SPECIFICATIONS
FOR THE

DEPARTMENT OF PUBLIC WORKS
CITY OF SAINT PAUL, MINNESOTA

GOVERNING SPECIFICATIONS

The Governing Specifications shall be the Minnesota Department of Transportation "Standard Specifications for Construction, 2014 Edition", all divisions of which shall be applicable hereinafter referred to as the "MnDot Specifications", as amended by the City of Saint Paul, Department of Public Works "Standard Supplemental Specifications for Construction", dated February 1, 2014, as amended by the Special Provisions.

The MnDot Specifications are on file in the office of the Commissioner of Transportation and may be purchased at the Transportation Building, Saint Paul, Minnesota.

I hereby certify that the specifications contained in the City of Saint Paul, Department of Public Works "Standard Supplemental Specifications for Construction", dated February 1, 2014, were prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

John P. Maczko, City Engineer

Date: 4/14/15 **Registration No.** 20026

DEPARTMENT OF PUBLIC WORKS
CITY OF SAINT PAUL, MINNESOTA

Index to Standard Supplemental Specifications for Construction

DIVISION I - GENERAL REQUIREMENTS		PAGE
1103	Definitions	3
1202	Contents of Proposal Package	3
1305	Requirement of Contract Bond	3
1402	Contract Revisions	7
1404	Maintenance of Traffic	8
1502	Plans and Working Drawings	13
1506	Supervision by Contractor	14
1507	Utility Property and Service	14
1508	Construction Stakes, Lines, and Grades	15
1510	Authority and Duties of the Inspector	16
1516	Acceptance	16
1517	Claims for Compensation Adjustment	17
1603	Materials, Specifications, Samples, Tests and Acceptance	17
1701	Laws to be Observed	18
1707	Public Convenience and Safety	19
1710	Traffic Control Devices	20
1711	Use of Explosives	22
1712	Protection and Restoration of Property	22
1717	Air, Land and Water Pollution (NPDES)	24
1721	Audits	25
1801	Subletting of Contract	25
1803	Progress Schedules	26
1806	Determination and Extension of Contract Time	27
1807	Failure to Complete Work on Time	28
1902	Scope of Payment	28
1904	Compensation for Contract Revisions	28
1906	Partial Payments	29
1908	Final Estimate and Payment - Conditions and Process	29

DIVISION II - CONSTRUCTION DETAILS

		PAGE
2013	Survey Monument Resetting	31
2021	Mobilization	31
2031	Field Office and Laboratory	31
2101	Clearing and Grubbing	32
2104	Removing Pavement and Miscellaneous Structures	33
2105	Excavation and Embankment	36
2112	Subgrade Preparation	38
2118	Aggregate Surfacing	39
2123	Equipment Rental	39
2201	Concrete Base	39

DIVISION II - CONSTRUCTION DETAILS (cont.)

		PAGE
2211	Aggregate Base	40
2301	Concrete Pavement	40
2360	Plant Mixed Asphalt Pavement	41
2401	Concrete Bridge Construction	44
2451	Structure Excavation and Backfills	45
2471	Structural Metals	45
2503	Pipe Sewers	46
2504	Water System	55
2506	Manholes and Catch Basins	69
2521	Walks	71
2531	Concrete Curbing	74
2535	Bituminous Curb	77
2571	Plant Installation	77
2572	Protection and Restoration of Vegetation	78
2573	Storm Water Management	78
2575	Establishing Turf and Controlling Erosion	79

DEPARTMENT OF PUBLIC WORKS
CITY OF SAINT PAUL, MINNESOTA

STANDARD SUPPLEMENTAL
SPECIFICATION FOR CONSTRUCTION
April 2, 2015

DIVISION I
GENERAL REQUIREMENTS

1103 DEFINITIONS

The provisions of MnDOT Specification 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 term "Extra Work" or "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 definitions as "Supplemental Agreement".

1202 CONTENTS OF PROPOSAL PACKAGE

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

"The second paragraph" shall be deleted in its entirety and the following provisions substituted in lieu thereof:

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

1302 AWARD OF CONTRACT

MnDOT Specification 1302 shall be deleted in its entirety and the following provisions substituted in lieu thereof:

Within 45 calendar days after opening Proposals, the Department will Award the Contract to the lowest responsible Bidder provided that the lowest responsible Bidder complies with the Proposal requirements. The Department may also decide not to make a Contract Award. The Department will notify the lowest responsible Bidder electronically, in writing or by other means that the Department has accepted the Proposal subject to execution and approval of the Contract as required by law.

The Department and the lowest responsible Bidder may mutually agree to extend the time within which the Department makes the Award.

1305 REQUIREMENT OF CONTRACT BOND

MnDOT Specification 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 one hundred percent (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 one hundred percent (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 any one 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, or the work to be performed there under, 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 contract, or to the work, or to 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	per occurrence
$ 2,000,000	aggregate per project
$ 2,000,000	products/completed operations total limit
$ 1,500,000	personal injury and advertising

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

2. Automobile Insurance
   a) Bodily Injury $ 750,000 per person
      $ 1,000,000 per accident
   b) Property damage not less than $50,000 per accident.

3. Workers Compensation and Employer's Liability
   a) Worker's Compensation per Minnesota Statute.
   b) Employer's Liability shall have minimum limits of $500,000 per accident; $500,000 per employee; $500,000 per disease policy limit.
   c) Contractors who do not have insurance must complete the State of Minnesota's Certificate of Compliance form.

4. 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 policy includes errors and omissions coverage.
   b) The Contractor shall not commence work until a Certificate of insurance covering all of 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 course of 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 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, 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 or building of any new building or structure, the amount of the insurance shall at all times, 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 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 for or 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 by or in consequence of any negligence in safeguarding the work, or through the use of unacceptable materials in constructing

the Work, or by 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, and 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 as, 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 retain any amount due under the Contract or any amount which shall become due under the Contract in satisfaction of any costs or charges incurred by the City in accordance with the foregoing schedule of charges 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 Worker's 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.

1402 CONTRACT REVISIONS

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

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

MnDOT Specification 1402.5, paragraph 3, shall be amended as follows:

An executed Supplemental Agreement is not required prior to the Contractor's performance of Extra Work in the following instance:

"Minor Extra Work" shall be authorized by Contract Change Order, not by a Work Order.

1404 MAINTENANCE OF TRAFFIC

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

1404.1 GENERAL

Unless the Contract requires otherwise, the Contractor shall keep roads undergoing improvements open to traffic at no additional cost to the Department. The Contractor shall direct traffic over a Department approved Traffic Control Plan or Layout, and/or Detour route as required by the Contract or as directed by the Engineer.

The Contractor shall maintain the portions of the Project being used by public traffic in a condition that accommodates the public traffic at all times. The Contractor shall provide and maintain temporary approaches, crossings, and intersections with trails, roads, streets, businesses, parking lots, residences, garages, farms, and other abutting property in a safe and acceptable condition.

The Contractor shall inform the Engineer 48 hours, or more if needed, in advance 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 other pedestrian facilities, or bicycle facilities.

The Contractor shall obtain the approval of the Public Works Right-of-Way Traffic Control Representative, 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 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 within a distance no greater than 150 feet of all buildings. 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.

It shall be the Contractor's responsibility to notify residents and businesses in writing 48 hours in advance of denying access to dead end alleys, parking lots, driveways, and garages. If, in the Engineer's opinion, sufficient notice has not been given, the Engineer may suspend the construction activity until proper notice is given.

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.

The Department will not require the Contractor to remove snow from roads open to traffic.

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 Department owned signs. Any damage caused by the Contractor will be billed directly to the Contractor.

The Contractor shall call the Traffic Operations Traffic 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 Plan, Layout, or Detour.)

The Contractor shall be responsible for 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' notice to Traffic Operations, Traffic Maintenance Supervisor at 651-266-9778 before pouring any concrete islands or integral curb and walk for the purpose of 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 **Bid Items 2564.602, "Sign Post Bases"**, and **2554.603, "Concrete Median Barrier Design 8333A"**, shall be as shown in the Fixed Unit Prices. The City will furnish the new bases and the Contractor will provide the labor. Bases must be installed plumb and flush, and bolt access holes shall be free of excess concrete. Improperly installed bases must be removed and reinstalled 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 Department. 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.

2. The Contractor shall reimburse the City for all expenses incurred in maintaining and restoring the detour roads, except for snow removal. The Department will remove snow from Detour Roads at the Department'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 MAINTENANCE DIRECTED BY THE ENGINEER

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 classed as Incidental Work unless payment provisions are provided in the Bid Schedule.

1404.6 BLANK

1404.7 WINTER SUSPENSION

On those sections of the project where through traffic has been excluded, the Contractor shall at their expense make passable and shall 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, temporary facilities, as well as traffic control devices will be the Contractor's responsibility and will be also classed as Incidental Work.

The Engineer or Construction Inspector will prepare a notice to be distributed to residents prior to a street or alley 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. The notice will include 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 name and telephone number of the Engineer. The Contractor shall make every effort to provide access whenever possible, and driveways shall be ramped as needed. If said notice is not delivered within the specified time, liquidated damages in the amount of $200 per block per calendar day will be charged against the Contractor.

Paving operations for streets not involving sewer repair or 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 or water construction, 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 be 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 one end of all alleys open to traffic at all times.

Within ten (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 $200 per block per calendar day will be charged against the Contractor.

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 and 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 the 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 the 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.

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

Furnishing and placing of traffic control devices as required shall be considered Incidental.

The Contractor shall furnish names, addresses, and phone numbers of at least three (3) individuals responsible for the placement and maintenance of traffic control devices. These individuals shall be "on call" 24 hours per day, seven 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 Conference.

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 fourteen (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 closure or internal traffic control signing.

The Contractor shall inspect, on a daily basis, 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, these 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 one hour of notification, the Contractor shall be subject to the daily charge of $300 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 two adjacent east-west streets shall be closed to through traffic at the same time.

To maintain north-south access, no two 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 hard hat, but must wear vest, and may use hand signals in lieu of "Stop-Slow" paddle, with approval of the Engineer.

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 first, before other operations. Inlet protection and sediment control shall be established second, before any removal operations. Once these are established, saw cutting and removals can begin.

1502 PLANS AND WORKING DRAWINGS

The provisions of MnDOT Specification 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, as they may request, up to a maximum six (6) sets. Upon request, one 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 two 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/index.aspx?nid=2554.

The 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 Specification 1505 shall govern as amended below:

It is anticipated that there will be private utility contractors working in this 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. No compensation will be made to the Contractor for "down time" due to the work of these others. The Contractor shall allow other contractors free access to the job site at all times, and a reasonable amount of time to complete their work.

The Contractor shall cooperate with John McNamara, 651-266-9780, or his representative in the Public Works Traffic Operations Division, for any signal and/or lighting disruptions, including removal and reinstallation of the signals and any associated facilities. A minimum of 48 hours advanced 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 classed as Incidental Work and no direct compensation will be paid to the Contractor.

The General Contractor is instructed to notify Traffic Operations two working days prior to doing work which affects foundation and conduit placement. Such work may be pouring concrete curb and gutter, driveways or paving road beds.

1506 SUPERVISION BY CONTRACTOR

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

The Contractor shall be reminded that they must have a Competent Person on site at all times while work is actually being performed, to manage the project. The Contractor is not allowed to switch individuals daily, weekly, or when the basic operations change.

1507 UTILITY PROPERTY AND SERVICE

The provisions of MnDOT Specification 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.

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, 651-454-0002, before starting construction in a given 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 on account of 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; however, 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, 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 Xcel Energy Gas work is complete.

The Contractor shall provide 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 Contractor shall notify the Project Engineer and Xcel Energy. 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.

The Contractor shall provide for a continuance of flow of existing sewers and other facilities interrupted by or on account of the work.

1508 CONSTRUCTION STAKES, LINES AND GRADES

The provisions of MnDOT Specification 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 classed as Incidental Work.

1510 AUTHORITY AND DUTIES OF THE INSPECTOR

The provisions of MnDOT Specification 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.

1516 ACCEPTANCE

The provisions of MnDOT Specification 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 one year from and after the date of the Final Contract Estimate.

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 or property or appurtenances thereof disturbed in fulfilling such guarantee.

The Contractor shall fill, resod, replace sidewalks, driveways, and otherwise repair all trench settlements which shall occur during this one 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 one 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 ten 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.

A sum of 5% shall be withheld on each estimate as the specified retainage. Upon substantial completion of the work, the retainage may be reduced to 2%. The Engineer shall determine the definition of substantial completion. The sum of 2% shall be withheld until the final estimate. Under no circumstances shall the retainage be reduced to less than 2%. If the Engineer is aware of issues, a sum of 5% may be withheld until the final estimate.

For the purpose of enforcing the provisions of all guarantees hereinbefore described, the City shall withhold from the Final Contract Estimate, the sum stated in the Special Provisions as a reserve for a period of one year from the date of the Final Contract Estimate. At the end of this one year period, the said sum shall be released to the Contractor less any amounts expended by the City for repair of work. The release of the reserve shall act as a final release of the Contractor from the contract.

The release of the reserve shall constitute final acceptance of the work.

1517 CLAIMS FOR COMPENSATION ADJUSTMENT

The provision of MnDOT Specification 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 1603 in the MnDOT Standard Specifications for Construction 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

The provisions of MnDOT Specification 1701 shall govern as amended below:

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 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 Department of Human Rights and Equal Economic Opportunity with the Request for Bid.

The Contractor shall submit to the Engineer the three items listed below at the Pre-Construction Conference.

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 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 employees listed below have had the specific training in, and are knowledgeable about the 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 those employees herein listed are capable of recognizing existing and predictable hazards on this excavation site and have 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 in excess of 20 ft. in depth. The design shall identify anticipated soil types and protective methods to be used.

The safety plan should address a minimum of two 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 sub-contractors.
-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

1707 PUBLIC CONVENIENCE AND SAFETY

The provision of MnDOT Specification 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 otherwise constitute a danger to the safety of the general public. Such work by the Contractor shall be classed as Incidental Work.

1710 TRAFFIC CONTROL DEVICES

The provisions of MnDOT Specification 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; and

(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 Department approved Traffic Control Plan or 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, 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 particular location or along a particular 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, or more if needed, in advance 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 other pedestrian facilities, 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 Department 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, 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 Department reserves the right to correct the deficiency and to deduct the costs from any moneys 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 section 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 one check at the end of the work day for proper alignment, visibility, and reflectivity. At least one night time 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 Preconstruction Conference, 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 Department 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 Department 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 Department.

1710.8 BLANK

1711 USE OF EXPLOSIVES

The provisions of MnDOT Specification 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 N. Dale Street, and shall comply with all provisions of the applicable City Ordinance.

1712 PROTECTION AND RESTORATION OF PROPERTY

The provisions of MnDOT Specification 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 any 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 classed 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 five (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.

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 of Saint Paul 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. 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. 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 my 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)

The provisions of MnDOT Specification 1717 shall govern as amended below:

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 (MPCA), and in accordance with the provisions of MnDOT Standard Specifications 1717, 2575 and the following.

<u>Minnesota Pollution Control Agency General Permit, Authorization to Discharge Storm Water</u>
The Contractor shall furnish, install, and maintain temporary and permanent erosion and sediment control devices in accordance with the provisions of 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 Contractor shall be solely responsible for complying with the requirements of the General Permit where Contractor is referenced including Paragraph I.D., Erosion and Sediment Control during Construction.

The Contractor shall be responsible for providing all inspections, documentation, record keeping, maintenance, remedial actions, repairs required by the permit. All inspections, maintenance, and records required in the General Permit Paragraphs I.C.2.c, I.C.2.d, and I.E., 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.

The Contractor shall have all logs, documentation, 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, or any local authority shall be attended by both the Engineer and the Contractor or their representatives. No work required by said entities, 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 Appendix D.C.

If the Contractor fails to perform the requirements as listed herein, the Engineer will prepare a written order detailing the required action. The Contractor shall start the required action within twenty-four (24) hours of receipt of the written 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 $500 per calendar day deduction.

The Contractor shall review and abide by the instructions contained in the permit package. The Contractor shall hold the City 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.

1721 AUDITS

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

Paragraph 1 shall have this sentence added: "Subcontracts totaling in excess of 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. Parts 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 bona fide demonstration of status of such entitles 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 four 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 five percent (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.

<u>Subcontractor Payment</u> - Prime Contractors will be required to pay any subcontractor within ten (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 ½ percent 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 or more is $10.00. For an unpaid balance of less than $100, 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 Specification 1803 shall govern as amended below:

Before work is started on this project, the Contractor and other interested parties shall attend a preconstruction conference 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 five days prior to the Preconstruction Conference.

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(s) shall keep on the work at all times during its progress, a competent resident superintendent that is specifically identified to the Engineer and who shall not be replaced without written notice to the Engineer except under extraordinary circumstances. The superintendent will be the Contractor's representative at the site and shall have authority to act on behalf of the Contractor. All communication to the superintendent shall be as binding as if given to the Contractor.

1806 DETERMINATION AND EXTENSION OF CONTRACT TIME

The provisions of MnDOT Specification 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, normal weather for the locality and season of the year, 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 ten 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 granted must be justified on the basis of 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 block of all streets and alleys shall be restored, or in the case of newly paved streets shall have all concrete flatwork completed and be 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 per block per calendar day will be charged against the Contractor.

2. The Contractor shall be aware of City 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 $200 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 $200 per block per calendar day will be charged against the Contractor.

Should the Contractor fail to meet any of the above requirements, the department reserves the right to deduct the specified liquidated damage charges from any monies due or coming due the Contractor.

1807 FAILURE TO COMPLETE THE WORK ON TIME

The provisions of 1807 in the MnDOT Standard Specifications for Construction shall govern as amended below.

The second paragraph of 1807.2 is hereby deleted.

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 to the Contractor in an amount(s) equal to the following.

If, at any time, the Contractor fails to, in a timely manner, properly furnish, install, maintain or remove any of the required traffic control devices as set forth in Section 1404

MAINTENANCE OF TRAFFIC of these Standard Supplemental Specifications for Construction and the associated Special Provisions, the Department reserves the right to properly correct the deficiency. Each time the Department takes such corrective action, the costs thereof including mobilization, will be deducted from monies due or coming due the Contractor.

1902 SCOPE OF PAYMENT

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

No direct compensation will be made for any work that is classed as Incidental Work on the Plans or in the Specifications.

1904 COMPENSATION FOR CONTRACT REVISIONS

The provisions of MnDOT Specification 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 City's Fixed Unit Prices bound in and included as part of the Special Provisions. 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.

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.

1906 PARTIAL PAYMENTS

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

Delete the fourth paragraph and substitute the following:

Five percent of the total amounts so ascertained as payable will be deducted and retained by the City in protection of its interests until released as hereinafter provided.

On Partial Estimates covering work on the State Aid Highway or Street System, partial payments in excess of 95 percent (95%) of the value of the completed work will be governed by the applicable Minnesota Statutes.

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.

1908 FINAL ESTIMATE AND PAYMENT – CONDITIONS AND PROCESS

The provisions of MnDOT Specification 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 Specification 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 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 Estimate, the Contractor shall submit a lien waiver from all subcontractors.

DIVISION II
CONSTRUCTION DETAILS

2013 SURVEY MONUMENT RESETTING

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 2013.602, "Coordination of Survey Monument Resetting", 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, materials, and equipment necessary to coordinate resetting of the monument. Coordination for this item shall be accomplished via the Chief Surveyor, 651-266-6075.

2021 MOBILIZATION

The provisions of MnDOT Specification 2021 shall govern as amended below:

The Lump Sum price for **Bid Item 2021.501, "Mobilization (5% Maximum)",** shall be limited to 5% of the sum total bid.

2031 FIELD OFFICE AND LABORATORY

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

Field Office shall be Type D service.

2031.2 Delete the third and fourth 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.

2101 CLEARING AND GRUBBING

The provisions of MnDOT Specification 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 before removing any tree, 651-632-2430.

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 classed as Incidental Work.

The Parks Department will remove any trees in this project area due to construction conflicts or disease. They will also remove all existing stumps. Bid items for Clearing and Grubbing are included in this contract 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.

Bid Item 2101.507, "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, any 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 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 three-inch (3") or larger root from a live tree is cut. The root shall be treated with tree paint or other approved asphalt base material. Unless the Proposal included an item for 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 four inches beyond the sidewalk form sides, and explore and remove all roots up to a depth of twelve inches. Tree root removals shall **not** be done by skid-steer loaders attempting to break roots away from the tree. The removal process for roots of three inches or larger will be done by a mechanical root

grinding device. This work shall be accomplished under **Bid Item 2101.507, "Tree Root Removal".** Payment shall be by the TREE and shall be compensation in full for all labor, materials, and equipment necessary.

Trees that have no roots to the depth of twelve inches or have roots of less than three inches in diameter, where removed from the trunk, may be removed by a hand axe operation and will be considered Incidental to **Bid Item 2104.503, "Remove Concrete Walk"**.

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 Division is made. The Forestry Division 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 2104.503, "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 2104.503, "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 Specification 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 eight inches (8") 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.

Unless the Proposal includes an item for bulk-heading, and 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 sawcut 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 sawcut 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 six inches (6") 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 six inches (6") maximum beyond and eight inches (8") 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.

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 six inches (6") thick, shall be classed as Incidental Work unless a specific 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 and 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, 419 Burgess, unless otherwise specified or directed by the Engineer. This work shall be classed as Incidental Work. Sewer Maintenance will furnish a receipt for materials delivered which must be returned to the Project Engineer.

Bid Item 2104.501, "Remove Concrete Curb or Curb and Gutter", shall be construed to mean the removal of concrete, sandstone or granite curb, concrete curb and gutter, and limestone gutter only.

Bid Item 2104.503, "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. (Removal of asphalt or tile walk is considered Incidental Work.)

Bid Item 2104.503, "Remove Concrete Walk", shall be construed to include that work required to remove any existing steps. Payment shall be by the SQUARE FOOT and shall be compensation in full for all labor, materials, and equipment necessary to remove the steps as specified. The removal of steps shall be measured as the width of the steps multiplied by the horizontal distance.

Bid Item 2104.505, "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.

Any removal of curb, walk, drives, 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 classed as Incidental Work.

Payment for **Bid Item 2104.505, "Remove Pavement",** shall be based on the actual SQUARE YARDS of pavement removed as authorized by the Engineer. Pavement to be removed may be concrete pavement, asphalt greater than 6" thick, or asphalt over concrete base. Said payment shall be compensation in full for all costs of excavation and disposal of unsuitable or excess material out of the project limits.

Payment for **Bid Item 2104.505, "Remove Trench Pavement",** shall be based on the actual SQUARE YARDS of trench pavement removed as authorized by the Engineer. Trench pavement to be removed may be concrete pavement, asphalt greater than 6" thick, or asphalt over concrete base. Said payment shall be compensation in full for all costs of excavation and disposal of unsuitable or excess material out of the project limits.

All oiled pavement removal regardless of thickness (even if greater than 6") shall be considered Incidental to **Bid Item 2105.501, "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 2105.501, "Common Excavation (P)".** The volume of the curb removal material has been included in the common excavation quantity.

Bid Item 2104.513, "Sawing Pavement", shall be construed to mean sawcutting locations where existing pavement will abut new pavement for the purpose of accomplishing pavement removals. This work will include sawcutting adjacent concrete curb or curb and gutter, and possible locations include streets, alleys and driveways. Pavement material may be full depth asphalt, concrete, or asphalt over concrete base, regardless of thickness. Sawcuts shall provide a clean and straight match line between the existing pavement and new pavement. 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. Sawcutting of sidewalks, for any purpose, shall be considered Incidental Work.

Sawcutting for the purpose of sealing joints in the new asphalt shall be paid under **Bid Item 2331.603, "Sawed / Sealed Joint".**

Bid Item 2104.509, "Remove Catch Basin or Manhole", shall be construed to mean the complete removal of existing catch basins and sewer manholes as shown in the Existing Sewer Chart.

There may be catch basins, side inlets, and collector manholes which will be removed as part of the project. All sewer pipes which connect to side inlets, catch basins and collector

manholes which are removed shall also be removed as described below. Removal of this pipe shall be Incidental to **Bid Item 2104.509, "Remove Catch Basin or Manhole".** All pipes where the top of the pipe is within 5 feet of the surface shall be removed. Reinforced concrete pipe shall be removed and disposed of off-site. 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 to be removed is deeper 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. Removal of this sewer pipe, bulkheading of any sewer structures or pipe which are to remain in place, and 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 2104.509, "Remove Catch Basin or Manhole".** The repair of any structures that are damaged during the removal operations shall also be Incidental to this item.

Removal of concrete catch basin leads shall be considered Incidental to **Bid Item 2104.509, "Remove Catch Basin or Manhole".** Said payment shall be compensation in full for all costs involved in the removal and disposal of the concrete sewer pipe, bulkheading of any sewer structures or pipe which are to remain in place, and furnishing, placing and compacting of granular material or select material in the void area resulting from removal of the pipe. The repair of any structures that are damaged during the removal operations shall also be Incidental to **Bid Item 2104.509, "Remove Catch Basin or Manhole".**

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 Items 2506.602, "Adjust Manhole Casting Assembly, 0" to 6"",** and **"Adjust Manhole Casting Assembly, 7" to 17"",** with no additional compensation.

The Contractor is not allowed to bury construction debris from the project 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 Specification 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"), shall be considered Incidental to **Bid Item 2105.501, "Common Excavation (P)".** The volume of the oiled pavement removal material has been included in the common excavation quantity.

Bid Item 2105.501, "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 2105.501, "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 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 2105.501, "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).

Payment for **Bid Item 2105.501, "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.

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

Bid Item 2105.609, "Granular Borrow" shall be measured and paid for by the TON, as per MnDOT Specification 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 the purpose of sewer construction shall be Unclassified Excavation as defined elsewhere in these "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 one block, for a maximum of seven (7) calendar 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 classed as Incidental Work and, therefore, 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 Specification 2112 shall govern as amended below:

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 Specification 2118 shall govern as amended below:

Bid Item 2118.501, "Aggregate Surfacing, Class 5", shall be construed to mean, at the direction of the Engineer, placement of aggregate surfacing (in order to provide 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.

The Contractor may substitute Class 5Q or Class 6 for Class 5 at no additional cost. Class 5, 5Q and 6 shall be 100% crushed or recycled material.

2123 EQUIPMENT RENTAL

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

Bid Item 2123.610, "Street Sweeping", shall be construed to mean only sweeping as ordered by the Engineer for the specific purpose of controlling dust resulting from the construction activity (such as tracking onto side streets and arterials where no construction activity is taking place). A power broom pickup sweeper, approved by the Engineer, shall be used to perform this work. Compensation for this item shall be at the rate of $120.00 per HOUR irrespective of evenings, weekends, or holidays. There will not be compensation for sweeping for the purpose of general job clean up or in preparation for paving.

2201 CONCRETE BASE

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

Concrete base shall be MnDOT mix 3B42 unless otherwise approved by the Engineer.

Concrete base shall be constructed on a 6" compacted layer of Aggregate Base, Class 5. Aggregate Base will be paid for separately under **Bid Item 2211.503, "Aggregate Base Placed (C.V.), Class 5 (P)".**

Bid Item 2201.501, "Concrete Base", shall be construed to mean furnishing and installing the concrete base to match the existing thickness.

Measurement and payment shall be by the SQUARE YARD and shall be compensation in full for all labor, materials, and equipment necessary to construct the concrete base complete in place. The area measured shall include both regular and irregular shapes and widths, of the thickness as shown on the plans.

2211 AGGREGATE BASE

The provisions of MnDOT Specification 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 .05 feet above and 0.00 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 Standard Specifications.

Bid Item 2211.503, "Aggregate Base Placed (CV), Class 5 (P)", quantities will be computed on the basis of 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 2211.503, "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 on the basis of 135 pounds per cubic foot of compacted base.

Bid Item 2211.503, "Aggregate Base Placed (CV), Class 5 (P)", shall be 100% crushed or recycled material.

The Contractor may substitute Class 5Q or Class 6 for Class 5 at no additional cost. Class 5Q and Class 6 shall be 100% crushed or recycled material.

2301 CONCRETE PAVEMENT

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

Concrete pavement will be measured by area in SQUARE YARDS, including regular and irregular shapes and widths, of the thickness as shown on the plans.

2360 PLANT MIXED ASPHALT PAVEMENT

MnDOT Specification 2360 shall be deleted in its entirety and replaced with the attached **2360 Plant Mixed Asphalt Pavement Specification.** The attached Specification shall be amended as follows:

Bid Item 2360.503, "Type SPWEA330C Wearing Course Mixture, 3" Thick", shall be construed to mean construction of 4" Aggregate Base, Class 5, and 3" Type SPWEA330C Wearing Course Mixture in boulevard 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, materials including aggregate base and equipment necessary to excavate and construct this pavement complete in place.

Type LV 3 Non-Wearing Course shall be compacted by the Maximum Density Method.

Pavement smoothness requirements **will not** apply on this Project.

Sawed and Sealed Joint

This work shall consist of sawcutting, cleaning, drying and sealing transverse joints in new bituminous surfaces according to the current version of City Standard Plate 3008, MnDOT Specifications, and as directed by the Engineer.

A. Materials

A1 Joint Sealant Material

The Contractor shall provide certification that the sealant meets the requirements of ASTMD-3405 with the following modifications:

Penetration at 77 degrees F 90-150
Bond at -20 degrees F, Standard Specimen, 3 Cycles, 200% Extension . . . . Passes

The sealant material shall weigh not less than 9 or more than 9.3 pounds/gallon.

The crack sealant compounds shall be packaged in sealed containers. Each container shall be clearly marked with the name of the manufacturer, the trade name of the sealant, the manufacturer's batch and lot number, the pouring temperature, and the safe heating temperature.

A copy of the manufacturer's recommendations concerning the heating and application of the joint sealant material shall be submitted to the Engineer before commencement of the work. These recommendations shall be followed by the Contractor. The temperature of the sealer in the field application equipment shall never exceed the safe heating temperature recommended by the manufacturer. Any given quantity of material shall not be heated at the pouring temperature for more than six (6) hours and shall never be reheated. Material shall not be placed if the material's temperature is below the manufacturer's recommended minimum application temperature.

Mixing of different manufacturer's brands or different types of sealants shall be prohibited.

A2 Bond Breaker Tape:

Bond breaker tape shall consist of regular masking tape or other suitable bond breaker tape designed for use with hot pour sealants. The width of the tape may be equal to, but not more than 1/8 inch narrower than the width of the sawcut. Backer tape shall be placed at the bottom of the reservoir to prevent the sealant material from flowing down into the deep sawcut. An alternate option is to stuff backer rod below the reservoir into the deep sawcut.

B. Weather Limitations:

Sealant materials may be placed during a period of rising temperature after the air temperature in the shade and away from artificial heat sources has reached 40 degrees F and indications are for a continued rise in temperature. During a period of falling temperature, placement of the sealant material shall be suspended until the above conditions are met.

Sealants shall not be placed when, in the opinion of the Engineer, the weather or

roadbed conditions are unfavorable. Sawing and sealing shall be permitted only during daylight hours.

C. Equipment Requirements:

The melting kettle shall be double jacketed boiler type, equipped with both agitation and re-circulation systems capable of melting and applying the sealant through a pressure-fed hose and wand. The melter shall be capable of starting at ambient temperature and bringing the sealing material to application temperature in one hour or less, while continuously agitating and recirculating the sealant. The melter shall be equipped with automatic thermostatic controls and temperature gages to monitor the sealant temperature in the applicator lines and temperature of heat transfer oil in the kettle jacket.

A self-propelled power saw capable of providing a straight cut of uniform depth and width shall be used. Diamond saw blades with either single or gang blade arrangement shall be used. The saw blade or blades shall be of such size and configuration such that the desired joint reservoir shape and deep sawcut are achieved in one pass of the saw. Two pass cutting will not be allowed. No spacers between blades shall be allowed unless the Contractor can show that the desired reservoir and sawcut can be obtained with them. Either wet or dry sawing will be permitted provided the above conditions are met.

The air compressor shall be capable of producing a continuous stream of clean, dry air through the nozzle at 90 psi and 38 cubic feet/foot minimum. The compressed air unit shall be equipped with water and oil traps and must produce sufficient air volume and pressure to remove all debris from the sawed joint and all adjacent road surfaces in a safe manner such that the debris will not reenter the joint prior to the sealing operation.

The heat lance shall operate with propane and compressed air in combination and be capable of achieving a temperature of heated air at the exit orifice of 1800 degrees F and a discharge velocity of 3300 feet/second.

D. Construction Details:

D1 General

The Contractor shall conduct the operation so that sawcutting of transverse joints, cleaning, and sealing are a continuous operation.

Traffic shall not be allowed to knead together or damage the sawed joints. Sawed joints not sealed before traffic is allowed on the pavement, shall be re-sawed if necessary, when sawing and sealing operations resume, at no additional cost to the City. Sawcutting, cleaning and sealing shall not be done within 48 hours of placement of the wear course.

D2 Sawcutting of Transverse Joints

The transverse sawcut joints shall normally extend the full width of the pavement.

D3 Cleaning Operation

Dry sawed joints shall be thoroughly cleaned with an air compressor meeting the requirements previously outlined. Cleaning shall continue until the joint is dry and all dirt, dust or deleterious matter is removed from the joint and adjacent pavement to

the satisfaction of the Engineer.

Wet sawed joints and adjacent pavement shall be thoroughly cleaned with a water blast (50 psi minimum) immediately after sawing to remove any sawing slurry, dirt, or deleterious matter adhering to the joint walls or remaining in the joint cavity. The joints shall then be dried with an air compressor. Cleaning shall continue until the joint is dry and all dirt, dust or deleterious matter is removed to the satisfaction of the Engineer. If the air compressor produces dirt or other residue from the joint cavity, the Contractor may be required to re-clean the joint with a water blast.

Following cleaning, the sawed joints shall be dried and warmed with a hot air lance. The Contractor shall be careful not to burn the pavement surface. After the hot air lance has been used to warm and dry the joint, the backer tape shall be placed into the bottom of the joint reservoir. Under no circumstances shall more than two (2) minutes elapse between the time the hot air lance is used and the sealant is placed.

Dry sawed joints shall be thoroughly vacuumed with a vactor sweeping system prior to being cleaned with an air compressor.

The Contractor shall be required to provide protective screening, subject to approval of the Engineer, if their cleaning operations could cause damage to our interference with traffic in adjacent lanes.

D4 Sealing Operation

The joints shall be sealed when the sealant material is at the pouring temperature recommended by the manufacturer. The Contractor shall fill the joint such that after cooling, the sealant is flush with the adjacent pavement along the edges and the center does not sag more than 1/8 inch below the pavement surface. Care shall be taken in the sealing of the joints so that the joints are not overfilled and the final appearance shall present a neat fine line. The applicator wand shall be returned to the machine and the joint sealant material re-circulated immediately upon completion of each joint sealing.

The Engineer may require the Contractor to use a squeegee to force the sealant material into narrow joint shapes if, in the opinion of the Engineer, the sealant material is not flowing into the joint properly. Sand shall not be spread on the sealed joints to allow for opening to traffic. The sealant shall be tack free before opening to traffic. A given quantity of sealant material shall never be heated at the pouring temperature for more than six (6) hours and shall never be reheated.

D5 Acceptance Sampling

The Contractor shall record the temperature of the kettle and the temperature of the sealant once every hour during the actual working operations. At the end of each day's production, the completed forms shall be presented to the Engineer, and they shall be placed in a permanent file by the Engineer. The Engineer shall continuously review the sealant temperatures. Temperatures measured more than 9 degrees F above the manufacturer's specified safe heating temperature, shall result in the rejection of the material in use and the Contractor shall dispose of the overheated material, at their expense, in an acceptable manner.

E. Workmanship:

Sealed joints shall be rejected if there is evidence of poor workmanship or obvious defects, such as, but not limited to the following:

(a) Sawed joint not filled completely.
(b) Lack of bond to the sides of the joint.
(c) Excessive debris or moisture in the joint.
(d) Contamination of the sealant.
(e) Sawed joint not filled flush.

Rejected sealed joints shall be repaired, the sealant removed and disposed of in an appropriate manner, and the joints resealed as necessary to the Engineer's satisfaction and at no further cost to the City.

F. Payment:

Payment shall be made under separate items for each joint type at the contract bid price per LINEAR FOOT, which shall include the cost of all labor, equipment, and materials necessary to complete the work as specified.

Item No.	Item	Unit
2360.603	Sawed/Sealed Joint	Lin. Ft.

2401 CONCRETE BRIDGE CONSTRUCTION

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

Bench mark 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 bench mark disks shall be classed as Incidental Work.

2451 STRUCTURE EXCAVATIONS AND BACKFILLS

The provisions of MnDOT Specification 2451 shall govern as amended below.

Granular foundation and/or bedding material shall meet the requirements of MnDOT Specification 3149 Granular Bedding.

Trench bedding shall be completed in accordance with the current version of City of Saint Paul Standard Plate 2317, "Types of Trench Bedding".

Granular foundation 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, and granular backfill material.

Granular foundation material may be used as directed by the Engineer in areas where the

existing foundation material exceeds the optimum moisture content or is in a relatively LOOSE or SOFT condition.

Granular bedding material may be used as directed by the Engineer in areas where suitable bedding material is not available from excavations.

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 the weighing.

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, or existing trench backfill is wet of optimum. Payment per unit shall be compensation in full for all costs involved in purchase, hauling, placing, and compacting of the granular backfill, plus disposal of unsuitable material off the project site.

Bid Item 2451.609, "Granular Bedding and/or Foundation", shall be construed to mean the removal and disposal of the unsuitable foundation or bedding material within the sewer trench, and replacement with the appropriate material. Payment per unit shall be compensation in full for all costs involved in purchase, hauling, placing, and compacting of the material, including disposal of unsuitable material off the project site.

Bid Items 2451.609, "Granular Backfill" and "Granular Bedding and/or Foundation", shall be measured and paid for by the TON, as per MnDOT Specification 1901.

2471 STRUCTURAL METALS

The provisions of MnDOT Specification 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; however, whenever plant inspection is conducted outside the State of Minnesota, the Contractor shall bear all costs of travel and subsistence of the Department's inspectors on an actual cost basis.

2503 PIPE SEWERS

MnDOT Specification 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 Specification 2506, as amended.

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

2503.2 Materials

Reinforced Concrete Pipe

Reinforced concrete pipe to be used shall conform to the latest requirements of ASTM Specification 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 pipe 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 pipe 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 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 four-inch (4") 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 Specification A21.51 for the appropriate class of pipe as noted in the plans. Ductile iron pipe joints shall meet the requirements of ANSI Specification 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 one mil thick. Spotty or 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, extra strength, conforming to the provisions of ASTM Specification Designation C-700.

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

2503.3 Construction Requirements

(A) General

The requirements of MnDOT Specification 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.

While 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 work shall be considered Incidental 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; and power, 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 and boulder stone, masonry or concrete fragments less than two (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 classed 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 two (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 workmen. 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. However, 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; however such equipment shall not be so operated or of a size or type as to itself 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, in their judgment, 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 to 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-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. However, 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 Standards 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 six 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 Specification 3149. Granular Bedding and Aggregate material shall meet the requirements of MnDOT Specification 3137, Class B and shall meet the gradation requirements of CA-35.

Placement of the foundation material shall be relatively uniform layers not exceeding eight (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 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 combine 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 2317.

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, but 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 Specification 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. 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.

(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 three (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 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 pipe line.

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 reports of tests 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 2306 and 2319.

On new or replacement PVC sanitary sewer mains of eight (8) inch or ten (10) inch diameter, a wye with attached 1/8 bend shall be provided for and directed to each service connection and buildable lot. On new or replacement PVC sanitary sewer mains of 12-inch through 24-inch diameter, a tee shall be provided for and directed to each service connection and buildable lot. On new or replacement sanitary sewer mains greater than 24", the sewer service connection shall be constructed in accordance with the current version of City Standard Plate 2319. The cost of furnishing and installing wyes and tees, where required, is Incidental to the bid cost for sewer mainline construction. All wyes, tees or other fittings used with PVC Pressure Pipe shall be Ductile Iron Class 50.

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 ten (10) feet in length of the existing "old" service between replacement segments of the "new" service.

2503.4 Method of Measurement

All sewer trench excavation and backfill shall be classed as Incidental Work.

Each sewer, as classified by bid item, will be measured separately by length along centerline of the sewer pipe to the nearest tenth of a foot. Terminal points of measurement will be the pipe end at free outlets, the point of junction with in place pipe, and/or the center of manholes, other junction structures, and catch basins.

When indicated in the Bid Schedule, newly constructed sewers shall be televised as defined in the Special Provisions, Division II Construction Details.

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.

2503.511	___ inch (1) Pipe Sewer (2)	Foot
2503.519	Flap Gate for (3) Pipe	Each
2503.521	___ inch Span (1) Pipe-Arch Sewer (2)	Foot
2503.521	___ inch (1) Elliptical Pipe Sewer (4)	Foot
2503.541	___ inch (1) Pipe Sewer, Design (5) (2)	Foot
2503.571	Install (6)	Foot
2503.573	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

2504 WATER SYSTEM

All work affecting water facilities shall comply with the latest edition of the Saint Paul Regional Water Services' (hereafter may be referred to as SPRWS) "Standards for the Installation of Water Mains".

All work related to SPRWS bid items must be approved in advance by a SPRWS representative.

General Excavation
The Contractor shall follow OSHA Standards for excavations, trenching, and shoring (Federal Register Part 1926, Subpart P).

Employees shall be protected against cave-ins of excavations by adequate protective systems using trench boxes and shoring. The use of sloping or benching to achieve a protective system is not intended under this contract. The Contractor shall be responsible for the excavation throughout the life of the trench. The Contractor shall have a duly authorized "Competent Person" on-site. The Competent Person shall be capable of identifying hazards and taking prompt corrective measures to eliminate them. Inspections shall be in accordance with OSHA Standard Section 1926.651(K)(1). All soils shall be classified as Type C. See **Trench Box/Excavation Safety** for specifics. All excavations must comply with the current version of the "SPRWS Excavation and Trenching Program". In accordance with the above standard, the Contractor is required to provide trench boxes, of an OSHA approved design, in good repair, and Incidental to the cost of the excavation.

Damage to any private irrigation system during excavation will be the responsibility of the excavator to repair. Repairs will need to be coordinated with the property owner.

Backfilling and Compaction
All excavations must meet MnDOT Standard Specification for Construction Section 2451 for acceptable bedding and compaction. The Contractor is responsible for backfilling, which shall include placement and compaction of suitable 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 three 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 SPRWS may require the Contractor to change methods 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.

Upon request of the SPRWS or City Engineer, the Contractor can be required to furnish evidence that density requirements have been met, at locations as directed by the SPRWS. Such evidence shall be in the form of reports made by an approved independent testing laboratory. The Contractor will be required to correct any deficiencies indicated by failing tests at their expense. Any excavation required to facilitate soil sampling or testing shall be done by and at the expense of the Contractor, as directed by SPRWS. The Contactor will be paid for actual invoiced costs, as received from the approved independent testing laboratory, for all density tests which pass the specified requirements. The Contactor will not be paid for costs of density tests which do not pass the specified requirements.

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 SPRWS, may damage the pipe installation, prevent thorough compaction, or increase the risks of future settlement unnecessarily.

Where suitable backfill material is not available from trench excavation, the Contractor shall furnish granular backfill as directed by the SPRWS at contract price for **Bid Item 2451.609, "Granular Backfill".** In addition, the Contractor shall dispose of all excess spoil to a location off the job site at no additional cost to SPRWS.

Hours of Work

Normal working hours for SPRWS crews are 8:00 a.m. to 3:00 p.m., Monday through Friday. The pipe work associated with the installation and tie-in of water services and mains shall be coordinated to minimize delays. The work by SPRWS crews shall be carried out during normal working hours, as listed above, unless otherwise approved by SPRWS. Occasional extensions past working hours may be requested by the Contractor with reasonable notice, or required by SPRWS because of water shut-off concerns. If the Contractor requires SPRWS crews beyond 3:00 pm, SPRWS is not liable for delays in operations caused by the time it takes to assemble and provide replacement crews. The Contractor also needs to perform its work during the hours authorized under the City's noise ordinance.

Valve Housing Inspection

Prior to construction, the SPRWS will locate the gate boxes in the existing street and the stop boxes in the boulevard or other areas. The Contractor will be furnished a list of these gate boxes and stop boxes at the Pre-Construction meeting.

The Contractor, with a minimum 48 hour notice will schedule with a representative of SPRWS and a Municipal Representative, an inspection all of the boxes on the site. Any that are found to be damaged, incomplete or buried shall be noted. The Contractor shall maintain all facilities in like repair and accessible throughout construction. If the Contractor fails to schedule and complete an inspection prior to construction, any facilities found to be damaged or broken within the construction area shall be assumed to have been damaged by the Contractor and the Contractor shall provide, at their expense, all labor and material needed for repair.

If broken top sections are noted on the valve housing in the roadway during the initial

inspection, the SPRWS representative will authorize the Contractor to obtain replacement parts at the Saint Paul Regional Water Services Store Yard. Labor to replace the top sections, time and transportation to obtain replacements, will be considered Incidental, for which no compensation will be made.

The SPRWS will provide the Contractor with measurements or drawings indicating the location of gate valves, air vents, and other water system items. It is the Contractor's responsibility to take ties or make markings so that these items can be located during all phases of construction, including grading and placement of non-wear and wear courses. The Contractor will make specified gate valves, air vents, and other water system items accessible to SPRWS personnel for operation or testing.

The Contractor shall notify SPRWS three (3) days prior to placing the wearing course. Failure to do so does not relieve the Contractor of their responsibilities to raise all gate valve housings to final grade.

When the project is completed, the Contractor will supply personnel to work with SPRWS personnel to re-inspect all of the water facilities within the project. A deficiency list will be generated from this inspection and supplied to the Contractor for repair. The Contractor shall schedule the walk-through and complete the deficiency list items in such timely manner as the construction season allows, which may necessitate completing some of the items during the following season.

Water Stop Box & Valve Housing - Adjustment /Repair

1. Service Curb Stop Box

(a) *Adjustment*

If the area surrounding an existing stop box is disturbed as part of this contract work, the Contractor shall adjust the stop boxes to the finished grade and expose the top after turf establishment. That adjustment shall be classed as Incidental Work.

Bid Item 2504.602, "Adjust Service Curb Stop Box", shall be paid for at the contract price as shown on the Bid Schedule and shall be compensation in full for all labor, equipment and materials necessary to adjust EXISTING Service Curb Stop Boxes to finished grade. This item shall ONLY be used when an existing service curb stop box is within a project area, yet it can be determined with certainty that the stop box itself has not been disturbed as part of the project. Generally this would be because the depth of the existing curb stop places it below the area disturbed by minor shaping and top soil placement, and would typically involve using an extension sleeve, coupler, adjustable repair top, or combination of these to correctly adjust to grade. If full depth excavation is needed instead, the appropriate pay item is **Bid Item 2504.602, "Service Stop Box".**

(i) Water Service work done under a separate contract

When water service work is performed prior to the other work in the right-of-way, all contractors coming onto the project must maintain the new standpipe at finished grade, including adjustment to proper ground elevation, proper alignment, and access to the Oriseal valve. This proper alignment and condition must be maintained until final inspection.

(ii) Water Service work done under Public Works contract
In those cases where the Contractor installs a new standpipe as part of the project, it is the Contractor's responsibility for the new standpipe. This includes adjustment to proper ground elevation, proper alignment, and access to the Oriseal valve. This must be maintained throughout operations. Adjusting to proper ground elevation may necessitate the Contractor returning to perform such work after final grade has been established and sod has been placed. This work shall be considered Incidental, and no compensation shall be made therein.

Proper depth installation will not require cutting of the standpipe. However, work in rock areas may require cutting the standpipe, at the direction of the SPRWS, before backfilling. This work of adjusting standpipes to proper finished grade shall be considered Incidental, and no compensation shall be made therein.

If the water stop box is in a new driveway or sidewalk, the Contractor is required to use an adjustable top for the standpipe to insure proper finishing of the concrete. The Contractor will provide the appropriate "inset lid covers for sloped pavement" for use in concrete or bituminous (See SPRWS Standard Plate D-14). **Bid Item 2506.521, "Furnish and Install Casting Assembly for Driveway",** shall be paid as EACH as shown on the Bid Schedule and shall be compensation in full for all labor and equipment required.

(b) *Repair*
Broken or damaged stop boxes requiring full depth excavation, as noted at the Pre-Construction Meeting, or during the initial inspection, will be repaired by the Contractor only as authorized by the SPRWS representative.

Bid Item 2504.602, "Service Stop Box", shall be paid at the contract price per EACH box as shown on the Bid Schedule and shall be compensation in full for all labor, materials, and equipment required to completely excavate, replace the service box and the boot (if necessary) backfill, and adequately compact the excavation.

(c) *Stop Box Removal/Abandonment in Project Area*
Stop boxes abandoned due to service cut-offs, main abandonment, and/or main replacement are to be removed or broken off below grade if unable to be removed. This work is considered Incidental to the project as per valve box adjustment due to grade.

2. Water Valve Housing in Full Depth Asphalt Roadway Areas

(a) *Adjustments*
All valve housings shall be adjusted to grade, regardless of the existing elevation of the housing in relation to the pavement. Adjust Valve Box will be paid only for valve boxes adjusted in the roadbed.

Bid Item 2504.602, "Adjust Valve Box", shall be paid at the contract price per EACH box as shown on the Bid Schedule and shall be compensation in full for all

equipment and materials necessary to adjust valve housing to finished street grade. Large (7" diameter) size top sections and/or inserts with adjustments from 3" to 12" may be purchased from SPRWS Warehouse; however, small (5 1/4" diameter) size materials must be purchased from an independent supplier.

(b) *Repair*

If an existing large (7" diameter) valve housing has a previously damaged middle or bottom section it will require full excavation, and the housing will be replaced with a small (5 1/4" diameter) valve housing by the Contractor, as authorized by the SPRWS representative. An existing small (5 1/4" diameter) valve housing may not need full excavation for repair, but will also need to be replaced by the Contractor, as authorized by the SPRWS representative. An adapter to reduce the large gate box at the mid section to a small gate box is also available for purchase from ESS Brothers & Sons, Inc., Loretto, MN (part name - Saint Paul Water Conversion Extension).

SPRWS does not require the removal of a top section of a valve box of any size. If they are removed as part of the construction process, it is the responsibility of the Contractor to replace the top section to initial condition. If negligence occurs, i.e. broken during removal, damaged during construction, stolen or misplaced, it is the responsibility of the Contractor to repair or replace the valve box and is considered to be Incidental. If it cannot be repaired, the Contractor, only as authorized by the Saint Paul Regional Water Services' representative, will be required to excavate full depth and replace with a full valve box assembly using a 5 1/4" diameter valve box assembly. This is the responsibility of the Contractor and is to be considered Incidental.

Bid Item 2504.602, "Replace Valve Box", shall be paid at the contract price per EACH box as shown on the Bid Schedule and shall be compensation in full for all labor, equipment and materials required to completely excavate, replace the valve housing and pot, if necessary, backfill and adequately compact the excavation. This will only be paid for valve boxes identified as needing repair during the pre-walk inspection.

3. Water Valve Housing Adjustment in Bituminous Overlay Areas

All valve housings in the roadbed shall be adjusted to grade, regardless of the existing elevation of the housing in relation to the pavement. Should the adjustment require, or if the Contractor chooses to remove the pavement around the valve, the pavement shall be replaced in kind. The cut around the valve shall be neat and the edges tacked prior to replacing the asphalt.

(a) *Adjustments*

Bid Item 2504.602, "Adjust Valve Box", shall be paid at the contract price per EACH box as shown on the Bid Schedule and shall be compensation in full for all labor, equipment, and materials necessary to adjust valve housing to finished street grade. The housing shall be adjusted to finished grade prior to placement of the wearing course. The Contractor may use adjustable inserts or rings and risers. Large (7" diameter) size inserts with adjustment from 3" to 12" can be purchased

from the SPRWS Store Yard; however small (5 1/4" diameter) materials must be purchased from an independent supplier. If proper adjustment cannot be obtained, partial or full depth excavation will be necessary.

(b) *Repair - partial depth excavation*
Bid Item 2504.602, "Repair Valve Box", shall be paid at the contract price per EACH box as shown on the Bid Schedule and shall be compensation in full for all labor, equipment and materials required to excavate, replace the valve box section(s), backfill, and adequately compact the excavation. An adapter to convert the large gate box at the mid section to a small is also available for purchase from ESS Brothers & Sons, Inc., Loretto, MN (part name - Saint Paul Water Conversion Extension) or approved equal, which shall be Incidental to **Bid Item 2504.602, "Repair Valve Box".**

(c) *Replace - full depth excavation*
Bid Item 2504.602, "Replace Valve Box", shall be paid at the contract price per EACH box as shown on the Bid Schedule and shall be compensation in full for all labor, equipment and materials required to excavate, replace the valve box section(s), backfill, and adequately compact the excavation. Valve Boxes to be replaced will be identified and paid only as authorized by the SPRWS representative, for a full valve box assembly.

4. Water Valve Housings in Grass Areas
If the boulevard grade is changed as part of this contract work, the Contractor shall adjust the valve boxes to finished boulevard grade and expose the top after turf establishment. That adjustment shall be classified as Incidental Work. Any materials needed to complete this work will be supplied by SPRWS. If the grade remains essentially unchanged, the Contractor will not be required to adjust water valve boxes to the final turf elevation.

Water Main Trench
Bid Item 2504.603, "Water Main Trench", shall be paid at the contract price as shown on the Bid Schedule by the LINEAR FOOT, measured as the length of pipe installed. It shall be construed to mean furnishing all labor and equipment (including trench box) necessary to excavate a trench of sufficient length, width, and depth to allow the SPRWS to safely install new main, hydrants, valves, and appurtenances, tap water services, replace wheel valves near main and tie into existing mains. It includes installation of offsets and bends when these are part of main installation. No allowance or adjustment in pay will be made as compensation for delays while the SPRWS performs their necessary work. Where wheel valves are outside the water main trench box, **Bid Item 2504.603, "Water Service Excavation",** will be paid to excavate for wheel valve replacement measured from the main to the wheel valve.

The materials and labor for the pipe work will be furnished by the SPRWS at no cost to the Contractor. The Contractor shall locate all underground utilities, shall direct their operator during excavation, and provide all traffic control required. The Contractor shall be responsible for any damage to utilities caused by or which arise from the excavation. The SPRWS will compact suitable material under and around the water main. The Contractor shall remove and discard existing water facilities (if applicable), lower the new water pipe,

fittings, and any equipment into the trench and shall also backfill and compact said trench after allowing SPRWS sufficient time to complete their work.

Refer to Section 2503.3 as to acceptable bedding and backfill materials.

Water Main Offset / Replacement

Water mains 12 inches and smaller, where there is eight (8) inches or less of clearance between the top of the water main and the bottom of the sewer, will be offset, unless alternative arrangements are approved by the SPRWS representative. Water mains 16 inches and larger, where there is four (4) inches or less of clearance, will be offset. Where there is four (4) inches to eight (8) inches of separation between the top of the water main and the bottom of the sewer, concrete piers (City Mix No. 3A46) may be used to support the sewer over the water main. Piers shall be viewed by, and are subject to approval by, the Engineer and the SPRWS representative prior to construction. Construction of support piers shall be paid for as Extra Work.

Any water main that has less than three (3) feet of clearance between a catch basin, manhole or other structure that is subject to cold, will be viewed in the field for appropriate action. Where new sewers pass under eight (8) inch or smaller cast iron water mains, the cast iron will be replaced with ductile iron pipe the width of the trench, plus two feet on either side of the trench.

Cast iron water mains 12 inches in diameter shall be replaced with ductile iron when the length of the pipe undermined exceeds five (5) feet. Cast iron water mains 16 inches and larger that are undermined will be reviewed on a case-by-case basis to determine if the water main will be replaced or supported.

The method of support for large water mains must be submitted to the SPRWS representative for approval ten (10) working days before the water main is exposed. At all locations where the new sewer will cross beneath existing water mains that are not replaced, the Contractor shall support the existing water main during construction. This work shall be considered Incidental Work.

Bid Item 2504.602, "Excavation for Water Main Offset or Replacement", shall be paid at the contract price per EACH excavation as shown on the Bid Schedule and cover both offsets and main replacements. It shall be compensation in full for all labor equipment and trench box, if required, necessary to excavate a trench of sufficient length, width, and depth to allow SPRWS to install the offset or replacement.

The Contractor shall locate all underground utilities, shall direct their operator during excavation, and provide all traffic control required. The Contractor shall be responsible for any damage to utilities caused by or which arise from the excavation. The SPRWS will compact suitable material around the offset. The Contractor shall remove and discard any abandoned pipe, lower new pipe, fittings, and any equipment into the trench; and shall also backfill and compact said trench after allowing SPRWS sufficient time to complete their work.

The Contractor should be aware that the elevations of the existing water mains shown on the plans are based on standard depths of water mains as provided by the SPRWS. The actual elevation of the water mains may be higher or lower than shown on the plans.

When there is an anticipated water main offset, it is the Contractor's responsibility to expose the top of the water main and to supply the SPRWS representative the following information:

Sewer invert elevation
Size and type of sewer
Elevation of top of the water main
Finished ground elevation

All work necessary to supply the above information will be considered Incidental.

Water Services

All existing lead pipe water service connections within the project area shall be replaced with excavation being done by either a contractor selected by SPRWS, or the Public Works Contractor. The determination of which excavator to use is solely at the discretion of SPRWS; due to such rationale as equipment, pneumogopher capability, timeliness, logistics or other suitability reasons. Because of this there may be deviations from quantities indicated and used as part of a bid process and no adjustments will be given for lost work, other than paying for actual work performed and materials supplied. Where a service connection is being replaced, the materials and labor for the pipe work will be furnished by the SPRWS at no expense to the Contractor.

Bid Item 2504.603, "Water Service Excavation", shall be construed to mean furnishing all labor and equipment necessary for the excavation; removal and disposal of any unsuitable material; and backfilling and compaction of water service excavations either by use of water service trench method or pneumogopher method in conjunction with holes. Payment shall be by the LINEAR FOOT at the contract price, REGARDLESS OF METHOD USED, measured as the distance from the water main to the property line or the water main to the stop box, depending on if the excavation is a full replacement or only a main-to-stop.

Payment shall be compensation in full for all labor and equipment (including trench box) necessary to excavate sufficient length, width and depth, including an area of approximately two (2) feet around the water main, to allow the SPRWS to complete their work. Also, to backfill and compact said excavation after allowing the SPRWS sufficient time to complete their work. The Contractor shall be responsible for any damage to utilities caused by or which arise from the excavation. No additional compensation will be paid for the second service where 2 (two) services are installed in the same trench or hole. No additional compensation will be paid when the excavation goes beyond the property line for a nominal distance, at the direction of SPRWS, to reach the property line wipe joint. Additional compensation may be paid in those instances when, at the direction of SPRWS, the Contractor, by pneumogopher or other means, excavates beyond what is necessary to replace the water service by the most direct route. These instances may occur when it is necessary to avoid damage to a tree or other obstruction. Payment in these instances will be the actual length of the Water Service Excavation.

Bid Item 2504.602, "Water Utility Hole", shall be paid at the contract price as shown on the Bid Schedule per EACH hole. It shall be compensation in full for all labor and equipment (including trench box) as required by the SPRWS necessary to excavate a hole of sufficient length, width, and depth to allow the SPRWS to safely:

1. Cut off a service connection at the main.
2. Install, repair, or replace a valve independent of water main installation.
3. Excavation to facilitate a main break repair by SPRWS crews.
4. Restraint of existing main joints for new construction.
5. Other excavation for which a hole is the appropriate pay item.

Excavation to cut in new valves for main replacement shall be paid as **Bid Item 2504.602, "Water Utility Hole",** when backfilling is necessary. Installation of new valves concurring with the installation of water main will be paid as **Bid Item 2504.603, "Water Main Trench"**.

Due to unexpected maintenance issues, the Contractor may be required to excavate various areas not identified on the plan sheets for repair work. This will be paid as **Bid Item 2504.602, "Water Utility Hole".**

The Contractor shall backfill and compact the excavation after allowing the SPRWS sufficient time to complete their work. All removals and restoration shall be paid under the appropriate bid item. The Contractor shall be responsible for any damage to utilities caused by or which arise from excavation, except for sewer service repairs that were unavoidable due to the excavation as defined by SPRWS. Compensation for sewer service repairs will be paid for at the contract price.

Trenchless Excavation
Trenchless excavation may be used where SPRWS feels it is advantageous in both water service and water main installation.

Bid Item 2504.603, "Pneumogopher", shall be paid at the contract price as shown on the Bid Schedule by the LINEAR FOOT, measured as the distance from the water main to the property line or the water main to the stop box. It shall be compensation in full for all labor and equipment necessary to install up to two (2) inch diameter copper service pipe using pneumogopher or other tunneling procedures.

The Saint Paul Regional Water Services will furnish the materials and make the connections to the water main and existing water service. Excavation for this item will be paid as outlined in **Bid Item 2504.602, "Water Utility Hole"**.

SPRWS reserves the right and option to furnish the labor and equipment when using the pneumogopher method to replace a lead service in streets that are (1) concrete base, (2) bituminous overlaid, (3) receiving minimal disturbance from sewer excavation, or (4) where trees or other obstacles prohibit trench excavation. All removals, restoration and traffic patterns shall be paid for under the appropriate bid items.

All existing copper services that have a clearance of at least four (4) inches and are located above the new storm sewer may be protected, insulated, and left in place; however if the Contractor chooses to have the service connections removed for their convenience, this work will be completed by the Saint Paul Regional Water Services and all materials and costs will be charged to the Contractor.

All water services that have four (4) inches or less of clearance, are considered in conflict with the new storm sewer and shall be offset to provide an 18-inch clearance under the sewer pipe. In certain cases, at the discretion of the SPRWS, service lines may be relocated over the sewer with the new portion being insulated. Service connections that are within six (6) feet of a catch basin, manhole or structure that is subject to cold air, will be insulated to prevent freezing. Any service connection with less than four (4) feet of clearance will be offset around the structure to a minimum of four (4) feet. Payment for offsetting water services shall be by the LINEAR FOOT of pipe installed and paid for under **Bid Item 2504.603, "Water Service Excavation".** The Contractor shall provide SPRWS notification 24 hours in advance of any water service interruption, relocation, or replacement.

Bid Item 2504.603, "Horizontal Directional Bore – Copper", shall be paid by the LINEAR FOOT at the contract price, and shall be compensation in full for all labor and equipment necessary to install up to a two (2) inch diameter copper service pipe or temporary water main. SPRWS shall provide the appropriate size copper pipe. Use of other excavation in conjunction, such as **Bid Item 2504.602, "Water Utility Hole"**, will not be compensated and will be considered Incidental to the cost of the Bore. Contractor's directional boring work shall include excavation and backfill of bore/locate pits and a crew to drill out and pull back product. Directional boring shall be completed with the use of a directional boring machine, as manufactured by "Ditch Witch", "Vermeer", or equal. The directional boring machine shall be supplied with an output signal inside the housing of the drill bit. The output signal shall have a constant output signal to allow a person to track the location of the beacon at all times. The Contractor shall be responsible for any damage to utilities caused by or which arise from the use of this machine. Particular care should be taken during the directional bore to avoid sanitary service laterals. At the discretion of the SPRWS, the Contractor may be required to televise the sanitary service, at their expense, if there is any doubt as to damage.

Bid Item 2504.603, "Horizontal Directional Drilling – High Density Polyethylene", (of specified diameter) shall be paid by the LINEAR FOOT at the contract price, and shall be compensation in full for all labor and equipment necessary to install a HDPE water main, of the diameter shown on the Bid Schedule, including tracer wires and connecting it to an existing water main. The project will be constructed using high-density polyethylene pipe suitable for installation by horizontal directional drilling.

The Contractor's directional boring work shall include excavation and backfill of bore/locate pits. The Contractor will be required to excavate pits where necessary to facilitate the directional drilling of the water main and will be Incidental to the cost of the Directional Drill. Use of any other excavation in conjunction, including the need to pothole to locate utilities, will not be compensated and will be considered Incidental to the cost of the Directional Drill.

This includes the cost of any excavation necessary to substantially change the direction of the bore.

It is expected that the Contractor will keep the size of the bore/locate holes to a minimum.

All elements of "Excavation Safety" mentioned below, shall apply.

The depth of the water main shall be 8 feet to the top of the pipe. In all cases, SPRWS personnel will make the taps into existing SPRWS facilities. The transition adapter of polyethylene to copper or polyethylene to ductile iron shall be provided by the Contractor. The Contractor will then be required to backfill and restore the pits.

Polyethylene piping may be joined by thermal butt fusion, socket fusion, or electrofusion. Polyethylene piping shall NOT be joined by solvent cements, adhesives, or threaded-type connections.

If the elevation of existing structures or sewers interferes in any way with achieving required water main depth, SPRWS will construct an offset of the main as appropriate considering field conditions. The Contractor will perform excavation, restoration, fusing adaptors to ductile iron pipe, etc. at the same unit price as **Bid Item 2504.602, "Water Utility Hole".**

The Contractor is responsible for correcting any damage done as a result of their work, and if there is any doubt as to damage to sanitary services, will be required to televise them. The TV and repairs are Incidental to the contract.

All polyethylene pipes will be furnished by the Contractor and installed in accordance with AWWA C906 – Polyethylene Pressure Pipe and Fittings.

When HDPE pipe is used, the Contractor will provide transition to the appropriate material at the ends of the project (generally to ductile iron or copper) and at locations where valves and fire hydrants are located. These transition sections will be Incidental to the bid price and must meet AWWA C906 standards. The Contractor will provide HDPE pipe which will be DR-9, pressure class 200 with ductile iron pipe sizing or approved equal. SPRWS may at their option, and upon request, consider use of an alternative such as DR-11.

The use of HDPE will also require tracer wires be installed with the main for use in locating the water main in the future. Two (2) – 6 gauge, plastic coated tracer wires shall be installed at the crown of the pipe. The Contractor must demonstrate proper conductivity to the satisfaction of SPRWS. SPRWS may at their option, and upon request, consider use of an alternative gauge of wire. All testing shall be done in accordance with Division 5000 of SPRWS Standards for the Installation of Water Mains. The Contractor shall conduct pressure, leakage, and conductivity tests. SPRWS will chlorinate the new main and appurtenances. SPRWS will conduct the bacteriological testing and place the new main in service. In the event of a problem with the newly installed facilities, the Contractor shall work with SPRWS to accomplish the repairs.

All valve box housings must be adjusted to grade prior to placement of the wearing course. Such adjustment will be considered Incidental to the contract work.

Trench Box/Excavation Safety

SPRWS employees shall be protected against cave-ins of excavations by adequate protective systems using trench boxes and shoring in accordance with OSHA standards and in compliance with the current revision of SPRWS Excavation and Trenching Program. Program documentation is obtainable from SPRWS upon request and will be provided at the Pre-Construction Conference.

The Contractor is solely responsible to provide for all trench boxes, shoring or other safety equipment as needed to provide a protective system and to adjust to changing and varied conditions encountered as the work progresses. SPRWS expects the Contractor to plan its approach to each excavation, recognize obstacles, and ensure the proper equipment is readily available for the work at hand. Accordingly, time needed to manage trench box inventory and ensure it is readily available on-site is Incidental to the project. Any down time related to trench box safety will be Incidental to the project.

As a general rule, a trench box shall be properly backfilled or set so as to ensure a sudden collapse of an excavations side wall will not result in trench box movement so as to jeopardize the safety of those it is protecting.

At the Pre-Construction Conference, the successful bidder shall provide a detailed listing of the size, length, and width of each type of trench box that they will have on the job site that will meet the minimum trench safety equipment as addressed below.

In accordance with the above standard, the Contractor is required to provide trench boxes that are OSHA compliant. Trench boxes must meet manufacturer's tabulated data requirements as referenced on the box and are to be in good repair. Trench boxes and shoring will be Incidental to the cost of excavation.

The minimum trench safety equipment is as follows:

- 1 - 24' trench box
  Minimum twenty-four (24) feet in length with two (2) shored sides with an option for three (3) shored sides when needed. It shall have a height of eight (8) feet. The I.D. width of the trench box shall not exceed six (6) feet for water mains twelve (12) inches and smaller, or eight (8) feet I.D. for water mains larger than twelve (12) inches unless prior approval is obtained from the SPRWS representative
- 2 - 5' trench boxes
  Five (5) feet length and should be adjustable to approximate width of six (6) feet and a height of eight (8) feet with four (4) shored sides
- 1 - 8' trench box
  Eight (8) feet length and should be adjustable to approximate width of six (6) feet and a height of eight (8) feet with four (4) shored sides
- 2 additional minimum thickness 1 ¼" plywood or steel road plating panels/sheeting with a minimum size of six (6) feet width and eight (8) feet height

- Ladders or box mounted egress system (i.e. trench box installed ladder rungs) for access and egress into trench box

The Contractor shall follow OSHA Standards for excavations, trenching, and shoring (Federal Register Part 1926, Subpart P). The Contractor shall be responsible for the excavation throughout the life of the trench. A "Competent Person" representing the Contractor doing the excavation work must present him/herself to the SPRWS on-site supervisor for each active excavation throughout the course of the contract work, and be on site during all excavation and backfill work. The Competent Person shall be capable of identifying hazards and taking prompt corrective measures to eliminate them. Evaluations shall be in accordance with OSHA Standard Section 1926.651 (K). All soils shall be classified as Type C.

In general, trench boxes sized to fit the work are required to minimize removals. The Contractor must provide for protected access and egress into the trench box by backfilling the side of the trench box to grade or bridging the gap between the excavation sidewall and the trench box via the use of access ramps fitted with handrails or other OSHA compliant access.

Two-Inch Insulation

Bid Item 2504.604, "2" Insulation", shall be paid at the contract price as shown on the Bid Schedule by the SQUARE YARD. It shall be compensation in full for all labor, materials, and equipment necessary to insulate water mains and water services in accordance with the procedures defined herein.

The following procedures shall be used for placement of insulation:

(1) Where a water service or main passes within 18 inches above or below the new storm sewer, insulation shall be placed between the water pipe and the storm pipe.
(2) Where a water service or main is offset over the new storm pipe, insulation shall be placed both over the top of the water pipe and between the water pipe and the storm pipe.
(3) Where a water main or service is within six (6) feet of a catch basin, manhole, or other outlet that is subject to cold, insulation shall be placed between the structure and the water pipe.

Insulation shall be placed parallel to the water pipe and extend one foot either side of the water pipe, and shall also extend one foot either side of the storm pipe for situation 1 and 2 above. For situation 3 above, the insulation shall extend two feet either side of the water pipe.

Insulation shall be Dow Styrofoam Brand HI-40 plastic foam insulation or equal, as approved by the SPRWS. Styrofoam insulation board shall be two inches in thickness. A uniform bedding material of sand shall be used around the insulation to provide a uniform loading on the insulation. Further information on the design or material for insulation can be obtained from SPRWS.

Payment for the SPRWS related Bid Items will be made from the following schedule.

Item No.	Description	Unit
2451.609	Granular Backfill	Ton
2504.602	Adjust Service Curb Stop Box	Each
2504.602	Service Stop Box	Each
2504.602	Adjust Valve Box	Each
2504.602	Replace Valve Box	Each
2504.602	Repair Valve Box	Each
2504.602	Water Utility Hole	Each
2504.602	Excavation for Water Main Offset or Replacement	Each
2504.603	Water Main Trench	Linear Foot
2504.603	Water Service Excavation	Linear Foot
2504.603	Pneumogopher	Linear Foot
2504.603	Horizontal Directional Bore – Copper	Linear Foot
2504.603	Horizontal Directional Drilling – High Density Polyethylene	Linear Foot
2504.604	2" Insulation	Square Yard
2506.521	Furnish and Install Casting Assembly for Driveway	Each

2506 MANHOLES AND CATCH BASINS

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

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

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.

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.

The Contractor shall furnish new castings under **Bid Item 2506.516, "Casting Assembly".** Payment for this item shall be by the EACH and shall be compensation in full for all labor, materials, and equipment necessary to provide the casting assemblies. Installation and adjustment shall be paid for separately under **Bid Item 2506.602, "Adjust Manhole Casting Assembly"** at the appropriate height.

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.

Segmental concrete masonry units (block, brick, adjusting rings) used in the construction of the catch basins, manholes, and other drainage structures 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 three units) shall be 5.5% by weight with the maximum of any one block being 6.0% by weight. Class C fly ash or other approved possolan 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.

Gray Iron castings shall be supplied by foundries that have been approved by the State Materials Engineer.

Bid Item 2506.503, "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 2322 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, and 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, materials and equipment necessary to reconstruct the manhole as detailed complete in place. Surface restoration items, the manhole casting assembly and adjustment shall be paid for separately under the appropriate bid items.

Bid Item 2506.602, "Adjust Manhole Casting Assembly, 0" to 6", shall be construed to mean adjusting a manhole frame to grade with manhole brick as detailed on the current version of City of Saint Paul Standard Plate 2321 for a maximum total adjustment of 6 inches. Payment shall be by EACH and shall be compensation in full for all labor, materials, and equipment necessary to adjust the manhole casting assembly complete in place. Surface restoration items and manhole casting assembly shall be paid for separately under the appropriate bid items.

Bid Item 2506.602, "Adjust Manhole Casting Assembly, 7" to 17", shall 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 2321 for an adjustment of between 7 inches and 17 inches. Payment shall be by EACH and shall be compensation in full for all labor, materials, and equipment necessary to adjust the

manhole casting assembly complete in place. Surface restoration items and manhole casting assembly shall be paid for separately under the appropriate bid items.

The maximum total height of casting adjustment using MS manhole brick on any newly constructed manhole shall be six (6") inches. Adjustments over six (6") inches shall be cast in place concrete and shall require the Engineer's approval.

All casting adjustments shall be made in accordance with the current version of City Standard Plate 2321.

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, 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.

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.

2506.3A3 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

Add the following:

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 clean up. Cost for new manhole casting assemblies shall be paid for under separate bid item.

Setting the casting to finished pavement grade as directed in 2506.3G, 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 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 EACH and payment shall be compensation in full for all labor, materials, and equipment necessary to construct the catch basin complete in place.

2521 WALKS

The provisions of MnDOT Specification 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" thick. Pedestrian ramps shall be 6" 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 eight inches (8"). 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 Gas and Saint Paul Regional Water Services will backfill cuts with 8" of Class 5 to match adjacent existing walk elevation. The Contractor shall remove the top 4" 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 in areas of Xcel Gas 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 approximately 200 square yards of 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.

In the vicinity of tree heaved sidewalk panels, removal of tree roots may be necessary. Removal of tree roots shall be under **Bid Item 2101.507, "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 three (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 outwalks is wider than three (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 City Standard Plates 3003, 3005, and 3006. 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. 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. 3Y36.

2521.3A Add the following:

A four (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 one-half (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 one-quarter (1/4) 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 1/4 inch radius.

All concrete sidewalks shall be constructed with a lightly brushed finish.

2521.3E 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 sidewalks after October 1st is blanket curing.

Payment for **Bid Item 2521.501, "4" Concrete Walk",** shall be at the contract price per SQUARE FOOT as shown on the Bid Schedule, and shall be compensation in full for all work and materials involved in constructing said walk, including but not limited to, excavation, foundation preparation, concrete, expansion joint fillers, concrete treating oil, root cutting, backfilling and disposing of surplus material.

Bid Item 2521.501, "6" Concrete Walk", shall be construed to mean construction of concrete walk six (6") inches thick in the quadrant areas of an intersection 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 six (6") inch walk complete in place.

2531 CONCRETE CURBING

The provisions of MnDOT Specification 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. 3Y36
Slip-Form Placement . . . . . Mix No. 3Y22

Performed expansion joint filler material shall meet the requirements of ASTM Designation D-1751.

2531.3A Add the following:

Six (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 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. Unless the Proposal includes Items Type 4 and Type 6, curb will be measured as curb and gutter.

2531.4B Add the following:

Measurement of concrete driveway areas will be from back of curb to inside edge of sidewalk. Concrete construction in the walk area fronting a drive will be paid as driveway of appropriate thickness.

2531.5 Add the following:

Payment for **Bid Item 2531.507, "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 work 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.

Bid Item 2531.603, "Hand Form Concrete Curb", shall be construed to mean hand forming concrete curb or curb and gutter in areas directed by the Engineer for the protection of trees or tree roots. Payment for this item will be on a per LINEAR FOOT basis 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.

Bid Item 2531.603, "Concrete Curb Design V", may be constructed independent of or integral to the adjacent sidewalk. The bottom elevation of the Concrete Curb Design V shall match the bottom elevation of the adjacent sidewalk slab. When the Concrete Curb Design V is constructed independent of the sidewalk, the portion of the Concrete Curb Design V that will have new concrete walk placed against it shall be clean so as to maximize bonding between the walk and Concrete Curb Design V. The joint locations in the curb shall align with the joint locations in the adjacent concrete walk.

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.

Payment for this item will be on a per LINEAR FOOT basis and shall be compensation in full for all labor, materials, equipment, concrete and finishing necessary to complete the work.

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 2531.501, "Concrete Curb & Gutter, Design B-624",** unless a specific bid item for the type of curb has been provided.

Bid Item 2531.618, "Truncated Domes", shall be construed to mean using cast iron truncated dome tile inserts to create the truncated dome pattern. This work no longer includes the 6" sidewalk under the dome panels; that walk will be paid as **Bid Item 2521.501, "6" Concrete Walk".**

The truncated dome tile inserts shall be set in a bed of concrete and the total thickness when completed shall be 6".

Payment for this item shall be by the SQUARE FOOT and shall be compensation in full for all labor, materials, and equipment necessary to construct the truncated domes complete in place. Truncated dome tile inserts must be cast iron and shall be from the following companies or approved equal.

Neenah Foundry Company
701 Industrial Circle S.
Shakopee, MN 55379
Phone: 952-445-5335 or 800-328-5850
Fax: 952-445-6417
Color: Gray
Cast Iron Detectable Warning Plate

East Jordan Iron Works
301 Spring Street
East Jordan, MI 49727
Phone 231-536-2261 or 800-874-4100
Fax 231-536-4458
Color: Gray
Cast Iron Detectable Warning Plate

2535 BITUMINOUS CURB

The provisions of MnDOT Specification 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.

2571 PLANT INSTALLATION AND ESTABLISHMENT

The provisions of MnDOT Specification 2571 shall govern as amended below.

2571.3K1 Delete and substitute the following:

The plant establishment period is one calendar year from the date all of the initial planting operations on the project are completed, unless specified otherwise.

During the one 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 15 to November 1).

2571.5D Delete in its entirety.

2571.5F Delete in its entirety.

All trees and shrubs shall be mulched with a minimum 4" 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.

2572 PROTECTION AND RESTORATION OF VEGETATION

The provisions of MnDOT Specification 2572 govern as amended below:

2572.5 Basis of Payment

Delete in its entirety and substitute the following:

The Department will pay for acceptable quantities at the appropriate contract unit bid price. If no unit price for work covered by Specification 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 Specification 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 2573.530, "Storm Drain Inlet Protection", shall be required for catch basins after curb and gutter construction. The Contractor shall inspect 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 "Wimco CG-23 High Flow Inlet Protection" or approved equal. Payment shall be by EACH, and shall be compensation in full for all labor, materials, and equipment necessary to complete the work as specified. Maintenance and/or replacement of the Inlet protection shall be Incidental to this bid item.

Bid Item 2573.602, "Interim Sediment Control for Catch Basins", shall be construed to mean providing sediment control in accordance with the details on the Erosion and Sediment Control Plan. Payment for this item shall be EACH and shall be compensation in full for all labor, materials, and equipment necessary to construct, maintain, and remove the sediment control as detailed.

Removal of sediment from the temporary erosion control devices shall be considered incidental to **Bid Item 2573.602, "Interim Sediment Control for Catch Basins".**

2574 SOIL PREPARATION

The maximum particle size for Topsoil Borrow shall be one inch (1").

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 one 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 2105.525, "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 Specification 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.

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 anesthetically 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 ft. 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 ft. 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 ten (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 five (5) days in advance of cutting. Inspection shall be made of sod at the source, but only to approve or reject the sod with respect to its condition prior to cutting.

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.

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 four (4) inches of topsoil. Seed shall be placed on a minimum of two (2) inches of topsoil.

Existing topsoil shall be salvaged and reused to the greatest extent possible, and this work shall be Incidental. If existing quantities of topsoil are insufficient, additional material shall be provided by placing **Bid Item 2105.525, "Topsoil Borrow (L.V.)".**

Watering of the sod will be paid for under **Bid Item 2130.501, "Water",** at the contract price per 1,000 gallons. Payment for the accepted quantities of water at the contract price per M GALLONS shall be compensation in full for all costs of furnishing, transporting, and applying the water. Water is available from Saint Paul Regional Water Services hydrants with a hydrant permit. Water will be paid from SPRWS invoices.

Hydrant Permit Requirements and Charges

Water obtained from a hydrant by permission of this Permit is expressly intended for <u>non-potable uses only</u> and is not to be used for drinking water.

Permit Required
Hydrants may be used only after obtaining a hydrant permit from SPRWS.

A hydrant meter issued by SPRWS must be used whenever taking water from a permitted hydrant.

A fine of $1,000 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 SPRWS 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 SPRWS permission to use a different hydrant.

Cash deposit of $500 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 per month shall be applied for each permit for each thirty-day period or fraction thereof to cover the cost of inspection and ordinary wear and tear on the hydrant.

2. A charge of $40 per month shall be applied for each permit for each thirty-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 thirty-day period or fraction thereof per permit. Rates for both fees are determined by meter size.
   b. Water Consumption Charges.
   c. 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.

4. An additional charge of $10 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.

5. During the period December 1 to April 1, an additional rental charge of $30 shall be applied for each thirty-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.

6. Applicant shall be responsible for any breakage or damage to SPRWS's hydrant, meter, or other works. Cost to be paid by applicant shall be based on SPRWS's actual repair or replacement costs. Repair or replacement shall be determined by SPRWS.

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 1 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 15 to June 10 and from August 10 to November 1, 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 per cent (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 fails to meet 30-growing days before November 1, and 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 2575.505, "Sodding, Type Lawn",** with no additional compensation.