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ARTICLE 101 - DEFINITION AND TERMS

When the contract documents include an abbreviation from the following list, it shall mean:

AAN.....	American Association of Nurserymen
AAR.....	Association of American Railroads
AASHTO.....	American Association of State Highway and Transportation Officials
AISI.....	American Iron and Steel Institute
AREA.....	American Railway Engineering Association
USASI.....	United States of America Standards Institute
ASTM.....	American Society for Testing and Materials
AWS.....	American Welding Society
AWWA.....	American Waterworks Association
ASA.....	American Standards Association
ANSI.....	American National Standards Institute
ASME.....	American Society of Mechanical Engineers
FHWA.....	Federal Highway Administration
SAE.....	Society of Automotive Engineers

Addendum to the Contract. An amendment to the contract documents modifying the obligations of the parties thereunder, including, but not limited to, the performance of the work, the furnishing of labor and materials, and the basis of payment.

Addendum to the Standard Specifications. Specifications adopted subsequent to the publication of these Specifications, which modify, supplement or otherwise depart from these Specifications.

Advertisement for Bids. The advertisement for proposals for all work or materials on which bids are required. Such advertisement will indicate with reasonable accuracy the quantity and location of the work to be done, or the character and quantity of the material to be furnished, and the time and place of submitting the proposals.

Agreement. The written agreement between the City and the Contractor setting forth the obligation of the parties thereunder, including, but not limited to; the performance of the work, the furnishing of labor and materials, the basis of payment, and contract time. Other contract documents are incorporated into the agreement.

Award. The acceptance of a bid by the formal approval of the Common Council.

Bid Deposit. The security furnished with a bid to guarantee that the bidder will enter into the contract if its bid is accepted.

Bidder. Any individual, partnership, limited liability company or corporation submitting a proposal for the work contemplated, acting directly or through a duly authorized representative.

Board of Public Works. The Board of Public Works of the City.

Calendar Day. Every day shown on the calendar, Sundays and holidays included.

Certificate of Compliance. A certification, provided by a manufacturer, producer, or supplier of a product, that the product as furnished to the Contractor complies with the pertinent Specifications or contract requirements.

Certified Report of Test or Analysis. A test report, provided by a laboratory, or by a product manufacturer, producer or supplier, indicating actual results of tests or analyses, covering elements of the specification requirements and validated by certification.

City. The City of Madison, Wisconsin.

Contract Documents. The contract documents include the proposal, bid deposit, agreement, payment and performance bond, Specifications, Supplemental Specifications, special provisions, general and detailed plans specifically identified in the agreement, notice to proceed, contract change orders and agreements that are required to complete the construction of the work in an acceptable manner, including authorized extensions thereof.

Contract Change Order. A written order, authorization or agreement executed by the Contractor and the City covering work not otherwise provided for, revisions in or amendments to the contract, or conditions specifically prescribed in the Specifications as requiring contract change orders. Such document becomes a part of the contract when executed by the contracting parties.

Contract Time. The number of days or the date stated in the agreement for the completion of the work.

Contractor. The individual, partnership, limited liability company, joint venture, corporation or agency undertaking the execution of the work under the terms of the contract and acting directly or through a duly authorized representative.

Detour. A road designated as a temporary route to carry vehicular traffic around a section of a street or highway which is closed to through traffic.

Drip Line. An imaginary circle that could be drawn on the soil around a tree directly under the tips of its outermost branches.

Engineer. The City Engineer of the City of Madison acting personally or through a duly authorized representative.

Equipment. All machinery, equipment, tools, and apparatus, together with necessary supplies for upkeep, operation and maintenance, necessary for the proper construction and acceptable completion of the work.

Highway, Street, or Road. A general term denoting a public way for the purpose of vehicular travel, including the entire area within the right-of-way.

Inspector. A representative of the Engineer assigned and authorized to make detailed inspection of any or all portions of the work or materials therefor.

Materials. Any substances specified for use in the construction of the project and its appurtenances.

Notice of Award. A written notice by the City to the apparent successful bidder stating that upon compliance by that bidder with the conditions precedent stated therein, within the time specified, the City will sign and deliver the agreement.

Notice to Proceed. A written notice to the Contractor of the time within which the Contractor shall begin the prosecution of the work.

NRC. An abbreviation for no root cutting that will be marked on the sidewalk, driveway, or curb that is being repaired or removed. No root cutting shall occur until reviewed by City Forester.

Payment and Performance Bond. The approved form of security, executed by the Contractor and the Contractor's surety or sureties, guaranteeing the faithful performance of the contract and the payment of claims for work or labor performed and materials furnished for or about the work under the contract, pursuant to the requirements of Section 779.14, Wis. Statutes.

Plans. The approved plans, profiles, typical cross sections, and other drawings identified in the contract documents, which show the location, character, dimensions, and details of the work to be done.

Project. The specific construction to be performed under the contract.

Project Area. The location of the construction to be performed under the contract.

Proposal. The offer of the bidder, submitted on the prescribed proposal form, to perform the work including the furnishing of labor and materials at the prices quoted by the bidder.

Proposal Form. The approved form on which the City requires formal bids to be prepared and submitted for the work.

Root Flare. A swelling where tree roots join the trunk and are visible at the soil surface.

Shop Drawings. All drawings, diagrams, and illustrations, such as stress sheets, erection plans, falsework plans, framework plans, cofferdam plans, bending diagrams for reinforcing steel, or similar data prepared by the Contractor, or by a subcontractor, manufacturer, fabricator, or supplier, which the Contractor is required to submit to the Engineer for approval.

Sidewalk. The portion of the street primarily constructed for the use of pedestrians.

Special Provisions. Special directions, provisions, or requirements peculiar to the project under consideration and not otherwise detailed or set forth in these Specifications.

Specifications. The directions, provisions, and requirements contained herein, together with written agreements and documents incorporated in the contract documents, pertaining to the method or manner of performing the work, the quantities, and the quality of materials to be furnished under the contract.

Standard Specifications. The body of directions, provisions, and requirements contained herein, together with all supplements and addenda thereto.

Street Tree. A tree located within a terrace (between the curb and sidewalk) or on public right of way.

Subcontractor. Any individual, partnership, limited liability company, joint venture, or corporation to whom the Contractor sublets any part of the contract.

Supplemental Specifications. Specifications adopted subsequent to the publication of these Specifications.

Surety. The corporate body bound with and for the Contractor to ensure performance of the contract and payment of all obligations pertaining to the work.

Traffic Engineer. The Traffic Engineer of the City of Madison acting personally or through a duly authorized representative.

Work. Work shall be understood to mean the furnishing of all labor, materials, equipment, and other incidentals necessary or convenient to the successful completion of the project, or a particular part of the project, in accordance with the requirements of the contract.

Work Day. A work day shall be any day that a Contractor can work on a project and which would or does necessitate an inspector on the project for any part of the day. If inclement weather curtails construction, the Engineer shall decide what portion, if any part of a day, shall be called a "Work Day." Work days may be counted to the nearest one-half day. A record of work days shall be kept on the job by the inspector.

ARTICLE 102 - BIDDING REQUIREMENTS AND CONDITIONS

102.1 Prequalification of Bidders.

All bidders shall file with the Engineer, during regular working hours, not less than seven (7) days prior to the day set for opening bids, proof of responsibility on forms furnished by the City.

The Engineer shall, determine if the bidder is qualified for the type of work for which the bidder requests prequalification. The decision of the Engineer shall be final and conclusive, unless within fifteen (15) days after such decision the bidder applies in writing to the City Engineer requesting that an appeal be considered by the Board of Public Works.

The Engineer may require a special prequalification for particular projects and/or may require additional information regarding a prequalified bidder's prequalifications to do certain aspects of the work.

In accordance with Section 39.02 of the Madison General Ordinances, all bidders shall submit in writing to the Affirmative Action Division of the City of Madison, a Certificate of Compliance or an Affirmative Action Plan at the same time or prior to the submission of the proof of responsibility forms.

102.2 Disqualification of Bidders.

Notwithstanding a prior finding of responsibility, any one or more of the following causes may be considered as sufficient for rejection of the bidder as nonresponsible for a given contract.

1. Developments subsequent to establishment of bidder's competency and qualifications which, in the opinion of the Board of Public Works would reasonably be construed as affecting the ability of the bidder to perform the work.
2. Conviction of a violation of a State or Federal law or regulation, or rule or regulation of a Federal department, board or bureau, or of a State department, board, or commission, relating to or reflecting on the competency of the bidder for performing construction work.
3. More than one proposal for the same work from an individual, partnership, limited liability company or corporation under the same or different names.
4. Evidence of collusion among bidders.
5. Lack of responsibility as shown by the quality or timeliness of past work for the City.
6. Noncompliance with terms of previous or existing contracts.
7. Uncompleted work which, in the judgment of the Board of Public Works, might hinder or prevent the prompt completion of additional work if awarded.
8. Uncompleted work on which the actual time used has exceeded the contract time set therefor, or on which work the performance or progress is not satisfactory in the judgment of the Board of Public Works.

Part I - General Conditions

9. Failure or refusal to submit a Certificate of Compliance or Affirmative Action Plan as defined by Section 39.02 of the Madison General Ordinances (entitled Affirmative Action) and as required by Section 102.11 of these Specifications.
10. Failure to comply with the Section 33.07 of the Madison General Ordinances (entitled Best Value Contracting).

102.3 No Other Interested Parties.

The bidder declares that the only persons interested in this contract as principals are therein named as such; that no official of the City and no person acting for or employed by the City is directly or indirectly interested in this bid, or in any contract which may be made under it, or in any expected profit to arise therefrom; that this bid and this contract are made in good faith, without fraud, collusion or connection with any other persons bidding for the same work.

102.4 Proposals.

No bid will be accepted that does not contain an adequate or reasonable price for each and every item named in the Schedule of Unit Prices.

A lump sum bid for the work in accordance with the plans and Specifications is required. The lump sum bid must be the same as the total amounts bid for the various items and it shall be inserted in the space provided.

Unit price figures shall be written numbers in the spaces provided.

In case of conflict between a unit price bid and the corresponding extended amount, or in the absence of an extended amount, the unit price bid shall govern.

All numbers, words, and signatures in the proposal shall be written with ink.

All papers bound with or attached to the proposal form are considered a part thereof and must not be detached or altered when the proposal is submitted. The plans, Specifications and other documents designated in the proposal form will be considered a part of the proposal whether attached or not.

A proposal submitted by an individual shall be signed by the bidder or by a duly authorized agent. A proposal submitted by a partnership shall be signed by a partner. A proposal submitted by a limited liability company shall be signed by an authorized member. A proposal submitted by a corporation shall be signed by an authorized officer or duly authorized agent of such corporation, and the proposal shall show the name of the State under the laws of which such corporation was chartered. The required signatures shall in all cases appear in the space provided therefor on the proposal.

The bidder shall submit the proposal on the form furnished by the City.

Each proposal shall be placed, together with the Bid Deposit, in a sealed envelope, so marked as to indicate name of project, the contract number or option to which it applies, and the name and address of the Contractor. Proposals will be received at the place and until the hour and date designated in the advertisement. When sent by mail, the sealed proposal marked as indicated above shall be enclosed in an additional envelope. Proposals sent by mail, submitted in person or otherwise delivered must be

in the hands of the official conducting the letting by the hour and date designated in the advertisement. Proposals received after the time designated will be returned to the bidder unopened.

102.5 Bid Deposit.

No proposal shall be considered unless either (i) it is accompanied by a Bid Deposit of the character and amount described in the Advertisement for Bids or (ii) a Biennial bid bond in an amount and form acceptable to the City of Madison has been previously submitted.

Bid Deposits of unsuccessful bidders shall be returned following the award of the contract by the Common Council. Bid Deposit of the successful bidder shall be returned within forty-eight (48) hours following execution of the contract and bond as required.

102.6 Rejection of Proposals.

Proposals may be rejected if they show any alterations of form, additions or amendments not called for, conditional or alternate bids unless called for, incomplete bids, erasures, or irregularities of any kind. Proposals in which the unit prices for some items are out of proportion to the prices for other items, or proposals in which unit prices are not submitted for each item of work listed may be rejected.

The Board of Public Works reserves the right to reject any and all bids and to reject the bid of any person or firm who, in its opinion, has not had sufficient experience in the type of construction on which they are bidding, or who is not provided with the necessary capital, materials, machinery and supervisory personnel to execute the work to be contracted for to the satisfaction of the said Board.

The City reserves the right to waive minor irregularities, and to proceed to do the work otherwise, if in the judgment of the Board of Public Works the best interest of the City will be served thereby.

102.7 Withdrawal of Proposals.

All proposals filed with the City will be kept secure and unopened and will not be allowed to pass out of the custody of a representative of the City, except on written request of the bidder or the bidder's authorized representative made prior to expiration of the time set for receipt of proposals, and if such withdrawal is made, such prospective bidder shall not be entitled to bid on the contract at hand unless the same is readvertised and proposals are again requested upon such advertisement.

102.8 Examination of Plans, Specifications, Special Provisions and Site of Work.

The bidder is required to examine carefully the work site, the proposal form, plans, Specifications, Supplemental Specifications, special provisions and contract forms for the work contemplated. It will be assumed that the bidder has investigated and is satisfied as to the conditions to be encountered for performing the work as scheduled, and as to the character, quality and quantities of work to be performed and materials to be furnished, and as to the requirements of the plans, Specifications, Supplemental Specifications, special provisions and contract. The submission of a proposal shall be considered conclusive evidence that the bidder has made such examination and is satisfied as to all the conditions and contingencies.

102.9 Bidder's Understanding.

It is understood and agreed that the bidder, by careful examination, satisfy himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this contract.

Bidders must satisfy themselves by such reasonable means as they may prefer as to the accuracy of the Engineer's estimates of quantities, and soil conditions, or otherwise, and shall not at any time after submission of a bid dispute such estimate of the Engineer, nor assert that there was any misunderstanding in regard to the nature or amount of the work to be done.

The City has endeavored to determine the location of existing utilities in the area of the work and so indicate on the appropriate drawings. The City makes no warranty as to the accuracy or completeness of such representations. It is understood and agreed that the cost of performing work in the vicinity of existing utilities indicated or reasonably inferable is included in the bid price.

No employee, agent or consultant of the City is authorized to make any representations as to the materials or workmanship involved, or the conditions to be encountered, and the Contractor agrees that no such statement or the evidence of any document or plan, not a part of this contract, shall constitute any grounds for claim as to conditions encountered. No verbal agreement or conversation with any employee, agent or consultant of the City, either before or after the execution of this contract, shall affect or modify any of the terms or obligations herein contained.

102.10 Minimum Rate of Wage Scale.

102.10(a) General

All bidders are notified that all labor employed on City contracts must be paid in accordance with the minimum rate of wage scale included in the Contract Documents.

For the information of the employees working on the project, a copy of the wage scale included in the contract documents and the provisions of Section 66.0903(8) of the Wisconsin Statutes shall be kept posted by the employer and in at least one conspicuous and easily accessible place at the site of the project.

The Contractor shall keep weekly payroll records setting forth the name, address, telephone number, classification, wage rate and fringe benefit package of each employee who worked on such City project and all other projects the employee worked in the same period, and the Contractor must keep records of the individual time each employee worked on the project and for each day of the project. Such records shall also set forth the total number of hours of overtime credited to each such employee for each day and week and the amount of overtime pay received in that week. Such records shall, in addition, set forth the full weekly wages earned by each such employee and the actual hourly wage paid to that employee. The Contractor shall submit payroll records to the Engineer every week for those periods when work is being done on the project. Said submittal shall be within twenty-one (21) calendar days of the end of the Contractor's weekly pay period.

The Contractor shall ensure that employees shall be paid unconditionally and shall receive the full amounts accrued at the time of payment, computed at rates not less than those stated in the City of

Madison “Minimum Rate of Wage Scale” and that each employee’s rate shall be determined by the work that is done within the trade or occupation classification which should be properly assigned to such employee. Questions regarding an employee’s classification or rate of pay within that classification, shall be resolved by the practice that predominates in the industry and on which the trade or occupation rate/classification is based. Therefore, rate of pay, classification and work jurisdiction disputes shall be resolved by relying upon practices established by collective bargaining agreements and guidelines used in such determinations by appropriate recognized trade unions operating within the City of Madison.

The Contractor shall agree that the normal rate of wage paid to the Contractor’s employees on other projects shall not be reduced or otherwise diminished as a result of the requirement to pay no less than the minimum rate of wage scale on a City project. Mulcting of employees on City projects by contractors, such as by kickbacks or other such devices, is prohibited.

These contract provisions shall apply to all work performed on the contract by the Contractor with its own organization and with assistance of laborers under its immediate superintendency and to all work performed by piecework or by subcontract. No laborer, worker, or mechanic shall be employed directly upon the site of the work except on a wage basis, but this shall not be construed to prohibit the rental of equipment from individuals.

In the event of a refusal by the Contractor to submit payroll records as required by the contract, the City of Madison shall have the option to cancel this contract and request the Surety to perform or to relet the balance of the work for bids, and in that event, to charge the Contractor for any loss which the City may incur thereby.

102.11 Affirmative Action.

The Contractor shall comply with the applicable requirements of Section 39.02 of the Madison General Ordinances entitled “Affirmative Action Ordinance”. Compliance requires completion and execution of the document entitled “The City of Madison Affirmative Action Plan for Public Works Contractors”.

102.12 Best Value Contracting.

The Contractor and all Subcontractors shall comply with Madison General Ordinance (MGO) section 33.07(7). The Contractor and all Subcontractors shall participate in a Class A Apprenticeship Program for each separate trade or classification in which it employs craft employees and shall continue to participate in such program or programs for the duration of the project. The Contractor or Subcontractor shall not be required to have an apprentice on this project in order to be in compliance with MGO 33.07(7).

The Contractor shall complete pages E-3 and E-4 entitled, “Best Value Contracting.”

This Contract shall be considered a Best Value Contract if the Contractor’s bid is equal to or greater than the amount set in the contract specifications for a single trade contract; or equal to or greater than the amount set in the contract specifications for a multi-trade contract.

In addition, this contract shall be exempt from Best Value Contracting requirements if the Contractor provides information prior to the award of contract sufficient such that the City Engineer makes a finding that the contracted work is not considered apprenticeable.

Each Contractor or Subcontractor shall comply individually with MGO 33.07(7).

If the Contractor cannot comply with the requirements of MGO 33.07, the City Engineer shall designate the Contractor's bid non-responsive and this Contract shall not be awarded to the Contractor. The Contractor shall promptly provide the City Engineer with addition information as required by the City Engineer to substantiate the means in which the Contractor intends to comply with MGO 33.07(7).

The Contractor shall insure that each subcontractor used complies with MGO 33.07(7). For each Subcontractor used, the Contractor shall provide all the information required of the General Contractor as indicated above. This information shall be provided prior to beginning work on the Contract. The Contractor shall not subcontract any portion of this contract to a Subcontractor who cannot comply with the provisions of MGO 33.07(7).

If the Contractor cannot provide the City Engineer sufficient information to substantiate the Contractor's compliance with MGO 33.07(7) within four (4) days of the bid opening as determined by the City Engineer, the City Engineer may designate the bid unresponsive.

If the City Engineer designates the Contractors bid unresponsive, the City Engineer shall notify the Contractor in writing that the Contractor's bid has been designated unresponsive. The City Engineer's decision shall be final and conclusive in all matters unless within ten (10) days after such decision the Contractor applies in writing to the Board of Public Works for a review of such decision.

102.13 Equal Benefits Requirement (Sec. 39.07, MGO).

This provision applies to contracts executed by the City on July 1, 2012 or later, unless exempt by Sec. 39.07 of the Madison General Ordinances (MGO).

For the duration of this Contract, the Contractor agrees to offer and provide benefits to employees with domestic partners that are equal to the benefits offered and provided to married employees with spouses, and to comply with all provisions of Sec. 39.07, MGO. If a benefit would be available to the spouse of a married employee, or to the employee based on his or her status as a spouse, the benefit shall also be made available to a domestic partner of an employee, or to the employee based on his or her status as a domestic partner. "Benefits" include any plan, program or policy provided or offered to employees as part of the employer's total compensation package, including but not limited to, bereavement leave, family medical leave, sick leave, health insurance or other health benefits, dental insurance or other dental benefits, disability insurance, life insurance, membership or membership discounts, moving expenses, pension and retirement benefits, and travel benefits.

Cash Equivalent. If after making a reasonable effort to provide an equal benefit for a domestic partner of an employee, the Contractor is unable to provide the benefit, the Contractor shall provide the employee with the cash equivalent of the benefit.

Proof of Domestic Partner Status. The Contractor may require an employee to provide proof of domestic partnership status as a prerequisite to providing the equal benefits. Any such requirement of proof shall comply with Sec. 39.07(4), MGO.

Notice Posting, Compliance. The Contractor shall post a notice informing all employees of the equal benefit requirements of this Contract, the complaint procedure, and agrees to produce records upon request of the City, as required by Sec. 39.07, MGO.

Subcontractors. Contractor shall require all subcontractors, the value of whose work exceeds the single-trade minimum set forth in Sec 33.07(7)(b)5., MGO, to provide equal benefits in compliance with Sec. 39.07, MGO.

See Section 39.07 MGO for exemptions from this requirement. Exemptions from this requirement include a Contractor whose employees are under a collective bargaining agreement that was in effect prior to July 1, 2012, however, the Contractor must agree to propose to the applicable collective bargaining unit(s) that an equal benefit requirement consistent with this ordinance be incorporated into the next collective bargaining agreement or in the existing agreement upon amendment, extension or other modification that occurs after July 1, 2012.

ARTICLE 103 - AWARD AND EXECUTION OF THE CONTRACT

103.1 Consideration of Proposals.

The proposals received will be compared on the basis of the summation of the products of the quantities of work listed and the contract unit prices offered. In case of discrepancy between the gross sum shown in the proposal and that obtained by adding the products of the quantities of work and the unit prices, the unit prices shall govern and any errors found in said products and summation shall be corrected.

103.2 Award of Contract.

All bids shall remain open for forty (40) calendar days after the day of bid opening. Award will be made to the lowest responsible bidder submitting a conforming bid, unless all bids are rejected.

103.3 Execution of Contract and Bond.

The Contractor shall within ten (10) days after the date of the notice of award of the contract, properly execute, on the forms provided, the Agreement and the Payment and Performance Bond, and submit an approved Affirmative Action Plan or Certificate of Compliance. All contracts shall be fully executed in duplicate except that the Engineer may require additional copies when deemed necessary. All numbers, words, and signatures in the Agreement and Bond shall be written with ink.

Within fourteen (14) days of receipt of the executed contract, including the approved Affirmative Action Plan or Certificate of Compliance, the Mayor of the City of Madison shall execute the contract on behalf of the City of Madison. The contract shall not become operative prior to its execution by the Mayor.

103.4 Failure to Execute Contract.

Failure on the part of the successful bidder to execute the contract or an acceptable Payment and Performance Bond, within ten (10) days after the date of notice of the award of the contract will, at the discretion of the Board of Public Works be just cause for the annulment of the award and the forfeiture of the Bid Deposit to the City, not as a penalty but in payment of liquidated damages sustained as a result of such failure.

103.5 Payment and Performance Bond.

The Contractor shall file with the City prior to the time of execution of the contract a Payment and Performance Bond on the prescribed form in the full amount of the contract price as security for the payment of all persons supplying labor, services, and materials for the execution of the work and the faithful performance of the contract. The bond shall remain in effect for a period of one year after the date of Certificate of Substantial Completion. The surety furnishing this bond shall have a sound financial standing, a record of service satisfactory to the City, and shall be authorized to do business in the State of Wisconsin.

ARTICLE 104 - SCOPE OF WORK

104.1 Lands for Work.

The City shall provide the lands upon which the work under this contract is to be done except that the Contractor shall provide land required for the erection of temporary construction facilities and storage of his materials, together with right of access to same.

104.2 Intent and Coordination of Contract Documents.

The intent of the plans and Specifications is to provide for the construction, execution and completion of a complete work or improvement which the Contractor undertakes to do in full compliance with the plans, Specifications, Supplemental Specifications, special provisions and contract. The Contractor shall perform all items of work covered and stipulated in the proposal and perform altered and extra work, all in accordance with the lines, grades, typical sections, and dimensions given, and shall furnish, unless otherwise provided in the contract, all materials, implements, machinery, equipment, tools, supplies, transportation, and labor necessary to the prosecution and completion of the work.

The contract documents are complimentary, and what is called for by any one shall be as binding as if called for by all. Materials or work described in words which so applied have a well-known technical or trade meaning shall be held to refer to such recognized standards.

In the event of a discrepancy between the drawing and the figured dimensions thereon, the figured dimensions, unless obviously incorrect, shall govern over scaled dimensions. In the case of a discrepancy between the Supplemental Specifications and these Specifications, the Supplemental Specifications shall govern; between the plans and these Specifications or the Supplemental Specifications, the plans shall govern; and between the special provisions and these Specifications, Supplemental Specifications or the plans, the special provisions shall govern. The latest issue of an Addendum to the Standard Specifications shall prevail over previously issued Standard Specifications whenever in conflict therewith.

The Contractor shall take no advantage of any apparent error or omission in the plans or Specifications, and the Engineer shall be permitted to make such corrections and interpretations as may be deemed necessary for the fulfillment of the intent of the plans and Specifications.

104.3 Changes in the Work.

The Engineer shall have the right to make alterations in the line, grade, plan, form or dimensions of the work herein contemplated, including the lengthening or shortening of the project, either before or after the commencement of the work and without notice to the sureties. Such alterations shall, insofar as practical, be ordered in writing before starting work on such alterations.

Except as otherwise provided in Sections 104.4, 104.5, and 104.6 below, whenever the quantity of any item of work as given in the proposal shall be increased or decreased as required to satisfactorily complete the work, payment for such item of work shall be made on the basis of the actual quantity completed at the original contract unit price.

Compensation for alterations in plans or quantities of work requiring contract change orders shall be as stipulated in such agreements.

104.4 Increased or Decreased Quantities.

It is agreed and understood that the quantities of any items of work shown on the plans or in the proposal are subject to increase or decrease during the progress of the work. The Engineer reserves the right to increase or decrease the quantities of any items of work, including increase or decrease of quantities by alteration of plans, as may be considered necessary or desirable during the progress of the work to satisfactorily complete the construction. Such increases or decreases in quantities shall not be considered as a waiver of any conditions of the contract nor invalidate any of the provisions thereof.

104.5 Increased Items.

Unless otherwise designated in the proposal, any increase of the contract shall be limited to fifteen (15) percent of the lump sum contract price submitted by the Contractor. Any item may be increased up to twenty-five (25) percent of the original quantity in the contract, but in no case may such an increase exceed in dollar value fifteen (15) percent of the original lump sum contract price bid. If it is determined by the Engineer that increases in excess of those mentioned above will prevail, then the Engineer along with the Board of Public Works shall: (a) renegotiate the unit price for all estimated work over the percentage limit shown above, or (b) advertise for and receive bids for estimated excess work. Unforeseen items of extra work not included in the proposal as a bid item shall be included when calculating the total amount of increase over the original lump sum contract price bid.

104.6 Decreased and Deleted Items.

Unless otherwise designated in the proposal, the quantity of any item may be decreased, and the actual quantity installed and accepted will be paid for at the contract unit price. Such decrease shall not constitute the basis for a claim for damages for anticipated profits for the work dispensed with. When the reduction in amount is a material part of the work contemplated for the project, the Contractor shall be entitled to compensation as determined by the Engineer for overhead and equipment charges incurred in expectation of the quantity of work originally estimated, unless specifically provided herein.

The right is reserved to delete from the work any item or portion thereof found unnecessary to the improvement. Such deletion shall not constitute the basis for a claim for damages for anticipated profits for the work dispensed with. The Contractor will be paid for all work done toward the completion of the item or portion thereof prior to such deletion a fair and equitable amount covering all items of cost incurred prior to the date of deletion of the work by order of the Engineer. Acceptable materials ordered by the Contractor, and not canceled prior to the date of deletion of the work, and which are delivered on the work, will be paid for at the actual cost to the Contractor, and shall become the property of the City. The Contractor shall be reimbursed for any money expended in preparation for work on any deleted item or portion thereof when such preparation has no value to the remaining items of the contract, or for a proportionate amount based on the total contract price over which such preparation would ordinarily be distributed when other items are included in such preparation.

104.7 Extra Work.

In connection with the work covered by the contract, the Engineer may, at any time during its progress, order other work or materials incidental thereto. All such work and materials that do not

appear in the proposal or contract as a specific item accompanied by a unit price, and which are not included under the price bid for other items in the contract, shall be designated as Extra Work. Extra Work may also consist of additions to or changes in design in contract items or portions thereof, when such additions are wholly disassociated from or outside the scope of the work as evidenced by the plans, special provisions and Specifications, and when the work caused by such additions or changes in design must be performed under conditions or in a manner that is materially and inherently different from the conditions and manner existent for such contract items as contemplated in the original scope of the work. The Contractor hereby agrees to perform Extra Work whenever it is deemed necessary or desirable by the Engineer to complete the project as originally contemplated, or as subsequently altered, and it shall be done in accordance with the requirements herein set forth.

Extra Work shall be done under the supervision of the Engineer, and the Engineer's decision shall be final and binding. The plan of the work to be followed, the equipment to be used, and the amount and character of labor to be employed shall meet with the approval of the Engineer.

The Contractor shall not perform any Extra Work until a contract change order has been authorized. Claims for compensation for Extra Work performed which has not been authorized and not covered by contract change order may be rejected.

The contract change order for Extra Work may provide for payment in an agreed lump sum for the Extra Work performed, on an agreed unit price basis for the units of such Extra Work performed. Where agreement cannot be reached to pay for Extra Work on either the lump sum basis or the unit price basis, the Engineer may direct that payment for Extra Work be determined on a force account basis.

Prices for Extra Work to be completed by subcontractors shall be the subcontractor's actual prices submitted for the work contemplated to which the general contractor may add an amount equal to, but not to exceed, five (5) percent thereof.

For Extra Work to be paid for on a force account basis, the actual cost computed in accordance with the terms of the contract change order shall include such costs and allowances and subject to such limitations as hereinafter provided:

1. For all labor and supervisors in direct charge of the specific work, the Contractor shall receive the rate of wage agreed upon in writing before beginning work, for each and every hour that said labor and supervisors are actually engaged in such work.

The Contractor shall receive the actual costs paid to, or in behalf of, laborers by reason of health and welfare benefits, pension fund benefits or other benefits required to be paid.

An amount equal to thirty-five (35) percent of the above items will be added to the cost of such items.

2. For property damage, liability, and worker's compensation insurance premiums, unemployment insurance contributions and social security taxes on the force account work, the Contractor shall receive the actual cost, to which cost shall be added an amount equal to fifteen (15) percent of the sum thereof. The Contractor shall furnish satisfactory evidence of the rate or rates paid.

Part I - General Conditions

3. For materials accepted by the Engineer and used, the Contractor shall receive the actual cost of such materials delivered to the work including transportation charges (exclusive of machinery rentals as hereinafter set forth), to which cost shall be added an amount equal to fifteen (15) percent of the sum thereof.
4. For any machinery or special equipment (other than small tools) including fuel and lubricants, the use of which has been authorized by the Engineer, the Contractor shall receive the rental rates agreed upon in writing before such work is begun, for the actual time that such equipment is in operation on the work, and to which rental sum no percentage shall be added.
5. No additional allowance shall be made for general superintendence, the use of small tools, or other costs of which no specific allowance is herein provided.
6. For administration cost when work is performed by an approved subcontractor, the Contractor shall receive an amount equal to five (5) percent of the total costs of such work computed as set forth above.
7. The compensation as set forth above shall be received by the Contractor as payment in full for Extra Work done on a force account basis. At the end of each day the Contractor's representative and the inspector shall compare records of the cost of work done as ordered on a force account basis.
8. No payment will be made for work performed on a force account basis until the Contractor shall furnish to the Engineer duplicate itemized statements of the cost of such force account work, detailed as to the following:
 - a. Name, classification, dates, daily hours, total hours, rate and extension of each laborer and supervisor.
 - b. Designation, dates, daily hours, total hours, rental rate and extension of each truck and other unit of machinery and equipment.
 - c. Quantities of materials, prices and extensions.
 - d. Transportation on materials.
 - e. Cost of property damage, liability and worker's compensation insurance premiums, unemployment insurance contributions and social security tax.
 - f. Such statements shall be accompanied and supported by original receipted invoices for all materials used and transportation charges; provided, that if materials used on the force account work are not specifically purchased for such work, but are taken from the Contractor's stock, then in lieu of the original invoices, the statements shall contain or be accompanied by an affidavit of the Contractor, certifying that such materials were taken from stock, that the quantity claimed was actually used, and that the price and transportation claimed represents the actual cost to the Contractor.

No verbal order or suggestions given by an employee of the City shall be construed as authorizing or laying the basis for any claim on the part of the Contractor for extra

compensation, either for Extra Work or materials, or for damages, because of the Contractor's compliance therewith. Such verbal orders and suggestions as to the performance of the work may be freely given, but in case they appear to the Contractor to involve Extra Work, for which the Contractor should receive extra compensation, the Contractor shall obtain a written order from the Engineer for such Extra Work prior to performing the work. In case of a dispute as to what does or does not constitute Extra Work, a decision will be made by the Engineer.

104.8 Removals.

The Contractor shall remove existing structures or parts thereof when specified in the contract and such removal shall be incidental to other bid items unless a separate bid is taken for the removal of such structures. The removal of such structures or parts thereof, when not specified in the contract but subsequently required, shall be paid for as Extra Work.

The Contractor shall dispose of all materials removed at locations specified in the contract.

104.9 Old Material.

All old material shall be the property of the City.

Should any of the old material be suitable for the new work, the same will be used by the Contractor as directed by the Engineer. In case any old material is reused in the work, an amount equal to the cost of a like quantity of new material of the same kind will be deducted from the contract price.

104.10 Cleaning Up.

The Contractor shall, as directed by the Engineer, remove from the City's property and from all public and private property, at the Contractor's expense, all temporary structures, rubbish, and waste materials resulting from the Contractor's operations.

It shall be the responsibility of the Contractor to keep all streets in the area free from mud, clay, gravel, and other materials which vehicles or equipment may track or scatter onto the street or which may be deposited by uncontrolled drainage of water directly onto the streets. The Contractor shall not allow vehicle tires to track earth, gravel or other materials onto streets. Access to the site may be prohibited if and when necessary to accomplish that purpose. It is required that vehicles be loaded in such a manner as to avoid any spillage of earth or other materials onto streets while hauling them from or to the site. Should the Contractor fail to comply with this requirement after twenty-four (24) hours written notice of noncompliance, then the City may have said streets cleaned. The City will have this work accomplished by the most expeditious means available at the time it is required and not necessarily by the least expensive means when time is of the essence. Cost of said cleaning shall be deducted from the payments due the Contractor.

Concrete trucks or any other equipment shall not be flushed out onto public streets, walks, or gutters. This does not include streets being worked on within the project, unless they are completed pavements.

It shall be the responsibility of the Contractor to inspect all access structures and catchbasins periodically during the life of the project for materials which may be deposited in them due to the

activities of the Contractor and it shall further be the Contractor's responsibility to remove said material immediately at the Contractor's expense.

104.11 Final Clean Up.

Upon completion of the work and before acceptance and final payment will be made, the Contractor shall remove from the project area all surplus and discarded materials, rubbish and temporary structures and leave the project area in a neat and presentable condition. The Contractor shall restore, at the cost and expense of the Contractor, all work completed under other contracts which has been damaged by the Contractor's operations, in general conformity with the Specifications for the item or items involved.

The City Inspector and a representative of the Contractor shall inspect the interior of all access structures and catchbasins within the construction limits for debris, construction materials, dirt and stones deposited therein by the activities of the Contractor.

Final clean up shall be considered subsidiary and incidental to the other items of the contract, and no separate or additional compensation will be made therefor.

No project shall be accepted until all excess mud, terrace dirt, asphalt material, rocks and crushed stone have been removed from the sidewalk, terrace, gutter and pavement. Work days may be charged against the Contractor until all clean up is complete and to the satisfaction of the Engineer.

ARTICLE 105 - CONTROL OF THE WORK

105.1 Authority of the Engineer.

The Engineer shall resolve all questions which arise as to the quality and acceptability of materials furnished, work performed, manner of performance, rate of progress of the work, interpretation of the plans and Specifications, acceptable fulfillment of the contract, compensation, and disputes and mutual rights between Contractors under the Specifications. The Engineer shall determine the amount and quantity of work performed and materials furnished.

All decisions of the Engineer shall, when so requested, be rendered in writing. They shall be final and conclusive in all matters unless within ten (10) days after such decision the Contractor applies in writing to the Board of Public Works for a review of such decision.

105.2 Review of Engineer's Decision.

When an application for review of the Engineer's decision is presented, the Board of Public Works shall, within ten (10) days thereafter, give opportunity for the Contractor to appear before it and the Engineer, and present evidence bearing upon such decision, and any claims for a modification or reversal thereof.

Said Board shall render its decisions within ten (10) days after such appearance and its decision shall be final unless the Contractor shall, within ten (10) days after receiving the decision, give notice in writing of its intention to file suit in court for final determination of the matter.

105.3 Authority and Duties of Inspector.

Inspectors assigned by the Engineer have authority to inspect all work done and all material furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. An Inspector is not authorized to revoke, alter or waive any requirements of the Specifications. An Inspector is authorized to call the attention of the Contractor to any failure of the work or materials to conform to the Specifications and contract. An Inspector shall have the authority to reject materials or suspend the work until any questions at issue can be referred to and decided by the Engineer.

If the Contractor fails to suspend operations when ordered to do so in writing, the work done after such order is issued may be rejected without payment therefor, as determined by the Board of Public Works.

The Inspector shall in no case act as supervisor or perform other duties for the Contractor, nor interfere with the management of the work done by the latter. Any advice which the Inspector may give the Contractor shall not be construed as binding the Board of Public Works in any way, or releasing the Contractor from fulfilling all of the terms of the contract.

The presence or absence of the Inspector shall not relieve in any degree the responsibility or the obligation of the Contractor to perform the work in accordance with the contract documents.

105.4 Participation by Another Governmental Body.

When another governmental body is to pay all or a portion of the cost of the work covered by the contract, the work shall be under the supervision of the City but subject to the inspection and approval of the proper official of the other governmental body and in accordance with the applicable Statutes, and rules and regulations made pursuant thereto. Such inspection and approval shall in no sense make the other governmental body a party to the contract, and will in no way interfere with the rights of either party hereunder.

105.5 Inspection of Work.

The Engineer and all duly authorized representatives shall at all times have access to the work wherever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for inspection. This shall include providing access to the site for the vehicles of the engineer and duly authorized representatives.

The Engineer reserves the right to inspect any and all sewers by the use of closed circuit internal televising system, and to use the data and information obtained in the final determination as to the acceptability of the sewer.

If the Specifications, the Engineer's instructions, laws, Ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Engineer timely notice of its readiness for inspection, and if the inspection is by another authority than the Engineer, of the date fixed for such inspection. Inspections by the Engineer shall be promptly made, and where practicable, at the source of supply. If any work should be covered up without approval or consent of the Engineer, it must, if required by the Engineer, be uncovered for examination at the Contractor's expense.

The Contractor shall promptly remove, rebuild and make good at the Contractor's cost any work which is found to be defectively executed. Any failure to reject work at the time of its construction shall not be construed as an acceptance of defective work. If any doubt exists as to the character of such work, it must, on order of the Engineer, be taken up. If found to be imperfect, it must be made good without additional compensation; if satisfactory the cost of removing and replacing shall be paid as Extra Work.

105.6 Contractor's Responsibility for Work.

Until acceptance of the work by the City in accordance with Section 105.15, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part thereof by the action of the elements, or from any other cause, whether arising from the execution or nonexecution of the work. The Contractor shall promptly rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before such acceptance and shall bear the expense thereof, except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God, of the public enemy, or of governmental authorities.

In case of suspension of work from any cause whatever, the Contractor, prior to suspension, shall take such precautions as may be necessary to prevent damage to the project, provide for normal drainage and shall erect any necessary barricades, signs or other facilities, at the Contractor's expense, as directed by the Engineer.

The Contractor shall give the work the constant attention necessary to facilitate the progress thereof and shall cooperate with the Engineer and other Contractors and/or utilities on or near the work in every way possible. The Contractor shall have at all times during the progress of construction, irrespective of the amount of work sublet, a competent superintendent or designated representative capable of reading and thoroughly understanding the plans and Specifications, as the Contractor's agent on the work, who shall receive instructions from the Engineer. The Contractor's superintendent or designated representative shall have full authority to execute the orders or directions of the Engineer without delay and to supply promptly such materials, tools, plant, equipment and labor as may be required to properly perform the work.

The Contractor shall follow strictly and without delay all instructions and orders given by the Engineer. All such drawings and instructions shall be consistent with the contract documents, and shall be confirmed in writing upon written request in each case. Any orders given by the Engineer to the superintendent or designated representative of the Contractor in the absence of the Contractor shall have the same force and effect as if given to the Contractor.

If the Contractor, in the course of the work, finds any discrepancy between the plans and the physical conditions of the project area or any errors or omissions in the plans or in the layout as given by points and instructions, it shall be the Contractor's duty to immediately inform the Engineer, in writing if required, and the Engineer shall promptly verify the same. Any work done after such discovery, until authorized, will be done at the Contractor's risk. If the Contractor observes that the drawings and Specifications are at variance with laws and regulations, the Contractor shall promptly notify the Engineer in writing and any necessary changes shall be adjusted as provided in the Contract for changes in the work. If the Contractor performs any work knowing it to be contrary to such laws, Ordinances, rules or regulations, and without such notice to the Engineer, the Contractor shall bear all costs arising therefrom.

Neither party shall employ or hire any employee of the other party without the other party's consent.

105.7 Contract Documents.

Unless otherwise provided in the contract documents, the City will furnish to the Contractor, free of charge, all copies of drawings and Specifications reasonably necessary for the execution of the work. The Contractor shall keep one copy of all drawings and Specifications on the project site, in good order, available to the Engineer. The Engineer shall furnish, with reasonable promptness, additional instructions, by means of drawings or otherwise, necessary for the proper execution of the work.

105.8 Working Drawings.

The approved plans will be supplemented by such working drawings as are deemed necessary to adequately control the work. It is mutually agreed that all authorized alterations affecting the requirements and information given on the approved plans shall be in writing. No changes shall be made on any plan or drawings after the same has been approved by the Engineer, except by direction of the Engineer.

Working drawings shall consist of such detailed plans as may be required for the prosecution of the work and which are not included in the plans furnished by the Engineer.

It is expressly understood that approval by the Engineer of the Contractor's working drawings does not relieve the Contractor of any responsibility for accuracy of dimensions and details, or of mutual agreement of dimensions and details. The Contractor shall be responsible for agreement and conformity of the working drawings with the approved plans and Specifications.

The contract price shall include the cost of furnishing all working drawings and the Contractor will be allowed no extra compensation for such drawings.

105.9 Surveys, Points and Instructions.

The City shall make all surveys unless otherwise specified in the contract.

The Engineer will furnish and set the construction survey stakes or reference points and bench marks necessary to establish the location, alignment and elevation for the project and such stakes will bear instructive markings or be accompanied by necessary detailed instructions. These stakes and marks shall constitute the field control by and in accordance with which the Contractor shall govern and execute the work. The Contractor shall furnish, such other facilities and labor as may be required in establishing such other points and lines necessary to the prosecution of the work. The Contractor shall furnish additional stakes and other material necessary for maintaining the points and lines given. The Contractor shall be responsible for the preservation of all stakes and marks, and if any of the survey stakes or marks have been carelessly or willfully destroyed or disturbed by the Contractor, the cost to the City of replacing them may be charged against the Contractor and be deducted from the payment of the work.

The Contractor shall provide reasonable and necessary opportunities and facilities for setting points and making measurements. The Contractor shall make timely demands upon the Engineer for such points and instructions as may be necessary as the work progresses. The Contractor shall not proceed until the Engineer has had the opportunity to furnish such points and instructions. The work shall be done in strict conformity with such points and instructions.

105.10 Conformity with Plans and Specifications.

All work performed and all materials furnished shall be in conformity with the lines, grades, cross sections, dimensions and materials requirements shown on the plans or indicated in the Specifications. It shall be finished to produce quality work and appearance within limits of precisions expected of good construction.

The lines, grades, typical sections, and dimensions shown on the plans are subject to adjustment by the Engineer during construction, but any deviation of a character not contemplated or provided for in the plans, Specifications or working drawings that may be required to successfully complete the project will be determined by the Engineer and authorized in writing.

In the event the Engineer finds the materials or the finished product in which the materials are used not within conformity with the plans and Specifications, the Engineer shall then make a determination whether or not acceptable work has been produced and can be accepted and remain in place. If the Engineer determined that acceptable work has been produced and can be accepted and remain in place, the Engineer will document the basis of acceptance by contract modification or as provided elsewhere in these Specifications which will provide for an appropriate adjustment in the contract price for such work or materials, either as the Engineer deems necessary to conform to his

determination based on engineering judgment, or as specifically provided for elsewhere in these Specifications.

In the event the Engineer finds that the materials or the finished product in which the materials are used or the work performed are not in conformity with the plans and Specifications and have resulted in an inferior or unsatisfactory product, the work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor. This expense includes total and complete restoration of any disturbed surface to original or better than original condition which existed before the repairs or replacement, regardless of improvements on lands where the repairs or replacement is required.

105.11 Removal of Unauthorized and Unacceptable Work.

Work performed without lines and grades being given, work performed beyond the lines and grades shown on the plans, or as given, except as herein provided, or any Extra Work performed without authority, will be considered as unauthorized and may not be measured or paid for by the City. Work so done may be ordered removed or replaced at the Contractor's expense.

Work which is not in conformity with the plans and Specifications and which results in an inferior or unsatisfactory product will be considered as unacceptable work.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness or any other cause, found to exist prior to the final acceptance of the work, shall be immediately removed and acceptably replaced or otherwise satisfactorily corrected by and at the expense of the Contractor. This expense includes total and complete restoration of any disturbed surface to original or better than original condition which existed before the repairs or replacement, regardless of improvements on lands where the repairs or replacement is required.

Upon failure on the part of the Contractor to comply forthwith with any written order of the Engineer made under the provisions of this Section, the Engineer will have authority to cause unauthorized work to be removed or replaced and unacceptable work to be remedied or removed and replaced and to deduct the cost thereof from any monies due or to become due the Contractor.

105.12 Cooperation by Contractor.

The City reserves the right at any time to contract for and perform other or additional work on or near the work covered by any contract.

The Contractor shall arrange and conduct the work so as not to interfere with the operations of other contractors engaged upon or near the work and to join the work to that of others in a proper manner, and in accordance with the spirit of the plans and Specifications, and to perform the work in the proper sequence in relation to that of other work, all as may be directed by the Engineer.

If any part of the Contractor's work depends for proper execution or results upon the work of any other contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such work that render it unsuitable for such proper execution and results. The Contractor's failure to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of the Contractor's work, except as to defects which may develop in the other contractor's work after the execution of the Contractor's work.

The Contractor, in performing work related to the contract, shall be held responsible for any damage done to the work performed by another Contractor. Each Contractor shall so conduct operations and maintain the work in such condition that adequate drainage shall be in effect at all times.

In case of a dispute arising between two or more Contractors engaged on the same improvement as to the respective rights of each under the Specifications, the Engineer shall determine the matters at issue and shall define the respective rights of the various interests involved in order to secure the completion of all parts of the work in general harmony and with satisfactory results. The Engineer's decision shall be final and binding on all parties concerned and shall not in any way be a cause for claims for extra compensation by any of the parties.

The right to construct or reconstruct any utility services in the highway or street, or to grant permits for the same, at any time, is hereby expressly reserved by the City, and the Contractor shall not be entitled to any damages either for the digging up of the street or for any delay occasioned thereby. Upon the presentation of a duly authorized and satisfactory permit which provides that all necessary repair work will be paid for by the party to whom such permit is issued, the Engineer may authorize the Contractor to allow parties bearing such permits to make openings in the street. The Contractor shall, when ordered by the Engineer in writing, make in an acceptable manner all necessary repairs due to such openings and such necessary work ordered by the Engineer shall be paid for at contract prices or on the basis of Extra Work as provided for in the Specifications and shall be subject to the same conditions as original work performed.

When indicated on the plans or Specifications or when directed by the Engineer or Inspector, the Contractor shall provide the City adequate opportunity to install all traffic signal loops in the stone base course or asphaltic lower layer before paving or final paving. The Contractor shall install the necessary loop lead duct conduit and signal pull boxes prior to the City installing the loop detector wires and shall coordinate construction operations with the City. The Contractor shall provide a minimum twenty-four (24) hours and a maximum forty-eight (48) hours advance notice to the Traffic Engineering Electrical Supervisor, Madison Traffic Engineering Shop (608-266-4767), prior to final compaction and trimming of the stone base course or asphaltic upper layer paving. The City shall be allowed twenty-four (24) hours to install the loop detector wires after such compaction and trimming or asphaltic lower layer paving is completed. Cost to repair damage to traffic signal loops that occur after their installation due to Contractor negligence, and the cost for all work to install loop detector wires in the asphaltic upper layer due to improper notice to the Traffic Engineering Electrical Supervisor will be deducted from the contract.

105.13 Order of Completion.

The Contractor shall complete any portions of the work in such order of time as has been stated in the contract or in such order as the Engineer may declare necessary by reason of an emergency.

105.14 Use of Completed Portions.

The City shall have the right to take possession of and use any completed or partially completed portion of the work, notwithstanding the time of completing the entire work or such portions, may not have expired. If such prior use increases the cost of, or delays the work, the Contractor shall be entitled to such extra compensation, or extension of time, or both as the Engineer may determine.

105.15 Substantial Completion.

When the Contractor considers the entire work completed, the Contractor shall notify the Engineer, in writing, that the work is complete and request that the Engineer conduct an inspection of the work. Within a reasonable time thereafter the Contractor and the Engineer shall make an inspection of the work to determine the status or completion. If the Engineer does not consider the work complete, the Engineer will notify the Contractor, in writing, of the reasons therefor. At this time any defects or imperfections that appear in the whole or any part of the work, which are caused by or due to any fault or negligence of the Contractor, the same shall be corrected before the work will be deemed substantially complete. Upon completion of the work to repair the defects and imperfections by the Contractor, the Contractor shall notify the Engineer, in writing, that the work has been completed. If, upon inspection, the work is found to be satisfactory by the Engineer, a certificate of substantial completion will be issued.

No project shall be considered complete until all excess mud, terrace dirt, asphalt material, rock and crushed stone have been removed from the sidewalk, terrace, gutter and pavement; inlets and storm sewers cleaned; and erosion control is in place. Work days may be charged against the contractor until all cleanup and repair of defects and imperfections are completed.

105.16 Guarantee.

Unless otherwise stated in the special provisions, the Contractor shall guarantee the work performed under this contract for a period of one year from the date of Certificate of Substantial Completion against defects in workmanship or materials, all in accordance with Section 105.15, “**Substantial Completion.**” If any defect should appear during the guarantee period, the Contractor shall make required replacement or acceptable repairs of the defective work at the Contractor’s expense. This expense includes total and complete restoration of any disturbed surface to original or better than original condition which existed before the repairs or replacement, regardless of improvements on lands where the repairs or replacement is required. The Payment and Performance Bond shall remain in force during this guarantee period. This guarantee is in addition to any other rights and remedies the City may have.

ARTICLE 106 - CONTROL OF MATERIALS

106.1 Source of Supply and Quality.

The Specifications require the use of new, high quality materials throughout the work, except as may specifically be provided elsewhere in the Specifications, on the plans, or in the special provisions, incorporated in the work in such a manner as to produce completed construction which is workmanlike and acceptable in every detail.

Only approved materials shall be incorporated into the work. The permitted use of an untested material shall not be construed as implied approval of the material, and such use shall be at the Contractor's risk pending completion of subsequent tests made on representative samples of the material.

Fabricated materials obtained by the Contractor from a manufacturer or a supplier shall, at the Engineer's discretion, be subject to approval before delivery of the material to the job site. Furthermore, the Contractor may be required to obtain material from another approved source, if it is determined that the product of a manufacturer or supplier is not of satisfactory uniformity or consistent quality.

In the case of materials obtained or produced from natural deposits, either commercially or by the Contractor, the Contractor shall obtain the Engineer's preliminary approval of the source.

The Contractor shall furnish samples as required, representative of the material proposed for the work, in sufficient time to permit testing as necessary to establish a basis for approval. Such samples shall be obtained under the observation of, and with methods approved by the Engineer.

Tests will be made on these preliminary samples and reports rendered, but it is to be understood that such tests are for information only and that any preliminary approval based thereon shall not be construed as a guaranty for acceptance of any material which may be delivered later for incorporation into the work.

Only the materials actually delivered for the work will be evaluated, and their acceptance or rejection will be based solely on the results of the tests prescribed in the Specifications.

The Contractor shall assume full responsibility for the furnishing of uniform and satisfactory materials. When materials are obtained from local deposits, the Contractor shall be responsible for any losses or damages resulting from the opening and operation thereof, or from the failure of the deposit after development to produce acceptable materials.

106.2 Plant Inspection.

The Engineer may undertake the inspection of materials at the plant (point of manufacture or source of supply), if necessary, or another agency may be designated for the purpose.

In the event plant inspection is undertaken, the following conditions shall be met:

1. The Engineer shall have the cooperation and assistance of the Contractor and producer.

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2. The Engineer shall have free entry at all times to such parts of the plant as may involve the manufacture or production of the materials being furnished.
3. If required by the Engineer, the Contractor shall arrange for acceptable working space in or near the plant for use by the Inspector. Such space shall be independent of space used by the material producer.
4. The Contractor shall give the Engineer sufficient advance notice of production schedules to permit making necessary arrangements.
5. Adequate safety measures shall be provided and maintained.

The right is reserved by the City to retest or reinspect plant inspected materials after delivery to the job-site and to reject any which are found not to comply with the contract requirements.

106.3 Samples and Tests.

To ascertain if materials comply with contract requirements samples shall, at the discretion of the Engineer, be taken at the source or at job destination, and as often as the Engineer deems it advisable or necessary. The taking of samples shall be in accordance with standard practices, except where methods and procedures for sampling a material are otherwise set forth in the Specifications.

The Contractor shall furnish without charge all samples required by the Engineer and shall afford such facilities as may be required for collecting and forwarding them. The Contractor may be required to furnish, when requested by the Engineer, a written statement giving the origin, composition or process of manufacture of a material.

In lieu of making tests, the Engineer may, in the case of commercial products, accept the manufacturer's Certified Report of Test of Analysis or a Certificate of Compliance. The samples for the tests or analyses reported on in the Certified Report of Test or Analysis may be those normally obtained in a formal product quality control program or obtained to represent the specific lot of material furnished when no formal control program is in effect, or those required to be obtained by Specifications.

Unless otherwise provided in the contract, it shall be the intent of these Specifications that conformity of materials to the specified requirements shall be at the time, or just prior to the time, they are incorporated into the work.

All tests shall be made in accordance with the methods described and designated herein or in the contract. Reference to ASTM Specifications shall be understood to mean the Standards or Tentative Standards of the American Society for Testing and Materials. References to A.R.E.A. Specifications shall be understood to mean the American Railway Engineering Association, Construction and Maintenance Section, Association of American Railroads, Manual. Reference to the AASHTO Specifications shall be understood to mean the Standard or Interim Specifications for Highway Materials and Methods of Sampling and Testing of the American Association of State Highway and Transportation Officials. Unless otherwise designated, references to various standard specifications and test methods shall be understood to mean the specification or test method which is current on the date of advertisement for bids.

Test results obtained by the City on samples of materials furnished by the Contractor shall be available to the Contractor.

106.4 Storage of Materials.

Materials shall be so stored as to insure the preservation of their quality and suitability for the work. Stored materials, even though approved before storage, shall be subject to inspection prior to their use in the work and shall meet the requirements of the contract at the time they are used. Stored materials shall be located so as to facilitate inspection. With the Engineer's approval, portions of the right-of-way not required for public travel may be used for storage purposes and for the placing of the Contractor's plant and equipment, but any additional space required shall be provided by the Contractor at the Contractor's expense. Contractor's equipment shall not be secured in any way to a street or park tree trunk.

106.5 Defective Materials.

All materials which are not in conformity with the requirements of the Specifications shall be considered defective and shall be rejected. Rejected materials shall be removed from the site of the work unless otherwise permitted by the Engineer. Any defective materials which have been subsequently corrected shall not be used or accepted until reevaluated and approved by the Engineer.

Materials which have been incorporated in the work and subsequently found to be defective may be left in place with the permission of the Engineer, after the Engineer's determination that reasonably acceptable work has been produced. An appropriate deduction will be made in the contract price for such materials or for the work in which such defective materials are incorporated.

ARTICLE 107 - PROTECTION OF PUBLIC AND UTILITY INTERESTS

107.1 Public Convenience and Safety.

The Contractor shall avoid as far as possible the maintenance of any condition which might be deemed at law to be an “attractive nuisance”. Where such condition is unavoidable or where apparent or potential hazards occur incident to the Contractor’s conduct of the work, the Contractor shall maintain a proper watch or provide other reasonable safeguards. The Contractor and its surety shall be responsible for all damage, bodily injury, or death arising through the Contractor’s negligence either in maintaining an attractive nuisance or otherwise.

Fire hydrants shall be visible and accessible from the street at all times to the Fire Department. No material or other obstructions shall be placed within ten (10) feet of a fire hydrant.

The Contractor shall strictly adhere to Section 182.0175, Wis. Statutes, regarding notification and location of utilities, including but not limited to three working days advance notice.

When directed by the Engineer, the Contractor shall uncover utility lines within the proposed construction limits well in advance of the construction. The grade of the utility lines shall be determined by the Engineer, and the utility companies will be advised by the Engineer as to their adjustment required. The Contractor shall then backfill and maintain the openings. Costs of this work shall be included in the unit price bid for Utility Line Openings as provided for in Measurement and Payment for Utility Line Openings in Part 5 of these Specifications.

In the case of horizontal boring construction within the Right-Of-Way, the Contractor shall verify that no damage was done to storm sewer mains, sanitary mains and laterals which were crossed, when directed by the Engineer. This may be accomplished by uncovering the line prior to boring or televising the line after boring. In addition, the Contractor may wish to televise the line before boring to verify the existing condition of the pipe. If the Contractor decides not to televise prior to boring, any damage to the pipe shall be considered the responsibility of the Contractor and shall be repaired by the Contractor at their expense. All costs associated with exposing and or televising storm sewer mains, sanitary mains and laterals shall be the responsibility of the Contractor. The Contractor shall coordinate access to homes in order to televise laterals. The video tape shall be date and time stamped and provided to the City Engineer within 24 hours of televising.

The Contractor shall obtain all available information in regard to new utilities and new cables, conduits and transformers, planned for installation concurrent with the improvements, and make proper provision and give proper notification so that new utilities and electrical equipment can be installed at the proper time without delay to the Contractor or unnecessary inconvenience to the owner. The location of new underground utilities and electrical equipment, planned to be installed concurrently with the improvement, shall not be covered with pavement prior to the installation of such facilities.

The Contractor shall schedule the operations so as to cause a minimum of interruption, interference or disturbance to the operation of stores, businesses, office buildings, hotels, churches, etc., and to allow access by pedestrians and emergency, delivery and service vehicles at all times.

The Contractor shall restore parking immediately on the street or portions of the street when construction is expected to be delayed for more than one week regardless of the cause unless the Engineer finds that it is not in the public’s best interest to restore the parking.

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Any temporary shutdown of existing services, i.e., sewers, water, gas, electrical power and access, as may be required, shall be performed only at such times and for such duration as agreed to by the Engineer. The interruption of services and access shall be conducted in accordance with a program mutually agreed to by the Engineer and the Contractor.

The Contractor shall work such overtime, including extended hours on normal work days, Saturdays, Sundays and holidays, as required by the Engineer to meet the above requirements at no additional cost to the City.

Gasoline or diesel operated equipment shall be equipped with mufflers and insulators to minimize noise.

During times when work will prevent access to driveways, the Contractor shall notify all residents, a minimum of 48 hours in advance, if vehicular access cannot be provided to their property.

The Contractor shall phase the work in such a way that the maximum cumulative total time in which any residential property is completely without driveway access is twenty (20) calendar days. Should the Contractor desire to provide temporary crushed stone driveways in order to comply with the above time constraints, the unit bid price for crushed stone will be paid by the City. It is anticipated this stone will be reused elsewhere in the contract. Notice shall be given in accordance with Section 107.7 - Maintenance of Traffic.

Should the Contractor need to use high early strength concrete to meet the day requirement, no additional compensation shall be paid.

The Contractor shall maintain access to all commercial drives, at all times unless permission is granted in writing to close the drive. This may be done by phasing of drive construction and/or plating of drives. No additional compensation shall be given for plating to maintain access.

The Contractor shall provide access to handicap residents at all times. The City shall compensate the Contractor for providing temporary gravel driveways to handicap residences at the contract unit price for crushed stone.

The contractor shall assist residents with refuse collection. Assistance shall be provided by either: maintaining access for City of Madison collection vehicles to all properties located in the project limits; or hauling all refuse and recyclables to a common location at the end of the project where City of Madison crews can collect the refuse and recyclables.

If sidewalk exists on both sides of any given block, the Contractor shall complete all repairs and reopen the sidewalk on one side of the block before beginning repairs on the opposite side of the block including work at the intersection. The contractor may propose alternatives for construction of sidewalk ramps such as constructing temporary ramps.

The City will refer any call or claim, the substance of which is an event caused by the Contractor, or by any person or company utilized by the Contractor, to the Contractor for handling. Within two (2) business days after contacting the individual, the Contractor shall provide a factual summary of the event giving rise to the call or claim, along with the Contractor's proposed resolution, to the City's Risk Manager or designee.

107.2 Protection and Restoration of Property and Property Monuments.

The Contractor shall use every reasonable precaution to prevent the damage or destruction of corporate, government or private property such as poles, trees, shrubbery, crops and fences adjacent to or interfering with the work; all overhead structures such as wires, cables, etc.; within or outside of the right-of-way.

The Contractor shall notify the owners of all corporate, government or private property which interferes with the work advising them of the nature of the interference, and shall arrange with them for the disposition of such property. The Contractor shall furnish the Engineer upon request with copies of all such notification and final agreements.

The Contractor shall give notice to owners and protect and support all water and gas pipes or other conduits and all railway tracks, buildings, walls, fences or other properties which may be subject to damage or subsidence during the execution of the work. The Contractor's responsibility shall be as prescribed in Section 101.111, Wis. Statutes. The Contractor shall take all reasonable and proper precautions to protect persons, animals and vehicles of the public from injury and wherever necessary shall erect and maintain a fence or railing around any excavation, and place a sufficient number of amber lights about the work and keep them burning from twilight until sunrise. The Contractor shall employ one or more watchpersons as an additional security wherever they are needed.

The Contractor shall not in any way prevent the flow of water in the gutters of the street, and shall use proper means to permit the flow of surface water along the gutters while the work is progressing.

The Contractor shall be responsible for the damage or destruction of property of any character resulting from neglect, misconduct, or omission in the manner or method of execution or nonexecution of the work, or caused by defective work or the use of unsatisfactory materials, and shall restore such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding, or replacing it as may be directed, or the Contractor shall otherwise make good such damage or destruction in an acceptable manner. If the Contractor fails to do so, the Engineer may, after the expiration of a period of forty-eight (48) hours after giving notice to the Contractor in writing, proceed to repair, rebuild or otherwise restore such property as may be deemed necessary, and the cost thereof shall be deducted from any compensation due or which may become due the Contractor under the contract.

The Contractor shall be responsible for all costs for the repair of underground pipes, wires, or conduits damaged by the Contractor's employees or subcontractors during the construction of the project.

The Contractor will be liable for all damage caused by fires and shall under no consideration start fires without first securing the necessary permits and the approval of the authority having jurisdiction even though the Contractor may be ordered or required to do such burning. In burning brush, stumps, or rubbish, care must be taken not to damage any standing trees, shrubs or other property.

The City reserves the right to impose gross vehicle weight and axle load limits where in its judgment the integrity of existing streets may be threatened.

The Contractor shall not grade, excavate, store material or equipment, or otherwise disturb the area in the vicinity of any tree located in the terrace without prior permission from the Engineer or City

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Forester. All work done in the vicinity of any tree located in the terrace shall be completed in accordance with section 107.13 Tree Protection Specification.

No ropes, cables, or guys shall be fastened to or attached to any tree for anchorage.

107.2(a) Public Land Survey Monuments

Preserve Existing Monument

The Contractor shall protect and carefully preserve all land boundary property corners, City survey control, and Public Land Survey monuments which exist within the project limits. Any of these three monument types which are disturbed or removed by the Contractor through the negligence or the carelessness of the Contractor's employees or subcontractors, shall be replaced by a Licensed Surveyor at the Contractor's expense. The Contractor shall contact City Surveyor, (267-1971), forty-eight (48) hours prior to any work adjacent to the monument to allow a City Surveyor to confirm the monument location. The City Surveyor shall also be contacted after the work has been completed in order to confirm the monument location has not been compromised.

Reset Existing Monument

Description

Reset Monument shall include hand excavation around the existing monument, salvage of the existing monument, and excavation (minimum six (6) inch diameter hole for setting the new monument, backfilling the monument. The Contractor shall contact City Surveyor, (267-1971), forty-eight (48) hours prior to excavation. The City Surveyor will set ties based on the existing monument location and coordinate the placement of the new monument.

Material

The City of Madison shall supply the new monument and new casting.

Method of Measurement

Reset Monument shall be measured as a completed unit.

Basis of Payment

The quantity of survey monuments, measured as provided above, shall be paid for at the contract unit price each for Reset Monument. This price shall be payment in full for all excavation around existing monument, removal of existing monument if necessary, excavating for the placement of the city supplied monument, for placing City supplied casting; for furnishing, placing and compacting backfill material, for disposal of surplus materials; and for all labor, tools, equipment and incidentals necessary to complete this item of work as defined above and in SDD 3.12.

107.3 Indemnification.

To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold harmless the City, its officials, officers, agents, employees, and consultants from and against all suits, claims, damages, losses and expenses, direct, indirect or consequential (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs)

arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense: (a) is attributable to bodily injury, sickness, disease, death, personal injury, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom and, (b) is caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the work or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder or arises by or is imposed by law regardless of the negligence of any such party.

In any and all claims against the City, its officials, officers, agents, employees, or consultants, by any employee of the Contractor, any subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the work or anyone for whose acts any of them may be liable, the indemnification obligation hereunder shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any such subcontractor or other person or organization under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

The obligations of the Contractor hereunder shall not extend to the liability of the City's consultants or consultants' agents or employees arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, and designs or specifications.

107.4 Contractor's Liability Insurance.

It shall be the Contractor's responsibility to see that all of the contract operations incident to the completion of the contract are covered by liability insurance in order that the general public or any representative of the contracting authority may have recourse against a responsible party for injuries or damages sustained as a result of said contract operations. This requirement shall apply with equal force, whether the work is performed by the Contractor, or by a subcontractor or by anyone directly or indirectly employed by either of them.

The Contractor shall not commence work under this Contract, nor shall the Contractor allow any Subcontractor to commence work on its Subcontract, until the insurance required below has been obtained.

107.4(a) Workers' Compensation Insurance.

The Contractor shall procure and maintain during the life of this Contract, statutory Workers' Compensation Insurance as required by the State of Wisconsin and other applicable laws on employees to be engaged in work at the site of the project under this contract and, in case of any such work sublet, the Contractor shall require the Subcontractor(s) similarly to provide Workers' Compensation Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Workers' Compensation Insurance. The Contractor and Subcontractor(s) shall also carry minimum Employers Liability limits of \$100,000 Each Accident, \$100,000 Disease – Each Employee, and \$500,000 Disease – Policy Limit, or those limits necessary to meet underlying Umbrella Liability insurance requirements.

107.4(b) General Liability.

The Contractor shall procure and maintain during the life of this Contract, Commercial General Liability insurance including, but not limited to, products liability, completed operations, contractual

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liability, and explosion, collapse and underground coverage in an amount not less than \$1,000,000 per occurrence/\$2,000,000 aggregate on a per project basis. Products-completed operations coverage shall be carried for two years after completion of work. Contractor's coverage shall be primary and list the City of Madison, its officers, officials, agents and employees as Additional Insureds.

107.4(c) Auto Liability Insurance.

The Contractor shall procure and shall maintain during the life of this Contract Business Automobile Liability insurance covering owned, non-owned and hired automobiles for limits of not less than \$1,000,000 combined single limit per accident.

107.4(d) Umbrella Liability Insurance.

The Contractor shall procure and maintain during the life of this Contract Umbrella Liability coverage at least as broad as the underlying Commercial General Liability, Business Automobile Liability and Employers Liability with minimum limits of \$5,000,000 per occurrence and aggregate.

107.4(e) Other Insurance.

The City of Madison reserves the right to require Contractor and/or any Subcontractor(s) to procure additional insurance policies depending on the type of work being performed. Such requirements will be noted in the contract documents.

107.4(f) Subcontractor's Insurance.

The Contractor shall insure the activities of his/her Subcontractors in his own policy.

107.4(g) Acceptability of Insurers.

Insurance is to be placed with insurers who have an A.M. Best rating of no less than A- and a Financial Category rating of no less than VII.

107.4(h) Certificates of Insurance.

The Contractor shall furnish the City of Madison with insurance certificates showing the type, amount, class of operations covered, effective dates and dates of expiration of policies prior to commencement of work. Such certificates shall also contain substantially the following statement: "The insurance covered by this certificate will not be canceled or materially altered, except after thirty (30) days written notice has been received by the City of Madison." The Contractor shall provide copies of additional insured endorsements or insurance policies if requested by the City.

107.4(i) Insurance for the Construction of Buildings.

The City will effect and maintain, Builder's Risk Insurance on a replacement cost basis in an amount equal to the estimated project cost. Coverage includes the building as well as materials stored on the site to be incorporated in the building, including form work in place, form lumber on site, temporary structures, equipment and supplies incidental to the construction of the building.

The insured loss, if any, is to be adjusted with and payable to the City.

Machinery and construction equipment, owned or rented by the Contractor, such as, but not limited to, mixers, hoists, cranes, scaffolding, miscellaneous and small tools, canvasses, tarpaulins, forms and shores (the capital value of which is not wholly included in the cost of the work) and Contractor's job office and warehouse, are not covered by this insurance.

This provision shall only apply to the contracts for the construction of buildings.

107.5 Use of Explosives.

When blasting is permitted by the Engineer, the Contractor shall use the utmost care to protect life and property. The blasting shall be done only by a blaster licensed for City blasting. The Contractor shall comply with all laws, ordinances, and applicable safety code requirements and regulations relative to the handling, storage and use of explosives and protection of life and property, and the Contractor shall be responsible for all damage thereto caused by the Contractor's or any subcontractor's operations. Signals warning persons of danger shall be given before any blast.

Excessive blasting or overshooting shall not be permitted. The Engineer shall have authority to order any method of blasting discontinued which leads to overshooting or is dangerous to the public or destructive to property or to natural features.

The Contractor shall notify the Supervisor of Mine Safety, State of Wisconsin Department of Commerce, Division of Safety, at least forty-eight (48) hours before any blasting operation begins and shall obtain a permit from the Fire Chief in accordance with Section 34.04, Madison General Ordinances.

Before any blasting shall be done by the Contractor, a certificate of insurance indicating special blasting ("X") coverage shall be filed with the Engineer. All of the requirements specified in Section 107.4 above shall apply to this coverage.

107.6 Dustproofing.

The Contractor shall take all necessary steps to control dust arising from operations connected with this contract. When ordered by the Engineer, the Contractor shall dustproof the construction area by sprinkling with water to which has been added calcium chloride at the rate of 400 pounds per 1,000 gallons of water. The Contractor shall be paid at the rate of \$30.00/1,000 gallons of water applied with a sprinkler truck and \$800.00 per ton of calcium chloride so applied. With the Engineer's permission, for limited areas only, the Contractor may control dust by sprinkling with water without the use of calcium chloride, or the calcium chloride may be spread dry by hand.

107.7 Maintenance of Traffic.

When the contract provides that the street or portions thereof undergoing improvement will be closed to through traffic, the Contractor will not be responsible for maintenance of the detour, unless specified in the contract, that may be necessary on adjacent streets for the accommodation of through traffic. The Contractor shall at all times conduct the work in such a manner as to insure the least possible obstruction to local traffic serving abutting properties along the street being improved and to that end shall provide and maintain in reasonably passable conditions such temporary roads and temporary approaches as are deemed reasonable and practical by the Engineer.

When the contract provides for the maintenance of traffic over or along the street while undergoing improvements or reconstruction, the street shall be kept open to all traffic and the Contractor shall keep the portions of the street being used by public traffic in such condition that traffic will be reasonably and adequately accommodated. The Contractor shall provide and maintain in safe and adequate condition temporary approaches, crossings and intersections with roads and necessary driveways. The Contractor shall bear all of the expense of maintaining traffic over the section of street undergoing improvement and the construction and maintenance of such approaches, crossings, intersections and other features as may be necessary without direct compensation except as to those features of such work which are a part of planned, completed construction work.

During the life of the project the Contractor, at locations designated in the contract, shall provide means satisfactory to the Engineer for crossings for the traffic on intersecting streets in a manner which will not interrupt the flow of such traffic or be harmful to the improvement. Temporary bridges for pedestrians shall be provided as required by the plans or special provisions or as ordered by the Engineer over new pavement, sidewalks, trenches, etc., at street intersections.

During a suspension of work under the terms of the contract or authorized by the Engineer due to unfavorable weather or other conditions which are not the fault of the Contractor and which make such suspension advisable, the Contractor shall make passable and shall open to traffic such portions of the street under improvement and such temporary roadways or portions thereof as may be agreed upon between the Contractor and Engineer for temporary accommodation of necessary traffic during the period of suspension. During the period of suspension, the surface maintenance of the travelway of the temporary route or line of travel agreed upon shall be at the expense of the City. When work is resumed, the Contractor shall replace or renew any work or material lost or damaged because of such temporary use of the highway under improvement. The Contractor shall remove, when required, work or material used in the temporary maintenance thereof, and shall complete the improvements in every respect as though its prosecution had been continuous and without interference except as may otherwise have been agreed upon by the Contractor and Engineer at the time arrangement was made for the temporary accommodation of necessary traffic during the anticipated period of suspension. Replacement of materials and additional work made necessary because of the temporary use of the highway shall be paid for at contract unit prices or as Extra Work.

All signing and barricading shall conform with the Federal Highways Administrations "Manual on Uniform Traffic Control Devices" (MUTCD) and the City of Madison Standards for sidewalk and bikeway closures and the State of Wisconsin Standard Detail Drawing S.D.D. 15d30.

The contractor shall submit an acceptable Traffic Control Plan to the office of the City Traffic Engineer, a minimum of 48 hours prior to the start of work on any project.

The contractor shall not restrict traffic during peak hours on streets with a functional classification of collector or arterial. Peak hours are defined as 7:00 a.m. to 8:30 a.m. and 4:00 p.m. to 5:30 p.m.

107.8 Notification When Closing Street.

All Contractors shall give the Traffic Engineer (266-4761) notice of their intent to begin work on any street at least seventy-two (72) hours in advance. If it is necessary that a detour be used during the life of the project, then the Traffic Engineer shall have at least ninety-six (96) hours notice. Saturdays, Sundays, and legal holidays shall not be included in the measuring of notice time. Further notice shall be given of any major change in project scheduling following the original notification.

The Contractor shall not remove existing traffic control or street name signs. The Traffic Engineering Field Operations Facility (266-4767) will remove these signs within twenty-four (24) hours, (one work day), upon the Contractor's request.

In case of an emergency street closing, particularly on Saturday, Sunday or a legal holiday, then the Contractor shall notify individually, the Police Department, Fire Department and Traffic Engineer.

The Contractor shall not in any manner unnecessarily obstruct the streets or crossings, and shall at all times and under all circumstances provide safe and sufficient means for foot passengers and vehicles.

The Contractor shall not at any time close any street to the public except by express permission of the Traffic Engineer. When closing a street is provided for in the contract or when the character of the work as determined by the Engineer makes it necessary that a street or portion thereof be closed to traffic, the Contractor shall notify the Traffic Engineer at the earliest possible date so that arrangements may be made for closing the street and providing detours if possible.

107.9 Barricades, Warning Signs and Flagging.

This work shall consist of furnishing, erecting and maintaining for the life of the contract, and removing at the completion of the work contemplated by the contract, traffic signs, pavement markings, barricades, lights and signals and shall include flagging and guidance of traffic. This work shall be done in accordance with the current edition of the Federal Highway Administration Part VI of the "Manual on Uniform Traffic Control Devices" (MUTCD), and the State of Wisconsin Supplementary and City of Madison Supplements. All requirements of the manual shall be a part of the contract as if attached thereto on each Public Works Project in the City of Madison. Sign sizes smaller than the standard sizes described in the manual and non-commercially manufactured signs shall not be used.

The Contractor will be held responsible for all damages to the work due to failure of barricades, signs, lights, flagpersons and watchpersons to protect it and, whenever evidence of such damage is found prior to acceptance, the Engineer may order the damaged portion immediately removed and replaced by the Contractor at the Contractor's own cost and expense if, in the Engineer's opinion, such action is justified.

The Contractor shall be responsible for furnishing, erecting and maintaining those traffic control devices and facilities, as required above throughout the life of the contract, including periods of suspension, except that costs for maintaining such devices and facilities during periods of suspension not specified in the contract or the cause of which is beyond the control and without fault of the Contractor shall be paid for as Extra Work.

If, in the opinion of the Engineer, proper provisions are not provided and maintained in accordance with these Specifications, the Engineer may restrict construction operations affected by such defective signs, devices or markings until proper provisions are established and maintained, or the Engineer may take the necessary steps to place them in proper condition and may deduct the costs of such steps from monies due or to become due the Contractor.

Bid Item 10720 Traffic Control Sign - Portable Arrow Board

Description.

This special provision describes providing, erecting, maintaining, moving and removing arrow board as hereinafter provided.

Materials.

Provide arrow board conforming to MUTCD requirements. Furnish, service, maintain, repair or replace the arrow board as necessary. Arrow board remain the contractor's property.

Construction.

Place arrow board at the locations indicated on the plan, in the contract, or as directed by the engineer.

Method of Measurement.

Traffic Control Arrow Board will be measured by the day acceptably completed. The measured quantity will equal the number of calendar days the device is in use.

Basis of Payment.

Payment for Traffic Control Arrow Board is full compensation for providing, installing, moving, and removing portable, self-contained flashing arrow board, including auxiliary power source.

Bid Item 10721 Traffic Control Sign - Portable Changeable Message

Description.

This special provision describes furnishing, maintaining and installing portable changeable message sign as hereinafter provided.

Materials.

Furnish equipment that enables one person to transport and operate the sign easily without assistance.

Provide a complete Changeable Message Sign and trailer that is painted highway safety orange, except the sign case, which will be painted black.

Sign Case.

Provide a sign that is capable of displaying a minimum of three (3) lines of message text per message (frame). Each line shall consist of a minimum of eight (8) characters, equally spaced a minimum of three inches (3") and a maximum of four and one-half inches (4-1/2") apart. Characters shall be a minimum of seventeen inches (17") high and a minimum of eleven inches (11") wide and be legible from a minimum of 850 feet during both day and night conditions. The maximum sign width shall be eleven feet six inches (11'-6"). Provide a sign display that consists of either a continuous matrix of pixels or individual character modules consisting of smaller matrices of pixels. Each matrix forming a character shall consist of a minimum thirty-five (35) pixels in a five (5) horizontal pixel by seven

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(7) vertical pixel arrangement. Each pixel shall consist of a high-intensity LED cluster. The LED lamps shall run at a minimum voltage to provide extended life. Each pixel shall be either square in shape with a minimum of two-inch (2") sides or round in shape with a minimum two-inch (2") diameter. The driver board shall provide means for dimming. The entire sign shall complete a message change within 100 milliseconds.

Provide a sign housing that is weatherproof and is constructed of aluminum. The front face shall be covered with either a one-piece, clear, non-glare, lexan panel, or individual one-piece, clear, non-glare, lexan panels.

Power Source.

Provide a solar Changeable Message Sign that runs on a battery system using a solar charging system.

Provide solar cells that are capable of charging and maintaining the batteries at operational levels under all weather conditions experienced in Wisconsin. A switch shall be provided to disconnect the solar power supply for safety during maintenance.

Construction.

Install portable changeable message sign level at the locations indicated on the plan, in the contract, or as directed by the engineer.

Method of Measurement.

Portable Electronic Changeable Message Sign will be measured per each unit complete per day.

Any day in which changeable message sign is not working properly for more than six hours will result in one day being deducted from the quantity measured for payment.

Basis of Payment.

Payment will be for measured quantities at the contract unit price, which shall be full compensation for furnishing, maintaining, installing and/or relocating the complete unit; and for furnishing all labor, tools, equipment, services and incidentals necessary to complete the contract work.

Traffic Control shall be measured for payment as a single complete unit of work, acceptably performed. The contract price shall include furnishing all materials, labor, tools, equipment and incidentals necessary to perform the work; constructing, assembling, painting, hauling, erecting, re-erecting, maintaining and removing traffic signs, barricades and other control devices; furnishing, placing, maintaining and removing lights and signals, including the fuel or power therefor; supplying and performing all flagging and guidance services; furnishing, applying and removing pavement marking, unless otherwise provided; and all other work incidental to Traffic Control. The contract lump sum shall be payable to the Contractor in accordance with the following schedule:

1. When twenty-five (25) percent or more of the original contract amount is earned, fifty (50) percent of the amount bid for Traffic Control will be paid.

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2. When seventy-five (75) percent or more of the original contract amount is earned, one hundred (100) percent of the amount bid for Traffic Control will be paid.

When the contract does not include a separate contract item for Traffic Control, then all the work herein before prescribed, required and performed will not be separately measured for payment, but will be considered incidental to other items in the contract.

Item 10725 Alternate Business Access Sign

General

This work consists of the construction, placement, altering and removal of alternate business access signs. The sign is used when ordinary access to properties is altered due to proposed traffic control during road construction projects. The sign directs people to the correct way to access a property due to the construction.

Materials

Sign shall conform to Standard Detail Drawing 6.44

Construction Methods

Number of signs, placement and alterations during construction shall be identified in section 107.7 MAINTENANCE OF TRAFFIC. It shall be noted that during different traffic control stages, the sign may be moved, and the arrow may be altered. Such alteration is considered incidental to this bid item.

Measurement

ALTERNATE BUSINESS ACCESS SIGN will be measured per each unit complete per day.

Any day in which ALTERNATE BUSINESS ACCESS SIGN is not placed properly for more than six hours will result in one day being deducted from the quantity measured for payment.

Payment

Payment will be for measured quantities at the contract unit price, which shall be full compensation for furnishing, maintaining, installing and/or relocating the complete unit; and for furnishing all labor, tools, equipment, services and incidentals necessary to complete the contract work.

107.10 Opening of Section of Highway to Traffic.

When the contract provides that the road or portions thereof shall be closed to traffic during construction, the work shall not be opened to traffic until so directed or authorized by the Engineer. Whenever all of the work or any portion thereof is in an acceptable condition for travel, such sections shall be opened to traffic as may be directed by the Engineer, but such opening shall not be construed as assumption of the maintenance by the City unless so specifically provided, nor as acceptance of the roadway or any part of it, nor as a waiver of any of the provisions of the Specifications and contract; provided, however, that on such sections of the project as are used by traffic, the Contractor shall not be required to assume any expense entailed in maintaining that portion of the roadway used by traffic which expense is attributable to such traffic used and beyond the control of the Contractor,

except costs in connection with those traffic control devices or facilities required. Such expense shall be borne by the City or shall be compensated for as Extra Work. Any damage to the highway not attributable to traffic which might occur on such sections shall be repaired by the Contractor at the Contractor's expense.

Whenever the Contractor is required to open to traffic all of the work or any portion thereof in accordance with the provisions given herein, or whenever the Contractor shall of the Contractor's own volition and when so authorized by the Engineer, open to traffic all of the work or any portion thereof prior to final acceptance, the Contractor shall conduct the remainder of the construction operations so as to cause the least obstruction to traffic.

The Contractor shall notify the Traffic Engineering Field Operations Facility in writing so that the Traffic Engineering Division can install traffic control signs and barricades prior to the opening of the street. Traffic Engineering shall have five (5) working days once the project site is restored with topsoil, seed and mulch to install signs and pavement marking. The Contractor shall maintain his/her traffic control and barricades until the Traffic Engineering Division has completed their work.

107.11 Use of City Water.

When the Contractor chooses to use City of Madison water for any part of the project, then the Contractor must proceed as follows:

1. Request Water Utility to install valve on convenient hydrant.
2. Agree to pay Water Utility charges for installation, use and removal of the valve.
3. Notify Water Utility immediately when use of valve is no longer necessary.

The Contractor shall not make connections to Water Utility facilities without permission from the Water Utility.

107.12 Railroad-Highway Grade Separations and Approaches, New Railroad Crossings, Operations on Railroad Right-of-Way.

107.12(a) General.

Work or operations on grade separations and their approaches, new railroad crossings, or upon railroad right-of-way shall be subject to inspection by the Chief Engineer of the railroad company, and shall be conducted and performed in a manner satisfactory to said Chief Engineer and also the City Engineer.

All work or operations incident thereto within the right-of-way of the railroad company shall be conducted in a manner which will not interfere with the safe and uninterrupted operation of railroad traffic.

Unless otherwise provided in the contract, flagging protection shall be required in conjunction with the construction:

1. Whenever construction operations or materials will or may encroach upon the minimum allowable statutory clearance from any track or tracks, including pile driving, the placing or

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- removal of falsework, bracing, cofferdams, sheeting, or forms and the construction of permanent structure over or adjacent to a track;
2. When trucks or machinery will be operated closely along or over tracks or where cranes will be handling materials or equipment over or across any track;
 3. When construction operations are in the close vicinity of power lines, railroad signal and communication lines, underground cables, fuel oil facilities or pipe lines which might result in fire or damage to such facilities to endanger railroad operations, or to endanger the public in the transaction of business on railroad premises;
 4. When excavation, tunneling, blasting, pile driving, placing or removing cofferdams or sheeting, or similar activities might cause the railroad's tracks or buildings to be undermined, heaved out of normal level or shifted out of alignment, etc.;
 5. At any other time when in the judgment of the Railroad's Superintendent or Division Engineer there is a reasonable probability of accident hazard to railroad traffic and at any other time when the flagging protection is necessary for safety to comply with the Operating Rules of the railroad.

Minimum allowable clearances from tracks during construction shall be not less than twelve (12) feet horizontally from the center line of any track nor less than twenty-two (22) feet vertically above top of rail, except as specifically approved by the Chief Engineer or a duly authorized representative.

The Railroad Company may require the Contractor to provide temporary telltale protection, as may be required under Section 192.31, Wisconsin Statutes, for any construction encroachment over railroad trackage of less than twenty-two (22) feet.

The Contractor shall be informed of the rules and regulations of the railroad company with respect to operations on the railroad right-of-way and shall arrange with the railroad company for the services of such qualified railroad employees as the Chief Engineer of the railroad company may prescribe for the protection of railroad traffic through the work. The cost of such services shall be borne by the Contractor, and the Contractor shall make payment directly to the railroad company.

The Contractor shall notify the Chief Engineer of the railroad company in writing, at least seventy-two (72) hours before starting any work in the proximity of the tracks, setting forth specifically the time at which it is planned to start such operations.

Excavations in the proximity of the tracks shall be protected in accordance with plan details.

The track zone shall be kept clear of any loose material or debris at all times.

Arrangements for crossing the tracks of a railroad company at locations other than at existing public crossings shall be made by the Contractor and the Contractor shall bear all costs incident thereto.

A written release from the railroad company notifying the Engineer that all claims against the Contractor for costs incurred by the railroad company have been satisfied shall be furnished, when required, before final payment for the contract work will be made.

107.12(b) Work by Railroad.

The railroad company may undertake certain work or operations incident to the project which are the subject of an agreement between the City and the railroad company. The Contractor shall make no alterations of such work without the consent of the Chief Engineer of the railroad company and then only in a manner as prescribed by the Chief Engineer. Should the Chief Engineer elect to have alterations requested by the Contractor made with railroad company forces, the Contractor shall bear the cost thereof and make payment therefor direct to the railroad company.

The movement or adjustment of telegraph, telephone, or signal facilities owned, operated or maintained by the railroad company and not otherwise provided for on the plans or special provisions or in agreements between the City and the company shall be at the cost and expense of the City.

107.12(c) Railroad Insurance Requirements.

The Contractor shall provide such special third party protection insurance for and in behalf of the railroad company and operating railroad for each crossing. The Contractor shall furnish evidence to the Engineer that the insurance coverages have been provided by filing two (2) copies of the policy extending such protection at the time of filing of other contract documents. One copy of this insurance policy will be transmitted by the City to the railroad company.

The minimum amount of insurance to be provided shall be limited to a combined single limit amount of Two Million Dollars (\$2,000,000) per occurrence for Bodily Injury Liability, Property Damage Liability, and Physical Damage to Property, with Six Million Dollars (\$6,000,000) aggregate for the term of the policy with respect to Bodily Injury, Liability, Property Damage Liability and Physical Damage to Property.

The coverage provided by this insurance shall be primary insurance exclusive of any carried by the named insured, and this coverage will be exhausted first, notwithstanding the fact that the insured may have other valid and collectible insurance covering the same risk.

No work which will require entry upon the right-of-way or premises of the railroad company shall be undertaken until the required insurance policy in acceptable form has been filed with and acknowledged in writing by the City. Such insurance shall be carried until all work required to be performed upon the right-of-way or premises of the railroad company shall have been satisfactorily completed and formally accepted by the City.

The cost of providing third party protection for the railroad company shall be construed to be incidental to other items of the contract and no additional payment will be made therefor unless a bid item for Railroad Insurance is included in the contract.

107.12(d) Flagging Protection

It shall be the responsibility of the Contractor to compensate the Railroad for the flag person requirements and shall be considered incidental to the City contract. Prior to any work within twenty-five feet (25') of the Railroad Tracks, the Contractor shall provide to the operating railroad an estimate of the time required to perform the necessary work within twenty-five feet (25') of the Railroad Tracks and the Contractor shall pre-pay the operating railroad an estimated cost for compensation for a flag person based on the estimated time required to perform all work within

twenty-five feet (25') of the tracks and the current hourly rate of compensation charged by the operating railroad for a flag person.

Absolutely no staging of equipment or materials will be allowed within the railroad right-of-way.

If a Contractor violates any of these requirements, the operating railroad reserves the right to remove and prohibit the Contractor from any further access or encroachment on the railroad right of way regardless of whether or not that access or encroachment is on, under, over, intentional or inadvertent, until such time as the Contractor provides satisfactory assurances and measures to prevent any reoccurrence of such violation.

107.13 Tree Protection Specifications.

These specifications shall be applicable to all Contractors working in the Public Right of Way, whether by permit, Public Works Contract, Developer Agreement or any other permission to work within the Public Right of Way. However, any Contractor doing work related to an emergency situation as described in Sections 10.05(13)(a) and 10.101(5) of the Madison General Ordinances are not bound by these provisions for those situations only. The term "Contractor" shall also mean 'Permit Grantee' or anyone given permission to work in the Public Right of Way, regardless of whether a permit is obtained or granted. For the purposes of these specifications, "Public Right of Way" shall include any property that the City of Madison has an ownership interest in, including, without limitation, highways and highway right-of-ways, public walkways and bike paths, parks, greenways and stormwater management areas. Other Sections of the Standard Specifications may repeat portions of this specification for emphasis and / or expand upon these specifications. The specifications found in those other Sections are not intended to conflict with these specifications.

The maintenance and enhancement of the urban forest is a goal of the City of Madison. Preserving and protecting healthy trees is one objective towards achieving this goal. Trees vary in their ability to adapt to altered growing conditions. Mature trees have established systems in the pre-existing physical environment. Disruption of this environment by construction activities interrupts the tree's physiological processes causing depletion of energy reserves and a decline in vigor, often resulting in the tree's death. These tree protection specifications are intended to insure that appropriate practices will be implemented in the construction phase of the project to protect a tree's structural integrity and future health. Also, these specifications will reduce the likelihood of undesirable consequences that may result from uninformed or careless construction practices adjacent to trees. The three most common forms of construction damage to trees are:

- Root cutting
- Bark abrasions
- Soil compaction

Damage can be prevented or minimized by following the specifications below and properly educating construction staff of these specifications and use of care when working around trees during the construction process. If the City Forester or City Engineer determines that a tree has been damaged due to failure to follow these specifications, or negligence of the Contractor or Subcontractor, a fine or liquidated damages shall be assessed to the Contractor or permit holder.

In particularly sensitive areas or areas of dense tree cover, the City Engineer may elect to specify the use of a protective fencing to mark the tree protection zones or zones of no disturbance. Whenever

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construction fencing is used, a bid item shall be included in the contract, unless specified as incidental.

107.13(a) Underground Utility Excavation & Installation.

The Contractor shall not grade, excavate, or otherwise disturb the area within five (5) feet of any tree as measured from the outside edge of the tree trunk or visible aboveground portion of the root system along the length of the terrace, without prior permission from the City Forestry Representative.

For laterals or utilities that are in close proximity to terrace trees, the situation shall be reviewed on a case by case basis by the Engineer and City Forestry Representative. The contractor shall use construction methods to minimize tree damage as directed by the Engineer. The Engineer may elect to terminate lateral installation prior to conflict with tree (normally terminate at the curb). Most laterals shall have their locations verified and on the plan set in advance of bidding. Laterals that have not had their locations verified, shall be so noted on the plans.

Boring under or within the 5 foot protection zone may be allowable.

All roots over one (1) inch in diameter that are damaged shall be cleanly cut immediately in back of the damaged section on the same day of the excavation. Cuts may be made with lopping shears, chainsaw, stump grinder, or other means which will produce a clean cut. Exposed roots should be covered as soon as excavation and installation are complete.

The Contractor shall not rip or pull roots out towards the trunk of a tree while excavating with a backhoe. The use of a backhoe to cut roots is NOT acceptable.

107.13(b) Curb Excavation and Installation.

Root masses that grow very close to, up to or over curb will require extra care during excavation. Curb modifications may be necessary as determined by the Engineer, such as curving into the direction of the street to avoid damage to the root system.

All roots over one (1) inch in diameter that are damaged shall be cleanly cut immediately back of the damaged section on the same day of the excavation. Cuts may be made with lopping shears, chainsaw, stump grinder, or other means which will produce a clean cut. Exposed roots should be covered as soon as excavation and installation are complete.

The City Forester will review curb and gutter that is marked for removal and adjacent to street trees. Forestry will mark curb and gutter with "NRC" (No Root Cutting) next to trees that curb and gutter removal and replacement has a greater potential to damage tree roots. The Contractor shall proceed in the following sequence to repair sidewalk marked with NRC as follows:

1. Place a yellow ribbon around the tree marked NRC at approximately 4-feet from the ground in order to highlight these trees for the equipment operator removing the concrete;
2. Ribbon shall remain until forms have been removed;
3. Carefully remove the concrete curb and gutter so marked and those adjacent curb and gutter sections six (6) feet on either side of the visible root flair without excavating into the terrace or without damaging roots;

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4. At the City's discretion, install a type II barricade with a sign provided by the City of Madison that states, "Tree Roots are being evaluated by City Forester";
5. Await inspection by Forester, who shall determine which roots can or cannot be cut or shaved, how much excavation can be safely allowed and communicate his/her findings to the Contractor and the Engineering Construction Inspector. After the Contractor notifies the City Forestry staff that the removals are complete and ready for their determination, the City Forestry staff shall respond by the end of the following work day. Rain days, weekends and holidays do not count as a work day for this purpose.
6. Proceed to cut or shave roots in the presence and under the direction of the Forester.

At locations where the curb and gutter is to be removed and replaced that are adjacent to street trees that are not marked "NRC", the Contractor can remove the concrete and underlying soil to sub-grade without notification to the City Forestry Representative.

Curb excavations shall be limited to one (1) foot behind the proposed curb for trees less than 10" in DBH (Diameter at Breast Height), for a distance of ten (10) feet each way from a tree trunk to reduce damage to the root system.

Curb excavations shall be limited to six (6) inches behind proposed curb for trees greater than 10" DBH, or street terrace widths less than six (6) feet for a distance of ten (10) feet each way from a tree trunk to reduce damage to the root system.

When excavation behind the curb is limited to less than 6 inches, the new curb must be a 'hand-formed' replacement for a minimum length as directed by the engineer.

Contractor shall not cut any roots that are 3" or larger in diameter without prior permission from the City Forestry Representative for curb and gutter installation.

In situations where root severing has to occur, the root cutting will be clean cuts – not jagged or ripped. The use of a Backhoe to cut tree roots is NOT acceptable.

All roots over one (1) inch in diameter that are damaged shall be cleanly cut immediately back of the damaged section on the same day of the excavation. Cuts may be made with lopping shears, chainsaw, stump grinder, or other means which will produce a clean cut. Exposed roots should be covered as soon as excavation and installation are complete.

107.13(c) Sidewalk Excavation and Installation.

The City Forester will review sidewalk that is marked for removal and adjacent to street trees. Forestry will mark sidewalk with "NRC" (No Root Cutting) next to trees that sidewalk removal and replacement has a greater potential to damage tree roots. The Contractor shall proceed in the following sequence to repair sidewalk marked with NRC as follows:

1. Place a yellow ribbon around the tree marked NRC at approximately 4-feet from the ground in order to highlight these trees for the equipment operator removing the concrete;
2. Ribbon shall remain until forms have been removed;

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3. Carefully remove the concrete sidewalk so marked and those adjacent sidewalk sections six (6) feet on either side of the visible root flair without damaging roots;
4. At the City's discretion, install a type II barricade with a sign provided by the City of Madison that states, "Tree Roots are being evaluated by City Forester";
5. Await inspection by Forester, who shall determine which roots can or cannot be cut or shaved and communicate his/her findings to the Contractor and the Engineering Construction Inspector. After the Contractor notifies the City Forestry staff that the removals are complete and ready for their determination, the City Forestry staff shall respond by then end of next work day. Rain days, weekends and holidays do not count as a work day for this purpose.
6. Proceed to cut or shave roots in the presence and under the direction of the Forester;
7. Install the granular sub-base, 3-inch minimum depth if the sub-grade is not acceptable, and new concrete sidewalk, 5-inch minimum depth;
8. Remove ribbon.

At locations where the sidewalk is to be removed and replaced that are adjacent to street trees that are not marked "NRC", the Contractor can remove the concrete and underlying soil to sub-grade without notification to the City Forestry Representative. The Contractor and the City shall review the construction site for privately owned trees (on private property, but near the sidewalk to be removed) that could require the above process. In those cases, the trees shall be reviewed on a case-by-case basis with the property owner.

Contractor shall not cut any roots that are 3" or larger in diameter without prior permission from the City Forestry Representative for sidewalk installation or repair within five (5) feet of any tree located in the terrace as measured from the outside edge of the tree trunk or visible aboveground portion of the root system. In situations where root severing has to occur, the root cutting will be clean cuts – not jagged or ripped. The use of a Backhoe to cut tree roots is NOT acceptable. All roots over one (1) inch in diameter that are damaged shall be cleanly cut immediately back of the damaged section on the same day of excavation. Exposed roots should be covered as soon as excavation and installation are complete.

107.13(d) Root Cutting / Root Grinding.

Roots shall be cut or ground as specified by the City Forestry Representative. This cutting or grinding shall require the use of tools such as: stump grinders; lopping shears; root saws; front mounted stump or wheel grinders; and chainsaws. Unless otherwise specified the Contractor shall be paid per linear foot for Root Cutting for the length of the NRC Curb or NRC sidewalk, with a maximum length of fifteen (15) linear feet per NRC location, more specifically as follows:

Root Cutting – Curb & Gutter

Description

This item shall include all root cutting and / or root grinding as determined by the City Forestry Representative for roots under removed curb & gutter that has been marked with "NRC" for No Root

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Cut until further inspection. Work under this item shall include all work, materials, labor and incidentals necessary to cut or grind the root, using proper tools as prescribed by the City Forestry Representative.

Method of Measurement

Root Cutting – Curb & Gutter shall be measured per linear foot of curb & gutter that is marked with “NRC” in the field, with a maximum measurement of 15 linear feet per tree location.

Basis of Payment

Root Cutting – Curb & Gutter shall be measured as described above which shall be full compensation for all work, materials and incidentals to complete the work as described above regardless of the degree of difficulty per given location.

Root Cutting – Sidewalk

Description

This item shall include all root cutting and / or root grinding as determined by the City Forestry Representative for roots under removed sidewalk that has been marked with “NRC” for No Root Cut until further inspection. Work under this item shall include all work, materials, labor and incidentals necessary to cut or grind the root, using proper tools as prescribed by the City Forestry Representative.

Method of Measurement

Root Cutting – Sidewalk shall be measured per linear foot of sidewalk that is marked with “NRC” in the field, with a maximum measurement of 15 linear feet per tree location.

Basis of Payment

Root Cutting – Sidewalk shall be measured as described above which shall be full compensation for all work, materials and incidentals to complete the work as described above regardless of the degree of difficulty per given location.

107.13(e) Terrace Restoration.

All mechanical grading, including sod installation within five (5) feet of any tree as measured from the outside edge of the tree trunk or visible aboveground portion of the root system shall be prohibited. Any grading required within the root protection zone shall be done with hand implements and performed in a manner so as to minimize damage to the root system.

107.13(f) Bark Abrasions and Limb Damage.

Contractor shall take precautions during construction not to disfigure, scar, or impair the health of any tree on public or private property.

Pre-construction pruning – Trees larger than 10” DBH will be pruned by City Forestry to an approximate minimum height of fourteen (14) feet above the road wherever construction equipment is expected to invade the tree crown. All pruning shall be done according to ANSI A300 tree pruning

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specifications. Occasionally a limb may have to remain at a height less than fourteen (14) feet above the roadway. These instances shall be noted during the 'walk thru' and the Contractor shall employ methods to protect said limb.

Contractor shall operate equipment in a manner as to not damage the branches of a tree. This may require using smaller equipment and loading or unloading materials in a designated space away from trees on the construction site.

Contractor shall notify City Forestry the same day of any damage to trees resulting from construction activities.

107.13(g) Soil Compaction.

No equipment or materials will be allowed to be parked on, driven over, or be piled on areas within five (5) feet a tree as measured from the outside edge of the tree trunk or visible aboveground portion of the root system. This not only prevents compaction, but also prevents damage to the trunks of trees and branches through scraping or scuffing the bark.

107.13(h) Contractor / Foreperson Acknowledgement.

The Tree Protection Specification and known conflicts and concerns shall be reviewed at the Pre-Construction meeting with the Contractor. This review shall include review of a one page educational informational sheet that details the procedures for avoiding damage to the tree and tree roots.

Utilities or others working in the Public Right of Way shall be required to sign this acknowledgement on a case by case basis.

107.13(i) Cost Recovery Charges and Liquidated Damages.

The Contractor's failure to follow the proper safeguards of these specifications shall result in the following cost recovery charges and liquidated damages to be assessed against the Contractor:

Where construction damage occurs causing or resulting in removal of the tree of 3 inch diameter or less (as measured at 12 inches above the ground):

1. The costs associated with removing the tree including wood disposal.
2. The costs associated with removing the stump to a depth of at least 24 inches below the ground.
3. The costs associated with replanting a replacement tree that is balled & burlapped and shall have a minimum caliper of two (2) inches. The species and replanting location shall be determined by City Forestry.

Where construction damage occurs causing or resulting in removal of the tree of greater than 3 inch diameter (as measured at 12 inches above the ground):

1. The costs associated with removing the tree including wood disposal.

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2. The costs associated with removing the stump to a depth of at least 24 inches below the ground.
3. The costs associated with replanting a replacement tree that is balled & burlapped and shall have a minimum caliper of two (2) inches. The species and replanting location shall be determined by City Forestry.
4. The value of the existing tree which shall equal \$125.00 per trunk diameter inch, as measured at 12 inches above the ground.

For bark scraping and broken branches:

1. The costs associated with pruning broken branches, including wood disposal.
2. Loss of limb or broken branch larger than three (3) inches in diameter: \$150.00 for each occurrence. Breakage of limbs that are less than fourteen (14) feet above the roadway shall be reviewed on a case by case basis.
3. Damage to trunk or bark larger than one-half (1/2) square foot in area: \$400.00 each area.

For root cutting or excavation within the root protection zone:

1. For mechanical excavation within five (5) feet of a tree as measured from the outside edge of the tree trunk or visible aboveground portion of the root system, along the length of the terrace or sidewalk side of the tree, including ripping of roots back towards the trunk, without prior permission from City Forestry Representative: \$150.00 for each occurrence
2. For mechanical excavation beyond six (6) inches or one (1) foot of the proposed curb installation, as determined by the size of existing tree and terrace width, including ripping of roots back towards the trunk: \$150.00 for each occurrence (see Curb excavation and installation specifications)
3. For failure to cleanly cut damaged roots greater than one (1) inch on the same day as the excavation: \$150.00 for each occurrence.

For Public Works Contracts these charges and liquidated damages shall be assessed as Liquidated Damages. For Private Contracts, Permit work, or others, these charges and liquidated damages shall be assessed as City imposed forfeitures or private contract forfeitures.

107.13(j) Private Development, Tree Removal.

If a private development shall require the removal of a public street tree to facilitate the construction of a site, adding a driveway, installing underground utilities, or any other improvement or site revision, the Developer shall obtain approval from City Forestry in advance of the proposed work.

107.14 Weapons Prohibition

Contractor shall prohibit, and shall require its subcontractors to prohibit, its employees from carrying weapons, including concealed weapons, in the course of performance of work under this Contract, other than while at the Contractor's or subcontractor's own business premises. This requirement shall

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apply to vehicles used at any City work site and vehicles used to perform any work under this Contract, except vehicles that are an employee's "own motor vehicle" pursuant to Wis. Stat. sec. 175.60(15m).

ARTICLE 108 - LEGAL RELATIONS

108.1 Laws to be Observed.

The Contractor shall at all times observe and comply with all Federal and State laws and administrative rules, local laws, ordinances, and regulations which in any manner affect the conduct of the work, and all orders or decrees, as exist at the present or which may be enacted later, of bodies or tribunals having jurisdiction or authority over the work. No plea of misunderstanding or ignorance thereof will be considered. The Contractor shall indemnify, defend and save harmless the City and all of its officers, officials, agents, employees and servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by the Contractor or the Contractor's employees, subcontractors or agents.

The movement of vehicles or equipment over any public highway to the project, necessary for the prosecution of the work shall be regulated in accordance with the provisions of the Wisconsin Statutes and the Madison General Ordinances.

108.2 Permits and Licensing.

The City of Madison will submit a DNR Notice of Intent (NOI) to obtain coverage under the Construction Site General Permit No. WI-S067831-2 for construction site erosion control on City of Madison Public Works contracts with one acre or greater of land disturbing activity. The Contractor shall meet the conditions of the permit by properly installing and maintaining the erosion control measures shown on the plans, specified in the Special Provisions, or as directed by the Engineer. This work will be paid for under the appropriate contract bid items in accordance with Article 210 EROSION CONTROL. A copy of the permit will be available at the City of Madison, Engineering Division office.

This list is not intended to be an exhaustive list of all permits that may be required to be obtained by the Contractor for construction. It shall be the responsibility of the Contractor to identify and obtain all other permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work.

108.3 Patented Devices, Materials and Processes.

Unless otherwise specified, contract prices are to include all royalties and costs arising from patents, trademarks, and copyrights in any way involved in the work. It is the intent that whenever the Contractor is required or desires to use any design, device, material or process covered by letters patent or copyright, the right for such use shall be provided for by suitable legal agreement with the patentee or owners and a copy of this agreement shall be filed with the Engineer; however, whether or not such agreement is made or filed as noted, the Contractor and the surety in all cases shall indemnify and save harmless the City from any and all claims for infringement by reason of the use of any such patented design, device, material or process to be involved under the contract, and shall indemnify the City for any costs, expenses, and damages which it may be obliged to pay, by reason of any such infringement, at any time during the prosecution or after the completion of the work.

108.4 Safety, Health and Sanitation.

The Contractor shall comply with all Federal, State and local laws governing safety, health and sanitation. The Contractor shall also provide all safeguards, safety devices and protective equipment,

and take any other actions necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

108.5 Personal Liability of Public Officials.

In carrying out any of the provisions of this contract or in exercising any power or authority granted to them thereby, there shall be no personal liability upon the City, its officers, officials, agents and employees, it being understood that in such matters they act as agents and representatives of the City. Any right of action by the Contractor against the City, or its officers, officials, agents or employees, is hereby expressly waived.

108.6 No Waiver of Legal Rights.

The City shall not be precluded or estopped by any measurement, estimate, or certificate made either before or after the completion and acceptance of the work and payment therefor, from showing the true amount and character of the work performed and materials furnished by the Contractor, or from showing that any such measurement, estimate or certificate is untrue or incorrectly made, or that the work or materials do not conform in fact to the contract. The City shall not be precluded or estopped, notwithstanding any such measurement, estimate, or certificate and payment in accordance therewith, from recovering from the Contractor and the Contractor's sureties such damages as it may sustain by reason of the Contractor's failure to comply with the terms of the contract. Neither the acceptance by the Engineer nor any payment for or acceptance of the whole or any part of the work, nor any extension of time, nor any possession taken by the City, shall operate as a waiver of any portion of the contract, or of any power herein reserved, or any right to damages herein provided. A waiver of any other or subsequent breach of the contract shall not be held to be a waiver of any other or subsequent breach.

ARTICLE 109 - PROSECUTION AND PROGRESS

109.1 Subletting or Assignment of Contract.

The Contractor shall not sublet, sell, transfer, assign, or otherwise dispose of the contract or any portion thereof, or any right, title, or interest therein, without written consent of the Engineer.

Consent to sublet any portion of the contract shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the contract or to release the Contractor or the Contractor's surety of liability under the contract and bond.

The Contractor shall, at the time of the signature of the contract, notify the Engineer of the names of subcontractors proposed for the work and shall not employ any that the Engineer may within ten (10) days object to as unsatisfactory. The Contractor shall not change subcontractors without written approval of the Engineer.

Requests for permission to sublet any portion of the contract shall be in writing and accompanied by a showing that the organization which will perform the work is particularly experienced and equipped for such work.

The Contractor shall be fully responsible to the City for the acts and omissions of subcontractors and of persons and organizations either directly or indirectly employed by the Contractor.

Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the City.

All work performed for the Contractor by a subcontractor will be pursuant to an appropriate written agreement between the Contractor and subcontractor which specifically binds the subcontractor to the applicable terms and conditions of the contract documents for the benefit of the City. Such agreement shall be available for review upon demand of the Engineer.

The Contractor shall not sublet over forty (40) percent of the total contract amount without written consent of the Board of Public Works.

109.2 Prosecution of the Work.

The Contractor shall begin the work within seven (7) days after the date of written notice to proceed.

Definite notice of intention to start work shall be given to the Engineer at least seventy-two (72) hours in advance of beginning work.

The Contractor shall employ an ample labor and supervisory force and provide construction equipment properly adapted to the work and of sufficient capacity and efficiency to accomplish the work in a safe and workmanlike manner at the rate of progress specified. All equipment shall be maintained in good working order and provision shall be made for immediate emergency repairs.

Should the Contractor fail to maintain the rate of progress required to complete the work within the contract time specified, the Engineer may require that additional labor or equipment be placed on the work, or a reorganization be effected in order that the work will be brought up to schedule and

maintained there. Should the Contractor fail to comply therewith, the Engineer may proceed under the provisions of these Specifications.

In the event work is prosecuted during adverse weather conditions, the Contractor will be required to exercise such precautions necessary to produce satisfactory work, and shall protect the finished work from the elements. It is agreed and understood that the cost thereof has been included in the unit prices bid for the various items of work in the contract and that no extra compensation will be allowed therefore.

If it is desirable to begin work before the above mentioned date, the Contractor shall establish a mutually acceptable date with the City Engineer. The Contractor shall limit work hours to 7:00 a.m. to 7 p.m. Monday-Saturday unless approved by the Engineer in writing.

109.3 Limitations of Operations.

At any time when, in the judgment of the Engineer, the Contractor has obstructed or closed, or is carrying on operations on a greater portion of the road than is necessary for the proper prosecution of the work, the Engineer may require the Contractor to finish the sections on which work is in progress before work is started on any additional section.

109.4 Character of Workers.

The Contractor shall, at all times, enforce strict discipline and good order among personnel, subcontractors and others employed on the work, and shall not employ on the work any unfit person or anyone not skilled in the work assigned.

All supervisors and workers shall have sufficient skill and experience to properly perform the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment and tools required to perform all work properly and satisfactorily.

If any person employed on the work shall refuse or neglect to obey the directions of the Engineer, as to quality of work, character of the work or quality of materials, or be so incompetent or disorderly as to endanger the proper fulfillment of this contract, such person shall, upon the written order of said Engineer, be at once removed from the project and not again employed on any part of the work.

Should the Contractor fail to remove such person or persons as required above, or fail to furnish suitable and sufficient personnel for the proper prosecution of the work, the Engineer may withhold all estimates which are or may become due, or the Engineer may suspend the work by written notice until such orders are complied with.

109.5 Methods and Equipment.

The Contractor shall provide and furnish the machinery, equipment and tools necessary to perform the work. These shall be in such condition and of such capacity as will produce work of satisfactory quality and complete the work within the contract time.

Equipment shall be such that no injury to the roadway, pavement, structures, adjacent property, or other highways will result from its use, and it shall conform to the requirements set forth in detail under specific items or classes of work.

The Contractor shall not operate vehicles or equipment over the subgrade, base course, or pavement which may cause damage to the subgrade, base course or pavement. This restriction applies not only to the type of vehicles or equipment but also to the gross weights and loads of the vehicles or equipment.

Before any personnel of the Contractor enter any access structure, catchbasin, or similar structure regardless of the location, it shall be tested for toxic and combustible gases and for oxygen deficiency with a detector provided by the Contractor. When any of the above conditions exist in a structure tested, that structure shall be completely vented and then retested until proven safe for entry and be continuously tested during the entire time personnel is within that structure. All cost of testing shall be considered incidental to the contract.

Failure on the part of the Contractor to provide adequate equipment, maintained in proper working order, may be sufficient cause for suspension of specific operations until compliance is attained or may constitute cause for default of contract.

When the methods and equipment to be used by the Contractor in accomplishing the construction are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the contract work in conformity with the requirements of the contract.

When the contract specifies that the construction be performed by the use of certain methods and equipment, such methods and equipment shall be used unless others are authorized by the Engineer. If the Contractor desires to use a method or type of equipment other than those specified in the contract, the Contractor may request authority from the Engineer to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed to be used and an explanation of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing construction work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the Engineer determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining construction with the specified methods and equipment. The Contractor shall remove the deficient work and replace it with work of specified quality, or take such other corrective action as the Engineer may direct. No change will be made in basis of payment for the construction items involved nor in contract time as result of authorizing a change in methods or equipment under these provisions.

109.6 Suspension of the Work.

The Engineer shall have the authority to order the partial or complete suspension of operations for such period or periods as the Engineer may deem necessary:

1. In the interest of public safety and convenience, or
2. Due to unsuitable weather and such other conditions as are considered unfavorable for prosecution of satisfactory work, or
3. Due to the failure on the part of the Contractor to carry out orders given or to perform any or all of the provisions of the contract.

Orders to suspend work shall be in writing. Unless specifically provided in the notice to suspend work, no additional or extra compensation or additional contract time will be allowed due to such suspension of operations. The Contractor may seek review of any suspension order not providing for additional compensation pursuant to Section 105.2 of these Specifications.

The Contractor shall resume work on the project no later than the date fixed in the written notice from the City to the Contractor to resume work.

109.7 Time of Completion.

The time of completion of the work contemplated under the contract will be specified in the agreement in one of the following ways:

1. A specific number of work days.
2. A specific number of calendar days including Saturdays, Sundays, and holidays.
3. A given calendar date on or before which the work shall be completed.

Work shall be prosecuted effectively and diligently to completion. Failure to begin operations, or failure to diligently prosecute the work, may be considered as a breach of contract and render the Contractor liable to action under default of contract, or the revocation or suspension of the Contractor's privilege to bid additional work, or both.

It is understood that the rate of progress and the completion of the work within the time as specified is an essential part of the contract.

The contract starting date, for purposes of determining contract time and extensions, is the seventh (7) day following the date of notification to begin work.

Contract time will not be charged during periods of complete suspension of operations, when approved by the City in conjunction with an order by the Engineer suspending operations or when so provided in the special provisions.

No work day will be charged on a project when the Contractor does incidental work during such times as the Engineer deems that significant work on the project cannot be accomplished. This paragraph is not applicable to fixed completion date contracts.

No project shall be deemed complete or accepted until all excess mud, terrace dirt, asphalt material, rocks and crushed stone have been removed from the sidewalk, terrace, gutter and pavement. Work days may be charged against the Contractor until all such cleanup is complete to the satisfaction of the Engineer.

Contract time will be extended in an amount as is mutually agreed upon by the Engineer and the Contractor, on the basis of contract change orders involving alterations in the contract affecting the prosecution of work, or involving extra or additional work, when such alterations are necessary for the purposes or convenience of the City when such extra additional work is of such character or is ordered to be done at such a time that the amount of time reasonably necessary to perform such work is disproportionate to the contract time originally set up in the proposal. The agreement for extended time on this account shall be arrived at concurrently with and as a part of the consideration for the

specific alteration or extra or additional work covered by that order. In the event no specific mention thereof is made in such order the value of the extra or additional work will be included in the computation for extension or contract time for increased value of work as hereinafter set forth.

In the event that the money value of work completed, exclusive of such extra or additional work for which additional time had been agreed upon as herein before set forth, is in excess of the amount of the original contract, the contract time will be extended proportionately in an amount, computed to the nearest whole day, in the ratio that the final cost of the work exclusive of the final cost of such extra or additional work for which additional time had been agreed upon as previously set forth, bears to the total amount of the original contract. When a contract completion date is stipulated, the equivalent contract time for this purpose will be construed as the total elapsed calendar days between the contract starting date and the contract completion date.

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have extended, shall in no way operate as a waiver on the part of the City of Madison of any of its rights under the contract.

In the event that a Contractor, in one letting, should be awarded two or more projects of a similar nature, then the letters of notification for each similar project shall be sent to the Contractor to begin work, at consecutive fourteen (14) day intervals. The City reserves the right to vary this schedule because of time of year or other circumstances that may affect a specific project.

109.8 Delays and Extensions of Time.

Should the Contractor find it impossible to complete the work on or before the time for completion as specified in the contract, the Contractor may, at any time prior to the expiration of the time stipulated for completion, make a written request to the Board of Public Works for an extension of time, setting forth therein the reasons which the Contractor believes will justify the granting of the request. If the Board of Public Works finds that the work was delayed because of conditions beyond the control of the Contractor, it may grant an extension of time for completion in such amount as it finds to be warranted and justified.

If the Contractor is delayed at any time in the progress of the work by any act of the City, or by any other Contractor employed by the City, or by any changes ordered in the work, or by strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties or any causes beyond the Contractor's control, or by any causes for which the Engineer may justify the delay, then the time of completion shall be extended for such reasonable times as the Board of Public Works may decide, provided the Contractor provides written notice of the cause of delay within ten (10) days after it first occurs.

If no schedule or agreement is made stating the dates upon which drawings shall be furnished to the Contractor, then no claim for delay shall be allowed for the City's failure to furnish drawings until two (2) weeks after demand for such drawings and not then unless such claims be reasonable.

109.9 Liquidated Damages.

Should the Contractor fail to complete the work within the time specified in the contract, or within such extra time as may have been allowed by extensions, there shall be deducted from any monies due or that may become due the Contractor, or in the event no monies are due, the Contractor shall pay to the City, the sum set forth in the following schedule for each and every day that the work shall

remain uncompleted. This sum shall be considered and treated not as a penalty but as fixed, agreed and liquidated damages due the City from the Contractor by reason of inconvenience to the public, added cost of engineering and supervision, maintenance of detours and other items which have caused an expenditure of public funds resulting from the Contractor's failure to complete the work within the time specified in the contract.

The fixed, agreed and liquidated damages shall be assessed, unless otherwise specified, in accordance with the following schedule, which represents the City's estimate of damages at the time of contracting:

Contract Amount			
Contract Amount		Daily Charge	
From More Than	To and Including	Calendar Day	Working Day
\$0	\$50,000	\$200.00	\$350.00
50,000	100,000	375.00	750.00
100,000	300,000	480.00	960.00
300,000	500,000	670.00	1340.00
500,000	1,000,000	855.00	1710.00
1,000,000	--	1155.00	2310.00

109.10 Default on Contract.

If in the opinion of the Engineer the Contractor:

1. Fails to begin the work under the contract within the time specified; or
2. Fails to perform the work with sufficient workers and equipment or with sufficient materials to insure the completion of said work within the specified time; or
3. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as shall be rejected as defective and unsuitable; or
4. Discontinues the prosecution of the work; or
5. Fails to resume work which has been discontinued within a reasonable time after notice to do so; or
6. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency; or
7. Allows any final judgment to stand against the Contractor unsatisfied for a period of forty-eight (48) hours; or
9. Makes an assignment for the benefit of creditors; or
10. Is determined to be in violation of the provisions of the contract relative to hours of labor, wages, character and classification of workers employed; or

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11. Fails to maintain insurance coverage as required; or
12. For any other cause whatsoever fails to carry on the work in an acceptable manner,

then the Engineer shall give notice in writing to the Contractor and the Contractor's surety of such delay, neglect, or default, specifying the same, and directing that said default be cured.

If the Contractor, within a period of ten (10) days after the date of such notice, shall not proceed in accordance therewith, then the City shall, upon written certification by the Engineer of the fact of such delay, neglect or default and the Contractor's failure to comply with such notice, have full power and authority to forfeit the rights of the Contractor and at its option:

1. Call upon the surety to complete the work in accordance with the terms of the contract;
2. Take over the work, including any or all materials and equipment on the ground as may be suitable and acceptable, and complete the work by or on its own force account;
3. Enter into a new agreement for the completion of said contract according to the terms and provisions thereof;
4. Use such other methods as, in the opinion of the City, shall be required for the completion of said contract in an acceptable manner.

All resulting costs and charges incurred by the City, including the cost of completing the work under contract, shall be deducted from any monies due or which may become due on such contract. In case the expenses so incurred by the City shall be less than the sum which would have been payable under the contract if it had been completed by said Contractor, then said Contractor shall be entitled to receive the difference subject to any claims for liens thereon which may be filed with the City or any prior assignment filed with it, and in case such expense shall exceed the sum which would have been payable under the contract, the Contractor and the surety shall be liable and shall pay to the City the amount of such excess.

109.11 Removal of Equipment.

In the case of annulment or termination of this contract before completion from any cause whatever, the Contractor, if notified to do so by the City, shall promptly remove any part or all of the Contractor's equipment and supplies from the property of the City, failing which the City shall have the right to remove such equipment and supplies at the expense of the Contractor.

109.12 Contractor's Right to Stop Work or Terminate Contract.

If the work should be stopped under an order of any court, or other public authority, for a period of three (3) months, through no act or fault of the Contractor or anyone employed by the Contractor, or if the Engineer should fail to make a partial payment within thirty (30) days after it is due; or if the City shall fail to pay the Contractor within a reasonable time any sum certified by the Engineer; then the Contractor may, upon seven (7) days written notice to the City and the Engineer, stop work or terminate this contract and recover from the City payment for all work executed and any loss sustained upon any plant or materials.

109.13 Emergency Deferment or Cancellation of Contract.

The Board of Public Works and the Contractor, in the event of a national emergency that creates a shortage of materials, labor, or equipment, (1) by reason of war conditions involving the United States, or (2) by reason of orders of the United States Government or its duly authorized agencies, or (3) executive order with respect to prosecution of war or national defense, may upon a finding by the Board that such emergencies do exist, and by reason of which such Contractor is unable to proceed with the work under the contract, defer such work in whole or in part, or cancel such contract, or any part thereof, as hereinafter provided.

109.13(a) Deferment.

In all cases where work under the contract is deferred, it shall be done by written agreement between the City and Contractor stating the terms and conditions of such deferment. If agreement upon the terms and conditions of such deferment cannot be agreed upon, the original contract is to remain in full force and effect.

109.13(b) Cancellation.

Where the contract, or any portion thereof, is terminated or canceled for reasons other than those enumerated in Section 109.12, and the Contractor released before all items of work included in his contract have been completed, payment will be made for the actual items of work completed at contract unit prices, or agreed prices where no unit prices are contained in the contract, and no claim for loss of anticipated profits shall be considered.

Acceptable materials, obtained by the Contractor for the work, that have been inspected, tested and accepted by the City and that are not incorporated in the work, may, at the option of the Board of Public Works be purchased from the Contractor at actual cost as shown by receipted bills at such points of delivery as may be designated by the Engineer.

If agreement upon the terms and conditions of cancellations of all or any part of the contract cannot be agreed upon, the original contract, or uncompleted part thereof, shall remain in full force and effect.

109.14 Mobilization.

Mobilization shall consist of the work and operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, and for the establishment of all Contractor's offices, buildings, sanitary and other facilities necessary for work on the project; and of all other work and operations which must be performed or for which costs must be incurred before beginning work on the various items on the project site.

Mobilization will be measured for payment as a single complete unit of work, acceptably performed. This item of work, measured as provided above, shall be paid for one time during the life of the contract at the contract lump sum price for Mobilization, which price shall be full compensation for supplying and furnishing all materials, facilities and services, and for performing all work necessary for the completion of this item, including all necessary repetitions caused by any and all suspensions of the work during the life of the contract. The contract lump sum shall be payable to the Contractor in accordance with the following schedule:

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1. When twenty-five (25) percent or more of the original contract amount is earned, fifty (50) percent of the amount bid for Mobilization will be paid.
2. When seventy-five (75) percent or more of the original contract amount is earned, one hundred (100) percent of the amount bid for Mobilization will be paid.

When the contract does not include a separate contract item for Mobilization, then all the work herein before prescribed, required and performed will not be separately measured for payment, but will be considered incidental to other items in the contract.

ARTICLE 110 - MEASUREMENT AND PAYMENT

110.1 Measurement of Quantities.

The Contractor will be paid for the actual amount of work performed in accordance with the contract, as shown by the final measurements or on the basis of plan quantities.

All work completed under the contract will be measured for payment by the Engineer according to United States standard measure units. The method of measurement and computations to be used in the determination of quantities of material furnished and of work performed under the contract will be those specified for the various items elsewhere in these Specifications or generally recognized as conforming to good engineering practice.

The completed work will be measured for final payment by the Engineer, as to determine the quantities of such items of work performed, except when contract change orders have been executed providing for other methods of measurement.

All materials shall be delivered in vehicles bearing plainly legible identification marks and numbers. The Engineer reserves the right to measure truck bodies to check the volumes marked on tickets for materials paid for on a volume basis.

Each load of material shall be accompanied by a ticket which shall show the type of material, the volume or weights (gross, tare and net), the vehicle identification marks and numbers, the date, and the source of the material. Material tickets for pay items received on the project shall be presented to the City Inspector within twenty-four (24) hours after delivery. Tickets presented after this time may be rejected due to the inability of the City to substantiate the basis of material delivered to the project.

Individual loads of material which are specified for measurement by the cubic yard shall be measured to the nearest cubic yard except where such materials are weighed for measurement. Material specified to be measured by the cubic yard may be weighed and the weights will be converted to cubic yards for payment purposes. Select Fill materials will be considered to have a unit weight of 2,835 pounds per cubic yard. Factors for conversion from weight measurements to volume measurements for other materials will be determined by the Engineer before such method of measurement of pay quantities is used.

Material specified to be measured by the ton (2,000 pounds) shall be weighed on platform scales or other approved scales, furnished by and at the expense of the Contractor. Said scales shall be satisfactory to the Engineer and they shall be tested by the Engineer or by authorized testing firms or agencies as often as the Engineer may deem necessary to insure the accuracy of the scales.

The term "gage", when used in connection with the measurement of plates, will mean the U. S. Standard Gage, except that when reference is made to the measurement of metal sheets used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing, then the term "gage" will mean that specified in AASHTO Designation: M 36 or M 167 for galvanized steel sheets and will mean that specified in AASHTO Designation: M 196 or M 197 for aluminum alloy sheets.

When the term "gage" refers to the measurement of wire, it will mean the wire gage specified in AASHTO Designation: M 32.

When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe, conduit, etc., and these items are identified by gage, unit weight, section, dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited Specifications, manufacturing tolerances established by the industries involved will be accepted.

110.2 Partial Payments.

Partial payments based on the value of the work satisfactorily performed or satisfactory materials furnished, at contract or agreed unit or lump sum prices, will be made to the Contractor as the work progresses, except that partial payments will not be made if the Contractor is in noncompliance with any order given to the Contractor by the Engineer pursuant to the contract.

Twice each month (provided that a payment of \$1,000 or more becomes due, which amount may at the Engineer's discretion be reduced for contracts of \$25,000 or less) the Contractor will prepare an estimate of the quantities of work performed and the value thereof at contract or agreed unit or lump sum prices. The estimate will be prepared on forms provided by the Engineer. After review and acceptance of the estimate by the Engineer, the City shall issue a partial payment.

The quantities included shall be computed to reflect the approximate amount of work completed, or substantially completed under each of the pertinent contract items to the date of the estimate less, in each case, an allowance adequate to cover contingencies and costs still to be incurred incident to finishing, maintaining, repairing and restoring of the work, and to cover possible variations between the contract and final quantities in instances where contract quantities are used as a basis for the estimate.

The Engineer may, upon presentation by the Contractor of receipted bills, freight bills or other satisfactory evidence of payment, include in the estimate prepared for partial payment the value of nonperishable materials which are to form a part of the completed work, produced or purchased, and delivered and stored in the vicinity of the work at such location where they will be available for ready incorporation into the work. The amounts paid for such materials shall go to reduce the amount of other partial or final payments due to the Contractor for the work performed as the materials are incorporated into the completed work.

From the total amount of the estimate, determined as provided above, there shall be deducted an amount equal to five (5) percent of the total amount of such estimate to be retained by the City until fifty (50) percent of the work has been completed. At fifty (50) percent completion, further partial payments shall be made in full to the Contractor and no additional amount shall be retained unless the Engineer certifies that the job is not proceeding satisfactorily in accordance with Section 110.5 herein or, the amount retained is not sufficient to provide for recovery of liquidated damages assessable against the Contractor. At fifty (50) percent completion or at any time thereafter, when the progress of the work is not satisfactory, additional amounts may be retained but, in no event shall the total retainage be more than ten (10) percent of the value of the work completed. When the work has been substantially completed except the work which cannot be completed because of weather conditions, lack of materials or other reasons which in the judgment of the Engineer are valid reasons for noncompletion, the Engineer may make additional payments retaining at all times in the amounts sufficient to cover the estimated cost of the work still to be completed or in the alternative may pay out the entire amount retained and receive from the Contractor a guarantee in the form of a bond or other collateral sufficient to insure the completion of the job.

The payment of any current estimate prior to final acceptance of the work by the City shall in no way constitute acceptance of the work, nor in any way prejudice or affect the obligation of the Contractor, to repair, restore, correct, renew or replace any defects or imperfections in the construction or in the strength or quality of the materials used in or about the construction of the work under contract and its appurtenances, or any damage due or attributable to such defects, which defects, imperfections or damage shall have been discovered on or before the final inspection or acceptance of the work. The Engineer shall be the sole judge of such defects, imperfections or damage and the Contractor shall be liable to the City for failure to correct the same as provided herein.

110.3 Setoffs.

Where any deductions from or forfeitures of payment in connection with the work of this contract are duly and properly declared or imposed against the Contractor, in accordance with the terms of this contract, State Laws or Ordinances of the City, the total amount thereof may be withheld from any money whatsoever due or to become due the Contractor under the contract, and when deducted shall be deemed and taken as payment in such amount. The City also has the equitable right to set off against any sum due and payable the Contractor under this contract any amount the City determines the Contractor owes the City, whether arising under this contract or any other agreement or otherwise.

110.4 Unpaid Wages.

Whenever, in the opinion of the Engineer, it may be necessary for the progress of the work to secure to any of the employees engaged in the work under this contract any wages which may then be due them, the City is hereby authorized to pay the employees the amount due them or any lesser amount, and the amount so paid them as shown by their receipts, shall be deducted from any monies that may be or become payable to the Contractor.

110.5 Acceptance and Final Payment.

When the work has been accepted by the Engineer in accordance with Section 105.15, the Engineer will prepare the final estimate of the quantities of the various classes of work performed. After the Contractor reviews and accepts the final estimate, and after the Contractor submits an affidavit certifying full compliance with Section 66.0903, Wisconsin Statutes, and receipt of evidence of such compliance by all subcontractors, the Engineer will recommend to the **Finance Director** that the final payment be made. Within thirty (30) days after such action the Contractor will be paid the entire sum then due, subject to deductions for prior payments and setoffs under the contract.

All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

The making of final payment shall not release the surety nor constitute a waiver of rights by the City. The guarantee of Section 105.16 is cumulative and not exclusive.

110.6 Payment Withheld.

Notwithstanding any responsibility of the surety and the Contractor for the following matters, the City may withhold, or on account of subsequent discovered evidence, nullify the whole or a part of any certificate to such extent as may be necessary to protect itself from loss on account of:

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1. Defective work not remedied.
2. Claims filed against the Contractor.
3. Failure of the Contractor to make payments promptly to subcontractors or for laborers or material.
4. A reasonable doubt that the contract can be completed for the balance then unpaid.
5. Damage to another Contractor.

When the above grounds are removed, payments shall be made for amounts withheld because of them.

110.7 Differing Site Conditions.

The Contractor shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the Engineer by written notice of:

1. Subsurface or latent physical conditions of the site differing materially from those indicated in this contract, or
2. Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work of the character provided for in this contract.

The Engineer shall promptly investigate the conditions. If the Engineer finds that such conditions do materially differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the contract modified in writing accordingly.

No claim of the Contractor under this Section shall be allowed unless the Contractor has given the required notice, except that the Engineer may extend the prescribed time.

No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract.

110.8 Claims for Adjustment in Compensation.

The compensation provided herein constitutes the total payment (subject to authorized adjustments) payable to Contractor for performing the work. All duties, responsibilities and obligations assigned to or undertaken by Contractor shall be at its expense without change in the Contract Price. This includes without limitation loss or damage arising from the nature of the work or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the Engineer, expenses incurred in consequence of the suspension or discontinuance of the work as herein specified; and for any infringement of patent, trademark, or copyright; and for completing the work according to the contract.

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Should the Contractor contend that it is entitled to additional compensation, Contractor shall within seven (7) days after the occurrence of the event giving rise to the claim deliver written notice to the Engineer, stating the general nature of the claim. The Engineer shall render a timely decision. Claims not presented within seven (7) days above mentioned, but presented at some later time, shall not be entitled to have such review.