

**TOWN OF CLAYTON**

**2010 MINIMUM ROAD DESIGN STANDARDS ORDINANCE**

**Revised 2002, 2005, 2011**

**Town Road Policy Statement:**

All roads constructed in the Town of Clayton shall comply with the minimum standards set forth below in order to be incorporated into the Town Road system.

The Town Board for the Town of Clayton finds that it is in the public interest for the Town of Clayton to establish minimum design standards for roads constructed in its jurisdiction. The Town's minimum road construction standards are intended: to accommodate long-range traffic forecasts; to afford satisfactory access to law enforcement, to the fire department, to the Public Works Department snow removal equipment, to sanitation equipment, to road maintenance equipment; and to minimize the Town's routine road maintenance obligations.

**Definitions:**

For clarity and consistency of application of this Policy, the following definitions shall be applied for the interpretation of the Policy:

1. Town road: A thoroughfare over which the public has a legal right to pass; usually measured to include the complete Right-of-Way (ROW).
2. Drainage: The engineered removal of water from the roadway system by means of culverts, ditches, curb and gutter, trenches, channels, and/or a storm sewer drainage system etc..
3. Roadway: The traveled portion of the highway.
4. Grade: The rate of ascent or descent of the slope a road.
5. Approach: The portion of a road extending 100' on either side of a cross culvert bridge or intersection.
6. Road Bed: The entire engineered roadway, sub-structure and surface of a public thoroughfare laid in place and ready for travel.
7. Base Course: The lowest engineered portion of a road bed supporting a roadway, typically consisting of crushed aggregate including the shoulders of the road.
8. Surface: The top of the roadway, or the traveled surface.
9. Sub-grade: The earthen portion of a roadway under the engineered base course.
10. Standard Specifications: State of Wisconsin Department of Transportation Standard Specifications for Highway Structure Construction
11. Embankment: The portion of a roadway which requires the placing and compacting of suitable fill material to bring the finished sub-grade up to the required grade

**Applicability:**

This Policy shall be applicable to all roads approved by the Town Board following adoption and publication of the Policy including, but not limited to: roads dedicated and constructed as part of a plat approval process pursuant to Chapter 236 of Wisconsin Statutes, any private roads being dedicated to the Town, and any other roads accepted by the Town as public roads in the Town of Clayton.

**Minimum Road Design Standards:**

All work shall be done in accordance with the Latest Edition of the State of Wisconsin Department of Transportation Standard Specifications for Highway Structure Construction (Standard Specifications), except as follows:

- All gravel used for street construction shall contain no more than 9.5% P200.
- Prior to placing the base course, the contractor shall supply the Town Engineer with a gradation report for the aggregate stockpile to be used. The Town reserves the right to take samples from the stockpile for testing during construction.

The following minimum design standards shall apply under the Town’s Policy: All Town roads shall be classified as local roads unless designated by the Town Board as a collector road or arterial road. The classification of all roads under this Policy shall be at the complete discretion of the Town Board. The Town Board shall consider such factors as the traffic count, the character of the anticipated traffic, and the relation of the highway to traffic patterns within the Town and the State and County highway network within the Town. It is intended that the local road classification have the lowest traffic counts to provide access to private property as its principal function.

Collector Roads are intended to act as conduits from Local Roads to higher priority thoroughfares or developed areas. Arterial Roads are intended to serve as corridors through the Town and to serve intra-regional and inter-area traffic movement.

<b>Land Usage</b>				
	<b>Residential Development</b>		<b>Commercial or Industrial Development</b>	
Design	With	Without	With	Without
Criteria	Curb & Gutter	Curb & Gutter	Curb & Gutter	Curb & Gutter
<b>Maximum Allowable Grade of Roadway (Percent)</b>				
Local	10	10	8	8
Collector	8	8	6	6
Arterial	6	6	6	6
<b>Minimum Allowable Grade of Roadway (Percent)</b>				
Local				
Collector				
Arterial				
<b>Minimum Centerline Radius of Horizontal Curve (In Feet)</b>				
Local	100	100	200	200
Collector	100	100	200	200

Arterial	300	300	400	400
<b>*Corner Radii at Intersections</b>				
	25	30	25	30

\* Intersections with County or State Highways may require larger radii.

<b>Minimum Length of Vertical Curve</b>	
Local	20' for each 1% algebraic difference in grade; none required for under 2% algebraic difference in grade
Collector	50' for each 1% algebraic difference in grade
Arterial	50' for each 1% algebraic difference in grade

<b>Design Speed (MPH) for Local, Collector &amp; Arterial Roads</b>		
	Preferred	Minimum
Local	25	25 (See Notes)
Collector	45	30 (See Notes)
Arterial	55	45 (See Notes)

**Notes:**

1. The Town Board may make exceptions to these requirements based on specific site topography and/or site limitations.
2. The developer shall supply the Town of Clayton with the design speed per the Wisconsin Department of Transportation Facilities Development Manual.

**Construction Process:**

Town Capital Reconstruction projects shall be constructed to the standards of this Policy and they shall be constructed in a single year with construction taking place between May 1 and November 1 of each year

Subdivision roads shall be constructed in the following manner:

Prior to the start of any construction a subdivision Developer shall have executed the following agreements with the Town:

- 1) The Developer shall have in place with the Town of Clayton a Developer's Agreement and irrevocable financial commitments equal to the estimated full burden costs of all road construction including plan design, grade and gravel, paving and shouldering, signage, erosion control, and any required Town Engineering and/or Town legal fees.
- 2) Road design and construction plans must be recommended by the Town's Plan Commission and approved by the Town Board prior to any construction.
- 3) Road construction shall take place only between May 1 and November 1 of each year.
- 4) All roads shall be constructed to finished base course grade within one year of the date of approval of the final plat or by a date certain agreed to by the Town Board.

- 5) On new subdivision developments, the roads shall be constructed to finished base course grade for a period of six months to one year allowing the base course remain unpaved through one winter. Before application of an asphalt surface, the sub-grade must pass a proof roll test and be accepted by the Town Engineer.
- 6) Road construction in subdivisions shall be in accordance with the following schedule. Where sub-base has satisfied the winter-over and proof roll requirements above:
  - a) Regardless of the Lot occupancy level of the subdivision, the binder course of asphalt shall be applied by August 31 following the first winter-over period (second year).
  - b) Regardless of the Lot occupancy level of the subdivision, the final surface of asphalt shall be applied by August 31 of the following year (third year).

**Culverts:**

Private entrance culverts shall be installed with the following requirements:

1. The Owner shall designate, with flagged stakes at each end, where the culvert is to be placed.
2. A Town officer will view the site and designate the size and length of the culvert (culverts must have end walls and the minimum culvert diameter shall be 18" or equivalent with a minimum length of 30', a 20' culvert may be used when it is being placed in a single lane driveway). Culvert material shall be corrugated steel with steel apron end walls.
3. Any culvert installed over 30' in length may require an oversized culvert and/or a clean-out located in the middle of the culvert, level within the driveway surface. No culvert shall exceed 36' in length without written approval of the Town Board.
4. The owner shall provide a culvert and end walls and notify the Town when they are on site.
5. The owner's contractor shall supply and install steel culverts with end walls. Installation shall include: excavation; a minimum of a 12" of clear stone bedding; placement of the new culvert with the end walls and all necessary hardware; backfilling of the trench; and restoration of the ditch, side slopes, and any other areas disturbed by construction.
6. Topsoil shall be filled in behind the end walls to provide a blended appearance.
7. Culverts shall be protected from sediment until vegetation is established and the installation is accepted by the Town. Any sediment deposits found in the culverts shall be removed prior to Town's acceptance.
8. If the culvert is set incorrectly or if there are sediment deposits left within the Town's ROW, The Town will clean the ditch and set the culvert (if applicable) to facilitate proper drainage at a fee set by the Town Board.
9. The Town will finalize the culvert permit upon completion of items 1 through 8 above.

**Driveway Aprons:**

Concrete driveway aprons, fences (including invisible electronic fencing), gates, lighting, or other objects shall not be allowed on the Town's ROW. The Town of Clayton is not responsible for any damage to concrete surfaces in the ROW caused by snow plowing activities.

**Collector and/or Arterial Road Standards:**

Collector and/or Arterial Roads shall comply with all of the minimum standards set forth below before the Town Board will consider an application for acceptance as part of the Town road system. This requirement shall include the application for approval of Plats and/or

Certified Survey Maps (CSM) where road construction is involved. These standards are as follows:

- 1) Collector and/or Arterial Roads shall have an eighty foot ROW
- 2) Collector and/or Arterial Roads shall be designed to be through roads. Any temporary termination due to project phasing shall have a 50' graveled radius and a 47' paved, temporary turnaround radius installed.
- 3) All top soil shall be stripped and removed from the ROW.
- 4) Suitable sub-soil material excavated from the ditches shall be used for the leveling of the sub-grade.
- 5) All ditches shall be generally designed to be cut 2-1/4 feet below edge of pavement elevation with a foreslope of no more than 4 to 1, a backslope of no more than 3 to 1, and graded to permit proper drainage with gradual slopes at a grade not less than 1.0% per approval street plans.
- 6) Cross culverts shall be placed in the roadbed to facilitate drainage of the roadway where necessary, per the approved drainage plan. Culverts shall be corrugated steel metal pipe with associated steel metal end-walls.
- 7) Collector and/or Arterial roads constructed in the Town of Clayton shall have:
  - a) 18" of 2½" breaker run (Gradation 1)
  - b) 6" of ¾" crushed run (Gradation 2)
  - c) Geotextile Fabric
  - d) Tensar® Triax™ Geogrid or Engineer approved equivalent can be substituted for 3" of breaker run (Gradation 1)
- 8) The travel portion of the road must be 24' wide and have 4" of compacted asphalt surface (1.75" surface and 2.25" binder).
- 9) The asphalt surface must have a 3' shoulder on each side consisting of ¾" crusher run material (Gradation 2).
- 10) 30-inch (6" sloped) Type Wisconsin Department of Transportation standard mountable Concrete Curb and Gutter shall be placed on the radii of all road intersections; the Town reserves the right to require curb and gutter on any other portion of a Town Road for both ease of maintenance and public health and safety.

#### **Local Road Standards:**

Local Road Standards shall comply with all of the minimum standards set forth below before the Town Board of the Town of Clayton will consider an application for acceptance as part of the Town road system. This shall apply to application for approval of Plats and/or Certified Survey Maps (CSM) with road construction involved.

- 1) Town Roads shall have a sixty-six foot ROW
- 2) Any permanent dead-end road shall have a 66' radius ROW (47' radius pavement, 50' radius graveled) cul-de-sac at its terminus. Any temporary termination due to project phasing shall have a 47' radius pavement and 50' radius graveled, temporary turnaround installed.
- 3) All top soil shall be stripped and removed from the ROW.
- 4) Suitable sub-soil material excavated from the ditches may be used for the leveling of the sub-grade.
- 5) All ditches shall be generally designed to be cut 2-1/4 feet below edge of pavement elevation with a fore-slope of no more than 4 to 1, a back-slope of no more than 3 to 1,

- and graded to permit proper drainage with gradual slopes at a grade not less than 1.0% per approval street plans.
- 6) Cross culverts shall be placed in the roadbed to facilitate drainage of the roadway where necessary, per approved street plans. Culverts shall be corrugated steel metal pipe with associated steel metal end-walls.
  - 7) Local roads constructed in the Town of Clayton shall have:
    - a) 15" of 2½" breaker run (Gradation 1)
    - b) 6" of ¾" crushed run (Gradation 2)
    - c) Geotextile Fabric
    - d) Tensar® Triax™ Geogrid or Engineer approved equivalent can be substituted for 3" of breaker run (Gradation 1)
  - 8) The travel portion of the road must be 22' wide and have 3.5" of compacted asphalt surface. (1.75" surface and 1.75" binder).
  - 9) The asphalt surface must have a 3' shoulder on each side consisting of ¾" of crusher run material (Gradation 2).
  - 11) 30-inch (6" sloped) Type Wisconsin Department of Transportation standard mountable Concrete Curb and Gutter shall be placed on the radii of all road intersections; the Town reserves the right to require curb and gutter on any other portion of a Town Road for both ease of maintenance and public health and safety.

### **Minimum Road Construction Standards:**

#### **Construction Staking:**

All staking work shall be done by the Town Engineer. The Town Engineer will provide station staking "lath" along both sides of the ROW. The positioning of the lath will provide direction on the placement of topsoil piles.

The Town Engineer shall provide the Contractor with street summary sheets that provide sub-grade, stone grade, ditch grade, and ROW elevations for all the streets.

The Contractor shall utilize the ROW station stakes for alignment. It is the Contractor's responsibility to stake the edge-of-stone and centerline alignments for the proposed streets. It is the Contractor's responsibility to check the vertical accuracy of the sub-grade and stone grades prior to the Town Engineer's sub-grade check.

#### **Clearing and Grubbing:**

Clearing and grubbing shall consist of cutting and disposing of trees, brush, stumps, roots, shrubs, fallen trees, fence posts, fence wire, vines and other vegetation and debris occurring within the project limits and disposing of same as required for the specified construction.

The clearing limits shall be the limits of the ROW or easement unless otherwise stated or indicated by the Town Engineer on the Approved plans.

The Contractor shall use whatever methods for clearing and grubbing best suited to the site and which will not cause damage to adjacent properties.

The Contractor shall remove obstructions such as street signs, small culverts and end walls, advertising signs and guard posts located in construction easements or Rights-of-Way, provided the owner is notified prior to removal and they are promptly replaced to their original condition unless otherwise specified by the Town Engineer.

Any existing culverts that the Town's Engineer indicates shall be salvaged, shall be carefully removed and shall become the property of the Town of Clayton.

Unless otherwise required, all materials resulting from the clearing or from cleanup shall become the property of the CONTRACTOR. The CONTRACTOR shall take full responsibility for the complete and proper disposal of the materials.

The CONTRACTOR and/or DEVELOPER shall be responsible for the protection, and replacement if necessary, of survey monuments which may exist throughout the project area. Any disturbed survey monuments shall be replaced by the Town's Engineer at the Contractor's expense.

**Fine Grading/Excavation:**

Prior to construction the contractor shall strip all topsoil from the ROW and stockpile it. The entire street ROW shall be excavated to the typical sections shown in the Approved Plans. There will be areas where existing ground elevations and proposed street grades will dictate that slope intercepts extend beyond the ROW lines. The Contractor shall adjust any existing low elevations to proper ROW elevations. Existing elevations that are higher in terrain may be left higher than typical. However, elevation differences in the ROW from one side of the street cross-section to the other shall be approved by the Town Engineer.

The sub-grade shall be comprised of sound non-organic material free from topsoil and/or any other deleterious material. Acceptable excavated sub-grade material shall be moved to locations on the project where fill is required.

The Contractor shall proof roll (loaded truck) the sub-grade for the Town Engineer in conjunction with the compaction testing prior to placing the crushed stone base course. Sub-grade in ditch areas shall be excavated and graded to allow for the addition of a minimum of 4" inches of topsoil.

Any excess material not needed for road construction shall be hauled off site or placed and leveled in locations determined by the Town Engineer.

**Roadway Embankments:**

Embankments consist of miscellaneous backfill material placed in accordance with the specifications below and conformity with the lines, grades, thicknesses and typical cross sections shown on the APPROVED plans.

Embankments shall consist of approved materials and shall contain no stones, concrete, logs, stumps, brush or other organic material. Frozen material shall not be permitted in the

embankment except in the area beyond the limits of an assumed one-to-one slope extending outward from the outer limits of the roadway shoulder line.

Materials used in the top 12" of an embankment shall be free of any foreign objects that would significantly affect scarifying, compacting, and finishing the sub-grade.

Before placing any material in an embankment, the Contractor shall clear, grub and strip the topsoil. Unless otherwise specified in the contract, the construction of embankments shall be discontinued in the fall or early winter when weather conditions which will cause substantial freezing of the materials as they are placed tend to prevail.

The material placed in an embankment shall be placed in layers starting at the lowest elevation. The layers shall be spread evenly to a uniform thickness throughout and parallel to the finished grade. The thickness of the layer shall be as necessary to secure the required compaction; generally not exceeding 8". Where it is not practical to place the material in layers to a thickness of 8" (such as marshes, wet ground, filling in water, or on a steep hillside), a single layer may be constructed to a thickness not greater than necessary to support the hauling equipment while placing subsequent layers.

Embankments placed in wet marshes or swamps shall be constructed by end-dumping the fill material. When marshes are excavated in a dry condition the embankment shall be constructed in layers and compacted as practicable. For a description of the method, please refer to Section 203 – Marsh Excavation.

Where material placed for embankment consists of rock (or broken stone) of sufficient size that placing in 8" layers is not practical, the material may be placed in layers not exceeding the average diameter of the largest pieces, provided there will be no nesting and all the voids are filled with smaller stones and satisfactory soil or rock fines.

**Preparation of Sub-grade:**

The Contractor shall notify the Town Engineer after the completion of the sub-grade construction. The Town's Engineer will check and document the sub-grade compaction and elevations. The Town Engineer will require a proof roll of the sub grade prior to the placement of any fabric and base course material.

The Contractor shall ensure that the sub-grade elevations are within Policy tolerances (0.08') prior to requesting that the Town's Engineer to verify elevations.

**Excavation below Sub-Grade:**

The Contractor shall excavate the road to the specifications shown in the typical plan cross-section.

Excavation below sub-grade (undercutting) may be necessary over some portions of a project. If such excavation is required, the Contractor shall obtain prior authorization from the Town Engineer.

The Contractor shall backfill excavations below sub-grade (2' over-dig) with suitable and approved material. This backfill material shall be compacted and brought up to the sub-grade elevations as shown on the typical plan cross-section and the Contractor shall be paid at the unit price change order to the bid.

**Compaction:**

Except as otherwise provided, all sub-grade, all base course, all fill placed in embankments, all backfills in marshes and construction of rock fills shall be compacted in accordance with requirements for standard compaction unless special compaction is called for on the APPROVED plans or supplemental specifications.

The material to be compacted shall be at the optimum moisture content to insure proper compaction. If the moisture content is such that excessive distortion or displacement occurs under the compaction equipment, the material shall be allowed to dry. Drying may be accelerated by aeration or manipulation by means of blade graders, discs, or other appropriate equipment. If the material is too dry to compact properly, water shall be added in quantities deemed necessary by the Town Engineer to aid and accelerate effective compaction.

Each layer of an embankment shall be compacted to the degree that no further appreciable consolidation is evidenced under the action of the compaction equipment. No material shall be placed for the succeeding layer until the required compaction is attained for each layer.

The compaction shall be attained by hauling and leveling equipment traveling with an equal distribution over each layer and supplemented by specialized equipment. If the compaction attained through the hauling and leveling equipment is satisfactory and sufficient, specialized equipment will not be required. If specialized equipment is necessary, the equipment shall include tamping rollers, pneumatic-tire rollers, vibratory rollers or other types of equipment designed for compaction.

Tamping rollers shall exert a weight of not less than 150 pounds per square inch of tamping surface. Other rollers, such as pneumatic-tire rollers shall exert a weight of not less than 150 pounds per linear inch of roller width.

Embankments of six' or less in height shall be compacted to at least 95% of maximum density for their full depth. Embankments over 6' in height shall have the top 6' compacted to not less than 95% of maximum density, and those portions more than 6' below the finished sub-grade shall be compacted to at least 90% of maximum density. The maximum density of the fill material will be determined in accordance with the ASTM test designation D-1557, the modified Proctor Test, and the relative density shall be determined in accordance with the Standard Method of Test for Density for Soil-in-Place by the Sand-Cone Method, AASHTO Test Designation T 191, or other approved methods. If such tests are required by the Town, they shall be done at the DEVELOPER'S expense.

## **Compaction Testing:**

### **Sub-grade**

The Town will contract with an independent testing laboratory to provide the required testing services.

Testing will determine maximum density and optimum moisture content for compaction in accordance with ASTM D1-1557 (one test for each type of material for each source). Field density testing will be conducted in accordance with ASTM D1-1556 and/or D-2922 and D-3017. Minimum frequency for field testing shall be two (2) acceptable tests per roadway or as follows, whichever number is greater:

- One moisture/density test per 100' of roadway.

Additional density testing may be required under the following conditions:

- Soil Density does not meet project requirements.
- Change in method of compaction.
- Change in source or quality of soil or aggregate.
- Disturbed cut areas.

### **Stone Base:**

The Town will contract with an independent testing laboratory to provide the required compaction testing services.

The contractor shall compact each layer of aggregate after it is placed and spread to the required thickness, width and section. If the material is deficient in moisture content the contractor shall add the necessary moisture during compaction operations by means which will provide a uniform application in order to attain the required density. Each layer or course placed shall be compacted to at least 95% of the maximum dry density as determined by the Modified Proctor Test (ASTM D1557). In areas where proper compaction is not obtainable due to segregation of materials, excess fines or other deficiencies shall be reworked or removed and replaced with material that will yield the desired results. The contractor shall shape and maintain the material to the proper dimensions prior to and during compaction operations.

### **Geotextile Fabric:**

The Contractor shall notify the Town's Engineer prior to any placement of fabric. The Contractor shall install geotextile fabric on the sub-grade of all streets.

The geotextile fabric shall consist of either woven polyester, polypropylene, stabilized nylon, polyethylene or polyvinylidene chloride. All fabric shall have the minimum strength values required in the weakest principal direction. The geotextile fabric rolls shall be clearly marked showing the type of fabric. The fabric shall comply with the following minimum physical requirements:

<b>Geotextile Fabric Minimum Physical Requirements</b>		
<b>Parameter</b>	<b>Method</b>	<b>Value</b>
Trapezoid Tear (lbs.)	ASTM D-4533	100 lbs
Permittivity (sec-1)	ASTM D4491	.02
Apparent Opening Size (sieve size)	ASTM D-4751	30/70
Ultraviolet Degradation (% strength retained)	ASTM D-4355	70
Grab Tensile Strength (lbs.)	ASTM D-4632-86	280 min.
Puncture Strength (lbs.)	ASTM D-4833	115 min.
Mullen Burst (psi)	ASTM D-3786	600 min.
Elongation at Required Strength (%)	ASTM D-4632-86	25% max

All numerical values represent minimum/maximum average roll values (i.e., the average of test results on any roll in a lot should meet or exceed the minimum values in the table).

The rolls of fabric are to be kept dry until installed and shall be clearly marked showing the type of fabric.

**Construction Methods:**

Prior to the placement of fabric, the sub-grade shall be smoothed, shaped, and compacted to the required grade, section, and density. After the fabric has been placed on the sub-grade area, no traffic or construction equipment will be permitted to travel directly on the fabric.

The fabric shall be placed on the sub-grade, rolled out parallel to the roadway, and pulled taut manually to remove wrinkles. Adjacent rolls of fabric shall be overlapped a minimum of 24". All factory and field seams shall be sewn with a thread having the same or greater durability as the material in the fabric and sewn seams shall have the same strength as the specified strength of the fabric.

Weights or pins may be required to prevent lifting of the fabric by wind. After placement, the fabric shall be exposed no longer than 48 hours prior to covering. Base course material shall be placed by back-dumping with trucks and leveled with a crawler dozer to a minimum depth of 4" over the fabric.

Construction equipment shall be such that ruts do not exceed 3" in depth. All ruts shall be filled with additional material; smoothing of ruts will not be permitted. Before covering, the condition of the fabric shall be inspected by the Town's Engineer to determine that no holes, rips, or tears occurred in the fabric. If any defects are observed, the damaged area shall be covered with a patch of fabric using a 36" overlap in all directions.

**Placement of Stone Base:**

The Contractor shall notify the Town's Engineer prior to any placement of stone base. The Contractor shall set up a proof roll with Town staff and the Town's Engineer on-site. The sub-grade shall be approved by the Town's Engineer prior to commencing with the fabric and stone placement.

Should the Contractor begin graveling streets without the consent of the Town Engineer; the Contractor shall remove the fabric and stone at his cost.

**Placing Topsoil:**

The Contractor shall place screened and pulverized, salvaged or imported topsoil to a depth of 4" in all ditches and other areas as indicated on the APPROVED plans and specifications. Rocks, stones, twigs, and clods that will not break down and other foreign material shall be removed, and the entire surface shall be dressed to present a uniform appearance.

After the areas upon which the topsoil is to be placed have been prepared and finished to the required lines, grades, slopes and cross-section, the topsoil shall be placed and spread thereon to a uniform depth of 4".

**Restoration:**

The Contractor shall stabilize all disturbed areas on the project including swales and lot lines. Restoration shall consist of placing and grading topsoil, seeding, fertilizing, mulching and erosion control re-vegetative if required.

**Seeding:**

The Contractor shall seed areas indicated on the approved plans and specifications. All seed shall conform to the Wisconsin Statutes and Wisconsin Administrative Code Chapter ATCP 20 regarding noxious weed seed content and labeling. Seed Mixture No.10 per Section 630 of the "Standard Specifications" shall be applied at the rate specified in that section.

The Contractor is responsible for a 2" catch of grass and shall reseed any bare or sparse areas as determined by the Town's Engineer.

**Fertilizer:**

The Contractor shall provide (and incorporate into the soil) fertilizer to the areas indicated on the APPROVED plans and specifications to be seeded. Type A Fertilizer per Section 629 of the "Standard Specifications" shall be applied at the rate specified in that section.

**Mulching:**

The Contractor shall utilize Method "C" Mulching per Section 627 of the "Standard Specifications" and it shall be applied at the rate specified in that section. The Contractor shall furnish and place weed free hay or straw as mulch at a depth of 1" to 1 ½" on all areas indicated on the plans and in the specifications to be seeded. Mulch shall be applied in locations not covered by Erosion Mat. Mulch shall be placed within three (3) days after seeding has been completed.

Mulching operations shall not be performed during periods of excessively high winds which would preclude the proper placing of the mulch. The placed mulch shall be loose or open enough to allow some sunlight to penetrate and air to slowly circulate, but thick enough to shade the ground, conserve soil moisture, and prevent or reduce soil erosion.

**Erosion Control Re-Vegetative Mat:**

Erosion control re-vegetative shall be installed at locations shown on plans APPROVED by the State of Wisconsin, Winnebago County, the Town of Clayton and/or any combination of agencies having jurisdiction over the project.

The entire street ditch section shall be matted with Class II, Type B erosion control vegetative mat (C125 as manufactured by North American Green or equal). If higher grade matting is needed due to steeper slopes or conveyance of excessive storm water flows, the Contractor shall specify a product to be approved by the Town Engineer.

**Bituminous Concrete Pavement:**

This work shall consist of the construction of plant mixed bituminous concrete surface on the approved prepared foundation, base course, or existing surface in accordance with the APPROVED plans and specifications. Asphaltic concrete pavement materials shall be mix HMA Type E-1. Pavements shall be placed in two lifts with 1½' of tapered overlap (Michigan Joint). The first lift shall be a binder course. The second lift shall be a finish course. Minimum lift thickness shall be 1.75".

**Materials:**

The binder course shall be 19.0 mm (3/4") Gradation as described in section-460.2.2.3, of the "Standard Specifications". The finish course shall be 12.5 mm (1/2") Gradation, as described in section 460.2.2.3, of the "Standard Specifications".

The bituminous Material used in bituminous concrete shall be Asphalt; Performance Graded (PG) 58-28 for local and commercial streets and PG 64-22 for industrial streets.

**Methods:**

The roadbed shall be prepared by doing any necessary scarifying, shaping, and compaction of the aggregate base course required to restore the surface to the proper contour and to provide a surface free from potholes, sags, depressions, or other irregularities.

All base preparation, compaction, prime coating, paving methods, and equipment used shall be in accordance with Section 460, of the "Standard Specifications".

**Shouldering:**

The Contractor shall install with the use of acceptable equipment a 3' shoulder on each side consisting of ¾" crusher run material (Gradation 2).

The construction of aggregate shoulders along pavements shall be prosecuted in such a manner that the shoulder is constructed to the required cross-section and flush with the pavement as soon as practicable. Shoulders shall be compacted in accordance with standard methods. If shouldering is delayed for any reason, the CONTRACTOR shall provide and maintain signing and other traffic protection and control devices.

**Acceptance:**

Prior to acceptance, the Town Engineer shall submit verification to the Town that the sub-grade, stone grade, ditches and Rights-of-Way were constructed in accordance with the APPROVED plans.

The Owner shall supply the Town of Clayton with lien waivers from the project contractor, the Town Engineer, the Town Attorney, and any other sub-consultants that performed work for the project.

***The following specifications are required where a Sanitary District's utilities exist in the ROW and the Utilities' specifications do not already include the specifications.***

**Testing of Utility Trenches:**

The contractor shall ensure that all utility trenches are backfilled with suitable, non-frozen material. The backfill material shall be placed in 6" – 12" layers (no greater than 12") from the top of the pipe to a point 16" below the proposed pavement surface grade and mechanically tamped prior to adding more fill.

All fill shall be uniformly compacted to a dry density which is at least 90% of the maximum dry density for materials used as determined by laboratory compaction tests at optimum moisture content. Compaction tests made shall be made in accordance with ASTM D-1557, at the developer's expense.

Adopted this 15<sup>th</sup>, day of August, 2012

  
\_\_\_\_\_  
Mark E. Luebke, Town Chair

Attest:   
\_\_\_\_\_  
Richard Johnston Town Administrator/Clerk