sod, or with compacted topsoil, seed, and mulch protected by jute mesh, or another type of rolled erosion control matting. In cases where grade or erosion problems exist, special control measures such as stone lined waterways, stone check dams and/or grade stabilization measures may be required by the Town to limit or control erosion.

Refer to the New York State Standard and Specifications for Erosion and Sediment Control Manual for seed, soil and velocity design variables. In general, Kentucky Bluegrass, Tall, or Red Fescue, and perennial rye grass are acceptable seed mixtures to utilize for permanent vegetation. Common rye grasses and red top are acceptable for temporary vegetation.

310-9 Vacant Lots

Vacant, unsold lots shall not be used as a depository for building material, scrap lumber and other waste, and shall be rough graded to provide positive drainage, seeded, and mowed, to prevent growth of nuisance weeds (Golden Rod, etc.).

310-10 Restoration – Temporary & Permanent

Temporary Restoration of Disturbed Areas

The intent of this section is to provide protective vegetation cover during temporary shutdown of construction and/or while waiting for permanent stabilization. All disturbed areas on slopes of less than one vertical to three horizontal (1:3) shall be planted as described below:

1. Area shall be rough graded and slopes stabilized.
2. Large debris and rocks shall be removed from the area.
3. The seedbed must be seeded within 24 hours of disturbance or scarification of the soil will be required prior to seeding.
4. Fertilizer or lime is not typically used for temporary seeding.
5. During the spring, summer or very early fall, disturbed areas shall be planted with ryegrass (annual or perennial) at 45 lbs. per acre. During the late fall or early winter, seed containing certified winter rye (cereal rye) shall be used at 100 lbs. per acre.
6. The seeded areas shall be mulched with straw at 2 tons per acre. Mulch anchors will be required where wind or areas of concentrated water are of concern. Refer to the most current version of the New York State Standard and Specifications for Erosion and Sediment Control for a mulch anchoring guide. When directed by the Town, mulch shall be mechanically rolled, tamped or kneaded into the soil with a bulldozer.

Any seeding method may be used that will provide the distributed area with a uniform application of seed that will result in good soil to seed contact rate. Watering or irrigation of the seed is required and based upon site conditions and climate shall occur in a manner that ensures the seedbed remains adequately moist.

Permanent Restoration of Disturbed Areas

The intent of this section is to provide permanent vegetative cover on disturbed or areas. All disturbed areas on slopes of less than one vertical to three 3 horizontal (1:3) shall be seeded by the hydraulic method using a hydro-seeder. This method shall include preparing the seedbed, as well as incorporating the appropriate seed mixture, fertilizer and paper or wood fiber mulch with tackifier as described below.

1. Topsoil shall be suitable for use in seeding and shall contain no material toxic to plant growth and shall be placed to a minimum depth of 6 inches compacted thickness. Topsoil specifications are detailed in Section 310-11.
2. Prepare the seedbed by loosening the soil to a depth of 6 inches.
3. The seed mixture shall be as follows:

Seed Species Mix	Application	Pure Live Seed	Weed Seed
22% Red Fescue	0.8 lbs/1,000 sq ft	90%	0.50%
63% Kentucky Bluegrass	2.3 lbs/1,000 sq ft	85%	0.50%
15% Perennial Ryegrass	0.6 lbs/1,000 sq ft	85%	0.50%

The Town of Perinton reserves the right to require modification to this seed mixture, depending on specific site conditions, soil type and intended land use.

For disturbed areas that are seeded by the hydraulic method utilizing a hydro-seeder, the seed/fertilizer/water mixture must also incorporate a paper or wood fiber mulch with a tackifing agent.

Broadcast seeding may be allowed under special circumstances and only through prior written approval from the Town of Perinton. The preparation of the seedbed shall remain the same as described above. The application of seed through this method must ensure uniform coverage of seed to the disturbed area that will result in relatively good soil to seed contact. The seedbed area must be immediately mulched following seeding.

Within 48 hours after broadcast seeding, a mulch layer of clean wheat straw shall be placed uniformly in a continuous blanket at a rate of not less than two (2) tons per acre. A mechanical blower may be used to apply mulch provided the machine has been specifically designed and approved for that purpose. Machines that cut mulch into short pieces shall not be permitted.

Watering or irrigation of the seedbed shall be completed as necessary to ensure that the seed remains adequately moist conditions. Its need will be based on site conditions and climate

Mulch anchors will be required where wind or areas of concentrated water are of concern. Refer to the most current version of the New York State Standard and Specifications for Erosion and Sediment Control for a mulch anchoring guide.

Winter mulching will be required of those disturbed areas when temporary or permanent seeding will not provide appropriate or adequate soil stabilization. A mulch layer of clean wheat straw

shall be placed uniformly in a continuous blanket at a rate of not less than two (2) tons per acre across the entire disturbed area. This mulch should be mechanically rolled, tamped or kneaded into the soil with a bulldozer.

Restoration of Grass and Planted Areas

Grass and planted areas shall be designated as all areas not specified as wooded or open areas. These areas typically include lawns areas. All work in connection with the restoration of grass and planted area shall be performed by an experienced landscape contractor and closely follow the standards of Section 310.

310-11 Topsoil

Topsoil Material

Topsoil shall be used for the top 6-inches of backfill required to be place on house lots, trenches, and excavations within grass and planted areas unless directed otherwise by the Town of Perinton or other requirements are called out within particular easement agreements. Topsoil, as defined by the Town Code Section 122-5, shall be approved screened topsoil obtained from excavation operations or, if sufficient topsoil is not available from the site, it shall be imported by the developer.

Topsoil shall contain between 6 percent and 12 percent by weight of fine textured stable organic material, and shall have a pH of between 5.5 and 7.6.

Topsoil shall have at least 25 percent fine textured material (passing the No. 200 sieve) and not more than 15 percent clay.

The Town of Perinton shall be notified if topsoil treated with soil sterilants, herbicides or were exposed to pesticides is proposed to be used.

Topsoil shall be relatively free of stones over 1-inch in diameter, trash, noxious weeds, subsoil, stumps, roots and brush. Gradation shall be per NYSDOT 713-01 (Topsoil – Lawn).

Application and Grading

Topsoil shall be distributed to a uniform and compacted depth of 6-inches over the area. It shall not be placed when it is partly frozen, muddy, or on frozen slopes, over ice, snow or standing water.

After topsoil is spread, all large, stiff clods and stones 1-inch in greatest dimension, roots, and other debris shall be cleared and disposed of off-site so that the finished surfaces shall be acceptable for seeding operations. In areas to be sodded, topsoil shall be graded to such elevations that when sod is placed, it shall be at the same elevation as the adjacent grassed areas.

Topsoil placed and graded shall be promptly seeded, fertilized and mulched by the hydraulic method utilizing a hydro-seeder.

310-12 Fertilizing and Seeding

Topsoil shall have a compacted depth of 6-inches and all low spots should be fill and leveled.

All areas to be seeded shall be disked or otherwise loosened to a depth of 2 to 4-inches, and shall be raked to true lines, free of all unsightly variations, bumps, ridges or depressions. All sticks, stones, roots or other objectionable materials which might interfere with the formation of a finely pulverized seed bed shall be removed from the soil.

Seed of the mix as specified in Section 310-10 shall be planted by the hydraulic method utilizing a hydro-seeder at a rate of 5 lbs per 1,000 square feet. Lime and fertilizer may be applied through the hydro-seeder as well if rolling is not practical.

Planting by the broadcast method will require prior written approval by the Town of Perinton. When seeding broadcast, the surface shall be evenly raked with a fine-tooth rake and rolled with an approved roller weighing approximately 500 lbs.

Fall planting is preferred - ideally after August 15th and before October 15th. In the spring, do not plant before May 15th. If seeding is completed between May and June, irrigation may be necessary to ensure successful seed germination.

Follow the mulch standards set forth in Section 310-10.

310-13 Sloped Areas

All disturbed areas having a slope steeper 3:1 (H:V), but not steeper than 2:1 (H:V) shall be re-graded to match existing adjacent slopes and stabilized utilizing a combination of mechanical and vegetative treatments within 24 hrs. This type of sloped condition creates issues with both slope stability and potential for significant erosion. Standard erosion control treatments (seed & mulch) are not suitable to mitigate the threat of both surficial slope failure and erosion.

A thorough geotechnical assessment of the native soil properties, including a slope stability analysis, must be prepared in order to determine appropriate slope stability measures and erosion control treatments. Only after stabilizing factors and the probability for slope failure have been addressed, can a specific stabilization method be identified.

A generalized stabilization method for these slope areas will involve the installation of biodegradable, natural fiber rolled erosion control blanket that is anchored in place with slope anchors, staples, or hardwood stakes and hydro-seeding with a slurry wood fiber mulch, erosion control seed mix, and fertilizer. All loose or unstable stones, rock or other debris shall be removed from the disturbed area. Piles of soil or other material shall be leveled to fill gullies, rills, gullies, pits and ruts and to secure a smooth seed bed.

Rolled erosion control product consisting of twisted natural fibers (coconut, bamboo, vegetable, etc.) shall be used as a resilient, high tensile strength netting to cover disturbed or denuded slopes. This material is chosen for its organic biodegradability properties, long life and effectiveness as a cover conducive to plant growth.

The rolled product shall have a layer of straw and coconut fiber stitched with biodegradable thread an approximate open area of 63-70% and shall have a service life of at least 3 years. The rolled

product shall have an allowable shear stress strength of 2.0 psf and have an allowable velocity of 8.0 fps. The rolled product shall be installed and anchored to the soil according to the manufacture's recommendations.

A hydro-seed slurry application consisting of water, seed, fertilizer, natural fiber hydro mulch and a hydro-colloidal tackifier and activators shall be applied over the netting face. These materials shall be applied at close range so that the slurry is well integrated into soil surface below. Any portions of the rolled product displaced as a result of the hydro-seeding application are to be repaired and re-anchored.

The erosion control seed mix shall be as follows or approved equal:

Seed Species Mix	Application Rate
37%Tall fescue	1.4 lbs/1000 sq ft
37% Red fescue	1.4 lbs/1000 sq ft
16% perennial ryegrass	1.6 lbs/1000 sq ft
5% Birds trefoil*	0.2 lbs/1000 sq ft
5% cereal rye	0.2 lbs/1000 sq ft

* Add the inoculant immediately prior to seeding.

The hydro mulch shall be as follows or approved equal:

1. No synthetic fibers present
2. 65% +/- mechanically processed straw
3. 25% +/- mechanically processed cotton fibers
4. 10% +/- tackifiers and activators
5. Carbon to Nitrogen ratio at 40:1 +/- or less
6. Typical application rate 3,500 lbs./acre (site dependent)

When proposing other methods of slope stabilization, including the use of various rolled erosion control blanket products (pre-seeded or otherwise) and turf reinforcement mats, the applicant must provide the Town of Perinton with the manufacture's technical specifications (material strength, open area, etc. and applicability) and recommended installation procedures for that particular product as well as a detailed description of the underlying soil type, slope, and moisture content. All information must be submitted to and approved by the Town of Perinton prior to any installation.

310-14 Maintenance

The applicant shall, during the construction and prior to acceptance, properly care for all grassed sloped areas, performing all mulching operations necessary to provide protection and establish growth on the treated areas. Mulch which becomes displaced shall be reapplied at once, together with any necessary re-netting, re-fertilizing and re-hydroseeding; all at no expense to the Town. Acceptance shall be made on the basis of stabilization; perennial vegetative cover with a density of eighty (80) percent over the entire disturbed area has been established.

310-15 Guarantee

All work shall be guaranteed for a minimum one (1) year period from the date of initial acceptance of the work. Initial acceptance shall be made at the time that a vigorous healthy stand of grass has been established as determined in Section 310-14 and by the Town representative. Final acceptance shall be acknowledged after seeded and sodded areas and plantings have been in place for one (1) year in vigorous healthy condition. The guarantee period shall end at that time.

SECTION 315
TREES AND PLANTING

315-1 Trees

All existing desirable trees and plant material to remain on the site shall be indicated on the proposed development plan, as well as any additional tree and plant material to be planted.

All trees to remain shall be properly trimmed of deadwood, weak, broken or unhealthy branches and limbs. Before construction begins, barricades shall be placed around trees and plant material as required by the Department of Public Works. Any trees to remain which are damaged during construction shall be evaluated for their long term survival. If any are determined to be too badly damaged they shall be removed and new trees of equal value shall be planted in their place.

All new tree and plant materials are to be planted in a manner that insures their future survival and growth. This shall include implementing methods such as guiding, staking, fertilizing and mulching. All trees and plant materials shall be planted at the appropriate time of the year. All newly planted materials shall be watered as required to insure proper growth and survival.

When trenching occurs near a tree to be preserved, the tree shall be pruned and fertilized on that side. Where deemed appropriate by the Department of Public Works, boring may be required in order to preserve existing trees.

There may be occasions where street trees are desirable. This will be determined during the planning/approval processes and displayed on the final approved plans. The Developer shall plant the trees as shown on the approved plans. Trees shall be a min. of 1-1/2" diameter and placed at the R.O.W. line, or as otherwise directed by the Commissioner of Public Works. Spacing shall be at 100' intervals on both sides of the R.O.W.

Shade trees shall be Hedge Maple, Emerald Queen Maple, Crimson King Maple, Amus Maple, Shademaster Locust, Greenspire Linden, Washington Hawthorn, Winter King Hawthorn, Ohio Pioneer Hawthorn, Japanese Tree Lilac. Other varieties shall be Bradford Pear (maturity 30') and Campstre Maple (maturity 25') and any other variety as required by the Planning Board. Trees shall not be planted next to fire hydrants, or in conflict with any other utilities.

315-2 Plants

Plants used shall be in conformance with the American Standard for Nursery Stock Z60.1 or latest version of rules and grading adopted by the American Association of Nurserymen, Inc.

All plants shall have a normal habit of growth and shall be sound, healthy, vigorous plants with well-developed root systems. Plants shall be free of disease, insect pests, eggs or larvae.

Plants shall not be pruned before delivery. Trees which have a damaged or crooked leader, or multiple leaders, unless specifically specified, will be rejected. Trees with abrasion of the bark, sunscalds, disfiguring knots, or fresh cuts on limbs over 1-1/4 inches which have not completely calloused, will be rejected. Plants shall be freshly dug. No heeled in plants, or plants from cold storage will be accepted.

Plants shall be measured when branches are in their normal position. Height and spread dimensions specified refer to the main body of the plant and not from branch tip to branch tip. Caliper measurement shall be taken at a point on the trunk 6" above natural ground line. If a range of size is given, no plant shall be less than the minimum size, and not less than 50% of the plants shall be as large as the upper half of the range specified. The measurements specified are the minimum size acceptable and are the measurements after pruning, where pruning is required. Plants that meet the measurements specified, but do not possess a normal balance between height and spread, shall be rejected.

The Developer or his contractor shall notify the Town in advance when the plant material is to be delivered and shall furnish an itemized list of the actual quantity of plant material in each delivery in order to coordinate inspection at the point of delivery.

Plants should be dug up and prepared for shipment in a manner that will not cause damage to the branches, shape and future development of the plants after replanting. Plant material labels shall be securely attached by wire to all plant material delivered to the planting site, for the purpose of inspection and plant identification. All plant materials being transported more than 10 miles between grower and planting site will be covered.

Plants designated "B and B" on the proposal or on any subsequent list furnished shall be adequately balled with firm natural balls of earth of diameter and depth not less than that recommended by the American Standard for Nursery Stock. Balls shall be firmly wrapped with burlap.

All plants which are 2" in caliper or over shall be drum-laced. No balled plants shall be planted if the ball is cracked or broken either before or during the process of planting.

The root balls of all plants shall be adequately protected at all times from sun and drying winds. All balled and burlapped plants which cannot be planted immediately upon delivery shall be set on the ground and shall be well protected with soil, or other acceptable material like weed mulch. Plants shall not remain unplanted for longer than two days after delivery.

315-3 Planting Preparation

Stakeout of existing utilities per Dig Safe New York Regulations shall be required. The Contractor shall stake out on the ground locations for trees to be planted.

Planting areas shall be free of debris or other deleterious matter prior to the placement of planting soil mixture. Rock, existing underground work, tree roots or obstructions encountered in the excavation of shrub and tree pits shall be brought to the attention of the Town. Work shall proceed after alternate locations that have been designated or approved by the Town.

Notify the Town in writing of all soil or drainage conditions which the Developer and/or his contractor considers detrimental to growth of plant material.

315-4 Planting

Place planting soil mixture in layers not to exceed eight inches and roll or tamp to the satisfaction of the Town. Plants shall be set at the same relationship to finished grade as they bore to the

ground from which they were dug. Planting soil shall be used to backfill approximately 2/3 full. The Developer and/or his contractor shall water thoroughly before installing remainder of the planting soil to top of pit, eliminating all air pockets. The Developer/Contractor shall not backfill beds with planting soil until approved by the Town.

The Developer and/or his contractor shall set planting plumb and brace rigidly in position until the planting soil has been tamped solidly around the ball and roots.

Ropes or strings shall be cut from top of ball after plant has been set and burlap or cloth wrapping shall be left intact around balls. The Developer and/or his contractor shall turn under and bury portions of burlap exposed at top of ball. Plastic burlap shall not be buried.

A four (4) inch deep saucer shall be formed around tree pits.

The Developer and/or his contractor shall mulch all planting areas and beds four (4) inches deep immediately after planting and shrub planting.

All plants shall be watered immediately after planting. Planting areas shall be reshaped to conform to specified grades after full settlement has occurred and mulch shall be restored.

Trunks of deciduous trees of 1-1/2 inch caliper or more shall be wrapped with a spiral wrapping minimum height of third branches or 2/3 height of tree, whichever is highest. Wrap from top down, and tie wrapping securely in place.

All trees shall be guyed and staked immediately after planting. Plants shall stand plumb after guying.

New plants shall be pruned only at time of planting and in accordance to standard horticultural practice to preserve the natural character of the plant. Pruning shall be done under the supervision of the Town. Pruning and trimming shall include removing all dead wood, suckers and broken or badly bruised branches using only clean sharp tools.

315-5 Clean-Up

The Developer or his contractor shall at the completion of planting operations remove all rubbish, dirt, and rejected materials no longer necessary for the completion of the remaining work.

315-6 Replacement

The Developer shall replace, without cost to the Town, and as soon as weather conditions permit and within a specified planting period, all dead plants and all plants not in vigorous, thriving condition. The plants shall be free of dead or dying branches and branch tips, and shall bear foliage of a normal density, size and color. Replacements shall closely match adjacent specimens of the same species. Replacements shall be subject to all requirements stated in this Specification.

The Developer shall make all necessary repairs due to plant replacements. Such repairs shall be done at no extra cost to the Town.

315-7 Guarantee

Trees planted in accordance with these specifications shall be guaranteed for two (2) years from the date of initial acceptance by the Town. During the 2nd year growing period, the Department of Public Works shall inspect all guaranteed work for final acceptance upon written request of the Developer. Trees found dead or not in a healthy growing condition shall be replaced by trees of the same size and species by the Developer at his own expense.

The Guarantee of all replacement plants shall extend for an additional period of one year from the date of their acceptance after replacement. If replacement plant material is not acceptable during or at the end of the said extended guarantee period, the Town may elect subsequent replacement or credit for each item.

SECTION 320
ROADS

320-1 General Requirements

All materials used shall meet the requirements as specified, unless the same are altered by specific requirements under any itemized specification or by modifying notes shown on the approved plans. The materials to be incorporated into any project and the work to be performed are intended to conform to the New York State Department of Transportation specifications as determined by the Department of Public Works. The Department of Public Works shall inspect all dedicated and private road construction to ensure conformance with approved plans. The DPW inspection cost may be back-charged to the developer.

The requirements set forth herein are considered minimum for the Town's minor road section. For other road categories, much of the discussion applies with variation shown on the detail. Field conditions may warrant a different road design. The developer is to design to these field conditions and provide a more substantial road design where warranted.

A sub-surface investigation and engineering report shall be completed and submitted per Section 130-5. In particular, the engineer must certify soil gradation is structurally sound and sufficient to freely drain water from the road area to catch basin weeps. Poorly draining soils will require engineered solutions to assure water is not trapped below the road area.

320-2 Basis of Construction

In order to assure the structural integrity of the subgrade and "crusher-run" stone foundation course, the following general rules shall apply:

1. Under-ground utilities shall be constructed outside the pavement area, except as approved by the Commissioner of Public Works on the approved Development Plans.

2. Where required for utility services, crossover trenches within the road may be backfilled with carefully selected site material if this existing material is suitable to provide a stable, firm trench. In many cases, the soil removed from the trench is acceptable. The crossing material shall be compacted in 6" layers with vibrating tamping equipment. If existing material is not adequate, trenches shall be backfilled with select granular material (approved by the Town Inspector) compacted in 6" lifts. Each fill layer shall be compacted to a minimum of 95% modified proctor.

3. After properly shaping and obtaining approval of the subgrade, the crusher-run foundation course may be placed. The entire "boxed" subgrade and each layer of foundation course – outside to outside edge must be compacted with approved vibratory equipment.

4. Crusher-run foundation courses for permanent roads must not be used as access roads for building construction, or in wet weather to prevent the subgrade from migrating into the crusher-run foundation course. All contaminated stone shall be removed and replaced with new crusher run.

5. All dedicated roads shall remain in its binder course over the winter months prior to the final application of top course asphalt. Developer shall coordinate with and receive approval from DPW prior to placing top course.

6. Where pavements must be placed in an embankment condition, the entire height of embankment must be constructed with the use of appropriate compaction equipment. This equipment shall consist of sheepsfoot rollers, vibratory roller or other appropriate equipment. The entire embankment shall be compacted to 95% modified proctor. The developer shall provide results of certified compaction tests undertaken by a competent soils testing laboratory.

320-3 Roadway Excavation

Topsoil shall be stored for later use, or placed in the embankment beyond the pavement limits as directed by the Department of Public Works. All stumps, brush, trees, and other rubbish shall be disposed of in a manner approved by the Department of Public Works. On site burial of such debris is not permitted.

320-4 Preparing Road Subgrade

The contractor shall excavate for the base, pavement, and gutters to the designed subgrade elevation and 6" wider on each side than the designed 25' specified pavement and gutter width as shown on the "Minor Road Section" and as indicated in the following specifications. Rural road specifications require excavation similar to the minor road sections.

The subgrade shall be excavated or "boxed" following the depth and alignment of the stakes established by the Developer's Surveyor or Project Engineer for this purpose. These stakes shall be at intervals of not more than 50', and the Department of Public Works may require intervals of 25' if determined necessary.

After being excavated to the proper depth, the subgrade shall be graded and crowned one quarter (1/4) of an inch to each foot of width on each side of centerline, allowing for an extra 3' x 12" wedge excavation as shown on the "Minor and Collector Road Sections". Following the vibratory rolling, the subgrade shall be proof rolled with a loaded ten-wheel truck hauling a gross weight of 20 tons. The truck shall make at least two complete passes over the subgrade area. If unstable material is found below the subgrade, through visual evidence of rutting or wearing, the Commissioner of Public Works and Town Engineer shall be notified. The unstable soil shall be removed and replaced with compacted crusher run. In certain instances the road section may need to be modified.

Any deviation from the road section will require a revised plan to be submitted by the Developer's licensed engineer. Said plan shall receive approval from the Commissioner of Public Works and Town Engineer prior to the work commencing.

If the stone base becomes contaminated after or during placement, it shall be removed and replaced and recompacted. If the stone base becomes rutted, it shall be regraded and recompacted.

The contractor is responsible for any settling in finished pavement, including gutters and curbing.

320-5 Road Base (Minor and Collector Road)
Road base for a Minor road consists of 12" crusher run in three courses as follows: one 6" lift and one 3" lift of #2 crusher run, and one 3" lift of #1 crusher run.

Road base for a Collector road consists of 18" crusher run installed in three courses as follows: one 9" lift of #3 crushed stone, one 6" lift of #2 crusher run and one 3" lift of #1 crusher run.

Rural road sections require similar base specification as the Minor road detail.

All stone material shall conform to "No. 1, 2 and 3 Crusher-Run" dolomite limestone as specified in Section 200.

The base shall be placed on a graded, crowned and compacted, free draining subgrade, free of organic material, large rocks, standing water, frozen ground, mud, ruts and disturbed earth as follows:

1. After proper rolling and grading of the subgrade, the 3' x 12" wedge is to be filled with No. 1 and No. 2 washed crushed stone to form the road weep. 10' of 4" perforated underdrain weep pipe shall be installed on both sides of all catch basins.

2. The first lift of crusher run shall be placed and graded, maintaining the specified crown of one-quarter inch (1/4") per foot and rolled thoroughly with a vibratory compactor capable of producing a minimum dynamic vibration force of 27,000 lbs.

3. The second lift of crusher run shall be placed, graded and compacted in the same manner as the first.

4. The last lift of crusher run shall be placed after concrete gutters have been constructed and shall conform to the lines and grades as shown on the "Minor and Collector Road Sections". All depressions shall be brought to grade and/or choked with #00's and #1's crushed dolomite lime stone. The material shall then be rolled thoroughly from the gutter to the center line.

Special care should be given during this operation not to harm the concrete gutters; i.e., scraping with grader blade or hitting with roller drums. Special attention should also be given to obtaining good compaction next to the gutter. A vibratory plate compactor or comparable machine should be used for compaction. Damaged gutter sections resulting from contractors operations shall be replaced to the satisfaction of the DPW prior to paving.

320-6 Bituminous Concrete Pavement
The contractor shall furnish and construct a two course bituminous concrete pavement surface laid to conform to the required thickness and cross section as shown on the plan and on the "Minor Road Section" and as further described in the following specifications.

The material shall conform to Section 200 of these specifications. Upon request, the contractor shall furnish the Commissioner in writing the source of the material and provide a written

description of the material to be used including size and percentages of the aggregate and asphalt. The Town Engineer reserves the right to modify the percentages of the aggregates to be used. New grades of asphalt mixes may perform better than the ones specified in this manual. The Commissioner of Public Works reserves the right to substitute materials as appropriate.

Before placement of asphalt pavement, certain temperature requirements must be met. First, for binder course, the air temperature must be 40 degrees and rising. On a clear, dry day the ground temperature must be at least 45 degrees and the temperature of the asphalt as measured in the paver hopper must be 250-325 degrees. Then, for the top course, the air must be 50 degrees and rising on a clear dry day with the ground temperature of at least 50 degrees and asphalt temperature as measured in the paver hopper between 250-325 degrees.

The asphalt shall be placed to the thicknesses indicated in the standard details. All pavement materials are subject to approval by the Commissioner of Public Works and alternate mixes used where directed. The pavement shall be laid by an approved self-propelled asphalt spreader manned by competent operators.

The asphalt top shall be placed in the year following the installation of the binder course. For new subdivisons, asphalt top shall be placed after at least 80% of homes have been built unless approved otherwise by the Commissioner of Public Works.

Each course will be compacted by rolling with a 10-12 ton tandem roller at the appropriate time by a competent operator. Two rollers are required (breakdown and finish) when applying the top course.

All raking shall be done by skilled labor to maintain a smooth finish at intersections and curves.

Before applying the top course, existing paved surface shall be cleaned, swept and tack coat applied at a rate of 0.05 gallons per sq. yd. via a pressure distributor as approved by the Town Engineer, manufacturer or as noted on the NYSDOT approved equipment list. The tack coat shall be applied on a clean, dry pavement surface, and when the ground temperature is above 50 degrees. If the roadway is being paved under live traffic, tack coat shall only be applied ahead of the paving mat and not over the entire roadway width.

Prior to placing top course, the Town shall inspect concrete gutter and binder surface for any irregularities. Gutter sections found cracked will be marked by the Town and replaced by the Developer. Sawing and sealing cracked gutter with caulk will not be permitted. Any binder asphalt found needing repair shall be milled out and replaced by the Developer.

Protection of new pavement (by reducing truck traffic, etc.) shall be provided until properly set. This protection is necessary on subdivisions where the traffic is mostly by cars starting and stopping or by heavy trucks.

The finished pavement shall be slightly above (maximum 1/4") the concrete gutters, at no time shall it be below.

320-7 Rural Road
A rural road specification is available for developments of 12 lots or less. Most of the methods described in Sections 320-2 through 320-6 apply for rural roads, except as modified on the "Rural Road Section" Detail contained in these specifications.

320-8 Cul-De-Sac
The same specified depth and materials for roads will be required in the construction of cul-de-sacs. All road grades should transition to a maximum grade of 2% at the appropriate distance from the beginning of the minor cul-de-sacs. All plans should include a separate cul-de-sac detail showing elevations at eight equidistant points along the edge of gutter. The slope between any two points within the cul-de-sac shall not exceed 2%.

Deviation from this 2% maximum may be considered by the Commissioner of Public Works and Town Engineer due to the terrain constraints.

Paving sequence in a cul-de-sac shall follow a pattern to minimize traffic on freshly installed asphalt. The sequence shall start with the first pass around the outside perimeter and subsequent passes parallel with the entrance road.

320-9 Backfill Over Utilities
Where water, sanitary or storm main and their appurtenances are constructed in the right-of-way, the backfill will be compacted in 6" lifts to the top of the trench.

320-10 Temporary Turn Arounds
For roadways being constructed in phases, a temporary turn around will be required at the end of each section. The turnaround shall be constructed in accordance with the minor road specifications, and will have a geometry that accommodates the movement of maintenance equipment and emergency vehicles. The Developer shall provide flexible delineator posts (i.e. Safe Hits or approved equal) at the corners of the turn around. It is the Developers responsibility to ensure the turnaround is always accessible during construction and not obstructed by construction equipment or material.

320-11 Private Road / Common Drives
Private roads and common drives shall be constructed according to the town regulations previously outlined in Sections 320-5, 320-6, except as modified by the typical section, as seen in the standard details.

An approved common driveway or private road must be in place prior to the issuance of building permits.

Refer to Section 205-16 for Design Details of Private Roads and Common Drives.

320-12 Utility Road Crossings
Proposed crossings of existing Town highways for any utility (including electric cable and telephone) shall be bored and installed with a casing or directionally drilled. Under special conditions, roads may be open cut with the approval of the Commissioner of Public Works.

First class steel pipe casing with welded joints shall be used for borings. The casing pipe diameter shall be a minimum of 6" larger than the outside diameter of the bell ends of the carrier pipe. A Highway Permit (149) must be obtained from the Department of Public Works.

A detailed drawing of each proposed highway crossing shall be submitted to the Department of Public Works for review and approval prior to undertaking any work connected with the crossing. The drawing shall include:

1. Excavation limits of boring pits; easements where required
2. Type and extent of sheeting where required
3. Location of traffic safety barriers/signs. A work zone traffic control plan as specified by NYSDOT and MUTCD, must be submitted.
4. Town highway R.O.W., property lines, and easements if applicable.
5. Pavement and shoulder limits
6. Pipe and casing type, grade and strength class
7. Profile indicating elevation of existing utility lines
8. Restoration plan and schedule.
9. Detailed construction cost estimate.

If the open cut method is permitted, the actual operation, backfill and restoration shall be completed in accordance with the "Pavement Restoration Detail" in the standard details.

In addition to the permit fee, a financial guarantee is required to cover the cost of the road crossing and restoration of the Town highway, shoulders, right-of-way and private property if disturbed.

320-13 Road Maintenance Bond

The minimum two year road maintenance guarantee shall begin upon the acceptance of the top course of asphalt. The objective of the maintenance bond is to assure the road integrity after development is complete. In cases where subsequent phases are planned adjacent to a constructed street eligible for a maintenance bond, the length of time covered by that maintenance bond may be extended beyond the two year minimum as determined by the Commissioner of Public Works.

320-14 Final Acceptance of Roadway

Prior to final acceptance of roadway and release of maintenance bond, all asphalt, concrete gutters or curbs, and catch basins will be inspected by the Department of Public Works for integrity.

Any flaws in finished product (including but not limited to settlement, heaving, and cracking of asphalt or concrete in ROW as well as spalling of the concrete) shall be repaired at contractor’s expense. All repairs must be inspected and approved by the Department of Public Works.

SECTION 325
CONCRETE GUTTERS AND SIDEWALKS

325-1 General

The Contractor shall furnish and place cement concrete gutters and sidewalks as shown on the plans, in accordance with the thickness and cross section as shown in the Construction Details and as stated in these specifications. All sidewalk ramps shall be constructed in conformance with NYSDOT Standard Sheet 608-01 (latest edition). Gutters shall be machine formed (slip formed) unless otherwise approved by the Commissioner of Public Works.

325-2 Material

The material shall conform to the New York State Department of Transportation Standard Specifications as indicated in Section 200 of these specifications.

325-3 Construction Methods

Concrete Gutter

Concrete gutter shall be constructed of the shape shown on the standard details and shall conform to the lines and grades shown on the plans and as approved by the Town. Machine formed (slip formed) gutters shall be constructed per NYSDOT Standard Specifications Section 500 and Section 609.

If approved by the Commissioner of Public Works, fixed form gutters shall be constructed per NYSDOT Standard Specifications Section 500 and Section 609. Standard steel forms shall be used (matching the full depth of the gutter) and set to the grade and alignment by stakes established by the Project Engineer for this purpose. These stakes shall be set at intervals of not more than 50' and 25' in flatter areas, as directed by the Commissioner. The base material that these forms are set upon shall be graded between the forms to obtain a full dimension of concrete and shall be compacted by mechanical means, preferably a vibra-tamper. These forms shall be oiled before the pouring of concrete.

Expansion joints shall be installed every 50' with fracture (or dummy) joints every 10'. Dummy joints shall be scored 1/8” to 1/4” width and a depth of 1/3 the thickness of the concrete gutter. An expansion joint shall be installed at the end of the workday, or wherever the pouring of concrete is stopped for any reason, to prevent the disturbance of concrete which has reached its initial set. Expansion joints shall be constructed of ½" pre-molded joint material.

To ensure positive flow, concrete gutter shall be screeded longitudinally with a suitable straight edge. The screed shall be worked laterally (i.e. parallel with the centerline of the gutter from the invert of the gutter to the outer edges). This process shall be done immediately after pouring concrete. When the gutters are installed by this "hand method" special attention should be given to the "spading" of the concrete along the sides of the forms.

The gutter may also be installed by use of an approved gutter machine (such as a Dotmar Gutter Machine) using the proper screed to form the invert shown on "Standard Road Section", and equipped with a Vibrator attachment.

After the concrete has set, the concrete shall be broomed lightly with a fine-bristled broom and edged with a proper metal edging tool. This brooming is to fill small voids thus making it unnecessary to do an excessive amount of floating and troweling which can bring too much water to the surface causing spalling of the finished concrete in the future.

The forms shall not be removed until the concrete is sufficiently "set" to prevent chipping of the edges. Concrete gutter and sidewalk shall be backfilled as soon as possible to prevent undermining and shall be protected from traffic for a sufficient length of time to avoid damage to them.

Concrete gutters shall not be installed where there is water lying between the forms or where the base is soft from rain. If gutters have been installed and a sudden rainstorm appears, the new gutters shall be covered by a waterproof material immediately.

The concrete gutter shall be cured by spraying with a transparent modified acrylic solvent based curing membrane. The spray shall be applied to the gutter at a coverage rate as specified by the manufacturer.

The curing agent shall be applied to the concrete within 15 minutes after the concrete is poured.

Concrete Sidewalk

Conventionally Formed

Conventionally formed concrete shall meet the requirements for **Class D** in accordance with NYSDOT Section 501 "Portland Cement Concrete – General" with the exception that fibers shall be incorporated in the mix. Concrete shall contain a water-reducing admixture meeting the requirements of NYSDOT Section 711-08 in such a quantity as to provide a minimum 10% reduction of the design water content by using a normal range water-reducer.

Conventionally formed sidewalk shall be constructed with steel forms unless otherwise approved by the Commissioner of Public Works. Forms shall be set true to line and grade and held rigid throughout construction. After forms have been set, aligned and graded, they shall be checked for alignment and grade by a DPW representative. Any corrections required shall be made immediately. Concrete shall be placed to top of forms and struck off with a screed or strike board with the surface floated with a magnesium float until the concrete is thoroughly compacted and the surface free of depressions and irregularities.

No water shall be introduced to the concrete surface to aid in finishing nor shall mixed mortar be used to finish and/or patch surface irregularities. As soon as surface moisture has disappeared, a broom finish shall be applied in a transverse direction and, immediately thereafter, dummy contraction joints scored, expansion joints and sides along forms edged.

Sidewalks shall be scored at regular intervals to create reasonably square blocks (i.e. sidewalks five (5) feet wide shall be scored to develop blocks which are five (5) feet long). Slabs shall be scored using a grooving tool a minimum of 3/4" deep and 3/8" wide. All slabs shall be edged with a ¼" radius steel edging tool.

Machine Formed

Machine formed concrete shall meet the requirements for **Class J** in accordance with NYSDOT Section 501 "Portland Cement Concrete – General" with the exception that fibers shall be incorporated in the mix.

Machine formed sidewalk placement shall consist of a single paver capable of placing, spreading, consolidating, screeding, and finishing the concrete such that hand finishing is kept to a minimum. Use equipment guided by a reference system that ensures the pavement is placed to the required line, grade and cross section. Use a self-propelled machine formed paver equipped with rigid side forms that laterally support the concrete and minimize edge slumping, a full-width finishing pan, and attached internal vibrators capable of consolidating the entire concrete placement. The equipment proposed for use by the contractor shall demonstrate the capability of placing the concrete in accordance with these specifications.

For all methods of placement, concrete sidewalk shall be sixty (60) inches wide, five (5) feet in length and have a maximum cross slope of ¼" per foot. The sidewalk depth shall be a minimum of five (5") inches, and seven (7") inches across driveways and sidewalk ramps. The Town of Perinton may take concrete samples during placement of sidewalk concrete for the purpose of compressive strength tests by an independent laboratory.

Concrete shall not be placed during rain nor shall placement be allowed to commence if rain appears imminent. Adequate coverings shall be made available at all times to protect any concrete placed from sudden showers. The base material shall not have any standing water on its surface.

Freshly placed concrete sidewalk shall be secured from vandalism and other mishap. Repair any damage as soon as possible.

Fiber Reinforcement

Fiber reinforcement for sidewalks shall be added to both conventional and machine formed concrete mixes at a rate of 2 pounds of fiber per cubic yard of concrete. Fibers shall be added during batching under supervision of the NYSDOT Regional Materials Engineer, or using a method approved by the Town of Perinton. Batch an appropriate volume of concrete such that the whole standard size bags or packages of fibers are used. It is the responsibility of the producer to indicate on each delivery ticket the amount of fibers added to the concrete.

Curing

Immediately after finishing and not more than 15 minutes after concrete sidewalk placement, apply a transparent modified acrylic solvent based membrane at a coverage rate specified by the manufacturer. Do not apply curing compound in the rain. If rain damages curing compound before it sets, reapply curing compound immediately after the concrete surface dries. Concrete shall be cured for seven (7) days.

Cure all driveways and sidewalks at driveways for a minimum of three days prior to opening to vehicle traffic.

The Contractor will remove the forms as soon as the concrete has set sufficiently. Any honeycomb and voids on the sides of the walks shall be immediately patched. After patching is completed, the curing compound shall be sprayed on the sides of the concrete sidewalk.

Sawcut joints as needed within 24 hours of placement of concrete. Saw cuts shall be done with a diamond blade capable of making straight cuts to the dimensions required. Saws must be equipped with cutting guides, blade guards, water cooling systems, dust control and cut depth control.

325-4 Weather Limitations

Concrete for sidewalks and gutters shall not be placed at air temperatures below 39 degrees Fahrenheit, or on any subgrade having a ground temperature less than 39 degrees Fahrenheit. If at any time during the first five (5) days of curing the ambient air temperature is expected to fall below 39 degrees Fahrenheit, special weather protection shall be provided consisting of blankets that meet NYSDOT 711-07 Form Insulating Materials for Winter Concreting. Use material capable of maintaining a surface temperature of 55 degrees Fahrenheit. Secure and overlap the insulation tight to the concrete surface to prevent air intrusion beneath the insulation. Extend the material a minimum of 12 inches beyond the edge of concrete.

325-5 Hot or Windy Weather Concreting

Special precautions shall be undertaken when concrete is being installed during hot temperatures or high winds to prevent the concrete from curing too quickly. Misting or covering with plastic may be necessary. A curing compound shall be applied as soon as possible, and in no case more than 15 minutes after placement.

325-6 Gutter/Sidewalk Replacement

Contractor will be required to replace damaged or deteriorated sections of gutter or sidewalk. Replacements shall match the line of grade of surrounding gutter or sidewalk, and built in accordance with the detail shown.

SECTION 330
CATCH BASINS

330-1 General
The contractor shall install catch basins at the locations shown on the approved plans, and according to the specifications described below or as directed by the Department of Public Works.

330-2 Materials
Catch basins shall be precast, 6" reinforced concrete (min. 3500 psi) as manufactured by Kistner (Model #CB315BS) or equal approved by the Department of Public Works.

Frame shall be galvanized NYSDOT 655F #9 with four (4) anchor tabs (655F-09WA4). Grate shall be galvanized NYSDOT 655-6 #9 rectangular (6556R1G-09). This frame and grate will fit on a 2' x 2' catch basin.

Weep pipe shall be 4" HDPE corrugated, perforated pipe with a manufactured cap.

330-3 Methods
The precast catch basins shall be placed on a minimum 6" thick base of compacted #1 and #2 crushed stone, at least 4" wider than the outside dimensions of the catch basin walls.

The 4" weep pipes shall be connected to the catch basin at the bottom of the stone weep. They shall be installed on sides parallel to the road. Pipes shall be perforated and 10' in length.

The frame and grate shall be brought to grade by a poured in place concrete riser not to exceed 12".

The frame and grate shall be adjusted to allow for a 1-1/2 inch drop from invert of gutter to top of grate (except under special conditions). This drop shall be formed gradually in the invert. The apron shall have "dummy" joints from all corners of the frame as per the standard "Catch Basin Detail".

The interior and exterior coating of the catch basin shall be as indicated on the Standard Catch Basin Detail in Division 4 of these specifications.

The catch basin shall be provided with #1 and #2 crushed stone around the exterior, as shown on the detail. This stone shall be compacted in 12" lifts, to 95% modified proctor, before pouring of the concrete apron.

The pipe leading from the catch basin to the storm manhole shall be bedded in 6" of #1 and #2 crushed stone and backfilled to 1 foot over the top of pipe with #2 crusher run. Excavated material can be placed back in trench to road base if suitable. Otherwise #2 crusher run shall be used, compacted in 1 foot lifts.

The pipe shall be high density polyethylene smooth lined, corrugated pipe with gasket materials meeting ASTM F2648 standards or PVC SDR 35 meeting ASTM 3034. Lateral pipes draining one catch basin shall be 8” inside diameter; two catch basins shall be 12” inside diameter.

Catch basins within gutters shall be placed at property lines with the intent to avoid vehicular traffic area of drives and other roadways, or proposed areas of construction.

All unused knockouts on catch basins shall be filled with sewer brick mortared in place.

All catch basin inverts shall be poured to the pipe invert. Sumps shall not be accepted.

SECTION 335
MANHOLES

335-1 Materials
All materials used in the construction of manholes shall conform to the details as shown in Section 200 of these specifications and the details as shown in the Appendix and ASTM C-478 64T standards. Cone shaped risers will not be allowed.

335-2 Frames & Covers
Manhole frames and covers shall be cast iron and shall conform to ASTM standard A48 Class 30. All horizontal bearing surfaces must be machined. Covers for use on storm sewers shall be ventilated and stamped with "STORM SEWER".

335-3 Manhole Steps
All manhole steps are to be Neenah No. R1982-F or approved equal.

335-4 Sealing Materials
All storm and sanitary manholes are to be sealed inside and out against corrosion as noted in the Standard Manhole Detail in Division 4 of these specifications. Two coats to be applied to all concrete surfaces.

Refer to Section 200 for additional requirements on manhole sealing materials.

335-5 Sanitary Manhole Testing
All sanitary manholes shall be vacuum tested utilizing the following test criteria.

1. This test is only applicable to precast concrete manholes.
2. All lifting holes and exterior joints shall be filled and pointed with an approved non-shrinking mortar.
3. Manholes are to be tested after installation and after backfilling. No standing water shall be allowed in the manhole excavation which may affect the accuracy of the test.
4. All pipes and other openings into the manhole shall be suitably plugged in such a manner as to prevent displacement of the plugs while the vacuum is drawn.
5. Installation and operation of vacuum equipment and indicating devices shall be in accordance with equipment specifications and instructions provided by the manufacturer.
6. The test head may be placed in the chimney section of the manhole. The rim-cone joint is not usually tested.
7. A vacuum of 10" of mercury shall be drawn. The time for the vacuum to drop to 9" of mercury shall be recorded.

8. Acceptance for 4' diameter manholes shall be defined as when the time to drop to 9" of mercury meets or exceeds the following:

Manhole Depth	**4’ Diameter Time to Drop 1’ Hg.**	**5’ Diameter Time to Drop 1’ Hg.**	**6’ Diameter Time to Drop 1’ Hg.**
10 ft. or less	60 seconds	75 seconds	90 seconds
10 ft. to 15 ft.	75 seconds	90 seconds	105 seconds
15 ft. to 25 ft.	90 seconds	105 seconds	120 seconds

9. If the manhole fails the test, necessary repairs shall be made and the vacuum test repeated until the manhole passes the test.

10. If the manhole joint gasket is displaced during the vacuum test, the manhole shall be disassembled and the seal replaced.

SECTION 340
GENERAL SEWER CONSIDERATIONS

340-1 Special Construction
Special types of sewer pipe may be used to meet unusual construction conditions when approved by the Commissioner of Public Works. Concrete encasement or cradle for the sewer, or the use of a stronger pipe, may be required where excessive loads are expected, particularly in shallow or very deep trenches or where subsoil conditions are unsatisfactory.

340-2 Protection of New Work
At the end of each working day (or any other time of work stoppage), the upstream end of the pipe shall be tightly plugged to prevent entrance of mud, silt, or muddy water.

340-3 Construction Under Adverse Conditions
No pipe shall be laid during conditions where safety precautions are compromised. In no case shall pipe be laid in water. In cases where sewers are being installed in wet conditions or below the ground-water table so that installed pipes become submerged overnight, sufficient backfill shall be placed to prevent the pipe from becoming buoyant.

340-4 Conflicting Pipe Lines and Other Utilities
No existing pipeline, conduit, cable, pole guy wire or other utilities or portion thereof shall be moved without the consent of the agency operating such utility. Any necessary changes in line and grade of the new pipeline shall be made only with the consent of the Department of Public Works.

340-5 Protection of Existing Sewers
Care shall be taken at all times to avoid entrance of mud and water to existing sewers. When connecting to an existing manhole, the connection shall be tightly plugged until completion of the work. At that time, the accumulated water and mud pumped out of the manhole. The plug may then be removed under the supervision of the Department of Public Works.

The cost of any necessary cleaning or flushing of existing facilities caused by failure to comply with this specification or for other reasons will be borne by the contractor.

340-6 Special Structures
Detailed plans for the construction of sewer pump stations, box culverts, headwalls, bridges, erosion control structures, any necessary special manholes or catch basins, etc. shall be submitted to the Town Engineer for approval prior to construction.

340-7 Handling Pipe
All pipes and fittings shall be handled carefully. Pipes and fittings shall not be dumped or dropped while unloading or during placement in the trench.

340-8 Stockpiling Pipe
The contractor shall take all necessary precautions to insure the structural integrity of any pipe that is stored. Pipe shall be stored according to the manufacturer's recommendations. All pipe shall be placed so that it does not create a safety hazard or impair the free flow of traffic. Care shall be taken to insure the stability of any stacked pipe stock pile.

340-9 Fitting and Cutting Pipe
The joint surfaces of all pipes and fittings shall be clean, and shall fit together to form a tight joint. When setting the pipe, the workmanship and tools used shall be such that the quality and strength of the pipe is not impaired.

340-10 Joints
Sanitary sewer joints shall comply with the provisions noted under Sanitary Sewer Main, Section 346.

340-11 Sewer Line and Grade
All sanitary sewer shall be staked out by a licensed N.Y.S. surveyor.

All pipe shall be laid true to line and grade with bells up-stream and shall have a full, firm and even bearing. Boulders or other natural obstructions shall not be considered cause for varying from true line and grade.

The contractor shall use a laser for the alignment of pipe. Hub stakes are required and will be used to field check proper alignment of pipe. At a minimum, stakes shall be set at each manhole, 25' out of the manhole and midpoint between manholes. Hubs shall be marked with the top of hub elevation and cut to proposed grade.

340-12 Trenches
Prior to start of excavation, Contractor shall first contact Dig Safely NY in accordance with NYS Code Rule 753. Any suitable excavation method may be used but sewer trenches shall be confined to the smallest area practical for proper construction. All pipe shall be bedded in #1 & #2 crushed stone, the full width of the trench from 6" below to 6" above the pipe. DPW may require placement of impervious barriers (at least one between manholes or every 250' whichever is less) to prevent the flow of water through the bedding. Refer to standard detail.

Hand methods or drilling/boring shall be employed where it is deemed necessary by the Department of Public Works to preserve trees or protect existing structures. All necessary precautions shall be taken when blasting to confine flying stone or debris and to protect and prevent damage to adjacent structures. Where necessary, sheeting and/or bracing shall be used to provide support and stability to the trench walls. Unless otherwise directed, sheeting and bracing shall be removed as the trenches are backfilled. All trench excavations should meet the guidelines of OSHA.

Pipes crossing under road areas shall be installed by boring and casing or directional drilling. If permission is granted by the Department of Public Works to open cut the road, trenches shall be backfilled with on-site material whenever it is deemed suitable by DPW. Compaction shall occur

in 12” lifts to 95% modified proctor. If onsite material is not suitable for backfill, #1 crusher run shall be used and compacted in the same manner described above.

340-13 Barricades
All excavations within the ROW that are to remain open at night shall be steel plated, barricaded and illuminated with flashers.

340-14 Spoil
Excavated material unsuitable for backfill shall be removed from the site of the work as it is excavated. Excavated material that is to be used for backfill shall be placed in and at least 2 feet away from the excavation wall. These spoil banks shall be located where they will not interfere with the work, or create an overload to the wall of the excavation. Where necessary, the excess material shall be removed to some other place and brought back when required.

340-15 Drainage
Necessary precautions shall be taken at all times to prevent the flooding of adjacent property. Drainage ditches, necessary relocation of stream channels, or other positive means of diverting and/or controlling the water shall be employed. No water shall be drained into a pipe or trench under construction. Water shall not be allowed to accumulate in the trenches, and shall be drained or pumped away from the work to approved drainage channels. Proper siltation control shall be maintained. The discharge of sediment laden water to existing drainage channels is prohibited.

340-16 Repairs
Any pipe repair work must be done in a manner approved by the DPW using acceptable patented repair sleeves or by removing and replacing damaged pipe. Repair procedures shall be discussed with the Department of Public Works prior to commencing the work.

340-17 Tapping Into Existing Manholes
A core bore machine or an approved equal shall be used to generate the hole for the proposed manhole tap. A “Kore-N-Seal” boot as manufactured by Trelleborg Pipe Seals, Milford, Inc. or approved equal shall be used to provide a water tight connection between the pipe and manhole.

Provisions should be made to protect downstream sewers from entrance of ground water, mud, or foreign material into system.

SECTION 345
STORM SEWER MAIN & CULVERTS

345-1 Storm Water Sewer Pipe
Storm water sewer pipe shall be made of the following materials:

1. High density polyethylene, smooth flow with watertight gasket material meeting ASTM F2648 standards.
2. PVC SDR35 (up to 14’ of cover) or PVC SDR 21 (more than 14’ of cover), with gasketed joints meeting ASTM D3034, D3139.
3. Class 3 reinforced concrete with "O" ring joints is considered minimum. Field conditions may warrant additional reinforcement.

All pipe shall be encased in #1 & #2 crushed stone bedding. Wyes shall be same material as storm sewer.

In an effort to prevent deposition and settling out of silt, all storm sewer mains shall be designed similar to sanitary sewers; that is, with velocities not less than three feet per second under full flow conditions.

345-2 Fittings
All storm main and storm lateral fittings shall be manufactured for the specific pipe used. Fittings must be water tight to the storm main and lateral connections. Inserta Tee’s or approved equal shall be used for lateral connections to the HDPE and concrete pipe.

345-3 Strength Classification
The pipe shall be designed as to proper strength classification by the developer's licensed professional engineer and shall be stated on the plans. Heights of cover, nature of foundation soil, vehicle loading, type of bedding, and trench width shall be considered in specifying the pipe. The pipe shall be encased in #1 and #2 crushed stone 6" above and below pipe. The developer shall be responsible for providing extra strength bedding, cradle, or encasement if the design conditions cannot be met in the field.

345-4 Pipe Slope/Anchorage
All storm sewers over 10% grade shall be air or water tested and anchored in accordance with the anchoring detail and following specifications. The developer’s engineer will be required to submit flow velocity calculations for all pipe and certify the specified pipe is suitable for those velocities.

1. Anchor Placement
   Anchors shall be installed at 50 foot intervals for a 10% to 35% grade and 25 foot intervals for a 35% to 50% grade or as directed by the Town. They shall not be placed on a pipe joint.

2. Material
   a. Cross bar, rod, nuts, and washers comprising the anchoring apparatus shall be stainless steel conforming to ASTM Designation A 36.
   b. The cross bar shall be 3 x 1/4 inches and 8 inches longer than the outside diameter of the pipe with holes for rods three inches from each end. The rods shall be threaded, 3/4 inch in diameter, and two feet longer than the outside diameter of the pipe with a 6 inch "L" at the bottom. The nuts and washers shall be 3/4 inch.
   c. Concrete shall develop a compressive strength of 3,500 psi in 28 days.

3. Method
   Contractor shall excavate at least two feet below standard trench depth a width of 18 inches where anchors are to be installed. After the pipe has been laid, the concrete shall be placed in the excavation and cover up the bottom 1/4 of the pipe. The anchoring apparatus shall then be placed in the fresh concrete as shown in the Appendix. After the concrete has hardened, the nuts shall be tightened.

345-5 Culverts

Whenever a proposed road will cross or disrupt an established drainage system or watercourse, a reinforced concrete culvert, bridge or single pipe shall be used to convey the water. The culvert pipe shall be reinforced concrete or smooth flow corrugated HDPE, with gasketed watertight joints.

Since all culverts and pipes will be required to handle different runoffs and flows, the Department of Public Works reserves the right to implement any and all requirements for the proposed reinforced concrete box culvert, bridge or pipes.

Some basic requirements for the box culvert are outlined below:

1. Box culvert to be designed for a standard HL-93 truck loading. Design details for box culverts shall be in accordance with NYSDOT Highway Design Manual Chapter 19 – Reinforced Concrete Box Culverts and Similar Structures.
2. Presumptive bearing capacity is 2000 lbs/sf. Remove all silt with roots under the culvert and replace with select fill, compacted to 95% optimum density. When placing concrete on dry soil or pervious material, waterproof paper or polyethylene sheeting shall be laid over the surfaces that are to receive concrete.
3. The contractor shall be knowledgeable with foundation and subsurface conditions prior to construction.
4. Construction methods shall be such as to minimize disruption or contamination of the stream flow.
5. Minimum cover for reinforcing bars shall be two inches unless shown otherwise on drawing.
6. Splice reinforcing bars a minimum of 36 bar diameters, unless shown otherwise.

7. Materials and workmanship shall be in accordance with the specifications.
8. Construction joints shall be continuous through slabs and walls wherever shown. All construction joints shall have a continuous 2” x 4” keyway.
9. All walls and surface of the top slab to be in contact with earth and stone shall be waterproofed with asphaltic coating conforming to ASTM D-449, coal-tar pitch conforming to ASTM D-450, or waterproofing membrane such as Bituthene 5000 manufactured by WR Grace or approved equal. Apply asphaltic coating to a thickness of 8.0 mils at right angles to base and while base is still tacky. Waterproofing shall be applied to within 2" of any exposed surface.
10. Construction joints shall be a maximum of 16 feet apart for the box culvert section.
11. Unless otherwise shown, chamfer all exposed concrete corners one inch (1").
12. Precast concrete box culverts shall be fabricated using corrosion inhibitor admixture such as DCI or approved equal.
13. Prior to commencement of construction, the contractor shall verify existing conditions, dimensions, elevations, angles, etc. in the field and notify the Town and design engineer of any discrepancies.
14. All excavations shall be kept free of water while foundation work is in progress.
15. Unless shown or indicated otherwise, all footings shall rest on soil according to the details shown on the drawings.
16. All footings shall be formed unless shown otherwise.

SECTION 346
SANITARY SEWER MAIN

346-1 Sanitary Sewer Pipe

Sanitary sewers shall be constructed of poly-vinyl chloride (P.V.C.) pipe with integral wall bell and spigot rubber ring joints. Minimum wall thickness for depths up to 14' shall be SDR 35 and SDR 21 for depths over 14'. Sewer mains shall meet ASTM Standard Specifications D-3034, joints ASTM D-3212, and fitting materials ASTM D-1784 and any later revisions thereto. Also ductile iron pipe, centrifugally cast conforming to ANSI Specification A21.51, cement lined in accordance with A21.4 with push-on type rubber ring gasket, minimum Class 51 may also be used under special circumstances and with approval from the Department of Public Works. Contractors shall check with the Department of Public Works for approved elastomeric joint systems.

346-2 Strength Classification

The pipe shall be designed to the proper strength classification by the developer's licensed professional engineer and shall be stated on the plans. Height of cover, loading, nature of foundation soil, type of bedding, and trench width shall be considered in specifying strength. The developer shall be responsible for supplying extra bedding, cradle or encasement if the design conditions cannot be met in the field.

346-3 Pipe Installation

The trench shall be excavated to the correct depth and line, using care not to exceed the design transition width. Bedding for the pipe consisting of #1 crushed stone shall be placed in the trench to a depth of 6". If an unstable trench bottom, or ground water is encountered, the Commissioner of Public Works/Town Engineer shall be notified immediately before proceeding with construction. In general, dewatering and excavation where a stable bottom can be obtained will be required. Then separation fabric, similar to Mirafi 500X shall be used to wrap the pipe bedding stone envelope. A well graded #3 and #4 crushed stone cradle shall be installed and a 6" lift of #1 crushed stone bedding shall be placed on top.

The sewer main shall be installed in accordance with the pipe manufacturers recommendation for maximum horizontal and vertical deflections. If an alignment shift is required that exceeds the manufacturer's recommendation, the sewer main shall be installed straight and a manhole structure provided at the desired bend location. Use of bends to accommodate any alignment shift in the sewer main is prohibited.

After installing the pipe to line and grade and making the joint, #1 crushed stone shall be placed, not dropped, in the trench. This stone shall be placed to a minimum of 6" above top of the pipe. Care should be taken to see that all voids under the pipe are "chinked" tight with stone.

If determined necessary by DPW, the contractor shall install impervious barriers along the pipeline. At a minimum spacing shall be one barrier between manholes, or every 250', whichever is less. This will prevent sub-surface water from flowing through the bedding barriers and causing sink holes to form. The barriers shall be 5' wide and constructed from tight clay soil. See standard detail in these specifications.

Carefully selected earth shall then be placed, not dropped, within the trench to a depth of 12” on top of the pipe. The contractor shall insure that no large stones lay on top of or in close proximity to the pipe. The soil shall be placed sufficiently dense and firm so as to provide the best safety cover for the pipe. This safety cover operation shall follow closely behind pipe laying to prevent damage to or movement of the pipe by cave-in of the trench walls.

346-4 Pipe Slope/Anchorage

Any sanitary sewers with grades of 10% or greater shall be air or water tested and anchored in accordance with the anchoring detail and following specifications. The developer’s engineer will be required to submit flow velocity calculations for all pipe and certify the specified pipe is suitable for those velocities.

1. Anchor Placement
   Anchors shall be installed at 50 foot intervals for a 10% to 15% grade. They shall not be placed on a pipe joint. Pipe slopes above 15% will require special approval from the Commissioner of Public Works.

2. Material
   a. Cross bar, rod, nuts, and washers comprising the anchoring apparatus shall be stainless steel conforming to ASTM Designation A 36.

   b. The cross bar shall be 3 x 1/4 inches and 8 inches longer than the outside diameter of the pipe with holes for rods three inches from each end. The rods shall be threaded, 3/4 inch in diameter, and two feet longer than the outside diameter of the pipe with a 6 inch "L" at the bottom. The nuts and washers shall be 3/4 inch.

   c. Concrete shall develop a compressive strength of 3,500 psi in 28 days.

3. Method
   Contractor shall excavate at least two feet below standard trench depth a width of 18 inches where anchors are to be installed. After the pipe has been laid, the concrete shall be placed in the excavation and cover up the bottom 1/4 of the pipe. The anchoring apparatus shall then be placed in the fresh concrete as shown in the Appendix. After the concrete has hardened, the nuts shall be tightened.

346-5 Rock Foundation

Where rock in either ledge or boulder formation is encountered, it shall be removed below grade and replaced with suitable materials in such a manner as to provide a compacted earth cushion at least 8 inches thick.

346-6 Special Installations

Under certain conditions, specialized methods will be required for sewer main installations. Examples include, but are not limited to, stream/waterway crossings, arterial road crossings, and railroad crossings. Special methods may also be required when standard trenching practices are not practical.

1. Boring and Casing – This method is required when the design slope of the sewer main is less than 1%. The casing pipe shall be a minimum of 30" diameter for carrier (sewer) pipes. Casing pipe sizes for sewers greater than 18" will be determined by the Department of Public Works. Refer to Road Boring and Casing Detail in these specifications.

2. Directional Drilling – This method will be allowed with approval from the Department of Public Works when the minimum design slope of the pipe exceeds 1%. The pipe material shall be High Density Polyethylene HDPE with a minimum wall thickness of SDR-17. Inner weld ribs must be mechanically removed.

346-7 Backfill

Backfill may be machine placed providing extreme care is used. Backfill shall be extended to existing grade and left in a neat and uniform condition. Excess earth shall be windowed over the trench area. Where the trench passed under a ditch, stream, swale, or drainage way, the backfill shall be left in such a manner as to allow proper drainage duplicating conditions as they existed prior to construction. The surface must be entirely free of lumps of earth, stones, and debris. Adjacent roadways shall be kept clean. Shoulders of highways which have been cut shall be carefully shaped and restored by tamping or rolling.

346-8 Compaction

Compaction shall be required any time the trench enters the right-of-way. This compaction shall be done in 12" lifts to 95% modified proctor. Suitable compaction equipment is required.

346-9 Existing Sanitary Main Taps

Taps of existing sanitary mains are discussed in Section 230-5.

SECTION 355
TESTING SEWER MAINS

355-1 General Requirements

A visual inspection of each section of completed sewer shall be made for smoothness of invert, freedom from obstructions, and straightness of line. The sewer shall be water-tight and free from infiltration.

All sanitary sewers and manholes must be tested before being approved. After a thirty-day waiting period following the completion of pipe construction, the contractor shall perform a Mandrell test for deflection on PVC sanitary sewer mains. Deflection measured between manholes shall not exceed 5% of the total pipe diameter.

355-2 Air Test for Sewer Lines

After completing backfill of a section of sewer line, the contractor shall, at his expense, conduct a Line Acceptance Test using low pressure air. The test shall be performed using the below stated equipment, according to stated procedures and under the supervision of the Town Inspector.

Equipment shall be Cherne Air-Loc Equipment, as manufactured by Cherne Industrial, Inc. of Edina, Minnesota or approved equal. Equipment used shall meet the following minimum requirements:

a. Pneumatic plugs shall have a sealing length equal to or greater than the diameter of the pipe to be inspected.

b. Pneumatic plugs shall resist internal test pressures without requiring external bracing or blocking.

c. Three individual hoses shall be used for the following connections:

    1. From control panel to pneumatic plugs for inflation.

    2. From control panel to sealed line for introducing the low pressure air.

    3. From sealed line to control panel for continually monitoring the air pressure rise in the sealed line.

d. It is the Contractors responsibility to ensure the plugs are in good serviceable condition and safe for use.

After a manhole to manhole reach of pipe has been backfilled and cleaned, the plugs shall be placed in the line at each manhole and inflated to 25 psig. Low pressure air shall be introduced into this sealed line until the internal air pressure reaches 5 psig greater than the average back pressure of any ground water that may be over the pipe. At least two minutes shall be allowed for the air pressure to stabilize.

After the stabilization period (5 psig minimum pressure in the pipe), the air hose from the control panel to the air supply shall be disconnected. The portion of line being tested shall be termed "acceptable" if the time required for the pressure to decrease from 5 to 4 psig is equal to or exceeds

the time shown for the given diameters as follows:

Pipe Diameter in Inches	Minutes
4	2.0
6	3.0
8	4.0
10	5.0
12	5.5
15	7.5
18	8.5
21	10.0
24	11.5

The above times assume ground water is not above the sewer pipe, since high ground water may cause back pressure and artificially prevent air from leaving the pipe and impact the test results. In areas where ground water is expected above the proposed sewer pipe, the contractor shall install a one foot long, one-half inch diameter pipe nipple (capped), into the manhole directly above one of the sewer pipes at the time of pipe installation. The ground water level above the pipe shall be determined as follows:

1) Remove the pipe nipple cap.
2) Blow air through the pipe nipple into the ground to clear it.
3) Connect a clear plastic tube to the nipple and hold tube vertically.
4) After water in the tube has stopped rising, measure height of water over the invert of the pipe.

Prior to starting the air test, divide height of water (in feet) determined in step 4 by 2.3 to establish the additional pounds of air pressure to be added to the pipe. For example, if the measured height of water is 11.5 feet, the added pressure is 5 psig. Consequently, the pressure in the pipe being tested increases from 5.0 psig to 10 psig, and the corresponding lower threshold increases from 4.0 psig to 9.0 psig. The allowable drop of 1 psig and the specified duration remains the same.

If the installation fails to meet this requirement, the contractor shall, at his own expense, determine the source of leakage. The contractor shall then repair or replace all defective materials and/or workmanship as specified elsewhere. The air test shall be repeated until the reach of sewer meets with the test requirements.

355-3 Force Main Air Test

All newly installed force main pipe and any valved section thereof shall be subject to a low pressure air test. Low pressure air shall be introduced into this sealed line until the internal air pressure reaches 15 psig, greater than the average back pressure of any ground water that may be over the pipe. At least two minutes shall be allowed for the air pressure to stabilize. The portion of the line being tested shall be termed "acceptable" if the time required in minutes for the pressure to decrease from 15 to 12 psig (greater than the average back pressure of any ground water that may be over the pipe) shall not be less than 60 minutes.

SECTION 360
LATERALS - GENERAL CONSIDERATIONS AND INSPECTIONS

360-1 General

Lateral connections extending to the ROW line shall be installed for each lot. These laterals shall be constructed with the same care as sewer mains. The sanitary laterals shall be a minimum of 4" in diameter and shall be installed on a minimum slope of 1/4 inch per foot, or 2% slope. The storm water lateral shall be 6 inches in diameter and shall be installed on a minimum slope of 1/8 inch per foot, or 1% slope.

360-2 Bedding for Laterals

Within the ROW, laterals shall be firmly bedded with #1 and #2 crushed stone from the bottom of excavation to 6" above the top of the pipe. Outside the ROW, suitable excavated material may be used for bedding and backfill. The laterals shall be laid true to line and grade, and the bedding material shall be tamped under the pipe and alongside the haunches to provide full bedding and lateral support for entire length of the pipe. If required by the Town, an impervious barrier replacing the stone bedding shall be installed near the road ROW. The impervious barrier shall be constructed of a tight clay soil material approved by the DPW. Similarly, in areas with high groundwater conditions, the DPW may require bedding and backfill material be modified to reduce risk of water migration issues for residents. The trench backfill materials should be compacted, with a jumping jack or plate tamper in lifts of 12" to 18".

360-3 Casing Pipe

Laterals that extend under porches or through a foundation wall, shall be placed in a sleeve of SDR 21 pipe that shall be long enough to bridge the gap between the foundation wall and solid ground next to the excavated area.

360-4 Design and Layout

The interior of each lateral pipe shall be cleaned before adding the next length of pipe. Laterals shall be installed at depths not greater than 15'. In cases where this is not possible, stone encased riser pipes shall be installed from the deep sanitary sewer main to the 10' level. See detail in appendix under Riser Lateral Detail.

The lateral connection to the trunk sewer shall be made using a wye branch and 45 degree bend, encased in compacted crushed stone. Connections to existing sewer mains may be accomplished using Inserta Tee fittings designed for the existing main pipe material.

All laterals shall be installed to 10' past the right of way or easement line, whichever is greater, and tested in conjunction with the main sewer testing.

All laterals shall be provided with a cleanout, matching the size of the lateral, at the road ROW or sewer easement line. Maximum spacing between cleanouts shall be 90'.

The ends of all laterals shall be plugged or capped to hold pressure while testing, and marked with a 2 inch x 4 inch hardwood witness stake extending from the pipe to a point 3 feet above the ground.

Indicate on the stake the depth to the lateral. Paint the top of the witness stake using the following color code:

Green - sanitary sewer
White - storm sewer
Blue - water service

360-5 Maintenance

The owner of the lateral shall be responsible for its maintenance. All sanitary and storm sewer laterals located in road ROW or within town easements shall be owned by the Town of Perinton. All laterals on private property shall be owned and maintained by the private property owner. It is the private property owners' responsibility to maintain and insure the proper functioning of their portion of the lateral.

360-6 Records

A record shall be kept by the developer's engineer of the location of all lateral ends and wye locations, this information shall be shown on the "as built" plans. As built plans, as described in section 300-16, shall be provided to the Town, prior to issuance of the first building permit.

360-7 Inspection of Laterals from Sewer to House

It is incumbent upon the developer or the plumber installing the laterals to schedule proper and timely requests for inspection appointments. A minimum of 24 hours advance notice is required for inspection appointments. Lateral inspections will cover the following items:

1. Right-of-Way connection and cleanout installation.
2. Materials, joints, alignments, and bedding of pipe.
3. Insure proper connections at house and ROW.
4. Record the location of all lateral pipe "tie-ins" for a permanent record, by the Department of Public Works.
5. Clean-out installations.

360-8 Penalties for Non-Compliance

Penalties for non-compliance with these regulations can be found in the Sewer Use Ordinance, Town Code Section 171-45.

Any return trips by the Town Inspector caused by failure of the builder to be ready for inspection may result in an extra charge billed to the person making the application for permit.

SECTION 365
STORM LATERALS AND DOWNSPOUT CONDUCTORS

365-1 Material

Poly-vinyl chloride (PVC) SDR-35 shall be used for storm laterals. PVC storm sewer laterals shall have integral wall bell and spigot rubber ring joints as manufactured by Johns-Manville Co. or approved equal. Lateral pipe shall meet ASTM standard specifications D-3034, joints ASTM 3212, and fitting materials ASTM D-1784 and any later revisions thereto.

Storm laterals may also be constructed with PVC SDR-21 meeting ASTM D-2241. SDR-21 laterals can be laid on a firm trench base without the use of stone. Schedule 40 (SCH 40) fittings may be used for bends or cleanouts provided a short stub of gasketed SDR 21 is glued immediately upstream of that fitting.

Cleanouts shall be constructed using the same materials as the laterals.

A backflow preventer may be required if there is a potential for backup of storm water into the building.

365-2 Installation and Method

All storm laterals shall be a minimum 6" diameter, and provided with cleanouts of the same size and material. A cleanout shall be located at the road ROW or easement line, at all 90˚bends, and every 90’ of pipe.

All building storm laterals to be connected to corrugated metal pipe (CMP) or polyethylene (PE) pipe shall use a manufactured fitting.

All building storm laterals to be connected to reinforced concrete pipe (RCP) or high density polyethylene pipe (HDPE) pipe shall core the pipe with the appropriate core bit and install an Inserta Tee or equal into the cored hole.

365-3 Downspout Conductors

Downspout conductors shall not exceed 6 feet in depth. Downspout conductor drains shall be 4” PVC sewer and drain pipe (ASTMD3034, SDR35) or approved equal, and shall connect to the 6” storm lateral.

Multiple bends will require an additional cleanout on the upstream side of the bends. Maximum bend shall be 45º. To achieve 90º, two 45º bends with a one foot stub between them shall be used. A maximum single bend is 45˚. To achieve 90˚, multiple bends must be used to provide a gentle sweep.

365-4 Cover

Due to the potential damage from vehicle loading or landscape plantings, all pipe shall have a minimum of three (3) feet of cover to finished grade, from the most remote connection to the main.

SECTION 366
SANITARY LATERALS

366-1 Material

Poly-vinyl chloride (PVC) sewer laterals shall have a minimum wall thickness of SDR-21 and integral wall bell and spigot rubber ring joints as manufactured by Johns-Manville Co. or approved equal by the Commissioner of Public Works. Lateral pipe shall meet ASTM standard specifications D-2241, joints ASTM 3212, and fitting materials ASTM D-3139 and any later revisions thereto. SDR-21 laterals shall be bedded throughout with #1 crushed stone. Schedule 40 (SCH 40) fittings meeting ASTM D-2665 standards may be used for bends or cleanouts when SDR-21 is used.

When connecting to an SDR-35 wye fitting at the main, an SDR-21 hub adapter shall be installed directly on the wye and remaining SDR-21 fittings and pipe used to extend the lateral from the main. No SDR-35 fittings are permitted on laterals upstream of the wye.

Refer to NYS Plumbing code for backwater check valve installation requirements on the *inside* of new homes. The Town of Perinton strongly recommends the installation of a backwater check valve such as Clean Check by RectorSeal on the *outside* of homes for all new sanitary lateral connections to existing mains.

366-2 Size

Sanitary sewer laterals shall be at least 4" in diameter for residential and a minimum of 6" for commercial. All joints shall be water tight. No Fernco or mission type couples will be allowed.

366-3 Installations

When installing P.V.C. pipe into another material, the method of transition must be approved by the Deputy Commissioner of Public Works, Sewers.

Any joint employing a solvent weld will only be permitted when a bell fitting falls within 1 ft. of the solvent weld. When SCH 40 fittings are used, an SDR-21 bell must be glued into the upstream side of the fitting.

All sanitary sewer laterals shall have a clean out to grade at the road ROW and at every 90’ interval of lateral installed. The cleanout must be left flush with the ground at the time of the final grade inspection. Vertical cleanouts must be the same size as the lateral pipe it services. The lateral shall be capped with a metal cup, capable of being detected with metal detector.

Multiple bends equaling 90º, will require an additional cleanout on the upstream side of the bends. Maximum bend allowed with 1 fitting shall be 45^0. To achieve a 90^0 bend, two 45^0 bends with a one (1) foot stub between them shall be used.

Due to potential damage from vehicle loading or landscape plantings, all piping shall have a minimum of three (3) feet of cover to finished grade.

SECTION 380
INDIVIDUAL LOT REQUIREMENTS

380-1 Grading

All lots shall be graded according to the approved final site or subdivision plans. Any changes to these plans must be approved by the Department of Public Works, prior to the work being done.

380-2 Final Grading Inspection

Prior to the final grading inspection being approved, the lot shall conform to the following requirements.

1. Finished floor elevation of the garage floor (unless otherwise noted on the plans) will be within 1 foot of approved plan.
2. All underground utilities must be completed.
3. All public utilities and appurtenances, including, but not limited to curb boxes, hydrants, manholes and cleanouts, must be brought to finished grade.
4. All excess building debris, brush piles, topsoil piles and fill dirt piles shall be removed from the lot.
5. Lot must be brought to the finished grade shown on the approved plans with a leveled 6" layer of topsoil to be provided. If topsoil is not placed at time of the final grade inspection, due to winter conditions, a Winter Grading Affidavit, signed by the developer and perspective homeowner, must be provided to the DPW prior to the C of O being issued. Mulch needs to be applied and tracked in with a dozer to stabilize the lawn area during the winter. Additional erosion control measures may also be required. A final grade inspection must be passed by June 1st of the following spring.
6. All drainage shall be directed away from house to street or drainage swale. Standing water will not be permitted.
7. Foundation must be completely backfilled.
8. Safe passage must be provided from driveway to front door.
9. When unusual site conditions exist, the site inspector may require special erosion control measures be installed.

If any of these requirements are not met, the final grading will fail. The Department of Public Works will not re-inspect the property until identified deficiencies have been corrected. After the final grade inspection is approved, neither the contractor nor homeowner shall change the grading of the lot without first seeking consent of the Department of Public Works.

380-3 Erosion and Sediment Control
In order to promote parking in the driveway and to keep the mud off of existing roads, the contractor shall construct a stabilized construction entrance 6" of crusher run stone on geotextile fabric and maintain it for the duration of building construction.

Erosion control devices such as straw bales, silt fence, diversion swales, check dams, silt socks and any others directed by the Department of Public Works shall be used to minimize erosion on the site. Soil from the lot shall not drain into gutters, road, or be tracked offsite. Any soil tracked off the lot being developed shall be swept on a routine basis or as directed by the Department of Public Works.

380-4 Easements and Right-of-Way
There shall be no landscape plantings, fences, buildings, lawn irrigation systems, dog control devices or any other permanent structure placed in a public right-of-way or easement unless approved by the Department of Public Works. Also, no grade changes, which will disturb the drainage, will be allowed unless approved by the Department of Public Works.

380-5 Lateral, Downspout and Water Service Material and Installation
Material and installation specifications for sanitary laterals, storm laterals and downspout conductors are provided in Section 365 and 366.

Outside water service material shall be copper Type "K" or plastic PE3408, SDR-9 with 6" of clean cushion sand (NYSDOT Section 703-6) over and under pipe, with 5' cover. All plastic services shall have a tracer wire or wired warning tape per standard details included in these specifications or as shown on the approved plans. Refer to MCWA regulations.

380-6 General Plumbing
All plumbing work must conform to the minimum requirements of the New York State Plumbing Code and any revisions thereto.

380-7 Inspections
All applicable inspections listed on the issued building permit must be completed before a Certificate of Occupancy will be issued. Inspections must be requested at the appropriate time - refer to permit for more information. The building permit shall be posted (preferably on a window) in the structure when an inspection is requested. The inspector is not required to use a ladder or stairway he deems unsafe to make the inspection. All ladders provided for inspector use shall conform to OSHA standards. Additional fees will be charged if there is a need for the inspector to come back.

380-8 Garage Floor Drains
All new construction of floor drains will be done with a manufactured crock/cover, SCH 40 fittings and pipe. Floor drains shall tie into sanitary sewer when available. When sanitary sewers are not available, floor drains shall be daylighted to a rear or side yard swales. Floor drains shall not be tied into septic systems.

380-9 Sprinkler Systems

Prior to installation of a lawn sprinkler system, a building permit must be obtained from the Buildings and Codes Department. The following items shall be submitted with the permit application:

1. A survey map of the property that displays the proposed location of the sprinkler heads to be installed on the property. The design details of piping layout, sizes, connections and intervals.
2. Specifications of the backflow prevention system that will be installed. A Certified Backflow Tester shall verify flow rate and pressure condition in the house while the system is operating.
3. The location of drains to be used for winter shut down.

Prior to system operation, it shall be inspected by the Building and Codes Department and Monroe County Department of Health.

Upon receipt of written approval from the Monroe County Health Department, final system connection can be made, the final inspections made, and a Certificate of Compliance issued.

380-10 Driveway Access

An adequate residential driveway for property access to each lot shall be constructed to a minimum width of 10' in width. It shall have a base consisting of 6" of #1 crusher run stone base or run-of-bank gravel (if asphalt driveway is planned). A compacted and well-drained sub-base free of organic material must be prepared before the base is installed. An asphalt course is preferred for all driveways. All portions of the driveway within the right-of-way shall be paved. When asphalt is used, the minimum requirements include 2" of compacted intermediate structural course and 1" of compacted top course.

In general, driveway edges shall be offset a minimum of 4' from adjacent property lines. Driveway aprons may be closer than 4' to each other within the ROW to accommodate vehicle turning movements and minimize lawn rutting. Only one driveway curb cut will be approved per lot unless otherwise approved by the Commissioner of Public Works.

380-11 Property Corners

All lot corners shall be pinned with #5 rebar, 42" long, prior to issuance of a Certificate of Occupancy and final release of letter of credit (if applicable).

380-12 Turn-Around Areas

Requirements for turn around areas are provided in Section 205-16C.

380-13 Invisible Fences

Invisible fences shall be installed entirely outside of the road ROW. If fence is installed within the ROW, a ROW encroachment agreement will have to executed between the DPW and homeowner.

DIVISION 4: CONSTRUCTION DETAILS

APPENDIX

UNIFORM UTILITY STAKE-OUT COLOR CODE

A. Yellow – Gas, oil, petroleum products, steam, compressed air, compressed gases and all other hazardous liquid or gas.

B. Red – Electric lines.

C. Orange – Communication lines; including telephone, telegraph, fire signals, cable TV, civil defense, data systems, electronic controls, etc.

D. Blue – Water.

E. Green – Sanitary and storm sewers, including force mains.

F. White – Proposed excavation.

Dig Safely New York (Utility Location Request Information)
Call: 811
Web: www.digsafelynewyork.com

FIGURE — I

RAINFALL INTENSITY CURVES for MONROE COUNTY, NEW YORK

STORM DURATIONS — 5 MINUTES TO 120 MINUTES

RETURN PERIODS — 2 YEARS TO 100 YEARS

MONROE COUNTY PLANNING COUNCIL

REF: WEATHER BUREAU, U.S. DEPT. OF COMMERCE BY METHOD OF EXTREME VALUES AFTER GUMBEL (ANNUAL SERIES)

(1) Use 25 yr. storm for main channel design.

(2) Use 10 yr. storm for subdivision pipe design.

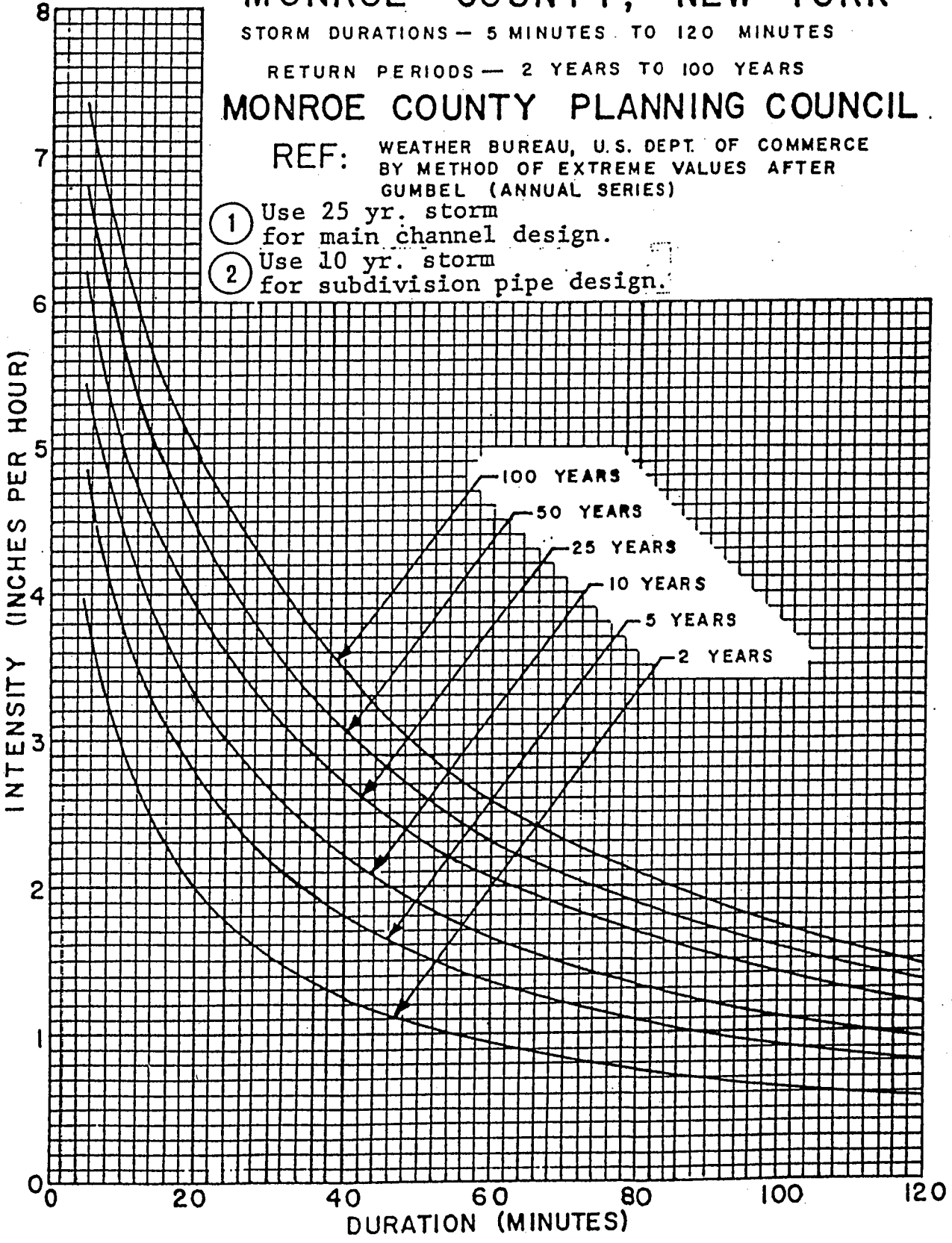


FIGURE — 2

RAINFALL INTENSITY CURVES for MONROE COUNTY, NEW YORK

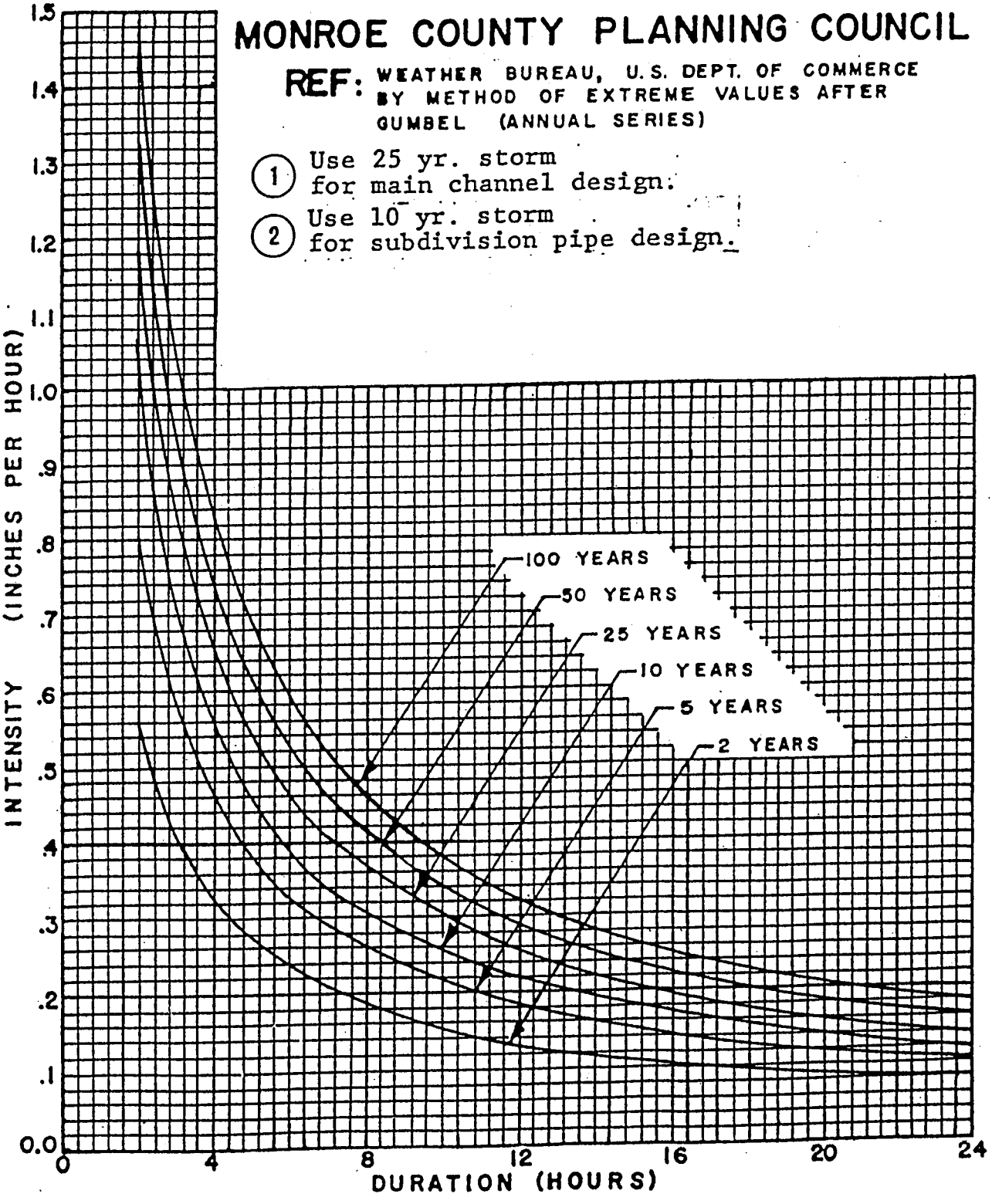
STORM DURATIONS — 2 HOURS TO 24 HOURS
RETURN PERIODS — 2 YEARS TO 100 YEARS

MONROE COUNTY PLANNING COUNCIL

REF: WEATHER BUREAU, U.S. DEPT. OF COMMERCE BY METHOD OF EXTREME VALUES AFTER GUMBEL (ANNUAL SERIES)

(1) Use 25 yr. storm for main channel design.

(2) Use 10 yr. storm for subdivision pipe design.



SUMMARY

	TOTAL ESTIMATED VALUE	TOTAL ELIGIBLE VALUE TO DATE	TOTAL RETAINAGE HELD TO DATE	TOTAL AUTHORIZED TO DATE
SECTION A - WATERMAIN	12.00	0.00	0.00	0.00
SECTION B - SANITARY SEWER	4.00	0.00	0.00	0.00
SECTION C - STORM SEWER	12.00	0.00	0.00	0.00
SECTION D - PAVEMENTS	3.00	0.00	0.00	0.00
SECTION E - GRADING & MISCELLANEOUS	11.00	0.00	0.00	0.00
SECTION F - EROSION & SEDIMENT CONTROL	3.00	0.00	0.00	0.00
SECTION G - TOWN GUARANTEES	5.00	0.00	0.00	0.00
TOTAL:	50.00	0.00	0.00	0.00

TOTAL AUTHORIZED:	0.00
LESS PREVIOUS RELEASES:	0.00
THIS STATEMENT:	**0.00**

ORIGINAL L.O.C.:	50.00
LESS TOTAL AUTHORIZED:	0.00
L.O.C. BALANCE:	50.00

APPROVALS:

_____ _____
DEVELOPER / ENGINEER

_____ _____
PERINTON DPW

CONSULTANT

PROJECT: **PROJECT NO:**
OWNER: **DATE:**
LOCATION: **TOWN OF PERINTON, NY** **LETTER OF CREDIT RELEASE NO.**

						TO DATE		THIS STATEMENT			
ITEM NO.	**DESCRIPTION**	**ESTIMATED QUANTITY**	**UNIT**	**UNIT PRICE**	**ESTIMATED QUANTITY X UNIT PRICE**	**QUANTITY INSTALLED**	**QUANTITY ELIGIBLE FOR RELEASE**	**QUANTITY INSTALLED**	**QUANTITY ELIGIBLE FOR RELEASE**	**TOTAL ELIGIBLE TO DATE**	**TOTAL ELIGIBLE THIS STATEMENT**
SECTION A - WATERMAIN											
1	8" DIA., CEMENT LINED, D.I.P. WATERMAIN, CLASS 51	1	LF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
2	8" GATE VALVE, COMPLETE	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
3	12" DIA., CEMENT LINED, D.I.P. WATERMAIN, CLASS 51	1	LF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
4	12" GATE VALVE, COMPLETE	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
5	ROAD BORING & JACKING, 20" CASING; 8" RJP WATERMAIN	1	LF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
6	8" TAPPING SLEEVE & VALVE	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
7	1" WATER SERVICE WITH CORP STOP & CURB STOP	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
8	DISINFECTION/SAMPLING TAP, COMPLETE	1	LS	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
9	12X12X12 TEE	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
10	FIRE HYDRANT ASSEMBLY, COMPLETE	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
11	12X8" CONCENTRIC REDUCER	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
12	CAP/BLOCK END OF MAIN	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
			SECTION A TOTAL:		12.00				***STATEMENT SUBTOTAL - SECTION A:***	0.00	0.00
									RETAINAGE (0%):	0.00	0.00
									STATEMENT SUBTOTAL - SECTION A (LESS RETAINAGE):	0.00	0.00

CONSULTANT

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SECTION B - SANITARY SEWERS											
1	8" DIA. PVC SANITARY SEWER, TYPE SDR-35	1	LF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
2	4' DIA. REINF. CONC. SANITARY MANHOLE	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
3	4" DIA. PVC SANITARY LATERAL SDR-21, W/ CLEANOUTS	1	LF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
4	CONNECT TO EXISTING SANITARY MANHOLE	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
			SECTION B TOTAL		4.00			***STATEMENT SUBTOTAL - SECTION B:***		0.00	0.00
								RETAINAGE (10%):		0.00	0.00
								STATEMENT SUBTOTAL - SECTION B (LESS RETAINAGE):		0.00	0.00

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SECTION C - STORM SEWERS											
1	TRENCH AND CULVERT EXCAVATION	1	CY	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
2	6" PVC STORM PIPE WITH CLEANOUTS	1	LF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
3	10" DIA. SICPP STORM PIPE	1	LF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
4	12" DIA. SICPP STORM PIPE	1	LF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
5	15" DIA. SICPP STORM PIPE	1	LF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
6	18" DIA. SICPP STORM PIPE	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
7	30"X30" SQUARE PRECAST DRAINAGE STRUCTURE	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
8	4' DIA. MANHOLE PRECAST DRAINAGE STRUCTURE	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
9	5' DIA. MANHOLE PRECAST DRAINAGE STRUCTURE	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
10	12" GALVANIZED END SECTION	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
11	15" CONCRETE END SECTION	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
12	OUTLET CONTROL STRUCTURE (POND)	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
			SECTION C TOTAL		12.00			***STATEMENT SUBTOTAL - SECTION C:***		0.00	0.00
									RETAINAGE (10%):	0.00	0.00
									STATEMENT SUBTOTAL - SECTION C (LESS RETAINAGE):	0.00	0.00

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SECTION D - PAVEMENTS											
1	ASPHALT (TOP, BINDER AND SUBBASE)	1	SF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
2	CONCRETE GUTTER	1	LF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
3	MAINTENANCE AND PROTECTION OF TRAFFIC FOR CONNECTION TO EXISTING ROAD	1	LS	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
			SECTION D TOTAL		3.00			***STATEMENT SUBTOTAL - SECTION D:***		0.00	0.00
								RETAINAGE (10%):		0.00	0.00
								STATEMENT SUBTOTAL - SECTION D (LESS RETAINAGE):		0.00	0.00

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SECTION E - GRADING & MISCELLANEOUS											
1	DEMOLITION AND DISPOSAL (EXISTING ASPHALT AND CONCRETE REMOVAL)	1	LS	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
2	TREE/BRUSH REMOVAL	1	LS	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
3	EXCAVATION AND GRADING	1	CY	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
4	TREES	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
5	6" TOPSOIL AND SEED	1	AC	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
6	SURVEY STAKEOUT	1	LS	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
7	DEED RESTRICTION MARKER	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
8	5' WIDE ASPHALT TRAIL	1	LF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
9	5' WIDE CONCRETE SIDEWALK	1	LF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
10	LIGHTING WITH POLE, FIXTURE, BASE AND WIRING LOOP	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
11	GRAVEL/TOPSOIL MAINTENANCE ROAD	1	SF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
			SECTION E TOTAL		11.00			***STATEMENT SUBTOTAL - SECTION E:***		0.00	0.00
									RETAINAGE (10%):	0.00	0.00
								STATEMENT SUBTOTAL - SECTION E (LESS RETAINAGE):		0.00	0.00

CONSULTANT

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SECTION F - EROSION & SEDIMENT CONTROL											
1	SILT FENCE	1	LF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
2	STABILIZED CONSTRUCTION ENTRANCE	1	EA	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
3	TEMPORARY SEEDING	1	SF	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
			SECTION F TOTAL		3.00			***STATEMENT SUBTOTAL - SECTION F:***		0.00	0.00
								RETAINAGE (0%):		0.00	0.00
								STATEMENT SUBTOTAL - SECTION F (LESS RETAINAGE):		0.00	0.00

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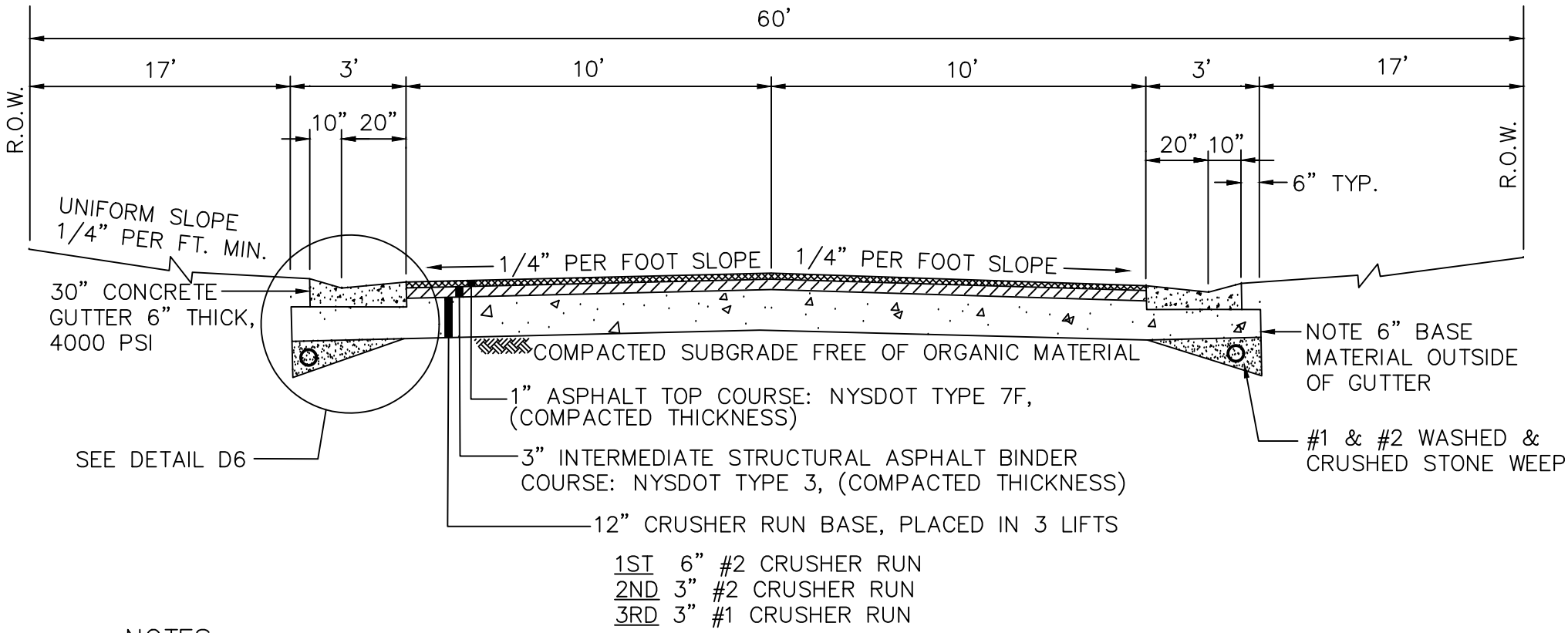
SECTION G -	**TOWN GUARANTEES**										
1	CONTINGENCIES - SECTIONS B-F ONLY (10 % OF CONSTRUCTION)	1	LS	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
2	ENGINEERING - SECTIONS B-F ONLY (2% OF CONSTRUCTION)	1	LS	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
3	INSPECTION - SECTIONS B-F ONLY (3% OF CONSTRUCTION)	1	LS	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
4	RECORD MAPS	1	LS	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
5	CONSULTANT FEE, PERMITS, SWPPP INSPECTIONS	1	LS	1.00	1.00	0.0	0.0	0.0	0.0	0.00	0.00
			SECTION G TOTAL		5.00				***STATEMENT SUBTOTAL - SECTION G:***	0.00	0.00
									RETAINAGE (0%):	0.00	0.00
									STATEMENT SUBTOTAL - SECTION G (LESS RETAINAGE):	0.00	0.00

MINOR ROAD SECTION

NTS



1ST 6" #2 CRUSHER RUN
2ND 3" #2 CRUSHER RUN
3RD 3" #1 CRUSHER RUN

NOTES:

1. THESE ARE MINIMUM SPECIFICATIONS. A SOIL INVESTIGATION IS REQUIRED TO SUPPORT A FINAL DECISION ON THE ROAD SECTION. THE COMMISSIONER OF PUBLIC WORKS WITH INPUT FROM THE DESIGN ENGINEER, SHALL DETERMINE THE ASPHALT MATERIALS.

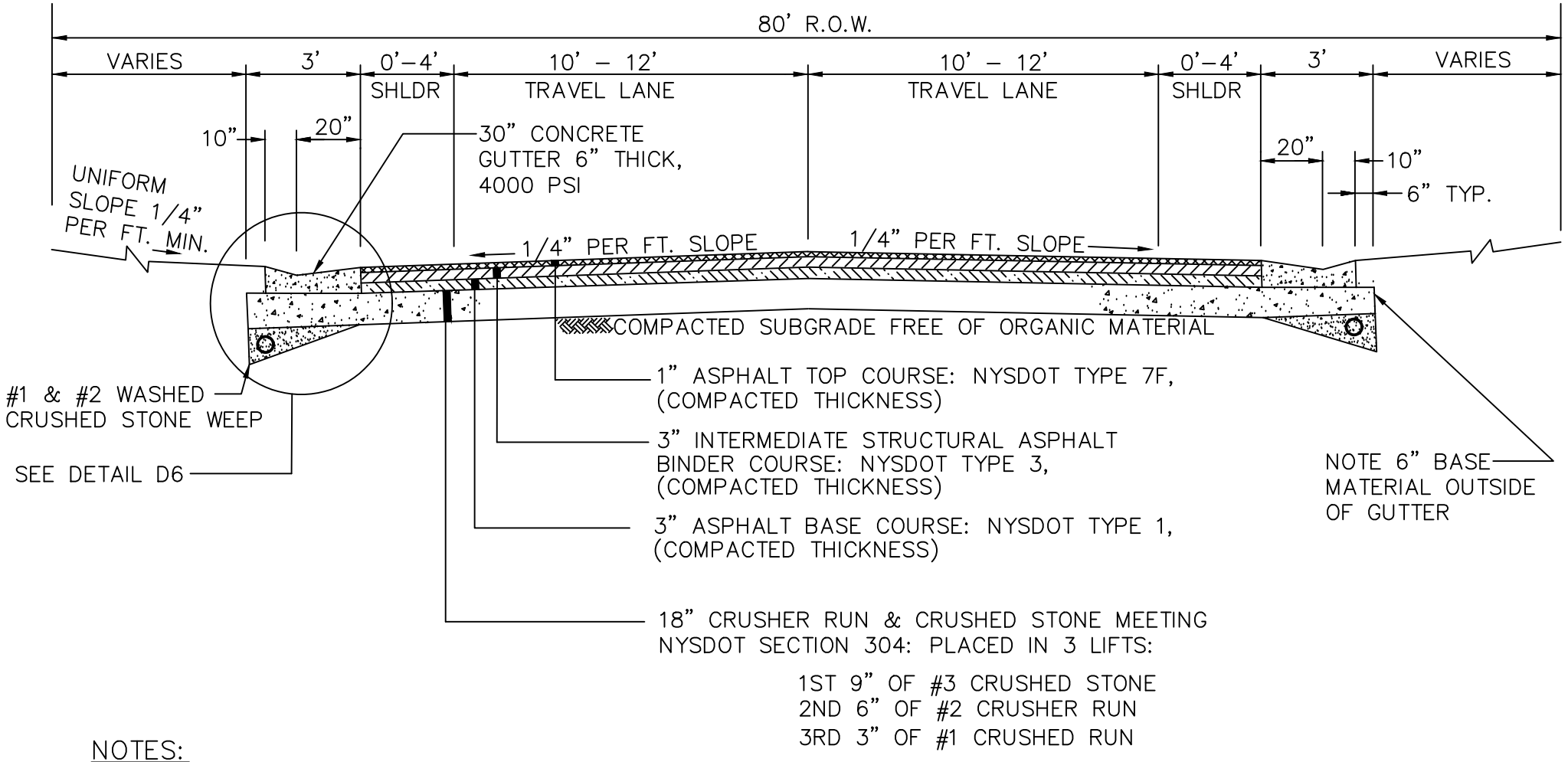
2. SUB-GRADE MUST FREE DRAIN TO STONE WEEP A 10' PIECE OF 4" PERFORATED PIPE WITH END CAP WILL EXTEND INTO THE WEEP FROM EACH CATCH BASIN.

3. IF ORGANIC MATERIAL IS ENCOUNTERED IN THE ROAD-BOX SUBGRADE IT WILL BE EXCAVATED OUT AND REPLACED WITH #2 CRUSHER RUN STONE GRADED TO DRAIN TO THE STONE WEEP UNDERDRAIN.

4. THE ROADBOX SUBGRADE AND SUBBASE MATERIAL SHALL BE COMPACTED TO 95% MODIFIED PROCTOR UTILIZING A 10-TON VIBRATORY ROLLER WITH VIBRATORY FORCE OF 27,000 LBS.

COLLECTOR ROAD SECTION

NTS

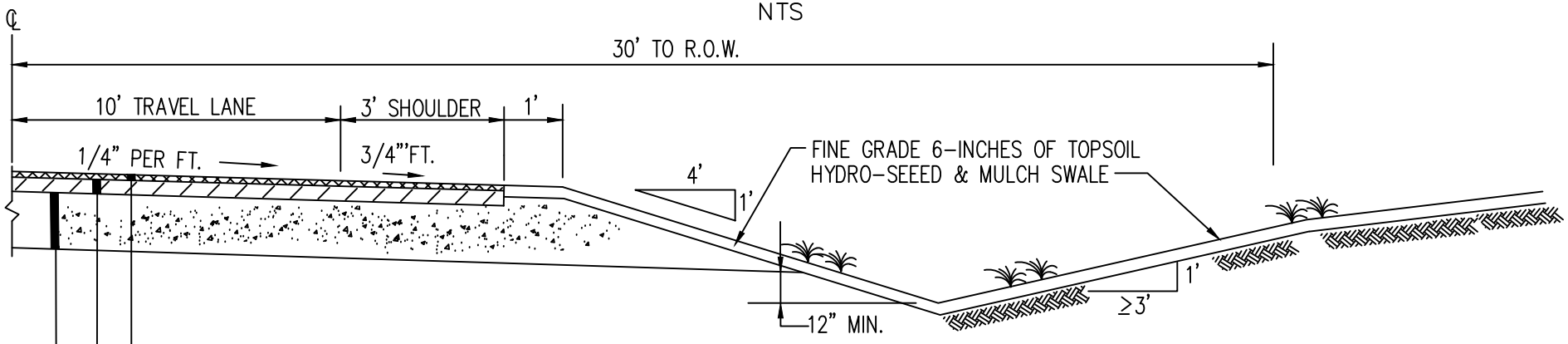


NOTES:

1. THESE ARE MINIMUM SPECIFICATIONS. A SOIL INVESTIGATION IS REQUIRED TO SUPPORT A FINAL DECISION ON THE ROAD SECTION. THE COMMISSIONER OF PUBLIC WORKS, WITH INPUT FROM THE DESIGN ENGINEER, SHALL DETERMINE THE ASPHALT MATERIALS. .
2. SUB–GRADE MUST FREE DRAIN TO STONE WEEP. A 10' PIECE OF 4" PERFORATED DRAIN PIPE WITH END CAP EXTENDS INTO THIS WEEP FROM EACH CATCH BASIN.
3. IF ORGANIC MATERIAL IS ENCOUNTERED IN THE ROAD BOX SUBGRADE IT WILL BE EXCAVATED OUT AND REPLACED WITH #2 CRUSHER RUN STONE TO DRAIN TO THE STONE WEEP UNDERDRAIN.
4. THE ROADBOX SUBGRADE AND SUBBASE MATERIAL SHALL BE COMPACTED TO 95% MODIFIED PROCTOR UTILIZING A 10–TON VIBRATORY ROLLER WITH A VIBRATORY FORCE OF 27,000 LBS.

RURAL ROAD SECTION

NTS



1" ASPHALT TOP COURSE (TYPE 7F), COMPACTED THICKNESS

3" INTERMEDIATE STRUCTURAL ASPHALT BINDER (TYPE 3) COURSE, COMPACTED THICKNESS

12" CRUSHER RUN BASE, PLACED IN 3 LIFTS

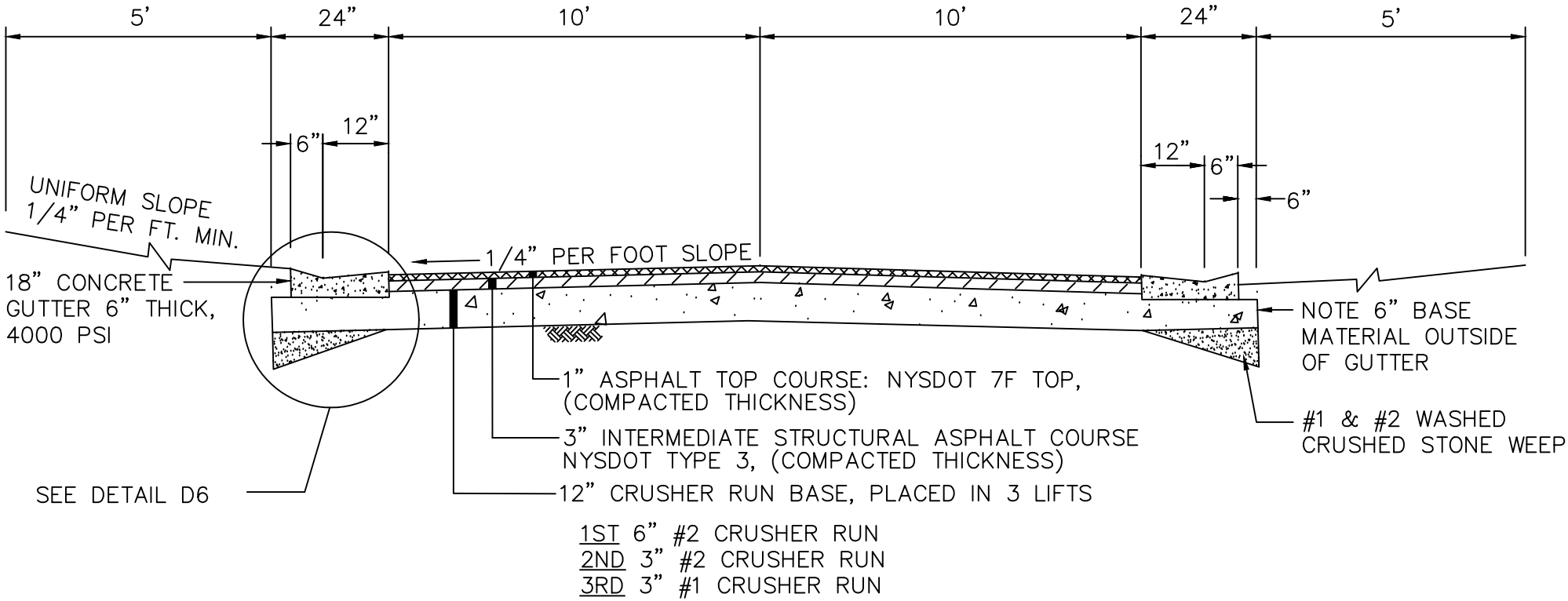
1ST 6" #2 CRUSHER RUN
2ND 3" #2 CRUSHER RUN
3RD 3" #1 CRUSHER RUN

CONDITIONS FOR USE

1. ROADSIDE GRASS SWALES TO HAVE 1% SLOPE MIN.
2. CONCRETE PAVED INVERT TO BE PROVIDED WHEN SWALE SLOPE EXCEEDS 3.5%. IT IS THE DEVELOPERS RESPONSIBILITY TO CONTROL EROSION IN ALL CASES. SOIL AND/OR GRADE CONDITIONS MAY REQUIRE SPECIAL EROSION CONTROL.
3. DRIVEWAY CULVERTS SHALL BE PROVIDED AT EACH DRIVEWAY. PIPE SIZE SHALL CONVEY FLOW IN SWALE, WITHOUT RESTRICTION AND BE A MINIMUM OF 12" IN DIAMETER. SEE DETAIL D-9.
4. THE ROADBOX SUBGRADE AND SUBBASE MATERIAL SHALL BE COMPACTED TO 95% MODIFIED PROCTOR UTILIZING A 10-TON VIBRATORY ROLLER WITH A VIBRATOY FORCE OF 27,000 LBS.
5. THIS SECTION MAY BE USED IN RT & RS ZONING ONLY FOR A ROADWAY SERVING 12 UNITS OR LESS. LOTS SERVED SHALL BE ON (1) ACRE OR GREATER WITH ROAD FRONTAGE IN EXCESS OF 150'. RURAL ROAD CANNOT BE USED OFF EXISTING ROADS WITH AN EDGE TREATMENT.
6. PAVEMENT SUBGRADE DRAINAGE AND STABILITY TO BE ACCEPTABLE TO THE TOWN OF PERINTON.

PRIVATE ROAD SECTION

NTS



NOTES:

1. THESE ARE MINIMUM SPECIFICATIONS. A SOIL INVESTIGATION IS REQUIRED TO SUPPORT A FINAL DECISION ON THE ROAD SECTION. THE COMMISSIONER OF PUBLIC WORKS WITH INPUT FROM THE DESIGN ENGINEER, SHALL DETERMINE THE ASPHALT MATERIALS.

2. SUB-GRADE MUST FREE DRAIN TO STONE WEEP A 10' PIECE OF 4" PERFORATED PIPE WITH END CAP WILL EXTEND INTO THE WEEP FROM EACH CATCH BASIN.

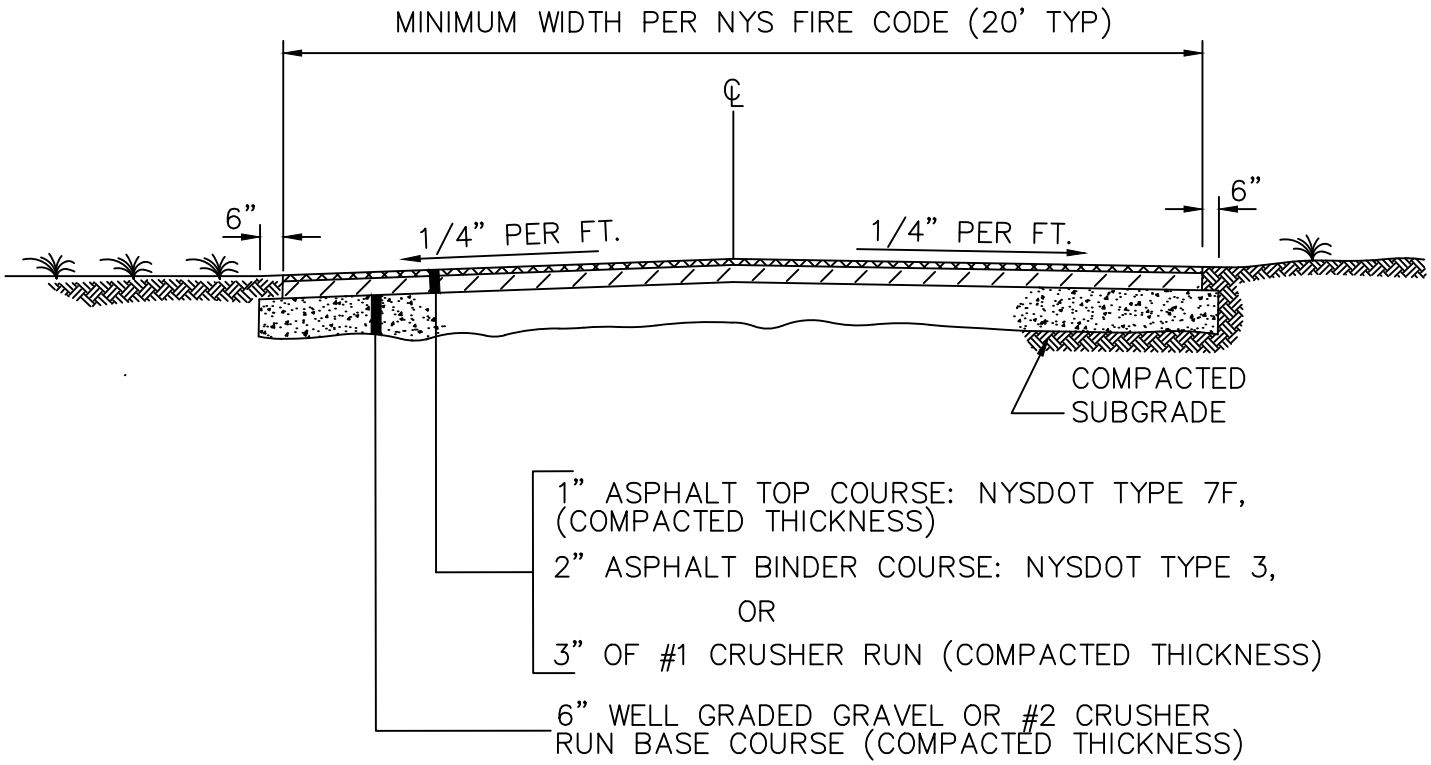
3. IF ORGANIC MATERIAL IS ENCOUNTERED IN THE ROAD-BOX SUBGRADE IT WILL BE EXCAVATED OUT AND REPLACED WITH #2 CRUSHER RUN STONE GRADED TO DRAIN TO THE STONE WEEP UNDERDRAIN.

4. THE ROADBOX SUBGRADE AND SUBBASE MATERIAL SHALL BE COMPACTED TO 95% MODIFIED PROCTOR UTILIZING A 10-TON VIBRATORY ROLLER WITH VIBRATORY FOCE OF 27,000 LBS.

COMMON DRIVE SECTION

NTS

TO SERVE 2 – 4 RESIDENCES

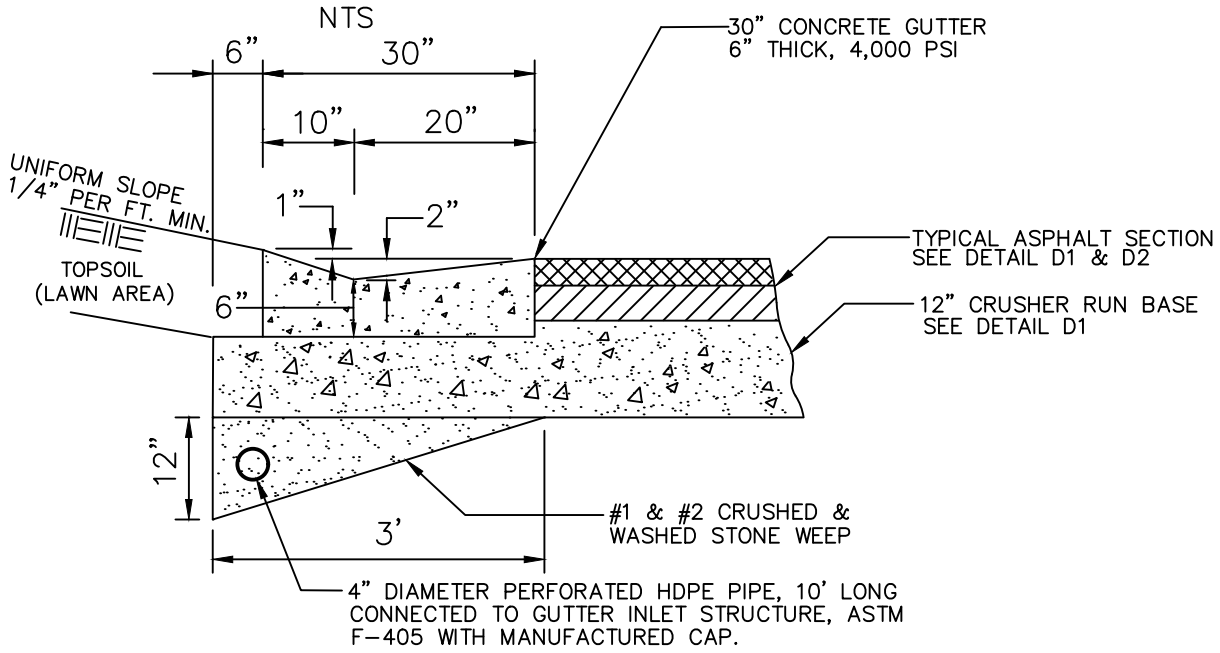


NOTES:

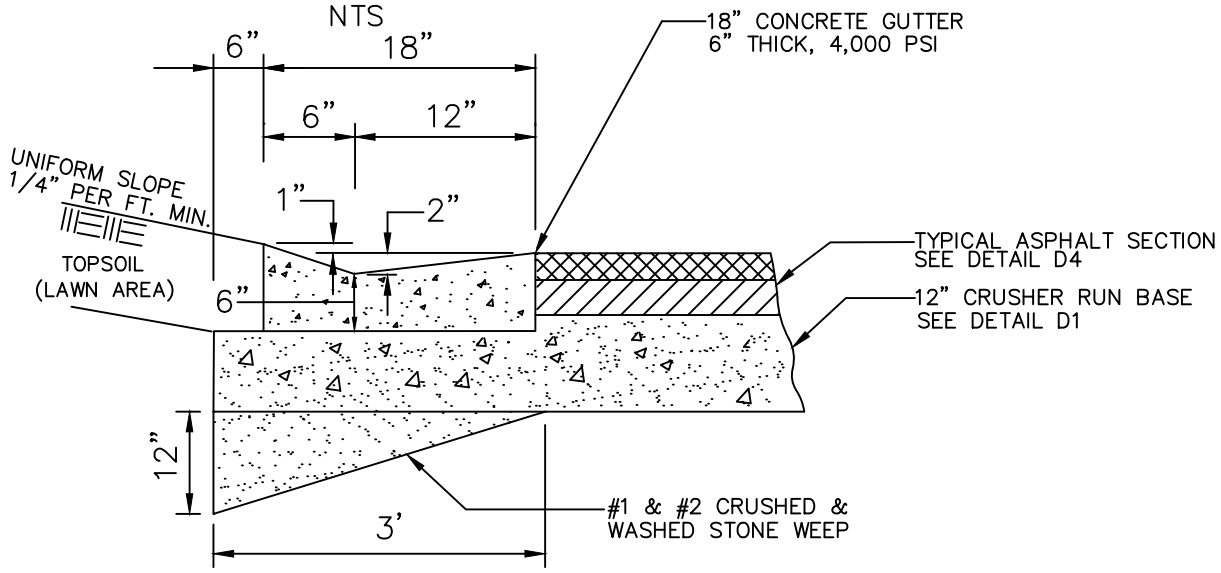
1. DRIVE SHALL BE PAVED IN ALL ZONING DISTRICTS EXCEPT RT & RS. STONE SURFACED DRIVES SHALL BE PAVED WITHIN THE ROAD RIGHT–OF–WAY.

2. IF CLOSED DRAINAGE SYSTEM IS NOT AVAILABLE, PROVIDE ROADSIDE SWALE WITH A MINIMUM 1% LONGITUDINAL SLOPE THAT DRAINS TO AN EXISTING CONVEYANCE CHANNEL/SYSTEM.

GUTTER WITH STONE WEEP & UNDERDRAIN
STANDARD / COLLECTOR ROAD SECTION

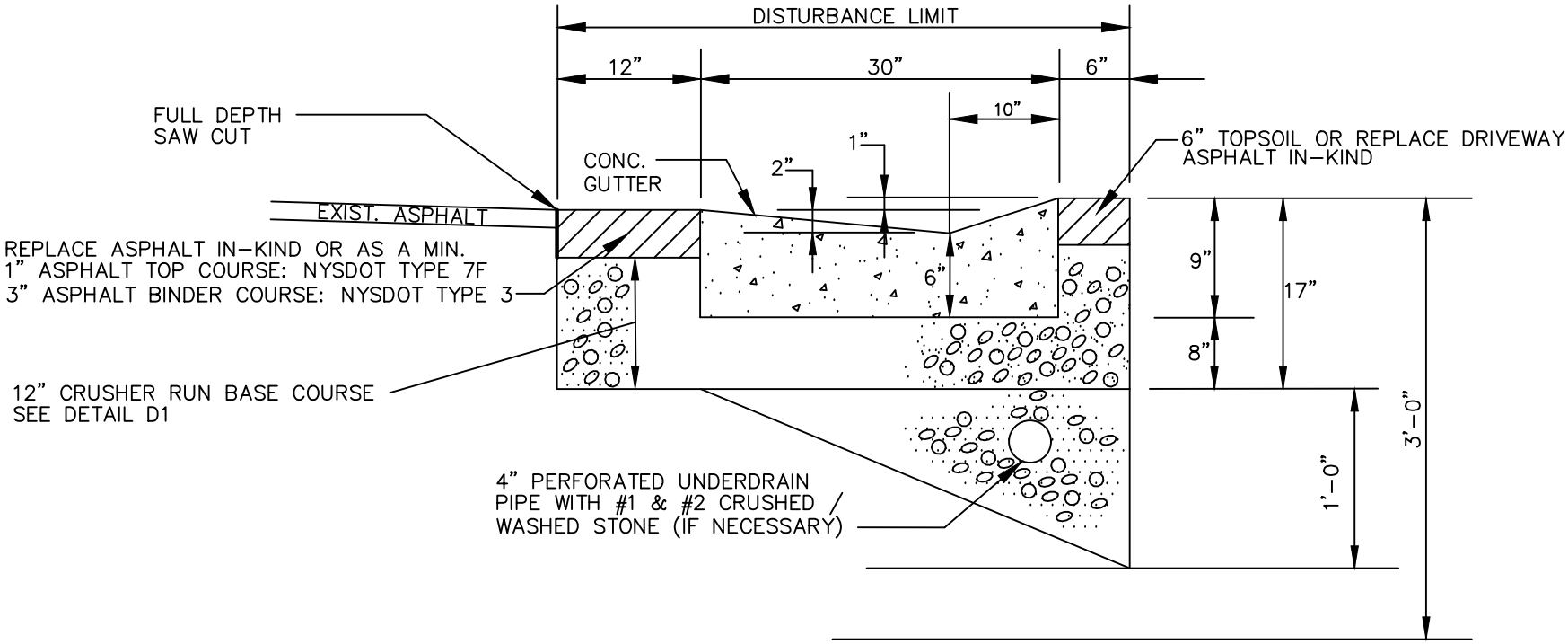


GUTTER WITH STONE WEEP
PRIVATE ROAD SECTION



CONCRETE GUTTER REPLACEMENT DETAIL

NTS

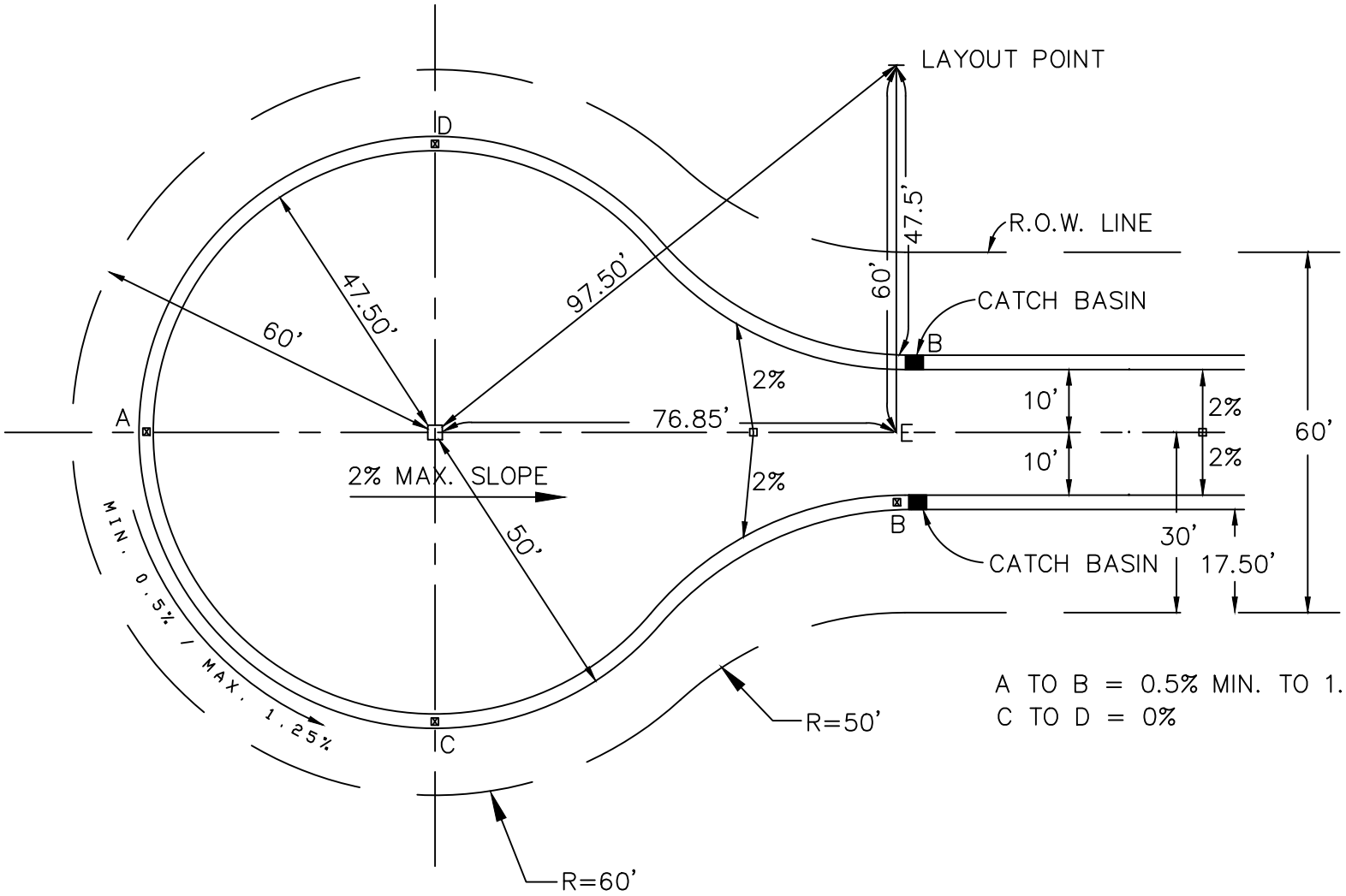


NOTES:

1. ANY GUTTER TO BE REPLACED SHALL BE IN FULL GUTTER SECTIONS.
2. CONCRETE USED FOR GUTTER REPLACEMENT SHALL BE CLASS J (SLIP FORM) OR CLASS A (CAST IN PALCE).
3. TACK COAT SHALL BE APPLIED TO THE VERTICAL CUT EDGE OF ALL EXISTING ASPHALT AS WELL AS THE VERTICAL EDGE OF THE NEW CONCRETE GUTTER PRIOR TO THE PLACEMENT OF THE ASPHALT TOP.
4. CONSTRUCTION EXPANSION JOINTS SHALL BE PLACED AT THE BEGINNING AND END OF A POUR AND AT 50' INTERVALS. A DUMMY JOINT SHALL BE PLACED AT 10' INTERVALS BETWEEN EXPANSION JOINTS.

STANDARD CUL–DE–SAC DETAIL

N.T.S.



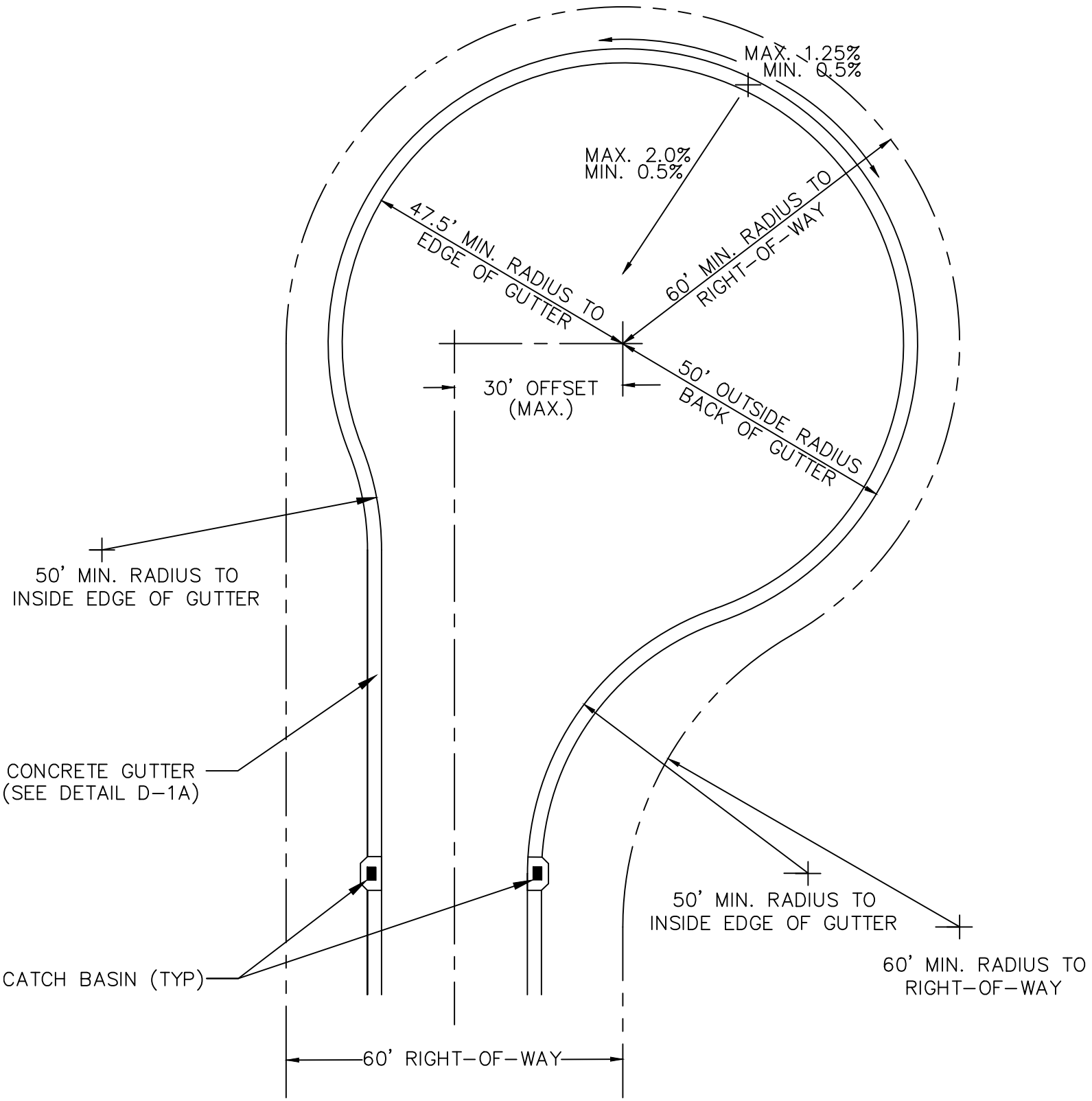
A TO B = 0.5% MIN. TO 1.25% MAX.
C TO D = 0%

ALL PLANS REQUIRE A SEPARATE CUL DE SAC DETAIL WITH ELEVATIONS AT EIGHT (8) EQUIDISTANT POINTS, ALONG THE GUTTER INVERT. THE SLOPE BETWEEN ANY TWO POINTS IN A CUL DE SAC SHALL NOT EXCEED 2%.

ALL ROAD GRADES SHOULD TRANSITION TO A MAXIMUM GRADE OF 2% FROM BEGINNING OF CUL DE SAC (A to E). CATCH BASINS SHOULD BE LOCATED TO INTERCEPT DRAINAGE BASED ON SEPARATE PLAN DETAIL.

OFFSET CUL–DE–SAC DETAIL

NTS

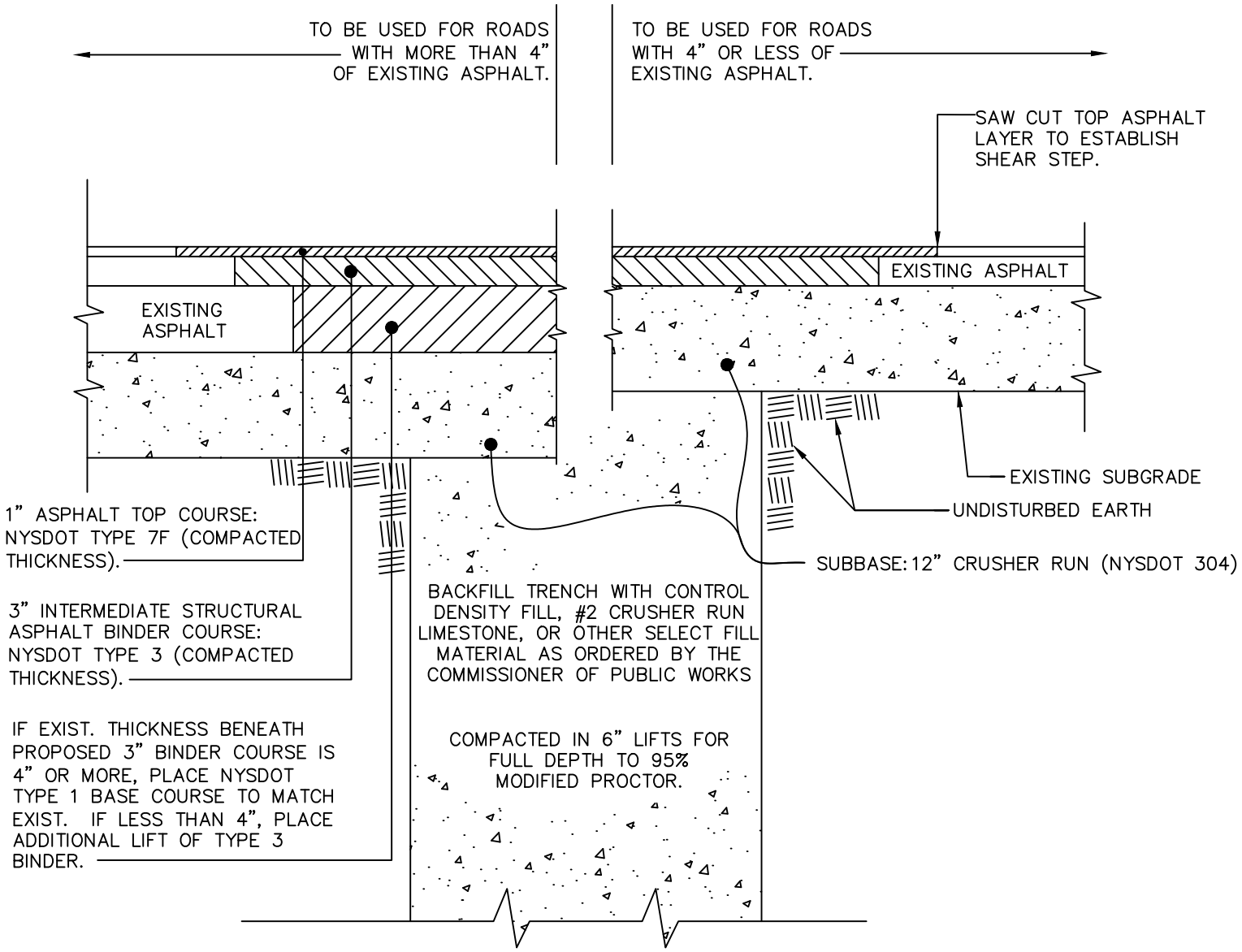


NOTE:

1. SLOPE REQUIREMENTS ARE SAME AS STANDARD CUL–DE–SAC DETAIL.

PAVEMENT RESTORATION DETAIL

NTS



NOTES:

1. ALL JOINTS SHALL BE SAW CUT AND TACK COATED

2. THE CONTRACTOR SHALL PROVIDE ONE TRAFFIC LANE DURING WORKING PERIODS AND TWO TRAFFIC LANES DURING NON-WORKING PERIODS FOR THE OPEN-CUT CROSSINGS. FLAG MEN, SIGNS, LIGHTS, BARRICADES, AND OTHER SAFETY DEVICES WILL BE REQUIRED AS DIRECTED BY THE COMMISSIONER OF PUBLIC WORKS OR HIGHWAY SUPERINTENDENT. CONTRACTOR SHALL NOTIFY THE PERINTON PUBLIC WORKS DEPARTMENT AT LEAST 48 HOURS PRIOR TO EXCAVATION.

3. WORK ZONE TRAFFIC CONTROL SHALL BE IN CONFORMANCE WITH NYSDOT 619 (LATEST EDITION) FOR ANY WORK IN THE ROW.

DRIVEWAY CULVERT & ROADSIDE SWALE ENCLOSURE DETAIL

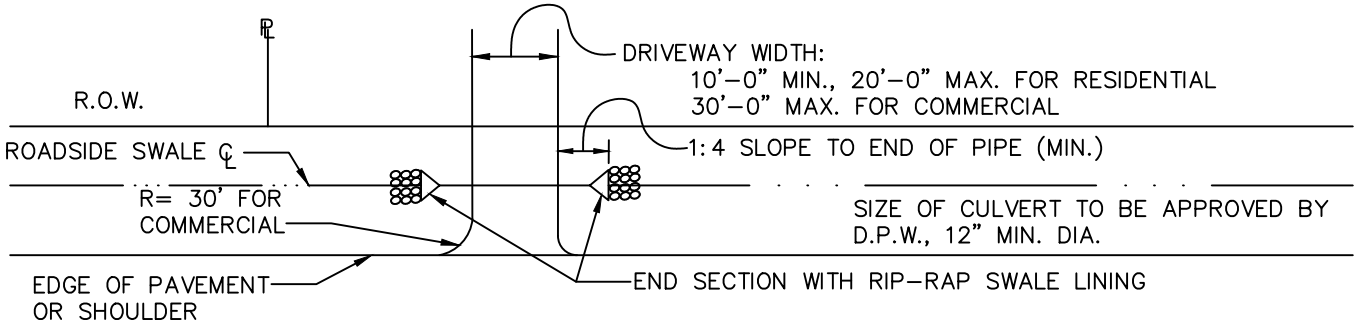
N.T.S.

A TOWN OF PERINTON 149 PERMIT FOR WORK WITHIN THE R.O.W. IS REQUIRED TO BE COMPLETED & APPROVED PRIOR TO WORK COMMENCING.

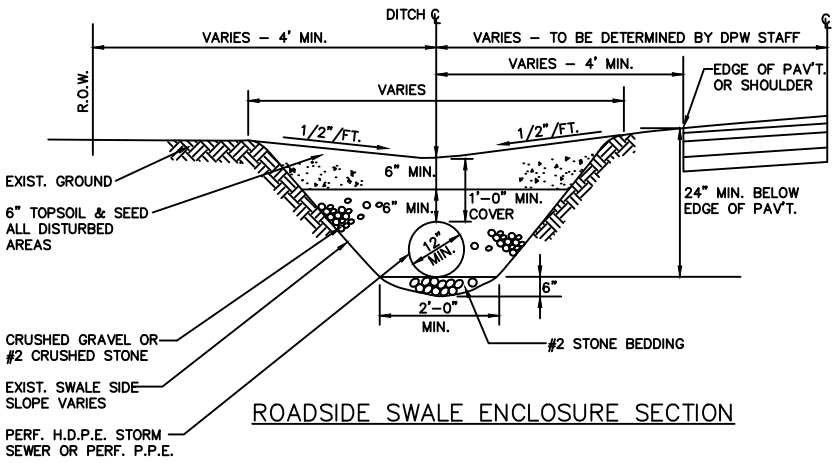
PRIOR TO INSTALLING A NEW CULVERT, THE ROADSIDE SWALE SHALL BE CLEANED OUT AND GRADED ALONG THE LOT FRONTAGE.

DRIVEWAY CULVERTS SHALL BE INSTALLED ON A LINE, GRADE AND OFFSET DETERMINED BY THE EXISTING SWALE LINE, GRADE, AS APPROVED BY THE COMMISSIONER OF PUBLIC WORKS. GALVANIZED STEEL END SECTION SHALL BE INSTALLED ON EACH END OF THE NEW CULVERT.

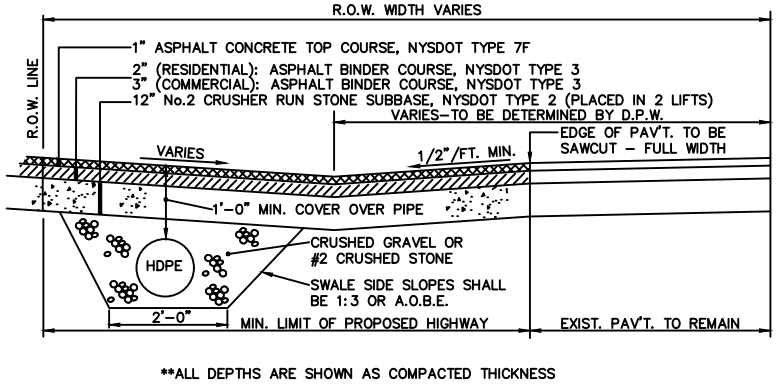
THE APPLICANT SHALL NOTIFY THE PERINTON PUBLIC WORKS DEPT. AT 223–5115, AT LEAST 48 HOURS PRIOR TO PERFORMING THE WORK TO ALLOW FOR FIELD INSPECTION.



PLAN



ROADSIDE SWALE ENCLOSURE SECTION



**ALL DEPTHS ARE SHOWN AS COMPACTED THICKNESS

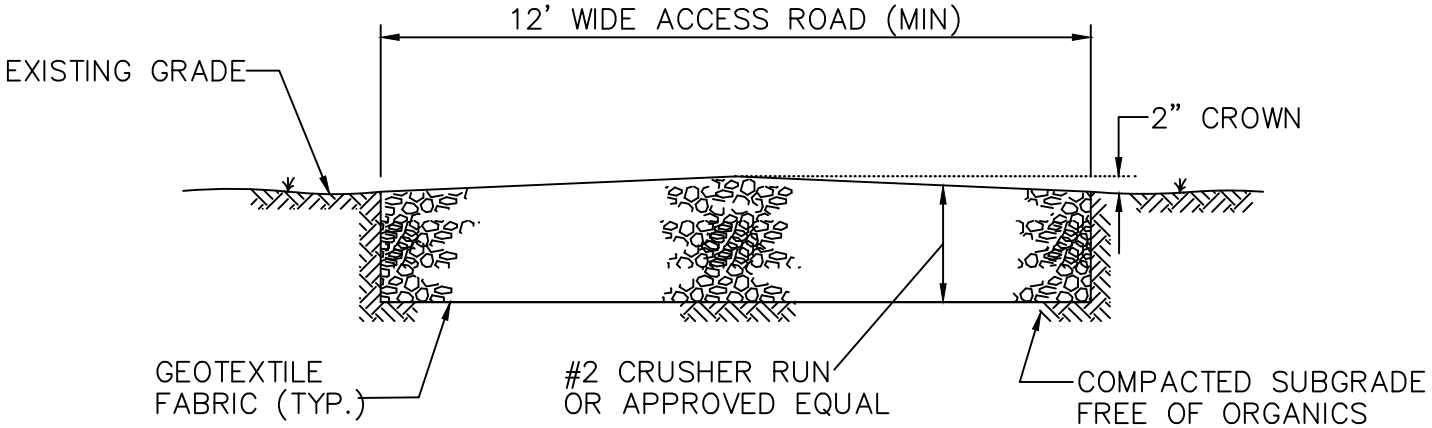
DRIVEWAY CULVERT SECTION

NOTES:

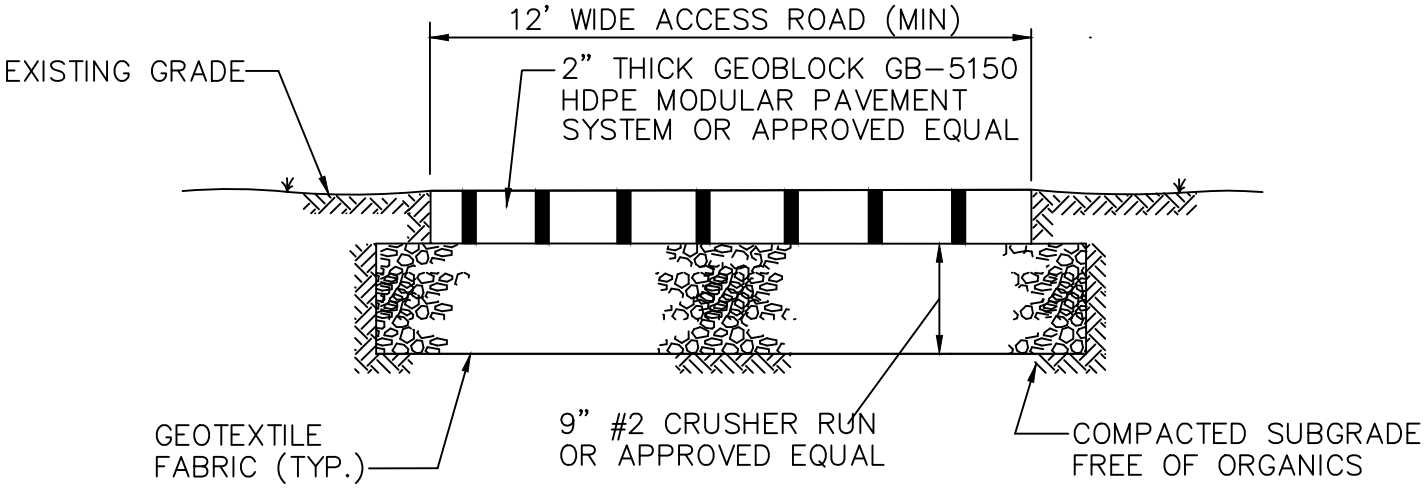
1. CULVERT PIPE MUST BE EITHER HDPE, WITH SMOOTHFLOW INTERIOR OR PERFORATED POLYETHYLENE PIPE (PPE).
2. THE EXIST. DRAINAGE SWALE MUST BE CLEANED AND GRADED TO DRAIN ACROSS THE ENTIRE HIGHWAY FRONTAGE.
3. DRIVEWAY SHALL BE PAVED TO THE RIGHT–OF–WAY LINE. THE DRIVEWAY GRADE SHALL SLOPE AWAY FROM THE OUTSIDE EDGE OF THE SHOULDER AT A MINIMUM OF 1/2 INCH PER FOOT TO THE CENTERLINE OF THE DRAINAGE SWALE.

SEWER OR STORMWATER MANAGEMENT FACILITY ACCESS ROAD DETAIL

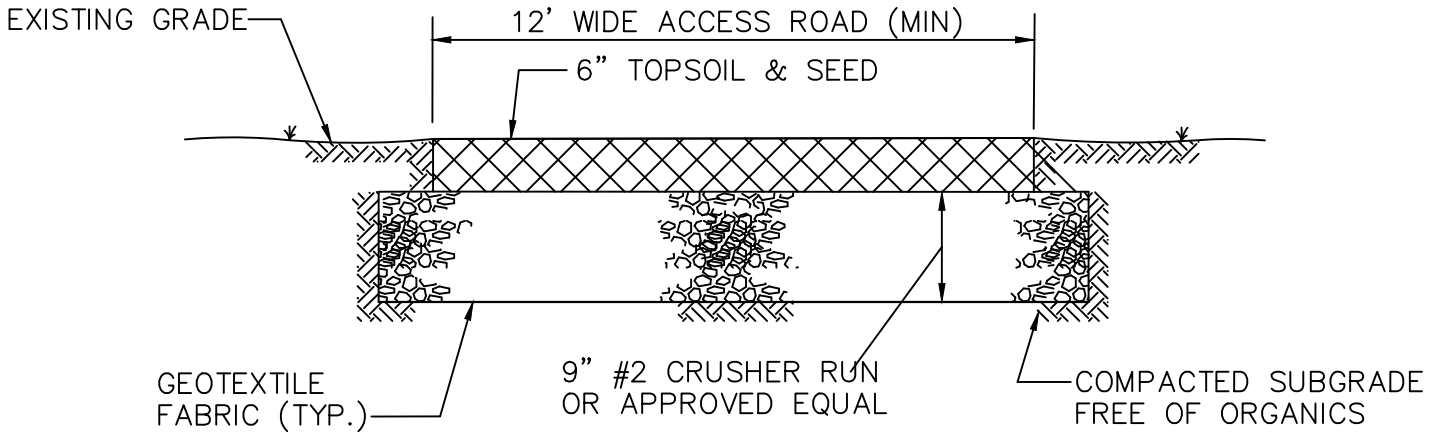
NTS



OPTION A



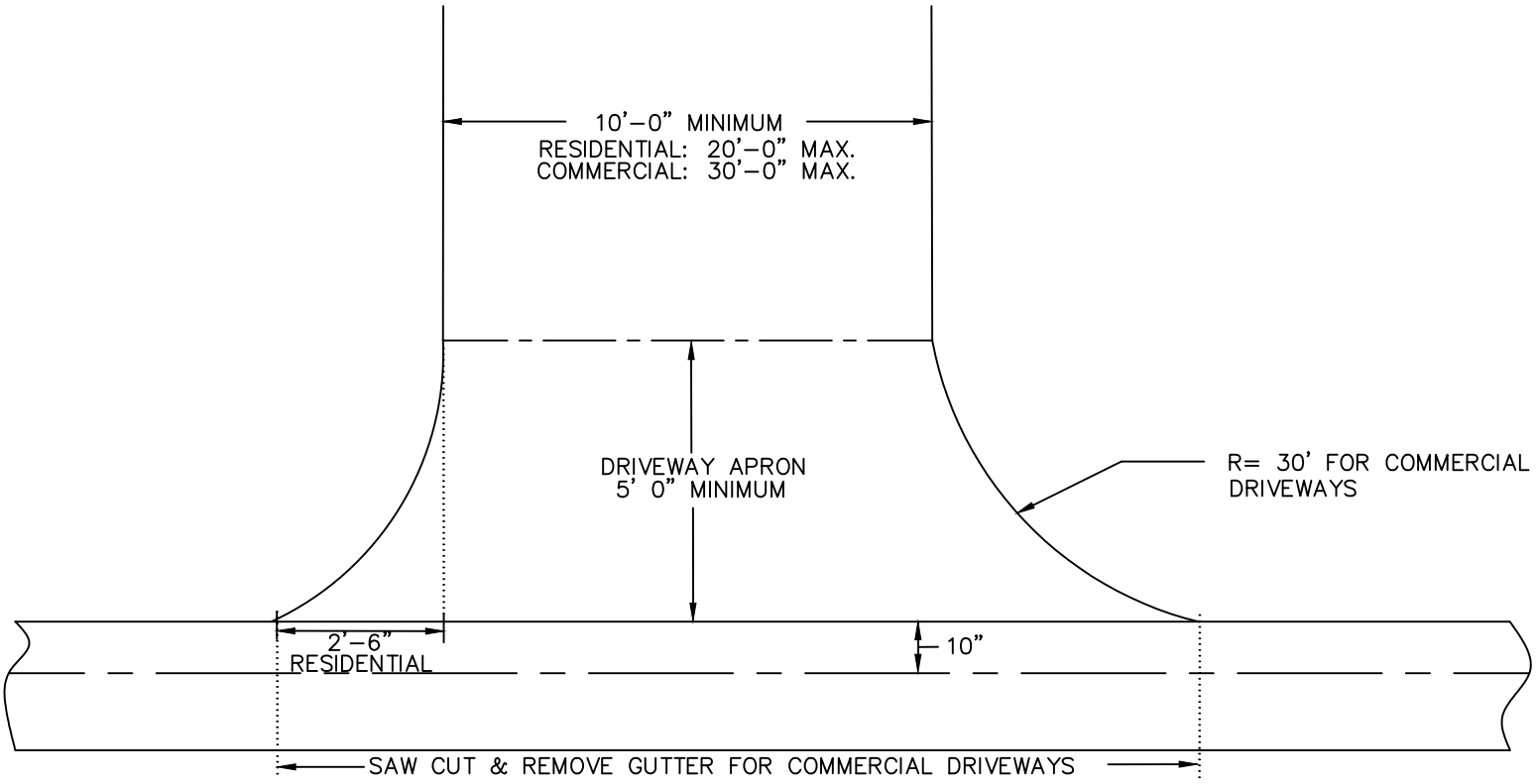
OPTION B



OPTION C

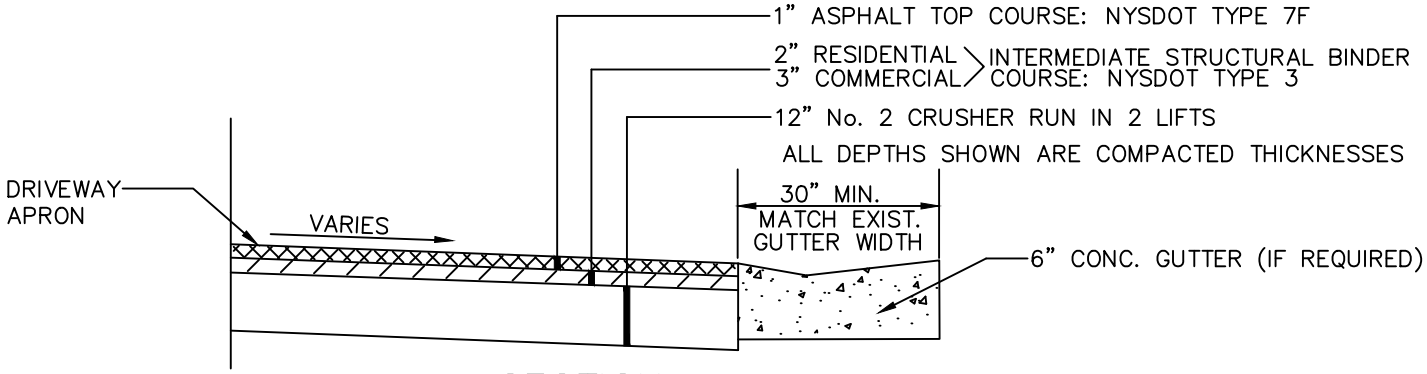
DRIVEWAY APRON WITH CONC. GUTTER DETAIL

NTS



PLAN

- IF THE CONCRETE GUTTER IS REPLACED, SAWCUT THE TOWN ROAD TO THE FURTHEST DISTURBED AREA. THE ASPHALT EDGE SHOULD BE TACK COATED & ROAD MATERIALS REPLACED BASED ON TOWN ROAD TYPE OR AS DETERMINED BY COMMISSIONER OF PUBLIC WORKS.
- NO CATCH BASINS ARE TO BE INSTALLED IN THE CONCRETE GUTTER WITHIN THE LIMITS OF A DRIVEWAY APRON.



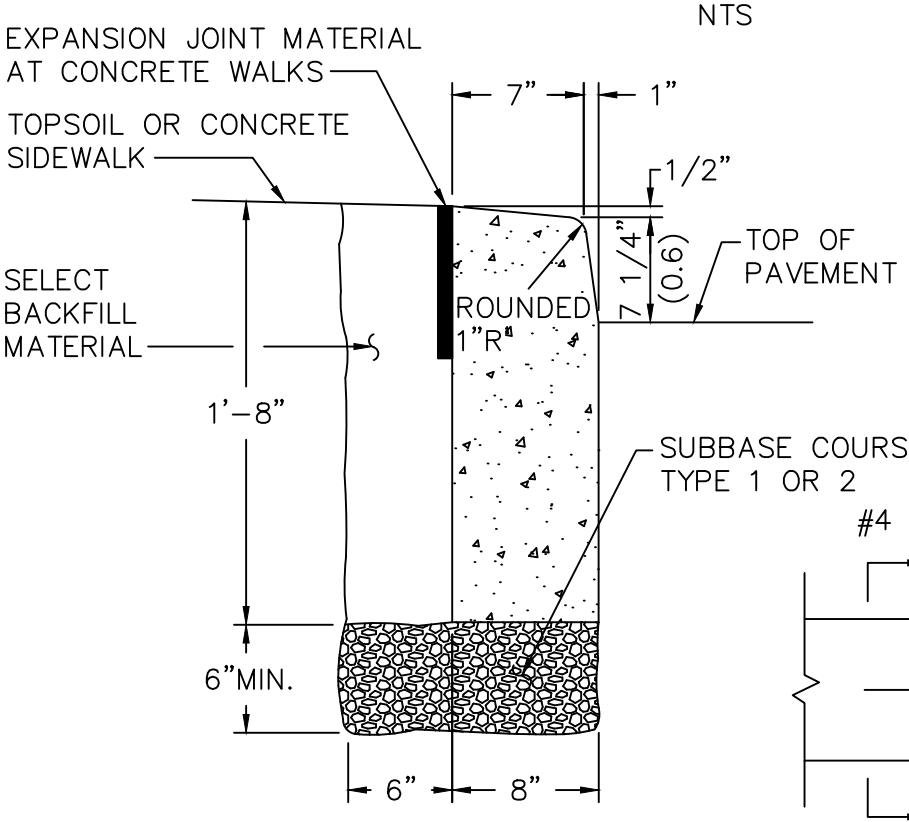
SECTION

NOTES:

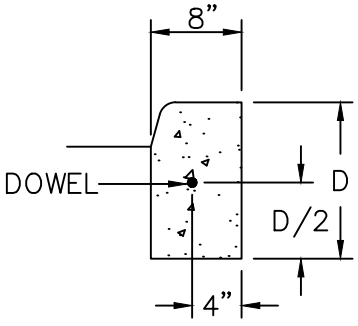
1. EXISTING PAVEMENT SHALL BE SAWCUT PRIOR TO GUTTER REPLACEMENT. ALL PAVEMENT JOINTS SHALL BE TACK COATED AND SEALED WITH BITUMINOUS SEALER.
2. PROVIDE 6" OF TOPSOIL AND SEED ON ALL DISTURBED AREAS.
3. EXPANSION JOINT MATERIAL TO BE INSTALLED BETWEEN THE EXISTING AND NEW CONCRETE.
4. MINIMUM STONE & ASPHALT SPECIFICATIONS FOR RESIDENTIAL DRIVEWAYS MUST FOLLOW SECTION 975 OF THE PERINTON DESIGN CRITERIA.

CONCRETE CURB DETAIL

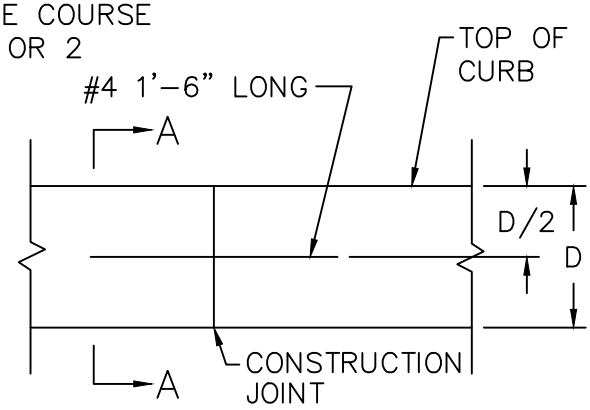
NTS



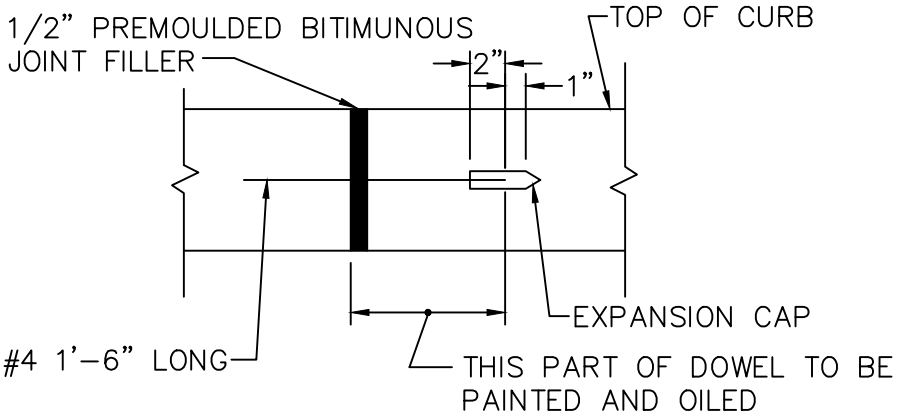
CURB AT FLEXIBLE PAVEMENT



SECTION A-A



ELEVATION AT CONSTRUCTION JOINT



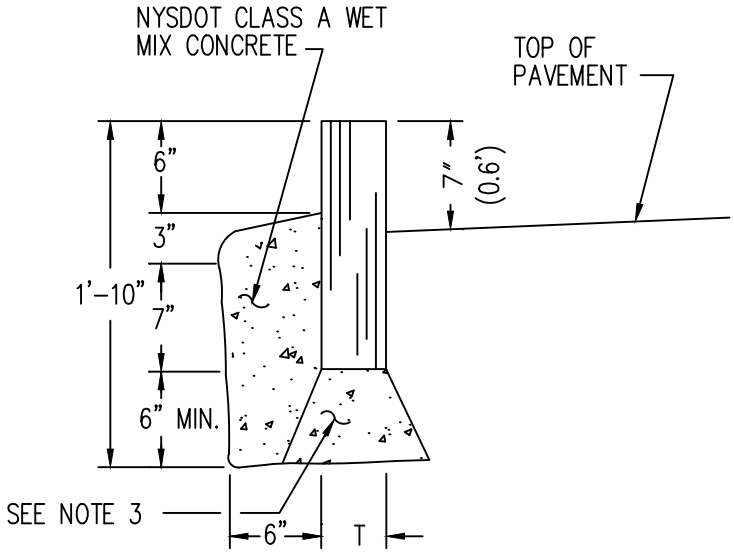
ELEVATION AT EXPANSION JOINT

NOTES:

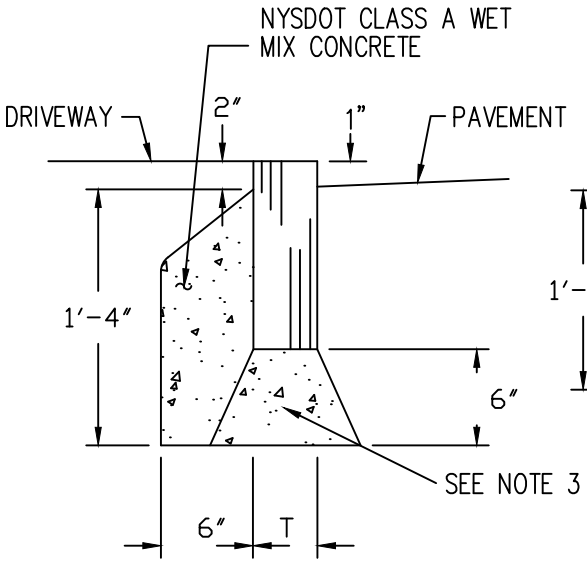
1. GRADED STONE BACKING SHALL BE PLACED ONLY WHERE SIDEWALK DOES NOT ABUT CURB.
2. PROVIDE 0" REVEAL FOR HEADER CURB AT SIDEWALK RAMPS, AND 1" REVEAL FOR HEADER CURB AT DRIVEWAYS.

GRANITE CURB DETAIL

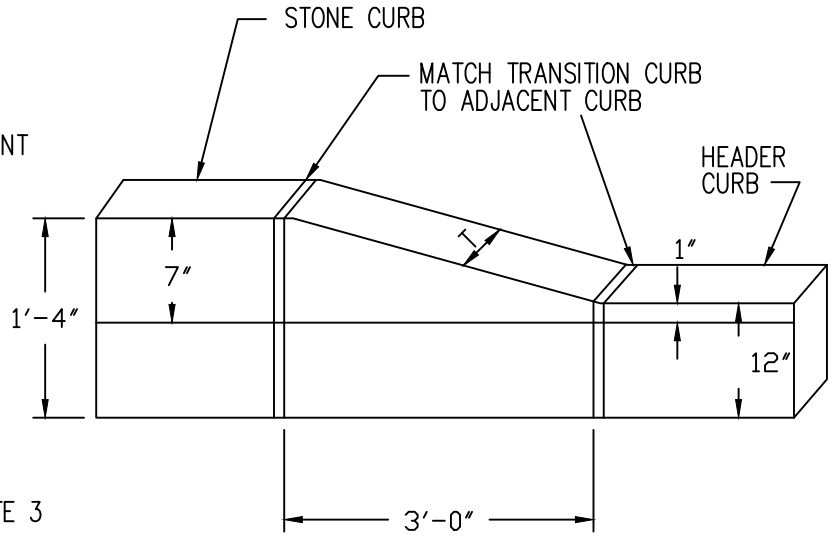
NTS



TYPE "A" CURB
AT FLEXIBLE PAVEMENT



HEADER CURB



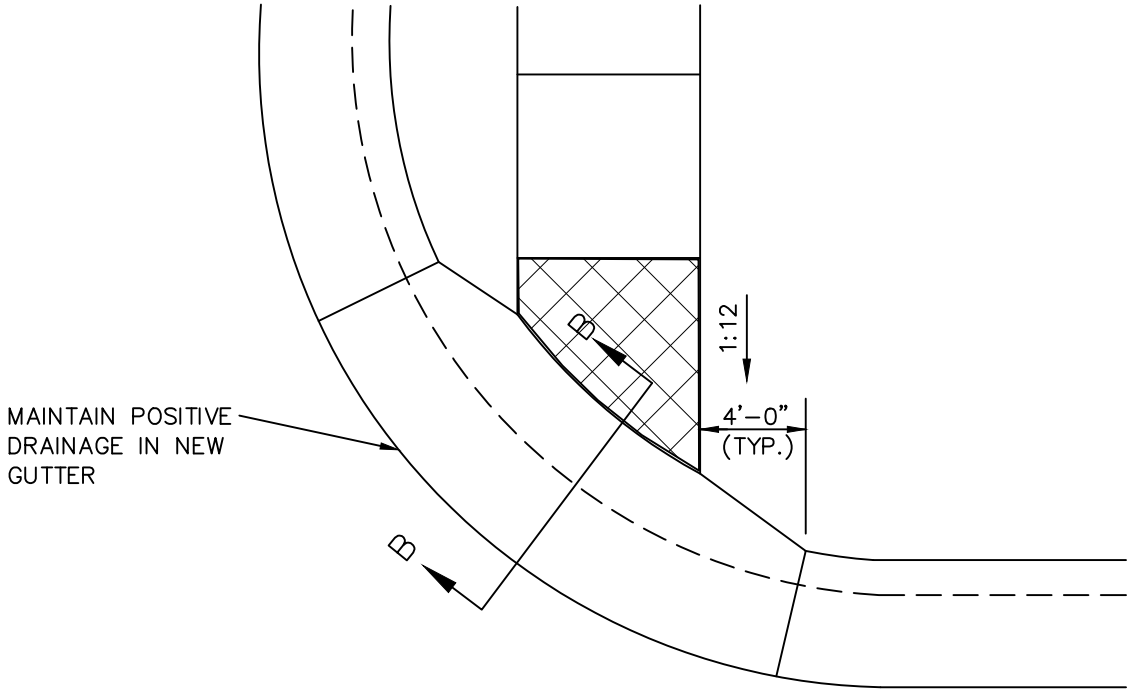
TRANSITION CURB

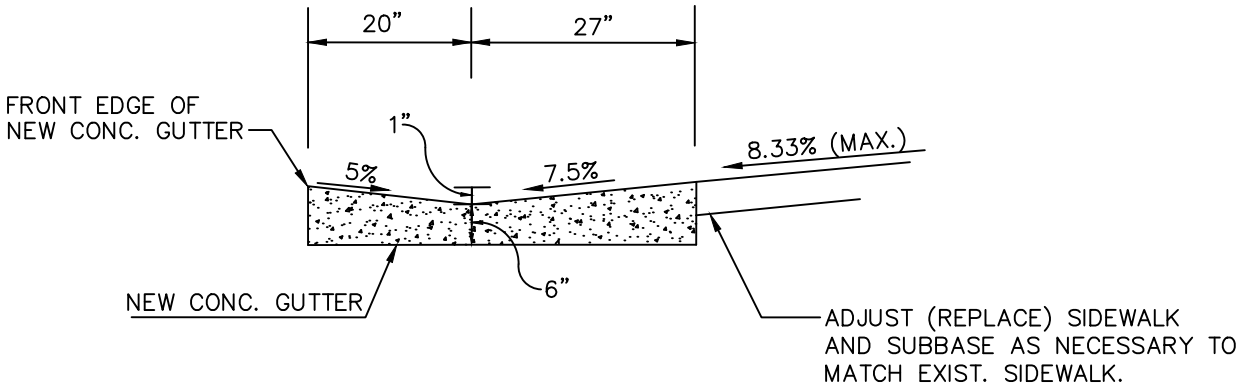
NOTES:

1. CURB THICKNESS T SHALL BE 4" OR 5" AS INDICATED ON THE DRAWINGS
2. PROVIDE 0" CURB REVEAL FOR HEADER CURB AT SIDEWALK RAMPS
3. ALL GRANITE CURB SHALL BE SET ON A 6-INCH THICK CONTINUOUS BED OF DRY CONCRETE MIX (NYSDOT CLASS A) OR ON A 6-INCH THICK CONTINUOUS BED OF COMPACTED #1 CRUSHER RUN MEETING NYSDOT SECTION 304, AS DIRECTED BY THE COMMISSIONER OF PUBLIC WORKS.

SIDEWALK GUTTER/RAMP DETAIL

NTS

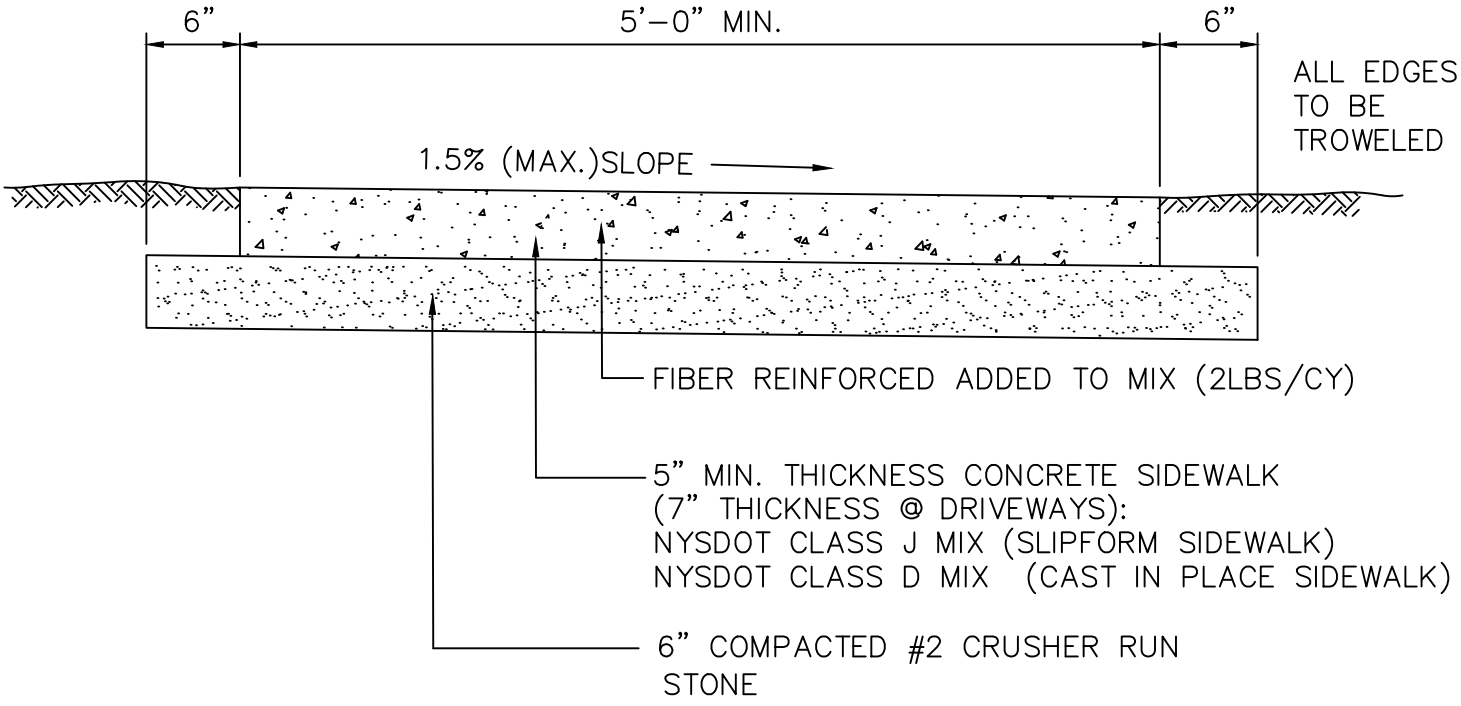




SECTION B–B NEW CONCRETE GUTTER / ADA SIDEWALK RAMP SECTION DETAIL

CONCRETE SIDEWALK DETAIL

NTS



NOTES:

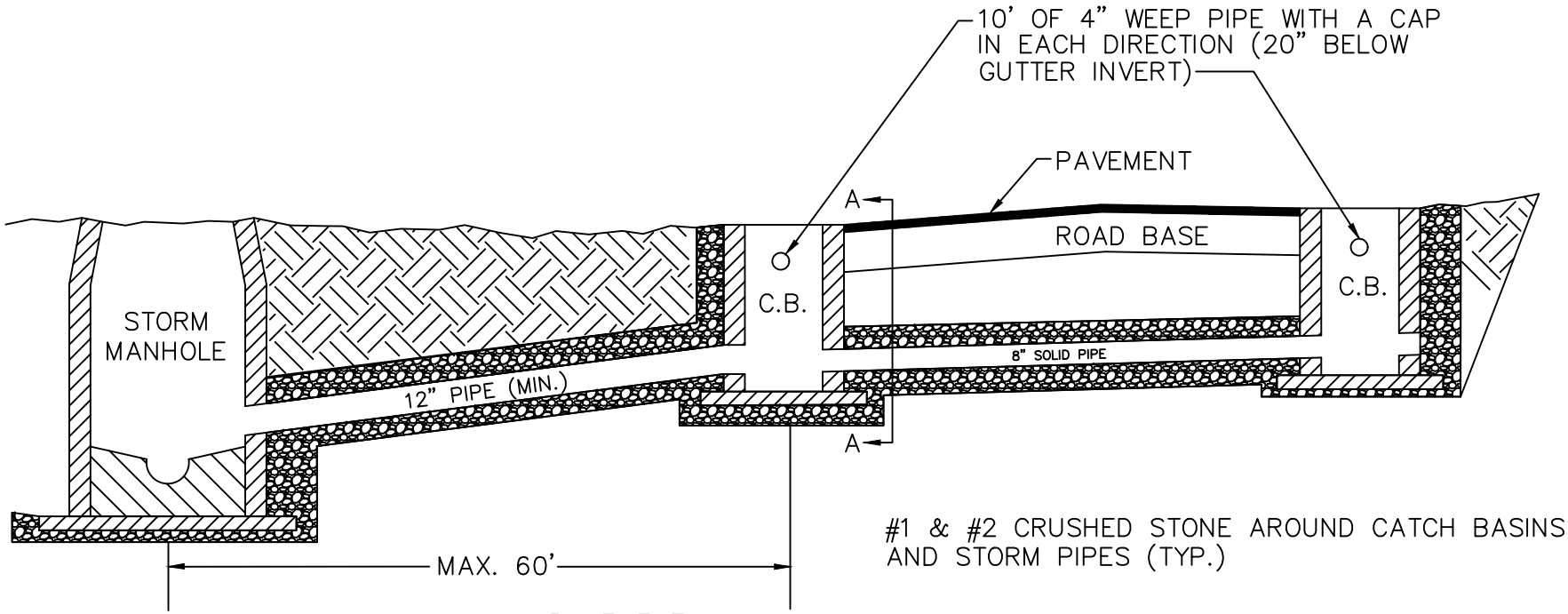
1. CONSTRUCTION EXPANSION JOINTS TO BE INSTALLED EVERY 25 FEET.
2. DUMMY JOINTS MINIMUM 1" DEEP TO BE SCORED EVERY 5 FEET.
3. ALL EXPOSED CONCRETE SURFACES SHALL BE BROOM FINISHED.
4. ALL EXPOSED CONCRETE TO RECEIVE TWO COATS OF A COMBINATION CURING COMPOUND–SEALER.
5. ALL WORK SHALL CONFORM TO ADA REQUIREMENTS

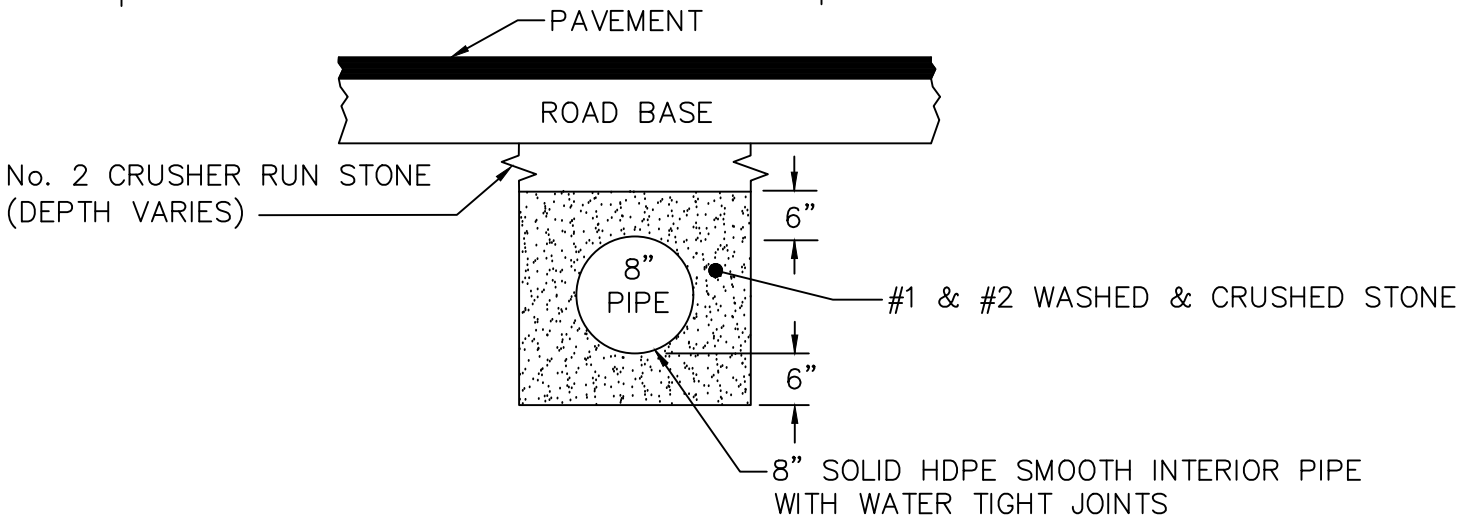
*SPECIAL NOTE

UNLESS OTHERWISE APPROVED BY THE COMMISSIONER OF PUBLIC WORKS, AT NO TIME SHALL THE SIDEWALK BACK EDGE BE LOWER THAN THE EDGE OF PAVEMENT OF ADJACENT ROADWAYS. ALL SIDEWALKS SHALL BE DESIGNED TO ALLOW FOR POSITIVE DRAINAGE OF ROADWAYS OR ADJACENT PROPERTIES AND NOT CREATE A BARRIER FOR POSITIVE DRAINAGE. PROPER DRAINAGE MAY BE MAINTAINED THROUGH THE USE OF YARD INLETS OR PROPER SIZE STORM CROSSOVER PIPE OF ADEQUATE LENGTH WITH END SECTIONS.

CATCH BASIN OUTLET SECTION

NTS

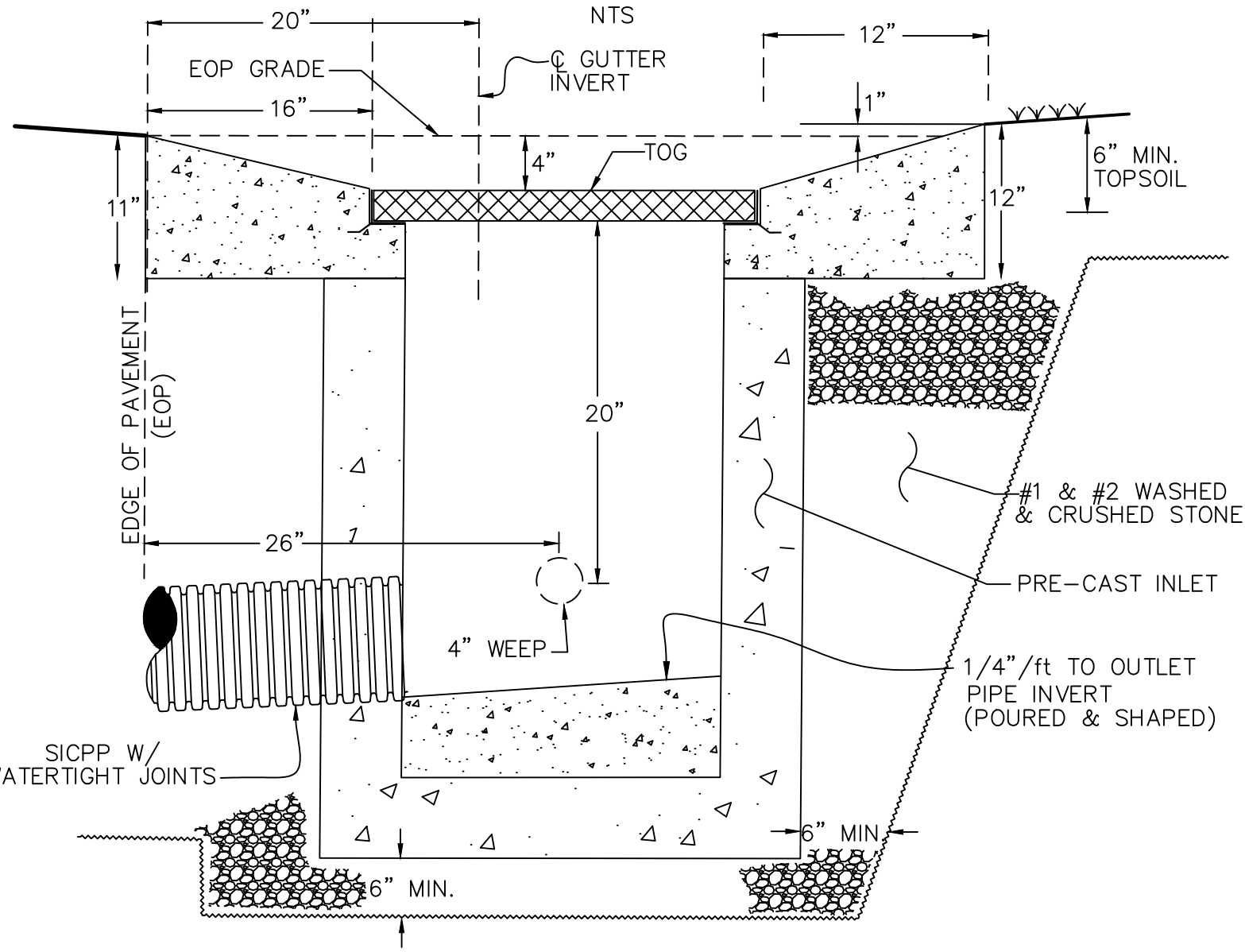




SECTION A–A

CATCH BASIN DETAIL

NTS

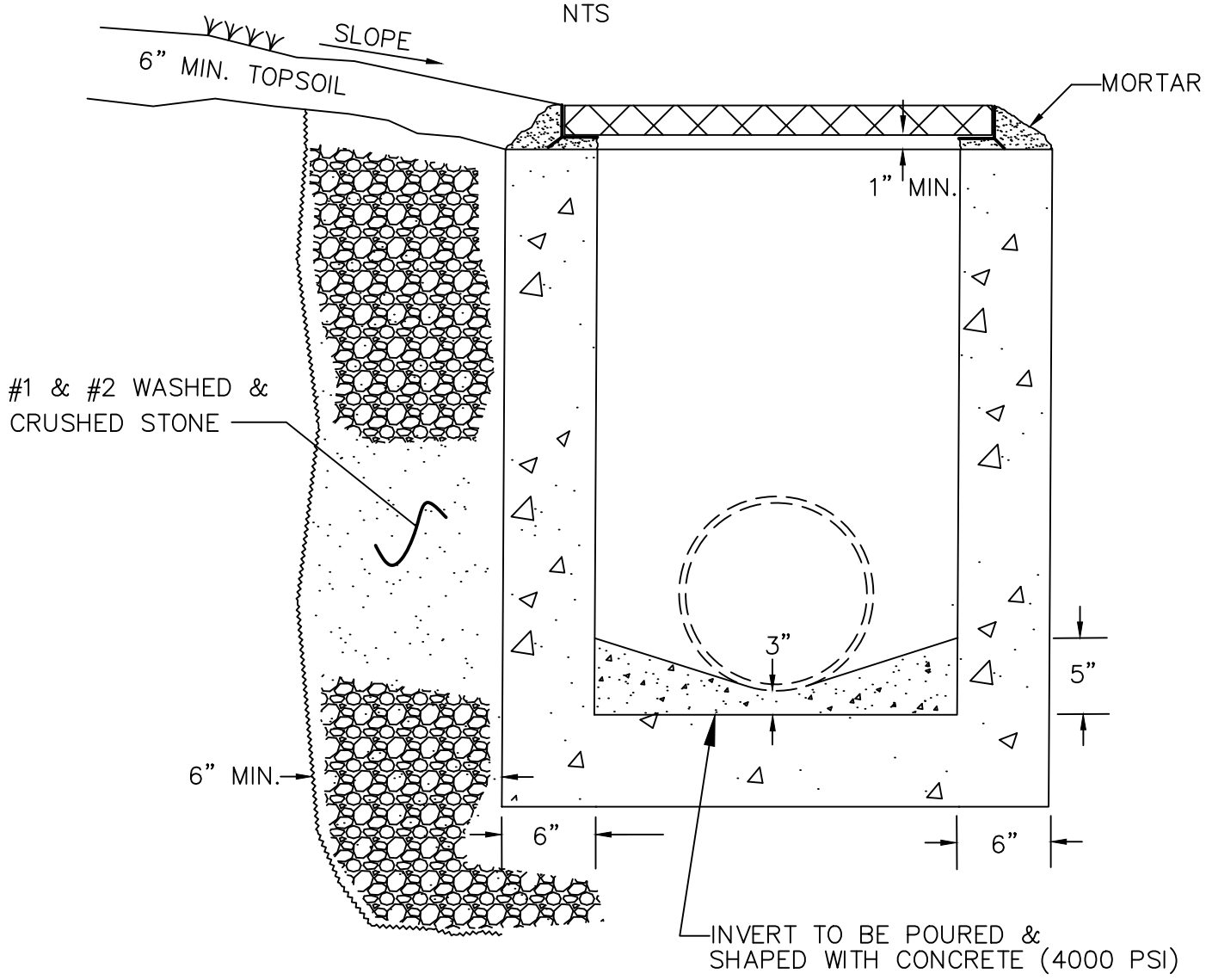


NOTES:

1. PRECAST STEEL REINFORCED CONCRETE CATCH BASIN #CB-315BS MANUFACTURED BY KISTNER OR APPROVED EQUAL (24" SQUARE).
2. MINIMUM INSIDE DEPTH 36" (TOP OF GRATE TO INVERT)
3. MAXIMUM INSIDE DEPTH 48"(TOP OF GRATE TO INVERT)
4. ALL GRADE ADJUSTMENTS SHALL BE MADE WITH MANUFACTURED RINGS OR FORMED & POURED CONCRETE (4000 PSI).
5. 4" WEEP PIPES INSTALLED 20" BELOW GUTTER INVERT AND SHALL EXTEND 10' IN EITHER DIRECTION. PROVIDE MANUFACTURED CAP.
6. MAX PIPE SIZE INTO OR OUT OF CATCH BASIN 12".
7. UNUSED KNOCKOUTS TO BE FILLED WITH BRICK & MORTAR TO A FULL 6" THICKNESS.
8. CATCH BASIN EXTERIOR SHALL BE COATED WITH BITUMASTIC 300M OR SUPER SERVICE BLACK, MANUFACTURED BY KOPPERS OR APPROVED EQUAL. THE INTERIOR SHALL BE COATED WITH 2 COATS OF EPOXY RESIN DAMP PROOFING.

FIELD INLET DETAIL

NTS



NOTES:

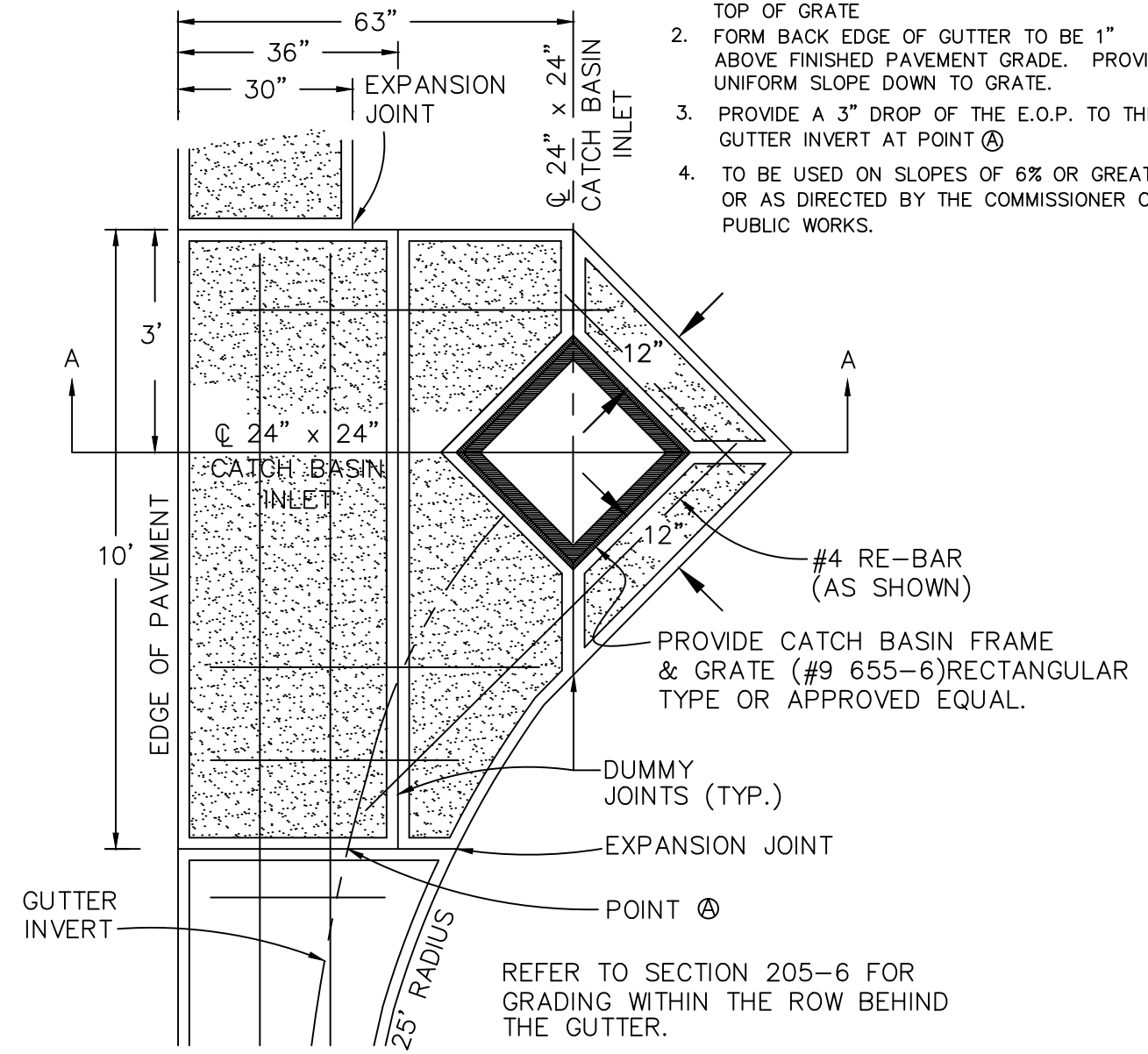
1. PRECAST STEEL REINFORCED CONCRETE CATCH BASIN MANUFACTURED BY KISTNER (CB–315BS) OR APPROVED EQUAL.
2. MINIMUM INSIDE DEPTH 36"
3. MAXIMUM INSIDE DEPTH 48" (TOP OF GRATE TO INVERT)
4. ALL GRADE ADJUSTMENTS SHALL BE MADE WITH MANUFACTURED RINGS OR FORMED & POURED CONCRETE (4000 PSI).
5. MAX PIPE SIZE INTO OR OUT OF CATCH BASIN 18".
6. UNUSED KNOCKOUTS TO BE FILLED WITH BRICK & MORTAR TO A FULL 6" THICKNESS.
7. CATCH BASIN EXTERIOR SHALL BE COATED WITH BITUMASTIC 300M OR SUPER SERVICE BLACK, BOTH MANUFACTURED BY KOPPERS OR APPROVED EQUAL. THE INTERIOR SHALL BE COATED WITH 2 COATS OF EPOXY RESIN DAMP PROOFING.

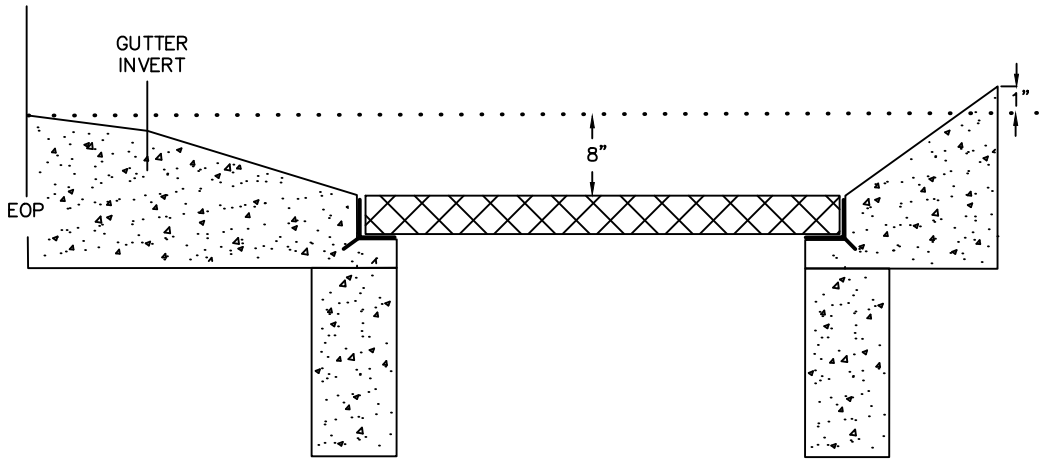
PERINTON FLAIR
CATCH BASIN DETAIL

N.T.S.

NOTES:

1. 8" DROP FROM E.O.P. TO TOP OF GRATE
2. FORM BACK EDGE OF GUTTER TO BE 1" ABOVE FINISHED PAVEMENT GRADE. PROVIDE UNIFORM SLOPE DOWN TO GRATE.
3. PROVIDE A 3" DROP OF THE E.O.P. TO THE GUTTER INVERT AT POINT Ⓐ
4. TO BE USED ON SLOPES OF 6% OR GREATER OR AS DIRECTED BY THE COMMISSIONER OF PUBLIC WORKS.





SECTION A-A

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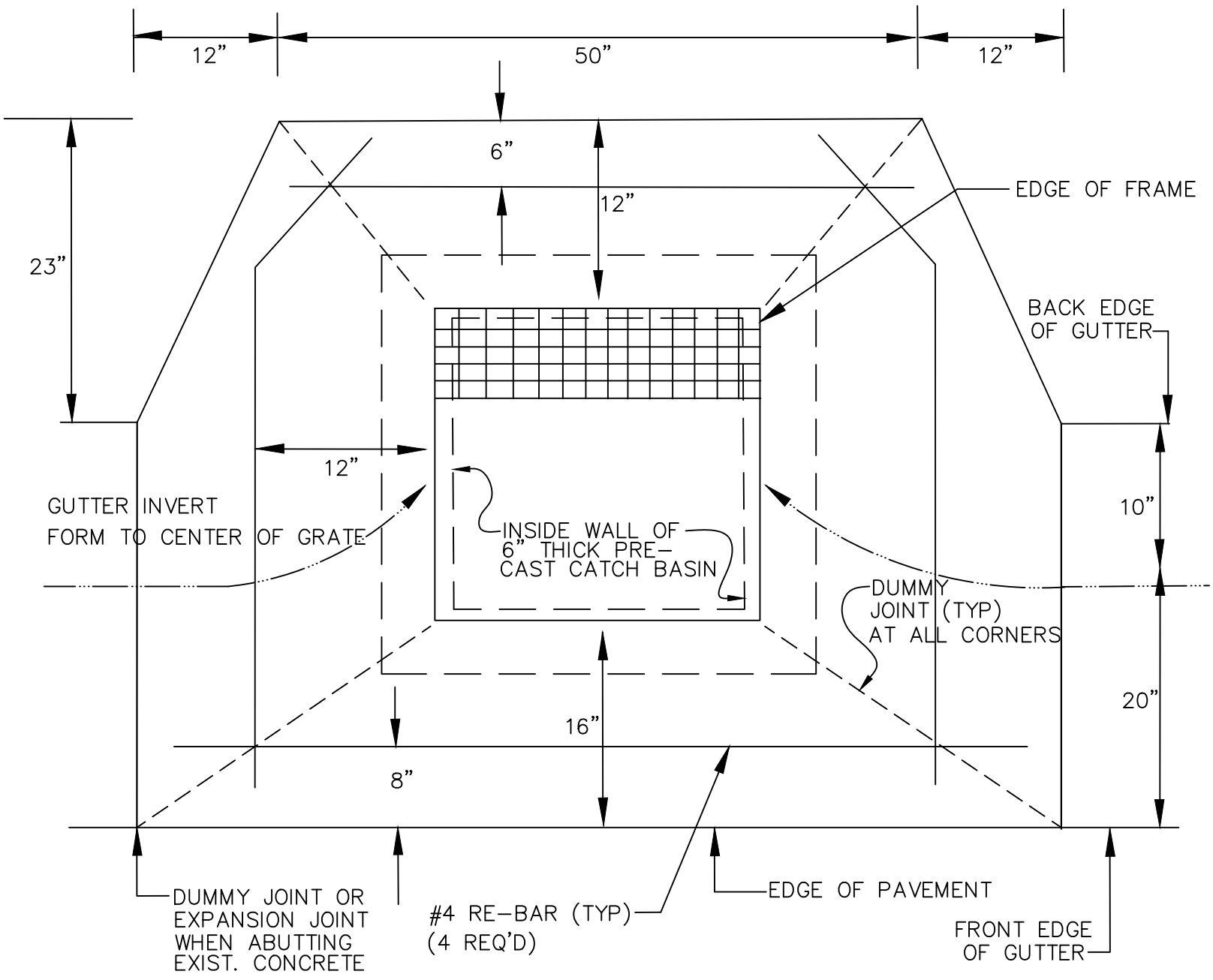
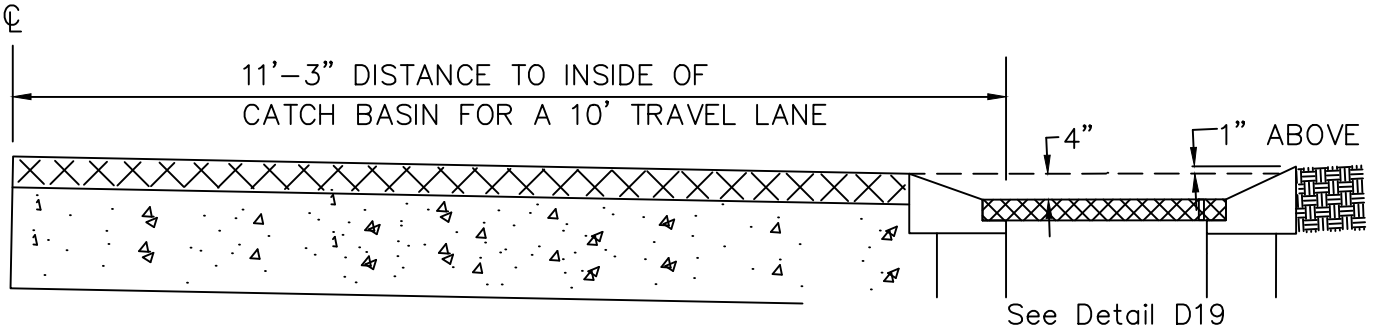
JANUARY 2021

GUTTER & CATCH BASIN APRON DETAIL

NTS





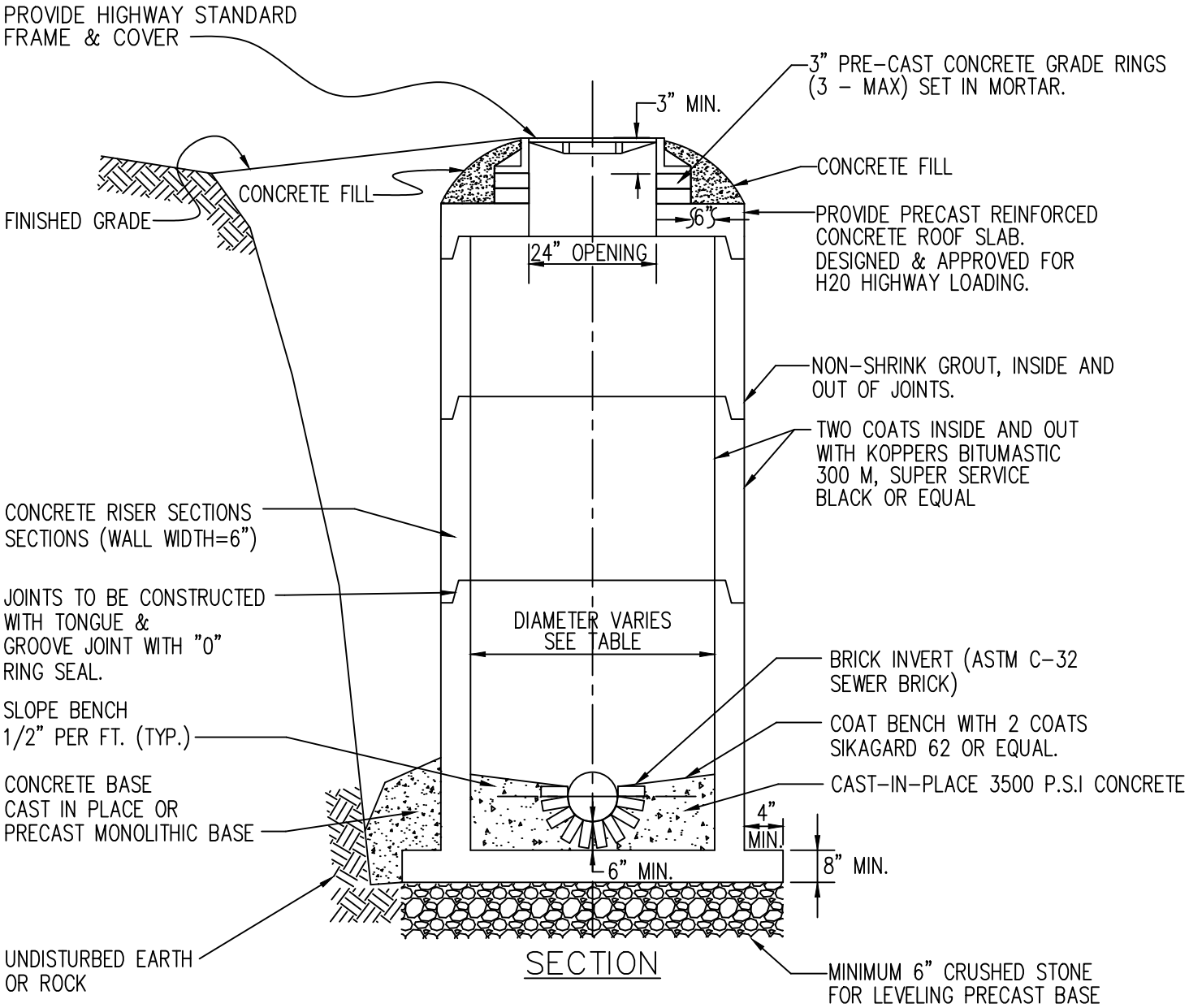
NOTES:

1.) PRE-CAST STEEL REINFORCED CONCRETE CATCH BASIN #CB-315BS MANUFACTURED BY KISTNER CONCRETE PRODUCTS, OR APPROVED EQUAL.

2.) PROVIDE A RECTANGULAR TYPE FRAME (NYSDOT 655F #9 W/4 ANCHORS) & GRATE (NYSDOT 655-6 #9 RECTANGULAR GRATE 6556R1G-09)

SANITARY / STORM MANHOLE DETAIL

N.T.S.



SECTION

NOTES:

1. USE REINFORCED CONCRETE RISERS AS MANUFACTURED BY KISTNER CONCRETE PRODUCTS, INC. OR APPROVED EQUAL.
2. PROVIDE TOWN STANDARD FRAME & COVER.
3. CONTRACTOR IS RESPONSIBLE FOR WATER TIGHTNESS OF MANHOLE.
4. MAXIMUM MANHOLE SPACING TO BE 300'.
5. USE MANHOLE ADJUSTMENT RINGS AS NEEDED. MAXIMUM, 3 COURSES.
6. WITH PRIOR WRITTEN APPROVAL FROM THE COMMISSIONER OF PUBLIC WORKS, HALF CLAY TILES OR HALF PVC SDR-35 PIPE SECTIONS EMBEDDED IN CONCRETE MAY BE USED INSTEAD OF A BRICK INVERT. THE BENCH MUST BE BUILT UP WITH SEWER BRICK.

SEWER SIZE	MANHOLE DIAMETER
8"-14"	4'-0"
15"-27"	5'-0"
30"-36"	6'-0"
3&4 WAY	5'-0" MIN. SPECIAL INV. DETAIL REQ'D

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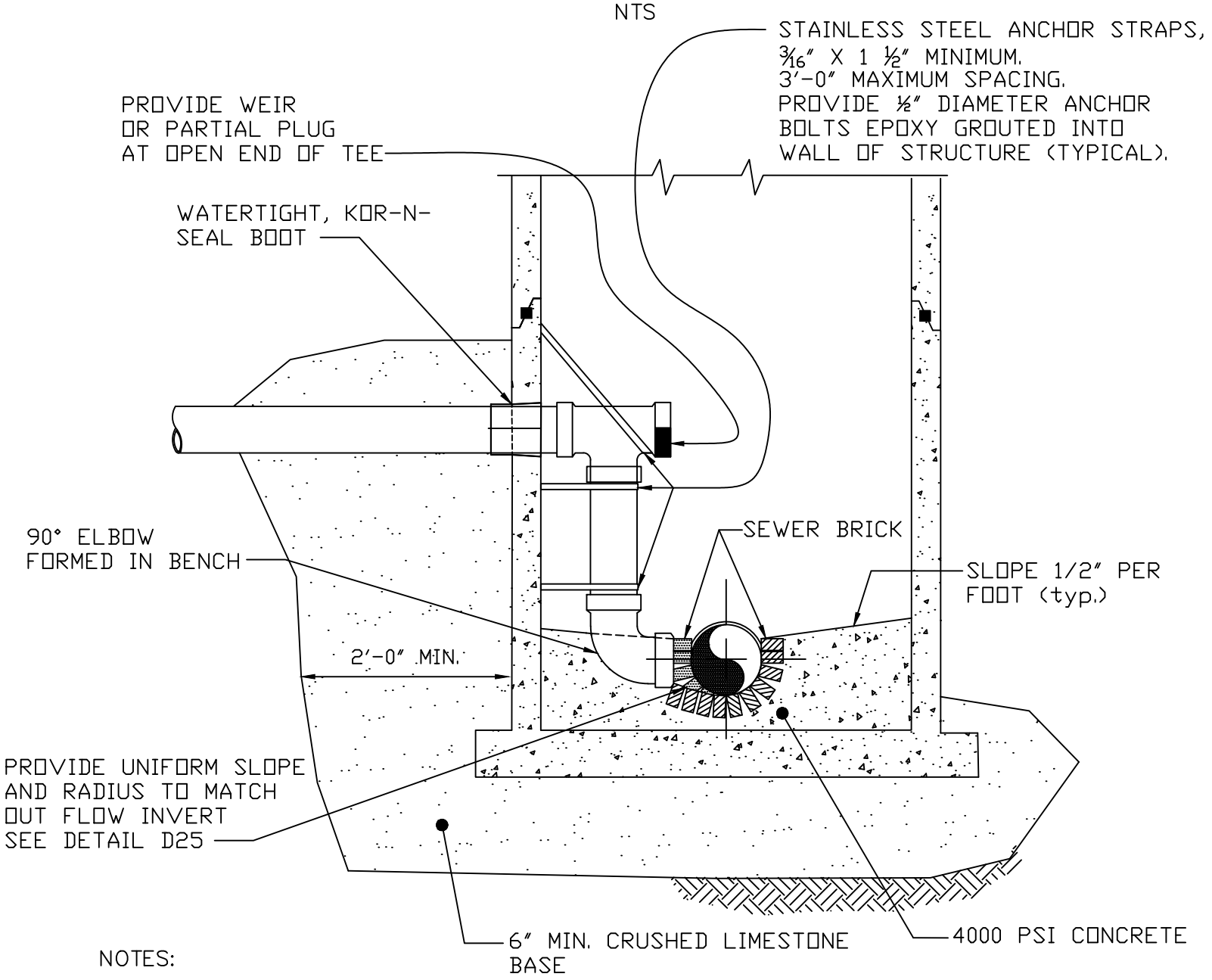
JANUARY 2021

SANITARY MANHOLE INSIDE DROP DETAIL

NTS



NOTES:

1) FITTINGS TO BE GPK SOLVENT WELD JOINTS MATCHING THE MATERIAL OF THE INCOMING PIPE (SDR-35 OR SDR-21). MINIMUM DROP REQUIRED FOR 8" SDR-35 PIPE IS 32".

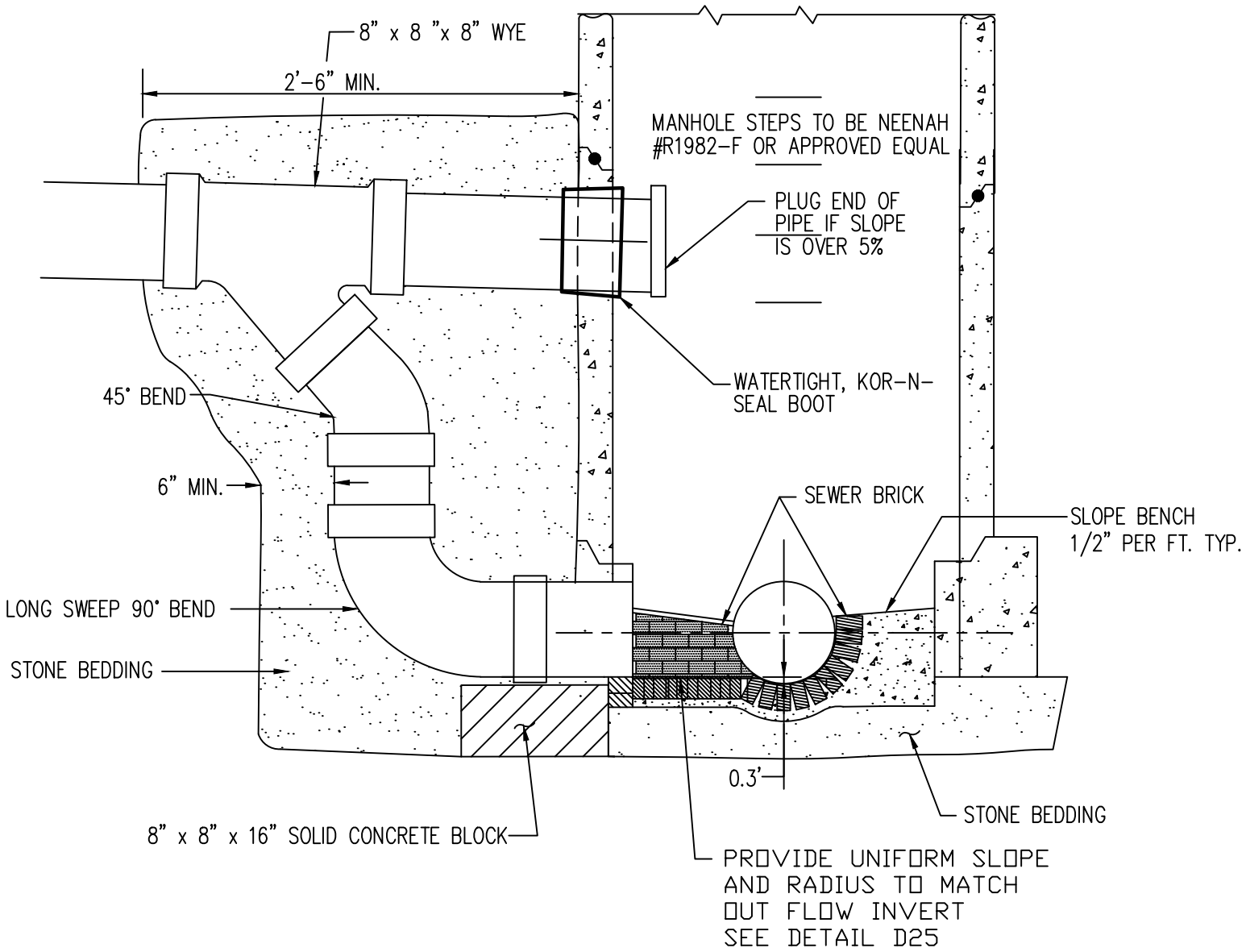
2) THIS DETAIL IS INTENDED TO SHOW ONLY ITEMS SPECIFIC TO DROP MANHOLE. REFER TO SANITARY SEWER MANHOLE STANDARD SHEET FOR DETAILED SPECIFICATIONS RELATING TO THE ENTIRE STRUCTURE.

3) ENGINEERED DETAILS ARE REQUIRED IF INCOMING PIPE SLOPE IS 5% OR GREATER.

4) THE COMMISSIONER OF PUBLIC WORKS SHALL DETERMINE THE MINIMUM MANHOLE DIAMETER REQUIRED BASED ON INCOMING PIPE SIZE.

SANITARY MANHOLE OUTSIDE DROP DETAIL

N.T.S.



NOTE:

1.) DETAILS, DIMENSIONS AND NOTES NOT SHOWN SHALL BE THE SAME AS STANDARD MANHOLE DETAILS.

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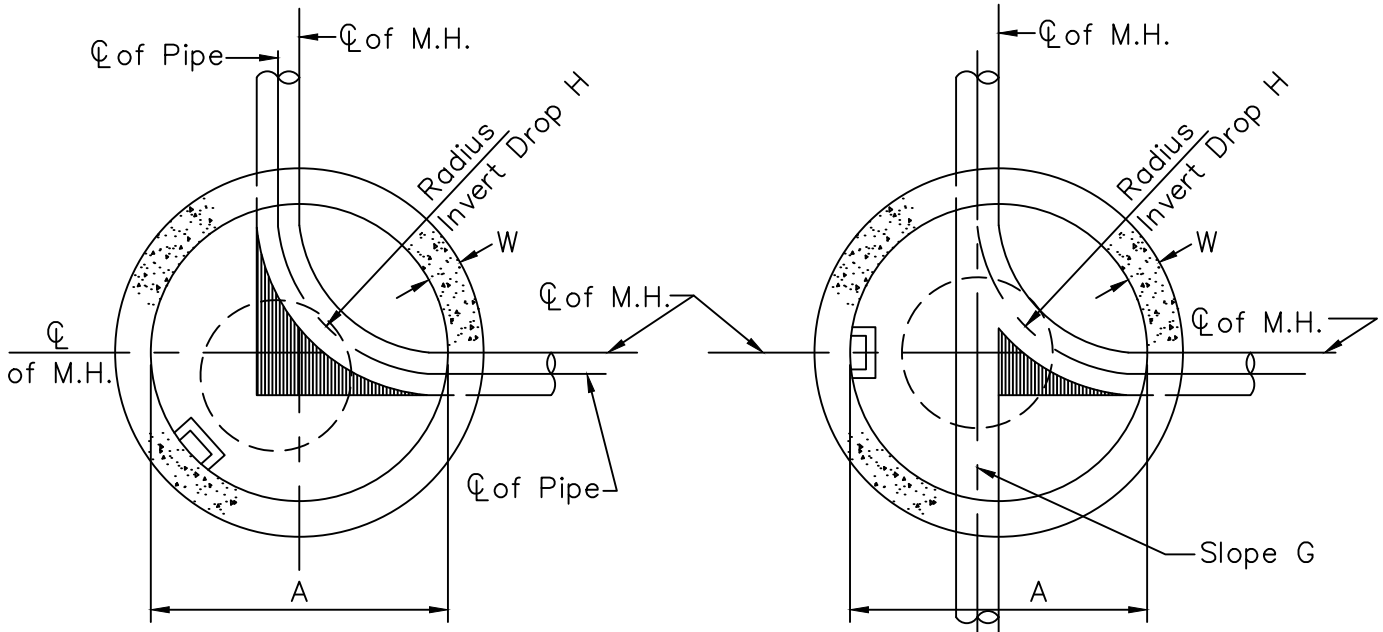
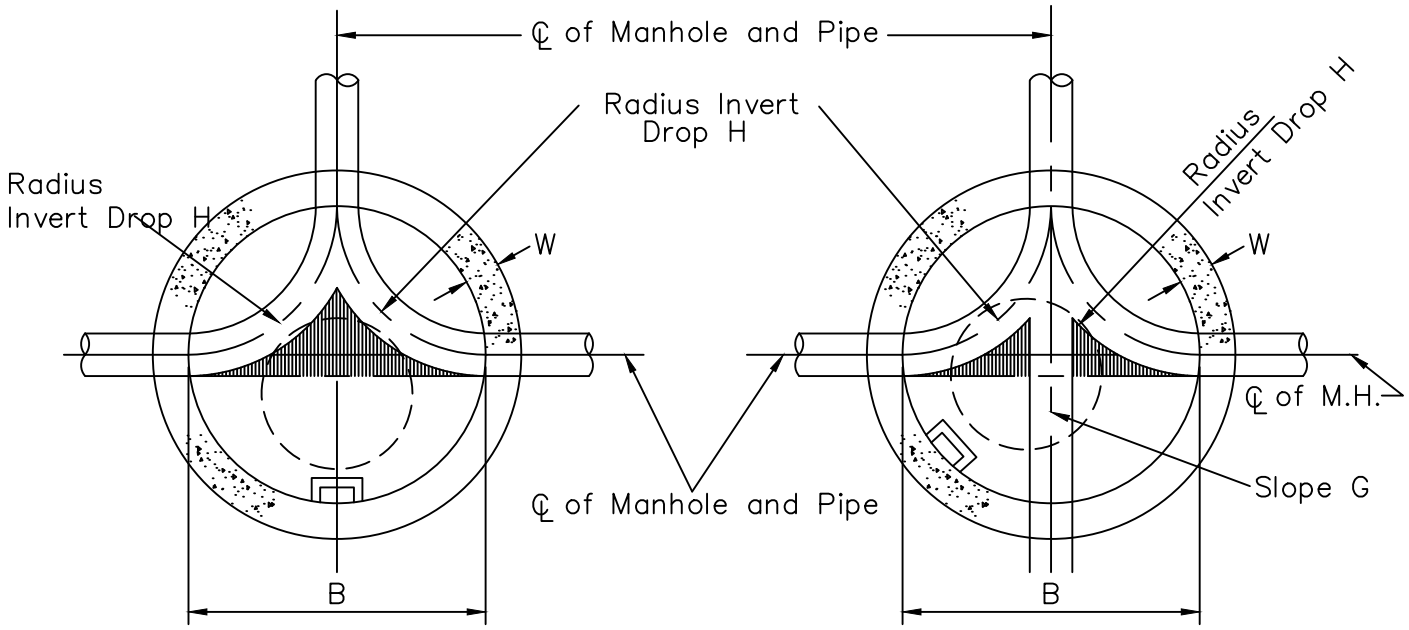
STANDARD
MANHOLE DIMENSIONS

NTS



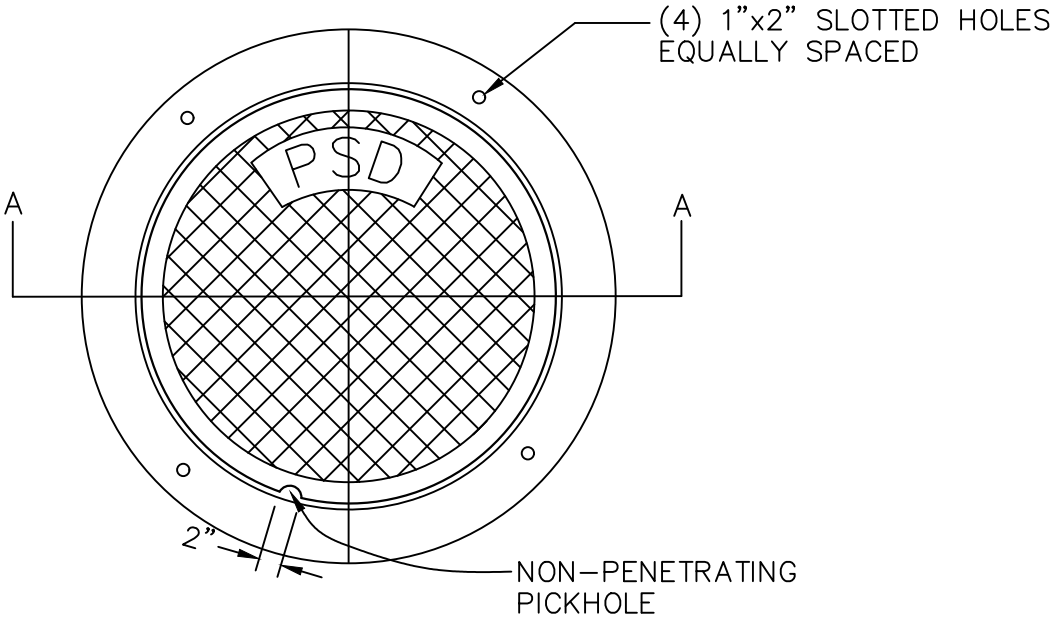
NOTE: Bench cut down to ℄ of pipe in all shaded areas.

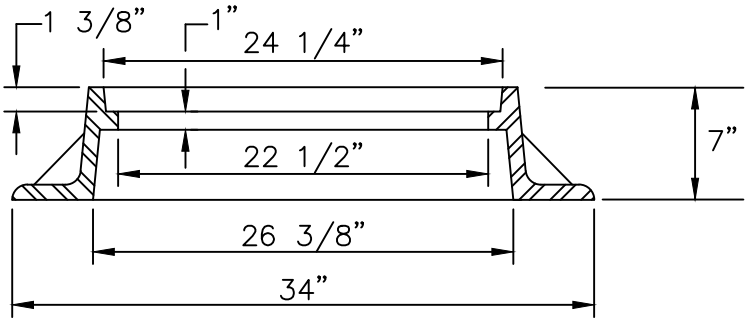


Sewer Pipe Dia.		8"	10"	12"	15"	18"	Greater Than 18"
Manhole Diameter	A	4'–0"	4'–0"	4'–0"	5'–0"	5'–0"	As per require–ments of D.P.W.
	B	5'–0"	5'–0"	5'–0"	5'–0"	5'–0"	
Invert Drop	G	0.1	0.1	0.1	0.1	0.1	
	H	0.3	0.3	0.3	0.3	0.3	

NOTE:
1) Where inlet and outlet pipes are DIFFERENT diameters the slope must not be less than the difference in diameter or greater than 9 inches. Maximum drop across a manhole invert for matching diameters shall be 9 inches.
2) Minimum inside diameter for inside drop manholes shall be 5 foot for straight through configurations and 6 foot for all others.

SANITARY MANHOLE STANDARD
FRAME AND COVER DETAIL

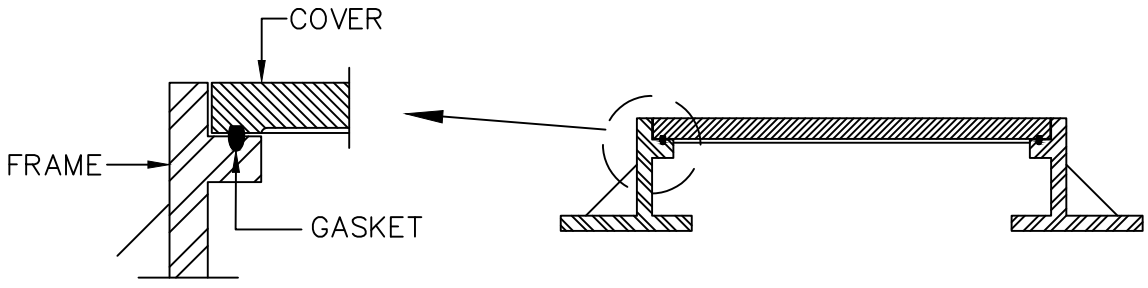




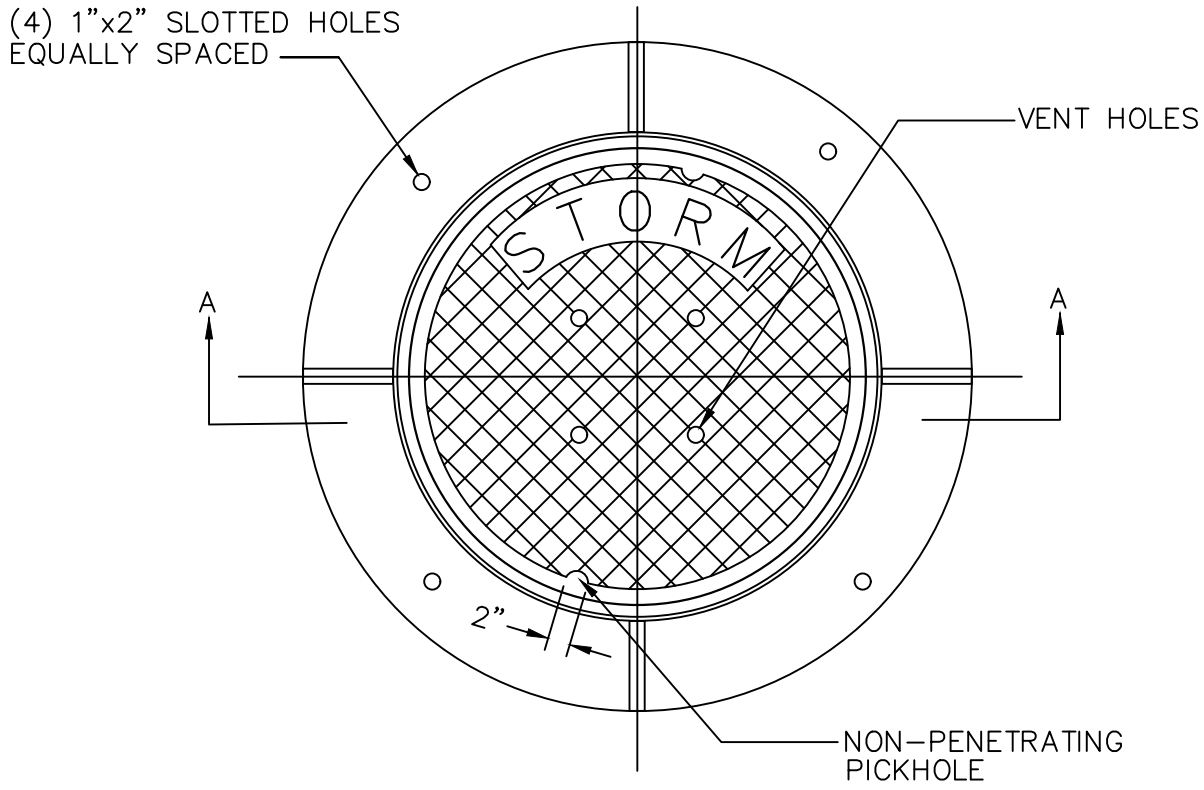
SECTION A – A

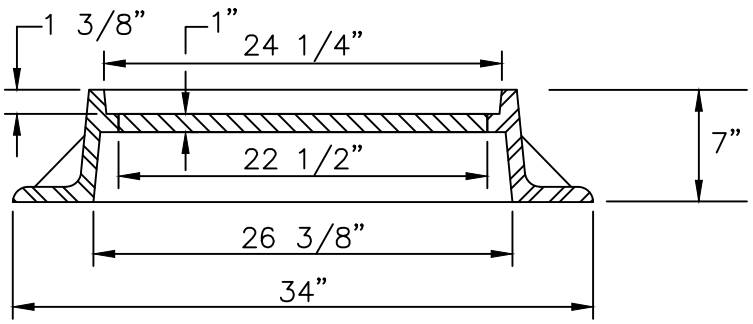
WATERTIGHT SANITARY SEWER MANHOLE COVER

NTS



STORM MANHOLE STANDARD
FRAME AND COVER DETAIL





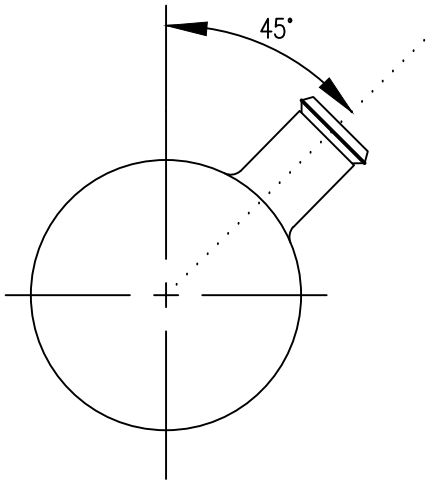
SECTION A–A

NOTES:

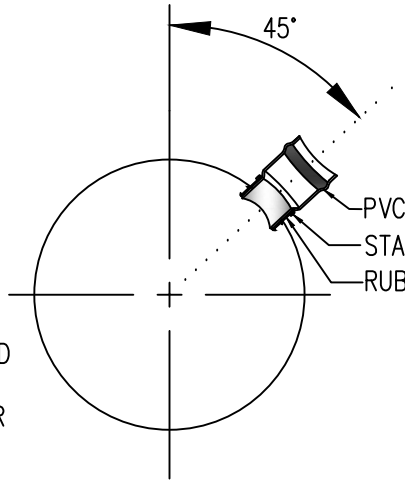
1. MATERIAL SHALL BE GRAY CAST IRON CONFORMING TO A.S.T.M. A48 (LATEST REVISION) CLASS 30B.
2. UNIT DESIGNED FOR HEAVY DUTY WHEEL LOADS A.A.S.H.T.O. HS20–44.
3. EACH FRAME AND COVER SHALL HAVE MACHINED HORIZONTAL BEARING SURFACES.

SANITARY WYE INSTALLATION ON EXISTING PVC MAIN DETAIL

NTS

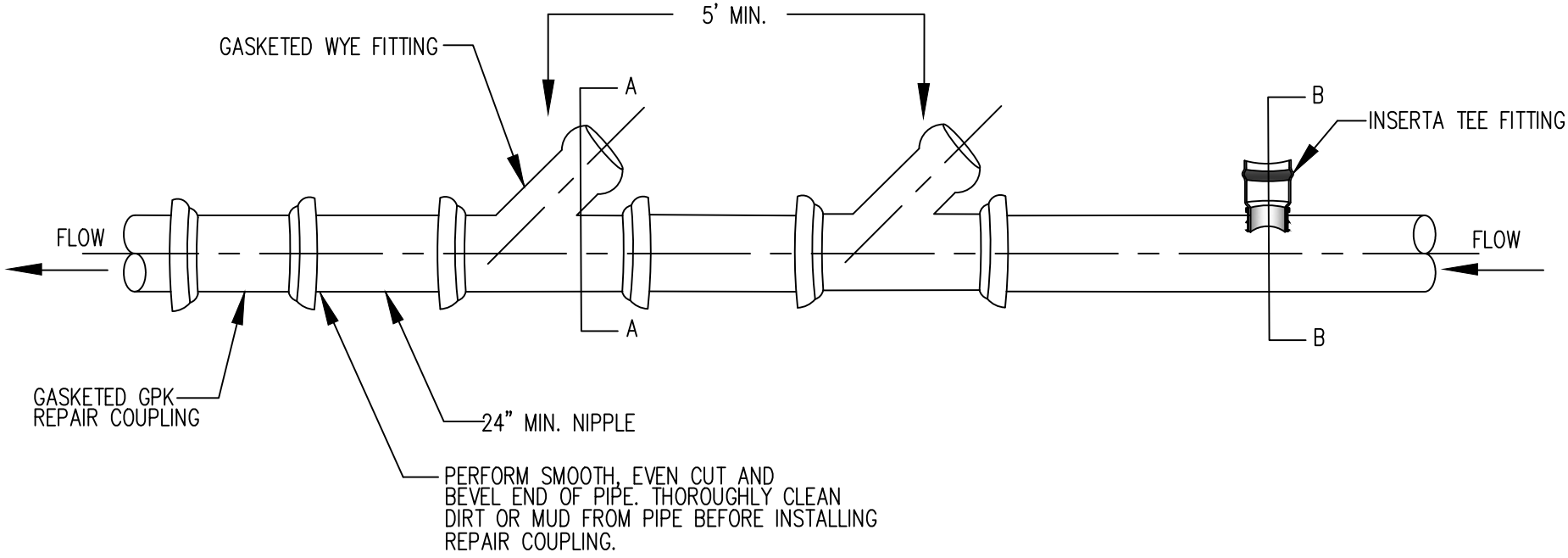


SECTION A–A



SECTION B–B

NOTE: A TAP INSTALLATION ON AN EXISTING MAIN MAY ALSO BE ACCOMPLISHED USING AN INSERTA TEE FITTING. THE MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE TO BE STRICTLY ADHERED TO, AND THE CONTRACTOR SHALL USE THE APPROPRIATE SIZED HOLE SAW.

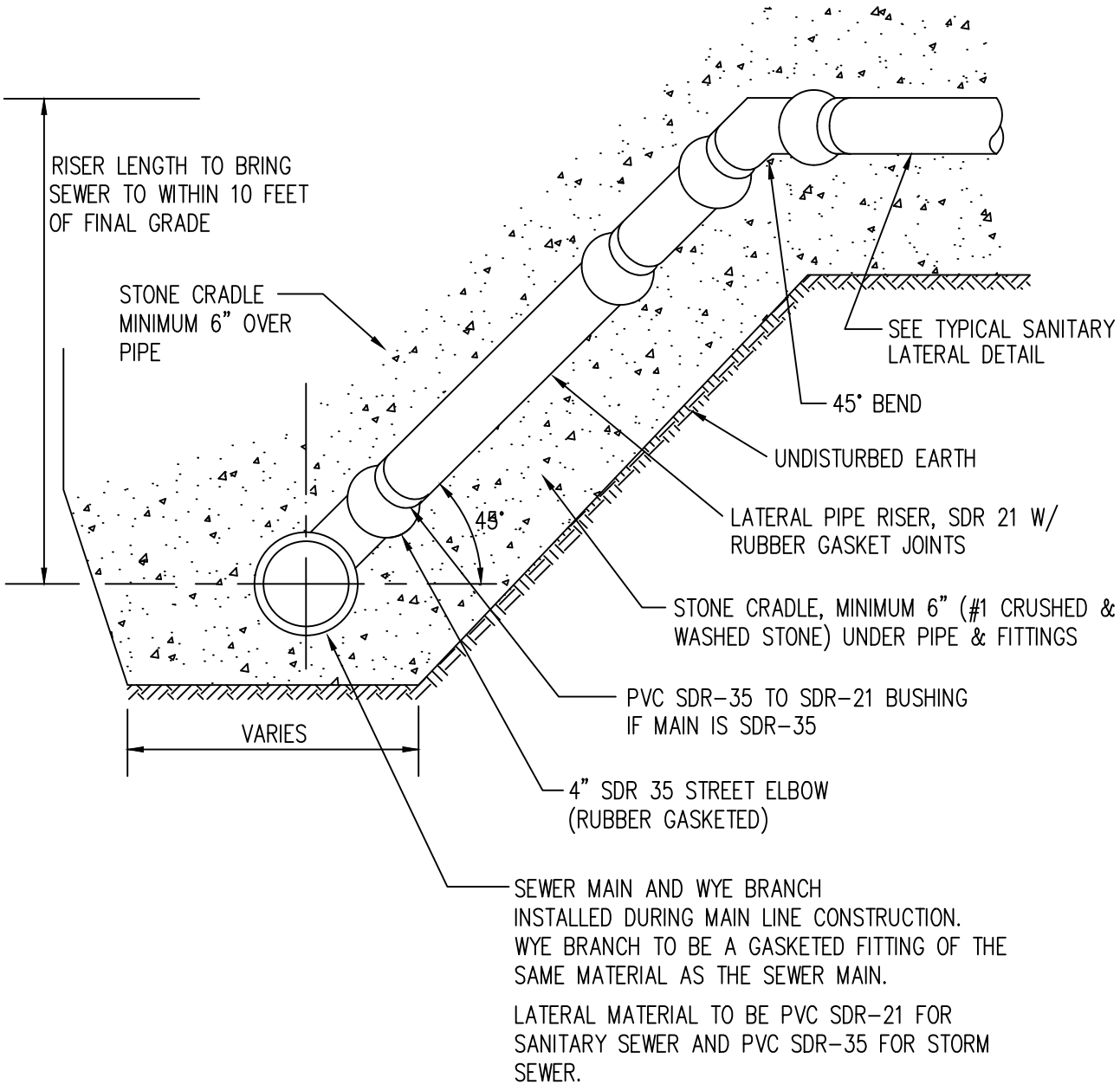


D29

JANUARY 2021

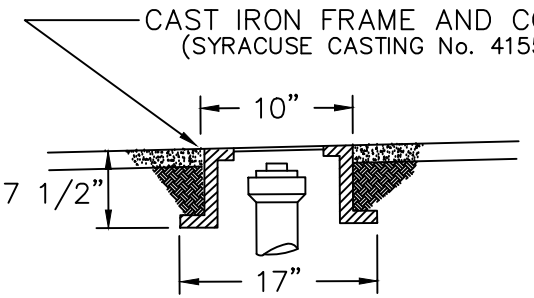
HOUSE LATERAL RISER DETAIL
FOR STORM OR SANITARY SEWER SERVICE

NTS



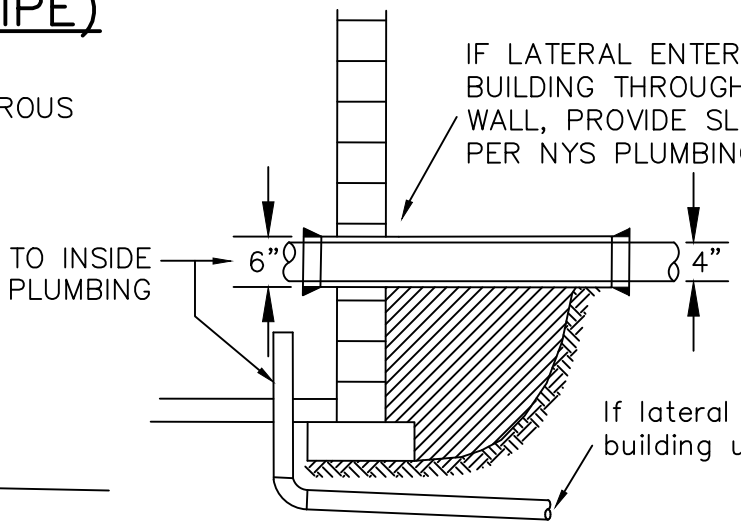
SANITARY LATERAL DETAIL
(PVC PIPE)

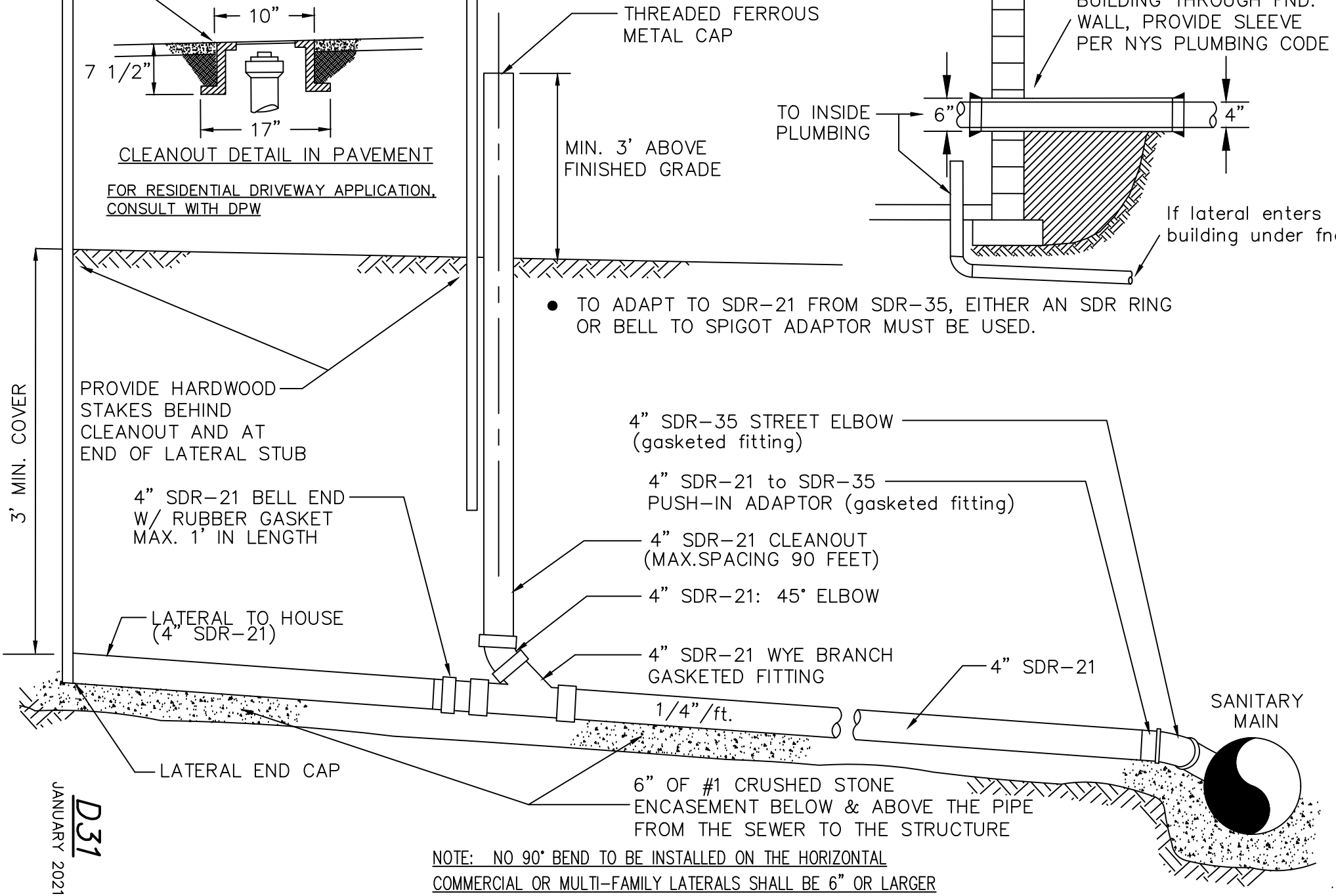
NTS



CLEANOUT DETAIL IN PAVEMENT

FOR RESIDENTIAL DRIVEWAY APPLICATION, CONSULT WITH DPW





- TO ADAPT TO SDR-21 FROM SDR-35, EITHER AN SDR RING OR BELL TO SPIGOT ADAPTOR MUST BE USED.

NOTE: NO 90° BEND TO BE INSTALLED ON THE HORIZONTAL

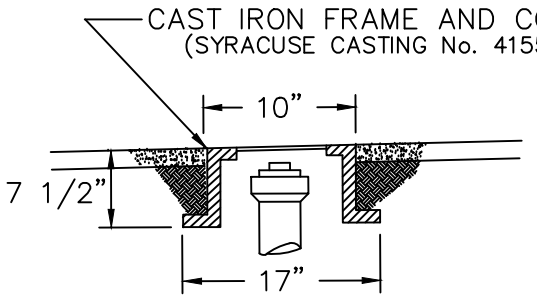
COMMERCIAL OR MULTI-FAMILY LATERALS SHALL BE 6" OR LARGER

D31

JANUARY 2021

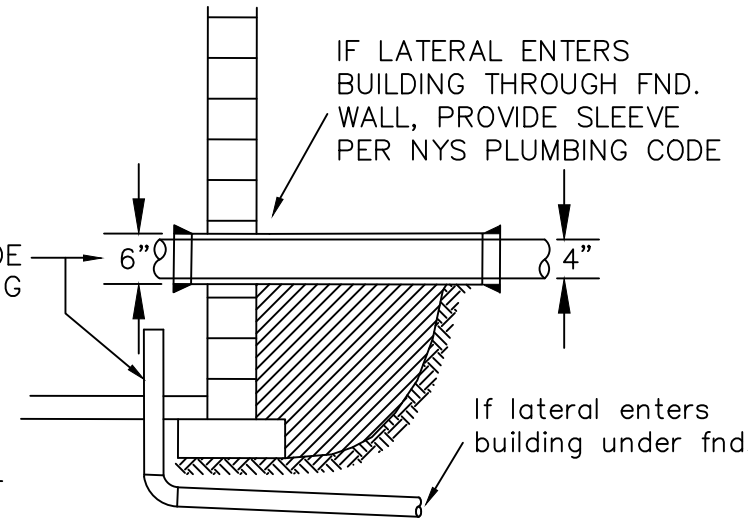
STORM LATERAL DETAIL
(PVC PIPE)

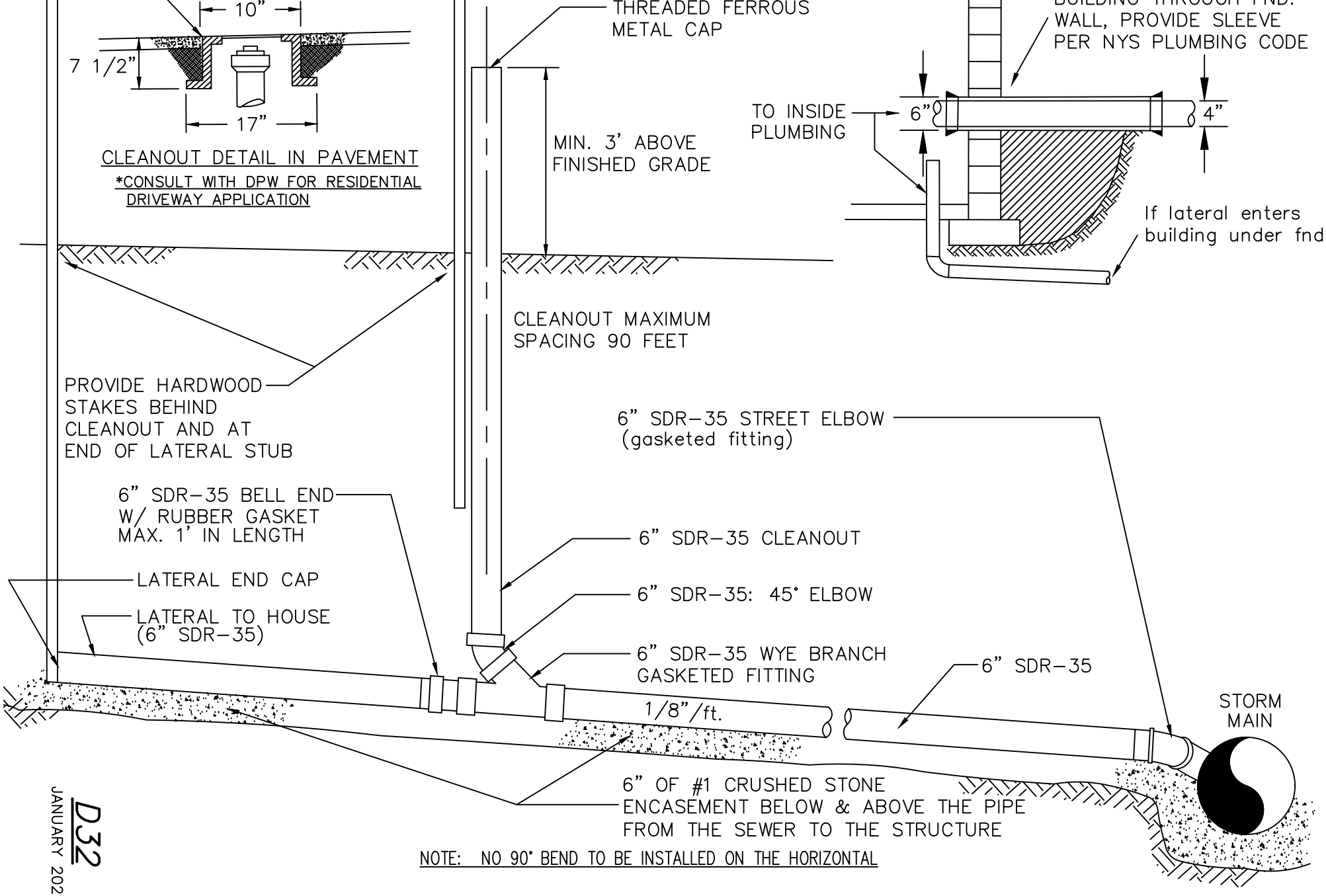
NTS



CLEANOUT DETAIL IN PAVEMENT

*CONSULT WITH DPW FOR RESIDENTIAL DRIVEWAY APPLICATION



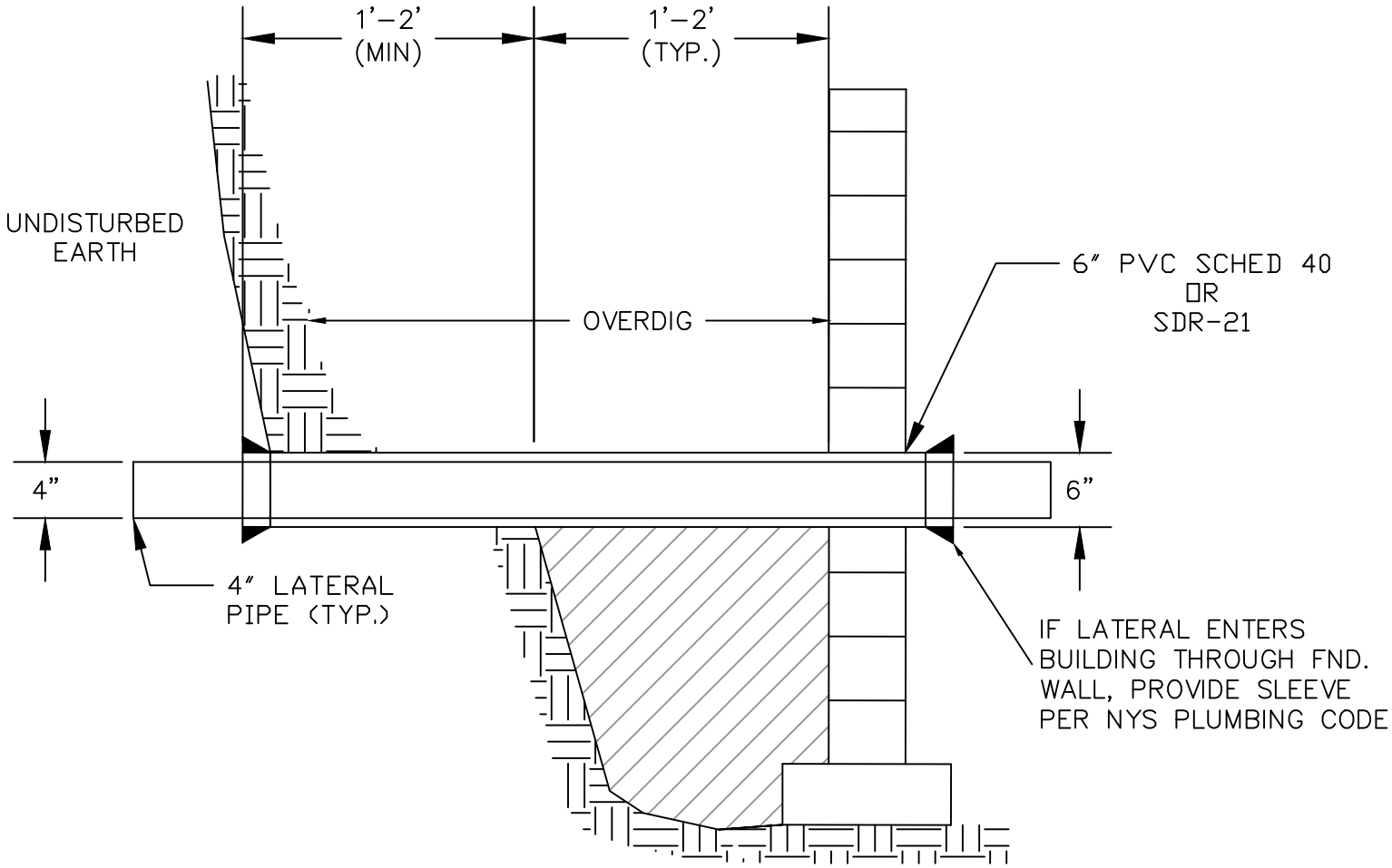


NOTE: NO 90° BEND TO BE INSTALLED ON THE HORIZONTAL

D32

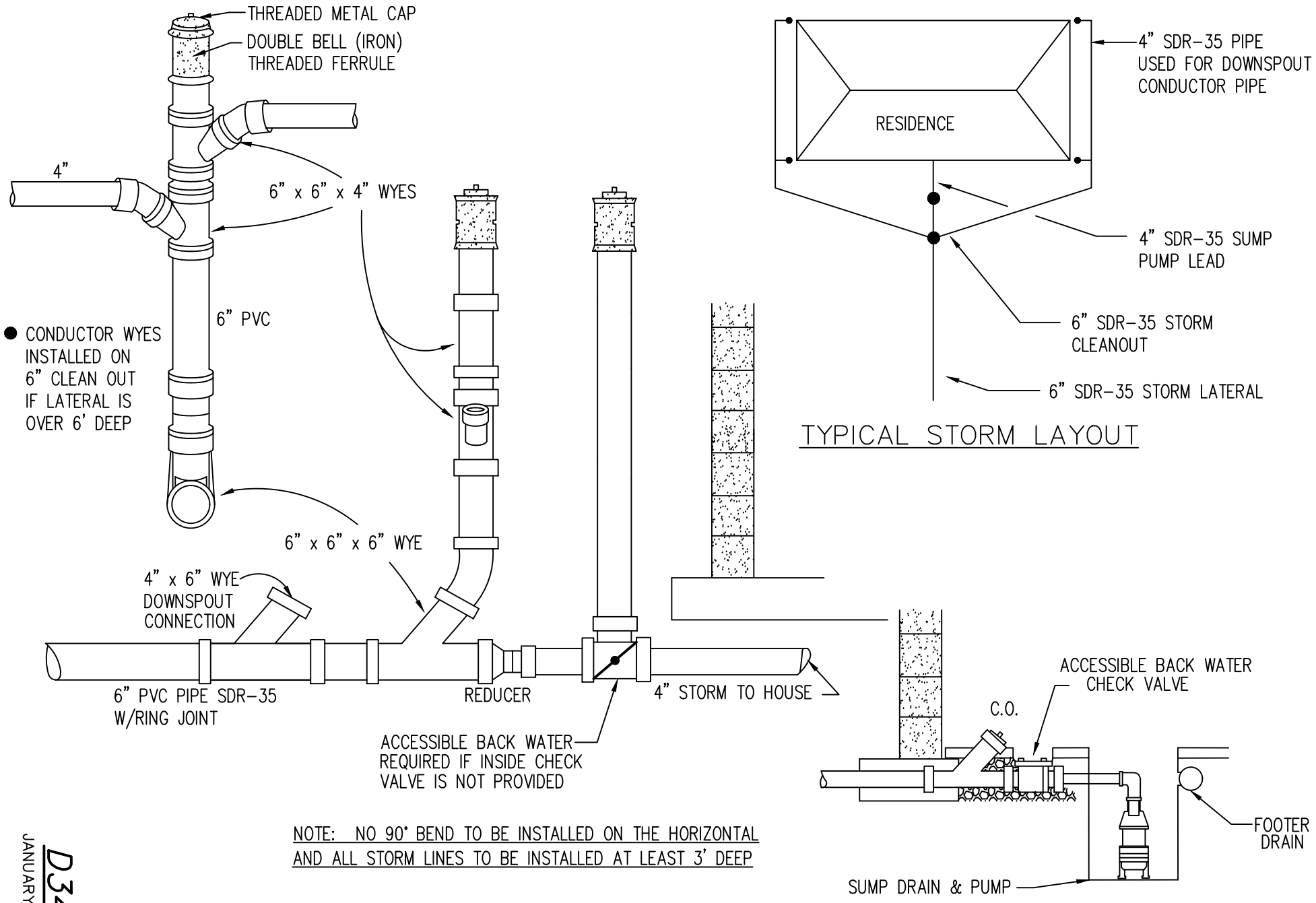
JANUARY 2021

SLEEVE DETAIL



DOWNSPOUT CONDUCTOR DETAIL

NTS



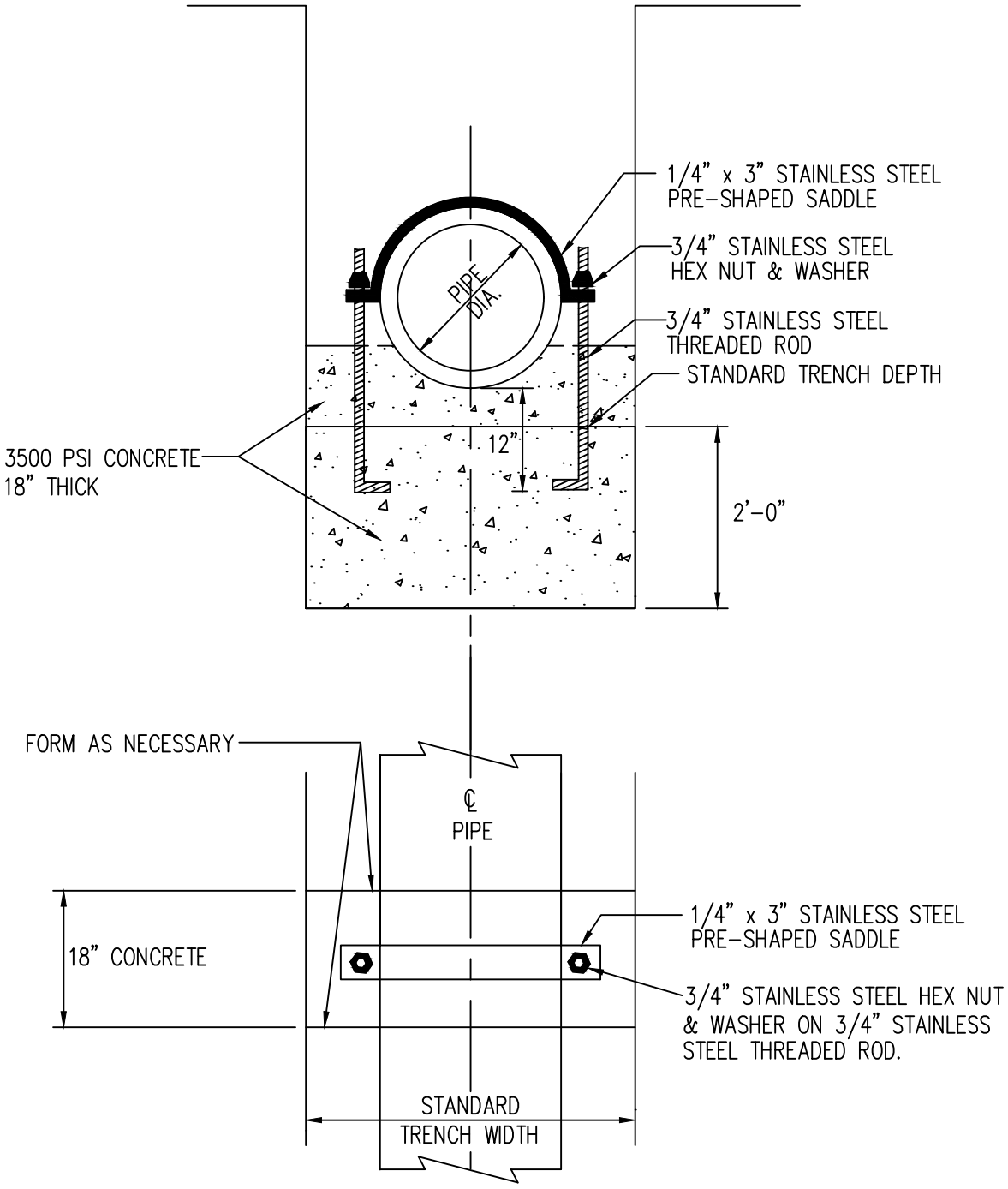
NOTE: NO 90° BEND TO BE INSTALLED ON THE HORIZONTAL AND ALL STORM LINES TO BE INSTALLED AT LEAST 3' DEEP

D34

JANUARY 2021

PIPE ANCHORAGE DETAIL

NTS



NOTE:

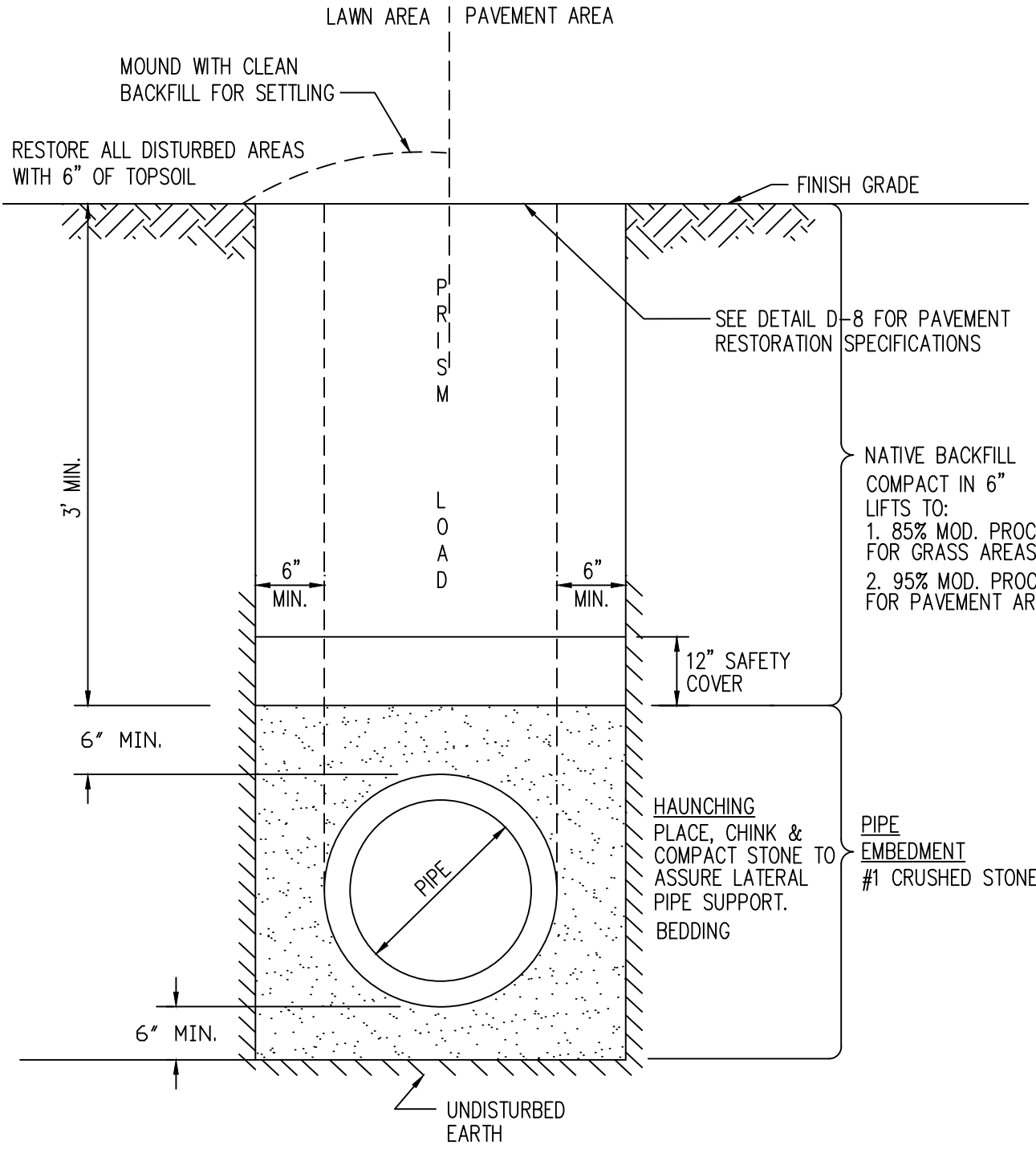
JOINT TO BE ON UPHILL SIDE AND ADJACENT TO ANCHOR BLOCK.

D35

JANUARY 2021

SEWER TRENCH DETAIL

NTS



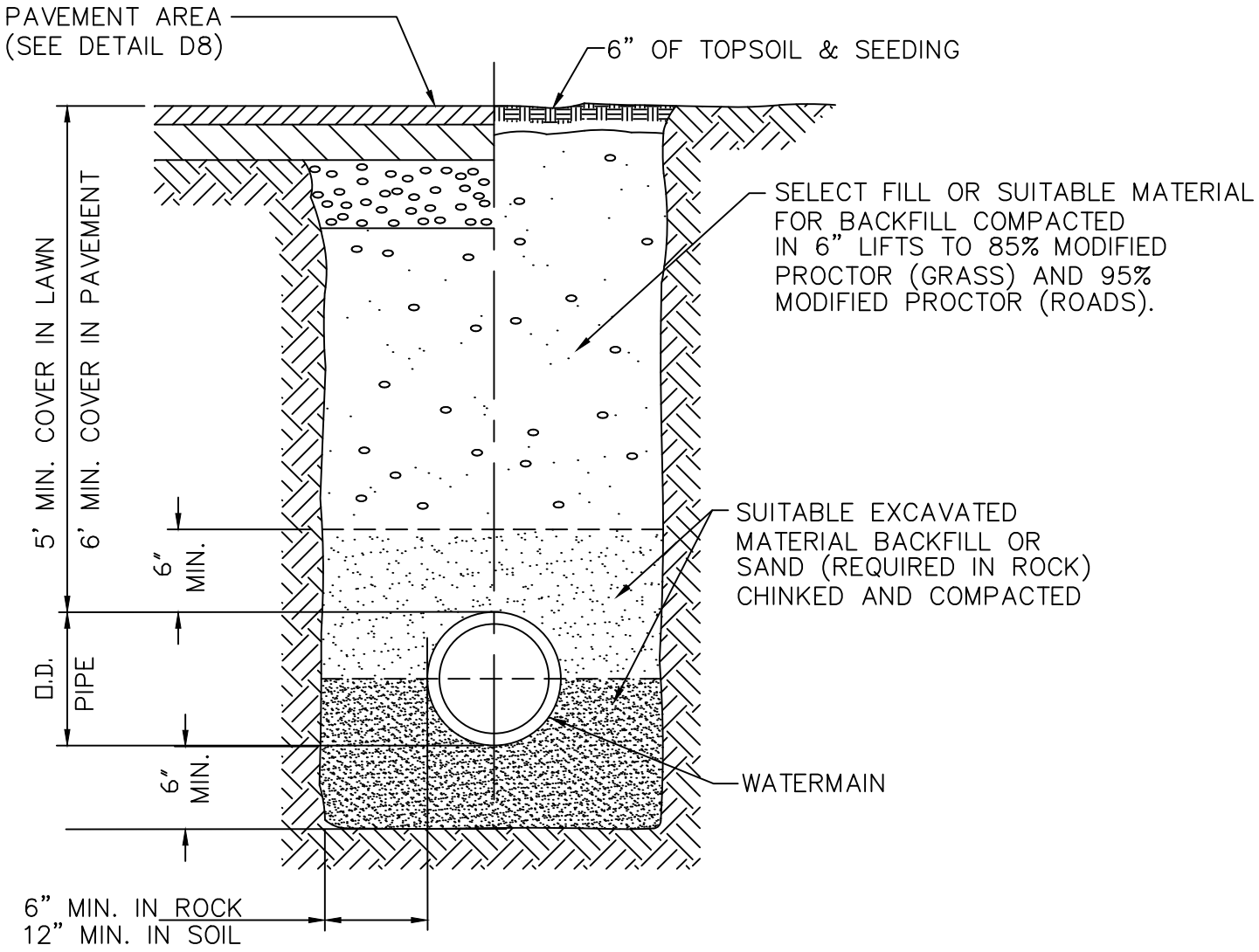
NOTE:
SAFETY COVER IS DEFINED AS NATIVE, CLEAN BACKFILL MATERIAL THAT IS FREE OF ORGANICS OR OTHER DELETERIOUS MATERIAL, INCLUDING ROCKS SIZED OVER 3-INCHES IN ANY DIRECTION.

D36

JANUARY 2021

WATERMAIN TRENCH DETAIL

NTS



NOTES:

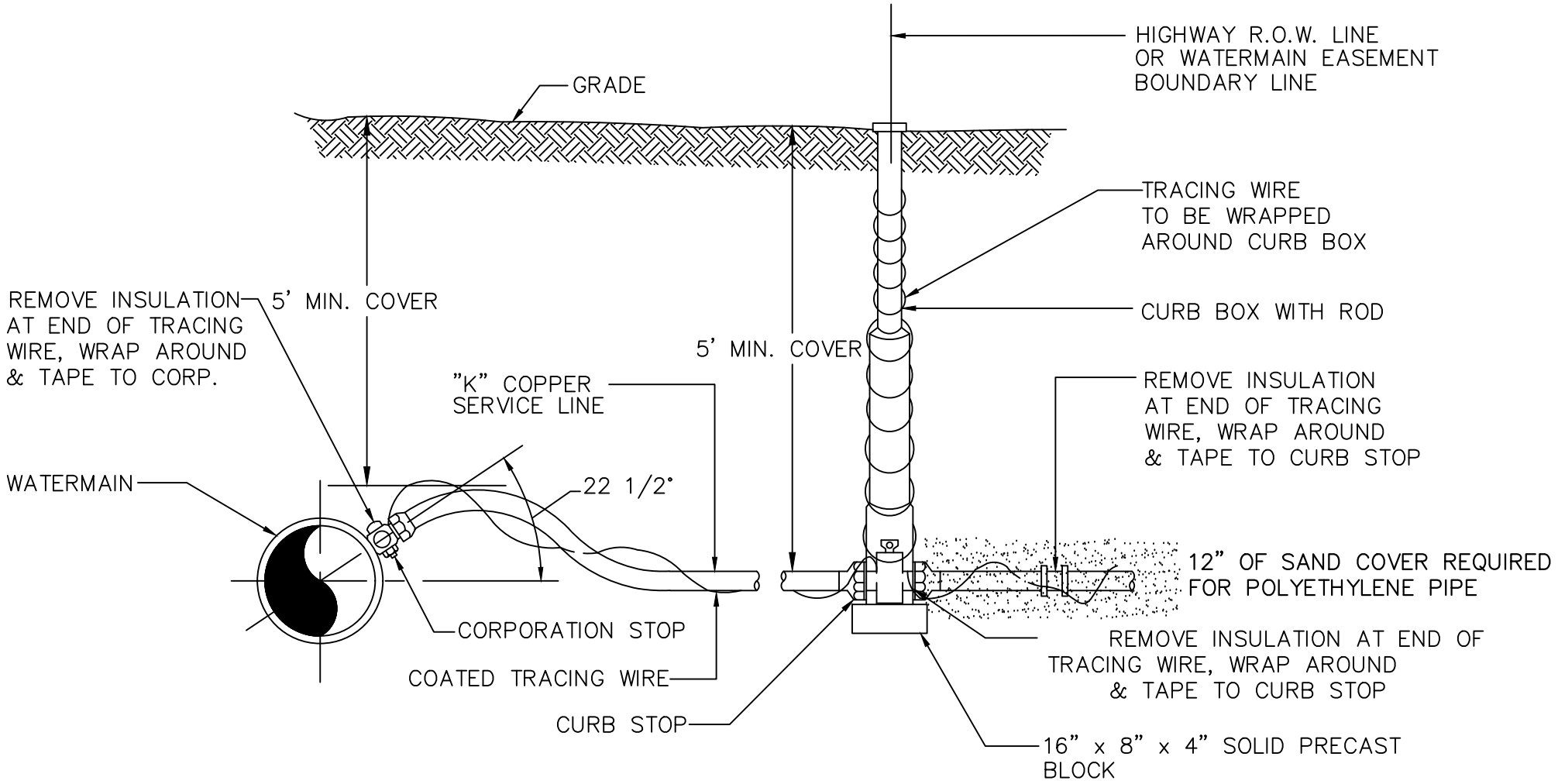
1. DEDICATED WATERMAINS MUST RECEIVE THE APPROVAL OF THE MCWA PRIOR TO INSTALLATION

D37

JANUARY 2021

WATER SERVICE INSTALLATION DETAIL

N.T.S.



NOTE:

INSULATED 10 OR 12 GAUGE TRACING WIRE AND SAND INCASEMENT TO BE USED WITH POLYETHLENE PLASTIC SERVICE ONLY.
SAND COVER TO BE 6" BELOW/ 6" ABOVE.

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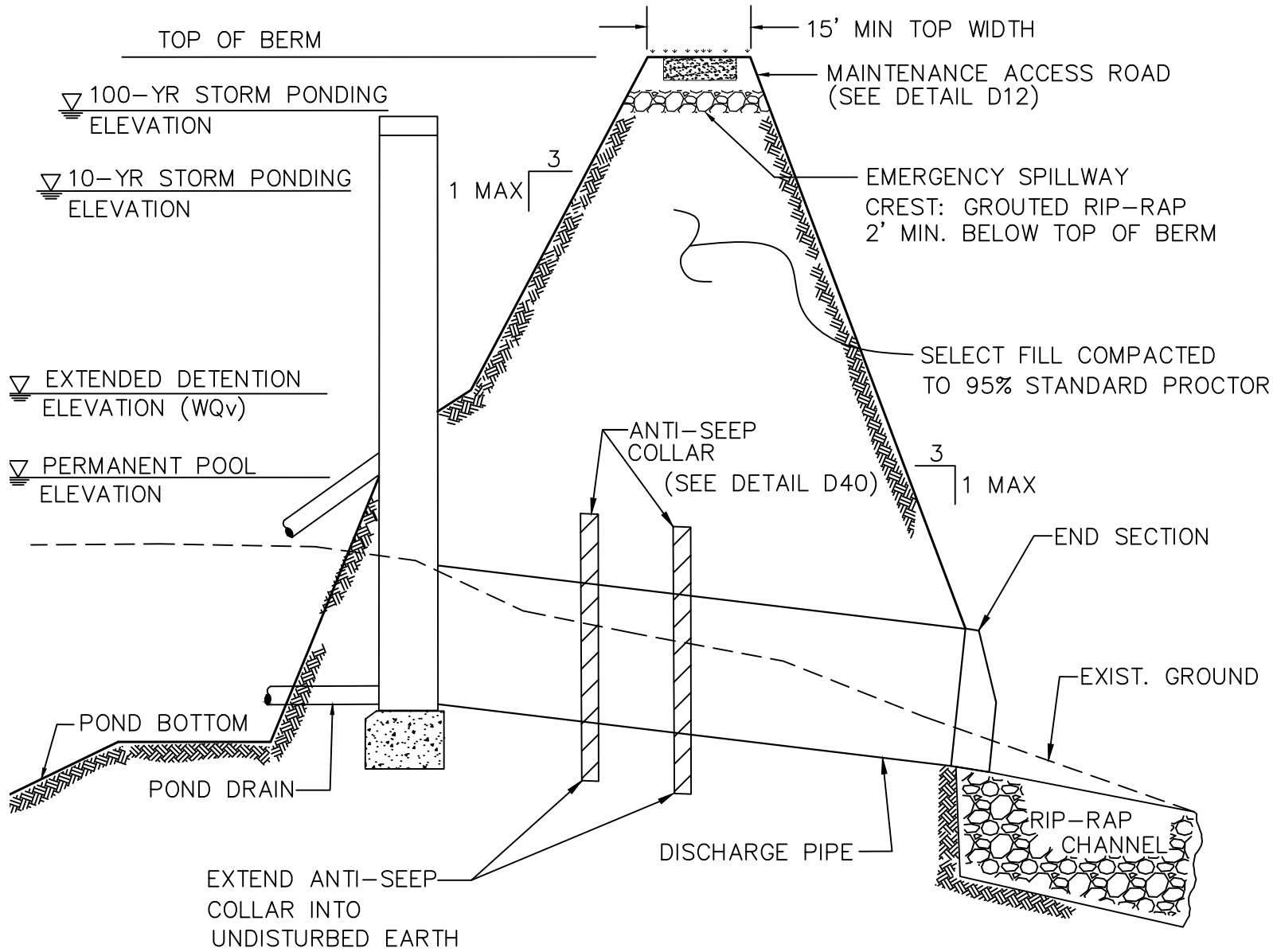
JANUARY 2021

TYPICAL STORMWATER MANAGEMENT FACILITY
OUTLET CONTROL DETAIL

NTS



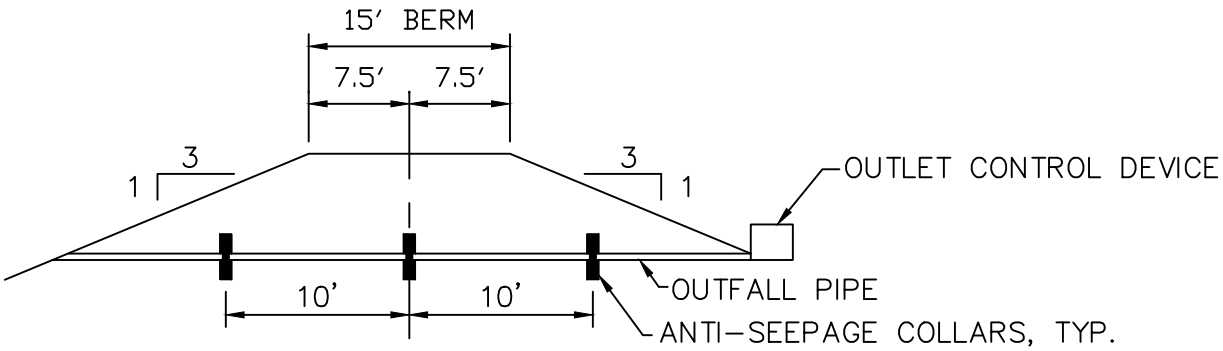
NOTES:

1.) OUTLET CONTROL STRUCTURE TO BE 4' DIAMETER OR 36" x 36" MIN PRECAST CONCRETE PROVIDED WITH RECTANGULAR FRAME AND GRATE

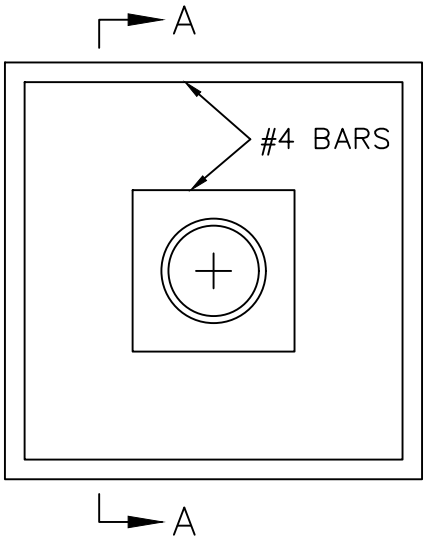
2.) THE GROUT MIX DESIGN SHALL BE REVIEWED AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS BEFORE PLACEMENT.

ANTI–SEEPAGE COLLAR DETAIL

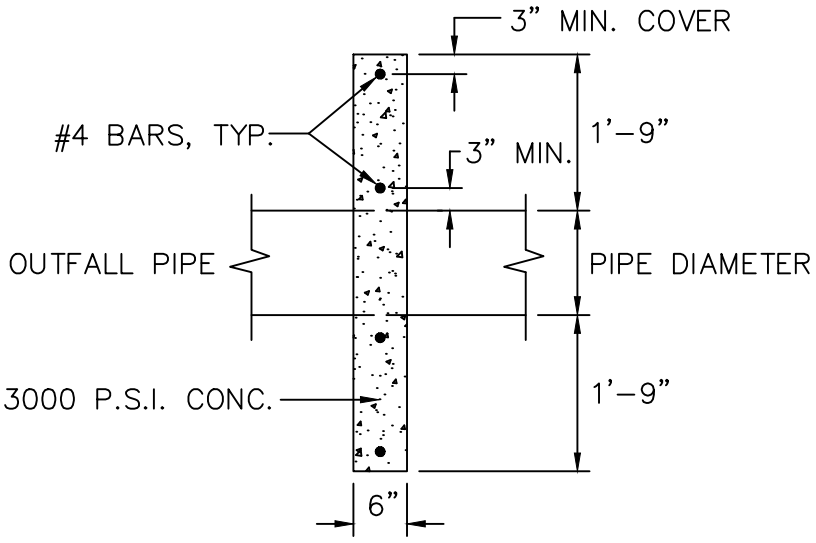
NTS



KEY TO ANTI–SEEPAGE COLLAR LOCATIONS



ELEVATION



SECTION A–A

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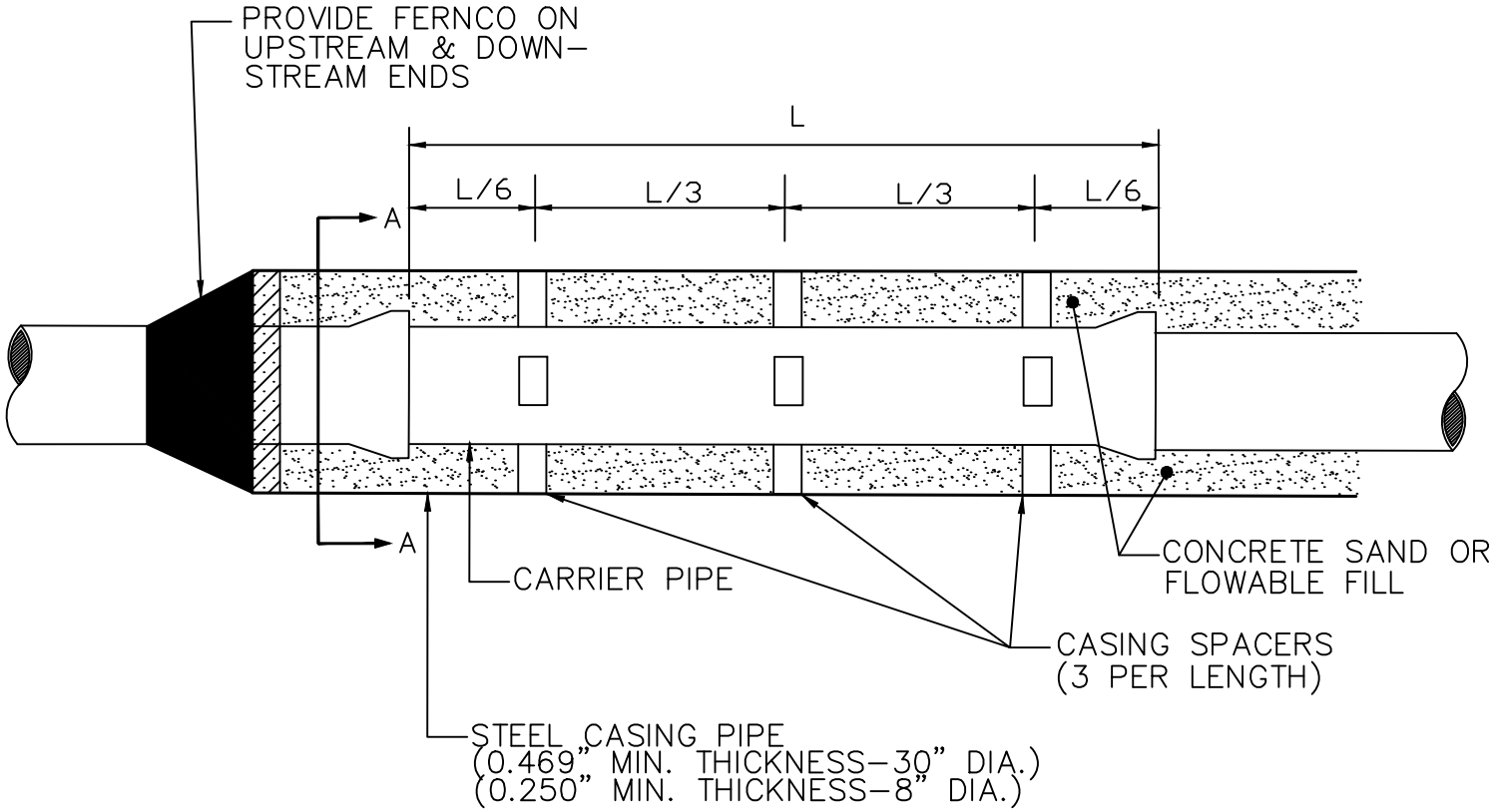
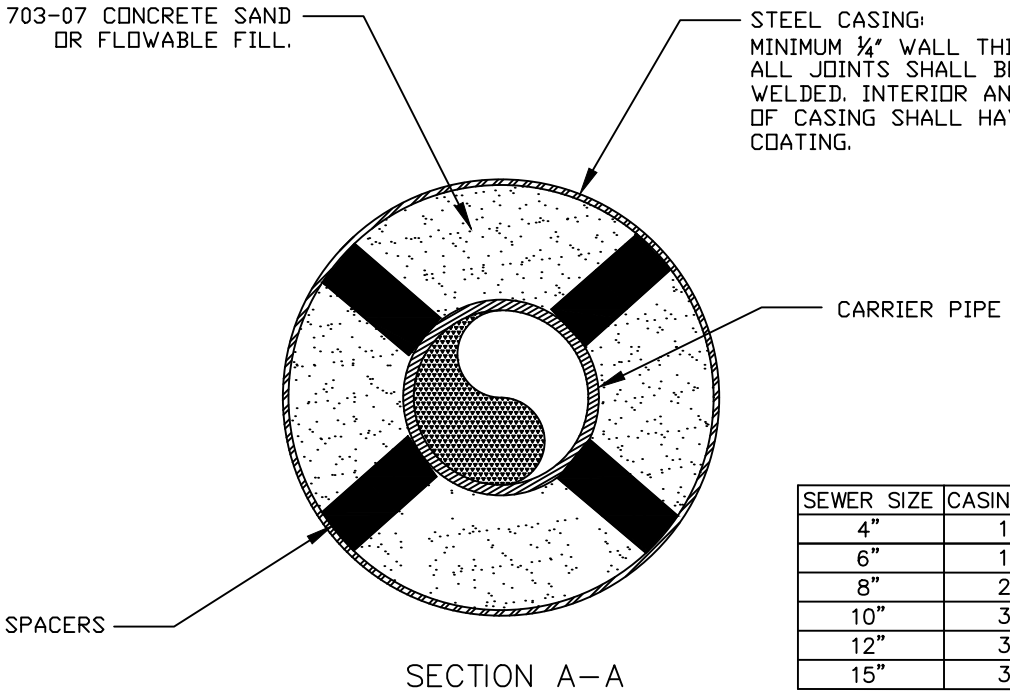
JANUARY 2021

ROAD BORING & CASING DETAIL

NTS





SECTION A-A

SEWER SIZE	CASING SIZE	MATERIAL
4"	12"	PVC
6"	18"	PVC
8"	24"	DUCTILE IRON
10"	30"	DUCTILE IRON
12"	30"	DUCTILE IRON
15"	30"	DUCTILE IRON

DUCTILE IRON SEWER PIPE, CLASS 52, FOR 8" AND UP. SDR 21 PVC PIPE FOR 4" AND 6".

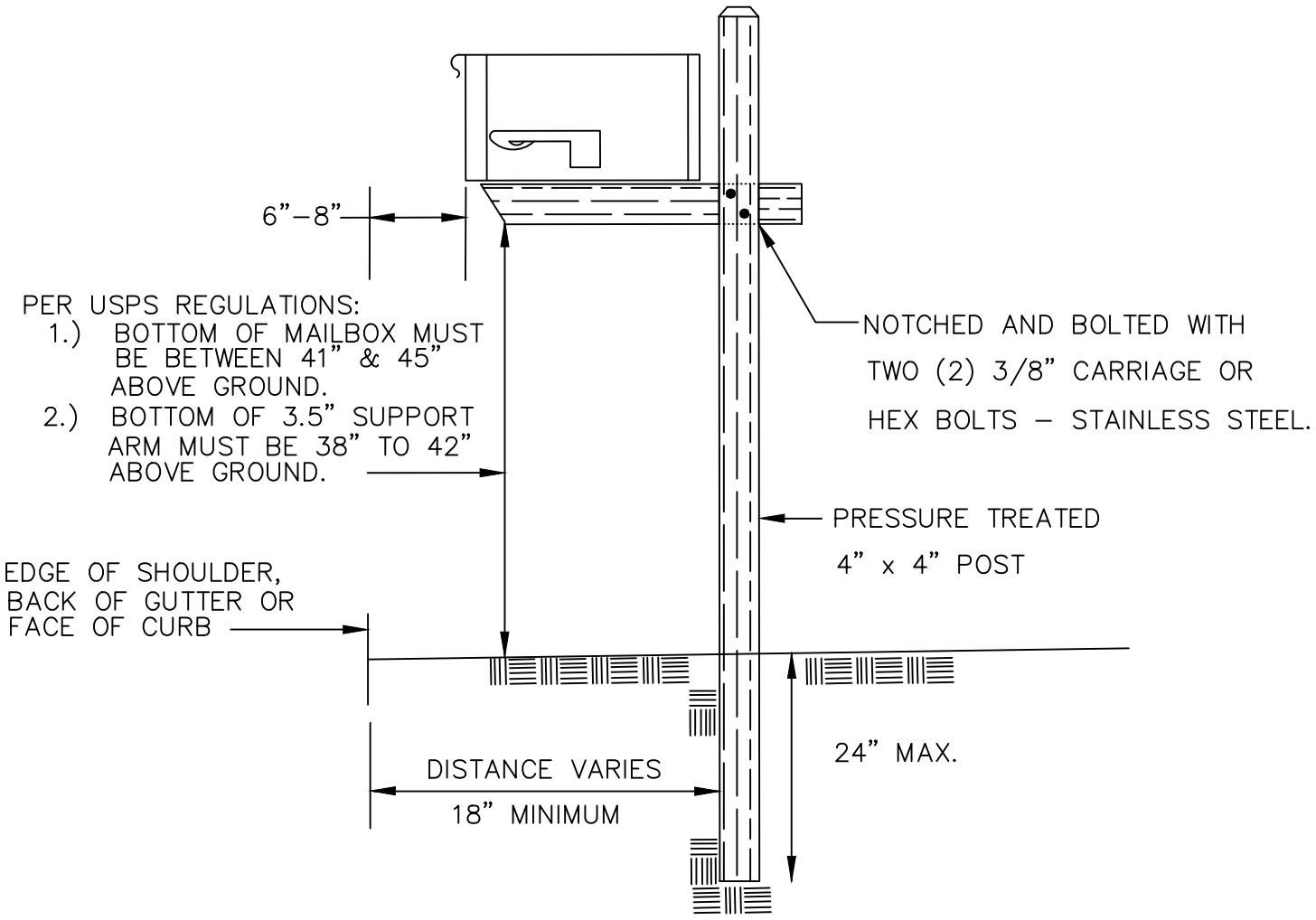
NOTE:
CONTRACTOR SHALL LOCATE AND EXPOSE ALL UTILITIES IN VICINITY OF BORING AND CASING PRIOR TO BEGINNING ANY WORK IN THIS AREA.

D41

JANUARY 2021

MAILBOX DETAIL

N.T.S.



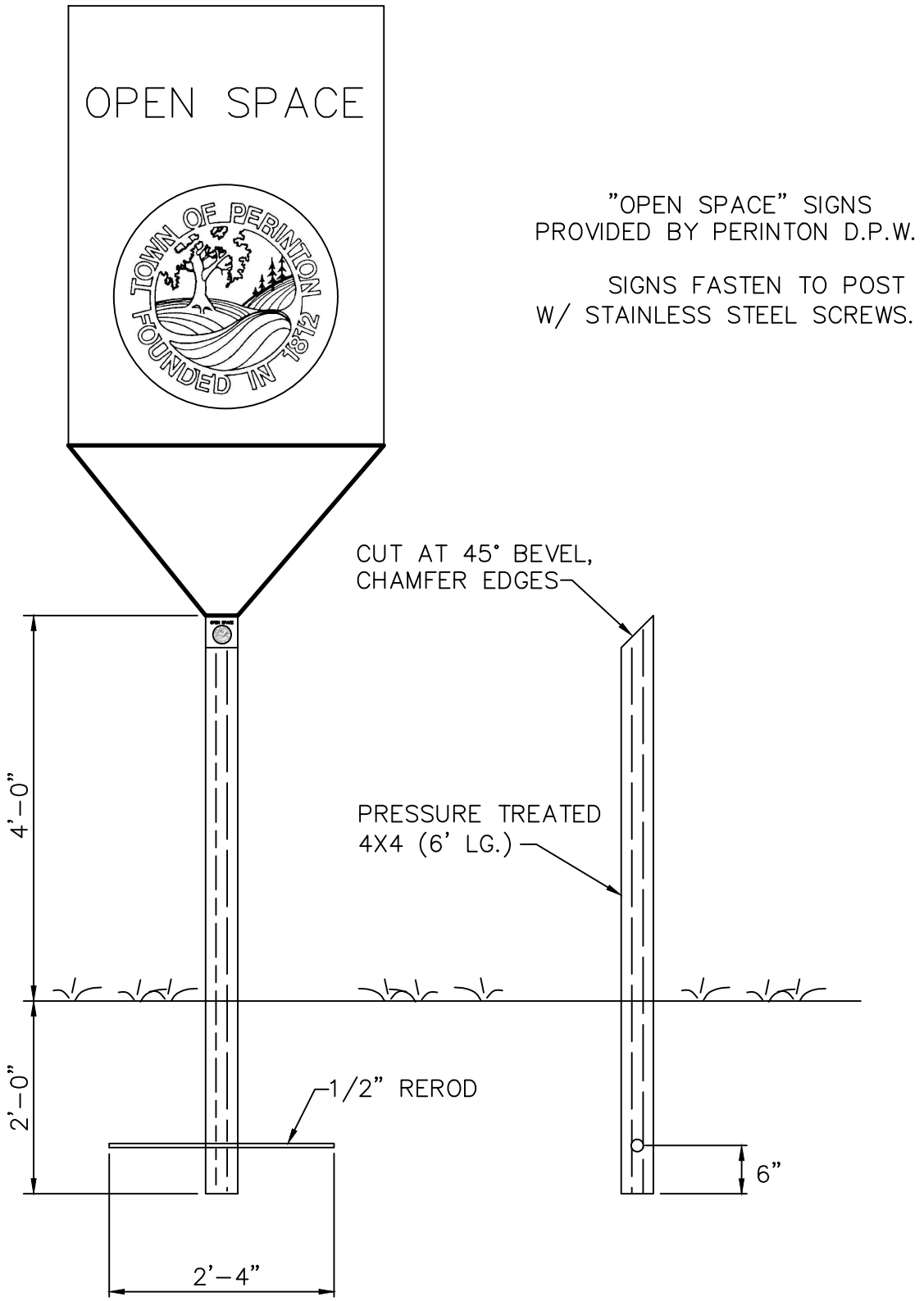
MAILBOX SUPPORTS

SUPPORTS FOR MAILBOXES SHOULD BE OF ADEQUATE STRENGTH AND SIZE TO SUPPORT THE BOX PROPERLY. HOWEVER, CUSTOMERS SHOULD AVOID THE USE OF MASSIVE MAILBOX SUPPORTS THAT, WHEN STRUCK, COULD DAMAGE VEHICLES AND CAUSE SERIOUS INJURY TO VEHICLE OCCUPANTS. HEAVY METAL POSTS, CONCRETE POSTS, AND MISCELLANEOUS ITEMS OF FARM EQUIPMENT SUCH AS MILKCANS FILLED WITH CONCRETE ARE EXAMPLES OF POTENTIALLY DANGEROUS SUPPORTS. THE IDEAL SUPPORT IS AN ASSEMBLY THAT BENDS OR FALLS AWAY FROM A STRIKING VEHICLE. DOMESTIC MAIL MANUAL (DMM) SECTIONS 156.531, 156.54, 157.32C, AND 157.4 INCLUDE POSTAL REGULATIONS REGARDING THE CONSTRUCTION AND PLACEMENT OF MAILBOXES AND SUPPORTS ON RURAL AND HIGHWAY CONTRACT ROUTES.

THE FEDERAL HIGHWAY ADMINISTRATION (FHWA) HAS DETERMINED THAT MAILBOX SUPPORTS NO LARGER THAN 4 INCHES BY 4 INCHES, A 4 1/2–INCH DIAMETER WOOD POST, OR A 2–INCH DIAMETER STANDARD STEEL OR ALUMINUM PIPE BURIED NO MORE THAN 24 INCHES, SHOULD SAFELY BREAKAWAY IF STRUCK BY A VEHICLE. THE MAILBOX MUST ALSO BE SECURELY ATTACHED TO ITS POST TO PREVENT SEPARATION WHEN STRUCK.

TOWN LAND IDENTIFICATION MARKER DETAIL

N.T.S.

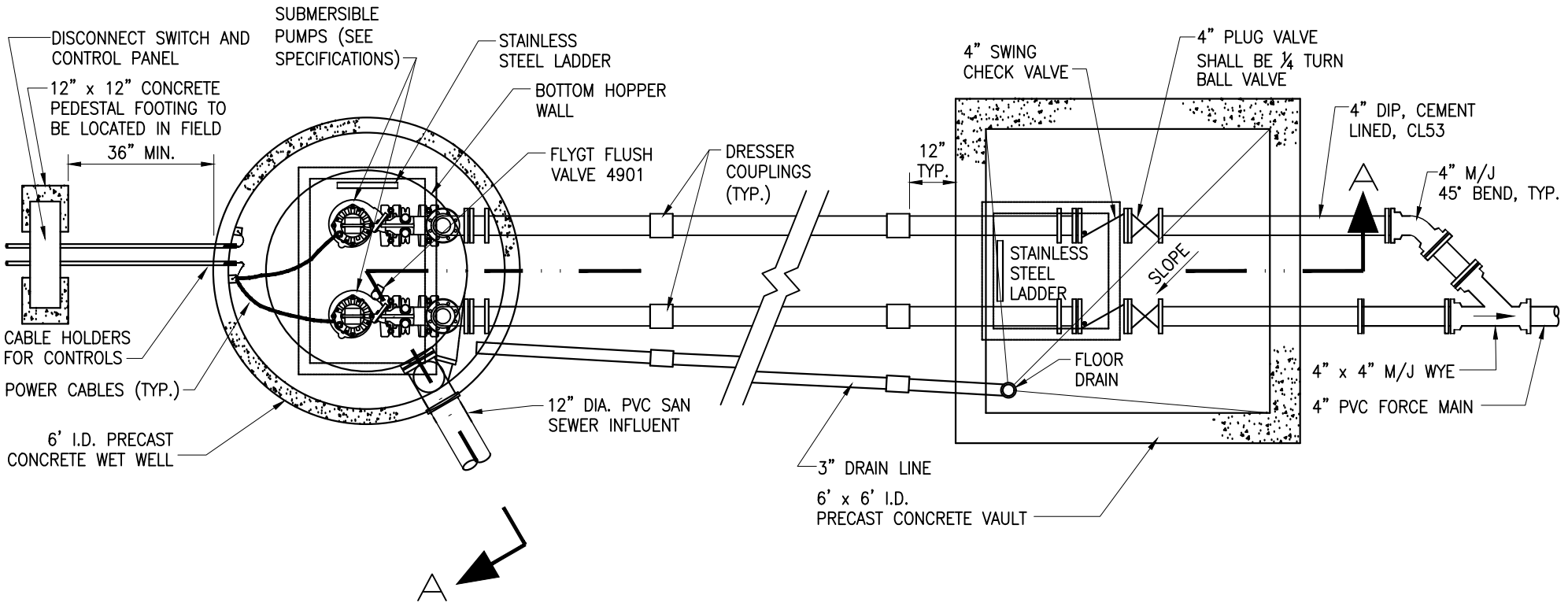


D43

JANUARY 2021

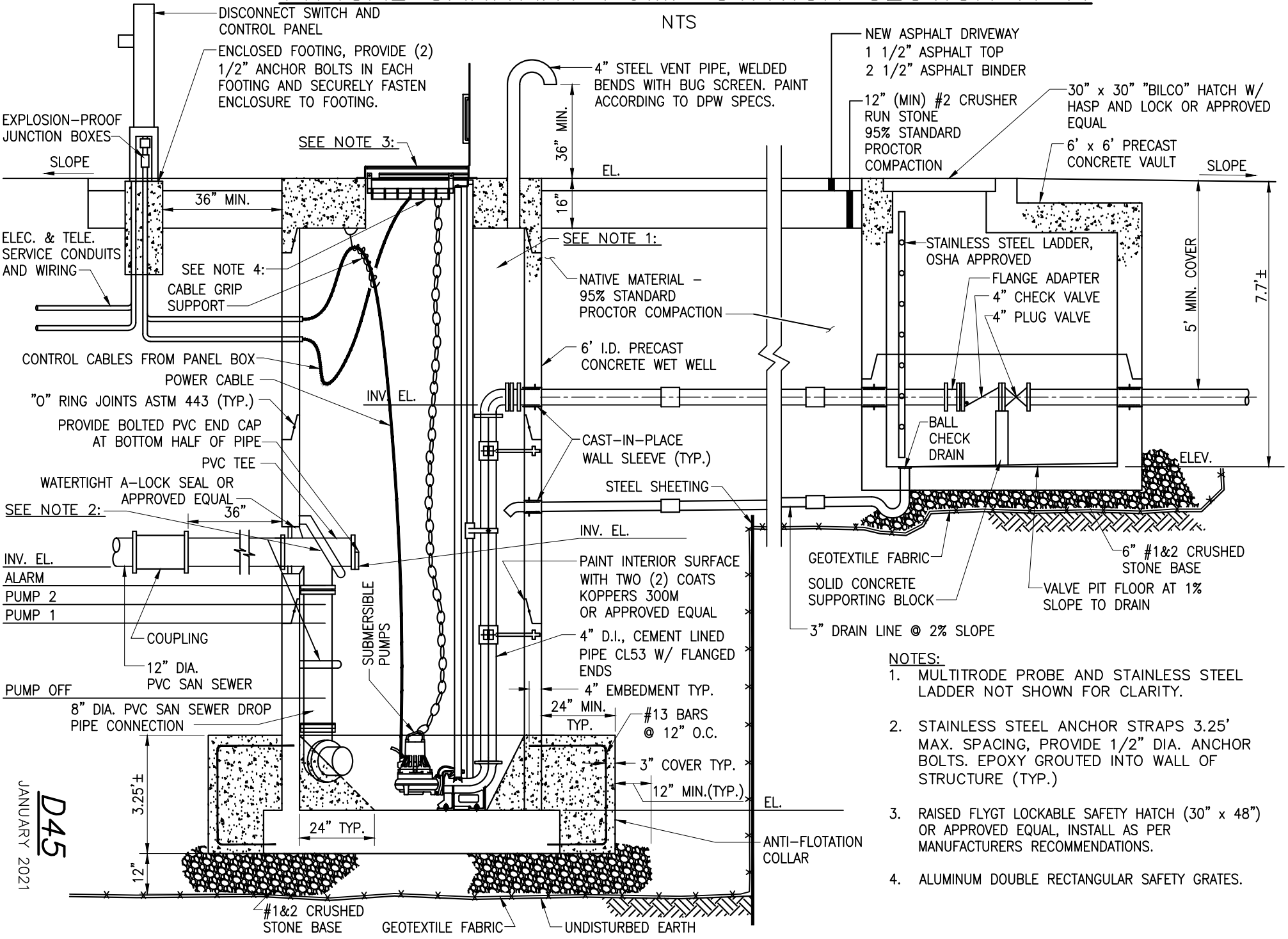
TYPICAL SANITARY PUMP STATION PLAN VIEW

NTS



TYPICAL SANITARY PUMP STATION SECTION A–A

NTS



NOTES:

1. MULTITRODE PROBE AND STAINLESS STEEL LADDER NOT SHOWN FOR CLARITY.
2. STAINLESS STEEL ANCHOR STRAPS 3.25' MAX. SPACING, PROVIDE 1/2" DIA. ANCHOR BOLTS. EPOXY GROUTED INTO WALL OF STRUCTURE (TYP.)
3. RAISED FLYGT LOCKABLE SAFETY HATCH (30" x 48") OR APPROVED EQUAL, INSTALL AS PER MANUFACTURERS RECOMMENDATIONS.
4. ALUMINUM DOUBLE RECTANGULAR SAFETY GRATES.

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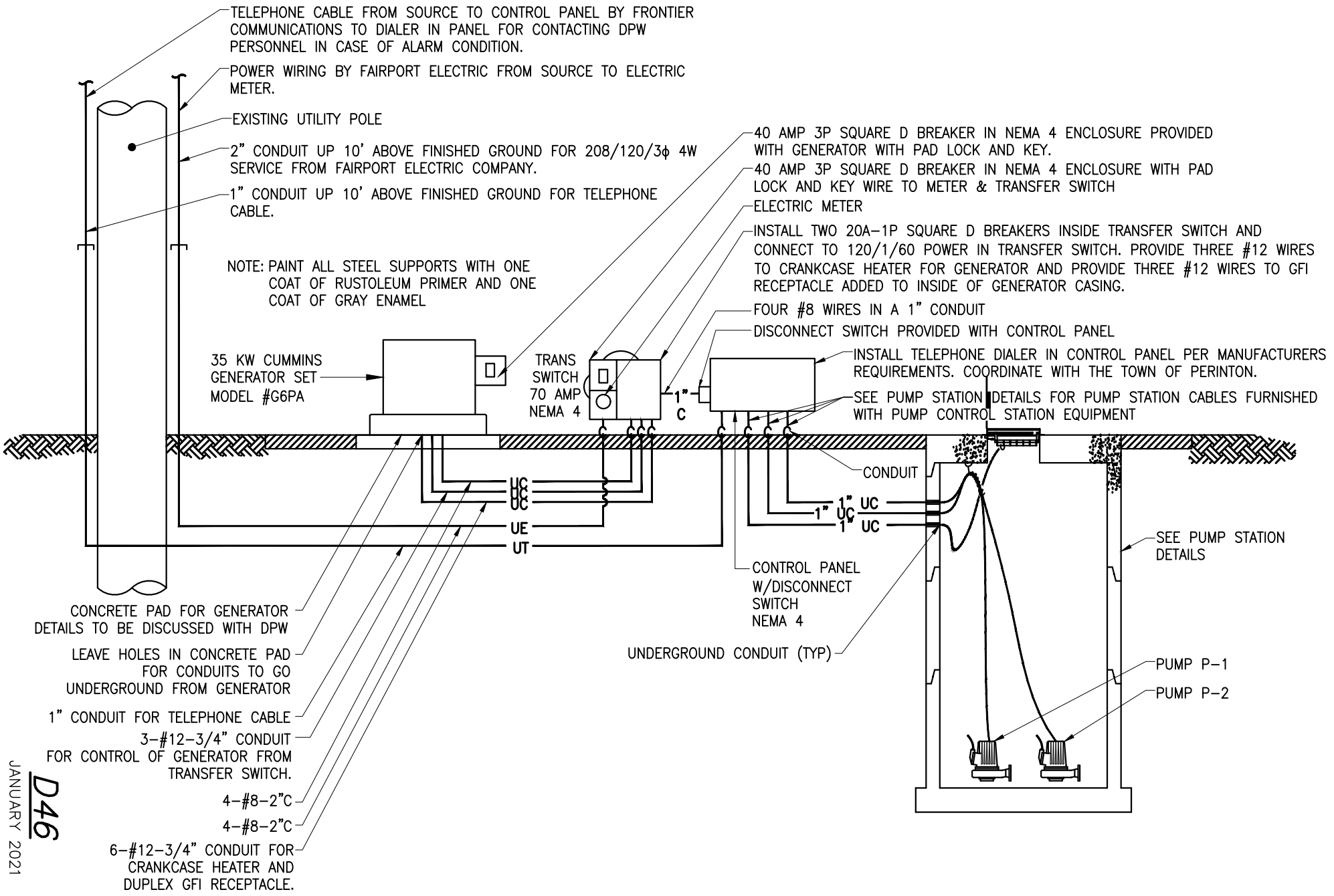
ELECTRICAL WIRING FOR TYPICAL SANITARY PUMP STATION

NTS



D46

JANUARY 2021