

Specifications & Special Provisions

City of Berlin, WI

2021 Street and Utility Improvements

Time of Completion

Substantial Completion: October 8, 2021
Final Completion: June 24, 2022

The above times of completion is based on an anticipated contract award date of April 13, 2021. Should the Contract be awarded after the anticipated date of award, the Engineer will issue a Notice of Contract Award, and the Contractor will be allowed the same number of calendar days from the above anticipated award date to the time of completion, to finish this work under this Contract.

Substantial completion means the completion of all work associated with the project, with the exception of asphalt surface course which will be installed the following season in 2022.

The project shall be completed in its entirety and ready for final payment by the final completion date, including resolution of all punch list items, testing and owner acceptance.

Work on this project may not begin until:

- Contract documents are fully executed by all parties
- A preconstruction meeting has been held
- Engineer has issued a Notice to Proceed.

Scope of Work

The work includes furnishing all labor, materials, and equipment required for the installation of sanitary sewer, watermain, service laterals, storm sewer, street construction, and restoration, as shown by the plans and contract documents, complete, ready for use and acceptable to the City of Berlin.

Working Hours

Project working hours shall be within the hours of 7:00 AM until 5:00 PM with site cleanup allowed until 6:00 PM unless otherwise approved by the city.

Contract Allowances

Allowance #1 Materials & Compaction Testing

The Owner shall make arrangements with a PSI testing laboratory for construction testing services to verify conformance with the specifications including compaction testing of backfill or subgrade and testing of materials.

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This work will be paid for by allowance listed on the Bid Form. Allowance will cover PSI invoices only. Contractor handling charges, overhead, and markup shall be included as incidental to associated items in the base bid. The Contractor shall bear the cost of subsequent retesting for materials or areas which fail to pass the initial tests. Contact person is:

Jeffrey Fischer, P.G. (920) 745-2200 jeffrey.fischer@psiusa.com
Branch Manager
Professional Service Industries, Inc. (PSI), 608 N. Stanton St. Ripon, WI 54971

Owner & Engineer

When the OWNER, CITY, or UTILITY is mentioned herein, it means the Owner. When the ENGINEER is mentioned, it means the Consultant, Kunkel Engineering Group, or its delegated representative.

Standard Specifications

Perform all work under this contract as per the provisions of Standard Specifications for Sewer and Water Construction in Wisconsin, Sixth Edition, and State of Wisconsin Department of Transportation, Division of Highways, Standard Specifications for Highway and Structure Construction, latest edition, including all Supplemental Specifications and other revisions to date, unless otherwise specified herein or noted on the plans. Both documents are referred to herein as Standard Specifications. Section numbers less than 100 refer to the former, section numbers larger than 100 refer to the latter.

Special Provisions

The following special provisions supplement, modify, or supersede standard technical specifications with reference to work under this contract.

Utilities

Notify all Utilities that may have overhead or buried lines in the construction area. Repair or replacement of any disturbed utilities is Contractor's responsibility. The Contract Price includes any costs for temporary or permanent relocations of such structures and facilities required to complete the Work unless specifically indicated otherwise in the plans or specifications.

Davis-Bacon Wage Rate Requirements

The minimum wages to be paid on the project shall be in accordance with Federal Davis Bacon Wage Rates set forth in the Contract Documents in Section 00435.

Contractors/Subcontractors should be aware that two separate Federal Davis Bacon Wage Rates have been issued for this project. WI20210008 Heavy (Sewer/Water/Tunnel) Mod 0 issued 01/01/2021 applies to work such as sanitary sewer, watermain and storm sewer work. WI20210010 Highway Mod 0 issued 01/01/2021 applies to street paving and related incidental work. Contractors/Subcontractors should contact ENGINEER with any questions about which wage rate they should be using. ENGINEER and OWNER are not responsible for contractors/subcontractors using incorrect Davis Bacon Wage Rate.

Be aware that project Administrators, Bidders, Contractors and Subcontractors are required to use the latest federal wage rate available at the time of bid opening. The Contractor/Subcontractor must ensure that employees and applicants for employment are not discriminated against because of their race, color, religion, sex, national origin, disability, age, or any other protected class.

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Federal Labor standards program laws, including, but not limited to the Davis Bacon Act, the Copeland Anti-Kickback Act, and the Contract Work Hours and Safety Standards Act apply. If the contract price is in excess of \$100,000.00, provisions of the Contract Work Hours and Safety Standards Act at 29 CFR 5.5(b) apply.

Use of American Iron and Steel

This project may be funded with monies made available from the Wisconsin Department of Natural Resources' Safe Drinking Water Loan Program (SDLWP) and Clean Water Fund Program (CWFP). The SDWLP and CWFP have statutory requirements commonly known as "American Iron and Steel" (AIS) mandating that all of the iron and steel products used in the project must be produced in the United States. In this section, the term "iron and steel products" means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials. Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Owner or the State of Wisconsin.

Submittals

Submit shop drawings, test results, operating and maintenance data, product data, samples, and other miscellaneous work-related items to Engineer. Schedule submissions at least fifteen (15) days before date reviewed submittals will be needed. Submittals shall include the following:

- Date of submission.
- Project title and number.
- Name of contractor, supplier, and manufacturer.
- Identification of deviations from contract documents.

Shop Drawings:

- Submit graphic information at accurate scale with name of preparer indicated.
- Show dimensions and note which are based on field measurements.
- Indicate compliance with standards and notation of coordination requirements.
- Highlight, encircle or otherwise indicate variation from Contract Documents or previous submittals and revisions on re-submittals.
- Do not use Engineer's/Architect's drawings as shop drawings.
- Submit three (3) copies or appropriate electronic PDF file of scans to Engineer for review.
- Engineer will return stamped and signed scans to the General Contractor for distribution.

Product Data:

- Submit three (3) copies or appropriate electronic PDF file of scans.
- Manufacturer's standard catalog sheets, brochures, illustrations, or other standard descriptive data shall be marked to clearly indicate information that is not applicable to this project. Supplement standard product data to provide additional information regarding performance or suitability for this project.
- Clearly mark manufacturer's information to identify specific materials, products or model numbers which are being furnished for this project.
- Show dimensions, capacities, wiring diagrams and controls.

Samples:

- Submit samples in duplicate unless specified otherwise herein.

As-Built Drawings

Contractor is to maintain a complete set of Water, Sanitary Sewer and Storm Sewer utility as-built drawings throughout project construction and provide pdf copies to the City within 30 days of the project substantial completion date. As built drawings may be completed with the use of CAD software, PDF software, or other applicable software as approved by the engineer to generate plan markups. As-Built drawings shall contain but is not limited to the following information:

- Installed locations, lengths, and elevations of all water, sanitary and storm sewer utilities.
- Installed locations, lengths, and elevations of all utility laterals including detailed locations of their connection point to existing service and the material connected to.
 - Contractor shall also note any visible concerns at points of connections (i.e.: sanitary lateral has tree roots intruding into pipe)
 - Installation notes for all sanitary manhole and storm manhole and inlet structures including invert elevations & material of all connected pipes.

Preparation of As-Built drawings will not be paid for separately but will be considered incidental to associated work.

Payment Requests

The contractor's payment requests shall be submitted in the format shown attached to these provisions (Section 00620). Change Orders, variable quantity adjustments, materials stored on site, and other considerations not covered by the form shown shall be addressed by attachments to this format (Section 00941). The form is included to illustrate the required format and the minimum information to be shown on the contractor's payment requests. In addition, contractor must provide lien waivers from all suppliers and subcontractors prior to final payment being approved.

Field Engineering and Layout of Work

Appropriate components of the Work will be staked by the Engineer at no cost to the Contractor as outlined below. Engineer will set stakes at arbitrary elevations and provide cuts and fills to the plan grade. Engineer will not set stakes such that the top of the stake is at a desired elevation (blue tops etc.). After construction begins, the perpetuation of grade stakes is Contractor's responsibility, and the cost of replacing damaged or lost stakes will be charged to Contractor.

Contractor is responsible for all lines, elevations and measurements of all Work executed under the Contract. Contractor must exercise proper precaution to verify figures before laying out Work and will be held responsible for any error resulting from failure to exercise such precaution.

Engineer must receive at least 48 hours' notice to perform staking, take measurements, check grades, and inspect all items of Work.

For Curb and Gutter Roads:

The Engineer will set one set of curb and gutter offset stakes for each curb line at no cost to the contractor.

For concrete street pavements only, the Engineer will set one additional set of stakes to establish the crown grade.

For asphalt pavement, after installation of curb and gutter, Contractor must establish, at his own cost, grade reference stakes for installation of aggregate base, fine grading, and paving based on the as-built curb and gutter in accordance with the plan grades, typical cross section or station cross sections. After installation of curb and gutter, Engineer's costs to establish or stake grades for aggregate base, fine grading, manhole rim and valve box adjustment, and asphalt concrete paving will be charged to the Contractor.

Structures, piping, or other specific components of the Work will be staked once.

Property Monuments and Markers

Contractor shall preserve property monuments and markers in the project area through the course of the work. Known survey monuments and property corners are indicated by symbols on the plans. Should a known or unknown marker be found in a position that it will be damaged by the work the Contractor shall notify the Engineer to witness its position, so that the marker can be reset upon completion.

Known markers if damaged or disturbed, without being witnessed by the Engineer, must be replaced by a surveyor licensed to practice in Wisconsin, who must issue a certificate to the owner affirming that the stakes have been replaced and that they occupy the same position that they did before the Work commenced. Any associated costs will be considered incidental to the Contract.

Traffic Control and Access

General:

The Contractor shall comply with the requirements of Section 1.7.0 of the Standard Specifications and the following provisions. All traffic control measures shall be performed in accordance with the current edition of the MUTCD and the Wisconsin Department of Transportation, Work Zone Safety–Guidelines for Construction, Maintenance, and Utility Operations.

Access

The Contractor must maintain access to business and residents throughout the project area at all times. Should, in the opinion of the Engineer, any portion of the work require temporarily closing a street or road, the temporary road closure must be approved by the Owner. Contractor shall maintain at least one lane of traffic at all times in sections open to local traffic. Abutting/adjoining property owners must be provided access to their property at all times, including when streets are temporarily closed to traffic.

The Contractor shall maintain an onsite stockpile of gravel/stone, etc., and the equipment to haul and spread it in order to ensure that access is provided in accordance with this section. Ensure that sufficient gravel is present on all streets in the construction area at all times so that vehicles can easily pass. Keep areas maintained for access graded so that low clearance vehicles do not "bottom out". Include all costs of furnishing and installing gravel for access in the Bid Price for Traffic Control and Access.

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Street Cleaning:

Keep adjacent streets clear of gravel, tracked soil and material spilled from trucks or other equipment. Implement dust control measures as required. Include all costs in the in the Bid Price for Traffic Control and Access.

Street Signage:

Remove and store all street and traffic signs in the construction area as required or directed by the Owner's representative. Owner will provide a storage site for signage. All stop signs removed must be replaced with contractor furnished temporary stop signs prior to removal of the original signs. Upon completion of the work, reinstall signage in as good as or better than present condition as directed by the Engineer or Owner's representative.

Mailboxes:

Where required for mail delivery access, relocate roadside mailboxes, or provide temporary mailboxes per local Post Office policy, so that interruption of mail service to residents is prevented. Where other arrangements for postal service have been made, storage of mailboxes during construction will be the responsibility of the individual property owners. Upon completion of the work, reinstall mailboxes in as good as or better than present condition as directed by the Engineer or Owner's representative. Include all costs in the in the Bid Price for Traffic Control and Access.

Measurement and Payment:

Include all costs of maintaining access, traffic control, and associated work outlined above, Lump Sum Bid Price for Traffic Control and Access.

Disposal of Materials & Salvage

Excavated material and other excess materials shall be disposed of in a legal manner at a site to be provided by the Contractor as per Section 2.2.11 of the standard specifications. The Contractor is solely responsible for securing a site and disposal of all surplus or excavated material from this project per all Wisconsin DNR and Federal regulations. Onsite burial of debris, brush, logs, and stumps will not be allowed.

Owner has first right to all salvageable items. Deliver all materials chosen to be salvaged to a location designated by the Owner.

Include all costs associated with Disposal of Materials & Salvage in the Bid Prices for which this work is associated.

Construction Erosion Control

Implement Construction Erosion Control as shown on the plans and as specified herein.

The following WDNR Construction Site & Erosion Control Standards apply:

- Interim Sediment Control, #1051
- Stone Tracking Pad, #1057
- Storm Drain Inlet Protection for Construction Sites, #1060
- Dewatering, #1061
- Non-Channel Erosion Mat, # 1052
- Channel Erosion Mat, #1053

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- Ditch Checks, #1062
- Silt Fence, #1056
- Sediment Bale Barrier, #1055
- Sediment Trap, #1063
- Sediment Basin, #1064
- Turbidity Barriers #1069
- Water Application of Additives for Sediment Control, #1051
- Interim Manufactured Perimeter Control & Slope Interruption Products, 1071
- Mulching, # 1058
- Dust Control, #1068

Staging

- Install erosion control measures prior to start of construction.
- Maintain erosion control measures to protect the project site and prevent sediment pollution of adjacent watercourses and properties as called out on the plans.

Removal Upon Completion

- Remove erosion control measures upon completion of the work or after seeding becomes established as applicable.
- Regrade and restore any settling basins and remove silt protection at storm inlets.
- Remove and dispose of all silt fencing installed.
- Patch seed and mulch disturbed areas where erosion control measures have been removed. This work will be considered incidental to the Bid Price for Construction Erosion Control.

General Requirements

- Follow general and project specific requirements outlined on the Plans.
- Prevent tracking of soils and sediment onto public and private streets by constructing temporary tracking pad per details. Remove at the end of each workday soils and sediment reaching public and private streets not part of the construction site.
- Remove and dispose of sediment deposits behind erosion control measures when deposits reach approximately one half the volume capacity of each erosion control measure.
- Minimize dispersion of dust from construction operations by application of water or other dust control measures. Controls shall confine dust and dirt within the immediate area of the project.
- Discharge all trench water into a settling basin or filtering device prior to release into storm sewer or stream.
- Prevent overland flow from leaving the work site by installing straw bale or fabric filter fencing parallel to the contours located downhill from the work area.
- Sediment control for pipeline construction shall include placing excavated trench material on the high side of the trench and backfill, compact, and stabilize the trench immediately after pipe installation.
- The contractor will be responsible for completing and maintaining construction site inspection reports per Wisconsin DNR Requirements.
 - All Reports shall be readily onsite and available to the Owner, Engineer, or a Wisconsin DNR Employee upon request.

Silt Fence

Install silt fence, conforming to WDNR Tech Std 1056, as called out on the plans or as directed by the Engineer or Owner's Representative for undistributed quantities. Perform all work as per S. 628 of the Standard Specifications. Include all costs of furnishing and installing silt fence in the unit Bid Price for Construction Erosion Control.

Where field conditions make silt fence installation ineffective or impractical, filter sock or other materials conforming to WDNR Tech Standard 1071 may be installed in lieu of silt fence with the approval of the engineer.

Storm Drain Inlet Protection

All storm inlets catching runoff from the project area shall be provided fabric protection per WDNR Tech Standard #1060. Include costs of protection for existing inlets in the Bid Price for Construction Erosion Control. Fabric protection for inlets being installed as part of this work is considered incidental to the Bid Price for Storm Inlets.

Payment

Include all costs of construction erosion control, except for items that are specifically included in the Bid on a unit cost basis, in the Bid Price for Construction Erosion Control.

In particular, see the plans for any undistributed quantity of erosion measures which are to be included in the Bid Price for Construction Erosion Control.

Gravity Sanitary Sewer System

Standard Gravity Sewer Materials:

Where sanitary sewer or lateral called out on the plans and contract documents furnish and install:

PVC Sewer Pipe:

PVC sanitary sewer with rubber gasket joints conforming to Section 8.3.0 and 8.10.0 of the Standard Specifications, except at locations where another pipe standards or material is specifically called out on the plans and provided for in the Bid.

- 4 inch through 15 inch: Type PSM, ASTM D-3034, SDR 35.
- 18 inch through 36 inch: Type PSM, ASTM F-679, SDR 35.

Sewer Laterals:

Sanitary sewer laterals shall be PVC SDR-35, with rubber gasket joints conforming to Section 8.10.1 - 8.10.6(a) of the Standard Specifications. Laterals shall be 6" diameter unless called out otherwise on the plans. All wyes shall be push on gasket type.

Sanitary Sewer Manholes:

Furnish and install pre-cast manholes, conforming to section 3.5.0 of the standard specifications and ASTM C-478. Furnish manholes of a size to accommodate the intersecting sewer per the standard specifications, with a minimum 48" inside diameter.

- All connections to new manholes are to be made with factory installed flexible boots.
- Manholes shall require a minimum of 4" to a maximum 8" adjusting rings to meet finished grade
- Standard frames and lids shall be Neenah R-1550 frame, Type "B" sealed non-rocking lid with concealed pick holes.

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- Install internal/external rubber frame/chimney seal manufactured by Adaptor Inc.

Sealed Manholes (flood-proofing)

At locations indicated below furnish and install sealed manholes, per the plan detail, with:

- Neenah R-1916 C frame and solid cover
- Concealed pick holes
- Type “E” locking mechanism including minimum 3 SS hex head cap screws and gaskets
- machined surface between frame & cover
- Internal frame/chimney seal by Adaptor Inc.
- Anchor casting per plan detail
- Furnish and install rod and bolt anchoring per plan detail.
- if no detail is shown in plans use File 32 Detail Drawing in the Standard Specifications

Locations of Sealed Manholes

- All Sanitary Manholes on Water Street North of the Moore Street intersection and including manholes in the Moore Street intersection
- All Sanitary Manholes on Liberty Street
- All Sanitary Manholes on Berlin Street
- All Sanitary Manholes on Cumberland Street (Adjust manholes with sealed lid)

Furnish and install rod and bolt anchoring per the plan detail.

Manhole Fillets:

Manholes shall have formed flow channels with smooth radius transitions per File No 13 Detail Drawing in the Standard Specifications. Flow channel shall be same diameter as the larger of adjoining sewers. Field poured flow channels shall not be installed until the manhole is complete and backfilled.

Grade of Manhole Castings – Surface Course Next Season:

The contract provides the hot mix asphalt surface course shall be installed in the following year. Set manhole rims to the binder course grade. Prior to installing the surface course, adjust the manhole rims to finished grade with cast iron manhole adjusting rings set on a bed of butyl caulk. Each manhole adjustment shall be made with a single ring. Rings shall be Neenah R-1979 series or equal. The contractor shall be responsible for any vertical allowance required to meet the nominal finished street grade with the available ring height. Manhole paving adjustments will not be paid for separately but will be considered incidental to the Bid Price for the HMA surface course.

Outside Drop Connections:

Furnish and install outside drop connection conforming to section 3.5.8 (d)1 of the standard specifications and File No 19 Detail Drawing (precast manhole flexible connection). Use stainless steel strapping and mounting hardware for construction of all outside manhole drop connections.

Precast integral outside drop connection manhole installations must be approved by the Engineer.

General Sanitary Sewer Construction Requirements:

Connection to Existing Sanitary System:

- Connect to existing sewer manholes using Kor-N-Seal process.

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- Connect to existing sanitary sewers using Fernco fittings.
- Connect sewers of different diameter per the detail on the plans

Removing and Abandoning Sewers and Manholes:

- All existing sewer pipe being taken out of service which is not removed in the normal course of installing the new sewer will be bulkheaded and abandoned as per Section 3.2.24 of the Standard Specifications.
- Completely remove or abandon all existing manholes on lines being relayed, per Section 3.2.24 of the Standard Specifications, unless the structure is called out to remain on the plans.

Wastewater Bypass:

The Contractor shall make provisions to bypass wastewater in an environmentally acceptable manner as per all applicable Department of Natural Resources codes. This work shall be coordinated with the City Water and Sewer Department.

Sanitary Sewer Laterals:

Sewer laterals shall be installed per Part V of the Standard Specifications.

Reconnections

Locations of existing sewer service laterals are not shown on the plans. It is the responsibility of the Contractor to locate, verify active status and reconnect all active sewer laterals.

Laterals shall be reconnected to the existing service lines two (2) feet beyond the street right of way line or as directed by the Engineer or Owner's Representative.

Where sections of existing sidewalk are to remain in place, remove and dispose of existing sidewalk and replace with a minimum 8" of ¾" base aggregate dense temporary walkway.

Minimum Payment Length for Lateral Reconnection

Where the existing lateral is found to be in acceptable condition, and the Engineer or owner's representative directs that the existing lateral be reconnected to the main, a minimum length of 10 feet of lateral will be paid for at the contract unit price for that particular service line.

Laterals for Undeveloped Lots or Future Connections:

- Where shown on the plans or directed by the engineer install new laterals to a point at least two feet beyond the Right of Way line.
- Plug and block ends of new laterals to withstand air testing.
- Mark the ends of all new laterals installed with a steel conduit witness stake extending from the invert of the lateral to 2 feet above ground level.
- It is the responsibility of the Contractor to preserve and maintain lateral witness stakes during subsequent grading and seeding work under this contract.
- If witness stakes are damaged, disturbed, or removed; replacement shall be at Contractor's expense.

Alignment and Grade

- Laterals shall be run approximately perpendicular to the sewer main.
- Minimum lateral grade shall be 1.00% for new construction.
- Reconstruction shall use the available drop as directed by the Engineer.

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- Prepare and submit as-built documentation showing the distance from downstream manhole to lateral wye and length of each lateral installed.

Sewer Service Risers:

Install Risers per Section 3.2.26 of the Standard Specifications, where sewer depth exceeds 12 feet or as directed by the Engineer.

- Sewer Main 12 to 16 ft. depth: Install Type D Riser (granular backfill as specified) per File #10E detail drawing
- Sewer Main 16 to 20 ft. depth: Install Type C Riser (concrete encasement) per File #10D

Sanitary Sewer Testing:

Notify Engineer and Owner at least 48 hours prior to testing. Engineer or delegated representative must be present during all phases of testing. A written report indicating the results shall be submitted to the Engineer and Owner.

Go-No-Go (Mandrel):

Test all sanitary sewer with a go-no-go mandrel for deflection as per Section 3.2.6(i)4 of the Standard Specifications.

Leakage Test:

Perform the low-pressure air test for leakage as per Section 3.7.3 of the Standard Specifications for all sewers which do not have active service connections upon completion.

Televised Sewer Inspection:

- All gravity sewers are to be televised for quality assurance. Provide televised video inspection logs and video on tapes or digital media. Video must show the position of the camera with reference to the length of the sewer run being televised and all laterals up to the point of connection from new sewer to existing.
- Sanitary sewer shall be cleaned / vacuumed prior to televising to remove any debris. If the video log shows debris in the sanitary sewer, the contractor shall remove all debris shown and re-video the line to ensure that it has been satisfactorily cleaned prior to acceptance by the owner.

Work Incidental to Sanitary Sewer, Manholes and Laterals:

Sanitary Sewer

The Contract Unit Price for Sanitary Sewer includes: costs of furnishing and installing sanitary sewer, bedding, backfill, fittings including connectors and reducers required to meet existing sanitary main, bypassing of wastewater, temporary cross connections to maintain sewer service, connecting new sewers to existing manholes and sewers, bulk heading sewers to be abandoned, abandoning sewers and manholes, all specified testing and retesting, cleaning the new mains, televising, and as-built documentation.

Sanitary Sewer Manhole

All costs associated with the installation of the manhole, furnishing the frame, lid, adjusting rings and specified chimney seals shall be included in the bid price for Sanitary Manhole.

Existing Manholes & Valve Boxes

Adjustment of existing manhole castings and valve boxes to meet proposed street grades will not be paid for separately but will be considered incidental to the Contract.

Sewer Laterals

Where lateral installation requires the removal of sidewalk, remove, and dispose of any existing sidewalk and replace with a 4" temporary gravel walkway. Where driveway paving must be removed to install laterals, saw cut, and remove existing paving, and replace with a temporary 6" gravel surface course. This work will not be paid for separately, but will be considered incidental to the Bid Price for Sewer Lateral

Measurement and Payment:

Sanitary Sewer

Sanitary Sewer will be paid for at the contract unit price per linear foot, measured horizontally from the center to center of proposed or existing manholes or to end of sewer pipe not terminating in a manhole. New sewers beginning at a stub out connection will be measured from the connection.

Sanitary Sewer Laterals

Sanitary Sewer Laterals will be paid for at the contract unit price per linear foot, measured horizontally from the centerline of the sewer main or centerline of manhole to the end of lateral or the connection to the existing lateral.

- Where Type D Risers are installed vertical length shall be included in payment.
- Type C Riser will be paid for at the Bid Price for Type C Riser, Measurement will be per ft of pipe encased. The remainder of the sewer service will be paid for at the Bid Price for Sewer Lateral.
- Where an existing lateral is reconnected with a short length of pipe, a minimum payment length shall be 10 LF at the contract unit price for San Lateral will be paid for each individual sanitary service line.

Sanitary Sewer Manholes

Sanitary Sewer Manholes will be paid for at the contract unit price per each.

Sanitary Sewer Force Main

Provide sanitary force main, appurtenances and testing as shown and specified for a complete, operating sanitary force main system.

Forcemain Pipe:

Where Forcemain is called out on the plans and contract documents furnish and install:

PVC Forcemain Pipe:

Furnish and install PVC, pressure class 150 psi, SDR-18 conforming to AWWA C-900 (4" to 12") or AWWA C-905 (14" to 48"), with integral bell and spigot joints with an elastomeric seal conforming to Section 8.51.2 of the Standard Specifications, except at locations where another pipe material is specifically called out on the plans.

Tracer Wire System Required

- Provide an integral 10-gauge copper tracer wire per section 2.11.2 and Drawing File 24a and 24b of the Standard W&S Specifications. Stranded wire is not acceptable.
- A grounding rod or anode shall be used to ground the tracer wire at the forcemain.

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- A locate station or access box shall be provided at the right-of-way. Boxes shall be Snake Pit Magnetized Tracer Boxes by Copperhead Industries, Lite Duty Box (LD12*TP) with cast iron cover or equal. Covers shall color coded to match applicable utility.
- Locate stations shall be placed at ends of the forcemain, at air release structures, and along the forcemain route with a maximum spacing of 1000 feet.
- Tracer wire connectors shall be Dry Conn Aqua Direct Bury Lug.
- Provide owner/engineer with documentation of tracer wire conductivity testing.
- Tracer wire insulation color for water per DSPS 382 Code:
 - Potable water – blue
 - Non-potable water – purple
 - Sewer – green (Wisc Std Spec for W&S)

Forcemain Fittings:

Fittings for Ductile Iron and PVC pipe shall comply with the following:

Furnish and install mechanical joint ductile iron fittings conforming to AWWA C110 or C153 for compact ductile iron fittings per Section 8.22.0 Standard Specifications

- Ductile iron:
 - Class 52 wall thickness.
 - AWWA thickness Class 52.
 - Cement Lining: Standard Specifications 8.18.3.
 - Bituminous Coating: Standard Specifications 8.18.3.
 - Polyethylene film wrap: Standard Specifications 8.21.0.
- Joints:
 - Buried: Mechanical
 - Mechanical Joint per AWWA C-111
 - Cor-Blue tee bolts
 - In Structures: Flanged (for use with flanged D.I. interior piping)
 - Flanged Joint per AWWA C-151
 - Stainless Steel Bolts
- Pressure Rating:
 - Standard Fittings 250 PSI
 - Compact Fittings 350 PSI

Pipe Restraints for Fittings on DI or PVC Pipe:

Furnish and install mechanical joint restraining glands on all fittings which require restraint per the Section 4.3.13 of the Standard Specifications, in lieu of concrete buttress thrust blocks, rodding, or strapping.

The restraining glands shall have a pressure rating equal to that of the pipe on which it is to be used and shall be Megalug by EBAA Iron Inc. or equal.

Construction:

Forcemain shall be installed per Section 3.2.6(n) of the Standard Specifications, with reference to AWWA C600 and AWWA C900 for ductile iron and PVC pipe, respectively.

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Tracer wire shall be taped to the force main at 10 ft intervals. Tracer wire boxes shall be located every 300' or as called out on the plans.

Leakage And Pressure Testing:

Test all force main as per Section 4.15.0 of the Standard Specifications. Hydrostatic testing shall be run at 150% of the specified design operating pressure, but not less than 50 PSI. Notify Engineer and Owner at least 48 hours prior to testing. Engineer or delegated representative must be present during all phases of all testing.

Incidental Construction:

Include costs of furnishing and installing tracer wire, wire boxes, and connections in the bid price for Forcemain.

Measurement And Payment:

Force main will be paid for at the contract unit price per linear foot for Sanitary Sewer Forcemain, measured horizontally along the direct course of the force main.

Water Distribution System

General:

Provide water main, appurtenances and testing as shown and specified for a complete, operating water main system.

Materials:

Standard Water Main Pipe:

Where Watermain is called out on the plans, furnish and install Pressure Class 150 p.s.i. PVC SDR-18 pipe conforming to AWWA C-900 (4" to 12") or AWWA C-905 (14" to 48"), with integral elastomeric bell and spigot joints per Section 8.20.0 of the Standard Specifications. AWWA C-909 will be allowed subject to pre-approval of the City Utility.

Water Main Insulation:

Where cover is less than 6 feet, or watermain passes less than four feet above or below a storm sewer, furnish and install polystyrene board insulation per sections 4.17.0 and 8.50.2 of the Standard W&S Specifications. Insulation board shall be 2" thick Foamular 250 Extruded Polystyrene (XPS) closed cell rigid foam insulation, by Owens Corning or approved equal. Insulation shall be 4 ft wide for watermain, narrower installations with a minimum of 2 ft width must be approved by the Engineer. Providing insulation for watermain crossing or adjacent to storm sewers will be considered incidental to the Bid Price for Watermain.

Tracer Wire System Required

- Provide an integral 12-gauge copper tracer wire per section 4.3.14 and Drawing File 24a and 24b of the Standard W&S Specifications. Stranded wire is not acceptable.
- Tracer wire shall be connected to a Copperhead 1.5-lb, drive in, magnesium ground rod (ANO-12) at all ends to provide conductivity including each water lateral location.
 - Grounding rod for lateral locations to be placed at the connection to existing water service.
- A locate station or access box shall be provided at hydrants. Boxes shall be Bingham & Taylor P200NFG, cast iron rim with ABS body, terminal block below lid, 2-1/2" shaft, 3-1/4" lid or equal.

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- Tracer wire connectors shall be DryConn Aqua, Direct Bury connectors, sized for thickness of tracer wire being installed.
- Provide owner/engineer with documentation of tracer wire conductivity testing.

Fittings for PVC pipe shall comply with the following:

Furnish and install mechanical joint ductile iron fittings conforming to AWWA C110 or C153 for compact ductile iron fittings per Section 8.22.0 Standard Specifications

- Ductile iron:
 - Class 52 wall thickness.
 - AWWA thickness Class 52.
 - Cement Lining: Standard Specifications 8.18.3.
 - Bituminous Coating: Standard Specifications 8.18.3.
 - Polyethylene film wrap: Standard Specifications 8.21.0.
- Joints:
 - Buried: Mechanical
 - Mechanical Joint per AWWA C-111
 - Bolts shall be fluorocarbon coated T-head bolts, per AWWA C111
 - In Structures: Flanged (for use with flanged D.I. interior piping)
 - Flanged Joint per AWWA C-151
 - Stainless Steel Bolts
- Pressure Rating:
 - Standard Fittings 250 PSI
 - Compact Fittings 350 PSI

Pipe Restraints for Fittings on PVC Pipe:

Furnish and install mechanical joint restraining glands on all fittings which require restraint per the Section 4.3.13 of the Standard Specifications, in lieu of concrete buttress thrust blocks, rodding, or strapping.

The restraining glands shall have a pressure rating equal to that of the pipe on which it is to be used and shall be Megalug by EBAA Iron Inc. or equal.

Watermain Disinfection:

Disinfect water mains per S.4.3.12 of the Standard Specifications.

Gate Valves:

Furnish and install Clow gate valves with

- resilient seat
- mechanical joint
- stainless steel bonnet bolts

Valve Boxes:

Valve boxes shall be Tyler 6860, screw type, three piece, cast iron, valve boxes with #6 bases, and drop lid stamped "Water".

Furnish and install road boxes with Adaptor II valve box cradles by Adaptor Inc.

Provide operating nut extension rods for all valves installed in areas where the main is installed with greater than 6-1/2 feet of cover.

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Hydrants:

Furnish and install Clow Medallion hydrants, with:

- 4-1/2" pumper nozzle
- 2-1/2" hose nozzles
- NFT Threads
- 16-inch traffic break flange
- stainless steel bolts below ground
- bronze to bronze seat
- 1 1/2 "pentagon operating nut
- chains on cap
- mechanical joint shoe
- minimum 7 -1/2 foot bury

Where directed by the Owners Representative, plug "weep holes" on hydrants. Consider this work incidental to the installation of the hydrant.

All joints on hydrant leads shall have restrained mechanical joints. Include cost of furnishing and installing hydrant, 6" auxiliary valve, watermain lead, the tee at the main and joint restraint in the Bid Price for Hydrant.

Tapping Sleeve & Valve:

Where called out on the plans furnish and install Mueller H304 tapping sleeve with resilient wedge tapping valve or approved equal.

Construction:

Watermain shall be installed per Part IV of the Standard Specifications.

Notice to Residents for Interruption of Water Service:

Residents/property owners shall be provided 24-hour advance notice by the Contractor when water service will be interrupted. Where a business or school cannot operate without water during normal business hours, the Owner will direct that connections be made during off-peak times or before/after normal business hours at no additional cost to the Owner.

Connections to Existing Watermains:

Where called out on the plans the Contractor shall connect the new watermains to the existing system as shown on the plans.

- The planning and scheduling of this work shall be coordinated with the owner's representative to minimize disruption of water service.
- Water service to schools must not be disrupted when children are present.
- All valves are to be operated by city utility personnel.
- The Contractor is advised that older portions of the water system in the project area may be sand cast iron pipe with an outside diameter incompatible with modern standard fittings. Modification of fittings for connection to sand cast watermain will be considered incidental to the work.
- A solid sleeve mechanical joint fitting will be used wherever a connection is not made to a Tee or Bend fitting.
- The contractor shall verify that all materials and fittings required to complete a connection are on hand before any existing mains are cut.

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- There will not be a separate bid item for 4" watermain; 4" watermain will be considered incidental to connecting to an existing watermain.

Include all costs of excavation including exploratory excavation, connecting the watermains, all fittings required to connect the mains based on field conditions, cost of delays or downtime, and additional costs of work performed at times other than normal business hours in the Bid Price for Connect to Existing Watermain.

Connection to Existing Watermains with Tapping Sleeve & Valve:

Where called out on the plans, connect to existing watermain under system pressure by installing a tapping sleeve and valve. This work will be paid for at the Bid Price for Tapping Sleeve and Valve.

Where a tapping sleeve and valve is installed at the contractor's option and not called out on the plans, the work will be considered incidental to the Bid Price for Connection to Existing Watermain.

Where a tapping sleeve and valve is installed at the request of the Owner and not called out on the plans, the work will be paid for on an Extra Work basis per Section 1.6 of the Standard Specifications.

Grade of Valve Boxes – Surface Course Next Season

The contract provides the hot mix asphalt surface course shall be installed in the following year. Set valve boxes to binder course grade. Prior to installing the surface course, adjust the valve boxes to finished grade, adjustment of valves should consist of first turning up the valve to matched finished asphalt grade, in cases where valves do not turn contractor shall notify owner and/or engineer, at which time adjustment with a cast iron adjusting ring set on a bed of butyl caulk will be considered. If approved, the valve box adjustment shall be made with a single ring. The contractor shall be responsible for any vertical allowance required to meet the nominal finished street grade with the available ring height. Valve box paving adjustments will not be paid for separately but will be considered incidental to the Bid Price for asphalt surface course.

Salvage Hydrants to be Taken Out of Service:

When requested by the engineer or City or Village personnel, salvage and deliver hydrants to a location designated by City or Village personnel at no additional cost to the Owner.

Testing:

Water Main Leakage and Pressure Testing:

- Test all watermain as per Section 4.15.0 of the Standard W&S Specifications.
- Notify the Utility Department at least 48 hours prior to testing.
- Representative of the Utility Department must be present during all phases of all testing.

Water Main Disinfection and Bacteriological Testing:

- Disinfect, flush, and perform bacteriological testing of all watermain installed as per the Standard W&S Specifications.
- When flushing water system from hydrants, water shall be dispersed across an area as not to infiltrate the sanitary sewer system and only a minimal amount enters the storm sewer system.
- Notify the Utility Department at least 48 hours prior to testing.

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- Representative of the Utility Department must be present during all phases of all testing.
- Two "Safe" samples must be obtained from each water main section before any service laterals are connected to that section.
- Collect samples and deliver to testing facility appropriately accredited by WDNR.
- Copies of water quality testing shall be transmitted to the Owner

Electrical Conductivity or Continuity Test For Tracer Wire System:

Contractor shall perform conductivity or continuity testing and makes necessary repairs. Provide owner/engineer with documentation of the required conductivity testing.

Measurement and Payment:

Watermain will be paid for at the contract unit price per linear foot measured horizontally through valves and fittings to centerline of connecting main, end of pipe valve or fitting, unless the contract specifically includes a lump sum price for a watermain adjustment or similar isolated work. There will not be a separate bid item for 4" watermain; 4" watermain will be considered incidental to connecting to an existing watermain.

Valves, Hydrants, and other related items will be paid for at the contract unit price per each as outlined on the Bid.

All other materials and work to provide a complete system will be considered incidental to the Bid Price for Watermain including:

- All required bends and fittings
- Joint restraint at fittings
- Insulation provided near storm sewers
- Disinfection, flushing and testing
- Tracer wire system and conductivity testing

Water Service Laterals

Service Laterals with HDPE Pipe:

- Minimum 1-1/4" CTS SDR 9 (200psi) HDPE pipe conforming to AWWA C-901 tubing, per Section 8.24.0 Standard Specifications.
- 1"x1 1/4" Corporation stops shall be AY McDonald Minneapolis Pattern, or Mueller, screw on type, with 2 studs, all stainless-steel single strap service clamp saddle.
- Curb stop valves shall be AY McDonald Minneapolis Pattern or Mueller H1504-2 screw on type, complete with AY McDonald Minneapolis Pattern or Mueller H10350 cast iron boxes. Shall have extension rods on all curb boxes (rods & pins shall be stainless steel).
- Curb Box Lids will also be provided with a tracer wire screw that is tapped into the bottom of the lid for securing a quick connect eyelet terminal. Once tightened, the threaded end of the screw becomes accessible for attaching an alligator clip at the top of the lid.

Water Service Lateral Tracer Wire

- All water laterals shall be provided with an integral 12-gauge copper tracer wire per section 4.3.14 and Drawing File 24a. Stranded wire is not acceptable.
- Run tracer wire from the trunk watermain along the water lateral and up the outside of the curb valve box. Tracer wire shall be connected to the bottom of the curb box lid as to provide conductivity, accessible from the top of the lid.

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- Tracer wire connectors shall be DryConn Aqua, direct bury connectors, sized for the thickness of tracer wire being installed.
- Provide owner/engineer with documentation of conductivity testing.

Construction

Water service laterals shall be installed per Part V of the Standard Specifications. Pressurize lateral, visually inspect for leaks, and perform any indicated repairs before backfilling.

Reconnections

It is the responsibility of the Contractor to locate, verify active status and reconnect all active water services.

Water Service Laterals shall be reconnected to the existing service line two (2) feet beyond the street right of way line or as directed by the Engineer or Owner's Representative.

Where sections of existing sidewalk are to remain in place, remove and dispose of existing sidewalk and replace with a minimum 8" of $\frac{3}{4}$ " base aggregate dense temporary walkway.

Measurement and Payment

Water Service Pipe:

Water Service Lateral will be paid for at the contract unit price per linear foot, measured horizontally from the centerline of the water main to the end of lateral or the connection to the existing lateral.

The Bid Price for Water Service Lateral includes

- Lateral piping with tracer wire system
- Temporary walkway and restoration

Where the existing lateral is found to be in acceptable condition and the Engineer or Owners representative directs that the existing lateral be reconnected to the main, a minimum of length of 10 feet of lateral will be paid for at the Contract Unit for HDPE Pipe for that particular water service location.

Water Service Fittings:

All costs associated with furnishing and installing Water Service Fittings will be paid for at the contract unit price per each. Include all fittings and connectors required for each new water service or reconnection.

The Bid Price for Water Service Fittings includes

- Tapping the main
- Furnishing and installing Corporation Stop w/ service saddle
- Furnishing and installing Curb Stop Valve and Box w/ extension rod
- Fittings and work required to connect to existing water service line
- Capping lines for future connection.

Work Incidental to Watermain and Water Service Laterals

Existing Valve Boxes for Valves to Remain in Service

Adjustment of existing valve boxes to meet proposed street grades will not be paid for separately but will be considered incidental to the Contract.

Restoration Incidental to Water Laterals

Where lateral installation requires the removal of sidewalk, remove, and dispose of any existing sidewalk and replace with a 4" temporary gravel walkway. Where driveway paving must be removed to install laterals, saw cut, and remove existing paving, and replace with a temporary 6" gravel surface course. This work will not be paid for separately, but will be considered incidental to the Bid Price for Water Lateral

Abandoning Existing Watermain

All watermain shall be abandoned per section 4.14.6 of the Standard Specifications.

Temporary Water Service

Install, maintain, and remove temporary residential water service as called out on the plans, where the water main is to be replaced in the current location. A temporary water service line is to be installed for each utility customer currently served off the main that is to be removed.

Submittal:

Contractor shall submit a work plan for installing temporary services at least 14 day prior to commencing the work. Submittal must be approved by Engineer or Owners Representative. Submittal shall include:

- Timeline for work
- Layout drawn on project plan with each service indicated
- Outline of installation, operation, and testing procedures
- List of materials to be used, including pipe size, type, and class

Guidelines:

- Pipe or hose shall be rated for potable water use
- Hose lining shall not impart any objectionable taste or odor to the water per ANSI 61
- Residents shall be notified in writing of this work subsequent to preconstruction conference and again 48 hours prior to disruption of service.
- Connection to the private plumbing system shall be by a wye at an outside tap.
- The connection of sequential residential services in series will not be permitted.
- Each temporary service shall have its own valved branch off the common temporary service line.
- Contractor shall take precautions to avoid contamination of water services during installation.
- Contractor shall provide protection for the temporary lines at locations such as road crossings, sidewalks, and driveways. Pipe must not remain open and unprotected from both vehicular and pedestrian traffic.

Testing prior to connection of the temporary system:

- Temporary water pipes shall be flushed and disinfected prior to being put into service.
- Liquid chlorine solution shall be introduced so the chlorine is distributed throughout the section being disinfected at a chlorine concentration of 50mg/liter throughout the section.
- The system shall be left charged with the chlorine solution for 24 hours. Chlorine residual shall be tested in the section after 24 hours.

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- Should tests indicate a chlorine residual of 25 mg/liter minimum, the section shall be flushed completely and recharged with water normal to system operation.
- Should the residual limit not be met, disinfection of the line shall be repeated until satisfactory results are obtained.
- Chlorinated water used for testing shall be directed to an acceptable outlet that meets the requirements of all applicable regulations.

This work will be paid for at the lump sum unit price for Temporary Water Service.

Storm Sewer System

Provide storm sewer, appurtenances and testing as shown and specified for a complete, operating storm sewer system.

Storm Sewer Materials:

Standard Storm Sewer Pipe:

Where Storm Sewer (STM) is called out on the plans furnish and install:

- Class III RCP pipe, all diameters, unless Class IV RCP (CLSS IV) is called specifically called out on the plans.

Tee Fittings called out on the plans will not be paid for separately but will be considered incidental to the Bid Price for Storm sewer.

Storm Sewer Pipe Standards:

- Circular RCP pipe shall conform to ASTM C76
- Horizontal Elliptical RCP shall conform to ASTM C507.
- PVC SDR-35 sewer pipe with rubber gasket joints conforming to Section 8.3.0 and 8.10.0 of the Standard Specifications

Test all PVC storm sewer pipe installed for deflection with a go-no-go mandrel per Section 3.2.6(j)4 of the Standard Specifications.

Storm Sewer Manholes:

- Pre-cast concrete manholes shall conform to ASTM C-478.
- Brick or block manholes conforming to Sections 3.5.3 and 3.5.9 Standard Specifications.
- Manholes shall be a minimum of 48" inside diameter
- Pre-cast flat slab tops may be used in lieu of cone sections where shallow depth of storm sewer precludes the use of cone sections.
- Manhole frame and lid shall be Neenah R1550 with open pick hole, non-rocking lid.
- Storm manholes shall have a Type III frame/chimney joint per S. 3.5.4(f) Std. Spec.

Grade of Manhole Castings – Surface Course Next Season:

The contract provides the hot mix asphalt surface course shall be installed in the following year. Set new manhole rims to the binder course grade. This work shall be included in the unit bid price for Storm Sewer Manhole.

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Prior to installing the surface course, adjust the manhole rims to finished grade with cast iron manhole adjusting rings set on a bed of butyl caulk. Each manhole adjustment shall be made with a single ring. Rings shall be Neenah R-1979 series or equal. The contractor shall be responsible for any vertical allowance required to meet the nominal finished street grade with the available ring height. Manhole paving adjustments will not be paid for separately but will be considered incidental to the Bid Price for the HMA Pavement.

Storm Curb Inlets:

- Inlets shall be standard 2' x 3' (inside dimension) precast concrete with 5" walls.
- Furnish and install at least one 2" precast concrete adjusting ring on all inlets.
- Trim inlet or outlet piping flush with the inside inlet wall and fill all gaps with mortar.
- Provide concrete invert fillet sloped toward the discharge.

Provide the following inlet frames and grates for the type of curb and gutter shown on the typical street cross section:

- Standard (barrier) Curb & Gutter Sections:
 - Neenah R-3067 for inlets in full height curbing
 - Neenah R-3290-A for inlets which fall in driveway openings.

Trim inlet or outlet piping flush with the inside inlet wall and fill all gaps with mortar. Provide a concrete invert sloped toward the discharge.

Yard Inlets:

Install yard inlets as indicated on the plans. Furnish and install Class III RCP riser pipe installed vertically with Neenah R-4040 inside bell grates as shown on the plans. Use 24" RCP riser pipe for 10", 12" and 15" outlet pipes. Trim inlet or outlet piping flush with the inside inlet wall and fill all gaps with mortar. Provide a concrete invert sloped toward the discharge. Include all cost of inlet grates and erosion control measures in the Bid Price for Yard Inlets.

RCP Apron Endwalls:

Furnish and install RCP apron endwalls per Section 522.2 of the Standard Specification where called out on the plans. Bid Price for RCP Apron Endwalls includes:

- Downstream rip rap:
 - Include a quantity 8 square yards of 12" thick medium rip rap, on a Type R geotextile fabric per S.606, riprap and S.645.2.2.6, geotextile in the WDOT Standard Specifications
- Furnish and install pipe safety grates on all endwalls for pipes 15" diameter and larger.
 - Minimum bar size shall be 3/4" dia or equivalent bar
 - Maximum opening shall be 6"x24"
- Provide pipe ties for two sections of RCP storm sewer connected to apron endwalls.
 - Pipe ties shall conform to WisDOT Standard Detail Drawing 8F4-7.
 - Costs of pipe ties are incidental to the Bid Price for Storm Sewer,

Construction Requirements:

- Storm Sewer shall be installed per Part III of the Standard Specifications.

Work Incidental to Storm Sewer, Manhole, and Inlets:

Remove or Abandon Storm Sewer and Structures:

All existing storm sewer being taken out of service and not removed in the normal course of installing the new pipe is to be either completely removed or abandoned by filling with blown in sand or slurry fill per Section 3.2.24 or the Standard Specifications, at the contractor's option. For slurry fill, proportion a lean sand/cement mixture to completely fill the pipe without voids.

Remove or abandon existing inlets and storm manholes on lines being abandoned and as called out on the plan per Section 3.2.24 of the Standard Specifications.

Include costs of abandoning storm sewers, manholes, and inlets in the Bid Price for Storm Sewer.

Inlet Protection for New Inlets Required:

Prevent sediment from entering installed inlets throughout the construction period by installing inlet protection conforming the WDNR Std 1060 as shown on the plan detail. Include costs in the Bid Price for Construction Erosion Control.

Storm Sewer Manholes and Inlets

All costs associated with furnishing and installing manholes including cost of larger diameter manholes to accommodate pipe size, flat slab top sections, connections to new and existing manholes, frame/lid castings or inlet frame and grate, concrete invert fillet, adjusting rings shall be included in the contract unit price for Storm Sewer, Storm Sewer Manhole, or Inlet as appropriate.

Measurement and Payment:

Storm sewer will be paid for at the contract unit price per linear foot, measured horizontally from the center to center of proposed or existing manholes or inlets or to end of sewer pipe not terminating in a manhole. New sewers beginning at a stub out connection will be measured from the connection. New storm manholes and inlets will be paid for at the contract unit price for each.

Drainage of Excavation

The Contractor shall comply with the requirements of Section 2.2.12 of the Standard Specifications. Where water is being pumped out of excavations, use geotextile bags, sediment settling tank or passive filtration conforming WDNR Technical Standard 1061. Costs of excavation drainage and discharge water code compliance will not be paid for separately but will be considered incidental to the bid price of the associated work.

Construction Dewatering

Dewatering shall conform to the requirements of Section 2.2.13 of the Standard Specifications. Implementation of temporary dewatering wells shall conform to NR 812. Dewatering capacity shall not exceed 70 gpm unless the Contractor secures applicable permits from WDNR. Discharge of water shall comply with WDNR Technical Standard 1061.

Include all costs of dewatering including costs of obtaining any required WDNR permits, compliance with state codes concerning the installation, maintenance, abandonment of dewatering wells, and the discharge of water associated with these operations. in the Bid Price for Construction Dewatering.

Bedding and Backfill

Provisions apply to all Storm Sewer, Sanitary Sewer, Watermain, and Service Lateral construction under this contract.

Material:

Bedding:

Furnish and install Class B bedding as per Section 8.43 (Table 33) and Standard Detail File 4 of the Standard Specifications (and plan detail if included in contract documents) for all sanitary sewer, storm sewer, watermain, and service lateral construction. Bedding Sand will not be allowed. Cover material called out on Std Detail File 4 shall be same as specified and used for bedding.

Excavated Backfill:

Backfill all trenches with excavated material provided that the available material conforms to Section 8.43.5 of the Standard Specifications and that, in the opinion of the Engineer, the material is not excessively wet so as prevent adequate compaction.

Granular Backfill:

If existing excavated material is unsuitable, furnish and install granular material meeting the provisions of Section 8.43.4 of Standard Specifications. Pit-run sand or gravel will be suitable backfill material provided it conforms to the gradation requirements of s. 8.43.4.

Construction Requirements:

Excavation

- Excavation shall extend to the specified subgrade depth for the bedding material.
- Over excavation of the trench shall be filled with the bedding material at no additional cost to the Owner.
- Not more than 200 feet of trench for pipeline shall be open at any one time. Not more than 100 feet of trench may be opened in advance of the completed pipe laying operations; not more than one street crossing may be obstructed by the same trench at any one time.

Unsuitable Excavated Material:

Remove and dispose of excavated material not suitable for use as backfill from the site per the Disposal of Materials section of these Special Provisions.

Compaction

Consolidate all excavated material backfill by mechanical compaction as per Section 2.6.14b of the Standard Specifications. The flooding method of consolidation will not be allowed to consolidate either excavated or granular backfill.

Testing:

Backfill Compaction Testing:

Where ordered by the Engineer, compaction testing of granular or excavated material backfill will be performed to verify compliance with Section 2.6.14b of Standard Specifications.

- Costs of Compaction Testing will be paid for by the Contract Allowance for Testing.

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- The Contractor shall bear the costs of retesting areas which fail initial tests and have been corrected

Granular Backfill Gradation Testing:

At the request of the Engineer and at no additional cost to the Owner, the Contractor shall furnish documentation of gradation testing, showing conformance to Table 37 of s. 8.43.4, for the material being furnished for Granular backfill.

Measurement and Payment:

Pipe bedding, and backfill with excavated material

Pipe bedding, and backfill with excavated material as specified above, will be considered incidental to the Bid Price for the pipe being installed

Granular Backfill

Granular Backfill will be paid at the contract unit price per ton. Contractor shall provide the Engineer or Owners Representative copies of Material Receipts which plainly indicate the project name, class of material, and material weight for all granular backfill delivered to the project.

Unclassified Excavation

This work includes excavation, demolition, removal, and disposal of all materials, furnishing required borrow material, construction of embankments and transition grading of lawns.

Unclassified excavation includes removal and disposal of pavements, sidewalk, and curbing.

All earthwork for this project shall conform to WDOT Standard Specification:

- S.205 (roadway excavation)
- S.207 (embankment)
- S.213 (finish grading)

Topsoil from areas of both cut and fill shall be stripped and stockpiled as per S.205 of the standard specifications. Spreading topsoil on finished areas will be paid for separately with seeding.

Surplus excavated material may be used for fill, subject to the approval of the Engineer or Owners Representative. Additional fill material required to produce the grades shown by the plans and cross sections shall be furnished by the Contractor. Fill material from off-site furnished and installed by the contractor shall be considered borrow excavation and conform to S.208 of the WDOT Standard Specifications. Embankments shall be constructed to standard compaction as per S.207.3.6.2 of the WDOT Standard Specifications.

The Contractor shall give the Engineer 24 hours' notice before filling operations. The Contractor shall have on-site equipment necessary to achieve specified compaction requirements. Material placed in embankments shall be deposited, spread, leveled, and rolled in layers not exceeding 8 inches in thickness to obtain consolidation and minimize settlement. No fills shall be placed on frozen ground and no frozen unstable fill materials shall be utilized. Fill shall be placed at near optimum moisture content so that specified compaction is achieved with a minimum of effort.

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Material from undercut areas and excess topsoil may be used in the outer portions of the embankment as per S.207 of the Standard Specifications. No stones larger than 8 inches shall be placed in embankments.

Include all cost of excavation, demolition, removal and disposal of materials, furnishing borrow material required, construction of embankments transition grading of lawns, and other indicated as incidental to Unclassified Excavation by these special provisions in the Bid Price for Unclassified Excavation.

This work will be paid for at the Lump Sum Bid Price for Unclassified Excavation, provided the road is built to the grades and cross sections shown on the plans.

Adjustment of Existing Castings and Boxes:

The Contractor is responsible for adjusting existing manhole rims, storm inlets, valve boxes, etc. within the right of way which are to remain in place, to binder grade, whether such structures are shown on the plans or apparent in the field. Make whatever arrangements are appropriate with the owners of other such structures within the right of way to have their structures adjusted to the required grade. Include all adjustment costs in the Bid Price for Unclassified Excavation

Mill Asphalt Pavement

Milling of the existing asphalt pavement will be full depth or as called out on the plans. Work shall comply with the applicable provisions of Section 330 of the Standard Specifications.

Millings shall be salvaged and stockpiled at locations determined by the Owner. Any excess material not accepted by the Owner shall be disposed of by the Contractor per the Disposal of Materials and Salvage section of these Special Provisions.

Measurement and Payment

Mill Asphalt Pavement will be paid for at the Bid Price per Square Yard measured in place prior to milling. Bid Price shall include milling, hauling, and disposal of excess material.

Stump Removal

Where stump removal is to be completed by the contractor. Remove stump completely or grind to a minimum of 8" below finished lawn grade, or earth subgrade for sidewalks and driveways. Stump Removal will be paid for at the Bid Price per Each as indicated on the Bid Form.

Excavation Below Subgrade and Sub Base course

Engineer or Owners Representative must approve soft or unstable areas of subgrade and sub base to be undercut prior to excavation below subgrade. As directed excavate unsuitable material, install a geotextile fabric, and install a breaker run stone sub-base course to the plan subgrade. Remove excess excavated material, not required for fill, from the site as per the provision for Disposal of Materials and Salvage.

Material

- Breaker run material conforming to "Select Crushed Material" per Section 312 of the Standard Specifications
- Gradation
 - 90%-100% passing 5" screen
 - minimum of 50% passing a 1-1/2" screen with at least 2 fractured faces

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- Geotextile Fabric
 - Furnish and install Mirafi HP370, WINfab 370HP, or approved equal geotextile at any location excavated below subgrade.

Measurement and Payment

Excavation below subgrade, geotextile fabric, and sub base course will be paid for based on of the quantity of select crushed material installed. The quantities of excavation and sub base course to be paid for must be recorded and agreed on by both the Contractor and Engineer's representative on a daily basis. Undercutting disposal of material, furnishing, and installing Geotextile Fabric and Sub-base course will be paid for at the contract unit price per cubic yard for EBS and Sub-base Course.

Saw Cutting Existing Pavement

Saw cut all existing pavement and concrete structures using a wheel mounted saw. Do not use any other method of cutting existing pavement and/or concrete. In particular, do not use bucket mounted disk cutters or handheld saws.

All concrete and asphalt cutting shall be done using a wet saw and water unless otherwise directed by the engineer in order to minimize dust throughout the project area.

Saw Cutting Pavement shall be considered incidental to associated work under this contract.

Fine Grading and Finishing the Roadway:

Fine Grading

Fine grade the roadway before paving, removing, or adding base material as required. Roll and compact the base course per Standard Compaction, Section 301.3.4.2 of WDOT Standard Specifications before paving.

Include all Fine Grading costs in the Bid Price for paving work under this contract as appropriate.

Finishing the Roadway

Finish the roadway per the provisions of Section 213 of the Standard Specifications. Shaping and fine grading of shoulders, and general cleanup grading will be considered incidental to associated work under the Contract.

Manhole, Inlet and Valve Box Adjustment:

Sanitary Manholes Adjustments

- Contractor shall install new Neenah R-1550 frame, Type “B” sealed non-rocking lid with concealed pick holes.
- Contractor shall install Type I flexible internal/external chimney seals. Internal/External rubber sleeve frame/chimney seals shall be manufactured by Adaptor Inc.

Storm Manhole and Inlet Adjustments

- Manhole frame and lid shall be Neenah R1550 with open pick hole, non-rocking lid.
- Inlet Frame and Lid Shall Be:
 - Neenah R-3067 for inlets in full height curbing
 - Neenah R-3290-A for inlets which fall in driveway openings.

Valve Box Adjustment

- Existing Valve Boxes may be adjusted using Tyler 6850/60 Series Screw Type Adjustable Risers as required.

The Utility Contractor shall adjust to binder grade all existing City manhole rims, valve boxes, etc. which are to remain in place. Adjusting storm manholes and sanitary manholes to binder grade will be paid for at the unit bid price for Manhole and Inlet Adjustment. Adjusting water valves to binder grade will be paid for at the unit bid price for Valve Box Adjustment.

The Asphalt Paving Contractor is responsible for adjustment of all manholes (sanitary & storm) and valve boxes within the project limits to finish grade. Adjustment of sanitary and storm sewer manhole shall be done with cast iron adjusting rings as noted within the project specifications, prior to the installation of HMA Pavement. Each valve box adjustment shall be made with a single ring. The contractor shall be responsible for any vertical allowance required to meet the nominal finished street grade with the available ring height. All work associated with manhole, inlet, and valve box adjustment will be paid for at the unit bid price for HMA Pavement.

Road Sub Base and Base Courses

Construction shall conform to Section 301.3 of the Standard WDOT Specifications

Sub Base Course:

Furnish and install a compacted, sub base course, as shown by the typical cross section.

- Breaker run material conforming to “Select Crushed Material” per Section 312 of the WDOT Standard Specifications
- Gradation
 - 90%-100% passing 5” screen
 - minimum of 50% passing a 1-1/2” screen with at least 2 fractured faces
- Install material to Standard Compaction per Sec. 301.3.4.2 of the WDOT Standard Specifications
- Shall not be placed on a rutted or muddy sub-grade

Base Course:

Furnish and install a compacted, base course as shown by the typical cross section.

- Base course shall conform to “Base Aggregate Dense, 3/4” per Section 305 of the WDOT Standard Specifications
- Base course shall be compacted to Special Compaction per Section 301.3.4.3 of the WDOT Standard Specifications (95% max density per AASHTO T99 & T191).
- Prior to placement of the HMA Pavement, the Contractor shall proof roll newly installed and/or existing base course for acceptance. Proof rolling shall be two to four passes with a rubber tire roller or loaded truck weighing at least 25 tons. Areas which show pumping or excessive rutting shall be undercut unstable materials removed and replaced, with base course material, and retested.

Testing:

Subgrade Compaction Testing and Acceptance

At the request of the Engineer subgrade shall be proof rolled and accepted prior to placing base course. Proof rolling shall be two to four passes with a rubber tire roller or loaded truck weighing

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at least 25 tons. Areas which show pumping or excessive rutting shall be undercut, unstable materials removed and replaced, with breaker run stone, and retested.

Material Testing

At the request of the Engineer and at no additional cost to the Owner, the Contractor shall furnish documentation of gradation testing for sub base or base course materials, showing conformance with the specifications.

Compaction Testing

Where ordered by the Engineer, compaction testing of base course will be performed to verify conformance with the above specifications.

- Costs of Compaction Testing will be paid for by the Owner if an Allowance for Testing is not provided in the Contract.
- The Contractor shall bear the costs of retesting areas which fail initial tests and have been corrected

Incidental Base Materials

Base course under sidewalk and driveways per plan details will not be paid for separately, but will be considered incidental to the Bid Prices for sidewalk and driveway

Measurement and Payment

Sub Base Course and Base Course will be paid for at the Bid Price per Square Yard for the course thickness indicated on the Bid Form. Base Course will be paid for at the Bid Price per Square Yard for Base Aggregate Dense for the course thickness indicated on the Bid Form. Payment limits extend to one foot beyond the back of curb or as indicated on the typical cross section.

Geogrid Reinforcement

General

This special provision describes furnishing and installing geogrids for subgrade stabilization, base reinforcement, or pavement structure applications in accordance to the plans, section 645 of the standard specifications, and as hereinafter provided.

Materials

Provide geogrid that consists of geogrid that consists of a single layer of a uniform square or rectangular grid of bonded, formed, or fused polymer tensile strands. Furnish polyester, polypropylene, polyamide, or polyethylene material that maintains dimensional stability during handling, placing, and installation. Use geogrid that is at least 6.0 feet wide.

Provide geogrid for subgrade reinforcement that complies with the following physical properties:

- Type SR geogrid shall conform to section 645.3.2 of the Standard Specification.

Construction

Prior to placement of the geogrid, bring the indicated placement surface to the required lines, grades, and dimensions as shown on the plans. Smooth and shape the surface to eliminate any rocks, clods, roots, or other items that may cause damage to the geogrid during placement or covering.

Place the geogrid on the prepared surface at the locations and to the limits as shown on

the plans. After placement, pull the geogrid taut and secure it using pins, clips, staples, or other devices to prevent movement or displacement. Place parallel strips of geogrid with a minimum overlap of 6 inches. Lap butt joints between roll ends a minimum of 12 inches. Fasten all lapped sections together by using ties, straps, clips, or other devices to develop a secure joint that meets the approval of the engineer. No vehicles or construction equipment shall be permitted to operate directly on the geogrid.

Cover small rips, tears, or defects in the geogrid with an additional section of geogrid; secure the additional geogrid in place so that it overlaps the damaged area by at least 3 feet in all directions. Remove and replace geogrid sections with large rips, tears, defects, or other damage at the direction of the engineer. All costs to repair or replace damaged or defective geogrid shall be the responsibility of the contractor.

After placement, cover the geogrid to the indicated depth with the type of material required on the plans or in the special provisions. Placing, spreading, and compacting of this material shall comply with the applicable sections of the standard specifications or special provisions except that the initial lift of material placed on the geogrid must be at least 4 inches. Place, spread, and compact the required backfill material so that the geogrid is not displaced or damaged. The engineer may require changes in equipment and/or operations to prevent such damage or displacement.

Measurement and Payment

Include all costs of furnishing and installing geo-grid in the contract Unit Price per square yard for Geogrid Reinforcement.

Cast in Place Concrete

Concrete Materials:

Concrete Grades used for cast in place components of the work shall conform to Section 501.3.1.3 WisDOT Standard Specifications.

- Fine Aggregates shall conform to Section 501.2.5.3 WisDOT Standard Specifications.
- Coarse Aggregates shall conform to Section 501.2.5.4 WisDOT Standard Specifications.
- Portland Cements shall conform to Section 501.2.1 WisDOT Standard Specifications
- Use an air-entraining admixture conforming to Section 501.2.2 of the WisDOT Standard Specifications such that slip form concrete contains 7.0% plus or minus 1.5% entrained air and all other concrete contains 6.0% plus or minus 1.5% entrained air.

General Construction Requirements:

Concrete construction shall conform with Section 501.3 of the WisDOT Standard Specifications.

- All concrete shall have an average 28-day compressive strength of 4000 psi and no individual test shall show a 28-day compressive strength less than 3800 psi.
- All concrete shall be poured within one hour of the time water was added to the dry mix. Any mixed concrete older than one hour, whether full or partial truck load, shall be rejected.

Testing

- Where ordered by the Engineer, the Contractor shall cast concrete test specimen cylinders per Section 501.3.10 of the Standard Specifications.
- Costs of Concrete Testing will be paid for by the Owner if an Allowance for Testing is not provided in the Contract

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- Concrete found not meeting the specifications will be removed and replaced as directed by the Engineer at the Contractors expense.

Standard Curing of Concrete:

Cure all concrete in accordance with Section 415.3.12 and 415.3.13 Standard Specifications using the Impervious Coating Method per Sections 415.3.12.1 and 415.3.12.2. Use white pigmented curing compound.

Linseed Oil Concrete Curing

- Furnish liquid membrane-forming curing compounds composed of a blend of boiled linseed oil and high viscosity, heavy boiled linseed oil emulsified in a water solution conforming to AASHTO M148, type 2.
- White colored linseed oil shall be used such that the cured concrete is aesthetically similar to ordinary cured concrete.
- The linseed oil shall be applied in two applications. The second application shall be applied after the first application has dried.
- The application rate for each application shall be one gallon of mixture to 200 SF of concrete.

Concrete Curb and Gutter:

Install concrete curb and gutter per Section 601 of the WDOT Standard Specifications.

- Adjacent to asphalt paving install a Type D Curb and Gutter (Barrier Type) as shown by the W.D.O.T., Standard Detail Drawing 8D 1-13
- Adjacent to PC Concrete Pavement or where called out on the plan for future PCC pavement, install a Type A Curb and Gutter with tie bars as shown on the above detail.
- Install curb and gutter on a minimum 4" compacted aggregate base.
- Curb and gutter pouring shall be separate and not monolithic or integral with any pavement or driveway pouring.
- Joint spacing shall not exceed 20 feet.
- Install a 1/2" expansion joint at all radius points and 5 feet on either side of all structures that fall in the curb lines.
- Install depressed curb for driveway approaches and handicapped ramps where sidewalk meets curbing.
- Backfill curb and gutter, along street terraces, walks, or all other areas to be seeded to within 4" of final street terrace or lawn grade.
- Provide Linseed Oil concrete curing

Curb and Gutter, V-Gutter, or Curb and Gutter Patching will be paid for at the Bid Price per Linear Foot measured in place, which includes preparation of base, fine grading, adjustment of inlet castings, joints, specified curing and backfilling.

Concrete Driveway Apron:

Install driveway aprons per the plans, plan details and conforming to Section 416.3.2 WisDOT Standard Specifications.

- Driveway width at property line shall match existing driveway width but shall not be less than 10 feet.
- Width of the driveway approach at the curb shall be 3 feet wider on each side of the approach than at the property line unless directed otherwise by the Engineer to compensate for narrow street terrace or other individual situations.

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- Contractor shall install aprons wider than shown on the plan at the property owners request and approval of the Owners Representative.
- Where the Engineer or Owners representative determine that sections of existing sidewalk are to remain, meet the face of the walk with the new driveway apron.
- Where the existing sidewalk is to be removed, the sidewalk section through the driveway, must be 6" thick on a 6" compacted aggregate base. The portion of the driveway in the walk area may be warped to blend in with the approach.
- Saw cut a center joint where drives are wider than 20'.
- Remove and replace any concrete driveway approach that cracks at locations other than the contraction joints.
- Install 1/2" felt at the gutter and where the walks about the driveways.
- Saw cut existing concrete driveways as required and install new concrete driveway patch between new sidewalk and existing concrete driveway.
- Provide Linseed Oil concrete curing

Sidewalks running across driveways are to be constructed per the detail and specifications for Concrete Driveways and will be paid as such.

Concrete Driveway Apron will be paid at the Bid Price per Square Foot, measured in place. Bid Price includes:

- 6" course of "Base Aggregate Dense, 3/4" per Section 305 of the WDOT Standard Specifications
- Preparation of subgrade and fine grading aggregate base
- Sawing and Jointing
- Specified curing.

Concrete Sidewalk & Steps:

Install concrete sidewalk per Section 602 of the WisDOT Standard Specifications.

- Sidewalk shall be installed on a 4" course of "compacted base aggregate dense 3/4"
- Minimum sidewalk thickness shall be 4".
- Install 1/2" felt where walks meet the curb and existing walks.
- Install 1/2" felt transverse expansion joint at uniform intervals not greater than 96 ft.
- Install 1" felt expansion joint between sidewalk and buildings or similar structures.
- Provide transverse contraction joints at 4-foot intervals along the run of sidewalk.
- Remove and replace any concrete sidewalk that cracks at locations other than the contraction joints.
- Provide Linseed Oil concrete curing

Sidewalk Accessibility Ramps

Where each sidewalk run meets the curb and gutter at intersections and as called out on the plans, provide accessibility ramps with a detectable warning field.

Ramps and accessibility provisions shall conform to Chapter R3: Technical Requirements of the Current Guidelines for Accessible Public Rights of Way, by the United States Access Board.

- Provide ramps with a transverse, broomed finish.
- The sidewalk ramps shall be installed with a detectable warning field comprised of a yellow truncated dome textured surface.

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- Detectable warning field shall be equal to the width of the sidewalk, and a minimum of 24" wide measured with the run of the walk.
- Detectable warning field shall be an approved insert device from the WDOT approved materials list.

Concrete sidewalk or Concrete Sidewalk Patching will be paid for at the Bid Price per square foot, measured in place. Bid Price includes, preparation of base, 4" base aggregate, jointing, specified curing, and accessibility ramps.

Detectable Warning Fields will be paid for under the unit price per each for Detectable Warning Field. The Each quantity means a field coverage of the sidewalk width and 2 feet measured with the run of the sidewalk per pay unit.

Concrete Steps

Install or replace concrete steps at locations as directed by the Engineer, as per the standard detail drawing in the plans. Concrete work shall be as specified above for sidewalk.

Concrete steps will be paid for at the Bid Price per square foot of tread area, measured in place. Bid Price includes, preparation of base, base aggregate, forming, jointing, and specified curing.

PCC Sidewalk Patching:

As shown on the plans or as directed by the Engineer or Owners Representative, install concrete sidewalk per Section 602 of the WDOT Standard Specifications.

- Sidewalk shall be installed on a 4" course of "compacted base aggregate dense $\frac{3}{4}$ "
- Minimum sidewalk thickness shall be 4".
- Install 1/2" felt where walks meet the curb and existing walks.
- Install 1/2" felt transverse expansion joint at uniform intervals not greater than 96 ft.
- Install 1" felt expansion joint between sidewalk and buildings or similar structures.
- Provide transverse contraction joints at intervals, equal to the width of the walk, along the run of sidewalk.
- Sidewalk Accessibility Ramps must comply with Americans with Disabilities Act provisions
- Remove and replace any concrete sidewalk that cracks at locations other than the contraction joints.

Hot Mix Asphalt Pavement

Asphalt Paving shall comply with provisions of Sections 450, 455, 460 and 465 of the WDOT Standard Specifications.

Materials:

Asphalt pavement shall be:

- Upper Course: HMA 4 LT 58-28 S
- Lower Course: HMA 3 LT 58-28 S

Upper and lower layer finished layer thickness shall be as called out on the typical cross section or plan sheets.

Construction Requirements

Install asphalt lower layer immediately after preparation and fine grading of the aggregate base course.

Do not place asphalt paving:

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- When the temperature 3 feet above the ground at the site of the work, in the shade is less than 40° F
- During the calendar period between October 15 and May 1, except with the written consent of the Engineer.

In the event of such approval the conditions and restrictions set forth above and in Standard Specifications apply.

HMA Driveway Patching

Material shall conform to the above specification for the upper course of Hot Mix Asphalt Pavement. Driveway patching is to match the existing asphalt thickness but shall be no less than a 2" thick single layer. HMA Driveway Patching will be paid for at the Bid Price Per Ton.

Tack Coat for Overlay of Existing Asphalt Pavement

Apply a light bituminous tack coat per Section 455 of the Standard Specifications, to all existing asphalt pavement to be overlaid by new upper layer. Use dilute, emulsified asphalt applied at a rate of 0.03 to 0.07 gallons per square yard as directed by the Engineer. Costs of tack coat will be considered incidental to the Bid Price for Asphalt Pavement.

Staged Paving with Next Season Surface Course

Should the contract documents require that the surface course be installed in the subsequent construction season, the following provisions apply:

Binder course (lower layer) shall be installed with a nominal 2 ft wide wedge transition from binder course grade to the top of the inside flag of the curb and gutter. Installation of this wedged transition will be paid for at the contract unit price per ton for HMA Pavement, Lower Layer.

The wedged transition along the curb and gutter shall be milled out prior to the installation of surface course (upper layer). Removal of the transition in the binder course shall be considered incidental to the Bid Price for HMA Pavement, Upper Layer.

All additional costs needed for this work will not be paid for separately but should be included in the Bid Price for HMA Pavement.

Measurement and Payment

Hot Mix Asphalt Pavement will be paid for at the Bid Price per Ton. Bid price includes fine grading and preparation of base. Contractor shall provide the Engineer or Owners Representative copies of Material Receipts which plainly indicate the project name, class of material, and material weight for all asphalt delivered to the project.

Topsoil and Seeding

Apply topsoil, fine grade, seed, fertilize, and mulch all areas disturbed by construction.

Topsoil

Furnish, install, and fine grade pulverized topsoil in all areas to be seeded.

Installed topsoil thickness shall be 4".

Provide an allowance of at least one additional inch to account for settling and compaction. Topsoil must not contain stones, rocks, gravel, excessive amounts of vegetative matter, sticks, herbicides, pesticides, weed seeds or other objectionable matter.

Seeding and Mulch

Perform all seeding work as per s. 630 of the WDOT Standard Specifications.
Apply Fertilizer Type A as per s. 629 of the Standard Specifications.

Standard Seeding:

- Seed Mixture #40 for street terrace and lawn areas
- Seed Mixture #20 for back slopes, and as directed by the Engineer.

Mulch all seeded areas as per s. 627 of Standard Specifications. Contractor's attention is called to the requirements for anchoring straw mulch by Methods A, B, or C. Provisions for anchoring straw mulch will be strictly enforced for this project.

Repair or replace any area that settles, washes out, does not grow, is excessively weedy, erodes, or fails in any other manner within the warranty period at no cost to Owner.

Measurement and Payment

Topsoil and Seeding will be paid for at the Bid Price per Square Yard or Acre, measured in place as indicated on the Bid Form. Bid Price includes cleanup grading, furnishing, and installing topsoil, fertilizer, seeding and mulch.