CITY OF JANESVILLE – STANDARD SPECIFICATIONS

SUMMARY OF UPDATES

Updates Effective November 1, 2024

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STANDARD SPECIFICATION REVISIONS

The following is an abbreviated list of key standard specifications updates:

PART 5 – SANITARY SEWER SYSTEM

- Section 5.2.1 – Clarified that the inside diameter of adjusting rings shall match the inside diameter of the structure cone.
- Section 5.2.2 – Added requirement for installing non-shrink grout around pipe connections to fill the space between and around the pipes and the structure bench. Also, added requirement for finishing mortar between concrete adjusting rings.
- Section 5.4.1 – Clarified that sanitary sewer pipe that is 18" or greater shall be SDR 35 (PS 46) or SDR 26 (PS 115). Also, added requirement for the Strong Back RC Series coupling or approved equal for making connections between existing and new sanitary sewer pipe.
- Section 5.6.1 – Added requirement for the Strong Back RC Series coupling or approved equal for making connections between existing and new sanitary lateral pipe.

PART 6 – WATER DISTRIBUTION SYSTEM

- Section 6.1.4 – Specified that the Contractor may operate valves (12" or less) with permission of the Water Utility.
- Section 6.2 – Removed language related to installation of new valve vaults. Valve boxes will be installed on all valves going forward.
- Section 6.2.1 – For rehabilitation of existing valve vaults, clarified that the inside diameter of adjusting rings shall match the inside diameter of the structure cone.
- Section 6.5.1 – Clarified that precast concrete thrust blocking shall be used for mains 12" or smaller, and cast-in-place concrete shall be used for mains larger than 12", unless otherwise approved by the Engineer.
- Section 6.6.1 – Specified that couplings for copper-to-copper unions shall be Mueller Company Part No. P-15403N or approved equal.
- Section 6.7.1 – Specified that, where hydrant drain ports must be plugged, the drain ports shall be plugged internally by the manufacturer, and a special tag will be installed on the hydrants.
- Section 6.10 – Modified tracer wire access box specifications to require the BoaBox 150 Water Access Point at water services.

PART 7 – STORM SEWER SYSTEM

- Section 7.2.1 – Clarified that the inside diameter of adjusting rings shall match the inside diameter of the structure cone. Also, added a specification for a casting/grate to be used at driveway locations and in gutters.
- Section 7.2.2 – Added requirement for finishing mortar between concrete adjusting rings.
- Section 7.3.2 – Added requirement for finishing mortar between concrete adjusting rings.
- Section 7.3.1 – Added a specification for a casting/grate to be used at driveway locations and in gutters.

- Section 7.5 – Changed pipe specification to reference WisDOT Standard Specifications for Highway and Structure Construction, Section 608. Specifications now allow for polypropylene pipe.

PART 10 – PAVEMENTS

- Section 10.3.1 – Updated AASHTO National Transportation Product Evaluation Program (AASHTO NTPEP) to AASHTO Product Evaluation and Audit Solution (AASHTO PEAS).
- Section 10.3.1 – Added Hamburg Wheel-Track Testing requirement to report the average corrected rut depth at 20,000 passes and the Stripping Number. Changed AASHTO T324 to WTM T324.
- Section 10.3.1 – Added Indirect Tensile Cracking Test procedure per WTM D8225 and requirement to report the individual CT-Index results for each replicate and the average.
- Section 10.3.2 – Added IDEAL-CT to the testing list.
- Section 10.3.2 – Changed Automated Extraction of Asphalt Binder from Asphalt Mixture from ASTM D8159 to WTM D8159.
- Section 10.3.2 – Specified that the finished pavement surface shall be ¼" above structure casting and water valve box rims.
- Section 10.3.5.1 – Changed Automated Extraction of Asphalt Binder from Asphalt Mixture from ASTM D8159 to WTM D8159.
- Section 10.3.5.1 – Added requirement for the Contractor to email the results of the DCT, HWTT, and IDEAL-CT tests to the Engineer within 48 hours of completion of the tests.
- Section 10.3.5.2 – Added IDEAL-CT to the testing list.
- Section 10.3.5.2 – Changed Automated Extraction of Asphalt Binder from Asphalt Mixture from ASTM D8159 to WTM D8159.
- Section 10.3.5.2 – Added that City testing may include IDEAL-CT testing. Requirements have not been specified for Corrected Rut Depth, Stripping Number, or CT-Index but these will be analyzed and the results shared with the Contractor whenever the City has a third-party lab complete HWTT and IDEAL-CT tests.
- Section 10.3.5.3 – Fixed an incorrect reference to Table 9 to reference the correct table number (Table 8).

PART 11 – STREET LIGHTS

- Section 11.1.3 – Added requirement for compaction of backfill materials when open excavations are created during installation of street lighting components.
- Section 11.4.1 – Changed the meter pedestal catalog number to MILB U5136-O-200S RL MTR DB.
- Section 11.7.1 – Changed light fixtures to Truly Green Solutions (TGS) and updated the corresponding wattage, lumens, and model numbers for each street type.

DETAIL DRAWINGS

- DETAIL #2 – Added a second page to show the proper installation of Type D-RF inlet protection.
- DETAIL #7 – Updated to incorporate requirement for the BoaBox 150 Water Access Point when tracer wire is required on water services.
- DETAIL #8 – Changed name to *Butterfly Valve and Valve Box*. Updated to show butterfly valve installation with valve box.
- DETAIL #8A – Changed name to *Gate Valve and Valve Box*. Also, updated to reduce the depth of ¾" stone required around the valve box.
- DETAIL #11 – Added clarifications regarding thrust blocking and removed offset castings from the profile view.
- DETAIL #18 – Modified typical sections to show aggregate base extending 12" behind the back of curb, instead of 6". Also, modified to show a 2% minimum cross slope.

CITY OF JANESVILLE, WISCONSIN

STANDARD SPECIFICATIONS
FOR
PUBLIC WORKS CONSTRUCTION

JANUARY 2013

REVISED NOVEMBER 1, 2024

CITY OF JANESVILLE - STANDARD SPECIFICATIONS

PART 1 – GENERAL PROVISIONS

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CITY OF JANESVILLE - STANDARD SPECIFICATIONS

PART 1 – GENERAL PROVISIONS

1.1 GENERAL

1.1.1 DEFINITIONS

Wherever used in these General Provisions or in the Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

ADDENDA Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the bidding documents or the Contract.

AGREEMENT That part of the Bid Documents which sets forth the basic promises, obligations, and signatures of both the CONTRACTOR and the CITY for this particular project.

APPLICATION FOR PAYMENT The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such support documentation as is required by the Contract.

BID The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

BID DOCUMENTS That part of the Contract which contains the Special Provisions, the Federal Wage Rates (if applicable), Notice to Contractors, Information to Bidders, Bid Proposal, Affidavit of Organization and Authority, List of Subcontractors, the Agreement, the Signature Page, the Bid Bond, the Contract or Performance Bond, the Bidder's Proof of Responsibility, the Designation of Responsible Person, and any Special Specifications in addition to the City of Janesville Standard Specifications (Parts 1 - 10), if any.

BONDS Bid, performance and payment Bonds and other instruments of security.

CHANGE ORDER A document recommended by the Engineer which is signed by the CONTRACTOR and approved by the City Engineer, and which authorizes an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Contract.

CITY By the term "City" is meant the CITY OF JANESVILLE, a Wisconsin Municipal Corporation, or it's duly appointed representatives.

CONTRACT DOCUMENTS The Agreement, Addenda, Bid Documents, CONTRACTOR's Bid (including documentation accompanying the Bid and any post-Bid documentation submitted prior to the Notice of Award), the Bonds, these General Provisions, the Special Provisions, the Specifications, the Drawings and the shop drawings as the same are more specifically identified in the Agreement, together with all amendments, modifications and supplements issued pursuant to Section 1.1.4.3 on or after the Effective Date of the Contract.

CONTRACT PRICE The monies payable by CITY to CONTRACTOR under the Contract (subject to the provisions of Section 1.1.7.7(1), in the case of Unit Price Work).

CONTRACT TIME The number of days (computed as provided in Section 1.3.2.5(2), unless provided

otherwise) or the date stated in the Contract for the completion of the Work.

CONTRACTOR The person, firm, corporation or their authorized representative(s) with whom CITY has entered into the Contract.

DEFECTIVE An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract, or has been damaged prior to ENGINEER'S recommendation of final payment (unless responsibility for the protection thereof has been assumed by CITY at Substantial Completion in accordance with Section 1.6.2(3) and (7).

DRAWINGS The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by ENGINEER and are referred to in the Contract.

EFFECTIVE DATE OF THE CONTRACT The date indicated in the Contract on which it becomes effective, but if no such date is indicated it means the date on which the Contract is signed and delivered by the last of the two parties to sign and deliver. (Also referred to as the Contract Date.)

ENGINEER Whenever the word "Engineer" is used herein, it shall be understood to refer to the City Engineer and to their authorized representatives.

FIELD ORDER A written order issued by ENGINEER which orders minor changes in the Work in accordance with Section 1.1.7.3.

INSPECTOR The authorized representative of ENGINEER who is assigned to the site or any part thereof.

LAWS AND/OR REGULATIONS All Federal, State, Local, and City Statutes, Codes, Administrative Codes, Ordinances, Regulations, Rules and/or Orders.

LUMP SUM WORK That Work bid, or quoted for a contract change, for which the CONTRACTOR bids or quotes a single amount of money and includes all items necessary to complete the Work for its intended purpose, or as otherwise defined.

NOTICE OF AWARD The written notice by CITY to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions precedent enumerated therein, within the time specified, the CITY will sign and deliver the Contract.

NOTICE OF FINAL COMPLETION The written notice by CITY to CONTRACTOR fixing the date on which all necessary work has been completed and at such time when CONTRACTOR has 45 calendar days to submit the following applicable documents to allow project closure: any disputed quantities, Davis Bacon or other federal wage rate documents (if applicable), Operation and/or Maintenance Manuals, applicable warranties. CITY OF JANESVILLE "CONTRACTORS AFFIDAVIT", and project closeout documents.

NOTICE TO PROCEED A written notice given by CITY to CONTRACTOR fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR'S obligations under the Contract.

OWNER The City of Janesville, a Wisconsin Municipal Corporation.

PARTIAL UTILIZATION Placing a portion of the Work in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion for all the Work. Also referred to as "Special Operational" dates.

PROJECT The total construction of which the Work to be provided under the Contract may be the whole, or a part as indicated elsewhere in the Contract.

SHOP DRAWINGS All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.

SPECIAL OPERATIONAL DATES Placing a portion of the Work in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion for all the Work. Also referred to as "Partial Utilization" dates.

SPECIAL PROVISIONS Provisions which supplement or modify these General Provisions or the Specifications, or other parts of the Contract.

SPECIFICATIONS Those portions of the Contract consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

SUBCONTRACTOR An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work.

SUBSTANTIAL COMPLETION When the Work has progressed to the point where, in the opinion of ENGINEER, it is sufficiently complete, in accordance with the Contract, so that the Work can be utilized for the purposes for which it is intended; or when final payment is due in accordance with Section 1.6.4.3. The terms "substantially complete" and "substantially completed" as applied to any Work refer to Substantial Completion thereof. At the ENGINEER'S discretion, substantial completion may apply to the entire Work or a designated part or portion thereof.

SUPPLIER A manufacturer, fabricator, supplier, distributor or vendor.

UNDERGROUND FACILITIES All pipelines, conduits, ducts, cables, wire, structures, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials; electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

UNIT PRICE WORK That Work bid, or quoted for a Contract change, using estimated quantities, and for which the CONTRACTOR bids or quotes a cost per completed unit.

WORK The entire completed construction or the various separately identifiable parts or portions thereof required to be furnished under the Contract. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract.

WORK DIRECTIVE A written directive to CONTRACTOR, issued on or after the Effective Date of the

CHANGE Contract and signed by ENGINEER ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in Sections 1.4.1.2 or 1.4.1.3 or to emergencies under Section 1.1.6.9(7). A Work Directive Change may not change the Contract Price or the Contract Time, but is evidence that the parties expect that the change directed or documented by a Work Directive Change will be incorporated in a subsequently Issued Change Order following negotiations by the parties as to its substance and effect, if any, on the Contract Price or Contract Time as provided in Section 1.3.4(2).

WRITTEN NOTICE A notice, provided in writing, delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice. In the case of field orders, Work directive changes, or stop Work orders, proper service includes delivery to the resident superintendent.

1.1.2 REFERENCED MATERIALS

(1) Referenced materials are as follows:

(a) Manual on Uniform Traffic Control Devices (MUTCD)

(b) Wisconsin Manual on Uniform Traffic Control Devices (WMUTCD) – Supplement to the MUTCD.

(c) Standard Specifications for Sewer and Water Construction in Wisconsin

(d) Wisconsin Department of Natural Resources Technical Standards

(e) Wisconsin Department of Transportation Construction and Materials Manual

(f) Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction

(g) Wisconsin Department of Transportation Standard Detail Drawings

(h) Wisconsin Department of Transportation Work Zone Field Manual

1.1.3 REFERENCE HIERARCHY

(1) The contract reference materials listed below are in order of significance. If there is a conflict between the Support References and the City documents, the interpretation that benefits the City shall apply. Likewise, if consultant prepared contract documents conflict with City documents, the interpretation that benefits the City shall apply.

(a) Contract Documents

(i) Special Provisions
(ii) Plan Set

(b) City of Janesville – Standard Specifications

(c) Support References (Latest Editions for all)

(i) Manual on Uniform Traffic Control Devices (MUTCD)
(ii) Wisconsin Manual on Uniform Traffic Control Devices (WMUTCD) – Supplement to the MUTCD.

(iii) Standard Specifications for Sewer and Water Construction in Wisconsin
(iv) Wisconsin Department of Natural Resources Technical Standards
(v) Wisconsin Department of Transportation Construction and Materials Manual
(vi) Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction
(vii) Wisconsin Department of Transportation Standard Detail Drawings
(viii) Wisconsin Department of Transportation Wisconsin Work Zone Field Manual 2021)

1.1.4 CONTRACT DOCUMENTS

1.1.4.1 INTENT

(1) The Contract comprises the entire Agreement between CITY and CONTRACTOR concerning the Work. The Contract Documents are complimentary; what is called for by one is as binding as if called for by all. Each Specification Division is mutually applicable to each other Division and all Work shall conform to all applicable Divisions unless specifically stated otherwise. The Divisions are established for the convenience of the user in locating the provisions most specifically related to their Work. The absence of a reference to another Division does not relieve the CONTRACTOR of the responsibility of performing Work in accordance with all Divisions of the specifications applicable to that Work. The Contract shall be construed in accordance with the laws of the State of Wisconsin.

(2) It is the intent of the Contract to describe a functionally complete Project to be constructed in accordance with the Contract. Any Work, materials or equipment that may reasonably be inferred from the Contract as being required to produce the intended result will be supplied whether or not specifically cared for. When words which have a well-known technical or trade meaning are used to describe Work, materials or equipment such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or Laws or Regulations in effect at the time of opening of Bids except as may be otherwise specifically stated.

1.1.4.2 STANDARDS

(1) In all matters of detail not specifically covered by the Specifications the Work shall be well and skillfully performed in accordance with the best trade custom, standards and methods used in Work of like character and purpose, and in accordance with standard recognized specifications and codes, including but not limited to, the applicable portions of the latest revisions of the following:

(a) Specifications of the American Society for Testing and Materials (ASTM)

(b) Codes and Standards of the American Concrete Institute (ACI)

(c) Specifications and Standards of the Asphalt Institute

(d) Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction, hereinafter referred to as the “Highway Specifications”.

(e) Portland Cement Association standards.

(f) American Water Works Association (AWWA) standards.

(2) If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract, CONTRACTOR shall so report to ENGINEER in writing at once and before proceeding with the Work affected thereby shall obtain a written interpretation or clarification from ENGINEER. However, CONTRACTOR shall not be liable to ENGINEER for failure to report any conflict, error or discrepancy in the Contract unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof. If the CONTRACTOR proceeds with Work that the CONTRACTOR had actual knowledge or should have known that a conflict, error or discrepancy in the Contract exists, correction of Work constructed without such notification to the ENGINEER shall be sole at the CONTRACTOR'S expense.

1.1.4.3 AMENDING AND SUPPLEMENTAL CONTRACT DOCUMENTS

(1) The Contract may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions there in one or more of the following ways:

(a) A Change Order (pursuant to Section 1.3.4(4)), or

(b) A Work Directive Change (pursuant to Section 1.3.4(1)), or

(c) An addition or deletion of Unit Price Work at the direction of ENGINEER.

(2) As indicated in Sections 1.3.5(2) and 1.3.6(1), Contract Price and Contract Time may only be changed by a Change Order, except as allowed herein and Section 1.3.5(2).

(3) In addition, the requirements of the Contract may be supplemented, and minor variations and deviations in the Work may be authorized, but only as allowed by law, in one or more of the following ways:

(a) A Field Order (pursuant to Section 1.1.7.3),

(b) ENGINEER's approval of a Shop Drawing or sample, or

(c) ENGINEER's written interpretation or clarification (pursuant to Section 1.1.7.2).

1.1.4.4 REUSE OF DOCUMENTS

(1) Neither CONTRACTOR nor any Subcontractor or supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with CITY shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER; and they shall not reuse any of them on extensions of the Project or any other project without consent of ENGINEER.

1.1.5 NOTICE OF INJURY OR LOSS

(1) Should CITY or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this

paragraph shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

(2) The duties and obligations imposed by these General Provisions and the rights and remedies available hereunder to the parties hereto, and in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by Sections 1.1.6.10, 1.1.6.11, 1.3.6(1), 1.3.7.3, 1.5.2, and 1.5.6 and all of the rights and remedies available to CITY thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract will survive final payment and termination or completion of the Contract.

1.1.6 CONTRACTOR'S RESPONSIBILITIES

1.1.6.1 SUPERVISION AND SUPERINTENDENT

(1) CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction except where specifically provided, and except that the ENGINEER may prohibit use of certain such means in order to minimize the potential of damage or unsafe conditions. The ENGINEER's failure to prohibit any particular means, however, does not relieve the CONTRACTOR of responsibility for the consequences of the means they use. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract.

(2) CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, acceptable to the CITY who shall not be replaced without written notice to CITY and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR. CONTRACTOR shall assign a competent project manager, acceptable to the CITY who shall not be replaced without written notice to the ENGINEER except under extra ordinary circumstances as allowed by the CITY.

(3) The CONTRACTOR shall follow strictly and without delay any instructions and orders given by the City Engineer and their representatives in the performance of their Work.

(4) Disorderly, intemperate, incompetent or intoxicated persons must not be employed, retained, or allowed upon the Work. Workers who neglect or refuse to comply with the instructions of the CITY shall, at the CITY's request, be promptly discharged and shall not thereafter be re-employed without the consent of the CITY.

1.1.6.2 LABOR, MATERIALS AND EQUIPMENT

(1) CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract. CONTRACTOR shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract, all Work at the site shall be performed during regular working hours, and CONTRACTOR will not permit overtime Work or the performance of Work on Saturday, Sunday or any legal holiday without CITY's consent and without at least one full working day advance notice.

(2) Unless otherwise specified, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work within the Contract Time.

(3) All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract.

(4) All labor shall be performed in the best and most skilled manner by mechanics qualified in their respective trades. The standard of the Work required throughout shall be of such grade as will bring results of the first class only.

(5) In connection with the performance of Work under the Contract, the CONTRACTOR agrees not to discriminate against any employee or applicant for employment because of age, race, religion, color, handicap, sex, physical condition, developmental disability as defined in S.51.01(5), Wisconsin Statutes, as from time to time amended, or national origin. This provision shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation and selection for training, including apprenticeship. The CONTRACTOR further agrees to take affirmative action to ensure equal employment opportunities for persons with disabilities. The CONTRACTOR agrees to post in conspicuous places, available for employees and applicants for employment, notices setting forth the provisions of the non-discrimination clause.

(6) CONTRACTOR shall provide a safe and sanitary working environment and proper protection for all components of the Work. Additional specific requirements, if any, will be listed in the Special Provisions.

1.1.6.3 SUBSTITUTES OR "OR-EQUAL" ITEMS

(1) Whenever materials or equipment are specified or described in the Contract by using the name of a proprietary item or the name of a particular Supplier the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other Suppliers may be accepted by ENGINEER if sufficient information is

submitted by CONTRACTOR to allow ENGINEER to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by ENGINEER will include the following: Requests for review of substitute items of material and equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall make written application to ENGINEER for acceptance thereof certifying that the proposed substitute will perform in an equal manner the functions and achieve the results and quality called for in the general design, be similar and of equal substance as that specified and be suited to the same use as that specified and provide maintenance and serviceability features equal to that specified. The application will state that the evaluation and acceptance of the proposed substitute will not prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not acceptance of the substitute for use in the Work will require a chance in any part of the Contract (or in the provisions of any other direct contract with CITY for Work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other CONTRACTORS affected by the resulting change, all of which shall be necessary to accommodate substitutions, which result in additional costs to any CONTRACTOR, such additional costs shall be borne by the CONTRACTOR proposing the substitution. ENGINEER may require CONTRACTOR to furnish at CONTRACTOR's expense additional data about the proposed substitute.

(2) If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to ENGINEER, if CONTRACTOR submits sufficient information to allow ENGINEER to determine that the substitute proposed is equivalent to that indicated or required by the Contract. The procedure for review by ENGINEER will be similar to that provided in Section 1.1.6.3(1) as applied by ENGINEER.

(3) ENGINEER will be allowed a reasonable time within which to evaluate each proposed substitute. ENGINEER will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without ENGINEER's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing.

(4) The approval of any material or Work at any stage of the construction will not prevent its subsequent rejection for cause. If found defective at any time within the guarantee period, such material or workmanship must be replaced at the expense of the CONTRACTOR.

1.1.6.4 CONCERNING SUBCONTRACTORS, SUPPLIERS AND OTHERS

(1) CONTRACTOR shall submit a complete Subcontractor List with the Bid Proposal. The Subcontractor List may only be modified with written CITY approval. Only Subcontractors on the approved Subcontractor List will be allowed to perform work associated with the Contract.

(2) CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization, whether initially or as a substitute, against whom CITY may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

(3) CONTRACTOR shall be fully responsible to CITY for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract shall create any contractual relationship between CITY and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of CITY to pay or to see to the payment of any monies due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

(4) The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

(5) All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract.

1.1.6.5 PATENT FEES AND ROYALTIES

(1) CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. CONTRACTOR shall indemnify and hold harmless CITY and ENGINEER and anyone directly or indirectly employed by CITY from and against all claims, damages, losses and expenses (including attorney's fees and court costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work on any invention, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

1.1.6.6 LAWS AND REGULATIONS

(1) Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein, and this Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted or is not correctly inserted, then upon the application of either party the Contract shall forthwith be physically amended to make such insertion or correction.

(2) CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly

required by applicable Laws and Regulations, the ENGINEER shall not be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

(3) If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Laws and Regulations, CONTRACTOR shall bear all costs arising therefrom.

1.1.6.7 TAXES

(1) Wisconsin Act 126 (Senate Bill 227) allows for a sales tax exemption to CONTRACTOR's purchasing for materials which become part of a "facility" located in Wisconsin for a qualifying exempt entity for public construction contracts executed after January 1, 2016. The City of Janesville qualifies as an exempt entity. The Wisconsin Department of Revenue defines "facility" as any building, shelter, parking lot, parking garage, athletic field, athletic park, storm sewer, water supply system, or sewerage and waste water treatment facility, but does not include a highway, street or road.

(2) A sales tax exemption certificate is included in Part 2, INFORMATION TO BIDDERS of the contract as well as a Department of Revenue fact sheet entitled Wisconsin Tax Bulletin 192, issued January 2016, which indicates CONTRACTOR's should check the last box at the bottom of page two and reference "exempt under section 77.54(9m), Wisconsin Statutes".

(3) The CONTRACTOR shall pay all sales, consumer, use and all other similar taxes required to be paid in accordance with the Laws and Regulations of the place where the Work is to be performed, services rendered, or materials purchased. The CONTRACTOR is solely responsible for knowledge and notice of the applicable tax laws and requirements. CONTRACTOR may benefit from any tax exemption as allowed by such laws and requirements.

1.1.6.8 USE OF PREMISES

(1) CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Project site and land and areas identified in and permitted by the Contract and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against CITY or ENGINEER by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim at law. CONTRACTOR shall and hereby does indemnify and hold CITY and ENGINEER harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court costs) arising directly, indirectly, or consequentially out of any action, legal, or equitable, brought by any such other party against CITY or ENGINEER to the extent based on a claim arising out of CONTRACTOR'S performance of the Work.

1.1.6.9 SAFETY AND PROTECTION

(1) The CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work and shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

(a) All employees on the Project Site and any other persons who may be affected thereby;

(b) The Public;

(c) All the Work and all materials or equipment to be incorporated herein, whether in storage on or off the site; and

(d) Other property at the site or adjacent thereto, including, but not limited to, trees, shrubs, lawns, walks, pavements, roadways, survey monuments, structures and utilities not designated for removal, relocation or replacement in the course of construction.

(2) The CONTRACTOR shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss.

(3) The CONTRACTOR shall erect and maintain all necessary safeguards for the safety and protection of the Work, property and persons listed above. When working on a street or highway that is open to traffic or when closing a street or highway to traffic to perform Work under this Contract, the Work shall be signed and protected in accordance with the MUTCD and the WMUTCD.

(4) The CONTRACTOR shall notify the owners and possessors of adjacent utilities when prosecution of the Work may affect them.

(5) The CONTRACTOR shall remedy all damage, injury or loss to any property herein described when caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any Subcontractor, and Sub-subcontractor, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable and hereby indemnifies and holds harmless the CITY for any and all such damage, injury or loss. This includes damage to or loss of survey monuments which shall be replaced by a Registered Wisconsin Land Surveyor at the CONTRACTOR's expense. If the ENGINEER decides that the City will replace any such monuments, the cost shall be charged to the CONTRACTOR at a rate of $1,000.00 per monument.

(6) The CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and the ENGINEER has accepted the completed Work.

(7) In any emergency affecting the safety of persons or property, the CONTRACTOR shall immediately and adequately act to prevent the threatened damage, injury or loss. Any additional compensation or extension of time claimed by the CONTRACTOR on account of emergency shall be determined by the ENGINEER or as otherwise provided in this CONTRACT.

(8) During the progress of the Work, the convenience and accommodation of the public and the residents along the Work must be provided for as far as is reasonably practicable by the CONTRACTOR and as otherwise required by law. Convenient and safe access to driveways, houses, and buildings along the Work must be maintained whenever possible by the CONTRACTOR. The CONTRACTOR shall not obstruct the gutters of any street contiguous to the Work, nor prevent in any manner the flow of the water in the same.

(9) When not intended for immediate use in the Work, materials delivered on the Work shall be neatly and compactly piled in such manner as to cause the least inconvenience to the abutting property owners and the general public, and not within ten (10) feet of any fire hydrant or police or fire alarm boxes as such utilities must be readily accessible at all times.

(10) The CONTRACTOR shall protect all shade trees and other public or private improvements from any and all types of damage. Should it become necessary to halt the prosecution of the Work in order to provide any public accommodations, no claim for damage will be allowed on account of such delay.

(11) In all cases where there is any interference with the Works of any water, gas, power, telephone, railroad or other company, the ENGINEER and said company must be notified by the CONTRACTOR at least twenty-four (24) hours in advance of the opening of such Work, or more as required by the individual company. Should it become necessary to move the position of said poles, pipes or appurtenances, the CONTRACTOR shall notify the CITY and said company of the locality and circumstance(s) and prosecution of Work allowed by the ENGINEER. No claim for damage(s) will be allowed on account of such delay.

1.1.6.10 INDEMNIFICATION

(1) To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless CITY and ENGINEER and their consultants, agents, representatives, and employees from and against all claims, damages, losses and expenses, direct, indirect or consequential (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court costs) arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense, (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom and (b) is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder or arises by or is imposed by Law regardless of the negligence of any such party.

(2) In any and all claims against CITY or ENGINEER or any of their consultants, agents or employees by any employee of CONTRACTOR, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, the indemnification obligation under Section 1.1.6.10(1) shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for

CONTRACTOR or any Subcontractor or other person or organization under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

(3) The obligations of CONTRACTOR under Section 1.3.1.7(5) shall not extend to the liability of ENGINEER, ENGINEER's consultants, agents or employees arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications.

1.1.6.11 CONTRACTOR'S WARRANTY OF TITLE

(1) CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to CITY no later than the time of payment free and clear of all liens.

1.1.6.12 CONTRACTOR'S CONTINUING OBLIGATION

(1) CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract shall be absolute. Neither any progress or final payment by ENGINEER, nor the determination of Substantial Completion, nor any use or occupancy of the Work or any part thereof by CITY, nor any act of acceptance by CITY, nor any failure to do so, nor any review and approval of a Shop Drawing or sample submission, nor any correction of defective Work by CITY will constitute an acceptance of Work not in accordance with the Contract or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract.

1.1.6.13 WAIVER OF CLAIMS

(1) The making and acceptance of final payment will constitute a waiver of all claims by CONTRACTOR against the CITY other than those previously made in writing and still unsettled.

1.1.7 CITY'S RESPONSIBILITIES

1.1.7.1 GENERAL

(1) The CITY, unless otherwise defined in the Special Provisions, assigns the City Engineer or their designated representative to represent its interests and function as the Project ENGINEER.

(2) In case of termination of the employment of the ENGINEER, the CITY will appoint an ENGINEER whose status under this Contract shall be that of the former ENGINEER. The appointment by the CITY is final and in no manner affects any rights of either party.

(3) The CITY shall provide engineering surveys, reference points, or line and grade as provided in Section 1.4.2.8.

(4) The CITY and/or the ENGINEER shall furnish the data required of it under this Contract promptly and shall make payments to the CONTRACTOR promptly after they are due as required by this Contract. In connection with ENGINEER's responsibilities in respect of Applications for Payment, etc., see Sections 1.1.6.11-13, 1.3.1.8, 1.3.3, 1.6.

(5) The CITY's and the ENGINEER's duties in respect to providing land and easements and providing engineering surveys to establish reference points are set forth in this Contract.

(6) The CITY's and the ENGINEER's responsibility with respect to inspection, tests and approvals are set forth in the Contract.

(7) The CITY's and/or the ENGINEER's right to stop Work or suspend Work is set forth in this Contract.

(8) The CITY and/or the ENGINEER have the right to terminate any and all services of the CONTRACTOR under the terms and conditions specified in this Contract.

(9) The ENGINEER, as it relates to projects at various locations, has the right to direct that those projects be done at such times and/or in such order as the ENGINEER may determine is in the best interest of the CITY.

1.1.7.2 CLARIFICATIONS AND INTERPRETATIONS

(1) ENGINEER will issue with reasonable promptness such written clarifications or interpretation of the requirements of the Contract (in the form of Drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract. If CONTRACTOR believes that a written clarification or interpretation justifies an increase in the Contract Price, or an extension of the Contract Time, CONTRACTOR may make a claim therefore as provided in Sections 1.3.5 and 1.1.7.4-7 or Section 1.3.6.

1.1.7.3 AUTHORIZED VARIATIONS IN WORK

(1) ENGINEER may authorize minor variations in the Work from the requirements of the Contract which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract. These may be accomplished by a Field Order and will be binding on CONTRACTOR who shall perform the Work involved promptly. If CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefore as provided in Sections 1.3.5 and 1.1.7.4-7 or Section 1.3.6.

1.1.7.4 COST OF THE WORK

(1) The term Cost of the Work means that the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Such costs shall be in amounts no higher than those prevailing in the locality of the Project.

(a) Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under the prevailing wage schedules in the contracts. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include all compensation referred to in the Prevailing Wage Schedules. Such employees shall include superintendents at the site. The expenses of performing Work after regular working hours, on Saturday, or Sunday, shall be included in the above to the extent authorized by CITY.

(b) Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to CITY and CONTRACTOR shall make provisions so that they may be obtained.

(c) Costs to operate equipment, except where such equipment is routinely on the project and for which separate payments are not normally made. Equipment charges, where appropriate, may be included whether rented or owned. Equipment charges should not exceed the average rental rate for similar size and age equipment of two established, area equipment rental companies, by more than 5%. Where equipment used is larger or more costly than that needed to accomplish the Work, then rates for the more appropriate equipment should be used unless otherwise allowed by the ENGINEER.

(d) Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Subcontractor's Cost of the Work shall be determined in the same manner as CONTRACTOR's Cost of the Work. All Subcontractors shall be subject to the other provisions of the Contract Documents insofar as applicable.

(e) Costs of special consultants (including engineers, architects, testing laboratories and surveyors) employed for services specifically related to the Work.

(2) The term Cost of the Work shall not include any of the following:

(a) Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR's principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Section 1.1.7.4(1)(a) or specifically covered by Section 1.1.7.4(1)(e), all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

(b) Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.

(c) Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

(d) Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

(e) Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Section 1.3.4(4).

1.1.7.5 CONTRACTOR'S FEES

(1) The CONTRACTOR's Fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

(a) A mutually acceptable fixed fee; or if none can be agreed upon:

(b) A fee based on the following percentages of the various portions of the Cost of the Work:

(i) For costs incurred under Section 1.1.7.4(1)(a) or (b) the CONTRACTOR's fee shall not exceed ten percent;

(ii) For costs incurred under Section 1.1.7.4(1)(d) the CONTRACTOR's Fee shall not exceed five percent. If a subcontract is on the basis of Cost of the Work Plus a Fee, the subcontractor's fee shall not exceed ten percent. Only the subcontractor actually performing the work is entitled to this fee.

(iii) Under no circumstances shall the CITY pay fees exceeding fifteen percent.

(iv) No fee shall be payable on the basis of any other costs

1.1.7.6 CASH ALLOWANCES

(1) It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract and shall cause the Work so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to ENGINEER.

(a) The allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

(b) CONTRACTOR's costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid.

(c) Where any difference exists between allowances and actual amounts used, an appropriate Change Order will be issued prior to final payment as recommended by ENGINEER to reflect additional amounts due CONTRACTOR or credits due CITY on account of Work covered by allowances with no markup included, and the Contract Price shall be correspondingly adjusted. Where such changes reflect a change in the cost of materials only, no change will be made for those costs covered in above paragraph. Where such changes reflect a change in the amount of a given item covered by an allowance, an appropriate change will be made for those costs covered above.

1.1.7.7 UNIT PRICE WORK

(1) Where the Contract provides that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Contract. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work

performed by CONTRACTOR will be made by ENGINEER in accordance with Section 1.1.7.8.

(2) Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

1.1.7.8 DETERMINATION OF UNIT PRICE QUANTITIES

ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER's written decisions thereon will be final and binding upon CONTRACTOR, unless, within fifteen days after the date of any such decision, CONTRACTOR delivers to ENGINEER written notice of intention to appeal from such a decision. The CONTRACTOR shall provide a person to assist the ENGINEER in such measurements, if requested to do so.

1.1.7.9 DECISIONS ON DISPUTES

(1) ENGINEER will be the interpreter of the requirements of the Contract and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the contract pertaining to the performance and furnishing of the Work and claims under Sections 1.3.5 and 1.1.7.4-7 or Section 1.3.6 in respect of changes in the Contract Price or Contract Time will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph, which ENGINEER will render within a reasonable time. Written notice of each such claim dispute and other matter will be delivered by the claimant to ENGINEER promptly (but in no event later than thirty days) after the occurrence of the event giving rise thereto, and written supporting data will be submitted to ENGINEER and within sixty days after such occurrence unless ENGINEER allow an additional period of time to ascertain more accurate data in support of the claim.

(2) ENGINEER will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to Sections 1.1.7.8 and 1.1.7.9 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in Section 1.1.6.13) will be a condition precedent to any exercise by CONTRACTOR of such rights or remedies as either may otherwise have under the Contract or by Laws or Regulations in respect of any such claim, dispute or other matter.

(3) Following ENGINEER's decision on disputes, the CONTRACTOR may within 15 days appeal to the Public Works Director in writing the decision of which shall be final, conclusive and binding on all parties to the Contract. Failure to do this shall constitute abandonment of the claim by the CONTRACTOR. This appeal is the exclusive remedy for disputes under this Contract. Any alternative involving arbitration is specifically prohibited.

1.1.7.10 LIMITATIONS ON ENGINEER'S RESPONSIBILITIES

(1) Neither ENGINEER's authority to act under this Section 1.1.7 or elsewhere in the contract nor any decision made by ENGINEER in good faith either to exercise or not

exercise such authority shall give rise to any duty or responsibility of ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

(2) ENGINEER will not be responsible for CONTRACTOR's means, methods, techniques, sequence or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract. This provision does not however restrict the authority of the ENGINEER to prohibit or require certain means as described in Section 1.1.6.1(1).

(3) ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

1.2 BIDDING REQUIREMENTS

1.2.1 BIDDING PROCEDURE

(1) Bidders shall submit a bid on the unit price items in the Bidding Documents as provided for in the Bid Proposal. The successful bidder will be determined by the low bid; however, the City shall have the right to reject any or all bids.

1.2.2 BONDS AND INSURANCE

1.2.2.1 PERFORMANCE AND OTHER BONDS

(1) CONTRACTOR shall furnish performance Bonds, each in an amount of at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract. These Bonds shall remain in effect at least until one year after the date when final payment is made, except as otherwise provided by Law or Regulation or by the Contract. CONTRACTOR shall also furnish such other Bonds as are required by the Special Provisions. All Bonds shall be in the forms prescribed by Law or Regulation or by the Contract and be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies", as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of the authority to act. If the contract does not include a separate bid item for performance and other bonds, the cost for the required bonds is incidental to the contract.

(2) If the Surety or any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in Wisconsin or it ceases to meet the requirements of Section 1.2.2.1(1), CONTRACTOR shall within five (5) days thereafter substitute another Bond and Surety, both of which must be acceptable to CITY.

1.2.2.2 CONTRACTOR'S LIABILITY INSURANCE

(1) CONTRACTOR shall purchase and maintain such comprehensive general liability and other insurance as is appropriate for the Work being performed and furnished and as will provide protection from claims set forth below which may arise out of or result

from CONTRACTOR's performance and furnishing of the Work and CONTRACTOR's other obligations under the Contract, whether it is to be performed or furnished by CONTRACTOR, by any Subcontractor, by anyone directly or indirectly employed by any of them to perform or furnish any of the Work, or by anyone for whose acts any of them may be liable. The cost of providing the required insurance coverage and limits is incidental to the contract.

(a) Claims under workers' or Workmen's Compensation, disability benefits and other similar employee benefit acts;

(b) Claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;

(c) Claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

(d) Claims for damages insured by personal injury liability coverage which are sustained, (a) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (b) by any other person for any other reason.

(e) Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom;

(f) Claims arising out of operation of Laws or Regulations for damages because of bodily injury or death of any person or for damage to property; and

(g) Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

(2) The limits of liability for the insurance required by the General Provisions shall provide coverage for not less than the following amounts or greater where required by laws or regulations:

(a) Worker's Compensation, etc., under Section 1.2.2.2(1)(a) and (b):

(i) State----------Statutory
(ii) Applicable Federal----------Statutory
(iii) Employers Liability----------Statutory

(b) Comprehensive General Liability under Section 1.2.2.2(1)(c) through (f):

(i) Bodily Injury (Including Product Liability):
$2,000,000----------Each Occurrence
$2,000,000----------Annual Aggregate

(ii) Property Damage (Including Product Liability):
$1,000,000----------Each Occurrence
$1,000,000----------Annual Aggregate
Or Combined Single Limit of-----$2,000,000 Except As Noted

(iii) Policy shall include property damage liability insurance which will provide explosion, collapse and underground coverages where applicable.

(iv) Personal Injury:

$2,000,000----------Annual Aggregate

(v) Policy shall include Independent Contractor Coverage.

(vi) Policy shall include Blanket Contractual Coverage for written agreements.

(vii) Policy shall include Broad Form Property Damage Coverage.

(viii) Policy shall include the City and its employees and agents as additional insureds.

(c) Comprehensive Automobile Liability under Section 1.2.2.2(1)(g):

(i) Bodily Injury
$1,000,000----------Each Person
$1,000,000----------Each Occurrence

(ii) Property Damage
$1,000,000----------Each Occurrence
Or Combined Single Limit of----------$1,000,000

(iii) Policy shall include coverage on all owned, non-owned and hired vehicles.

(iv) Policy shall include the City and its employees and agents as additional insured.

(3) Notify the City immediately upon cancellation or initiating cancellation, whichever is earlier, or any material change in coverage. Cease operations immediately if any insurance is cancelled or reduced. Do not resume operations until the required coverage is in force.

1.2.2.3 CONTRACTUAL LIABILITY INSURANCE

(1) The comprehensive general liability insurance required by Section 1.2.2.2 will include contractual liability insurance applicable to CONTRACTOR's obligations under Section 1.1.6.10(1) and (2).

1.2.2.4 PROPERTY INSURANCE

(1) Unless otherwise provided in the Special Provisions, CONTRACTOR shall purchase and maintain property insurance upon the Work at the site to the full insurable value thereof. This insurance shall include the interests of CITY, CONTRACTOR, Subcontractors and ENGINEER in the Work, all of whom shall be listed as insureds or additional insured parties, shall insure against the perils of fire and extended coverage and shall include "all risk" insurance for physical loss and damage including theft, vandalism, and malicious mischief, collapse and water damage, and such other perils as may be provided in the Special Provisions and shall include damages, losses and expenses arising out of or resulting from any insured loss or incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers, architects, attorneys and other professionals). If not covered under the "all risk" insurance or otherwise provided in the Special Provisions, CONTRACTOR shall purchase and maintain similar property insurance on portions of the Work stored on and off the site or in transit when portions of the Work are to be included in an Application for Payment.

(2) The insurance required by Sections 1.2.2.2 and 1.2.2.3 shall include the specific coverages and be written for not less than the limits of liability and coverages provided in the Special Provisions, or required by law, whichever is greater. All of the policies of insurance so required to be purchased and maintained (or the certificates or other evidence thereof) shall contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to CITY and ENGINEER by certified mail. All such insurance shall remain in effect until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing defective Work in accordance with Section 1.5.6.

(3) The cost of providing the required insurance coverage and limits is incidental to the contract.

1.2.2.5 BUILDER'S RISK INSURANCE

(1) The Contractor shall provide Builder's Risk coverage, in the amount of the bid, for the duration of the project. Insurance shall remain in effect until project acceptance by the City, which may include a final certificate of occupancy, if applicable.

(2) The Contractor shall forward certificates of insurance to the City evidencing the above required coverage. The certificate should indicate the City will receive a 30-day prior written notice of any material change or cancellation of the policy.

(3) The cost of providing the required insurance coverage and limits is incidental to the contract.

1.2.3 SUBSTANCE ABUSE PREVENTION

(1) 2005 Wisconsin Act 181, effective May 1, 2007, created Wis. Stats. § 103.503 requiring employers performing work on public works construction projects in Wisconsin for Municipal Government and State building projects to have a written substance abuse testing program in place. This City Public Works Contract is conditioned upon the Contractor's full compliance with this law.

1.2.4 WAGE RATES

1.2.4.1 General

(1) 2015 Wisconsin c 55 repeals the state prevailing wage law for local governmental units such as villages, towns, cities, school districts, or sewerage districts effective January 1, 2017.

(2) Unless specified in a contact's special provisions that federal wage rates apply (Davis Bacon Act), prevailing wage rates do not apply to public works contacts issued by the CITY.

1.2.4.2 Federal Wage Rates

(1) When specified in the Special Provisions of a particular contract, Federal Wage Rates, as issued by the U.S. Department of Labor; Branch of Construction, Wage

Determinations (Davis-Bacon), apply to all work performed under that contract. CONTRACTOR shall abide by all clauses and reporting requirements as stipulated in said Special Provisions for that contract.

1.3 CONTRACT SCHEDULING

1.3.1 START UP – PRELIMINARY MATTERS

1.3.1.1 NOTICE OF CONTRACT AWARD

(1) The CITY will issue the CONTRACTOR a Notice of Award of the Contract by the Common Council of the CITY after such award. CONTRACTOR shall sign the Contract and provide all the required Bonds, insurance, and other documents within ten (10) days of the date of such Notice.

1.3.1.2 NOTICE TO PROCEED; COMMENCEMENT OF CONTRACT TIME:

(1) The Engineer will issue the CONTRACTOR a Notice to Proceed. The Contract Time shall commence to run on the eleventh (11th) day after the Notice to Proceed, unless stated otherwise in the Notice to Proceed. The ten (10) daytime periods in Sections 1.3.1.1 and 1.3.1.2 may be concurrent.

(2) Thereafter, if work is interrupted for any reason, upon written notification by the Engineer the contractor shall resume work within seven (7) calendar days.

1.3.1.3 COPIES OF DOCUMENTS

(1) Unless otherwise specified in the Special Provisions, the City will not provide hard copies of the contract documents, plan sets or specifications. The Contractor is responsible for obtaining and printing the contract documents, plan sets and specifications.

1.3.1.4 STARTING THE PROJECT

(1) CONTRACTOR shall commence performance of the Work no later than the date when the Contract Time commences to run, but no Work shall be performed at the site prior to obtaining an executed copy of the Contract and receiving Notice to Proceed from the Engineer.

1.3.1.5 BEFORE STARTING CONSTRUCTION

(1) Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby. However, CONTRACTOR shall not be liable to CITY or ENGINEER for failure to report any conflict, error or discrepancy in the Contract, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

1.3.1.6 PRECONSTRUCTION MEETING

(1) After the Effective Date of the Contract, but before any significant Work takes place, a preconstruction meeting attended by CONTRACTOR, ENGINEER and others as appropriate will be, if necessary, held to discuss the schedules referred to in Section 1.3.2.1, to discuss procedures for handling Shop Drawings and other submittals and for processing Applications for Payment, and to establish a working understanding among the parties as to the Work.

1.3.1.7 SHOP DRAWINGS AND SAMPLES

(1) After checking and verifying all field measurements and after complying with applicable procedures, CONTRACTOR shall review and approve and submit to ENGINEER for their review and approval in accordance with the accepted schedule of Shop Drawing submissions, or for other appropriate action, all Shop Drawings. All submissions will be identified as ENGINEER may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable ENGINEER to review the information as required. ENGINEER will keep two copies of all Shop Drawings. CONTRACTOR shall submit as many more copies as their needs require.

(2) CONTRACTOR shall also review and approve and submit to ENGINEER for their review and approval all samples required by the Contract. All samples will have been checked by CONTRACTOR and will be identified clearly as to material, supplier, pertinent data such as catalog numbers and the use for which intended.

(3) All submittals shall be provided with such promptness and in such sequence as to cause no delay in the Work or in the Work of any separate CONTRACTOR. Any additional time or expense incurred resulting from re-submittals shall not be grounds for either an increase in the Contract amount or an extension of the Contract time.

(4) When more than one CONTRACTOR is under separate prime Contract with CITY on a single project, all CONTRACTORS shall submit their shop drawing to the General CONTRACTOR who will review and forward them to the ENGINEER. The General CONTRACTOR is required to be familiar with the submittals of other CONTRACTORS for whom they have a coordination responsibility (Section 1.4.3.2), and to advise the ENGINEER, at the time of forwarding, of the existence of any part of the submittal which will cause them to experience any additional cost or other problems.

(a) Before submission of each Shop Drawing or sample CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the Work and the Contract.

(b) At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract and shall cause a specific notation to be made on each Shop Drawing submitted to ENGINEER for review and approval of each such variation.

(c) Wherever specifications call for Work to be performed, or materials to be installed in accordance with the manufacturer's printed instructions or

directions, CONTRACTOR shall furnish copies as required for Shop Drawings of those instructions or directions to the Engineer before installing the material or performing the Work.

(5) ENGINEER will review and approve with reasonable promptness Shop Drawings and samples, but ENGINEER's review and approval will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence, or procedure of construction is allowed in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

(6) ENGINEER's review and approval of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract unless CONTRACTOR has in writing call ENGINEER's attention to each such variation at the time of submission as required by Section 1.3.1.7(4)(b) and ENGINEER has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of Section 1.3.1.7(4)(a) or (c).

(7) Where a Shop Drawing or sample is required by the Specifications, any related Work performed prior to ENGINEER review and approval of the pertinent submission will be the sole expense and responsibility of CONTRACTOR.

(8) CONTRACTOR shall furnish to ENGINEER four complete copies of a maintenance manual for all equipment furnished. The manuals shall include manufacturer's instructions for maintenance and operation for each item of mechanical and electrical equipment. Manuals shall contain: operation instructions, lubrication schedules, types and quantities, preventative maintenance program, spare parts list, parts lists, I.D. number and exploded views, assembly instructions, parts supplier location, troubleshooting and startup procedures, and where applicable, test data and curves.

1.3.1.8 SCHEDULE OF VALUES

(1) Each CONTRACTOR shall submit to the CITY a schedule of values of the various portions of the Work, including quantities if required aggregating the total Contract sum, divided so as to facilitate payments to Subcontractors or according to Contract sections and supported by such data to substantiate its correctness as the City may require. Each item in the schedule of values shall include its proper share of overhead and profit. Breakdowns including such vague categories as labor, materials, etc., will not be approved. This schedule, when approved by the ENGINEER, shall be used only as a basis for the CONTRACTOR's Application for Payment. During the course of the Work, any extras or credits shall be entered in that line item to which it most closely relates.

(2) Progress payments for Unit Price Work will be based on the number of units completed as measured by the ENGINEER, according to Section 1.1.7.8.

1.3.2 SCHEDULE

1.3.2.1 PROGRESS SCHEDULE

(1) Within ten (10) days after the Effective Date of the Contract (unless otherwise specified), CONTRACTOR shall submit to ENGINEER, for acceptance, a progress schedule as called for below. These will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Provisions applicable thereto. The CONTRACTOR's responsibilities regarding time are listed in Section 1.3.2.5.

(a) An estimated progress schedule indicating the starting and completion dates of the various stages of the Work in a form acceptable to ENGINEER. It shall indicate the proposed dates for major milestones events requiring the close cooperation of several trades and shall be of sufficient detail to allow all Subcontractors to properly do their Work.

(b) A preliminary schedule of Shop Drawing submissions; and

(c) A preliminary schedule of values for all of the Work as called for in Section 1.3.1.8.

(2) During construction, the general CONTRACTOR shall revise the progress schedule as necessary to conform to the current status of the Work, distribute copies to the parties receiving the original progress schedule, and give due and timely notice to all others as necessitated by any revisions.

1.3.2.2 DAILY WORK RESTRICTIONS

(1) Contractor will be expected to work on this Contract during regular work hours (7:00 A.M. to 5:00 P.M.), Monday through Friday.

1.3.2.3 HOLIDAY WORK RESTRICTIONS

(1) Contract work will not be allowed on the applicable holidays listed below or other City observed holidays. If a holiday falls on a Saturday, the preceding Friday will be recognized as the observed holiday. If a holiday falls on a Sunday, the following Monday will be recognized as the observed holiday.

(a) New Year's Day
(b) Memorial Day
(c) Independence Day
(d) Labor Day
(e) Thanksgiving Day
(f) Day After Thanksgiving
(g) Christmas Eve Day
(h) Christmas Day

1.3.2.4 CONTINUING WORK

(1) CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with CITY. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Section 1.3.7.4 or as CONTRACTOR and CITY may otherwise agree in writing.

1.3.2.5 CONTRACT TIME

(1) The time for completion of the Work contemplated under a Contract will be specified either as a specific number of calendar days including Sundays and Holidays or as a given calendar date on or before which the Work shall be completed by the CONTRACTOR. The CONTRACTOR shall carry the Work forward expeditiously with adequate forces and shall achieve substantial completion within the Contract Time.

(2) When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. A calendar day of twenty-four (24) hours, measured from midnight to the next midnight, shall constitute a day.

(3) CONTRACTOR shall submit and follow progress schedule as called for in Section 1.3.2.1.

(4) If CONTRACTOR is delayed in the progress of the Work, CONTRACTOR may be entitled to an extension of the Contract Time as outlined in Section 1.3.6.

(5) The CONTRACTOR agrees that time is of the essence for this Contract, and that after due allowance of such extension of time as is provided for in this Contract, the CITY shall invoke the requirements and liquidated damages as agreed to in this CONTRACT.

(6) The ENGINEER has the authority to entirely discontinue said Work should the condition of the weather make it desirable to do so and/or in order that the Work may be well and properly executed.

1.3.3 FAILURE TO MEET CONTRACT TIME REQUIREMENTS

(1) Should the CONTRACTOR fail to start or resume work in accordance with Section 1.3.1.2 of these Specifications or substantially complete the Work by the Completion Date(s) agreed upon in this Contract or within such extra time as may have been allowed by extensions, the CONTRACTOR or surety shall pay a sum of liquidated damages for each and every calendar day including Sundays and Holidays, that these time requirements are not met. The ENGINEER may deduct such sum from any monies due or to become due the CONTRACTOR.

(2) The Contract liquidated damages sum for the Contract completion date shall be defined based on the value of the Contract.

Contract Value	Contract Liquidated Damages per Calendar Day
$0 to $500,000	$750
$500,001 to $1,000,000	$1,000.00
$1,000,001 to $2,000,000	$1,500.00
$2,000,001 or greater	$2,000.00

Liquidated damages will be applied for failure to meet Contract special operational and/or partial utilization dates as defined in the Contract special provisions. Liquidated damages amount will be defined based on the value of the Contract.

(a) The sum shall be considered and treated not as a penalty, but as a fixed and agreed upon liquidated damage amount due to the CITY from the CONTRACTOR by general reasons of inconvenience to the public, maintenance of detours and other items which caused expenditure of public or CITY time or funds resulting from the CONTRACTOR's failure to complete the Work within the time specified in this Contract and as allowed by law as a convenient and reasonable escalation of actual damage(s) or as otherwise allowed by law.

(b) Permitting the CONTRACTOR to continue and finish the Work or any part of it after the time fixed for its Substantial Completion or after the date to which the time for Substantial Completion may have been extended, shall in no way operate as a waiver on the part of the CITY of any of its rights under this Contract.

(3) The CONTRACTOR or its surety shall also pay for each and every day inspection is required on all construction projects and Work after the time allowed for Substantial Completion has expired. This per diem rate for inspection will include the cost of inspection, construction supervision, consultant costs, clerical and administrative costs, vacations, pensions, overtime and other similar overhead charges. The amount of the per diem charge will be based on the fully-burdened hourly rate of the City inspector(s) and staff member(s). If the City hired a consultant for construction administration, inspection, staking, and/or supervision, then the amount shall be based on the actual consultant costs. The ENGINEER will deduct such charges from any money then due or to become due the CONTRACTOR.

(4) An inspector will be assigned to the project upon notice from the ENGINEER to the CONTRACTOR to start Work. If more than one crew is utilized by the CONTRACTOR, as many additional inspectors will be assigned to the project as the ENGINEER deems necessary. An additional charge per day after the time allowed for Substantial Completion shall be made for each such additional inspector.

(5) The decision of the ENGINEER shall be considered final in all matters pertaining to the necessity for inspection and the number of inspectors required on construction projects.

(6) The foregoing charges will be made in addition to the charges of liquidated damages.

1.3.4 CHANGES IN CONTRACT WORK

(1) Without invalidating the Contract and without notice to any surety, CITY may, at any time or from time to time, order additions, deletions or revisions in the Work. If such changes are not unit price, they will be authorized by a Change Order or a Work Directive Change. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract (except as otherwise specifically provided). The total of such increases or decreases on non unit price contracts shall not exceed twenty (20) percent of the total Contract Price.

(2) If CITY and CONTRACTOR are unable to agree as to the extent, if any, of an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Work Directive Change, a claim may be made therefore as provided in Sections 1.3.5, 1.1.7.4-7 or Section 1.3.6.

(3) CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the Contract as

amended, modified and supplemented as provided in Section 1.1.4.3, except in the case of an emergency as provided in Section 1.1.6.9(7) and except in the case of uncovering Work as provided in Section 1.4.2.13(2).

(4) ENGINEER and CONTRACTOR shall execute appropriate Change Orders as necessary resulting from:

(a) Changes in the Work which are ordered by CITY pursuant to Section 1.3.4(1) or are agreed to by the parties;

(b) Changes in the Contract Price or Contract Time which are agreed to by the parties;

(c) Changes in the Contract Price or Contract Time which embody the substance of any written decision rendered by ENGINEER pursuant to Section 1.1.7.9(1).

Provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule.

(5) If notice of any change affecting the general scope of the Work or the provisions of the Contract (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility, and the amount of each applicable Bond will be adjusted accordingly.

1.3.5 CHANGES IN CONTRACT PRICE

(1) The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing Work. The Contract Price is the total price bid, modified either by approved Change Order or, in case of Unit Price Work, by measurement of units of Work actually provided according to Section 1.1.7.8; Section 1.3.4(1); and Section 1.1.7.7(1). All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at their expense without change in the Contract Price as bid.

(2) The Contract Price may only be changed by a Change Order, except as provided for Unit Price Work. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the party making the claim to the other party promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim). All claims for adjustment in the Contract Price shall be determined by ENGINEER in accordance with Section 1.1.7.9(1). No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this Paragraph.

(3) The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined by one of the methods listed in Sections 1.3.5(3)(a) through (d). The ENGINEER may determine which method should be used.

(a) Where the Work involved is covered by unit prices contained in the Contract and where such appropriate unit prices have already been bid or otherwise established and are applicable by application of such unit prices to the quantities of the items involved (subject to the provisions of Section 1.1.7.7).

(b) Where appropriate unit prices have not been bid or otherwise established, the ENGINEER may require the cost of changes in the Work to be computed as unit prices for purposes of analysis. If mutually agreed upon, such unit prices may be the basis for a Change Order.

(c) By mutual acceptance of a lump sum which may include an allowance for overhead and profit.

(d) On the basis of the Cost of the Work (determined as provided in Section 1.1.7.4) plus an optional CONTRACTOR's fee for overhead and profit (determined as provided in Section 1.1.7.5).

1.3.6 CHANGES IN CONTRACT TIME

(1) The Contract Time may only be changed by a Change Order. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered to the ENGINEER promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within sixty days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim). All claims for adjustment in the Contract Time shall be determined by ENGINEER in accordance with Section 1.1.7.9(1). No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this Paragraph.

(2) If in the judgment of the ENGINEER a direct cause-effect relationship exists between a delay and the date of substantial completion of the Work, then the Contract Time may be extended in the amount of such effect, provided the delay is beyond the control of CONTRACTOR or any of their Subcontractors, and if the claim for such extension has been made as provided in Section 1.3.6, Paragraph 1.

(3) Such delays may include any act or neglect of the CITY, or any separate CONTRACTOR employed by the CITY, or changes ordered in the Work, or labor disputes, fire, unusual delay in transportation, adverse weather conditions not reasonably anticipatable, unavoidable casualties, or any causes beyond the CONTRACTOR or Subcontractor control, or any other cause which the ENGINEER determines may justify the delay. Such delays, in and of themselves, shall not be grounds for change in the Contract amount.

(4) All time limits stated in the Contract are of the essence of the Contract.

1.3.7 SUSPENSION OF WORK AND TERMINATION

1.3.7.1 CITY MAY STOP THE WORK

(1) If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or if provisions for clean-up, safety or testing are not met, or CONTRACTOR fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract, the CITY may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of CITY to stop the Work shall not give rise to any duty on the part of CITY to exercise this right for the benefit of CONTRACTOR or any other party. Any stoppage of Work under this section shall not be admissible grounds for an increase in the Contract Price or time.

1.3.7.2 CITY MAY SUSPEND WORK

(1) CITY may, at any time and without cause, suspend the Work or any portion thereof by notice in writing to CONTRACTOR which will fix if possible the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed or fixed by later written notice. CONTRACTOR may be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if CONTRACTOR makes an approved claim therefore as provided in Sections 1.3.5, 1.1.7.4-7 and Section 1.3.6.

1.3.7.3 CITY MAY TERMINATE

(1) Upon the occurrence of any one or more of the following events:

(a) If CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

(b) If a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

(c) If CONTRACTOR makes a general assignment for the benefit of creditors;

(d) If a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under Contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of general administration of such property for the benefit of CONTRACTOR's creditors;

(e) If CONTRACTOR admits in writing an inability to pay its debts generally as they become due;

(f) If CONTRACTOR persistently fails to perform the Work in accordance with the Contract (including, but not limited to, failure to supply sufficient supervision or skilled Worker or suitable materials or equipment or failure to adhere to the approved progress schedule established as revised from time to time).

(g) If CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

(h) If CONTRACTOR disregards the authority of ENGINEER; or

(i) If CONTRACTOR otherwise violates in any substantial way any provisions of the Contract;

(2) CITY may, after giving CONTRACTOR (and the surety if necessary) seven days written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and all of CONTRACTOR's tools, appliance, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which CITY has paid CONTRACTOR

but which are stored elsewhere, and finish the Work as CITY may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the direct, indirect and consequential costs of completing the Work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court costs) exceed the unpaid Contract balance less any liquidated damages, CONTRACTOR shall pay the difference to CITY. Such costs incurred by CITY must be reasonable, but when exercising any rights or remedies under this paragraph, CITY shall not be required to obtain the lowest price for the Work performed. If the unpaid Contract balance exceeds the stated costs for the CITY to complete the Work, CONTRACTOR shall then be entitled to payment for all Work satisfactorily completed by CONTRACTOR, less any liquidated damages.

(3) Where CONTRACTOR's services have been so terminated by CITY, the termination will not affect any rights or remedies of CITY against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies due CONTRACTOR by CITY will not release CONTRACTOR from liability.

(4) Upon seven (7) days written notice to CONTRACTOR, CITY may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Contract. In such case, CONTRACTOR shall be paid for all Work executed and any expense sustained plus reasonable termination expenses which will include, but not be limited to, direct, indirect and consequential costs (including, but not limited to, fees and charges of engineers, architects, attorneys and other professional and court costs).

1.3.7.4 CONTRACTOR MAY STOP WORK OR TERMINATE

(1) If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety (90) days by CITY, except as provided in Section 1.3.2.5(6), or under an order of Court or other public authority, or CITY fails for thirty (30) days to pay CONTRACTOR any sum finally determined to be due, without explanation, then CONTRACTOR may, upon seven (7) days' written notice to CITY and ENGINEER, terminate the Contract and recover from CITY payment for all Work executed. In addition and in lieu of terminating the Contract, if CITY has failed to make any payment as aforesaid, CONTRACT may upon seven (7) days' written notice to CITY and ENGINEER stop the Work until payment of all amounts due, which are being held without reason. The provisions of this paragraph shall not relieve CONTRACTOR of the obligations under Section 1.1.6.10(1) to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with the CITY.

1.4 CONSTRUCTION

1.4.1 AVAILABILITY OF LANDS / EXISTING CONDITIONS

1.4.1.1 AVAILABILITY OF LANDS

(1) CITY shall furnish, as indicated in the Contract, the lands upon which the Work is to exist, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained by CITY unless otherwise

provided in the Contract. If CONTRACTOR believes that any delay in CITY's furnishing these lands, rights-of-way or easements entitles CONTRACTOR to an extension of the Contract Time, CONTRACTOR may make a claim therefore as provided in Section 1.3.6. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment. CONTRACTOR shall not use or go on any private land without written permission of the owner.

1.4.1.2 PHYSICAL CONDITIONS

(1) Explorations and Reports

Reference is made to those reports of explorations and tests of subsurface conditions at the site that have been utilized by ENGINEER in preparation of the Contract. Such reports, if any, shall be available for inspection at the Office of the City Engineer. CONTRACTOR may rely upon the accuracy of the technical data contained in such reports for the specific location of the exploration, but not upon non-technical data, interpretations or opinions contained therein or for the completeness thereof for CONTRACTOR's purposes. Except as indicated in the immediately preceding sentence and in Section 1.4.1.2(6), CONTRACTOR shall have full responsibility with respect to subsurface conditions at the site.

(2) Existing Structures

Reference is made to those drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground facilities referred to in Section 1.4.1.3(2) which are at or contiguous to the site that have been utilized by ENGINEER in preparation of the Contract. CONTRACTOR may rely upon the accuracy of the technical data (dimensions) contained in such drawings, but not for the completeness thereof for CONTRACTOR's purposes. Except as indicated in the immediately preceding sentence and in Section 1.4.1.2(6), CONTRACTOR shall have full responsibility with respect to physical conditions or in relating to such structures.

(3) Report of Differing Conditions

If CONTRACTOR believes that:

(a) Any technical data on which CONTRACTOR is entitled to rely as provided in Sections 1.4.1.2(1) and (2) is inaccurate, or

(b) Any physical condition uncovered or revealed at the site differs materially from that indicated, reflected or referred to in the Contract.

CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work in connection therewith (except in an emergency as permitted by Section 1.1.6.9(7)), notify ENGINEER in writing about the inaccuracy or difference.

(4) ENGINEER's Review

Engineer will promptly review the pertinent conditions, determine the necessity of obtaining additional explorations or tests with respect thereto and advise CONTRACTOR of their findings and conclusions.

(5) Possible Document Change

If ENGINEER concludes that there is a material error in the Contract or that because of newly discovered conditions a change in the Contract is required, a Work Directive Change or a Change Order may be issued as provided in Section 1.3.4 to reflect and document the consequences of the inaccuracy or difference.

(6) Possible Price and Time Adjustments

In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time may be allowable to the extent that they are attributable to any such inaccuracy or difference. If CITY and CONTRACTOR are unable to agree as to the amount or length thereof, a claim may be made therefore as provided in Sections 1.3.4 and 1.3.6.

1.4.1.3 PHYSICAL CONDITIONS UNDERGROUND FACILITIES

(1) Shown or Indicated

The information and data shown or indicated in the Contract with respect to existing Underground Facilities at or contiguous to the site is based on information and data furnished to ENGINEER by the owners of such Underground Facilities or by others. Unless it is otherwise expressly provided in the Special Provisions:

(a) CITY and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and,

(b) The locations and sizes of existing utilities or other facilities as shown on the plan are approximate. CONTRACTOR shall have full responsibility for reviewing and checking all such information and data, for locating all underground facilities shown or indicated in the contract, and for coordination of the Work with the owners of such underground facilities including appropriate City Departments, for the safety and protection thereof.

(c) The CONTRACTOR shall proceed with caution in the excavation and preparation of the site so the exact location of the utilities can be determined. They shall be responsible for the repair of such structures when broken or otherwise damaged. The CONTRACTOR shall include in the Contract Price any costs for temporary or permanent relocation of utilities required to complete the Work.

(2) Not Shown or Indicated

If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract and which CONTRACTOR could not reasonably have been expected to be aware of, CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency as permitted by Section 1.1.6.9(7), identify the owner of such Underground Facility and give written notice thereof to that owner and ENGINEER. ENGINEER will promptly review the Underground Facility to determine the extent to which the Contract should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract may be amended or supplemented to the extent necessary. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility as provided in Section 1.1.6.9(1). CONTRACTOR may be allowed an increase in the Contract Price or

an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any Underground Facility that was not shown or indicated in the Contract and which CONTRACTOR could not reasonably have been expected to be aware of. If the parties are unable to agree as to the amount or length thereof, CONTRACTOR may make a claim therefore as provided in Sections 1.3.5, 1.1.7.4-7 and Section 1.3.6.

1.4.2 GENERAL CONSTRUCTION

1.4.2.1 ACCESS TO WORK

(1) ENGINEER and other representatives of CITY, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide proper and safe conditions for such access.

1.4.2.2 RECORD DOCUMENTS

(1) CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Directive Changes, and Field Orders and written interpretations and clarifications (issued pursuant to Section 1.1.7.2) and a copy of state approved plans if applicable, in good order and annotated to show all changes made during construction. These record documents together with all approved samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, samples and Shop Drawings will be delivered to ENGINEER in an orderly, understandable manner.

1.4.2.3 CLEANING OF WORK SITE

(1) The CONTRACTOR shall at all times keep the site of the Work, including streets, alleys and all private and public property involved in or adjacent to the Work, free from any rubbish, surplus or waste materials that have been deposited by their employees or which have accumulated as a result of the Work.

(2) The CONTRACTOR must remove all surplus materials, tools, equipment or plant, leaving the site of the Work and all portions of the finished Work clean, unobstructed and ready for use before the Work will be considered complete. The City Engineer may have removed from the site of the Work all rubbish, surplus waste materials, etc., which the CONTRACTOR has neglected or refused to remove and deduct the cost of such removal from any monies due the CONTRACTOR.

(3) The CONTRACTOR shall clean up each segment, block or portion of Work as the Contract progresses. Work not cleaned up at the end of each month shall not be included in that month's estimate for payment.

(4) CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

1.4.2.4 EXCAVATED MATERIAL

(1) Unless indicated otherwise, all excavated material shall remain the property of the City and shall be removed from the Work site and hauled where directed by the ENGINEER, within the City limits. Excavated material may be used for backfilling as called for by these Specifications and required by the ENGINEER.

(2) If, on any portion of the Work, the ENGINEER states that the City has no need of the excess excavated material, it shall be the responsibility of the CONTRACTOR to dispose of said excess from that portion of the Work, allowing owners of property abutting the Work first opportunity to receive the material.

(3) The CONTRACTOR shall level off all excess excavated material in a manner satisfactory to the City, prior to monthly payments.

1.4.2.5 TREES, OBSTRUCTIONS

(1) If large trees or other obstructions are encountered in doing the Work and are not shown on the plans and are not otherwise included for clearing and grubbing, notice shall be given the ENGINEER and specific instructions will be given and a price agreed upon in writing for their treatment or removal. No payment will be allowed for trees under 3" in diameter, as measured 4-1/2 feet above the ground. The City may, at its option, remove the trees or obstructions. Where brushwood is encountered, it shall be removed and disposed of as directed by the City. Trees not directly in the line of Work shall be protected.

(2) No payment will be made for tree removal for underground construction. All roots shall be removed for a distance of 6" from all new concrete Work.

1.4.2.6 PERMITS AND FEES

(1) CONTRACTOR shall be responsible for all state and local permits and fees, except Wisconsin DNR permits for sewer and water installation, storm water and erosion control, all fees for temporary utility services necessary, and for all utility charges necessary, and for all utility charges for necessary permanent connections to the Work, unless provided otherwise.

(2) Whenever the Work necessitates entering a state highway right-of-way or any other road under the jurisdiction of the State of Wisconsin Department of Transportation, and/or whenever the Work necessitates entering a railroad right-of-way, the City shall obtain all necessary permits, and the conditions of such permits shall be considered a part of this specification. The CONTRACTOR shall not enter upon the Work until such permits have been obtained.

1.4.2.7 TRAFFIC CONTROL

(1) CONTRACTOR shall neither open an excavation, disrupt or block a street, without approval of the ENGINEER.

(2) The CONTRACTOR shall submit a traffic control plan, in accordance with the MUTCD and WMUTCD, for approval of the ENGINEER.

(3) Provide and maintain traffic control devices to maintain a safe work zone throughout the duration of the project. Relocate devices as required to accommodate changing

work operations. When not in use, place devices away from traffic outside of paved and gravel shoulder surfaces. Lay signs and supports flat on grade with uprights oriented parallel to and downstream from traffic. Do not stack devices or equipment.

(4) Attach warning lights to traffic control devices with vandal resistant hardware. Warning lights shall remain in good working order for the duration of the project.

(5) Maintain traffic control devices on the project at or above the quality that the Wisconsin Department of Transportation Work Zone Field Manual defines as marginal.

(6) Review signs, traffic control devices, and temporary pavement marking for location, position, visibility, and appropriateness for job conditions immediately after each setup. Do additional reviews as necessary to provide a safe work zone and ensure signs and traffic control devices conform to MUTCD standards.

(7) The CONTRACTOR must:

(a) Notify the ENGINEER of the scheduled time for work to begin,

(b) Notify the ENGINEER by noon on Wednesday of the week prior to the scheduled work in which will result in traffic on that street being disrupted or closed to traffic. This time will allow the ENGINEER to notify the Fire, Police, Janesville Transit Services, and other Departments accordingly. The ENGINEER shall also notify the same Departments when the street is reopened to travel.

(8) The CONTRACTOR shall have the sole responsibility of safeguarding the Work and Work site throughout the duration of the Work.

(9) The performance of any Work by the CITY, when done in conjunction with the Work under this Contract, shall not relieve the CONTRACTOR from full responsibility for safeguarding the Work and the Work site or of any other duties imposed on the CONTRACTOR by this Contract. CONTRACTOR shall be solely liable for any and all damages caused by their activities, indemnifies and shall hold the CITY harmless from any and all claims resulting from any and all CONTRACTOR's acts and omissions and those of the Subcontractors, and all others employed for whom the CONTRACTOR would be responsible and liable including acts and omissions at the Work site by the CITY, its employees, agents, representatives and ENGINEER. The CONTRACTOR shall also be liable for any and all damages caused by the negligent digging up of streets, alleys, or other public grounds or which may result from carelessness in the prosecution of this Work (Wisconsin Statutes 62.15-11) or current law.

1.4.2.8 REFERENCE POINTS

(1) CITY shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. This shall include line and grade for street and utility improvements. CONTRACTOR shall be responsible for laying out the Work (unless otherwise specified in Special Provisions) shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of CITY. CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations,

and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel.

1.4.2.9 TRACKED VEHICLES

(1) Tracked vehicles or any other machine or vehicle having wheels with spikes, lugs, or ridges, or having the wheels tied, chained, or locked, shall not be driven or otherwise propelled on asphalt or other permanent flexible pavements in the City as regulated in City Ordinance Section 12.48.010.

1.4.2.10 DISPOSAL OF MATERIALS

(1) The Contractor is responsible for the removal and disposal of all demolition material and other debris from the job site. If Contractor chooses to dispose of material at the City Sanitary Landfill or the City Demolition Landfill, the Contractor shall pay the related disposal fees at the current rates.

1.4.2.11 FUELING AND EQUIPMENT MAINTENANCE

(1) The Contractor is solely responsible for any and all costs associated with a petroleum spill on City property should one occur from over-fueling, spillage, etc. The Contractor shall notify Engineering staff immediately if a spill occurs and take necessary measures to contain it, clean it up, and properly disposal of in accordance with Federal and State regulations.

(2) The City reserves the right to require the Contractor to sample and test the material, as required by the City, to ensure it is not hazardous; however, if the degree of contamination is such that the soil is a hazardous material as determined by the City, the Contractor shall make other arrangements for legal documentation and disposal of the material.

1.4.2.12 TESTS AND INSPECTIONS

(1) CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals.

(2) If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefore, pay all costs in connection therewith and furnish ENGINEER the required certificates of inspection, testing or approval. CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with CITY's acceptance of a supplier of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval. The cost of all inspections, tests and approvals in addition to the above which are required by the Contract shall be paid by CITY (unless otherwise specified.)

(3) If any Work (including the Work of others) that is to be inspected, tested or approved is covered prior to such inspection, testing, or approval without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation. Such uncovering and restoration to new condition shall be at CONTRACTOR's expense. Neither observation by ENGINEER nor inspections, tests or approvals by others shall

relieve CONTRACTOR from CONTRACTOR's obligations to perform the Work in accordance with the Contract.

1.4.2.13 UNCOVERING WORK

(1) If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER' observation and replaced to new condition at CONTRACTOR's expense.

(2) If ENGINEER considers it necessary or advisable that other covered Work be observed by ENGINEER or inspected or tested, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, CONTRACTOR shall bear all direct, indirect and consequential costs of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction (including but not limited to fees and charges of engineers, architects, attorneys and other professionals). Either the CONTRACTOR shall correct the defective Work or the CITY shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, may make a claim therefore as provided in Section 1.3.6. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefore as provided in Sections 1.3.5, 1.1.7.4-7 and Section 1.3.6.

1.4.2.14 MOBILIZATION AND DEMOBILIZATION

(1) The contractor is responsible for all costs associated with the work and operations necessary to move personnel, equipment, supplies, and incidentals to and from the project site and to supply any other facilities necessary to work on the project. It also includes all other work and operations whose performance is required, and costs necessarily incurred before beginning work on various items on the project site. If the contract does not include a separate Mobilization and Demobilization bid item, the work necessary for mobilization and demobilization is incidental to the Contract.

1.4.3 RELATED WORK / COORDINATION

1.4.3.1 RELATED WORK AT SITE

(1) CITY may perform other Work related to the Project at the site by CITY's own forces, have other Work performed by utility owners or let other direct contracts therefore which may contain General Provisions similar to these.

(2) CONTRACTOR shall afford each utility owner and other CONTRACTOR (or CITY if CITY is performing the additional Work with its employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such Work, and shall properly connect and coordinate the Work with theirs. Exempt as provided otherwise in the Contract, CONTRACTOR shall do all the cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other Work.

CONTRACTOR shall not endanger any Work of others by cutting, excavating or otherwise altering their Work and will only cut or alter their Work with the written consent of ENGINEER and the others whose Work will be affected.

(3) If any part of CONTRACTOR'S Work depends for proper execution or results upon the Work of any such other CONTRACTOR or utility owner (or CITY), CONTRACTOR shall inspect and promptly report to ENGINEER in writing any delays, defects or deficiencies in such Work that render it unavailable or unsuitable for such proper execution and results. CONTRACTOR's failure so to report will constitute an acceptance of the other Work as fit and proper for integration with CONTRACTOR's Work except for latent or non-apparent defects and deficiencies in the other Work.

1.4.3.2 COORDINATION

(1) Each CONTRACTOR and their Subcontractors shall cooperate and coordinate their Work with adjacent Work and shall give due notice to other CONTRACTORS and Subcontractors of intersecting Work to assure that all items are installed at an agreeable time and to facilitate general progress of the Work. The General CONTRACTOR shall coordinate all Work by all CONTRACTORS on the project.

(2) Each CONTRACTOR shall review the Time of Completion dates included on the Bid forms for each Contract, and shall cooperate as required for all CONTRACTORS to meet their respective Time of Completion dates.

1.4.3.3 SEPARATE CONTRACTOR CLAIMS

(1) Should CONTRACTOR cause damage to the Work or property of any separate CONTRACTOR at the site, should any claim arising out of CONTRACTOR's performance of the Work at the site be made by any separate CONTRACTOR against CONTRACTOR, CITY or ENGINEER or any other person, CONTRACTOR shall promptly attempt to settle with such other CONTRACTOR by agreement, or to otherwise resolve the dispute at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold CITY and the ENGINEER harmless from and against all claims, damages, losses and expenses (including, but not limited to fees of engineer, architects, attorneys and other professionals and court costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any separate CONTRACTOR against CITY or ENGINEER or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from CITY or ENGINEER on account of any such damage or claim.

(2) If CONTRACTOR is delayed at any time in performing or furnishing Work by any act or neglect of a separate CONTRACTOR, CONTRACTOR may make a claim for an extension of time in accordance with Section 1.3.6. An extension of the Contract Time shall be CONTRACTOR's exclusive remedy with respect to CITY for any delay, disruption, interference or hindrance caused by any separate CONTRACTOR.

1.5 WARRANTY / DEFECTIVE WORK

1.5.1 WARRANTY

(1) All material and workmanship included in a Contract shall have a one-year warranty from the date of project acceptance by the Engineer, unless the manufacturer's warranty is greater.

(2) CONTRACTOR warrants and guarantees to CITY that all Work will be in accordance with the Contract and will not be defective. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in Sections 1.3.7.1; 1.4.2.1; 1.4.2.12; 1.4.2.13; or 1.5.1 through 1.5.5.

1.5.2 ONE YEAR CORRECTION PERIOD

(1) If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract, any Work is found to be defective, CONTRACTOR shall promptly, without cost to CITY and in accordance with CITY's written instructions, either correct such defective Work, or, if it has been rejected by CITY, remove it from the site and replace it with non-defective Work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, CITY may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) will be paid by CONTRACTOR. Where items of Work necessary for final completion are done after the date of substantial completion, or where corrective Work is done under the initial guarantee period, the correction period for that Work shall be one year following the completion of such Work.

1.5.3 REJECTING DEFECTIVE WORK

(1) ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, and will also have authority to require special inspection or testing of the Work as provided in Section 1.4.2.13(2), whether or not the Work is fabricated, installed or completed.

1.5.4 CORRECTION OR REMOVAL OF DEFECTIVE WORK

(1) If required by ENGINEER, CONTRACTOR shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by ENGINEER, remove it from the site and replace it with non-defective Work. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby. If other improvements or utilities are adjacent to the defective Work, it shall be the responsibility of the CONTRACTOR to replace any and all portions of such utilities or improvements which may become damaged or adversely affected by the corrections of the defective Contract Work.

1.5.5 ACCEPTANCE OF DEFECTIVE WORK

(1) If, instead of requiring correction or removal and replacement of defective Work, CITY prefers to accept it, CITY may do so. CONTRACTOR shall bear all direct, indirect and consequential costs

attributable to CITY's evaluation of and determination to accept such defective Work (such costs to include but not be limited to fees and charges of engineers, architects, attorneys and other professionals). If any such acceptance occurs prior to ENGINEER's recommendation of final payment, CITY shall be entitled to an appropriate decrease in the Contract Price. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to CITY.

1.5.6 CITY MAY CORRECT DEFECTIVE OR UNCOMPLETED WORK

(1) If CONTRACTOR refuses or fails within a reasonable time after written notice of ENGINEER to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with Section 1.5.4, or if CONTRACTOR fails to perform the Work in accordance with the Contract, or if CONTRACTOR fails to comply with any other provision of the Contract, CITY may stop the CONTRACTOR and their Work at once, and after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph, CITY shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, CITY may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, in the Work all materials and equipment stored at the site or for which CITY has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow CITY, CITY's representatives, agents and employees such access to the site as may be necessary to enable CITY to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of CITY in exercising such rights and remedies will be charged against CONTRACTOR. Such direct, indirect and consequential costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court costs and all costs of repair and replacement of Work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's defective Work and may include an additional ten percent mark-up for administrative costs. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by CITY of CITY's rights and remedies hereunder.

(2) If, however, the CITY shall fail to correct any faulty or defective material or Work, as outlined above, the CONTRACTOR shall not be relieved of correcting said materials or Work, and the right of final acceptance or condemnation of the Work shall not be waived in any manner by reason of any said failure on the part of the City.

1.6 PAYMENTS

1.6.1 PROGRESS PAYMENTS

(1) All construction payments will be processed as electronic fund transfers (EFT). Effective January 1, 2014 the City of Janesville no longer offers payments by check. As a condition of the contract, all CONTRACTORS shall fill out and submit the City of Janesville's ETF Application Form to allow EFT payments.

(2) Unless otherwise provided in the Special Provisions, payments are to be made to the CONTRACTOR not later than the last business day of each month for the value of Work performed during the preceding month, by one of the following methods:

(a) Progress payments for strictly unit price Contracts will be processed monthly on the basis of approved written estimates of the Engineer of the value of the Work performed during the preceding month, if any, without the need for CONTRACTOR's application.

(b) Progress payments for other Contracts shall be made as follows: CONTRACTOR shall submit to ENGINEER, within the first five days of a month (but not more often than once a month), an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the end of the previous month accompanied by such supporting documentation as is required by the Contract.

(3) ENGINEER will, prior to the last business day of the month, either process the payment or indicate the reason for not processing the payment.

(4) If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation warranting that CITY has received the materials and equipment free and clear of all liens, charges, security interests and encumbrances (which are hereinafter in these General Provisions referred to as "Liens") and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect CITY's interest therein, all of which will be satisfactory to CITY. All such stored equipment and materials for which payment is requested shall have a copy of the invoices included with the pay request. Equipment shall be identified thoroughly on the invoices.

(a) Payment for the stored equipment and material which are on the site shall not exceed the invoiced amount for each item, less the Contract retainage. The overhead and profit for the stored items shall not be invoiced until the last item is installed.

(b) Payment for off-site storage is normally reserved for sensitive or very large pieces of equipment that in the ENGINEER's opinion would not be practical to have stored on the site. Payment for off-site stored items shall be limited to 75% of the invoiced value of the item, less Contract retainage. The CONTRACTOR shall reimburse the CITY the cost of inspecting off-site stored items.

1.6.2 REVIEW OF APPLICATIONS FOR PROGRESS PAYMENTS

(1) ENGINEER's approval of any payment will constitute a representation by ENGINEER that, to the best of ENGINEER's knowledge, information and belief, the quality of the Work is in accordance with the Contract (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract, to a final determination of quantities and classifications for Unit Price Work under Section 1.1.7.8 and to any other qualifications stated); and the CONTRACTOR is entitled to payment of the amount recommended.

(2) ENGINEER may refuse to approve the whole or any part of any payment or may increase the percentage retained because of Sections 1.6.2(2)(a) through (g), or because of subsequently discovered evidence or the results of subsequent inspections or tests which may nullify any such payment previously made, to such extent as may be necessary in ENGINEER's opinion to protect CITY from loss because:

(a) The Work is defective, or completed Work has been damaged requiring correction or replacement.

(b) The Contract Price has been reduced by Change Order.

(c) CITY has chosen to correct defective Work or complete Work in accordance with Section 1.5.6, or

(d) Of ENGINEER's actual knowledge of the occurrence of any of the events enumerated in Section 1.3.7.3(1)(a) through (i).

(e) The percentage or amount of a given Work item or pay item properly completed differs in the ENGINEER's professional judgment from the requested percentage or amount.

(f) Claims have been made against CITY on account of CONTRACTOR's performance or furnishing of the Work or liens have been filed in connection with the Work or there are other items entitling CITY to a set-off against the amount recommended.

(g) CONTRACTOR has refused to perform certain necessary functions or is otherwise not in compliance with the Contract provisions.

(3) The date of Substantial Completion of the Work is the date certified by the City Engineer when construction of all major items is complete and construction is sufficiently complete, in accordance with the Contract, so the Work may be occupied for the full and complete use for which it is intended, and that same may be secured with locks either temporary or permanent, and be under the full control of the ENGINEER.

(4) For purposes of assessment of liquidated damages, such assessment will not be applicable on or after the date of Substantial Completion.

(5) The ENGINEER will, at the time of Substantial Completion, prepare a "punch list" of all items necessary for final completion.

(6) CITY shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but CITY shall allow CONTRACTOR reasonable access to complete or correct items on the punch list.

(7) Use by CITY of any finished part of the Work, which has specifically been identified in the Contract, or which CITY and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by CITY without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work if the owner has a need or desire to occupy and use part of the Work and initiates the request, subject to the following:

(a) CITY at any time may request CONTRACTOR in writing to permit CITY to use any such part of the Work which CITY believes to be ready for its intended use and is or can readily be made substantially complete. At the earliest possible time, consistent with the CONTRACTOR's scheduling needs, CONTRACTOR will complete that portion of the Work and will certify to the ENGINEER that said part of the Work is substantially complete. Within a reasonable time after either such certification, ENGINEER shall inspect that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify CONTRACTOR giving the reasons therefore. If ENGINEER considers that part of the Work to be substantially complete, any applicable assessment of liquidated damages will be reduced according to the proportions of square footage considered substantially complete. If the part of the

Work in question still has major items incomplete at the time the CITY must occupy it, and if such time is after the completion date or any extension thereof, then any applicable assessment of liquidated damages will not be reduced according to proportion of square footage, but may be reduced by some lesser degree as the ENGINEER may determine.

1.6.3 RETAINAGE

(1) Except as provided in Section 1.6.2(2), the ENGINEER will retain 5% of each partial payment until such time as the Contract is over 50% complete. Once the contract is beyond 50% complete, 2.5% of the contract amount (adjusted for change orders) will be retained from each partial payment until the Contractor submits all final paperwork to allow closing of the Contract unless forfeitures in accordance with Section 1.6.4.1 are applicable. 2003 Wisconsin Act 157 allows amounts exceeding 2.5% of the Contract to be retained when the progress of work is not satisfactory.

1.6.4 CONTRACT FINALS

1.6.4.1 FINAL COMPLETION

(1) Upon written notice from CONTRACTOR that the entire Work, including all punch list items, is complete, ENGINEER will make a final inspection and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

1.6.4.2 FINAL APPLICATION FOR PAYMENT

(1) After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, warranties, bonds, certificates of inspection, marked up record documents (as provided in Section 1.4.2.2) and other documents, all as required by the Contract, and after ENGINEER has indicated that the Work is acceptable (subject to the provisions of Section 1.6.4.3), CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract.

(2) ENGINEER may require CONTRACTOR to obtain and submit a statement from all parties on whose property they have encroached or abutted to do their Work either with or without having first obtained permission to do so, which statement shall be in the following form. These forms will be supplied by the City upon request.

Date_____

CITY ENGINEER
CITY OF JANESVILLE

The property owned by the undersigned has been left in satisfactory condition, following completion of construction Work (through or abutting) said property.

_____ _____
(Witness) (Owner)

If the CONTRACTOR is unable to secure the above statement, he shall inform the ENGINEER of the reasons for their failure to do so.

1.6.4.3 CONTRACT FINAL PAYMENT, AFFIDAVIT SUBMITTALS, AND ACCEPTANCE

(1) General Information

Once all contract work has been completed, including final punch list items, the Engineer will issue a "Notice of Final Completion" to the Contractor. The Contractor shall have 45 calendar days from notification by the Engineer to provide all required contract final payment submittals. If the Contractor fails to provide the required submittals within this timeframe, the Contractor shall forfeit an initial $2,500 and an additional $2,500 every 30 calendar days thereafter. These forfeitures shall be deducted from the contract retainage until such time as the submittals are provided or the contract retainage value is expended. Disbursement of final retainage shall be in accordance with Section 1.6.3. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation, all as required by the Contract, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract have been fulfilled, CITY, within twenty days after these determinations, issue final payment.

(2) CONTRACTOR'S AFFIDAVIT

Prior to issuance of final payment on all public works contracts issued by the CITY, a "CONTRACTOR'S AFFIDAVIT", which provides a lien waiver and protects the City against any claims, must be completed and signed by the Prime Contractor and submitted to the Engineer. This form is included in this Contract.

(3) Federal Prevailing Wage Rates (including Davis-Bacon Act Requirements)

Submission of certified payrolls will be required for Contracts regulated by Davis-Bacon Act wage rates prior to contractor payments.

CITY OF JANESVILLE - STANDARD SPECIFICATIONS

PART 2 – EROSION CONTROL

2.1 GENERAL

2.1.1 Standards

Within the City of Janesville Standard Specifications are references to the latest editions of the Standard Specifications for Sewer and Water Construction in Wisconsin, Manual on Uniform Traffic Control Devices (MUTCD), WDNR Storm Water Construction Technical Standards, WISDOT Construction and Materials Manual, and WISDOT Standard Specifications for Highway and Structure Construction.

See Section 1.1.2 - Referenced Materials in PART 1 – GENERAL PROVISIONS for access to the above-mentioned references.

2.1.2 Submittals

Any materials, items, processes, etc. requiring submittals for Engineer's review and approval shall be submitted, to the Engineer, by the Contractor a minimum of one (1) week prior to the contractor incorporating into the contract work.

2.1.3 Documentation and Reporting

The Contractor shall provide inspection and maintenance reports for all erosion control measures. Reports shall be completed weekly and within twenty-four (24) hours after any rainfall event of one-half (½) inch or more.

The Engineer shall have full authority to suspend or limit Contractor operations if erosion control measures are not properly installed or maintained to conform to the City of Janesville – Standard Specifications.

2.2 DEWATERING

2.2.1 Materials

Refer to WDNR Technical Standard for Dewatering Practices for Sediment Control – Code No. 1061.

2.2.2 Construction

Refer to WDNR Technical Standard for Dewatering Practices for Sediment Control – Code No. 1061.

Additionally:

The Contractor shall be responsible for obtaining any necessary dewatering permits.

2.2.3 Measurement

Dewatering shall be incidental to the project.

2.2.4 Payment

Dewatering shall be incidental to the project.

2.3 DITCH CHECK, EROSION BALES

2.3.1 Materials

Refer to WDNR Technical Standard for Ditch Check – Code No. 1062.

2.3.2 Construction

Refer to WDNR Technical Standard for Ditch Check – Code No. 1062.

2.3.3 Measurement

Ditch Checks constructed with a double row of erosion bales will be measured by the lineal foot acceptably complete. The length will be determined by measuring each row individually and averaging the two lengths.

2.3.4 Payment

Ditch Check, Erosion Bales shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes, including maintenance and removal, associated with this bid item.

2.4 DITCH CHECKS, STONE

2.4.1 Materials

Refer to WDNR Technical Standard for Ditch Check – Code No. 1062.

2.4.2 Construction

Refer to WDNR Technical Standard for Ditch Check – Code No. 1062.

2.4.3 Measurement

Ditch Checks constructed with stone will be measured by the lineal foot acceptably complete. The length will be determined by measuring; perpendicular to the flow, in-line with the centerline of the top of ditch check and from edge of stone to edge of stone – edge refers to the toe of slope.

2.4.4 Payment

Ditch Check, Stone shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes, including maintenance and removal, associated with this bid item.

2.5 DIVERSION BERM

2.5.1 Materials

Refer to WDNR Technical Standard for Construction Site Diversion – Code No. 1066.

2.5.2 Construction

Refer to WDNR Technical Standard for Construction Site Diversion – Code No. 1066.

2.5.3 Measurement

Diversion Berms will be measured by the lineal foot acceptably complete. The length will be determined by measuring in-line with the centerline of the top of berm and from edge of berm to edge of berm – edge refers to the toe of slope.

2.5.4 Payment

Diversion Berms shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes, including maintenance and removal, associated with this bid item.

2.6 DUST CONTROL

2.6.1 Materials

Refer to WDNR Technical Standard for Dust Control – Code No. 1068.

Additionally:

Water used for Dust Control may be obtained through the City of Janesville Water Utility System. If the contractor chooses to use these waters, the contractor shall coordinate with the water utility and follow all procedures required for proper metering and payment.

Other methods of dust control may be used. These methods shall be approved by the Engineer prior to use.

2.6.2 Construction

Refer to WDNR Technical Standard for Dust Control – Code No. 1068.

Additionally:

Dust control measures shall be provided, within two (2) hours, by the contractor as deemed necessary by the Engineer.

2.6.3 Measurement

All dust control measures shall be incidental to the project.

2.6.4 Payment

All Dust Control measures shall be incidental to the project.

2.7 EROSION MAT, CHANNEL

2.7.1 Materials

Refer to WDNR Technical Standard for Channel Erosion Mat – Code No. 1053.

2.7.2 Construction

Refer to WDNR Technical Standard for Channel Erosion Mat – Code No. 1053.

2.7.3 Measurement

Erosion Mat, Channel shall be measured by the square yard acceptably complete. Allowances will not be made for any portions of the mat that must be entrenched in the soil for any end or junction slot, or for required overlaps.

2.7.4 Payment

Erosion Mat, Channel shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes, including maintenance, associated with this bid item.

2.8 EROSION MAT, NON-CHANNEL

2.8.1 Materials

Refer to WDNR Technical Standard for Non-channel Erosion Mat – Code No. 1052.

Additionally:

Erosion Mat shall be Class I, Urban.

2.8.2 Construction

Refer to WDNR Technical Standard for Non-channel Erosion Mat – Code No. 1052.

2.8.3 Measurement

Erosion Mat, Non-channel shall be measured by the square yard acceptably complete. Allowances will not be made for any portions of the mat that must be entrenched in the soil for any end or junction slot, or for required overlaps.

2.8.4 Payment

Erosion Mat, Non-channel shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes, including maintenance, associated with this bid item.

2.9 FERTILIZER

2.9.1 Materials

Refer to WisDOT Standard Specifications, Section 629.2.

Additionally:

Fertilizer shall be Type B.

2.9.2 Construction

Refer to WisDOT Standard Specifications, Section 629.3.

2.9.3 Measurement

Fertilizer shall be incidental to the corresponding seeding bid item.

2.9.4 Payment

Fertilizer shall be incidental to the corresponding seeding bid item.

2.10 INLET PROTECTION

2.10.1 Materials

Refer to WDNR Technical Standard for Storm Drain Inlet Protection for Construction Sites – Code No. 1060.

2.10.2 Construction

Refer to WDNR Technical Standard for Storm Drain Inlet Protection for Construction Sites – Code No. 1060.

Additionally:

Inlet protection must be kept in place and properly maintained at all times. Inlet protection may only be removed once the disturbed contributing area has been stabilized, as determined by the Engineer.

2.10.3 Measurement

Inlet protection shall be measured as each individual location and type acceptably complete.

2.10.4 Payment

Inlet Protection shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes, including maintenance and removal, associated with this bid item.

2.11 MULCHING

2.11.1 Materials

Refer to WDNR Technical Standard for Mulching for Construction Sites – Code No. 1058.

Additionally:

Mulch shall be straw.

2.11.2 Construction

Refer to WDNR Technical Standard for Mulching for Construction Sites – Code No. 1058.

Additionally:

Mulch shall be treated with a tackifier or crimped in place.

The Contractor may elect to use erosion mat conforming to Section 2.8 of these specifications in lieu of mulching. If the Contractor chooses this option, this erosion mat will be considered as mulch for payment purposes.

2.11.3 Measurement

Mulching shall be incidental to the corresponding seeding bid item.

2.11.4 Payment

Mulching shall be incidental to the corresponding seeding bid item.

2.12 SEDIMENT BASIN

2.12.1 Materials

Refer to WDNR Technical Standard for Sediment Basin – Code No. 1064.

2.12.2 Construction

Refer to WDNR Technical Standard for Sediment Basin – Code No. 1064.

2.12.3 Measurement

Sediment Basins will be measured as each individual basin acceptably complete.

2.12.4 Payment

Sediment Basins shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes, including maintenance and removal, associated with this bid item.

2.13 SEDIMENT TRAP

2.13.1 Materials

Refer to WDNR Technical Standard for Sediment Trap – Code No. 1063.

2.13.2 Construction

Refer to WDNR Technical Standard for Sediment Trap – Code No. 1063.

2.13.3 Measurement

Sediment Traps will be measured as each individual trap acceptably complete.

2.13.4 Payment

Sediment Traps shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes, including maintenance and removal, associated with this bid item.

2.14 SEEDING

2.14.1 Materials

Refer to WisDOT Standard Specifications, Section 630.2.

Additionally:

All terrace areas shall be seeded with an urban lawn seed mixture meeting the following formulation:

- 50% Kentucky Bluegrass
- 25% Creeping Red Fescue
- 25% Perennial Rye Grass

2.14.2 Construction

Refer to WisDOT Standard Specifications, Section 630.3.

Additionally:

Seed mixture shall be applied at a rate of four (4) pounds per 1,000 square feet.

The Contractor shall establish adequate vegetative cover prior to winter shutdown. If adequate vegetation cannot be stablished, the Contractor shall stabilize the site by applying an anionic polyacrylamide (PAM) in accordance with the WDNR Technical Standard for Land Application of Additives for Erosion Control – Code No. 1050. This stabilization shall be completed at no cost to the City if in the judgment of the Engineer the inadequate vegetation is a result of contract delays caused by the Contractor.

2.14.3 Measurement

Seeding shall be measured by the square yard acceptably complete.

2.14.4 Payment

Seeding shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

2.15 SILT FENCE

2.15.1 Materials

Refer to WDNR Technical Standard for Perimeter Sediment Control and Slope Interruption – Code No. 1056.

2.15.2 Construction

Refer to WDNR Technical Standard for Perimeter Sediment Control and Slope Interruption – Code No. 1056.

2.15.3 Measurement

Silt Fence will be measured by the lineal foot acceptably complete. The length will be determined by measuring along the base of the fence, center-to-center of end post, for each section of fence.

2.15.4 Payment

Silt Fence shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes, including maintenance and removal, associated with this bid item.

2.16 STONE TRACKING PAD

2.16.1 Materials

Refer to WDNR Technical Standard for Trackout Control Practices – Code No. 1057.

2.16.2 Construction

Refer to WDNR Technical Standard for Trackout Control Practices – Code No. 1057.

2.16.3 Measurement

Stone Tracking Pads will be measured as each individual stone tracking pad acceptably complete.

2.16.4 Payment

Stone Tracking Pads shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes, including maintenance and removal, associated with this bid item.

2.17 STREET CLEANING

2.17.1 (VACANT)

2.17.2 Construction

Street Cleaning shall be completed on any street adjacent to a construction site having a build-up of materials from the construction site at the end of every workday and within two (2) hours of a request by the Engineer.

2.17.3 Measurement

Street Cleaning shall be incidental to the project.

2.17.4 Payment

Street Cleaning shall be incidental to the project.

2.18 TEMPORARY SEEDING

2.18.1 Materials

Refer to WDNR Technical Standard for Seeding for Construction Site Erosion Control – Code No. 1059.

2.18.2 Construction

Refer to WDNR Technical Standard for Seeding for Construction Site Erosion Control – Code No. 1059.

2.18.3 Measurement

Temporary Seeding shall be incidental to the project.

2.18.4 Payment

Temporary Seeding shall be incidental to the project.

CITY OF JANESVILLE - STANDARD SPECIFICATIONS

PART 3 – EARTHWORK

3.1 GENERAL

3.1.1 Standards

Within the City of Janesville Standard Specifications are references to the latest editions of the Standard Specifications for Sewer and Water Construction in Wisconsin, Manual on Uniform Traffic Control Devices (MUTCD), WDNR Storm Water Construction Technical Standards, WISDOT Construction and Materials Manual, and WISDOT Standard Specifications for Highway and Structure Construction.

See Section 1.1.2 - Referenced Materials in PART 1 – GENERAL PROVISIONS for access to the above-mentioned references.

3.1.2 Submittals

Any materials, items, processes, etc. requiring submittals for Engineer's review and approval shall be submitted, to the Engineer, by the Contractor a minimum of one (1) week prior to the contractor incorporating into the contract work.

3.2 CLEARING & GRUBBING

3.2.1 (VACANT)

3.2.2 Construction

Refer to WisDOT Standard Specifications, Section 201.3.

Additionally:

Within thirty (30) days of being cleared or grubbed, all cleared and grubbed materials either chipped or in mass shall be hauled and disposed of off-site at an Engineer approved location.

Due to the Emerald Ash Borer (EAB) infestation in Rock County, all ash trees shall be handled in accordance with the following:

- All cleared and grubbed ash tree material shall remain within Rock County.
- Between Memorial Day and Labor Day all cleared and grubbed ash tree material to be hauled shall be chipped or, if hauled in mass, the load must be covered.

Symmetrically trim lower limbs or branches of trees left in place, which overhang the street or sidewalk, to a minimum of fifteen (15) feet above the adjacent top of curb, or street surface if no curb exists, and seven (7) feet above the adjacent sidewalk surface.

3.2.3 Measurement

Clearing and Grubbing shall be measured separately, by the station, inch-diameter, or lump sum acceptably complete. If measured by the station, the associated width of the station shall be defined in the special provisions.

3.2.4 Payment

Clearing and Grubbing shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

3.3 EXCAVATION

3.3.1 Materials

Refer to WisDOT Standard Specifications, Section 205.2.

3.3.2 Construction

Refer to WisDOT Standard Specifications, Section 205.3.

Additionally:

All excavated materials shall remain the property of the City and shall be hauled and disposed of where the Engineer directs, within city limits.

If, on any portion of the work, the Engineer states that the City has no need for the excess excavated material, it shall be the responsibility of the Contractor to dispose of said excess from that portion of the work, allowing owners of property abutting the work first opportunity to receive the material.

3.3.3 Measurement

Excavation shall be measured by the cubic yard acceptably complete.

The plan quantity shall be computed based on a surface to surface comparison between a detailed topographic field survey and the proposed ground digital terrain model. The plan quantity specifically includes the volume of that material between the existing ground and the proposed final soil grade.

Measurements of excavated quantities will only be completed for any Engineer approved areas of additional excavation, reduced excavation or excavation below subgrade. The payable quantity will be adjusted accordingly based on field measurement of excavated material in place.

3.3.4 Payment

Excavation shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all construction processes associated with this bid item.

Additionally:

Excavation Below Subgrade (EBS) shall be paid for by the cubic yard in accordance with the following:

- EBS completed during initial excavation process will be paid for under the excavation bid item.

- EBS required after the initial excavation work is completed shall be paid for under the EBS bid item. If the subgrade has been approved by the Engineer and excavation equipment has been removed from the project site, a one-thousand five-hundred dollar ($1,500) extra sum shall be paid to account for re-mobilization.

3.4 FOUNDATION PREPARATION FOR ROADWAYS

3.4.1 (VACANT)

3.4.2 Construction

Refer to WisDOT Standard Specifications, Section 211.3.

3.4.3 Measurement

Foundation Preparation shall be incidental to the corresponding bid items.

3.4.4 Payment

Foundation Preparation shall be incidental to the corresponding bid items.

3.5 FINISHING ROADWAY

3.5.1 (VACANT)

3.5.2 Construction

Refer to WisDOT Standard Specifications, Section 213.3.

3.5.3 Measurement

Finishing Roadway shall be incidental to the corresponding bid items.

3.5.4 Payment

Finishing Roadway shall be incidental to the corresponding bid items.

3.6 TOPSOIL AND SALVAGED TOPSOIL

3.6.1 Materials

Refer to WisDOT Standard Specifications, Section 625.2.

Additionally:

Topsoil to be placed in the lower four (4) inches shall be free of clumps larger than three (3) inches in diameter, clay, added sand, rocks or foreign matter or any pesticide or herbicide.

Topsoil to be placed in the top two (2) inches shall be shredded to a fine, powdery consistency.

The Contractor shall provide the Engineer with written documentation of proposed topsoil sources if topsoil needs to be obtained off-site. The proposed topsoil shall be approved by the Engineer prior to use.

3.6.2 Construction

Refer to WisDOT Standard Specifications, Section 625.3.

3.6.3 Measurement

Refer to WisDOT Standard Specifications, Section 625.4.

3.6.4 Payment

Topsoil and Salvaged Topsoil shall be paid for at the contract unit prices for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with these bid items.

3.7 BORROW

3.7.1 Materials

Refer to WisDOT Standard Specifications, Section 208.2.

Additionally:

The Contractor shall be responsible for ensuring that any soil or other fill material imported onto a project site is clean and free of contamination, topsoil, debris, wood, waste, frozen materials, and organic matter. It is recommended that the Contractor work with reputable source and obtain adequate documentation that the source of the material is not an area where contamination is present.

Prior to bringing any soil or other fill material onto a project site the Contractor shall provide a site map and any associated data for the source property from the Wisconsin Department of Natural Resources Contaminated Lands Environmental Action Network (CLEAN), and provide all available information regarding the past and current uses of the source property.

The City may require the Contractor to provide testing of the material at the Contractor's expense if the City deems such testing to be appropriate.

The Contractor shall be responsible for all costs associated with the placement of material that is contaminated or suspected to be contaminated on a project site. These costs shall include all costs associated with the contaminated material including but not limited to project delays, material testing, and associated remediation.

3.7.2 Construction

Refer to WisDOT Standard Specifications, Section 208.3.

3.7.3 Measurement

Borrow shall be measured by the cubic yard acceptably complete.

The plan quantity shall be computed based on a surface to surface comparison between a detailed topographic field survey and the proposed ground digital terrain model. The plan quantity specifically includes the volume of that material between the existing ground and the proposed final soil grade.

Measurements of borrowed quantities will only be completed for Engineer-approved areas of additional borrow and reduced borrow. The payable quantity will be adjusted accordingly based on field measurement of borrowed material in place.

3.7.4 Payment

Borrow shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all construction processes associated with this bid item.

CITY OF JANESVILLE - STANDARD SPECIFICATIONS

PART 4 – AGGREGATE

4.1 GENERAL

4.1.1 Standards

Within the City of Janesville Standard Specifications are references to the latest editions of the Standard Specifications for Sewer and Water Construction in Wisconsin, Manual on Uniform Traffic Control Devices (MUTCD), WDNR Storm Water Construction Technical Standards, WISDOT Construction and Materials Manual, and WISDOT Standard Specifications for Highway and Structure Construction.

See Section 1.1.2 - Referenced Materials in PART 1 – GENERAL PROVISIONS for access to the above-mentioned references.

4.1.2 Submittals

Any materials, items, processes, etc. requiring submittals for Engineer's review and approval shall be submitted, to the Engineer, by the Contractor a minimum of one (1) week prior to the contractor incorporating into the contract work.

4.1.3 Source

Quarries or Pits providing aggregate shall be WisDOT approved.

4.1.4 Load Tickets

Load tickets for aggregate materials shall be submitted by the Contractor to the Engineer the same day the aggregate materials are delivered and placed. At a minimum, these tickets shall show the name of the quarry or pit providing the aggregate, tare weight of the empty truck, gross weight of loaded truck, net weight of aggregate, product description, date, and delivery location.

4.2 BEDDING MATERIALS

4.2.1 Materials

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Sixth Edition, Section 8.43.2.

4.2.2 Construction

Bedding Material shall be used in accordance with the specifications that correspond to the application or contract bid item it is associated with.

4.2.3 Measurement

Bedding Material shall be incidental to the corresponding bid item.

4.2.4 Payment

Bedding Material shall be incidental to the corresponding bid item.

4.3 BREAKER RUN

4.3.1 Materials

Refer to WisDOT Standard Specifications, Section 311.2.

4.3.2 Construction

Refer to WisDOT Standard Specifications, Section 311.3.

4.3.3 Measurement

Breaker Run shall be measured according to the corresponding contract bid item.

If Breaker Run is not incidental to the corresponding contract bid item, Breaker Run will be measured by the ton acceptably complete.

4.3.4 Payment

Breaker Run shall be paid for according to the corresponding contract bid item.

If Breaker Run is not incidental to the corresponding contract bid item, Breaker Run shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

If nonconforming materials are encountered, disincentive shall be applied.

4.4 COARSE GRADATION AGGREGATE

4.4.1 Materials

Coarse Gradation Aggregate shall be three (3) inch in accordance with WisDOT Standard Specifications, Section 305.2.

4.4.2 Construction

Refer to WisDOT Standard Specifications, Section 305.3.

4.4.3 Measurement

Coarse Gradation Aggregate shall be measured according to the corresponding contract bid item.

If Coarse Gradation Aggregate is not incidental to the corresponding contract bid item, Coarse Gradation Aggregate will be measured by the ton acceptably complete.

4.4.4 Payment

Coarse Gradation Aggregate shall be paid for according to the corresponding contract bid item.

If Coarse Gradation Aggregate is not incidental to the corresponding contract bid item, Coarse Gradation Aggregate shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

If nonconforming materials are encountered, disincentive shall be applied.

4.5 FINE GRADATION AGGREGATE

4.5.1 Materials

Refer to WisDOT Standard Specifications, Section 305.2.

Additionally:

Fine Gradation Aggregate shall be well graded, ¾ inch or 1-¼ inch. All material shall be 100% virgin aggregate or 100% Recycled Asphalt Concrete (RAP). Crushed concrete is not allowed.

If RAP is used, it must meet the following conditions:

1. Processed by a crusher or a screen
2. 100% passing a 1 ½" sieve
3. Well graded and uniform.

4.5.2 Construction

Refer to WisDOT Standard Specifications, Section 305.3.

Virgin Aggregate Base Material
The Engineer reserves the right to require the Contractor to prove that the compaction of the base material meets a minimum of 95.0% of the material target density as determined by AASHTO T-180.Virgin Aggregate

RAP Base Material
The compaction of the RAP base material shall be to the satisfaction of the Engineer.

4.5.3 Measurement

Fine Gradation Aggregate shall be measured according to the corresponding contract bid item.

If Fine Gradation Aggregate is not incidental to the corresponding contract bid item, Fine Gradation Aggregate will be measured by the ton acceptably complete.

4.5.4 Payment

Fine Gradation Aggregate shall be paid for according to the corresponding contract bid item.

If Fine Gradation Aggregate is not incidental to the corresponding contract bid item, Fine Gradation Aggregate shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

If nonconforming materials are encountered, disincentive shall be applied.

4.6 IMPORTED TRENCH BACKFILL

4.6.1 Materials

Imported Backfill Material

Refer to WisDOT Standard Specifications, Section 313.2.

Blended Backfill Material

Blended Backfill Material is a ratio of imported backfill material to excavated trench material. The ratio shall be determined by the Engineer.

Additionally:

The Contractor shall be responsible for ensuring that any soil or other fill material imported onto a project site or being used for blending is clean and free of contamination, topsoil, debris, wood, waste, frozen materials, and organic matter.

4.6.2 Construction

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Parts II & III.

Additionally:

Imported Trench Backfill Material shall be used in accordance with the specifications of the corresponding contract bid item.

If the Engineer deems the excavated trench material unsuitable for use, imported backfill material shall be used to backfill the trench.

If the Engineer deems the excavated trench material is unfit for use as backfill material on its own, blended backfill material shall be used to backfill the trench. The Contractor shall provide imported backfill material and thoroughly blend it with the excavated trench material.

Compaction of backfill materials shall be completed in accordance with Standard Specifications for Sewer and Water Construction in Wisconsin, Section 2.6.14(b), however, all backfill material shall be compacted in twelve (12) inch (loose) lifts.

In paved areas, compaction of backfill material shall meet 95% Modified Proctor density within three vertical feet (3’) of pavement subgrade. Compaction of backfill material

shall meet 90% Modified Proctor density from one vertical foot (1') over the pipe to within three vertical feet (3') of pavement subgrade.

In non-paved areas, compaction shall meet 85% Modified Proctor density from one vertical foot (1') over the pipe to the topsoil interface.

Compaction testing will be completed by and at the discretion of the Engineer to ensure compliance.

4.6.3 Measurement

Imported Trench Backfill shall be measured by the ton acceptably complete.

4.6.4 Payment

Imported Trench Backfill Material shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

Additionally:

Payment will be made only for materials incorporated into the work at the direction of the Engineer.

4.7 RIPRAP

4.7.1 Materials

Refer to WisDOT Standard Specifications, Section 606.2.

4.7.2 Construction

Refer to WisDOT Standard Specifications, Section 606.3.

4.7.3 Measurement

Riprap shall be measured by the square yard acceptably completed.

4.7.4 Payment

Riprap shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

If nonconforming materials are encountered, disincentive shall be applied.

4.8 SELECT CRUSHED MATERIAL

4.8.1 Materials

Refer to WisDOT Standard Specifications, Section 312.2.

4.8.2 Construction

Refer to WisDOT Standard Specifications, Section 312.3.

4.8.3 Measurement

Select Crushed Material shall be measured according to the corresponding contract bid item.

If Select Crushed Material is not incidental to the corresponding contract bid item, Select Crushed Material will be measured by the ton acceptably complete.

4.8.4 Payment

Select Crushed Material shall be paid for according to the corresponding contract bid item.

If Select Crushed Material is not incidental to the corresponding contract bid item, Select Crushed Material shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

If nonconforming materials are encountered, disincentive shall be applied.

4.9 AGGREGATE TESTING

4.9.1 Material Testing

4.9.1.1 Contractor Testing

At the request of the Engineer, the Contractor is required to provide documentation ensuring that the aggregate mixture being provided conforms to the specified gradation requirements.

4.9.1.2 City Testing

The City reserves the right to test any aggregate scheduled for placement under contract. Testing will be performed at the discretion of the Engineer and may consist of testing procedures provided in WisDOT Standard Specifications, Section 301.2.3.

4.9.1.3 Nonconforming Materials

Refer to WisDOT Standard Specifications, Section 106.5.

Additionally:

If any aggregate test results are nonconforming, disincentives shall be applied to all work associated with the aggregate gradation sampled in accordance with the following:

PERCENT BEYOND SPECIFIED LIMITS	PAYMENT FACTOR (percent of contract price)
> 0 to < 2	95
≥ 2 to < 5	85
≥ 5 to < 8	70
8 or greater	Remove & Replace

Disincentives shall apply until a satisfactory sample is obtained.

Disincentives shall be applied to all materials associated with the source and project location of the nonconforming sample.

Each gradation shall be met. The percentages beyond the specified limits are cumulative for all specified gradations.

CITY OF JANESVILLE - STANDARD SPECIFICATIONS

PART 5 – SANITARY SEWER SYSTEM

5.1 GENERAL

5.1.1 Standards

Within the City of Janesville Standard Specifications are references to the latest editions of the Standard Specifications for Sewer and Water Construction in Wisconsin, Manual on Uniform Traffic Control Devices (MUTCD), WDNR Storm Water Construction Technical Standards, WISDOT Construction and Materials Manual, and WISDOT Standard Specifications for Highway and Structure Construction.

See Section 1.1.2 - Referenced Materials in PART 1 – GENERAL PROVISIONS for access to the above-mentioned references.

5.1.2 Submittals

Any materials, items, processes, etc. requiring submittals for Engineer's review and approval shall be submitted, to the Engineer, by the Contractor a minimum of one (1) week prior to the contractor incorporating into the contract work.

The contractor shall provide shop drawings for all structures supplied. At a minimum, shop drawings shall indicate structure diameter, top of structure (corbel) and invert elevations, and the size and angle of all the openings. Shop drawings shall be submitted to and approved by the Engineer prior to manufacture.

5.1.3 Inspections

The Contractor shall not backfill any completed sanitary sewer improvements without inspection by and approval of the Engineer.

5.2 STRUCTURES

5.2.1 Materials

Structure

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 8.39.0.

Additionally:

Refer to Detail Drawing #4 of these Specifications.

Adjusting Rings

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Sections 8.39.11 and 8.41.6.

Additionally:

Adjusting rings shall be either precast concrete, expanded polypropylene plastic (EPP), or high-density polyethylene (HDPE) plastic.

Precast concrete adjusting rings shall have rebar or wire mesh reinforcement. Concrete rings shall have a minimum height of three (3) inches and a maximum height of six (6) inches. Non-shrink mortar shall meet the requirements of ASTM C-1107 and have a 28-day compressive strength of at least 4,000 pounds per square inch.

Plastic rings shall be Pro-Ring as manufactured by Cretex Specialty Products, or approved equal. The height of each plastic adjusting ring may not exceed four (4) inches.

The outside diameter of the adjusting rings shall allow for the proper installation of the external chimney seal. The inside diameter of the adjusting rings shall match the inside diameter of the structure cone.

Castings

Castings shall include frame and cover. Sanitary structure covers shall be self-sealing (T-gasket style) with a concealed pick hole. Specified covers are a special product produced specifically for the City of Janesville. All castings shall be supplied by the contractor and shall meet the criteria provided below.

Frame: **Neenah Catalog # R-1710-NR** (Part # 1090-0003)
Cover: **Neenah N1090-1091** *(WASTEWATER UTILITY)*
This cover is a special product specifically for the City of Janesville.

Chimney Seals

All structures shall have an external chimney seal in accordance with Standard Specifications for Sewer and Water Construction in Wisconsin, Section 8.42.3.

Additionally:

Chimney seals shall be Cretex Specialty Products External Chimney Seal, Adaptor Inc. E3 Seal, or approved equal.

Non-Shrink Grout

Non-shrink grout shall be capable of meeting a strength of at least 4,000 psi and as manufactured by Lycon, Master Builders, U.S. Grout Corporation, or approved equal.

5.2.2 Construction

Structure

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Part II and Chapter 3.5.0

Additionally:

Refer to Detail Drawing #4 of these Specifications.

Structure base sections shall be in accordance with Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 3.5.5(c).

All pipe connections to structures shall be in accordance with Standard Specifications for Sewer and Water Construction in Wisconsin, Section 3.5.7(c). Non-shrink grout shall be installed around pipe connections to fill the space between and around the pipes and the structure bench.

For connection of future sewers, a short pipe extension with a watertight cap or plug shall be installed.

Adjusting Rings

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 3.5.4.

Additionally:

All frame and chimney joints shall be in accordance with Standard Specifications for Sewer and Water Construction in Wisconsin, Section 3.5.4(f)2(a), Paragraph 1.

Up to three (3) flat, grade adjusting rings may be installed on a given structure. In addition to these three (3) rings, slope adjustment rings may be used to match sloped street surfaces. A maximum of two (2) slope adjustment rings may be used to match the surface slope, unless approved by the Engineer.

When using concrete rings, a non-shrink mortar may be allowed between the frame and top adjusting ring for proper grade adjustment with prior approval of the Engineer. Mortar between all concrete adjusting the rings shall provide a watertight seal, be flush with the vertical faces of the adjusting rings, and have a smooth finish. The Engineer may require that additional non-shrink grout be installed to achieve the desired finish.

When using plastic rings, a manufacturer recommended sealant shall be used between adjacent rings, as well as between the ring and casting, and the ring and structure. Plastic rings shall be installed per manufacturer recommendations. No mortar is allowed between plastic adjusting rings and casting.

A combination of concrete and plastic rings is allowable, but the total number of rings shall be no more than three (3), excluding the allowed maximum of two (2) slope adjustment rings. Of those three (3) rings, no more than two (2) shall be plastic. Where a combination of ring materials is used, the concrete rings must be installed below the plastic rings, and the manufacturer recommended sealant for the plastic rings shall be used between the concrete and plastic.

Regardless of the type of adjusting rings being used, the total adjustment height shall be three (3) to nine (9) inches for new structures and three (3) to twelve (12) inches for reconstructed or repaired structures.

Castings

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Section 3.5.4(e).

Chimney Seals

All chimney seals shall be installed per manufacturer's specifications and as directed by the Engineer.

Non-Shrink Grout

Placing of grout shall be at temperatures above 45 Degrees Fahrenheit to 75 Degrees Fahrenheit. Temperature shall be maintained above 40 Degrees Fahrenheit until strength exceeds 4,000 psi.

5.2.3 Measurement

Structures shall be measured as each individual unit acceptably complete.

5.2.4 Payment

Structures shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

5.3 DROP STRUCTURE

5.3.1 Materials

Refer to Section 5.2.1 of these Specifications, Detail Drawing #5 of these Specifications, and to Standard Specifications for Sewer and Water Construction in Wisconsin, Section 3.5.8(d).

5.3.2 Construction

Refer to Section 5.2.2 of these Specifications, Detail Drawing #5 of these Specifications, and to Standard Specifications for Sewer and Water Construction in Wisconsin, Section 3.5.8(d).

5.3.3 Measurement

Refer to Section 5.2.3 of these Specifications.

5.3.4 Payment

Refer to Section 5.2.4 of these Specifications.

5.4 MAINLINE PIPE & FITTINGS

5.4.1 Materials

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 8.10.0.

Additionally:

Mainline pipe and fittings, sizes 4" – 15", shall be SDR 35 or SDR 26 polyvinyl chloride (PVC) meeting requirements of ASTM D3034 and D2241. Mainline pipe and fittings, sizes 18" or greater, shall be SDR 35 (PS 46) or SDR 26 (PS 115) polyvinyl chloride (PVC), meeting requirements of ASTM F679 and D2241.

SDR 35 PVC shall be used at bury depths less than or equal to 15 feet. SDR 26 PVC shall be used at depths greater than 15 feet.

Pipe joints shall be rubber gasket joints as described in Standard Specifications for Sewer and Water Construction in Wisconsin, Section 8.10.6(a).

Couplings for connections between existing and new mainline sanitary sewer pipe shall be Strong Back RC Series by Fernco or approved equal.

5.4.2 Construction

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Parts II & III.

Additionally:

Refer to Detail Drawing #15 of these Specifications.

The Contractor shall establish and check the alignment of the new sanitary sewer pipe using instrumental methods (i.e. a transit or approved equal).

5.4.3 Measurement

Pipe shall be measured by the lineal foot acceptably complete. This measurement equals the distance along the centerline of the pipe, from center to center of end structures or from center of end structure to the terminus of new pipe where no structure exists.

5.4.4 Payment

Pipe shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials, construction, and testing processes associated with this bid item.

5.5 DEEP LATERAL PIPE & FITTINGS

5.5.1 Materials

Deep Lateral Pipe and Fittings

Deep lateral pipe and fittings shall be SDR 26 polyvinyl chloride (PVC) meeting requirements of ASTM D3034 and D2241. Pipe material may transition to SDR 35 PVC upstream of the upper bend if the bury depth is 15 feet or less.

Riser Pipe and Fittings

Riser pipe and fittings shall be SDR 26 polyvinyl chloride (PVC) meeting requirements of ASTM D3034 and D2241.

5.5.2 Construction

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Parts II & III.

Additionally:

Deep Lateral Pipe and Fittings
Refer to Detail Drawing #6A of these Specifications.

Riser Pipe and Fittings
A vertical sanitary riser may be installed when installing a deep lateral will conflict with other utilities in the street or where an existing riser requires repair. The Engineer must approve the installation of a sanitary riser in lieu of a deep lateral.

Refer to Detail #6 of these Specifications.

5.5.3 Measurement

Deep lateral pipe shall be measured by the lineal foot acceptably complete. This measurement equals the distance along the centerline of the pipe, from center of main to center of the upper bend.

Riser pipe shall be measured by the lineal foot acceptably complete. This measurement equals the distance along the centerline of the pipe, from center of main to terminus of pipe.

5.5.4 Payment

Deep lateral pipe and riser pipe shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

5.6 LATERAL PIPE & FITTINGS

5.6.1 Materials

Lateral pipe shall be SDR 35 or SDR 26 polyvinyl chloride (PVC) meeting requirements of ASTM D3034 and D2241. SDR 35 PVC shall be used at bury depths less than or equal to 15 feet. SDR 26 PVC shall be used at depths greater than 15 feet.

Couplings for connections between existing and new sanitary lateral pipes shall be Strong Back RC Series by Fernco or approved equal.

5.6.2 Construction

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Parts II & III.

Additionally:

Tracer wire shall be installed for all sanitary sewer laterals where the sanitary sewer lateral and the water service have a horizontal separation greater than two (2) feet in accordance with Section 5.9 of these specifications.

Refer to Detail Drawing #7 of these Specifications.

When an existing lateral is encountered on the mainline sewer and it is unknown whether the lateral is active or inactive, the Contractor must coordinate with the Engineer to determine if the lateral should be reconnected or abandoned.

5.6.3 Measurement

Pipe shall be measured by the lineal foot acceptably complete. This measurement equals the distance along the centerline of the pipe, from center of main to terminus of pipe.

5.6.4 Payment

Pipe shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

5.7 TRENCH EXCAVATION BELOW SUBGRADE

5.7.1 Materials

Material used to replace unsuitable pipe subgrade shall be 1-1/2” graded crushed stone in accordance with Standard Specifications for Sewer and Water Construction I Wisconsin, Section 8.43.7 (Table #39).

Sieve Size	Percent Passing by Weight
1-1/2 Inch	100
1 Inch	-
3/4 Inch	-
3/8 Inch	30-65
No. 4	25-55
No. 10	15-40
No. 40	-
No. 200	2-12

5.7.2 Construction

If the Engineer deems the material below the pipe invert is unstable, the Contractor will be required to excavate the unsuitable material to a depth acceptable to the Engineer. The Contractor will place specified stone to replace the excavated material.

5.7.3 Measurement

Trench Excavation Below Subgrade shall be measured as cubic yards acceptably complete. Payment will include a depth (d) from a point four (4) inches below pipe

grade to bottom of excavation and a maximum width of the pipe outside diameter, plus 24 inches at the trench bottom.

5.7.4 Payment

Trench Excavation Below Subgrade shall be paid at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

5.8 TRACER WIRE SYSTEM

5.8.1 Materials

Tracer Wire

Tracer wire shall be copper 12-AWG high strength, high carbon with minimum 450lb break load and include a minimum 30 mil HDPE insulation made by Copperhead Industries or approved equal. Tracer wire shall be domestically manufactured in the USA. Tracer wire color shall be green.

Connectors

SnakeBite Locking Connector (LSC1230C) by Copperhead Industries shall be used at splice connections.

Grounding Rods

Grounding Rods shall be a 1.5-pound, drive-in magnesium ground rod (ANO-12) with a minimum 20 feet of 12-AWG red HDPE insulated cope-clad steel wire connected to the rod manufactured by Copperhead Industries or approved equal.

Access Boxes

Access box shall be the SnakePit Lite Duty access box with a green two-terminal switchable lid (LD14*2T-SW). Access boxes to be installed in driveway approaches or pavement shall be manufactured specifically for that application (CD14*2T-SW or RB14*2T-SW). Access box and lids shall be manufactured by Copperhead Industries or approved equal. The word “SEWER” shall be embossed on access box lids.

5.8.2 Construction

All tracer wire system components, including tracer wire, connectors, ground rods and access points, must be compatible.

Run a single continuous tracer wire along the sanitary lateral from the sanitary sewer main to the to the access box in the terrace. A second continuous wire shall be run from the access box to the end of the lateral that is stubbed into the lot for future connection. Tape at a maximum of 5-foot intervals. Where the tracer wire will be brought to the surface, install a ¾-inch SCH 40 PVC conduit vertically up from the sanitary lateral and secure the tracer wire access box to the conduit. Provide a minimum of 2-foot of excess/slack wire at the access box so it can be adjusted to final grade without needing to splice the wire.

Install and connect a grounding rod in virgin ground at the sanitary sewer mainline and connect to the tracer wire.

5.8.3 Measurement

Tracer wire system shall be measured by the lineal foot acceptably complete.

5.8.4 Payment

Tracer wire system shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

When no separate bid item is listed for the tracer wire system, then it shall be considered incidental to construction.

5.9 TESTING

5.9.1 Deflection Test

Deflection testing shall be in accordance with Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 3.2.6(i)4, and shall be incidental to payment for new pipe installation.

5.9.2 Low Air Pressure Test

Testing requirements shall be in accordance with Standard Specifications for Sewer and Water Construction in Wisconsin, Section 3.7.3, and shall be incidental to payment for new pipe installation.

5.9.3 Television Inspection

Televising shall be performed after the roadway fine aggregate base course has been established and prior to any asphalt paving. Television inspection shall be incidental to payment for new pipe installation.

5.9.3.1 Sewer Cleaning

The Contractor shall provide all equipment, supervision, labor, and materials necessary to complete proper cleaning of the sewer pipes. The Contractor shall clean the sewer line and all associated manholes. The Contractor shall remove all debris and material to provide a fully cleaned pipe free of all construction debris and other materials. As many passes as necessary shall be made to clean each section of sewer pipe. Wherever possible, cleaning shall be completed from the downstream manhole.

5.9.3.2 Sewer Televising

<u>Equipment</u>

The Contractor shall use a color pan and tilt camera or a side wall scanning (panoramic) camera specifically designed and constructed for sewer inspection.

At a minimum, the cameras shall have a focal distance range from six inches to infinity. Lighting for the camera shall be sufficient to provide a clear view of the entire pipe and shall be adjustable so as to reduce glare provide a clear picture. Camera and lighting shall be suitable to provide a clear in-focus picture of the entire periphery of the sewer pipe for all conditions encountered while completing the work.

Televising Methods

The Contractor shall perform all CCTV inspections in accordance with current NASSCO's Pipeline Assessment Certification Program (PACP) standards. CCTV inspections will be delivered entirely in electronic format. The entire survey shall be recorded in an approved electronic format submitted with electronic links between the data and the video.

The Contractor shall inspect each sewer one segment at a time and the data shall be isolated by pipe segment. Each video file shall begin and end at the center of the associated structures. The Contractor shall move the camera through the line from upstream to downstream at a uniform rate of approximately 30 feet per minute. For each structure, a minimum five second video segment shall be captured to include a pan to view the structure itself followed by a view of the pipe connection. A similar five-second video segment shall be captured at each lateral pipe connection as well as at all noted pipe defects. Complete pan and tilt inspection of all lateral connection edges is required.

In addition to the video, the Contractor shall also capture a separate still image of all lateral connections where roots are present and at all significant pipe defects and obstructions.

Any laterals observed to have flow shall be further investigated by the Contractor to determine if the flow is active usage or infiltration. The Contractor shall attempt to contact the associated property owner to determine active flow. If contact cannot be made, the Contractor shall continuously observe the lateral for up to three minutes noting any variation in flow, the presence of suds, etc. The results of this observation shall be noted in the daily log.

The Contractor shall note that all video recording shall be of a quality acceptable to the Engineer. All video recordings provided by the Contractor shall be acceptable with respect to picture clarity, color, lighting, and focus. The Engineer finds any portion of a line segment to be unacceptable the full segment shall be rejected. Line segments may also be rejected if the segment is misidentified, or other data is incorrect. The Contractor shall re-televise any rejected line segments.

Data Requirements - Accuracy

The structure to structure distance identified in all television inspection reports shall be with-in +/- 0.5 feet of the actual measured linear footage along the

existing sewer alignment as measured with a steel tape from the center of structure to center of structure.

The measured distance from the center of the beginning structure to any lateral or pipe defect shall be with-in +/- 0.2 feet.

5.9.3.3 Deliverables

All project deliverables shall be in in accordance with NASSCO, PACP standards. The Contractor shall provide two full copies of all project deliverables. The electronic deliverables shall be delivered as two full copies each contained on a USB external hard drive acceptable to the Engineer. Televised inspection records shall be delivered in electronic format with links between the data and the video. The still images of laterals and pipe defects shall also be included on these hard drives.

In addition to the electronic deliverables, the Contractor shall provide two full bound hard copy reports containing all inspection records. The Contractor shall also provide two hard copies of all daily logs for both cleaning and televised inspections.

The inspection data shall be delivered in a Microsoft Access Database acceptable to the Engineer and shall include the PACP fields as identified in the table below.

HEADER FIELD CHECKLIST

Field #	Header Field	Mandatory	Required for this Project
1	Surveyed By	X	
1a	Certificate Number	X	
2	Owner		X
3	Customer		
4	Drainage Area		
5	Sheet Number	X	
6	P/O Number		
7	Pipe Segment Ref.		X *
8	Date	X	
9	Time		X
10	Street	X	
10a	City	X	
11	Location Details		
12	Upstream MH No.	X	
13	Upstream MH Rim to Invert		X
14	Upstream MH Grade to Invert		
15	Upstream MH Rim to Grade		
16	Downstream MH No.	X	
17	Downstream MH Rim to Invert		X
18	Downstream MH Grade to Invert		
19	Downstream MH Rim to Grade		
20	Sewer Use		X
21	Direction	X	
22	Flow Control		X
23	Height	X	
24	Width	X	
25	Shape	X	

26	Material	X		
27	Lining Method		X	
28	Pipe Joint Length		X	
29	Total Length			
30	Length Surveyed		X	
31	Year Laid			
32	Year Renewed			
33	Media Label		X	
34	Purpose		X	
35	Sewer Category			
36	Pre-Cleaning	X		
36a	Date Cleaned		X	
37	Weather		X	
38	Location		X	
39	Additional Info		X	**
40	W/O #			
41	Project			
42	Pressure V			

* - Facility ID as provided by Engineer

** - Identify any drop structures

5.9.3.4 Payments

Per Section 5.4.4 of these Specifications deflection testing, air testing, and television inspection of sewer pipe shall all be incidental to the mainline sewer pipe bid item.

CITY OF JANESVILLE - STANDARD SPECIFICATIONS

PART 6 – WATER DISTRIBUTION SYSTEM

6.1 GENERAL

6.1.1 Standards

Within the City of Janesville Standard Specifications are references to the latest editions of the Standard Specifications for Sewer and Water Construction in Wisconsin, Manual on Uniform Traffic Control Devices (MUTCD), WDNR Storm Water Construction Technical Standards, WISDOT Construction and Materials Manual, and WISDOT Standard Specifications for Highway and Structure Construction.

See Section 1.1.2 - Referenced Materials in PART 1 – GENERAL PROVISIONS for access to the above-mentioned references.

6.1.2 Submittals

Any materials, items, processes, etc. requiring submittals for Engineer's review and approval shall be submitted, to the Engineer, by the Contractor a minimum of one (1) week prior to the contractor incorporating into the contract work.

The Contractor shall provide shop drawings for all vaults supplied. Shop drawings shall indicate, at a minimum, vault diameter, top of structure (corbel) and bottom of structure elevations, and the size and angle of all the openings. Shop drawings shall be submitted to and approved by the Engineer prior to manufacture.

6.1.3 Inspections

The Contractor shall not backfill any completed water distribution system improvements without inspection by and approval of the Engineer.

6.1.4 Operation of Public System

The Water Utility shall operate all valves and hydrants affecting the operating public system. The Contractor shall provide the Water Utility with 24-hour advanced notice for system operations. Alternatively, the Contractor may be allowed to operate valves (12" or less) with permission of the Water Utility. The Water Utility shall still be notified at least 48 hours before any transmission water mains (16" or greater) are shut off, so they can assist with closing the transmission main valves.

The Contractor is responsible for notifying (in writing) all affected residences and businesses in advance of a service outage. Service outages shall be limited to six (6) hours or less. Provide a minimum 24-hour advanced notice to residences and a minimum 72-hour advanced notice to businesses.

Water main flushing is required whenever the water main has been depressurized (i.e. following a water shut-off). Once the water main has been flushed, the Contractor will fill a white bucket with water from the nearest hydrant to the project location. The Contractor and Engineer will inspect the water to ensure the sample is free of debris and other particles. If the Engineer does not approve of the turbidity of the sample, the

Contractor shall continue flushing the water main until a clear water sample is obtained and approved by the Engineer.

6.2 VAULTS

6.2.1 Materials

Adjusting Rings

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Sections 8.39.11 and 8.41.6.

Additionally:

Adjusting rings shall be either precast concrete, expanded polypropylene plastic (EPP), or high-density polyethylene (HDPE) plastic.

Precast concrete adjusting rings shall have rebar or wire mesh reinforcement. Concrete rings shall have a minimum height of three (3) inches and a maximum height of six (6) inches. Non-shrink mortar shall meet the requirements of ASTM C-1107 and have a 28-day compressive strength of at least 4,000 pounds per square inch.

Plastic rings shall be Pro-Ring as manufactured by Cretex Specialty Products, or approved equal. The height of each plastic adjusting ring may not exceed four (4) inches.

The inside diameter of the adjusting rings shall match the inside diameter of the structure cone.

Castings

Castings shall include frame and cover. Specified covers are a special product produced specifically for the City of Janesville. All castings shall be supplied by the Contractor and shall meet the criteria provided below.

Frame: **Neenah Catalog # R-1710-NR** (Part # 1090-0003)
Cover: **Neenah N1090-1092** *(WATER UTILITY)*
This cover is a special product specifically for the City of Janesville.

6.2.2 Construction

Perform rehabilitation on existing valve vaults as specified by the plans.

Adjusting Rings

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 3.5.4.

Additionally:

All frame and chimney joints shall be in accordance with Standard Specifications for Sewer and Water Construction in Wisconsin, Section 3.5.4(f)2(a), Paragraph 1.

Up to three (3) flat, grade adjusting rings may be installed on a given structure. In addition to these three (3) rings, slope adjustment rings may be used to match sloped street surfaces. A maximum of two (2) slope adjustment rings may be used to match the surface slope, unless approved by the Engineer.

When using concrete rings, a non-shrink mortar may be allowed between the frame and top adjusting ring for proper grade adjustment with prior approval of the Engineer.

When using plastic rings, a manufacturer recommended sealant shall be used between adjacent rings, as well as between the ring and casting, and the ring and structure. Plastic rings shall be installed per manufacturer recommendations. No mortar is allowed between plastic adjusting rings and casting.

A combination of concrete and plastic rings is allowable, but the total number of rings shall be no more than three (3), excluding the allowed maximum of two (2) slope adjustment rings. Of those three (3) rings, no more than two (2) shall be plastic. Where a combination of ring materials is used, the concrete rings must be installed below the plastic rings, and the manufacturer recommended sealant for the plastic rings shall be used between the concrete and plastic.

Regardless of the type of adjusting rings being used, the total adjustment height shall be six (6) to nine (9) inches for new structures and six (6) to twelve (12) inches for reconstructed or repaired structures.

Castings

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Section 3.5.4(e).

6.2.3 Measurement

Rehabilitation on existing vaults shall be measured as each individual unit acceptably complete.

6.2.4 Payment

Rehabilitation on existing vaults shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

6.3 VALVE BOXES

6.3.1 Materials

Valve boxes shall be Tyler Union Model 6860 or East Jordan Model 8560, with a 26T top, 36B bottom, #6 base, and a #58 (14”) or #59 (18”) extension depending on depth of the water main. The word “WATER” shall be cast into the valve box lid. All valve boxes shall have an asphaltic bituminous coating and be made in the USA.

Valve box adaptors shall include a powder-coated steel frame with a rubber gasket attached to the bottom of the frame as manufactured by Adaptor, Inc. or approved equal. Use the appropriate valve box adaptor based on the size of the valve.

6.3.2 Construction

Refer to Detail Drawings #8 and #8A of these Specifications.

Install valve boxes and valve box adaptors on all valves.

Valve boxes shall be free of debris, plumb, and centered over the valve so the valve wrench can access the top operating nut. The valve wrench shall not touch sides of the valve box when operating. The Contractor shall coordinate a walk-thru with Engineer to demonstrate that valve boxes are plumb and free of debris.

6.3.3 Measurement

Valve Boxes shall be measured as each individual unit acceptably complete.

6.3.4 Payment

Valve Boxes shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

When no separate bid item is listed for the valve boxes, then it shall be considered incidental to construction.

6.4 VALVES

6.4.1 Materials

All valves shall be manufactured by the Mueller Company. Valves shall have non-rising (NR) valve stems with a two (2) inch square wrench nut complying with AWWA C509/C515. The ends of valves shall have D-150 mechanical joints (MJ x MJ ends). All valves (including joints) shall have stainless steel (Type 304) bolts and open left.

Gate valves shall be Series 2361 or Series 2362 and shall be used for pipe diameters of 4” to 12”.

Butterfly valves shall be Linseal Series, Class 150B or approved equal and shall be used for pipe diameters of 16” or larger.

For tap valve installations, the tapping sleeves shall be in accordance with Section 6.5 of these specifications.

6.4.2 Construction

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 4.8.0.

Additionally:

Place valves on an 8”x8”x16” solid concrete block.

6.4.3 Measurement

Valves shall be measured by each individual unit acceptably complete.

6.4.4 Payment

Valves shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

6.5 MAINLINE PIPE & FITTINGS

6.5.1 Materials

Ductile Iron Pipe

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 8.18.0 and 8.22.0.

Additionally:

All ductile iron pipe shall have Special Thickness Class 52 and be domestically manufactured. Pipe shall be lined with cement-mortar in accordance with the lining options provided in AWWA C104.

Joints shall have compression push-on rubber gaskets conforming to AWWA C111. Unless otherwise specified gasket material shall be standard styrene butadiene copolymer (SBR.) Locking gasketed joints shall be Field Lok 350 or approved equal.

Fittings shall be ductile iron in accordance with AWWA C110 or AWWA C153, latest revisions, with mechanical restrained joints and be domestically manufactured.

Fittings, sizes 4” – 24”, with restrained push-on or restrained mechanical joint, shall be rated for 350 psi working pressure. Fittings, sizes 30” – 64”, with restrained push-on or restrained mechanical joint, shall be rated for 250 psi working pressure.

Fittings shall be internally lined with cement mortar in accordance with AWWA C104. The lining thicknesses shall be equal to or greater than those for comparable size pipe.

Mechanical restrained joints shall be either EBAA Megalug Series 1100 (black) or Ford UFR1400. Hardware for the mechanical restrained joints shall be Cor-Blue.

All joints, fittings, etc. shall be equipped to provide electric continuity. Copper straps to provide continuity between pipes shall be installed by the pipe manufacturer, except as allowed by the Engineer.

Polyvinyl Chloride Pipe (PVC) Pipe

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 8.20.0.

Additionally:

Pipe shall meet requirements of AWWA C900, Pressure Class 235 psi, and DR 18. Joints shall have compression push-on rubber gaskets and conform to ASTM D3139. Elastomeric gaskets shall conform to ASTM F477.

Fittings shall be ductile iron in accordance with AWWA C110 or AWWA C153, latest revisions, with mechanical restrained joints.

Fittings, with restrained push-on or restrained mechanical joint, shall be rated for 350 psi working pressure.

Fittings shall be internally lined with cement mortar in accordance with AWWA C104. The lining thicknesses shall be equal to or greater than those for comparable size pipe.

Mechanical restrained joints shall be either EBAA Megalug Series 2000PV. Hardware for the mechanical restrained joints shall be Cor-Blue.

Tapping Sleeves

Tapping sleeves shall be of the MJ outlet type, designed for attachment of the MJ inlet of a tapping valve. The sleeve body shall be all stainless steel and the sleeve shall be rated for 150 psi working pressure. Tapping sleeve shall be Smith-Blair 663 or approved equal.

Thrust Blocking

Precast concrete blocks shall be used for mains that are 12” or smaller. Cast-in-place concrete shall be used for mains larger than 12”, unless otherwise approved by the Engineer. All cast-in-place concrete shall be in accordance with Sections 10.2.1 and 10.2.2 of these Specifications. Curing compounds will not be required.

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin for minimum dimension requirements.

6.5.2 Construction

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Parts II & IV.

Additionally:

PVC water main shall be installed in accordance with AWWA C605.

The Contractor shall ensure electrical continuity for all ductile iron pipe. When CAD welding of copper straps is allowed by the Engineer, a protective coating (anti-corrosion spray) shall be applied to the exposed area per manufacturer recommendations.

Additionally, the Contractor must ensure continuity between sleeved connections to existing/new mains (in same configuration as standard pipe joints), and the Engineer must

approve continuity on all sleeved connections. The continuity of the new main must be tested in accordance with Section 6.13 of these Specifications.

Mechanical Restrained Joints shall be installed at all fittings according to manufacturer's specifications.

6.5.3 Measurement

Pipe shall be measured by the lineal foot acceptably complete. This measurement equals the distance along the centerline of the pipe (including fittings and valves), from center to center of end structures or from center of end structure to the terminus of new pipe where no structure exists.

6.5.4 Payment

Pipe shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all pipe, fittings, required materials, and construction processes associated with this bid item.

6.6 SERVICE PIPE & FITTINGS

6.6.1 Materials

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Section 8.24.0.

Additionally:

Service Pipe

For services up to and including two (2) inches in diameter, Type K soft copper pipe shall be used.

Services greater than two (2) inches and less than four (4) inches in diameter are not allowed.

For services greater than or equal to (4) inches in diameter, ductile iron shall be used. All pipe and fittings shall in accordance with Section 6.5.1 of these specifications.

Fittings

Corporation Stops shall be manufactured by Mueller Company and shall be Part Number P-25008N or B-25008N.

Curb Stops shall be manufactured by Mueller Company and shall be Part Number P-25155N.

Stop Boxes shall be manufactured by Mueller Company and shall be Part Number H-10300.

Couplings for copper-to-copper unions shall be equipped to provide electric continuity and shall be Mueller Company Part Number P-15403N or approved equal.

Tapping Saddles for PVC Mainline Pipe

Tapping saddles shall have an operating pressure rating of 150 psi. Saddles shall be full circumference, epoxy coated, ductile iron body with Type 304 stainless steel double bands, nuts, and bolts. The flange shall conform to AWWA C207, Class D ANSI 150-pound drilling, and 18-8 Type 304 stainless steel material. The gasket shall be Grade D Buna N material formulated to resist oil, acids, and hydrocarbon fluids. Tapping saddles shall be Smith-Blair 317 or approved equal.

6.6.2 Construction

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Part 5.

Additionally:

All corporation stops shall be dry tapped and installed with the main line.

A tracer wire system shall be required for all PVC water main.

6.6.3 Measurement

Refer to Section 6.5.3 of these Specifications.

6.6.4 Payment

Refer to Section 6.5.4 of these Specifications.

6.7 HYDRANTS

6.7.1 Materials

Hydrant

Hydrants shall be manufactured by the Waterous Company and shall be Model No. WB67-250 – Classic Pacer. Hydrants shall be yellow-coated; open left; and consist of two (2) – 2 ½" National Standard Thread (NST) hose connections, one (1) – 4 ½ " NST pumper connection, #3A operating nuts, a 16" break off section, and a 6" plain end with integral MJ gland connection. Bury depth shall be seven (7) feet.

Hydrant Valves

Refer to Section 6.4.1 of these Specifications.

Hydrant Valve Boxes

Refer to Section 6.3.1 of these Specifications.

Hydrant Lead

Refer to Section 6.5.1 of these specifications.

Additionally:

Hydrant leads shall be ductile iron.

Vertical extensions to the hydrant shall be the K 434 Standpipe Extension Kit for the Waterous Pacer Hydrants, which will be supplied and installed according to the manufacturer's requirements.

If the drain port on a hydrant is to be plugged, the drain port shall be plugged internally by the manufacturer, and a permanent tag shall be installed on the hydrant that states: "NO DRAIN", "PUMP AFTER USE".

6.7.2 Construction

Hydrant, Hydrant Valve & Hydrant Valve Box

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 4.8.0.

Additionally:

Install valve boxes per 6.3.2 of these Specifications.

Refer to the Hydrant Detail of these Specifications.

Hydrant Lead

Refer to Section 6.5.2 of these specifications.

Additionally:

Refer to the Hydrant Detail of these Specifications.

Hydrant leads shall be free of joints for lengths less than sixteen (16) feet. If joints are required in the hydrant lead, as allowed by the Engineer, then the joint before the hydrant shall be a restrained mechanical joint.

If vertical adjustments to the hydrant are required, as directed by the Engineer, the Contractor shall supply and install the specified materials according to manufacturer's directions.

Any damage to hydrant surfaces will require restoration (e.g., touch-up paint), which shall be supplied and installed in accordance with manufacturer's recommendations.

6.7.3 Measurement

Hydrant, Hydrant Valve & Hydrant Valve Box

Hydrants shall be measured by each individual unit acceptably complete.

Hydrant Lead

Refer to Section 6.5.3 of these specifications.

6.7.4 Payment

Hydrant, Hydrant Valve & Hydrant Valve Box

Hydrants shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for hydrant, hydrant valve, valve box, vertical extensions, and all required materials and construction processes associated with this bid item.

Hydrant Lead

Refer to Section 6.5.4 of these specifications.

6.8 MAIN BLOW-OFF CONNECTION

6.8.1 Materials

Ductile Iron

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 8.22.0 and Sections 6.5 and 6.6 of these Specifications.

Additionally:

The corporation stop shall be the Mueller 300 2" Ball Valve with Minneapolis top thread and FIP threads on both ends (Part No. B-20287N).

Castings shall be provided as specified in Section 6.2.1 of these Specifications.

6.8.2 Construction

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Parts II & IV, Section 6.5 of these Specifications, and Detail Drawing #10 of these Specifications.

6.8.3 Payment

Main Blow-off Connections shall be measured per each connection acceptably complete.

6.8.4 Payment

Main Blow-off Connections shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

6.9 INSULATION

6.9.1 Materials

Insulation shall be closed-cell extruded rigid Styrofoam boards (blue board) with a minimum thickness of two (2) inches.

6.9.2 Construction

Insulation shall be placed above the water main where less than 5.5 feet of cover can be achieved. Insulation shall also be placed at storm sewer crossings where the storm sewer

passes over the water main. At such crossings, the insulation should be placed between the water main and storm sewer.

Insulation width shall be four (4) feet wide and a minimum length of eight (8) feet centered over the water main pipe. Additional length or thickness of insulation may be required by the Engineer.

Insulation shall be placed six (6) inches above the top of the water main pipe.

6.9.3 Measurement

Insulation shall be measured by the square yard acceptably complete. Allowances will not be made for any portions of the insulation required overlaps.

6.9.4 Payment

Insulation shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

6.10 TRACER WIRE SYSTEM

6.10.1 Materials

Tracer Wire

Tracer wire shall be copper 12-AWG high strength, high carbon with minimum 450lb break load and include a minimum 30 mil HDPE insulation made by Copperhead Industries or approved equal. Tracer wire shall be domestically manufactured in the USA.

Connectors

Mainline-to-Service Connectors (3WB-01) by Copperhead Industries shall be used at all water main to water service and water main to hydrant lead connections. SnakeBite Locking Connector (LSC1230C) by Copperhead Industries shall be used at splice connections (i.e. tees and crosses).

Grounding Rods

Grounding Rods shall be a 1.5-pound, drive-in magnesium ground rod (ANO-12) with a minimum 20 feet of 12-AWG red HDPE insulated cope-clad steel wire connected to the rod manufactured by Copperhead Industries or approved equal.

Access Boxes

Access boxes at water services shall be the BoaBox Water Access Point by Copperhead Industries. The BoaBox 150 shall be used on all curb box standpipe sizes.

Access boxes at hydrants shall be the blue Cobra 2-terminal with jumper and hydrant flange package (T2-*-FLPKG) by Copperhead Industries or approved equal.

Access boxes at dead-ends shall be the SnakePit Lite Duty access box with a blue two-terminal switchable lid (LD14*2T-SW). Access boxes to be installed in pavement shall be

manufactured specifically for that application (CD14*2T-SW or RB14*2T-SW). Access boxes and lids shall be manufactured by Copperhead Industries or approved equal. The word "WATER" shall be embossed on access box lids.

6.10.2 Construction

Contractor shall install a complete tracer wire system when mainline PVC watermain is specified. All tracer wire system components, including tracer wire, connectors, ground rods and access points, must be compatible.

Run a single continuous tracer wire along the mainline pipe, hydrant leads, and water services, and tape at a maximum of 5-foot intervals. The continuous wire shall bypass all valves and fittings on either the north or east side, depending on alignment of watermain.

All mainline tracer wires shall be interconnected at mainline crosses, tees, and services. At tees, the three wires shall be joined using a single, three-way SnakeBite locking connector (LSC1230C). At crosses, the four wires shall be jointed using two, three-way locking connectors with a short jumper wire between them. Non-locking, friction fit, or taped connectors are prohibited. At mainline/water service and mainline/hydrant lead connections use Mainline-to-Service Connector (3WB-01). Contractor to ensure that no wire is exposed outside the connectors. Copperhead Industries connectors do not require the tracer wire to be stripped prior to inserting into the connector.

Tracer wire shall be brought to the surface at all water services, hydrants, and dead-ends with an access box. At water services, install the BoaBox 150 Water Access Point in accordance with manufacturer recommendations. The BoaBox should be supported from the ground, not the curb box standpipe. Ensure the access box is located in the terrace area and outside the sidewalk limits. Backfill and compact around BoaBox before connecting wires to the terminal. At hydrants, install the Cobra 2-terminal access box and attach to the flange of the hydrant. At dead-ends (future water main extensions, blow-offs, etc.), install the SnakePit Light Duty Access box.

Provide a minimum of two-foot excess/slack wire in all access boxes and insert wires into the proper slots on the underside of the access box lid. The switch on the access box should be left in the "ON" position when the installation is complete.

Tracer wire must be properly grounded at all water services, hydrants, and dead-ends using a grounding rod. Provide a minimum of 2-foot of excess/slack wire so grounding wire can be adjusted to final grade without needing to splice the wire. Grounding rods shall be driven into virgin soil.

New tracer wire systems shall not be connected to existing tracer wire systems to ensure that the new systems can operate independently without interference from the existing systems.

When connecting new tracer wire systems to existing cast iron or ductile iron water mains, the tracer wire shall be connected to the existing water main and grounded at the connection point. The Contractor shall CAD weld a copper strap to the existing water main and attach the tracer wire to the copper strap. In addition, a grounding rod shall be driven into undisturbed soil and connected to the copper strap. The Contractor shall ensure that

the tracer wire connections at the copper strap are properly protected to prevent future corrosion.

6.10.3 Measurement

Tracer wire system shall be measured by the lineal foot acceptably complete.

6.10.4 Payment

Tracer wire system shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

When no separate bid item is listed for the tracer wire system, then it shall be considered incidental to construction.

6.11 VERTICAL OFFSET

6.11.1 Materials

Supply pipe and fittings as specified in Part 6 of the City's Standard Specifications.

6.11.2 Construction

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Section 4.10 and Detail 11 of these specfications.

Use fittings to deflect the watermain below an existing underground pipe to provide adequate vertical separation. These offsets will achieve a minimum 18" vertical separation between the conflicting pipe and underlying new mains.

Any offset that can be made without fittings (i.e. joint deflections) will not be defined as a vertical offset.

6.11.3 Measurement

Vertical Offsets shall be measured per each connection acceptably complete. An offset must consist of four (4) vertical bends to be considered a vertical offset. All partial offset work shown on the plans will be incidental to the water main installation.

6.11.3 Payment

Vertical Offset shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

Payment for this item is for 4" diameter main or larger. There is no additional payment for deflecting water services (i.e. 2" or smaller), below an existing underground pipe.

6.12 TRENCH EXCAVATION BELOW SUBGRADE

6.12.1 Materials

Refer to Section 5.8.1 of these Specifications.

6.12.2 Construction

Refer to Section 5.8.2 of these Specifications.

6.12.3 Measurement

Refer to Section 5.8.3 of these Specifications.

6.12.4 Payment

Refer to Section 5.8.4 of these Specifications.

6.13 TESTING

6.13.1 Hydrostatic Testing

The Contractor shall perform hydrostatic testing on all new and replacement mains under supervision of the Engineer. Where a new main will be connected to an existing main, it may be necessary for the Contractor to install a temporary plug or blow-off in the new main for testing purposes. After the specified hydrostatic testing is completed, actual connection to the existing main shall be made.

A pressure test shall be conducted on all new and replacement mains. A stable pressure of 150 psi must be achieved in the main before the test begins. The test shall be run for a duration of two hours, and the pressure must be maintained within ±2 psi of the starting pressure. If these requirements are met, the water main will have passed the pressure test.

Alternatively, if allowed by the Engineer, the Contractor may add water to the system during a 2-hour leakage test. The rate at which water is added to maintain a pressure of 150 psi must not exceed the allowable leakage as calculated in the below equation. The Contractor must clearly demonstrate to the Engineer the volume of water added to the system over the duration of the test. If the leakage experienced during the test is less than the allowable leakage, the water main will have passed the leakage test.

$$L = \frac{SD\sqrt{P}}{148{,}000}$$

Where:

L = allowable leakage, in gallons per hour
S = length of pipe tested, in feet
D = nominal diameter of the pipe, in inches
P = average test pressure during the test, in pounds per square inch

Should any test section fail to pass the pressure test or leakage test (if allowed), the Contractor shall immediately make the necessary repairs at its own expense.

The water main must pass the hydrostatic test before a bacteriological test may be performed.

6.13.2 Bacteriological Testing

Testing requirements shall be in accordance with Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 4.16.0.

Additionally:

Sets of samples shall be collected every 1,200 feet of new pipe installed, at dead-ends, and from each pipe branch greater than one pipe length in accordance with AWWA C651-14.

Samples may be taken by Water Utility Staff Monday-Thursday from 7:30 am – 2:30 pm to allow for testing 24 hours after sampling.

6.13.3 Chlorine Residual Testing

Any water blown off shall be in accordance with WDNR WPDES General Permit No. WI-0057681-04 – Hydrostatic Test Water and Water Supply System Water.

6.13.4 Continuity Testing for Ductile Iron Water Main

All new and replacement ductile iron water main will be subject to a continuity test under supervision of the Engineer. The new pipe may be divided into test sections as deemed appropriate by the Engineer, and each section shall be subjected to 400 amps DC for 15 minutes. The Contractor shall ensure that the new water main can be located along its entire length and at connections with existing pipes in the system.

All equipment necessary to perform the test shall be provided by the Contractor at no additional cost to the Owner. The Contractor shall take whatever precautions deemed necessary such as filling the water main with water prior to testing to protect the gaskets and building the amperage up slowing while watching the ammeter. If the water main fails the continuity test, the Contractor shall make the necessary repairs at its own expense.

6.13.5 Tracer Wire Testing for PVC Water Main

All new tracer wire installations shall be tested by the Contractor with standard line tracing equipment at low frequency (512 HZ). Contractor shall test tracer wire intermittently during watermain installation. Final verification shall be performed prior to installing base course and prior to final acceptance of the project. A continuity test will not be acceptable.

6.13.6 Testing Procedures and Payment

The Contractor shall develop a testing plan for each location, as determined by the Engineer, of new main required to be tested.

Payment for all work associated with testing plan development and procedures, and at approved locations, shall be incidental to water main work performed.

CITY OF JANESVILLE - STANDARD SPECIFICATIONS

PART 7 – STORM SEWER SYSTEM

7.1 GENERAL

7.1.1 Standards

Within the City of Janesville Standard Specifications are references to the latest editions of the Standard Specifications for Sewer and Water Construction in Wisconsin, Manual on Uniform Traffic Control Devices (MUTCD), WDNR Storm Water Construction Technical Standards, WISDOT Construction and Materials Manual, and WISDOT Standard Specifications for Highway and Structure Construction.

See Section 1.1.2 – Referenced Materials in PART 1 – GENERAL PROVISIONS for access to the above-mentioned references.

7.1.2 Submittals

Any materials, items, processes, etc. requiring submittals for Engineer's review and approval shall be submitted, to the Engineer, by the Contractor a minimum of one (1) week prior to the contractor incorporating into the contract work.

The contractor shall provide shop drawings for all structures and inlets supplied. Shop drawings shall indicate, at a minimum, structure diameter or inlet dimensions, top of structure (corbel) and invert elevations, and the size and angle of all the openings. Shop drawings shall be submitted to and approved by the Engineer prior to manufacture.

7.1.3 Inspections

The Contractor shall not backfill any completed storm sewer improvements without inspection by and approval of the Engineer.

7.2 STRUCTURES

7.2.1 Materials

Structure

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 8.39.0.

Additionally:

Refer to Detail Drawing #12 of these Specifications.

Adjusting Rings

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Sections 8.39.11 and 8.41.6.

Additionally:

Adjusting rings shall be either precast concrete, expanded polypropylene plastic (EPP), or high-density polyethylene (HDPE) plastic.

Precast concrete adjusting rings shall have rebar or wire mesh reinforcement. Concrete rings shall have a minimum height of three (3) inches and a maximum height of six (6) inches. Non-shrink mortar shall meet the requirements of ASTM C-1107 and have a 28-day compressive strength of at least 4,000 pounds per square inch.

Plastic rings shall be Pro-Ring as manufactured by Cretex Specialty Products, or approved equal. The height of each plastic adjusting ring may not exceed four (4) inches.

The inside diameter of the adjusting rings shall match the inside diameter of the structure cone.

Castings

Castings shall include frame and cover or grate. The contractor shall provide castings that meet the criteria provided below.

Frame:	**Neenah Catalog # R-1710-NR** (Part # 1090-0003)
Cover:	**Neenah N1090-1093** *(STORMWATER UTILITY)* This cover is a special product specifically for the City of Janesville.
Frame:	**Neenah Catalog # R-3067** (For curb castings) Curb box head shall have 3” radius and include a 17”x3” EnviroNotice plate. The EnviroNotice logo shall say “Dump No Waste Drains to River” (Part # 3067-7002) or approved equal.
Grate:	**Type V or VB** (VB to be used at low points)
Frame:	**Neenah Catalog # R-3290-A** (Part # 3290-0009) For use at driveway locations and in gutters
Grate:	**Type C**

7.2.2 Construction

Structure

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Part II and Chapter 3.5.0.

Additionally:

Refer to Detail Drawing #12 of these Specifications.

Structure base sections shall be in accordance with Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 3.5.5(c).

All pipe connections to structures shall be in accordance with Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 3.5.7(a)2.

Adjusting Rings

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 3.5.4.

Additionally:

All frame and chimney joints shall be in accordance with Standard Specifications for Sewer and Water Construction in Wisconsin, Section 3.5.4(f)2(a), Paragraph 1.

Up to three (3) flat, grade adjusting rings may be installed on a given structure. In addition to these three (3) rings, slope adjustment rings may be used to match sloped street surfaces. A maximum of two (2) slope adjustment rings may be used to match the surface slope, unless approved by the Engineer.

When using concrete rings, a non-shrink mortar may be allowed between the frame and top adjusting ring for proper grade adjustment with prior approval of the Engineer. Mortar between all concrete adjusting the rings shall provide a watertight seal, be flush with the vertical faces of the adjusting rings, and have a smooth finish. The Engineer may require that additional non-shrink grout be installed to achieve the desired finish.

When using plastic rings, a manufacturer-recommended sealant shall be used between adjacent rings, as well as between the ring and casting, and the ring and structure. Plastic rings shall be installed per manufacturer recommendations. No mortar is allowed between plastic adjusting rings and casting.

A combination of concrete and plastic rings is allowable, but the total number of rings shall be no more than three (3), excluding the allowed maximum of two (2) slope adjustment rings. Of those three (3) rings, no more than two (2) shall be plastic. Where a combination of ring materials is used, the concrete rings must be installed below the plastic rings, and the manufacturer-recommended sealant for the plastic rings shall be used between the concrete and plastic.

Regardless of the type of adjusting rings being used, the total adjustment height shall be three (3) to nine (9) inches for new structures and three (3) to twelve (12) inches for reconstructed or repaired structures.

Castings

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 3.5.4(e).

7.2.3 Measurement

Structures shall be measured as each individual unit acceptably complete.

7.2.4 Payment

Structures shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

7.3 INLETS

7.3.1 Materials

Structure

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 3.6.3 and Detail Drawing #13 of these Specifications.

Additionally:

Refer to Detail Drawing #14 of these Specifications for storm inlets with sumps.

Adjusting Rings

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 8.39.11 and 8.41.6.

Additionally:

Adjusting rings shall be either precast concrete, Expanded Polypropylene plastic (EPP) or High Density Polyethylene (HDPE) plastic.

Precast concrete adjusting rings shall have rebar or wire mesh reinforcement. The concrete rings shall have a minimum height of three (3) inches and a maximum height of six (6) inches. Rings shall have an inside dimension consistent with the inlet opening. Each precast concrete adjusting ring shall be one continuous, uniform piece.

The height of each plastic adjusting ring may not exceed four (4) inches. The rings shall comply with the latest edition of ASTM Specification D-4976, have a traffic rating compliant to AASHTO HS-20, and be on the latest edition of WisDOT's Approved Product List for structure adjustment products. Plastic rings shall be tongue and groove to provide a secure vertical alignment and shall have an inside dimension consistent with the inlet opening.

Castings

Castings shall include frame and grate. The Contractor shall provide castings that meet the criteria provided below.

Frame:	**Neenah Catalog # R-3067** Curb box head shall have a 3" radius and include a 17"x3" EnviroNotice plate. The EnviroNotice logo shall say "Dump No Waste Drains to River" (Part # 3067-7002) or approved equal.
Grate:	**Type V or VB** (VB to be used at low points)

Frame: **Neenah Catalog # R-3290-A** (Part # 3290-0009)
For use at driveway locations and in gutters
Grate: **Type C**

7.3.2 Construction

Structure

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 3.6.0 and Detail Drawing #13 of these Specifications.

Additionally:

All pipe connections to inlets shall be in accordance with Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 3.5.7(a)2.

For inlets where a sump is specified, a sump shall be incorporated into the construction of the precast structure. The sump depth shall be eighteen (18) inches below the invert of the outflowing storm sewer.

Adjusting Rings

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 3.5.4.

Additionally:

All frame and chimney joints shall be in accordance with Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 3.5.4(f)2(a), Paragraph 1.

For new inlets the height of adjusting rings shall be three (3) to nine (9) inches. For reconstructed or repaired inlets, the height of adjusting rings shall be three (3) to twelve (12) inches.

A combination of concrete and plastic rings is allowable, but the total number of rings shall be no more than three (3). Of those three (3) rings no more than two (2) shall be plastic and the total height of plastic rings shall not exceed four (4) inches. Where a combination of ring materials is used, the concrete rings must be installed below any plastic rings. In addition to the three (3) rings allowed above, a single or pair of slope adjustment rings may be used as required to match the surface slope.

For concrete adjusting rings, mortar between the rings shall provide a watertight seal, be flush with the vertical faces of the adjusting rings, and have a smooth finish. The Engineer may require that additional non-shrink grout be installed to achieve the desired finish.

For plastic rings, a minimum 2” wide butyl tape shall be used between adjacent rings, as well as between the ring and structure.

Castings

Refer to Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 3.5.4(e).

7.3.3 Measurement

Inlets shall be measured as each individual unit acceptably complete.

7.3.4 Payment

Inlets shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

7.4 APRON ENDWALLS

7.4.1 Materials

Refer to WISDOT Standard Specifications for Highway and Structure Construction, Section 520.2.3.

7.4.2 Construction

Refer to WISDOT Standard Specifications for Highway and Structure Construction, Section 520.3.5.

7.4.3 Measurement

Apron Endwalls shall be measured as each individual unit acceptably complete.

7.4.4 Payment

Apron Endwalls shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

7.5 PIPE & FITTINGS

7.5.1 Materials

Refer to WisDOT Standard Specifications for Highway and Structure Construction, Section 608.

Additionally:

Pipe shall be Class III-B allowable materials in accordance with Table 608-1 unless otherwise noted on the plans:

a. Reinforced concrete pipe shall conform to AASHTO M170 for circular pipe and AASHTO M207 for elliptical pipe.
b. Polypropylene pipe shall conform to AASHTO M330, Type S. Bell and spigot connections shall utilize a welded or integral bell meeting the requirements of ASTM D3212. Plain-end fittings shall utilize an external mechanical or fastened coupling per manufacturer recommendations.

Pipe joints shall have rubber gaskets as described in the WisDOT Standard Specifications for Highway and Structure Construction, Section 608, and Standard Specifications for Sewer and Water Construction in Wisconsin, Chapter 8.41.2. In addition, polypropylene pipe shall have two rubber gaskets installed by the manufacturer on each pipe spigot.

Storm sewer pipe that may be exposed to ultraviolet radiation (sunlight) for extended periods shall be reinforced concrete pipe. Polypropylene pipe will not be allowed in applications where excessive sunlight exposure may occur.

7.5.2 Construction

Refer to WisDOT Standard Specifications for Highway and Structure Construction, Section 608.

7.5.3 Measurement

Pipe shall be measured by the lineal foot acceptably complete. This measurement equals the distance along the centerline of the pipe, from center to center of end structures, from center of end structure to the terminus of new pipe where no structure exists, or from the terminus of new pipe where no structure exists to the terminus of new pipe where no structure exists.

Apron endwalls shall not be considered structures.

7.5.4 Television Inspection

Televising shall be performed after the roadway fine aggregate subgrade has been established and prior to any line segment being put into service. Television inspection shall be completed in accordance with Section 5.9.3 of these specifications and shall be incidental to payment for new pipe installation.

7.5.5 Payment

Pipe shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials, construction, and testing processes associated with this bid item.

CITY OF JANESVILLE - STANDARD SPECIFICATIONS

PART 8 – CURB AND GUTTER

8.1 GENERAL

8.1.1 Standards

Within the City of Janesville Standard Specifications are references to the latest editions of the Standard Specifications for Sewer and Water Construction in Wisconsin, Manual on Uniform Traffic Control Devices (MUTCD), WDNR Storm Water Construction Technical Standards, WISDOT Construction and Materials Manual, and WISDOT Standard Specifications for Highway and Structure Construction.

See Section 1.1.2 - Referenced Materials in PART 1 – GENERAL PROVISIONS for access to the above-mentioned references.

8.1.2 Submittals

Any materials, items, processes, etc. requiring submittals for Engineer's review and approval shall be submitted, to the Engineer, by the Contractor a minimum of one (1) week prior to the contractor incorporating into the contract work.

8.2 CURB AND GUTTER

8.2.1 Materials

Refer to WisDOT Standard Specifications, Section 601.

Replace Section 601.2 (2) with the following:

Furnish grade A concrete conforming to WisDOT Section 501, whereas modified below:

Section 501 Modifications:

Replace Section 501.2.7.4.2 with the following:

Use fine and coarse aggregate conforming to Table 1 below:

Table 1 – Aggregate Gradation Limits

Sieve	Fine Aggregate	Coarse Aggregate	
		Size No. 1 AASHTO No. 67*	Size No. 2 AASHTO No. 4*
	(% passing by weight)		
2-inch	--	--	100
1 ½ -inch	--	--	90 - 100
1-inch	--	100	20 - 55
¾ -inch	--	90 - 100	0 - 15
No. 4	90 - 100	0 - 10	--
No. 8	--	0 - 5	--

No. 16	45 -85	--	--
No. 50	5 - 30	--	--
No. 100	0 - 10	--	--
No. 200	≤ 3.5	≤ 1.5	≤ 1.5

* Size No. according to AASHTO M43

Remove Section 501.2.7.4.2.1 Optimized Aggregate Gradation

Replace Section 501.3.2.2.1, 501.3.2.2.2 and 501.3.2.2.4 with the following:
Grades A, A-FA and A-T shall be used unless otherwise specified in the contract documents or with prior approval of the Engineer.

A, A-FA, A-T: If using type II portland cement, or if using Type IL blended cement where the base portland cement meets Type II chemical requirements in Table 2 below:

Table 2 - Concrete Grades

Grade	Cement (lb)	Fly Ash (lb)	Weight Total Agg (lb)	Percent Fine Agg (% total agg)	Design Water (gals)	Maximum Water (gals)
A	565		3120	30-40	27	32
A-FA†	395	170	3080	30-40	27	32
A-T‡	395	Total fly ash and slag of 170‡	3090	30-40	27	32

† If using less than the tabulated maximum quantities of fly ash or slag, calculate the cement content by reducing the base cement content for the grade A mix by the weight of the fly ash or slag added.

‡ For ternary mixes containing cement, fly ash and slag, if using less than the tabulated maximum combined quantity of fly ash and slag, calculate the cement content by reducing the base cement content for the grad A mix by the combined weight of the fly ash and slag added

Remove Section 501.3.2.3 Optimized Concrete Mixtures

Admixtures shall only be used with prior approval of the Engineer.

Remove Section 501.3.5.2

Additionally:

High Early Strength Concrete shall be a 7 or 9 bag mix according to Table 3 below.

Table 3 – High Early Strength Concrete Mixtures

Cement Type	Cement (lb)	Fly Ash (lb)	Non-chloride accelerator (ASTM C494)	Water Cement Ratio*
Type I	655	Optional	Max 2%	Max 0.40
Type I	850	Optional	Max 2%	Max 0.44

*If extra workability is needed, a High Range Water Reducer is allowed.

A minimum of 3000 psi compressive strength is required within 48 hours for

a 7 bag mix, and within 12 hours for a 9 bag mix.

The use of high early strength concrete, where directed by the Engineer, will be paid at Contract unit price per cubic yard of High Early Strength, which price is in addition to the Contract unit prices for various bid items.

8.2.2 Construction

Refer to WisDOT Standard Specifications, Section 601.3

New curb and gutter shall be 30-inch Types K or L with three (3) inch radii per WisDOT SDD 08D01-22a. Where replacing existing curb and gutter with a 6.25% gutter slope the replacement curb and gutter may have a 6.25% gutter slope unless otherwise specified in the contract documents.

Expansion joints shall not be placed on each side of every inlet three (3) feet from the inlet. Expansion joints shall be placed at PCs, PTs, and 10 feet from inlet structures. Expansion joints at PCs or PTs that are less than 10 feet from an inlet structure shall be eliminated. Along tangent sections expansion joints shall be placed at intervals not to exceed 300 feet.

8.2.3 Measurement

Refer to WisDOT Standard Specifications, Section 601.4

8.2.4 Payment

Curb and Gutter shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

If nonconforming materials are encountered, disincentive shall be applied.

8.2.5 Material Testing

8.2.5.1 Contractor Testing

At the request of the Engineer, the Contractor is required to provide documentation ensuring that the concrete mixture being used is consistent with the approved mix design.

8.2.5.2 City Testing

The City reserves the right to test any concrete scheduled for placement under contract. Testing will be performed at the discretion of the Engineer and may consist of testing procedures for air content, compressive strength of concrete cylinders, slump, and temperature.

Additionally:

The City shall cast three (3) concrete cylinders. All three (3) will be broken at twenty-eight (28) days and the average of the two (2) higher compressive strength results will determine the compressive strength for the placement on the day the concrete cylinders were cast.

8.2.5.3 Nonconforming Materials

Air Content

Ensure that concrete air content conforms to the following:

- Slip-formed concrete contains 7.0 percent air, +/- 1.5 percent.
- Other concrete contains 6.0 percent air, +/- 1.5 percent.

If the concrete air content is determined to be nonconforming, the concrete shall not be used. Any of this material that has been placed shall be removed and disposed of off-site at the contractor's expense.

Compressive Strength

Ensure that the compressive strength of the concrete, at 28 days, is a minimum of 3,700 pounds per square inch (psi).

If concrete cylinder test results are nonconforming, disincentives will be applied, to all work completed on the day the concrete cylinders were cast, in accordance with the following:

PERCENT STRENGTH BELOW MINIMUM	PAYMENT FACTOR (percent of contract price)
≥ 95 to < 100	90
≥ 90 to < 95	75
≥ 85 to < 90	50
Below 85	Remove & Replace

Slump

Ensure that concrete slump conforms to the following:

- Slip-formed concrete, 2.5 inch slump or less.
- Not slip-formed concrete, 4 inch slump or less.

If the concrete slump is determined to be nonconforming, the concrete shall not be used. Any of this material that has been placed shall be removed and disposed of off-site at the contractor's expense.

Time

Ensure that concrete is delivered and completely discharged within one (1) hour from the time mixing of concrete ingredients begins. Any concrete not placed within the time limit shall not be used.

8.3 FINE GRADATION AGGREGATE BASE PLACED UNDER CURB AND GUTTER

8.3.1 Materials

Refer to Section 4.5.1 of these specifications.

8.3.2 Construction

Refer to Section 4.5.2 of these specifications.

8.3.3 Measurement

Refer to Section 4.5.3 of these specifications.

8.3.4 Payment

Refer to Section 4.5.4 of these specifications.

8.4 STEEL REINFORCEMENT

8.4.1 Materials

Refer to WisDOT Standard Specifications, Section 505.

Additionally:

Steel reinforcement shall be #4 (½-inch diameter) steel reinforcement bars.

8.4.2 Construction

Steel reinforcement shall be incorporated at service lateral trenches, hydrant lead trenches, at other locations provided in the contract documents and where deemed necessary by the Engineer.

Where steel reinforcement bars are required, the Contractor shall provide, parallel to the length of the curb and gutter, three (3) horizontal bars for all curb and gutter twenty-four (24) inches in width and greater and shall provide two (2) horizontal bars for all curb and gutter less than twenty-four (24) inches in width. Steel reinforcement bars shall be placed with one (1) bar spaced six (6) inches from the front and back vertical surfaces. For curb and gutter twenty-four (24) inches in width and greater, a third horizontal bar shall be placed in the center of the curb and gutter. All steel reinforcement bars shall have at least two (2) inches of cover from the nearest concrete surface.

8.4.3 Measurement

Steel reinforcement shall be measured in-place, per steel reinforcement bar, by the lineal foot acceptably complete. Required overlapping of steel reinforcement bars shall be incidental to the length.

8.4.4 Payment

Steel Reinforcement shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

8.5 PAVEMENT TIES

8.5.1 Materials

Refer to WisDOT Standard Specifications, Section 416.

Additionally:

Pavement ties shall be #4 (½-inch diameter) deformed, epoxy coated, steel reinforcement bars, twelve (12) inches in length.

8.5.2 Construction

Refer to WisDOT Standard Specifications, Section 416.

8.5.3 Measurement

Refer to WisDOT Standard Specifications, Section 416.

8.5.4 Payment

Pavement Ties shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

8.6 CONCRETE CURING COMPOUND

8.6.1 Materials

Refer to WisDOT Standard Specifications, Section 601.

Additionally:

Curing Compounds shall have white pigmentation.

Water based, wax based curing compounds will be acceptable will prior approval of the Engineer.

8.6.2 Construction

Refer to WisDOT Standard Specifications, Section 601.

Additionally:

Curing of concrete shall be done in accordance with the impervious coating method.

8.6.3 Measurement

Concrete Curing Compound shall be incidental to corresponding concrete bid item.

8.6.4 Payment

Concrete Curing Compound shall be incidental to corresponding concrete bid item.

CITY OF JANESVILLE - STANDARD SPECIFICATIONS

PART 9 – SIDEWALK

9.1 GENERAL

9.1.1 Standards

Within the City of Janesville Standard Specifications are references to the latest editions of the Standard Specifications for Sewer and Water Construction in Wisconsin, Manual on Uniform Traffic Control Devices (MUTCD), WDNR Storm Water Construction Technical Standards, WISDOT Construction and Materials Manual, and WISDOT Standard Specifications for Highway and Structure Construction.

See Section 1.1.2 - Referenced Materials in PART 1 – GENERAL PROVISIONS for access to the above-mentioned references.

9.1.2 Submittals

Any materials, items, processes, etc. requiring submittals for Engineer's review and approval shall be submitted, to the Engineer, by the Contractor a minimum of one (1) week prior to the contractor incorporating into the contract work.

9.2 CONCRETE SIDEWALK

9.2.1 Materials

Refer to WisDOT Standard Specifications, latest edition, Section 602.

Replace Section 602.2 (2) with the following:

Furnish grade A concrete conforming to WisDOT Section 501, whereas modified below:

Section 501 Modifications:

Replace Section 501.2.7.4.2 with the following:

Use fine and coarse aggregate conforming to Table 1 below:

Table 1 – Aggregate Gradation Limits

Sieve	Fine Aggregate	Coarse Aggregate	
		Size No. 1 AASHTO No. 67*	Size No. 2 AASHTO No. 4*
	(% passing by weight)		
2-inch	--	--	100
1 ½ -inch	--	--	90 - 100
1-inch	--	100	20 - 55
¾ -inch	--	90 - 100	0 - 15
3/8 - inch	100	20 – 55	0 - 5
No. 4	90 - 100	0 - 10	--

No. 8	--	0 - 5	--
No. 16	45 -85	--	--
No. 50	5 - 30	--	--
No. 100	0 - 10	--	--
No. 200	≤ 3.5	≤ 1.5	≤ 1.5

* Size No. according to AASHTO M43

Remove Section 501.2.7.4.2.1 Optimized Aggregate Gradation

Replace Section 501.3.2.2.1, 501.3.2.2.2 and 501.3.2.2.4 with the following:

Grades A, A-FA and A-T shall be used unless otherwise specified in the contract documents or with prior approval of the Engineer.

A, A-FA, A-T: If using type II portland cement, or if using Type IL blended cement where the base portland cement meets Type II chemical requirements in Table 2 below:

Table 2 - Concrete Grades

Grade	Cement (lb)	Fly Ash (lb)	Weight Total Agg (lb)	Percent Fine Agg (% total agg)	Design Water (gals)	Maximum Water (gals)
A	565		3120	30-40	27	32
A-FA†	395	170	3080	30-40	27	32
A-T‡	395	Total fly ash and slag of 170‡	3090	30-40	27	32

† If using less than the tabulated maximum quantities of fly ash or slag, calculate the cement content by reducing the base cement content for the grade A mix by the weight of the fly ash or slag added.

‡ For ternary mixes containing cement, fly ash and slag, if using less than the tabulated maximum combined quantity of fly ash and slag, calculate the cement content by reducing the base cement content for the grad A mix by the combined weight of the fly ash and slag added

Remove Section 501.3.2.3 Optimized Concrete Mixtures

Admixtures shall only be used with prior approval of the Engineer.

Remove Section 501.3.5.2

Additionally:

High Early Strength Concrete shall be a 7 or 9 bag mix according to Table 3 below.

Table 3 – High Early Strength Concrete Mixtures

Cement Type	Cement (lb)	Fly Ash (lb)	Non-chloride accelerator (ASTM C494)	Water Cement Ratio*
Type I	655	Optional	Max 2%	Max 0.40
Type I	850	Optional	Max 2%	Max 0.44

*If extra workability is needed, a High Range Water Reducer is allowed.

A minimum of 3000 psi compressive strength is required within 48 hours for a 7 bag mix, and within 12 hours for a 9 bag mix.

The use of high early strength concrete, where directed by the Engineer, will be paid at Contract unit price per cubic yard of High Early Strength, which price is in addition to the Contract unit prices for various bid items.

9.2.2 Construction

Refer to WisDOT Standard Specifications, latest edition, Section 602.

Additionally:

Curing concrete shall be done by the impervious coating method.

All sidewalks, unless otherwise ordered or provided for, shall have a standard width of five (5) feet with a transverse slope of three sixteenth (3/16) inch per foot toward the gutter. The minimum allowable transverse slope shall be one eight (1/8) inch per foot and the maximum shall be one fourth (1/4) inch per foot. Sidewalk shall be laid with the back of sidewalk above the top of curb per Detail #16. As the walk approaches a street intersection specific direction shall be obtained from the Engineer as to its slope and grade. On corner lots special grades shall be obtained from the Engineer. Curb ramps shall be constructed in accordance with latest WisDOT Standard Detail Drawing SDD 8D5 sheets a-e.

Place ½ inch wide transverse expansion joint filler through the sidewalk at all property lines and at intervals not exceeding 100 feet.

The minimum thickness of any part of the sidewalk shall be four (4) inches. Where driveways are encountered, the walk shall have a minimum thickness of six (6) inches for the entire width of the drive approach or driveway, whichever is greater. The above minimum six (6) inch thickness shall also apply to all concrete drive approaches and sidewalk ramps.

All roots from trees and stumps adjacent to the work and/or encountered during the excavation shall be carefully grinded or cut and removed to a depth of not less than six (6) inches below the bottom surface of the proposed concrete sidewalk or six (6) inches from the nearest side surface of the concrete sidewalk.

The City may require the replacement of newly-placed sidewalk, at no cost to the City, where:

- Sidewalk ponds water to a depth of one-fourth (¼) inch or more at any location.
- Surface imperfections are noticeable from five (5) feet away.
- Finishing water, leaf marks, or rain water marks compromise surface quality or surface appearance.
- Broom finish or joints are not of uniform depth, not perpendicular to the line of sidewalk or not reasonably straight.
- Width is off by more than one (1) inch and depth by more than one-fourth (¼) inch.
- Tripping edge, cracks, chips, spalling, or scrapes from construction equipment exist.
- Stained or discolored sidewalk exists,

- Horizontal alignment is off by one (1) inch or more.
- Transverse slope is less that one eighth (1/8) or greater than one fourth (1/4) inch per foot,
- Curb ramps do not comply with the WisDOT standard detail drawings.

9.2.3 Measurement

Refer to WisDOT Standard Specifications, latest edition, Section 602.

9.2.4 Payment

Sidewalk shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

If nonconforming materials are encountered, disincentive shall be applied.

9.2.5 Material Testing

9.2.5.1 Contractor Testing

At the request of the Engineer, the Contractor is required to provide documentation ensuring that the concrete mixture being used is consistent with the approved mix design.

9.2.5.2 City Testing

The City reserves the right to test any concrete scheduled for placement under contract. Testing will be performed at the discretion of the Engineer and may consist of testing procedures for air content, compressive strength of concrete cylinders, slump, and temperature.

Additionally:

The City shall cast three (3) concrete cylinders. All three (3) will be broken at twenty-eight (28) days and the average of the two (2) higher compressive strength results will determine the compressive strength for the placement on the day the concrete cylinders were cast.

9.2.5.3 Nonconforming Materials

<u>Air Content</u>

Ensure that concrete air content conforms to the following:

- Slip-formed concrete contains 7.0 percent air, +/- 1.5 percent.
- Other concrete contains 6.0 percent air, +/- 1.5 percent.

If the concrete air content is determined to be nonconforming, the concrete shall not be used. Any of this material that has been placed shall be removed and disposed of off-site at the contractor's expense.

<u>Compressive Strength</u>

Ensure that the compressive strength of the concrete, at 28 days, is a minimum of 3,700 pounds per square inch (psi).

If concrete cylinder test results are nonconforming, disincentives will be applied, to all work completed on the day the concrete cylinders were cast, in accordance with the following:

PERCENT STRENGTH BELOW MINIMUM	PAYMENT FACTOR (percent of contract price)
≥ 95 to < 100	90
≥ 90 to < 95	75
≥ 85 to < 90	50
Below 85	Remove & Replace

Slump

Ensure that concrete slump conforms to the following:

- Slip-formed concrete, 2.5 inch slump or less.
- Not slip-formed concrete, 4 inch slump or less.

If the concrete slump is determined to be nonconforming, the concrete shall not be used. Any of this material that has been placed shall be removed and disposed of off-site at the contractor's expense.

Time

Ensure that concrete is delivered and completely discharged within one (1) hour from the time mixing of concrete ingredients begins. Any concrete not placed within the time limit shall not be used.

9.3 STEEL REINFORCEMENT

9.3.1 Materials

Refer to WisDOT Standard Specifications, latest edition, Section 505.

9.3.2 Construction

Steel reinforcement shall be incorporated at service lateral trenches, hydrant lead trenches, at other locations provided in the contract documents and where deemed necessary by the Engineer.

Where steel reinforcement bars are required, the Contractor shall provide, parallel to the length of sidewalk, four (4) horizontal bars for concrete sidewalk. Steel reinforcement bars shall be placed with one (1) bar spaced twelve (12) inches from the front and back vertical surfaces and at twelve (12) inches on center. All steel reinforcement bars shall have at least two (2) inches of cover from the nearest concrete surface.

9.3.3 Measurement

Steel reinforcement shall be measured in-place, per steel reinforcement bar, by the lineal foot acceptably complete. Required overlapping of steel reinforcement bars shall be incidental to the length.

9.3.4 Payment

Steel Reinforcement shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

9.4 CONCRETE CURING COMPOUND

9.4.1 Materials

Refer to WisDOT Standard Specifications, Section 602.

Additionally:

Curing Compounds shall have white pigmentation.

Water based, wax based curing compounds will be acceptable only with prior approval of the Engineer.

9.4.2 Construction

Refer to WisDOT Standard Specifications, Section 602.

Additionally:

Curing of concrete shall be done in accordance with the impervious coating method.

9.4.3 Measurement

Concrete Curing Compound shall be incidental to corresponding concrete bid item.

9.4.4 Payment

Concrete Curing Compound shall be incidental to corresponding concrete bid item.

9.5 DETECTABLE WARNING FIELD PANELS

9.5.1 Materials

Detectable Warning Field Panels shall be included on the latest version of the WisDOT's Approved Product List for Curb Ramp Detectable Warning Fields and shall be made of cast iron and unpainted.

9.5.2 Construction

Detectable Warning Field Panels, as provided, consist of multiple pieces that require assembly. The Contractor is required to assemble and install the detectable warning field panels in accordance with manufacturer recommendations, and provide one (1), 2' x 5'

panel to be installed at each ramp location. The contractor shall obtain City approval prior to installing radial detectable warning fields at any location.

The Contractor shall install the panels in ramp in accordance with the latest WisDOT Standard Detail Drawings SDD 8D5 sheets a-g.

9.5.3 Measurement

Detectable Warning Field Panels shall be measured as each individual, 2’ x 5’ panel acceptably complete.

9.5.4 Payment

Detectable Warning Field Panels shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

CITY OF JANESVILLE - STANDARD SPECIFICATIONS

PART 10 – PAVEMENTS

10.1 GENERAL

10.1.1 Standards

Within the City of Janesville Standard Specifications are references to the latest editions of the Standard Specifications for Sewer and Water Construction in Wisconsin, Manual on Uniform Traffic Control Devices (MUTCD), WDNR Storm Water Construction Technical Standards, WISDOT Construction and Materials Manual, and WISDOT Standard Specifications for Highway and Structure Construction.

See Section 1.1.2 - Referenced Materials in PART 1 – GENERAL PROVISIONS for access to the above-mentioned references.

10.1.2 Submittals

Any materials, items, processes, etc. requiring submittals for Engineer's review and approval shall be submitted, to the Engineer, by the Contractor a minimum of one (1) week prior to the Contractor incorporating into the contract work.

Concrete Pavement

The Contractor shall provide concrete mix designs for all pavement types scheduled for use. Concrete mix designs shall be submitted to and approved by the Engineer prior to use.

Hot Mix Asphalt (HMA) Pavement

The Contractor shall provide asphalt mix designs for all pavement types scheduled for use. Asphalt mix designs shall be submitted to and approved by the Engineer prior to use.

10.1.3 Load Tickets

Concrete Pavement

Each load of ready-mixed concrete shall have a computer printed ticket. The ticket shall include: load description and quantity; truck identification; actual batch weights of all materials in the load; time of the start of batch life; time of the start of discharge and delivery location.

HMA Pavement

Each load of HMA shall have a computer printed ticket. The ticket shall include: mix description (i.e. 5 LT XX-34) and quantity, truck identification, tare weight of the empty truck, gross weight of loaded truck, net weight of mix, date and time of batching, and delivery location. Tickets shall identify all additives included.

10.2 CONCRETE PAVEMENT

10.2.1 Materials

Refer to WisDOT Standard Specifications, Sections 415.2.

Replace Section 415.2.1 (1) with the following:

Furnish grade A concrete conforming to WisDOT Section 501, whereas modified below:

Section 501 Modifications:

Replace Section 501.2.7.4.2 with the following:

Use fine and coarse aggregate conforming to Table 1 below:

Table 1 – Aggregate Gradation Limits

Sieve	Fine Aggregate	Coarse Aggregate	
		Size No. 1 AASHTO No. 67*	Size No. 2 AASHTO No. 4*
	(% passing by weight)		
2-inch	--	--	100
1 ½ -inch	--	--	90 - 100
1-inch	--	100	20 - 55
¾ -inch	--	90 - 100	0 - 15
3/8 - inch	100	20 – 55	0 - 5
No. 4	90 - 100	0 - 10	--
No. 8	--	0 - 5	--
No. 16	45 -85	--	--
No. 50	5 - 30	--	--
No. 100	0 - 10	--	--
No. 200	≤ 3.5	≤ 1.5	≤ 1.5

* Size No. according to AASHTO M43

Remove Section 501.2.7.4.2.1 Optimized Aggregate Gradation

Replace Section 501.3.2.2.1, 501.3.2.2.2 and 501.3.2.2.4 with the following:

Grades A, A-FA and A-T shall be used unless otherwise specified in the contract documents or with prior approval of the Engineer.

A, A-FA, A-T: If using type II portland cement, or if using Type IL blended cement where the base portland cement meets Type II chemical requirements in Table 2 below:

Table 2 - Concrete Grades

Grade	Cement (lb)	Fly Ash (lb)	Weight Total Agg (lb)	Percent Fine Agg (% total agg)	Design Water (gals)	Maximum Water (gals)
A	565		3120	30-40	27	32
A-FA†	395	170	3080	30-40	27	32
A-T‡	395	Total fly ash and slag of 170‡	3090	30-40	27	32

† If using less than the tabulated maximum quantities of fly ash or slag, calculate the cement content by reducing the base cement content for the grade A mix by the weight of the fly ash or slag added.

‡ For ternary mixes containing cement, fly ash and slag, if using less than the tabulated maximum combined quantity of fly ash and slag, calculate the cement content by reducing the base cement content for the grad A mix by the combined weight of the fly ash and slag added

Remove Section 501.3.2.3 Optimized Concrete Mixtures

Admixtures shall only be used with prior approval of the Engineer.

White pigmented, water-based, wax-based curing compounds shall be allowed with prior approval of the Engineer.

Remove Section 501.3.5.2

Additionally:

High Early Strength Concrete shall be a 7 or 9 bag mix according to Table 3 below.

Table 3 – High Early Strength Concrete Mixtures

Cement Type	Cement (lb)	Fly Ash (lb)	Non-chloride accelerator (ASTM C494)	Water Cement Ratio*
Type I	655	Optional	Max 2%	Max 0.40
Type I	850	Optional	Max 2%	Max 0.44

*If extra workability is needed, a High Range Water Reducer is allowed.

A minimum of 3000 psi compressive strength is required within 48 hours for a 7 bag mix, and within 12 hours for a 9 bag mix.

The use of high early strength concrete, where directed by the Engineer, will be paid at Contract unit price per cubic yard of High Early Strength, which price is in addition to the Contract unit prices for various bid items.

10.2.2 Construction

Refer to WisDOT Standard Specifications, Sections 415.3.

Additionally:

Curing concrete shall be done by the impervious coating method.

Remove Section 415.3.10.2 – Ride Quality

Remove Section 415.3.16 – Tolerance in Pavement Thickness

Remove Section 415.5.2 – Adjusting Pay for Thickness

10.2.3 Measurement

Refer to WisDOT Standard Specifications, Sections 415.4.

10.2.4 Payment

Concrete Pavement shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

If nonconforming materials are encountered, disincentive shall be applied.

10.2.5 Material Testing

10.2.5.1 Contractor Testing

At the request of the Engineer, the Contractor is required to provide documentation ensuring that the concrete mixture being used is consistent with the approved mix design.

10.2.5.2 City Testing

The City reserves the right to test any concrete scheduled for placement under contract. Testing will be performed at the discretion of the Engineer and may consist of testing procedures for air content, compressive strength of concrete cylinders, slump, and temperature.

Additionally:

The City shall cast three (3) concrete cylinders. All three (3) will be broken at twenty-eight (28) days and the average of the two (2) higher compressive strength results will determine the compressive strength for the placement on the day the concrete cylinders were cast. Additional samples shall be created for opening to traffic, tested at 7-days, or as directed by the Engineer.

10.2.5.3 Nonconforming Materials

<u>Air Content</u>

Ensure that concrete air content conforms to the following:

- Slip-formed concrete contains 7.0 percent air, +/- 1.5 percent.
- Other concrete contains 6.0 percent air, +/- 1.5 percent.

If the concrete air content is determined to be nonconforming, the concrete shall not be used. Any of this material that has been placed shall be removed and disposed of off-site at the Contractor's expense.

<u>Compressive Strength</u>

Ensure that the compressive strength of the concrete, at 28 days, is a minimum of 3,700 pounds per square inch (psi).

If concrete cylinder test results are nonconforming, disincentives will be applied to all work completed on the day the concrete cylinders were cast, in accordance with the following:

PERCENT STRENGTH BELOW MINIMUM	PAYMENT FACTOR (percent of contract price)
≥ 95 to < 100	95
≥ 90 to < 95	85
≥ 85 to < 90	70
Below 85	Remove & Replace

Slump

Ensure that concrete slump conforms to the following:

- Slip-formed concrete, 2.5 inch slump or less.
- Not slip-formed concrete, 4 inch slump or less.

If the concrete slump is determined to be nonconforming, the concrete shall not be used. Any of this material that has been placed shall be removed and disposed of off-site at the Contractor's expense.

Time

Ensure that concrete is delivered and completely discharged within one (1) hour from the time mixing of concrete ingredients begins. Any concrete not placed within the time limit shall not be used.

10.3 HOT MIX ASPHALT (HMA) PAVEMENT

10.3.1 Materials

Refer to WisDOT Standard Specifications, Sections 450.2, 455.2 and 460.2.1 – 460.2.7 except wherein modified or appended:

Section 450.2 General Requirements for Asphaltic Pavements - Materials

FRAP is required for all surface HMA mixes. All FRAP shall be crushed and screened into two fractions, with a separation occurring on or between the #4 (4.75mm) and the 3/8" (9.5mm) sieves. The top size of the coarse fraction shall be no larger than ½".

For example, if the Contractor chooses the 9/16" sieve to separate the fine FRAP from the coarse FRAP, then the fine Frap would be all the material passing the 9/16", and the coarse FRAP would be the all material retained on the 9/16" up to a max size of ½".

FRAP and RAP stockpiles must be homogenous and consistent and meet the requirements in Table 1 during stockpiling:

Table 1 – FRAP/RAP Stockpile Requirements

PARAMETER	FRAP / RAP
P200 (0.075-mm)	± 2.0%
Asphalt Binder Content	± 1.0%

The Contractor shall test the FRAP pile every 2500 tons during stockpiling to ensure

that no more than 20% of the tests are out of tolerance.

RAS shall be ground to 100% passing the 3/8" sieve and 90% passing the #4 sieve. RAS stockpiles must be homogenous and consistent, and meet the requirements in Table 2 during stockpiling:

Table 2 – RAS Stockpile Requirements

PARAMETER	RAS
P200 (0.075-mm)	± 2.0%
Asphalt Binder Content	± 1.5%

The Contractor shall test the RAS pile every 250 tons during stockpiling to ensure that no more than 20% of the tests are out of tolerance.

Test results shall be made available to the City, upon request, within 10 business days. Additives for use must be listed and approved on the AASHTO Product Evaluation & Audit Solutions (AASHTO PEAS), the Illinois Tollway Asphalt Modifier Approved Products List, or specifically approved by the City of Janesville. Any use of additives must be listed on the submitted mix design.

Section 455.2 Asphaltic Materials - Materials

Additionally, the Engineer may request an in-line sample of the virgin AC to verify the virgin PG Grade. The virgin binder PG grade (AASHTO M320) for each mix design is according to Table 4.

The final extracted and recovered (AASHTO TP2) PG grade (AASHTO M320) of each HMA mix design must not be higher than the high temperature of 70°C, or higher than the low temperature of -22°C. listed in Table 3 below:

Table 3 – Extracted and Recovered PG Requirements

MIX DESIGN	EXTRACTED & RECOVERED PG
4 LT, 4 MT, 5 LT, 5 MT	PG 70 - 22

Section 460.2 Hot Mix Asphalt Pavement - Materials

460.2.5 – Recycled Asphalt Materials

Recycled materials may be used according to the requirements in Table 1 and 2 above. The Percent Binder Replacement (Pbr), the allowable RAP/FRAP/RAS materials and virgin PG binder must meet the requirements in Table 4 for the following mixes. If a different grade of binder is needed to achieve passing performance testing, it is acceptable with approval by the City.

Table 4 – Virgin Asphalt Cement Requirements

	RAP[†]/FRAP/RAS	FRAP/RAS	
Pbr	0 - 25	26 - 35*	36 - 50*
4 LT (Lower Layer)	PG 58 - 28		PG XX - 34
4 MT, 5 LT, 5 MT	PG XX - 28	PG XX - 34	

[†]RAP is only allowed in the 4LT up to 25% Pbr, RAP is not allowed in the 4 MT, 5LT or 5MT.
*Additive must be used in the mixture if Pbr is greater than 30%; performance testing requirements must be met with additive. This additive must be clearly labeled on the submitted mix design.

The RAS component cannot exceed 5% by weight of the blend. The Hot Mix Asphalt plant must use positive dust control while producing the 4 MT, 5 LT and 5 MT mixes for the City of Janesville.

460.2.7 – HMA Mixture Design

Each mix design submitted to the City must meet the requirements in Table 5 below:

Table 5 – Mix Design Requirements

PROPERTY		4 LT 4 MT	5 LT 5 MT
SIEVE	¾" (19.0-mm)	100	--
	½" (12.5-mm)	90 - 100	100
	3/8" (9.5-mm)	90 max	90 - 100
	#4 (4.75-mm)	--	90 max
	#8 (2.36-mm)	28 - 58	32 - 67
	P200 (0.075-mm)	2.0 - 7.0	2.0 – 7.0
Crush Count		N/A (see Table 6 - Hamburg)	
Minimum % VMA		14.5	15.5
%Va*		3.0	3.0
Dust to Binder Ratio (P200/Pbe)		1.2	1.2

*Design the mixtures conforming to Table 5 to 4.0% air voids to establish the aggregate structure. Add liquid asphalt to achieve 3.0% air voids at the design number of gyrations (Ndes).

Additionally, each of the HMA mix designs must meet the performance requirements in Table 6, for the Disk-Shaped Compact Tension Test (DCT) (ASTM D 7313), the Hamburg Wheel-Track Test (HWTT) (WisDOT's Manual of Test Procedures WTM T324[1]), and the Indirect Tensile Cracking Test (IDEAL-CT) (WTM D8225). DCT and Hamburg testing samples will be short-term aged according to WTM R30, which is 4 hours ± 5 minutes (loose material) in an oven at 135°C. No additional long-term aging of the DCT specimens is required. The IDEAL-CT testing samples will be long-term aged according to WTM R30, which is 6 hours ± 5 minutes (loose material) in an oven at 135°C. All performance testing

[1] WisDOT's Manual of Test Procedures is available on WisDOT's QMP website and contains a collection of modifications to standardized ASTM and AASHTO procedures. These modified test procedures are prefixed with the acronym "WTM" - WisDOT Test Modified, followed by the test number (i.e. AASHTO T 324 has test modifications under WTM T324). Additional guidance can be found in the Manual of Test Procedures.

will follow the applicable testing standard except as modified below:

- DCT (ASTM D 7313)
    - *Test Replicates* - Four DCT replicates at 150.0 mm in diameter and 50.0 ± 5.0 mm in thickness are required for a valid test. All test replicates shall have an air void target of 6.0 ± 0.5%. Two DCT replicates shall be cut from the same gyratory specimen.
    - *Conditioning* - Test replicates shall be conditioned in a standard freezer for a minimum of 8 hours and a maximum of 12 hours at a temperature within -12 ± 5°C. After the initial conditioning, the specimen shall be placed into the DCT chamber for 1.5 ± 0.5 hours at the standard testing temperature of -18°C.
    - *Analysis & Reporting* - Average all four test replicates. Discard the replicate that produces the furthest fracture energy result from the average. Average the remaining three replicates to produce the final Fracture Energy results.
- Hamburg Wheel-Track Testing (WTM T324)
    - *Testing* – All Tests shall be conducted to 20,000 passes to capture Stripping Inflection Point.
    - *Analysis & Reporting* – Report the average rut depth and Stripping Inflection Point (SIP). Additionally, for information only, report the average Corrected Rut Depth at 20,000 passes and Stripping Number.
- Indirect Tensile Cracking Test (WTM D8225)
    - *Test Replicates* – Four gyratory compacted specimens.
    - *Analysis & Reporting* - Average all four test replicates. Discard the result that is furthest from the average. Average the remaining three replicates to produce the final average CT-Index result. Report the individual CT-Index results for each replicate and the average.

Table 6 – Performance Testing Requirements

PERFORMANCE TEST	4 LT	4 MT	5 LT	5 MT
DCT (ASTM D 7313 as modified in 10.3.1)				
Fracture Energy, J/m^2	≥ 350	≥ 375	≥ 375	≥ 425
HWTT (WTM T324 as modified in 10.3.1)				
Rut Depth at 15,000 Passes, mm	≤ 12.5	≤ 12.5	≤ 12.5	≤ 12.5
SIP, Passes	≥ 7,500	≥ 11,250	≥ 7,500	≥ 11,250
Corrected Rut Depth at 20,000 Passes (CRD_{20k}), mm	Report	Report	Report	Report
Stripping Number (LC_{SN}), Passes	Report	Report	Report	Report
IDEAL-CT (WTM D8225 as modified in 10.3.1)				
CT-Index	Report	Report	Report	Report

All mix designs shall be submitted by the Contractor for review by the Engineer. Construction will not begin until the Engineer approves each mix design.

Individual test results for the parameters in Table 3 and Table 6 shall be included in the design submittal to the City for review.

10.3.2 Construction

Refer to WisDOT Standard Specifications, Sections 450.3, 455.3 and 460.3.1 – 460.3.2 except wherein modified or appended:

Section 450.3 Construction – Equipment

A Transfer device will be required unless the Contractor can demonstrate no end-of-load segregation as witnessed by the Engineer on the first day of production.

On the first day of production, the City will obtain materials for mix design verification. Verification testing may include any of the following:

1. Asphalt Content*
2. Gradation*
3. Volumetrics
4. DCT
5. Hamburg
6. IDEAL-CT
7. PG Grade of the Recovered Binder

The Contractor is encouraged to obtain and test material on the first day of production as well.

*Asphalt content and gradation will be determined using the Automated Extraction of Asphalt Binder from Asphalt Mixture - WTM D8159.

Section 455.3 Construction

Tack Coat shall be applied with a uniform double coverage spray pattern, meeting Engineer's approval. Paving operations shall not commence until, in the opinion of the Engineer, the tack coat has broken and is tacky to the touch.

To ensure the 50% dilution rate and the 0.050 – 0.070 gal/SY tack coat application rate (after dilution), the Engineer reserves the right to take a field sample to determine

compliance. Apply tack coat only when the air temperature is 32°F or more unless the engineer approves in writing. Before applying tack coat, ensure that the surface is reasonably free of loose dirt, dust or other foreign matter. Do not apply to surfaces with standing water. Do not apply if weather conditions are unfavorable or before impending rains.

The finished rolled pavement surface shall be 1/4" above structure casting and water valve box rims.

Following paving operations, a 6-foot straight edge shall be placed over the centerline of each casting parallel to the direction of traffic. A measurement shall be made at each side of the casting. If any measurement is greater than 5/8" or if the casting is at or above the finished surface, the Contractor shall use infrared patching to resolve the issue. If in the opinion of the Engineer, the issue cannot be resolved with infrared patching, the casting and frame shall be reset to the correct elevation and slope and permanently patched per the direction of the Engineer at the Contractor's expense.

The Contractor shall coordinate daily paving operations such that any construction joint that may be required is transverse to the roadway centerline and at a location pre-approved by the Engineer.

All intersecting streets and driveways shall be paved to the limits marked in the field.

This work will be paid for under the corresponding mainline asphalt paving bid item.

Section 460.3 Construction – Equipment

Thickness shall meet the requirements of Table 7 below:

Table 7 – Paving Layer Thickness Requirements

MIXTURE TYPE	MINIMUM LAYER THICKNESS	MAXIMUM LAYER THICKNESS
4 LT, 4 MT	1.75"	4.0"
5 LT	1.5"	2.5"
5 MT	1.5"	3.0"

10.3.3 Measurement

Refer to WisDOT Standard Specifications, 460.4 except wherein modified or appended:

Section 460.4 Measurement

Asphaltic Material and Tack Coat will be incidental to the corresponding HMA Pavement bid items.

10.3.4 Payment

HMA Pavement shall be paid for at the contract unit price for measured quantities. Payment shall include full compensation for all required materials and construction processes associated with this bid item.

If nonconforming materials are encountered, disincentive shall be applied (refer to Section 10.3.5.3 of this document).

10.3.5 Material Testing

10.3.5.1 Contractor Testing

Refer to WisDOT Standard Specifications, 460.2.8 – 460.2.8.2.1.7 except wherein modified or appended:

Section 460.2.8 Quality Management Program

The Contractor is encouraged to conduct optional Contractor Assurance.

The Contractor shall email the Engineer within 24 hours of production, the four (4) point running average calculation sheet for the following properties:

1. Asphalt Content*
2. Gradation*
3. Air Voids
4. VMA

*Asphalt content and gradation will be determined using the Automated Extraction of Asphalt Binder from Asphalt Mixture - WTM D8159.

The Contractor shall email the Engineer within 48 hours of completion of the tests, the results of the following:

1. DCT – Average Fracture Energy
2. HWTT – Rut depth at test completion, SIP, CRD_{20k}, LC_{SN}
3. IDEAL-CT – Average CT-Index and individual CT-Index results.

The Contractor shall allow access by the Engineer to observe Contractor sampling, testing, and material production. The Contractor shall allow access to the City's Consultant Laboratory to sample production material at the plant.

At the Engineer's request, the Contractor shall provide the Engineer the companion sample to each charted test. All samples will be retained by the Contractor for a minimum of 14 days after production.

The required quality management program and testing shall be incidental to the asphalt pavements specified under the contract.

10.3.5.2 City Testing

<u>Density</u>

Pavement densities shall be determined using the City of Janesville's nuclear density testing equipment. The use of nuclear density testing equipment shall comply with WisDOT and the Department of Health and Safety pertaining to the use of the nuclear density equipment.

HMA pavement densities must conform to Table 8 below:

Table 8 – Minimum Required Density

MINIMUM PERCENT DENSITY REQUIREMENT	UPPER LAYER	LOWER LAYER
4 LT	--	92.0*
4 MT, 5 LT, 5 MT	93.0	92.0

*91.0% target when paving over aggregate base

The City will perform five (5) tests per lot. A lot will consist of five-hundred (500) tons or less of a single mix design. The five (5) density tests will be averaged to determine the resultant lot density.

HMA Mixture

The City shall use a third-party testing laboratory for verification of mix design of production samples. The testing will include any of the following:

1. Asphalt Content*
2. Gradation*
3. Air Voids
4. VMA
5. DCT (ASTM D7313)
6. Hamburg (WTM T324)
7. IDEAL-CT (WTM D8225)
8. PG Grading of the recovered Binder
9. PG Grading of the virgin Binder

*Asphalt content and gradation will be determined using the Automated Extraction of Asphalt Binder from Asphalt Mixture - WTM D8159.

All test results will be made available to the Contractor.

Individual tests of the HMA pavement properties must be within the limits in Table 9 below, relative to the submitted mix design:

Table 9 – Conformance Requirements

HMA PROPERTY	4 LT	4 MT	5 LT	5 MT
#8 (2.36-mm), % Passing by Weight	+ 4.5 / - 5.0	+ 4.5 / - 5.0	+ 4.5 / - 5.0	+ 4.5 / - 5.0
P200 (0.075-mm), % Passing by Weight	+ 1.5 / - 2.0	+ 1.5 / - 2.0	+ 1.5 / - 2.0	+ 1.5 / - 2.0
Air Voids (Va), %	+ 1.3 / - 1.0	+ 1.3 / - 1.0	+ 1.3 / - 1.0	+ 1.3 / - 1.0
Asphalt Content, %	- 0.3	- 0.3	- 0.3	- 0.3
VMA, %	≥ 14.0	≥ 14.5	≥ 15.0	≥ 15.0
DCT (ASTM D 7313 as modified in 10.3.1) Fracture Energy, J/m^2	≥ 350 J/m^2	≥ 375 J/m^2	≥ 375 J/m^2	≥ 425 J/m^2
HWTT (WTM T324 as modified in 10.3.1) Rut Depth at 15,000 Passes, mm SIP, Passes Corrected Rut Depth at 20,000 Passes (CRD_{20k}), mm Stripping Number (LC_{SN}), Passes	 ≤ 12.5 ≥ 7,500 Report Report	 ≤ 12.5 ≥ 11,250 Report Report	 ≤ 12.5 ≥ 7,500 Report Report	 ≤ 12.5 ≥ 11,250 Report Report
IDEAL-CT (WTM D8225 as modified in 10.3.1) CT-Index	 Report	 Report	 Report	 Report

All performance testing samples will be reheated according to WTM R30 and WisDOT's most recent sample preparation guidance.

10.3.5.3 Nonconforming Materials

Density

If the average lot density falls below the minimum density listed in Table 8, the payment factors in Table 10 below will be applied:

Table 10 – Nonconforming Density Payment Factors

PERCENT LOT DENSITY BELOW SPECIFIED MINIMUM	PAYMENT FACTOR (PERCENT OF CONTRACT PRICE)
From 0.0 to 0.5	98
From 0.6 to 1.0	95
From 1.1 to 1.5	91
From 1.6 to 2.5	85
From 2.6 to 3.0	70
More than 3.0	Remove & Replace

Follow **CMM 815.11 – Procedure for Determining Limits of Unacceptable Material** if an individual density test falls more than 3.0% below the minimum density target. At the discretion of the engineer, the limits of unacceptable material will be determined and pay will be adjusted according to CMM 815.11.

HMA Mixture

At the Engineer's discretion, if the individual HMA property falls out of specification according to the City's third-party verification laboratory, the material payment will be reduced based on Table 11 below:

Table 11 – Nonconforming Mixture Payment Factors

HMA PROPERTY	PAYMENT FACTOR
Asphalt Content or P200	85
Air Voids (Va) or VMA	90

Assessed tonnage may include up to the total day's production. All available test data will be reviewed by the City and taken into consideration. The final assessed tonnage will be determined by the City at the City's sole discretion.

The Contractor may dispute the City's quality verification test results by having their retained sample tested in a separate, third party, AASHTO re:source accredited laboratory. The test results from the City's third party (AASHTO re:source) consultant laboratory and the Contactor's third party (AASHTO re:source) laboratory will be averaged for pay adjustments.

If at any time the DCT, Hamburg, Virgin PG Grading and/or Recovered PG Grading properties fall out of the specifications listed in Table 3, Table 4, and Table 9 according to the City's third-party verification laboratory, the City may require the Contractor to stop production. Production will not resume until the Contractor can provide corrective action documentation, along with satisfactory test results.

CITY OF JANESVILLE - STANDARD SPECIFICATIONS

PART 11 – STREET LIGHTS

11.1 GENERAL

11.1.1 Standards

Within the City of Janesville Standard Specifications are references to the latest editions of the Manual on Uniform Traffic Control Devices (MUTCD), WISDOT Construction and Materials Manual, and WISDOT Standard Specifications for Highway and Structure Construction.

See Section 1.1.2 - Referenced Materials in PART 1 – GENERAL PROVISIONS for access to the above-mentioned references.

11.1.1 Permits

The Contractor shall be required to obtain and pay all fees for a City of Janesville electrical permit prior to the start of construction. The permit shall be acquired from the Building and Development Services Division located on 3rd floor of City Hall, 18 N. Jackson Street. The Contractor shall be required to schedule all required inspections directly with the City Electrical Inspector.

11.1.2 Submittals

Any materials, items, processes, etc. requiring submittals for Engineer's review and approval shall be submitted, to the Engineer, by the Contractor a minimum of one (1) week prior to the contractor incorporating into the contract work. It will be the Engineer's sole discretion when requiring submittals.

11.1.3 Compaction

Where open excavations are created during the installation of street lighting components, backfill materials shall be compacted in accordance with the following:

a. In paved areas, compaction shall meet 95% Modified Proctor density below pavement subgrade.
b. In non-paved areas, compaction shall meet 85% Modified Proctor density below the topsoil interface.

Compaction testing will be completed by and at the discretion of the Engineer to ensure compliance.

11.2 CONDUIT

11.2.1 Materials

Conduit shall UL listed Schedule 40 PVC nonmetallic conduit. The conduit shall be 1 ½ ” or 2” diameter as specified in the contract documents.

11.2.2 Construction

Conduit shall be buried to a minimum depth of 24” and installed and joined per the manufacturer’s specifications.

11.3 CONDUCTOR WIRE

11.3.1 Materials

The conductor wire shall be UL listed. Wire within the light pole shall be THHN or THWN. All other wire shall be RHH, RHW, or USE. Wire size shall be as approved with the City electrical permit.

11.3.2 Construction

All wire shall be installed in accordance with the approved electrical permit. A 10 amp inline fuse shall be required at the connection within each light pole.

11.4 METER PEDESTAL

11.4.1 Materials

The meter pedestal shall be a Milbank pedestal, Catalog # MILB U5136-O-200S RL MTR DB, or equivalent as approved by the power utility. The optional 5th terminal kit shall be required when making a 208-volt connection.

11.4.2 Construction

The meter pedestal shall be installed per the manufacturer’s specifications and applicable electrical codes.

11.5 LIGHT POLE BASE

11.5.1 Materials

The light pole base shall be a Hubbell Powers Systems helical screw-in lighting foundation, Catalog # C11232JG4VL.

11.5.2 Construction

The light pole base shall be installed per the manufacturer’s specifications.

11.6 LIGHT POLE

11.6.1 Materials

The light pole shall be supplied by Flag Poles, Inc. of East Setauket, New York. All poles shall have a satin brush finish. The pole and mast arm shall be as defined below.

	Pole Height	Mast Arm Length	Catalog #
Residential Street	25’	4’	FPSLS84525C-1-4
Collector Street	30’	8’	FPSLS84530C-1-8
Arterial Street	35’	8’	FPSLS84535C-1-8

11.6.2 Construction

The light pole shall be installed per the manufacturer’s specifications.

11.7 LIGHT FIXTURE

11.7.1 Materials

The light fixture shall be Truly Green Solutions (TGS) as defined below or an equivalent TGS RWL G2 model as approved by the Engineer.

Street Type	Wattage	Lumens	Model #
Residential Street	40	5,200	RWL2-S-40-40-U-P7S-3-G
Collector Street	100	13,000	RWL2-M-100-40-U-P7S-3-G
Arterial Street	135	18,000	RWL2-M-135-40-U-P7S-3-G

The light fixture shall include a Tork photocell Catalog # 5237-UL.

11.7.2 Construction

The light fixture shall be installed per the manufacturer’s specification and applicable electrical codes.

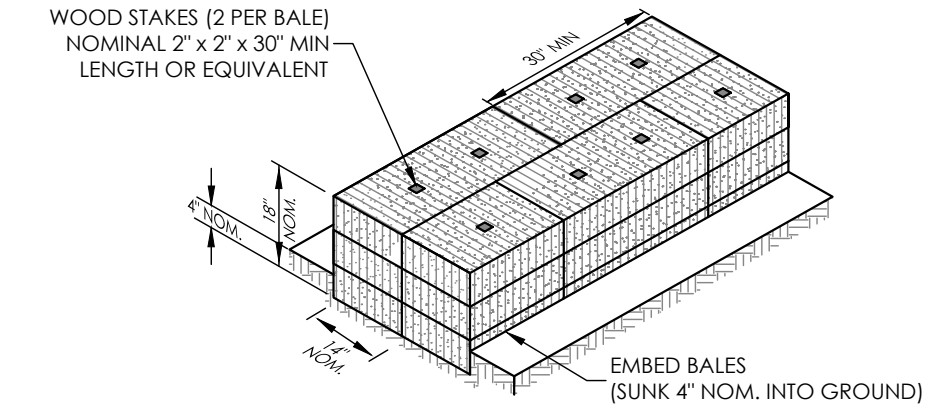
CITY OF JANESVILLE, WISCONSIN

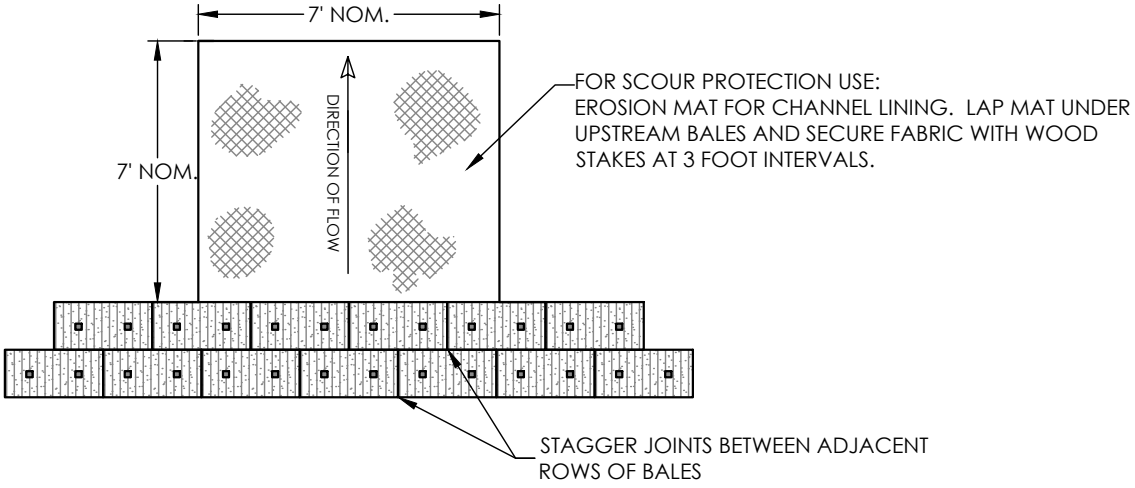
STANDARD SPECIFICATIONS
FOR
PUBLIC WORKS CONSTRUCTION
Detail Sheet Index

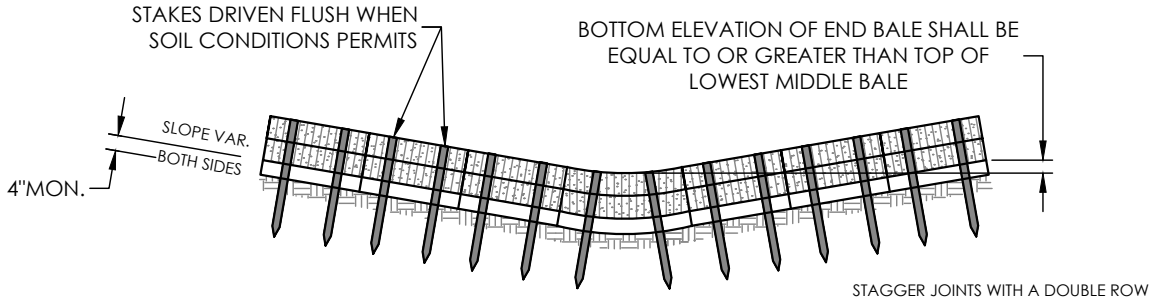
JANUARY 2013

REVISED NOVEMBER 1, 2024

NOTE:
ALL DIMENSIONS ARE APPROXIMATE



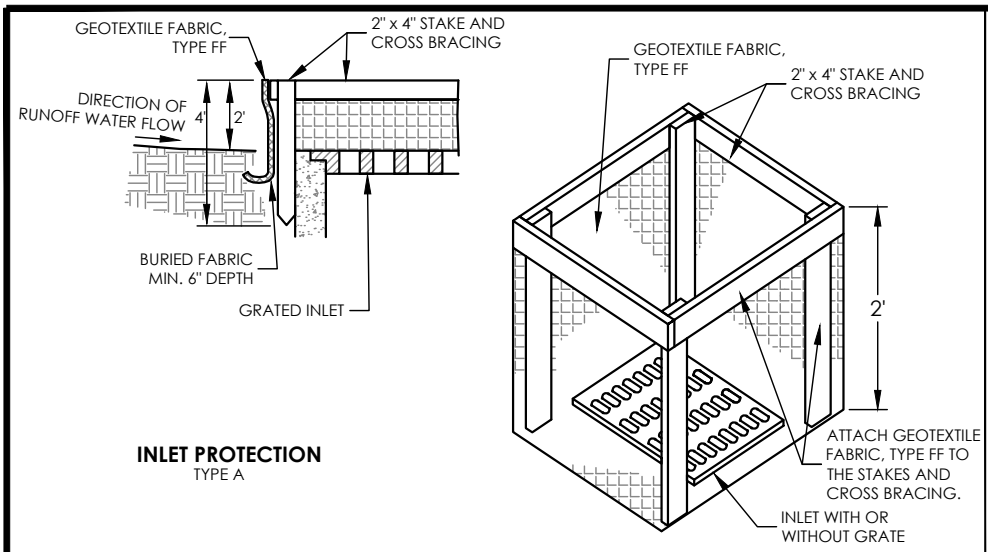




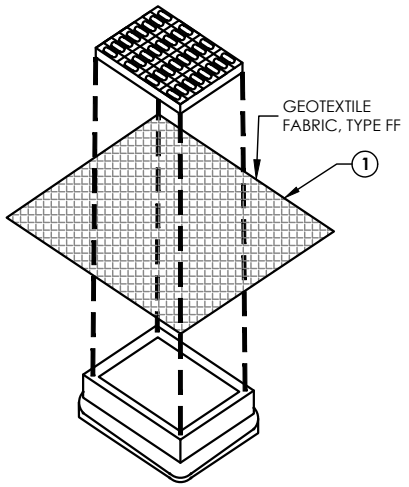
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES

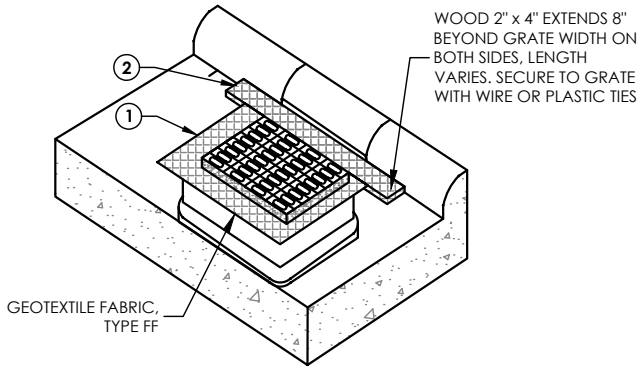
City of Janesville **Engineering Division** **January - 2013** **last revision: January 2013**	**DITCH CHECK, EROSION BALES**	NOT TO SCALE DETAIL # 1



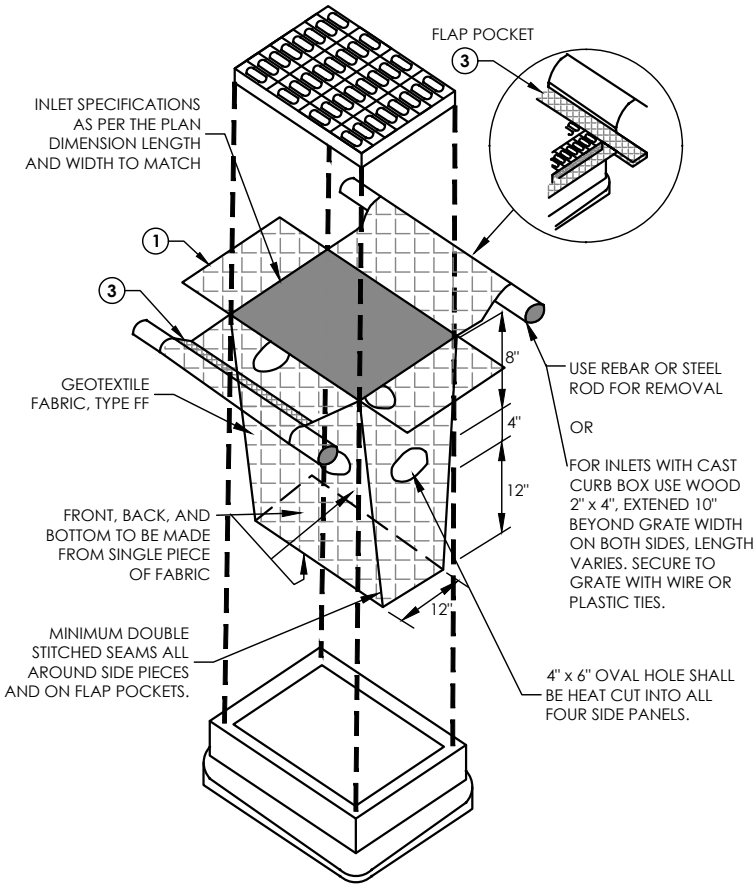
INLET PROTECTION
TYPE A



INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C
(WITH CURB BOX)



INLET PROTECTION, TYPE D
(CAN BE INSTALLED IN ANY INLET WITH OR WITHOUT A CURB BOX AS PER NOTE (2))

GENERAL NOTES:

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER. KEEP THE INLET PROTECTION IN PLACE AND MAINTAIN UNTIL THE DISTURBED CONTRIBUTING AREA IS STABILIZED, AS DETERMINED BY THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE D.O.T. EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEO-TEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

(1) FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETERS TO FACILITATE MAINTENANCE OR REMOVAL.

(2) FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING

(3) FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2" x 4".

INSTALLATION NOTES:

TYPE B & C
TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE. THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS, OR OTHER METHODS TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D
DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

City of Janesville
Engineering Division
January - 2013
last revision: January 2024

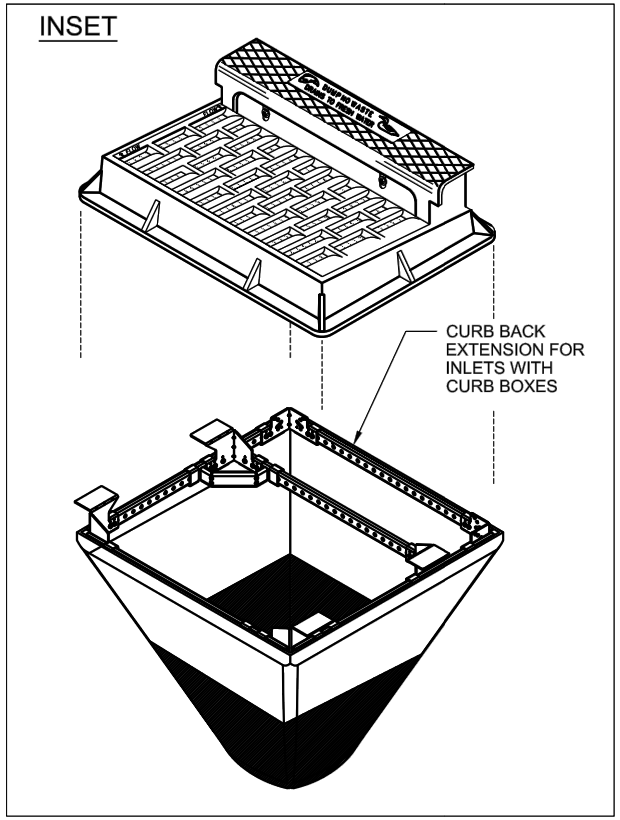
INLET PROTECTION

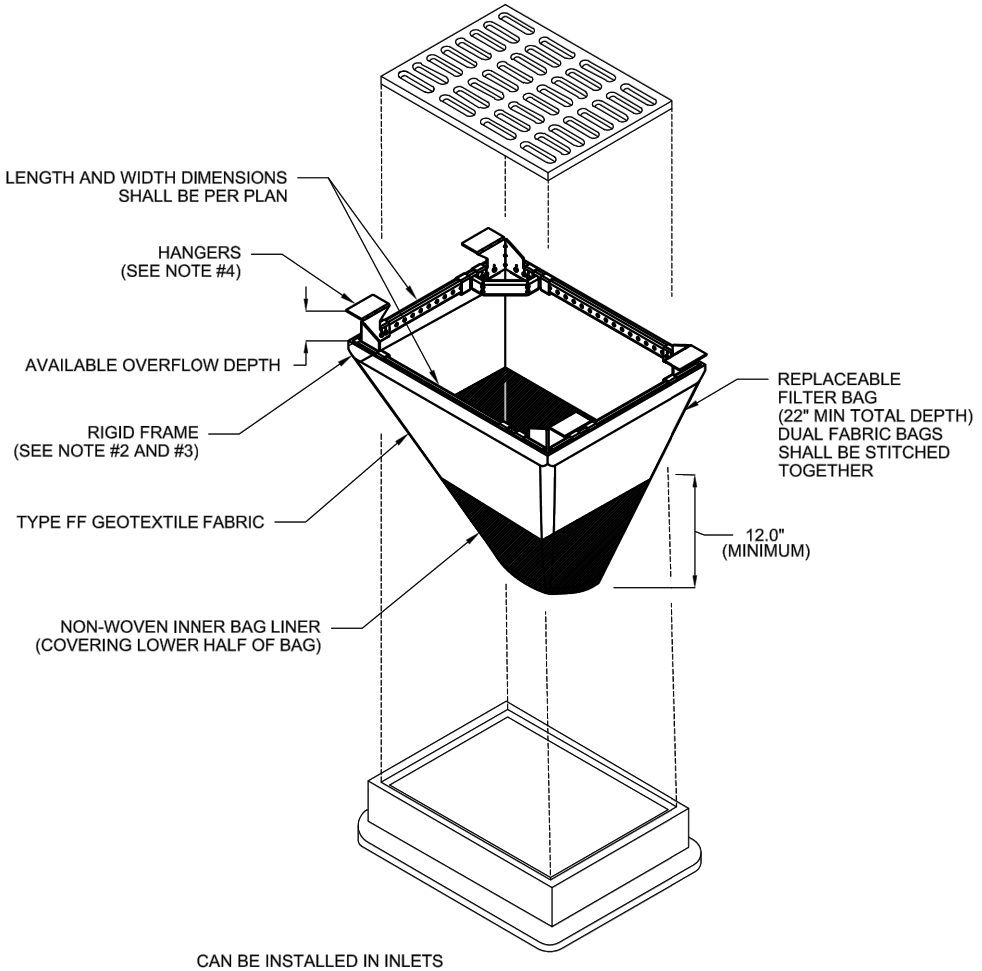
NOT TO SCALE

City of Janesville
Engineering Division
January - 2013
last revision: January 2025

INLET PROTECTION

TYPE D-RF INLET PROTECTION





CAN BE INSTALLED IN INLETS
WITH OR WITHOUT CURB BOXES

NOTES:

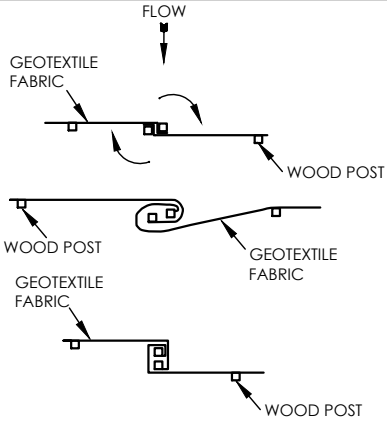
1. TAPER BOTTOM OF BAG TO MAINTAIN 3" OF CLEARANCE BETWEEN THE BAG AND THE STRUCTURE, MEASURED FROM THE BOTTOM OF THE OVERFLOW OPENINGS TO THE STRUCTURE WALL.
2. THE RIGID FRAME SHALL BE CONSTRUCTED OF GALVANIZED STEEL AND HAVE ADEQUATE STRENGTH TO SUPPORT THE WEIGHT OF THE SEDIMENT BAG WHEN COMPLETELY FULL.
3. THE RIGID FRAME SHALL NOT INTERFERE WITH OR ELEVATE THE GRATE MORE THAN 1/8".
4. DROP THE INLET FILTER THROUGH THE CLEAR OPENING SUCH THAT THE HANGERS REST FIRMLY ON THE LIP OF THE STRUCTURE.

MAINTENANCE NOTES:

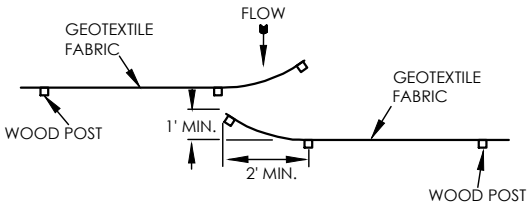
1. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED IN THE FABRIC DOES NOT FALL INTO THE STRUCTURE. MATERIAL THAT HAS FALLEN INTO THE STRUCTURE SHALL BE IMMEDIATELY REMOVED.

NOT TO SCALE

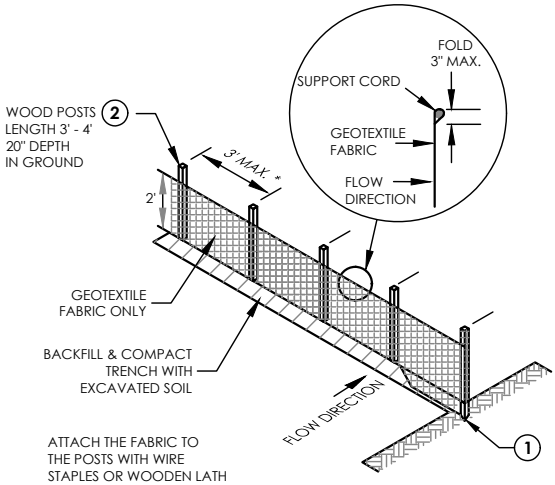
JOINING TWO LENGTHS OF SILT FENCE (3)



TWIST METHOD (A)



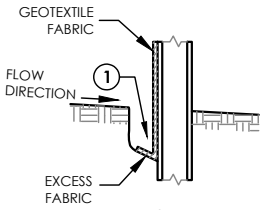
HOOK METHOD (B)



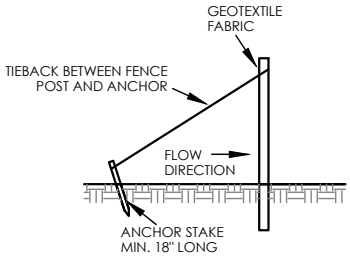
EDIT: 8' POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

SILT FENCE



TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN ADDITIONAL SUPPORT REQUIRED)

GENERAL NOTES:

(1) TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6 " DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH, BACKFILL, AND COMPACT TRENCH WITH EXCAVATED SOIL.

(2) WOOD POSTS SHALL BE A MINIMUM SIZE OF 1-1/8" x 1-1/8" OF HARDWOOD

(3) CONSTRUCT SILT FENCE FROM A CONTINOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS:

A) TWIST METHOD - OVERLAP THE END POSTS AND TWIST, OR ROTATE , AT LEAST 180 DEGREES

B) HOOK METHOD - HOOK THE END OF EACH SILT FENCE LENGTH

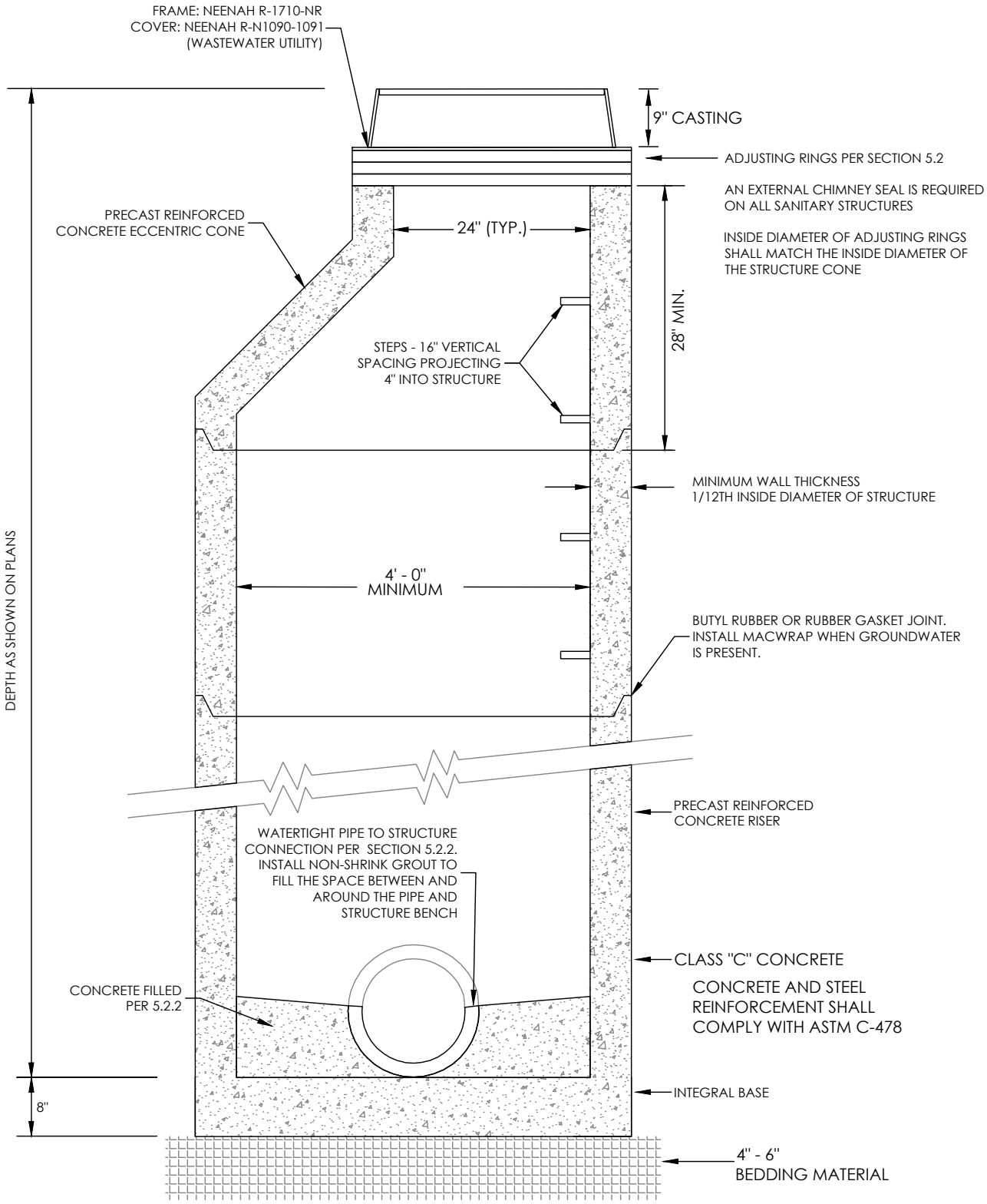
City of Janesville
Engineering Division
January - 2013

last revision: January 2013

SILT FENCE

NOT TO SCALE

DETAIL # 3



City of Janesville
Engineering Division
January - 2013

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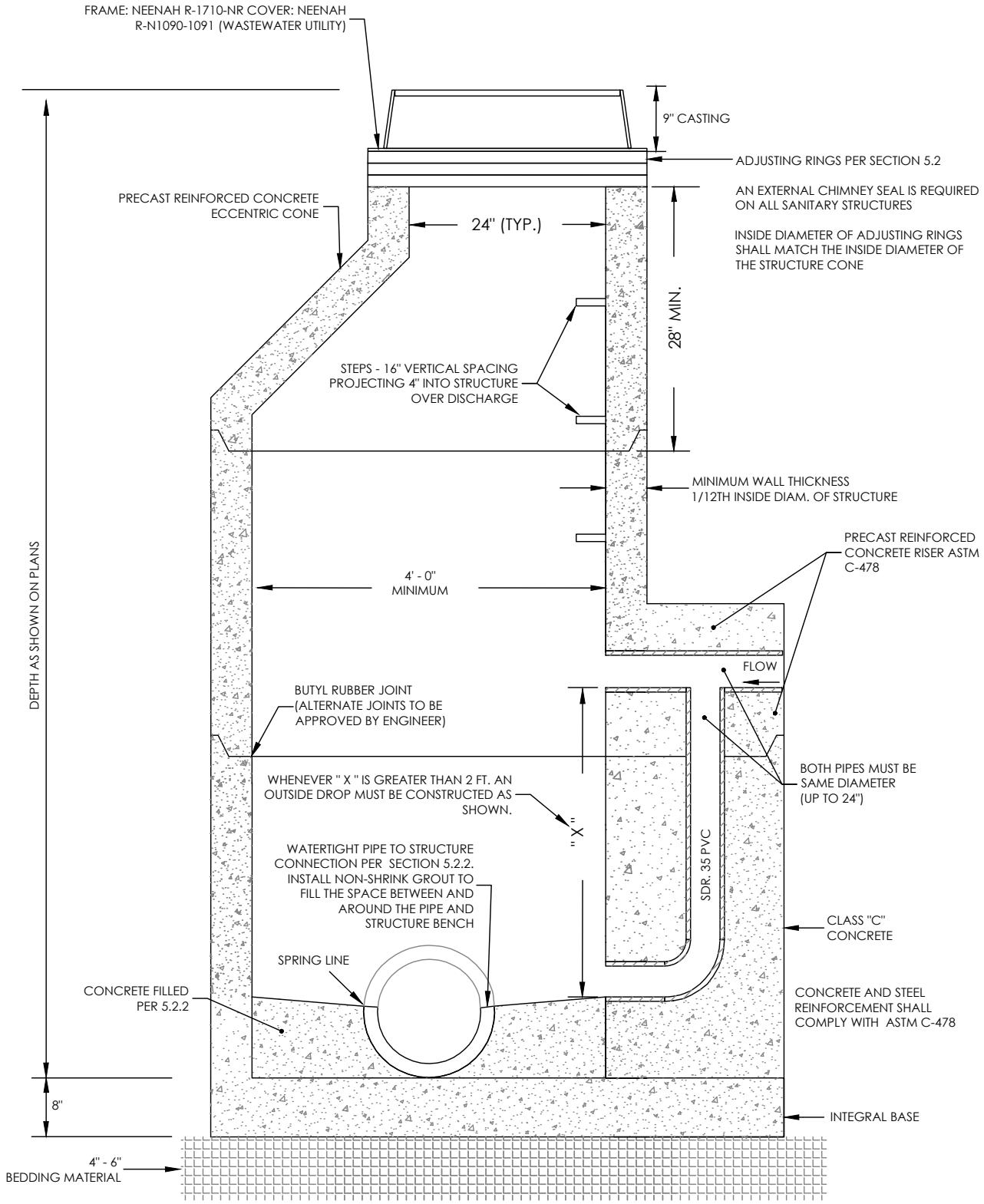
SANITARY STRUCTURE

NOT TO SCALE

DETAIL # 4



City of Janesville
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January - 2013

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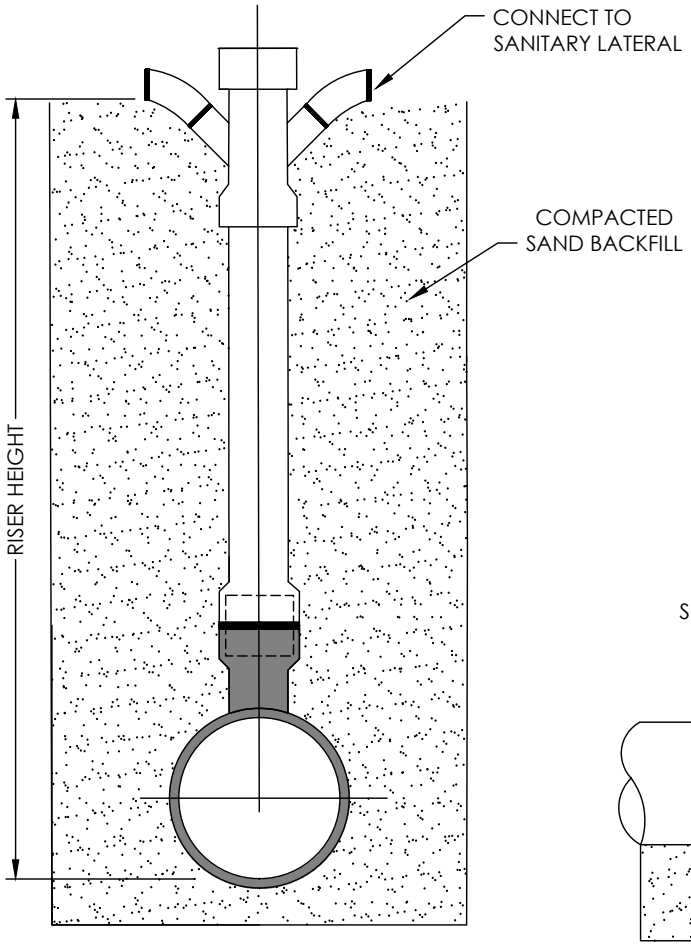
SANITARY DROP STRUCTURE

NOT TO SCALE

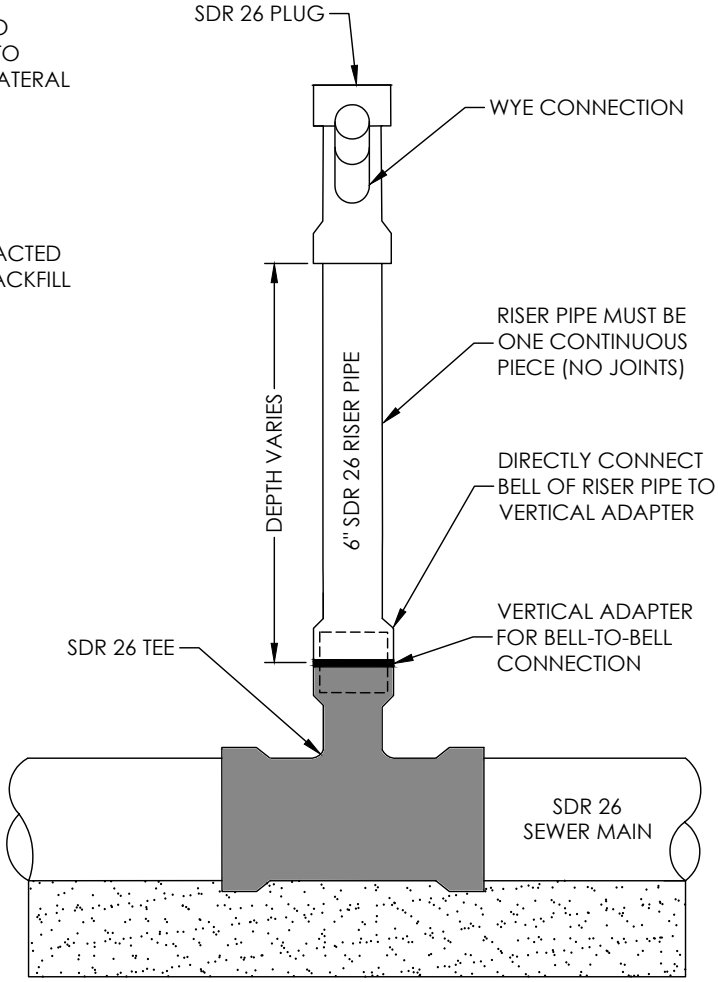
DETAIL # 5

NOTE:
A SANITARY RISER MAY ONLY BE INSTALLED IN LOCATIONS WHERE A DEEP LATERAL WILL CONFLICT WITH OTHER UTILITIES OR WHERE A REPAIR IS REQUIRED ON AN EXISTING RISER. A DEEP LATERAL (DETAIL #6A) SHALL BE INSTALLED IN ALL OTHER CASES.

NOTE: DOUBLE WYE SHOWN



FRONT VIEW



SIDE VIEW

NOTES:

- 6" SDR 26 TEE INSTALLED VERTICALLY
- 6" SDR 26 VERTICAL RISER ADAPTER
- 6" SDR 26 VERTICAL PIPE CUT TO LENGTH
- 6" X 4" SDR 26 DOUBLE WYE (SHOWN)
- 45° SDR 26 BEND(S) TO CONNECT TO 4" HORIZONTAL LATERALS
- 6" SDR 26 PLUG

LATERAL MATERIAL SHALL BE SDR 35 PVC IF DEPTH IS LESS THAN OR EQUAL TO 15 FEET.
LATERAL MATERIAL SHALL BE SDR 26 PVC IF DEPTH IS GREATER THAN 15 FEET.

City of Janesville
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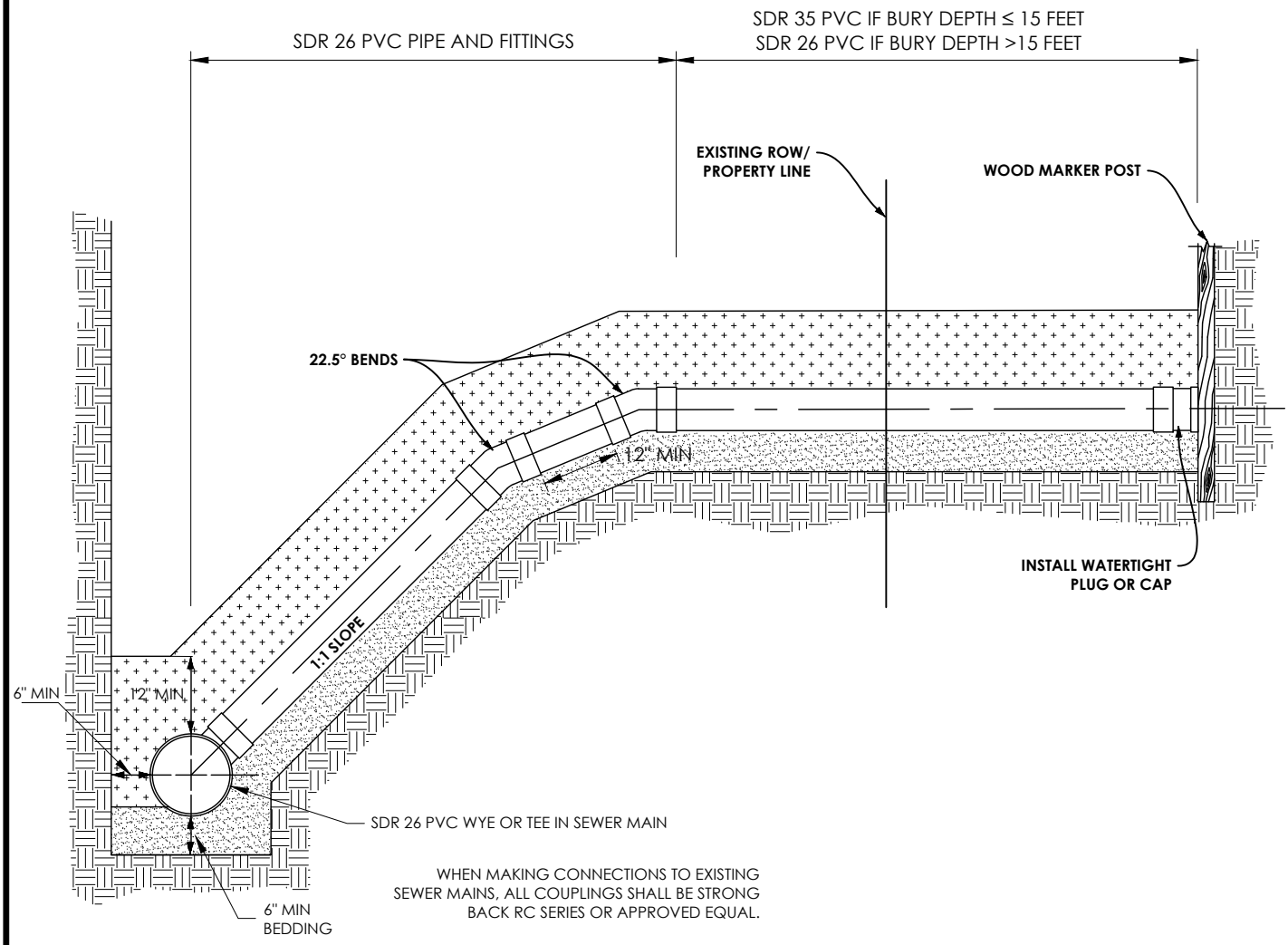
SANITARY RISER

NOT TO SCALE

DETAIL # 6



City of Janesville
Engineering Division
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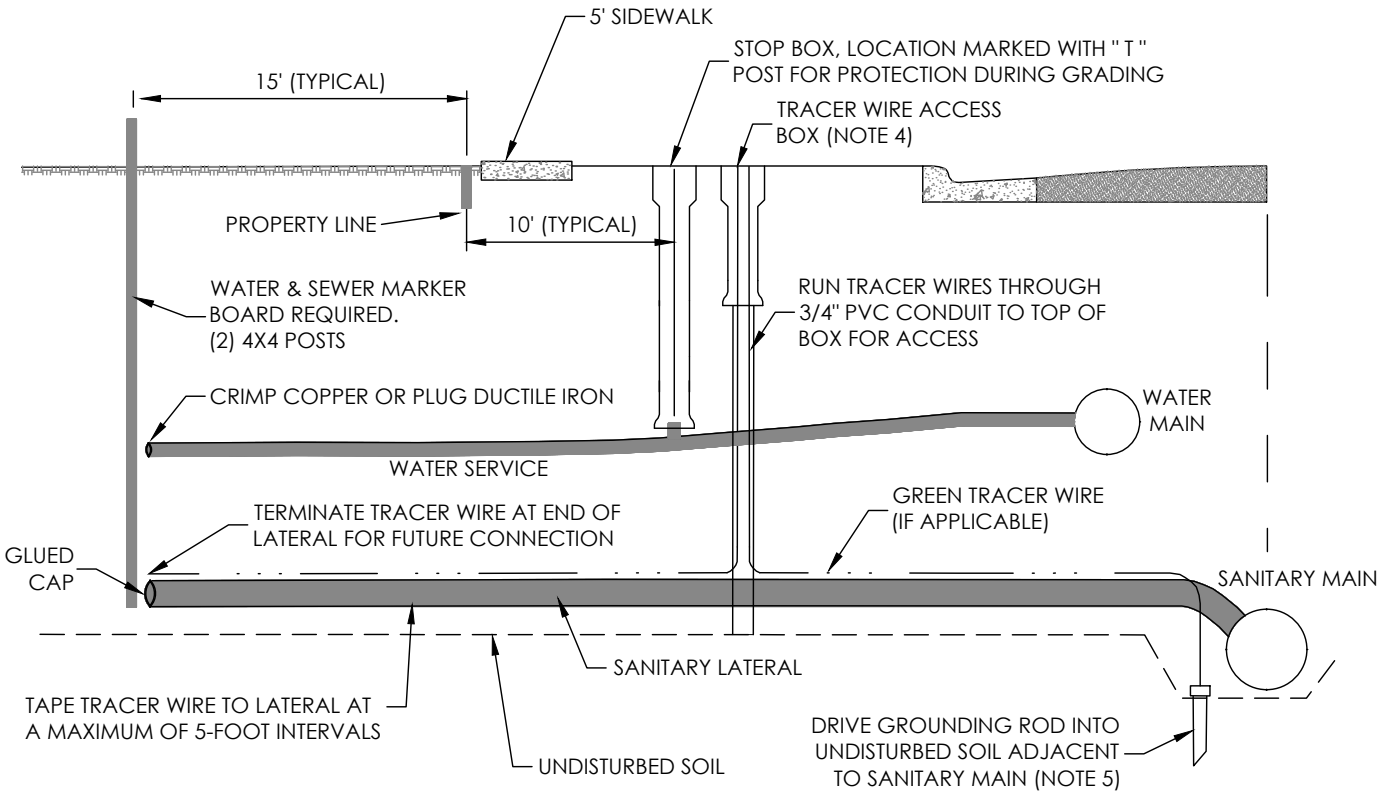
DEEP SANITARY LATERAL

NOT
TO
SCALE

DETAIL # 6A



NOTES:

1) IF THE SANITARY LATERAL HAS GREATER THAN 2' OF HORIZONTAL SEPARATION FROM THE WATER SERVICE, GREEN TRACER WIRE WILL BE INSTALLED AND ATTACHED TO A TRACER WIRE ACCESS BOX.

2) TRACER WIRE SHALL BE 12-AWG HIGH STRENGTH, HIGH CARBON WITH MINIMUM 450 LB BREAK LOAD AND MINIMUM 30 MIL HDPE INSULATION. TRACER WIRE SHALL BE MADE BY COPPERHEAD INDUSTRIES OR APPROVED EQUAL AND BE MANUFACTURED IN THE USA.

3) ANY TRACER WIRE THAT IS SPLICED TOGETHER SHALL BE CONNECTED WITH THE SNAKEBITE LOCKING CONNECTOR (LSC1230C) BY COPPERHEAD INDUSTRIES.

4) ON SANITARY LATERALS, TRACER WIRE ACCESS BOX SHALL BE THE SNAKEPIT ACCESS BOX WITH TWO-TERMINAL SWITCHABLE LID. ACCESS BOX SHALL BE SECURED TO THE TOP OF A 3/4" SCH 40 PVC CONDUIT INSTALLED VERTICALLY.

5)ON WATER SERVICES, TRACER WIRE ACCESS BOX SHALL BE THE BOABOX 150 WATER ACCESS POINT BY COPPERHEAD INDUSTRIES. TRACER WIRE IS REQUIRED ON COPPER WATER SERVICES WHEN SERVICES ARE CONNECTED TO PVC WATER MAINS. THE BOABOX 150 SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

6) GROUNDING RODS SHALL BE A 1.5-LB DRIVE-IN MAGNESIUM GROUND ROD (ANO-12) MANUFACTURED BY COPPERHEAD INDUSTRIES OR APPROVED EQUAL.

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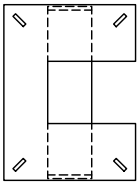
SANITARY SEWER AND WATER SERVICES

NOT TO SCALE

DETAIL # 7

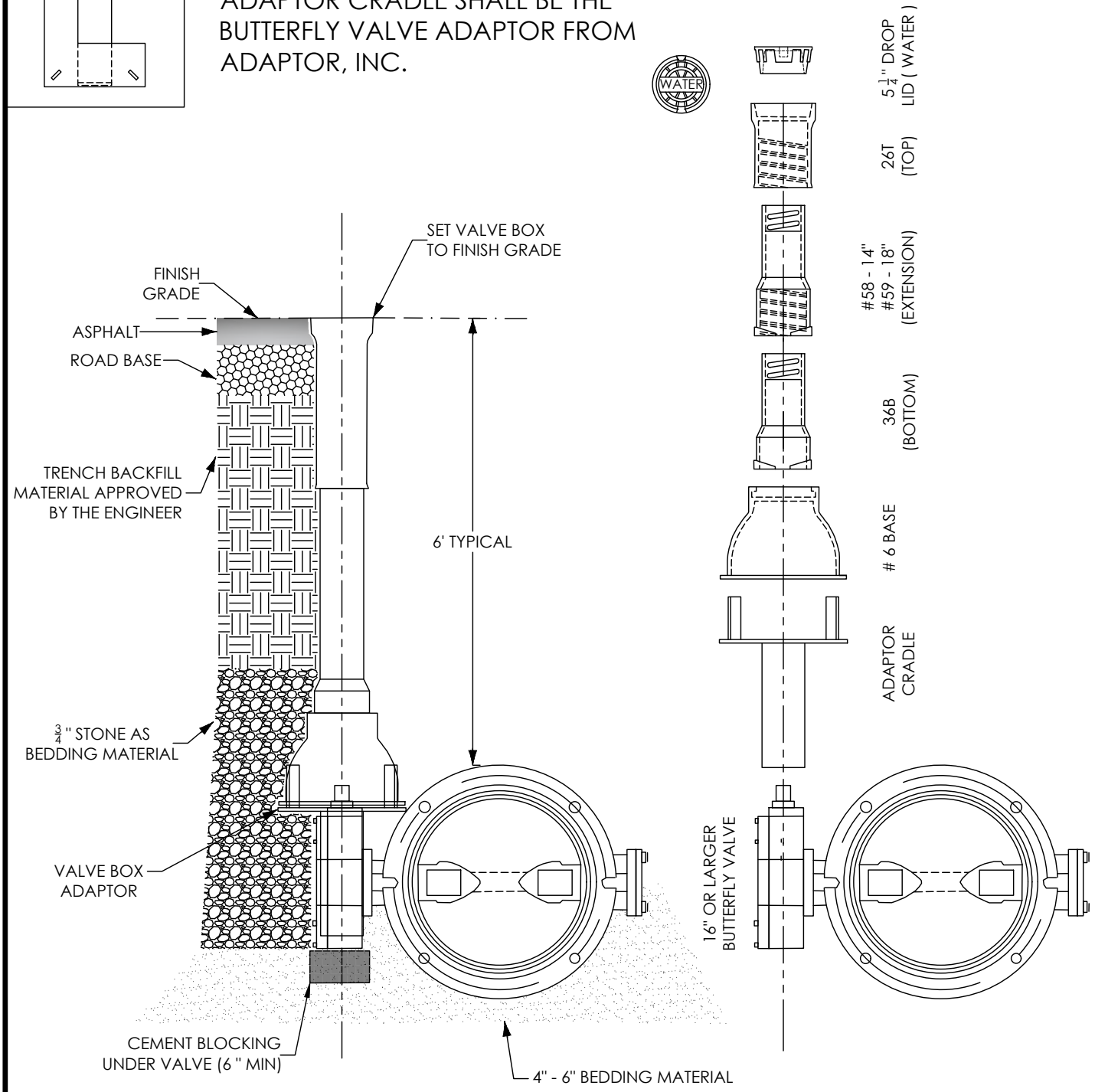
ADAPTOR
TOP VIEW

CRADLE



ALL VALVE BOXES SHALL BE 3-PIECE, USA MADE EAST JORDAN 8560 SERIES OR TYLER UNION 6860 SERIES HEAVY DUTY SCREW TYPE (DD)

ADAPTOR CRADLE SHALL BE THE BUTTERFLY VALVE ADAPTOR FROM ADAPTOR, INC.



City of Janesville
Engineering Division
January - 2013

last revision: January 2025

BUTTERFLY VALVE AND VALVE BOX

NOT TO SCALE

DETAIL # 8

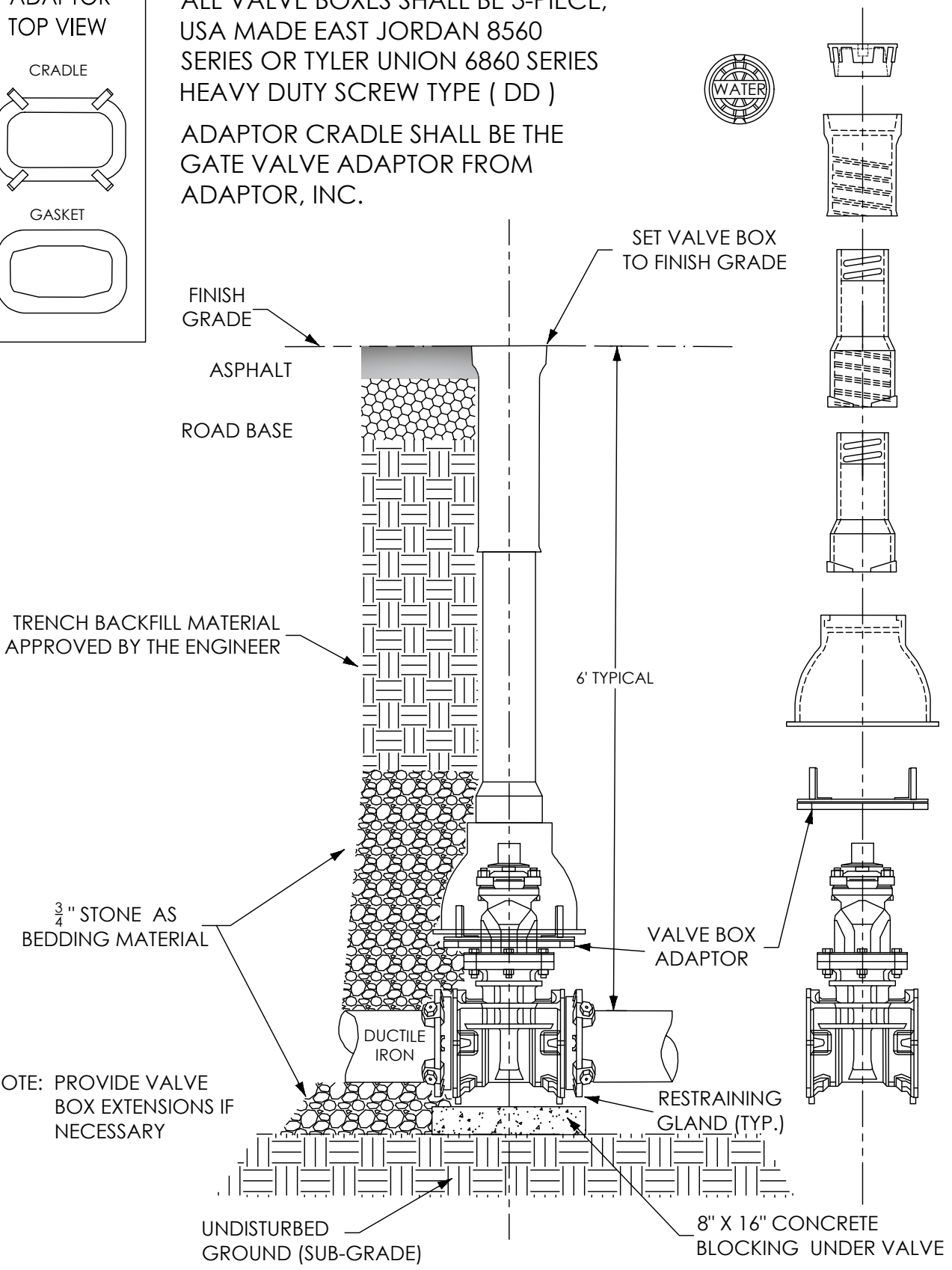
ADAPTOR
TOP VIEW

CRADLE

GASKET

ALL VALVE BOXES SHALL BE 3-PIECE, USA MADE EAST JORDAN 8560 SERIES OR TYLER UNION 6860 SERIES HEAVY DUTY SCREW TYPE (DD)

ADAPTOR CRADLE SHALL BE THE GATE VALVE ADAPTOR FROM ADAPTOR, INC.



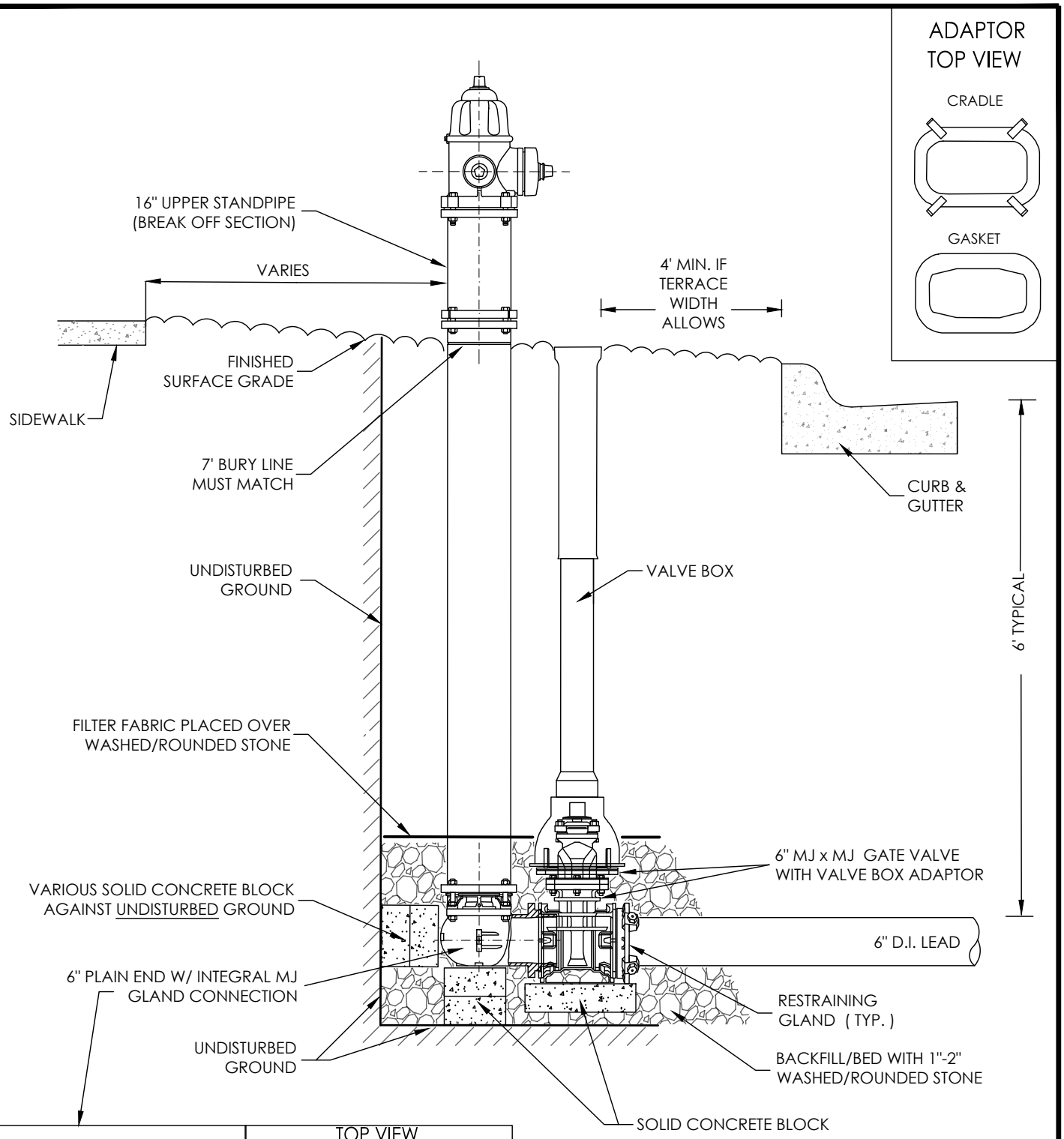
City of Janesville
Engineering Division
January - 2020

last revision: January 2025

GATE VALVE AND VALVE BOX

NOT TO SCALE

DETAIL # 8A



City of Janesville
Engineering Division
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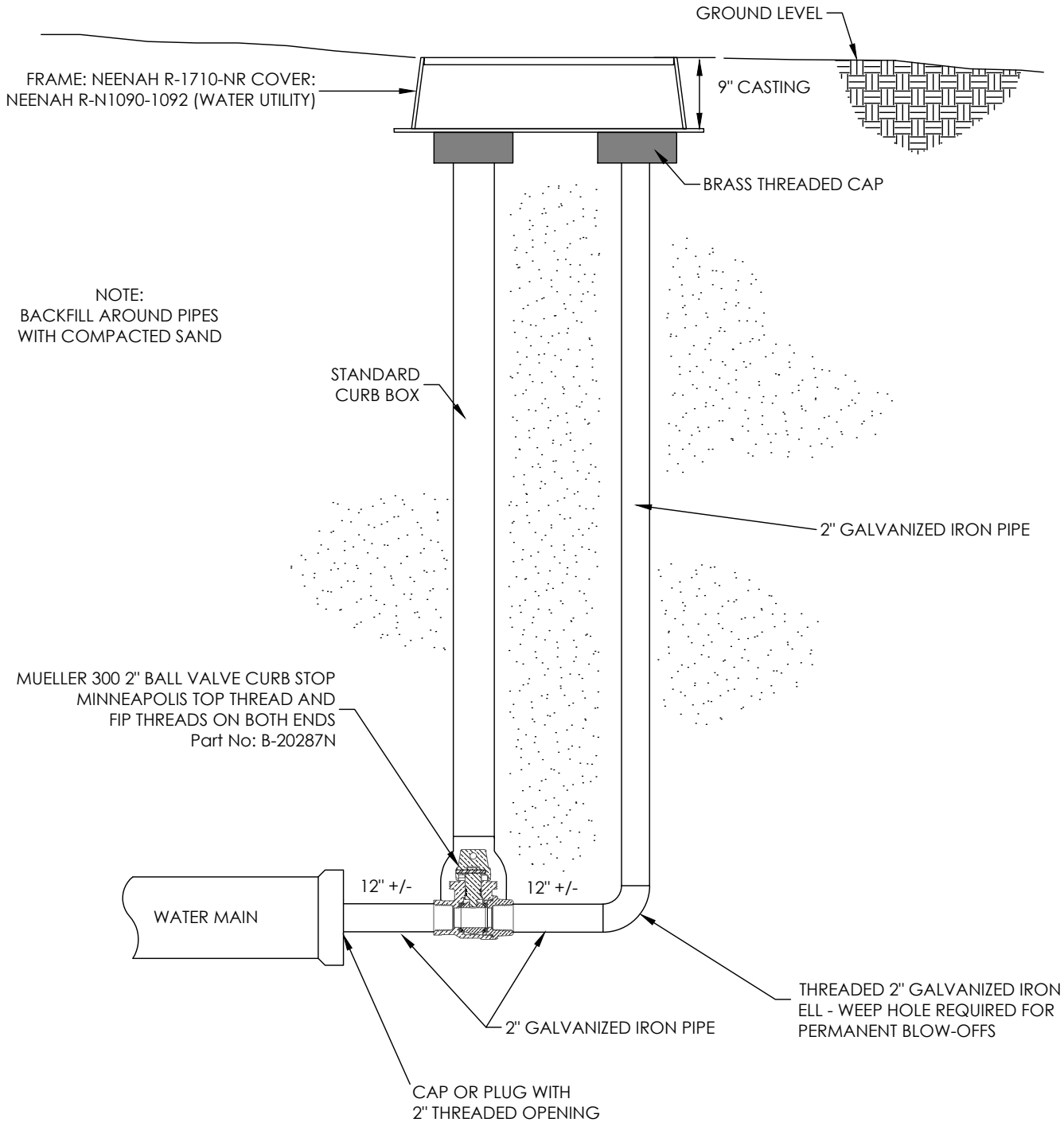
last revision: January 2023

HYDRANT

NOT
TO
SCALE

DETAIL # 9



City of Janesville
Engineering Division
January - 2013

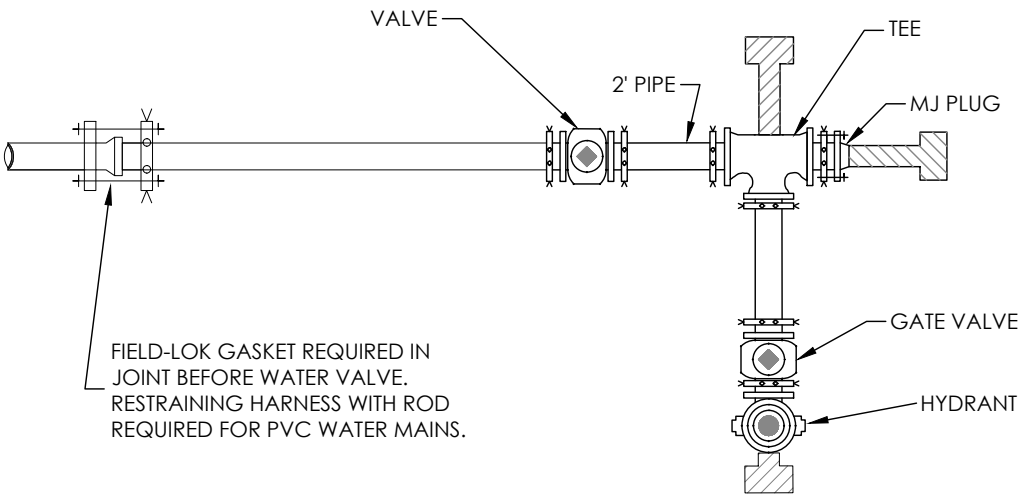
last revision: January 2022

WATER MAIN BLOW-OFF CONNECTION

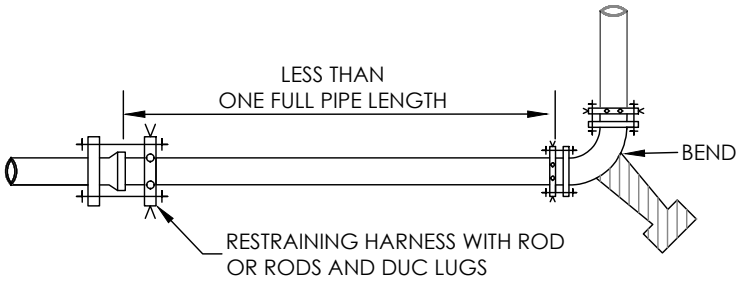
NOT
TO
SCALE

DETAIL # 10

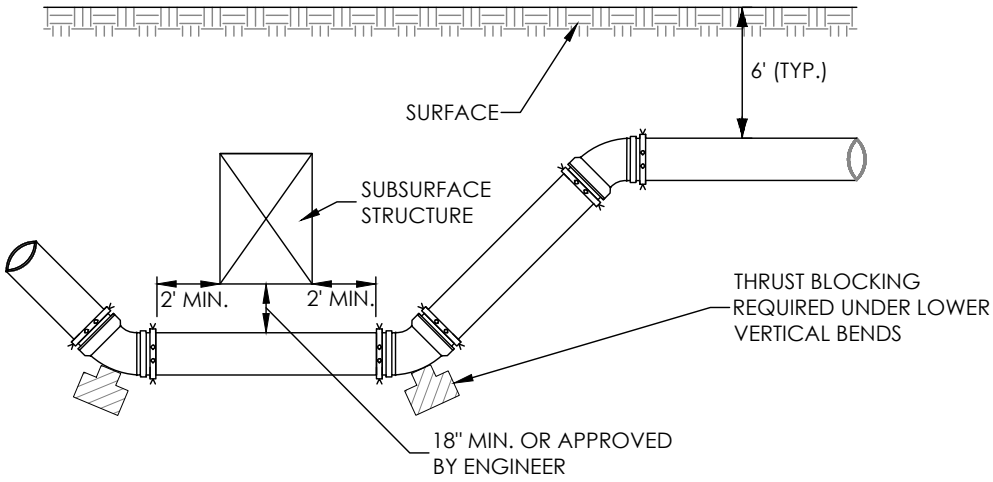
PLAN VIEW



NOTE:
THRUST BLOCKING MUST BE INSTALLED FIRMLY BETWEEN A TEE, BEND, OR PLUG AND UNDISTURBED SOIL

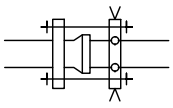


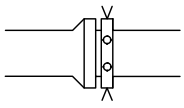
PROFILE VIEW

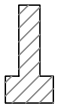


NOTE:
SEE FILE NO. 44 - 47A OF STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION IN WISCONSIN FOR ADDITIONAL DETAILS AND MINIMUM BLOCKING DIMENSIONS.

LEGEND


RESTRAINING HARNESS WITH ROD


DUC LUGS OR MEGA-LUG GLANDS


PRECAST CONCRETE BLOCKING FOR 12" MAINS OR SMALLER.
CAST-IN-PLACE BLOCKING FOR MAINS LARGER THAN 12", UNLESS OTHERWISE APPROVED BY ENGINEER.

City of Janesville
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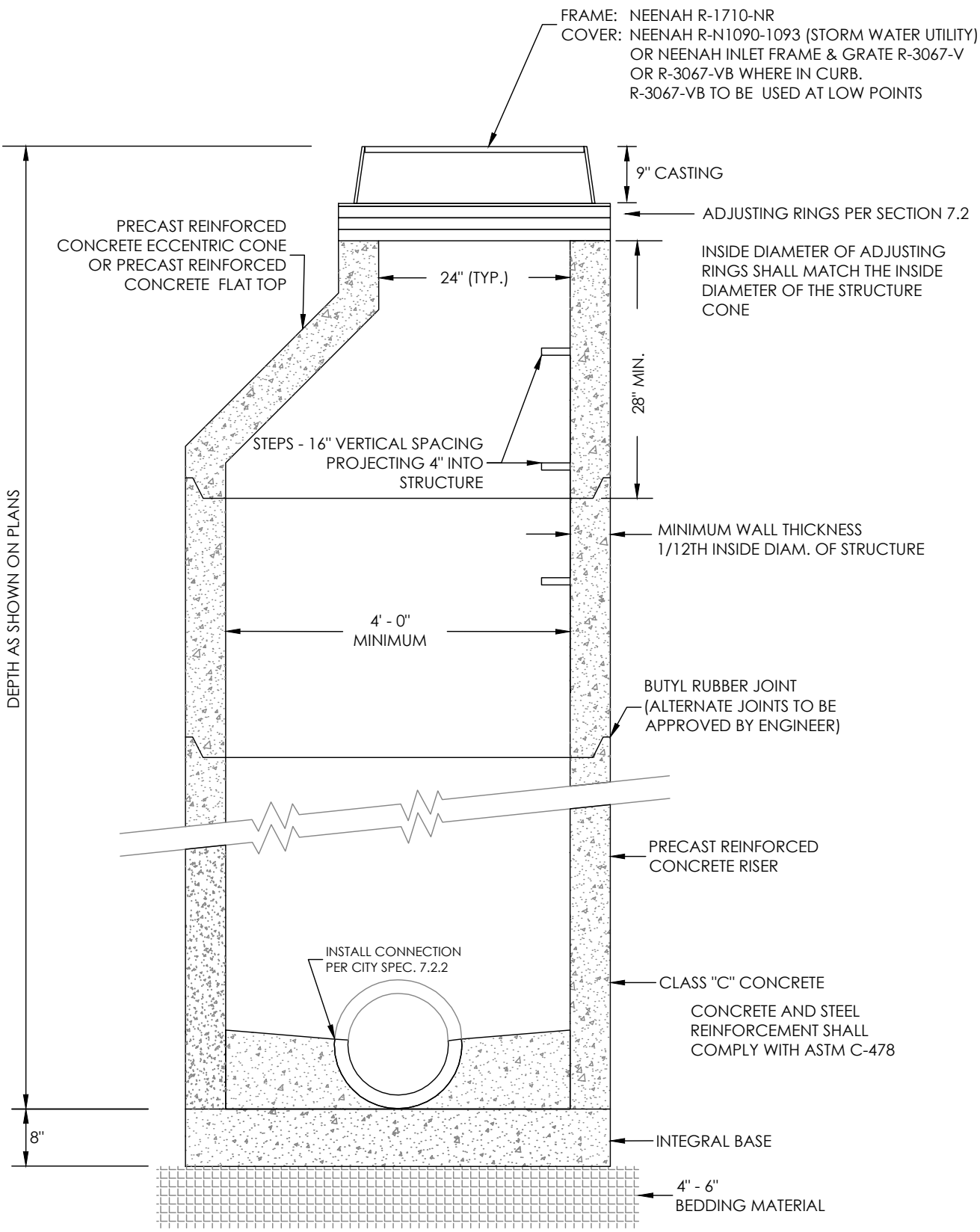
PIPE RESTRAINTS

NOT TO SCALE

DETAIL # 11



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January - 2013

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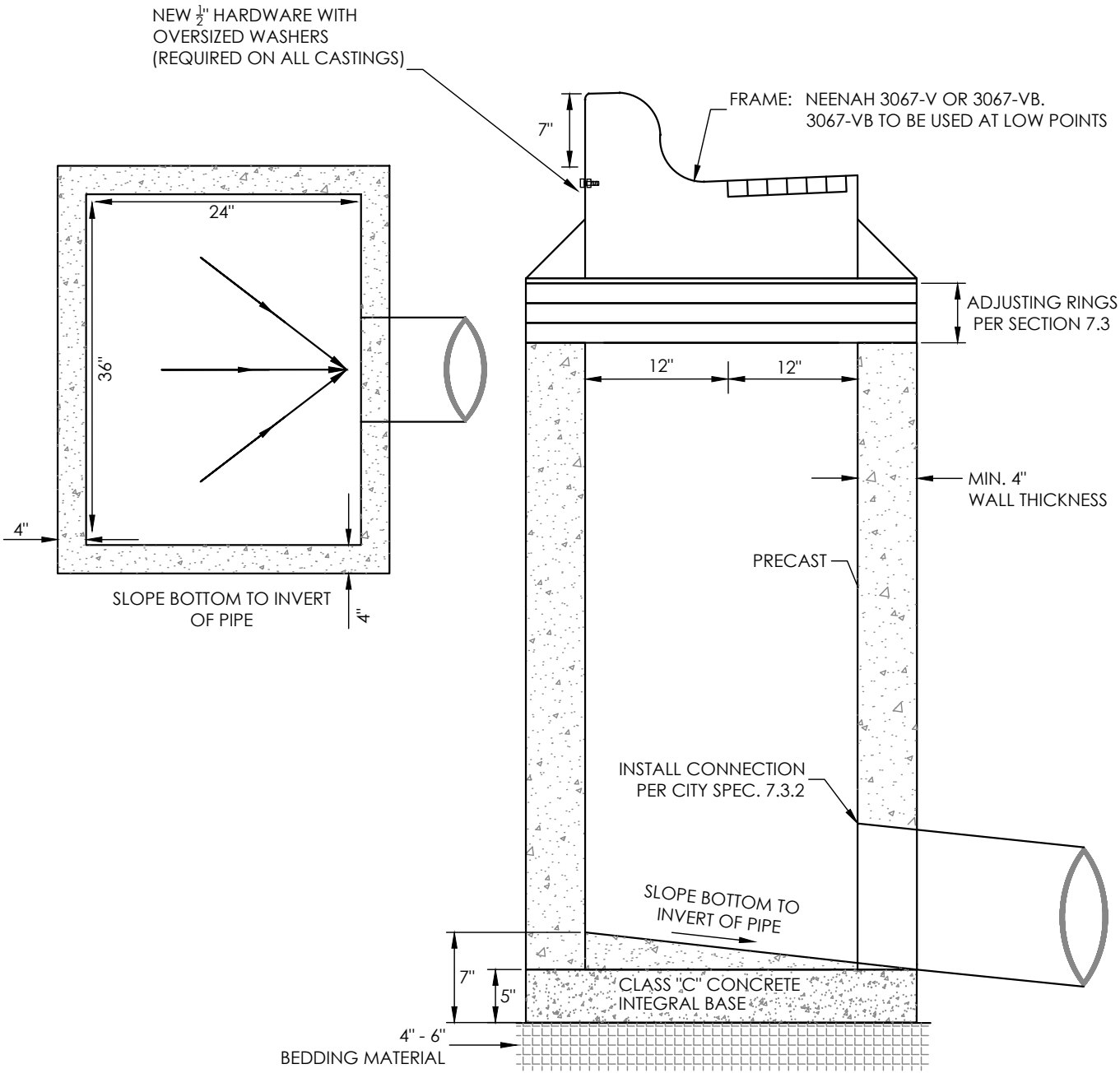
STORM STRUCTURE

NOT TO SCALE

DETAIL # 12



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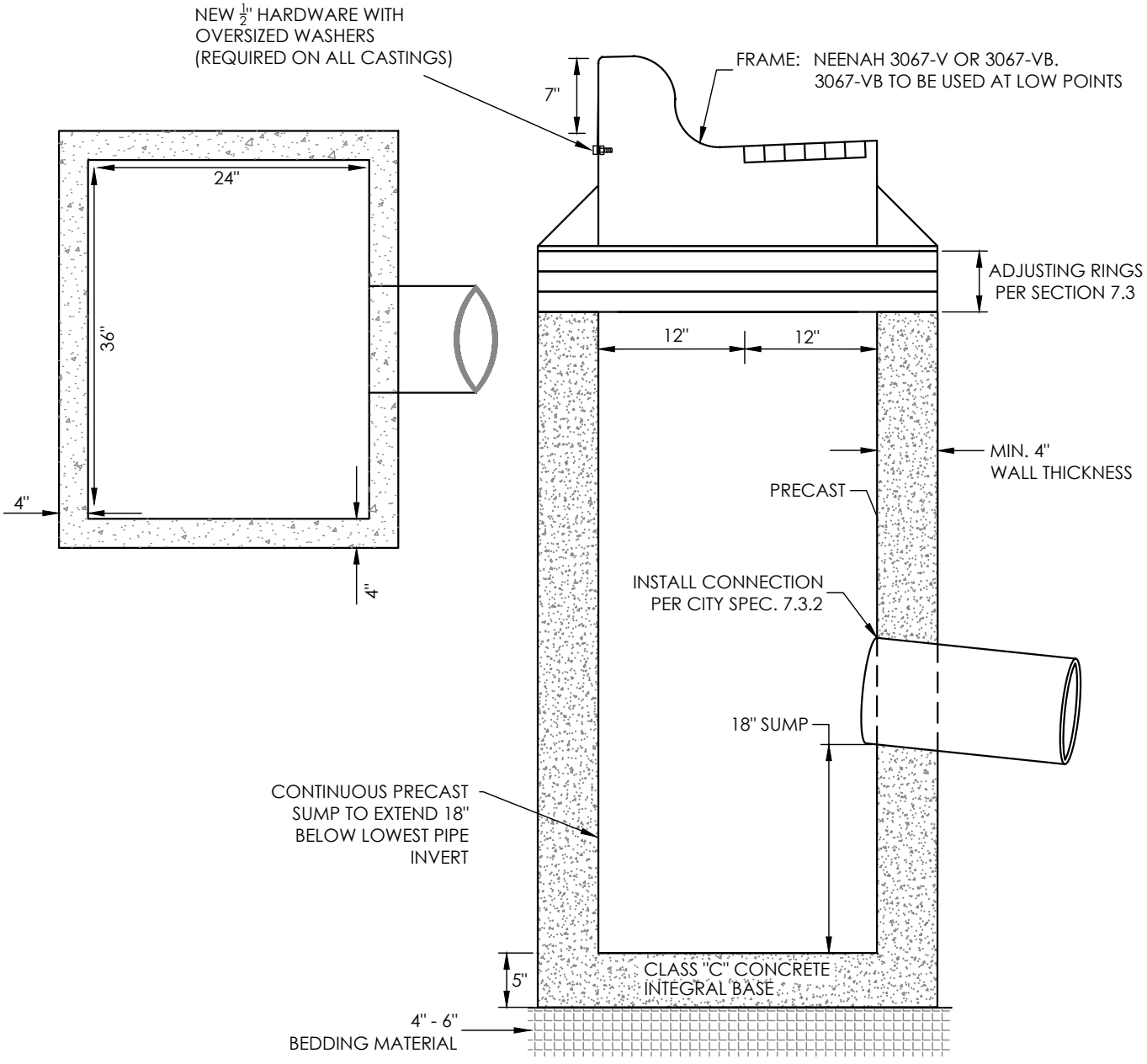
STORM INLET

NOT
TO
SCALE

DETAIL # 13



City of Janesville
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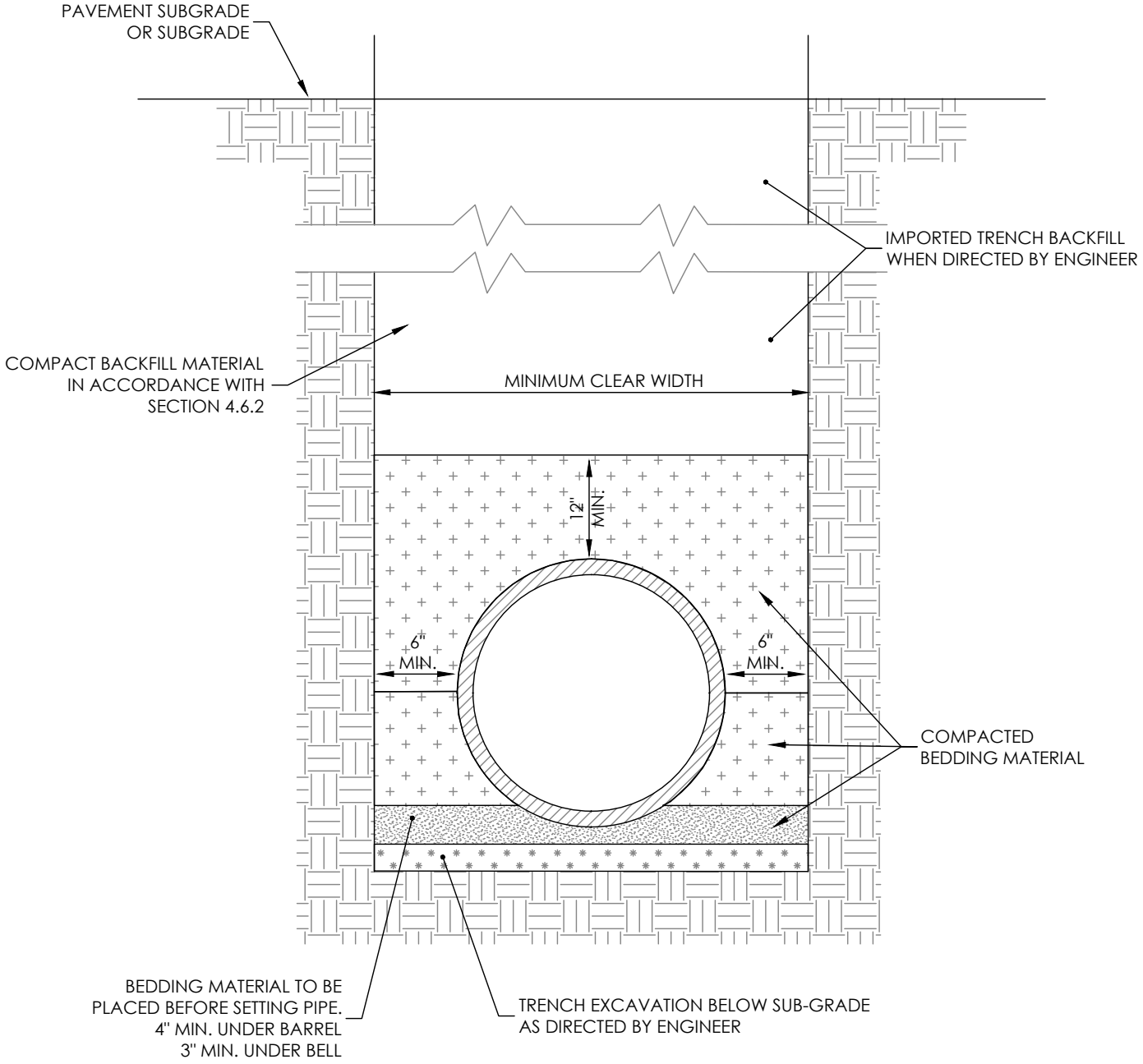
last revision: January 2024

STORM INLET WITH SUMP

NOT
TO
SCALE

DETAIL # 14



NOTE:
USE 1" WASHED STONE WHEN TRENCH
IS WET OR AS DIRECTED BY ENGINEER

City of Janesville
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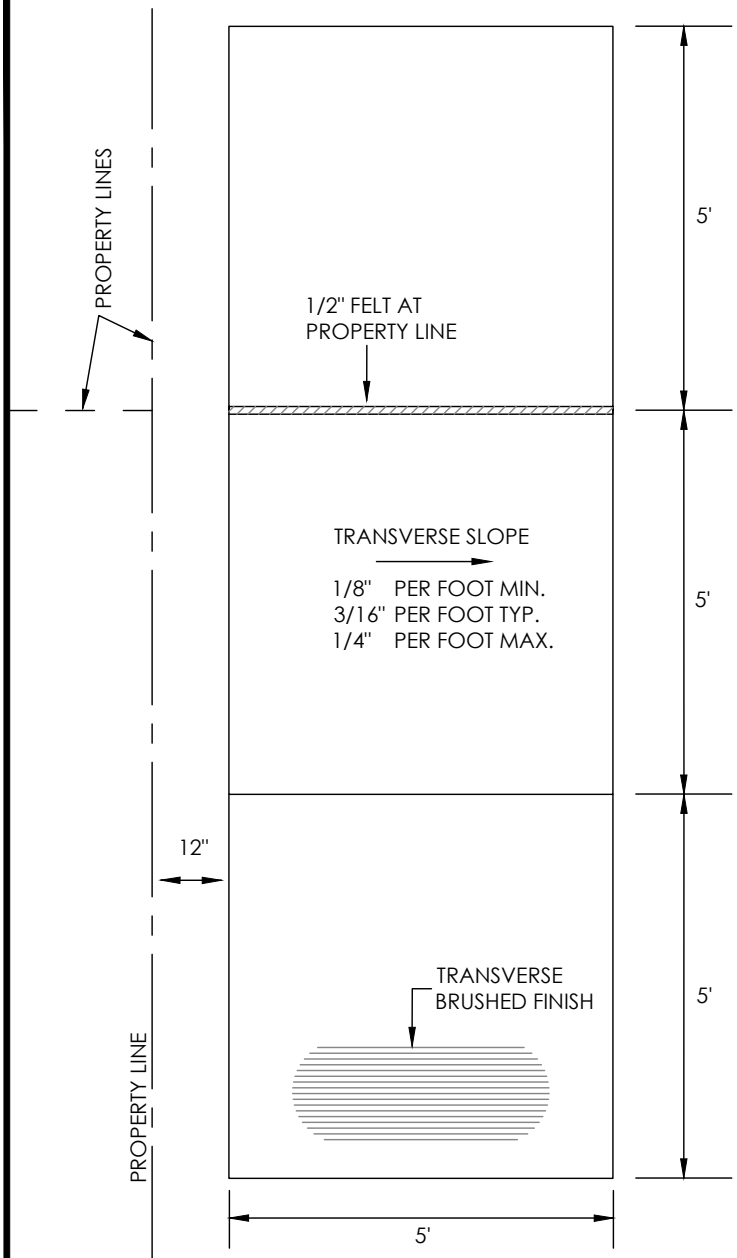
TRENCH BACKFILL

NOT
TO
SCALE

DETAIL # 15



NOTE:

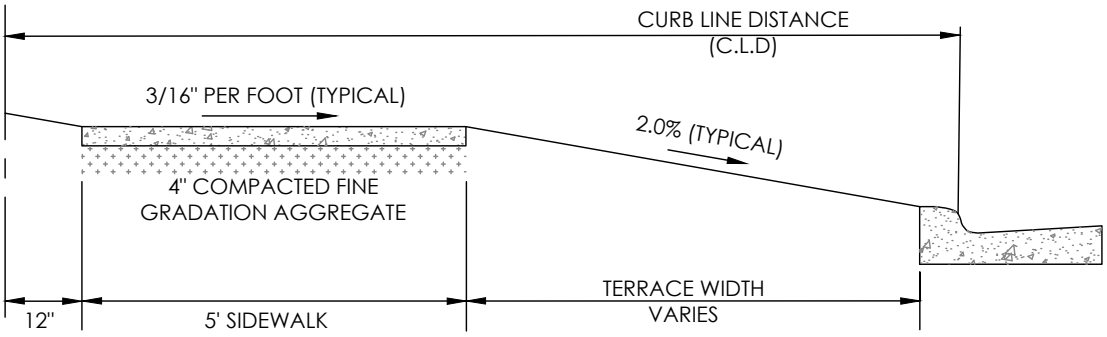
MINIMUM SIDEWALK DEPTH IS 4"

MINIMUM SIDEWALK DEPTH THRU DRIVEWAY IS 6"

SIDEWALK THRU INDUSTIRAL
DRIVEWAYS MAY NEED TO BE 8" (OR GREATER)

* AT DRIVEWAY OPENING LOCATIONS IN NARROW TERRACE AREAS, CHECK WITH THE CITY ENGINEER OR SIDEWALK INSPECTOR FOR PROPER DIMENSIONS AND GRADES

* IF TERRACE SLOPES AWAY FROM THE CURB CHECK WITH THE SIDEWALK INSPECTOR FOR PROPER DIMENSION AND GRADES.



City of Janesville
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last revision: January 2016

NEW SIDEWALK

NOT TO SCALE

City of Janesville
Engineering Division
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last revision: January 2016

NEW SIDEWALK

Curb Line Distance	Terrace Width	Terrace Slope	Driveway Approach Slope	Elevation of Front of Walk above the top of curb terrace slopes = 2.0%		Elevation of Back of Walk above the top of curb (standard 5.0' sidewalk width & standard 6" high curb)					
						at 1/8" per ft. = 1.04% Min.		at 3/16" per ft. = 1.56% Typ.		at 1/4" per ft. = 2.08% Max.	
feet	feet	%	%	feet	inches	feet	inches	feet	inches	feet	inches
9	2.5	2.00	18.3	0.05	5/8"	0.10	1-1/4"	0.13	1-9/16"	0.15	1-7/8"
10	3.5	2.00	14.3	0.07	13/16"	0.12	1-7/16"	0.15	1-3/4"	0.17	2-1/16"
11	4.5	2.00	11.8	0.09	1-1/16"	0.14	1-11/16"	0.17	2"	0.19	2-5/16"
12	5.5	2.00	10.2	0.11	1-5/16"	0.16	1-15/16"	0.19	2-1/4"	0.21	2-9/16"
13	6.5	2.00	9.0	0.13	1-9/16"	0.18	2-3/16"	0.21	2-1/2"	0.23	2-13/16"
14	7.5	2.00	8.1	0.15	1-13/16"	0.20	2-7/16"	0.23	2-3/4"	0.25	3-1/16"
15	8.5	2.00	7.4	0.17	2-1/16"	0.22	2-11/16"	0.25	3"	0.27	3-5/16"
16	9.5	2.00	6.9	0.19	2-1/4"	0.24	2-7/8"	0.27	3-3/16"	0.29	3-1/2"
17	10.5	2.00	6.5	0.21	2-1/2"	0.26	3-1/8"	0.29	3-7/16"	0.31	3-3/4"
18	11.5	2.00	6.1	0.23	2-3/4"	0.28	3-3/8"	0.31	3-11/16"	0.33	4"
19	12.5	2.00	5.8	0.25	3"	0.30	3-5/8"	0.33	3-15/16"	0.35	4-1/4"
20	13.5	2.00	5.5	0.27	3-1/4"	0.32	3-7/8"	0.35	4-3/16"	0.37	4-1/2"
21	14.5	2.00	5.3	0.29	3-1/2"	0.34	4-1/8"	0.37	4-7/16"	0.39	4-3/4"
22	15.5	2.00	5.1	0.31	3-3/4"	0.36	4-3/8"	0.39	4-11/16"	0.41	5"
23	16.5	2.00	4.9	0.33	3-15/16"	0.38	4-9/16"	0.41	4-7/8"	0.43	5-3/16"
24	17.5	2.00	4.7	0.35	4-3/16"	0.40	4-13/16"	0.43	5-1/8"	0.45	5-7/16"
25	18.5	2.00	4.6	0.37	4-7/16"	0.42	5-1/16"	0.45	5-3/8"	0.47	5-11/16"
26	19.5	2.00	4.5	0.39	4-11/16"	0.44	5-5/16"	0.47	5-5/8"	0.49	5-15/16"
27	20.5	2.00	4.3	0.41	4-15/16"	0.46	5-9/16"	0.49	5-7/8"	0.51	6-3/16"
28	21.5	2.00	4.2	0.43	5-3/16"	0.48	5-13/16"	0.51	6-1/8"	0.53	6-7/16"
29	22.5	2.00	4.1	0.45	5-3/8"	0.50	6"	0.53	6-5/16"	0.55	6-5/8"
30	23.5	2.00	4.0	0.47	5-5/8"	0.52	6-1/4"	0.55	6-9/16"	0.57	6-7/8"

1) A 9.5' wide or wider terrace width typically provides for desirable drive approach slopes and ADA compliant curb ramp slopes of 7% or less .

2) Where terrace widths are less than 9.5' wide adjustments will likely be necessary to provide ADA compliant curb ramps at corners and mid block crossings. Contact the City's sidewalk inspector prior to installation.

3) Where existing conditions are such that the terrace slopes away from the curb and gutter instead of toward the curb & gutter contact the City sidewalk inspector to discuss sidewalk grades prior to installation.

4) One inch (1") of fall across a five foot (5') wide sidewalk = 1.667% or just over 3/16" per foot transverse slope.

NOT TO SCALE

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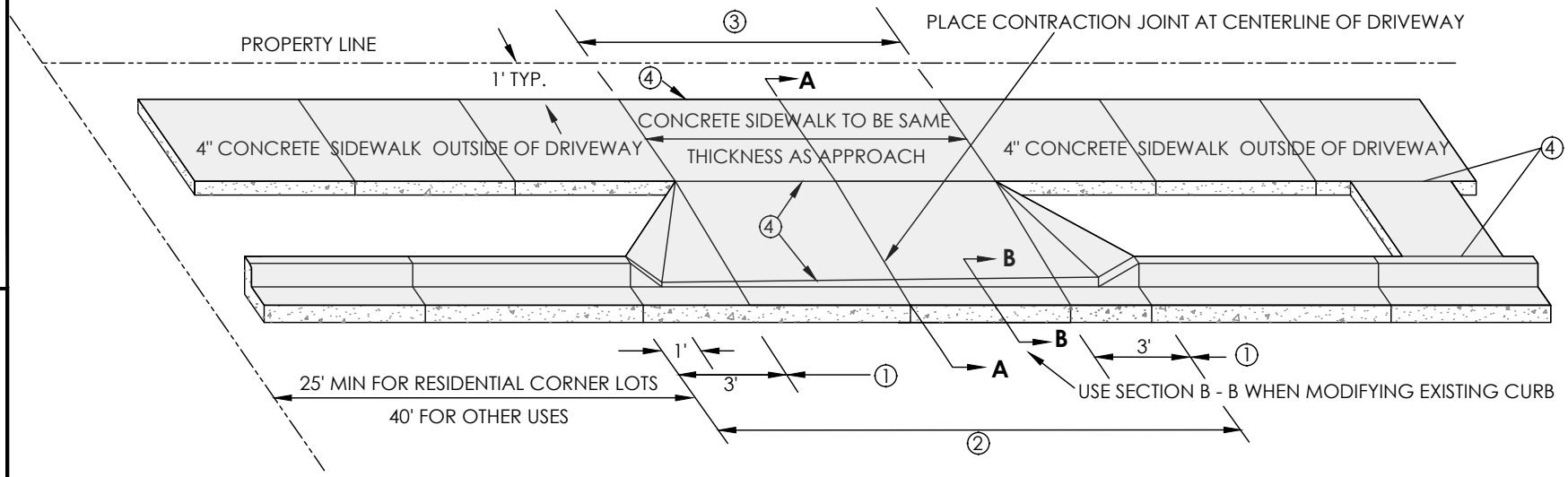
DRIVEWAY APPROACH



THESE STANDARDS APPLY FOR SINGLE OR DOUBLE DRIVEWAYS. DOUBLE DRIVEWAYS SHALL HAVE AT LEAST 10' ON EACH PROPERTY. APPROACHES SHALL BE 6" CONCRETE OR 2" ASPHALT (MIN) FOR SINGLE FAMILY AND DUPLEX RESIDENTIAL DRIVEWAYS. APPROACHES FOR COMMERCIAL, INDUSTRIAL, OR MULTI-FAMILY RESIDENTIAL SITES MAY NEED TO BE 8" CONCRETE OR THICKER.

THE SITE PLAN REVIEW COORDINATOR AND CITY ENGINEER MAY APPROVE WIDER OPENINGS FOR SPECIAL CONDITIONS.

REMOVE AND REPLACE THE ENTIRE CURB AND GUTTER THROUGH THE DRIVEWAY OPENING OR PROFILE SAW CUT AND REMOVE THE CURB HEAD USING A CONCRETE SAW DESIGNED FOR THIS PURPOSE.

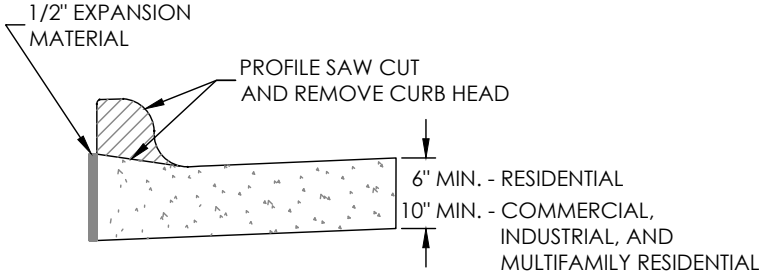
① DRIVEWAY FLARE ON EACH SIDE SHALL EQUAL 0.6 TIMES THE DISTANCE BETWEEN THE WALK AND THE BACK OF THE CURB, BUT NOT TO EXCEED 3 FEET.

② 30' MAX RESIDENTIAL WITH 1 CAR GARAGE
36' MAX RESIDENTIAL WITH 2 OR 3 CAR GARAGE AND USES OTHER THAN RESIDENTIAL
42' MAX DUPLEX 2 CAR SIDE-BY-SIDE
PER APPROVED SITE PLAN FOR COMMERCIAL, INDUSTRIAL AND MULTI-FAMILY RESIDENTIAL SITES

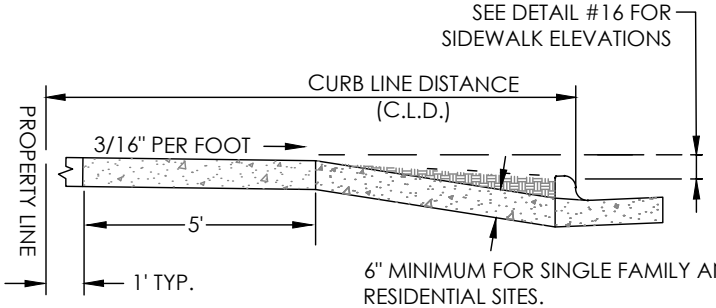
③ 24' MAX RESIDENTIAL WITH 1 CAR GARAGE
30' MAX RESIDENTIAL WITH 2 OR 3 CAR GARAGE AND USES OTHER THAN RESIDENTIAL
36' MAX DUPLEX 2 CAR SIDE-BY-SIDE

④ EXPANSION JOINT MATERIAL

NOTE: A CURB OPENING PERMIT IS REQUIRED FOR SINGLE FAMILY AND DUPLEX RESIDENTIAL SITES. SITE PLAN APPROVAL IS REQUIRED FOR COMMERCIAL, INDUSTRIAL, AND MULTI-FAMILY RESIDENTIAL SITES.
CONTACT THE BUILDING AND DEVELOPMENT SERVICES DIVISION 608-755-3060.



SECTION B - B

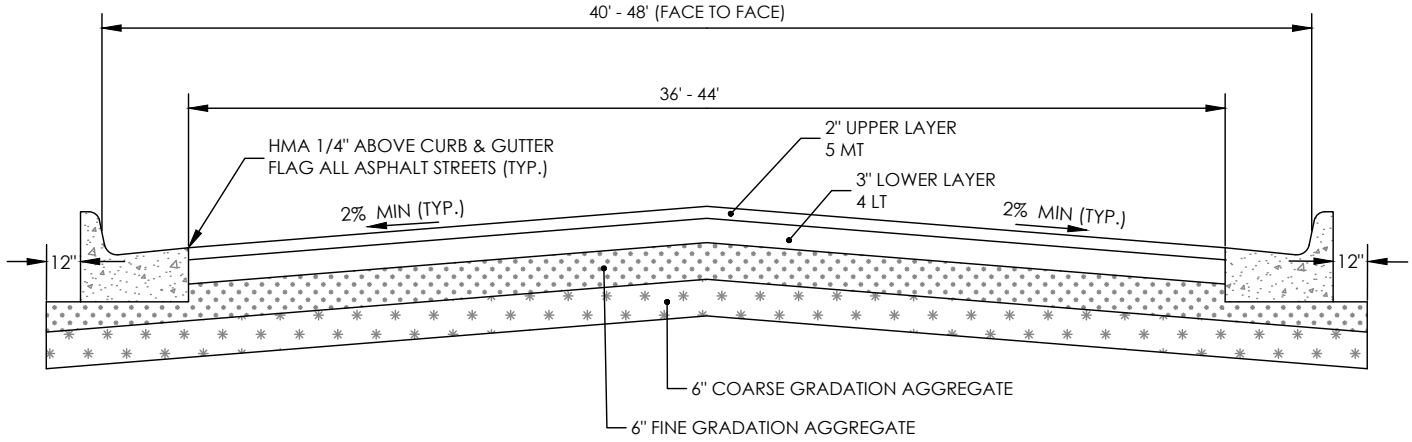


SECTION A - A

6" MINIMUM FOR SINGLE FAMILY AND DUPLEX RESIDENTIAL SITES.
8" OR THE THICKNESS REQUIRED BY SITE PLAN REVIEW COORDINATOR FOR COMMERCIAL, INDUSTRIAL, OR MULTI-FAMILY RESIDENTIAL SITES.

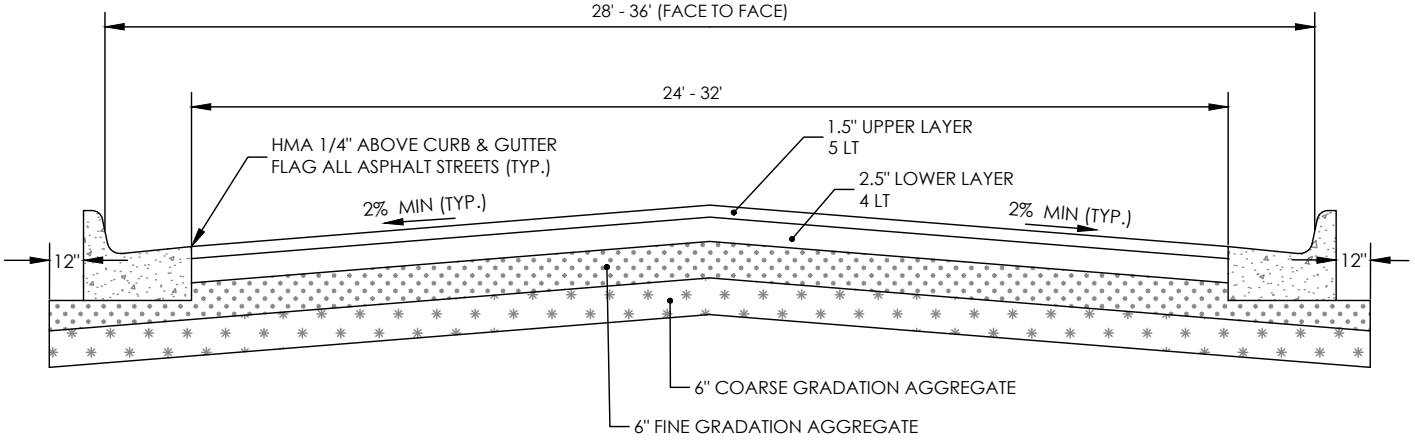
NOT TO SCALE

DETAIL # 17



ARTERIAL TYPICAL SECTION

NOTE: ALL HOT MIX ASPHALT PAVEMENT SHALL BE PER SECTION 10.3 OF THE CURRENT CITY OF JANESVILLE STANDARD SPECIFICATIONS



NON-ARTERIAL TYPICAL SECTION

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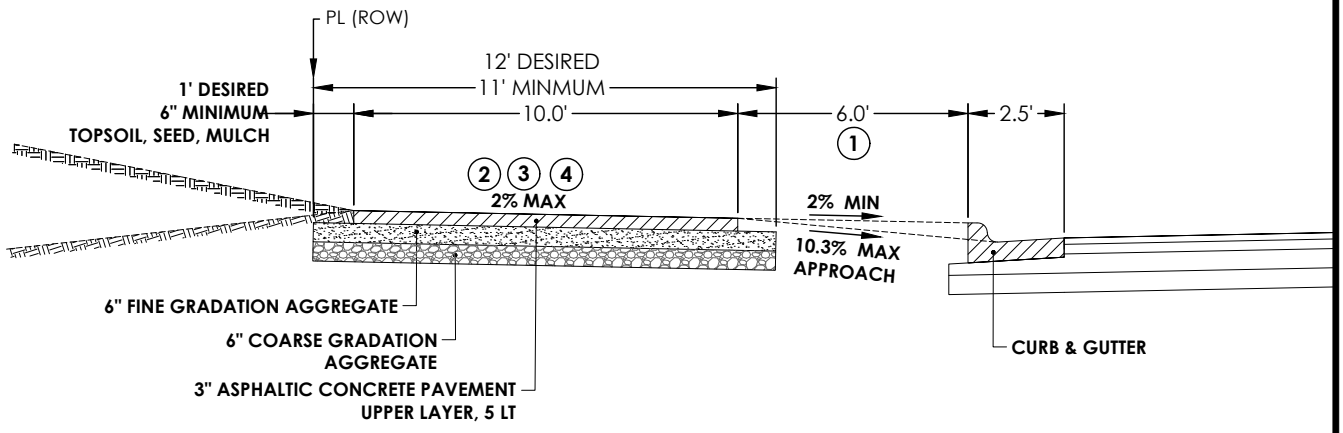
PAVEMENT SECTION

NOT TO SCALE

DETAIL # 18



STANDARD ASPHALT TRAIL

(1) 6' TERRACE WITH 70' R.O.W. TOPSOIL, SEED, MULCH

(2) TRAIL WITHIN R.O.W., SLOPED TOWARD CURB/ROADWAY. TRAIL IN PARKLAND SLOPED TO MATCH EXISTING SURFACE DRAINAGE.

(3) 2% MAX SLOPED MAINTAINED THROUGH DRIVEWAYS.

(4) 5-INCH ASPHALT THICKNESS THROUGH COMMERCIAL DRIVEWAYS. CONCRETE TRAIL THROUGH DRIVEWAY WITH ENGINEER APPROVAL ONLY.

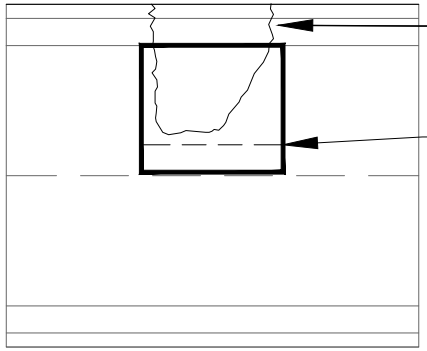
City of Janesville
Engineering Division
January - 2017
last revision: January 2021

STANDARD ASPHALT TRAIL

NOT TO SCALE

DETAIL # 19

PLAN VIEW EXISTING ASPHALT STREET



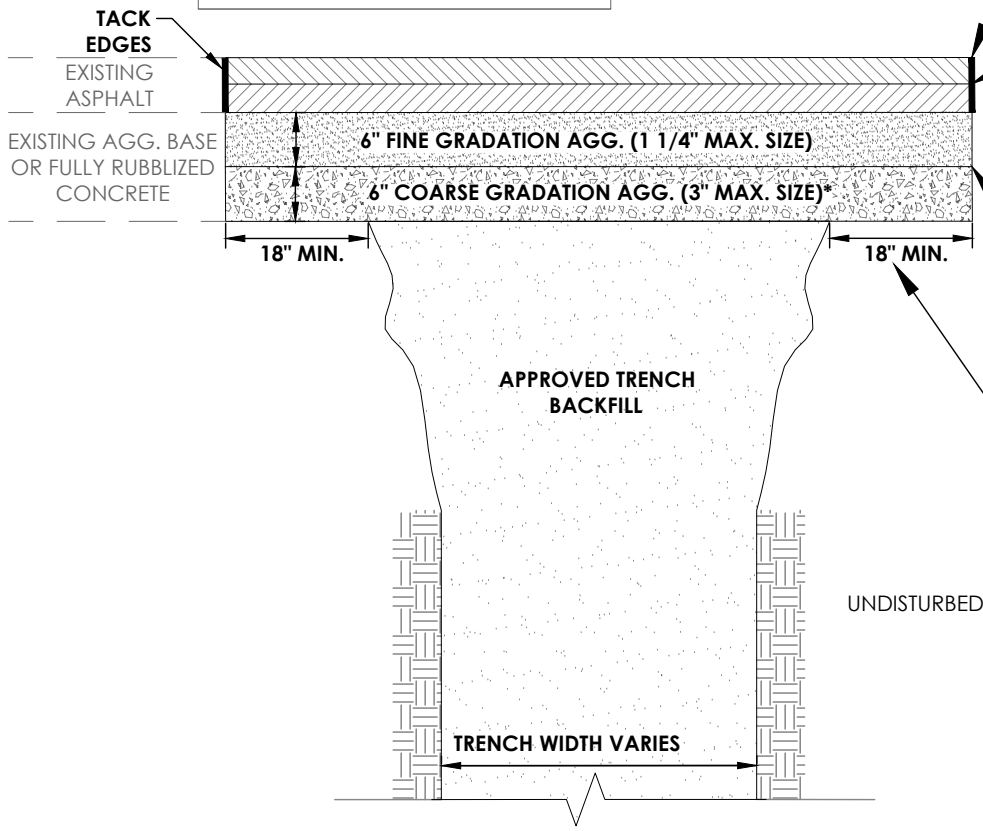
SEE CURB & GUTTER AND SIDEWALK PATCH DETAIL FOR CURB & GUTTER PATCHING REQUIREMENTS

IF PATCH EDGE FALLS IN WHEEL PATH, EXTEND PATCH SUCH THAT EDGE WILL BE LOCATED OUTSIDE OF THE TYPICAL WHEEL PATH.

ALL PERMANENT FINAL PATCHES SHALL BE RECTANGULAR IN SHAPE AND CONSTRUCTED TO BE PARALLEL AND PERPENDICULAR TO THE FLOW OF TRAFFIC.

ALL PATCH EDGES TO HAVE UNIFORM, VERTICAL FULL DEPTH SAW CUT.

REMOVE ANY LOOSE MATERIAL AND APPLY ASPHALT EMULSION TACK COAT TO ALL VERTICAL ASPHALT EDGES.



HOT MIX ASPHALT
4.0" MIN. 5 LT UPPER LAYER (RESIDENTIAL) OR
5.0" MIN. 5 MT OR 4 MT (COLLECTOR & ARTERIAL)
MATCH EXISTING THICKNESS IF THICKER THAN MINIMUMS.

HOT MIX ASPHALT COMPACTED IN TWO LIFTS. 4 LT IS ALLOWABLE FOR LOWER LAYERS. MACHINE ROLL PATCH SURFACE FLUSH WITH EXISTING ASPHALT. MAX. ALLOWABLE HEIGHT ABOVE EXISTING PAVEMENT = 1/8 INCH.

12" MIN. CRUSHED LIMESTONE BASE COURSE INSTALLED IN TWO OR MORE LIFTS. MECHANICAL COMPACTION REQUIRED WITH 6" MAX. LIFT THICKNESS.

* 12" OF FINE GRADATION AGG. (1 1/4" MAX. SIZE) COMPACTED IN TWO LIFTS ALLOWED FOR PATCHES UNDER 100 SY.

PATCH TO EXTEND A MINIMUM OF 18" BEYOND ALL DISTURBED SOIL LIMITS.

EXCAVATION SHALL BE PROTECTED WITH TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD.

City of Janesville
Engineering Division
January - 2015

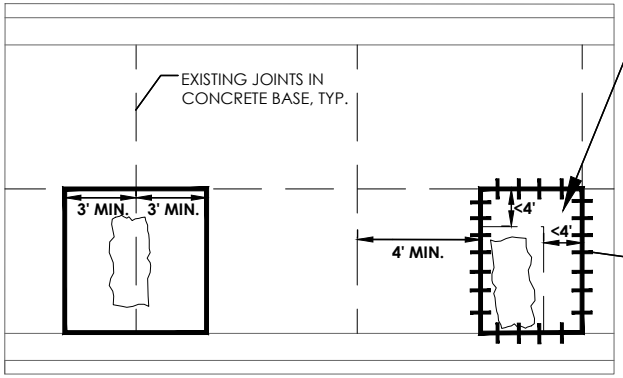
last revision: January 2022

PAVEMENT PATCH - EXISTING ASPHALT PAVEMENT

NOT TO SCALE

DETAIL # 20

PLAN VIEW EXISTING ASPHALT OVER CONCRETE STREET



WHERE CONCRETE JOINT LOCATIONS ARE APPARENT FROM VISIBLE JOINTS OR REFLECTIVE CRACKING, SAWCUT AND REMOVE PAVEMENT TO THE NEAREST TRANSVERSE OR LONGITUDINAL JOINT IF LESS THAN 4 FEET OF CONCRETE WOULD REMAIN.

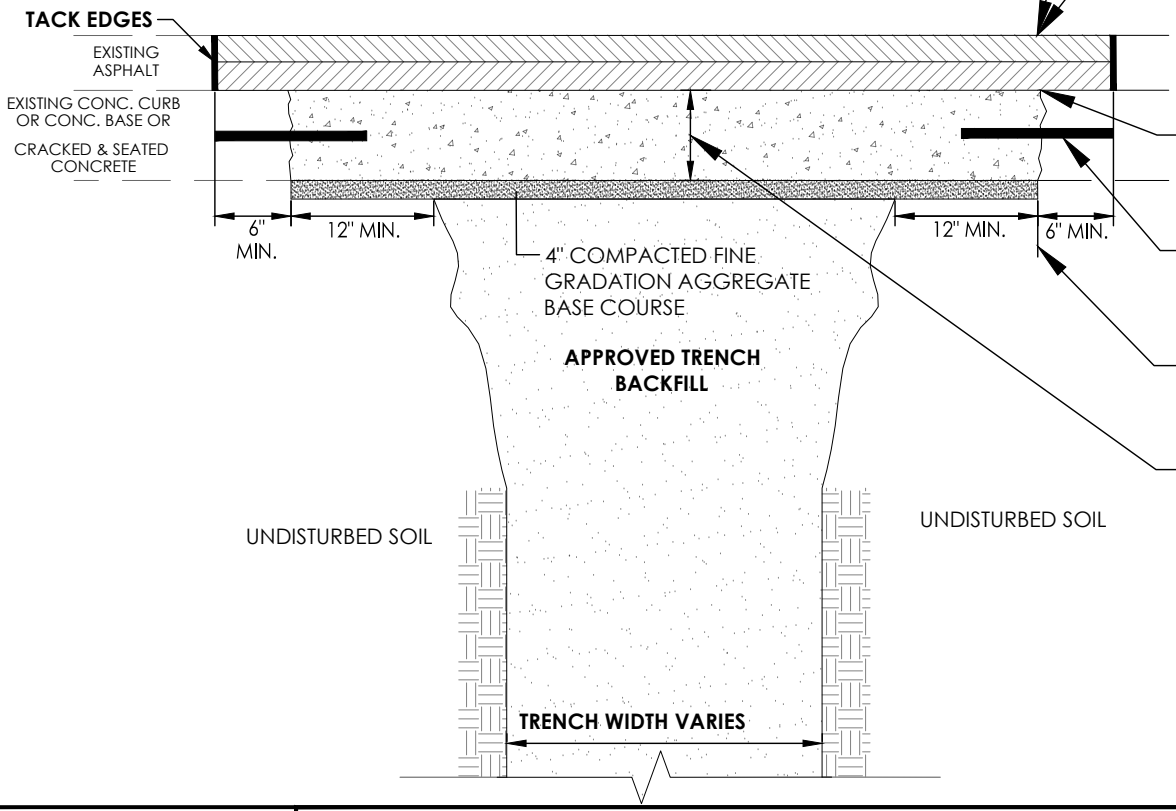
12" LONG #4 OR #5 TIE BARS AT 30" O-C, MIN. 2 PER SIDE.

ALL PERMANENT FINAL PATCHES SHALL BE RECTANGULAR IN SHAPE AND CONSTRUCTED TO BE PARALLEL AND PERPENDICULAR TO THE FLOW OF TRAFFIC.

ALL PATCH EDGES TO HAVE UNIFORM, VERTICAL SAW CUT THROUGH ASPHALT CAP. UNDERLYING CONCRETE MAY BE BROKEN AND REMOVED.

CLEAN AND APPLY ASPHALT EMULSION TACK COAT TO ALL VERTICAL ASPHALT EDGES AND SURFACE OF CONCRETE BASE.

HOT MIX ASPHALT.
MATCH EXISTING THICKNESS OVER CONCRETE.
WHERE THICKNESS EXCEEDS 3", INSTALL IN TWO LIFTS. PAVE ASPHALT A MIN. OF 20 HOURS AFTER CONCRETE PLACEMENT, UNLESS OTHERWISE DIRECTED BY CITY ENGINEERING DIVISION.



HOT MIX ASPHALT COMPACTED IN TWO LIFTS. MACHINE ROLL PATCH SURFACE FLUSH WITH EXISTING ASPHALT. MAX. ALLOWABLE HEIGHT ABOVE EXISTING PAVEMENT = 1/8 INCH.

MATCH TOP OF CONCRETE BASE PATCH ELEVATION WITH TOP OF EXISTING CONCRETE BASE ELEVATION.

12" LONG #4 OR #5 TIE BARS, DRILLED AND DRIVEN 6"-7" INTO EXISTING CONCRETE AT MID DEPTH. 30" O/C SPACING OR A MINIMUM OF TWO PER SIDE.

PATCH TO EXTEND A MINIMUM OF 18" BEYOND ALL DISTURBED SOIL LIMITS. (AT PAVEMENT SURFACE)

8" MIN. PORTLAND CEMENT CONCRETE OR MATCH EXISTING THICKNESS, WHICHEVER IS GREATER.

USE GRADE A, A-FA, OR A-T CONCRETE. USE HIGH EARLY STRENGTH CONCRETE WHEN ASPHALT SURFACE WILL BE PLACED THE NEXT DAY OR WHEN DIRECTED BY CITY ENGINEERING DIVISION.

EXCAVATION SHALL BE PROTECTED WITH TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD.

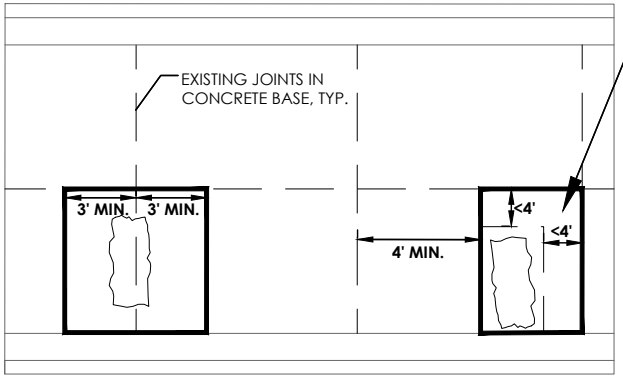
City of Janesville
Engineering Division
January - 2015
last revision: January 2022

PAVEMENT PATCH - EXISTING ASPHALT OVER CONCRETE PAVEMENT
OPTION 1 - ASPHALT OVER CONCRETE PATCH

NOT TO SCALE

DETAIL # 21

PLAN VIEW EXISTING ASPHALT OVER CONCRETE STREET



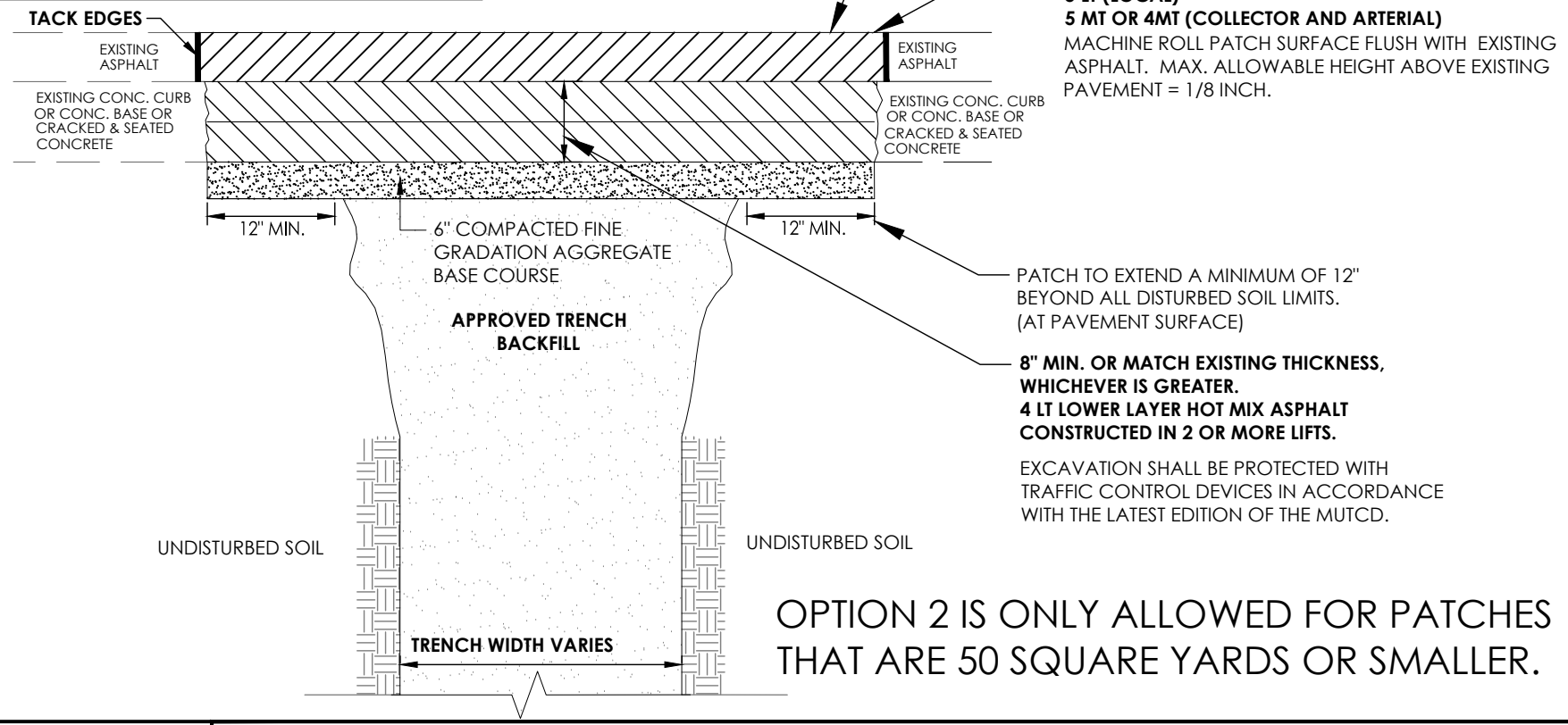
WHERE CONCRETE JOINT LOCATIONS ARE APPARENT FROM VISIBLE JOINTS OR REFLECTIVE CRACKING, SAWCUT AND REMOVE PAVEMENT TO THE NEAREST TRANSVERSE OR LONGITUDINAL JOINT IF LESS THAN 4 FEET OF CONCRETE WOULD REMAIN.

ALL PERMANENT FINAL PATCHES SHALL BE RECTANGULAR IN SHAPE AND CONSTRUCTED TO BE PARALLEL AND PERPENDICULAR TO THE FLOW OF TRAFFIC.

ALL PATCH EDGES TO HAVE UNIFORM, VERTICAL SAW CUT THROUGH ASPHALT CAP. UNDERLYING CONCRETE MAY BE BROKEN AND REMOVED.

CLEAN AND APPLY ASPHALT EMULSION TACK COAT TO ALL VERTICAL ASPHALT EDGES AND HORIZONTAL SURFACES WITHIN PATCH.

UPPER LAYER HOT MIX ASPHALT. MATCH EXISTING THICKNESS OVER CONCRETE.
5 LT (LOCAL)
5 MT OR 4MT (COLLECTOR AND ARTERIAL)
MACHINE ROLL PATCH SURFACE FLUSH WITH EXISTING ASPHALT. MAX. ALLOWABLE HEIGHT ABOVE EXISTING PAVEMENT = 1/8 INCH.



PATCH TO EXTEND A MINIMUM OF 12" BEYOND ALL DISTURBED SOIL LIMITS. (AT PAVEMENT SURFACE)

8" MIN. OR MATCH EXISTING THICKNESS, WHICHEVER IS GREATER.
4 LT LOWER LAYER HOT MIX ASPHALT CONSTRUCTED IN 2 OR MORE LIFTS.

EXCAVATION SHALL BE PROTECTED WITH TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD.

OPTION 2 IS ONLY ALLOWED FOR PATCHES THAT ARE 50 SQUARE YARDS OR SMALLER.

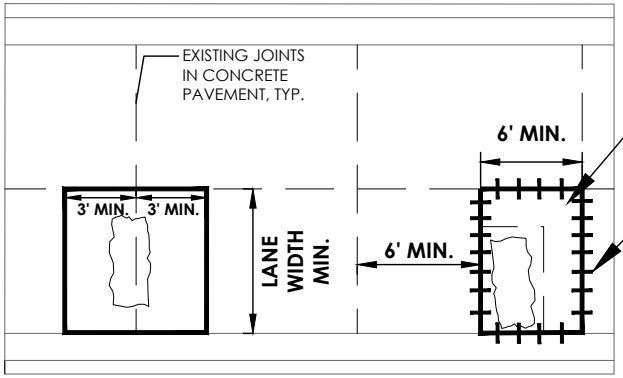
City of Janesville
Engineering Division
January - 2015
last revision: January 2022

PAVEMENT PATCH - EXISTING ASPHALT OVER CONCRETE PAVEMENT
OPTION 2 - FULL DEPTH ASPHALT PATCH

NOT TO SCALE

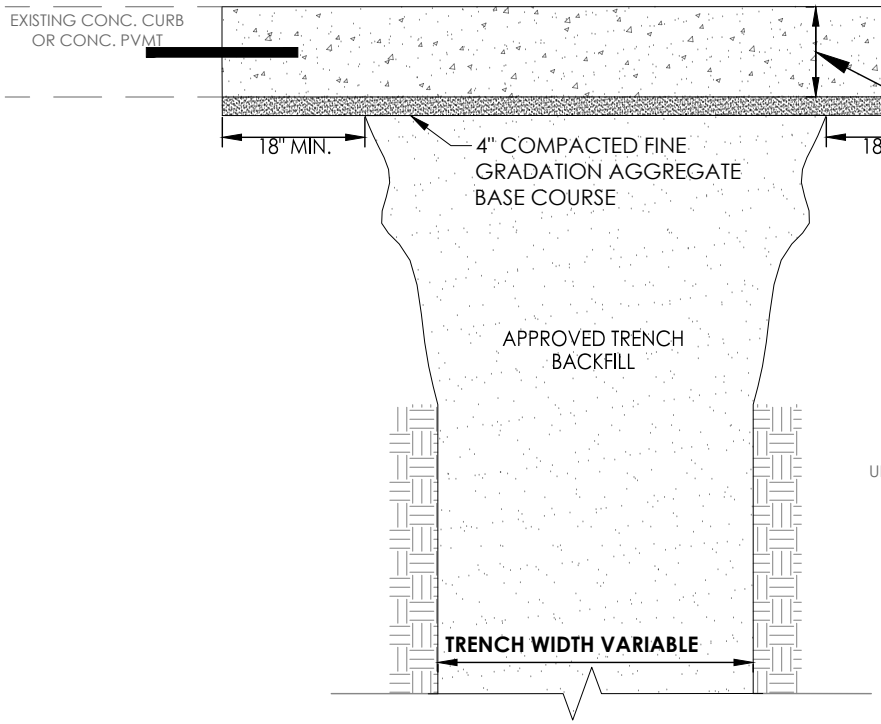
DETAIL # 22

PLAN VIEW EXISTING CONCRETE STREET



THE MINIMUM PATCH DIMENSIONS SHALL BE 6' BY THE FULL LANE WIDTH.

12" LONG #4 OR #5 TIE BARS AT 30" O-C, MIN. 2 PER SIDE.



ALL PERMANENT FINAL PATCHES SHALL BE RECTANGULAR IN SHAPE AND CONSTRUCTED TO BE PARALLEL AND PERPENDICULAR TO THE FLOW OF TRAFFIC.

ALL PATCH EDGES TO HAVE UNIFORM, VERTICAL FULL DEPTH SAW CUT.

12" LONG #4 OR #5 TIE BAR DRILLED AND DRIVEN 6"-7" INTO EXISTING CONCRETE AT MID DEPTH. 30" O/C SPACING OR A MINIMUM OF TWO PER SIDE. (PLAIN CONCRETE PAVEMENT ONLY *)

8" MIN. PORTLAND CEMENT CONCRETE OR MATCH EXISTING THICKNESS, WHICHEVER IS GREATER.

USE GRADE A, A-FA, OR A-T CONCRETE. USE HIGH EARLY STRENGTH CONCRETE WHEN DIRECTED BY CITY ENGINEERING DIVISION.

PATCH TO EXTEND A MINIMUM OF 18" FROM ALL DISTURBED SOIL LIMITS.

EXCAVATION SHALL BE PROTECTED WITH TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD.

* DOWELED CONCRETE PAVEMENT SHALL BE REPAIRED OR REPLACED IN ACCORDANCE WITH WI DOT STANDARD DETAIL DRAWING13c09. CRCP SHALL BE REPAIRED OR REPLACED IN ACCORDANCE WITH WI DOT STANDARD DETAIL DRAWING 13a7. (TYPICALLY REPAIRED ONLY BY CITY CONTRACTOR)

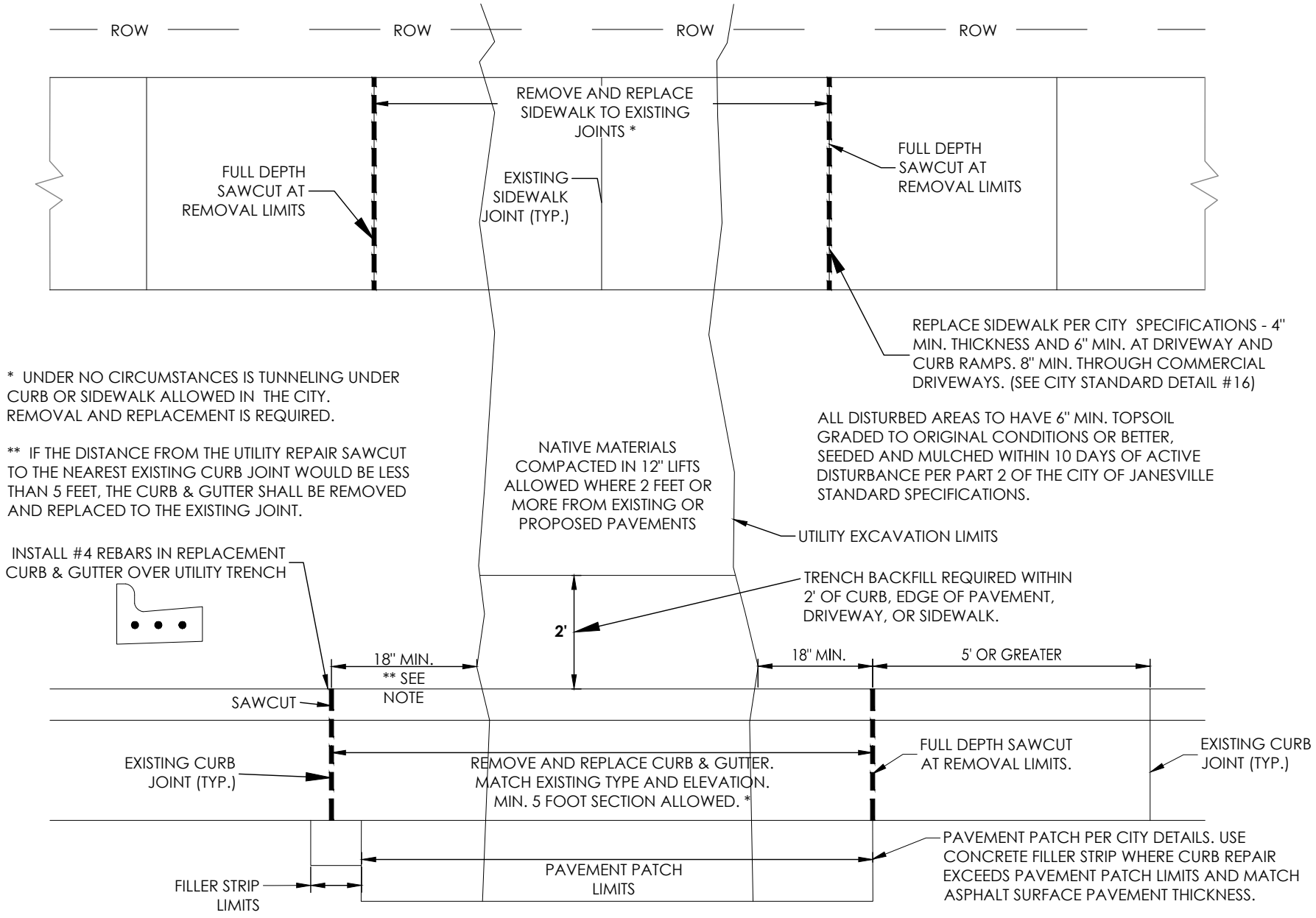
City of Janesville
Engineering Division
January - 2015

last revision: January 2022

PAVEMENT PATCH - CONCRETE PAVEMENT

NOT TO SCALE

DETAIL # 23



City of Janesville
Engineering Division
January - 2015

last revision: January 2022

CURB & GUTTER AND SIDEWALK PATCH

NOT TO SCALE

DETAIL # 24