

South Fayette Township

Construction Standards & Appurtenances



Addendum to the Township Subdivision and Land Development Regulations

Adopted: February 18, 2002
Amended: January 5, 2004
Amended: February 19, 2007
Amended: April 7, 2010

Township of South Fayette

Construction Standards and Appurtenances

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SECTION I : TITLE

This chapter shall be known as the “Public Improvement Construction Standards of South Fayette Township.”

SECTION II : PURPOSE

The purpose of these standards, as adopted, and all subsequent amendments that may be adopted, is to regulate new construction or reconstruction of public improvements in order to protect safety and health and provide for the general welfare of the township by providing procedures and standards for the design and construction of roads, storm water facilities, sidewalks and all of the associated appurtenances within the township.

SECTION III : DEFINITIONS

As used in this chapter, the following terms shall have the meanings indicated:

- 3.1 **ADT** -- Average daily traffic.
- 3.2 **AS-BUILT PLAN** -- A drawing showing the final as-built location, elevation and /or depth, size and materials of all completed public and private improvements as well as all easements.
- 3.3 **AWDT** -- Average weekday daily traffic.
- 3.4 **AXLE LOAD** -- The total load transmitted by all wheels in a single or tandem axle configuration extending across the full width of the vehicle.
- 3.5 **BASE COURSE** -- A layer or layers of specified material of planned thickness placed between the subbase and surface course to serve one (1) or more functions, such as distributing load, providing drainage or minimizing frost action.
- 3.6 **BEDROCK** – Natural rock layer, hard or soft, in place at ground surface or beneath unconsolidated surface deposits.
- 3.7 **CARTWAY** -- That portion of the street right-of-way surfaced for vehicular use.
- 3.8 **CONTRACTOR** -- Any developer, landowner, agent of such landowner, excavator, authorized contractor, sub-contractor, or employee, who improves, grades, or otherwise provides work associated with land development.
- 3.9 **DESIGN THICKNESS** -- A total thickness, all components above subgrade.
- 3.10 **DIRECTOR of PUBLIC WORKS** -- The designated Township Official or employee responsible for the construction, operation and maintenance of roads and/or facility now or hereafter owned and maintained or to be owned or maintained by the Township.
- 3.11 **DRIVEWAY** -- A private area used exclusively for circulation and ingress and egress to a street by the owner or owners or visitors of the lot. All driveways shall meet the requirements of this code.
- 3.12 **ENGINEERING GEOLOGIST** – A person who holds a degree in geology from an accredited

college or university and who has training and experience in the field of engineering geology.

- 3.13 ENGINEER, PROFESSIONAL** – A person licensed by the Commonwealth of Pennsylvania to practice engineering and who is knowledgeable in the branch of civil engineering.
- 3.14 ENGINEER, TOWNSHIP** -- The professional engineer appointed by the Township of South Fayette and is responsible for the review of road and street designs. The Engineer is considered to be an agent of the Township.
- 3.15 EROSION** – The detachment and movement of soil or rock fragments by water, wind, ice or gravity, including such processes as gravitational creep.
- 3.16 EXCAVATION** – Any act by which earth, sand, gravel, rock or any other similar material is cut into, dug, quarried, uncovered, removed, displaced, relocated or bulldozed, and shall include the conditions resulting there from.
- 3.17 FILL** – Any act by which earth, sand, gravel, rock or any other material is deposited, placed, pushed, dumped, pulled, transported or moved to a new location, and shall include the condition resulting.
- 3.18 FLEXIBLE PAVEMENT** -- A pavement structure which maintains intimate contact with and distributes loads to the subgrade and depends on aggregate interlock, particle friction and cohesion for stability; generally refers to bituminous materials.
- 3.19 GOVERNING BODY** – The Board of Commissioners of the Township of South Fayette.
- 3.20 GRADING** – Excavation or fill or any combination thereof, and shall include the conditions resulting from any excavation or fill.
- 3.21 GRADING PERMIT** – Any permit required under these regulations.
- 3.22 HAZARD** – A danger or potential danger to life, limb, or health or an adverse effect or potential adverse effect to the safety, use or stability of property, waterways, public ways, structures, utilities and storm sewers, and including stream pollution.
- 3.23 PERSON** – A natural person, but shall also include a partnership, corporation, trust or association.
- 3.24 PARKING AREA** -- A public or private garage or a paved, open off-street area other than a driveway or street with adequate means of access, which meets the requirements of this code and which is used exclusively for the parking of vehicles of occupants or visitors of the lot; however, a driveway serving a single-family dwelling or which is for the exclusive use of an individual dwelling unit in a residential building may be used as a parking area.
- 3.25 PARKING LANE** -- An improved longitudinal strip of roadway intended primarily for the parking of vehicles.
- 3.26 PAVEMENT STRUCTURE** -- The combination of select materials, subbase, base course and surface course placed on a subgrade to support the traffic load and distribute it to the roadbed. Where the single term “pavement” is used, it generally indicates the entire “pavement structure.”
- 3.27 PRIVATE IMPROVEMENT** -- A street, sidewalk, walkway, gutter, curb, sewer, waterline, utility,

driveway, parking area, street light, street sign or related facility, to be operated and maintained by a private entity, but which must comply with the township code.

- 3.28 PUBLIC IMPROVEMENT** -- A street, sidewalk, walkway, gutter, curb, sewer, waterline, street light, street sign and other utility or related facility to be dedicated to or maintained by the township, and which must comply with the township code.
- 3.29 RETAINING WALL** -- A structure composed of concrete, steel or other approved building material constructed for the purpose of supporting a cut or filled embankment which would otherwise not comply with the requirements of the standards set forth in this chapter and which is more than four feet in height, as measured on the exposed vertical surface of the wall.
- 3.30 RIGHT-OF-WAY** -- A general term denoting a public way for purposes of vehicular travel installation and maintenance of utilities.
- 3.31 ROADBED MATERIAL** -- The material in cuts and embankments and in embankment foundations from the subgrade surface down, extending to such depth as affects the support of the pavement.
- 3.32 SELECT MATERIAL** -- Suitable native materials, clean and free of debris, usually obtained from designated roadway cuts or nearby borrow areas, or other similar material used for a specific purpose, e.g., to protect or improve weaker sections of subgrade or for use as lower subbase layer.
- 3.33 SIDEWALK** -- A walk for pedestrians constructed to the standards set forth in this code.
- 3.34 SITE** -- A lot, tract or parcel of land or a series of lots, tracts or parcels of land which are adjoining, where grading work is continuous and performed at the same time.
- 3.35 SOILS ENGINEER** -- A person registered by the Commonwealth of Pennsylvania as a professional engineer and who has training and experience in the branch of soils engineering.
- 3.36 SOIL SUPPORT** -- Expresses the ability of the roadbed material or subgrade soil to support the traffic loads transmitted through a flexible pavement structure.
- 3.37 SOIL SURVEY** -- The unpublished and operational soil survey for Allegheny County, Pennsylvania, and the accompanying text entitled "Soil Survey Interpretations of Allegheny County, Pennsylvania," as prepared by the United States Department of Agriculture, Soil Conservation Service, et al. When applicable, the term "soil survey" shall mean the Soil Survey, Allegheny County, Pennsylvania.
- 3.38 SOLID WASTE** -- All parts of combinations of ashes, garbage, refuse, radioactive material, combustible demolition materials and industrial wastes, such as food-processing wastes, wood, plastic, metal scrap, etc.
- 3.39 STABILIZATION** -- Modification of soils or aggregates by incorporating materials that will increase load bearing capacity, firmness and resistance to weathering or displacement.
- 3.40 STREET** -- An avenue, boulevard, road, highway, freeway, parkway, lane, viaduct and any other ways used by vehicular traffic, but not including driveways, parking areas or walkways. Street includes the entire right-of-way.

- 3.41 **SUBBASE** -- A layer or layers of specified or selected material of planned thickness placed between the subgrade and base course to serve one (1) or more functions, such as distributing a load, providing drainage or minimizing frost action.
- 3.42 **SUBGRADE** -- The uppermost layer of roadbed material prepared and compacted to support a pavement structure.
- 3.43 **SURFACE COURSE or SURFACING** -- One (1) or more concrete or bituminous bound of layers of a pavement placed on the base course, designed to accommodate the traffic load. The top layer, sometimes called “wearing course” is designed to resist skidding, traffic abrasion and the disintegrating effects of climate.
- 3.44 **TOWNSHIP** -- The Township of South Fayette, Allegheny County, Pennsylvania.
- 3.45 **TRAFFIC EQUIVALENCY FACTOR** -- A number that expresses the relationship between a given axle load and another axle load in terms of effect on the serviceability of a payment structure. Most often, axle loads are equated in terms of the equivalent number of repetitions of an eighteen-thousand-pound [eighteen (18) kip] single axle.
- 3.46 **TRAVEL LANE** -- A longitudinal strip of the roadway intended to accommodate a single lane of moving vehicles.
- 3.47 **UTILITY** -- A public service including but not limited to electric service, gas service, water service and cable TV service.
- 3.48 **UTILITY COMPANY** -- Any company subject to the jurisdiction of and control by the Pennsylvania Public Utility Commission or franchised cable television company.

{End of SECTION III}

SECTION IV : TOWNSHIP REQUIREMENTS

4.1 INTRODCUTION

- 4.1.1 These standards cover the requirements for construction of all Township projects whether directly constructed by (a) Contractor(s) under contract to the Township, or constructed by a land developer who in turn employs (a) construction Contractor(s).
- 4.1.2 The Rules and Regulations Manual describes and identifies procedural requirements, relative to engineering work, payment of fees, certain facility design criteria and parameters, time restraints, certain terms which will be incorporated in an agreement with the Township before the commencement of construction and other factors relating to construction projects within the Township.
- 4.1.3 Unless otherwise noted herein, all material and methods of construction shall be in accordance with the latest editions, as amended, of the Pennsylvania Department of Transportation (PennDOT) Publication 408 Specification, as well as PennDOT's for Roadway Construction (RC) Standards.
- 4.1.4 Power of the Township - The Board of Commissioners of South Fayette Township and its authorized agents, servants or employees are empowered as follows: to enter upon any lands or enclosures to cut, open, clean, maintain, repair or replace any bridges, culverts, basins, pipes, drains, ditches, watercourses or other storm water drainage collection

4.2 GENERAL REQUIREMENTS

- 4.2.1 Notification and Project Supervision – The Contractor will notify the Township one (1) week in advance of starting work. Prior to the start of construction, a pre-construction meeting will be held at the township building.

The Contractor shall supervise and direct the work and be solely responsible to see that the work is done in accordance with these standards and Township Code. The onsite superintendent will be the Contractor's representative at the site and shall authority to act on behalf of the Contractor.

The Contractor shall be fully responsible for the acts and omissions of the workers, staff, subcontractors and other organizations directly or indirectly in his employ and/or associated with the particular project.

- 4.2.2 Site Appearance – The contractor shall keep the project site free from accumulation of waste materials, rubbish and other debris resulting form the work. Upon completion of the work, the Contractor shall remove all tools, equipment and surplus material and shall leave the site in an appearance acceptable to the Township.
- 4.2.3 Dirt/Dust Control – The Contractor shall provide mud-free, dust-free areas and roads on the

worksite. The accumulation of mud and/or dirt from the excavation and other operations shall be cleaned off the surfaces to properly maintain the roadway in a condition satisfactory to the Township. If the Contractor fails to clean streets within 24 hours of notice by the Township, the Township may perform work and invoice the Contractor for all costs including time, labor and materials.

Dust control palliatives may be utilized where and when necessary and as directed by the Township to satisfactorily maintain roads, streets, berms and other traveled ways for vehicular traffic.

No construction vehicles, equipment and/or materials and supplies may be parked or stored on roadways unless approval is granted by the Township Engineer.

- 4.2.4 Time, Calendar and Weather Limitations - All construction activity shall be conducted from Monday through Friday between the hours of 7:00 a.m. and 7:00 p.m. and Saturday between the hours of 7:00 a.m. and 6:00 p.m., unless prior approval of any exception has been granted by the municipality. No types of construction, demolition, grading, hauling or transporting work shall be permitted on Sunday.

Road construction work, such as excavation and embankment, subgrade, fine grade construction, base construction or surface construction, cannot be commenced before March 15th and must be completed by October 31st of the same year. It is assumed that the weather conditions between dates will be acceptable for road construction. However, if adverse weather conditions occur between these dates, the contractor or builder must abide by the judgment of the Township Engineer in regard to permissible construction weather conditions. Work will only be permitted before or after these dates on a day-by-day basis as approved by the Township Engineer.

In addition bituminous paving mixtures shall not be placed when surfaces are wet or when the temperature of either the air or the surface on which the mixture is to be placed is forty (40) degrees Fahrenheit (F) or lower. When work is halted because of weather conditions, tonnage en-route to the project will not be accepted.

- 4.2.5 Responsibility for Compliance – The Contractor shall have the sole responsibility to comply with all federal, state and local laws, and the Township disclaims any duty to enforce any violations of such laws or inform the Contractor of non-compliance.
- 4.2.6 Violations and Penalties – It shall be unlawful for any Contractor or Public Utility Company to construct Public or Private Improvements regulated by these standards, or cause the same to be done, in conflict with or in violation of any of the provisions of these standards or the Township Code.

The Township Manager, or his designated representative, shall serve a notice of violation on the Contractor or Utility Company responsible for the violation of the provisions of these standards or of the approved plans. Such order shall direct the discontinuance of the illegal action(s) or condition(s) and the abatement of the violation.

The imposition of the penalties herein prescribed shall not preclude the Township from instituting appropriate action to prevent unlawful construction or to restrain, correct or abate a violation or to stop illegal act(s).

- 4.2.7 Stop Work Order – upon notice from the Township Manager, or his designated representative, that the work on the installation of public or private improvements is being prosecuted contrary to the provisions of these standards, such work shall immediately be stopped. The stop work order shall be in writing and shall be given to the Contractor.

Any person who shall continue to perform any work in or about a work site after having been served with a Stop Work Order, except such work that is required to remove a violation, or unsafe conditions, shall be liable to the violations and penalties set forth in these standards and the Township Code.

- 4.2.8 Responsibility for Damages - The Contractor shall be completely and solely responsible for any and all property damages, bodily injuries, financial losses and interruption of utility services that results from or are attributable to his construction activities. Restoration of all such disturbed facilities and utility lines shall be accomplished immediately after incurrence thereto.

- 4.2.9 Environmental Controls – An Erosion and Sedimentation Control Plan, approved by the Allegheny County Conservation District (ACCD) and in conformance with the Pennsylvania Department of Environmental Protection (PADEP) Resources Soil Erosion and Sedimentation Control Manual, must be on file with the Township before any construction work can begin. Additionally, the Contractor must ensure that the proper erosion control devices are installed and inspected by either the Township Engineer or the ACCD. In addition, the Township Engineer and/or Township Zoning Officer reserve the right to require the installation of additional erosion and sediment control measures, as necessary.

4.3 UTILITY NOTIFICATIONS and CONTROLS

- 4.3.1 PA OneCall - Proposed pipe lines and appurtenances may also encroach upon right-of-way occupied by pipelines or other facilities owned, operated and/or maintained by other utility companies including Equitable Gas Company, Columbia Gas of PA Inc., Peoples Natural Gas Company, Pennsylvania American Water Company, Columbia Gas Transmission Corp., South Fayette Township School District, Cable TV, Duquesne Light Company, Municipal Authority of the Township of South Fayette, AT & T, Pennsylvania Department of Transportation, Township of South Fayette and/or other utility and governmental entities. It shall be the responsibility of the Contractor to notify the appropriate representatives of those agencies in advance of performing any work therein and, to conduct all construction activities in accordance with the respective regulations appertaining thereto. The Contractor shall utilize the PA OneCall System as required by law. The PA OneCall telephone number is 1-800-242-1776.

It is the responsibility of the Contractor to contact the owners of the various utilities in the

area prior to starting and during performance of the work in accordance with PA Act No. 287 of 1972 and As Amended by PA Act 187 of 1996 known as the Underground Utility Line Protection Act.

- 4.3.2 Street Opening Permit - A street excavation permit is required for the installation of any utilities within an existing street in accordance the procedures and requirements set forth in the Township Code and/or Ordinances.
- 4.3.3 Interruption of Utility Services – All utility services to dwellings or places of business shall be maintained with a minimum of interruption throughout the construction of the contract work. No such service shall be intentionally interrupted without the approval of the respective utility company concerned, and without first giving due warning to the occupants of said dwelling or business establishment. At least three (3) days notice of an interruption in service shall be given to the Authority so that the Authority may notify its customers.
- 4.3.4 Conflicts with Existing Utilities – There may be instances where existing pipe lines are in a location where construction of the proposed work cannot reasonably proceed until the utility has been relocated. The Contractor shall make all necessary sub-surface investigations and shall locate such utility mains far enough in advance of the work so that scheduled progress is not unnecessarily interrupted.

4.4 CONSTRUCTION SITE SAFETY

- 4.4.1 Contractor Responsibility - Safety on the construction site shall be the absolute responsibility of the Contractor. The Contractor shall provide all personnel with the tools, clothing and other devices necessary for such safe practice, including appropriate waterproof clothing, respirators, protective glasses, mechanical air blowing equipment to pre-ventilate manholes and other chambers, explosive atmosphere detectors, ladders, safety harnesses, etc.
- 4.4.2 Unsafe Work - No work shall be performed under any unsafe conditions and if same is detected at any time, the Contractor shall, therefore, thoroughly instruct all personnel involved in such work so that appropriate and complete safety practices are observed at all times.
- 4.4.3 Trench Excavation - Where necessary to maintain the required trench configuration in the pipe zone, in confined areas where trench walls above the pipe zone cannot be sloped, or for the protection and safety of construction personnel, sheeting, shoring and/or bracing shall be installed in accordance with the requirements of the appertaining regulatory agencies.

Said sheeting, shoring and/or bracing shall be designed by the Contractor and shall be adequate to withstand the loads to be imposed during the construction operations. All trench supports shall also be required to provide complete safety to construction personnel working within. Trench boxes may be utilized; however, their design, fabrication, structural adequacy, handling, placement and removal shall be the responsibility of the Contractor.

Trenches at any and all locations where pedestrian or vehicular traffic hazards would result, shall not be left open during non-construction hours, unless they are suitably covered with a steel plate which is adequately anchored and reinforced to sustain pedestrian and/or vehicular

traffic loads which may be imposed. All excavations within road rights-of-way shall be closed over night and over weekends and marked with a flashing traffic marker to warn motorists and pedestrians.

All structure excavations and open trenches shall be constructed in accordance with the regulations set forth as a part of the Safety and Health Regulations for construction by the U.S. Department of Labor.

4.5 INSPECTION of WORK

4.5.1 General - All construction work involving the installation of improvements in residential subdivisions and/or land developments shall be subject to inspection by the Township. This inspection requirement shall also pertain to private improvements as defined in the Township's Subdivision and Land Development Regulations.

All completed work shall be required to meet the approval of the Township and shall be changed, modified, replaced, removed or otherwise corrected by the Contractor to such extent as directed by the Township.

4.5.2 Types of Inspections - It is the responsibility of the Contractor to ensure that all contractors give the Township appropriate notice to allow scheduling of said inspections. Township inspections shall be required on the following types of work:

- (a) All phase of roadway construction and paving;
- (b) Storm drainage installation, including: piping, catch basins, detention/retention facilities, etc.
- (c) Construction of concrete curbs, sidewalks, structures, etc.
- (d) Landscaping and Signage.
- (e) The developer shall also meet the inspection requirements of the utility companies independent of the inspection requirements of the Township.

4.5.3 Inspection Fees – Inspection fees required by Township Code, and as stipulated in the Township Fee Schedule, shall be paid in escrow by the Contractor prior to the recording of final plat.

4.5.4 Independent Inspection - At the Township Engineer's discretion, an independent inspector may be required to be present at the site on a continual basis while work is in progress. The cost of providing a full-time or part-time inspector shall be charged to the Contractor.

The inspector shall be responsible maintaining daily inspection logs and for conducting and providing certified reports for the following inspections:

- Compaction tests for all embankments and trenches;
- Slump tests and compression tests and air entertainment on all concrete work.

4.5.5 Non-Inspected Work - Any work performed without any proper inspections, as required above, will give the Township the option to hold the bond covering the portion of the improvements in violation or require removal and replacement of the un-inspected work. The

Township shall have the option to retaining part, or all, of the bond for ten (10) years after installation of improvements in violation of this chapter. It is pertinent that the Contractor insures that his/her subcontractors request all necessary inspections as well.

4.6 ACCEPTANCE of WORK

- 4.6.1 Final Acceptance of Public Improvements – The Township requires completion of all improvements before any work is accepted for maintenance by the Township. Final acceptance of facilities and improvements shall be free from defects or damage at the time of inspection.

A final walk-through to inspect improvements shall be arranged by the Contractor with the Township Manager and/or Township Engineer. Upon completion of the walk-through, the Township will provide to the Contractor a written inspection report (i.e. punchlist) outlining any and all defective work.

Any faulty or defective work shall be corrected by the responsible party within a period of thirty (30) days of the date of the Township report date. Failure by the Contractor to make the necessary repairs shall result in the revoking of all operations permits and the withholding of any future building permits and/or occupancy permits, if applicable.

Upon verification from the Township that the punchlist items have been completed, the Contractor must submit to the Township a request in writing for acceptance of the project by the Township, and provide the Township a 18 month Maintenance Bond, as outlined in these Construction Standards.

- 4.6.2 Final Acceptance of Roadways – the provisions required are similar to those outlined in Section 4.6.1.; however, the Township will not accept any roadways for maintenance until the Contractor has completed all of the requirements as outlined in the Township form entitled, “Application for Maintenance and Acceptance”.

Note that no street will be approved for acceptance by the Township after September 1st of the calendar year. All final inspections must be completed before this date. A further requirement for approval to be accepted will be a legal description for each street and associated right-of-way to be accepted. The legal description must be prepared and sealed by a registered surveyor.

- 4.6.3 Removal of Snow – The Township will only provide winter maintenance on streets that have been accepted by Board of Commissioners. It will be the responsibility of the developer or the contractor to maintain streets that have not been accepted. However, the developer may, at the sole discretion of the Township, enter into a Winter Maintenance Agreement for such snow removal.

- 4.6.4 As-Built Drawings - As-built drawings of the project shall be submitted to the Township before final acceptance by the Board of Commissioners. As-built drawings shall be prepared by a licensed land surveyor and/or engineer and submitted to the Township in the following

forms: reproducible mylar, blue print copy and diskette in the software format approved by the Township. The portion of the bond generally released at final inspection will not be released until the as-built drawings have been submitted and approved by the Township.

4.7 WORK ZONE TRAFFIC CONTROL

- 4.7.1 PennDOT Pub 203M - Where said work is to be constructed along State Highways and/or Township Streets, and where construction activities may otherwise impede normal vehicular traffic patterns on said highways or streets, the control of traffic shall be accomplished in accordance with the details set forth in PennDOT Publication 203M, the title of which is "Work Zone Traffic Control".
- 4.7.2 Traffic Plan - If requested by the Township, the Contractor shall submit a traffic control plan and procedure (conforming to PennDOT Publication 203M) to the Township for approval, prior to commencing with field construction.

4.8 SHOP DRAWINGS and MATERAILS SUBMITTALS

- 4.8.1 Submittals Required - All materials proposed to be utilized for construction are required to be approved for use by the Township, in advance of shipment to the job site. No materials shall be incorporated into the work which has not received the prior approval from the Township.
- 4.8.2 Submittal Approval - Such approvals shall be obtained by submitting two (2) copies of shop drawings, catalog cuts, materials specifications, bills of materials and/or such other printed information which clearly illustrates the relevant details of the material(s).

The Township will review, make corrections on, reject and/or approve said submitted shop drawings and materials information and will return one copy to the Contractor within fourteen (14) calendar days. The Contractor maybe required to make a re-submittal prior to installation of the material in the construction work.

4.9 BONDING

- 4.9.1 Performance Bond – the contractor will be required to post a Performance Bond, in favor of the Township, in the amount equal to one hundred and ten percent (110%) of the cost of the completions of the improvements estimated as of ninety (90) days following the date scheduled for completion by the developer/contractor.

All aspects outlined in these Construction Standards regarding Performance Bonds will be in accordance with the provisions outlined in Article VI of the township's Subdivision and Land Development Ordinance.

- 4.9.2 Maintenance Bond - as a condition of acceptance by the Township, the contractor must provide an eighteen (18) month Maintenance Bond, beginning from the date of acceptance of the improvements by the Township Engineer. The amount of the Maintenance Bond will be

equal to fifteen percent (15%) of the actual cost of the installation of public improvements. Prior to the conclusion of the eighteen (18) month period for the Maintenance Bond, the contractor shall notify the Township, requesting a final inspection of the public improvement(s).

All aspects outlined in these Construction Standards regarding Maintenance Bonds will be in accordance with the provisions outlined in Article VI of the Township's Subdivision and Land Development Ordinance.

Nothing in these Construction Standards, including services which the township may render during the period of the performance bond and/or maintenance bond, shall be construed to mean that the road has been accepted as a township road.

{End of SECTION IV}

SECTION V : STDS. for PUBLIC/PRIVATE IMPROVEMENTS

5.1 ROADWAY and PARKING LOT DESIGN

5.1.1 Classifications - The following roadway classification system shall apply to all public or private street construction or reconstruction regulated by the Township Code, the Subdivision and Land Development Ordinance, or these Construction Standards. All streets/roads shall be assigned one (1) of the classifications listed below.

- Arterial Road;
- Collector Road – either Principal Collector or Minor Collector;
- Local Road – either Principal Local or Minor Local;
- Private Road (Non-municipal).

The purpose of this system is to identify each road within the township limits and classify each street and road according to the following four (4) design criteria:

- Serviceability and Linking to Other Roads;
- Average Daily Traffic Counts;
- Roadway Design Standards;
- Pavement Rating

In order for a particular road to be assigned to one of the classifications listed above, the subject road must meet ALL of the minimum criteria established for the four (4) design criteria presented above. Please reference to *Appendix 'A'* for a listing of the streets/roads and their corresponding classifications.

1) Serviceability and Linking to Other Roads

- (a) Arterial Road – road that serves major centers of activity and/or serves the highest traffic volume corridors. Serves trips that have either one or both ends outside of the township. Arterial roads are not owned by the township, and can not be sub-classified.
- (b) Collector Road – Provides access to abutting land uses and distributes traffic between arterial, other collector or local streets/roads. Collector roads can be either owned by the township or PennDOT, and can be sub-classified as either a Principal or Minor Collector Road.
- (c) Local Road – Primarily serves abutting homogeneous land uses. Local roads are primarily owned by the township, and can be sub-classified as either a Principal or Minor Local Road.
- (d) Private Road (Non-municipal) – roads that are not owned by the township and serve fewer than five (5) residential lots.

2) Average Daily Traffic (ADT) Count – counts represent two-way traffic.

- (a) Arterial Road – provides for or carries a minimum of ten thousand (10,000) ADT with two percent (2%) or more trucks.
- (b) Principal Collector Road - provides for or carries between five thousand (5,000) and ten thousand (10,000) ADT with two percent (2%) or more trucks

- (c) Minor Collector Road - provides for or carries between one thousand (1,000) and five thousand (5,000) ADT. Provides for no truck usage except for local deliveries.
- (d) Principal Local Road – provides for or carries between four hundred (400) and one thousand (1,000) ADT. Provides for no truck usage except for local deliveries.
- (e) Minor Local Road – provides for or carries between one hundred (100) and four hundred (400) ADT. Provides for no truck usage except for local deliveries.
- (f) Private Road (Non-municipal) - provides for or carries a maximum of one hundred (100) ADT. Provides for no truck usage except for local deliveries.

3) Roadway Design Standards (Minimum)

Note: Roadway Dimensions do NOT include width of curbing.

Roadway Classification	Roadway Width (ft.) (minimum)	R.O.W. Width (ft.) (minimum)
Arterial Road	24	60
Principal Collector Road	24	60
Minor Collector Road	22	50
Principal Local Road	20	50
Minor Local Road	16	33
Private (Non-Municipal)	15	40

- 4) Pavement Rating – In order to classify as an Arterial, Principal Collector or a Principal Local Road(s), the road in question MUST have a Pavement Rating of 75 or better. Pavement Ratings for every road within the Township are provided in the December 2003 Transportation Plan prepared for South Fayette Township, by TriLine Associates, Inc. This Transportation Plan will be recertified on an annual basis by the Township Engineer.

5.1.2 Roadway Design - Specific design standard elements are provided for South Fayette Township. Elements not defined by this ordinance shall be designed in accord with the Pennsylvania Department of Transportation Design Manual 2 and Publication 70, as amended. Refer to *Figure SF-1* for Typical Roadway Grading Detail.

- 1) Design Speed - the design and posted speed for the following roads will be as follows.

<u>Roadway Classification</u>	<u>Design (mph)</u>	<u>Posted (mph)</u>
Collector	40	25 to 35
Local	30	15 to 25
Private	15	n/a

- 2) Pavement, Right-of-Way, Pavement and Shoulder Widths (feet) will be as follows.

<u>Roadway Classification</u>	<u>R.O.W.</u>	<u>Road*</u>	<u>Shoulder</u>
Collector	60	27	6 (each side)
Local	50	26	n/a
Cul-de-sac	50	45	n/a
Private	40	23	n/a

*NOTE: Includes asphalt curb width = eighteen (18) inches each side.

- 3) Horizontal Alignment - is defined as the circular arc which connects tangent lines.
- Minimum radius without super elevation for each design speed is as follows =

Design Speed	C/L Curve (ft)
25 mph	205
30 mph	300
35 mph	420
40 mph	565
45 mph	730
50 mph	930

- Reverse curves require a minimum tangent length of 75 feet with no super elevation. If super elevation is required, a tangent must be provided such that a smooth super elevation transition is provided.
- Maximum rate of super elevation = 0.04 ft./ft. for radii less than 191 feet.
- Minimum rate of super elevation = 0.02 ft./ft.
- Minimum radii with super elevation (R) = 155 ft. (e = 0.04 ft./ft.)
- Minimum length of super elevation runoff (L) = 75 > 100 ft. (e = 0.04 ft./ft.)
- Minimum length of horizontal tangent (T) = 50 ft.

4) Vertical Alignment – the following minimum K values shall be used to compute the minimum curve length. Curve length equals the algebraic difference of the tangent grades times the K value:

Design Speed (mph)	15	20	25	30	35	40	45	50
K Value - Crest Curve (feet)	8	9	15	24	36	65	77	107
K Value - Sag Curve (feet)	12	15	22	31	41	55	70	90
Maximum Grade (%)	14	14	14	12	12	12	10	10
Minimum Grade (%)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

5.1.3 Pavement Design – The purpose of these pavement design standards is to provide an adequate pavement structure for the soil support available and the traffic anticipated. The standards are also intended to provide this structure as economically as possible. Refer to Figure SF-2 for Typical Roadway Paving Sections.

- 1) Minimum design. The pavement structure will be designed to provide the following minimum thickness, unless otherwise stated in the following tables:
 - Stone Subbase: eight (8) inches, placed in two (2) lifts, atop of geotextile material.
 - Asphalt Base Course: three (3) inches BCBC or ID-2 binder
 - Wearing Course: three (3) inches ID-2; placed in two (2) lifts.
- 2) Materials. All materials will conform to the latest Pennsylvania Department of Transportation Publication 408 Standards.
 - (a) Wearing Surface - The wearing surface will be constructed with Superpave Asphalt Mix Design, HMA Wearing Course, PG 64-22, 0 to .3 Million ESAL's, 9.5 mm Mix, SRL-L.
 - (b) Binder/Base Course - The base course will be constructed with Superpave Asphalt Mix Design, HMA Binder Course, PG 64-22, 0 to .3 Million ESAL's, 19.0 mm Mix.

- (c) Subbase - The subbase will be constructed with PennDOT approved 2A, 3A or No. 4 sized aggregate material. No Slag.
 - (d) Underdrain – Perforated plastic pipe, SDR-35. *Refer to Figure SF-3.*
 - (e) Geotextile fabric – The geotextile fabric used for all subsurface drainage will be Pennsylvania Department of Transportation Class 1. Pennsylvania Department of Transportation Class 4 geotextile will used on subgrade and for any stabilization. When a pavement fabric is used, it will be Petromat or an approved equal. Other geotextile fabrics may be used when conditions warrant and with the Engineer’s approval.
- 3) Design method. The determination of the soil support and traffic intensity categories will be made by a registered professional engineer with experience in pavement design. The categories will be made using data and methods approved by the Township Engineer.
- (a) Soil support. The pavement subgrade will conform to the requirements stated in this ordinance. All subgrade will be well-compacted and non-plastic in nature. Through the use of proof-rolling (97-6D), the township will determine and/or approve the subgrade. Only quality subgrade will be accepted.
 - (b) Traffic intensity design index. A design index (DI) number shall be determined from the listing below of the maximum traffic intensity anticipated to occur during the 1st fifteen (15) year life cycle of the street.

Traffic Intensity Categories

- DI-1** = Light Traffic (Mostly passenger cars; includes most residential subdivision streets.)
- DI-2** = Medium Traffic (Light commercial traffic, and residential streets exceeding 2,000 AWDT.)
- DI-3** = Medium to Heavy Traffic (Up to 600 vehicles per day, mixed types, less than 5% maximum legal axle loads traveling the same wheel path patterns.)
- DI-4** = Heavy Traffic (Up to 600 vehicles per day, up to 25% DI-5 commercial, up to 10% maximum legal axle loads.)
- DI-5** = Very Heavy Traffic (Over 600 vehicles per day, high frequency of legal axle loads.)

- (c) Pavement Design Thickness (inches) - based upon soil support and traffic intensity categories, the design thickness for the pavement structure, excluding the subbase, shall be determined from the listings below, and approved by the Township Engineer. *Refer to Figure SF-2.*

DI-1	DI-2	DI-3	DI-4	DI-5
6”	7”	8”	9”	10”

NOTE: *Alternative reinforced concrete pavement may be submitted for approval.*

5.1.4 Intersection(s) Design -

- 1) The desirable intersecting angle is ninety degrees (90).
- 2) The minimum acceptable angle shall be as follows:
 - Collector Road = 80 degrees.
 - Local & Private Road = 75 degrees.

- 3) Distance between new intersections = 150 feet.
- 4) Distance from new driveway to intersection = 75 feet (measured from C/L of driveway to C/L of intersection). *Note: where lot frontages prohibit meeting this criterion, distance must be approved by the Township Engineer.*
- 5) New intersection areas shall have no more than four (4) intersecting roadways.
- 6) Maximum distance between intersections:
 - Residential Subdivision = 1,600 feet.
 - Commercial/Industrial development - recommended by the Township Engineer based upon the specific characteristic of the proposed development.
- 7) Level of Service - All intersections shall be designed to a Level of Service (LOS) Type 'C' or better; with a Level of Service defined by the Highway Capacity Manual, Special Report 209, as amended or replaced, published by the Transportation Research Board. Additionally, the LOS of the existing traffic movements can not be downgraded.
- 8) Leveling Area - Where the grade of any street at the approach to an intersection exceeds 5%, a leveling area shall be provided with a transitional grade not to exceed 3% for a distance of 50 feet from the nearest right-of-way line of the intersection.
- 9) Clear Sight Triangle and Sight Distance Criteria – *refer to Figures SF-4, SF-5 and SF-6.*
- 10) Traffic Control Devices - The Township Engineer must approve which type of traffic control devices (i.e. Yield Sign, Stop Sign or Traffic Signal) are to be utilized at all new intersections. In case of private construction of roadways for inclusion in the township system, the cost of engineering, materials and installation will be borne by the developer.

5.1.5 Cul-de-Sacs (Residential & Commercial) -

- 1) Refer to Section 5.1.2.2) for pavement and R.O.W. dimensions.
- 2) Minimum cul-de-sac length = 500 feet.
- 3) The Township prefers cul-de-sacs without islands, except in the instance where an intermediate turnaround is warranted, as per the Township Land Development and Subdivision Ordinance, and *Figure SF-7.*
- 4) Temporary turnarounds are permitted only to facilitate a multi-phase development and are to be constructed in accordance with *Figure SF-8.*

5.1.6 Parking Lot Areas -

- 1) Maximum Cross Slope = 5% (along length of vehicle).
- 2) Maximum Longitudinal Slope = 7% (perpendicular to vehicle).
- 3) Minimum Cross Slope or Longitudinal Slope = 2%.
- 4) Pavement Design – the pavement structure will be designed to provide the following minimum thickness, unless otherwise agreed to by the Twp. Engineer:

- Stone Subbase: 8 inches 2A Crushed Stone atop of Geotextile Material.
- Asphalt Base Course: 3 inches BCBC or ID-2 Binder.
- Wearing Course: 1.5” inches ID-2.

5.2 DRIVEWAY DESIGN

5.2.1 General Requirements & Restrictions -

- 1) All driveways will be located, designed, constructed and maintained in such a manner as not to interfere with the design, maintenance and storm drainage of the adjoining street.
- 2) Driveways shall not be constructed in such a way that creates a drainage problem on adjoining property. No catch basin(s) shall be placed where a driveway intersects a street.
- 3) If requested by the township, a traffic study will be performed, and submitted for approval, to justify the number and location of driveway(s) requested.
- 4) All driveways shall comply with the sight distance requirements listed in this ordinance.
- 5) Driveways can not be located at interchanges, ramp areas, or locations that would interfere with the placement and proper functioning of highway signs, signals, detectors, lighting, or other traffic control devices.
- 6) The number of driveways that will be permitted for a property equals one (1). Multiple driveways are permitted, but at the approval of the Township Engineer. Multiple driveways serving the same property must be separated by a minimum distance of 30 feet.

5.2.2 Design Criteria -

- 1) All driveways shall comply with the sight distance requirements listed in this ordinance.
- 2) The maximum grade on a driveway will be twelve percent (12%).
- 3) Distance to intersecting roadway or street – Refer to Section 5.1.3.4.
- 4) Paved driveways shall have a construction joint, approved by the Township Engineer, at the public street right-of-way.
- 5) All other driveway design criteria will be as defined in Chapter 441 of Title 67 of the Pennsylvania Code, Access to and occupancy of highways by driveways and local roads.

5.3 EXCAVATION, FILL AND ROADWAY CONSTRUCTION

5.3.1 General Requirements and Definitions -

- 1) All earth work will be performed in accordance with the provisions outlined herein, PennDOT Publication 408, PennDOT RC Standards and the South Fayette Township’s Land Use and Subdivision Ordinance. Specific reference is made to Section 803, entitled “Site Development” and the provisions for poor soils and steep slopes.

- 2) The Township Engineer must have proper notice prior to any earthwork activities commencing within township boundaries. In accordance with Township Code Regulations, either a Grading Permit or written approval from the Allegheny County Conservation District will be required.
- 3) Onsite Soils Technician – It will be the Contractor’s responsibility to provide and pay for an onsite soils technician, approved by the Township Engineer for the duration of the earthwork, subgrade preparation and subbase placement operations. It will be the responsibility of the technician to document the testing procedures and meet with the Township Engineer on a weekly basis to review the work performed.
- 4) Clearing and Grubbing – Unless otherwise specified, all material obtained from clearing and grubbing shall become the property of the contractor and shall be disposed of in an approved disposal site. No burning will be permitted in the Township.
- 5) Topsoil Excavation – Shall be defined as the removal of the existing surface layer of organic material which is suitable for reuse in seeding, sodding and planting. Topsoil shall be free from subsoil, stumps, roots, brush, stones, clay lumps or similar objects. All topsoil must be stripped from the proposed subgrade and stockpiled in accordance with the approved Erosion and Sedimentation Control Plan. No pavement will be permitted to be constructed on topsoil.
- 6) Slope Steepness - Maximum slope steepness of a cut slope should normally be three (3) horizontal to one (1) vertical for minimizing erosion and landslide hazard. However, soils which have a low probability of being landslide-prone shall be permitted to have a slope no steeper than a two (2) horizontal to one (1) vertical.
- 7) Cut slopes which are steeper than those specified above may be allowed under a grading permit, provided that one or both of the following is satisfied:
 - The material in which the excavation is made is sufficiently stable to sustain a slope steeper than the slope specified above for recognized soil conditions on the site. A written statement, signed and sealed by a professional engineer, stating that the steeper slope will have sufficient stability and that risk of creating a hazard will be slight, must be submitted to the Township.
 - A retaining wall or other approved support designed by a professional engineer and approved by the Township is provided to support the face of excavation.
- 8) The top or bottom edge of slopes should generally be set back from adjacent property lines or street right-of-way lines a minimum of five (5) feet, in order to permit the normal rounding of the edge without encroaching on the abutting property or street.
- 9) Borrow Material – The Contractor may be required to supply embankment material from an off-site borrow source. Such material shall be common fill, free of organic or other deleterious material and capable of supporting construction traffic and being compacted to the specified density(s). The Township Engineer, or his appointed assistant, shall have the opportunity to visit the offsite area, and inspect the proposed borrow material prior to its

use. Accordingly, this material shall not be used as embankment material until it is approved by the Township Engineer.

- 10) Blasting – No blasting will be permitted within the Township limits.
- 11) Slide-prone Soils - In special cases, when grading occurs in areas of slide-prone soil, as recognized by the soil survey or better, the Township Engineer may require special precautions from the grader. The results of all soil tests and core borings made relating to the site graded shall be submitted to the Township Engineer.

5.3.2 Embankment Placement Requirements –

- 1) All embankments to be constructed will meet with the requirements of the geotechnical report. All fill is to be clean, well-drained and compacted to optimum density. The Township Engineer reserves the right to reject any embankment placement. Guidelines for fills in the Erosion and Sediment Control Handbook for Allegheny County should be followed. One or a combination of guidelines should be used to minimize hazard, depending on site conditions and proposed grading.
- 2) Prior to beginning embankment placement operations, backfill existing depression area such as gullies, old ditch lines, stump holes, etc. to adjacent ground elevation(s). Additionally, the site area shall be benched and toe drains installed as outlined in the plans, or specified by the Township Engineer.
- 3) No fill should be placed over trees, stumps or other material which could create a hazard. These materials may be buried in natural ground where no structures will be built or hazard created. Limbs can be chipped and mixed with the topsoil.
- 4) When undercutting is not required, loosen or scarify the existing embankment foundation to a depth of eight (8) inches. Any existing pavement located more than three (3) feet below finished grade is permitted to remain, provided the pavement is broken-up to a size of not greater than one (1) square foot in size.
- 5) When constructing embankment on an existing slope, bench the slope to the width and depth as either outlined in the approved geotechnical report, or as approved by the Township Engineer.
- 6) Embankments shall be constructed of earth, rock or a mixture thereof, and deposited in successive lifts not more than eight (8) inches in thickness before compaction. Each lift shall be compacted to 95 % of the maximum dry density as defined by ASTM D-1557, or the latest revised edition. Compact the top three (3) feet of embankment area to 100 % of the maximum required dry density weight.
- 7) The size of the rock in the upper three (3) feet of the paved or building areas shall not be greater than eight (8) inches in diameter. The maximum size of the rock particles below the upper three (3) feet may be increased to 3 feet by 3 feet by 16 inches thick. These rocks shall be individually placed to permit proper compaction if fill material on all sides. In no cases shall rocks this size be placed in a full lift without soil encapsulation. No large

rocks may be placed within six (6) feet of any building, utility structure or utility line.

- 8) In no cases shall the slope of the embankment exceed a ratio of 3 horizontal to 1 vertical (i.e. 3:1), unless specifically approved by the Township Engineer.
- 9) Protection of Fill - All embankments must be pitched at the end of each day's operations to provide proper drainage. It will be the Contractor's responsibility to fully repair any damage to any compacted lift, including those lifts previously tested and approved, caused by weather, improper grading, moisture, equipment or any other cause whatsoever.
- 10) Frost – No fill material will be permitted to be placed when the fill material, the embankment foundation or the previous lifts on which it is to be placed is frozen. Any embankment foundation that has become frozen, shall be scarified, recompacted or removed to the approval of the Township Engineer.

5.3.3 Preparation of Subgrade -

- 1) The subgrade shall be well-rolled and fine graded to a tolerance to within one-tenth (0.1) +/- of the required subgrade shown on the approved plans.
- 2) The subgrade must be proof-rolled with a loaded single-axle truck carrying a gross weight of eighteen thousand (18,000) pounds and approved by the Township Engineer or Director of Public Works prior to the placement of subbase or base course material.
- 3) The Township Engineer, or approved equal, shall inspect the prepared subgrade surface to determine if any undercut excavation is required, and to what extent.
- 4) All undercut areas defined (i.e. soft, plastic or rock areas in the subgrade) shall be undercut to a minimum depth of at least one (1) foot, and be refilled with approved materials, including geotextile. All undercut methods and materials must be approved by the Township Engineer.
- 5) The subgrade is to conform to the same crown as the paved surface.

5.3.4 Placement of Subbase Materials - The material and methods of construction for this work will comply with PennDOT Publication 408, latest edition. Specific reference is made to Section 350, 'Subbase', as amended.

5.3.5 Placement of Flexible Asphalt Pavement - The material and methods of construction for this work will comply with PennDOT Publication 408, latest edition. Specific reference is made to Section 400, 'Flexible Pavements', as amended.

All wedge curbs shall be constructed at the same time and in the same manner (i.e. paving type and number of lifts) as the roadway. Refer to Section 5.6.3 of these Construction Standards.

5.3.6 Placement of Final Wearing Course in Subdivisions - In the case of new roads or streets being constructed in new subdivision plans, the final wearing course lift will NOT be placed or

constructed until such time a eighty-five percent (85%) of the housing units are completed and occupancy is granted by the Township.

If the subdivision is not 85% complete within five (5) years of the initial roadway construction date, the Township has the right to direct the contractor to place the final wearing course lift, as designed. The contractor will be required to maintain the Performance Bond (Section 4.9.1) until all paving work has been completed and accepted by the Township.

5.4 EROSION and SEDIMENTATION CONTROL

5.4.1 General Requirements –

- 1) Guidelines for minimizing erosion and sedimentation control, found in the Erosion and Sediment Control Handbook for Allegheny County, should be followed. One or a combination of guidelines should be used to minimize hazard, depending on site conditions and proposed grading. However, the Township Engineer may approve grading plans not meeting guidelines of the handbook if proposed grading will not constitute a hazard. Governmental and/or engineering reports should be used as evidence that proposed grading will not constitute a hazard.
- 2) Adequate provisions shall be made to prevent any surface or subsurface waters from damaging the following:
 - The cut face of an excavation.
 - The sloping surface of a fill.
 - Adjacent property affected by the change in the existing natural runoff pattern.
- 3) To prevent damage, grading plans should follow vegetative control methods and ditch and conduit control methods in the Erosion and Sediment Control Handbook for Allegheny County, Pennsylvania, when they fit the site. The Township Engineer may approve methods and materials recommended by governmental agencies and professional engineers when they are more suitable to the site in preventing damage.

5.5 STORMWATER MANAGEMENT FACILITIES

5.5.1 General Requirements - A stormwater management plan shall be prepared for all the new residential, commercial or industrial development as prescribed in the Township Subdivision regulations.

5.5.2 Design Requirements -

- 1) Storm Connections - all drainage ditches or storm sewers must be piped to the nearest stream or proper watercourse. No ditches or storm sewers will be permitted to drain in open lots or fields, nor will open un-piped ditches be permitted between lots. All storm drainage systems discharging from a street through a lot having frontage on the street must be extended to outlet at the rear lot line or into an existing watercourse.
- 2) Inlets Manholes and Other Structures – Unless otherwise approved by the Twp. Engineer, all storm drainage structures shall be in accordance with *Figures SF-9, SF-10 and SF-11*

or PennDOT specifications; constructed either of precast concrete or cast-in-place reinforced concrete. Unless otherwise approved, storm inlets will be similar to a Type 'M' Inlet, with a bike safety grate. Inlets greater than five (5) feet in height must have steps installed at 12 inch centers. NO masonry bricks can be used for final adjustments. NO precast concrete inlet tops are permitted; all grates must be cast iron, set to finished roadway grade elevation. The maximum spacing between inlets will be three hundred (300) feet or downstream from the high point of the street.

Any drainage structure not described in the PennDOT Publications must be detailed on the plans and approved by the Township Engineer. This shall include but not be limited to culverts, wing walls and headwalls, bridges and channels.

- 3) Storm Piping – all sewers shall be a minimum of fifteen (15) inches in diameter and will be designed at a minimum slope of two (2) percent (%). When storm piping is to be installed under roads, all piping shall be reinforced concrete piping, unless otherwise approved by the Twp. Engineer. Corrugated metal and/or plastic pipe may be used for pipe runs that are either parallel to, or off of, the street right-of-way. All storm piping shall meet the requirements of PennDOT Publication 408, latest edition, or as it may be amended.

Any storm pipe which will be in contact with mine drainage must be specifically designed for this condition. All natural springs becoming apparent during construction will be piped to the nearest storm sewer or watershed with proper drain pipes.

- 4) All ditches will be lined with riprap or an approved equal as per the Twp. Engineer, when the designed velocity exceeds five (5) feet per second.
- 5) Concrete Anchors - storm sewers on slopes of twenty percent (20%) or greater will be anchored with concrete anchors, spaced (center to center) as follows:
 - 35 feet for slope grades between 20% and 35%.
 - 25 feet for slope grades between 35% and 50%.
 - 15 feet for slope grades greater than 50%.
- 6) Pavement Base Drain - longitudinal pavement base drain, minimum of six (6) inches in diameter, will be installed on both sides of the roadway. All drains will include full-length geotextile fabric meeting the requirements of Section 735 of the PennDOT Publication 408, as amended, and will be installed as per PennDOT "RC" Standards and *Figure SF-3*. Pavement base drain installation will typically extend from structure to structure, with both ends of any given run extending into the structure.
- 7) Roof, Yard and Driveway Drains - no roof drainage from dwellings or other buildings will be permitted to be piped directly onto the roadway surface, or into the pavement base drains. Drainage from dwellings, driveways and downspouts must be connected to the storm sewer system via a non-perforated pipe. If there is no storm drainage system, a separate system, constructed with six (6) inch minimum diameter non-perforated pipe, must be provided.

- 8) **Underground Infiltration** – infiltration devices may be permitted only on sites where soil borings show that soils meets established infiltration criteria. Each design must be submitted to Twp. Engineer for review and approved

In general, the system must be designed such that no sediment or runoff is permitted to enter the device during construction. To prevent premature clogging of the device or system, a layer of sand (6” minimum) shall be placed on the bottom before the storage stone medium. Atop the storage stone shall be a filter cloth and then a layer of sand or pea gravel which can be removed and replaced whenever clogging occurs. The system must be designed to provide access for periodic inspection.

- 9) **Detention Impoundments and Facilities** – the design of either dry or wet impoundments as well as underground detention facilities shall be approved by the Twp. Engineer.

5.6 UTILITIES

- 5.6.1 **General Requirements** – the basic design parameters (i.e. minimum pipe diameter, flow and pressure requirements, etc.) for all utilities must be in accordance with – and as required by – the public franchises granted jurisdiction in the Township by the Public Utility Commission of the Commonwealth of Pennsylvania.

Any deviation from the General or Installation Requirements outlined herein must be submitted in writing to the Township and approved by the Township Engineer. Should it be determined that a violation has occurred with respect to these requirements, the entity responsible for the offense will have 30 days to fully address the violation, or face possible fines from the Township.

- 5.6.2 **Installation Requirements** –

- 1) All utilities will be located in the public right-of-way, but outside the pavement section or within a 10’ utility easement just outside the right-of-way. All utilities will be located minimum of three and one-half (3.5) feet behind the back of the curb.
- 2) No utilities may be installed under proposed sidewalk, unless approved by the Township Engineer.
- 3) All utilities and/or conduits must be installed prior to the placement of any pavement. All final inspections of the utilities must be conducted by appropriate agencies prior to the applying of any wearing course.
- 4) When utilities must cross the pavement, they will do so at an angle perpendicular to the longitudinal direction of pavement. If future utilities are forecast to cross the pavement section, the developer will install metal or plastic conduit pipe to accommodate such utilities.

- 5.6.3 **Placement Requirements with Other Utilities/Facilities** – No contractor, utility company or property owner is permitted to install or replace any utility directly above or beneath an existing utility/facility.

During installation and/or replacement operations, all utilities shall be spaced a minimum of 18” from the vertical plane of the existing utility/facility.

The minimum distance between an individual utility service - required to be placed perpendicular to another main service line – and the service main itself, shall be no closer than six (6) inches from the existing utility/facility.

5.6.4 Fire Hydrants – The maximum distance between fire hydrants shall be 600 feet. In all cases where the subdivision and/or plan is to be serviced by a water line, it is the contractor’s responsibility to arrange a meeting between the Township and the Water Authority, to determine the final location of such hydrant(s). The developer shall pay costs of the hydrant(s) as charged to the Township by the Water Authority.

5.6.5 Trench Repairs – All backfill and asphalt repaving work for trench repairs is to be conducted in accordance with *Figure SF-12*.

5.7 ROADWAY APPURTENANCES

5.7.1 Guiderail – The use of guiderails will be avoided except in the case where site conditions warrant such safety devices. Earthwork and landscaping will be done in such a manner as to eliminate any unsafe conditions or hazards near the roadway.

If required, guiderail installation will be in accordance with the most recent version of PennDOT Publication 408 and their RC Standards.

When guiderails are required in a residential subdivision, consideration will be given to the use of pretreated wooden posts and railings and/or corten weathering steel railings.

5.7.2 Sidewalks – The location of where sidewalks are to be required will be in accordance with the Township’s Subdivision and Land Development Ordinance.

Sidewalks shall be located in line with existing sidewalks on adjacent lots or, where none exists, shall be located a minimum of two (2) feet from the edge of any curb or paving where practical. The grade and paving of the sidewalk shall be continuous across driveways.

All sidewalks shall be concrete and are to be constructed in accordance with *Figure SF-13*. Alternate designs may be submitted to the Township Engineer for approval.

5.7.3 Curbs and Shoulders - The standard curb for local roads will be a bituminous wedge curb eighteen (18) inches wide and six (6) inches in height. All wedge curbs shall be constructed at the same time and in the same manner (i.e. paving type and number of lifts) as the roadway.

Concrete curbs may be constructed where conditions warrant their use, or when directed by the Township Engineer. Concrete curbs and gutters will be constructed in accordance with PennDOT RC Standards.

When, as directed by the Township Engineer, it is necessary to construct roadway shoulders, either a PennDOT Type 1 or Type 3 shoulder is to be constructed. All shoulder construction will be in accordance with PennDOT RC-25 Standards.

- 5.7.4 Curb Cut Ramps - Curb cut ramps will be required at all intersections where sidewalks are present and at each other locations deemed necessary by the Township Engineer. Curb cut ramps will be designed as a sidewalk section accordance with Pennsylvania Department of Transportation Design Manual 2, Chapter 6.
- 5.7.5 Crosswalks - Crosswalks may be required wherever necessary to facilitate pedestrian circulation and to give access to community facilities such as parks, playgrounds, schools or public buildings.
- 5.7.6 Pedestrian Signals - Pedestrian signals will be required where the safety of the pedestrian warrant such devices. When pedestrian signals are required, they will be designed and constructed in accordance with the current American Association of State Highway and Transportation Officials standards.
- 5.7.7 Street Lighting – Street lighting will be required at all new intersections with existing roads and in areas described in the Township’s Subdivision and Land Development Ordinance. In subdivisions, the developer will be required to prepare and submit a street lighting plan to Allegheny Power Company. All street lighting will conform to the standard Pennsylvania Department of Transportation requirements, and as approved by the Township Engineer.
- 5.7.8 Street Signs – In new subdivisions, after a street is completed to the acceptance of the Township, the developer shall request the township to install the required street signs. Street signs will include but not be limited to street name signs, stop signs, speed limit signs and advisory signs. The developer will also provide for any street markings, such as stop lines and crosswalks.

As outlined in the Township’s Subdivision and Land Development Ordinance, the developer will be required to pay all costs associated with the purchase and installation of the referenced signs(s). After dedication, the sign(s) will then become the responsibility of the Township to maintain.

- 5.7.9 Retaining Walls - If a retaining wall is constructed to satisfy a requirement of this chapter, a building permit, as provided for by other municipal regulations, shall not be required. The grading permit will apply to the retaining wall, and the requirements for inspection, etc., as stated herein will be complied with.

Retaining walls must be constructed in accordance with sound engineering practice. The plans submitted for approval shall bear the seal of a professional engineer.

The backfilling of retaining walls and the insertion of subterranean drainage facilities shall be done strictly in accordance with the provisions of this chapter and the appropriate municipal specifications.

In general, where a wall is replacing an exposed slope, the vertical face of the wall shall be three (3) feet back from the adjoining property. A special exception to this requirement may be applied for and granted by the Code Enforcement Officer if it can be satisfactorily demonstrated that such a modification is necessary to ensure normal use of the property (i.e., for a side-line driveway).

The requirement of this subsection may also be set aside when the proposed retaining wall is a joint venture between adjacent property owners and appropriate documents so stating are filed with the application for the permit.

{End of SECTION V}

SECTION VI : APPENDIX 'A'

Roadway Classifications

Note : Roads NOT owned by the Township are listed in italics

1. **Arterial Roads:** (*ADT > 10,000; Rd. Width = 24 ft.; Pvmnt. Rating > 75*)
 - a) *State Route 079*
 - b) *State Route 050*

2. **Principal Collector Roads:** (*5,000 < ADT < 10,000; Rd. Width = 24 ft.; Pvmnt. Rating > 75*)
 - a) *Alpine Road*
 - b) *Battleridge Road*
 - c) *Boyce Road*
 - d) *Hickory Grade Road (Rte 50 to Alpine Road)*
 - e) *Millers Run Road (Rte 50 to Rte 978)*
 - f) *Presto Sygan Road*
 - g) *Old Pond Road*
 - h) *Route 978*
 - i) *Twin Ponds Lane*
 - j) *Union Avenue Ext.*
 - k) *Washington Pike*

3. **Minor Collector Roads:** (*1,000 < ADT < 5,000; Rd. Width = 22 ft.; Pvmnt. Rating > 50*)
 - a) *Bursca Drive*
 - b) *Cemetery Hill Road*
 - c) *Mayview Road*
 - d) *Millers Run Road (from Rte 978 to County Line)*
 - e) *Oakridge Road*
 - f) *Old Oakdale Road*
 - g) *Robinson Run Road*

4. **Principal Local Roads:** (*400 < ADT < 1,000; Rd. Width = 20 ft.; Pvmnt. Rating > 75*)
 - a) *Dutch Hill Road*
 - b) *Fawcett Church Road*
 - c) *Hunting Ridge Trail*
 - d) *Marshall Road*
 - e) *Meeting House Road*
 - f) *Mohawk Road*
 - g) *Seminary Avenue*
 - h) *Scotch Hill Road*

5. **Minor Local Roads:** (*100 < ADT < 400; Rd. Width = 16 ft.; Pvmnt. Rating > 50*)
 - a) *ALL roads within residential subdivisions*
 - b) *ALL roads NOT listed in the classifications presented above, including, but not limited to:*
 - *Bowman Road*
 - *Cecil Sturgeon Road*
 - *Coal Pit Road*
 - *Hickory Grade Road (from Alpine Road to County Line)*
 - *Morgan Hollow Road*
 - *Parks Road*
 - *Sygan Road*

SECTION VII : APPENDIX 'B'

General Conditions

1. **DEFINITIONS:** The following terms and expressions used in the Contract Documents shall be understood as follows:

Wherever the word "Contractor" is used in this contract, it shall be understood to mean the party of the second part of the agreement, or the second party's legal representative.

Wherever the word "Owner" is used in this contract, it shall mean South Fayette Township, Pennsylvania, or its legal representative acting in an authorized capacity.

Wherever the word "Engineer" is used in this contract, it shall be understood to mean the duly appointed Township Engineer of South Fayette Township, for the work designated in this contract, acting within the scope of the duties entrusted to him, and as stated in the Contract.

Wherever the words "Inspector" or "Resident Engineer" are used, they shall be understood to mean the representative of the Engineer assigned to the inspection of materials and workmanship under this contract.

Wherever the word "Subcontractor" is used, it shall be understood to mean persons, firms, or corporations having a direct contract with the Contractor and including those who furnish materials worked to a special design in accordance with the Specifications but not including those who merely furnish materials not so worked.

Wherever the words, "Plans" or "Drawings" are used, they shall be understood to mean the Contract Drawings and Designs accompanying the Specifications and such detail and supplementary drawings as may be furnished from time to time.

Wherever in the Specifications or upon the Drawings, the words "as directed" "as required," "as permitted" or words of like effect are used, it shall be understood that the direction, requirement, or permission of the Engineer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import, shall mean approved by, acceptable or satisfactory to the Engineer.

2. **ENGINEERS ROLE:** All work under this contract shall be done to the satisfaction of the Township Engineer, who shall in all cases determine quality, acceptability, and fitness of all work, materials, equipment and appliances, which are to be paid for there under. In the event any dispute arises with reference to the true meaning or intent of the drawings, specification and provisions of the contract, in every such case the dispute or claim shall be submitted to the Owner through the Engineer for decision. The award or decision thereon shall be the final decision and binding on all parties hereto.

The Engineer shall in all cases determine the amount, quality, and acceptability of all work and materials which are to be paid for under the Contract, and shall have authority to reject all work and materials which do not conform to the Contract requirements. He shall have authority to halt the Work whenever such action may be necessary to secure the safe and proper execution of the Contract.

In every case, the Engineer's decision shall be final and binding and shall be a condition precedent to the right

of the Contractor to receive any money there under, in case of a dispute.

3. **CONTRACT AND CONTRACT DOCUMENTS:** The Plans, Specifications, and Addenda, form a part of the contract and the provisions thereof shall be binding. The Table of Contents, Titles, Headings, Running Headlines, etc., contained herein, and in said Documents, are solely to facilitate reference to various provisions of the Contract Documents and in no way affect, limit or amplify the interpretation of the provision to which they refer. Whenever the term "Contract" or "Contract Documents" is used, it shall mean and include these Plans, Advertisement for Bids, Information for Bidders, Bid Form, Agreement, Bonds and Addenda. In case of any conflict or inconsistency between the provision of the Contract and those of the Specifications, the provision of the Contract shall govern.

4. **LINES AND GRADES:** If necessary, the Township will supply the Contractor initial horizontal and vertical control. The Contractor must carefully preserve bench marks, reference points and stakes, and in case of destruction or removal, he will be charged with resulting expense arising out of any mistake that may be caused by their dislocation.

The Contractor shall employ a competent Civil Engineer or Surveyor satisfactory to the Township to lay-out the work from the bench marks, points and lines noted on the drawings and established at the site. The Engineer employed shall be a Registered Professional Civil Engineer or Registered Professional Surveyor and his name and registration number shall be submitted to the Engineer.

5. **WORKING DRAWINGS:** The Plans furnished prospective bidders are intended to give the complete scope and details of the proposed work.

6. **CONTRACTOR THOROUGHLY INFORMED:** The Contractor hereby declares that he has read each clause in the Contract Documents and hereby agrees that he will comply with all terms herein set forth; also that he has thoroughly examined the Contract Plans for the work to be done under this Contract; that he has examined the location of the proposed work, and fully understands the character of the work to be done under this Contract.

7. **MATERIALS AND WORKMANSHIP:** All materials, equipment, and workmanship, unless otherwise specified, shall be the best of their respective kinds, and be in conformity with the general intent and requirements of the Contract Documents and within the contract time specified. If at any time before the commencement or during the progress of the work, the materials and workmanship appear to the Engineer as insufficient or improper for securing the quality of the work required, he may order the Contractor to improve their character and the Contractor shall conform to such orders.

8. **RIGHT OF INSPECTION:** The Contractor shall permit the Engineer, his assistants, inspectors, and properly authorized persons to enter upon and have free access to the Work at all times, and all places of manufacture where materials for the work are being made, and for the purpose of giving lines and elevations and to measure and inspect the work or materials.

9. **LABOR SKILLS:** The Contractor shall employ only competent and skilled men and first-class mechanics on all parts of the Work, and shall in his absence, a responsible and qualified representative in charge, duly authorized to receive and execute all requests of the Engineer.

10. **EMPLOYMENT OF LABOR:** The Contractor, in the construction of the Work, shall give employment preference to local residents, insofar as possible, providing such local residents are qualified and prove satisfactory to execute the same economically and to advantage. Superintendents, foremen and skilled

labor regularly employed by the Contractor or Subcontractor are exempt from this provision. If requested, the Contractor shall furnish the Engineer with a list of all employees engaged upon the Work, their permanent addresses, and a statement of length of time each has been employed.

11. ACCIDENT PREVENTION: Precautions shall be exercised at all times for the protection of persons and property. The safety provisions of applicable laws of Pennsylvania and the Municipal Building and Construction codes shall be observed. Machinery and equipment and other hazards shall be guarded in accordance with the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America to the extent that such provisions are not inconsistent with applicable laws or regulations.

12. FIRST AID: The Contractor shall provide and keep upon the Work, at each of the locations where the Work is being performed, a completely equipped first aid kit and shall provide ready access thereto at all times when men are employed on the Work. He shall designate a competent person or persons to be in charge of first aid work and shall cause such person or persons to receive proper instruction therein.

13. CONTRACTOR'S INSURANCE: The Contractor shall not commence Work under this Contract until he has obtained all the insurance required under this Paragraph, and such insurance has been approved by the Owner, nor shall the Contractor allow any subcontractor to commence Work on his subcontract until all similar insurance required of the subcontractor has been so obtained and approved.

a) Compensation Insurance: The Contractor shall take out and maintain during the life of this Contract at his own expense, Workmen's Compensation Insurance for all of his employees employed at the site of the project. If any work is sublet, the Contractor shall require the Subcontractor similarly to provide Workmen's Compensation Insurance for all of the latter's employees, unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in hazardous work under this Contract at the site of the project is not protected under the Workmen's Compensation stature, the Contractor shall provide, and shall cause each subcontractor to provide, adequate insurance for the protection of his employees not otherwise protected.

The Contractor shall accept insofar as the Work covered by the Contract is concerned, the provision of the Workmen's Compensation Act of 1915 and any supplements or amendments thereof, including any which may hereafter be passed, and shall insure his liability there under, or file with the Owner, a certificate of exemption from insurance from the Bureau of Workmen's Compensation of the Department of Labor and Industry.

b) Public Liability and Property Damage Insurance: The Contractor shall take and maintain during the life of this Contract at his own expense such Public Liability and Property Damage Insurance as shall protect the Owner and Contractor and any subcontractor performing work covered by this Contract, from claims for damages for personal injury, including accidental death, as well as from claims for property damage, which may arise from operations under this Contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them. The amounts of such insurance shall be as follows:

Public Liability Insurance in an amount not less the \$500,000 for injuries, including wrongful death to any one person, and subject to the same limit for each person, in an amount not less than \$1,000,000 on account of one accident.

Property Damage Insurance in an amount not less than \$500,000 for damages on account of any one

accident, and in an amount not less than \$1,000,000 for damages on account of all accidents.

c) **Fire, Lighting & Extended Insurance:** In addition to the aforesaid insurance the successful bidder shall also take out and maintain during the life of the Contract at his own expense, insurance against loss or damage by fire or lightning and those perils covered by the extended coverage endorsement upon the entire Structure or Work covered by the Contract, which insurance shall be equal to one hundred percent (100%) of the insurable value thereof, including but not limited to items of labor and materials connected therewith whether in or adjacent to the Structure or Work insured, materials in place or to be used as a part of the permanent construction including, surplus materials, shanties, protective fences, bridges or temporary structures, miscellaneous materials, and supplies incident to the Work and such scaffolding, staging, door, forms and equipment as are not owned or loaned by the successful bidder, the cost of which is included in the cost of the Work. This incurrence may exclude, and therefore need not cover, any tools owned by mechanics, and tools, equipment, scaffolding, staging, doors and forms owned or rented by the successful bidder, the capital value of which is not included in the cost of the Work, or any cook shanties, bunk houses, or other structures erected for housing the workmen.

d) **Special Hazards Insurance:** The following special hazards shall be covered by a rider or riders to the Public Liability and Property Damage Insurance policy or policies herein required to be furnished by the Contractor or by separate policies of insurance in amount at his own expense, as follows:

Blasting: Where blasting operations are performed under this Contract the minimum limit of the protection required is five hundred thousand dollar (\$500,000) for personal injury or property damage on account of one accident and one million dollars (\$1,000,000) total.

Explosion: Equipment under high internal pressure, such as compression tanks, boilers, air compressors, etc., used in executing this Work shall be covered with boiler insurance in limits of not less than five hundred thousand dollars (\$500,000) including personal injury for damages on account of one accident and one million dollars (\$1,000,000) total.

e) **General Insurance:** Automobiles, trucks, and tractors and similar equipment shall be covered by public liability and property damage in amounts as specified under Subparagraph (b) of this Paragraph. The Contractor shall furnish the Owner with satisfactory proof of coverage in the insurance required.

14. **RESPONSIBILITY FOR ACCIDENTS AND DELAYS:** The Contractor shall be deemed and considered an independent Contractor in respect to the Work covered by the Contract, and shall assume all risks and responsibilities for casualties of every description in connection with the Work. The Contractor shall alone be liable and responsible for, and shall pay for, any and all loss or damage sustained by any person or party either during the performance or subsequent to the completion of the Work under this Agreement, by reason of injury to persons and damage to property, buildings and adjacent work, that may occur either during the performance of the Work covered by this Contract or that may be sustained as a result of or in consequence thereof, irrespective of whether or not such injury or damage be due to negligence or the inherent nature of the Work.

15. **RESPONSIBILITY FOR WORK LOSS AND DAMAGE:** The Contractor shall assume all responsibility for the Work, and shall take all precautions for preventing injury to property in or about the

Work, shall bear all losses resulting from that amount of character of the Work being different, or because the nature of the premises in or on which the Work is done is different, from what was estimated or expected, or on account of the weather, elements or other similar causes; and he shall assume the defense of and indemnify and hold blameless the Owner, its officers and agents from all claims, relating to any violations of law by the Contractor, his subcontractors, or his employees, and to invention, patents and patent rights used during the Work, or to injuries to any person, corporation, or property received or sustained by, or in consequences of any improper materials or implements of labor used therein, or defect in the apparatus, ways, works, machinery or plant, or to any act, omission or neglect of the Contractor, or agents, of employees therein.

16. RESPONSIBILITY FOR DAMAGE TO WORK OF OTHER CONTRACTORS: The Contractor shall assume all responsibility for and shall take all precautions for preventing injury to work completed or in progress by other Contractors in or about the Work. He shall cover and protect such work from damage, and all injury to the same before the completion of this Contract shall be made good by him. In the event this is not done immediately, the Engineer is hereby authorized to determine and deduct the cost of the damage from the partial and final estimates.

17. DAMAGES TO BE PAID: The Contractor shall pay to the Owner all expenses, losses, and damages as determined by the Engineer incurred by the Owner in consequence of any defect, omission or error of the Contractor, his agent, subcontractors or employees, or the making good thereof. The Engineer is hereby authorized to deduct the same, as determined from the partial and final estimates.

18. CONDITION OF WORK SITE: The Contractor shall maintain the site in a neat condition. No undesirable accumulation of debris or materials shall be allowed. On or before the completion of the Work, the Contractor shall, without additional compensation, excepting as otherwise specifically directed or permitted in writing, tear down and remove all temporary buildings and structures built by him; shall remove from the premises all lumber, shoring, debris, surplus materials of every kind, plant, machinery and other construction equipment installed by him; shall effectively remove and dispose of in a satisfactory manner all sanitary facilities or accumulations of any organic refuse from any ground occupied by him within the limits of the property of the Owner, or of private persons or corporation, and the adjacent property which may have been affected by his operations, shall leave the streets and sidewalks in a neat and satisfactory condition. The Engineer may have such work done at the expense of the contractor if he shall refuse to comply within three (3) days, with an order in writing to this effect.

19. OCCUPATION OF PRIVATE LAND: The Contractor shall not, without consent from the proper parties, enter or occupy with men, materials, or equipment, any land outside of the rights-of-way or property of the Owner.

20. WORK IN BAD WEATHER: During freezing, stormy or inclement weather, no work shall be done except such as can be performed satisfactorily and in a manner to produce acceptable results.

21. VIOLATION OF CONTRACT: If the Contractor shall abandon the Work, or in the opinion of the Engineer, shall neglect or fail to execute the Work with promptness and diligence, or unreasonably delay the Work so that it may not be completed within the contract time; or if he shall neglect or refuse to furnish suitable materials in place of any which may be rejected by the Engineer as unsuitable, or shall refuse or neglect to furnish and supply a sufficiency of properly skilled workmen and necessary equipment or either; or if he shall execute any of the Work improperly, carelessly, or in bad faith, and refuse to remove any of the Work which, in the opinion of the Engineer, is defective and unsuitable, and to replace it with Work that is in accordance with the Contract requirements; or, if the Contractor shall make default in the performance of any of the terms, conditions, and provisions of the Contract; then and in that event the Owner may notify the

Contractor in writing to remedy his neglect or default and require said Contractor to comply with the terms, conditions and provisions of the Contract which he is violating. If said notification be without effect twenty-four (24) hours after delivery thereof, then and in that event the Owner shall have the right to declare the Contractor in default and notify' him to discontinue all work or any part thereof; and thereupon the Contractor shall discontinue work or any part thereof; and thereupon the contractor shall discontinue such work or such part thereof as the Owner may designate, whereupon the Owner may be contract or otherwise, as it may determine, complete the Work or such part thereof and charge the entire expense of completing the Work, or part thereof to the Contractor; and for such completion the Owner for itself or its Contractors may take possession of an use or cause to be used in the completion of the Work or part thereof any such materials, equipment, machinery, implements, and tools of every description as may be found upon the site of said Work.

All expenses incurred under this section may be deducted and paid for by the Owner out of any money then due to become due the Contractor under this Contract, or any part thereof and in such accounting the Owner shall not be held to obtain the lowest figures for the Work of completing the Contract or any part thereof, or for insuring its proper completion but all sums actually paid therefore shall be charged to the Contractor.

In case the expenses so charged are less than the sum which would have been payable under this Contract, if the Work had been completed by the Contractor, the Contractor shall be entitled receive the difference; and in case such expenses shall exceed the said sum, the contractor shall pay the amount of excess to the Owner upon completion of the Work without further demand being made therefore.

22. VERBAL STATEMENT NOT BINDING: It is understood that the written terms and provisions of this Agreement shall supersede all prior oral statements of the Owner, Engineer, or other representatives of the Owner and such statements shall not be effective or be construed as entering into or forming part of, or altering in any way whatsoever, the written Agreement. No change herein shall be effective until the same has been approved by the Owner and transmitted in writing through the Engineer to the Contractor.

23. SUITS AND CLAIMS: The Contractor agrees to fully indemnify, protect, and save harmless the Owner, its officers or agents from any and all liability, and from all suits and actions of every kind and description brought against them, or any of them, for or on account of any loss sustained by any person or party either during the performance or subsequent to the completion of the Work covered by this Agreement, by reason of injuries to person and damage to property, buildings, or adjacent work, that may occur during the performance or subsequent to the completion of said Work, or that may be sustained as a result or consequence thereof, irrespective of whether or not such injuries or damage are due to negligence or to the inherent nature of the Work. The term "Work" as used herein shall be deemed to include Work of repair or maintenance performed under this Agreement, irrespective of whether or not the same is required by the terms herein. The Contractor further agrees that in the event of such suits or claims being brought against the Contractor or the Owner, or both, he will, before the final estimate is paid to him, furnish bonds or security approved by a representative of the Owner, indemnifying the Owner against all claims, suits, expenses and damages for or on account of the injury of any persons or damage to any property in connection with the performance of the Work included in the contract. The amount of such security shall be sufficient to cover the liability under such suits or claims pending, filed, or on which notice is given or indicated.

24. TESTS AND STANDARDS: The contractor shall furnish all instruments, appliances and labor for making tests as called for in the specifications. All subsequent adjustments required as a result of tests shall be made by the contractor. If any of the materials and/or equipment fails under test to meet the requirements of the specification or to function properly, the defects shall be rectified by readjusting or removing and

replacing the faulty materials and/or equipment at the sole expense of the contractor, until other tests or requirements establish the acceptability of the materials and/or equipment.

25. SANITARY REQUIREMENTS: The contractor shall provide for all persons employed on the work, suitable sanitary conveniences, properly secluded from public observation. The location, type of construction and method of disposal of wastes shall be subject to the approval of the Township Engineer and such precautions of the community in the vicinity of the construction work. Potable drinking water shall be supplied on the work by the contractor.

26. PROTECTION OF UTILITY LINES: The Contractor assumes the responsibility of contracting the South Fayette Municipal Authority, PA Water Company, Gas Company, Power Company, Telephone Company, A,T & T Cable Company and any other utilities determined by the contractor to be within the project area. Any and all costs incurred in the temporary relocation and the correction of damage to any utility, including materials completely in-place are to be borne by the contractor. The contractor must comply with PA "One-Call" requirements.

The contractor must notify the PA "One Call" System at 1-800-242-1776 at least three working days prior to the commencement of any work. The contractor is to make the One-Call every ten days until the project is completed. The One-Call verification must be submitted to the Engineer. Also it is the sole responsibility of the contractor to notify the owner of any utility located within the work area that is not a member of the One-Call System.

27. TRAFFIC CONTROL: Contractor is responsible to coordinate all work with South Fayette Township Department of Public Works and shall provide all signs and personnel required to direct and control traffic around and by the work areas, consistent with OSHA regulations, MUTCD standards, and PennDOT standards. Any detour routes must be approved by South Fayette Township before being implemented. All temporary traffic signs and safety barricades, as well as the placement of same, must be approved by the Township Engineer. Work areas must be protected after working hours and safety lights must be maintained to mark the areas throughout the sundown hours. If requested by the Twp. Engineer, a Maintenance and Protection of Traffic Plan must be submitted to the Municipality for approval prior to issuance of Notice to Proceed. Approval of this plan shall give it full status as a contract document.

Methods employed will be as specified in the Penn DOT Publication No. 203, entitled "Work Zone Traffic Control" and/or Penn DOT Publication No. 203A, Short Term Work Zone Traffic Control". Traffic control on all Township roadways will be done in such a manner to allow passage of one lane of traffic at ALL times. The cost for traffic control will be considered incidental to the cost of construction.

SECTION VIII : APPENDIX 'C'

Instructions to Bidders

- I. **GENERAL:** The following instructions are for the information and guidance of bidders and relate to the proper form and method for the submission of bids and of the surety to accompany the same, and certain information in conformity with which all proposals and bids shall be submitted and provisions relating to the letting of the contracts. All information in the Public Advertisement shall be considered as part of the Instruction to Bidders.
- II. **PRE-QUALIFICATION OF BIDDERS:** If specified in the contract, all bidders must be pre-qualified by the Pennsylvania Department of Transportation and shall submit certification of prequalification along with Bid Form. Furthermore, subcontractor(s) prequalification certification number must be received fifteen (15) calendar days prior to the subcontractor(s) start of work.
- III. **EXAMINATION OF CONTRACT DOCUMENTS:** The bidder shall examine all contract documents before submission of bids. If, before submission of bids, a bidder shall find any discrepancy, omission, contradiction or ambiguity in the contract documents or a provision which is in conflict with a federal or state law or regulation or with a law or ordinance of Township of South Fayette or other local authority, he shall at once notify the engineer. If the contract documents are in error or require correction or clarification, an official supplement to the contract documents will be issued, copies of which will be sent to all prospective bidders. Such supplements shall be signed by the bidder and submitted with the bid.
- IV. **VISIT TO SITE:** Before submitting a proposal, each Bidder shall visit the location(s) of the proposed work and examine all of the existing conditions, and in general, determine to his own satisfaction the character and extent of the work to be done under this contract. The bidder shall make himself familiar with the specifications, information, site condition, etc., before submitting his bid in order that no misunderstanding shall exist in regard to the nature and character of the work to be done. No allowance will be made for any claim that a bid was based upon incomplete information as to the nature and character of the site or the work involved.
- V. **WITHDRAWAL OF BIDS:** No bid will be allowed to be withdrawn after it has been deposited with the owner, before the bid date as listed in the contract.

In case a contract for which bids are received is not awarded within the time specified after the opening of bids, any bidder shall have the right to withdraw his bid upon written application to the township.

- VI. **ACCEPTANCE OR REJECTION OF BIDS:** South Fayette Township reserves the right to reject any or all proposals; to accept any bid; to waive any informality in bids received; or to withhold final award on the contract. Bids which reflect an unbalanced contract price when unit price extensions are made may be rejected for this reason alone.

The owner also reserves the right to reject the bid of a bidder who has previously failed to perform properly or complete on time, contracts of a similar nature, or who does not have the necessary qualifications to perform the contract,

However, it remains the primary intent and purpose of South Fayette Township to award the contract to the lowest "responsible" bidder, based on the evaluation of the alternates within the contract documents and specifications.

- VII. QUESTIONS & ADDENDA:** During the bidding period, bidders may be furnished addenda for additions to or changes on the plans and/or in the Specifications, such addition and/or changes shall become a part of the contract documents.

Any and all questions regarding this bid must be submitted in a written form, and faxed to the Township Municipal Office, attention the Township Engineer. Questions must be received at least one (1) week prior to the bid date, so that answers may be distributed uniformly to all bidders.

- VIII. SUBMISSION OF BIDS:** No bid will be considered that is not properly completed and signed in writing by the bidder or an authorized agent, and which is not accompanied by proper security. All bids must be delivered in a sealed envelope to the address stated in Bid Advertisement

No bid will be considered complete which does not contain a price for each unit as well as the total cost based upon the estimated quantities. Unit prices are submitted for the purpose of additions or deductions and alternate evaluation, in the event the scope of the work is changed from that originally described in the contract.

- XI. BID SECURITY:** Each bidder is required to deliver with his bid a Bid Bond or Certified Check in the amount equal to ten percent (10%) of his bid, payable to the order of South Fayette Township, as payee, or obligee, which shall be forfeited as liquidated damages if the bidder shall fail to execute the contract as required by law and furnish bonds as specified within ten (10) days after notification of award of the contract.

The bid bonds of three lowest bidders will be held until the contract is signed and approved, after which time they will be returned within three (3) days. Checks of other bidders will be returned within ten (10) days from the date bids are opened.

- X. PERFORMANCE BONDS:** The bidder, at his own expense, shall procure a Performance Bond in the amount equal to one hundred and ten percent (110%) of the contract price, for the faithful performance of the contract in accordance with the terms and provisions established. The cost of the bonds is incidental to the contract.

- XI. COMPLETED AGREEMENT:** Within ten (10) days after the contract has been awarded, the bidder to whom a contract is awarded shall execute and deliver to South Fayette Township, a signed and completed contract, post the required bonds and deliver the specified certificates of insurance.

In case the bidder shall fail to do so, he will be deemed to have abandoned the agreement and the Township may thereupon re-advertise or otherwise award the agreement and recover the losses

sustained by such abandonment out of the bidder's surety or certified check.

XII. MINIMUM WAGE RATE: The minimum wage rates for each craft or classification of all workmen needed to perform the work during the anticipated term hereof shall be governed by the "Pennsylvania Minimum Wage Act of 1968" (Act No. 11) as amended and the regulations issued pursuant thereto. The contractor's attention is directed to this statute so that the applicable provisions of the Act shall be strictly adhered to in the work. Failure to adhere to the applicable provisions of this Act shall be sufficient grounds for the Township to declare the agreement in default or to terminate the agreement.

XIII. MAINTENANCE BONDS: Upon completion of the work and prior to the final payment, a maintenance bond shall be furnished by the contractor to the township as a guarantee against defective workmanship and materials.

The financial security shall be in an amount equal to twenty five percent (25%) of the final contract value and shall be valid for a period of two (2) years. The cost of the bonds is incidental to the contract.

XVI. INSURANCE REQUIREMENTS: The bidder to whom the contract is awarded shall take out and maintain during the life of the contract, adequate Workman's Compensation Insurance for all employees employed on the project and, in case any work is sublet, the contractor shall require the subcontractor to provide Workmen's Compensation Insurance for the latter's employees unless such employees are covered by the protection afforded by the contractor.

The successful bidder shall also take out and maintain for the life of the contract any Public Liability and Property Damage Insurance as shall protect the owner, the contractor and any subcontractor performing the work covered by the contract from claims for damages for personal injuries, including wrongful death, as well as claims for property damages which may arise from operations under the contract, whether such operation be by himself or by any subcontractor or anyone directly or indirectly employed by either of them. Coverage limits are a minimum of \$500,000/\$1,000,000.

The form of the Insurance and the Surety thereon shall be satisfactory to the owner. The amount of the Insurance shall not be less than that specified in the contract documents.

Three (3) copies of the Certificate of Insurance shall be furnished to the Owner by the contractor.

XV. DELAYS IN COMPLETION OF THE CONTRACT: The contractor shall not be charged with any excess cost when the contract delay is due to unforeseeable causes beyond the control, and without the fault or negligence, of the contractor, such as Acts of God. In such instances, the contractor shall give immediate written notice to the township. Should the township agree with the contractor's assessment, the township will extend the contract for a reasonable period of time based upon the causes of delay. Such extension of time, however, shall not entitle the contractor to any additional compensation as a result of said delays.

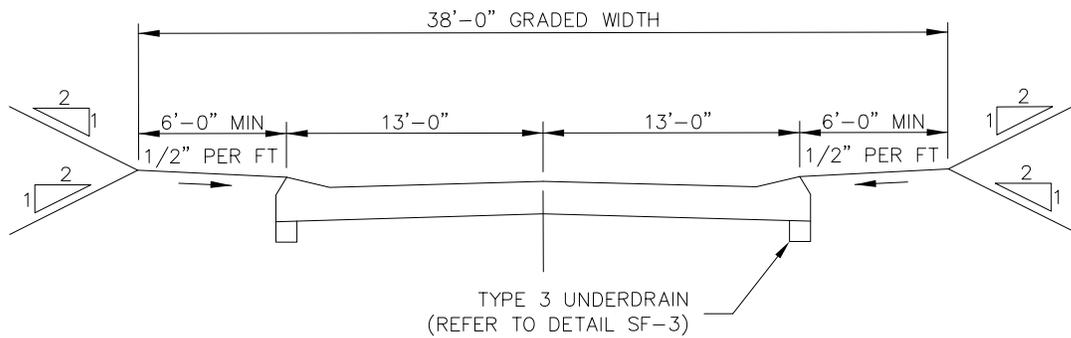
If for any reasons other than those referred above, any portion of the work remains incomplete after the specified contract completion date, for each and every work day that any portion of the work

remains incomplete; the township shall have the right to deduct from the moneys due the contractor as liquidated damages per the contract documents.

XVI. NON-COLLUSION AFFIDAVIT: All bids to receive consideration must be accompanied by an executed Non-Collusion Affidavit in the form provided by the Township.

SECTION IX :
Standard Figures & Details

- Figure SF-1 Typical Roadway Grading Detail**
- Figure SF-2 Typical Roadway Paving Section(s)**
- Figure SF-3 Special Underdrain Details**
- Figure SF-4 Driveway Sight Distance Details**
- Figure SF-5 Formula Sight Distance Table (uphill grades)**
- Figure SF-6 Formula Sight Distance Table (downhill grades)**
- Figure SF-7 Cul-De-Sac Details (with and without island)**
- Figure SF-8 Temporary Turnaround Detail**
- Figure SF-9 Storm Inlet Detail**
- Figure SF-10..... Precast Manhole Detail**
- Figure SF-11Endwall Details**
- Figure SF-12Utility Trench Repair Detail**
- Figure SF-13Sidewalk Detail**



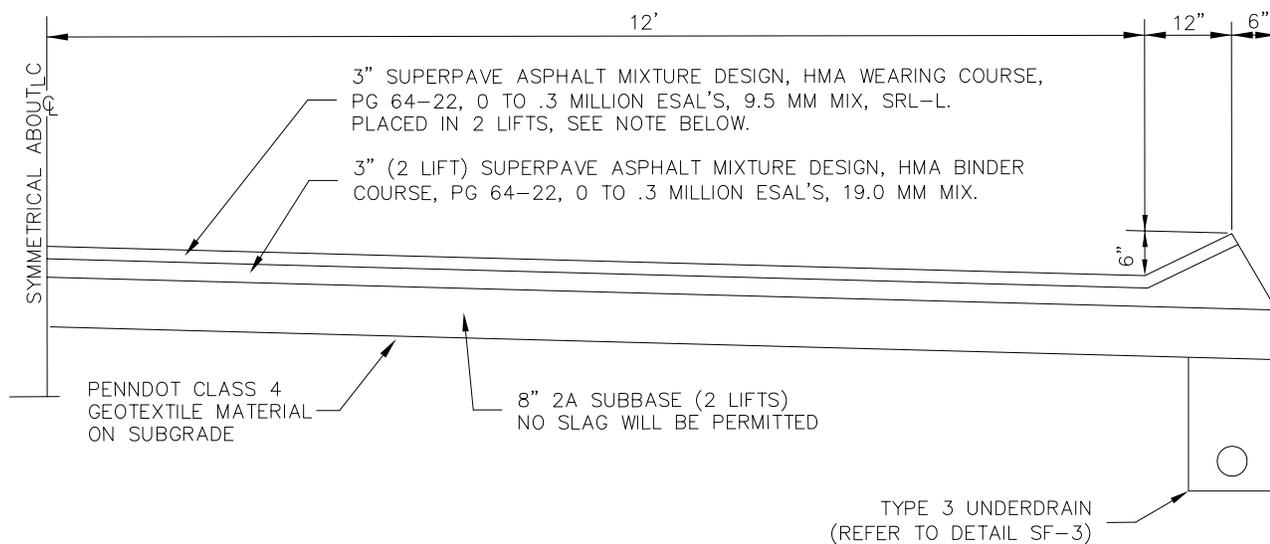
NOTE:
DISTANCES SHOWN ARE FOR LOCAL ROADWAY.
REFER TO STANDARDS FOR OTHER ROADWAY TYPES.

REVISIONS:

TYPICAL ROADWAY GRADING DETAIL

SOUTH FAYETTE TOWNSHIP STANDARD DETAILS

FIG. SF-1



NOTE:
 1. TYPICAL SHOWN IS FOR ROAD DEFINED AS DI-1. FOR ROADWAY DESIGNS OTHER THAN DI-1, SEE BELOW.
 2. FINAL WEARING COURSE LIFT TO BE PLACED AT THE TIME OF FINAL ROADWAY ACCEPTANCE.

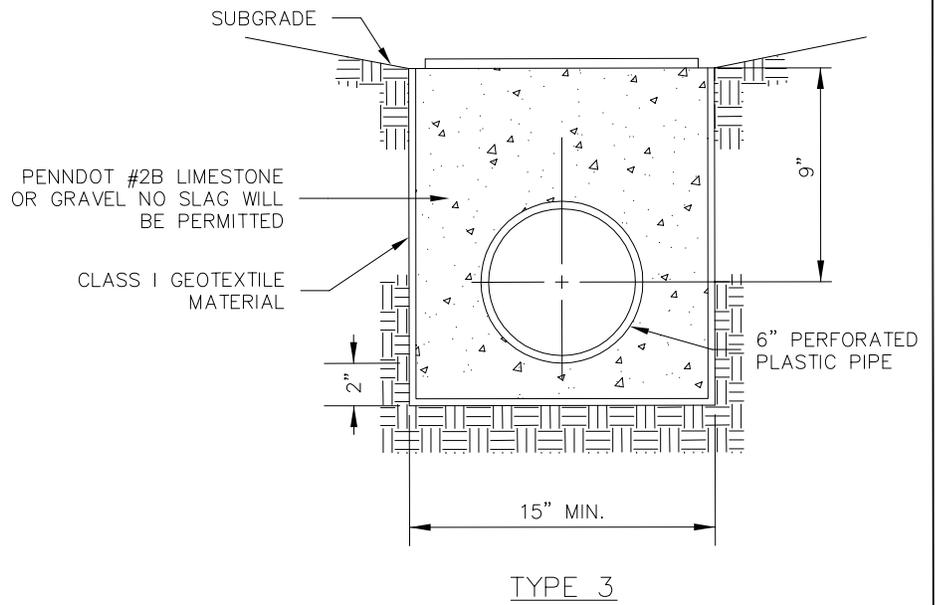
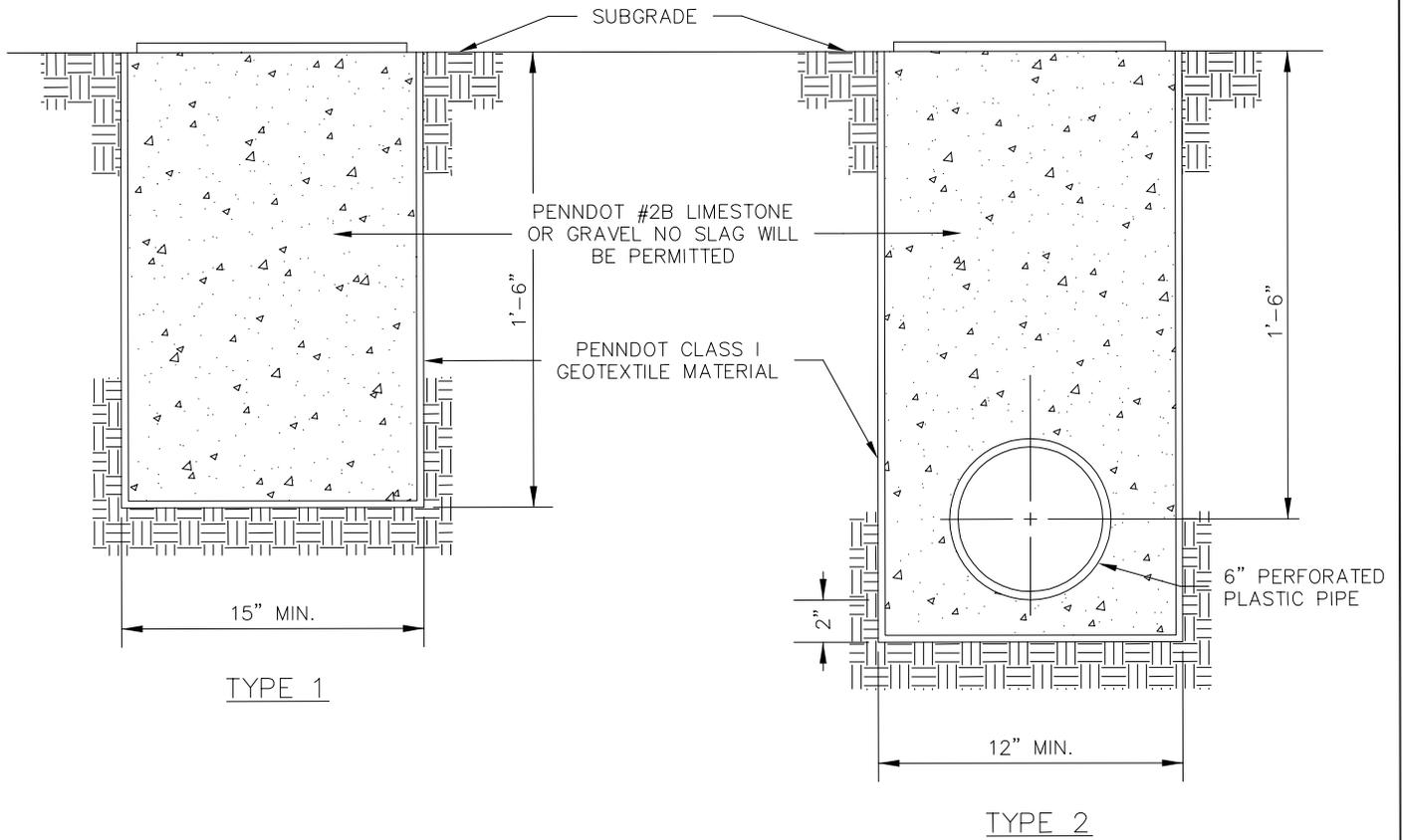
INTENSITY CATEGORY	OVERALL ASPHALT THICKNESS (INCHES)	WRG COURSE THICKNESS	BASE/BINDER THICKNESS
DI-1	6"	3"	3"
DI-2	7"	3"	4"
DI-3	8"	3"	5"
DI-4	9"	3 1/2"	5 1/2"
DI-5	10"	3 1/2"	6 1/2"

REVISIONS:

TYPICAL ROADWAY PAVING SECTIONS

SOUTH FAYETTE TOWNSHIP STANDARD DETAILS

FIG. SF-2

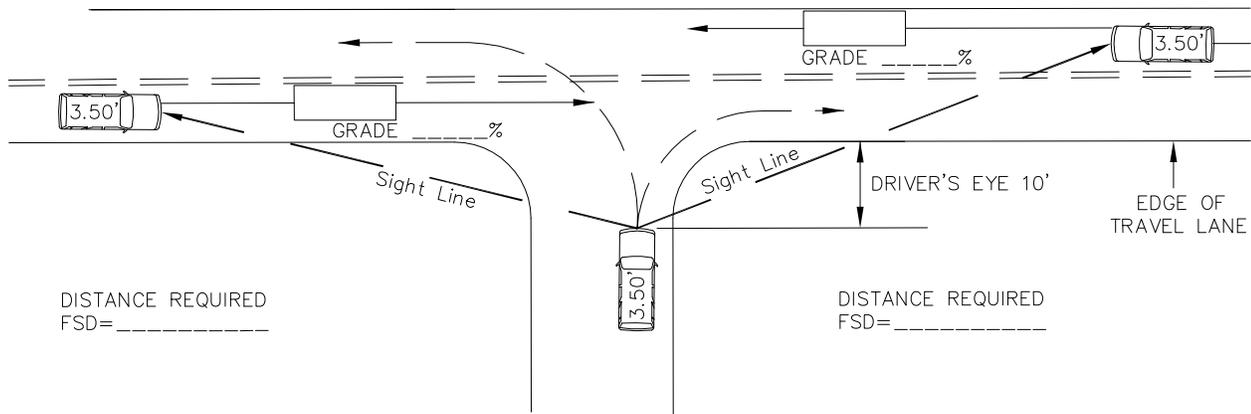


REVISIONS:

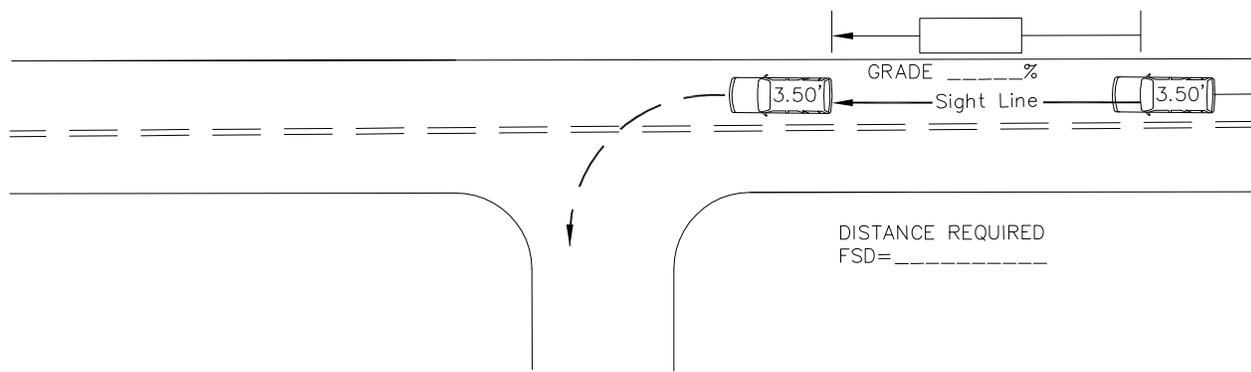
SPECIAL UNDERDRAIN DETAILS

SOUTH FAYETTE TOWNSHIP STANDARD DETAILS

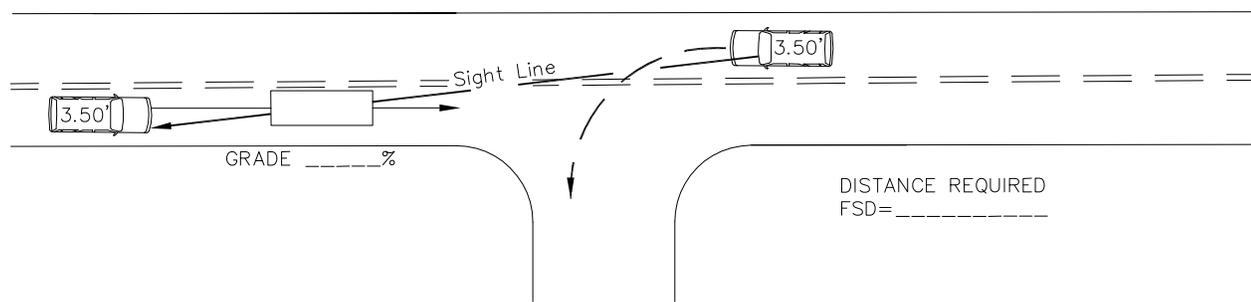
FIG. SF-3



THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER AT A DRIVEWAY LOCATION CAN CONTINUOUSLY SEE ANOTHER VEHICLE APPROACHING ON THE ROADWAY.



THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER ON THE ROADWAY CAN CONTINUOUSLY SEE THE REAR OF A VEHICLE WHICH IS LOCATED IN THE DRIVER'S TRAVEL LANE AND WHICH IS POSITIONED TO MAKE A LEFT TURN INTO A DRIVEWAY.



THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER OF A VEHICLE INTENDING TO MAKE A LEFT TURN INTO A DRIVEWAY CAN CONTINUOUSLY SEE A VEHICLE APPROACHING FROM THE OPPOSITE DIRECTION.

REVISIONS:

DRIVEWAY SIGHT DISTANCE

SOUTH FAYETTE TOWNSHIP STANDARD DETAILS

FIG. SF-4

FORMULA SIGHT DISTANCE TABLE

Speed (V) (Miles Per Hour)	Average Grade (G) (Percent)										
	Use plus grades when approaching vehicle is traveling upgrade.										
	0.0	+1.0	+2.0	+3.0	+4.0	+5.0	+6.0	+7.0	+8.0	+9.0	+10.0
25	147	145	144	143	142	140	139	138	137	136	135
30	196	194	191	189	187	185	183	182	180	178	177
35	249	245	242	239	236	233	231	228	226	224	221
40	314	309	304	299	295	291	287	284	280	277	274
45	383	376	370	364	358	353	348	343	339	334	330
50	462	453	444	436	429	422	415	409	403	397	392
55	538	527	517	508	499	490	482	475	468	461	454

REVISIONS:

**FORMULA SIGHT DISTANCE TABLE
USE PLUS GRADES WHEN APPROACHING VEHICLE IS TRAVELING UPGRADE**

SOUTH FAYETTE TOWNSHIP STANDARD DETAILS

FIG. SF-5

FORMULA SIGHT DISTANCE TABLE

Speed (V) (Miles Per Hour)	Average Grade (G) (Percent)										
	Use negative grades when approaching vehicle is traveling downgrade.										
	0.0	-1.0	-2.0	-3.0	-4.0	-5.0	-6.0	-7.0	-8.0	-9.0	-10.0
25	147	148	150	151	153	155	157	159	161	164	166
30	196	199	201	204	207	210	214	217	221	226	230
35	249	252	256	260	265	269	275	280	286	292	299
40	314	319	325	331	338	345	352	360	369	379	389
45	383	390	398	406	415	425	435	447	459	472	487
50	462	471	481	492	504	517	531	546	563	581	600
55	538	550	562	576	590	606	622	641	661	682	706

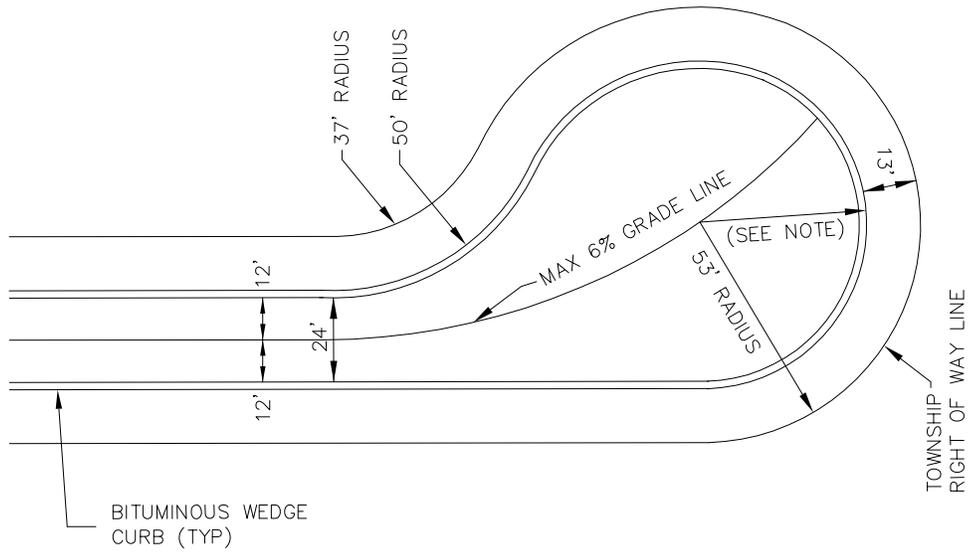
REVISIONS:

**FORMULA SIGHT DISTANCE TABLE
USE NEGATIVE GRADES WHEN APPROACHING VEHICLE IS TRAVELING DOWNGRADE**

SOUTH FAYETTE TOWNSHIP STANDARD DETAILS

FIG. SF-6

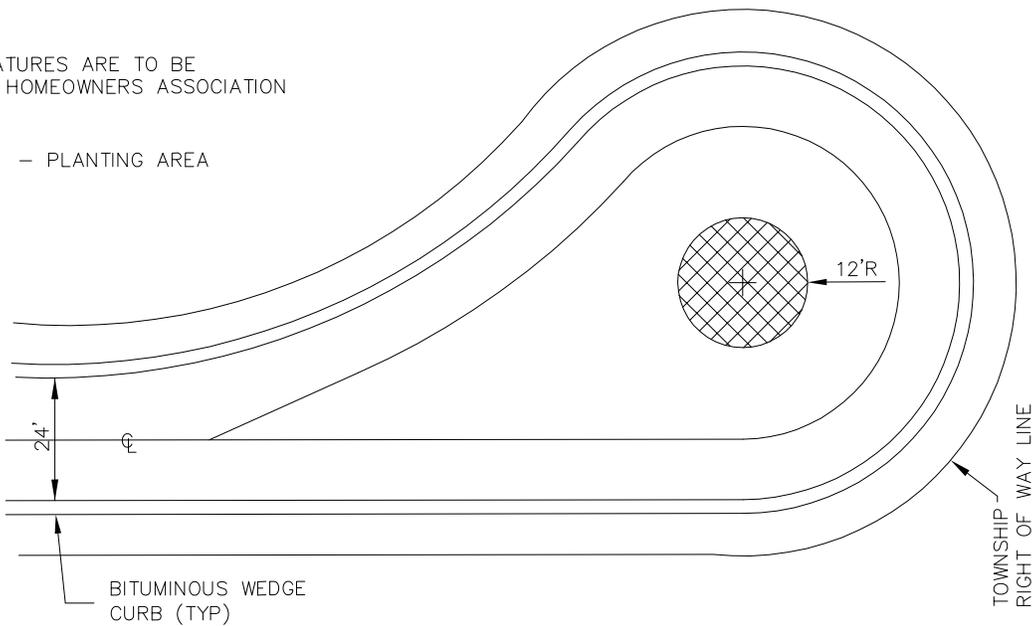
NOTE:
 MINIMUM RADIUS:
 LOCAL RESIDENTIAL - MINIMUM RADIUS 45' TO BACK OF CURB
 LOCAL COMMERCIAL - TO BE DETERMINED BY TOWNSHIP ENGINEER.



CUL-DE-SAC WITHOUT ISLAND

NOTE:
 ALL ISLAND FEATURES ARE TO BE
 MAINTAINED BY HOMEOWNERS ASSOCIATION

☒ - PLANTING AREA



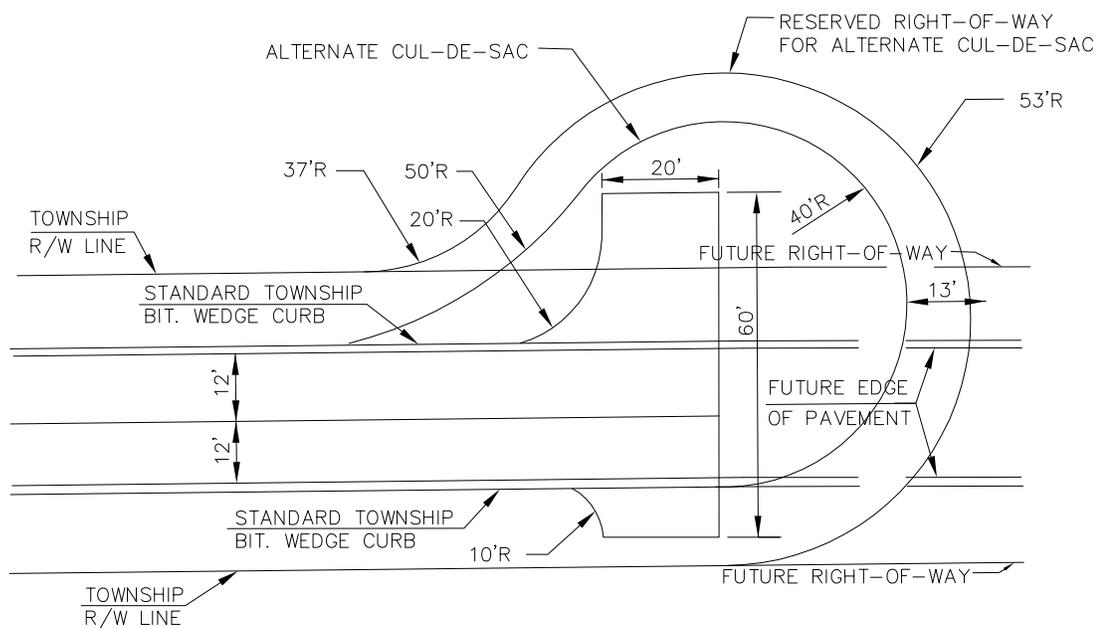
CUL-DE-SAC WITH LANDSCAPED ISLAND

REVISIONS:

CUL-DE-SAC DETAILS

SOUTH FAYETTE TOWNSHIP STANDARD DETAILS

FIG. SF-7

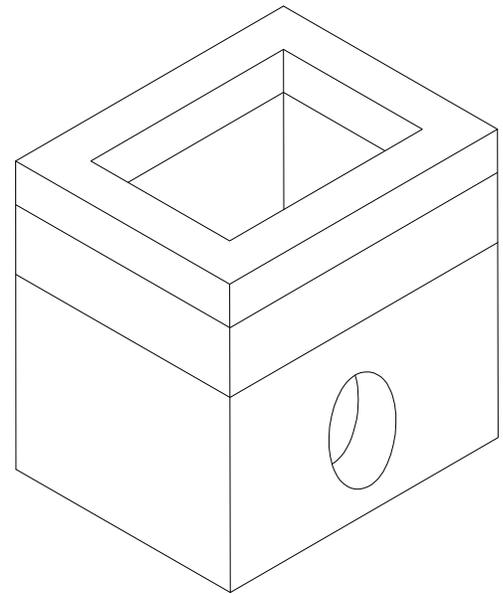
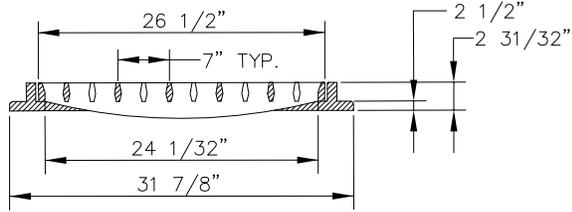
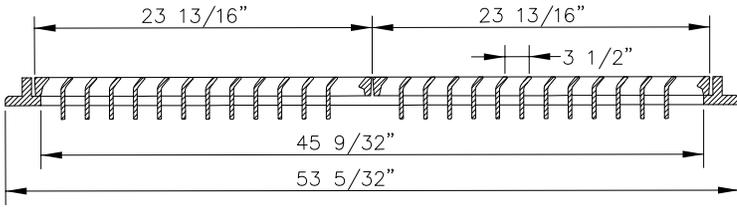


REVISIONS:

**MULTI-PHASE DEVELOPMENT TEMPORARY
HAMMERHEAD TURNAROUND**

SOUTH FAYETTE TOWNSHIP STANDARD DETAILS

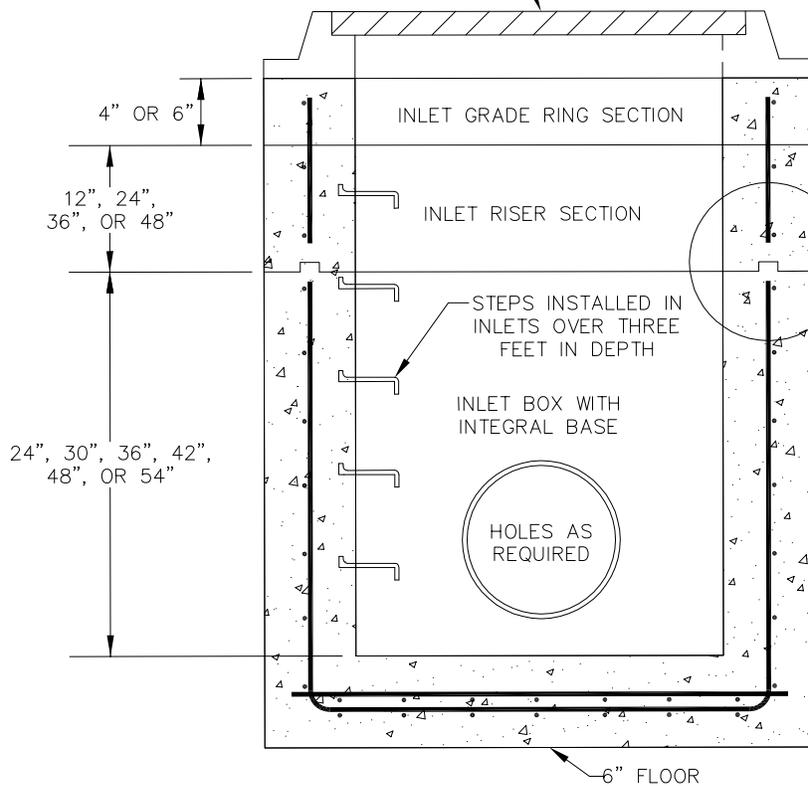
FIG. SF-8



ISOMETRIC VIEW

- USE PENNDOT APPROVED 2x4 INLET BOX
- NEENAH R-3574-2L FRAME AND GRATE (2 PIECE GRATE)

INLET TOP UNIT AND GRATE AS REQUIRED



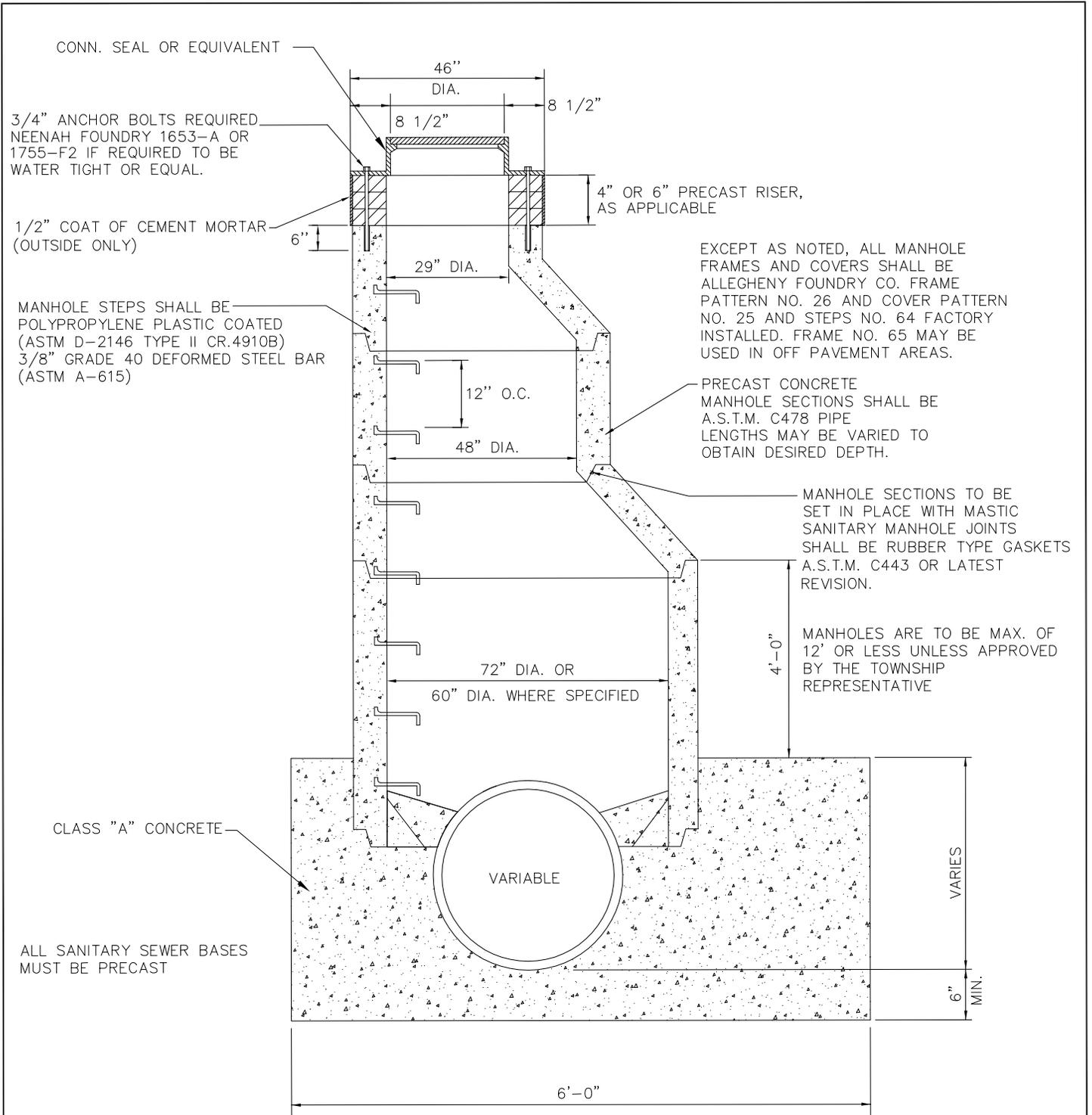
ELEVATION VIEW

NOTES:

1. CEMENT CONCRETE - CLASS AA.
2. REINFORCING - 60 ksi, PLAIN, MEETING ASTM A615.
3. MINIMUM 1 1/2 INCHES CLEARANCE TO REINFORCING.
4. OPENINGS LOCATED AS REQUIRED.
5. ALL OTHER CONSTRUCTION IN ACCORDANCE WITH PENNDOT PUB. 408 AND RC STANDARDS OR CURRENT REVISION.
6. MAX. DEPTH - VARIABLE AS APPROVED BY THE TOWNSHIP.
7. STEPS SHALL BE INSTALLED @ 12" SPACINGS.

REVISIONS:

STORM INLET

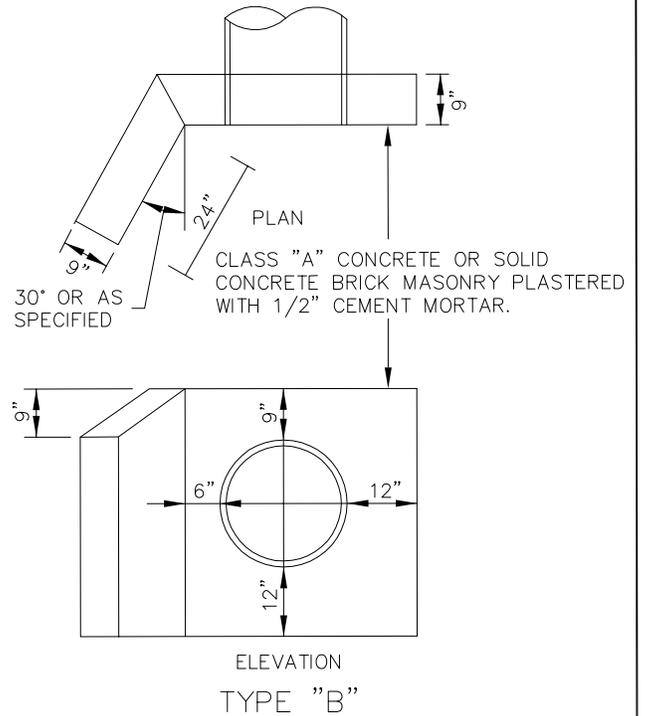
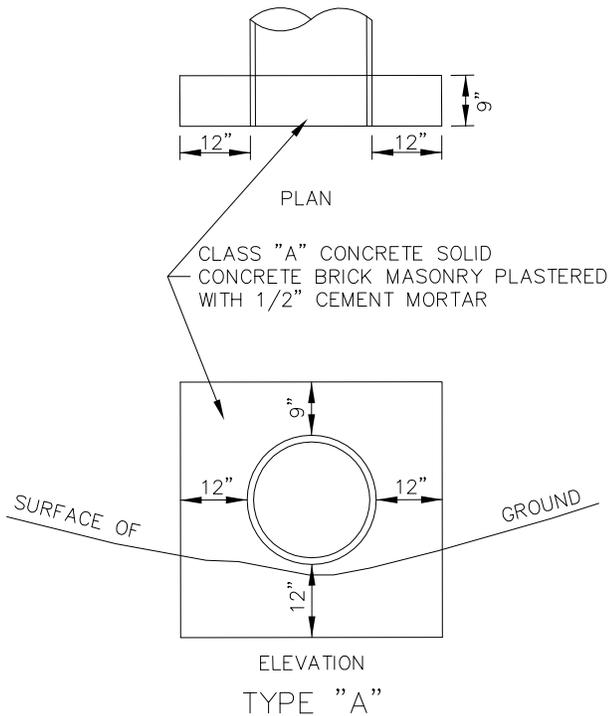


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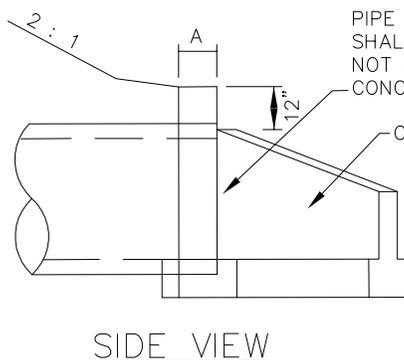
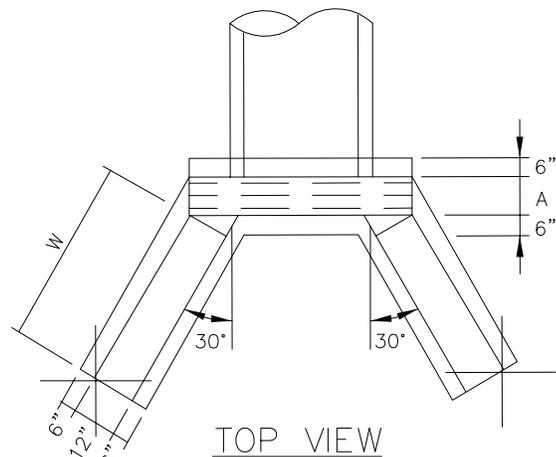
PRE-CAST CONCRETE MANHOLE FOR PIPES UNDER 48" IN DIAMETER

SOUTH FAYETTE TOWNSHIP STANDARD DETAILS

FIG. SF-10

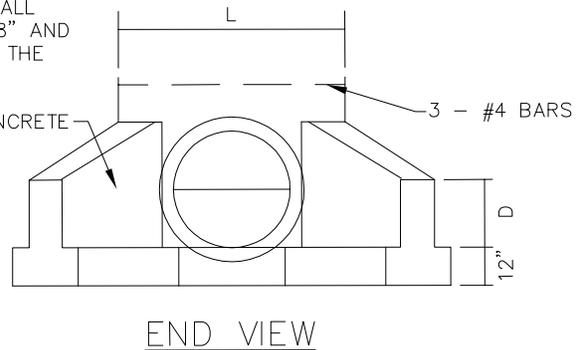


PIPE DIAMETER D (IN.)	L (FT.)	W (FT.)	A (IN.)	D (FT.)
24	4.8	3.5	12	1.3
30	5.3	3.8	12	1.3
36	5.8	4.6	12	1.5
42	6.3	5.8	12	1.5
48	6.9	6.9	15	1.8
54	7.5	8.0	15	2.0
60	8.1	9.2	15	2.3
72	9.2	11.5	18	2.5



PIPE EXITING ENDWALL
SHALL PROTRUDE 8" AND
NOT BE BURIED IN THE
CONCRETE FLOOR

CLASS "A" CONCRETE



TYPE "C"

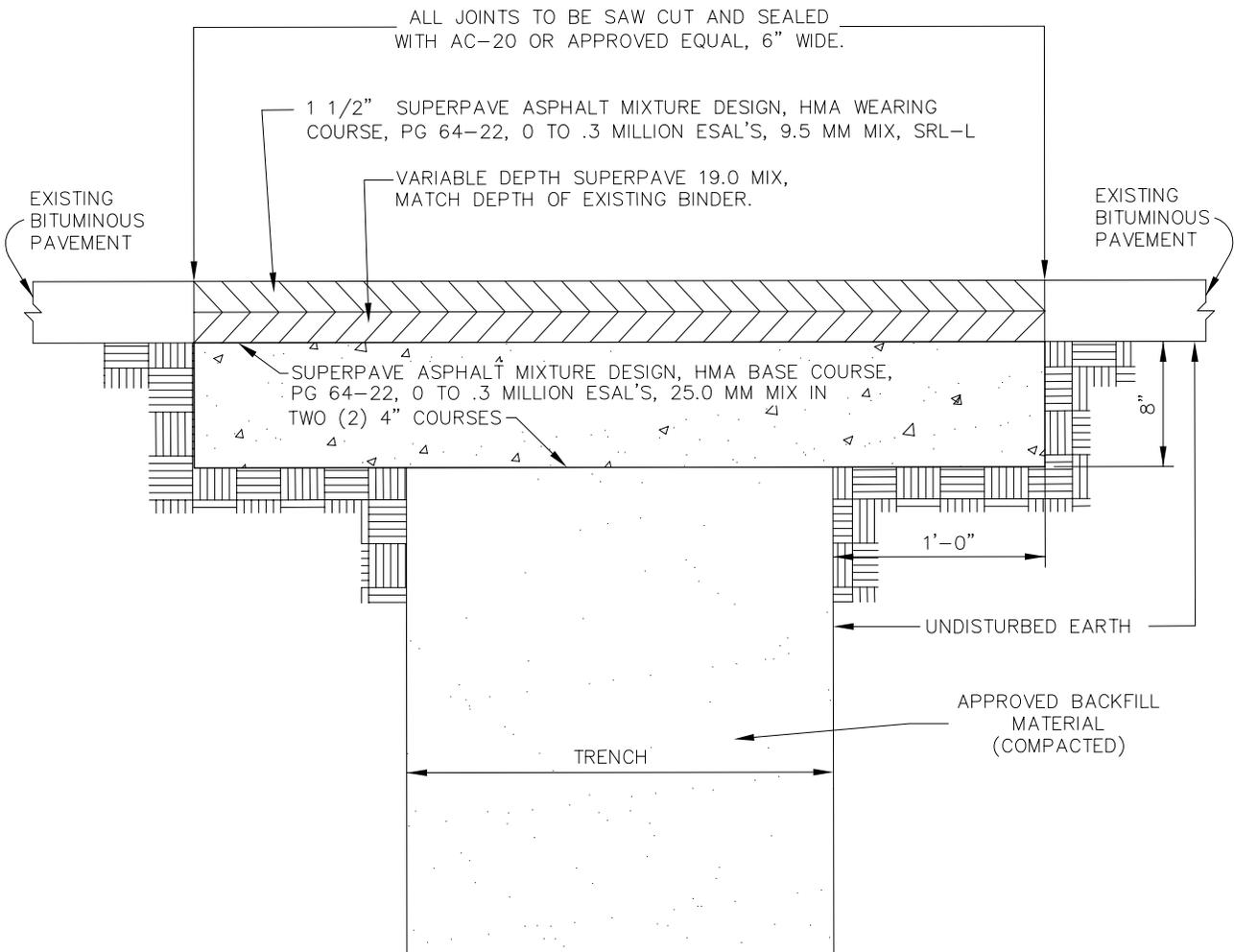
NOTES: ALTERNATIVE ENDWALLS DESIGN MAY BE SUBMITTED
FOR APPROVAL BY THE TOWNSHIP ENGINEER

REVISIONS:

ENDWALL DETAILS

SOUTH FAYETTE TOWNSHIP STANDARD DETAILS

FIG. SF-11



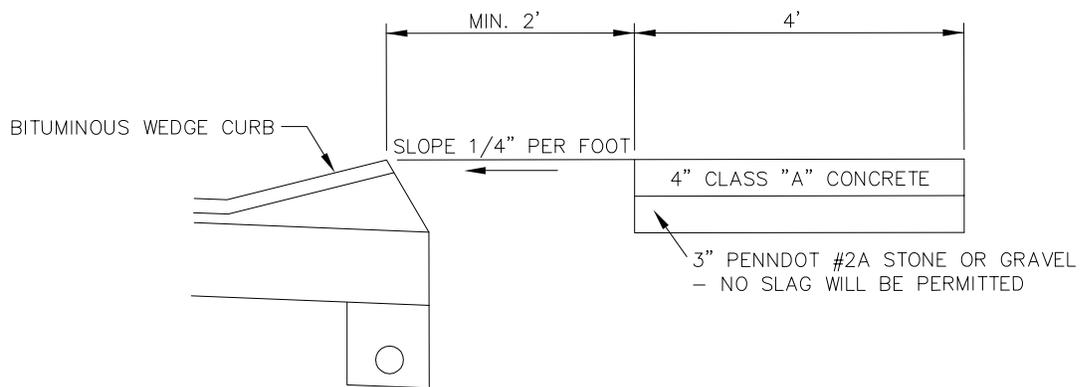
NOTE:
 TRENCH REPAVING REQUIREMENTS FOR OTHER THAN BITUMINOUS PAVING WILL BE DETERMINED BY THE TOWNSHIP ENGINEER OR THEIR DESIGNATED REPRESENTATIVE.

REVISIONS:

UTILITY TRENCH REPAIRS

SOUTH FAYETTE TOWNSHIP STANDARD DETAILS

FIG. SF-12



NOTES:

- 1) WHEN THE CONCRETE SIDEWALK CROSSES A DRIVEWAY THAT PORTION OF THE SIDEWALK SHALL BE 4" OF #2A STONE OR GRAVEL AND 5" OF CONCRETE WITH A 6"X6"X68# REINFORCED STEEL MAT. SHOULD BE POURED DIRECTLY THROUGH THE DRIVEWAY.
- 2) 2' GRASS AREA MUST BE INSTALLED UNLESS APPROVED BY THE TOWNSHIP REPRESENTATIVE

REVISIONS:

SIDEWALK DETAIL

SOUTH FAYETTE TOWNSHIP STANDARD DETAILS

FIG. SF-13