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DEPARTMENT OF PUBLIC WORKS
CITY OF SAINT PAUL, MINNESOTA

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**DEPARTMENT OF PUBLIC WORKS
CITY OF SAINT PAUL, MINNESOTA**

**STANDARD SUPPLEMENTAL
SPECIFICATION FOR CONSTRUCTION
February 2, 2021**

**DIVISION I
GENERAL REQUIREMENTS**

1103 DEFINITIONS

The provisions of MnDOT specifications 1103 shall govern as amended below:

The terms “Commissioner”, “State”, and “Department” shall be deemed to mean the “City of Saint Paul”, defined as a municipal corporation of the State of Minnesota as represented by, and acting through, its authorized officials.

The terms “extra work” and “minor extra work” shall be defined to mean any work not required by the contract as awarded, but which is authorized by administrative order for contract change order.

The term “complete in place” shall mean completion of the item or designated units thereof in accordance with all indicated and specified requirements, including the furnishing of all materials, equipment, tools, labor, and work incidental thereto. Bid prices for complete in-place items shall also include full compensation for any work essential for completion of the item as intended or specified, whether or not the specific material or operation is indicated.

The term “incidental work” shall mean furnishing all materials, equipment, tools, labor, and work incidental thereto, whether indicated or implied necessary for the successful completion of the project, but for which no compensation is paid directly to the contractor.

“Contract change order” shall carry the same definition as “supplemental agreement”.

1202 CONTENTS OF PROPOSAL PACKAGE

The provisions of MnDOT specifications 1202 shall govern as amended below:

The plans, specifications, and other documents designated in the proposal are also a part thereof, whether attached or not.

1205 EXAMINATION OF PROPOSAL PACKAGE AND SITE OF WORK

The provisions of 1205 in the Saint Paul Standard Supplemental Specifications for Construction shall govern as amended below:

Solicitation documents may be obtained via www.stpaulbids.com.

To do business with the City of Saint Paul in 2014 and beyond, your business must be registered on www.stpaulbids.com.

For questions about www.stpaulbids.com, please contact the City at stpaulbids@ci.stpaul.mn.us.

For further information regarding obtaining contract documents, contact the Contract and Analysis Department at 651-266-8900.

1302 AWARD OF CONTRACT

The provisions of MnDOT specifications 1302 shall be amended as follows:

Change the first sentence to read “Within 45-calendar days...” instead of “Within 30-calendar days...”

1305 REQUIREMENT OF CONTRACT BOND

The provisions of MnDOT specifications 1305 shall be deleted in its entirety and the following provisions substituted in lieu thereof:

Performance and Payment Bond

The contractor shall furnish to the City of Saint Paul a PERFORMANCE BOND, the sureties of which must be acceptable to the City in the amount equal to 100% of the contract amount, which bond shall expressly guarantee completed execution of the contract and all supplemental agreements comprising a part thereof.

The contractor shall also furnish a separate PAYMENT BOND, the sureties of which must be acceptable to the City in the amount equal to 100% of the contract amount, to further expressly guarantee full and complete payment to all persons performing labor and/or furnishing materials in connection with the contract, and which bond shall indemnify the City for any loss sustained by the City on account of, or by reason of, the acts of the contractor or the acts of anyone directly or indirectly employed by the contractor in the prosecution of the work.

All contractors' bonds shall contain the following rider:

“And the said surety for value received, hereby stipulates and agrees that no change, extension of time, alterations or additions to the terms of the contracts, the work to be performed thereunder, or the specifications accompanying same, shall in any way affect its obligation on this bond and it hereby expressly waives notice of any such change, extension of time, alterations or additions to the terms of the contracts, the work, or the specifications.”

Insurance and Indemnification

A. General

Contractor shall be required to carry insurance of the kind and in the amounts shown below for the life of the contract. Insurance certificates for general liability should state that the City of Saint Paul, its officials, employees, agents, and representatives are named as additional insureds.

1. General Liability Insurance

\$1,500,000.00	per occurrence
\$2,000,000.00	aggregate per project
\$2,000,000.00	products/completed operations total limit
\$1,500,000.00	personal injury and advertising

Policy must include an “all services, products, or completed operations” endorsement.

2. Automobile Insurance (when Commercial vehicles are used in connection with contract)

a) Bodily injury	\$ 750,000.00	per person
	\$ 1,000,000.00	per accident
b) Property damage not less than	\$ 50,000.00	per accident

3. Automobile Insurance (when Personal vehicles are used in connection with contract, the City is not required to be named as Additional Insured, but proof of insurance is required prior to commencement of activities. Contractor must provide City with Endorsements from insurance company)

a) Bodily injury	\$ 30,000.00	per person
	\$ 60,000.00	per accident
b) Property damage not less than	\$ 20,000.00	per accident

4. Automobile Insurance (when Rental vehicles are used in connection with contract, the Contractor shall either purchase insurance from the rental agency or provide the City with proof of insurance as stated above.)

5. Workers’ Compensation and Employer’s Liability

- a) Workers’ compensation per Minnesota Statute.
- b) Employer’s liability shall have minimum limits of \$500,000.00 per accident, \$500,000.00 per employee, and \$500,000.00 per disease policy limit.
- c) Contractors with 10 or fewer employees who do not have Worker’s Compensation coverage are required to provide the City with a completed “Certificate of Compliance” (State of Minnesota form MN LIC 04) verifying their number of employees and the reason for their exemption

6. Professional Liability Insurance is required when a contract is for service for which professional liability insurance is available for purchase.

a) \$ 1,000,000.00	per occurrence
b) \$ 2,000,000.00	aggregate

7. General Insurance Requirements

- a) The policy is to be written on an occurrence basis or as acceptable to the City. Certificate of Insurance must indicate if the policy is issued on a claims-made or occurrence basis. Agent must state on the certificate if the policy includes errors and omissions coverage.
- b) The Contractor shall not commence work until a Certificate of Insurance covering all the insurance required for this project is approved and the Project

Manager has issued a Notice to Proceed. Insurance must remain in place for the duration of the original contract and any extension periods.

c) The City reserves the right to review Contractor's insurance policies at any time to verify that City requirements have been met.

d) Nothing shall preclude the City from requiring contractor to purchase and provide evidence of additional insurance if the scope of work changes significantly or the risk to the public changes during the project.

e) Satisfaction of policy and aggregate limits can be met with an umbrella or excess policy with the same minimum monetary limits written on an occurrence basis, providing it is written by the same insurance carrier, or a different insurance carrier if an endorsement is provided showing underlying coverage.

f) All insurance certificates given to the City shall provide that the City shall be given notice of all changes, cancellations, or non-renewal per the policy's terms and conditions.

B. Pollution Liability Insurance

When the work includes abatement or demolition of hazardous materials, the contractor is required to provide "Contractor's and Engineer's Asbestos and Pollution Liability" coverage either through the contractor's insurance company or the contractor's subcontractor's insurance company. The minimum coverage amount of insurance is \$2,000,000.00 each occurrence.

The contractor is required to furnish the City with their or their subcontractor's insurance certificate before a contract is approved. The City reserves the right to ask for a copy of the contractor's or the subcontractor's "Contractor's and Engineer's Pollution Liability Policy" before approving a contract. The City reserves the right to reject a policy based on deductible amounts. The following language must be on the contractor's or subcontractor's insurance certificate:

If Coverage is by the Subcontractor's Insurer

"The City of Saint Paul and the general contractor under contract with the City of Saint Paul are hereby named as additional insured with a cross-suits liability endorsement on the "Contractor's and Engineer's Pollution Liability Policy" for survey and/or abatement of any pollution exposure including, but not limited to, asbestos, lead, and mercury."

If Coverage is by the Contractor's Insurer

"The City of Saint Paul is hereby named as additional insured with a cross-suits liability endorsement on the "Contractor's and Engineer's Pollution Liability Policy" for survey and/or abatement of any pollution exposure including, but not limited to, asbestos, lead, and mercury."

C. Subcontractor's Insurance

In the event any work contemplated by the contract is sublet, the contractor shall be responsible to see that the subcontractors provide insurance in accord with the minimum requirements herein above imposed on the contractor.

D. Railroads

In cases where the contract requires that work be done on or near the right-of-way of a railroad and/or that the contractor haul materials on a private crossing over the tracks of a railroad, the contractor must provide such insurance as the railroad company may require.

E. Private Owners

If the owner of any premises on which work is required to be done demands insurance in addition to that provided above or elsewhere in the contract, the contractor shall, without extra compensation therefore, provide such insurance as the owner may require.

F. Builder's Risk Insurance

In any case where the contract contemplates the building, construction, remodeling, or rehabilitation of any building or structure, the contractor shall procure and maintain Builder's Risk Insurance with the City named as an additional insured in the amounts as follows:

1. New Construction

When the contract contemplates the construction of any new building or structure, the amount of the insurance shall always be equal to 100% of the contract amount.

2. Remodeling or Rehabilitation

When the contract contemplates the remodeling or rehabilitation of an existing building or structure, the amount of insurance shall be \$10,000.00 or twice the contract amount, whichever is the greater.

G. Indemnification

The contractor shall indemnify and save harmless the City and all of its officers, agents, and employees from all suits, actions, or claims of any character, name, and description brought on account of any claimed or actual injuries or damages received or sustained by any person, persons, or property, by or from the alleged or actual act or acts of said contractor, or in consequence of any negligence in safeguarding the work, or through the use of unacceptable materials in constructing the work, or on account of any act or omissions, neglect, or misconduct of said contractor, or from any claims or amounts arising or recovered under the Workers' Compensation Law or any other law, by-law, ordinance, order, or decree. The contractor shall indemnify and save harmless the City from any and all losses caused by, or on account of, any claims or amounts recovered for any infringement of patent, trademark, or copyright. The unauthorized use by the contractor of public or private property for any purpose may be considered an injury or damage to the property so used.

H. Duty to Defend

Where the City is joined as a party defendant in any aforesaid suit or suits, action or actions on account of any aforesaid claim or claims for any such injuries or damages arising there from or connected with the work, the contractor shall be obligated to fully indemnify and hold harmless the City from all liability therein and to further accept the tender of the

defense of any such suit or suits, action or actions at the contractor's own separate cost and expense. If the contractor in any such instance or instances shall unduly fail or refuse upon due notice and demand as the same may be given by the City to assume the defense of the City therein, and the City itself shall supply such defense then and thereupon the contractor shall on such account, and in addition to all other liability of the contractor to the City in the premises, pay to the City the following sum on account and for reimbursement for the City's costs and expenses in providing such defense, compiled and set forth herein as follows:

1. Reasonable attorney's fees for any appearance in court in each instance where the City is made a party to an action or is brought into a pending action as an additional party or third-party defendant, the same amount being established as a reasonable attorney's fee for appearing in any action.
2. All actual costs incurred by the City in participating in such action, including specifically investigative expenses and any costs of the City by reason of any discovery procedures undertaken in such action.
3. Reasonable attorney's fees for any appearance in court. The City may charge as liquidated damages any costs or charges incurred by the City when the City is required to participate in any lawsuit as hereinbefore provided growing out of, or caused as a result of, the operations of the contractor done in the performance of the contract.

I. Duty to Notify City

It shall be the contractor's duty to notify the City in writing immediately by service of notice upon the Office of the City Attorney of the existence of any claims, other than those arising under the Workers' Compensation Act, or possible claims either because of personal injury or property damage, which claims arise as a result of the contractor's or subcontractor's operations in the performance of the contract.

1306 EXECUTION AND APPROVAL OF CONTRACT

The provision of MnDOT specifications 1306 shall govern as amended below:

Upon completion of the contract award process, the project engineer will send a "Notice to Proceed" letter to the contractor. The Notice to Proceed shall include any revisions to the schedule or special instructions that resulted from the pre-construction meeting and authorize a project start date.

1402 CONTRACT REVISIONS

The provision of MnDOT specifications 1402 shall govern as amended below:

In MnDOT specifications 1402.3(2), delete any reference made to contract quantity increases in excess of 125% or decreases below 75% of the original quantity.

1403 NOTIFICATION FOR CONTRACT REVISIONS

1403.1 GENERAL The following notification requirements apply to all potential Contract revisions including those defined in 1402, "Contract Revisions." The Engineer will consider requests for Contract revisions only if the notification procedures in this section are followed. The specified time limits may only be extended through a written, jointly-signed agreement between the Contractor and the Engineer. The Engineer will address the underlying issue prompting the notification in a timely manner.

1403.2 FIRST NOTICE, BY CONTRACTOR: The Contractor shall notify the Engineer as soon as a Contract revision appears necessary. The Contractor shall not start or continue with an activity or Contract Item for which a Contract revision may be necessary without authorization from the Engineer.

1403.3 WRITTEN NOTICE, BY CONTRACTOR: If the Contractor disagrees with the Engineer's response or the Engineer does not respond to the first notice, the Contractor shall provide a written notice. Provide this written notice within 5 business days of first notice if Engineer has not responded or within 5 business days of receiving the Engineer's response to the first notice. The written notice shall include the following: (1) A description of the situation; (2) The time and date the situation was first identified; (3) The location of the situation, if appropriate; (4) A clear explanation of why the situation represents a Contract revision, including appropriate references to the pertinent portions of the Contract or law; (5) A statement of the revisions deemed necessary in the Contract Unit Price(s), delivery schedule(s), phasing, time, etc. Because of the preliminary nature of this notice, the Department recognizes that this information may rely on estimates; (6) An estimate of the time by which the Engineer must respond to minimize cost or delay, and; (7) Anything else that will help achieve timely resolution.

1403.4 WRITTEN ACKNOWLEDGEMENT BY ENGINEER: The Engineer will provide a written acknowledgment of receipt of the Contractor's written notice.

1403.5 FINAL WRITTEN RESPONSE BY ENGINEER: Within 10 business days of receiving the Contractor's written notice, the Engineer will provide a written response that includes one of the following: (1) Confirmation of the need for a contract revision. The Contractor shall pursue time extensions in accordance with 1806, "Determination and Extension of Contract Time," and compensation in accordance with 1904, "Compensation for Contract Revisions," or (2) Denial of the request for a contract revision, in which case the Engineer will make clear, by reference to the Contract, why the issue does not represent a revision to the contract. (3) A request for additional information, in which case the Engineer will state clearly what is needed and by when; the Engineer will respond within 10 business days of receiving the additional requested information. 1403.6 CONTRACTOR'S RECOURSE If the Contractor disagrees with the Engineer's final written response or the Engineer's response is untimely, the Contractor may pursue a claim in accordance with 1517, "Claims for Compensation Adjustment." The Contractor shall give the Engineer written notice of the intent to pursue a claim within 5 business days of receiving the Engineer's final written response.

1404 MAINTENANCE OF TRAFFIC

The provisions of MnDOT specifications 1404 shall be deleted in their entirety and replaced with the following:

1404.1 General

The contractor shall be held fully responsible to prevent and eliminate any dust nuisance caused by and during construction until the project has been completed and accepted. Such dust control measures may include sweeping, water sprinkling, calcium chloride applications, treatment with bituminous materials, or any other methods as directed by the engineer which will provide and maintain dust-free roads. All such dust control work shall be classified as incidental work unless payment provisions are provided in the bid schedule.

The contractor shall inform the engineer 48-hours in advance, or more if needed, of daily operations that will have a significant impact on traffic flow. Significant impacts to traffic flow include, but are not limited to, bypasses, crossovers, street closures, lane closures, removal of parking, alterations of access, changes to bus stops or routes, truck restrictions or route changes, restrictions to sidewalks, pedestrian facilities, or bicycle facilities.

The contractor shall obtain approval from the Public Works Right-of-Way traffic control representative at 651-266-9808 for such traffic control plans, layouts, and/or detours prior to implementation.

Lane closures or other traffic restrictions identified by the engineer shall not be initiated until after the morning rush hour during periods of inclement weather or at other times when, in the opinion of the engineer, such traffic restrictions would be a hazard to public traffic.

The contractor and Public Works shall inform the proper authorities, including the fire and police departments, of the location and time period of impending operations with significant impact on traffic flow, and advise of approved traffic control plans, layouts, and/or detours that will be in effect. Other authorities may include, but are not limited to, transit and rail.

The contractor shall conduct their construction activities to minimize disruption to local traffic and access. Routes shall be maintained so that emergency vehicles can gain access to all buildings within a distance no greater than 150-feet. The engineer may require the contractor to restore certain streets prior to closing additional streets and/or provide a temporary roadway for cross streets or cross alleys to facilitate traffic movement and emergency accessibility.

The contractor shall place lane line tick marks as directed by the Traffic Operations supervisor prior to opening the roadway to traffic. This work shall be considered incidental work.

The City of Saint Paul will not require the contractor to remove snow from roads open to traffic.

Residents must be notified in advance of denying access to dead end alleys, parking lots, driveways, and garages. The engineer or construction inspector will prepare a notice to be

distributed to residents prior to a closure. The contractor will provide to the inspector, the date the closure will begin, a brief description of the construction process, the name and telephone number of a designated representative of the contractor, and the anticipated duration of the closure.

The notice shall be hand-delivered by the contractor to the properties abutting the block(s) of street or alley to be closed to through traffic. The notice shall be delivered 5-to-7-days prior to closure of the block(s) to through traffic. If said notice is not delivered within the specified time, liquidated damages in the amount of \$500.00 per block, per calendar day, will be charged against the contractor.

The contractor shall make every effort to provide access whenever possible and driveways shall be ramped as needed

Paving operations for streets not involving sewer repair, construction, or utility work shall be coordinated with other construction so that local access is maintained for all property owners.

Removal of street surfacing shall not precede mainline sewer, water, or new street construction by more than 5-days unless authorized by the engineer.

All streets shall be restored, or in the case of newly paved streets, shall have all concrete flatwork completed and brought up through the first bituminous base course within 30-days of completion of the underground utility work and mainline sewer work, or within 30-days of removals where no utility work or mainline sewer is required. The construction of catch basins or catch basin leads shall not be considered mainline sewer work or utility work.

Some residents of the project area may have alley access. The contractor shall keep at least 1-end of all alleys open to traffic at all times.

Within 10-days following the approval of the contract, the contractor shall provide the engineer with a planned sequence of construction, clearly outlining the sequence of operations, streets closed during any stage of construction, and provisions for routing detoured traffic. The contractor shall meet with representatives of XCEL ENERGY and any other utilities which may be affected by the construction before developing the sequence of construction.

The engineer will determine the viability of the planned sequence and may accept, reject, or suggest alterations to the planned sequence. The contractor may not begin any construction operations without complete approval of the planned sequence of construction by the engineer.

The contractor shall remove all temporary "No Parking" signs within 24-hours after the wear course has been placed. If said work is not completed within the specified time, liquidated damages in the amount of \$500.00 per block, per calendar day, will be charged against the contractor.

1404.2 Maintenance of Signs, Parking Meters, and Preparation for New Installation Thereof

The contractor shall exercise reasonable care against damage to, or the loss of, City-owned signs. Any damage caused by the contractor will be billed directly to the contractor.

The contractor shall call the Traffic Operations maintenance supervisor at 651-266-9778 for signs and 651-266-6151 for parking meters, a minimum of 48-hours in advance to arrange for removal of existing signs or parking meters (signs and meters should be identified on approved traffic control plans, layouts, and/or detours).

The contractor shall be responsible for the installation of sign post bases in new concrete walks and center islands, or placement of concrete median barriers where directed, and shall give a minimum of 48-hours' advance notice to the Traffic Operations traffic maintenance supervisor at 651-266-9778 before pouring any concrete islands or integral curb and walk for locating where sign collars are to be placed. Failure to do so will result in the contractor being billed directly for all costs incurred by the City for installing the sign collars.

Payment for "**Sign Post Bases**" shall be as shown in the fixed unit prices. The City will furnish new sign post bases and the contractor will provide the labor for installation. Bases must be installed plumb and flush and bolt access holes shall be free of excess concrete. Improperly installed bases shall be removed and reinstalled by the contractor with no additional compensation.

1404.3 Contractor's Request for Detour

The contractor may request from the engineer a detour for through traffic. The contractor shall specify the detour routes to be established and submit all information needed to justify the detour request. The contracting authority will consider and may, at its sole discretion, approve the detour request and establish a detour if arrangements can be made that are satisfactory to the agencies having jurisdiction over the roads to be used in accordance with the following:

1. The contractor shall design, provide, install, maintain, and remove traffic control devices on the detour roads at no additional cost to the City. The contractor shall submit the proposed detour layout to the engineer for approval at least 7-calendar days before the contractor implements the detour.
2. The contractor shall reimburse the City for all expenses incurred in maintaining and restoring the detour roads, except for snow removal. The City of Saint Paul will remove snow from detour roads at the City's expense.
3. The contractor shall provide, install, and maintain traffic control devices and other traffic protection measures required to maintain local traffic.

1404.4 Blank

1404.5 Blank

1404.6 Winter Suspension

On those sections of the project where through traffic has been excluded, the contractor shall, at their expense, make passable and open the road to all traffic during periods of winter

suspension as directed by the engineer to eliminate the need to maintain detour roads during the suspension period.

The contractor shall not suspend operations for the winter until meeting the requirements of MnDOT Specifications 1710 "Traffic Control Devices" and 1803.6 "Temporary Suspensions".

When resuming work after winter suspension, the contractor shall remove and replace, correct or renew, any work lost or damaged during the suspension as directed by the engineer and shall remove, to the extent directed by the engineer, any temporary construction or materials used in the maintenance thereof.

When winter suspension results from an extension of the contract time due to fault or negligence on the part of the contractor, the contractor shall not suspend operations until roads or temporary facilities which are being used by traffic are in such condition that only routine maintenance will be required to adequately accommodate through and local traffic during the anticipated period of suspension. In this instance, all maintenance of roads and temporary facilities, as well as traffic control devices, will be the contractor's responsibility and will be also classified as incidental work.

Traffic Control

All traffic control devices and methods shall conform to the latest edition of the Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD) including Part 6, The Minnesota Temporary Traffic Control Zone Layouts Field Manual, Minnesota Standard Signs Manual Parts I, II and III, the Traffic Engineering Manual, the applicable Material Specifications, and the following:

All category I and category II temporary traffic control devices used shall meet NCHRP 350 crash-testing criteria. This includes all new and used category I and category II devices. Category I devices include tube markers, plastic drums, cones, etc. Category II devices include portable sign supports, type I, II, and III barricades, etc.

The contractor shall furnish, install, maintain, and remove all traffic control devices required to provide safe movement of vehicular traffic through the project during the life of the contract, from the start of contract operations to the final completion thereof. The engineer will have the right to modify the requirements for traffic control as deemed necessary due to existing field conditions.

The contractor shall furnish, install, maintain, and remove all traffic control devices required to provide safe movement of pedestrian traffic through the project during the life of the contract, from the start of contract operations to the final completion thereof. The engineer will have the right to modify the requirements for traffic control as deemed necessary due to the existing field conditions. Liquidated damages in the amount of \$500.00 per block, per calendar day, will be charged to the contractor for every day that a pedestrian route is not available.

Traffic control devices include, but are not limited to, barricades, warning signs, trailers, flashers, cones, drums, pavement markings, flaggers as required, and sufficient barricade weights to maintain barricade stability.

Furnishing and placing of traffic control devices as required shall be considered incidental work unless the **bid item 2563.601 "Traffic Control"** is included in the estimated quantities.

The contractor shall furnish names, addresses, and phone numbers of at least 3-individuals responsible for the placement and maintenance of traffic control devices. At least 1 of these individuals shall be "on call" 24-hours per day, 7-days per week during the times any traffic control devices furnished and installed by the contractor are in place. The required information shall be submitted to the engineer at the pre-construction meeting.

If the contractor modifies the layout or sequence from the plan, the contractor shall submit the proposed traffic control layout to the engineer for approval at least 14-days prior to the start of construction. At least 24-hours prior to placement, all traffic control devices shall be available on the project for inspection by the engineer. The contractor shall modify his/her proposed traffic control layout and/or devices as deemed necessary by the engineer.

The contractor shall notify the engineer in writing at least 72-hours prior to the start of any construction operation that will necessitate lane closures or traffic control signing performed by the City of Saint Paul

The contractor shall inspect daily all traffic control devices which the contractor has furnished and installed and verify that the devices are placed in accordance with the traffic control layouts, the special provisions, and/or the MN MUTCD. Any discrepancy between the placement and the required placement shall be immediately corrected. The person performing this inspection shall be required to keep a daily log. This log shall also include the date and time any changes in the stages, phases, or portions thereof go into effect. The log shall identify the location and verify that the devices are placed as directed or corrected in accordance with the plan. All entries in the log shall include the date and time of the entry and be signed by the person making the inspection. The engineer reserves the right to request copies of the logs as deemed necessary.

The contractor shall be required to respond immediately to any call from the engineer or designated representative concerning any request for improving or correcting traffic control devices. If the contractor is negligent in correcting the deficiency within 1-hour of notification, the contractor shall be subject to the daily liquidated damage charge of \$500.00 until the traffic control is corrected as requested.

Special Traffic Provisions

All items associated with any special traffic provisions shall be considered incidental work with no additional compensation.

The planned sequence shall reflect the following conditions:

To maintain east-west access, no 2-adjacent east-west streets shall be closed to through traffic at the same time.

To maintain north-south access, no 2-adjacent north-south streets shall be closed to through traffic at the same time.

On dead end streets, around schools, and in areas without alley access, the contractor shall make every effort to provide local access as much as practical. Such efforts shall include providing temporary aggregate surfacing for roads and driveways.

Off duty licensed police officers may be utilized as flaggers and may use uniforms in lieu of a hard hat, but must wear a vest and may use hand signals in lieu of a “stop-slow” paddle with approval of the engineer. The utilization of flaggers shall be incidental or incidental to **bid item 2563.601 “Traffic Control”** if listed in the plans.

The contractor may request changes to the planned sequence of construction at any time. No change or deviation will be permitted without prior approval of the engineer.

Traffic control shall be established before all other operations. Inlet protection and sediment control shall then be established before any removal operations. Once these are established, saw-cutting and removals can begin.

1502 PLANS AND WORKING DRAWINGS

The provisions of MnDOT specifications 1502 shall govern as amended below:

Additional sets of prints of the plans and special provisions will be furnished to the successful bidder without charge for up to a maximum 6-sets. Upon request, 1-set of paper reproducible prints of the plans will also be furnished without charge.

Supplemental drawings covering all standard designs and details referred to and noted in the plans and specifications are found in the City of Saint Paul, Minnesota, Department of Public Works standard plates, or in the MnDOT standard plates as revised. These 2-sets of standard plates are, in their entirety, hereby incorporated into and made part of the contract and shall govern in all matters except as modified by the plans and special provisions.

The City of Saint Paul Standard Plates may be found at:
<http://www.stpaul.gov/departments/public-works/standard-plates>.

MnDOT standard plates can be obtained from the Minnesota Department of Transportation, Transportation Building, or from their web site.

1505 COOPERATION BY CONTRACTORS

The provisions of MnDOT specifications 1505 shall govern as amended below:

It is anticipated that there will be private utility contractors working in the project area at the same time as the contractor. The contractor shall cooperate with these workers and other contractors and shall coordinate work to minimize disruption. The contractor shall allow other contractors free access to the job site at all times as well as a reasonable amount of time to complete their work. No compensation shall be due the contractor for any claim of damage, delay, inconvenience, or loss resulting from the presence and operations of other contractors working within the same project site.

The contractor shall work with the Public Works Traffic Operations Division at 651-266-9780 for any signal and/or lighting disruptions including the removal and reinstallation of signals and associated facilities. A minimum of 48-hours' advance notice shall be required for any work the Traffic Division is to do. All contractor activity associated with this signal and/or lighting work is classified as incidental work and no direct compensation will be paid to the contractor.

The general contractor is instructed to notify Traffic Operations 2-working days prior to doing work which affects foundation and conduit placement. Such work may be pouring concrete curb and gutter, driveways, or paving roadbeds.

The Contractor shall coordinate with private utility contractors in order to complete the contract work as shown in the plans. The Contractor shall schedule and make all arrangements with private utilities to coordinate work. There will be no compensation for this coordination nor an extension of deadline should the Contractor fail to coordinate with necessary utility contractors.

1506 SUPERVISION BY CONTRACTOR

The provisions of MnDOT specifications 1506 shall govern as amended below:

Responsible contractor

The City of Saint Paul cannot award a construction contract in excess of \$50,000.00 unless the bidder is a "responsible contractor" as defined in Minnesota Statutes §16C.285, subdivision 3.

A bidder must verify it meets the minimum criteria detailed in the law. A bidder must submit its verification electronically by completing the "Responsible Contractor" section in the "Officers and Acknowledgements" folder within the electronic bid file. A company officer must certify statements in that section. Bidders only need to complete the electronic verification; DO NOT email, fax, or send paper forms to the City. The City will not accept emailed, faxed, or other paper submissions and will only accept electronic verifications.

The City of Saint Paul will not award a construction contract in excess of \$50,000.00 unless the bidder is a "responsible contractor" as defined in Minnesota Statutes §16C.285, subdivision 3. A bidder submitting a proposal for this project must verify that it meets the minimum criteria specified in that statute by submitting the "Responsible Contractor Verification and Certification of Compliance" form. A company owner or officer must sign the "Responsible Contractor Verification and Certification of Compliance" form under oath verifying compliance with each of the minimum criteria. THE COMPLETED FORMS MUST BE SUMITTED WITH THE BID PROPOSAL.

A bidder must obtain a verification from each subcontractor it will have a direct contractual relationship with. At the City's request, a bidder must submit signed subcontractor verifications. A contractor or subcontractor must obtain an annual verification from each motor carrier it has a direct contractual relationship with. A motor carrier must give immediate written notice if it no longer meets the minimum responsible contractor criteria. The requirement for subcontractor verifications does not apply to:

- Design professionals licensed under Minnesota Statutes §326.06; and

- A business or person that supplies materials, equipment, or supplies to a subcontractor on the project, including performing delivering and unloading services in connection with the supply of materials, equipment, and supplies. But, a business or person must submit a verification if it delivers mineral aggregate such as sand, gravel, or stone that will be incorporated into the work by depositing the material substantially in place, directly, or through spreaders, from the transporting vehicle.

A bidder or subcontractor who does not meet the minimum criteria specified in the statute, or who fails to verify compliance with the criteria, is not a “responsible contractor” and is ineligible to be awarded the contract for this project or to work on this project. Submitting a false verification makes the bidder or subcontractor ineligible to be awarded a construction contract for this project. Additionally, submitting a false statement may lead to contract termination. If only one bidder submits a bid, the City may, but is not required to, award a contract even if that bidder does not meet the minimum criteria.

The contractor shall designate a competent superintendent and a competent individual for the project in accordance with MnDOT specification 1506.1. Liquidated damages of \$500.00 per day shall be charged against the contractor for every day that a competent individual is not available on site when there is construction activity taking place.

1507 UTILITY PROPERTY AND SERVICE

The provisions of MnDOT specifications 1507 shall govern as amended below:

The subsurface utility information in this plan is utility quality level D. This quality level was determined according to the guidelines of CI/ASCE 38-02 entitled “Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data”.

Any exploratory excavation required to determine the locations and/or elevations of utilities for work as part of this contract shall be considered incidental work.

Utilities which are shown have been located on the plans as accurately as possible. However, the City **does not** guarantee that all utilities are shown, or if shown, are in the exact locations indicated on the plans. It will be the responsibility of the contractor to notify Gopher State One Call at 651-454-0002 before starting construction in each area which may be affected by construction, requesting utility locations in the field.

The contractor shall provide for a continuance of flow of existing sewers and other facilities interrupted by, or because, the work.

The City, as owner and operator of the storm and sanitary sewer systems, will not mark or locate sewer facilities for the contractor. The location of the sewer system will be shown on the plans provided to the contractor for the project whenever a conflict can be anticipated. Furthermore, the City will provide permit drawings for sanitary sewer service connections when requested by the contractor. The contractor shall contact the Public Works Sewer Division at 651-266-6234 to acquire the permit drawings. Drawings will be made available for pick-up by the contractor within 48-hours.

In conjunction with this project, Xcel Energy may abandon **SOME** gas mains in the area and construct new mains under the sidewalk or in the boulevard area.

As necessary, Xcel Energy will cut and reconnect gas services for the contractor. The contractor will not be granted additional compensation should Xcel Energy cause the contractor any delays.

The contractor may not begin any stage of construction or removals until the Xcel Energy gas work is complete.

The contractor shall provide the project engineer and Xcel Energy 48-hours' advance notice of the placement of both the base course and wearing course applications for all streets to be paved that have gas mains in the street. This notification shall allow Xcel Energy to conduct gas leak surveys during construction. The number for Xcel Energy is 651-229-2211.

The contractor shall allow the utility crews free access to the job site and a reasonable amount of time to complete their work. The contractor may be required to do street removals, expose plated structures, move spoil piles, materials, or machinery to allow the utility companies to complete their work and then proceed with their construction activities. The contractor will be responsible for maintaining traffic control devices during this time.

No compensation will be made for construction down time or delays arising out of, or occasioned by, such underground utility facilities.

At locations where a proposed sewer crosses other existing sewers or utility installations, the engineer may require the contractor to make exploratory excavations shortly ahead of sewer construction to determine if potential grade conflicts exist. It may then be possible for the engineer to make minor changes in sewer grades or alignment to avoid conflicts, or in the alternative, the conflicting utility may be offset to help avoid delays in the sewer construction operation. Such exploratory excavation done by the contractor shall be classed as incidental work.

1508 CONSTRUCTION STAKES, LINES, AND GRADES

The provisions of MnDOT specifications 1508 shall govern as amended below:

The contractor shall notify the engineer or chief surveyor a minimum of 72-hours in advance of the need for construction stakes or other survey work. The telephone number for the chief surveyor is 651-266-6075.

The contractor shall furnish such assistance as may be required by the engineer to check forms, string lines, or subgrade elevations. From the control hubs, monuments, and bench marks established by the City, the contractor shall complete the layout of the work and shall be responsible for all measurements that are required for the execution of the work to the limits as specified in the contract documents, or any modifications specified by the engineer. All such work as above-described shall be classified as incidental work.

1510 AUTHORITY AND DUTIES OF THE INSPECTOR

The provisions of MnDOT specifications 1510 shall govern as amended below:

Add to the first paragraph: The Inspector is not charged, unless otherwise specified by law, with the responsibility of ensuring the contractor's compliance with OSHA regulations.

1513 RESTRICTIONS ON MOVEMENT AND STORAGE OF HEAVY LOADS AND EQUIPMENT

The provisions of MnDOT specifications 1513 shall govern as amended below:

The contractor shall not store materials or equipment on adjacent residential streets that are not actively being constructed.

The contractor shall not leave packaging, castings, or other removal debris on site for more than 48-hours.

The contractor shall not leave vehicles running unattended.

1516 ACCEPTANCE

The provisions of MnDOT specifications 1516 shall govern as amended below:

1516.4(2) shall be deleted in its entirety and the following provisions substituted in lieu thereof:

Guarantee and Reserve

All work shall be guaranteed by the contractor against defects resulting from poor workmanship and faulty or inferior materials or equipment for a period of 1-year from, and after the date of, receiving the official substantial completion checklist.

If, within the guarantee period, repairs or changes are required in connection with guaranteed work which, in the opinion of the engineer are rendered necessary as a result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the contract, the contractor shall promptly, upon receipt of written notice from the engineer and without expense to the City, place in satisfactory condition in every particular all such guaranteed work, correct all defects therein, and make good all damage to the work site or any structure or appurtenance thereof which, in the opinion of the engineer, has resulted from the use of materials, equipment, or workmanship which are inferior.

The contractor shall further repair, restore, or renew any work, property, or appurtenances thereof disturbed in fulfilling such guarantee.

The contractor shall fill, re-sod, replace sidewalks, driveways, and otherwise repair all trench settlements which shall occur during this 1-year warranty period in the boulevard area of the right-of-way at no cost to the City. The contractor shall fill and resurface any settlement in the surfaced portion of the roadway which is greater than 1-inch as measured from a 12-foot straight edge or which traps surface drainage at no cost to the City.

If the contractor fails to begin and continuously prosecute such repairs or corrections of guaranteed work within 10-days after receipt of written notice from the engineer, the engineer may cause the necessary work to be done and all costs thereof, including engineering and inspection, will be deducted from any monies due or to become due the contractor. In any case, the contractor shall be held fully liable for all damages and expense incurred because of, or occasioned by, defective or inferior materials, equipment, or workmanship.

The City will adhere to the new state retainage law, Minn. Stat. § 270C.66 as outlined below:

The City will withhold 5% of the total contract amount up to 60 days after the Substantial Completion Checklist has been submitted by the Contractor and approved by the Engineer.

The Substantial Completion Checklist (enclosed in the appendix of this document) shall be submitted by the Contractor when the Contractor believes all work is done. The City Engineer will have 10 days to review and respond.

If the Engineer approves, the retainage will be dropped to 1% plus 250% of deficient work. The Engineer will create a list of deficient items. The Contractor shall sign the deficient list when deficient items have been addressed.

If the Engineer does not approve the Substantial Completion Checklist, the City will continue to withhold the 5%. The Contractor will be required to resubmit the Substantial Completion Checklist.

Release of retainage shall not constitute final acceptance, nor relieve the Contractor from any warranties. The warranty period shall begin once the City issues substantial completion approval to the Contractor, as indicated by the City's Substantial Completion Checklist. The City will provide an additional punch list to the Contractor prior to the end of the one-year warranty period.

FINAL CLEANUP

Before requesting final inspection in accordance with MN, Stat. 1572 Subd, 2 "Project Acceptance," the Contractor shall remove the following from the Project Site and other locations outside of the Project Site used in performing the Work:

- (1) Surplus and discarded Materials
- (2) Equipment
- (3) Rubbish
- (4) Temporary Structures
- (5) All temporary traffic control signs
- (6) Other items not on the Project Site before execution of the Contract

The Contractor shall also leave the Project Site, including borrow pits, in a condition acceptable to the Engineer. The cost of final cleanup is included in the Contract Unit Prices of the Contract Items.

CRITERIA FOR DAMAGED CONCRETE CURB AND FLAT WORK REPLACEMENT FOR WARRANTY WORK –Construction Requirements The following criteria shall be used to determine concrete

curbing and flat work that must be removed and replaced prior to wear course paving. Its primary use is for the markup of damaged curb or sidewalks. City staff will mark all the concrete sections that need to be removed and replaced. All concrete areas must be clean prior to inspection and marking.

Glossary Control

- Joints: Expansion and contraction joints installed by the contractor during curb and sidewalk construction.
- Gouges: Portions of concrete that are missing due to damage to the curb section during or subsequent to curb construction. Gouges shall be measured from the front edge, back edge or top of curb to the maximum projection of the gouge both into and along the curb section.
- Flat Work: Includes sidewalks, aprons, driveways, cross gutters, boulevard, medians and slope paving.

CURB AND FLAT WORK DAMAGE CRITERIA

- A. All curb and flat work panels that have visible cracks at locations other than control joints shall be replaced. (No Saw & Seal)
- B. All curb and flat work panels that have settled shall be replaced. (No mud, sand, or foam jacking will be allowed)
- C. A minimum of two consecutive non-damaged curb or flat work panels is required between panels identified for replacement; i.e. a non-damaged panel between two damaged panels shall also be identified as damaged curb and shall be replaced.
- D. All curb and flat work replacement shall be full panels unless otherwise directed by City Engineer. Large panels and curbs can be divided as long as no new sections are less than 6 feet in length as a result.
- E. Horizontal or vertical alignment offsets of curb and flat work panels at control joints greater than $\frac{1}{4}$ " will require curb replacement to correct the offset.
- F. Curb and flat work panels with street side/front edge damage shall be removed and replaced if the damage meets the following criteria:
 - Curb and flat work with horizontal gouges greater than 1" from the street edge regardless of vertical gouge depth.
 - Curb and flat work with horizontal gouges between $\frac{1}{2}$ " and 1" from the street edge with a cumulative length along the curb panel greater than 6" regardless of vertical gouge depth.
- G. Curb panels with house side/back edge damage, adjacent driveways or other hard surfaces, shall be removed and replaced if the damage meets the following criteria:
 - Curb with horizontal gouges greater than 1" from the curb edge regardless of vertical gouge depth
 - Curb with horizontal gouges between $\frac{1}{2}$ " and 1" from the curb edge with a cumulative length along the curb panel greater than 6" regardless of vertical gouge depth.
- H. Curb panels with house side/back edge damage, adjacent sod/landscaped areas, shall be removed and replaced if the damage meets the following criteria:
 - Curb with horizontal gouges 2" or greater from the curb edge regardless of vertical gouge depth.
 - Curb with horizontal gouges between 1" and 2" from the curb edge with a cumulative length greater than 1' regardless of vertical gouge depth.

- I. Curb and flat work panels with top surface damage shall be removed and replaced if the damage meets the following criteria:
 - Curb and flat work with vertical gouges or scrapes 1" or greater regardless of horizontal length.
 - Curb and flat work with vertical gouges or scrapes between ½" and 1" with a cumulative horizontal length greater than 1'.
- J. Curbs with extensive "honeycombing" or air voids created due to lack of vibratory application on back side shall be replaced. The city reserves the right to define what is considered extensive or excessive.
- K. Partial curb panel replacement shall not be allowed if the percentage of curb panels to be replaced exceeds 50% of the total curb length of each block. When the amount of curb damage exceeds 50% of the total block curb length, 100% of that block's curb must be removed and replaced per City standards. The City reserves the right to determine the street segment or length to which the 50% rule will be applied.

1517 CLAIMS FOR COMPENSATION ADJUSTMENT

The provision of MnDOT specifications 1517 shall govern as amended below:

Should the consideration of a claim for compensation adjustment reach an impasse, the City shall select the method (arbitration or litigation) of claim resolution.

Should arbitration be selected and the contractor agrees to arbitration, the claim shall be submitted to arbitration as follows:

Claims, disputes, and other matters in question arising out of, or relating to the contract documents or the breach thereof, except for claims which have been waived by the making and acceptance of final payment, shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. This agreement to arbitrate shall be specifically enforceable under the Prevailing Arbitration Law. The award rendered by the arbitrators shall be final and judgment may be entered upon it in any court having jurisdiction thereof.

Notice of the Demand for Arbitration shall be filed in writing with the other party to the contract documents and with the American Arbitration Association and a copy shall be filed with the engineer. Demand for arbitration shall, in no event, be made on any claim, dispute, or other matter in question which would be barred by the applicable statute of limitations.

The contractor will carry on the work and maintain the progress schedule during any arbitration proceedings, unless otherwise mutually agreed in writing.

1603 MATERIALS: SPECIFICATIONS, SAMPLES, TESTS, AND ACCEPTANCE

The provisions of MnDOT specifications 1603 shall govern as amended below:

Certificates of Compliance will be required on any material that does not receive other inspection, e.g., castings, reinforcing bars, ductile iron pipe, sod, PVC pipe, asphalt cement, tack, cement, etc.

1701 LAWS TO BE OBSERVED (PROMPT PAYMENT AND RETAINAGE)
REVISED 10/09/19

The provisions of MnDOT 1701 are supplemented with the following:

Prompt payment of subcontractors is required by Minnesota Statutes §16A.1245. The Contractor must pay a subcontractor no later than ten days after receiving payment from the Department for undisputed work provided by that subcontractor. If the Contractor fails to pay a subcontractor on time, then the Contractor must pay interest, at the rate of 1.5% per month, to the subcontractor on the undisputed amount not paid on time. For an unpaid amount under \$100, the Contractor must pay the actual interest penalty (calculated at 1.5% per month). For an unpaid amount over \$100, the Contractor must pay the actual interest penalty (calculated at 1.5% per month) or \$10, whichever is greater.

Minnesota Statutes §16A.1245 also provides that a subcontractor who prevails in a civil action to collect interest penalties from a prime contractor must be awarded its costs and disbursements, including attorney's fees, incurred in bringing the action.

Payment of retainage for federal-aid projects is governed by Minnesota Statutes §§337.10, 15.72, and 49 C.F.R. 49 §26.29.

State law does not require retainage to be withheld. The contractor may not withhold more than 5% in retainage from a subcontractor, as provided by Minnesota Statutes §337.10 subd. 4 (b). If the Contractor holds retainage from a subcontractor, the Contractor must fully pay out that retainage no later than 30 days after the subcontractor's work is satisfactorily completed, or 10 days after the Contractor receives payment of retainage from the Department, whichever is earlier, unless there is a dispute about the work under a subcontract. If there is a dispute about the work under a subcontract, the contractor must pay out retainage to any subcontractor whose work is not involved in the dispute and must provide a written statement detailing the amount and reason for the withholding to the affected subcontractor.

For purposes of paying out retainage, a subcontractor's work is satisfactorily completed when all of the tasks called for in the subcontract have been accomplished and documented as required by the Contract. When the Department has made an incremental acceptance of a portion of the prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

Payment of retainage for state projects is governed by Minnesota Statutes §337.10 and Minnesota Statutes §15.72.

State law does not require retainage to be withheld. The contractor may not withhold more than 5% in retainage from a subcontractor, as provided by Minnesota Statutes §337.10 subd. 4 (b). The contractor must pay any retainage no later than 10 days after the Contractor receives payment of retainage from the Department, unless there is a dispute about the work under a

subcontract. If there is a dispute about the work under a subcontract, the contractor must pay out retainage to any subcontractor whose work is not involved in the dispute and must provide a written statement detailing the amount and reason for the withholding to the affected subcontractor.

The contractor agrees to abide by all applicable federal, state, and City requirements including City of Saint Paul policies governing smoking in public buildings.

The contractor shall comply with the appropriate wage decision included in the specifications or distributed by the Department of Human Rights and Equal Economic Opportunity with the request for bid.

The contractor shall comply with contract compliance specifications included elsewhere in the specifications or distributed by the Department of Human Rights and Equal Economic Opportunity with the request for bid.

The contractor shall submit to the engineer the 3-items listed below at the pre-construction meeting:

1. A site safety plan, including a listing of protective systems (e.g. trench boxes, shoring, etc.) for trenching operations that the contractor will have available as needed.

2. Identification of the contractor's sole on-site "competent person" regarding safe trenching operations.

A "competent person" must have had specific training in, and be knowledgeable about, soils analysis, the use of protective systems, and the requirements of the standard. A "competent person" shall be on site of each active excavation at all times.

The contractor shall submit that identification in the following format. A blank form is found in the back of the specifications:

_____, being duly sworn, deposes that he/she is the _____ of _____

contractor and as such, hereby certifies that the employee listed below has had the specific training in, and is knowledgeable about, soil analysis, the use of protective systems, and the requirements of the standard in order to fulfill the role and the duties of the "competent person" on this project.

I further certify that the employee herein listed is capable of recognizing existing and predictable hazards on this excavation site and has the authority to take prompt corrective action to eliminate hazards and have the requisite skills, ability, training, and experience to design and implement protective systems capable of protecting all employees on the project.

3. Designs by a registered professional engineer for any trenches more than 20-feet in depth. The design shall identify anticipated soil types and protective methods to be used.

The safety plan should address a minimum of 2-principal issues: Administrative and hazard analysis. Items of the safety plan are to include, but are not limited to, the following:

Administrative Section

- Identification of the contractor's on-site "competent person" in reference to soil types and safe trenches.
- A listing of protective systems (e.g. trench boxes, shoring, etc.) available for trenching operations.
- Identification and accountability of contractor personnel responsible for accident prevention.
- Local requirements such as noise control, traffic problems, etc.
- Methods for control and coordination of subcontractors.
- Plans for layout of temporary construction facilities.
- Plans for initial indoctrination, continued safety education, and training of employees.
- Plans for traffic control and marking of hazards (haul roads, highway intersections, railroads, utilities, bridges, restricted areas, etc.).
- Plans for job cleanup and safe access and egress.
- Plans for fire protection and emergency services.
- Plans for safety inspections by qualified persons and reports to be kept and filed.
- Accident investigation procedures.
- Safe clearance procedures.
- Severe weather contingency plans.

Hazard Analysis Section

- Activity hazard analysis must be prepared for every contract activity and operation in each major phase of work.
- The plan should identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to minimize/eliminate each hazard. The activity hazard analysis shall include these major points:
 - Activity being performed (in each phase)
 - Sequence of work
 - Hazards to be controlled in each activity

Compliance with Tax Law Requirements

The City of Saint Paul cannot make final payment to the contractor until the contractor demonstrates that it and all its subcontractors have complied with the income tax withholding requirements of Minnesota Statutes, section 290.92, for wages paid for work performed under the contract. To establish compliance, the contractor must submit a "contractor affidavit" either online or in paper form (IC134) to the Minnesota Department of Revenue. The contractor will receive written certification of compliance when the Department of Revenue determines that all withholding tax returns have been filed and all withholding taxes

attributable to the work performed on the contract have been paid. The contractor must then provide this written certification to the City of Saint Paul to receive final payment.

Every subcontractor working on the project must submit an approved “contractor affidavit” from the Minnesota Department of Revenue to the contractor before the contractor can file its own contractor affidavit. The contractor is advised to obtain the certification from each subcontractor as soon as the subcontractor completes work on the project. Experience has shown that waiting until the project is complete to obtain the form from all subcontractors is likely to result in significant additional work for the contractor as it will be difficult or impossible to collect all forms.

The Department of Revenue, in association with the Department of Employment and Economic Development, offers a free seminar to help contractors understand tax law requirements. The City of Saint Paul strongly urges the contractor and all subcontractors to attend the “Employment Taxes and Employer Responsibilities Seminar” or similarly offered classes. You can find a schedule and more information on the Department of Revenue’s website at www.revenue.state.mn.us/businesses/withholding/Pages/EducationandOutreach.aspx.

Complying with this requirement is considered part of the work under this contract. The City of Saint Paul will enforce this requirement equally with all other contract requirements. Contractor delay in complying with this requirement will cause the City to delay final payment and contract acceptance. The City of Saint Paul may also report non-compliance to the Department of Revenue, which may result in enforcement action by the Department of Revenue.

1707 PUBLIC CONVENIENCE AND SAFETY

The provision of MnDOT specifications 1707 shall govern as amended below:

The contractor must act as the engineer directs if the engineer represents that they have reasonable grounds to believe that there is clear and present danger to property or the health and welfare of persons incurred by acts of the contractor.

The engineer may require the contractor to install and maintain protective fencing around or otherwise secure excavations which may present an attractive nuisance or constitute a danger to the safety of the public. Such work by the contractor shall be classified as incidental work.

1710 TRAFFIC CONTROL DEVICES

The provisions of MnDOT specifications 1710 shall be deleted in their entirety and replaced with the following:

1710.1 General

The contractor shall provide traffic control devices and methods meeting the requirements of the latest editions of the MN MUTCD including Part 6, the Minnesota Temporary Traffic Control Zone Layouts Field Manual, the Minnesota Standard Signs Manuals, and the applicable Material Specifications. The contractor shall also provide traffic control devices and methods in accordance with the following:

1. Reflectorize all signs, paddles, and other traffic control devices including those used for daytime operations.
2. Signs shall conform to all NCHRP 350 requirements as specified by the MN MUTCD. At the pre-construction meeting, the contractor shall submit a letter of compliance or MnDOT NCHRP 350 Certificate of Compliance to the engineer stating that the category I and category II devices meet the requirements of NCHRP 350 and are NCHRP 350 approved. The contractor shall also include drawings of the different signs and devices with the letter of compliance, subject to the approval of the engineer.

1710.2 Provide, Maintain, and Remove

The contractor shall direct traffic over a City-approved traffic control plan, layout, and/or detour route as required by the contract or as directed by the engineer.

The contractor shall submit all information needed to obtain the approval of the Public Works Right-of-Way traffic control representative at 651-266-9808 for such traffic control plans, layouts, and/or detours prior to implementation including identifying the traffic control devices to be used at a location or along a detour. The submittal shall include existing signing to remain, remove, or cover traffic signals which will be interrupted by construction and where lane changes will affect signal head visibility, alignment, or detection as well as other impacted devices such as parking meters.

1. The contractor shall inform the engineer 48-hours in advance, or more if needed, of daily operations that will have a significant impact on traffic flow. Significant impacts to traffic flow include, but are not limited to, bypasses, crossovers, street closures, lane closures, removal of parking, alterations of access, changes to bus stops or routes, truck restrictions or route changes, restrictions to sidewalks and pedestrian or bicycle facilities.
2. The contractor shall submit the proposed detour layout to the engineer for approval at least 7-calendar days before the contractor begins to use the detour.

The contractor shall furnish, install, and maintain traffic control devices including barricades, barricade weights, attenuators, plastic drums, channeling devices, and cardboard “No Parking” signs as required by the City of Saint Paul in accordance with the contract and the MN MUTCD that perform the following functions:

1. Advise, warn, and alert the traveling public of construction in advance of the project termini and on all roads, streets, and public trails approaching or crossing the project;
2. Control and guide traffic through the project, which may include using flag persons, and pilot vehicles as required by the contract; and
3. Protect, warn, and exclude traffic and protect workers at all work sites.

The term “traveling public” shall include all modes of traffic (vehicles, pedestrians, and bicycles) and meet accessibility standards of the MN MUTCD.

Paper “No Parking” signs must be purchased at Traffic Operations and the locations of the signs recorded with them. “No Parking” signs must be displayed for 24-hours prior to enforcement.

If the contractor fails to properly provide, install, maintain, or remove any of the required traffic control devices, the City of Saint Paul reserves the right to correct the deficiency and to deduct the costs from any monies due, or becoming due, to the contractor in accordance with 1512 “Unacceptable and Unauthorized Work”.

1710.3 Blank

1710.4 Blank

1710.5 Blank

1710.6 Contractor’s Responsibility

The provisions of MnDOT specifications 1710.6 shall govern as amended below:
The engineer’s approval of the traffic control devices and the contractor’s method of application of traffic control measures as provided for in this contract will not relieve the contractor of responsibility for protecting the work, the workers, and the traveling public in accordance with 1511 “Inspection of Work”.

The contractor shall be responsible for the maintenance and immediate repair or replacement of all traffic control devices which become damaged, moved, or destroyed, any lights which cease to function properly, and all barricade weights which are damaged, destroyed, or otherwise fail to stabilize the barricades.

The contractor’s maintenance of traffic devices shall include checks twice daily with 1-check at the end of the work day for proper alignment, visibility, and reflectivity. At least 1-nighttime inspection shall also be made each week. The checks shall include immediate correction of deficiencies.

The contractor must certify in writing at the end of each week to the Traffic Operations supervisor, the date and time of inspections and what action was taken to correct deficiencies.

At the pre-construction meeting, the contractor shall furnish names, addresses, and phone numbers of the primary and secondary individuals responsible for traffic control devices.

Should the contractor fail to perform any of the work required for such protection, the City reserves the right to perform that which is essential to traffic safety and bill the contractor directly for these costs.

The contractor shall protect traffic signs not removed or relocated by the City before construction in their original location for the duration of the work, except as otherwise

approved by the engineer. The contractor may adjust or remove and reset a sign interfering with construction to a temporary location, if approved by the engineer, and if the original location is not critical and the contractor resets the sign at the permanent location as soon as construction operations allow. The contractor shall notify the engineer before removing or disturbing a traffic sign.

No measurement will be made of the individual items required for traffic control. All work required to furnish, install, maintain, and remove the traffic control devices will be included in the lump sum price for traffic control.

If there is no bid item for traffic control, this work shall be considered incidental work. Any additional minor items or slight changes as may be required shall be furnished by the contractor with no additional compensation being made thereof.

1710.7 Engineer's Authority

In accordance with 1501 "Authority of the Engineer", the engineer will accept or reject a traffic control device provided by the contractor, but not incorporated in the final construction based on acceptable day and night performance.

If requested by the engineer, the contractor shall provide representative samples or remove traffic control devices for testing at no additional cost to the City.

1710.8 Blank

1711 USE OF EXPLOSIVES

The provisions of MnDOT specifications 1711 shall govern as amended below:
Prior to doing any blasting, the contractor will be required to obtain a permit for blasting at the Department of Public Works Service Desk, 899 North Dale Street, and shall comply with all provisions of the applicable City ordinance.

1712 PROTECTION AND RESTORATION OF PROPERTY

The provisions of MnDOT specifications 1712 shall govern as amended below:

Before work on this project is started, the contractor shall arrange to meet the City forester or a designated representative and they shall jointly inspect the project site to determine and mark trees within the street right-of-way which may be trimmed or removed before construction commences.

On trees which are to remain, the root system shall be removed as approved by the engineer for any proposed curb, driveway, or sidewalk. Such root removal will be classified as incidental work.

In addition to the trees shown on the plans, there are stumps located in the boulevard areas that may require grubbing.

If, during construction, it is determined that additional trees must be removed, residents within 100-feet of trees to be removed will be advised by the City no less than 5-days prior to the removal.

Hand forming curb and gutter adjacent to trees or placing lighting conduit under proposed curb and gutter prior to pouring will be considered incidental work unless a bid item is provided therefore.

Protection of trees will be considered when locating outwalks or driveways. Special construction procedures may be required when making utility service connection repairs or replacements. This work will be considered incidental work.

The contractor will be liable for reimbursement to the City for damage to, or loss of, trees not designated for removal by the contract. The amount of reimbursement will be determined by the City forester. The latest edition of the "Guide for Establishing Values of Trees and Other Plants" as prepared by the Council of Tree and Landscape Appraisers, 232 Southern Building, Washington, D.C. 2005, will be used as a guideline for determining the value of a damaged or lost tree.

The maximum reimbursement for the damage or loss of a tree shall not exceed \$15,000.00. A copy of the latest edition of "Guide for Establishing Values of Trees and Other Plants" is available for inspection at the City forester's office, 1120 Hamline Avenue North, Saint Paul, Minnesota 55108.

Unless a specific bid item is provided, sheeting, boxing, or other methods of soil retention required to protect trees shall be incidental work. No additional time will be granted for completion of construction if these methods are used.

Tree roots shall be protected as much as practical during construction. The contractor shall cut only those roots absolutely needed to accomplish construction. Roots uncovered during construction shall be protected with soil until sodding is completed.

Construction and/or personal vehicles (backhoes, graders, excavators, loaders, skid-steer loaders, automobiles, etc.) shall always be parked on the roadbed of the right-of-way. Parking on boulevards/tree lawns is strictly forbidden. Non-compliance with this stipulation shall be considered to be in violation of **Sec. 176.03 and Sec. 176.06 of Title XVII-Trees** of the City of Saint Paul Legislative Code. Each violation shall be subject to a \$300.00 fine under the auspices of **Sec. 176.07-Damaging Trees; Penalty**.

The operation of construction equipment on boulevards is limited to those instances necessary to achieve construction objectives or as directed by the engineer.

Construction supplies (RCP, water main, manhole castings, etc.) shall not be stored on the boulevards/tree lawns if other viable options are available. If storage of materials on boulevards is deemed necessary, it shall be approved by the field engineer. As part of this approval, the field engineer may require the installation of vertical mulching, gravel on top of geotextile fabric, or construction grade plywood mats prior to placement of the materials to be stored.

Spoil piles shall not be stored on the boulevards/tree lawns without the expressed permission of the field engineer.

1717 AIR, LAND, AND WATER POLLUTION (NPDES)

Pollution of natural resources of air, land, and water by operations under this contract shall be prevented, controlled, and abated in accordance with the rules, regulations, and standards adopted and established by the Minnesota Pollution Control Agency (M.P.C.A.) and in accordance with the provisions of MnDOT 1717 and the following:

Minnesota Pollution Control Agency General Permit, Authorization to Discharge Storm Water

A. The contractor shall furnish, install, and maintain temporary and permanent erosion and sediment control devices in accordance with the provisions of 2573 and 2575 as shown in the plans, in accordance with the provisions of the special provisions attachment "Minnesota Pollution Control Agency General Permit, Authorization to Discharge Storm Water" and the following:

The City of Saint Paul has applied for and received coverage under the above-mentioned permit by signing both the owner's and contractor's certification blanks on the permit application. The City of Saint Paul shall retain a photocopy of the original permit application. Upon award of the contract, the City of Saint Paul and the contractor shall execute the Storm Water Permit Transfer/Modification Application form (attached to these special provisions) and submit it along with a photocopy of the original application to the Minnesota Pollution Control Agency. The Minnesota Pollution Control Agency, upon receipt of the Storm Water Permit Transfer Modification Application, will amend it to the original permit application thereby making both the City of Saint Paul and the contractor co-permittees for the requirements of the general permit "Authorization to Discharge Storm Water."

- B. There is no fee for the transfer of the permit. Work may not begin until all transfer permit forms are signed and dated and the contractor identifies by name a person knowledgeable and experienced in the application and implementation of the Storm Water Pollution Prevention Plan and has developed a chain of responsibility for all operators (subcontractors) on the site, in accordance to Part III.A.1 of the general permit.
- C. The contractor shall be solely responsible for complying with the requirements of the general permit where contractor is referenced in Part II.B.2: Permittee(s) for Parts II.B, II.C, and IV.

The contractor shall be responsible for providing all inspections, documentation, record keeping, maintenance, remedial actions, and repairs required by the permit. All inspections, maintenance, and records required in the general permit Part IV.E, Inspections and Maintenance, shall be the sole responsibility of the contractor. The word "permittee" in these referenced paragraphs shall mean "contractor". Standard forms for logging all required inspection and maintenance activities shall be used by the contractor. All inspection and maintenance forms used on this project shall be turned over to the engineer

every 2-weeks for retention in accordance with Part IV.E, Inspections and Maintenance of the permit.

The contractor shall have all logs, documentation, and inspection reports on site for the engineer's review and shall post the permit on site. The contractor shall immediately rectify any shortcomings noted by the engineer. All meetings with the MPCA, Watershed District, WMO, or any local authority shall be attended by both the engineer and the contractor or their representatives. No work required by said entities, and for which the contractor would request additional compensation, shall be started without approval from the engineer. No work required by said entities and for which the changes will impact the design or requirements of the contract documents or impact traffic shall be started without approval from the engineer.

The contractor shall immediately notify the engineer of any site visits by local permitting authorities performed in accordance with Part V.H, Inspection and Entry.

- D. If the contractor fails to perform the requirements as listed herein, the engineer will issue a work order detailing the required action. The contractor shall start the required action within 24-hours of receipt of the work order and continue the required action until the project is brought into compliance with the permit. Failure to perform the required action as specified shall subject the contractor to a \$1,000.00 calendar day deduction.

The contractor shall review and abide by the instructions contained in the permit package. The contractor shall hold the City of Saint Paul harmless for any fines or sanctions caused by the contractor's actions or inactions regarding compliance with the permit or erosion control provisions of the contract documents.

Portable toilets shall be secured with tie-downs or stakes. Portable toilets shall be regularly inspected for leaks.

All sanitary waste will be collected from the portable units a minimum of once per week by a licensed sanitary waste management contractor.

1721 AUDITS

The provisions of MnDOT specifications 1721 shall govern as amended below:

The right of audit extends to the City of Saint Paul.

1801 SUBLETTING OF CONTRACT

The provisions of MnDOT specifications 1801 shall govern as amended below:

Paragraph 1 shall have this sentence added: "Subcontracts totaling more than 40% of the total original contract cost may be approved at the discretion of the engineer."

Paragraph 2 shall have this sentence added: "At the discretion of the engineer, less than 40% may be approved."

An ordinance identified as Council File 92-610 amends Chapter 82.07 of the City of Saint Paul Administrative Code. Part 3 and 4 state:

3. Any vendor who is determined to be the lowest responsible bidder who plans to accomplish all or a portion of the work using self-employed independent contractors, subcontractors, and partnership contractors must provide the City with a bona fide demonstration of status of such entities prior to the final award of any contract that falls within the definition of this section. If there is a substitution of a self-employed independent contractor or subcontractor during the execution of the contract, the proof of status must be submitted to the Labor Standards Compliance Office of the City.

All such self-employed independent contractors, subcontractors, and partnership contractors must have executed a written contract/subcontract agreement for their work performance.

The City will accept any 4 of the following as a bona fide demonstration of status:

- a) Identification of a registered trade name and location of a telephone listing under that name.
- b) A contractor's license.
- c) A subcontractor's bond.
- d) Proof of workers' compensation insurance coverage.
- e) If the subcontractor is a partnership, a copy of the executed partnership agreement and federal tax identification numbers applicable to that partnership agreement.
- f) A copy of the previous year's tax filing.
- g) Any other determination regarding status as defined by the State or Federal Department of Revenue.

For independent truck owners, factors which will be used to determine status include a cab card and a valid driver's license which have correlating identification, as well as the factors contained in the Minnesota Rules Section 5224.0290.

4. Failure on the part of the general contractor to demonstrate contractor/subcontractor status or failure to pay prevailing wages may result in contract payment delay, cancellation of the contract, debarment under Chapter 95 of the Saint Paul Administrative Code, and/or payment of a fee equal to 5% of the entire contract price to the City as liquidated damages.

If status cannot be determined clearly enough by submission of the above information or documentation, the subcontractor status will be disallowed and the individuals will be included on the engaging company's payroll as employees and will be entitled to receipt of the prevailing wage for all work performed.

Subcontractor Payment

Prime contractors will be required to pay any subcontractor within 10-days of the prime contractor's receipt of payment from the municipality for undisputed services provided by the subcontractor. The prime contractor will be required to pay interest of 1.5% per month, or any part of a month, to the subcontractor on any undisputed amount not paid on time to the subcontractor. The minimum monthly interest penalty payment of an unpaid balance of \$100.00 or more is \$10.00. For an unpaid balance of less than

\$100.00, the prime contractor shall pay the actual interest penalty due to the subcontractor.

A subcontractor who prevails in a civil action to collect interest penalties from a prime contractor must be awarded its costs and disbursements, including attorney fees incurred in bringing the action.

1803 PROGRESS SCHEDULES

The provisions of MnDOT specifications 1803 shall govern as amended below:

Before work is started on this project, the contractor and other interested parties shall attend a pre-construction meeting scheduled by the engineer to review the plans, specifications, and the contractor's progress schedule. Such progress schedule shall be submitted to the engineer at least 5-days prior to the pre-construction meeting.

At the time of the preconstruction meeting, the Contractor's competent person and the Inspector shall agree upon a time and place for weekly on-site meetings to discuss upcoming work.

The contractor shall supervise, inspect, and direct the work completely and efficiently, devoting such attention and applying such skills and expertise as may be necessary to perform the work in accordance with the contract documents. The contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The contractor shall be responsible to see that the completed work complies accurately with the contract documents.

The contractor shall keep on the work at all times during its progress a competent Resident Superintendent that is specifically identified to the engineer. The resident superintendent will be the contractor's representative ON SITE, EVERYDAY and shall have authority to act on behalf of the contractor. The superintendent shall not be replaced without written notice to the engineer except under extraordinary circumstances. All communication to the resident superintendent shall be as binding as if given to the contractor.

The Superintendent shall communicate with and direct their subcontractors. Subcontractors should direct inquiries to the Superintendent who will communicate their concerns to the Engineer.

During the Contractor's prosecution of work, they may discover unforeseen changes or site conditions which will require part of the Contractor's operations to be suspended while further data or information is gathered. During this period of time, while the Contractor's operations are temporarily suspended and the Engineer is reviewing the conditions, there will be no claims for delays.

Wherever existing utility structures or branch connections leading to mains or other conduits, ducts, pipe or structures present obstructions to the grade and alignment of the pipe which would require a change in plans or a revision to the existing utility, the Engineer will provide new grades for the new utility or a plan for revising the existing utility within 48 hours of the

location of the existing public utilities and for private utilities. If the Contractor elects not to uncover existing utilities and a conflict between utilities occurs, the Contractor shall be required to relay pipe or revise the existing utility, as directed by the Engineer, with no additional compensation.

1804 PROSECUTION OF WORK

REVISED 10/25/18

The provisions of MnDOT 1804 are supplemented and/or modified with the following:

Special Project ADA Requirements

All pedestrian facilities on this project must be constructed according to Public Rights-of-Way Accessibility Guidelines (PROWAG) which can be found at:

<http://www.dot.state.mn.us/ada/pdf/PROWAG.pdf>.

The appropriate pedestrian ramp details for each quadrant are included in the plan. The engineer may provide additional details to those provided in the plan that meet the PROWAG guidelines as the need arises and field conditions dictate.

- A. The contractor must designate a responsible person competent in all aspects of PROWAG to assess proposed sidewalk layouts at each site before work begins. The designated person must have attended the MNDOT ADA Construction Certification Course and received a passing score within the past 3-years. For class dates and locations, please refer to the following link at: <http://www.dot.state.mn.us/ada/training.html>.

A minimum of 1-person per project must possess a valid ADA Construction Certification card anytime ADA work is being performed on the project. If work on electrical components is the only ADA work taking place on the project, the electrician must have in their possession a current MNDOT Signals and Lighting Certification.

ADA work shall include, but not be limited to, the following: Assessment of proposed sidewalk layouts at each site before work begins, determining and marking removal limits for work pertaining to pedestrian facilities, all ADA-related removals and grading, forming and finishing of concrete at all pedestrian facilities, paving pedestrian crossings, placing bituminous pedestrian facilities, final grading, and pavement markings. Any ADA work not listed above can be added at the discretion of the engineer. An ADA-certified person is not required on site if the only work being performed concerns traffic signals and APS installations.

These requirements shall be effective as of May 1, 2019. Any time work the contractor is performing concerns pedestrian facilities, the contractor's ADA-certified person shall be on site.

- B. Pedestrian facilities must be constructed to meet the following criteria:
1. Pedestrian Access Routes (PAR) must be constructed to meet the following:
 - Minimum 4-foot width.

- A maximum cross slope of 2.0%.
 - Vertical discontinuities must be less than 0.25-inches.
 - Must provide positive drainage without allowing any ponding and maintain existing drainage flow patterns unless indicated otherwise in the plan.
 - All grade breaks shall be constructed perpendicular to the path of travel.
 - Maximum 5% running slope unless adjacent roadway profile exceeds 5%.
2. Landings are part of the PAR and must be constructed to meet the following:
- 4-feet by 4-feet minimum width and shall match full width of incoming PAR.
 - Maximum slope of 2.0% in all directions.
 - Required at all locations where the PAR changes directions or inverse running slopes are >2%.
 - Must be connected to the PAR.
 - Shall be constructed as a single plane surface having no grade breaks.
3. Ramps are part of the PAR and must be constructed to meet either of the following criteria:
- Longitudinal slopes less than 5% in the direction of travel requires no landing at the top of the ramp (unless the PAR changes direction).
 - Longitudinal slopes between 5 - 8.3% in the direction of travel require a landing at the top of the ramp.
- C. The contractor and the engineer shall work together to construct all pedestrian facilities set forth in the plans and in the above section 0.B.

If the plan or site conditions do not allow accessibility standards to be met, the contractor shall consult with the engineer to determine a resolution. The engineer shall respond to the contractor in a timely manner (up to 24-hours) with a solution on how to proceed. The contractor shall mitigate any potential delays by progressing other available work on the project.

If the contractor constructs any pedestrian facilities that are not per plan, do not meet the above requirements in section 0.B, or do not follow the agreed upon resolution with the engineer, the contractor will be responsible for correcting the deficient facilities with no compensation paid for the corrective work.

The following hold points will be utilized in the construction of pedestrian facilities:

1. Removals: The contractor and the engineer shall use the appropriate ramp, sidewalk, and driveway details in the plan and calculate the removal limits for the sidewalk and curb and gutter. If it is determined that the removal limits will exceed the plan removal limits by more than 10-feet and the plan removal limits are not adequate to meet PROWAG and MnDOT standards, the contractor shall consult with the engineer to determine a solution. Once the engineer and the contractor reach an agreement on how to proceed, the contractor may finish the removals.
- 2A. Curb and Gutter at Quadrants: Prior to pouring the curb and gutter at curb ramps, the contractor and the engineer must verify that the curb and gutter will work with any vertical constraints (doorways, steps, bus stops, outwalks, and landing areas). Prior to

pouring curb and gutter at quadrants, the contractor must verify the zero-height curb and curb transitions will be located as shown in the plans and will provide an adequate detectable edge as shown on standard plan 5-297.250 (sheet 4 of 6). The contractor shall verify curb tapers are constructed at correct heights so that positive boulevard slopes and drainage is maintained away from landings and sidewalks to the newly constructed curb and gutter sections. The contractor shall verify that the proposed gutter flow lines will provide positive drainage as well as maintain existing drainage patterns including existing gutter inflows/outflows. The curb and gutter shall be constructed as detailed in the plan with a defined flow line and with no vertical discontinuities over ¼-inch. For required flow-line corrections including curb line raises and curb ramp cross slope “tabling”, see standard plan 5-297.250 (sheet 6 of 6). Curb shall be poured at 3% inflow around the radius or at a minimum distance of 10-feet from any zero-height curb section when machine is placed. The contractor shall consult with the engineer to determine a resolution if any of these conditions cannot be met. Once the engineer and the contractor reach an agreement on how to proceed, the contractor may proceed with pouring the curb and gutter.

- 2B. Curb and Gutter at Roadway Sections: Prior to pouring curb and gutter at roadway sections, the contractor must verify proposed curb and gutter heights will work with existing roadway and shoulder slopes. The contractor shall verify, prior to placing the pedestrian facilities, that positive drainage is maintained within the public right-of-way (R/W), as well as maintaining existing off R/W drainage. The contractor shall check to ensure all top back of curb elevations will allow for adequate boulevard slopes, PAR slopes, and widths as shown on standard plan 5-297.254 (sheet 4 of 4) while maintaining all vertically constrained match points (doorways, steps, bus stops, outwalks, and landing areas). The contractor shall check all driveway locations and widths and follow driveway details and plans for all driveway layouts including curb heights and curb tapers. Driveway curb sections and aprons shall be constructed to minimize changes in the sidewalk width, alignment, and profile. The contractor shall consult with the engineer to determine a resolution if any of these conditions cannot be met. Once the engineer and the contractor reach an agreement on how to proceed, the contractor may proceed with pouring the curb and gutter.
3. Forming and Finishing: After the curb and gutter has been correctly poured and the contractor has set the sidewalk forms, the contractor shall verify, prior to placing the curb ramps and sidewalks, that positive drainage is maintained within the public R/W as well as maintaining existing off R/W drainage, and that all the requirements in section 0.B will be achieved.

Ramps – In addition, the longitudinal slopes shown in the construction plans and the standard plan shall be utilized unless these conditions cannot be met. The starting point for setting the forms on the controlling ramp leg, landing, and sidewalk slopes should be the following:

- Steep (S) = 7%
- Flat (F) = 4%
- Landing = 1%
- Sidewalk Cross Slope = 1.5%

If any of these requirements cannot be met, the contractor shall meet with the engineer to determine the best solution. Once the engineer and the contractor reach an agreement on how to proceed, the contractor may proceed with the curb ramp and sidewalk pour.

Landings: An initial landing is the first required landing of a pedestrian ramp. All initial landings required at the top of a ramped sloped surface (>2% longitudinal slope) shall be formed and placed separately in an independent concrete pour. This does not include initial landings placed at roadway grade such as depressed corners, parallel ramps, rural flat landings, or flat cut-throughs. Secondary landings consist of all landings beyond the initial landing. These secondary landings do not require a separate landing pour.

Wet casting or drill and grouting of reinforcement bars will be required in accordance with the details shown in standard plan 5-297.250 (sheet 6 of 6). Wet casting of reinforcement bars shall be installed through holes or slots in the forms, with a form height at least equal to the walk thickness of the formed concrete shown in the plans. These bars shall be deformed and installed with 2-inch minimum concrete cover.

When not accounted for in the plan, payment for these bars will be made under item 2301.602 (drill & grout reinforcement bar - epoxy coated) by EACH at the predetermined price of \$10.00 per bar furnished and installed. All necessary subgrade preparation and aggregate base placement for the entire ramp construction limit shall be done before the initial landing is constructed at each location.

- D. It shall be the responsibility of the contractor, or contractor's surveyor if applicable, to lay out all proposed work at each intersection in accordance with the plan and requirements listed in the special provision. The contractor may confer with the engineer for guidance in laying out the proposed work, but it will be the contractor's responsibility to ensure the proposed work meets all the requirements of the special provision. This layout includes, but is not limited to, placement of grade breaks, curb transitions, gutter flow lines, truncated dome placement, crosswalk marking placement, flares, landing limits, removal limits, driveway tie in limits, and ramp limits. It is important that the contractor lay out this work properly to achieve the construction of a compliant pedestrian facility. The owner's surveyor will only stake points and elevations provided in the plan. For custom designs, other than specific dimensions provided in the plan, the contractor shall be expected to scale dimensions from the plan as needed to construct the facility. If scaled dimensions do not allow for a facility to be constructed to meet the requirements of the special provision, the contractor shall follow the process listed in section 0.C. This layout work shall be incidental.
- E. The contractor shall utilize measures and methods when working near existing buildings that will avoid damaging the building's face or structure. The contractor will be responsible for any damage to the building's face or structure, both below and above ground. Any damage resulting from contractor's operations will be repaired at the contractor's expense to the satisfaction of the engineer.

- F. The contractor will round all joints and edges with a 1/4-inch radius grooving or edging tool within the PAR. This requirement includes all curb and gutter joints at zero-inch height curb sections at curb ramps. Contraction joints shall extend to at least 30% of walk thickness. The contractor shall also have the option of providing saw cuts to construct the sidewalk joints. If saw cutting, provide 1/8-inch wide contraction joints within the PAR, including all curb and gutter joints at zero-inch height curb sections. When greater than 50-feet of continuous sidewalk runs are constructed, the contractor shall saw cut all joints. This work shall be incidental.

The top-grade break of walkable flares needs a visual joint to indicate a change in grade. To eliminate the use of excessive contraction joints in the quadrant, the visual joint shall meet MnDOT 2521.3.C, except the depth requirement is reduced to 1/4-inch.

In sections where concrete boulevard is placed between the back of curb and the sidewalk, the 1/2-inch preformed joint filler material shall be placed at the back of curb and between the outside edge of sidewalk at existing building or structures. The 1/2-inch wide preformed joint filler shall not be placed in the longitudinal joint between the sidewalk and boulevard unless it is necessary to provide expansion at fixed structures. At locations where sidewalk is adjacent to existing buildings, extend walk up to the edge of building and place 1/2-inch preformed joint filler 1/2-inch lower than top of walk whenever possible. Furnish and install backer rod of appropriate diameter when joints are 1/4-inch wide or greater, clean surfaces, and apply approved silicon joint filler to flush with top of walk. If the transverse sidewalk and boulevard joint layouts cannot be aligned, use approved preformed joint filler with a maximum 1/8-inch width and place between the sidewalk and boulevard to prevent contraction joints from migrating into the adjacent concrete panels.

- G. The minimum continuous and unobstructed clear width of a pedestrian access route shall be 4.0-feet. All new or reconstructed sidewalk widths shall match or exceed in-place sidewalk and in no case shall it be less than 5.0-feet in width except at locations where obstructions cannot be moved or at driveways where slopes exceed the maximum allowable grades. The cross slope of the sidewalk or shared use path shall not exceed 2% and shall be measured perpendicular to the path of travel across the entire surface width of the sidewalk or shared-use path. Curb ramps should match proposed sidewalk PAR width and shall match full shared-use path widths. Whenever possible, the entire landings should be placed in a single concrete placement. If this is not possible due to construction staging, follow requirements for reinforcement bar placement and tie adjacent landings together.

In areas where the sidewalk is to be constructed around fixed structures and the grade has been changed, the sidewalk shall be finished around these structures to the satisfaction of the engineer at no additional cost.

Architectural elements such as brick pavers, concrete stamping, and multiple colored concrete placements shall be kept outside the curb ramps and landing areas. Any architectural elements that do not maintain a consistent flat smooth surface shall not be used within the PAR.

Use (H) on all jobs that have pedestrian signal system work.

- H. All pedestrian signal systems should be installed as shown in the plan and must be constructed to meet the following criteria. The contractor shall verify that the proposed push button locations will meet all the following criteria before proceeding with the installation of the pedestrian push button system:
- Pedestrian push buttons shall be oriented with the button facing towards the intersection and the button face placed parallel to the outside edge of the crosswalk.
 - Pedestrian push buttons shall be a minimum of 4-feet and a maximum of 10-feet from the back of curb/edge of roadway, but may be placed 1.5-feet to 4-feet from the back of curb/edge of roadway if mounted on a signal pole as indicated in the plan or as approved by the engineer.
 - Pedestrian push buttons shall be located at the outside crosswalk edge and shall be no more than 5-feet offset from the projected outside edge of the crosswalk/ detectable warnings.
 - Pedestrian push buttons shall be a minimum of 10-feet apart, except in islands and medians where only a 6-foot clear distance must be maintained. This 6-foot obstruction-free area is called a Maintenance Access Route (MAR).
 - The MAR is defined as a 6-foot minimum clear distance between any raised obstacles such as push-button stations, electrical foundations (signal, lighting, or cabinet), buildings, V curb, utility poles, sign posts, etc.
 - This MAR is needed for mechanical removal of snow and ice. A maintenance access route is only required on the same route as the PAR. At quadrants, the MAR should be a paved surface, but does not need to meet the PAR cross slope criteria.
 - Each pedestrian push button shall have a landing immediately adjacent to the push button face with minimum dimensions of 4-feet by 4-feet and a maximum slope of 2.0% in all directions. Center the push button on the edge of landing if possible to do so without violating any of the requirements listed in the special provision. The landing must be connected to the pedestrian access route.
 - All new hand holes shall be placed outside of the PAR, inclusive of ramps and landings.
 - The push buttons shall be mounted at a height of 42-inches as indicated in the plan and shall have a 10-inch maximum side reach. Every effort should be made to reduce the side reach distance to the least amount possible.
 - Crosswalk pavement markings shall be striped in a straight alignment between the outside edges of the detectable warnings from the corner closest to the roadway edge. Markings shall be placed with no kinks unless the crosswalks are shown as kinked in the plan.
 - The contractor shall maintain all working points marked by the surveyor and use the working points to lay out push button locations in accordance with the plans and special provisions.

If any of these conditions cannot be met, the contractor shall consult with the engineer to determine a resolution per section 0.C. The contractor may proceed once the engineer and contractor reach an agreement on how to proceed. If the contractor constructs any pedestrian push button systems or pedestrian facilities which do not meet the criteria or the agreed upon resolution with the engineer, the contractor will be responsible for correcting the deficiencies with no compensation paid for the corrective work.

To help ensure signal systems are properly constructed, the contractor must adhere to the following practices:

- All push button station bases shall be installed using a breakaway pedestal base, see Typical APS Pedestrian Push Button Location and MnDOT-approved /qualified products list. The pedestal base shall be fastened to the station foundation using 4 5/8-inch (UNC) x 7 1/2-inch stainless steel anchor rods. The push button station foundation shall be constructed as part of the sidewalk by increasing the sidewalk dimension to a 12-inch minimum thickness and an 18-inch minimum diameter to top of sidewalk surface. The push button station foundation shall be placed as part of the landing. All construction joints/grade breaks shall be located outside of the foundation area and designated landing area.
- When not accounted for in the plan and determined necessary by the engineer, payment to furnish and install an additional APS pedestrian push button station will be \$1,000.00 EACH and will be made under item 2565.602 (pedestrian push button station). Payment shall include all components necessary to furnish and install an APS push button station, including additional conduit, wiring, APS push button base installation, and shaft with reflective tape and cap.
- Signal pole foundations which are being constructed in or adjacent to sidewalk shall be constructed in accordance with the applicable MnDOT standard plate 8120 or 8126. If a push button is proposed to be mounted on a signal pole, a MnDOT-approved extension bracket shall be used. If a push button is proposed to be mounted on a signal pole, the APS push button shall meet the vertical, horizontal, and crosswalk skew requirements.
- All newly installed pedestal foundations when used as a push button station shall be constructed in accordance with applicable MnDOT standard plate 8112. Concrete for new foundation shall be placed either with or after the landing concrete is placed and the top of the foundation surface shall be 1/4-inch maximum higher than the top of the landing surface. If a push button is placed on a new or existing pedestal pole, the push button shall be installed using 3-APS push button spacers (saddle adaptors) and the APS push button shall meet the vertical, horizontal, and crosswalk skew requirements.

For more guidance see the “Preferred Pedestrian Ramp Location” detail included in the appendix of this document.

1806 DETERMINATION AND EXTENSION OF CONTRACT TIME

The provisions of MnDOT specifications 1806 shall govern as amended below:

Determination of Contract Time

The contract time shall be specified as a definite number of working days, as a fixed calendar date, or as a specified number of calendar days.

If the working day is the unit of measure for determination of contract time, the engineer will furnish the contractor a weekly statement which will show the daily expenditure of working days. The statement will include an accounting of all delays affecting prosecution of the progress-controlling operations. The delay time will be classified as either avoidable or unavoidable.

If the calendar day is the unit of measure for determination of contract time, or a fixed calendar completion date is specified, the contract time is presumed to have been determined by considering the proposal quantities, seasonal weather for the locality, and the necessity of having the work completed by the specified date. The time may be extended only as a result of unavoidable delays.

The contract starting date shall be the latest date specified for the beginning of construction operations as set forth in the proposal or within 10-days following written Notice to Proceed from the engineer.

Extension of contract Time

The granting of additional time for completion of the work with a working day contract will be limited to the performance of extra work or increased quantities of work.

When the contract time is specified as a fixed calendar completion date or is a specified number of calendar days, any time extensions are granted, they must be justified on the basis of an unavoidable delay in starting or completing the progress-controlling operations and then only when and to the extent that it is shown that delay time could not be overcome and the work brought back on schedule through reasonable adjustments in the progress schedule. Provided the contractor has made all reasonable efforts to maintain an adequate and acceptable progress schedule, the specified completion date may be extended as the engineer determines to be justified.

No extension of contract time shall be authorized unless and until an administrative order for contract change agreement has been fully executed.

1. Each newly paved block of streets or alleys shall have all concrete flatwork completed and brought up through the first bituminous base course within 30-days of completion of underground utility work and mainline sewer work, or within 30-days of removals where no utility work or mainline sewer work is required. The construction of catch basins or catch basin leads shall not be considered mainline sewer work or utility work. If said work is not completed within the specified time, liquidated damages in the amount of \$500.00 per block, per calendar day, will be charged against the contractor.
2. The contractor shall be aware of City of Saint Paul Ordinance No. 17642 which limits work in any given block on a project to 90-days from the time removals are started until an asphalt base course is placed. If said work is not completed within the specified time, liquidated damages in the amount of \$500.00 per block, per calendar day, will be charged against the contractor.
3. The contractor shall remove all temporary "No Parking" signs within 24-hours after the wear course has been placed. If said work is not completed within the specified time, liquidated damages in the amount of \$500.00 per block, per calendar day, will be charged against the contractor.

Should the contractor fail to meet any of the above requirements, the City reserves the right to deduct the specified liquidated damages charge from any monies due, or coming due, the contractor.

1807 FAILURE TO COMPLETE WORK ON TIME

The provisions of MnDOT specifications 1807 shall govern as amended below:

Liquidated damages will be assessed in accordance with the provisions of MnDOT 1807, as modified herein, and the amount(s) deducted from any monies due, or coming due, the contractor in an amount(s) equal to the following:

Liquidated damages for work not done in compliance with these special provisions shall follow the sequence below:

Inspector shall notify the Contractor verbally or in writing if work is noncompliant. Inspector will make note of date and time of notification.

If work is not in compliance within 24 hours of initial notification, the Engineer will notify the Contractor in writing that liquidated damages will begin accruing and will continue to accrue until work is compliant as specified.

1902 SCOPE OF PAYMENT

The provisions of MnDOT specifications 1902 shall govern as amended below:

No direct compensation will be made for any work that is classified as incidental work on the plans or in the specifications.

1904 COMPENSATION FOR CONTRACT REVISIONS

The provisions of MnDOT specifications 1904 shall govern as amended below:

Extra work on items for which there are contract unit price bids submitted as part of the proposal will be paid for at the respective unit prices stipulated in the contract. Extra work on items for which there are no contract unit price bids will be paid for in accordance with the City's fixed unit prices. In the absence of such payment provisions, the extra work will be paid for on a negotiated unit price or lump sum basis documented in the contract change order authorizing the work.

All change orders must be approved by the Engineer prior to the work being done.

The Contractor shall submit a proposed price to the Engineer. The price shall include the Contractor's 10% markup if work is to be done by a subcontractor.

The Engineer shall approve the price or negotiate a price prior to the work being done.

No extension of deadline shall occur if the contractor delays in submitting a price for the work.

If an agreement cannot be reached to pay for the extra work on a negotiated unit price or lump sum basis, or if such payment provisions are impractical, the City will require the contractor to perform the extra work on a force account basis to be compensated as per MnDOT specifications.

All change orders must be approved by the Engineer prior to the work being done. No compensation for contract revisions shall be made if the Contractor does not notify the Engineer in accordance with MnDOT specification 1403.

1906 PARTIAL PAYMENTS

The provisions of MnDOT specifications 1906 shall govern as amended below:

1906.2 Material on Hand shall be deleted in its entirety. The City will not pay for stored materials.

The contract estimate will be sent to the contractor for execution of the affidavit appearing thereon and returned to the engineer. The contract estimate must be executed by the contractor and the City before payment will be made.

1907 PAYMENT FOR SURPLUS MATERIALS

The provisions of MnDOT specifications 1907 shall govern as amended below:

1907 Payment for Surplus Material shall be deleted in its entirety. The City will not pay for surplus materials.

1908 FINAL ESTIMATE AND PAYMENT – CONDITIONS AND PROCESS

The provisions of MnDOT specifications 1908 shall govern as amended below:

When final inspection reveals that all work, including extra work, has been completed in accordance with the terms of the contract and in accordance with any instructions for correction previously issued by the engineer, the engineer shall so notify the contractor. The contractor shall then submit a request for final payment to the engineer on a "Schedule of Amounts for (Partial/Final) Estimate No. __" form furnished by the engineer in a manner and form identical to partial payment requests.

Such request shall detail final quantities and value of all extra work done in accordance with the provisions of MnDOT specifications 1403 and 1904 as amended, as well as all items of work completed under contract unit price bids.

After review, the engineer shall prepare a final contract estimate setting forth the approved final quantities and corresponding payment therefore. All estimates upon which previous payments have been based are subject to correction in the final contract estimate.

The final contract estimate, showing the accepted quantity and value of each item of work performed and all amounts to be retained or deducted under the provisions of the contract, shall be submitted to the contractor for their execution before it may be approved by the City for payment.

Prior to payment of the final contract estimate, the contractor shall submit a certified affidavit stating that the minimum wage requirements of Chapter 102 of the Saint Paul Legislative Code, adopted October 25, 1969 and revised by Ordinance No. 16323, has been complied with.

Prior to payment of the final contract estimate, the contractor shall submit a lien waiver from all subcontractors.

**DIVISION II
CONSTRUCTION DETAILS**

2031 FIELD OFFICE AND LABORATORY

The provisions of MnDOT specifications 2031 shall govern as amended below:

Field Office shall be Type D service with constant electrical power supply and adequate lighting fixtures throughout. Includes duplex outlet receptacles capable of providing adequate amperage for electric lighting and other appliance and amenity needs. City property stored inside the field office that is stolen or vandalized by any person or persons will be replaced in-kind by the contractor. There is a reasonable expectation that city property will be stored in the field office at all times.

2031.2 Delete the second and third sentence of the third paragraph and substitute the following:

Should the contractor select, with the engineer's approval, a site outside the right-of-way, the contractor shall make the necessary arrangements and shall bear any costs associated with the use of the site.

The need for a field office shall be determined by the construction manager on a project-by-project basis. A field office with electricity shall be on site before construction excavation of any kind commences.

2031.3.B Furnishings

The contractor shall provide the following per 2031.3.B:

1. Two pedestal type desks (B.1.a)
2. File drawers (B.1.b)
3. One storage closet or cabinet (B.1.d)
4. Shelving (B.1.e)
5. Minimum of three swivel type chairs (B.1.f)

In addition, the contractor shall provide the following:

1. Printer with copying and Bluetooth capabilities
 - a. Must remain operable for the duration of construction and replaced if it becomes inoperable or removed
2. White dry erase board (4' x 6') with stand or mounted on wall
3. Functional dry erase markers with eraser
 - a. Functional set must be available while site is under construction
4. First-aid kit, shall include:
 - a. 1 roll athletic tape
 - b. 1 roll waterproof tape
 - c. 1 first-aid shears
 - d. 1 tweezers
 - e. 1 tube antibiotic ointment

- f. 5 pairs examination gloves
 - g. 10 adult sized fabric bandages
 - h. 2 rolls elastic wrap bandages
 - i. 20 alcohol cleansing wipes
 - j. 10 gauze pads
 - k. 1 certified AED
5. Broom, dust pan, all-purpose household cleaner, and paper towels
 - a. All must be available while the field office is in use
 6. Slip-resistant stairs with handrail to access exterior doors
 - a. If the unit must be suspended above the ground for proper installation, the contractor will provide stairs for safe entry and egress
 7. Gravel parking area
 - a. If the field office does not already have an area to park and approach from, then an area will be created directly adjacent to the field office by placement of class V or other material with the approval of the engineer
 - b. The parking area must be maintained and usable for the duration of construction
 8. Exterior, pole mounted security light
 - a. Shall be mounted so as to provide adequate lighting during hours of darkness for the field office and parking area.
 9. . The field office shall be in place and operational prior to any roadway work commencing. There will be no additional compensation or extension of deadline due to Contractor failure to supply a field office prior to roadway work.

2101 CLEARING AND GRUBBING

The provisions of MnDOT specifications 2101 shall govern as amended below:

The contractor shall not remove any tree or shrub until it is properly identified and marked in the field by the engineer. In addition to trees marked, some trees to be removed will be determined by the engineer upon observation of the root system. The engineer shall consult with the City forester as needed.

The tree removal contractor must be licensed by the City of Saint Paul and shall obtain the necessary permits from the Parks Department at 651-632-2430 before removing any tree.

On streets where it appears that recently planted or small trees will be in the trench area or affected by the roadway construction, the Parks Department will remove the trees prior to construction. The small trees to remain in place shall be protected from dirt, asphalt, or any other miscellaneous debris caused by construction. This protection shall be by means of a snow fence or other method as approved by the engineer. This work shall be classified as incidental work.

The Parks Department will remove any trees in MOST City project areas due to construction conflicts or disease. They will also remove all existing stumps. Bid items for clearing and grubbing are included in case Parks Department crews are unable to do these removals for any reason. If the Parks Department is unable to remove the trees or stumps, those removals will be done under the contract at the direction of the engineer at the appropriate bid price.

Emerald Ash Borer Compliance

All or part of this project is in a county which has been placed under an Emerald Ash Borer quarantine by the Minnesota Department of Agriculture (MDA). The contractor may contact MDA at 1-888-545-6684 or visit the Emerald Ash Borer website at <http://www.mda.state.mn.us/plants/pestmanagement/eab.aspx> to find more information. The contractor must comply with the following requirements:

The contractor will not:

1. Offer any part of an Ash tree (*Fraxinus* spp.) from a quarantined area to any industry or individual without an Emerald Ash Borer Compliance Agreement with MDA; or
2. Make available any part of an ash tree or any non-coniferous (hardwood) species with bark from the quarantined area for use as firewood; or
3. Transport any part of ash trees, in any form, outside of a quarantined county without complying with an Emerald Ash Borer Compliance Agreement with MDA; or
4. Transport any part of ash trees, in any form, outside the state of Minnesota without contacting John.o.haanstad@aphis.usda.gov to obtain the United States Department of Agriculture's and the MDA's joint approval of the Emerald Ash Borer Compliance Agreement.

The contractor will:

1. Dispose of ash trees according to the Emerald Ash Borer Compliance Agreement; and
2. Use the ash wood chips within the construction limits for erosion control, construction exit pads, or other project related needs.

The City of Saint Paul will not directly compensate the contractor for compliance with these requirements.

Bid item 2101. 624 "Wood Chip Disposal" shall be construed to mean the disposal of any and all wood chips left by the Parks Department's removal of stumps, miscellaneous trees, and structured removal of ash trees. The grindings will be left in place for erosion control. Payment shall be by the TREE and shall be compensation in full for all labor, materials, and equipment necessary to remove and appropriately dispose of the wood chips.

When approved by the engineer, the grinding method of stump removal may be employed. This method will be permitted only to accommodate existing utilities and structures. In the case where the entire stump is to be removed, it shall be ground to a depth of 12-inches below the final subgrade elevation.

Tree root removal will be considered for curb, driveway, and sidewalk construction. The engineer and City forester will determine the extent of the removal when a 3-inch diameter or larger root from a live tree is cut. The root shall be treated with tree paint or other approved asphalt base material immediately after cutting. Unless the bid proposal includes an item for tree root removal, root removal shall be incidental work.

In sidewalk areas marked for removal, the contractor will remove all roots within the sidewalk area. The contractor shall also clean cut to 4-inches beyond the sidewalk form sides and

explore and remove all roots up to a depth of 8-inches. Tree root removals shall not be done by skid-steer loaders attempting to break roots away from the tree.

The removal process for tree roots of a 3-inch diameter or larger will be done by a mechanical root-grinding device. This work shall be accomplished under **bid item 2101.624 "Tree Root Removal"**. Payment shall be by the TREE regardless of the number of trimmed roots per tree and shall be compensation in full for all labor, materials, and equipment necessary to trim and seal tree roots of a 3-inch diameter or larger.

Tree roots of less than 3-inches in diameter where removed from the trunk may be removed by a hand axe operation and will be considered incidental work.

The engineer may, after sidewalk panels have been removed near a tree, delay any root-cutting operation until a review by the City of Saint Paul Forestry Unit is made. The Forestry Unit may dictate exactly how root-cutting in the area will be done. Any delays occurring during this process will be considered incidental to **bid item 2104.518 "Remove Concrete Walk"**.

Reasonable measures must be taken to protect quality boulevard trees. This may include wraps or rerouting the sidewalk away from the tree trunk. Any change from a normal alignment of the sidewalk will be made by the engineer. These measures will be considered incidental to **bid item 2104.518 "Remove Concrete Walk"**.

All equipment used in the public right-of-way must be operated in such a way as to prevent mechanical injuries to either the trunk or canopy of boulevard trees.

2104 REMOVING PAVEMENT AND MISCELLANEOUS STRUCTURES

The provisions of MnDOT specifications 2104 shall govern as amended below:

Pipe sewers and drainage pipes which are to be abandoned shall be bulk-headed with brick or concrete block masonry 8-inches thick at the upstream ends, at downstream ends that connect to catch basins, manholes, or pipes 36-inches or greater in diameter, and at locations directed by the engineer. Mainline sewer pipe (excluding catch basin leads) to be abandoned having a 12-inch or larger inside diameter shall be filled with a suitable material as determined by the engineer.

Designated pipe sewers and structures within the upper 5-feet of the right-of-way shall be completely removed. Designated pipe sewers and structures below a depth of 5-feet may be abandoned in place as described above or as approved by the engineer.

Unless the proposal includes an item for bulk-heading, abandoning, or removal of existing sewers, it will be incidental work and no direct compensation will be made therefore.

The use of equipment which breaks pavement shall be limited to the type of machine which is equipped with a power stroke hammer unless otherwise approved by the engineer in writing prior to commencement of the breaking operation.

Asphalt pavement or bituminous surfacing shall be saw-cut and cut full-depth at the limits of partial removal prior to that removal unless otherwise approved by the engineer. In all areas paved with concrete or concrete base, the edges of the concrete shall be saw-cut to at least 1/3 of its thickness. Cutting shall be done prior to the use of any mechanical pavement removal equipment. The pavement shall be removed in such a manner that the remaining pavement is not damaged.

Prior to restoring the trench area, the edges of the trench shall be trimmed back to a vertical face on a straight line which is parallel with the centerline of the trench.

When removing existing curbing and driveways, the contractor shall not disturb any material beyond the limits required to form for new construction, assumed as 12-inches maximum from the back of new curb and 6-inches beyond the edge of new driveways. The contractor shall not excavate any deeper than necessary to accomplish the new construction.

When removing existing sidewalks, the contractor shall not disturb any material beyond the limits required for new construction (assumed as 6-inches maximum beyond and 8-inches maximum below existing grade).

Removals shall be restricted to methods which, in the engineer's judgment, will not damage any of the existing structures which are to remain in place.

Any damage due to the contractor's operations to existing pavement or structures which are to remain in place shall be repaired or replaced at the contractor's expense.

Any damage to sprinkler systems or any other structure on private property will be repaired or replaced by the Contractor. If the Contractor chooses to have the property owner repair or replace on private property, the Contractor shall reimburse the property owner for the cost of the repair or replacement. The City will not reimburse the Contractor for damage repaired on private property unless approved by the Engineer.

Damage to sprinkler systems in the public Right of Way (boulevard) shall be repaired or replaced by the property owner.

The removal of pipe sewers, side inlets, existing bulkheads, asphalt or wood curb, telephone ducts, abandoned gas mains, abandoned water mains, oiled roadways, or bituminous pavement less than 6-inches thick shall be classified as incidental work unless a specific bid item has been provided for payment.

If unknown abandoned gas mains are encountered in the trench that requires removal, the contractor shall contact Xcel Energy and negotiate a unit price before the removal work is performed.

Materials which can be reused such as manhole or catch basin frames, covers, and granite catch basin cover slabs which are not needed in the new work, shall be salvaged by the contractor and delivered to the City Sewer Maintenance yard at 419 Burgess Street, unless otherwise specified or directed by the engineer. This work shall be classified as incidental

work. Sewer Maintenance will furnish a receipt for materials delivered which must be returned to the engineer.

Bid item 2104.502 "Remove Catch Basin or Manhole" shall be construed to mean the complete removal of existing catch basins and/or sewer manholes designated in the plans.

In lieu of complete removal and with approval of the engineer, the upper 5-feet of the structure may be removed, the structure base perforated to prevent the entrapment of water, and the structure backfilled with compacted granular borrow.

Sewer pipes which connect to side inlets, catch basins, and manholes which are to be removed, shall be removed as described below:

All catch basin lead pipes within 5-feet of the surface shall be removed. Removal of these pipes shall be incidental to **bid item 2104.502 "Remove Catch Basin or Manhole"**. Removal of mainline sewer pipes, regardless of depth, shall be paid for under the appropriate bid item.

Reinforced concrete pipe, ductile iron, cast iron, P.V.C., or any pipe with a cured-in-place liner shall be removed and disposed of offsite. Clay tile pipe may be removed or crushed in place. The void area which results from removal of the sewer pipe shall be filled with compacted granular material or select material from the site.

When the pipe to be removed connects to a precast structure which is to remain in place, the pipe shall be removed through the wall of the structure and a bulkhead constructed in the wall of the structure.

When the pipe to be removed connects to a concrete masonry block structure which is to remain in place, the pipe shall be neatly trimmed on the outside of the structure and a bulkhead constructed in the wall of the structure.

When the pipe to be removed connects to a mainline sewer which is to remain in place, the pipe shall be removed to the joint nearest the mainline pipe and a bulkhead shall be constructed in the end of the remaining pipe.

When the pipe depth increases to greater than 5-feet, the pipe shall be removed to a joint which is at least 5-feet below the surface and a bulkhead shall be constructed in the end of the remaining pipe.

Pipe removal, bulkheading of any sewer structures or pipes which are to remain in place, furnishing, placing and compacting of granular material or select material in the void area resulting from removal of the pipe shall be incidental to **bid item 2104.502 "Remove Catch Basin or Manhole"**. The repair of any structures that are damaged during the removal operations shall also be incidental to this item.

All existing manhole structures to remain in place shall have the manhole frame, cover castings, and concrete adjusting rings removed and disposed of off the job site. This shall be classified as incidental to **bid item 2506.502 "Adjust Frame and Ring Casting"** with no additional compensation.

The contractor shall furnish new casting assemblies for the adjusted manholes. Payment for the new castings shall be by EACH and shall be compensation in full for all labor, materials, and equipment necessary to provide the casting assemblies under **bid item 2506.502 “Casting Assembly”**.

Bid item 2104.503 “Remove Concrete Curb or Curb and Gutter” shall be construed to mean the removal of concrete, sandstone or granite curb, concrete curb and gutter, or limestone gutter. Payment shall be by the LINEAL FOOT and shall be compensation in full for all labor, materials, and equipment necessary to remove the curb and/or curb and gutter.

Bid item 2104.503 “Remove Street Car Tracks” shall be construed to mean all work necessary for the removal and disposal of street car track pavement area. This includes the pavement above the tracks, both set of ties and rails, concrete pavement or concrete base (reinforced and non-reinforced), bituminous surfacing, bituminous overlay, or paving brick comprising part of said pavement. Payment for this item at the contract unit price shall be by the SQUARE FOOT and shall be compensation in full for all labor, materials, and equipment necessary to complete the removal and appropriate disposal of the rails, ties, and the pavement above them.

Bid item 2104.504 “Remove Concrete Driveway Pavement” shall be construed to mean the removal of monolithically-poured concrete driveways including integral curb and the monolithically-poured concrete in the walk area fronting a driveway. Payment shall be by the SQUARE YARD and shall be compensation in full for all labor and equipment necessary to remove the driveway pavement and dispose of the material off-site.

Any removal of curb, walk, driveways, or pavement required due to errors or changes in the plan shall be paid for as shown in the bid schedule. No additional compensation will be made for any additional time, labor, or equipment necessary to complete the removals.

All work required for the removal and disposal of fieldstone or cobblestone curb and/or gutter shall be classified as incidental work.

Sawing of driveway pavement shall be considered incidental to this bid item.

Payment for **bid item 2104.504 “Remove Pavement”** shall be construed to mean all work necessary for the removal and disposal of full-depth bituminous pavement, concrete pavement or concrete base (reinforced or non-reinforced), plus any bituminous surfacing, overlay, or paving brick comprising a part of said pavement. Payment shall be by the SQUARE YARD and shall be compensation in full for all labor and equipment necessary to remove the pavement and dispose of the material off-site. Saw-cutting to define the limits of the pavement removal shall be paid for separately under the appropriate bid item. In areas where there is streetcar track removal, the Remove Pavement quantity shall be calculated as the remove pavement area **minus the remove street car tracks area**.

Payment for **bid item 2104.504 “Remove Trench Pavement”** shall be construed to mean all work necessary for the removal and disposal of full-depth bituminous pavement, bituminous residential pavement (typically 3 ½ -inches), concrete pavement, or concrete base (reinforced or non-reinforced), plus any bituminous surfacing, overlay, or paving brick comprising a part of

said pavement to the limits defined by the saw-cut. Payment shall be by the SQUARE YARD and shall be compensation in full for all labor and equipment necessary to remove the trench pavement and dispose of the material offsite. Saw-cutting to define the limits of the trench removal shall be paid for separately under the appropriate bid item.

When plans state “replace pavement in kind” and there exists a brick layer below the bituminous surface, the engineer may direct that the brick layer be replaced with bituminous.

All oiled pavement removal regardless of thickness (even if greater than 6-inches) shall be considered incidental to **bid item 2105.507 “Common Excavation (P)”**. The volume of the pavement removal material has been included in the common excavation quantity.

Any bituminous curb removal shall be considered incidental to **bid item 2105.507 “Common Excavation (P)”**. The volume of the curb removal material has been included in the common excavation quantity.

Bid item 2104. 503 “Sawing Concrete Pavement (Full Depth)” shall be construed to mean saw-cutting locations to define the limits of pavement removal. Saw-cutting shall include, but not be limited to, full-depth concrete pavement or concrete base plus any bituminous surfacing, overlay, paving brick, concrete curb or curb and gutter, or other items approved by the engineer. Saw-cuts shall provide a clean and straight match line between the existing and new construction. Payment for this item shall be by the LINEAR FOOT and shall be compensation in full for all labor, materials, and equipment necessary to complete the work as described.

Bid item 2104. 503 “Sawing Bituminous Pavement (Full Depth)” shall be construed to mean saw-cutting locations to define the limits of pavement removal. Saw-cutting shall include, but not be limited to, full-depth bituminous pavement, bituminous residential pavement (typically 3 ½ -inches), plus any bituminous surfacing, overlay, paving brick, concrete curb or curb and gutter, or other items approved by the engineer. Saw-cuts shall provide a clean and straight match line between the existing and new construction. Payment for this item shall be by the LINEAR FOOT and shall be compensation in full for all labor, materials, and equipment necessary to complete the work as described.

In the case of mixed pavement, i.e., asphalt over concrete, sawing of pavement shall be classified as **bid item 2104. 503 “Sawing Concrete Pavement (Full Depth)”**

Saw-cutting of sidewalks and driveways for any purpose shall be considered incidental work.

Bid item 2104.518 “Remove Concrete Walk” shall be construed to mean the removal of monolithically-poured concrete walk or integral walk and curb with no additional payment for the removal of the curb portion. Payment shall be by the SQUARE FOOT and shall be compensation in full for all labor, materials, and equipment necessary to remove the concrete walk.

Removal of poured concrete steps shall be paid for under **bid item 2104.518 “Remove Concrete Walk”**. Payment shall be by the SQUARE FOOT measured as the width of the steps multiplied by the horizontal length of the steps and shall be compensation in full for all labor, materials, and equipment necessary to remove the steps.

Removal of asphalt, tile, brick or block walk, brick, block or segmented concrete steps shall be considered incidental work.

Bid item 2104.525 "Grind Flush Protruding Sewer Pipe (Inside Brick MH)" shall be construed to mean all work necessary to remove a protruding pipe-end flush with the inside brick manhole surface that is to be rehabilitated by forming and pouring a new concrete liner system. Payment shall be by EACH pipe and shall be compensation in full for all labor, equipment, and materials necessary to complete the work.

Bid item 2104.618 "Remove Brick Pavers" shall consist of removing and salvaging existing brick pavers in accordance with the plans, the provisions of MnDOT 2104, and the following:

The contractor shall remove and salvage brick pavers which are in good condition. Good condition is a whole brick with no surface cracks and little chipping along the edges of the brick, with final determination by the engineer. The engineer will meet with the contractor prior to the start of any salvaging of brick to further define the definition of good brick.

The contractor will be required to take any measures necessary to prevent the pavers from being stolen during the project. The contractor should be made aware that there have been problems on previous projects with brick being stolen off the surface of streets on evenings and weekends when the contractor was not working on the site. The contractor will be responsible for replacing brick stolen during the course of the contract.

To minimize the damage to the brick pavers, they shall be removed by hand and the salvageable bricks stacked on pallets. The palletized brick shall then be wrapped in steel banding. (Approximately 300-bricks can be safely stacked on each pallet.) The bricks shall be separated according to the brand and dimension of brick. To inventory the brick, the pallets shall be clearly marked with the number of brick contained on the pallet and the location from which they were salvaged. If necessary, the pallets of brick shall be moved by the contractor to a secure location approved by the engineer at the end of each working day. The contractor shall load and transport the pavers in such a manner as to protect their condition during the hauling of pavers from the site.

Bid item 2104.618 "Remove Brick Pavers" shall be construed to mean carefully removing, cleaning, and stacking the usable pavers on pallets and if necessary, delivering the pallets to an approved storage location. Payment shall be by the SQUARE FOOT and shall be compensation in full for all labor, materials, and equipment necessary to complete the work as specified. All costs of securing bricks and transporting if necessary, shall be considered incidental to this pay item. Payment for this item will be in addition to bid items for removal of the structural section of pavement below the brick, such as bid item 2105.501 "Common Excavation (P)".

The contractor is not allowed to bury project construction debris in the right-of-way.

The contractor shall not stockpile construction debris on the job site for an extended period.

The contractor shall dispose of construction debris within 7-days of removals.

2105 EXCAVATION AND EMBANKMENT

The provisions of MnDOT specifications 2105 shall govern as amended below:

All suppliers are required to furnish documentation of passing gradation tests for common borrow and granular borrow.

All oiled pavement removal, regardless of thickness (even if greater than 6-inches), shall be considered incidental to **bid item 2105.507 "Common Excavation (P)"**. The volume of the oiled pavement removal material has been included in the common excavation quantity.

Bid item 2105.507 "Common Excavation (P)" shall include removal of bituminous curbing and rock or stone curb.

It is incumbent on the contractor to review the streets for the possibility of a high existing crown. Any additional excavation necessary for the removal of the high crown will be incidental to **bid item 2105.507 "Common Excavation (P)"** and no additional compensation will be made for any additional time, labor, or equipment necessary to complete the excavation.

Occasionally, the City may be required to adjust the alignment and/or elevation of the proposed gutter line to provide adequate drainage (this will occur more often on streets with insufficient grade). Any additional excavation necessary for these elevation changes will be considered incidental to **bid item 2105.507 "Common Excavation (P)"** and no additional compensation will be made for any additional time, labor, or equipment necessary to complete the excavation.

Excavation shall proceed as follows:

Unless otherwise approved by the engineer, the contractor shall remove the existing roadway surface down to the elevation of the bottom of the proposed base course and concrete curb and gutter. The contractor shall install new or repair existing utilities as indicated on the plan. The engineer shall then examine the subgrade. Based upon visual observation and upon results of the soil boring report, the engineer will determine the need for, or extent of, the subgrade excavation. Where depths of subgrade excavation vary, the depths shall transition at the rate of 20 (horizontal): 1 (vertical).

The quantity for common excavation shown in the bid schedule has been calculated as follows:

On existing paved streets that are to be reconstructed, **bid item 2105.507 "Common Excavation (P)"** was computed assuming that the new final roadway elevation is to be the same as the existing roadway elevation. The depth of the excavation is the distance between the top of the existing pavement and the bottom of the aggregate base of the proposed section. The volume of common excavation was computed by adding the excavation in the pavement area and the excavation in the curb and gutter area **MINUS the remove pavement volume**. The excavation in the pavement area was determined by multiplying the depth of the excavation (9.5-inches) by the area of new pavement. The excavation in the curb and gutter area was determined by multiplying the length of the new curb and gutter, by the depth of the excavation, by the width of the excavation (the width of the curb and gutter plus 8-inches, which totals 40-inches).

On oiled streets and alleys that are to be reconstructed, **bid item 2105.507 “Common Excavation (P)”** was computed assuming that the new final roadway elevation is to be 1-inch lower than the existing roadway elevation. The depth of the excavation is the distance between the top of the existing pavement section and the bottom of the aggregate base of the proposed pavement section.

The volume of common excavation was computed by adding the excavation in the pavement area and the excavation in the curb and gutter area. The excavation in the pavement area was determined by multiplying the depth of the excavation (9.5-inches plus 1-inch) by the area of new pavement. The excavation in the curb and gutter area was determined by multiplying the length of the new curb and gutter, by the depth of the excavation, by the width of the excavation (the width of the curb and gutter plus 8-inches, which totals 40-inches). See drawing bound in the specifications.

No adjustment or re-computation of the common excavation quantity will be made based on the actual conditions not conforming to the above assumptions.

Payment for **bid item 2105.507 “Common Excavation (P)”** shall be made on the quantity of common excavation shown in the bid schedule. Said payment shall be compensation in full for all costs of excavation, including disposal of unsuitable or excess material out of the project limits with no adjustment for actual quantity excavated.

Excavation below the bottom of the proposed aggregate base course and curb and gutter for subgrade correction shall be classed as **bid item 2105.507 “Subgrade Excavation”**.

Actual depth and location of subgrade excavation may vary due to soil conditions at the discretion of the engineer.

Payment for **bid item 2105.507 “Subgrade Excavation”** shall be based on the actual subgrade excavation limits authorized by the engineer. Said payment shall be compensation in full for all costs of excavation, including disposal of unsuitable or excess material out of the project limits.

Rock Excavation bid item 2105.507 “Rock Excavation” shall be construed to mean removing all hard-solid rock in ledge formation, bedded deposits and unstratified masses, all-natural conglomerate deposits so firmly cemented as to present all the characteristics of solid rock, and any boulder, stone, masonry, or concrete fragments exceeding 1/2-cubic yards in volume. Materials such as shale, hard pan, soft or disintegrated rock which can be dislodged with a hand pick or removed with a power operated excavator will not be classified as Rock Excavation. Payment shall be by the CUBIC YARD and shall be compensation in full for all costs of excavation, including disposal of unsuitable or excess material out of the project limits. This item is intended to be used in areas where rock excavation is necessary for roadway construction, structure foundations, sewer main, sewer services, catch basins, water services, and water main work.

Bid item 2105.609 “Granular Borrow” shall be measured and paid for by the TON as per MnDOT specifications 1901. The contractor's attention is drawn to the provision of a delivery ticket certified by a weigh master in lieu of having a buyer's representative at the weighing. This ticket shall accompany each delivery vehicle and be made available to the engineer. The

weigh ticket shall indicate the weight of the vehicle unloaded, the weight of the vehicle loaded, and the date, time, and place of weighing.

Excavation for sewer construction shall be Unclassified Excavation as defined elsewhere in the "City of Saint Paul Standard Supplemental Specifications for Construction".

Excavated materials shall not be piled around the trees. Heavy equipment shall be operated in a manner that will not injure the trees and shall not be parked near the trees.

Organic soils and any other excavation that the engineer may designate shall be removed and disposed of off the project site. Granular materials shall be salvaged and utilized as subgrade material. If granular materials are not obtainable from the excavation, granular borrow shall be furnished and placed.

The engineer shall have complete control over the disposition of all excavation material and the determination of adjustment.

The contractor may stockpile up to 200-cubic yards of material in any 1-block for a maximum of seven 7-days. The stockpile must not prohibit drainage, access to driveways, alleys, or intersections. The stockpile will only be allowed on streets after the surfacing has been removed and before the aggregate base is placed, or on streets with asphalt base. One local access traffic lane must remain open at all times. If, in the engineer's judgment, the stockpile is hazardous for any reason, the engineer may direct the contractor to relocate the stockpile at the contractor's expense.

Stockpiles of material shall be placed a minimum of 50-feet away from surface waters. Any stockpiles placed on a paved surface shall have perimeter controls at the base of the pile.

Unless the proposal contains an item for de-watering, it shall be classified as incidental work and no direct compensation will be made.

Any excavation required to facilitate the taking of density tests shall be done by, and at the expense of, the contractor.

2112 SUBGRADE PREPARATION

The provisions of MnDOT specifications 2112 shall govern as amended below:

Following the removal of pavement from the exposed subgrade and base, the contractor shall remove all standing water within 24 hours to prevent subgrade failure. If standing water is not removed within 24 hours, the contractor will be held responsible for subgrade failure. The contractor will need to correct the failed subgrade with no compensation from the city.

The contractor shall allow adequate time for the subgrade to dry prior to aggregate base and bituminous operations.

All water removed shall follow NPDES and SWPPP requirements. 1717

2112.3E Delete and substitute the following:

When the subgrade is being prepared for placement of a bituminous base or surface course, the elevation of the finished surface at the time the next layer is placed shall not vary more than .05-feet above and 0.00-feet below the prescribed elevation.

2118 AGGREGATE SURFACING

The provisions of MnDOT specifications 2118 shall govern as amended below:

Bid item 2118.509 “Aggregate Surfacing, Class 5” shall be construed to mean at the direction of the engineer, placement of aggregate surfacing (to provide a driving surface for local access) in areas where the existing street surfacing has been removed for construction purposes. Payment shall be by the TON and shall be compensation in full for all costs involved in the purchase, hauling, placing, and compacting of the material complete in place.

Aggregate surfacing used to provide temporary driveway connections and ramps shall be classified as incidental work.

The contractor may substitute class 5Q or class 6 for class 5 at no additional cost.

2123 EQUIPMENT RENTAL

The provisions of MnDOT specifications 2123 shall govern as amended below:

Bid item 2123.610 “Street Sweeping (with Pickup Broom)” shall be construed to mean sweeping as ordered by the engineer for general job cleanup, controlling dust and dirt, or cleanup such as tracking onto side streets and arterials where no construction activity is taking place. Daily sweeping may be required by the engineer.

A wet, power broom pickup sweeper, approved by the engineer, shall be used to perform this work. Compensation for this item shall be by the HOUR irrespective of evenings, weekends, or holidays. No compensation shall be made if water is not used during sweeping.1505

There will be no compensation for sweeping in preparation for paving.

2130 APPLICATION OF WATER FOR DUST CONTROL

Watering for dust control or compaction will be considered incidental. Water is available from Saint Paul Regional Services’ hydrants with a hydrant permit.

The contractor shall be responsible for any subgrade failure due to overwatering for dust control.

2211 AGGREGATE BASE

The provisions of MnDOT specifications 2211 shall govern as amended below:

All suppliers are required to furnish documentation of passing gradation tests for aggregate base class 5 prior to delivery to the project.

Any excavation required to facilitate taking of density tests shall be done by, and at the expense of, the contractor.

When subsequent construction includes placing bituminous base or surfacing, the aggregate base finished surface tolerance shall not vary more than .03-feet above and 0.02-feet below the prescribed elevation.

The gradation of the aggregate base shall conform to that shown as class 5 in section 3138 of the MnDOT specifications.

The Contractor shall water the aggregate base as required to meet compaction densities without compromising the subgrade. The contractor will be responsible for subgrade failure due to overwatering.

The contractor shall allow adequate time for the subgrade and aggregate base to dry prior to bituminous operations.

Bid item 2211.507 “Aggregate Base Placed (CV), Class 5 (P)” quantities will be computed based on planned dimensions of the base using either cross-sectional area and length or base area and thickness, subject to weight or volume conversions provided for hereinafter.

Proposal quantities for **bid item 2211.507 “Aggregate Base Placed (CV), Class 5 (P)”** shall be accepted for payment unless dimensions are altered by authorization of the engineer, in which case the scheduled quantity will be adjusted to compensate for the increased or decreased volumes. Where variables or placement conditions make it impractical to determine or document in-place volume, the base material will be measured by weight or vehicle measure and the quantities so measured will be converted to equivalent in-place volume based on 135-pounds per cubic foot of compacted base.

The contractor may substitute class 5Q or class 6 for class 5 at no additional cost.

2301 CONCRETE PAVEMENT

The provisions of MnDOT specifications 2301 shall govern as amended below:

Concrete base shall be poured to match the thickness of the abutting in-place concrete base. At the end of a concrete base pour, the edge shall be poured against an appropriate concrete form. Concrete may not be left in a free-flow manner.

Concrete pavement and/or concrete base shall be measured by area in SQUARE YARDS, including regular and irregular shapes and widths, of the thickness as shown on the plans. Payment shall be compensation in full for all labor, materials, and equipment necessary to construct the concrete base complete in place.

Concrete base shall be MnDOT mix 3R52 unless otherwise approved by the engineer.

Concrete base shall be constructed on a 6-inch compacted layer of aggregate base, class 5. Aggregate base will be paid for separately under **bid item 2211.507 “Aggregate Base Placed (C.V.), Class 5 (P)”**.

Bid item 2301.503 “Concrete Grinding” shall be construed to mean the cutting or grinding of a vertical projection between $\frac{1}{4}$ ” and $1\frac{1}{4}$ ” deviation from the accepted walking surface to a maximum slope of 1:12. The newly exposed surface must meet OSHA requirements for friction coefficient for safe ambulation. Surface preparation is incidental. Surface preparation includes but is not limited to washing or blowing of debris from surface and joints, removal of bituminous patches or other materials, and disposal of preparation by-products.

Corrections shall only be instances of concrete-to-concrete surfaces. Heaved panels abutting other materials, i.e. bituminous, pavers, bricks, granular, etc., will not be considered for grinding or cutting. The correction may be parallel or perpendicular to the path of travel. The contractor must prevent dust pollution so as to satisfy all environmental permitting associated with the contract, with regulatory agencies, and with local and state laws.

Instances of grinding must be identified before the work and approved by the project engineer or representative. The decision will depend on cause of the sidewalk deviation and the effectiveness of the grinding as a solution. Quality of final product is subjected to the project engineer or representative’s acceptance and can be refused for payment if expectations are not satisfied.

Grinding cannot not be utilized as a repair method for newly placed concrete surfaces.

Damages to sidewalk panels from grinding shall be replaced by the contractor at no cost to the city.

Each correction will be measured by the linear foot of actual surface cut or ground (2301.503).

Payment for transverse grinding or cutting of concrete sidewalk panels shall be compensation in full for all labor, materials, equipment, and disposal of refuse to execute the work. Dust control and TPAR are incidental to this item and may be paid for separately if bid items are provided for.

Bid item 2301.602 “Drill and Grout Reinforcement Bar (Epoxy Coated)” shall mean to furnish and install reinforcement bars on all sides of the separately poured concrete pedestrian ramp landing and between the pedestrian ramp and adjacent curb. Wet casting or drill and grouting of dowel bars will be required in accordance with the details shown in standard plan 5-297.250, sheet 6 of 6. These bars may be either smooth or deformed and shall be installed with 2-inch minimum concrete cover. Payment for these bars will be made under bid item **2301.602 “Drill & Grout Reinforcement Bar (Epoxy Coated)”** by EACH, furnished and installed.

Bid item 2301.607 “Lean Mix Backfill – Abandon Sewers In-place” shall be construed to mean abandoning sewer pipes, tunnels, or backfilling designated areas with a lean mix backfill material. The lean mix backfill material shall be a mixture of cement, sand, and water. In lieu of cement, fly ash may be substituted for up to $\frac{1}{2}$ of the cement content by weight. The cement

shall be type I. The lean mix backfill mixture shall have a 28-day compressive strength of 1,000-psi. The contractor shall submit for review and approval the proposed mix design of the lean mix backfill prior to use.

Prior to placement of lean mix backfill, the contractor shall provide PVC pipe stubs in each sewer bulkhead to allow for pumping, witnessing of lean mix backfill placement, and air venting during placement. Whenever possible, pumping of lean mix backfill into an abandoned sewer is to progress from the upstream bulkhead to the downstream bulkhead. Bulkhead construction and any bracing required to prevent such damage shall be an incidental cost to the lean mix backfill.

The contractor shall place the lean mix backfill in lifts or at a rate so as not to damage any bulkhead, tunnel, or structure.

The contractor shall document to the engineer the volume of lean mix backfill placed at each work site or set-up. Measurement and payment shall be by the CUBIC YARD placed and shall be compensation in full for all labor, materials, and equipment necessary to abandon the designated sewer pipe, sewer tunnel, or backfill area with lean mix backfill, complete in place.

Bid item 2301.607 “Lean Mix Backfill – Abandon Sewers In-place” shall be construed to mean abandoning sewer pipes, tunnels, or backfilling designated areas with a lean mix backfill material. The lean mix backfill material shall be a mixture of cement, sand, and water. In lieu of cement, fly ash may be substituted for up to ½ of the cement content by weight. The cement shall be type I. The lean mix backfill mixture shall have a 28-day compressive strength of 1,000-psi. The contractor shall submit for review and approval the proposed mix design of the lean mix backfill prior to use. No chemical additives are allowed that result in changing the volume of lean mix delivered to the project work site.

Prior to placement of lean mix backfill, the contractor shall provide PVC pipe stubs in each sewer bulkhead to allow for pumping, witnessing of lean mix backfill placement, and air venting during placement. Whenever possible, pumping of lean mix backfill into an abandoned sewer is to progress from the upstream bulkhead to the downstream bulkhead. Bulkhead construction and any bracing required to prevent such damage shall be an incidental cost to the lean mix backfill.

The contractor shall place the lean mix backfill in lifts or at a rate so as not to damage any bulkhead, tunnel, or structure.

The contractor shall document to the engineer the volume of lean mix backfill placed at each work site or set-up. Measurement and payment shall be by the CUBIC YARD placed and shall be compensation in full for all labor, materials, and equipment necessary to abandon the designated sewer pipe, sewer tunnel, or backfill area with lean mix backfill, complete in place.

2360 PLANT MIXED ASPHALT PAVEMENT

The provisions of MnDOT specifications 2360 shall govern as amended below:

Bid item 2360.504 “Type SPWEA330F Wearing Course Mixture, 3-inch Thick” shall be construed to mean construction of 4-inch aggregate base, class 5, and 3-inch (or match existing thickness of adjacent mat) type SPWEA330F wearing course mixture in areas between the new concrete driveway aprons and the existing asphalt or dirt driveways and other areas determined by the engineer. Payment for this item shall be by the SQUARE YARD and shall be compensation in full for all labor and materials, including aggregate base and equipment necessary to excavate and construct this pavement complete in place.

2401 CONCRETE BRIDGE CONSTRUCTION

The provisions of MnDOT specifications 2401 shall govern as amended below:

Benchmark disks when included in the plans will be furnished by the City of Saint Paul and placed as designated by the engineer or as shown on the plans. Unless a bid item is included in the contract, placement of the benchmark disks shall be classified as incidental work.

2411 MINOR CONCRETE STRUCTURES

The provisions of MnDOT specifications 2411 shall govern as amended below:

The concrete for cast-in-place sewer structures shall be MnDOT mix no. 3G52. The concrete as used may contain a water-reducing admixture for the purposes of increasing the concrete slump without the addition of extra water. The use of an approved retarder will be permitted so the concrete can be pumped to its final position before it takes its initial set. No reduction in cement content will be permitted when a water-reducing admixture is used. Use of the water-reducing admixture shall not entitle the contractor to additional compensation.

The use of calcium chloride in concrete used in underground reinforced concrete structures will not be permitted.

All other admixtures used shall be specifically approved by the engineer prior to use.

Reinforcing steel bars shall be the size, shape, and length shown on the contract drawings and shall conform to the requirements of ASTM A-615, grade 60.

Steel, including structural steel, steel plates, angles, bars, flats, and other shapes shall conform to the requirements of ASTM A-36, Structural Steel and ASTM 283, Low and Intermediate Tensile Strength Carbon Steel Plates, unless otherwise described in this section.

Bid item 2411.605 “Concrete Steps” shall mean construction of concrete steps complete in place. Payment for this item shall be by the CUBIC YARD and shall be compensation in full for all labor, materials, and equipment necessary to construct the steps and adjoining outwalk complete in place.

2451 STRUCTURE EXCAVATIONS AND BACKFILLS

The provisions of MnDOT specifications 2451 shall govern as amended below:

Granular pipe bedding material shall meet the requirements of MnDOT specifications 3149 granular bedding.

Trench bedding shall be completed in accordance with current City sewer standard plate 2317D "Types of Trench Bedding", or as specified otherwise of project specifications. A geotechnical investigation is required for sewer relocations or as require by the city of Saint Paul sewer utility. A geotechnical investigation report (signed by MN P.E.), supersedes city sewer standard plate 2317D.

Granular pipe bedding material shall be compacted to not less than 100% of maximum density in accordance with the specified density method, A.S.T.M. designation D-698 and D-1556.

All suppliers are required to furnish documentation of passing gradation tests for all granular foundation, granular bedding, granular backfill, and aggregate foundation material.

Aggregate foundation for sewers or granular pipe bedding material may be used as directed by the engineer in areas where the existing foundation material exceeds the optimum moisture content, is in a relatively LOOSE or SOFT condition, or in areas of STRUCTURE EXCAVATION, CLASS R.

Granular pipe bedding material may be used as directed by the engineer in areas where suitable bedding material is not available from excavations or in areas of STRUCTURE EXCAVATION, CLASS R.

Bid item 2451.505 "Aggregate Backfill (CV)" shall be construed to mean washed river rock for the infiltration trench conforming to MnDOT specifications 3149 modified to following gradation:

Table 2451.3D-1. Aggregate Backfill Gradation Requirements

Sieve Size	Percent Passing
3.0"	100
2.5"	90-100
2.0"	45-80
1.5"	0-30
1.0"	0-6

The Contractor shall provide location of the source pit to the Engineer and allow the City's geotechnical consultant opportunity to conduct testing prior to transport to the work site. In lieu of source pit testing, aggregate backfill suppliers are required to furnish documentation indicating compliance with the specifications, including gradation, unit weight, void space (40% minimum, dry rodded), and composition. This documentation shall be submitted to the Engineer prior to transport to the work site. Carbonate quarry rock, crushed concrete, and recycled bituminous material shall not be used.

Aggregate backfill should be placed in lifts and lightly compacted with plate compactors. Care shall be taken to prevent natural or fill soils from mixing with the aggregate backfill. All contaminated aggregate backfill shall be removed and replaced with uncontaminated backfill.

Payment shall be by the CUBIC YARD and shall be compensation in full for all costs in purchase, transport, placing, and compacting of the material in place.

Bid item 2451.513 “Fine Filter Aggregate (CV)” shall meet the requirements of MnDOT specifications 3149 fine filter aggregate. Payment shall be by the CUBIC YARD and shall compensation in full for all labor, materials, and equipment necessary.

Bid item 2451.609 “Granular Backfill” shall be construed to mean placement of granular backfill in areas where suitable trench backfill is not available from trench excavation, existing trench backfill is wet of optimum, or in areas of STRUCTURE EXCAVATION, CLASS R. Payment per UNIT COST shall be compensation in full for all costs involved in the purchase, hauling, placing, and compacting of the granular backfill, including disposal of unsuitable material off the job site. Contractor to submit material product information to the engineer for review and approval before delivering to the project work site.

Bid item 2451.609 “Granular Pipe Bedding” shall be construed to mean the removal and disposal of the unsuitable bedding material within the sewer trench and replacement with the appropriate material. This item shall also be used for placing BEDDING MATERIALS in areas of STRUCTURE EXCAVATION, CLASS R. Payment per UNIT COST shall be compensation in full for all costs involved in the purchase, hauling, placing, and compacting of the material, including disposal of unsuitable material off the job site.

Contractor to submit material product information to the engineer for review and approval before delivering to the project work site.

Bid item 2451.609 “Aggregate Foundation for Sewers” shall be construed to mean removal and disposal of the unsuitable material within the sewer trench and below the invert elevation of the pipe and replacement. Payment per UNIT COST shall be compensation in full for all costs involved in the purchase, hauling, placing, and compacting of the material, including disposal of unsuitable material off the job site.

Aggregate foundation materials shall meet the requirements of MnDOT specifications 3149.2H, coarse filter aggregate. Aggregate foundation materials used for sewer pipe bedding to be wrapped in (2) layers MnDOT Spec 3733 Type V geotextile fabric.

Aggregate foundation for sewers or granular pipe bedding material may be used as directed by the engineer in areas where the existing foundation material exceeds the optimum moisture content, is in a relatively LOOSE or SOFT condition, or in areas of STRUCTURE EXCAVATION, CLASS R.

Contractor to submit material product information to the engineer for review and approval before delivering to the project work site.

Bid items 2451.609 “Granular Backfill”, “Granular Pipe Bedding”, and “Aggregate Foundation for Sewers” shall be measured and paid for by the TON as per MnDOT specifications 1901.

The contractor's attention is drawn to the provision for a delivery ticket certified by a weigh master in lieu of having a buyer representative at the weighing. This ticket shall accompany each delivery vehicle and be made available to the engineer. The weigh ticket shall indicate the weight of the vehicle unloaded, the weight of the vehicle loaded, and the date, time, and place of the weighing.

2471 STRUCTURAL METALS

The provisions of MnDOT specifications 2471 shall govern as amended below:

2471.3N Add the following:

No charge will be made to the contractor for plant inspection services provided within the State of Minnesota. Whenever plant inspection is conducted outside the State of Minnesota, the contractor shall bear all costs of travel and subsistence of the City of Saint Paul's inspectors on an actual cost basis.

2503 PIPE SEWERS

The provisions of MnDOT specifications 2503 shall be deleted in its entirety and be replaced with the following:

2503.1 Description

This work shall consist of the construction of pipe sewers using plant-fabricated pipe and other appurtenant materials, installed for conveyance of sewage, industrial wastes or storm water, exclusive of sewer constructed in tunnel. Manhole and catch basin construction shall be in accordance with the provisions of MnDOT specifications 2506 as amended.

Where aprons are required, they shall be furnished and installed under the provisions of MnDOT specifications 2501 as amended.

2503.2 Materials

Reinforced Concrete Pipe

Reinforced concrete pipe to be used shall conform to the latest requirements of ASTM specifications C-76, C-506, or C-507 for the appropriate type and class of pipe as noted on the plans.

All joints for circular concrete sewer pipes shall conform to the current version of MnDOT standard plate 3006. Pipe joints shall be clean and dry and shall be lubricated and joined in accordance with the manufacturer's instructions.

Joints in arch or elliptical concrete pipes shall be sealed watertight with rubber gaskets or with such flexible, elastic, preformed plastic or bituminous mastic joint sealer materials as Ram-Nek, Kent-Seal, or an engineer-approved equal, applied in accordance with manufacturer's recommendations.

PVC Pipe

Polyvinyl Chloride (PVC) pipe shall be rated as 100-psi pressure pipe for water distribution systems. This PVC pressure pipe shall meet the requirements of AWWA Standard C-900 "Standard for Polyvinyl Chloride (PVC) Pressure Pipe 4-inch through 12-inch for Water" or Uni-Bell PVC pipe association standard B-11-85 specifications for "PVC Water Transmission Pipe for 14-inch through 36-inch Nominal Diameters".

It shall be furnished in cast iron pipe-equivalent diameters with locked-in rubber-gasketed integral bell joints as listed in the AWWA C-900 and UNI B-11 standards. The certification of the National Sanitary Foundation (NSF) and the Underwriters Laboratories (UL) shall be required and shall be marked on each length of pipe. The PVC pipe shall have a dimension ratio of 25 (Class 100).

Ductile Iron Pipe

Ductile iron pipe shall conform to ANSI specifications A21.51 for the appropriate class of pipe as noted in the plans. Ductile iron pipe joints shall meet the requirements of ANSI specifications A21.11.

All pipe and fittings shall be furnished with cement mortar lining, meeting the requirements of ANSI A-21.4 for standard thickness lining. All interior and exterior surfaces of the pipe and fittings shall have a tar or bituminous seal coating at least 1-mil thick. Spotty, thin seal coating or poor coating adhesion shall be cause for rejection.

Clay Pipe

The clay pipe and fittings to be used for sanitary sewer construction shall be vitrified clay pipe (VCP), extra strength, conforming to the provisions of ASTM specifications designation C-700.

VCP joints shall conform to the latest requirements of ASTM specifications designation C-425 for compression couplings.

Cured-in-Place Pipe

A cured-in-place pipe (CIPP) shall consist of a resin-impregnated felt liner inserted into an existing pipe and conforming to the requirements as defined in the special provisions. The City will not pay for stored CIPP materials.

2503.3 Construction Requirements

A. General

The requirements of MnDOT specifications 2451 as they relate to the excavation, foundation construction, and backfilling of prefabricated structures shall apply together with the additional requirements of modifications contained herein.

The centerline of the sewer has been determined with reasonable accuracy. The City reserves the right to make minor adjustments in sewer and manhole locations.

A generous collar of concrete shall be constructed around the new sewer pipe at all connections to existing structures or pipe.

B. Pipe Installation

B1. Excavation

All installation shall be accomplished by open trench construction except for short tunnel sections approved by the engineer and except that boring, augering, jacking, or tunnel construction methods shall be employed where so specifically required by the plans or special provisions. Installation of pipe through tunnel excavations will be allowed only where the surface structure can be properly supported and the backfill restored to the satisfaction of the engineer.

Excavating operations shall proceed only so far in advance of pipe laying as will satisfy the needs for coordination of work and permit advance verification of unobstructed line and grade as planned.

Where interference with existing structures is possible or in any way indicated and where necessary to establish elevation or direction for connections to in-place structures, the excavating shall be done at those locations in advance of the main operation so actual conditions will be exposed in sufficient time to make adjustments without resorting to extra work or unnecessary delay. This shall be considered incidental work unless a specific bid item has been provided.

The excavating operations shall be conducted so as to carefully expose all in-place underground structures without damage.

Wherever the excavation extends under or approaches so close to an existing structure as to endanger it in any way, precautions and protective measures shall be taken as necessary to preserve the structure and provide temporary support.

Hand methods of excavating shall be utilized to probe for and expose such critical or hazardous installations as gas, water, sewer mains and services, electrical, telephone, fiber optic, street lighting and traffic signal cables, and conduits.

Excavated materials will be classified for payment to the extent that the removal of materials classified by the engineer as rock will be paid for separately from other unclassified materials as extra work. All other materials encountered in the excavations, with the exception of items classified for payment as structure removals, will be considered as unclassified excavation. Unclassified materials shall include muck, rubble, wood debris, fragments of boulder stone, masonry or concrete less than 2-cubic yards in volume, together with other miscellaneous matter that can be removed effectively with power-operated excavators without resorting to drilling and blasting. Excavation of all such unclassified material will be classified as incidental work.

Rock excavation shall be defined to include all hard-solid rock in ledge formation, bedded deposits and unstratified masses, all-natural conglomerate deposits so firmly cemented as to present all the characteristics of solid rock, and any boulder stone, masonry or concrete fragments exceeding 2-cubic yards in volume. Materials such as shale, hard pan, soft or disintegrated rock which can be dislodged with a hand pick or removed with a power operated excavator, will not be classified as rock excavation.

The contractor shall thoroughly familiarize themselves with all state and federal regulations governing excavation. The sides of the trench shall be sloped and/or braced as necessary to assure the safety of the workers. The trench side slopes and the trench width at the top of the excavation will vary, depending upon the depth of the trench, the size of the pipe, and the nature of the material encountered. The width of the trench shall be kept at a minimum to prevent excess removal or destruction of the existing surface.

The equipment used for surfacing removal, excavation, and pipe placement shall be of such sizes and types as to adequately perform the intended operations. Such equipment shall not be so operated or of a size or type as to cause a greater trench width than that minimally required for safe operation.

If at any time the trench becomes wider than required for a reasonable and safe operation, the engineer may direct the contractor to change their equipment or methods of operation in order to narrow the trench to a reasonable width at the top of the excavation.

All work must be confined within the limits of the construction easement or public right-of-way indicated on the plans. To comply with this requirement in the various pipe depth, location, and soil condition combinations, the contractor shall install any necessary sheeting, bracing, or trench boxing at their own expense.

The sides of trenches shall be securely braced or sheeted when necessary to prevent caving. The engineer may order such bracing as they deem necessary for the protection of life or property, but such order will not relieve the contractor of their responsibility for the conduct of the work or the consequences thereof. No additional compensation will be made for any sheeting or bracing required, or so ordered by the engineer. If sheeting is ordered left in place by the engineer, payment will be made for the materials as an extra work item.

Trench width in this area of the excavation shall allow for a 12-inch minimum to 18-inch maximum space between the trench walls or sheeting and the outside diameter of the sewer.

The maximum allowable trench width at the level of the top of pipe may be exceeded only by approval of the engineer after their consideration of pipe strength and loading relationships.

In case the maximum width is exceeded, the contractor may be required to provide a higher class of bedding, a higher strength of pipe, or both as determined by the engineer without additional compensation.

All excavated materials shall be piled in a manner that will not endanger the work or obstruct fire hydrants. Gutters shall be kept clear or other satisfactory provisions made for street drainage at all times.

B2. Foundations

Care must be taken to avoid over-excavation at pipe grade. Where the existing material at pipe grade is loose or where material is placed due to over-excavation, mechanical compaction of such material will be required in order to achieve a density of 100% as determined by the standard proctor density (ASTM D698).

The finished pipe grade shall be prepared accurately, in every instance, by shaping with hand tools as required to provide the class of bedding specified.

Where rock (as previously defined) is encountered at pipe grade, it shall be removed to a depth of at least 6-inches, but not more than 12-inches below the outside bottom of the pipe barrel and below the lowest projection of joint hubs.

Unless otherwise specified, backfilling to pipe grade shall be made with such suitable materials which are available from the trench excavation and approved by the engineer. In the event that suitable backfill material is unavailable from the trench excavation, the engineer may direct that granular or aggregate foundation material be hauled in and placed as extra work. Granular material shall meet the requirements of MnDOT specifications 3149. Granular bedding and aggregate material shall meet the requirements of MnDOT specifications 3137, class B and shall meet the gradation requirements of CA-35.

Placement of the foundation material shall be relatively uniform layers not exceeding 8-inches in loose thickness. Each layer of backfill shall be compacted thoroughly by means of approved mechanical compaction equipment as will produce uniform pipe support throughout the full pipe length and facilitate proper shaping of the pipe bed.

Where other unclassified material encountered at pipe grade is, in the engineer's judgment unsuitable for pipe foundation, the subgrade shall be excavated below the pipe to stable material as directed by the engineer. Excavation and disposal of such unsuitable, unclassified materials shall be classed as incidental work. Backfilling to pipe grade shall be as described above for rock excavation and backfilling.

The contractor shall be fully responsible to keep the trenches free of water by such means as will preserve the structural stability of the trench bottom and sides and provide a dry trench for the installation of the pipe.

In the event de-watering wells need to be installed by the contractor, it shall be the contractor's responsibility to obtain all necessary approvals and permits including a Water Appropriation Permit from the Department of Natural Resources. The contractor shall also be responsible for all fees and documentation associated with the permits.

Discharging water into sanitary or combined sewers will not be permitted except through written authorization of the City of Saint Paul Department of Public Works sewer engineer.

The contractor shall be responsible for the installation and maintenance of a flow measurement device subject to the approval of the sewer engineer before any flow is discharged to a sanitary or combined sewer. The contractor shall allow the Sewer Engineering Division to inspect and monitor the flow measurement device. The contractor

shall reimburse the City for all water drained to a sanitary or combined sewer at the sewage treatment rates current at the time of the discharge.

B3. Bedding

Unless otherwise noted in the plans, the pipe bedding shall be as shown on the current version of City of Saint Paul standard plate 2317C.

Pipe bedding will be construed as that part of the trench backfill below a plane 12-inches above the top of the outside of the pipe. Bedding material shall be selected granular or clay material free from stones or organic material which can be placed and thoroughly compacted around the pipe. Bedding material shall be selected from the trench excavation and shall be segregated and stockpiled for that purpose when necessary.

If approved material is available from the excavation and is NOT utilized for bedding purposes, the contractor shall provide approved granular material for bedding as specified below at their own expense.

In some instances, natural suitable bedding material may not be encountered during the normal excavating of the trench.

When the material encountered is determined by the engineer as unsuitable, the contractor shall provide and place approved bedding from surplus material stockpiled from previous excavation or other excavation then in progress on the project, at no additional compensation.

If approved surplus bedding material is not available through no fault of the contractor, the engineer may order the contractor to furnish and place, as extra work, granular bedding material meeting the requirements of MnDOT specifications 3149.2F, granular bedding. Pipe bedding shall be compacted to a density of 95% as determined by standard proctor density (ASTMD698) with approved hand-operated mechanical equipment without damage to the sewer or utility installations.

B4. Laying Pipe

Pipe shall be carefully handled to avoid any damage in transit, unloading, distribution, and laying. Prefabricated joint material on pipes shall be protected from dirt and deformation. Equipment used for laying pipe shall be of adequate size and properly equipped to lay the pipe.

Proper implements, tools, and facilities satisfactory to the engineer shall be provided and used by the contractor for the safe and convenient protection of the work. Before being lowered into the trench and while suspended, the pipe shall be inspected for defects. Any defective, damaged, or unsound pipe shall be rejected.

All foreign matter or dirt shall be removed from the inside of the pipe before it is lowered into its position in the trench and all pipe shall be kept clean by approved means during and after laying. All openings along the line of the sewer shall be securely closed as directed and in suspension of work at any time, suitable stoppers shall be placed to prevent earth,

other substances, or children from entering the sewer. Pipe once laid shall be protected from injury or disturbance of any kind.

Pipe-laying shall proceed upstream at the line and grade as noted on the plans and as staked by City surveyors. Bell or grooved ends shall be laid facing upgrade. The grade board method or laser beam method shall be used for line and grade on all mainline sewers. Minimum grade for catch basin leads shall be 2% unless deemed impractical by the Engineer. Holes shall be excavated for bells so that the barrel of the pipe is supported uniformly on a firm foundation. The pipe being laid shall be brought into position and the joint closed by such means as will accomplish the work without damage or disturbance to any part of the in-place pipe line.

As each length of pipe is properly laid and jointed, the bedding material shall be placed and compacted at least to the spring line so that there will be no displacement of in-place pipes during the pipe laying operation.

No pipe shall be laid in water or where the trench conditions are unsuitable for such work except by written permission of the engineer.

Joints shall be made watertight. The interior of the pipeline shall be uniformly smooth throughout and true to line and grade with no projections or steps at the joints.

All PVC pipe shall be laid in strict accordance with the latest provisions of ASTM designation D-2321.

All VCP pipe shall be laid in strict accordance with the latest provisions of ASTM designation C-12.

DIP or PVC sewer pipe may be substituted for 12-inch and 15-inch RCP catch basin leads only at specific locations where the installation of RCP is impractical as determined by the engineer. Payment for DIP or PVC used in catch basin leads shall be at the RCP price, plus or minus the material cost difference between DIP or PVC and RCP for the size pipe used.

Catch basin pipes and hooded outlet covers. When a catch basin is located upstream of an existing or proposed stormwater management practice (infiltration trench, filtration trench, etc.) the catch basin lead shall leave the catch basin along an interior flat wall of the catch basin structure. This allows for the proper placement of cast iron hooded outlet covers, or PVC "snouts" for effective pretreatment of the stormwater management practice.

B5. Backfilling

Backfill will include placement and compaction of material in the trench from the top of the bedding to the bottom of the street surfacing. Backfill shall be placed and compacted so that a uniform density of 95% of the maximum density as determined by the standard proctor method is obtained, except for the upper 3-feet of the trench backfill which shall be compacted to a density of 100% as determined by the standard proctor density ASTM D-698.

The methods and equipment used by the contractor for backfilling and compacting shall be such as to cause no damage to any of the sewers, water mains, utility installations, structures, etc., in the street or to any building or structure along the street. Special attention shall be given to work around utility installations, water mains, manholes, etc., to ensure adequate compaction of the fill under and adjacent to these installations in order to maintain their stability and that of the street surface.

The Contractor shall notify the inspector prior to backfilling around utilities. Utilities shall include, but not be limited to sewer mains, force mains, sewer services, catch basin leads, water mains, water services and stormwater bmps. If the inspector is not notified, this work shall be classified as unauthorized work in accordance with MnDOT spec. XXXX

The engineer may require the contractor to change their method or equipment used for compaction if, in their opinion, there is a possibility of damage to any installation in the street or to nearby structures.

Suitable backfill material shall be defined as a mineral soil free of foreign materials (rubbish, debris, etc.), frozen clumps, oversized stone, rock, concrete or bituminous chunks, and other unsuitable materials whose presence in the backfill, in the opinion of the engineer, may damage the pipe installation, prevent thorough compaction, or increase the risks of after settlement unnecessarily.

Backfill materials shall be carefully placed in relatively uniform depth layers spread over the full width and length of the trench section as will provide simultaneous support on both sides of pipeline.

The use of heavy roller-type compaction equipment shall be limited to safe pipe loading.

The maximum loose thickness of each backfill layer shall be 12-inches except that, in consideration of the demonstrated capabilities of special-type vibrating compactors, the maximum depth may be increased at the engineer's discretion.

Until final acceptance of the project, the contractor shall assume full responsibility and expense for all backfill settlement and shall refill and restore the work as directed to maintain an acceptable surface condition.

The engineer may require sampling and testing of the soils that are to be used for bedding and backfill to determine the maximum density and may require density tests on the compacted bedding and backfill. Any excavation required to facilitate soil sampling or testing shall be done by, and at the expense of, the contractor as directed by the engineer. It will be the contractor's responsibility to compact or re-compact the backfill until specified requirements are met.

The City may employ its soils engineering consultant, or in the alternative, the contractor may employ a City-approved testing laboratory to perform density testing as required by the City. In this case, the contractor will be required to furnish evidence that the requirements have been met. Such evidence shall be in the form of test reports made by

the approved testing laboratory at locations as directed by the engineer. The contractor will be required to correct any deficiencies indicated by failing tests at their expense.

The contractor will be paid for actual invoiced costs as received from the approved testing laboratory for all density tests which pass the specified requirements. The contractor will not be paid for costs of density tests which do not pass the specified requirements and if the density testing was done by the City's consultant, the invoiced costs of failing tests will be deducted from any monies due, or becoming due, to the contractor.

After the contractor completes the sewer installation and trench backfill compaction and prior to final acceptance of the work, the City reserves the right to inspect all sewer lines using TV cameras to establish the structural condition of the pipes.

No charge will be made against the contractor for the cost of the TV inspection. However, the contractor will be fully responsible to correct, at no cost to the City, any defects in the mains recorded by the TV cameras.

C. Sewer Service Reconnections

Work to connect or reconnect sanitary sewer services to an existing mainline pipe shall consist of all labor and materials necessary for the construction of the required sanitary sewer service in accordance with the current version of City standard plates 2306G and 2319E.

Contractors are fully responsible for reviewing and understanding the requirements of all current City sewer standard plates as posted on: <https://www.stpaul.gov/departments/public-works/standard-plates/sewers-appurtenances>.

On new or replacement PVC (SDR 26 or C900) sanitary sewer mains of 8-inch to 12-inch diameter, a ductile iron wye with attached 45° bend shall be provided for and directed to each service connection and buildable lot. All wyes, tees, or other fittings used with PVC pressure pipe shall be ductile iron class 50. The cost of furnishing and installing wyes and tees where required is incidental to the bid cost for sewer mainline construction.

On new or replacement PVC (SDR 26 or C905) sanitary sewer mains of 15-inches or larger, a tee shall be provided in accordance with the current version of City standard plate 2319E and directed to each service connection and buildable lot.

On unlined sanitary sewer mains, all new or repaired sewer service connections shall be constructed in accordance with the current version of City standard plate 2319E.

On CIPP lined sanitary sewer mains, all new or repaired sewer service connections shall be constructed in accordance with the current version of City standard plate 2325.

The contractor shall allow access and furnish such assistance to the engineer as may be required to properly and accurately record all measurements of length, location, and size of the sanitary sewer services.

Any repair or reconnection of sanitary sewer connections made necessary by the construction of sewer in tunnel shall be done using tight sheeted trenches or pits.

Unless a specific pay item is contained in the plans, connecting a new or replacement mainline sewer or new or replacement sewer service to an existing manhole shall be incidental to the cost of the sewer construction.

All sanitary sewer reconnections shall be as uniform as possible with respect to materials used. Where multiple re-connections of the same sanitary service occur due to replacement of multiple intersecting utilities, the contractor is to make the reconnect as continuous as possible. An example of this situation is where both the mainline sanitary sewer and water main are replaced. This will often result in a pair of DIP sanitary service reconnects with a short length of the original VCP service between them. The contractor is directed not to leave in place segments less than 10-feet in length of the existing "old" service between replacement segments of the "new" service.

Sewer services to be connected or reconnected to a new PVC mainline repair section shall be connected to a ductile iron wye installed as part of the mainline repair. All wyes or tees necessary to connect a sewer service to the PVC mainline repair shall be ductile iron class 50. The cost of furnishing and installing wyes and tees where required shall be incidental to the cost of mainline sewer construction.

The trench bottom should be as dry as possible prior to pipe and backfill placement. The trench shall not be left open for extended periods of time.

If surface water or perched groundwater enters the trench during excavation, the contractor shall remove the water as quickly as possible. The contractor shall assume all liability that may incur from water control.

If suitable trench backfill is not available from trench excavation or existing trench backfill is wet of optimum, the engineer may direct the contractor to provide **bid item 2451.609 "Granular Backfill"** as specified in 2451.

2503.5 Basis of Payment

The accepted quantities of sewer pipe of the sizes, type, and classes specified will be paid for at the contract unit bid prices per FOOT, which shall be considered full payment for all materials and work necessary to construct the sewer complete in place.

2503.503-inch (1) Pipe Sewer (2).....	Foot
2503.502 Flap Gate for (3) Pipe	Each
2503.503-inch Span (1) Pipe-Arch Sewer (2)	Foot
2503.503-inch (1) Elliptical Pipe Sewer (4)	Foot
2503.503-inch (1) Pipe Sewer, Design (5) (2).....	Foot
2503.503 Install (6)	Foot
2503.502 Install (6)	Each

NOTE:

1. Specify kind — See 2503.2A.
2. Specify strength class, if other than minimum requirement.
3. Specify size and kind.
4. Specify HE or VE and strength class, if other than minimum requirement.

5. Special pipe or joint design — give standard plate number.
6. Specify item name.

Bid item 2503.511 “12” C-900 Pipe Sewer” shall be construed to mean the procurement and installation of 12-inch C-900 pipe sewer as a substitute for 12-inch R.C.P. catch basin leads in areas where utility conflicts occur or at other locations designated by the engineer. Payment shall be by the LINEAR FOOT and shall be compensation in full for all costs to purchase, transport, and install.

Bid item 2503.503 “8” Ductile Iron Pipe Sewer, Class 52” shall be construed to mean the procurement and installation of 8-inch D.I.P. sewer as a substitute for 12-inch R.C.P. catch basin leads in areas where utility conflicts occur or at other locations designated by the engineer. Payment shall be by the LINEAR FOOT and shall be compensation in full for all costs to purchase, transport, and install.

Bid item 2503.503 “12” Perforated Thermoplastic Pipe Sewer” shall be construed to mean the procurement and installation of 12-inch perforated PVC pipe, class SDR 26 to be laid along the length of the in-street infiltration trench. There shall be 12-holes, 0.5-inch in diameter, per foot. Perforation pattern is 4-rows, two spaced 75-degrees from the bottom, the other two spaced 135-degrees from the bottom. Drilling of holes shall be incidental to **bid item 2503.503 “12” Perforated Thermoplastic Pipe Sewer**”. End caps shall be placed on both ends of the pipe during construction. Caps shall be removed once the system is in place. Payment shall be by the LINEAR FOOT and shall be compensation in full for all costs to purchase, transport, and install.

Bid item 2503.602 “Connect to Existing Structure” shall include all work necessary to connect a sewer pipe to an existing sewer structure. This bid item shall include all labor, equipment, and materials associated with connecting sewer pipe to existing sewer structures including, but not limited to: field cutting existing structure, gaskets, non-shrink grout, concrete collars, and other materials necessary to complete the work.

Bid item 2503.602 “Install Sewer Coupling” shall be construed to mean all work to install a flexible shielded sewer coupling with stainless steel take-up clamps, per current City sewer standard plate 2324A, as shown on the Plans. Contractor to submit shop drawing information for flexible shielded sewer couplings and cement mortar mix to engineer for review. Payment shall be by EACH and shall be compensation in full for all labor, equipment, and materials necessary to complete the work.

Bid item 2503.602 “Field Core Drill Sanitary Sewer Connections” shall be construed to mean all work and costs associated with field core drilling appropriate-sized “round hole” in pre-cast concrete manhole to accommodate water-tight flexible booted connection and sanitary sewer pipe connection, as shown on the Plans or directed by the engineer. Payment shall be by EACH and shall be compensation in full for all labor, equipment, and materials necessary to complete the field core drilling work and for installing a water-tight flexible booted connection.

Bid item 2503.602 “Field Core Drill Storm Sewer Connections” shall be construed to mean all work and costs associated with field core drilling appropriate-sized “round hole” in pre-cast concrete manhole or large RCP sewer mainline to accommodate a grouted (non-shrink) storm

sewer pipe connection, as shown on the Plans or directed by the engineer. Payment shall be by EACH and shall be compensation in full for all labor, equipment, and materials necessary to complete the field core drilling work and installing a non-shrink grouted storm sewer connection.

Bid item 2503.602 “Televise Repaired Sewer Services (Lateral Launch from Sewer Main)” shall be construed to mean televising all repaired private sewer services located within the project construction limits. Repaired private sewer services shall be free and clear of all construction debris and sediment. A lateral launch-type camera shall be used to properly video each repaired sanitary sewer service and each connection to the sewer mainline. Televising of each repaired sewer service shall begin from the City sewer mainline.

Televising work shall be completed and submitted to Sewer Utility for review.

The contractor shall provide the inspection data in LACP version 6 NASSCO format and shall be compatible with GraniteNet Software. The inspection video shall be submitted to the engineer in two formats:

- DVD-R format
- MPEG 4 format and shall have the following video features:
 - 720 x 480-pixel size (full resolution)
 - The naming of the video file shall consist of the Permit number and Inspection Date.

Payment shall be by EACH and shall be compensation in full for all labor, equipment, and materials necessary to televise each repaired private sewer service from the City sewer mainline, providing a DVD as described above, and providing a written sewer service inspection report (see appendix for example report).

Bid item 2503.603 “Clean and Televise Sanitary Sewer” shall be construed to mean cleaning and televising all sanitary sewer mainlines located within the project construction limits just before or after the bituminous base course has been placed. Sewer mains shall be free and clear of all construction debris and sediment. A pan and tilt-type CCTV camera specifically designed for sewer mains and latera connections inspection shall be used to properly video each existing and repaired sanitary sewer service. Before televising, the contractor shall clean (up to 3-passes) the sanitary mainlines located within the project limits by using high pressure sewer cleaning and vactor equipment commonly used in the sewer industry. The contractor shall provide the inspection data in PACP version 6 NASSCO format and shall be compatible with GraniteNet Software. The inspection video shall be submitted to the engineer in two formats:

- DVD-R format
- MPEG 4 format and shall have the following video features:
 - 720 x 480-pixel size (full resolution)
 - The naming of the video file shall consist of the Pipe Segment Reference, Inspection Date and Time, and Inspection Direction.

Payment shall be the LINEAR FEET and shall be compensation in full for all labor, equipment, and materials necessary to clean and televise the mainline sewers and provide a DVD as described above. No extra cost for removing construction related debris.

Bid item 2503.603 “Clean and Televisive Storm Sewer” shall be construed to mean cleaning and televising all new or existing storm sewer mainlines located within the project, as requested by the engineer, just before or after the bituminous base course has been placed. Sewer mains shall be free and clear of all construction debris and sediment. A pan and tilt-type CCTV camera specifically designed for sewer mains and latera connections inspection shall be used to properly video each existing and repaired storm sewer service. Before televising, the contractor shall clean (up to 3-passes) the storm mainlines located within the project limits by using high pressure sewer cleaning and vactor equipment commonly used in the sewer industry. The contractor shall provide the inspection data in PACP version 6 NASSCO format and shall be compatible with GraniteNet Software. The inspection video shall be submitted to the engineer in two formats:

- DVD-R format
- MPEG 4 format and shall have the following video features:
 - 720 x 480-pixel size (full resolution)
 - The naming of the video file shall consist of the Pipe Segment Reference, Inspection Date and Time, and Inspection Direction

Payment shall be the LINEAR FEET and shall be compensation in full for all labor, equipment, and materials necessary to clean and televisive the mainline sewers and provide a DVD as described above. No extra cost for removing construction related debris.

“The Contractor shall submit all Project required Sewer Videos within 90-days after sewer casting assemblies have been raised to the surface.”

Bid item 2503.602 “Exploratory Televisive Sewer Inlet Pipe” shall be construed to mean all labor, equipment (televising, etc.) setup, and materials necessary to televisive the extents of unknown sewer pipe inlets as shown on the Plans or directed by the Engineer. Sewer videos to be submitted to the project inspector for review. Payment shall be per EACH for all costs to televisive the extents of each unknown sewer inlet pipe.

Bid item 2503.602 “Sanitary Sewer Service Repair Excavation” shall be construed to mean all labor, equipment, and materials necessary to repair an existing sewer service connection. This item shall include the excavation and repair of 3-feet of sanitary sewer service pipe including a sewer service saddle in accordance with current City sewer standard plates 2319E & 2305.

Payment shall be at the contract unit price per EACH and shall be payment in full for all labor, equipment, and materials necessary to complete the repair including excavation, backfilling, and compacting, complete in place.

Repairs beyond the 3-foot length shall be paid for separately under **“bid item 2503.603 “Sanitary Sewer Service Repair”**.

Bid item 2503.603 “Sanitary Sewer Service Repair” shall be construed to mean reconstruction of sanitary sewer services which are longer than 3-feet in length. The first 3-feet of pipe will be paid under **bid item 2503.602 “Sanitary Sewer Service Repair Excavation”**. The remainder of the sanitary sewer pipe installed shall be paid for under this item.

Payment shall be by the LINEAR FOOT of pipe placed and shall be compensation in full for all labor, equipment, and materials necessary to construct the services or complete the repair including excavation, backfilling, and compacting, complete in place.

The above items refer to services that have disconnected from the sewer wye and need to be reconnected, or other services that have root problems or are broken.

Bid item 2503.603 “Sanitary Sewer Service Reconnection” shall be construed to mean reconstruction of sanitary sewer services at locations where water main construction necessitates removal and replacement of existing sanitary sewer services within the trench area, in accordance to sewer standard plate 2306G. Payment shall be by the LINEAR FOOT of pipe placed and shall be compensation in full for all labor, equipment, and materials necessary to reconnect the service including excavation, backfilling, and compacting, complete in place.

Any exploration work necessary to determine elevations and locations of utilities for sewer or water work shall be considered incidental.

Bid item 2503.610 “Field Locate and Expose Sewer Manhole” shall be construed to mean all labor, equipment, and materials necessary to locate and expose buried sewer manholes. Work to be completed in the presence of the project inspector. Payment shall be by the **HOOR** for all labor and equipment necessary to field locate and expose buried sewer manholes.

2506 MANHOLES AND CATCH BASINS

The provisions of MnDOT specifications 2506 shall govern as amended below:

Any exploration work necessary to determine the location of sewers, water mains, or any other utilities shall be considered incidental.

At the discretion of the engineer, some castings or materials may be identified to be salvaged by the contractor and delivered to the City Sewer Maintenance yard at 419 Burgess Street.

Castings and other materials removed from existing structures and not designated for reuse shall become the property of the contractor and shall be disposed of off the job site.

The contractor shall furnish new castings for adjusted manholes under **bid item 2506.502 “Casting Assembly”**. Payment for this item shall be by EACH and shall be compensation in full for all labor, equipment, and materials necessary to provide the casting assemblies. Installation and adjustment shall be paid for separately under **bid item 2506.502 “Adjust Frame and Ring Casting”** at the appropriate height.

Bid item 2506.502 “Casting Assembly” shall also apply to rebuilt, repaired, and rehabilitated manholes.

Casting assemblies for new manholes (by full-depth excavation) shall be incidental to the new manhole bid item.

The concrete fill used to shape the invert of all manhole types shall extend up to half of the connecting pipe diameters.

Inlet and outlet pipes shall extend through the walls of the structure being connected to and shall be trimmed flush with the inside wall or as otherwise directed. Masonry blocks shall not be set with a joint width less than 1/4-inch to assure that vertical joints are completely filled with mortar.

The locations shown on the plan sheets for new catch basin construction are approximate. The City surveyor shall stake the exact location in the field.

Private utility company manholes, where encountered, shall be adjusted to grade by the appropriate utility company unless a specific bid item has been provided. The contractor shall allow the utility company access to the project and time to do this adjustment.

Solid Segmental concrete masonry units (Pre-approval by Sewer Utility Required)

Segmental concrete masonry units used (if approved) in the construction of the catch basins, manholes, and other sewer structures shall conform to ASTM C139 and current City sewer standard plates except that: the cement used shall be type II (moderate sulfate resistant), the compressive strength (average of three units) shall be 5,000-psi with the minimum of any one block being 4,500-psi, and the maximum absorption (average 3-units) shall be 5.5% by weight with the maximum of any 1-block being 6.0% by weight. Class C fly ash or other approved pozzolan shall be substituted for 15% on a pound-for-pound basis by weight of the designed Portland cement. In lieu of the type II cement with 15% type C fly ash, type 1.P cement may be used.

Adjustment materials for manholes and catch basins

Regarding manhole adjustments use: MS manhole brick (ASTM C-32) as shown on current City sewer standard plates, or individual concrete grade rings that are greater than 3-inches in height and have a 28-day compressive strength of 8,000-psi. **2-inch concrete rings are NOT ALLOWED.** Contractor to submit detailed product specifications to engineer for review and approval.

- Brick Specifications:
 - Size: 2-¼ x 4 x 8
 - Spec: Grade MS Manhole brick conforming to ASTM C-32
 - Supplier:
 - METRO BRICK INC.
 - 3314 Winpark Drive
 - Crystal MN 55427-2063
 - Phone 952-417-0200
 - Fax 952-417-0204

Masonry mortar for sewer applications.

- Provide either bag mix or certified plant mixture meeting ASTM C270 property specification, ASTM C387, and Minnesota Department of Transportation specifications. Bag mix or plant mixture to be air-entrained.
- For manhole adjustments, place mortar bed between each row of grade MS brick or between each row of individual 3-inch thick (or greater) concrete grade rings, in accordance with current standard plate 2321C.

Gray Iron castings shall be supplied by foundries that have been approved by the state materials engineer and comply with City of Saint Paul standard plates.

Potential Alternative Materials for manholes and catch basins

Only with the engineers approval, can solid segmental concrete masonry units (e.g. solid blocks) be used in the construction of the catch basins, manholes, and other drainage structures. Solid segmental concrete masonry units and block shall conform to ASTM C139 except that the cement used shall be type II (moderate sulfate resistant), the compressive strength (average of three units) shall be 5,000-psi with the minimum of any one block being 4,500-psi, and the maximum absorption (average 3-units) shall be 5.5% by weight with the maximum of any 1-block being 6.0% by weight. Class C fly ash or other approved pozzolan shall be substituted for 15% on a pound-for-pound basis by weight of the designed Portland cement. In lieu of the type II cement with 15% type C fly ash, type 1.P cement may be used.

Bid Item 2506.503 “Install Structural Cementitious Manhole Liner for Brick Manholes (Minimum 1-1/2”, Maximum 2-1/2” Thickness)” shall be construed to mean:

A. General

All work to furnish and properly install a structural cementitious mortar liner inside brick manholes. Installation of cementitious manhole liner materials shall not begin until receiving approval from the Engineer. All cementitious manhole liner work shall be done in accordance with the manufacturers specifications. The manhole liner shall have a minimum thickness of 1-1/2 inches and a maximum thickness of 2-1/2 inches.

B. Materials for Structural Cementitious Manhole Liner Systems

All cementitious lining materials shall be specially designed for the rehabilitation of manholes and other related wastewater structures. Liner materials shall be cement based, poly-fiber reinforced, shrinkage compensated, and fast setting. Liner materials shall be mixed with water per manufacturer’s written specifications and applied using equipment specifically designed for either low-pressure spray or centrifugal spin casting application of cement mortars.

Approved structural cementitious lining materials shall be Quadex QM-1s Restore as manufactured by Quadex, Inc.; PERMACAST MS-10,000 as manufactured by AP/M PERMAFORM; Sauereisen Sewerseal F-170 as manufactured by Sauereisen, Inc., Strong Seal MS-2C as manufactured by the Strong Company, Inc. or “pre-approved” equal.

Approved material for structural cementitious manhole liners shall have the following minimum physical properties:

- Compressive Strength (ASTM C109)
28-day: > 8,000 psi
- Flexural Strength (ASTM C293)
28-day: > 1,250 psi
- Shear Bond Strength (ASTM C882)
> 1,500 psi
- Shrinkage (ASTM C596)
0% @ 28-days
- Permeability (AASHTO T-277)
Less than 550 Coulombs

C. Installation of the Structural Cementitious Liner and Sewer Flows

The Contractor shall notify the Engineer one (1) working day in advance of the start of cementitious liner placement, and this work shall be performed only when the Engineer or City's designated representative is present.

The new cementitious liner shall be installed per the written specifications of the manufacturer, and without disruption of flow at the bench level of the manhole. Whenever possible, flows entering the structure above the bench level shall be handled by means of a flow through line plug and piping plumbed through the forming system passing flow into the outlet invert.

Sanitary sewer flow must be maintained at all times. No additional compensation shall be due the Contractor for pumping, diverting or redirecting sewer flows, including ground water or rain water, as required for construction.

All surfaces on or against which the new cementitious liner is to be placed shall be free of standing or running water, mud, debris, oil, dried concrete, grout or loose material. Manhole steps shall be removed to within 1 inch of the manhole wall and all loose and/or deteriorated material shall be removed and properly disposed of by the Contractor.

All materials used for surface preparation or installation shall not contain benzene, lead, or exceed 3.5lbs per gallon of volatile organic compounds (VOC). Any sand blasting materials shall be arsenic-free and contain no free silica. Blasting materials shall not be re-used. The use of acid for cleaning purposes, no matter how dilute, shall not be allowed.

End the cementitious liner at the bottom of the existing manhole frame. All cementitious lined manholes shall have a minimum liner thickness of 1.5-inches applied within the tapered chimney section of each lined brick manhole.

Before final acceptance of the work, damage to surfaces, corners of concrete and concrete finish, whether such damage shall have resulted from the action of the elements or damage from any cause whatsoever, shall be neatly repaired by the Contractor at no additional cost

to the City. Any damaged areas where surface repairs are needed, shall be brought to a smooth, dense, watertight condition and meet the approval of the Engineer.

D. Materials for Manhole Invert and Bench Rehabilitation

Concrete materials for manhole invert and bench repair shall be selected and proportioned in such a manner as to produce concrete which will be extremely strong, dense and resistant to weathering and abrasion. Material shall consist of rapid setting cements, high density, and chemically stable aggregates. Material shall not contain any gypsum, chlorides, or metallic particles.

Approved material for manhole bench and invert rehabilitation work shall be compatible with the cementitious liner system used and have the following minimum physical properties:

- Compressive Strength (ASTM C109)
 - 30 minutes: > 1,200 psi
 - 1 hour: > 2,500 psi
 - 1 day: > 4,000 psi
- Bond Strength (ASTM C882)
 - 28 day: > 3,000 psi
- Shrinkage (ASTM C596)
 - 0%

E. Manhole Bench and Invert Rehabilitation

All manholes to have structural cementitious liner systems installed will require bench and invert rehabilitation. Invert rehabilitation may be waived by the Engineer upon a field inspection of each manhole.

Whenever possible, bypass plugs will be installed in all the inlets and plumbed into the outlet, allowing flow to pass through the structure without interference of bench and invert repairs. All loose and/or deteriorated material shall be removed and properly disposed of by the Contractor.

Invert areas material shall be removed to allow a minimum of 0.5-inches of new concrete to be placed around the circumference of the inverts. In bench areas material shall be removed to allow a minimum of 2-inches of new concrete over the existing benches at a point half the depth of the outlet invert and tapered up to the wall. Where laterals are present, the system shall provide for a sanitary sweep into the main flow line.

New concrete material that is compatible with the cementitious liner system shall be placed to a minimum 2-inch thickness in the bench areas, over solid existing concrete base. The new bench shall be tapered up to the manhole wall at a slope of 2 inches per foot.

Where solid concrete does not remain after preparation, new concrete shall be poured to a minimum 4-inch thickness. New concrete material shall conform to the following ASTM

standards: C-33; C-94; C-150; C-260; and C-494. Concrete shall be selected and proportioned in such a manner as to produce concrete which will be extremely strong, dense, and resistant to weathering and abrasion. Concrete shall have a 28-day cure strength of 5,000 psi. A water reducing agent may be used in the concrete mix.

F. Testing (Contractor) and Quality Assurance

One test sample cube (2"x2"x2") for final compression testing shall be collected by the Contractor at each manhole. The test cubes of the cementitious liner material shall be tested in accordance with ASTM C-109. Strength tests shall be completed by an independent testing company and paid for by the Contractor.

The Contractor shall field verify and document to the Engineer that the required liner thickness has been attained for each lined manhole. Manhole liner thickness shall be verified with a depth gauge at two locations per manhole and photo documented. Photo and liner thickness documents shall be submitted to the Engineer with the pay requests. Any areas found to be thinner than the minimum specified thickness shall immediately receive additional material.

Visual inspection should confirm a leak-free, uniform appearance. Over-spray, pinholes, and other surface defects shall be repaired by the Contractor and no additional cost to the Owner.

G. Payment.

All costs related to manhole cleaning, water use, step removal, interior surface preparation and patching, flow management, disposal of waste materials, installation of cementitious lining, testing, and bench and invert rehabilitation work shall be included in the **LINEAR FEET unit price bid for "Bid Item 2506.503 "Install Structural Cementitious Manhole Liner for Brick Manholes (Min. 1-1/2", Max. 2-1/2" Thickness)"** as measured from the manhole invert to the underside of the manhole frame and shown on the "Manhole Liner Details" plan sheet.

Any chemical grouting of the brick manholes to stop active water leaks, shall be paid for separately as indicated in the bid form. Payment for chemical grouting of brick manholes only applies to that work necessary to stop active water leaks.

Bid Item 2506.503 "Chemical Grouting of Brick Manholes (Cementitious Liners)" shall be construed to mean all work necessary to stop active manhole leaks such that the brick manhole surface is ready for a cementitious liner to be installed. All other manhole preparation work required prior to lining shall be considered incidental for which no additional payment will be made.

All chemical grout or sealing materials used shall conform to ASTM F 2304 latest edition Standard Practice for Rehabilitation of Sewers Using Chemical Grouting.

Payment shall be per GALLON of chemical grout installed and shall be compensation in full for all labor, equipment, and materials necessary to stop active water leaks.

The Contractor shall document and submit to the Engineer or City's Designated Representative the number of gallons of chemical grout used at each manhole.

Bid Item 2506.602 "Reconstruct Manhole on Rock Surface" shall be construed to mean the removal of the existing brick manhole section of a sand rock tunnel shaft, and replacing the brick section with a precast concrete manhole per city standard plate 2114. Unit measurement shall be by EACH and payment shall be compensation in full for all labor, materials, and equipment necessary to construct the manhole, complete in place including new casting assembly and adjustment. Any rock excavation necessary to complete the work to be paid under Bid Item 2105.507 "Rock Excavation" by the CUBIC YARD. Contractor to field confirm tunnel shaft diameter and depth of brick manhole and to submit shop drawings for the precast concrete manhole, hydrophilic gaskets and concrete mix to the Engineer for review.

Bid item 2506.602 "Reconstruct Precast Concrete Manhole" shall be construed to mean the reconstruction of an existing precast concrete manhole as detailed on the current version of City of Saint Paul standard plate 2322F and to a depth indicated in the plans or as directed by the engineer. Included as part of this bid item shall be the excavation and removal and/or salvaging of the existing manhole to the required depth, keeping the manhole invert free of debris, and maintaining flow at all times. Payment shall be by the LINEAR FOOT and shall be compensation in full for all labor, equipment, and materials necessary to reconstruct the manhole as detailed complete in place. The manhole casting assembly and adjustment shall be paid for separately under the appropriate bid items.

Bid item 2506.502 "Adjust Frame and Ring Casting (≤ 6" adjustment)" shall be construed to mean adjusting a manhole frame to grade with MS manhole brick as detailed on the current version of City of Saint Paul standard plate 2321C for a maximum total adjustment of 6-inches. Place mortar bed between each row of grade MS manhole brick. Final casting height shall not be higher than the adjacent finished pavement and shall not be more than 1/2-inch lower than the adjacent finished pavement. Bituminous mix for adjustments shall match bituminous mix specified in the typical section. Payment shall be by EACH and shall be compensation in full for all labor, equipment, and materials necessary to adjust the manhole casting assembly complete in place. Manhole casting assembly shall be paid for separately under the appropriate bid items.

Bid item 2506.502 "Adjust Frame and Ring Casting (7" to 17" adjustment)" shall also be construed to mean adjusting a manhole frame to grade with cast-in-place concrete and grade MS manhole brick as detailed on the current version of City of Saint Paul standard plate 2321C for an adjustment of between 7-inches and 17-inches. Individual concrete grade rings, if used, must be 3-inches thick (or greater) in height and have a 28-day compressive strength of 8,000-psi (attained before shipping). Place mortar bed between each row of grade MS manhole brick or between each row of individual 3-inch thick (or greater) concrete grade rings. Final casting height shall not be higher than the adjacent finished pavement and shall not be more than 1/2-inch lower than the adjacent finished pavement. Bituminous mix for adjustments shall match bituminous mix specified in the typical section. Payment shall be by EACH and shall be compensation in full for all labor, equipment, and materials necessary to adjust the manhole casting assembly complete in place. Manhole casting assembly shall be paid for separately under the appropriate bid items.

Bid item 2506.502 “Rehab Brick San MH – Form and Pour Concrete Lining System” shall be construed to mean:

General

The purpose of this specification is to provide for full structural restoration and sealing of existing brick manholes. The restoration is accomplished by pouring a new monolithic concrete liner within the existing structure. The concrete liner shall have a minimum thickness of 3-inches in the barrel section of the manhole and 5-inches in the chimney of the manhole. Refer to current version of Saint Paul standard plate 2113.

Do Not Apply This bid item to Brick Manholes Where Depths Exceed 15-feet

Surplus materials, debris, or excavated material shall not be allowed to accumulate in the sewers, tunnels, or manholes. Concrete shall not be placed until all form work, embedded parts, foundation surfaces, and joints involved in work have been approved by the engineer. If surface water or perched groundwater enters the excavation during the project, the contractor shall remove the water as quickly as possible. The bottom of the excavation surrounding the sanitary manhole should be as dry as possible prior to pipe and backfill placement. Also, the excavation should not be left open for long periods of time. The contractor shall assume all liability that may incur from water control. If suitable existing backfill is not available from any excavation or existing excavation backfill is wet of optimum, the engineer may direct the contractor to provide **bid item 2211.503 “Aggregate Base Placed, Class 5 (TON)”** as specified in 2211.

Submittals (Before Work Begins)

Submit references demonstrating the successful installation of poured concrete liner systems having an aggregate vertical length of at least 500-feet;

Submit manufacturer’s certification indicating that materials used meet the appropriate ASTM standards and specifications;

Submit outline indicating proposed equipment and procedures for accomplishing the work;

Submit product data for poured concrete liner system (e.g. concrete mix, etc.); and

Submit measurements for the inside diameter of each manhole barrel section to confirm to the engineer or City’s designated representative that the manhole barrel diameter is 46-inches or greater.

Preparation of the Structure

Cleaning and surface preparation: Prior to installing the poured concrete liner, the contractor shall remove all loose debris, grease, and loose material from the existing structure surface. All loose and/or deteriorated material shall be properly disposed of by the contractor. All materials used for surface preparation or installation shall not contain benzene, lead, or exceed 3.5-pounds per gallon of volatile organic compounds (VOC). Any sand-blasting materials shall be arsenic-free and contain no free silica. Blasting materials shall not be re-used.

The use of acid for cleaning purposes, no matter how dilute, shall not be allowed.

All existing manhole steps shall be removed to within 1-inch of the existing inside wall (incidental to bid item).

Removals and Disposal of Materials

Removed materials shall not be allowed to enter the sewer system. All dislodged material shall be removed from the structure and disposed of by the contractor. All existing manhole frames and castings shall be removed and disposed of by the contractor. Manhole steps shall be removed to within 1-inch of the manhole wall. Surplus materials, debris, or excavated material shall not be allowed to accumulate in the sewers, tunnels, or manholes.

The brick manhole structure must be prepared to allow:

- A minimum poured concrete liner thickness of 3-inches is required in the barrel section of the manhole, and 5-inches in the chimney section.
- A minimum entrance opening of 26-inches is required at the top of the manhole.

Remove the existing casting and remove the existing brick chimney to a depth where the inside diameter of the in-place manhole equals 36-inches. After the existing chimney is removed, a minimum 36-inch inside diameter form is to be used as an outside pouring form. This form can be a typical pour tube (Sono-tube) which remains in place following construction. A removable form is also acceptable. In no instances will the liner be allowed to be poured in the excavation without the use of a form to provide a break between the unexcavated earth and the newly constructed liner. The result shall be a minimum 5-inch wall thickness in the new chimney area.

If any sanitary manhole is vactored, the designated dump site is at the Metropolitan Wastewater Treatment Plant, 2400 Childs Road, upon completion of MCES-required forms. See the appendix for additional Metropolitan Wastewater Treatment Plant disposal site information and any other general vector disposal information.

Any vactoring, vector disposal, or bypass pumping shall be incidental items for which the contractor will receive no direct compensation.

Concrete Forms

Forms are required to provide a rounded surface of the new concrete liner. Flat panels will not be accepted. The forming system shall be designed to fit the configuration of concentric structures and eccentric structures where applicable. The system shall be designed to allow the new concrete liner to be a minimum of 3-inches thick. The system shall have straight sections in various diameters and rise heights and reducing sections to connect the various diameter straight sections. Block out inserts shall be used to provide full diameter opening to all piping entering and leaving the structure.

Forms shall be designed to have sufficient strength to carry the dead weight of the concrete as a liquid, without deflection. Forms and bracing shall remain in place until they can be removed without damaging the concrete.

Wood forms lined with sheet metal, plywood or similar material, or steel forms neatly and accurately made and properly braced, may be used for the interior faces of the poured sections. The forms shall be designed so as to conform to the sections as detailed in the plans.

No extraneous materials shall be permitted to mix with the concrete or be left between the face form and the manhole surface. Forms will be constructed to provide for sufficient openings to allow for inspection and removal of extraneous materials before and during placement of concrete.

The entire concrete liner shall be installed in one pour without joints.

Concrete shall be thoroughly consolidated so that it comes into close contact with the forms and fills all existing pockets, seams, and cracks. Consolidation shall not be continued so as to cause segregation or to the extent that localized areas of grout are formed. The operations of pouring and consolidating shall be so conducted that the resultant concrete, upon removal of the forms, is smooth, dense, and free from any honeycomb or pockets of segregated aggregate. All surfaces on or against which concrete is to be placed shall be free of standing or running water, mud, debris, oil, dried concrete, grout, or loose material.

Material for Poured Concrete Liner

Concrete materials shall be selected and proportioned in such a manner as to produce concrete which will be extremely strong, dense, and resistant to weathering and abrasion.

A collated, fibrillated polypropylene (Fibermesh or equal) admixture shall be added according to the admixture manufacturer's recommendations. Concrete shall have a minimum 28-day cure strength of 5,000-psi. Use type II Portland cement in the mix design. A concrete mix design shall be submitted to the engineer prior to any work beginning.

The concrete as used may contain a water-reducing admixture for the purposes of increasing the concrete slump without the addition of extra water. The use of an approved retarder will be permitted so the concrete can be pumped to its final position before it takes its initial set. No reduction in cement content will be permitted when a water-reducing admixture is used. Use of the water reducing admixture shall not entitle the contractor to additional compensation. The use of calcium chloride in concrete will not be permitted. All other admixtures used shall be specifically approved by the engineer prior to use.

Installation of Poured Concrete Liner and Sewer Flows

The contractor shall notify the engineer 1-working day in advance of the start of the poured concrete placement and this work shall be performed only when the engineer or City's designated representative is present.

The poured concrete liner shall be installed without disruption of flow at the bench level of the manhole. Whenever possible, flows entering the structure above the bench level shall be handled by means of a flow through line plug and piping plumbed through the forming system passing flow into the outlet invert.

Sanitary sewer flow must be maintained at all times. No additional compensation shall be due the contractor for pumping, diverting, or redirecting sewer flows including ground water or rain water, as required for construction.

Concrete shall be cured, as described in MnDOT specifications, except as otherwise directed by the engineer. A membrane curing compound will be permitted subject to approval by the engineer. Interior concrete surfaces of structures shall be floated and troweled to a smooth finish except when constructed in forms that cannot be removed until the concrete has set.

The engineer, at his/her discretion, shall have the right to require replacement, strengthening, or correction of defective portions of the manhole structures. Concrete shall be considered defective if it is structurally unsound, not watertight, or improperly finished.

Before final acceptance of the work, damage to surfaces, corners of concrete, and concrete finish, whether such damage resulted from the action of the elements or damage from any cause whatsoever, shall be neatly repaired by the contractor at no additional cost to the City. Any damaged areas where surface repairs are needed shall be brought to a smooth, dense, watertight condition and meet the approval of the engineer.

Testing (contractor) and Quality Assurance

The contractor shall measure and document the inside diameter of each manhole barrel section to confirm to the engineer that the barrel diameter is 46-inches or greater.

The contractor shall collect and test 3-concrete cylinders (per cement truck delivery) of the poured concrete material to confirm that the respective specifications for compressive strength have been satisfied. The concrete compressive strength tests shall be completed by an independent testing company.

Visual inspection should confirm a leak-free, uniform appearance. Holes and other surface defects shall be repaired by the contractor and no additional cost to the City.

Payment

All costs related to manhole cleaning, proper disposal, step removal, interior surface preparation, any chemical grouting, water use, temp sewage conveyance, disposal of waste materials, installation and removal of forms, poured concrete lining, and concrete testing work shall be included in EACH unit price bid for **bid item 2506.502 “Rehab Brick San MH – Form and Pour Concrete Lining System”**.

Bid Item 2506.601, “Storm Sediment Trap Manhole” shall be construed to mean constructing the manhole as detailed within the plans and in accordance with Saint Paul standard plate 2112. Included as part of this bid item shall be the installation of a post construction stormwater treatment system (Baffle & Hooded Outlet Cover) as described herein:

Post construction stormwater pretreatment system shall include perforated stainless-steel Type 304 Baffle Panel(s) with a minimum yield strength of 31,000 PSI. Minimum dimensions of the finished Baffle Panel(s) installed shall be 72”x46”, and shall include all mounting brackets as identified by the Manufacturer. Installation of the Baffle shall conform to the Manufacturer’s recommendations.

Post construction stormwater pretreatment system shall also include a PVC Hooded Outlet Cover. The Hooded Outlet Cover shall be equipped with a watertight gasketed access port, mounting flange and anti-siphon vent with a minimum diameter of 1” extending a minimum of

3" above the top of the Hooded Outlet Cover. The Hooded Outlet Cover shall cover the entire outlet pipe diameter, extending ½ of the pipe diameter beneath the invert of the outlet pipe. Installation of the Hooded Outlet Cover shall conform to the Manufacturer's recommendations.

The installed stormwater pretreatment system shall be capable of accommodating a flow rate of 20 cubic-feet per second.

Included as part of this Bid Item shall be the submission of Shop Drawings, Product Specifications, and Manufacturer's Installation Recommendations to the Engineer. Also included as part of this bid item shall be the verification that the structure is clean and free from debris related to this Contract. The Contractor is to coordinate this activity with the City's Representative on-site.

Payment shall be LUMP SUM and shall be compensation in full for all labor, materials and equipment necessary to construct the manhole and install the post construction treatment system complete in place as detailed within these plans and specifications.

Bid item 2506.602 "Clean Storm Water Treatment Device" shall be construed to mean all labor, equipment, and materials necessary to remove all debris and storm water sediments from newly constructed storm water treatment devices. Cleaning work to be completed in the presence of the project Inspector and after surface restoration work has been completed. Payment shall be by EACH and include all costs to complete the cleaning work to the satisfaction of the City.

Bid item 2506.602 "Reconstruct Brick Manhole – 6-Foot Depth" shall be construed to mean re-constructing brick sanitary manhole cone sections as shown on the plans or as directed by the engineer's representative. This work shall be performed in accordance with Saint Paul standard plate no. 2322F. The constructor is to measure the diameter of the inside of the manhole at the intended depth in the direction of the main pipe

The contractor shall re-construct the brick sanitary manhole cone section and replace manhole casting assemblies as detailed on City of Saint Paul standard plate no. 2322F. Included as part of this bid item shall be the excavation and removal and/or salvaging of the existing manhole to the required depth and keeping the manhole invert free of debris and maintaining flow at all times.

Payment will be made under **bid item 2506.602 "Reconstruct Brick Manhole – 6-Foot Depth"** at the bid unit price per EACH, which shall be compensation in full for all labor, equipment, and materials necessary to reconstruct the brick sanitary manhole per City of Saint Paul standard plate no. 2322F complete in place.

The maximum total height of casting adjustment using grade MS manhole brick on any newly constructed manhole shall be 6-inches. Adjustments over 6-inches shall be cast-in-place concrete and shall require the engineer's approval. Individual concrete adjusting rings, if used, must be 3-inches (or greater) in height and have a 28-day compressive strength of 8,000-psi (attained before shipping). Place a minimum mortar bed between each row of grade MS

manhole brick or between each row of individual 3-inch thick (or greater) concrete adjusting rings in accordance with city standard plates.

Utility castings shall be adjusted so that the final casting height shall not be higher than the adjacent finished pavement and shall not be more than 1/2-inch lower than the adjacent finished pavement.

The plans indicate replacement of all existing catch basin leads. The contractor should note that existing catch basin leads may be reused to minimize surface disruption where approved by the engineer. Connections to existing catch basin leads shall be considered incidental. In some cases, the contractor may be directed to construct a new manhole or catch basin over an existing sewer pipe. All labor, equipment, and materials necessary to construct a structure in this situation shall be considered incidental to the manhole or catch basin.

Any modifications necessary to precast or cast-in-place structures shall be considered incidental.

The contractor shall comply with erosion control specifications and/or with the erosion control plan. That compliance does not relieve the contractor from their responsibility for cleaning the sewer system should any soil be washed into it.

2506.3G Adjusting Frame or Ring Casting

Delete in its entirety.

2506.4 Method of Measurement

Delete the first sentence.

2506.4A Constructing Drainage Structures

Title shall be changed to "Constructing Manholes and/or Catch Basins".

Unless a specific pay item is contained in the plans, constructing a manhole or catch basin over an existing sewer pipe shall be incidental to the cost of the manhole or catch basin construction.

2506.5 Basis of Payment

Payment for adjusting manhole castings at the contract price shall be compensation in full for all costs of the work and material necessary for the adjustment including pavement removal, excavation, cleaning the casting, adjusting the structure, setting the casting in mortar, pavement replacement, and cleanup. Cost for new manhole casting assemblies shall be paid for under separate bid item. Setting the casting to finished pavement grade as directed in **bid item 2506.602** shall be incidental to construct manhole or catch basin.

Add the following to the payment schedule in the last paragraph:

Bid item 2506.602 "Construct Manhole, Design Type "shall be construed to mean construction of the manhole in accordance with the appropriate City of Saint Paul standard plate. Unit measurement shall be by EACH and payment shall be compensation in full for all labor, materials, and equipment necessary to construct the manhole complete in place.

Bid item 2506.602 “Construct Catch Basin, Design Type” shall be construed to mean construction of the catch basin in accordance with the appropriate City of Saint Paul standard plate. Unit measurement shall be by EACH and payment shall be compensation in full for all labor, materials, and equipment necessary to construct the catch basin complete in place.

The plans indicate replacement of all existing catch basin leads. When a catch basin is located upstream of an existing or proposed stormwater management practice (infiltration trench, filtration trench, etc.) the catch basin lead shall leave the catch basin along an interior flat wall of the catch basin structure. This allows for the proper placement of cast iron hooded outlet covers, or PVC “snouts” for effective pretreatment of the stormwater management practice.

The plans indicate replacement of all existing catch basin leads. The contractor should note that existing catch basin leads may be reused to minimize surface disruption where approved by the engineer. Connections to existing catch basin leads shall be considered incidental.

Breaking into existing manholes or catch basins for the installation of catch basin leads, sanitary sewer services, or storm sewer services shall be considered incidental when the structures are constructed of brick, concrete block, or precast concrete. If the engineer directs the contractor to core into a cast-in-place structure, this work shall be paid for on a time and materials basis.

In some cases, the contractor may be directed to construct a new manhole or catch basin over an existing sewer pipe. All labor, materials, and equipment necessary to construct a structure in this situation shall be considered incidental to the manhole or catch basin.

Any modifications necessary to precast or cast-in-place structures shall be considered Incidental.

2521 WALKS

The provisions of MnDOT specifications 2521 shall govern as amended below:

Construction of sidewalk, concrete outwalks, and corner quadrants shall be completed within 10-days of the curb or curb and gutter construction to allow for local access. All mainline walk shall be 4-inches thick unless otherwise noted on the plans or typical sections. All Pedestrian ramps shall be 6-inches thick.

Preformed joint filler material, ½-inch thick, shall be placed as shown in drawing bound in the specifications.

CONCRETE FORM SETTING NEXT TO RETAINING WALLS AND/OR BUILDING FOUNDATIONS

Sidewalk forms will be offset from any irregular retaining wall or building foundation by approximately 8-inches. Expansion material shall be placed along the offset instead of the irregular wall or foundation. Offset forms will be considered Incidental and no extra payment shall be made. Retaining walls and building foundations that are flat and straight may have expansion material placed adjacent and will not need an offset line. Expansion material will be used in all instances.

Reasonable measure must be taken to protect quality boulevard trees. This may include wraps or rerouting the sidewalk away from the tree trunk. Any change from a normal alignment of the sidewalk will be made by the engineer. This process will be considered incidental to the bid item and no additional payment shall be made.

Concrete walk constructed in a driveway area shall be the same thickness as the adjacent driveway with payment under the appropriate concrete driveway pavement bid item.

Concrete walk restoration for utility cuts associated with this project shall be performed by the contractor. Xcel Energy and Saint Paul Regional Water Services will backfill cuts with 8-inches of class 5 to match adjacent existing walk elevation. The contractor shall remove the top 4-inches of class 5 before pouring new sidewalk. The removal of the class 5 shall be considered incidental work.

The contractor shall not be held responsible for panels that have settled due to poor compaction performed by Xcel Energy or Saint Paul Regional Water Services.

Some outwalk or mainline walk installation may have to be done piece-meal due to coordination issues. No additional payment shall be made for such work.

The City has the option to add random sidewalk removal and replacement. This work will be done at the bid prices for sidewalk removal and replacement with all necessary sidewalk saw-cutting as incidental work. The locations of this sidewalk removal and replacement will be determined by the engineer.

The City has the option to add random sidewalk removal and replacement in areas of driveways. This work will be done at the bid prices for concrete driveway removal and replacement with all necessary driveway and sidewalk saw-cutting as incidental work. The locations of this sidewalk removal and replacement will be determined by the engineer.

The Public Works contractor will be responsible to replace any topsoil and sod behind the newly constructed sidewalk at the Contractors expense.

In the vicinity of tree-heaved sidewalk panels, removal of tree roots may be necessary. Removal of tree roots shall be under **bid item 2101. 624 "Tree Root Removal"**. Payment shall be by the TREE and shall be compensation in full for all labor, materials, and equipment necessary.

On residential street paving projects with full width boulevard restoration, concrete outwalks shall be constructed fronting each residence where existing on side lots and as directed by the engineer. They shall extend from the public sidewalk to the new curb and gutter and shall be 3- feet wide except as follows:

If the property owner requests a narrower outwalk or no outwalk, the request shall be granted.

Outwalks shall be constructed perpendicular to the sidewalk or curb.

If an existing monolithic concrete outwalk is wider than 3- feet, it shall be reconstructed to that width.

Locations of existing outwalks may be shifted by the engineer to avoid tree roots.

In locations where existing walk has been substantially disturbed and must be restored or corner quadrant pedestrian curb ramps are directed to be constructed by the engineer, additional serviceable but unlike sidewalk may be ordered removed by the engineer and new sidewalk constructed.

All areas of sidewalk construction may not be shown on the plans. The engineer may designate additional areas of cracked or tree-heaved sidewalk to be replaced at construction time. Expansion joints shall be installed where the sidewalk abuts curbing, intersection sidewalks and driveways, street lighting and traffic signal pole foundations, fire hydrant, or any other structures within or abutting the sidewalk. In all cases, expansion joints shall be formed by placing material in the form before the concrete is poured.

Where new concrete curb and gutter is to be installed at corner quadrants, pedestrian curb ramps shall be installed as shown on the current version of MnDOT standard plans 297.250, sheets 1 through 6. The construction of pedestrian curb ramps is included in payment for walk.

The name of the contractor and the year of construction shall be stamped at the beginning and the end of each section of sidewalk constructed.

The contractor shall protect the new concrete until it is sufficiently cured so as not to be damaged by vandalism, weather or other foreseeable circumstances. Any damaged concrete shall be repaired to the satisfaction of the engineer at the contractor's expense.

All concrete mix shall be supplied by a state-certified supplier. Documentation for the certification shall be submitted to the engineer prior to using the material.

2521.2A1 Concrete shall be Mix No. 3F52.

2521.3A Add the following:

A 4-inch thick aggregate base class 5 will be placed under new walk constructed where none existed previously and will be classed as incidental work.

2521.3D2 Delete the first paragraph and substitute the following:

Expansion joint filler material shall be ½ -inch in thickness and shall meet the requirement of ASTM designation D-1751. It shall be the full depth and width of the concrete slab except that the top of the joint material shall be ¼ -inch below the finished surface of the slab. In all cases, the expansion joints shall be formed by placing the filler material in the forms before the concrete is poured.

For standard walk construction, transverse expansion joints shall be installed at regular intervals not exceeding 30-feet throughout the entire length of the sidewalk. The edges of the slabs at all joints, as well as the outer edges, shall be rounded to a ¼ -inch radius.

All concrete sidewalks shall be constructed with a lightly brushed finish.

2521.3E Add the following:

The Contractor shall cure all exposed concrete surfaces in accordance with MnDOT 2301. The Contractor shall take care when applying curing compound so as to avoid overspray onto retaining walls, landscaping and other structures. Cost to remove cure overspray shall be at the Contractor's expense.

Concrete treating oil shall be used only when a curing method other than membrane curing is used. The only curing method authorized for concrete placed in sidewalks after October 1st is blanket curing.

Bid item 2521.518 "4" Concrete Walk" shall be construed to mean construction of concrete walk 4-inches thick at locations designated in the plans and other locations the engineer may direct. Measurement and payment shall be by the SQUARE FOOT and shall be compensation in full for all materials, labor, and equipment necessary to construct the 4-inch walk complete in place. **The required 4-inch thick aggregate base will be classed as incidental to this bid item.**

Bid item 2521.518 "6" Concrete Walk" shall be construed to mean construction of concrete walk 6-inches thick in the quadrant areas of intersections designated in the plans and other areas the engineer may direct. Measurement and payment shall be by the SQUARE FOOT and shall be compensation in full for all materials, labor, and equipment necessary to construct the 6-inch walk complete in place. **The required 4-inch thick aggregate base will be classed as incidental to this bid item.**

Acceptance of concrete walks shall be in accordance with criteria listed under St. Paul Supplemental Specifications 1516.

Truncated dome construction shall be paid for separately under **bid item 2531.618.**

2531 CONCRETE CURBING

The provisions of MnDOT specifications 2531 shall govern as amended below:

All concrete mix shall be supplied by a state-certified supplier. Documentation for the certification shall be submitted to the engineer prior to using the material.

Mix designations shall be modified as follows:

- Manual Placement mix no. 3F52
- Slip-Form Placement mix no. 3F32

Preformed expansion joint filler material shall meet the requirements of ASTM designation D-1751.

2531.3A Add the following:

6-inches of aggregate base class 5 shall be placed under all driveway construction. The construction of the aggregate base shall be classed as incidental work.

2531.3C Add the following:

Transverse expansion joints shall be placed at intervals not to exceed 200-feet in addition to the locations previously described.

2531.3E Add the following:

All driveways shall be constructed according to the designated standard detail plate and with a lightly brushed finish.

The gutter portion of the curb abutting concrete driveways shall be of the same shape and dimensions as the gutter portion of the curb and gutter.

Joint sealing will not be required.

The contractor shall protect the new concrete until it is sufficiently cured so as not to be damaged by vandalism. Any damaged concrete shall be repaired to the satisfaction of the engineer.

2531.3G Add the following:

Concrete treating oil shall be used only when a curing method other than membrane curing is used.

The only curing method authorized for concrete placed in curb and gutter after October 1st is blanket curing.

2531.4A Add the following:

Measurement of concrete curb and gutter shall be continuous through concrete driveway construction and catch basins with driveway measured to the back of curb. Measurement of type 3 and type 6 curb will be of the constructed length of curb with no payment through driveway and with the driveway measured to the projected face of curb.

2531.4B Add the following:

Measurement of concrete driveway areas will be from back of curb to inside edge of sidewalk. Measurement of concrete driveway area will be to the projected face of curb when the adjoining curb is type 3 or type 6. Concrete construction in the walk area fronting a drive will be paid as driveway of the appropriate thickness.

2531.5 Add the following:

Bid item 2531.503 “Concrete Curb & Gutter” shall be construed to mean constructing concrete curb or curb and gutter as shown on the plans. The Contractor may use fixed forms or slipform machine to place curb. Payment for this item will be by the LINEAR FOOT and shall be compensation in full for all labor, materials, equipment, concrete, and finishing necessary to complete the work. This item applies to all types of curbing and all methods of placement, including hand form curb.

Acceptance of concrete walks shall be in accordance with criteria listed under St. Paul Supplemental Specifications 1516.

Payment for **bid item 2531.504 “Concrete Driveway Pavement”** shall be at the contract price per SQUARE YARD as shown on the bid schedule and shall be compensation in full for all labor and materials involved in constructing said driveway including, but not limited to, excavation, foundation preparation, Class 5 aggregate base, concrete, expansion joint fillers, concrete treating oil, backfilling, and disposing of surplus materials.

Construction of concrete driveway pavement shall be completed within 10-days of the curb and gutter construction.

Concrete curb design V shall be constructed as per MnDOT standard detail plate no. 7020K, except as modified below:

Concrete curb design V may be constructed independent of, or integral to, the adjacent sidewalk.

When constructed independent of the walk, the concrete curb design V shall be according to MnDOT standard detail plate 7020K and have a tapered height to match the adjacent grade as determined by the contractor and the engineer. The joint locations in the curb shall align with the joint locations in the adjacent concrete walk.

When constructed integral to adjacent walk, the concrete curb design V, MnDOT standard detail plate 7020K, shall be modified so the bottom of the curb shall match the bottom of the integral walk and have a tapered height to match the adjacent grade as determined by the contractor and the engineer. The joint locations in the curb shall align with the joint locations in the adjacent concrete walk.

Payment for concrete curb design V shall be payable by the LINEAR FOOT based on the constructed curb height with no additional compensation for other modifications.

The locations requiring the use of concrete curb design V will be determined in the field by the engineer. Any concrete curb design V that is constructed without preapproval of the engineer will be considered unauthorized work for which no compensation will be made and may be removed at the engineer’s discretion. The height and length of the concrete curb design V to be constructed shall be recommended by the contractor and approved by the engineer before the concrete curb design V is constructed.

Bid item 2531.603 “Concrete Curb Design V, 1” to 8” Height” shall be construed to mean constructing a curb according MnDOT standard detail plate 7020K or as modified above for construction with integral walk. Payment shall be by the LINEAL FOOT and shall be compensation in full for all labor, materials, and equipment necessary to construct the curb with a tapered height of 1-inch to 8-inch inclusive, complete in place.

Bid item 2531.603 “Concrete Curb Design V, 8” to 24” Height” shall be construed to mean constructing a curb according MnDOT standard detail plate 7020K or as modified above for construction with integral walk. Payment shall be by the LINEAL FOOT and shall be compensation in full for all labor, materials, and equipment necessary to construct the curb with a tapered height of greater than 8-inches to a maximum height of 24-inches, complete in place.

In areas where no new curb is proposed, but new catch basins or catch basin leads necessitate removing and replacing existing curb, the contractor shall replace the curb in kind. Payment for new curb shall be under **bid item 2531.503 “Concrete Curb & Gutter, Design B-624”** unless a specific bid item for the type of curb has been provided.

Truncated dome construction in a walk area shall consist of a cast iron truncated dome tile set in a bed of concrete with a finished thickness of 6-inches. The cast iron tile shall be furnished as a rectangular tile or a radial tile to conform to various curb radii and shall be paid for separately as noted below.

6-inch walk construction under the truncated domes shall be paid for separately under **bid item 2521.518 “6” Concrete Walk”**.

Bid item 2531.618 “Truncated Domes (Rectangular)” shall be construed to mean furnishing and installing rectangular cast iron truncated dome tile inserts to create the truncated dome pattern. Payment shall be by the SQUARE FOOT and shall be compensation in full for all labor, equipment, and materials necessary to furnish and install the rectangular truncated dome tile complete in place.

Bid item 2531.618 “Truncated Domes (Radial)” shall be construed to mean furnishing and installing cast iron truncated dome tile inserts with a radial edge to conform to various curb radii to create the truncated dome pattern. Payment shall be by the SQUARE FOOT, measured in accordance with MnDOT standard plate 7038A, and shall be compensation in full for all labor, equipment, and materials necessary to furnish and install the radial truncated dome tile complete in place.

Truncated dome tile inserts must be cast iron and shall be from any supplier on the MnDOT-approved list.

Truncated Domes shall be placed in accordance with the “Preferred Pedestrian Ramp Location” detail included in the appendix of this document.

2535 BITUMINOUS CURB

The provisions of MnDOT specifications 2535 shall govern as amended below:

2535.2 The bituminous mixture for the curb shall be of the same type as that used in the wearing course upon which the curb is to be constructed unless the use of another type is specified or approved by the engineer.

2535.3 A tack coat shall be applied to the area on which the curb is to be constructed and shall be incidental to the bituminous curb construction.

2540 CONSTRUCT SURVEY MONUMENT

Should the contractor hit, disturb, or remove an existing survey monument that has been located, marked, or shown on the plan, an assessment of liquidated damages in the minimum amount of \$1,000.00 per monument or the actual cost of restoring the monument, whichever is greater, shall be charged. If, during the course of construction a monument is discovered, the contractor shall notify the chief surveyor at 651-266-6075. The contractor shall cease all activities that could disturb the monument until the surveyors have perpetuated the monument's location. The chief surveyor must be contacted at 651-266-6075 prior to the removal of a survey monument. The contractor shall not be charged liquidated damages if permission to remove a monument is obtained. City staff will reset the monument. Compliance with this provision does not indemnify the contractor from Minnesota Statutes Chapter 381.19, 505.33, or 160.15.

Bid item 2540.602 "Construct Survey Monument" shall be construed to mean providing the necessary excavation and traffic control to help the City survey crew locate and reset an existing survey monument or place a new monument at finished grade if the old monument becomes disturbed during construction. Payment shall be by EACH and shall be compensation in full for all labor, equipment, and materials necessary to coordinate resetting of the monument. Coordination for this item shall be accomplished through the chief surveyor at 651-266-6075.

2563 ALTERNATE PEDESTRIAN ROUTE

REVISED 03/09/18

Maintain and guide pedestrian traffic through the project at all times using continuous Alternate Pedestrian Routes (APR) per standards set forth in the MN MUTCD Chapter 6D. Provide each APR to the same level of accessibility of each existing access and walkway prior to construction. Utilize accessible device standards as shown in the plan or in Figure 6K-5 in the field manual if a plan is not provided. Utilize bypass and detour standards as shown in the plan or in layouts 88 and 89 in the field manual if a plan is not provided.

Provide and place Accessible Pedestrian Signals (APS), temporary curb ramps, pedestrian barricades, pedestrian channelizers, detectable edges, temporary walkway surfaces, and other accessible design features as necessary.

As needed, provide continuous temporary walkway surfaces that are smooth, stable, and slip resistant in relevant weather conditions. Temporary walkway surfaces will allow the normal usage of wheelchairs, walkers, strollers, and other mobility devices. Concrete, bituminous, steel, rubber, wood (3/4-inch or thicker), and plastic are acceptable surface materials for the temporary walkway surface. Gravel, millings, or other uneven surfaces are not acceptable

surface materials. Temporary walkway surface devices shall utilize dimensions from 6F.74.1 in the MN MUTCD. The temporary walkway surface shall be supported by a solid base.

Any portable sign or barricade placed in or adjacent to a pedestrian walkway shall have a detectable edge to guide pedestrians with visual disabilities around the sign or barricade.

Minimize disruption to pedestrians to the maximum extent feasible by providing APRs in the following order of preference:

1. Provide the APR on the same side of the street as the disrupted route utilizing bypasses.
2. Where it is not feasible to provide a same side APR, provide an APR on the other side of the street.
3. Where it is not feasible to provide an APR on the other side of the street, provide an APR detour with trailblazing signs.

If existing parking spots are desired to be used for an APR route within the project limits, contact City of Saint Paul Traffic Operations for approval and parking-banning notification procedures.

Schedule and coordinate the replacement of pedestrian access to accommodate the needs of businesses and residences 3-days prior to the replacement. Leave the existing sidewalks in place until such time that it is required to remove them to accommodate new construction. Pedestrian access may be provided to businesses and homes through the use of any public access from adjacent parking lots and side streets. Provide front door access to buildings without alternate public entrances.

Liquidated damages in the amount of \$500.00 per block, per calendar day, will be charged to the contractor for every day that a pedestrian route is not available.

Protect the pedestrian route with pedestrian barricades or pedestrian channelizing devices if it is adjacent to construction, excavation drop-offs, traffic, or other hazards. Protect the pedestrian route with a portable barrier if it is on the shoulder, in a parking lane, or in a closed lane adjacent to traffic on a multi-lane road or if the speed limit is greater than 40-m.p.h. When both sides of a pedestrian route require channelizing devices, use similar types unless the portable barrier is used to protect pedestrians from traffic.

No pedestrian curb ramp or blended transition work shall occur concurrently at adjacent intersections.

The contractor is advised that on a corridor that has transit service, re-locations of stops can only be made with the approval of the engineer. The contractor is hereby directed to section 1707 (PUBLIC CONVENIENCE AND SAFETY) of the special provisions.

Notify the engineer at least 24-hours prior to the start of any construction operation that will necessitate a change in pedestrian access.

Furnish the name, address, email, and phone number of at least one individual responsible for the maintenance of the APR. This individual shall be "on call" 24-hours a day, 7-days per week

during the times any devices, furnished and installed by the contractor, are in place. Submit the required information to the engineer at the pre-construction meeting.

Answer calls immediately and begin corrective measures needed within one hour.

If the contractor is negligent in correcting the deficiency within 1-hour of notification, the contractor shall be subject to a monetary deduction at the rate of \$100.00 per hour when only one residence or location is affected and at the rate of \$500.00 per hour in all other cases that the engineer determines the contractor has not complied.

No measurement will be made of the various items that constitute an Alternate Pedestrian Route, but all such work shall be construed to be included in the lump sum payment under bid item 2563.601 (Alternate Pedestrian Route). The lump sum payment shall be compensation in full for all costs of furnishing, installing, maintaining, and removing the individual devices.

Liquidated damages in the amount of \$500.00 per block, per calendar day, will be charged to the contractor for every day that a pedestrian route is not available.

Bid item 2563.601 "Traffic Control" includes advance warning signs to inform motorists what to expect ahead. These may include a single sign, rotating strobe lights, portable changeable message signs, or a series of signs as directed by the engineer.

Bid item 2563.601 "Traffic Control" also includes pre-warning signs, i.e., "Road closed starting date to end date" to be installed 7-days prior to construction start.

Furnishing and placing of traffic control devices as required shall be considered incidental work unless the **bid item 2563.601 "Traffic Control"** is included in the plans.

2571 PLANT INSTALLATION AND ESTABLISHMENT

The provisions of MnDOT specifications 2571 shall govern as amended below:

2571.3K1 Delete and substitute the following:

The plant establishment period is 1-calendar year from the date all of the initial planting operations on the project are completed unless specified otherwise.

During the 1-year plant establishment period, the contractor is responsible for determining which plants need to be replaced. Replacements shall be maintained and guaranteed for an additional 60-growing days (April 15th to November 1st).

2571.5D Delete in its entirety.

2571.5F Delete in its entirety.

All trees and shrubs shall be mulched with a minimum of 4-inches of shredded hardwood bark mulch. This work shall be considered incidental unless a bid item has been provided. The contractor shall determine and provide the maintenance required to establish plantings and promote, as nearly as possible, normal growth. The procedures used shall follow normal

cultural practices including, but not limited to, watering, fertilizing, pruning, weeding, herbicide, and insecticide treatments.

The contractor shall periodically inspect the plantings in order to determine and provide special maintenance procedures required due to site or climate conditions.

The contractor shall be responsible for notifying the City of the end of the guarantee period. If, at the end of the guarantee period any plant material fails to fulfill all requirements of this specification with regard to quality and condition and further that they shall be free of dead branches and twigs and shall bear foliage of a normal density.

Bid item 2571.601 "Tree Protection" shall be construed to mean the installation of tree protection fencing around select trees as indicated on the plan sheet and as shown in the detail enclosed within the appendix of this document. Payment for bid item 2571.601 shall be by EACH and shall be compensation in full for all labor, equipment, and materials necessary to install, maintain, and remove at the end of construction, the tree protection fencing.

Limit grading within the drip line of existing street trees. Grading within 5-feet of the trunk of a tree shall be done by hand or small equipment to minimize damage to tree roots.

2572 PROTECTION AND RESTORATION OF VEGETATION

The provisions of MnDOT specifications 2572 govern as amended below:

2572.5 Delete in its entirety and substitute the following:

The City of Saint Paul will pay for acceptable quantities at the appropriate contract unit bid price. If no unit price for work covered by specifications 2572 is included in the contract, the work shall be incidental and no payment shall be made therefor.

2573 STORM WATER MANAGEMENT

The provisions of MnDOT specifications 2573 shall govern as amended below:

Should the contract require a General Storm Water Permit for Construction Activity from the Minnesota Pollution Control Agency or other permits from the Metropolitan Council, Watershed District, Department of Natural Resources, or any other governing agency, the contractor shall abide by all provisions thereof.

Bid item 2573.502 "Storm Drain Inlet Protection" shall be required for existing catch basins and for newly installed catch basins as identified on the erosion control plan sheet. Inlet protection shall be in place from the time construction activities begin until bituminous is placed on the roadway and the boulevards have been restored.

The contractor shall inspect all storm drain inlet protection every 7-days and within 24-hours after every rain event. Contractor shall replace or clean storm drain inlet protection if it becomes nonfunctional. Contractor shall clean sump if sediment is within 12-inches of outlet pipe.

Storm drain inlet protection shall be options 1 or 2 in accordance with City of Saint Paul standard plate 2400A or approved equal.

Payment shall be by EACH and shall be compensation in full for all labor, equipment, and materials necessary to install inlet protection for existing catch basins and for newly installed catch basins. A catch basin at a single location may require multiple treatments throughout the course of construction. Maintenance and/or replacement and removal of the Inlet protection shall be incidental to this bid item.

Storm Drain Inlet Protection to remain in place until two (2) weeks after sod is placed or as directed by the Engineer.

Bid item 2573.501 “Water Treatment (Portable Sediment Containment System)” shall consist of providing, using, and maintaining temporary dewatering dumpsters designed for treating storm water from construction activities, as part of mechanical dewatering operations, and based on site condition constraints. At a minimum, the contractor shall furnish 1-commercially engineered dewatering dumpster to be kept on the project site at all times for the life of the contract. This work shall be done in accordance with the applicable MnDOT standard specifications, the plans, and the following:

S-1 The device shall measure 8-foot by 20-foot, similar in form to a trash dumpster, with orifice attachment portals for dewatering hoses and sediment cleanout access. The device shall include a geotextile filter wall followed by a replaceable filter media in the form of slash mulch, excelsior fibers, or other filter media depending on pollutant load. The portable sediment containment system shall be installed in the field following manufacturer’s recommendations and approved site plans. The portable sediment containment system shall be slightly tilted such that the water shall flow over the internal weir and shall be placed on a slash mulch or filter aggregate over a suitable geotextile.

S-2 If the contractor fails to provide or use the dewatering dumpsters to treat sediment or other pollutant containing ground or storm water, the contractor shall suspend operations and related operations if ordered by the engineer until the issue is resolved. Failure to adequately use or maintain the device or cease operations if ordered by the project engineer will result in a \$1,000.00 per calendar day deduct until corrective actions are successful.

S-3 Measurement will be made by the LUMP SUM. Payment will be made under Item 2573.601 (portable sediment containment system) at the contract bid price per lump sum, which shall be compensation in full for all costs incidental thereto, including labor, equipment, and materials for performing all dewatering operations as specified.

Bid item 2573.503 “Sediment Control Logs” shall be placed as directed by the engineer. Payment for bid item 2573.503 shall be by the LINEAR FOOT and shall be compensation in full for all labor, equipment, and materials necessary to complete the work as specified.

2574 SOIL PREPARATION

The maximum particle size for topsoil borrow shall be 1-inch.

Prior to placement of topsoil, the contractor shall landscape the boulevards as described in “(2575) ESTABLISHING TURF AND CONTROLLING EROSION”. Each load of topsoil shall be accompanied by the numbered load slip showing date, load delivery times, truck number, and amount in cubic yards based on vehicular measure.

The contractor shall submit to the engineer the source of topsoil borrow at least 1-month prior to time of placement. The contractor shall have the topsoil tested for nutrient levels and gradation and furnish documentation indicating the test results. Depending on the test results, the fertilizer will be adjusted to provide the optimum nutrients necessary for the new sod placement. Testing shall be considered incidental work.

Measurement and payment for **bid item 2574.607 “Topsoil Borrow (L.V.)”** shall be on the basis of actual loose volume which may be hauled to, and used on, the project. Said payment shall be compensation in full for all costs involved in the purchase, hauling, placing, and compacting of topsoil borrow materials.

Topsoil will not be accepted for payment unless it has had prior approval from the engineer.

2575 ESTABLISHING TURF AND CONTROLLING EROSION

The provisions of MnDOT specifications 2575 shall govern as amended below:

The Public Works contractor will be responsible to replace any removed topsoil and sod behind the property line or sidewalk at the contractor’s expense.

All sod suppliers are required to furnish documentation indicating compliance with the specifications. This document shall be submitted to the engineer prior to placing the sod. Areas requiring turf restoration shall be sodded within 21-calendar days following completion of curbs, walks, and drives adjacent to the area to be restored.

It is intended to landscape boulevard areas to a uniform transverse grade from sidewalk to curb. Where trees exist, the boulevard area shall be contoured to produce a grade that is aesthetically pleasing and easily maintained while minimizing tree root damage. Irregular boulevard grades will result when adjustments are made to minimize root damage.

Unless directed otherwise by the engineer, all existing turf will be removed up to a tree by a method approved by the engineer prior to starting removals. Some situations will dictate that the existing turf be left around a tree and no grading done adjacent to the tree. In these situations, the new sod will be cut-in to match the existing turf.

These locations will be determined on the job site by the project supervisor and a forestry representative. The property owner will be informed by the forestry representative when this option is selected.

The contractor will not be fined for damage to hidden roots below the sod if the contractor's method of removal has been approved.

Sod placed within 5-feet of a tree that fails to meet the 30-growing days shall be removed and replaced at the contractor's expense. If the sod placed within 5-feet of a tree fails to grow the second time, no further action will be taken.

After the new curb is constructed and it is determined there is existing turf that meets the grade standards and is of a condition that cannot be improved upon by re-sodding, it shall be left in place and preserved.

Boulevard landscaping and inherent excavation shall be incidental to the furnishing and placement of sod.

Where new sod will abut existing turf, it will be "cut-in" so as to produce a flush surface with the existing turf.

All areas to be sodded shall be fertilized with a 10-10-10 or comparable fertilizer at the rate of 10-pounds per 1,000-square feet and shall be considered incidental work.

Unless otherwise specified, the sod type shall be "lawn".

Topsoil shall be pulverized loam, well weathered, decomposed, and contain a high percentage of humus which will be fertile and able to sustain plant life.

The engineer shall be notified of the sod source at least 5-days in advance of cutting. Inspection shall be made of the sod at the source, but only to approve or reject the sod with respect to its condition prior to cutting.

The contractor shall grade the boulevard as soon as possible after the curb, walk, and drives are placed.

Prior to placement of seed or sod, the contractor shall rake the areas to remove rocks and debris and provide a smooth and uniform surface.

Grading and raking in areas to be seeded or sodded shall be classed as incidental work.

The areas of sod placement shall include boulevards disrupted by street or sewer construction, numerous areas behind the walk due to sewer and water service re-connections, sidewalk reconstruction, and at other locations as the engineer may direct. No additional compensation shall be given to the contractor for sod placement in these areas, regardless of size.

Sod shall be placed on a minimum of 4-inches of topsoil. Seed shall be placed on a minimum of 2-inches of topsoil.

Material that is approved by the engineer as topsoil and is required to be removed shall be stripped and stockpiled for use as topsoil in restoration and shall be classified as incidental work.

If existing quantities of topsoil are insufficient, additional material shall be provided by placing **bid item 2574.607 "Topsoil Borrow (L.V.)"**.

Watering of the sod shall be incidental to **bid item 2575.504**.

Water is available from Saint Paul Regional Water Services' hydrants with a hydrant permit. Water will be paid from Saint Paul Regional Water Services' invoices.

Hydrant Permit Requirements and Charges

Water obtained from a hydrant by permission of the permit is expressly intended for non-potable uses only and is not to be used for drinking water.

Permit Required

Hydrants may be used only after obtaining a hydrant permit from Saint Paul Regional Water Services.

A hydrant meter issued by Saint Paul Regional Water Services must be used whenever taking water from a permitted hydrant.

A fine of \$1,000.00 and confiscation of hydrant nozzle adaptors and appurtenances will result in the event:

1. A person is found using water from a hydrant without having first obtained a proper Saint Paul Regional Water Services hydrant permit, or
2. A person is found using water from a hydrant different than the one specified on the permit and the person had not first obtained Saint Paul Regional Water Services' permission to use a different hydrant.

Cash deposit of \$500.00 Required

The deposit is to guarantee payment for water used, charges accrued, and any breakage or damage to the board's hydrant, meter, or other works.

Charges for hydrant rental, all subject to applicable sale taxes:

1. A charge of \$10.00 per month shall be applied for each permit for each 30-day period or fraction thereof to cover the cost of inspection and ordinary wear and tear on the hydrant.
2. A charge of \$40.00 per month shall be applied for each permit for each 30-day period or fraction thereof to cover the cost of administration of the hydrant permit.
3. Regular water charges:
 - a. The water service base fee and right-of-way recovery fee in effect on the date the hydrant meter is returned shall be applied for each 30-day period or fraction thereof per permit. Rates for both fees are determined by meter size.

4. Water consumption charges:
 - a. Charges for water used shall be based on metered consumption or estimated consumption according to the maximum summer consumption rate in effect on the date the hydrant meter is returned.
5. An additional charge of \$10.00 shall be applied each time a request to move the hydrant meter to another hydrant is approved to cover the cost of inspection and ordinary wear and tear on the newly approved hydrant.
6. During the period December 1st to April 1st, an additional rental charge of \$30.00 shall be applied for each 30-day period or fraction thereof to compensate for the cost of extraordinary inspection and wear and tear when a hydrant is operated during winter months.
7. Applicant shall be responsible for any breakage or damage to Saint Paul Regional Water Services' hydrant, meter, or other works. Cost to be paid by applicant shall be based on Saint Paul Regional Water Services' actual repair or replacement costs. Repair or replacement shall be determined by Saint Paul Regional Water Services.

It is the contractor's responsibility to determine when the sod shall be watered. This does not relieve the contractor from the 30-growing day specification.

2575.3F3 Delete the first sentence and substitute the following:

The contractor may place sod as dormant sodding after November 1st when all of the following conditions are met:

2575.3K1 Delete the first paragraph in its entirety and substitute the following:

The contractor shall maintain the sod for 30-growing days. The engineer will then make the final inspection and consider acceptance of the sod. A growing day is any calendar day from April 15th to June 10th and from August 10th to November 1st, subject to adjustments by the contract. The above-specified dates may be adjusted by the engineer by no more than 15-days to shorten the excluded periods when conditions are favorable to active growing, or lengthen the excluded periods when conditions are unfavorable.

Delete the second paragraph and substitute the following:

Any sod placed by the contractor that dies before the 30-growing days are completed shall be replaced with new sod at no expense to the City. This new sod shall be maintained by the contractor for at least 20-growing days.

Upon satisfactory placement of the sod, the engineer may authorize partial payment not exceeding 90% of the contract bid price. When the sod is found to be acceptable after 30-growing days, the engineer will authorize 100% payment of the contract bid price.

The 30-growing day maintenance period will be strictly enforced. Sod placed in the spring that doesn't accumulate 30-growing days prior to June 10th must be maintained throughout the

summer. Any sod found to be unacceptable by the engineer upon completion of the maintenance period will be rejected and must be replaced. The prime contractor will be responsible to coordinate that replacement.

Sod placed adjacent to a curb that is subjected to excessive amounts of salt so as to kill the new sod shall be handled in the following manner:

1. The contractor shall remove the dead sod as directed by the engineer and this work shall be paid for on a time and material basis as a change agreement item.
2. The new sod to repair these areas shall be paid for under **bid item 2575.504** with no additional compensation.

Bid item 2575.508 “Hydraulic Soil Stabilizer, Type 5” shall be used in situations where the ground has frozen before the sod is placed, or as directed by the engineer. It is applied at the rate of 2,100-pounds per acre.

Payment for **bid item 2575.508 “Hydraulic Soil Stabilizer, Type 5”** shall be by the POUND and shall be compensation in full for all labor, equipment, and materials necessary to complete the work as specified.