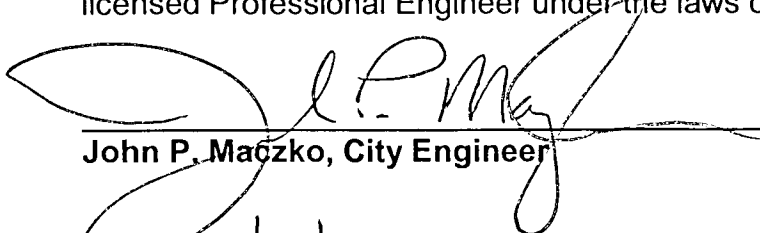


**SPECIFICATIONS
FOR THE
DEPARTMENT OF PUBLIC WORKS
CITY OF SAINT PAUL, MINNESOTA
GOVERNING SPECIFICATIONS**

The Governing Specifications shall be the Minnesota Department of Transportation "Standard Specifications for Construction, 2005 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 December 1, 2006, 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 December 1, 2006, 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: _____

11/14/06

Registration No. _____

20026

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

Index to Standard Supplemental Specifications for Construction

DIVISION I - GENERAL REQUIREMENTS	PAGE
1103 Definitions	1
1202 Contents of Proposal Form	1
1203 Issuance of Proposal Forms	2
1205 Examination of Plans, Specifications and Site of Work	2
1206 Preparation of Proposal	3
1210 Withdrawal or Revisions of Proposal	3
1212 Public Opening of Proposal	3
1302 Award of Contract	4
1305 Requirement of Contract Bond and Insurance	5
1306 Execution and Approval of Contract	9
1402 Alteration of the Work and Changed Condition	9
1403 Extra Work	10
1404 Maintenance of Traffic	10
1405 Use of Materials Found on the Project	13
1502 Plans and Working Drawings	13
1507 Utility Property and Service	13
1508 Construction Stakes, Lines and Grades	15
1510 Authority and Duties of the Inspector	15
1516 Acceptance of Work	15
1517 Claims for Compensation Adjustment	16
1701 Laws to be Observed	17
1707 Public Convenience and Safety	17
1710 Traffic Control Devices	18
1711 Use of Explosives	21
1712 Protection and Restoration of Property and Landscape	21
1721 Audits	22
1801 Subletting of Contract	22
1803 Prosecution of Work	24
1806 Determination and Extension of Contract Time	25
1902 Scope of Work	26
1903 Compensation for Increased or Decreased Quantities	26
1904 Extra and Force Account Work	26
1906 Partial Payment	27
1908 Final Payment	27
1910 Fuel Cost Escalation Clause	28

DIVISION II - CONSTRUCTION DETAILS	PAGE
2013 Survey Monument Resetting	29
2031 Field Office and Laboratory	29
2101 Clearing and Grubbing	29
2104 Removing Pavement and Miscellaneous Structures	30
2105 Excavation and Embankment	33
2112 Subgrade Preparation	34
2118 Aggregate Surfacing	34
2123 Equipment Rental	35
2201 Concrete Base	35
2211 Aggregate Base	35
2301 Concrete Pavement	36
2357 Bituminous Tack Coat	36
2360 Plant Mixed Asphalt Pavement	37
2401 Concrete Bridge Construction	42
2471 Structural Metals	42
2503 Pipe Sewers	43
2504 Water System	54
2506 Manholes and Catch Basins	64
2521 Walks	67
2531 Concrete Curbing	69
2535 Bituminous Curb	71
2571 Plant Installation	71
2572 Protection and Restoration of Vegetation	72
2573 Storm Water Management	73
2575 Controlling Erosion and Establishing Vegetation	73

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

**STANDARD SUPPLEMENTAL
SPECIFICATION FOR CONSTRUCTION
December 1, 2006**

**DIVISION I
GENERAL REQUIREMENTS**

1103 DEFINITIONS

The provisions of Mn/Dot Specification 1103 shall govern as amended below:

The terms "Commissioner", "State", and "Department" shall be deemed to mean the "City of St. 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 FORM

The provisions of Mn/Dot 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.

1203 ISSUANCE OF PROPOSAL FORMS

Mn/Dot Specification 1203 shall be deleted in its entirety and the following provisions substituted in lieu thereof:

The proposal form is entitled "Request for Bid" and is provided by and available without charge from the City Purchasing Agent, 280 City Hall and Court House, Saint Paul, Minnesota, 55102.

1205 EXAMINATION OF PLANS, SPECIFICATIONS AND SITE OF WORK

The provisions of Mn/Dot Specifications 1205 shall govern as amended below:

Prints of the Plans and Special Provisions may be viewed or purchased by prospective bidders and other interested parties at the Contract and Analysis Services Office, 280 City Hall, 15 West Kellogg Boulevard. The contract documents may be purchased for a non-refundable fee in accordance with the provisions of City Ordinance No. 13211, dated April 12, 1966. Make checks payable to the City of Saint Paul, Department of Public Works. For further information regarding the purchase of contract documents, call the Contract and Analysis Services Office, at 651-266-8900.

Additionally, Plans and Special Provisions may be viewed, though not purchased at the St. Paul Builders Exchange and the Minneapolis Builders Exchange.

Work areas shall be located within the dedicated right-of-way. This may include use of all or part of the City Street and adjoining locations where new installations are shown on the plans, if approved by the Engineer and the Traffic Division of Public Works.

If the Contractor requires additional real property for construction operations, they shall acquire it at no cost to the City and shall show proof to the satisfaction of the Engineer that permission has been granted by the fee title owner or their authorized representative for such real property use.

The Contractor may not use any Park Land which includes the right-of-way or median on parkways without written permission from the Parks Department.

1206 PREPARATION OF PROPOSAL

The provisions of Mn/Dot Specification 1206 shall govern as amended below:

The proposal must be prepared and submitted in duplicate on the proposal form. Bid Schedules, completely filled out, totaled, and signed must be submitted in duplicate with, and as part of the proposal.

1206.3 "Allowable Substitutions" shall be deleted in its entirety and the following substituted in lieu thereof: "Electronic Bidding" may be utilized per the requirements of the Purchasing Division, Ramsey County/City of Saint Paul Joint Purchasing Office, 280 City Hall, 15 West Kellogg Boulevard, Saint Paul, Minnesota 55102.

For more information regarding "Electronic Bidding", call the Ramsey County/City of Saint Paul Joint Purchasing Office at 651-266-8900.

1210 WITHDRAWAL OR REVISIONS OF PROPOSAL

The provision of Mn/Dot Specification 1210 shall govern as amended below:

Paragraph #1 shall be deleted in its entirety with no substitution therefore.

Item #1 of paragraph #2 shall be deleted in its entirety and the following substituted in lieu thereof:

- (1) Each Addendum shall be furnished to each prospective bidder who has received a Proposal Form prior to the date of the Addendum. Each Proposal Form issued after the date of the Addendum will have such addendum attached thereto.

Item #4 shall be added to paragraph #2 as follows:

- (4) No oral interpretation will be made to any bidder as to the meaning of the contract documents or any part thereof. Every request for such an interpretation shall be made to the Registered Professional Engineer who certified preparation of the plans and Special Provisions.

1212 PUBLIC OPENING OF PROPOSAL

The Provisions of MnDOT Specification 1212 shall be deleted in its entirety and the following provisions substituted in lieu thereof:

This bid will be opened at the time and place indicated on the bid form. Data submitted by a bidder are private or nonpublic until the bids are opened. Once the bids are opened, the name of the bidder and the dollar amount, including any discounts for early pay, specified in the response, are read and become public. A tabulation of the public information will be available within 48 hours, or longer if the bid is part of a complex project.

It is the policy of the Contract and Analysis Services office (CAS) not to provide solicitation results over the phone. Please call 651-266-8900 to request tabulation.

All other data in a bidder's response to a bid is private or nonpublic data until completion of the selection process. "Completion of the selection process" means that the City has completed its evaluation and has ranked the responses. After the City has completed the selection process, all remaining data submitted by all bidders is public, with the exception of trade secret data as defined and classified in Minn. Stat. 13.37. A statement by a bidder that submitted data is copyrighted or otherwise protected does not prevent public access to the data contained in the bid.

If all responses to a request for bids are rejected prior to completion of the selection process, all data, other than that made public at the bid opening, remains private or nonpublic until a resolicitation of bids results in completion of the selection process or a determination is made to abandon the purchase. If the rejection occurs after the completion of the selection process, the data remain public. If a resolicitation of bids does not occur within one year of the bid opening date, the remaining data become public.

Bidders, their authorized agents, and other interested parties are invited to attend the bid opening.

1302 AWARD OF CONTRACT

Mn/Dot Specification 1302 shall be deleted in its entirety and the following provisions submitted in lieu thereof:

The lowest responsible bidder will be notified by letter from the City Purchasing Agent, of the City's intent to award the Contract.

Upon receipt and approval of all documents submitted in accordance with provisions of the proposed form (bond, insurance, Human Right Compliance Review Report, and documents sent to the bidder with the proposal form (Vendor Outreach forms), the City will issue the Contractor a Purchase Order finalizing the award.

Prior to Award of Contract, the lowest responsible bidder must provide the City appropriate documentation demonstrating the status of proposed subcontractors. Appropriate documentation is listed in 1801 of these Special Provisions.

1305 REQUIREMENT OF CONTRACT BOND AND INSURANCE

Mn/Dot Specification 1305 shall be deleted in its entirety and the following provisions substituted in lieu thereof:

1305.1 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.

1305.2 Insurance and Indemnification

(a) General

Unless otherwise provided by the Mayor of the City of St. Paul, and in the amount hereinafter specified. The Contractor shall not commence work under the contract until he has obtained all the insurance required by these specifications and until such insurance has been approved by the City Attorney of the City of St. Paul; nor shall the Contractor allow any subcontractor to commence work on their sub-contract until all similar insurance

required of their sub-contractor shall have been obtained and approved. The Contractor's attention is specifically directed to any Special Provision in their individual contract demanding additional insurance.

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. All Certificates of Insurance shall provide that the City's Division of Contract and Analysis Services be given not less than thirty (30) days prior to written notice of cancellation, non renewal or any material changes in the policy including, but not limited to, coverage amounts. Agent must state on the certificate if policy includes errors and omissions coverage.

Satisfaction of policy and endorsement requirements for General Liability and Auto Insurance, of "each occurrence" and "aggregate" limits, can be met with an umbrella or excess policy, with the same minimum monetary limits and written on an occurrence basis, providing it is written by the same insurance carrier.

(b) Worker's Compensation and Employer's Liability Insurance

1. Worker's Compensation per Minnesota Statute
2. Employer's Liability shall have minimum limits of \$500,000 per accident; \$500,000 per employee; \$500,000 per disease policy limit.
3. Contractors (Providers) with 10 or fewer employees who do not have Worker's Compensation coverage are required to provide the City with a letter verifying their number of employees.

(c) Public Liability Insurance

1. Bodily Injury \$1,000,000 each occurrence; \$2,000,000 aggregate.
2. Property Damage \$1,000,000 each occurrence; \$2,000,000 aggregate.
3. Policy must include an "all services, products, and completed operations" endorsement.
4. Policy shall include coverage for improper discharge of waste or waste products, including improper disposal of materials used.

(d) Comprehensive Owners Protection Insurance

In lieu of being named as joint-insured with the Contractor on such policy, and in lieu of the cross-liability endorsement, the City will accept Comprehensive Owners Protection Insurance issued in the name of the City and paid for on behalf of the City by the Contractor, which insurance shall be subject to the same limits and insure the same risks as the Public Liability Insurance herein above set forth.

(e) Automobile Insurance

1. Bodily Injury \$750,000 per person; \$1,000,000 per accident.

2. Property Damage not less than \$100,000 per accident.

(f) Professional Liability Insurance

When appropriate or when required in the Special Provisions.

1. \$1,000,000 per occurrence.
2. \$2,000,000 aggregate.

(g) Sub-Contractors Insurance

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

(h) Contractual Liability Insurance

The Contractor shall provide, either by a separate policy of insurance or by an endorsement to the insurance herein required, Contractual Liability Insurance in such amounts and of such kinds as required for Comprehensive Protective Public Liability Insurance.

Any additional amounts of Public Liability Insurance which may be demanded by the City, in specified cases, shall be accompanied by a parallel and corresponding increase, in an equal amount, in the coverage afforded by the Contractual Liability Insurance. Such Contractual Liability Insurance shall be in such a form as to expressly include all sub-contractors who may be employed to perform part or parts of the contract.

(i) Proof of Insurance

The Contractor shall not proceed with the work contemplated in their contract until they have furnished the Purchasing Agent of the City of Saint Paul with satisfactory proof of the existence and carriage of insurance of the kinds and in the amount above specified.

The proof of insurance shall be in such form as the City Attorney may require, and unless otherwise provided by the City in writing, the proof of insurance shall consist of certified specimen copies of the insurance policy or policies, which specimen copies have been approved by the City Attorney and filed with the City.

All such proof of insurance required herein shall state that thirty days written notice shall be given to the City, by service of such notice upon the City Attorney, before any insurance is changed or canceled. In the absence of written consent by the City, the Contractor shall not proceed with the work contemplated by the contract beyond the period of coverage afforded by a

cancelled insurance policy until the required insurance coverage has been procured, approved, and filed with the City as a replacement for such cancelled insurance coverage.

(j) Indemnification

The Contractor shall indemnify and save harmless the City and all of its officers, agents and employees from all suits, or claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person, persons or property, by or from the act or acts of said Contractor, or by or in consequences 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 omission, neglect or misconduct of said Contractor, or from any claims or amounts arising or recovered under the Workmen's Compensation Law or any other law, by-law, ordinance, order or decree, and so much of the money due the Contractor under and by virtue of this contract, as shall be considered necessary by the City, may be retained for the use of the City or, in case no money is due, their surety shall be held until such suit or suits, action or actions, claim or claims, for injuries or damages, as aforesaid, shall have been settled and suitable evidence to that effect furnished to the City.

The Contractor shall indemnify and save harmless the City from any and all losses caused by or on account of any claim or amounts recovered for any infringement of patent, trade-mark 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.

(k) 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 therefrom or connected with the work, the Contractor shall be obligated to fully indemnify and hold harmless the City from all liability therein and further, to accept the tender of the defense or any such suit or suits, action or actions, at the Contractor's own separate cost and expense. If the Contractor, in any such instance or instances, shall unduly fail or refuse, upon due notice and demand as the same may be given by the City, to assume the defense of the City therein, and the City itself shall supply such defense, then and thereupon the Contractor shall, on such account, and in addition to all other liability of the Contractor to the City in the premises, pay to the City the following sum on account and as 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.
- (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 arising out of or caused as a result of the operations of the Contractor done in the performance of the contract.

(l) Duty to Notify City

The Contractor shall 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 Workmen's Compensation Act, or possible claims either because of personal injury or property damage, which claims arise as a result of his (the Contractor's or sub-contractor's) operations in the performance of the contract.

1306 EXECUTION AND APPROVAL OF CONTRACT

Mn/Dot Specification 1306 shall be deleted in its entirety with no substitutions therefore.

1402 ALTERATION OF THE WORK AND CHANGED CONDITION

The provision of Mn/Dot Specification 1402 shall govern as amended below:

Delete the first paragraph of 1402.1B in its entirety with no substitution therefore.

In the last paragraph of 1402.2C(2), delete any reference made to contract quantity increases in excess of 125% or decreases below 75% of the original quantity.

1403 EXTRA WORK

The provision of Mn/Dot Specification 1403 shall govern as amended below:

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

1404 MAINTENANCE OF TRAFFIC

The provision of Mn/Dot Specification 1404 shall govern as amended below:

The Contractor shall inform the Engineer 48 hours in advance as to what their daily operations will be in respect to operations that will have a significant impact on traffic flow.

The Public Works Right-of-Way Traffic Control Representative (651-487-7226) must approve necessary lane closures and traffic control layouts prior to implementation. The Contractor and/or Public Works shall inform the proper authorities, including the Fire and Police Departments, of impending lane closures or street closures.

The provisions of Section 1404.3 "Contractor's Request for Detour" shall be deleted in its entirety and the following provisions substituted in lieu thereof:

The Contractor may request that through traffic be detoured. The request shall contain all information needed to justify the request and select the routes to be established. If arrangements can be made that are satisfactory to the agencies having jurisdiction over the roads to be used, the contracting authority may then, at its sole discretion, establish an approved detour subject to the following conditions:

- (a) The Contractor, at the Contractor's expense, shall design, provide, install, maintain, and remove all the necessary traffic control devices on the detour roads with the exception of "Stop", "Yield", "Do not Enter", "No Parking" on detour routes and turn restriction signs which will be provided by the City.
- (b) The Contractor shall reimburse the City for all expenses incurred in maintaining and restoring the detour roads, except for snow removal.
- (c) The Contractor shall fulfill his obligations for maintenance of local traffic by furnishing, placing, and maintaining all traffic control devices and other traffic protection measures required of them on the roads undergoing improvements.

The provisions of Section 1404.5, "Special Maintenance Directed by the Engineer", shall be deleted in its entirety and the following provisions substituted in lieu thereof:

The Contractor shall be held fully responsible to prevent and eliminate any dust nuisance occasioned 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 conditions on the project.

All such dust control work shall be classed as Incidental Work unless payment provisions are provided in the Bid Schedule.

The provisions of Section 1404.7 "winter suspension" shall be deleted in its entirety and the following provisions substituted in lieu thereof:

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 authorized winter suspension, as may be ordered by the Engineer to eliminate the necessity of maintaining the detour roads during the suspension period.

The Contractor shall not suspend operations for the winter until they have fulfilled the requirements of 1710 and 1803.4.

When work is resumed after winter suspension, the Contractor shall replace or renew any work lost or damaged during the suspension; 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.

It shall be the Contractor's responsibility to notify residents and/or 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 exercise reasonable care against damage to or the loss of City owned signs. Any damage caused by the Contractor will be billed directly to the Contractor. The Contractor shall call Traffic Operations Traffic Maintenance Supervisor at 651-487-7210 for signs and 651-266-6151 for meters a minimum of 48 hours in advance to arrange for removal of existing signs or parking meters. 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.

A minimum of 48 hours notice shall be given to Traffic Operations, Traffic Maintenance Supervisor at 651-487-7210 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 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, flush and bolt access holes shall be free of excess concrete. Improperly installed bases must be removed and reinstalled with no additional compensation.

The Contractor shall inform the Engineer and Traffic Operations 48 hours in advance as to what their daily operations will be in respect to operations that will have a significant impact on traffic flow. The Contractor and Traffic Operations shall inform the proper authorities including the Fire and Police Departments on the location and time periods the necessary lane closures or street closures will be in effect. Saint Paul Traffic Operations (651-487-7200) must approve such closures and traffic control layouts before they are implemented.

Lane closures will 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, the lane closure would be a hazard to traffic.

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 of 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 alley's to facilitate traffic movement.

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

1405 USE OF MATERIALS FOUND ON THE PROJECT

The provisions of Mn/Dot Specification 1405 shall govern as amended below:

Refer to the Special Provisions for the disposition of salvageable materials.

1502 PLANS AND WORKING DRAWINGS

The provisions of Mn/Dot 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 of 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 Detail Plates for Street and Sewer Construction" dated May, 2004, as revised and in the Mn/Dot "Standard Plates Manual" which is dated January 1, 2004, 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 Manual "Standard Detail Plates" may be obtained from the Department of Public Works, Room 900 City Hall Annex, at a cost of \$30.00 each, including sales tax and a \$5.00 postage and handling fee.

The Mn/Dot "Standard Plates Manual" can be obtained from the Minnesota Department of Transportation, Transportation Building.

1507 UTILITY PROPERTY AND SERVICE

The provisions of Mn/Dot 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-.2, entitled "Standard Guidelines 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 at 651-454-0002, before starting construction in a given area, requesting utility locations in the field, which may be affected by construction. 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 at 651-266-6234 to acquire the permit drawings. Drawings will be made available for pick up by the Contractor within 48 hours.

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, allow the utility companies to complete their work, and proceed with their construction activities. The Contractor will be responsible for maintaining traffic control devices during this time.

The following sentence shall be added to the end of the second paragraph of Mn/Dot Specification 1507.3B "Payment".

However, 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 grade or alignment to avoid conflicts, or in the alternative, the conflicting utility may be offset to help avoid delays in the sewer construction operation. Such exploratory excavation done by the Contractor shall be classed as Incidental Work.

1508 CONSTRUCTION STAKES, LINES, AND GRADES

The provisions of Mn/Dot Specification 1508 shall govern as amended below:

The Contractor shall notify the Engineer a minimum of 72 hours in advance of his need for construction stakes or other survey work. The telephone number is 651-266-6076.

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 Mn/Dot 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 OF WORK

The provisions of Mn/Dot Specification 1516 shall govern as amended below:

The second paragraph and last sentence of the third paragraph of 1516.2, Final Acceptance, shall be deleted in their entirety and the following provisions substituted in lieu thereof:

1516.3 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.

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 Mn/Dot 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 judgement 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.

1701 LAWS TO BE OBSERVED

The provisions of Mn/Dot 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 bound in the specifications.

The Contractor shall comply with contract compliance specifications bound elsewhere in the specifications.

1707 PUBLIC CONVENIENCE AND SAFETY

The provision of Mn/Dot 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 Mn/Dot Specification 1710 shall govern as amended below:

Sections 1710.1, 1710.3, 1710.4, 1710.5, and 1710.6 shall be deleted and the following substituted thereof.

All traffic control devices and methods shall conform to the requirements of the latest edition of the Minnesota Manual on Uniform Traffic Control Devices (MMUTCD), specifically the latest edition of Temporary Traffic Control Field Manual; Minnesota Standard Signs Manuals Parts I, II, and III; and the following:

1. The Contractor shall conform to all NCHRP Report 350 requirements for temporary traffic control devices used on projects, including Category II devices which went into effect on October 1, 2000. Crash testing requirements will only apply to those devices purchased after October 1, 2000. Devices purchased prior to October 1, 2000 may NOT be used.
2. All Category I and Category II temporary traffic control devices used after January 1, 2006 shall meet NCHRP 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.
3. Construction and Maintenance Signs and Channelizing Devices

The following devices shall use Encapsulated Lens (High Intensity) Reflective Sheeting, Mn/Dot Specification 3352.2A2c "Standard No. 3" or Flexible Encapsulated Lens (High Intensity) Reflective Sheeting or Tape, Mn/Dot Specification 3352.2A2d "Standard No. 4."

- a. All black on orange warning guide signs.
- b. All barricades (Type I, II, and III).
- c. All other traffic channelizers such as drums, vertical panels, etc.
- d. Cones and tubes, if used at night.
- e. All other reflectorized orange and orange/white traffic control devices in the work area.
- f. Other traffic control devices that are specified herein for encapsulated lens sheeting.

4. Regulatory Signs

The following signs shall use Encapsulated Lens (High Intensity) Reflective Sheeting, Mn/Dot Specification 3352.2A2b "Standard No. 2."

- a. "STOP" (R1-1)
- b. "YIELD" (R1-2)
- c. "4-WAY" (R1-3)
- d. "ALL-WAY" (R1-4)
- e. "DO NOT ENTER" (R-5-1)
- f. "WRONG WAY" (R5-1a)
- g. Overhead, non-illuminated.

5. Warning Signs and Object Markers

The following signs shall use Encapsulated Lens (High Intensity) Reflective Sheeting, Mn/Dot Specification 3352.2A2b "Standard No. 2."

- a. Chevron" (W 1-8)
- b. "NO PASSING ZONE" (W14-3)
- c. "ONE LANE BRIDGE" (W5-3)
- d. Overhead non-illuminated warning signs including overlays, such as "EXIT ONLY", "LEFT EXIT", etc.
- e. All object markers with reflectorized sheeting:
 - . "BRIDGE END CLEARANCE" (X4-4)
 - . "CYLINDER STYLE DELINEATOR (Tech. Memo 97-05-T-03)
 - . "SNOW PLOW MARKER" (X4-5)
 - . "NINE BUTTON MARKER" (X4-2)
 - . "150mm X 300mm CULVERT MARKER" (Tech. Memo 84-11-T-2)
- f. All post mounted delineators with reflectorized sheeting.

6. Guide Signs

The following signs shall use Encapsulated Lens (High Intensity) Reflective Sheeting, Mn/Dot Specification 3352.2A2b "Standard No. 2."

- a. All reflectorized legends and borders
- b. All overhead, non-illuminated green guide signs
- c. All ground mounted green guide signs
- d. All legend symbols and route markers used on guide signs

All signs not listed above for encapsulated lens sheeting may be made of Enclosed Lens (Engineer Grade) Retro-reflective Sheeting, Mn/Dot Specification 3352.2A2a. "Standard No. 1" (herein referred to as enclosed lens reflective sheeting).

The standard "STOP"/SLOW" flaggers paddle shall be made of enclosed lens reflective sheeting. All backgrounds on brown or blue guide signs may be made of enclosed lens reflective sheeting.

The Contractor shall submit a sketch identifying the traffic control devices to be used at a particular location or along a particular detour to the Traffic Operations Engineer for approval a minimum of five (5) working days prior to beginning construction. The sketch shall include identification of traffic signals which will be interrupted by construction.

With the exception of "Stop", "Yield", "Do Not Enter", "No Parking" on detour routes and turn restrictions signs, the Contractor shall furnish, install and maintain all traffic control devices, barricades, barricade weights, attenuators, plastic drums, channeling devices and cardboard NO PARKING signs which are needed for the guidance, warning and control of vehicular traffic and pedestrians through this project and on all detours necessitated by this project.

The "No Parking" signs must be purchased at Traffic Operations and the location of the signs recorded with them.

"No Parking" signs must be displayed for 24 hours prior to enforcement.

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

The maintenance of the traffic devices shall be the responsibility of the Contractor and shall be checked at least twice daily, including once at the end of the work day for proper alignment, proper visibility and reflectivity.

The check 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 least one night time inspection shall be made each week. At the Preconstruction Conference, the Contractor shall furnish names, addresses and phone numbers of the primary and secondary individuals responsible for traffic control devices.

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. Any additional minor items or slight changes as may be required shall be

furnished by the Contractor with no additional compensation being made thereof.

Approval of the traffic control devices and approval of the Contractor's method of application of those traffic control measures as provided for in this contract shall not relieve the Contractor of their responsibility for protecting the work, the workers and the traveling public.

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.

1711 USE OF EXPLOSIVES

The provisions of Mn/Dot 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, 800 City Hall Annex, and shall comply with all provisions of the applicable City Ordinance.

1712 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE

The provisions of Mn/Dot 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, 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.

1721 AUDITS

The provisions of Mn/Dot 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 Mn/Dot Specification 1801 shall govern as amended below:

Paragraph 1 shall have this sentence added: "Subcontracts totaling in excess of 50% 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 entities prior to the final award of any contract that falls within the definition of this section. If there is a substitution of a self-employed independent contractor or subcontractor during the execution of the contract, the proof of status must be submitted to the Labor Standards Compliance Office of the City.

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

The City will accept any 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.

Subcontractor Payment - 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 PROSECUTION OF WORK

The provisions of Mn/Dot Specification 1803 shall govern as amended below:

The first sentence of 1803.1, Progress Schedule, shall be deleted in its entirety and the following provisions substituted in lieu thereof:

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 Mn/Dot Specification 1806 shall govern as amended below:

1806.1 Determination of Contract Time

Delete paragraph one and substitute the following:

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 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.

Delete the third paragraph of 1806.1 and substitute the following:

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.

1806.2 Extension of Contract Time

Delete the first sentence and substitute the following:

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.

Add the following paragraph:

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.

1902 SCOPE OF PAYMENT

The provision of Mn/Dot 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.

1903 COMPENSATION FOR INCREASED OR DECREASED QUANTITIES

Mn/Dot Specification 1903 shall be deleted in its entirety and the following substituted therefore:

The Contractor's unit prices, as shown on the Bid Schedule, shall apply to all items independent of any quantity change.

1904 EXTRA AND FORCE ACCOUNT WORK

The provisions of Mn/Dot Specification 1904 shall govern as amended below:

Delete the first two paragraphs of Mn/Dot Specification 1904 and substitute the following provisions in lieu thereof:

Extra Work performed in accordance with the provisions of Mn/Dot Specification 1403 will be paid as follows:

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 PAYMENT

The provisions of Mn/Dot Specification 1906 shall govern as amended below:

Change the first sentence to read: At least once each month, at regular intervals, the Contractor will prepare for the Engineer's review, a Contract Estimate of the value of the work completed to date.

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.

Delete the sixth paragraph and substitute the following:

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.

Partial payments will not be made more often than once each month unless the Engineer determines that the amount of work performed warrants semi-monthly payments.

1908 FINAL PAYMENT

The provisions of Mn/Dot Specification 1908 shall govern as amended below:

Paragraphs Nos. 1, 2, and 3 of Mn/Dot Specification 1908 shall be deleted in their entirety and the following provisions submitted in lieu thereof:

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 Mn/Dot 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 St. 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 sub-contractors.

1910 COST ESCALATION

The provisions of Mn/Dot Specification 1910 shall be deleted and no substitution shall be made therefore.

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 651-266-6076. 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 651-266-6076 prior to the removal of a survey monument. The Contractor shall not be charged liquidated damages if permission to remove a monument is obtained, and shall be compensated for any work done to reset the monument. Compliance with this provision does not indemnify the Contractor from Minnesota Statutes Chapter 381.19, 505.33 or 609.105.

2031 FIELD OFFICE AND LABORATORY

The provisions of Mn/Dot 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.

- 2031.2 Fourth paragraph: delete reference to Certificate of Final Acceptance.

- 2031.3c Delete the requirement for a curing tank, except for bridge projects, and an electrically powered mechanical sieve.

2101 CLEARING AND GRUBBING

The provisions of Mn/Dot Specification 2101 shall govern as amended below:

- 2101.3A Add the following:

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 Department of Community Services 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 City of Saint Paul 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.

2101.3C Add the following:

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 tree 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.

2101.3D Delete the first paragraph and substitute the following:

Mn/Dot Specification 2104.3C3.

2101.3D1 Delete in its entirety.

2101.3D(4) Delete and substitute the following:

Burning shall not be allowed on the project site.

2104 REMOVING PAVEMENT & MISCELLANEOUS STRUCTURES

The provisions of Mn/Dot Specification 2104 shall govern as amended below:

2104.3B Add the following:

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 saw cut full depth at the limits of partial removal prior to that removal unless otherwise approved by the Engineer.

In all areas paved with concrete or concrete base, the edges of the concrete shall be saw cut to at least 1/3 of its thickness. Cutting shall be done prior to the use of any mechanical pavement removal equipment. The pavement shall be removed in such a manner that the remaining pavement is not damaged.

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

When removing existing curbing and driveways, the Contractor shall not disturb any material beyond the limits required to form for new construction, assumed as 12 inches maximum from the back of new curb, and 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.

2104.3B2b Delete the reference to a minimum depth of three inches (3") and substitute full depth.

2104.3B5 Delete the first sentence and the first word of the second sentence.

2104.3C1 Add the following:

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.

2104.3C2 Delete the second and third paragraph.

2104.5 Add the following:

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

"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.)

"Remove Concrete Driveways" 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.

2105 EXCAVATION AND EMBANKMENT

The provisions of Mn/Dot Specification 2105 shall govern as amended below:

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) CONTROLLING EROSION AND ESTABLISHING VEGETATION.

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. Placement of fertilizer shall be as per Supplemental Specification 2575.3A. Testing shall be considered Incidental.

Topsoil will not be accepted for payment unless it has had prior approval from the Engineer.

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.

2105.3B Third Paragraph; delete the last sentence and substitute the following:

Unless the Bid Proposal contains an item for de-watering, it shall be classed as Incidental Work and, therefore, no direct compensation will be made.

2105.3C Add the following:

The Contractor shall use due care in excavating near utilities.

2105.3F1 First paragraph: add as last sentence:

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 Mn/Dot Specification 2112 shall govern as amended below:

2112.3(c) 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 Mn/Dot 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.

Bid Item 2118.501, "Aggregate Surfacing, Class 5", shall be 100% crushed or recycled material.

2123 EQUIPMENT RENTAL

The provisions of Mn/Dot Specification 2123 shall govern as amended below:

2123.5 Add the following:

Street sweeping, Item 2123.601, 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 \$85.00 per hour irrespective of evenings, weekends or holidays. The Contractor will not be compensated for sweeping for the purpose of general job clean up or in preparation of paving.

2201 CONCRETE BASE

The provisions of Mn/Dot Specification 2201 shall govern as amended below:

2201.4 With reference to 2301.4, delete the first paragraph of 2301.4A and substitute the following:

Concrete base will be measured by area in square yards, including regular and irregular shapes and widths, of the thickness as shown on the plans.

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

2211 AGGREGATE BASE

The provisions of Mn/Dot 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.

2211.3C1 Second paragraph; add as last sentence.

Any excavation required to facilitate taking of density tests shall be done by and

at the expense of the Contractor.

2211.3D First paragraph; add as last sentence.

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.

2211.4 The gradation of the aggregate base shall conform to that shown as Class 5 in Section 3138 of the Mn/Dot Standard Specifications.

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

2301 CONCRETE PAVEMENT

The provisions of Mn/Dot Specification 2301 shall govern as amended below:

2301.4A Delete the first paragraph and substitute the following:

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.

2357 BITUMINOUS TACK COAT

The provisions of Mn/Dot Specification 2357 shall govern as amended below:

The Engineer shall determine the necessity of placing a tack coat between the various bituminous layers.

2357.3D Delete the last paragraph.

2360 PLANT MIXED ASPHALT PAVEMENT

The provisions of Mn/Dot Specification 2360 shall govern as amended below:

The Saint Paul City Council per Council File 93 -1398, support the efforts of City Departments in the pursuit of environmental preferable purchasing decisions. Contractors are therefore made aware that specification 2360.1A2h found on page 4 of 48 of the 2007 (2360) Plant Mixed Asphalt Pavement specifications, bound herein, include a section that approves use of "Scrap Asphalt Shingles" in both wear and non-wear courses to a maximum of 5% of the total weight of mixture.

Mn/DOT Specification 2360 as found in the 2005 MnDOT Standard Specification for Construction, shall be deleted in its entirety and replaced with the attached 2360 PLANT MIXED ASPHALT PAVEMENT specification. The compaction method for bituminous mixtures on this Project is as follows: Type MV 3 Wearing Course shall be compacted by the Maximum Density Method.

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

Bituminous Mixture for patching shall be compacted by the Ordinary Compaction Method.

Pavement smoothness requirements of 2360.7C will not apply on this Project. The requirements of 2360.7B (Straight edge specification) will apply.

Sawed and Sealed Joint

This work shall consist of saw cutting, cleaning, drying and sealing transverse joints in new bituminous surfaces according to City Standard Detail Plate No. 3008, Mn/Dot 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 ASTM D-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 nor more than 9.3pounds/gallons.

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 saw cut. Backer tape shall be placed at the bottom of the reservoir to prevent the sealant material from flowing down into the deep saw cut. An alternate option is to stuff backer rod below the reservoir into the deep saw cut.

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 saw cut 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 saw cut 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 saw cutting 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. Saw cutting, cleaning and sealing shall not be done within 48 hours of placement of the wear course.

D2 Saw Cutting of Transverse Joints

The transverse saw cut 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 or 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 lineal foot, which shall include the cost of all labor, equipment, and materials necessary to complete the work as specified.

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
2360.603	Sawed/Sealed Joint	Lin. Ft.

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2401 CONCRETE BRIDGE CONSTRUCTION

The provisions of Mn/Dot 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.

2471 STRUCTURAL METALS

The provisions of Mn/Dot Specification 2471 shall govern as amended below:

2471.3 In the first Paragraph of 2471.3:

Delete "Department's Bridge Construction and Maintenance Engineer" and substitute "City Bridge Engineer".

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2471.3 F 3 All reference in this section to "Departments" shall be deemed to mean Mn/Dot.

2471.3 N 1 Delete the last sentence of the third paragraph of 2471.3N1 and substitute:

"No charge will be made 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."

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2503 PIPE SEWERS

Delete in its entirety and substitute 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 basins construction shall be in accordance with the provisions of Mn/Dot Specification 2506, as amended.

Where aprons are required, they shall be furnished and installed under the provisions of Mn/Dot 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 Mn/Dot Standard Plate No. 3006G. 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 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 Mn/Dot 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, 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, 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 Engineering 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 Foundation material shall meet the requirements of Mn/Dot Specification 3149, Granular Bedding, and Aggregate Foundation Material shall meet the requirements of Mn/Dot Specification 3137, Class B and shall meet the gradation requirements of CA-3.

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.

If the trench bottom is otherwise suitable firm material, but becomes soft and muddy due to the presence of water, through no fault or negligence of the Contractor, the soft material shall be removed to firm natural soil or as the Engineer directs. Such excavation and disposal of soft material shall be classed as Incidental Work.

(B3) Bedding:

Unless otherwise noted in the Plans, the pipe bedding shall be as shown on City of Saint Paul Standard Detail Plate 2317C.

Pipe bedding will be construed as that part of the trench backfill below a plane 12 inches above the top of the outside of the pipe. Bedding material shall be selected granular or clay material, free from stones or organic material which can be placed and thoroughly compacted around the pipe. Bedding material shall be selected from the trench excavation and shall be segregated and stockpiled for that purpose when necessary. If approved material is available from the excavation, 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 Mn/Dot Specification 3149, 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.

(A) Sewer Service Reconnections

Work to reconnect sanitary sewer services shall consist of all labor and materials necessary for the construction of the required sanitary sewer service reconnection in accordance with City Standard Plates No. 2306E and 2319C.

The Contractor shall furnish such assistance to the Engineer as may be required to properly and accurately record all measurements and changes in existing sanitary sewer services.

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 each service connection. On new or replacement PVC sanitary sewers of 12-inch through 24-inch diameter, a tee shall be provided for each service connection. The cost of furnishing and installing wyes and tees is incidental to the sanitary sewer service. All wyes, tees or other fittings used with PVC Pressure Pipe shall be Ductile Iron Class 50.

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 contiguous as possible with respect to materials and age. 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 storm sewer trench excavation and backfill shall be classed as Incidental Work.

Each storm sewer, as classified by proposal item, will be measured separately by length along centerline of the sewer 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.

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".

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 (such as trench boxes, shoring, allowable sloping or other). 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 unless otherwise determined by acceptable documented visual and manual tests.

In accordance with the above standard, the Contractor is required to provide trench boxes, of an OSHA approved design, in good repair, and shall be considered incidental to the cost of the excavation.

Valve Housing Inspection

Prior to construction, the Saint Paul Regional Water Services will locate and repair 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 may with their own forces, inspect these facilities and if deficiencies are found, notify the Saint Paul Regional Water Services inspector. If the Saint Paul Regional Water Services does not repair the facilities ahead of construction, then the Contractor, along with a representative of Saint Paul Regional Water Services, shall inspect all of the boxes on the site and 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 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 Saint Paul Regional Water Services 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.

Upon request, the Contractor will make specified gate valves, air vents, and other water system items accessible to SPRWS personnel for operating and testing.

The Contractor shall notify the Saint Paul Regional Water Services 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 Saint Paul Regional Water Services personnel to reinspect 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. Water 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 boulevard grade and expose the top after turf establishment. That

adjustment shall be classed as Incidental Work.

When a new standpipe is being installed, it is the Contractor's responsibility to adjust the standpipe to finish grade. In some cases, this may require cutting the standpipe before backfilling. This work shall be considered Incidental.

If the water stop box is in a new driveway or sidewalk, the Contractor shall protect the bolt assembly, top and bottom, from becoming locked into the concrete.

Water Service work done under a separate contract

When water service work is performed prior to 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.

Water Service work done under PW contract

In those cases where the Contractor installs a new standpipe as part of the project, it is the Contractors 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 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. SPRWS will provide, at no cost to the Contractor the appropriate "concrete repair top or meter pit cover" for use in concrete or bituminous. The Contractor must also protect the bolt assembly, top and bottom, from becoming locked into the concrete.

(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 Saint Paul Regional Water Services representative.

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

Any materials required for such repair may be obtained, without cost to the Contractor, at the Saint Paul Regional Water Services Store Yard. Time and transportation costs to obtain replacement materials will be considered incidental.

2. Water Gate Valve Housing In Full Depth Asphalt Roadway Areas

(a) Adjustments

All gate 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 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 (seven-inch (7") diameter) size top sections and/or inserts may be purchased from Saint Paul Regional Water Services Store Yard; however small (five-inch (5") diameter) size materials must be purchased from an independent supplier. This bid item shall apply to all gate valves (previously existing or newly constructed) in pavement areas.

(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 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.

Bid Item 2504.602 "Replace Valve Box", shall be paid at the contract price per box as shown on the Bid Schedule, and shall be compensation in full for all labor and equipment required to completely excavate,

replace the valve housing and pot, if necessary, backfill and adequately compact the excavation.

Any material required for such repairs may be obtained, without cost, at the Saint Paul Regional Water Services Store Yard. Time and transportation costs to obtain replacement materials will be considered Incidental.

3. **Water Gate Valve Housing Adjustment in Bituminous Overlay Areas**
Adjust Valve Box will be paid only for valve boxes adjusted in a roadbed. All gate valve housings shall be adjusted to grade, regardless of the existing elevation of the housing in relation to the pavement.

The housing shall be adjusted to finished grade prior to placement of the wearing course. The Contractor may use adjustable inserts. Large (7" diameter) size inserts can be purchased from the Saint Paul Regional Water Services Store Yard; however small (5 1/4" diameter) materials must be purchased from an independent supplier. If inserts produce an unacceptable adjustment, the Contractor shall readjust that housing and the Contractor will be paid for both adjustments. 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.

Bid Item 2504.602 "Adjust Valve Box", shall be paid at the contract price per box, as shown on the Bid Schedule and shall be compensation in full for all labor, equipment and materials necessary to adjust the valve housing to finished street grade. This bid item shall apply to all gate valves (previously existing or newly constructed) in pavement areas.

4. **Water Gate Valve Housings in Grass Areas**

If the boulevard grade is changed as part of this contract work, the Contractor shall adjust the gate 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 Saint Paul Regional Water Services. If the grade remains essentially unchanged, the Contractor will not be required to adjust water gate valve boxes to the final turf elevation.

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 Saint Paul Regional Water Services 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 Saint Paul Regional Water Services 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 reviewed 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 Saint Paul Regional Water Services representative for approval ten (10) working days before the water main is exposed. At all locations where the new sewer will cross beneath the existing water mains that are not replaced, the Contractor shall support the existing water main during construction. This work shall be considered Incidental.

Bid Item 2504.602 "Water Main Offset Trench/Replacement Trench", shall be paid at the contract price per trench 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 Saint Paul Regional Water Services 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 Saint Paul Regional Water Services 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 Saint Paul Regional Water Services 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 Saint Paul Regional Water Services 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 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 Saint Paul Regional Water Services to safely install new main, hydrants, valve, and appurtenances, tap water services, and tie into existing mains.

The materials and labor for the pipe work will be furnished by the Saint Paul Regional Water Services 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 Saint Paul Regional Water Services will compact suitable material under and around the water main. The Contractor shall remove and discard existing water main (if applicable) lower the new water pipe, fittings, and any equipment into the trench and shall also backfill and compact said trench after allowing Saint Paul Regional Water Services sufficient time to complete their work.

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

Water Services

All existing lead pipe water service connections within the project area, shall be replaced. Where a service connection is being replaced, the materials and labor for the pipe work will be furnished by the Saint Paul Regional Water Services at

no expense to the Contractor.

The method of excavation shall be either open trench, pneumogopher, or other tunneling methods as determined by the Saint Paul Regional Water Services. Regardless of the existing elevation of the service or the water main, the Contractor shall perform all excavation necessary to obtain a depth of 8 feet of cover from the water main to the property line, or from the water main to the stop box as determined by the Saint Paul Regional Water Services. If rock trench conditions are encountered, the Saint Paul Regional Water Services shall determine the depth prior to excavation. Locating underground utilities, directing the operation during excavation, and traffic control shall be the responsibility of the Contractor.

Trench boxes shall be used at all property line excavations or stop box locations if the Contractor is directed to terminate their excavation there. They shall also be required where surface encumbrances or other utilities restrict the sloped excavation or where the Water Utility orders their use to minimize removals.

If two (2) service replacements are in the same trench or hole, payment will be for one (1) service replacement. No additional compensation will be paid for the second service. Typically, when pneumogopher or tunneling methods are used for installing water services, two (2) water utility holes will be paid. One hole over the water main and the other hole in the boulevard area. If pneumogophing occurs in the same hole or trench as an adjacent service, only one water utility hole will be paid.

Bid Item 2054.603 "Water Service Trench", 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 (including trench box) necessary to excavate a trench of sufficient length, width and depth, including an area of approximately two (2) feet around the water main, to allow the Saint Paul Regional Water Services to complete their work. Also, to backfill and compact said trench after allowing the Saint Paul Regional Water Services sufficient time to complete their work. All removals and restoration shall be paid for under the appropriate bid item. The Contractor shall be responsible for any damage to utilities caused by, or which arise from the 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. (Utilities do not include sewer service repairs.)

Bid Item 2504.602 "Water Utility Hole", shall be paid at the contract price as shown on the bid schedule per hole. It shall be compensation in full for all labor and equipment (including trench box) as required by the Saint Paul Regional

Water Services necessary to excavate a hole of sufficient length, width, and depth to allow the Water Utility to safely:

1. Cut off a service connection at the main.
2. Install a new service connection using the pneumogopher procedures.
3. Repair or replace a valve and/or hydrant.

The Contractor shall backfill and compact the excavation after allowing the Saint Paul Regional Water Services 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 excavation as defined by SPRWS. Compensation for sewer service repairs will be paid for at the contract price. (Utilities do not include sewer service repairs.)

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 item 2504.602 "Water Utility Hole".

Saint Paul Regional Water Services 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 (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 which 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 Saint

Paul Regional Water Services, 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 "Water Service Trench". The Contractor shall provide the Water utility notification 24 hours in advance of any water service interruption, relocation, or replacement.

Trench Box

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. They should be of sufficient numbers to accommodate the number of crews working on water items.

Trench boxes should fit the work required.

A water service trench requires a trench box with three (3) shored sides and a width between three (3) feet and five (5) feet to minimize removals. This trench box is required at the property line or boulevard stop box for water service replacement. If the rest of the excavation is sloped in accordance with OSHA requirements, a trench box may not be required. Water service trench should be bid to include the use of a trench box as specified. No additional compensation shall be made for furnishing a trench box on water service excavation.

Saint Paul Regional Water Services holes require a trench box with four (4) shored sides and should be adjustable to approximate width of three (3) feet and a length of seven (7) feet. If the Water Utility permits, the Contractor may slope the excavation in accordance with OSHA requirements, to avoid using a trench box. No additional compensation shall be made for furnishing a trench box on Saint Paul Regional Water Services hole excavation.

A water main trench requires a trench box with two (2) shored sides with a minimum length of 20 feet. The I.D. width of the trench box shall not exceed six (6) feet for water mains 12 inches and smaller, or eight (8) feet I.D. for water mains larger than 12 inches. No additional compensation shall be made for furnishing a trench box on water main trench excavation.

Two-Inch Insulation

Bid Item 2504.604 "Two-Inch 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 Saint Paul Regional Water Services. 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 the Saint Paul Regional Water Services.

2506 MANHOLES AND CATCH BASINS

The provisions of Mn/Dot Specification 2506 shall govern as amended below:

Castings and other materials removed from existing structures which are usable, but not needed for this project, shall be salvaged by the Contractor and delivered to the City Paving Plant, 456 Burgess Street, unless otherwise directed by the Engineer.

The Contractor shall notify the Engineer if, during their adjustment operation, they discover any manhole castings that are not suitable for reuse. The Contractor shall deliver these suitable castings to 419 Burgess Street with a note from the Project Engineer. The City will then furnish a replacement, free of charge, to the Contractor.

The shaped concrete fill invert for 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 pozzolan shall be substituted for 15% on a pound for pound basis by weight of the designed Portland Cement. In lieu of the Type II cement with 15% Type C fly ash, Type 1.P cement may be used.

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

The maximum total height of adjustment on any newly constructed manhole shall be five (5") inches. Adjustments over five (5") inches shall require the Engineer's approval.

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.

2506.3G Add the following:

Manhole castings shall be removed from structures prior to the full depth bituminous paving operation and the structure openings covered with rigid steel plates. Before the wearing course is placed, the castings shall be set in mortar to the final road elevation. Asphalt pavement removed for the adjustment shall be replaced with asphalt material to the same elevation and density of that

removed.

Manhole castings in a bituminous overlay project shall be adjusted prior to placement of the wearing course. The Contractor may use cast iron adjusting rings where appropriate. Should the adjustment require, or the Contractor chooses removal of the pavement section around the casting, the pavement shall be replaced in kind. The cut around the casting shall be neat and the edges tacked prior to placing the asphalt. Should the adjustment prior to placement of the wearing course produce an unacceptable adjustment, the Contractor shall readjust the casting and the Contractor will be reimbursed for each of the adjustments as per 2506.522 "Adjust Frame and Ring Casting".

Bid Item 2506.522, "Adjust Frame and Ring Casting" shall be construed to mean adjusting the manhole casting as directed above.

2506.4 Method of Measurement

Delete the first sentence.

2506.4A Constructing Drainage Structures

Title shall be changed to "Constructing Manholes and 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 Delete the first sentence and add the following:

Payment for adjusting existing 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.

2506.5(d) Add the following:

Setting the casting to finished pavement grade as directed in 2506.3G, shall be incidental to construct manhole or catch basin.

2506.5 Add the following to the payment schedule in the last paragraph.

Bid Item 2506.602 "Construct Manhole Design _____", each, shall be construed to mean construction of the manhole in accordance with the

appropriate City of Saint Paul Standard Detail 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, _____", each shall be construed to mean construction of the catch basin in accordance with the appropriate City of Saint Paul Standard Detail 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 Mn/Dot Specification 2521 shall govern as amended below.

2521.1 Add the followings:

Construction of concrete outwalks and corner quadrants shall follow concrete curb/curb and gutter construction in a timely manner to allow for local access.

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 Standard Plates No. 3004C, 3005C and 3006C. 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.

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.

2521.2A Concrete shall be Mix No. 3Y36.

2521.2B Performed expansion joint filler material shall meet the requirements of ASTM Designation D-1751.

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.

2521.3C2 Delete the first paragraph and substitute the following:

Expansion joint filler material shall be one-half ($\frac{1}{2}$) 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 ($\frac{1}{4}$) 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.

2521.3C3 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.

2521.5 Delete the first paragraph and substitute the following:

Payment for *Bid Item 2521.501 "Four-Inch 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.

2521.5 *Bid Item 2521.501 Six-Inch 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 Mn/Dot 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.

2531.2A Mix designations shall be modified as follows:

Manual Placement Mix No. 3Y36

Slip-Form Placement Mix No. 3Y22

2531.2D 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 1 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.

Bid Item 2531.603 "Hand Formed Concrete Curb to Protect Trees", 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 lineal foot basis and shall be compensation in full for all labor, materials, equipment, concrete and finishing necessary to complete the work.

2535 BITUMINOUS CURB

The provisions of Mn/Dot 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

The provisions of Mn/Dot Specification 2571 shall govern as amended below.

2571.3A1e First sentence; 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.

2571.3M3

Third paragraph; delete the first sentence and substitute the following:

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).

Fourth paragraph; delete in its entirety.

Fifth paragraph; delete the last sentence.

2571.5B Delete in its entirety.

2571.5D 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 Mn/Dot 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 Mn/Dot 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.

2573.5 Basis of Payment

Delete in its entirety and substitute the following:

The Department will pay for acceptable quantities at the appropriate contract unit bid prices. If no unit price for work covered by Specification 2573 is included in the contract, the work shall be incidental and no payment shall be made therefore.

2575 CONTROLLING EROSION AND ESTABLISHING VEGETATION

The provisions of Mn/Dot Specification 2575 shall govern as amended below:

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.

2575.3A Add the following:

Areas requiring turf restoration shall be sodded within 21 calendar days following completion of curbs, walks, and drives adjacent to the area to be restored.

It is intended to landscape boulevard areas to a uniform transverse grade from sidewalk to curb. Where trees exist, the boulevard area shall be contoured to produce a grade that is aesthetically pleasing and easily maintained while minimizing tree root damage. Irregular boulevard grades will result when adjustments are made to minimize root damage.

Unless directed otherwise by the Engineer, all existing turf will be removed up

to a tree by a method approved by the Engineer prior to starting removals. Some situations will dictate that the existing turf be left around a tree and no grading done adjacent to the tree. In these situations, the new sod will be cut in to match the existing turf.

These locations will be determined on the job site by the project supervisor and a Forestry representative. The property owner will be informed by the Forestry representative when this option is selected.

The Contractor will not be fined for damage to hidden roots below the sod if the Contractor's method of removal has been approved.

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*.

Watering of the sod will be paid for under *Bid Item 2130.501 "Water"*, at the contract price of \$16.00 per 1,000 gallons. Payment for the accepted quantities of water at the contract price per 1,000 gallons shall be compensation in full for all costs of furnishing, transporting, and applying the water.

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.

2575.3A4c

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:

2575.3L1

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

Areas replaced with new sod shall be maintained by the Contractor for at least

20 growing days after placement.

2575.O3

Delete the first sentence and substitute the following:

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.