



STANDARDS FOR DEVELOPMENT AND
CONSTRUCTION

2016

Adopted April 2016

Forward

It is the objective of New Market Township to provide high quality, cost-effective and sustainable infrastructure as well as context sensitive, responsible development for its current and future citizens. To achieve these goals, it is necessary to assure quality development through uniform performance standards for the design and construction of the Township's infrastructure. To implement this objective, it is important that guidelines be adopted to standardize engineering requirements within the Township.

These development standards outline certain requirements, materials, and practices that will be incorporated into development plans and specifications for site layout, storm sewer, roadway construction, and grading within New Market Township.

All Construction and Development projects within the Township will require a complete and competent set of specifications for the work.

Roadways shall conform to the most recent editions of:

1. New Market Township Specifications for Construction of Roadway and Drainage Facilities.
2. MnDOT Special Provision Boiler Plates, modified and approved by the Township Engineer
3. Minnesota Department of Transportation (MnDOT) Standard Specifications for Construction
4. Minnesota Manual on Uniform Traffic Control Devices for Streets and Highways
5. MnDOT Schedule of Materials Control
6. MnDOT State Aid Manual for Local Transportation.
7. MnDOT Road Design Manual
8. New Market Township Standard Plans and Standard Plates
9. MnDOT Standard Plans and Standard Plates
10. City Engineers Association of Minnesota Standard Specifications
11. Materials eligible to be approved by MnDOT shall be on approved MnDOT Lists.
12. Scott County Design Standards
13. All other publications listed in this document.

As modified herein and the Township's most recent Standard Detail Plates, general specifications and comprehensive transportation plans.

These development standards are intended as a reference source of information, standards, and data. Particular sections or information in this manual may be incorporated into project specifications by reference as deemed appropriate by the Township Engineer, provided this manual is made available to those to whom the reference is intended. Projects must comply with the requirements outlined in this manual, unless otherwise allowed by the Township Board.

From time to time this manual will be amended by official action of the Township Board. The most recent update of this manual shall dictate the requirements for a project at the time of the plan approval.

New Market Township Board of Supervisors

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LAND USE GUIDELINES

2016

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New Market Township has adopted these standards and specifications to guide development within the area designated in the Scott County Comprehensive Plan as the Rural Residential Service Area (RRSA). These Township standards and specifications, which may be more restrictive than comparable conditions imposed by County regulations, are anticipated and accommodated in the Scott County Zoning Ordinance in Chapter 1 1-3 Application 3 Standard, Requirement, and the Scott County Land Subdivision Ordinance Chapter 10 Improvements 10-2 Standards and Requirements.

A. The appropriate intensity of development in the Rural Residential Service Area

Incorporating the Township's standards and specifications for the design of development in the RRSA in combination with the conditions found at each site may result in the reduction of the theoretical maximum intensity of development at the site from the maximum intensity quantitatively allowed by the County's standards. The Township Board in adopting these standards and specifications recognizes these qualitative improvements may reduce the quantitative efficiency of the proposed development. Along with the opportunity for more intense development in the Township provided by the RRSA strategy, the Board strongly supports and values implementing these qualitative standards. The appropriate intensity of development at each unique site will be that provided by the plan for development of that site implementing these planning design standards and specifications.

B. The desired character of development in the Rural Residential Service Area (RRSA)

The goal of the Township for development using the unique opportunity provided by the RRSA designation is development that connects home sites with nature while disconnecting them from their neighbors. The Township promotes these values during the process of development:

1. Identifying and respecting the natural features of the site for incorporation into the character of each development and to shape its design.
2. Encouraging development that connects to natural areas but responsibly disconnects and sustains each parcel as an independent unit for:
 - a) Stormwater management, by requiring the use of low impact development (LID) stormwater best management practices, rather than pond and pipe systems.
 - b) Utilities, by disconnection of each home's on-site septic treatment from others in the development (no community systems)
 - c) Visual experience, by consideration of the placement of each home and its visual relationship to its neighbors.
3. Anticipate and respect the continuation of agricultural activities on adjacent larger parcels (10 or more acres) in the design of the development.

The standards and specifications adopted by the Township are intended to assure preservation of the connection with nature during development with focus in these three elements of development:

1. ***Stormwater management.*** The twin objectives of this strategy are assuring best practices for low impact development (LID) are used on each parcel, and using these practices as the foundation for the desired distributed and disconnected pattern of new development of each site.
2. ***Township and any private roads and trails serving new development.*** Impervious surface will be minimized to implement stormwater best practices and low impact designs (LID) in the right of ways.
3. ***Integration of new development into the landscape.*** The objective is a pattern of new development that is designed to not seem designed. A landscape plan for all the areas of the site and a site plan with attention to building placement relationships with the roadway and neighboring homes as well as the distribution of home sites across the site will be required for new development.

1. Requirement for Decentralized Stormwater Management

- a. Stormwater on the site must be managed by decentralized Low Impact Development (LID) site management practices. Curbs, gutters and storm drains are designed to be hydraulically efficient in removing stormwater from a site. However, they also increase peak runoff discharge, flow and velocity and pollutants delivery to downstream waters. These “pipe and pond” systems are only allowed as an exception with specific approval by the Township Board as recommended by the Township Engineer
- b. Stormwater management plans for new development must provide multiple small watersheds. The plans should incorporate LID practices such as disconnection of impervious surfaces and highly localized and small scale drainage sheds. A custom decentralized pattern of stormwater management that will disperse flows and manage runoff close to where it originates is the objective of these guidelines.
- c. Stormwater management plans for new development must be integrated with the landscape design and plan for the new development. Stormwater flow should be directed to adjacent turf lawns, filter strips, amended soils and other LID practices or carried by grass channels to these areas.
- d. The Township Board upon review and approval of the Township Engineer may allow low impact roadway designs within subdivisions which provide areas next to paved roads designed to receive and filter runoff.

2. Required placement and orientation of homes

- a. The home sites in new a development must be oriented so no facade of any home is or appears to be an extension of, or parallel to, any facade of any adjacent.
- b. The setback from the roadway of any home must be at least 10% less or greater than its neighbors.

c. The minimum lot width for new development must be 200 ft measured at the front setback line as provided in Section 1-7 Definitions "Lot Width" in the Scott County Zoning Ordinance. Where a strict conformance to this rule is not practicable, the board may allow lots as narrow as 150 feet with the following conditions: 1) Lots less than 200 feet in width are not adjacent to each other, and 2) the average width of lots in the subdivision is greater than 200 feet.

3. Expanded Resource Management Plan

A Landscape Plan implementing the objectives of the Township, drawn to similar standards and specifications as required by the Scott County Zoning Ordinance for nonresidential developments 4-4-2 1 a, b & e and 2 a & g, must be prepared as part of the Resource Management Plan for all new residential development in the RRSA. This plan must identify natural areas to be preserved, provide for the connection and continuity of these areas and describe the transition of the site from its present condition to a finished residential development.

- a. The landscape plan must provide a planting plan for all pervious areas that are disturbed or natural areas that are not retained within the development.
- b. The landscape plan should enhance separation and privacy between the homesite and adjacent home sites and provide separation, privacy and a transition from any adjacent roadway appropriate to the character and classification of that roadway.

4. The adjustment of these standards and specifications

The Township Board may authorize adjustments of these standards and specifications upon finding:

1. The requested specific adjustment is warranted due to specific conditions at the site
2. The requested specific adjustment will contribute to meeting the goals and objectives for development in the RRSA at this site.

If a pipe and pond system for stormwater management is permitted by an adjustment, the area served by the system must be minimized, affecting the least possible area of the site.

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ENGINEERING DESIGN STANDARDS

2016

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Definition of Terms

Approved Plat:	Shall mean a final plat that has been accepted by the Township Board and is recorded at the Scott County Court House.
Benchmark:	Shall mean a permanent or semi-permanent physical mark of known elevation. The elevation shall be tied to the U.S.G.S. Sea Level Datum.
Builder:	Shall mean the person applying for and receiving a building permit to perform the work requested in said permit.
Building Official:	Shall mean the duly appointed Building Official of the Local Permit Authority or his/her designated representative.
Contract Documents:	Shall mean, unless the context provides otherwise, either a Development Contract entered into between the Township and the Developer, or any Agreement existing between two or more persons, whether written or oral, setting forth the obligations of each party.
Contractor:	Shall mean, depending on the context, a person under contract with the Township to perform labor or work for the Township; or a person under contract with a Developer to install municipal.
Construction:	Is the total process of furnishing labor, material and equipment to arrange and combine the parts into a completed project in accordance with the approved plans and specifications.
Developer:	Shall mean the person or company who has executed, or proposes to, execute a developers agreement with New Market Township and/or the County for the purpose of subdividing land within the Township; and shall, where appropriate, include Developer, Developer's Engineer, Contractor Agents or Employees either individually or collectively.
Freeze-Thaw Cycle:	Freeze-thaw cycle shall mean one winter season, typically from November 1st through April 30th.
Person:	Shall mean an individual, corporation, partnership, or any combination thereof.
Plans:	The approved drawings which include plan views, profiles, cross sections, working drawings, details, and supplemental drawings, or exact reproductions thereof, which show the location, character, dimensions, extent, limits and all else necessary to complete the work covered by the project.
Record Plans:	Shall mean the corrected or adjusted construction plans that accurately show the distances, elevations, dimensions, details, and all other changes to reflect the actually completed work as constructed.

Construction Observation/ Site Inspection:	Observance of infrastructure construction to monitor compliance with the approved construction plans and Township standards.
Specifications:	The body of written directives, provisions, and requirements made pertaining to the methods or manner of performing the work, the quantities, and the quality of materials to be furnished under the contract; and outlining the obligations and responsibilities of the parties to the contract; and setting forth the method of payment and the duration of the work.
Standard Plates:	Shall mean those detail drawings or plates prepared for and/or approved by the New Market Township. Approved standard plates may include industry standard plates prepared by the Minnesota Department of Transportation (MnDOT).
Township:	Shall mean New Market Township, Scott County, Minnesota.
Township Board, Town Board, or Board:	Shall mean the Township Board of New Market Township.
Township Clerk:	Shall mean the duly appointed Township Clerk of New Market Township or his/her designated representatives.
Township Engineer:	Shall mean the duly appointed Township Engineer of New Market Township or his/her designated representatives.
Township Inspector:	Shall mean duly appointed Township Inspector or Project Engineering Inspector of New Market Township or their designated representatives.
Township Planner:	Shall mean the duly appointed Township Planner of New Market Township or his/her designated representatives.
Warranty Period:	That period of time commencing from written acceptance by the Township Board of public improvements that the developer warrants those improvements free from defect.

Statement of Policy

PUBLIC INFRASTRUCTURE INSTALLATION

PURPOSE:

The purpose of this policy is to establish the Township's policies and procedures for the construction of public roadways and utilities in new developments.

It is the Township's responsibility to provide and ensure the public health, safety, and welfare through the Township's infrastructure including the storm water drainage system, transportation systems, and related appurtenances. Once constructed, these facilities are owned, operated, maintained, and ultimately reconstructed by the Township, which requires substantial investment of taxpayer dollars. Due to these financial obligations it is important for the Township to clarify the Township's policy towards constructing new public improvements in developments.

STATEMENT OF POLICY:

This policy, as adopted by the Township Board and placed into practice by New Market Township, establishes the basis for the design and construction of development in the Township for the following reasons:

1. To ensure consistency and compatibility with the Township's existing infrastructure systems.
2. To ensure maximum control by the Township of system components that will ultimately be owned and maintained by the Township.
3. To ensure construction meets Township Standards.
4. To avoid potential insurance liability problems.
5. To ensure completion of a facility once construction is initiated.
6. To ensure record plans (as-builts) are properly prepared and filed.
7. To minimize the amount of staff and consultant time and consequent taxpayer dollars that are being spent in educating numerous privately employed design personnel about Township ordinances, standards, and procedures.
8. To ensure public health safety and welfare

The following describes three options for the delivery of a development and the related public infrastructure. Other options could be considered by staff and the Board based on a request from the Developer. The Township reserves the right to choose or deny the use of any option in the best interest of the Township at its sole discretion.

PUBLIC INFRASTRUCTURE DELIVERY POLICY:

OPTION 1 – DEVELOPER DESIGN, CONTRACT AND FINANCING; TOWNSHIP REVIEW AND OBSERVATION:

The Developer:

- Designs the plat and grading plan
- Designs the public improvements plan
- Contracts for the grading and other private improvements
- Contracts for the public improvements

- Provides construction staking
- Pays the contractor(s)
- Submits a letter of credit for 125% of the project costs (both construction and soft costs)
- Reimburses the Township for its costs to complete the items listed below and any other development related costs

The Township:

- Reviews the plat and grading plan
- Reviews the public improvements plan
- Performs full time construction observation
- Performs materials testing

The letter of credit may be periodically reduced as work is completed and accepted.

OPTION 2 – TOWNSHIP DESIGN AND OBSERVATION; DEVELOPER CONTRACT AND FINANCING:

The Developer:

- Designs the plat and grading plan
- Contracts for the grading and other private improvements
- Contracts for the public improvements
- Pays the contractor(s)
- Submits a letter of credit for 125% of the project costs (both construction and soft costs)
- Reimburses the Township for its costs to complete the items listed below and any other development related costs

The Township:

- Reviews the plat and grading plan
- Designs the public improvements plan
- Approves the developer’s contractor for the public improvements
- Performs full time construction observation and staking
- Performs materials testing

The letter of credit may be periodically reduced as work is completed and accepted.

OPTION 3 – TOWNSHIP DESIGN, CONTRACT, AND OBSERVATION; DEVELOPER FINANCING:

The Developer:

- Designs the plat and grading plan
- Contracts for the grading and other private improvements
- Pays the contractor for the grading and other private improvements
- Establishes a “Construction Account” in the amount 125% of the project costs (both construction and soft costs) to be drawn upon by the Township in order to pay its contractor
- Reimburses the Township for its costs to complete the items listed below and any other development related costs

The Township:

- Reviews the plat and grading plan
- Designs the public improvements plan
- Contracts for the public improvements
- Pays the public improvements contractor out of the "Construction Account"
- Performs full time construction observation and staking
- Performs materials testing

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General Engineering Requirements

Developers of property within New Market Township are required to submit certain plans and specifications for review and approval by the Township and County. These include such items as existing conditions/site survey/ grading plans, plats, roadway plans, utility plans, erosion control plan, landscaping plan, signage plan, and lighting plans. If the project is not designed by the Township Engineering staff, the Developer must also submit construction plans, project specifications, and as-built construction plans. A competent professional engineer that is licensed to practice in the State of Minnesota shall prepare these plans and specifications.

The professional services required of the Developer might include an Architect, Land Surveyor, Planner, and Engineer. The engineering services include not only preparation of plans and specifications but field staking and site inspection in order to assure the Township of a quality product and to assure that the completed project is in conformance with the approved plans and specifications.

If the Developer installs the required public improvements within the development under Option 1, the following procedures shall be followed:

1. After Preliminary Plat approval, the Developer shall submit the following for review and approval by the Township:
 - Roadway & Utility Plan
 - Grading Plan
 - Landscaping Plan
 - Roadway Lighting Plan
 - Signage Plan
 - Plat
 - Storm Sewer Design Calculations (Hydrology map and Rational Worksheet)
 - Specifications (Grading, Roadways and Utilities)
 - Soil Report with Recommendations
 - Construction cost estimates for development agreement preparation
2. Collector roadways are to be designed to meet or exceed the MnDOT standards for 40-mph.
3. All utility testing, grading as-builts, curb and gutter and bituminous base, raising of structure iron, erosion control and signage shall be completed and approved prior to issuance of building permits. However, the Township may waive this requirement when weather related circumstances prevent completion of roadway projects before the end of the construction season. The Developer is responsible for maintaining said roadways in a condition that will assure the access of emergency vehicles at all times when such a waiver is granted. Concrete curb and gutter installation and bituminous paving will occur solely at the discretion of the Township after October 15.
4. The Developer shall submit an erosion and sediment control plan to the Township for review and approval. No work is to begin until all erosion and sediment control measures are in place.
5. Developer will provide competent engineering / survey services for staking and plan interpretation for the construction of improvements, unless other arrangements are made in advance with the Township.

6. Copies of project bids, change orders, written field instruction, test reports, etc. shall be forwarded to the Township Engineer in a timely manner.
7. The Developer shall furnish the Township with a list of contractors being considered for construction of the project. The Township reserves the right to reject any contractor.
8. Any changes or modification to the plans or specifications shall be submitted to the Township and approved by the Township Engineer in writing before they are made.
9. The Township Engineer will provide full-time/part-time construction observation services of the work as the Township deems necessary. The cost of all construction observation and related items will be charged back to the Developer. The Township and Township Engineer must be notified a minimum of 72 hours in advance of all work so a Township representative of the Township Engineer can be present if appropriate. Failure to notify the Township and Township Engineer or to provide adequate notice may lead to rejection of the work.
10. Upon completion of all work required, the Township Engineer or a designated Township representative will make a final inspection of the completed work. Representatives of the Developer may accompany the Township's representative during the final inspection. Before final payment is made to the Contractor by the Developer, the Township Engineer shall be satisfied that all work is satisfactorily completed in accordance with the approved plans and specifications, including placement of the wear course. The Developer's Engineer shall submit a written statement to the Township Engineer attesting that to the best of his/her knowledge the work has been completed in accordance with the approved plans and specifications. Acceptance of the work shall be made by resolution of the Township Board upon the recommendation of the Township Engineer.
11. The bituminous wear course cannot be laid until the completed utilities and bituminous base course have gone through a minimum of one freeze-thaw cycle and the Township has reviewed record plans. Additional time may be required at the discretion of the Township Engineer and Township Board.
12. The Developer will warrant all improvements required to be constructed by the Development Contract against poor material and faulty workmanship. The warranty period for roadways and underground utilities is two (2) years. The warranty period shall commence after the final wear course has been completed and the improvements have been accepted by Township Board resolution. All trees shall be warranted to be alive, of good quality, and disease free for twelve (12) months after the security for the trees is released upon an inspection of the landscaping to ensure all plantings are compliant with the approved landscape plan. Any replacements shall be warranted for twelve (12) months from the time of planting. The Developer shall post maintenance bonds or other surety acceptable to the Township to secure the warranties. The Township shall retain ten percent (10%) of the security posted by the Developer until the bonds or other acceptable surety are furnished to the Township or until the warranty period has been completed, whichever first occurs. The retainage may be used to pay for warranty work. NOTE: Township Board acceptance will not occur until all work order items are complete.
13. Upon completion of the base course, the Developer shall provide the Township a full set of record plans and an electronic set of all drawings as outlined in this manual. Such record plans shall be completed and submitted to the Township Engineer within three (3) months of completion of the work. The Developer or its Surveyor/Engineer shall provide to the Township a copy of the plat and as-built utility improvements in electronic format. See record plan section for requirements.
14. Upon completion of the wear course, Developer shall complete bituminous saw and seal.
15. Developer shall escrow the cost for the first seal coat, to be completed by Township.

Under Options 2 and 3 as outlined in the Statement of Policy, the following procedures shall be followed.

1. The Developer shall submit:
 - Preliminary plat with sufficient information to enable the Township Staff to review the proposed development and to determine that the development can be provided with utility service.
 - Conceptual Roadway & Utility Plan
 - Grading Plan
 - Landscaping Plan
 - Soil Report with Recommendations (if available as part of Grading Plan)
2. New Market Township will provide a final design for the approved plat, and will prepare construction plans and specifications for the utility and roadway improvements. New Market Township will administer the construction contract and provide construction staking and resident construction observation in accordance with the provisions set forth with the designated Option.
3. The Developer will be responsible for site grading and for rough grading the roadway right-of-ways. The Developer will also be responsible for erosion control as outlined above.
4. The Developer will provide all on-site improvements required by the final approval of the subdivision, including such items as landscaping; roadway lighting; roadway signs; special berming; stormwater holding ponds; paths and walkways; etc.
5. A copy of New Market Township Engineering Standards with Standard Detail Plates is on file for review at the Township Hall or available electronically from the Township or Township Engineer.
6. Prior to beginning construction, the Developer shall obtain and submit to the Township all regulatory agency permits and approvals.
7. Developer will coordinate with all private utilities regarding the construction of new facilities and reconstruction of existing facilities as required by the development.

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Design Standards

This information has been prepared to assist developers and their engineers in the planning and construction of public infrastructure in New Market Township. It is not intended to be, nor should it be used as a specification for any improvement, but rather a guideline to be used in the preparation of such documents.

CONFLICT

In the event of conflict between references and specifications, the following order shall dictate, precedence, with number 1 overriding number 2, and so on. Any alteration to this order, or to resolve disputes shall be at the discretion of the Township Engineer.

1. New Market Township Specifications for Construction of Roadway and Drainage Facilities.
2. Minnesota Department of Transportation (MnDOT)_Special Provision Boiler Plates, modified and approved by the Township Engineer
3. MnDOT Standard Specifications for Construction
4. Minnesota Manual on Uniform Traffic Control Devices for Streets and Highways
5. MnDOT Schedule of Materials Control
6. MnDOT State Aid Manual for Local Transportation.
7. MnDOT Road Design Manual
8. New Market Township Standard Plans and Standard Plates
9. MnDOT Standard Plans and Standard Plates
10. City Engineers Association of Minnesota Standard Specifications
11. Materials eligible to be approved by MnDOT shall be on approved MnDOT Lists
12. Scott County Design Standards
13. All other publications listed in this document

STORM SEWER

Drainage facilities shall conform to the requirements of Scott County and the local watershed district, and the Township's most recent Standard Detail Plates and Engineering Design Standards.

New Market Township and Scott County may inspect and enforce erosion and sediment control practices on construction sites in New Market Township.

The Developer shall obtain all regulatory agency permits and approvals as required. The following are specific requirements related to the development of drainage facilities:

General

1. Riprap, granular filter and filter fabric shall be placed at all outlet flared end sections per MnDOT standards. The placement of the riprap shall be hand placed. Design criteria justifying the size and amount of riprap is required (see Standard Detail).
2. Junction manholes should be designed to limit the hydraulic head increase by matching hydraulic flow lines and by providing smooth transition angles. Intersection angles must be a minimum of 90 degrees.

3. Over-excavate the bottom of the water quality ponds to compensate for any erosion sedimentation that could occur. The Developer will be responsible for verifying, at the end of the warranty period, that the ponds are providing the required volumes.
4. Submit calculations and drainage area maps showing 5 year design and 100 year flood boundaries shall be submitted with the plans and specifications verifying the adequacy of the number of catch basins, pipe capacities, and pond sizes.
5. The lowest floor elevation of a structure in a development that adjoins a pond will be at a minimum of two feet above the pond's 100 year storm HWL elevation or a minimum of one foot above its emergency overflow (EOF) elevation, whichever is less restrictive.
6. The lowest opening elevations near emergency overflow swales and ditches shall be a minimum of two feet above the 100 year storm HWL elevation of the swale or ditch.
7. Provide for emergency overflow routes to drain low points along roadways or lot lines to ensure a freeboard of two feet from the lowest opening elevation and the calculated 100 year storm HWL elevation. Roadway ponding shall not exceed a maximum depth of 3' at its deepest point. Design criteria verifying the adequacy of the overland drainage route capacity is required.
8. Inlets will generally be required every 400' on roadways or a combination of roadways and swales. Additionally, inlets should be located such that 3 cfs is the maximum flow at the inlet for the 5 year flood design storm event.
9. Minimum pipe cover in paved areas shall be 2.5'. In unpaved areas, the minimum cover shall be 2.0'.
10. Storm sewer shall be designed to maintain a self-cleaning pipe velocity. The minimum full flow velocity shall be 3 feet per second (fps). The maximum velocity shall be 10 fps, except when entering a pond, where the maximum velocity shall be limited to 8 fps.
11. Any storm ponds shall be designed and constructed to meet National Urban Runoff Program (NURP) design standards,?
12. Storm water detention facilities constructed in New Market Township shall be designed according to the most current technology as reflected in the MPCA publication "Protecting Water Quality in Urban Areas," and shall contain, at a minimum, the following design factors to the extent possible:
 - An average permanent pool depth of four to ten feet.
 - A permanent pool length-to-width ratio of 3:1 or greater.
 - A ten foot wide maintenance bench shall be provided with a slope of 10' horizontal to 1' vertical (10:1) and elevated above the normal water level.
 - A protective buffer strip of vegetation surrounding the pond will be required. The minimum width of the buffer is 10', or as required by the Township Engineer.
 - Storm water detention facilities for new development must be sufficient to limit peak flows in each sub-watershed to those that existed before the development for the 100 year storm event.
13. Wetlands
 - Wetlands must not be drained or filled, wholly or partially, unless replaced by restoring or creating wetland areas in accordance with the "Minnesota Wetland Conservation Act" and other wetland regulations.
 - Utilization of existing wetlands for storm water management is subject to review by the appropriate regulatory agency in accordance with the "Minnesota Wetland Conservation Act" and other wetland regulations.

14. Easements

- A standard 5-foot wide drainage and utility easement shall be provided along all side and rear lot lines. A 10-foot wide drainage and utility easement shall be provided along front lot lines and all right-of-way/property lines.
- If a Developer's proposal involves directing some or all runoff off of the site, it shall be the responsibility of the applicant to obtain from adjacent property owners any necessary easements or other property interests concerning flowage of water.
- Easements are required for all ponding areas to the basin's 100 year storm HWL elevation, for all inletted and outletted basins, swales, ditches, and overflow routes to the basin's 100 year storm HWL elevation.
- If the storm sewer is to be installed less than 10' deep within private property, the easement shall be a minimum of 20' wide with the pipe centered in the easement. If the storm sewer is 10' deep or greater, then the easement shall be twice as wide as the depth.

15. Show or define access routes for maintenance purposes to all manholes, inlets, and/or outlets at ponding areas that are outside of public right-of-way. Access routes shall have a 7% maximum grade, 2% cross slope, minimum horizontal curve radius of 50', a minimum width of 12', and shall not cross wetlands. Accesses shall be dedicated at the time of final platting in the form of drainage and utility easements shown on the plat.
16. In the development of any subdivision or ponding area, the Developer is responsible for the removal of all significant vegetation (trees, stumps, brush, debris, etc.) from any and all areas which would be inundated by the designated controlled water elevation (Outlet Elevation) of any required pond as well as the removal of all dead trees, vegetation, etc., to the HWL of the pond.
17. The invert elevations of the pond inlet flared end sections shall be no lower than the Outlet Elevation of the pond. Submerged inlets will only be allowed at the discretion of the Township Engineer.
18. The Developer and/or engineer upon the completion of the construction of a designated ponding area is required to submit a record drawing plan of the ponding area certifying the pond construction and that the pond meets all design parameters as set forth in the proposed site.
19. Erosion control shall at a minimum observe standards established in the following reports: "Protecting Water Quality in Urban Areas" (Best Management Practices for Minnesota), "National Urban Runoff Program" (NURP), and National Pollutant Discharge Elimination System / State Disposal System (NPDES/SDS) General Stormwater Permit or as modified herein.
20. No overland or channeled storm water may leave a development site in excess of the existing rate and volume. The storm water in each phase of a development will need to be managed to this criteria and any interim storm water design for the development will need to meet this criteria.
21. All newly constructed and reconstructed buildings will route drain leaders to pervious areas wherein the runoff can be allowed to infiltrate. The flow rate of water exiting the leaders shall be controlled so no erosion occurs in the pervious areas.
22. Manholes shall be placed in paved surfaces wherever possible.
23. If differing pipe sizes exist at manhole junctions, the pipe crowns should be at the same elevation

24. Catch basins for roadways with curb shall be located on the tangent section of the curb at a point 5' from the return. Mid-radius catch basins will not be allowed. Also, catch basins shall be designed to collect drainage on the upstream side of the intersection.
25. Minimum storm sewer pipe size shall be 12 inches diameter. Minimum drain tile pipe size shall be 4 inches diameter.
26. The maximum spacing between manholes is 400' for storm sewer lines less than 24" in diameter and 500' for storm sewer lines 24" to 30" in diameter. Maximum spacing on large diameter storm sewer lines shall be approved by the Township Engineer.
27. The last manhole in a paved area or adjacent to the roadway before entering a ponding area shall have a sumped bottom unless otherwise approved by the Township Engineer. The sump shall be a minimum of 2.0' in depth.
28. Any connections to existing manholes or catch basins shall be core drilled or the opening cut out with a concrete saw. No jack hammering or breaking the structure with a maul is permitted. Also, all connections to an existing system will require a manhole for access.
29. Aprons or flared end sections shall be placed at all locations where the storm sewer outlets to a ponding area. All aprons or flared end sections shall be tied to the next three (3) pipes. All trash guard installations will be subject to approval by the Township Engineer. The Township standard for aprons or flared end sections is the most current version of MnDOT's Standard Detail for Concrete Apron for Reinforced Concrete Pipe.
30. No connection of private drain lines to the public storm sewer system shall be permitted unless approved by the Township Engineer and Township Board. If allowed, the connection shall comply with the requirements for municipal storm sewer as described herein and the International Building Code (IBC).

GRADING/EROSION CONTROL

The grading plans and erosion control systems shall conform to the most recent editions of "Protecting Water Quality in Urban Areas" (Best Management Practices for Minnesota), "National Urban Runoff Program" (NURP), National Pollutant Discharge Elimination System / State Disposal System (NPDES/SDS) General Stormwater Permit or as modified herein and Scott County requirements.

The Developer shall obtain all regulatory agency permits and approvals as required, including, but not necessarily limited to, those from New Market Township, Minnesota Pollution Control Agency, Army Corp of Engineers, Minnesota Department of Natural Resources, Minnesota Department of Transportation, Scott County, Watershed, etc. prior to beginning of construction, etc.

The following are specific requirements related to the development of grading/erosion control plans for the proposed subdivision and adjacent land within 200' unless noted otherwise:

1. Grading/erosion control plans designed and signed by a civil engineer or a land surveyor licensed in the State of Minnesota.
2. Show existing and proposed storm sewer.
3. Show proposed borrow pits and stockpile areas.
4. Show lot corner elevations and bench marks utilized.
5. Existing contours shall be at 1' or 2' intervals to a mean sea level datum (dashed lines). The contours shall extend beyond the proposed plat boundaries 150' or more to completely show the limits of a drainage basin(s) not fully contained within the proposed plat.
6. Proposed contours shall be at 1' or 2' intervals to a mean sea level datum (solid lines).

7. Graded slopes may be a maximum of 33% (3:1) and minimum of 2%.
8. Show ponds, wetlands, lakes, streams, or marshes.
 - Show high water level (HWL) for ponds.
 - Show the Outlet Elevation and HWL for ponds and wetlands.
 - Show OHWL elevation and DNR pond number if applicable.
 - Storage volume proposed.
 - Drainage area boundaries.
 - Show and define areas that will be seeded and mulched, sodded (one row behind the back of curb), or seeded with blanket. Common drainage swales must be seeded and blanketed at a minimum. Specify seed type on the construction plans.
 - Show Wetland Buffer.
9. Show existing and proposed building and driveway footprints.
10. Show house pads with house style and lowest floor elevations, garage elevation and walkout elevation. Include a legend for these items. Elevations must be in accordance with the requirements set forth in the County's Zoning Ordinance.
11. Driveways shall be designed at a minimum grade of 2% and a maximum grade of 10%, unless otherwise approved by the Township.
12. All driveways entering a paved road shall be paved (bituminous or concrete or paver brick) within the right-of-way. Alternative low impact surface treatments may be considered on a case by case basis.
13. Show proposed erosion control, including silt fence, heavy-duty silt fence, bio-rolls and blanket locations. Heavy-duty silt fence is required around all ponding areas and wetlands. Silt fence, bio-rolls and blanket are required in other areas as needed to keep any soil runoff within the property.
14. Show emergency overflow routes from all low points and ponds and show high point elevation along emergency overflow routes. Show directional flow arrows. Either sod or seed with fiber blanket shall be placed in these areas to protect from erosion.
15. Show removal of all trees and brush below the controlled water level that will be impacted from existing and newly created ponding areas. In the development of any subdivision or ponding area, the Developer is responsible for the removal of all significant vegetation (trees, stumps, brush, debris, etc.) from any and all areas which would be inundated by the designated controlled water elevation (Outlet Elevation) of any required ponding easement as well as the removal of all dead trees, vegetation, etc., to the HWL of the pond.
16. Show or define access routes for maintenance purposes to all inlets, outlets, manholes and lift stations at ponding areas.
17. Show limits of clearing and grading.
18. Show 5 year and 100 year design drainage boundaries. Show acreage of each drainage area/watershed.
19. Erosion control shall at a minimum observe standards established in the following reports:
"Protecting Water Quality in Urban Areas" (Best Management Practices for Minnesota),
"National Urban Runoff Program" (NURP), National Pollutant Discharge Elimination System / State Disposal System (NPDES/SDS) General Stormwater Permit, Scott County and the
"Engineering Design Standards" for New Market Township or as modified herein.
20. Show all lot and block numbers.
21. Show all roadway names.

22. Show centerline roadway elevations every 50-feet and at high and low points. Also show roadway grades.
23. Show typical lot detail indicating where lot and house elevations are.
24. Show typical roadway section.
25. Show drainage arrows at high points and major grade changes.
26. Show existing and proposed easements and outlots.
27. Wetland boundaries must be accurately shown along with the name of the person or company who delineated the wetland boundaries.
28. A grading as-built is required to be submitted and reviewed by the Township prior to the issuance of building permits.
29. Appropriate behind the curb / ditch erosion control.
30. A minimum of 4" of topsoil (w/minimum 15% organic) must be applied to all disturbed areas of the development prior to seeding or sodding.
31. Prior to seeding or sodding, turf areas must be tilled to a depth of 2'.

ROADWAYS/TRAILS

Roadways shall conform to the most recent editions of "MnDOT Standard Specification for Highway Construction", "MnDOT Road Design Manual", "Minnesota Manual on Uniform Traffic Control Devices for Streets and Highways" or as modified herein and the Township's most recent Standard Detail Plates, general specifications and comprehensive transportation plans.

The Developer shall obtain all regulatory agency permits and approvals as required including, but not necessarily limited to, those from the Minnesota Department of Transportation, Scott County, etc. prior to beginning of construction.

The following are specific requirements related to the design of roadway construction:

1. Roadway construction materials shall be in conformance with the Minnesota Department of Transportation, Standard Specifications for Construction, 2016 Edition and all subsequent revisions, except as specifically altered or modified herein.
2. Geotextile Fabric - Shall be installed after completion and approval of subgrade. Geotextile fabric shall be a non-woven, Type 5 fabric.
3. All local roadways shall meet 20-mph design standards
4. All collector roadways are to be designed to meet or exceed MnDOT standards for 45-mph.
5. Road section design shall meet standards contained in the Township Standard Detail Plates and Specifications.
6. Roadways shall intersect at right angles unless otherwise approved by the Township.
7. Barricades in accordance with the Minnesota Manual on Uniform Traffic Control Devices and the Standard Detail Plates shall be placed on all dead end roads.
8. Soil boring information shall be submitted to the Township / Township Engineer.
9. Removal and replacement of unsuitable subgrade materials will be subject to the recommendations of the soils engineer and the approval of the Township Engineer.

10. Cul-de-sacs are required on all "dead-end" public roads. Temporary "dead-end" situations associated with phased development shall conform to the temporary turn around show in the Standard Detail Plates and shall have permanent easements dedicated for such use that can be vacated once a temporary cul-de-sac is removed.
11. Low impact roadway design with ditches and without curb and gutter shall be proposed in new subdivisions.
12. If a development requires concrete curb and gutter, it shall be mountable curb unless driveway locations are defined, in which case B618 curb shall be used. B618 curb and gutter are required in all intersection radii and catch basin transitions.
13. A 20' minimum intersection radius shall be used on residential roadways. A 30' minimum intersection radius shall be used for collector roads. Minimum grade around curb radii is 0.5% where curb is proposed.
14. An ADA compliant concrete pedestrian curb ramp is required when sidewalk or pathway intersects roadways. The ramp shall be constructed in accordance with ADA and MnDOT standards.
15. The design and construction of sidewalks and trailways shall be in accordance with the Township's Standard Details and Specifications.
16. Road signs, stop signs or other traffic control signage shall be paid for by the Developer and include installation per "Minnesota Manual on Uniform Traffic Control Devices for Streets and Highways," MnDOT, and New Market Township Standard Detail Plates. The signs shall be placed at all intersections or at such other locations as approved by the Township Engineer. All signs must be installed prior to final building inspection approval or earlier if necessary as determined by the Township Engineer.
17. Roadway lighting systems shall be installed at the Developer's expense and as approved by the Township Engineer.
18. The wear course shall be placed after the completed utility construction has gone through at least one freeze-thaw cycle. Dependent upon the home construction in the area, additional time may be required before the wear course may be placed, at the discretion of the Township Engineer.
19. The Township requires soil borings for the determination of an R-value to be used in calculating the total granular equivalency (G.E.) of a roadway's design requirements. The R-value is a measure of embankment soil resistance strength expressed on a scale of 1 to 100. Soil investigation should also include the observation of ground water in the boring.
20. Concrete valley gutters will not be used unless approved by the Township Engineer.

The boulevard (right-of-way) shall not contain any landscaping other than vegetated ground cover able to be maintained at a height of 6 inches or less.
21. No retaining walls shall be located on public right-of way or public property unless approved by the Township Engineer and Township Board. Retaining walls over 3-feet in height, located on private or public property shall be designed by a Professional Structural Engineer licensed in the State of Minnesota.

Certain retaining walls will require a Building Permit. Retaining walls that require a building permit shall be constructed in accordance with plans and specifications prepared by a structural or geotechnical engineer licensed by the State of Minnesota. Following construction, a certification signed by the design engineer shall be filed with the Building Official evidencing that the retaining wall was constructed in accordance with the approved plans and specifications. All retaining walls identified on the development plans or by special

conditions referred to this Contract shall be constructed before any other building permit is issued for a lot on which a retaining wall is required to be built.

22. The Developer shall establish turf and control all erosion on all disturbed areas and will maintain until the Township accepts the project.
23. No residential driveway shall be permitted within 50 feet of the end of the radius of an intersection of any two roadways.
24. A right turn lane and bypass lane will be required on township collector roads at the intersection of any new township connector or local road with expected traffic counts of 200 Average Daily Trips (ADT) at full build-out, or where the development will utilize an existing road which intersects the collector but does not currently have turn and bypass lanes. The analysis for full build-out ADT may extend beyond the initial development. The turn and bypass lanes will be required with the first development using the access, regardless of whether or not the first development creates 200 ADT. The lanes will be constructed at the sole cost of the Developer.
25. Bituminous Saw and Seal shall be completed upon completion of wear course as per the Township specifications.
26. Developer shall escrow the cost of the first seal coat, which will be completed by the Township within 2 years of placement of the final wear course.

Construction Plan Standards

In order to standardize construction and achieve uniformity, the guidelines listed below shall be followed.

GENERAL REQUIREMENTS

1. Electronic PDF plan sets shall be submitted to the Township. (size: 11x17 or 22x34)
2. A standard title sheet shall be prepared for each project plan set. In addition, each plan sheet shall be clearly labeled with sheet number, identification of improvement, and other appropriate information.
3. A location plan shall be prepared on the title sheet, at a legible scale, indicating the entire project. An index of the construction plan sheets involved with the work and their location within the project shall be shown on the plan.
4. All detail drawings shall be on a separate sheet or sheets and referenced to the proper sheet. Township Standard Details shall be utilized wherever feasible.
5. Scale – Maximum Horizontal Scale - 1"= 50', Maximum Vertical Scale - 1"= 10'
6. All parcels shall be properly labeled with lot and block numbers and plat name, or parcel identification numbers (PIN) in unplatted areas.
7. All roadways shall be clearly labeled.
8. All match line breaks shall be clean with reference points clearly marked. All plan views which are broken by a match line shall be on the same or consecutive sheets if possible.
9. Existing public utilities and other topography shall be shown, stationed and labeled as existing.
10. Locations of existing gas, electric, cable TV and telephone lines shall be shown in accordance with Minnesota State Statute 216.D.
11. Right-of-way and pavement or curb and gutter alignment data shall be shown.
12. All plans shall have properly placed north arrows for each plan sheet. Whenever possible, the north arrows should point up or to the right of the sheet.
13. Benchmarks shall be placed on all plan and profile sheets. A minimum of two benchmarks shall be provided.

SPECIFIC REQUIREMENTS

1. The profile shall be directly below the plan, on the same sheet, with the stationing aligned as closely as practical. Stationing shall be shown on the plan view as well as on the profile.
2. All manholes and flared end sections shall be numbered in both plan and profile views.
3. Storm sewer plans shall indicate boundary or limits of ponding easements, pond outline, normal water elevation, high water elevation, acre-feet of storage, discharge rate of flow, and outlet control device for each pond.
4. A minimum of two benchmarks must be included within the construction plans.
5. A storm sewer schedule must be included with the construction plans. Include the structure number, size of structure, and proposed casting number in the schedule. Include all skimmer structures, flared end sections, and sumps in this schedule.

6. Utility crossings shall be shown in the plan and profile views.
7. Show flow direction arrows in the plan section of the plan and profile.
8. If storm sewer bends are utilized, provide stationing for the beginning and end points of the bends. Provide the radius of the bend utilized.
9. The utility construction plans and roadway construction plans shall show the centerline stationing.
10. The roadway construction plans shall include the typical roadway sections utilized.
11. Each roadway plan sheet shall show right-of-way width, roadway width (back of curb to back of curb or edge of pavement), and a typical radius dimension at intersections.
12. Proposed horizontal alignment data shall be shown on the roadway plan sheets.
13. Existing and proposed vertical alignment data shall be shown on the roadway plan sheets.
14. The roadway construction plans shall show directional arrows for drainage. High points and low points shall be labeled as such.
15. Show ponds, wetlands, lakes, streams, or marshes.
 - Show the Outlet Elevation and HWL for ponds and wetlands.
 - Show OHWL elevation and DNR pond number if applicable.
 - U.S. Fish & Wildlife classification if applicable.
 - Show proposed pond storage volume.

Record Drawing Requirements

Record drawings are required for all public and private improvements.

After the completion of Developer installed public or private improvements, the Township Engineer shall be provided with an electronic (PDF) of the record drawing plans of the project for review purposes.

Upon final approval of the record drawing plans of the project, the Township Engineer shall be provided with final half size sets (11"x17") of the approved record drawing plans of the project in electronic (PDF) format. All record plans shall be clearly legible drawings, accurately drawn to scale. Proper notes and statements as required in this manual shall be placed on the plans.

ELECTRONIC AS-BUILTS

1. Record drawing plans PDF Format
2. All information must be in AutoCAD DWG format.
3. Approved final plat sheets submitted in Scott County coordinates.
4. As-built construction plan sheets shall have descriptive layer names or a key for the layers names.
5. Overall development plan with all utilities (MHs, FES, CBs, GVs, etc.) in Scott County coordinates.
6. Show Scott County monuments that were used for the survey.

After completion of construction, all manholes, catch basins, and other elements of the project shall be re-measured with an as-built field survey. The plans shall be corrected and modified to show the correct distances, elevations, dimensions, and any other change in the specific details of the plans. All changes and modifications on the record plan shall be drawn to scale to accurately represent the work as constructed. Incorrect elevations, distances, etc. shall be crossed out from the original plan sheets and corrected as necessary to complete the record plan. Do not remove the proposed elevations from the plan sheets.

At a minimum record plans shall include:

GENERAL

1. All construction contractors' names should be noted on each page.
2. Record Plan stamp with date should be shown on each page.

GRADING PLAN

1. Existing ground elevations at all lot corners.
2. Spot elevations at all house pads (hold down elevations).
3. Elevations of tops and bottoms of retaining walls.
4. Spot elevations of pond bottom (50' maximum grid).
5. Drainage and utility easement and outlot spot elevations.

6. Pond water elevations and date taken.
7. Prior to close out, as-builts of ponding areas must be done to verify depths after house construction is complete.
8. Location and elevations along all swales, emergency overflows, wetlands, wetland mitigation areas if any, ditches, location and dimensions of borrow areas/stockpiles;

NOTE: The as-built grading plan does not replace the approved grading plan. This plan is merely a tool to observe the grading of the area prior to home construction. The approved grading plan will still be utilized for all home construction purposes.

STORM SEWER

1. As-built elevations (invert & rim), pipe lengths, and grades for all lines.
2. Note describing pipe type and size for each run.
3. Cross out proposed elevations and write as-built above –DO NOT remove proposed elevations from plans.
4. Ties to all storm sewer bends, if utilized. Ties shall be provided to the beginning and end points, using the following priorities:
 - Manholes.
 - Catch basins.
 - Neighboring structures, with the address noted.
 - Buildings or other permanent structures (bridges, telephone boxes, pedestals, transformers, etc.).
 - Power poles, streetlights, etc.
5. As-built plans on all ponding areas are required. Plans shall indicate finished contours at two-foot intervals, normal water elevation, high water elevation, and the acre-feet of storage for each ponding area along with the final storm sewer plans. Upon completion of pond construction, ponds shall be cross-sectioned to confirm that they have been constructed to the proper volume and shape. As-built record plans shall be prepared for all ponding areas just prior to closing project out.

ROADWAYS

1. Show where fabric has been placed in the roadways on the plan portion of the as-builts.
2. Show any areas where subgrade correction was needed, type of correction, and the size of the corrected area. Include ties to nearby structures.
3. Show location of all draitile on the plans.

Construction Requirements

No construction will commence on any project until the construction plans for the improvements are approved by the Township Engineer.

SUBDIVISION MONUMENTATION

Minnesota State Statute requires subdivision monumentation of all plats within one year of recording with the County. The Township requires all subdivision monumentation necessary to provide control for the installation of public infrastructure improvements be established prior to issuance of the "Notice to Proceed".

SUGGESTED CONSTRUCTION STAKING GUIDELINES

STORM SEWER

1. Line and grade stakes shall be set every 25' for the first 100' out of the downstream manhole, and every 50' thereafter to the next manhole or catch basin.
2. An offset hub and line reference stake to back of curb shall be set for all catch basins and catch basin manholes.
3. Catch basin top and invert elevations and manhole top elevation and upstream and downstream invert elevations shall be shown on the cut sheets.
4. Cut sheets shall be provided to the Township for all storm sewer construction.

ROADWAYS

1. When centerline stakes are set for grading subgrade, cut sheets shall be provided.
2. Line and grade stakes shall be set every 25' and for all beginning, mid and end radius points of the curb at roadway intersections.
3. Cut sheets shall be provided to the Township for all curb and gutter construction.

Note: All cut sheets must identify bench marks used, bench mark elevations, actual hub elevations, proposed elevations, and cuts or fills for all entries.

It is also imperative that the contractor and project inspector for the Township have cut sheets in hand *prior to* construction. The Township will order contractor to cease working whenever this requirement is not met.

CONSTRUCTION OBSERVATION

It is the policy of New Market Township that any construction activity within the Township be monitored/inspected by Township staff personnel or a designated representative on behalf of the Township. The Developer is responsible to pay for all Township costs associated with construction observation and to have a representative from their engineering firm available for plan interpretation/questions.

TESTING REQUIREMENTS

In order to assure quality materials and workmanship, the following tests shall be required:

STORM SEWER

1. Pipe Class - Pipe class to be stamped on pipe, certification documentation may be required at the discretion of the Township Engineer.
2. In accordance with the MnDOT Schedule of Materials Control

ROADWAYS

1. In accordance with the MnDOT Schedule of Materials Control
2. Soil Borings - Logs and recommendation required for subgrade correction, and section design. Soil boring reports must be included within the specifications.

INSTALLATION REQUIREMENTS

STORM SEWER

1. Storm sewer pipe shall be installed in accordance with MnDOT Section 2501, except as modified or altered herein.
2. Pipe foundation, backfilling, and compaction shall be as outlined under Sanitary Sewer, Paragraphs 2 and 3.
3. Catch basin leads or storm sewers which cross the roadway in areas where soils are highly frost susceptible shall be backfilled in accordance with the guidelines outlined in the MnDOT Road Design Manual, Sections 8-6.02.08 and 8-6.02.09. A perforated drain pipe shall be placed on the bottom of the aggregate bedding, which shall drain into a catch basin structure. A detail for this construction shall be included on the plans. In lieu of the MnDOT method, the Township may consider an alternative design. Any alternative design shall be reviewed and approved by the Township Engineer.
4. Minimum catch basin lead size shall be 12 inches in diameter.
5. Minimum culvert size shall be 15 inches in diameter.
6. Copies of any shop drawings shall be provided to the Township Engineer.
7. Maximum lateral adjusting ring offset is 3" (.25').
8. Drain tile shall be installed, and approved by the Township Engineer.

ROADWAYS

1. Roadway construction shall be in accordance with the following MnDOT specifications:
 - a) Common excavation and embankment - MnDOT Section 2105. Roadway embankments shall be compacted by the method described as "Specified Density Method" as outlined in Paragraph 2105.3.F1.
 - b) Aggregate Base - MnDOT Section 2211. Compaction by "Specified Density Method" as outlined in Paragraph 2211.3.C1.
 - c) Plant-mixed Bituminous Mixture - MnDOT Section 2360. Design mix required to determine optimum oil content. Steel wheel and rubber tired rollers required for finish.

- d) Cold Weather Paving - Restrictions shall be in accordance with MnDOT Section 2331.3, Paragraph B. The Township Engineer shall make determinations on suitability of paving conditions.
 - e) Tack Coat - Installed in accordance with MnDOT Section 2357.
 - f) Concrete Curb and Gutter - MnDOT Section 2531. Curb section shall be as indicated on Plans in accordance with Standard Detail Plates. Joints shall be installed as outlined in Paragraph 2531.3.C. Maximum spacing of expansion joints shall be sixty (60) feet for hand formed curb; two hundred (200) feet for slip formed curb. Concrete curing and protection shall be in accordance with Paragraph 2531.3.G. If required by the Township Engineer:
 - Two (2) No. 4 reinforcing rods, 20 feet long, will be placed in the lower portion of the curb crossing all trenches.
 - Two (2) No. 4 reinforcing rods 10' long shall also be placed on each side of all catch basins located within the curb and gutter.
2. Roadway shall be constructed to not less than the minimum standards shown on the typical sections indicated on Standard Details. Subgrade conditions or other circumstances may require a larger section.
 3. Prior to placement of geotextile fabric and base course, the Contractor shall test roll the roadway subgrade. The Contractor shall provide a loaded tandem axle truck with a minimum gross weight of 25 tons and a weight ticket for the test roll vehicle if required by the Township Engineer. The test rolling shall be done under the direction of the Township Engineer. The Township shall also require test rolling of the aggregate base, once the base section has been constructed.
 4. After acceptance of test rolling and completion of the tolerance of subgrade, a geotextile subgrade stabilization fabric shall be installed in accordance with manufacturer's recommendations.
 5. Subsurface drain pipe shall be installed per the Standard Detail Plates and at other locations as determined by the Township Engineer in the field.
 6. It is desirable for the Developer to complete the roadway subgrade, aggregate base, curb and gutter and bituminous base course within the same construction season as the utility installation. The bituminous wear course shall be completed after a minimum of one freeze-thaw cycle after utility construction is complete.
 7. If the Developer is allowed to install the first layer of bituminous in the same season as the utilities, all castings within the roadway shall be adjusted to a point 1/2 inch below the level of the bituminous base surface, and readjusted later prior to placement of the final wear course. Ramping of castings and adjusting rings will not be permitted.
 8. After placement of the bituminous base course and prior to placing the bituminous wear course, the Developer shall repair, replace and/or correct any and all settlements, cracks, breakups, markings, scars, or other damage or abuse caused by construction activity. Curb and gutter will be marked out by the Township for removal and replacement.
 9. The Township will plow snow on Developer's roadways only if at least one course of bituminous surfacing is in place and all castings within the roadway are adjusted to proper elevation and crown.
 10. Before any excess excavation material is deposited on private property, the Contractor must get permission in writing from the property owner. Special care is directed to areas of surplus material disposal that may involve future buildings or foundations.

TRAILS AND SIDEWALKS

1. Trails and sidewalks shall be constructed in accordance with "Bikeway Design Manual, State of Minnesota Department of Transportation" and the "Parks and Trails Plan, New Market Township, Minnesota".
2. Shall meet all Americans with Disabilities Act (ADA) regulations.
3. Shape and compact subgrade to 100% standard proctor density. Excavate and remove all topsoil, black dirt, peat, muck or silt soils from beneath pathway; backfill with select grading material. Subgrade of trail way to be a minimum of two feet above water table.
4. Avoid sharp or sudden changes in horizontal and vertical alignment. Provide adequate site distance for bicycles at intersections and on vertical changes in alignment. Provide clearance for vertical obstructions (trees, power poles, signs, etc.); four foot minimum for bicycle facilities.
5. Bicycle trails are to be marked and signed in accordance with the Minnesota Manual on Uniform Traffic Control Devices, latest edition.
6. Minimum standards shall be increased as necessary where required by poor subgrade soil, traffic volumes, hazardous conditions, or other special circumstances. Extra width and/or flatter curves may be required on long downhill slopes for additional reaction space.
7. Parklands must be sodded or seeded (as determined by Engineer) and maintained by Developer until final acceptance of the project is completed.

Final Project Completion/Acknowledgment

ACCEPTANCE OF UTILITIES

Once the utility construction and all related work order items are complete and a written request is made by the Developer, the Township will accept the utilities in the form of a resolution by the Township Board. Once the utilities are accepted, the warranty period for the utilities will begin.

ACCEPTANCE OF ROADWAYS

Once the roadway construction and all related work order items are complete and a written request is made by the Developer, the Township will accept the project in the form of a resolution by the Township Board. Once the project is accepted, the warranty period for the roadways will begin.

Building Requirements

ISSUANCE OF BUILDING PERMITS

1. The Township will advise the Building Official not to issue building permits for structures or buildings in new subdivisions until the following items have been successfully completed or unless otherwise identified in the developer's agreement.
 - a) Utilities have been installed and all tests have passed.
 - b) Final site and boulevard grading including seeding and erosion control is completed to the satisfaction of the Township Engineer.
 - c) The first lift of bituminous (with iron raised and adjusted) is placed adjacent to the property and all the way to an adjoining road. However, the Township Engineer is authorized to waive this requirement when weather related circumstances prevent completion of roadway projects before the end of the construction season. The Developer is responsible for maintaining said roadways in a condition that will assure the access of emergency vehicles at all times when such a waiver is granted.
 - d) All roadway signs must be installed.
 - e) As-built grading plan submitted and reviewed by the Township.
2. The issuance of individual building permits for residential property shall be based on the subdivision grading plan approved by the Township and Scott County as part of the development site plan process. Changes to the actual grading of the lot or structure type noted on said plan shall be subject to a separate review and approval process by the Township and Scott County. To initiate this review process, a revised grading plan clearly indicating proposed changes to the approved grading plan shall be submitted for review and approval before the building permit is issued. Further, the Developer shall be required to acknowledge the revised plan as a modification to the original overall site grading plan. It is New Market Township's intent to assure the revised plan fits the lot, is consistent with area development and does not negatively impact adjacent property or structures.
3. Commercial, residential and industrial building permit applications shall be accompanied with a Certified Survey of the lot, locating all existing and proposed buildings, outlining all setbacks, setting the first floor elevation and indicating the utility connection points.
4. Prior to issuance of building permits, wetland buffer monuments shall be placed in accordance with the Township's policy. The monument design shall be per the Standard Detail Plates.

ISSUANCE OF OCCUPANCY PERMITS

1. No structure or building shall be occupied without first obtaining an Occupancy Permit from the Building Official.
2. Occupancy Permits shall not be issued until permanent sanitary sewer, water, and electric services are connected to the building and in operating condition, and they have been inspected and approved.
3. Occupancy Permits shall not be issued until there is a paved roadway access to the parcel being occupied. Such suitable roadway access shall consist of a completed subgrade, aggregate base, and the base course of bituminous.
4. Front yard, sides and all easements shall be sodded in accordance with the Township's Landscaping Ordinance.

BUILDING CONSTRUCTION REQUIREMENTS

1. The Developer shall be responsible for all roadway maintenance until the roadways are accepted by the Township.
 - a. Warning signs shall be placed when hazards develop in roadways to prevent the public from traveling on same and to direct attention to detours.
 - b. If and when roadways become impassable, such roadways shall be barricaded and closed.
 - c. In the event residences are occupied prior to completing roadways, the Developer shall maintain a smooth surface and provide proper surface drainage to insure that the roadways are passable to traffic and emergency vehicles.
 - d. In accordance with Developer's NPDES Construction Stormwater permit and Scott County Erosion control requirements, the Developer shall be responsible for keeping roadways within and adjacent to the subdivision swept clean of dirt and debris that may spill, track, or wash onto the roadway from Developer's operation. The Developer shall contract for roadway cleaning within and immediately adjacent to the development. A copy of this contract shall be approved by the Township before grading is started. The contract shall provide that the Township may direct the contractor to clean the roadways and bill the Developer.
 - e. The Developer may request, in writing, that the Township keep the roadways open during the winter months by plowing snow from the roadways prior to final acceptance of said roadways. The Township shall not be responsible for repairing the roadways because of snow plowing operations. Providing snow plowing service does not constitute final acceptance of the roadways by the Township.

Miscellaneous

1. The Developer's engineer is responsible for design changes and contract administration between the Developer and the Developer's contractor. Prior to starting construction, a representative of the Developer, a representative of the Consulting Engineer and a representative of the Contractor shall meet with the Township Engineer and other interested parties to discuss the method and means of supply, a work schedule as to the construction phases and a general review of the specifications and Township requirements. Within 10 days of the pre-construction conference, a written schedule of proposed construction activity, including estimates of time to complete each phase shall be established.
2. Proper notification of improvements shall be given by the Developer or his/her Engineer to the proper governmental agencies, watershed districts, area residents, etc, that could be affected by said construction. All necessary permits shall be obtained prior to commencing any work. All special requirements of the governmental agencies having jurisdiction over the work shall be complied with.
3. The Developer's Contractor shall furnish, erect and maintain temporary signs and barricades as provided in MnDOT Section 1710, "Traffic Control Devices" to protect the public. The Superintendent of Public Works shall be notified a minimum of 24 hours prior to the proposed partial blockage or closure of any roadway, alley or public right-of-way. No roadway or public right-of-way shall be closed without the proper approval of the Superintendent of Public Works.
4. It is the responsibility of the Developer's Contractor to protect and leave undisturbed markers or monuments set for the subdivision of land. In the event that any are destroyed, they shall be replaced at the Developer's and/or Contractor's cost.
5. The Developer shall immediately repair or replace, without additional compensation, any defective workmanship or material during the construction period, or within two years after the date of final acceptance of the work, regardless of prior inspections and approvals.
6. Township roadways utilized for access or egress to and from the project site shall be kept free of dirt and other debris resulting from construction activity, including material delivery. Any damage to access or egress roadways shall be repaired or corrected by the Developer at his expense. Adequate control of dust shall be maintained by the Developer's Contractor.
7. The Township will require the Contractor to submit a list of materials and respective suppliers as well as all tests of materials to the Township Engineer. Where material or labor supplied by the Contractor or Developer shall be rejected by the Township as defective or unsuitable, then such rejected material shall be removed, disposed of off the project site, and replaced with approved material. The work shall be completed again in accordance with the specifications and approval of the Township.
8. The Contractor shall supply the Township with a list of all subcontractors and material suppliers.
9. Reflector Language A single diamond shaped reflector panel shall be placed at the end of dead end roadway. All trees, stumps, brush, etc., shall be cleared within two (2') feet of the edges of trails. The exception will be only hardwood specimen trees or other exceptional items of high significant value, as determined by the Township Inspector.
10. The standard ten (10') foot utility and drainage easement adjacent to the roadway right-of-way shall be cleared and grubbed for the placement of utilities. The exception will be only hardwood specimen trees or other exceptional items of high significant value, as determined by the Township Inspector.
11. The Developer shall pay for and install all permanent roadway signage.