105.9 Surveys, Points and Instructions.

The City shall make all surveys unless otherwise specified in the contract.

Set and maintain construction stakes to within 0.03 feet horizontally and establish elevations to within 0.04 feet vertically for curb & gutter, pavements, storm sewer and sanitary sewer layout. Set and maintain construction stakes to within 0.1 feet horizontally and establish elevations to within 0.1 feet vertically for water main and road subgrade layout.

The Engineer will furnish and set the construction survey stakes or reference points and bench marks necessary to establish the location, alignment and elevation for the project and such stakes will bear instructive markings or be accompanied by necessary detailed instructions. These stakes and marks shall constitute the field control by and in accordance with which the Contractor shall govern and execute the work. The Contractor shall furnish, such other facilities and labor as may be required in establishing such other points and lines necessary to the prosecution of the work. The Contractor shall furnish additional stakes and other material necessary for maintaining the points and lines given. The Contractor shall be responsible for the preservation of all stakes and marks, and if any of the survey stakes or marks have been carelessly or willfully destroyed or disturbed by the Contractor, the cost to the City of replacing them may be charged against the Contractor and be deducted from the payment of the work.

The Contractor shall provide reasonable and necessary opportunities and facilities for setting points and making measurements. The Contractor shall make timely demands upon the Engineer for such points and instructions as may be necessary as the work progresses. The Contractor shall not proceed until the Engineer has had the opportunity to furnish such points and instructions. The work shall be done in strict conformity with such points and instructions.

109.4 Character of Workers.

The Contractor shall, at all times, enforce strict discipline and good order among personnel, subcontractors and others employed on the work, and shall not employ on the work any unfit person or anyone not skilled in the work assigned.

All supervisors and workers shall have sufficient skill and experience to properly perform the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment and tools required to perform all work properly and satisfactorily.

All persons employed on the work will be courteous and respectful to all others working at or present at the site, including City employees or other representatives and members of the public. Contractor's employees will create and maintain a welcoming, respectful, and inclusive work environment and are strictly prohibited from engaging in unruly, abusive, violent, bullying, or other threatening or intimidating behavior or language, and are strictly prohibited from engaging in harassment or discrimination on the basis of a person's race, sex, gender, gender identity, gender expression, religion, creed, color, age, disability/handicap, marital status, HIV status, source of income, familial status, ancestry or national origin, sexual orientation, arrest record, conviction record, current or past military service, less than honorable discharge, use or non-use of lawful products off the employer's premises during non-work hours, physical appearance, political beliefs, or the fact that a person is a student.

If any person employed on the work shall refuse or neglect to obey the directions of the Engineer, as to quality of work, character of the work or quality of materials, or be so incompetent or disorderly as to endanger the proper fulfillment of this contract, or otherwise engage in behavior contrary to this Section,

such person shall, upon the written order of said Engineer, be at once removed from the project and not again employed on any part of the work.

Should the Contractor fail to remove such person or persons as required above, or fail to furnish suitable and sufficient personnel for the proper prosecution of the work, the Engineer may withhold all estimates which are or may become due, or the Engineer may suspend the work by written notice until such orders are complied with.

210.1(e) Silt Fence, Silt Sock, Erosion Bales.

When required, either by the erosion control plan or by the Construction Engineer, perimeter controls consisting of silt fence, silt sock or erosion bales shall be installed to protect down slope areas from silt laden runoff generated from disturbed work areas. Perimeter controls shall be installed per their respective WDNR Conservation Practice Standard (1055 for Erosion Bales, 1056 for Silt Fence, and ~~1071~~ City of Madison Standard Detail Drawing 1.12 for Silt Sock).

210.2 Materials.

210.2(a) Silt Sock.

Silt sock provided shall be 8 or 12 inches in diameter as determined by the approved erosion control plan or as directed by the Construction Engineer. The silt sock shall be manufactured from a Multi-Filament Polypropylene (MFPP). The MFPP shall have a maximum mesh opening of 1/8 in, a minimum tensile strength of 202 psi, and a 100% original strength from ultraviolet exposure at 1000 hours (ASTM G-155). The silt sock shall be filled with either a compost filler material or a wood chip filler material with no pieces larger than 2 inches. Under no circumstances shall the compost filler material contain any animal waste or byproducts. Wooden posts for staking silt sock shall be 2 in X 2 in X ~~36~~ 30 in and staking shall be by cross-staking over the silt sock at 10-foot intervals (minimum).

210.2(b) Polyacrylamide Soil Stabilizers.

Polyacrylamide Soil Stabilizers shall conform to the WDOT's Product Acceptability List (PAL) for Soil Stabilizers, Type B.

210.2(c) Erosion Matting.

Erosion Matting provided shall be of the Class and Type specified. The Class and Type requirements listed below match those of the Wisconsin Department of Transportation nomenclature. Products currently listed in the Wisconsin Department of Transportation's Product Acceptability List (PAL) for the Class and Type specified shall be considered to meet the City of Madison's Specifications. However, only products listed in the PAL that are constructed with 100 percent biodegradable material will be permitted on City of Madison projects, with the exception of Class III materials.

Class I Type A, Class I Type B, Class II Type A, and Class II Type C mats shall be designated ORGANIC to ensure provision of a product with 100 percent biodegradable matting, netting, and stitching. Photodegradable is NOT equivalent to biodegradable. Products listed in the PAL as Class I Urban Type A and Class I Urban Type B are all 100 percent biodegradable, and therefore do not need to be designated ORGANIC. Class III ECRM is not required to be constructed of biodegradable material. When biodegradable matting is required, anchoring devices also need to be 100 percent biodegradable.

When a specific Class and Type of matting is called for on the proposal page, the Contractor shall not be allowed to substitute out other matting Class and Types for the one called for.

CLASS I All Class I erosion mats shall be a light-duty, organic erosion control revegetation mat (ECRM). Class I mat shall have an expected working duration of a minimum of six (6)

months. All Class I products used on City of Madison projects shall be constructed of 100 percent biodegradable materials, including stitching. There are four Types of Class I erosion mat.

URBAN TYPE A shall have a minimum permissible shear stress of 1.0 lbs/ft^2 for non-netted materials. No specified minimum permissible shear stress for netted products. Recommended for use on slopes 4:1 or flatter, and recommended for use in environmentally sensitive areas. Not recommended for use in channels.

URBAN TYPE B shall have a minimum permissible shear stress of 1.0 lbs/ft^2. Recommended for use on slopes of 2.5:1 or flatter, and recommended for use in environmentally sensitive areas. Not recommended for use in channels.

TYPE A ORGANIC shall have a minimum permissible shear stress of 1.0 lbs/ft^2. Recommended for use on slopes of 2.5:1 or flatter. Not recommended for use in channels. Only products that are constructed of 100 percent biodegradable matting, netting, and stitching will be permitted.

TYPE B ORGANIC shall have a minimum Permissible Shear Stress of 1.5 lbs/ft^2 (70) Pa. Recommended for use on slopes of 2:1 for flatter. Only products that are constructed of 100 percent biodegradable matting, netting, and stitching will be permitted.

CLASS II Class II erosion mats shall be long lasting, organic ECRM mats. Class II mat shall have an expected working duration of a minimum of three (3) years. All Class II products used on City of Madison projects shall be constructed of 100 percent biodegradable materials, including stitching. There are two acceptable Types of Class II erosion mats.

TYPE A ORGANIC shall be a jute fiber mat. This type of matting shall only be used to reinforce sod and shall conform with Section 628.2.2 of the Wisconsin Department of Transportation Standard Specifications.

TYPE B shall not be permitted on City of Madison projects.

TYPE C ORGANIC shall have a Minimum Permissible Shear Stress of 2.0 lbs/ft^2 (95 Pa). Type C shall be 100% biodegradable including all netting used in its construction. Recommended for used on slopes of 2:1 or flatter, or in channels. Recommended for use in environmentally sensitive areas.

CLASS III Class III erosion mat shall be a 100% synthetic mat which shall be UV stabilized. There are four Types of Class III erosion mat.

TYPE A is an ECRM mat and shall have a Minimum Permissible Shear Stress of 2.0 lbs/ft^2 (95 Pa). Recommended for used on slopes of 2:1 or flatter, or in channels.

TYPE B is a Turf Reinforcement Mat (TRM) and shall have a Minimum Permissible Shear Stress of 2.0 lbs/ft^2 (95 Pa). Recommended for used on slopes of 2:1 or flatter, or in channels.

TYPE C is a TRM and shall have a Minimum Permissible Shear Stress of 3.5 lbs/ft^2 (170 Pa). Recommended for used on slopes of 2:1 or flatter, or in channels.

TYPE D is a TRM and shall have a Minimum Permissible Shear Stress of 5.0 lbs/ft^2 (240 Pa). Recommended for used on slopes of 1:1 or flatter, or in channels.

Note: When Class III, Types B, C or D are used, the affected areas shall be seeded and fertilized but not mulched. The affected area shall then have Class I matting installed over the affected area. The seeding and Class I matting will be measured and paid for separately.

210.3 Construction Methods.

210.3(a) Polymer Stabilization.

Application is intended to be done with conventional hydraulic seeding equipment. Polyacrylamide Soil Stabilizer may also be placed through dry spreading. Application rates shall be as recommended by the manufacturer and shall meet the approval of the engineer. In general, rate of application shall be 20 lbs./acre.

210.3(b) Erosion Matting.

Erosion mat shall be installed in compliance with WDNR Conservation Practice Standard 1052 -Non-channel Erosion Mat, WDNR Conservation Practice Standard 1053 - Channel Erosion Mat, the Standard

Plate "EROSION MAT" in the City of Madison Standard Specifications for Public Works Construction, and/or in compliance with the manufacture's specifications. Erosion matting shall be installed within three (3) days of seeding.
The Contractor shall submit the name of the specified product proposed for use as well as the manufacturer's recommended installation instructions, including but not limited to: recommended anchoring devices, (i.e. type of stakes or staples); overlap; anchor trench configuration; and anchoring pattern. The Contractor shall provide this submittal at the preconstruction meeting. Where any discrepancy exists between installation methods called out on the Standard Plate and the manufacturer's specifications, the Construction Engineer shall have the final authority to specify the installation method used.

ARTICLE 213 - MISCELLANEOUS

213.1 General.

This article shall consist of miscellaneous work in accordance with these Specifications, the Contract, as shown on the plans and cross sections, or as directed by the Engineer. The work shall be done at the locations and to the lines and grades as shown on the plans or as directed by the Engineer.

213.2 Description

213.2(a) Mailboxes.

The mailboxes shall be removed from each driveway and temporary placed at one end of the project limits. The temporary placement location will be determined by the City Construction Engineer. Access will be provided to the temporary placement location area at all times. At the end of the project, the contractor shall re-install the mailboxes to their original location or a location determined by the City Construction Engineer. The contractor shall replace the original post and mailbox if any damage occurs.

213.2(b) Construction Fence (plastic)

Work under this item shall include all work, materials, labor and incidentals necessary for the Contractor to provide, install, maintain, and remove construction fence from the project site as shown on the plans.

Construction fencing shall be installed to discourage access to the construction area by the general public during the course of the project. Fencing shall be maintained throughout construction and adjusted or removed at the request of the Engineer.

This fence shall be highly visible (orange), constructed of a plastic web, and able to withstand the expected amount of use it shall receive on a construction site. Relocation of fencing may be required as the work progresses. No extra payment shall be made for temporarily opening and re-closing the fence, or relocation of the fencing as needed to perform the work. Fencing shall be left in place until construction operations are complete.

Construction fencing shall be International Orange color, high-density polyethylene mesh conforming to the following:

- Mesh opening: 1 inch minimum to 3 inch maximum
- Height: 4 feet

Ultimate tensile strength: Avg 3000 lb per 4' width (ASTM D638)

213.3 Method of Measurement.

Unless otherwise provided, this work will be measured in the original position of the structures to be removed and replaced, as follows:

1. Remove and Replace mailbox shall be measured by each completed unit in place.
2. Construction Fence (Plastic) shall be measured by the linear foot quantity as listed in the proposal page without measurement thereof.

213.4 Basis of Payment.

Remove and Replace Mailbox shall be paid at the contract price for work as described and measured above including all work, materials, labor, and incidentals.

Construction Fence (Plastic) shall be measured as described above and shall be paid for at the contract unit price which shall be full compensation for all work, materials, labor, tools.

303.2(o) Tree Grates

Tree Grate 4' x 6' (Including Frame)
Tree Grate 4' X 8' (Including Frame)
Tree Grate 5' X 5' (Including Frame)
Tree Grate 4' X 12' (Including Frame)
Tree Grate 5' Diameter Circle (Including Frame)

Description

This work shall consist of the furnishing and installing tree grates as shown on SDD 3.15 and as herein provided.

Materials

Tree grates shall be cast iron per ASTM A48 class 35B or better. Standard finish is raw cast grey iron. Tree grate shall be ADA compliant, provide with angle frame and rebar. Casting shall be:
R-8811 (4' x 6' rectangle)
R-8815-A (4' by 8' rectangle)
R-8815 (4' x 12' rectangle)
R-8713 (5' x 5' square)
R-8871 (5' Diameter Circle)
Approved product shall be from Neenah Foundry Co. P.O. Box 729, 2121 Brooks Ave. Neenah, WI 54957, 920-725-7000, or Approved equal.

Construction

The location of each grate shall be marked on the pavement or curb by the City Forester.

Install tree grates according to manufacturer's instructions and as shown on the details to provide installation on a true, flat plane.

Concrete installation under the grate frame shall be formed or cut back flush with the inside edge of the grate frame.

The Contractor shall excavate a minimum of three feet in depth in the location of the proposed tree grate to ensure location is suitable for tree planting. Any obstructions shall be reviewed by City Forestry for tree suitability and possible tree grate location adjustment.

The Contractor shall fill/plug the center tree hole of all grates that do not have trees in areas that are open to pedestrians as a result of the tree plantings not occurring until November. The surface shall be level with the surface of the tree grate. Tree hole shall be filled/plugged with a piece of plywood wired to the grate. A traffic barrel shall be screwed to the top of the plywood. The Contractor shall support the center of the tree grate for those that do not have trees to prevent them from being broken. Unsupported grates broken before tree planting occurs (up to one calendar year if tree planting is by others) shall be the responsibility of the Contractor to replace.

303.2(p) C1 Concrete, 7-Inch

DESCRIPTION

This work shall be in accordance with the requirements of Part 3 of the Standard Specifications, except as herein after amended.

MATERIALS

The concrete mix design shall be as follows per cubic yard:

Cement: 575 lbs
Fine Aggregate: 950 lbs
Upper Canadian Black Granite (½ x ¼) **or** Starlite Black Granite (9/16 x 3/16): 752.5 lbs
Colonial Red Granite (9/16 x 3/16): 1397.5 lbs

Sieve Analysis

Upper Canadian Black Granite

Sieve Size	% Passing
9/16”	100%
0.53”	98.5%
7/16”	84.7%
5/8”	65.8%
¼”	14.2%
#4	1.0%

Starlite Black Granite

Sieve Size	% Passing
9/16”	98%
3/8”	66%
3/16”	12%
#8	0%

Colonial Red Granite

Sieve Size	% Passing
9/16”	98.0%
3/8”	67.0%
#4	13.0%
#8	3.0%
#16	<1.0%

Expansion joint filler shall be closed cell foam type conforming to ASTM D 1752. ASTM D 5249, Type 41 2, ASTM D 7174. The joint sealer shall be the gun grade Sonolastic NP 1 urethane as manufactured by Sonneborn, or an approved equal. The color shall match the adjoining work and shall be approved by the Engineer.

CONSTRUCTION

Placing and Finishing Concrete. Conform to Part 3 of the Standard Specifications for the concrete. The Engineer will check and approve the foundation, forms and reinforcement if required, before placing the concrete. Place the concrete on a moist foundation, deposit it to the required depth, and consolidate sufficiently to bring the mortar to the surface, then strike-off and finish to a true and even surface. Before mortar sets, spray the surface with water and brush or lightly broom the surface to expose the aggregate to closely match the existing C1 concrete sidewalk adjacent to the area. Before performing the final surface finish, check the sidewalk surface with a 10-foot straightedge, and correct all areas that vary ¼-inch from the testing edge by adding or removing concrete while the concrete is still plastic.

C1 Concrete Sidewalk 7-Inch shall be doweled into all existing and new concrete with #6 epoxy coated tie bars. All tie bars shall be in accordance with Standard Detail 3.10 and 3.11 of the City of Madison Standard Specifications

All C1 Concrete Sidewalk 7-Inch shall include 2 inches crushed stone base foundation incidental if needed. Contractor shall follow concrete waste management specifications.

Interface between C1 Concrete Sidewalk 7-Inch and 7" Concrete Sidewalk & Drive shall have foam expansion joint and caulk seal, which are incidental to this item.

303.3 Measurement and Payment.

303.3(a) Method of Measurement.

Sidewalks, sidewalk ramps, mountable median island nose, driveways and steps shall be measured by area in square feet. The measured areas of crosswalks shall be included with the measured areas of sidewalks.

Curb Ramp Detectable Warning Field shall be measured in place by the square feet of surface area.

Tree grates as described above shall be measured by the unit, each, installed and accepted in place. All tree location test holes shall be considered incidental to the tree grate.

When required, the "Profile Sawcut" shall be measured by length in linear along the flow line of the curb.

In the case of integral curb and walk, the width of the walk shall extend to a point six (6) inches behind the face of curb. The curb shall be paid for separately as Curb and Gutter.

In the case of steps, the area measured for payment shall be the summation of the areas of the treads, computed by multiplying the width of the tread by the length of the tread out to out of integral wall, if any.

Reinforcing steel for concrete sidewalk installed in accordance with the terms of the contract will be included with this bid item.

Cold weather protection for sidewalk and drives shall be measured by the square foot of sidewalk or driveway surface.

C1 Concrete Sidewalk, 7-Inch shall be measured by the square foot installed and accepted.

303.3(b) Basis of Payment.

The area, measured as provided above, shall be paid for at the contract unit price per square foot for the items of concrete sidewalk, concrete driveways, concrete mountable median island nose, and concrete steps,

which price shall be full compensation for furnishing all materials, including concrete masonry, expansion joints and sealant; for excavations and preparation of subgrade including subbase, backfilling, and disposal of surplus material; for forming; for placing, finishing, protecting, jointing, sealing and curing of the concrete; and for all labor, tools, equipment and incidentals necessary to complete the work and restore the site of the work. Providing and placing crushed aggregate base course shall be paid for separately with bid item 40102.

Payment for Curb Ramp Detectable Warning Field is full compensation for providing all materials, including detectable warning field panels, finishing, protecting, and curing concrete; and restoring the work site; and for all labor, tools, equipment and incidentals required to complete the work and restore the site. Payment for any concrete sidewalk directly below detectable warning field is paid for separately under the applicable concrete sidewalk bid item.

Payment for Tree Grate as described above, measured as provided above, will be paid for at the contract unit price each, which price shall be payment in full for furnishing, installing tree grates and washed stone, reinforcing steel; and for furnishing all labor, tools, equipment and incidentals necessary to complete this item of work.

The footage for profile sawcut, measured as provided above, shall be paid for at the contract unit price per linear foot, which price shall be full compensation for excavating; for all labor, tools, materials, and equipment necessary to complete the work, including crushed stone made necessary by excessive excavation behind the curb; and for disposal of the concrete.

The contract price for reinforcing steel for concrete sidewalk shall include furnishing the specified materials and all labor, tools, equipment and incidentals necessary to complete the work.

Cold weather protection for sidewalk and drives shall be paid for at the contract unit price per square foot, measured as specified above in Method of Measurement, which price shall be full compensation for furnishing all materials; for placing and maintaining; and for all labor, tools, equipment and incidentals necessary to complete the work during the concrete curing time specified in Section 301.8(a.) “Cold Weather Protection.”

Where reinforcing steel for concrete sidewalk is not listed as an item on which to submit unit prices, it shall be understood and agreed that the Contractor shall be paid seventy-five ($0.75) cents per linear foot of uncoated reinforcing steel, and one ($1.00) dollar per linear foot of epoxy-coated reinforcing steel furnished and placed in accordance with these Specifications.

C1 Concrete Sidewalk, 7-Inch, measured as stated above, is full compensation for providing all materials, including concrete, bar steel reinforcement HS, joint fillers, joint sealers, and expansion joints; for excavating and preparing the foundation; backfilling and disposing of surplus material; for placing, finishing, protecting, and curing; and restoring the work site. However, if the contract provides a bid item for excavation, then the department will pay for work required and performed in construction concrete sidewalks as specified in the contract.

303.2(n) Curb Ramp Detectable Warning Field.

Description

This special provision describes placing detectable warning fields in curb ramps in accordance with the requirements of the standard specifications and as hereinafter provided.

Materials

Furnish Curb Ramp Detectable Warning Fields, which shall be cast iron set in the concrete, manufactured by East Jordan Ironworks, Neenah Foundry, Pioneer Detectable LLC, Tuftile ADA Solutions (or equivalent).

402.2(b) Personnel.

The Contractor shall provide competent workers who are capable of performing the duties assigned to them in the work of placing and compacting asphalt mixtures in accordance with the specifications. The paving crew shall be under the supervision of an experienced supervisor who shall be on the project at all times, and who shall not operate equipment, such as paving machines or rollers, at any time during the paving operation. Under no circumstances shall the workers, or others, be allowed to walk across recently laid asphalt mixture behind the paving machine and ahead of the roller.

Flaggers shall be required to meetWisconsin Department of Transportation Certification.

402.3 Asphalt Pavement.

Unless otherwise specified or directed by the Engineer, asphalt driveways and asphalt terrace paving shall be constructed of three (3) inches of upper layer pavement installed in one (1) lift on select fill, or as directed by the Engineer. 4 LT 58-28 S, 5 LT 58-28 S mixture or an approved commercial mix shall be used, unless a substitute is approved by engineer.

The composition for the various asphalt mixtures shall conform to the limits specified in Part 4 of the latest edition of the Standard Specifications for Highway and Structure Construction of the State of Wisconsin, Department of Transportation, except as modified herein or in the Special Provisions of the contract. Warm mix HMA is not approved.

The mixture shall be laid and compacted so that the average yields in pounds per square yard shall conform to the following charts showing the various thicknesses of installation:

Unless otherwise specified in the contract, or directed by the Engineer, the upper layer mixtures shall be installed in one course of one and ~~one-half~~ three-quarter (1-3/4) inches in depth.

ARTICLE 409 - MILL & OVERLAY/PATCHING CRITERIA

409 ~~401~~.1 General

((NEW ITEM))

504.2(q) Drilled Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings. Drilled PVC Underdrain shall start with Solid-Wall Poly (Vinyl Chloride) (PVC) sewer pipe and fittings, labeled as “Drilled PVC Underdrain” on the plans, shall conform to the requirements of the Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings, ASTM D 3034 for SDR-35. Joints shall be elastomeric or solvent cement and shall be made as recommended by the manufacturer.

Holes are 5/8” diameter and are drilled at 0, 90, 180 and 270 degrees in a radial pattern. The pattern is repeated every 6 inches but rotated 45 degrees to create the drill pattern shown in drawing 5.7.47.

Fittings supplied by manufacturers other than the supplier of the pipe shall not be permitted without the approval of the Engineer.

Spec revisions to section 505.4:

505.3(b) Box Culvert Wingwalls. Box Culvert Wingwalls shall be constructed as depicted in Standard Detail Drawing 5.5.1, Box Culvert Wingwall, or Standard Detail Drawings 5.5.1 A&B, Box Culvert Wingwall - 1 & - 2, as ~~at the locations~~ specified on the plan set.

505.4 Measurement and Payment.

505.4(a) Box Culverts.

Box Culvert shall be measured to the nearest whole foot of each of the various types, classes and sizes of box culvert installed at the various depths, measured along the centerline of the box culvert center to center of junctions and fittings. The quantity to be paid for does not include the lengths of wingwalls and construction through sewer access structures, catchbasins, or other structures. There shall be no deductions from the measured lengths for the installations of wyes, tees, angle-sections and special sections required to join boxes of dissimilar sizes, shapes and types. Part V - Sewers and Sewer Structures Iss. 02/02/2021-Part5.doc 49 The contract price shall include all materials necessary to perform the work, including fittings and accessories, but not including wyes, tees, angle-sections and special precast sections required to join pipes of dissimilar sizes, shapes and types and wingwalls; excavation of the trench, except tunneling and jacking; installation and removal of sheeting and bracing; disposal of surplus material from the trench; backfilling the trench and compaction of the backfill material; embankment over the sewer using surplus material from the excavation of the trench; laying the box; jointing material and sealing of joints in the box; filling the separation between multiple box installations; connections to existing structures; cleaning out the sewer; restoring the site; and all other work incidental to the installation of storm sewers. Bedding, including the required filter fabric, shall be considered incidental to this item. Backfill with select backfill, if required, shall not be included in this item and shall be compensated under the respective item.

507.2(d) Inlets.

The following lists of Neenah Foundry castings are acceptable for City construction and are further detailed in the Standard Detail Drawings. Substitutions shall be approved by the Engineer prior to delivery to the job site.

1. R-3067 -7004 Heavy-duty curb inlet frame, curb box with two (2) inch radius and "Dump No Waste - Drains to Lake" logo. EJ Co. 7030Z1-T1 frame, curb box and "Dump No Waste – Drains to Lakes" logo, shall be considered an approved equal.
   Grates: Neenah Foundry Type R, Type V, Type VB. EJ Co. Type M5, M6, M7.

   For use with Type "H" Inlets in Type 'A', Type 'B' or Type 'H' Concrete Curb and Gutter.

2. R-3067 -7009 Heavy-duty curb inlet frame, slanted curb box with openings. EJ Co. 7030Z1-T7 frame and slanted curb box with openings shall be considered an approved equal.
   For use with Type "H" Inlets in Type 'A' Mountable Concrete Curb and Gutter.

   Note: Grates to be denoted in construction plans.

3. R-3067-7000 Casting to be used when an existing "H" inlet is located at a new or proposed driveway location. In this application, the curb head section of the casting shall be removed from the existing inlet and replaced with this "plate" casting. This allows the existing inlet frame to be used without removal and replacement of the existing curb & gutter section surrounding the inlet to replace with our standard driveway casting R-3290-A.

Note: Casting number provides frame and grate.

4. R-3067-C Narrowed Casting (no casting in the curb head area) to be used as an alternate to R-3067-7000 in drive way areas. EJ Co. 7030Z2 frame shall be considered an approved equal.

Note: Casting number provides frame and grate.

5. R-3290 -A Heavy-duty curb inlet frame and custom grate. No curb box required. For use with Type "H" Inlets in Driveway Section Type 'A' Concrete Curb and Gutter. EJ Co. 7034Z-M frame and grate shall be considered an approved equal.

Note: Casting number provides frame and grate.

6. R-1878 -B7G Heavy-duty frame and flat open grate for use with Type "H" Inlets and in grassed areas. No curb box required.

7. R-1878 -B7L Heavy-duty frame and flat closed cover for use with Type "H" Inlets. No curb box required.

8. R-3281-A Heavy-duty curb inlet frame, curb box with two (2) inch radius. May be used with diagonal openings grate denoted with **–AL** (left) or **–AR** (right) or with staggered longitudinal vane grate denoted with a **-B**. For use with Type "S" Inlets in Type 'G' Concrete Curb and Gutter.

9. R-3362-L Casting to be installed on inlets constructed in alleys with "v" style ribbon curb - see SDD 5.7.33 for installation details.

10. R-3808-0005 Component number for ~~all version of Terrace Inlets (SDD 5.7.12)~~ Terrace Inlets Types 1-5 (SDD 5.7.12 – 5.7.12E) shall be made of DUCTILE IRON – this requires a special order from Neenah Foundry. Standard Gray Iron castings shall not be allowed for use.

11. R-1878-B11G Heavy-duty frame and flat open grate for use with Terrace Inlet Type 6 (SDD 5.7.12E). No curb box required.

507.3(b) Precast Requirements.

Precast Sewer Access Structures (SAS) and inlets, generally referred to as precast structures, shall be of reinforced concrete and shall conform to the specifications of Precast Reinforced Concrete Manhole Sections, ASTM C 478. Joints shall meet the requirements for circular reinforced concrete pipe as specified in these Specifications.

Precast structures for storm and sanitary sewer structures ~~shall not~~ may be furnished with steps to facilitate construction. Prior to project acceptance, all steps shall be removed from structures. After step removal, the metal from the steps will need to be covered with epoxy.

Precast structures of reinforced concrete may be substituted for cast-in-place structures provided they can meet all of the following criteria and the conditions of the contract and approval is granted from the Engineer. No precast structures shall be brought to the job site until approval is granted from the Engineer. Any precast structure not meeting these criteria shall be replaced by a cast-in-place structure or a precast structure satisfying these criteria at the Contractor's expense.

Part VIII - Standard Detail Drawings

SERIES 1 - EROSION CONTROL

1.01 RESERVED FOR FUTURE USE
1.02 EROSION MAT
1.03 RESERVED FOR FUTURE USE
1.04 RESERVED FOR FUTURE USE
1.05 CLEAR STONE BERM FOR EROSION CONTROL
1.06 RESERVED FOR FUTURE USE
1.07 CONSTRUCTION ENTRANCE
1.08 STREET CONSTRUCTION ENTRANCE BERM
1.09 RESERVED FOR FUTURE USE
1.10 STREET CONSTRUCTION STONE BERM
1.11 RIGID FRAME INLET PROTECTION
1.12 SILT SOCK

SERIES 2 - EARTHWORK

2.01 STANDARD PLANTING TECHNIQUE FOR TREES IN TURF AREAS
2.02 STANDARD PLANTING TECHNIQUE FOR TREES IN TREE GRATES
2.03 STANDARD PLANTING TECHNIQUE FOR EVERGREENS
2.04 STANDARD PLANTING TECHNIQUE FOR SHRUBS
2.05 STANDARD PRUNING TECHNIQUES FOR DECIDUOUS AND CONIFEROUS TREES AND SHRUBS
2.06 TYPICAL FIELD STONE RETAINING WALL
2.07 WETLAND PLANTING PODS TYPE #1
2.08 WETLAND PLANTING PODS TYPE #2
2.09 RAINGARDEN & BIO-RETENTION DETAIL
2.10 TERRACE RAIN BASIN
2.11 BOUNDARY MARKER

SERIES 3 - CONCRETE AND CONCRETE STRUCTURES

3.01 STANDARD SPECIAL WATERWAY
3.02 MADISON STANDARD CURB CUT DETAILS
3.03 STANDARD CURB RAMPS TYPES 1 AND 2
3.04 CURB RAMPS GENERAL AND CURB RAMP TYPE 2-A
3.05 CURB & GUTTER DETAIL AT END OF CUL-DE-SAC
3.06 MADISON STANDARD CONCRETE CURB & GUTTER
3.07 MADISON STANDARD CONCRETE CURB & GUTTER
3.08 MADISON STANDARD CONCRETE CURB & GUTTER
3.09 RESERVED FOR FUTURE USE
3.10 LONGITUDINAL JOINTS AND PAVEMENT TIES DETAIL
3.11 DOWELED CONCRETE PAVEMENT DETAIL
3.12 MADISON STANDARD SECTION CORNER MONUMENT DETAIL
3.13 CONCRETE MOUNTABLE MEDIAN ISLAND NOSE DETAILS
3.14 BIKE/PED RAMP DETAIL

SERIES 4 - PAVEMENTS

SERIES 5 - SEWER AND SEWER STRUCTURES

SERIES 6 - TRAFFIC ENGINEERING

SERIES 7 - WATER MAINS AND SERVICE LATERALS