

MISCELLANEOUS SPECIFICATIONS

CITY OF NORTHFIELD, MINNESOTA

NORTHFIELD, MN

- 1 – GENERAL
- 2 – PROPOSED PROJECT SCHEDULE
- 3 – ALTERNATES/ALTERNATIVES
- 4 – MEASUREMENT & PAYMENT
- 5 – COORDINATION
- 6 – PROJECT MEETINGS
- 7 – SUBMITTALS
- 8 – REGULATORY REQUIREMENTS
- 9 – SPECIFICATION REFERENCE
- 10 – QUALITY CONTROL
- 11 – MOBILIZATION
- 12 – SUBSURFACE INVESTIGATION
- 13 – REMOVING PAVEMENT AND MISCELLANEOUS STRUCTURES
- 14 – MAINTENANCE OF HAUL ROADS & TEMPORARY ACCESS
- 15 – MAINTENANCE AND CONTROL OF TRAFFIC
- 16 – DEWATERING
- 17 – AIR, LAND AND WATER POLLUTION
- 18 – FIELD ENGINEERING
- 21 – EXTRA WORK AND FORCE ACCOUNT WORK
- 22 – PROJECT CLOSEOUT
- 23 – WITHHOLDING AFFIDAVIT FOR CONTRACTORS – FORM IC-134
- 24 – EXEMPTION FROM SURETY DEPOSITS FOR OUT-OF-STATE CONTRACTORS –
FORM SD-E

MISCELLANEOUS SPECIFICATIONS

1. GENERAL

1.1 SUMMARY OF WORK The project is located in City of Northfield, MN. The project location is shown on the vicinity map in the design drawing set. The general scope of services anticipated is outlined on the attached bar chart diagram. Selection of specific alternates or acceptance of contractor proposed alternatives may alter the scope, as shown. The project involves but is not limited to the complete construction of public improvements for the reconstruction of several streets. Individual elements of work shall include, but are not limited to:

- a. Removal of bituminous pavement, concrete curb and gutter, sidewalk and driveways, pipe and other miscellaneous items.
- b. Clearing and grubbing.
- c. Street excavation.
- d. Sanitary sewer construction.
- e. Water main construction.
- f. Water and sewer service construction.
- g. Storm sewer construction.
- h. Concrete walk construction.
- i. Concrete curbing and driveway pavement construction.
- j. Bituminous street construction.
- k. Turf restoration and erosion control construction
- l. Traffic Control.
- m. Other miscellaneous work shown on the plans or specified herein.

- 1.2 WORKING HOURS The allowable working hours for the project will be Monday through Friday from 7:00 a.m. to 7:00 p.m., including all maintenance and fueling of equipment. Working on Saturdays will be allowed with permission from the Engineer.
- 1.3 STORAGE AREA The Contractor will be responsible for determining a storage area with the approval of the Engineer. The Contractor shall be responsible for the protective fencing of trees, etc. located on the site and for restoration of any disturbed areas on the storage site. Storage areas shall be fenced. Turf restoration shall be by sodding and shall be incidental to the project.
- 1.4 MAINTENANCE OF EQUIPMENT Prior to mobilization to the site, all equipment shall be freshly washed to remove all grease, oil, dirt and organic material from previous projects. All equipment shall be maintained in a clean and operational manner, including all safety features. Equipment with visible leaks or other malfunctions, which pose an environmental, safety or other concern, shall immediately be removed from the site and repaired.
- 1.5 PUBLIC SAFETY The Contractor shall take the necessary precautions to protect the public and employees from injury by open excavations or other hazardous circumstances by providing temporary fences, barricades, warning signs, flashers, and other safety aids. Such precautions shall be subject to review and approval by the Owner and the Engineer. If at any point during the construction the Engineer or Inspector observes what they determine to be unsafe working conditions, a verbal stop work order will be given until the situation is resolved. If unsafe working conditions continue, a written stop work order will be issued and work will be suspended, with the working day count continuing. Commencement of work will be allowed when assurances are made to the Engineer that unsafe working conditions will not be repeated. The Contractor shall furnish names, addresses, and phone numbers of at least two (2) local individuals capable of immediate response who will be responsible for the site security and traffic control devices to:

1. The Engineer
2. The Owner
3. Local Law Enforcement Agencies

The Contractor shall respond with sufficient personnel, equipment and/or materials and conduct the required work or be subject to a **\$100 per hour deduction from the time of notification for non-attention to project security and safety.**

NO TRENCH SHALL BE ALLOWED TO BE LEFT OPEN AT NIGHT.

- 1.6 CONTRACTOR USE OF PROJECT SITE The Contractor's use of the project site shall be limited to its construction operations, including on-site storage of materials and field offices. No materials shall be stored in a location as to limit access to the affected public. Any damage caused by Contractor operations to private property, including but not limited to, parking lots, trees, shrubs, material spatter, etc. shall promptly be corrected at the Contractor's expense. The Contractor shall confine its work within the limits of the easements, public rights-of-way, and/or construction

limits as shown on the plans. If the Contractor desires additional space, it shall be the Contractor's responsibility to acquire easements and/or permission, as desired.

2. **PROPOSED PROJECT SCHEDULE** Project Title: _____, City of Northfield, Minnesota. The Contractor is REQUIRED to fill out and return the following schedule to the Engineer and highlight the critical path sequence (CPM).

Weeks Following 'Notice to Proceed'		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
ACTIVITY	DATE:																		

3. ALTERNATES / ALTERNATIVES

- 3.1 All bids must include a bid based on the "base bid" or the Contract Documents defined alternatives, as specified, without anticipation of the use of "or equal" items or contractor proposed alternatives. Bids solely based on the use of "or equal" items or contractor proposed alternatives may be rejected without consideration, at the discretion of the Owner. Installers wishing to qualify alternate methods and/or materials for this project must submit a copy of the license or certificate verifying the manufacturer's or licensor's approval, and evidence of the installer's experience including the number, total length, and locations of trenchless construction projects installed to date using the proposed materials and methods together with the names and phone numbers of facility owners to the Engineer 10 days prior to the opening of bids to allow time for evaluation. The final decision to accept or reject the applicant lies solely with the Owner.
- 3.2 PROPOSALS WITH SPECIFIED BID ALTERNATES: The Owner reserves the right to select the bid alternate desired, regardless of the amount bid.
- 3.3 CONTRACTOR PROPOSED ALTERNATIVES: Contractor proposed alternative methods and techniques may be considered by the Owner, with the advice of the Engineer, after Award of Contract. No alternatives shall be accepted or considered as part of the bid. The Contractor shall include in its base bid the items, as specified, without consideration of using any proposed alternative materials and/or methods. The Contractor shall then include in its bid the amount of the deduction, increase or revised bid amount to be applied if the proposed alternative materials and methods are accepted. The Owner and Engineer shall evaluate the stature of the proposed materials and methods. Evaluation by the Owner and Engineer shall include the cost of modifying the design, as necessary and shall be at the discretion of the Owner and Engineer.
- The Owner reserves the right to accept or reject "Contractor Proposed Alternatives". Execution of alternates and alternatives proposed by the Contractor, if accepted by the Owner, shall be governed by those Specifications provided by the Engineer.
- 3.4 SPECIFICATION REFERENCES - CONTRACTOR PROPOSED ALTERNATIVES: If the Bidder proposes an alternative:
- a. The Contractor is required to request, in writing, a determination on the Specifications, which will be enforced to govern the construction. This request shall be made directly to the Engineer at the time of bid opening or before.
 - b. The Engineer shall attempt to provide the Specification requirements prior to the end of the working day to allow the Contractor time to withdraw its bid, if requested by the Contractor.
- 3.5 SUBMITTALS: Unless otherwise specified, contractors whose bids are based on "equal" materials and/or methods shall include with their bid the manufacturer name, address, product name, model, specification reference and/or testing certification of the items proposed to be used. The Contractor shall also include evidence of the 'equal' stature of the products proposed.

- a. CONTRACTOR PROPOSED ALTERNATIVES The Contractor shall contact the Engineer prior to bidding the job to discuss its proposed alternative approach to the methods and materials used or execution of the job. The Engineer shall evaluate the proposed methods and may at the Engineer's discretion choose to issue an addendum to all contractors or accept the conversation as privileged communication. Unless otherwise specified, the Contractors whose bid includes alternative materials and/or methods shall include with their bid the manufacturer name, address, product name, model, specification reference and/or testing certification of the items proposed to be used. The Contractor shall also include evidence of the 'equal' stature of the products and/or methods proposed. The Contractor shall mark the outside of the bid envelope that alternative methods are included.
4. MEASUREMENT & PAYMENT Methods of measurement and payment for all items not individually specified shall be according to the appropriate referenced specification standard or as indicated on the bid form.
 - 4.1 Payment for Hauled Materials: No compensation will be paid for any weigh ticket received after the date shown on the ticket unless prior arrangements are made with the Engineer.
 - 4.2 Payment for Materials Stored on Site:
 - a. No compensation shall be paid for materials delivered to the site and not incorporated into the project.
 - 4.3 Payment for Major Lump Sum Items: The Contractor shall submit a schedule of values for major items of construction, which are bid as lump sum. The schedule shall identify major sections of work and the percentage of the bid price applied to each. Payment shall be made according to the percentage complete of each major section of work.
 - 4.4 The Contractor shall submit to the Engineer a "Certificate of Conformance" statement stating that the scale used to weigh hauled materials has been tested and calibrated for the current construction season. This Certificate shall be from Mn/DOT or other reliable scale servicing company. Providing a certified scale and obtaining such "Certificate of Conformance" is the sole responsibility of the Contractor and all costs associated are considered incidental to the materials being supplied.
 - 4.5 Hauled Materials: The Contractor shall furnish numbered weigh tickets which list the Date, Project, Type of Material, Gross Weight, Tare Weight, Material Weight in tons, and Truck Number for each load brought to the construction site. If the individual pay items are identified on a unit weight basis, the Contractor shall provide the Engineer with a summary type spreadsheet, which provides accumulative job totals of all aggregate and bituminous materials hauled to the project. This spreadsheet shall be submitted to the Engineer on a weekly basis.
 - 4.6 Procured Materials: The Contractor shall furnish an insurance bond showing the type of material, the amount of material, the valuation of the material, the stored location, the project, the date, the name and address of the surety.

- 4.7 Compacted Volume Materials: When measurement is specified by the CUBIC YARD, COMPACTED VOLUME (C.Y.[C.V.]), the Owner and the Contractor agree that it is not always practical to perform cross sectional measurements to verify the compacted volume of the material placed. When such an event occurs, the Contractor shall furnish weigh tickets to determine the volume of material delivered to the site and the Owner and Contractor agree that the conversion from weight measure to volume measure shall be:
- a. Aggregate Materials: 1 Cubic Yard, Compacted Volume = 1.8225 Tons
 - b. Riprap, Cl. 4 - Granite: 1 Cubic Yard, Compacted Volume = 1.35 Tons
 - c. Riprap, Cl. 4 - Limestone: 1 Cubic Yard, Compacted Volume = 1.20 Tons

5 **COORDINATION**

- 5.1 A project management network-scheduling tool (i.e., critical path (CPM), etc.) or a DETAILED bar chart shall be employed by the Contractor for cost value reporting, planning and scheduling of all work required under the Contract Documents. This schedule shall show the order in which the Contractor proposes to execute the work with dates on which it proposes to start the various phases of the work and the estimated completion date of each phase. The Contractor shall submit a preliminary version of its intended schedule within 10 working days following the Notice of Award on the Section 2 form or on a form of its own choosing. The Contractor is required to show the initial critical path (CPM) of tasks to be performed. Unless otherwise approved by the Engineer, the schedule shall also include an anticipated payment schedule for the volume of work to be completed each month. This schedule shall indicate the Contractor's intention and ability to complete the work within the contract times, as specified in Article 3 of the Agreement. The Preconstruction Conference as outlined in Section 6.1 will not be conducted until the schedule is submitted. In addition, no construction staking shall be provided until the schedule is submitted by the Contractor and reviewed by the Engineer.
- 5.2 The Contractor is responsible for working with public and private utility companies in protecting and/or relocating existing or new utility lines located near and affected by this construction. Coordination with the utility companies is very important and should be considered in planning the work and the associated extra costs involved.
- 5.3 The Contractor shall consult with the City's maintenance personnel when working around or performing the required sanitary sewer installations. The Contractor shall also work with the City's maintenance personnel to provide for scheduled water shutdowns in a given area and to provide for continued water service to the properties along the project throughout the duration of the project.
- 5.4 The Contractor shall work with all utility companies, as necessary, to allow for installation and for maintenance of service of gas, power, lighting, telephone, cable TV, etc. in the boulevards or across the streets prior to final shaping of aggregate base and/or topsoil. This coordination with the utility companies is the responsibility of the Contractor and is considered incidental to the construction and no additional compensation shall be granted.
- 5.5 The Contractor shall coordinate all work requiring shutting down water service or limiting access to buildings by emergency equipment with the fire & emergency

departments. This shall include notification of the daily construction schedule by the Contractor.

- 5.6 Contractor shall cooperate with other contractors performing construction on other projects in the vicinity of this Project, including but not limited to allowing access for the delivery of equipment and materials.
- 5.7 Water, sanitary sewer and storm sewer connections made to existing utilities will need to be coordinated with the Engineer so that anyone affected by the temporary shutdown of service can be notified 24 hours in advance.
- 5.8 The Contractor shall coordinate with the postal service, recycling service, garbage collection service, school bus service, etc. to maintain continual uninterrupted service to all residences and businesses throughout the duration of the project. The Contractor shall temporarily relocate mailboxes, haul recycling and garbage for residents to a designated pick up location, etc., as required by the subject service provider. All equipment materials and labor required to coordinate with service providers and maintain services shall be incidental to the Contract.
- 5.9 The Contractor shall provide a full plan set and specifications to all subcontractors on the project site. Any subcontractor work not performed to the project plans and specifications will be subject to non-payment.
- 5.10 All work under the contract must be substantially complete by **November 15, 2010**. Substantial completion shall be defined as all work with the exception of the construction of the bituminous wearing course and the final adjustment of manholes and gate valves.

6. **PROJECT MEETINGS**

- 6.1 **Pre-construction Conference**: Prior to the start of the work, a joint meeting will be held with representatives of the Contractor, the Owner, the Engineer, and any other interested parties. This meeting is intended to introduce the various key personnel from each organization and to discuss the start of the work, order of work, labor and legal requirements, insurance requirements, method of payment, shop drawing requirements, protection of existing facilities, location of disposal and stockpile areas, and other pertinent items associated with the project. The Contractor shall be prepared to discuss his proposed detailed construction progress schedule. The construction schedule shall be subject to the review of the Owner, Engineer and applicable agencies. The meeting time and place will be determined.
- 6.2 **Construction Progress Meetings**: These meetings will require the attendance of the Contractor's Project Manager or other designated staff authorized by the Contractor to discuss project status and negotiate agreements between the Contractor and Owner. Failure of the Contractor to attend scheduled project meetings as required may result in project delays expensed by the Contractor. Meetings will be held between the Owner, Contractor and Engineer for the purpose of reviewing the project schedule or the status of the project. **Any change orders or changes from the plans and specifications during the prior week shall be addressed at the meeting.** These meetings will be arranged by the Owner, and/or Engineer on a weekly basis at a time and location to be determined at the preconstruction meeting.

7. SUBMITTALS

7.1 SUMMARY The Contractor shall submit three (3) copies of all required submittals and sample items as noted below. The Engineer will review them with reasonable promptness. The Contractor shall make all required corrections and file with the Engineer three (3) corrected sets for final review. If the Contractor requires more than two (2) reviewed copies, the Contractor shall submit additional sets. The responsibility for completeness of submittals lies with the Contractor. If the Engineer and/or Owner signs the submittal with no exception taken, such action shall not absolve the responsibilities of the Contractor in any way.

7.2 ITEMS TO BE SUBMITTED

- a. Written Progress Management Schedule Tool (as defined in Section 01310) - to be reviewed at the Preconstruction Conference. See Article 3 of 00500 Agreement for contractual time requirements.
- b. Minnesota Pollution Control Agency (MPCA) - General Storm Water Permit for Construction Activity (MN R100001) materials.
- c. Concrete Mix Design
- d. Bituminous Mix Design (wear and non-wear)
- e. Gradation Test Results from 2 separate tests, as required in Source Quality Control provisions of individual sections contained herein, from material stockpiles of aggregates to be used on this project. These tests may be run by the Contractor or its supplier during aggregate production.
- f. Geotextile Fabrics - Certificates of Compliance.
- g. Sanitary Sewer and Sanitary Sewer Service
 - i. Manhole structure - shop drawings.
 - ii. Manhole casting - shop drawings.
 - iii. Piping and fittings - Certificates of Compliance.
 - iv. Final televising DVD and log.
- h. Storm Sewer, Subdrain and Sump Drain Lines
 - i. Manhole and catch basin structure - shop drawings.
 - ii. Manhole and catch basin casting - shop drawings.
 - iii. Piping and fittings - Certificates of Compliance.
- i. Watermain and Water Service Lines
 - i. Hydrants - Certificates of Compliance.
 - ii. Valves & boxes - Certificates of Compliance.
 - iii. Pipe & fittings - Certificates of Compliance.
 - iv. Corporation stops, saddles, curb stops, curb boxes, copper pipe - Certificates of Compliance.
- j. Seeding - Certificates of Compliance for seed mixture.

k. Trees & Shrubs - Certificates of Compliance.

7.3 MATERIAL SAFETY DATA SHEETS The Contractor shall submit two copies of Material Safety Data Sheets (MSDS) for each material on site to the OWNER. The Contractor shall maintain an orderly file of material safety data sheets at the job site.

7.4 RECORD DRAWINGS

a. The CONTRACTOR shall maintain at the construction site one complete set of drawings suitably marked to show all deviations from the original set of drawings and other information as specified. Supplementary sketches shall be included, if necessary, to clearly indicate all work as constructed. Sanitary and water service tie-in or stub-out locations shall show station and distances left or right of the survey control centerline. Existing sanitary and water service piping material type and size at the tie-in locations shall be noted also. All wye locations shall be located as well, and marked in the field during construction (A service record form is attached for the Contractor's use.).

b. All manholes, watermain bends and valves shall be located with tie-off dimensions to known items on the plans or in the field to enable the Contractor or City personnel to locate these structures for adjustment.

c. All work shall be clearly shown and the record drawings shall be satisfactory to the OWNER in order to insure that adequate information is indicated to show the actual construction. The complete set of the record drawings shall be submitted to the ENGINEER prior to submittal of the final Application for Payment. Failure of the CONTRACTOR to maintain an up-to-date set of record drawings on the project site shall be reason to withhold payments. All underground lines shall be determined from the record drawings.

7.5 SUBMITTAL ROUTING A Letter of Transmittal that identifies the submitted item and the review action required, shall accompany all submittals.

7.6 RESPONSIBILITY The Engineer's review of a submittal shall not relieve the Contractor from the responsibility for deviation from the drawings and specifications unless the Contractor has, in writing, called the Engineer's attention to the deviations at the time of submission; nor shall it relieve the Contractor from the responsibility of errors in the submittals. All submittals shall be reviewed by the Engineer prior to their incorporation into the project. If materials are installed without prior review, they will be subject to removal, at the Contractor's expense, if the material is found to be non-conforming to the Specifications.

7.7 WYE LOCATIONS All wye locations shall be marked in the field by the Engineer.

8. REGULATORY REQUIREMENTS

8.1 SUMMARY Applicable codes and standards referred to in these specifications shall establish minimum requirements for equipment, materials, construction and shall be superseded by more stringent requirements of drawings and specifications when and where they occur. All equipment furnished and installed under the

contract shall be designed, fabricated, assembled, installed, and placed into service. The equipment will conform to the applicable provisions of the Federal and State Safety and Health Standards, including but not limited to Federal Occupational Safety and Health Regulations for Construction; the Division of Environmental Health, Minnesota Department of Health; the Minnesota Pollution Control Agency; the Department of Natural Resources; the Minnesota Department of Transportation, Division of Highways; the Minnesota Industrial Commission and ordinances of the City that apply to this work. All construction methods and tools shall comply with commonly accepted standards for safety and health of personnel engaged on construction, including but not limited to Federal Occupational Safety and Health Regulations for Construction; the Division of Environmental Health, Minnesota Department of Health; the Minnesota Pollution Control Agency; the Department of Natural Resources; the Minnesota Department of Transportation, Division of Highways; the Minnesota Industrial Commission and ordinances of the City that apply to this work. Any conflicts between specifications and applicable codes and standards shall be referred to the Engineer.

8.2 **PERMITS OBTAINED BY OWNER** The Owner has applied for the following permits from appropriate authorities. It is anticipated that permission to proceed will be authorized prior to execution of Contract. The Contractor shall perform all work and conduct itself in full accordance with the requirements of the applicable permit:

- a. Minnesota Pollution Control Agency (MPCA) - General Storm Water Permit for Construction Activity (MN R100001)
- b. Minnesota Health Department - Extension of water mains.

The Contractor shall be responsible for posting any bonds, which may be required as a condition to any permit, listed above.

8.3 **PERMITS OBTAINED BY CONTRACTOR** The Contractor shall secure and pay the cost of any other permits not mentioned above, which may be required including but not limited to:

- a. Work within the right-of-way
- b. Plumbing permits for service connections within houses, as necessary.

8.4 **WORK WITHIN A RAILROAD RIGHT OF WAY** The Contractor shall comply with all provisions of Mn/DOT Specification 1708.

9.0 **SPECIFICATION REFERENCE**

9.1 **SPECIFICATIONS WHICH APPLY** The performance of the work, the material requirements, the basis of measurement and the basis of payment for the various portions of the work, shall be in accordance with the appropriate sections of the latest edition of the Minnesota Department of Transportation, "Standard Specifications for Construction", and all subsequent revisions, except as altered or modified by the contract document entitled, _____

_____ ; City of Northfield, Minnesota; _____ 20__.

9.2 **SOIL DISTURBING ACTIVITIES** Minnesota Pollution Control Agency (MPCA) - General Storm Water Permit for Construction Activity (MN R100001).

- a. Details of the Permit are available on request from the Engineer, or at:
 - i. Storm Water Program - <http://www.pca.state.mn.us/water/stormwater/stormwater-c.html>
 - ii. Permit itself - <http://www.pca.state.mn.us/publications/wq-strm2-51.doc>

9.3 WATERMAIN, SANITARY SEWER AND STORM SEWER CONSTRUCTION

- a. Watermain, sanitary sewer and storm sewer construction shall conform to the applicable provisions of the "Standard Utilities Specifications for Trench Excavation and Backfill/Surface Restoration Watermain and Service Line Installation and Sanitary Sewer and Storm Sewer Installation" as published by the City Engineers Association of Minnesota, (CEAM) 1999 Edition.
- b. Copies of the Standard Utilities Specifications may be downloaded and printed from the "DOCUMENTS" portion of the City Engineers Association of Minnesota (CEAM) web site at: www.ceam.org.
- c. References to the standard specifications shall serve to supplement or modify the referenced specification. Portions of referenced specifications not specifically affected by the supplemented information of modification shall remain in effect as originally written.
- d. **THREADED ITEMS** - All threaded items furnished under this contract, including but not limited to mechanical joint connectors, flanged joint connectors, mainline valves, saddles, corporation stops, curb stops, hydrants, and air release valves shall be furnished to the nominal size as specified with ENGLISH threads. Should the Contractor choose to supply any items with metric threads, the Contractor shall supply full shop drawings of the item(s) with special attention drawn to the metric thread designation proposed.

9.4 GRADING, STREET AND SURFACE IMPROVEMENTS

- a. All of Divisions II and III, and any specifically referenced Division I sections of the Minnesota Department of Transportation (Mn/DOT), "Standard Specifications for Construction", 2005 Edition, together with all the Supplemental Specifications and Mn/DOT Technical Memoranda in force 30 calendar days prior to bid date and referencing the use of English units of measure, shall apply to all construction performed under this Contract except as modified in these Specifications. Unless noted, the requirements in the Specifications are in addition to the Mn/DOT Specification section being referenced.

Mn/DOT Division	Applicable
I	Only when specifically referenced.
II & III	Always.

- b. Whenever the word "Contracting Authority," "Department" or "Owner" is used in the sense of ownership as part of these Specifications and Contract, it shall mean Owner as defined in the Agreement.
- c. References to the standard specifications shall serve to supplement or modify the referenced specification. Portions of referenced specifications not specifically affected by the supplemented information or modification shall remain in effect as originally written.

9.5 **EXECUTION** The Contractor shall have the following documents at the site at all times during the construction:

- a. The applicable edition of Mn/DOT Standard Specification for Highway Construction.
- b. Any Supplemental Specifications to the applicable edition of Mn/DOT Standard Specification for Highway Construction.
- c. Any Technical Memoranda specifically referenced or linked to the execution of the Contract Documents.
- d. Mn/DOT Standard Plates Manual.
- e. Minnesota Manual of Uniform Traffic Control Devices (MN MUTCD), 2005, revised January 2007
- f. Minnesota Temporary Traffic Control Zone Layouts Field Manual, January 2007
- g. Project Manual
- h. "Standard Specifications" as published by the City Engineers Association of Minnesota, (CEAM) 1999 Edition.
- i. The Storm Water Pollution Prevention Plan (SWPPP), including completed inspection reports, developed for this project.

10. **QUALITY CONTROL**

10.1 **SCOPE OF TESTS**

- a. All materials, equipment, installation, and workmanship included in this contract, if so required by the Engineer, shall be tested and inspected to prove compliance with the contract requirements.
- b. No tests specified herein shall be applied until the item to be tested has been inspected and approval given for the application of such tests.
- c. Tests and inspections shall include:
 - i. The delivery acceptance tests and inspection.
 - ii. The installed tests and inspections of items as installed.
 - iii. Final testing and start-up.
- d. Tests and inspection, unless otherwise specified or accepted, shall be in accordance with the recognized standards of the industry.

- e. **Owner** shall conduct field tests on his work as required to comply with applicable codes, to determine acceptability of workmanship, and as specified including but not limited to the following:
 - i. Concrete construction as specified in 03300.7, Compression Tests.
 - ii. Engineered backfill as specified in 02220.11.
 - iii. Tests of welded joints as specified in 13210.9.
 - iv. Preliminary test and checks associated with placing equipment and systems into service.
 - v. Thickness tests on painting.
 - vi. Leakage testing for tank.
 - vii. Mill test report.
 - viii. Other tests as defined in the specifications.
- f. Tests will be taken according to the Mn/DOT Schedule of Material Controls.

10.2 **EVIDENCE OF TEST** The form of evidence of satisfactory fulfillment of delivery acceptance test and of installed test and inspection requirements shall be, at the discretion of the Engineer, either by tests and inspections carried out in his presence or by certificates or reports of tests and inspections carried out by approved persons or organizations.

10.3 **DELIVERY ACCEPTANCE TESTS** The delivery acceptance tests and inspections shall be at the Contractor's expense for any materials or equipment specified herein and shall include the following:

- a. Test of items during the process of manufacture and/or on completion of manufacture, comprising material test, hydraulic pressure tests, electric tests, performance and operating tests, and inspections in accordance with the relevant standards of the industry and, or particularly, as detailed individual clauses of these specifications or as may be required by the Engineer to satisfy himself that the items tested and inspected comply with the requirements of this contract.
- b. Inspection of all items delivered at the site in order that the Engineer may be satisfied that such items are of the specified quality and workmanship and are in good order and condition at the time of delivery.

10.4 **INSTALLED TESTS AND INSPECTIONS OF ITEMS AS INSTALLED** All equipment shall be tested by the Contractor to the satisfaction of the Engineer before any facility is put into operation. Tests shall be as specified herein and shall be made to determine whether the equipment has been properly assembled, aligned, adjusted, and connected. Any changes, adjustments, or replacements required to make the equipment operate as specified shall be carried out by the Contractor as part of the work.

10.5 **FINAL TESTING AND START-UP**

- a. At least 10 days before the time allowed in his construction schedule for commencing testing and start-up procedures, the Contractor shall submit to

the Engineer, in duplicate, details of the procedures he proposes to adopt for testing and start-up of all equipment to be operated singly and together, excepting when such procedures have been covered in the specifications. Tests requiring water shall be conducted using clear water. The water required for such tests shall be provided by the Contractor.

- b. If, under test, any portion of the work fails to fulfill the contract requirements and is altered, renewed or replaced, tests on that portion so altered, removed, replaced, together with all other portions of the work as are affected thereby, shall, if so required by the Engineer, be repeated within reasonable time and in accordance with the specified conditions and the Contractor shall pay to the Owner all reasonable expenses incurred by the Owner as a result of the carrying out of such tests.
- c. Final testing and start-up shall be combined with the instruction of operating personnel to the end that when final testing is completed, the stations can be turned over to the Owner in an operating condition and the City personnel will be prepared to continue the operation in an orderly manner. Instruction of operating personnel by manufacturer's representatives shall be performed during this period.
- d. Should the proposed (under separate contract) connection to the water distribution system be incomplete, the Contractor may utilize a flexible, above ground temporary connection to the distribution system. Cost of such connection shall be the Contractor's. Following final testing, the temporary connection shall be disconnected and the tower left full or drained at the direction of the Engineer.

10.6 REPEAT TESTS Where, in the case of an otherwise satisfactorily installed test, any doubt, dispute or difference should arise between the Engineer and the Contractor regarding the test results or the methods or equipment used in the carrying out by the Contractor of such test, then the Engineer may order the test to be repeated. If the repeat test, using such modified methods or equipment as the Engineer may require, substantially conforms the previous test, then all costs in connection with the repeat test will be paid by the Owner; otherwise, the costs shall be borne by the Contractor. Where the results of any installed test fail to comply with the contract requirements for such test, then such repeat tests as may be necessary to achieve the contract requirements shall be made by the Contractor at his own expense.

10.7 TESTING AND LABORATORY SERVICES

- a. Independent Testing Laboratory: **All testing shall be coordinated by the Owner.** The Owner arrange for the services of an approved independent testing laboratory satisfactory to the Engineer to perform the testing utilizing recognized standard procedures and criteria. **The Owner will be responsible for costs associated with these tests. Additional tests required due to failing tests will be at the expense of the Contractor.** Testing rates will be according to the current MN/Dot Schedule of Materials Control.

- b. Reports and Certificates: The Contractor shall submit reports and certificates of all inspections and test to Engineer to duplicate. The reports and certificates become the property of the Owner.
- c. Sample Materials: The Contractor shall furnish all sample materials required for these tests and shall deliver same without charge to the testing laboratory or other designated agency when and where directed by them.
- d. Additional Tests: Any additional tests required beyond these required under this specification may be ordered by the Engineer to settle disagreements with the Contractor regarding quality of work done. If the work is defective, the Contractor shall pay all costs of the extra tests and shall correct the work. If the work is satisfactory, the Owner will pay for extra tests.

10.8 ENGINEER'S CONSTRUCTION OBSERVERS AND TESTING

- a. The Engineer will provide a Project Observer to ascertain that the work is accomplished properly and in accordance with the plans and specifications. Whether in the field or in the Contractor's shop or shops of his subcontractors, the observer shall have full access to the work and shall be given full cooperation. The inspector shall have the authority, subject to the final decision of the Engineer, to reject any defective work or material or to suspend the work if not being properly performed. The inspector shall have no authority to permit any deviation from the plans and specifications except on written order from the Engineer.
- b. The presence of the Engineer or any inspectors, however, shall not relieve the Contractor of the responsibility for the proper execution of the work in accordance with all requirements of the Contract Documents. Compliance is a duty of the Contractor, and said duty shall not be avoided by any act or omission on the part of the Engineer or any inspectors.

10.9 SITE INVESTIGATION AND CONTROL

- a. The Contractor shall verify all dimensions in the field and shall check field conditions continuously during construction. The Contractor shall be solely responsible for any inaccuracies built into the work due to his failure to comply with this requirement.
- b. The Contractor shall inspect related and appurtenant work and shall report in writing to the Engineer any conditions, which will prevent proper completion of the work. Failure to report any such conditions shall constitute acceptance of all site conditions, and any required removal, repair or replacement caused by unsuitable conditions shall be performed by the Contractor at his sole cost and expense.

10.10 RIGHT OF REJECTION The Engineer, acting for the Owner, shall have the right, at all time and places, to reject any articles or materials to be furnished hereunder which in any respect, fail to meet the requirements of these specifications, regardless of whether the defects in such articles or materials are detected at the point of manufacture or after completions of the work at the site. If the Engineer or

inspector, through an oversight or otherwise, has accepted materials or work which is defective or which is contrary to the specifications, such material, no matter in what stage or condition of manufacture, deliver, or erection, may be rejected by the Engineer for the Owner.

11. **MOBILIZATION**

This section covers the mobilization of all labor, materials, tools, equipment and performances of all work and services necessary or incidental to construct the project, including but not limited to, the demobilization associated with closing the project, removing all equipment, removing excess materials, and general clean-up.

11.1 **METHOD OF MEASUREMENT AND PAYMENT** Mobilization shall be measured by the LUMP SUM and paid in accordance with the following schedule.

- a. On the first partial estimate that shows work performed on at least one major contract item, 25 percent of the amount bid for Mobilization will be paid, but not more than 3 percent of the original Contract amount.
- b. On subsequent partial estimates, payment shall be made at the same percentage as the value of work completed to date relative to the original Contract amount, except that payment shall not be reduced from the original 25 percent. Materials on hand shall be excluded from the payment ratio computation.
- c. At such time that 95 percent of the original Contract amount is earned, full payment for Mobilization shall be made.

11.2 **SPECIFICATION REFERENCES**

- a. Mn/DOT Specification Section 2021 shall apply to mobilization.
- b. Unless noted otherwise, the provisions in this section are in addition to the referenced specification.

12. **SUBSURFACE INVESTIGATION**

12.1 **SUMMARY** This section covers the furnishing of all labor, materials, tools, equipment and performances of all work and services necessary or incidental to conducting subsurface investigation as shown on the drawings, as specified herein, and/or as specified by the Engineer.

12.2 **METHOD OF MEASUREMENT AND PAYMENT** Measurement and compensation for the following items shall be paid according to the referenced specification or as modified below:

- a. Subsurface Investigation shall be paid by the Unit Price Bid per HOUR under this bid item 1.5 Cu Yd Backhoe, if the item is on the Bid Form.

12.4 **CONSTRUCTION REQUIREMENTS**

- a. The Contractor shall:

1. Perform underground utility exploration as directed by the Engineer which involves excavation to locate pipelines for location and elevation verification.
 2. Clean debris and gravel which is present before the Project, out of existing manholes and catch basins along the Project and to regROUT the inverts, as directed by the Engineer.
 3. Other work associated with the Project, as directed by the Engineer.
- b. Where exploratory excavation is performed in a location that will not be disturbed later, the backfill shall be placed and compacted to the density specified elsewhere in these Specifications for the type of utility located.

13. **REMOVING PAVEMENT AND MISCELLANEOUS STRUCTURES**

13.1 **SUMMARY** This section covers the furnishing of all labor, materials, tools, equipment and performances of all work and services necessary or incidental to the removal of pavement and miscellaneous structures as indicated on the drawings or as specified herein.

13.2 **METHOD OF MEASUREMENT AND PAYMENT** Measurement and compensation for the following items shall be paid according to the UNIT PRICE bid for removing pavement and miscellaneous structures shall include all costs of labor, materials, equipment and ultimate disposal required to complete the work, as specified.

- a. The furnishing and installing of specific items and/or the performance of work under certain circumstances shall not be individually paid. The costs shall be included in the unit price bid for the associated removal and excavation items. Such items of work include but are not limited to:
1. Saw cutting - bituminous and/or concrete, driveways, sidewalks, pavements, curb & gutter, and other impervious surfaces. All subcutting must be full depth and be completed prior to construction of the concrete or bituminous match points.
 2. Removing storing and reinstalling mail boxes, street signs, fences (including invisible dog fences) or similar structures which must be moved to construct the project.
 3. Off-site disposal of excess excavated material and debris.
 4. Removal and off-site disposal of bituminous or concrete pavement, unless designated for salvaging.
 5. Removing, salvaging and storing, or disposing of manhole and catch basin castings.
 6. Loading, hauling, stockpiling and placing as directed (i.e., leveling) designated salvage items to a location directed by the Owner.
 7. Fees and permits for the disposal of materials.
 8. Removal and disposal of existing sanitary sewer pipe, storm sewer pipe, watermain, and service pipes.

9. Bulkheading the ends of existing pipes designated by the Engineer to be abandoned in place.
10. Protection from damage of structures or other surface improvements that are not to be removed, and subsequent repair and/or replacement if damaged by Contractor operations.

13.3 CONSTRUCTION REQUIREMENTS

- a. Remove existing bituminous, curb and gutter, walks, drives, steps and other specified items where shown on the plans and/or required for the construction of the project.
- b. Saw cut bituminous and concrete surfaces prior to excavation, to produce a clean-cut breakage joint.
- c. Dispose of all concrete and bituminous removal items, rubbish and debris outside of the construction zone. It shall be the Contractor's responsibility to secure all required permits and pay all fees associated with the disposal of the material and to secure the disposal site.
- d. Remove existing mailboxes, street signs and similar structures that must be removed to construct the project. Restore these facilities to the original location or a location designated by the Owner, when work has progressed past the location of the structure. The Contractor shall reinstall or replace those structures which are damaged or lost during the course of construction with new materials or components.
- e. The Contractor shall take full responsibility to protect structures or other surface improvements from damage that are not to be removed. If damage to these facilities occurs due to the construction of the project, the Contractor shall replace or repair them.
- f. The Owner will designate which existing hydrants, valves and boxes, manhole castings and other items removed as part of the construction, are to be salvaged. All other items shall be disposed by the Contractor.
- g. In general, all existing watermain, sanitary sewer and storm sewer pipe being replaced by new improvements shall be considered as debris and removed during the construction process. In certain instances, existing pipes may be abandoned in place, with the approval of the Engineer.
- h. Where existing pipes are to be abandoned in place, the exposed pipe ends shall be bulkheaded shut with a watertight non-shrink concrete grout at a thickness of not less than one pipe diameter.

14. **MAINTENANCE OF HAUL ROADS & TEMPORARY ACCESS**

14.1 **TEMPORARY ACCESS** Utility and street reconstruction shall be done in such a manner that businesses and residents living along the project will be closed for a minimal amount of time.

- a. The area in which the contractor is working shall have barricades placed on either end of the construction zone. The barricades shall be moved as the pipe installation and street reconstruction

- b. Pipe and service installation shall be done in such a manner so that all driveway entrances will be closed for a minimal amount of time. Compaction and backfilling procedures shall be kept within close proximity to the pipe installation crew, limiting the amount of open trench. In no case may a trench be left open over night without written consent from the City Engineer.
- c. During wet weather and on weekends, 100% crushed Class 5, recycled bituminous or another approved aggregate will be used as directed by the Engineer for temporary accesses. Temporary traffic control devices such as barricades, flashers, and channelizing devices shall be used where the Engineer deems necessary. Temporary traffic control devices shall be considered incidental. The Contractor shall provide the Engineer with an approved traffic control plan, which minimizes traffic disturbance. Every effort must be made to provide and maintain access during construction.
- d. All equipment, labor and materials used to maintain a safe, drivable access will be paid at the unit price bid for Traffic Control.

14.2 MAINTENANCE

- a. The Contractor shall notify and obtain the approval of the local governmental authority for the use of all haul roads and construction easement areas within the City limits not specifically noted below. The Contractor will be required to deliver new materials and dispose of all excavated material plus removal items only on designated haul roads. This also applies to equipment entering and leaving the project site such as backhoes and front end loaders.
- b. Allowable City street and project haul roads are described as follows:
(TBD per project)
- c. The Contractor shall confine all operations, ingress and egress to the designated haul roads. The Owner may assess a fee in the amount of \$500 per day for each day that the Contractor occupies or travels on non-designated haul roads. The fee shall be in addition to damages assessed against the Contractor to repair damage caused to the roadway.
- d. The Contractor shall maintain and repair any damage to haul roads. Maintenance shall include, but not be limited to, the following: blading, patching, signing, graveling and dust control. This work will be at the Contractor's expense, without any direct compensation being made other than the payment received for Contract items.
- e. The Contractor shall be responsible for all roadbed maintenance over backfilled trenches and roadbed subgrade during the construction period.

14.3 REFERENCED SPECIFICATION

- a. Mn/DOT Specification 1515, Control of Haul Roads
- b. Mn/DOT Specification 2051, Maintenance and Restoration of Haul Roads.
- c. Unless noted otherwise, the provisions in this section are in addition to the referenced specification.

14.4 CONSTRUCTION REQUIREMENTS Reclaimed bituminous and salvaged aggregate base may be used for temporary access surfacing. No additional compensation shall be granted for the installation, removal and disposal of materials utilized in this way.

15. MAINTENANCE AND CONTROL OF TRAFFIC

15.1 TRAFFIC CONTROL

- a. All traffic control methods shall conform to the provisions of the latest edition of the Minnesota Manual of Uniform Traffic Control Devices (MN MUTCD), including its supplements and Part VI, "Field Manual for Temporary Traffic Control Zone Layouts", the "Guide to Establishing Speed Limits in Highway Work Zones", the Minnesota Flagging Handbook, the provisions of Mn/DOT 1404 and 1710, the Minnesota Standard Signs Manuals Parts I and II, the Traffic Engineering Manual Chapter 8 Appendixes 8-8.02 and 8-8.03, the Traffic Control Layouts/Typical Traffic Control Layouts in the Plans.
- b. The Contractor shall furnish, install, maintain and remove all traffic control devices including, but not limited to, construction signs, barricades and barricade weights, traffic marking tape, and warning lights which are needed for the guidance, warning and control of traffic adjacent to and through this project.
- c. All disturbed streets and driveways shall be opened to local traffic on weekends to the extent possible. Property owners shall be contacted 48 hours in advance to plan for interruptions in accessibility. The Contractor shall schedule the work to cooperate fully with residential and business property owners abutting the project to minimize the time of restricted access to their property during the construction period. Driveway access to any property adjacent to the construction zone shall be restricted no more than seven days to allow for curing of the concrete curb and driveway pavement.
- d. If it is necessary to enter upon a right-of-way controlled by the County or Minnesota Department of Transportation, the Contractor shall notify the appropriate agency before commencing construction within the right-of-way.
- e. In the event that any of the above right-of-way require traffic to be detoured around the construction zone, the Contractor shall prepare the detour route with the appropriate Agency representatives. The Contractor shall provide and maintain all signing and other traffic control required. The affected Agency shall be notified by the Contractor before re-routing traffic. Dust control and road maintenance of the by-pass route shall be the Contractor's responsibility.
- f. The Contractor shall be responsible for securing a site for storage of construction equipment and materials.
- g. Through traffic may be diverted from streets under construction during hours of operation. Access for emergency vehicles shall be maintained or provided at all times.

- h. The Contractor shall maintain garbage and recycling service at all times. Costs for providing access or hauling containers to an accessible location shall be incidental to the contract.
- i. During wet weather and on weekends, 100% crushed Class 5, recycled bituminous or another approved aggregate will be used as directed by the Engineer for temporary accesses. Temporary traffic control devices such as barricades, flashers, and channelizing devices shall be used where the Engineer deems necessary. Temporary traffic control devices shall be considered incidental. The Contractor shall provide the Engineer with an approved traffic control plan, which minimizes traffic disturbance. Every effort must be made to provide and maintain access during construction.
- j. All equipment, labor and materials used to maintain a safe, drivable access will be paid at the unit price bid for Traffic Control.

15.2 GENERAL CONSTRUCTION AND TRAFFIC REQUIREMENTS The parking of Contractor's Vehicles that obstruct any traffic control devices will not be permitted.

15.3 METHOD OF MEASUREMENT AND PAYMENT Traffic Control shall be measured by the LUMP SUM and paid in accordance with the following schedule.

- a. On the first partial estimate that shows work performed on at least one major contract item, 25 percent of the amount bid for Traffic Control will be paid, but not more than 3 percent of the original Contract amount.
- b. On subsequent partial estimates, payment shall be made at the same percentage as the value of work completed to date relative to the original Contract amount, except that payment shall not be reduced from the original 25 percent. Materials on hand shall be excluded from the payment ratio computation.
- c. At such time that 95 percent of the original Contract amount is earned, full payment for Traffic Control shall be made.

15.4 CONSTRUCTION REQUIREMENTS

- a. The Contractor shall notify the Engineer in writing at least 72 hours prior to the start of any construction operation that will necessitate lane closure or internal traffic control signing.
- b. The traffic control devices required along the project corridor shall be delivered and installed prior to the start-up of the work.
- c. The Contractor shall maintain traffic through the intersections whenever possible.
- d. The Contractor shall monitor and maintain all traffic control devices.

16. DEWATERING

16.1 SUMMARY This section covers the furnishing of all labor, materials, tools, equipment and performances of all work and services necessary or incidental to the dewatering of trenches as necessary to construct the elements shown on the drawings or as specified herein.

16.2 METHOD OF MEASUREMENT AND PAYMENT Measurement and compensation for the following items shall be paid according to the referenced specification or as modified below:

- a. Dewatering shall be considered incidental to the utility being constructed unless identified in the Bid Form.
- c. The furnishing and installing of specific items and/or the performance of work under certain circumstances shall not be individually paid. The costs shall be included in the unit price bid for the dewatering items, as indicated. Such items of work include but are not limited to:
 1. Interference of other underground structures and utilities, include in the price bid for dewatering.
 - i. The removal and restoration, or protection of existing utilities that are shown on the plans and for which there is no bid item for removing and restoring, or working around the utility.
 2. The costs of furnishing discharge piping including bends, and adapters, include in the price bid for dewatering.
 3. Protecting existing improvements from damage, include in the price bid for dewatering
 4. Removal and off-site disposal of bituminous or concrete pavement, unless designated for salvaging.
 5. Removing, salvaging and storing, or disposing of manhole and catch basin castings.
 6. Loading, hauling, stockpiling and placing as directed (i.e., leveling) designated salvage items to a location directed by the Owner.
 7. Fees and permits for the disposal of materials.
 8. Removal and disposal of existing sanitary sewer pipe, storm sewer pipe, watermain, and service pipes.
 9. Bulkheading the ends of existing pipes designated by the Engineer to be abandoned in place.
 10. Protection from damage of structures or other surface improvements that are not to be removed, and subsequent repair and/or replacement if damaged by Contractor operations.

16.3 CONSTRUCTION REQUIREMENTS

- a. The Contractor shall furnish and install all necessary discharge piping and obtain all permits, easements, rights-of-way, etc. to convey and discharge the water at a sufficient distance from the project area to eliminate recharge of the ground water a the project site.
- b. Water from dewatering operations shall not be discharged where it will pond or cause damage to cropland or personal property due to the presence of standing or flowing water.

- c. Water shall be discharged into temporary sedimentary basins prior to ultimate discharge into natural streams or waterways where its impact will have negligible impact.
- d. Existing and/or proposed sanitary system(s) shall not be used as an outlet for the dewatering operations.

17. **AIR, LAND AND WATER POLLUTION** This section covers the furnishing of all labor, materials, tools, equipment and performances of all work and services necessary for the prevention of air, land and water pollution as indicated on the plans or as specified herein or as directed by the Engineer.

17.1 **ROCK CONSTRUCTION ENTRANCE** Rock construction entrances will be required on all sections of the project where the construction area meets a hard surface street or as directed by the Engineer. Rock construction entrances will be constructed as soon as the street surface has been milled and salvaged, and this may require entrances to be rebuilt after each phase of utility installation. The Contractor will be responsible to maintain rock entrances for the duration of the project or until a gravel driving surface is in place. Rock construction entrances shall be installed in areas that allow all residents access to their homes, however, some streets may be blocked off during construction to limit the number of rock entrances required.

Rock entrances shall be constructed according to the typical sections shown on the plans. Construction, maintenance, and materials required for the rock entrances will be considered incidental to the contract.

17.2 **METHOD OF MEASUREMENT AND PAYMENT** Measurement and compensation for the following items shall be paid according to the referenced specification or as modified below:

- a. Payment for all work associated with the prevention of water pollution and erosion control shall be incidental to the project and no separate compensation will be granted, unless payment for such work is specifically identified in the bid tab.

17.3 **SPECIFICATION REFERENCES**

- a. Mn/DOT Specification Section 1717 shall apply to the prevention of air, land and water pollution.
- b. Mn/DOT Specification Section 2573 shall apply to storm water management.
- c. Unless noted otherwise, the provisions in this section are in addition to the referenced specification.

17.4 **GENERAL EXECUTION** The Contractor shall provide and maintain all sanitary accommodations for use by employees. All solid waste material shall be disposed by the Contractor in accordance with the local and State solid waste disposal regulations.

17.5 **DUST CONTROL** The Contractor shall provide all equipment and materials necessary for the control of dust arising during the performance of the work. Dust shall be controlled so as to not be a nuisance to adjacent property owners or

occupants. At times requested by the Engineer or Owner, or at other times as necessary, the Contractor shall take measures to reduce the transport of dust and sediment off-site.

These measures may include, but are not limited to:

1. application of a calcium chloride solution in accordance with Mn/DOT Specification 2131 (liquid form only),
 2. pick up sweepers (no open brush sweepers),
 3. watering source areas of dust,
 4. temporary surfacing such as paving, mulching, or sodding source areas, and
 5. use of contractor-installed gravel driveways at accesses to public roadways,
 6. washing streets.
- a. The Contractor shall provide water tank trucks equipped with water cannon capable of delivering water through either front or rear-mounted nozzles. Tank trucks shall be of sufficient size and mobility and carry a sufficient quantity of water to control dust generated by Contractor's activities.
 - b. The cost of all Dust Control measures (except street sweeping) will be considered incidental to the project.
 - c. A bid item for Street Sweeping is included in the project.

17.6 USE OF CHEMICALS Reference Storm Water Pollution Prevention Plan (SWPPP).

18. FIELD ENGINEERING

18.1 STAKING Unless otherwise specified in the specific sections, Owner shall provide engineering surveys to establish reference points for construction as follows:

- a. Sanitary Sewer and Storm Sewer: Staking will be furnished and set by the Engineer at 50 foot spacing (usually offset for construction) for the control of the underground construction herein described. Cuts to the proposed pipeline grade will be furnished by the Engineer. Manholes and catch basins will be staked with an offset and a witness with a cut to the lowest structure invert. Location staking shall be provided for service wyes for new construction. No staking will be provided for service wyes for reconstruction projects or where existing services are being connected to the new sewer line.
- b. Watermain: The staking interval for watermain shall be 50 feet. Cuts to the proposed pipeline grade will be furnished by the Engineer. Location staking shall be provided for valves and fittings. Hydrants will be staked

with an offset and a witness with a cut to the ground elevation at the hydrant.

- c. Services: No staking will be provided for service line construction for reconstruction projects or where existing services are being connected to the new sewer line.
- d. Street Grading and Top of Curb: A control line (usually offset from the curb line) with cuts and fills to proposed grade at 50 foot spacing on tangents, and 25 foot spacing on horizontal or vertical curves, shall be furnished and set on both sides for control of the construction herein described.
- e. Concrete Paving: Control lines for paving forms or stringline control with cuts and fills to proposed finished grade at 25 or 50 foot stations shall be furnished and set by the Engineer for control of the concrete construction herein described. The offset and actual form or stringline locations shall be in accordance with the paver manufacturer's recommendations and the approved paving strategy as determined at the Preconstruction conference.
- f. Site Grading: Centerline stakes, with cut or fill to finished grade will be provided at 50 foot spacing. Stakes with cut or fill to finished grade will be provided for; contours representing grade breaks at 100 foot spacing along the contour, contours representing the top and bottom of ponds at 100 foot spacing along the contour, and for building pad corners (usually offset from the actual corner).
- g. Miscellaneous: Location stakes will be provided for silt fence locations at 100 foot spacing. Location stakes representing clearing and grubbing limits will be provided at 100 foot spacing.
- h. The Contractor shall give the Engineer sufficient notice, normally two working days, to provide staking for the orderly progress of the work and shall provide clear line of sight for all staking.
- i. The stakes are an integral part of the project and the Contractor shall protect and preserve all such stakes and marks, and may be charged with the expense of resetting all such stakes and marks destroyed or disturbed due to the Contractor's carelessness or negligence. Stakes that are destroyed due to vandalism, erosion or other incidents shall be re-staked by the Engineer, at the Contractor's expense.
- j. In the event of apparent or questionable errors or inconsistencies in such stakes set for control of line and/or grade, the Contractor shall promptly notify the Engineer of such error or inconsistency and shall not proceed with the work until such stake, grade, or mark shall have been verified or corrected by the Engineer.
- k. All other line and grade staking shall be the responsibility of the Contractor. The Contractor shall furnish sufficient equipment and personnel for determination of plan grades, cross sections, course thicknesses, etc. The survey cost of establishing stakes requested by the Contractor for the convenience of the Contractor, beyond those cited as basic project control, will be charged to the Contractor or withheld from the amounts due to the Contractor.

1. Unless otherwise stated in the applicable section of the Specifications or waived by the Engineer, the Contractor shall provide Blue Tops prior to final paving for subgrade and aggregate base construction.

18.2 SPECIFICATIONS

- a. Water Distribution System - See CEAM 2611.3 (A2).
- b. Pipe Sewers - See CEAM 2621.3 (A2).

19. **EXTRA WORK AND FORCE ACCOUNT WORK** The contractor shall submit a schedule of labor and equipment rates on a per hour basis for each operation required during construction of the project. Once approved, based on the Contractor's previous work, these rates may be used for extra work necessary beyond the scope of the bid prices. The Engineer shall approve the extra work. The rates shall be submitted at the pre-construction conference.

20. **PROJECT CLOSEOUT**

20.1 FINAL INSPECTION

- a. After the cleaning up of the work, premises, and all other areas and structures connected with the performance of the contract, the work as a whole, shall be examined by the Engineer and Owner; and, any workmanship or materials found not meeting the requirements of the specifications shall be identified and included on a punch list given to the Contractor.
- b. The Contractor shall, at its own expense, promptly remove, replace, repair, or otherwise correct the deficiencies with good and satisfactory workmanship and material to the satisfaction of the Owner and Engineer.
- c. In the event that the Contractor does not satisfactorily remove, replace, repair, or otherwise correct the deficiencies within thirty (30) calendar days after receipt of the punch list, the Owner reserves the right to employ the services of other contractors and/or service organizations to conduct the necessary work and deduct any and all associated costs from final payment to the Contractor. The entry of such other agents on the project to perform this work will not relieve the Contractor from any of its warranty, maintenance or start-up obligations.

- 20.2 **PROJECT ACCEPTANCE** The project shall be accepted after the final examination has been conducted and all settlement, defects, damages, etc., discovered during the previous examination have been remedied.

21. **WITHHOLDING AFFIDAVIT FOR CONTRACTORS - FORM IC-134** All Contractors and Subcontractors are to present this form when final payment is requested. Upon completion of the project, the Contractor is to complete the form and send it to the Minnesota Department of Revenue for certification. Upon verification by the Department of Revenue (usually one-day) it is signed, dated and returned to the Contractor if in compliance with the withholding laws. If certified, final payment can then be made to the Contractor. Five (5%) percent of the payment will be withheld until 30 days after the signed Affidavit is approved by the City Council.

22. **EXEMPTION FROM SURETY DEPOSITS FOR OUT-OF-STATE CONTRACTORS - FORM SD-E** After entering into a contract for a project in excess

of \$100,000, a non-Minnesota Contractor will have to file form SD-E with the Minnesota Department of Revenue who will then determine if the Contractor is exempt from the 8% surety deposit requirements. If the Contractor is exempt, the Department will certify the form and return a copy to the Contractor, who will then be responsible for providing a copy to the City. If the Contractor is not exempt, the Department will notify the City to withhold the 8% surety deposit from each partial payment made to the Contractor. The Minnesota Department of Revenue will retain the surety deposits until the Contractor's state tax obligations are considered fulfilled. The Department will refund, with interest, any amounts held as surety.