



CITY OF MILWAUKEE

DEPARTMENT OF PUBLIC WORKS

INFRASTRUCTURE SERVICES DIVISION

STREET AND BRIDGES UNIT

STRUCTURAL DESIGN

2012 CONCRETE REPAIRS AND DECK COATING

AT THE

2ND AND PLANKINTON PARKING STRUCTURE

724 NORTH 2ND STREET

located in

MILWAUKEE, WI

JOB NUMBER : PA160110300

OFFICIAL NOTICE NUMBER : 70

DATE : May 2012

CITY OF MILWAUKEE, WISCONSIN
DEPARTMENT OF PUBLIC WORKS
INFRASTRUCTURE SERVICES DIVISION

Specifications

Governing

2012 CONCRETE REPAIRS AND DECK COATING

at the

2ND AND PLANKINTON PARKING STRUCTURE

Milwaukee, Wisconsin

Job No. PA160110300

MAY 2012

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END OF SECTION 00 01 10

SECTION 00 01 15 – LIST OF DRAWING SHEETS

The following listed Drawings accompany and form a part of the project contract documents along with these specifications and generally illustrate the nature of the work.

<u>Sheet No.</u>	<u>Title</u>
1.	TITLE SHEET
2.	LOWER LEVEL PLAN
3.	RAMP 1 PLAN
4.	RAMP 2 PLAN
5.	RAMP 3 PLAN
6.	RAMP 4 PLAN
7.	RAMP 5 PLAN
8.	RAMP 6 PLAN
9.	RAMP 7 PLAN
10.	RAMP 8 PLAN
11.	ROOF PLAN
12.	STAIR PLAN
13.	RAMP 8 MASONRY DETAILS

END OF SECTION 00 01 15

CITY OF MILWAUKEE GENERAL
OFFICIAL NOTICE TO CONTRACTORS

Separate sealed bids for each project will be received until 10:30 a.m. of the bid opening date at which time bids will be publicly opened and read for furnishing all material and doing all work for each project in accordance with the requirements of the respective Official Notice on the bid form furnished in accordance with plans, specifications, contract documents, and proposed form of contract on file in the office of the Department of Public Works, Frank P. Zeidler Municipal Building, Room 507, Milwaukee, Wisconsin 53202.

PROSPECTIVE BIDDERS ARE TO CAREFULLY EXAMINE AND REVIEW ALL CONTRACT DOCUMENTS AND MATERIALS IN SAID OFFICE BEFORE SUBMITTING BID.

Affidavits of No Interest must accompany the bids, and the failure of prospective bidders to comply with these requirements may disqualify the bid.

The Contractor/Lessee agrees to comply with all applicable requirements of the American with Disabilities Act of 1990, 42 U.S.C. Section 12101, Et. Seq. the TDD Number for Public Works is (414) 286-2025.

As a part of the bid each bidder shall submit a full and complete list of all the proposed subcontractors and the class of work to be performed by each, which list shall not be added to nor altered without the written consent of the Commissioner of Public Works.

All Contractors and subcontractors are required to furnish or have on file a certificate of insurance in accordance with the insurance provisions of the General Specifications.

All Contractor(s) and subcontractor(s) are subject to the prevailing wage rates and hours of labor as prescribed by the Common Council of the City of Milwaukee consistent with provisions of Section 66.293 of the Wisconsin Statutes.

Copies of the actual work classifications and wage and fringe benefit rates enforced on this project are available in Room 516 of the Frank P. Zeidler Municipal Building.

Corporate surety will be required on performance and payment bonds for all projects listed in the following Official Notice. All applicable charter and statutory provisions and ordinances, all the provisions of this official notice, invitation to bid, general and detailed specifications, special provisions, proposal, schedule of fixed prices, addendum and plans for this project and all other contract documents set forth in the invitation to bid will be incorporated and made part of the contract as if therein set forth in full.

Tie bids, when the lowest ones, will be decided by the Commissioner of Public Works.

The Commissioner of Public Works reserves the right to reject any or all bids.

END SECTION 00 11 14

CITY OF MILWAUKEE SPECIFIC
OFFICIAL NOTICE NO. 70

Sealed bids will be opened on **Thursday May 31, 2012 at 10:30 A.M.** for the 2012 Concrete Repairs and Deck Coating at the 2nd and Plankinton Parking Structure.

Bid Security Required: Bond, Certified Check, Cashier's
Check or Cash to accompany bid:
10% of Contractor's Base Bid

Completion Date: November 21, 2012

Liquidated Damages, per diem: \$500.

THE MINORITY, WOMAN, SMALL BUSINESS ENTERPRISE REQUIREMENT FOR THIS CONTRACT IS 25%. (5.57% African-American, 6.8% WBE, and 12.63% SBE)

THE RESIDENT PREFERENCE PROGRAM PARTICIPATION REQUIREMENT FOR THIS PROJECT IS 40%.

THE APPRENTICESHIP REQUIREMENTS FOR THIS CONTRACT ARE N/A.

Plans and specifications will be furnished to the prospective bidders upon payment of a \$10.00 non-refundable fee in Room 507, Frank P. Zeidler Municipal Building, 841 North Broadway, Milwaukee, Wisconsin 53202.

A \$10.00 per set additional non-refundable fee is required to obtain bid documents by mail.

Contractor must comply with all provisions of the CITY OF MILWAUKEE GENERAL OFFICIAL NOTICE TO CONTRACTORS published above.

THE CONTRACTOR SHALL SPECIFICALLY NOTE THE MINORITY, WOMAN, SMALL BUSINESS ENTERPRISE, RESIDENCY AND APPRENTICESHIP FORMS FOR THIS PROJECT. IF THE FORMS ARE NOT FILLED OUT PROPERLY, IT WILL BE CAUSE FOR REJECTION OF THE BID.

THE TRAINING INCENTIVE WILL NOT APPLY TO THIS PROJECT.

Plans and project manual for this project may be viewed in the Infrastructure Services Division, Structural Design Unit, Room 907, Frank P. Zeidler Municipal Building, 841 North Broadway, Milwaukee, Wisconsin.

SECTION 00 21 13 – INSTRUCTIONS TO BIDDERS

PART 1 – GENERAL

1.1 SUMMARY

- A. See also Instructions to Bidders in the “General Specifications” of the Department of Public Works, City of Milwaukee, Wisconsin, dated January 31, 1992, and all subsequent addenda.

1.2 BID FORM

- A. Submit a unit price for each item of work as indicated on the drawings and specified herein, complete in every respect.
- B. Bids will not be accepted in any form except on the bid form included with these specifications.
- C. The Contractor must recognize and abide by the right of the Owner (City of Milwaukee) to accept or reject any or all bids in the best interests of the City.

1.3 CONTRACT AWARD

- A. In case of discrepancy between the total Base Bid indicated in the proposal and that obtained by adding the products of the quantities of work and the unit prices, the unit prices shall govern. Any errors found in the total Base Bid indicated will be corrected, and the contract award shall be made to the lowest responsible bidder based on the corrected total Base Bid.
- B. The Commissioner of Public Works will award the contract based on the Base Bid only.

1.4 CONTRACT BREAKDOWN

- A. Shortly after the award of the contract, each Contractor shall submit a list showing the cost breakdown of the items in his contract. This list will be used as a basis for estimates of work completed for partial payment.

1.5 SITE VISIT

- A. All Contractors shall visit the site, consult the drawings and specifications, be familiar with the work of other Contractors and determine for himself all conditions affecting the work.
- B. Failure by a Contractor to be familiar with the project shall not release him from any obligation under this contract to complete the work in strict conformity with the plans and specifications and all City, State and Federal codes or regulations pertaining to the work.

1.6 TIME FOR COMPLETION

- A. The time allowed for completion is stated in the Specific Official Notice and shall start with the date on the Notice to proceed which will be sent to the Contractor directly following the signing of the

00 21 13/2

contract. The time allowed includes the time required for fabricating and procuring material and doing the work at the 2ND and Plankinton Parking Structure.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

PART 4 – MEASUREMENT AND PAYMENT (Not Applicable)

END OF SECTION 00 21 13

SECTION 00 72 00 – GENERAL CONDITIONS

PART 1 – GENERAL

1.1 DEPARTMENT OF PUBLIC WORKS GENERAL SPECIFICATIONS

- A. Provisions of the Department of Public Works General Specifications dated January 31, 1992, and all subsequent addenda, shall apply to all contractors and subcontractors working on the project. Copies of the General Specifications may be obtained from the Department of Public Works General Office, Room 516, Frank P. Zeidler Municipal Building, 841 North Broadway, Milwaukee, Wisconsin.

1.2 DEFINITIONS

- A. Commissioner: Commissioner of Public Works
- B. Division: Infrastructure Services Division.
- C. City Engineer: The City Engineer of the Infrastructure Services Division.
- D. Project Inspector: The authorized representative of the Commissioner assigned to make detailed inspection of any or all portions of the work and materials thereof.
- E. Addenda: Writing or graphic instruments issued prior to the execution of the contract which modify or interpret the bidding documents, including drawings and specifications by additions, deletions, clarifications or corrections. Addenda will become part of the contract documents when the contract is executed.
- F. Contract Drawings: Drawings of the work to be done as listed hereafter in the List of Drawing Sheets.
- G. Base Bid: Amount of money stated in the Bid Form as the sum of which the bidder offers to perform the work.
- H. Additive Alternate: Additional amount of money stated in the Bid Form as the sum of which the bidder offers to perform the alternate work.

1.3 CONTROL OF WORK AND MATERIALS

- A. Detail and Shop Drawings: Shop drawings and other additional drawings which may be required for each branch of the work shall be prepared by each respective contractor unless otherwise directed by the City Engineer. Prints shall be the same size as contract documents when practical. Prints of each drawing shall be submitted to the City Engineer for approval before proceeding with the work. Changes ordered by the City Engineer shall be made and revised prints submitted as above. The City Engineer's approval of drawing shall not relieve the contractor of responsibility for errors.
- B. Consignment and Delivery of Materials: The materials for the work shall be consigned to the contractor and he shall be responsible for the delivery of all materials required for the completion of the contract.

1.4 PROJECT COORDINATION

- A. Contractors are required, so far as possible; to arrange work and to dispose of materials so as not to interfere with the work or storage of materials of other contractors or City forces engaged upon the work.
- B. Contractor shall give full cooperation to other trades and furnish any information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay.
- C. Where the work of a contractor will be installed in close proximity to the work of other trades, or where there is evidence that the work of a contractor will interfere with the work of other trades, he shall assist in working out space conditions to make satisfactory adjustments.
- D. If a contractor installs work before coordinating it with other trades or so as to cause interference with work of other trades, he shall make necessary changes in his work to correct the condition without extra charge.
- E. Contractors are required to join their 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 contractors, and as may be directed by the Project Inspector.

1.5 TECHNICAL SPECIFICATIONS AND DRAWINGS

- A. All contractors shall have complete sets of plans and specifications on the job site at all times.
- B. Anything mentioned in the Technical Specifications and not shown on the Drawings or shown on the Drawings and not mentioned in the Technical Specifications shall be as if shown on or mentioned in both. In case of difference between Drawings and Technical Specifications, the Technical Specifications shall govern. In case of any discrepancy in drawings or Technical Specifications, the matter shall be immediately submitted to the City for decision. Said discrepancy shall not be adjusted by the contractor.

1.6 SAFETY REGULATIONS

- A. All work shall be done in accordance with the safety requirements set up by the Wisconsin Administrative Code Rules and the Occupational Safety and Health Administration (OSHA).

1.7 CODE RULES

- A. The rulings, regulations and laws of the following shall be complied with in the completion of this project:
 - 1. Wisconsin Administrative Code
 - 2. Occupational Safety and Health Administration (OSHA)
 - 3. Plumbing and Drainage Codes of the City of Milwaukee
 - 4. City of Milwaukee Building Codes
 - 5. Ordinances of the City of Milwaukee

1.8 APPROVALS

- A. Wherever the words "or equal", or "approved equal", or similar terms are used, it shall mean as approved by the Commissioner of Public Works or his agent. All drawings, bulletins, and data necessary for an

approval shall be submitted in quadruplicate to the City Engineer. Such approval shall apply to design only and shall in no way relieve this contractor from his responsibility for the full performance of his contract. Evaluation of "or equal" products will be made at the time of shop drawing submission.

1.9 GENERAL SPECIFICATIONS

- A. When the General Specifications of the Department of Public Works are in conflict with any other specification referenced herein, the General Specifications of the Department of Public Works shall govern.

1.10 SAVINGS CLAUSE

- A. If any clause, item or other part of these specifications shall be deemed illegal or in conflict with code only that item or clause shall be deemed null and void within the specifications. All other items will remain in effect.

1.11 CONSTRUCTION PROGRESS MEETINGS

- A. The City reserves the right to schedule periodic construction progress meetings requiring the attendance of the contractors' and subcontractors' representatives as deemed necessary by the City.

1.12 PLANS AND WORKING DRAWINGS

- A. The approved plans will be supplemented by such working drawings and computations as are necessary to adequately control the work. It is mutually agreed that all authorized alterations of the approved plans shall be in writing. No changes shall be made on any plan or drawing after the same has been approved by the City Engineer, except by direction of the City Engineer.
- B. Working drawings for structures shall be furnished by the contractor and shall consist of such detailed plans and computations as may be required for the prosecution of the work and which are not included in the plans furnished by the engineer. Such working drawings shall be approved by the engineer. Plans may also be required and in such cases shall be likewise subject to approval, unless approval is waived by the City Engineer.
- C. It is expressly understood, however, that approval by the City Engineer of the contractor's working drawings does not relieve the contractor of any responsibility for accuracy of dimensions and details or conformity of his working drawings with the approved plans and specifications.
- D. The contract price shall include the cost of furnishing all working drawings and the contractor will be allowed no extra compensation for such drawings.

1.13 CONFORMITY WITH PLANS AND SPECIFICATIONS

- A. All work performed and all materials furnished will be in reasonably close conformity with the lines, grades, cross sections, dimensions and material requirements shown on the plans or indicated in the specifications. It shall be finished to produce quality work and appearance within limits of precision reasonably expected of good construction.

- B. Specific specification values and prescribed tolerance amounts or limits or minimum or maximum values may be specified. Whenever such tolerances or ranges are specified, the production and processing of material or performance of the work shall be so controlled that the material or work will substantially meet the specific value or fall substantially within the specified range or limits and shall only occasionally be of borderline quality or dimensions.
- C. Whenever tolerances, limits or minimum and maximum values are not specified, reasonable and accepted standards or established manufacturing or construction tolerances will be permitted.
- D. 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 by the exigencies of construction or otherwise will be determined by the engineer and authorized by him in writing.
- E. In the event the engineer finds materials which are incorporated in the work, or the finished product in which the materials are used, to be not within reasonably close conformity with the plans and specifications, he will then make a determination whether or not reasonably acceptable work has been produced and can be accepted and remain in place. If the engineer determines that reasonably acceptable work has been produced and can be accepted and remain in place, he 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 he deems necessary to conform to his determination based on engineering judgment, or as specifically provided for elsewhere in these specifications.
- F. In the event the engineer finds that the materials, the finished product in which the materials are used, or the work performed are not in reasonably close 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.

1.14 PERSONAL LIABILITY OF PUBLIC OFFICIALS

- A. 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 Department, its 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 Department, or its agents or employees, is hereby expressly waived.

1.15 GUARANTEE

- A. The Contractor shall guarantee to replace or repair promptly at his own expense, as directed by the Commissioner of Public Works or his agent, all workmanship or materials in which defects may develop within one (1) year from the date of final acceptance of his work. This guarantee includes all damage done by the operator due to faulty equipment, poor installation or poor construction. The City shall also receive any extended guarantees or warranties normally supplied by any vendor or Manufacturer for material or equipment incorporated in the work.

1.16 ENVIRONMENTAL PROTECTION

- A. The contract shall establish and carry out a program for immediate removal of debris during the construction of the parking structure in order to prevent the accumulation of unsightly, deleterious and/or potentially polluting materials.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

PART 4 – MEASUREMENT AND PAYMENT (Not Applicable)

END OF SECTION 00 72 00

SECTION 00 73 01 - INSPECTION CHARGES

PART 1 – GENERAL

1.1 INSPECTION CHARGES

- A. The Contractor will be charged a fee for inspection for each and every day such inspection is required after the time allowed for completion has expired.
- B. The amount of the fee for inspection shall be \$400 per day.
- C. The time allowed for completion is stated in the Specific Official Notice and shall start with the date on the Notice to Proceed which will be sent to the Contractor directly following the signing of the contract. The time allowed includes the time required for fabricating and procuring material and doing the work at the site.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

PART 4 – MEASUREMENT AND PAYMENT (Not Applicable)

END OF SECTION 00 73 01

MINIMUM WAGE SCALE

RESOLVED, By the Common Council of the City of Milwaukee, that building and construction trades workers in the construction industry employed upon public work projects done by contract for the City of Milwaukee, either new construction or repair work, upon any roads, bridges, sewers, streets, alleys, buildings, or any other public work, shall be paid no less than the hourly wage rates and fringe benefits which prevail in the Milwaukee metropolitan area for the same type of work or for closely related work. (FILE NUMBER 68-1317)

Prevailing hours of labor for all classes of laborers and mechanics means no more than ten (10) hours per day nor more than forty (40) hours per week and may not include any hours worked on a Saturday, Sunday, or one of six holidays. ALL work performed in excess of these prevailing hours must be paid at a rate of at least 1-1/2 times the hourly basis rate of pay (plus fringe benefits). *Fringe Benefits must be paid on ALL hours worked for ALL job classifications.*

If a contractor or subcontractor anticipates employing a person or persons in classifications, trades, or occupations that are not set forth in the Minimum Wage Scale, then that contractor or subcontractor is required to apply to the Commissioner of Public Works PRIOR to the bid opening date set forth in the official notice for the project for a special wage determination containing the classification(s) and associated wage and benefit rate(s). Special wage determinations requested after the bid opening date MAY be issued at the discretion of the Commissioner of Public Works' Office if it is satisfied that a special classification is used as a prevailing practice in the City of Milwaukee.

The Prime Contractor must provide each subcontractor with a copy of the Minimum Wage Scale with the appropriate classifications and rates for the type of work to be performed. The Minimum Wage Scale, including this cover sheet, must be physically included in the subcontract agreement between the prime and subcontractor.

Bidders are required to utilize the Wisconsin Department of Workforce Development's "Dictionary of Occupational Classifications and Work Descriptions" to determine the appropriate job classifications/wage rates for their employees prior to bidding and to insure employees are paid for those job duties they actually perform. This document can be found on their website at dwd.wisconsin.gov; type "dictionary" in the search box. All disputes and/or controversies regarding the proper classification of any laborer, worker, or mechanic employed on a City project will be referred to the State of Wisconsin Department of Workforce Development for final resolution and disposition.

ss. 66.0903(8), Wis. Stats.

Any contractor, subcontractor, or agent thereof, who fails to pay the prevailing rate of wages determined by the department under this subsection or pays less than 1-1/2 times the hourly basic rate of pay for all hours worked on the project in excess of prevailing hours of labor determined under this subsection, shall be liable to the employees affected in the amount of their unpaid minimum wages or their unpaid overtime compensation and an additional amount as liquidated damages.

Each contractor, subcontractor, or agent thereof participating in a project covered by this subsection shall keep full and accurate records clearly indicating the name and trade or occupation of every laborer, workman, or mechanic employed by him in connection with the project and an accurate record of the number of hours worked by each employee and actual wages paid therefor.

**NOTICE TO ALL CONTRACTORS AND
SUBCONTRACTORS:**

**EFFECTIVE 1/1/2010, DUE TO CHANGES IN
WISCONSIN PREVAILING WAGE LAW, SEC.
66.0903 -**

**IN ADDITION TO THE PREVAILING WAGE
REPORTING REQUIREMENTS ALREADY IN
PLACE FOR CITY OF MILWAUKEE DPW
CONTRACTS:**

ALL CONTRACTORS AND SUBCONTRACTORS
ON A PREVAILING WAGE PROJECT ARE ALSO
REQUIRED TO FILE CERTIFIED PAYROLLS OR
COLLECTIVE BARGAINING AGREEMENTS
ELECTRONICALLY WITH THE STATE OF
WISCONSIN DEPARTMENT OF WORKFORCE
DEVELOPMENT (DWD)

INSTRUCTIONS AND FURTHER DETAILS CAN BE
FOUND ON THE DWD'S WEBSITE EXPLAINING THE
REQUIREMENTS

http://dwd.wisconsin.gov/er/prevailing_wage_rate/default.htm

00 73 43/3
PREVAILING WAGE RATE DETERMINATION
 Issued by the State of Wisconsin
 Department of Workforce Development
 Pursuant to s. 66.0903, Wis. Stats.
 Issued On: 01/13/2012
 Amended On: 03/02/2012

DETERMINATION NUMBER: 201200107

EXPIRATION DATE: Prime Contracts MUST Be Awarded or Negotiated On Or Before 12/31/2012. If NOT, You MUST Reapply.

PROJECT NAME: ALL PUBLIC WORKS PROJECTS UNDER SEC. 66.0903, STATS.-CITY OF MILWAUKEE

PROJECT LOCATION: MILWAUKEE CITY, MILWAUKEE COUNTY, WI

CONTRACTING AGENCY: CITY OF MILWAUKEE-DEPT OF PUBLIC WORKS

CLASSIFICATION:	Contractors are responsible for correctly classifying their workers. Either call the Department of Workforce Development (DWD) with trade or classification questions or consult DWD's Dictionary of Occupational Classifications & Work Descriptions on the DWD website at: dwd.wisconsin.gov/er/prevailing_wage_rate/Dictionary/dictionary_main.htm .
OVERTIME:	<p>Time and one-half must be paid for all hours worked:</p> <ul style="list-style-type: none"> - over 10 hours per day on prevailing wage projects - over 40 hours per calendar week - Saturday and Sunday - on all of the following holidays: January 1; the last Monday in May; July 4; the 1st Monday in September; the 4th Thursday in November; December 25; - The day before if January 1, July 4 or December 25 falls on a Saturday; - The day following if January 1, July 4 or December 25 falls on a Sunday. <p>Apply the time and one-half overtime calculation to whichever is higher between the Hourly Basic Rate listed on this project determination or the employee's regular hourly rate of pay. Add any applicable Premium or DOT Premium to the Hourly Basic Rate before calculating overtime.</p> <p>A DOT Premium (discussed below) may supersede this time and one-half requirement.</p>
FUTURE INCREASE:	When a specific trade or occupation requires a future increase, you MUST add the full hourly increase to the "TOTAL" on the effective date(s) indicated for the specific trade or occupation.
PREMIUM PAY:	If indicated for a specific trade or occupation, the full amount of such pay MUST be added to the "HOURLY BASIC RATE OF PAY" indicated for such trade or occupation, whenever such pay is applicable.
DOT PREMIUM:	This premium only applies to highway and bridge projects owned by the Wisconsin Department of Transportation and to the project type heading "Airport Pavement or State Highway Construction." DO NOT apply the premium calculation under any other project type on this determination.
APPRENTICES:	Pay apprentices a percentage of the applicable journey person's hourly basic rate of pay and hourly fringe benefit contributions specified in this determination. Obtain the appropriate percentage from each apprentice's contract or indenture.
SUBJOURNEY:	Subjourney wage rates may be available for some of the trades or occupations indicated below with the exception of laborers, truck drivers and heavy equipment operators. Any employer interested in using a subjourney classification on this project MUST complete Form ERD-10880 and request the applicable wage rate from the Department of Workforce Development PRIOR to using the subjourney worker on this project.

This document **MUST BE POSTED** by the **CONTRACTING AGENCY** in at least one conspicuous and easily accessible place **on the site of the project**. A local governmental unit may post this document at the place normally used to post public notices if there is no common site on the project. This document **MUST** remain posted during the entire time any worker is employed on the project and **MUST** be physically incorporated into the specifications and all contracts and subcontracts. If you have any questions, please write to the Equal Rights Division, Labor Standards Bureau, P.O. Box 8928, Madison, Wisconsin 53708 or call (608) 266-6861.

The following statutory provisions apply to local governmental unit projects of public works and are set forth below pursuant to the requirements of s. 66.0903(8), Stats.

s. 66.0903 (1) (f) & s. 103.49 (1) (c) "PREVAILING HOURS OF LABOR" for any trade or occupation in any area means 10 hours per day and 40 hours per week and may not include any hours worked on a Saturday or Sunday or on any of the following holidays:

1. January 1.
2. The last Monday in May.
3. July 4.
4. The first Monday in September.
5. The 4th Thursday in November.
6. December 25.
7. The day before if January 1, July 4 or December 25 falls on a Saturday.
8. The day following if January 1, July 4 or December 25 falls on a Sunday.

s. 66.0903 (10) RECORDS; INSPECTION; ENFORCEMENT.

(a) Each contractor, subcontractor, or contractor's or subcontractor's agent performing work on a project of public works that is subject to this section shall keep full and accurate records clearly indicating the name and trade or occupation of every person performing the work described in sub. (4) and an accurate record of the number of hours worked by each of those persons and the actual wages paid for the hours worked.

s. 66.0903 (11) LIABILITY AND PENALTIES.

(a) 1. Any contractor, subcontractor, or contractor's or subcontractor's agent who fails to pay the prevailing wage rate determined by the department under sub. (3) or who pays less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor is liable to any affected employee in the amount of his or her unpaid wages or his or her unpaid overtime compensation and in an additional amount as liquidated damages as provided under subd. 2., 3., whichever is applicable.

2. If the department determines upon inspection under sub. (10) (b) or (c) that a contractor, subcontractor, or contractor's or subcontractor's agent has failed to pay the prevailing wage rate determined by the department under sub. (3) or has paid less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor, the department shall order the contractor to pay to any affected employee the amount of his or her unpaid wages or his or her unpaid overtime compensation and an additional amount equal to 100 percent of the amount of those unpaid wages or that unpaid overtime compensation as liquidated damages within a period specified by the department in the order.

3. In addition to or in lieu of recovering the liability specified in subd. 1. as provided in subd. 2., any employee for and in behalf of that employee and other employees similarly situated may commence an action to recover that liability in any court of competent jurisdiction. If the court finds that a contractor, subcontractor, or contractor's or subcontractor's agent has failed to pay the prevailing wage rate determined by the department under sub. (3) or has paid less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor, the court shall order the contractor, subcontractor, or agent to pay to any affected employee the amount of his or her unpaid wages or his or her unpaid overtime compensation and an additional amount equal to 100 percent of the amount of those unpaid wages or that unpaid overtime compensation as liquidated damages.

5. No employee may be a party plaintiff to an action under subd. 3. unless the employee consents in writing to become a party and the consent is filed in the court in which the action is brought. Notwithstanding s. 814.04 (1), the court shall, in addition to any judgment awarded to the plaintiff, allow reasonable attorney fees and costs to be paid by the defendant.

BUILDING OR HEAVY CONSTRUCTION

Includes sheltered enclosures with walk-in access for the purpose of housing persons, employees, machinery, equipment or supplies and non-sheltered work such as canals, dams, dikes, reservoirs, storage tanks, etc. A sheltered enclosure need not be "habitable" in order to be considered a building. The installation of machinery and/or equipment, both above and below grade level, does not change a project's character as a building. On-site grading, utility work and landscaping are included within this definition. Residential buildings of four (4) stories or less, agricultural buildings, parking lots and driveways are NOT included within this definition.

SKILLED TRADES

<u>CODE</u>	<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u>	<u>HOURLY FRINGE BENEFITS</u>	<u>TOTAL</u>
		\$	\$	\$
101	Acoustic Ceiling Tile Installer	33.43	19.31	52.74
102	Boilermaker	31.09	21.87	52.96
103	Bricklayer, Blocklayer or Stonemason Future Increase(s): Add \$.50 on 6/01/2012; Add \$1.45/hr on 6/01/2013 Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	35.58	16.37	51.95
104	Cabinet Installer	29.06	15.16	44.22
105	Carpenter Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	33.43	19.31	52.74
106	Carpet Layer or Soft Floor Coverer	31.68	18.55	50.23
107	Cement Finisher	30.87	16.33	47.20
108	Drywall Taper or Finisher Future Increase(s): Add \$2.20/hr on 6/1/2012	28.97	17.74	46.71
109	Electrician Future Increase(s): Add \$1.40/hr on 6/1/2012. Add \$1.60/hr on 6/1/2013. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	31.54	20.95	52.49
110	Elevator Constructor	43.79	25.48	69.27
111	Fence Erector	27.00	0.00	27.00
112	Fire Sprinkler Fitter	36.82	19.03	55.85
113	Glazier	32.25	16.20	48.45
114	Heat or Frost Insulator	33.28	22.45	55.73

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
115	Insulator (Batt or Blown)	23.62	11.55	35.17
116	Ironworker	31.31	21.54	52.85
117	Lather	31.68	18.41	50.09
118	Line Constructor (Electrical)	35.97	18.08	54.05
119	Marble Finisher	31.16	16.27	47.43
120	Marble Mason	35.53	15.92	51.45
121	Metal Building Erector	21.05	7.82	28.87
122	Millwright	28.30	23.29	51.59
123	Overhead Door Installer	26.53	0.00	26.53
124	Painter Future Increase(s): Add \$2.20/hr on 6/1/2012. Premium Increase(s): Add \$.20/hr for paperhanging; Add \$.35/hr for bridge, iron and drywall; Add \$.75/hr for spraying and sandblasting; Add \$.60/hr for EIFS work; Add \$1.00/hr for lead based paint removal.	28.97	17.74	46.71
125	Pavement Marking Operator	26.00	0.00	26.00
126	Piledriver	28.11	23.94	52.05
127	Pipeline Fuser or Welder (Gas or Utility)	30.52	18.84	49.36
129	Plasterer	20.13	1.03	21.16
130	Plumber	36.97	17.47	54.44
132	Refrigeration Mechanic	37.21	19.04	56.25
133	Roofer or Waterproofor Future Increase(s): Add \$.50/hr. effective 06/01/2012	29.40	15.05	44.45
134	Sheet Metal Worker	37.20	16.37	53.57
135	Steamfitter	38.26	19.49	57.75
137	Teledata Technician or Installer Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	24.65	15.67	40.32
138	Temperature Control Installer	29.63	19.17	48.80
139	Terrazzo Finisher	18.00	5.35	23.35
140	Terrazzo Mechanic	31.16	16.27	47.43

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
141	Tile Finisher	23.76	16.05	39.81
142	Tile Setter	29.95	15.64	45.59
143	Tuckpointer, Caulker or Cleaner Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	34.35	15.92	50.27
144	Underwater Diver (Except on Great Lakes)	36.20	18.81	55.01
146	Well Driller or Pump Installer	25.32	15.30	40.62
147	Siding Installer	36.60	16.37	52.97
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	27.42	15.10	42.52
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	28.78	15.16	43.94
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	17.80	9.00	26.80
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	23.38	12.48	35.86
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.30	10.97	32.27

TRUCK DRIVERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
201	Single Axle or Two Axle	32.32	16.75	49.07
203	Three or More Axle Future Increase(s): Add \$1.75/hr on 6/1/2012; Add \$1.85/hr on 6/1/2013. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	22.50	16.19	38.69
204	Articulated, Euclid, Dumptor, Off Road Material Hauler	33.32	17.60	50.92
205	Pavement Marking Vehicle	19.25	10.84	30.09
207	Truck Mechanic	24.91	15.35	40.26

LABORERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
301	General Laborer Premium Increase(s): Add \$.11 for mortar mixer, fork lift operator, air and electric equipment and power buggy operators; Add \$.22 for jackhammer operator, certified welder, gunite machineman.	28.82	15.61	44.43
302	Asbestos Abatement Worker	21.58	17.83	39.41
303	Landscaper	12.50	2.20	14.70
310	Gas or Utility Pipeline Laborer (Other Than Sewer and Water)	19.14	15.53	34.67
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased) Premium Increase(s): DOT PREMIUMS: Pay two times the hourly basic rate on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	17.24	15.00	32.24
314	Railroad Track Laborer	17.00	1.06	18.06

**HEAVY EQUIPMENT OPERATORS
SITE PREPARATION, UTILITY OR LANDSCAPING WORK ONLY**

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
501	Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Milling Machine; Boring Machine (Directional, Horizontal or Vertical); Backhoe (Track Type) Having a Mfgr's Rated Capacity of 130,000 Lbs. or Over; Backhoe (Track Type) Having a Mfgr's Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bulldozer or Endloader (Over 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Crane, Shovel, Dragline, Clamshells; Forklift (Machinery Moving or Steel Erection, 25 Ft & Over); Gradall (Cruz-Aire Type); Grader or Motor Patrol; Master Mechanic; Mechanic or Welder; Robotic Tool Carrier (With or Without Attachments); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Tractor (Scraper, Dozer, Pusher, Loader); Trencher (Wheel Type or Chain Type Having Over 8 Inch Bucket).	32.32	18.18	50.50
502	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Environmental Burner; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Jeep Digger; Screed (Milling Machine); Skid Rig; Straddle Carrier or Travel Lift; Stump Chipper; Trencher (Wheel Type or Chain Type Having 8 Inch Bucket & Under).	33.32	17.60	50.92

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
503	Air Compressor (&/or 400 CFM or Over); Augers (Vertical & Horizontal); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Crusher, Screening or Wash Plant; Farm or Industrial Type Tractor; Forklift; Generator (&/or 150 KW or Over); Greaser; High Pressure Utility Locating Machine (Daylighting Machine); Mulcher; Oiler; Post Hole Digger or Driver; Pump (3 Inch or Over) or Well Points; Refrigeration Plant or Freeze Machine; Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack.	32.32	17.59	49.91
504	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	36.20	18.81	55.01
505	Work Performed on the Great Lakes Including Crane or Backhoe Operator; Assistant Hydraulic Dredge Engineer; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder; 70 Ton & Over Tug Operator. Premium Increase(s): Add \$.50/hr for friction crane, lattice boom or crane certification (CCO).	37.45	19.45	56.90
506	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or More); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	26.80	18.52	45.32
507	Work Performed on the Great Lakes Including Deck Equipment Operator, Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under); Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	27.75	19.15	46.90

**HEAVY EQUIPMENT OPERATORS
EXCLUDING SITE PREPARATION, UTILITY, PAVING LANDSCAPING WORK**

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
508	Boring Machine (Directional); Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic. Premium Increase(s): Crane Operators with CCO certification add \$.50/hr. Cranes with boom length over 200 ft. not exceeding 300 ft. OR lifting capacity over 200 ton not exceeding 300 ton add \$.50/hr. Over 300 ton OR 300 ft. add \$.01/hr. per foot OR ton whichever is greater.	39.16	19.10	58.26

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked				
CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
		\$	\$	\$
509	Backhoe (Track Type) Having a Mfgr's Rated Capacity of 130,000 Lbs. or Over; Boring Machine (Horizontal or Vertical); Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With A Lifting Capacity Of 4,000 Lbs. & Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Pile Driver; Versi Lifts, Tri-Lifts & Gantrys (20,000 Lbs. & Over). Premium Increase(s): Crane Operators with CCO certification add \$.50/hr.	38.66	19.10	57.76
510	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump (Over 46 Meter), Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Dredge (NOT Performing Work on the Great Lakes); Forklift (Machinery Moving or Steel Erection, 25 Ft & Over); Gradall (Cruz-Aire Type); Hydro-Blaster (10,000 PSI or Over); Milling Machine; Skid Rig; Traveling Crane (Bridge Type). Premium Increase(s): Crane Operators with CCO certification add \$.50/hr.	38.16	19.10	57.26
511	Air, Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Bulldozer or Endloader (Over 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Pump (46 Meter & Under), Concrete Conveyor (Rotec or Bidwell Type); Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Environmental Burner; Gantrys (Under 20,000 Lbs.); Grader or Motor Patrol; High Pressure Utility Locating Machine (Daylighting Machine); Manhoist; Material or Stack Hoist; Mechanic or Welder; Railroad Track Rail Leveling Machine, Tie Placer, Extractor, Tamper, Stone Leveler or Rehabilitation Equipment; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yd or More Capacity; Screed (Milling Machine); Sideboom; Straddle Carrier or Travel Lift; Tining or Curing Machine; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Trencher (Wheel Type or Chain Type Having Over 8-Inch Bucket). Premium Increase(s): Crane Operators with CCO certification add \$.50/hr.	38.16	19.10	57.26
512	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Finishing Machine (Road Type); Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Grout Pump; Hoist (Tugger, Automatic); Industrial Locomotives; Jeep Digger; Lift Slab Machine; Mulcher; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Screw or Gypsum Pumps; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Stump Chipper; Trencher (Wheel Type or Chain Type Having 8-Inch Bucket & Under); Winches & A-Frames.	37.47	19.10	56.57

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
513	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Boatmen (NOT Performing Work on the Great Lakes); Boiler (Temporary Heat); Crusher, Screening or Wash Plant; Elevator; Farm or Industrial Type Tractor; Fireman (Asphalt Plant NOT Performing Work on the Great Lakes); Forklift; Generator (&/or 150 KW or Over); Greaser; Heaters (Mechanical); Loading Machine (Conveyor); Oiler; Post Hole Digger or Driver; Prestress Machine; Pump (3 Inch or Over) or Well Points; Refrigeration Plant or Freeze Machine; Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack.	30.44	19.10	49.54
514	Gas or Utility Pipeline, Except Sewer & Water (Primary Equipment). Future Increase(s): Add \$2/hr. on 1/1/2013.	34.89	19.68	54.57
515	Gas or Utility Pipeline, Except Sewer & Water (Secondary Equipment).	31.26	17.40	48.66
516	Fiber Optic Cable Equipment	25.74	15.85	41.59

SEWER, WATER OR TUNNEL CONSTRUCTION
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Includes those projects that primarily involve public sewer or water distribution, transmission or collection systems and related tunnel work (excluding buildings).

SKILLED TRADES

CODE	TRADE OR OCCUPATION	Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		
		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
		\$	\$	\$
103	Bricklayer, Blocklayer or Stonemason	35.53	15.92	51.45
105	Carpenter Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	33.43	19.31	52.74
107	Cement Finisher Future Increase(s): Add \$1.86 on 6/1/12; Add \$1.87 on 6/1/13; Add \$1.87 on 6/1/14; Add \$1.87 on 6/1/15; Add \$1.75 on 6/1/16. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.40/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.	27.14	19.22	46.36
109	Electrician Future Increase(s): Add \$1.40/hr on 6/1/2012. Add \$1.60/hr on 6/1/2013. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	31.54	20.95	52.49
111	Fence Erector	27.00	0.00	27.00
116	Ironworker Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	31.31	22.22	53.53
118	Line Constructor (Electrical)	35.97	18.08	54.05
125	Pavement Marking Operator	26.00	0.00	26.00
126	Piledriver	28.11	23.94	52.05
130	Plumber	36.18	16.86	53.04
135	Steamfitter	35.81	19.04	54.85
137	Teledata Technician or Installer	24.65	15.17	39.82

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
143	Tuckpointer, Caulker or Cleaner	34.30	15.47	49.77
144	Underwater Diver (Except on Great Lakes)	36.20	18.81	55.01
146	Well Driller or Pump Installer	24.22	14.80	39.02
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	27.42	15.10	42.52
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	28.78	15.16	43.94
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	17.80	9.00	26.80
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	23.38	12.48	35.86
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.30	10.97	32.27

TRUCK DRIVERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
201	Single Axle or Two Axle	23.00	8.64	31.64
203	Three or More Axle	17.54	13.41	30.95
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Future Increase(s): Add \$1.75/hr on 6/1/2012; Add \$1.85/hr on 6/1/2013. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	22.50	16.19	38.69
205	Pavement Marking Vehicle	19.25	10.84	30.09
207	Truck Mechanic	17.54	13.41	30.95

LABORERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
301	General Laborer Future Increase(s): Add \$1.73/hr on 6/4/2012. Premium Increase(s): Add \$1.92 for bottomman; Add \$2.03 for concrete manhole builder, bracer, jointman, or pipelayer; Add \$4.83 for blaster. Add \$2.00 for all tunnel work under 15 lbs. compressed air; Add \$2.00 for 0-30 lbs. compressed air; Add \$3.00 for over 30 lbs. compressed air.	27.72	15.61	43.33

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
303	Landscaper	12.50	2.20	14.70
304	Flagperson or Traffic Control Person	22.50	12.90	35.40
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	17.09	14.40	31.49
314	Railroad Track Laborer	17.00	1.06	18.06

**HEAVY EQUIPMENT OPERATORS
SEWER, WATER OR TUNNEL WORK**

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
521	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Master Mechanic; Pile Driver. Premium Increase(s): Crane Operators with CCO certification add \$.50/hr. Cranes with boom length over 200 ft. not exceeding 300 ft. OR lifting capacity over 200 ton not exceeding 300 ton add \$.50/hr. Over 300 ton OR 300 ft. add \$.01/hr. per foot OR ton whichever is greater.	39.16	19.10	58.26
522	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Boring Machine (Directional); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump (Over 46 Meter), Concrete Conveyor (Rotec or Bidwell Type); Concrete Spreader & Distributor; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity of 4,000 Lbs. & Under; Dredge (NOT Performing Work on the Great Lakes); Milling Machine; Skid Rig; Telehandler; Traveling Crane (Bridge Type). Future Increase(s): Add \$2.05/hr on 6/4/2012. Premium Increase(s): Add \$.25/hr for operating tower crane.	33.91	18.55	52.46

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
523	Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Boring Machine (Horizontal or Vertical); Bulldozer or Endloader (Over 40 hp); Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Concrete Pump (46 Meter & Under), Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Hydro-Blaster (10,000 PSI or Over); Manhoist; Material or Stack Hoist; Mechanic or Welder; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yd or More Capacity; Screed (Milling Machine); Sideboom; Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Trencher (Wheel Type or Chain Type Having Over 8-Inch Bucket). Future Increase(s): Add \$2.05/hr on 6/4/2012. Premium Increase(s): Add \$.25/hr for operating tower crane.	32.96	18.55	51.51
524	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Finishing Machine (Road Type); Environmental Burner; Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Hoist (Tugger, Automatic); Grout Pump; Jeep Digger; Lift Slab Machine; Mulcher; Power Subgrader; Pump (3 Inch or Over) or Well Points; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Screw or Gypsum Pumps; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Stump Chipper; Tining or Curing Machine; Trencher (Wheel Type or Chain Type Having 8-Inch Bucket & Under); Winches & A-Frames.	30.89	18.12	49.01
525	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Crusher, Screening or Wash Plant; Farm or Industrial Type Tractor; Fireman (Asphalt Plant NOT Performing Work on the Great Lakes); Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Loading Machine (Conveyor); Post Hole Digger or Driver; Refrigeration Plant or Freeze Machine; Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add \$2.05/hr on 6/4/2012. Premium Increase(s): Add \$.25/hr for operating tower crane.	30.51	18.55	49.06
526	Boiler (Temporary Heat); Forklift; Greaser; Oiler.	29.44	18.10	47.54
527	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	36.20	18.81	55.01

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
528	Work Performed on the Great Lakes Including 70 Ton & Over Tug Operator; Assistant Hydraulic Dredge Engineer; Crane or Backhoe Operator; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder.	36.20	18.81	55.01
529	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or More); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	26.80	18.52	45.32
530	Work Performed on the Great Lakes Including Deck Equipment Operator; Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under), Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	26.80	18.52	45.32

AIRPORT PAVEMENT OR STATE HIGHWAY CONSTRUCTION

Includes all airport projects (excluding buildings) and all projects awarded by the Wisconsin Department of Transportation (excluding buildings).

SKILLED TRADES

CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
		\$	\$	\$
103	Bricklayer, Blocklayer or Stonemason	32.66	15.92	48.58
105	Carpenter Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	33.43	19.31	52.74
107	Cement Finisher Future Increase(s): Add \$1.86 on 6/1/12; Add \$1.87 on 6/1/13; Add \$1.87 on 6/1/14; Add \$1.87 on 6/1/15; Add \$1.75 on 6/1/16. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.40/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.	29.33	17.03	46.36
109	Electrician	31.64	23.78	55.42
111	Fence Erector	35.62	0.00	35.62
116	Ironworker	31.31	21.54	52.85
118	Line Constructor (Electrical)	35.97	18.08	54.05
124	Painter	27.87	14.39	42.26
125	Pavement Marking Operator	27.87	14.39	42.26
126	Piledriver Premium Increase(s): Add \$.65/hr for Piledriver Loftsmen; Add \$.75/hr for Sheet Piling Loftsmen. DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	29.56	24.96	54.52
133	Rofer or Waterproofer	28.85	14.60	43.45
137	Teledata Technician or Installer	24.65	15.17	39.82
143	Tuckpointer, Caulker or Cleaner	34.30	15.47	49.77
144	Underwater Diver (Except on Great Lakes)	36.20	18.81	55.01

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	33.87	16.10	49.97
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	29.64	14.64	44.28
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	25.18	13.07	38.25
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	23.38	12.48	35.86
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.30	10.97	32.27

TRUCK DRIVERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
201	Single Axle or Two Axle Future Increase(s): Add \$1.75/hr on 6/1/2012; Add \$1.85/hr on 6/1/2013. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	22.35	16.19	38.54
203	Three or More Axle	24.91	15.63	40.54
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Future Increase(s): Add \$1.75/hr on 6/1/2012; Add \$1.85/hr on 6/1/2013. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	22.50	16.19	38.69
205	Pavement Marking Vehicle	23.84	14.70	38.54
206	Shadow or Pilot Vehicle	24.76	15.35	40.11
207	Truck Mechanic	24.91	15.63	40.54

LABORERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
301	General Laborer Future Increase(s): Add \$1.60/hr on 6/1/2012; Add \$1.70/hr on 6/1/2013; Add \$1.60/hr on 6/1/2014. Premium Increase(s): Add \$.15/hr for air tool operator, joint sawer and filler (pavement), vibrator or tamper operator (mechanical hand operated), chain saw operator and demolition burning torch laborer; Add \$.35/hr for bituminous worker (raker and luteman), formsetter (curb, sidewalk and pavement) and strike off man; Add \$.50/hr for line and grade specialist; Add \$.65/hr for blaster and powderman; Add \$2.01/hr for topman; Add \$2.46/hr for bottomman; Add \$3.23/hr for pipelayer. / DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	24.34	17.85	42.19
302	Asbestos Abatement Worker	22.00	16.86	38.86
303	Landscaper	23.71	15.03	38.74
304	Flagperson or Traffic Control Person Future Increase(s): Add \$1.60/hr on 6/1/2012; Add \$1.70/hr on 6/1/2013; Add \$1.60/hr on 6/1/2014. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.	20.83	17.85	38.68
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	17.09	14.40	31.49
314	Railroad Track Laborer	17.00	1.06	18.06

**HEAVY EQUIPMENT OPERATORS
AIRPORT PAVEMENT OR STATE HIGHWAY CONSTRUCTION**

Fringe Benefits Must Be Paid On All Hours Worked

<u>CODE</u>	<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u> \$	<u>HOURLY FRINGE BENEFITS</u> \$	<u>TOTAL</u> \$
531	Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Traveling Crane (Bridge Type). Future Increase(s): Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	34.22	18.90	53.12
532	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With A Lifting Capacity Of 4,000 Lbs., & Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver. Future Increase(s): Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	33.72	18.90	52.62

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
533	<p>Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Heater, Planer & Scarifier; Asphalt Milling Machine; Asphalt Screed; Automatic Subgrader (Concrete); Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bituminous (Asphalt) Plant & Paver, Screed; Boatmen (NOT Performing Work on the Great Lakes); Boring Machine (Directional, Horizontal or Vertical); Bridge (Bidwell) Paver; Bulldozer or Endloader; Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Conveyor System; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump, Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane Wlth a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Grout Pump; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A-Frames.</p> <p>Future Increase(s): Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14.</p> <p>Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).</p>	33.22	18.90	52.12

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
534	<p>Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawyer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler; Tining or Curing Machine.</p> <p>Future Increase(s): Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14.</p> <p>Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).</p>	32.96	18.90	51.86
535	<p>Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Concrete Proportioning Plant; Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack.</p> <p>Future Increase(s): Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14.</p> <p>Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).</p>	32.67	18.90	51.57
536	Fiber Optic Cable Equipment.	24.39	15.45	39.84
537	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	36.20	18.81	55.01

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
538	Work Performed on the Great Lakes Including 70 Ton & Over Tug Operator; Assistant Hydraulic Dredge Engineer; Crane or Backhoe Operator; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder.	36.20	18.81	55.01
539	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or More); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	26.80	18.52	45.32
540	Work Performed on the Great Lakes Including Deck Equipment Operator, Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under); Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks-Great Lakes ONLY.	26.80	18.52	45.32

LOCAL STREET OR MISCELLANEOUS PAVING CONSTRUCTION
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Includes roads, streets, alleys, trails, bridges, paths, racetracks, parking lots and driveways (except residential or agricultural), public sidewalks or other similar projects (excluding projects awarded by the Wisconsin Department of Transportation).

SKILLED TRADES

CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
		\$	\$	\$
103	Bricklayer, Blocklayer or Stonemason	35.53	15.92	51.45
105	Carpenter	29.06	15.16	44.22
107	Cement Finisher	27.57	16.33	43.90
109	Electrician Future Increase(s): Add \$.50/hr. effective 06/04/2012. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	28.74	17.86	46.60
111	Fence Erector	27.00	0.00	27.00
116	Ironworker	31.31	21.54	52.85
118	Line Constructor (Electrical)	35.97	18.08	54.05
124	Painter	28.47	16.74	45.21
125	Pavement Marking Operator	26.00	0.00	26.00
126	Piledriver	28.11	23.94	52.05
133	Rofer or Waterproofer	28.85	14.60	43.45
137	Teledata Technician or Installer	24.65	15.17	39.82
143	Tuckpointer, Caulker or Cleaner	34.30	15.47	49.77
144	Underwater Diver (Except on Great Lakes)	36.20	18.81	55.01
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	35.42	12.90	48.32
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	28.78	14.42	43.20
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	25.18	13.07	38.25
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	23.38	12.48	35.86
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.30	10.97	32.27

TRUCK DRIVERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
201	Single Axle or Two Axle	15.00	0.00	15.00
203	Three or More Axle	20.00	6.00	26.00
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Future Increase(s): Add \$1/hr on 6/3/2012; Add \$1/hr on 6/2/2013.	31.89	17.98	49.87
205	Pavement Marking Vehicle	19.25	10.84	30.09
206	Shadow or Pilot Vehicle	15.00	0.00	15.00
207	Truck Mechanic	20.00	6.00	26.00

LABORERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
301	General Laborer	21.73	17.04	38.77
303	Landscaper	22.96	15.37	38.33
304	Flagperson or Traffic Control Person Future Increase(s): Add \$1.60/hr on 6/1/2012; Add \$1.70/hr on 6/1/2013; Add \$1.60/hr on 6/1/2014. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.	23.55	13.45	37.00
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	17.09	14.40	31.49
314	Railroad Track Laborer	17.00	1.06	18.06

**HEAVY EQUIPMENT OPERATORS
CONCRETE PAVEMENT OR BRIDGE WORK**

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
541	Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic. Future Increase(s): Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	34.22	18.90	53.12
542	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity of 4,000 Lbs. & Under; Crane, Tower Crane Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver. Future Increase(s): Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	33.72	18.90	52.62

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
543	Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Automatic Subgrader (Concrete); Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Boring Machine (Directional, Horizontal or Vertical); Bridge (Bidwell) Paver; Bulldozer or Endloader; Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Conveyor System; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump, Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane With a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Grout Pump; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Manhoist; Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A-Frames.	31.89	18.22	50.11
544	Backfiller; Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Jeep Digger; Joint Sawyer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler; Tining or Curing Machine. Future Increase(s): Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	33.22	18.90	52.12

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
545	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Concrete Proportioning Plant; Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack.	30.42	17.58	48.00
546	Fiber Optic Cable Equipment.	24.39	15.45	39.84
547	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	36.20	18.81	55.01
548	Work Performed on the Great Lakes Including 70 Ton & Over Tug Operator; Assistant Hydraulic Dredge Engineer; Crane or Backhoe Operator; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder.	36.20	18.81	55.01
549	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or more); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	26.80	18.52	45.32
550	Work Performed on the Great Lakes Including Deck Equipment Operator; Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under); Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	26.80	18.52	45.32

**HEAVY EQUIPMENT OPERATORS
ASPHALT PAVEMENT OR OTHER WORK**

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
551	Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self Erecting Tower Crane With a Lifting Capacity of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads and/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic.	38.06	18.10	56.16

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
552	<p>Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity Of 4,000 Lbs. & Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver.</p> <p>Future Increase(s): Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14.</p> <p>Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).</p>	33.72	18.90	52.62
553	<p>Air, Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Heater, Planer & Scarifier; Asphalt Milling Machine; Asphalt Screed; Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bituminous (Asphalt) Plant & Paver, Screed; Boring Machine (Directional, Horizontal or Vertical); Bulldozer or Endloader; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Laser/Screed; Concrete Slipform Placer Curb & Gutter Machine; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane With a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Manhoist; Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Railroad Track Rail Leveling Machine, Tie Placer, Extractor, Tamper, Stone Leveler or Rehabilitation Equipment; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A-Frames.</p>	31.52	17.50	49.02

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
554	Backfiller; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawyer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Self-Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler. Future Increase(s): Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14.	32.67	18.55	51.22
555	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14.	32.67	18.55	51.22
556	Fiber Optic Cable Equipment.	24.39	15.45	39.84

RESIDENTIAL OR AGRICULTURAL CONSTRUCTION

Includes single family houses or apartment buildings of no more than four (4) stories in height and all buildings, structures or facilities that are primarily used for agricultural or farming purposes, excluding commercial buildings. For classification purposes, the exterior height of a residential building, in terms of stories, is the primary consideration. All incidental items such as site work, driveways, parking lots, private sidewalks, private septic systems or sewer and water laterals connected to a public system and swimming pools are included within this definition. Residential buildings of five (5) stories and above are NOT included within this definition.

SKILLED TRADES

<u>CODE</u>	<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u>	<u>HOURLY FRINGE BENEFITS</u>	<u>TOTAL</u>
		\$	\$	\$
101	Acoustic Ceiling Tile Installer	27.00	1.16	28.16
102	Boilermaker	31.09	21.87	52.96
103	Bricklayer, Blocklayer or Stonemason	26.22	13.80	40.02
104	Cabinet Installer	26.00	2.33	28.33
105	Carpenter	31.68	7.03	38.71
106	Carpet Layer or Soft Floor Coverer	21.40	6.01	27.41
107	Cement Finisher	28.00	10.10	38.10
108	Drywall Taper or Finisher Future Increase(s): Add \$2.20/hr on 6/1/2012	28.97	17.74	46.71
109	Electrician	31.10	6.01	37.11
110	Elevator Constructor	43.79	25.48	69.27
111	Fence Erector	17.64	4.66	22.30
112	Fire Sprinkler Fitter	36.39	16.97	53.36
113	Glazier	36.23	8.04	44.27
114	Heat or Frost Insulator	29.04	19.73	48.77
115	Insulator (Batt or Blown)	11.00	2.51	13.51
116	Ironworker	23.05	4.06	27.11
117	Lather	28.15	15.14	43.29
119	Marble Finisher	31.16	16.27	47.43
120	Marble Mason	35.53	15.92	51.45
121	Metal Building Erector	15.19	2.00	17.19
123	Overhead Door Installer	23.00	8.00	31.00
124	Painter	23.00	2.81	25.81

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
125	Pavement Marking Operator	26.00	0.00	26.00
129	Plasterer	30.36	7.15	37.51
130	Plumber	37.42	17.92	55.34
132	Refrigeration Mechanic	25.00	0.51	25.51
133	Rofer or Waterproofor Future Increase(s): Add \$.50/hr. effective 06/01/2012	29.40	15.05	44.45
134	Sheet Metal Worker	28.15	15.14	43.29
135	Steamfitter	32.59	11.05	43.64
137	Teledata Technician or Installer	19.23	5.32	24.55
138	Temperature Control Installer	22.00	2.64	24.64
139	Terrazzo Finisher	18.00	5.35	23.35
140	Terrazzo Mechanic	31.16	16.27	47.43
141	Tile Finisher	23.96	15.50	39.46
142	Tile Setter	27.00	1.91	28.91
143	Tuckpointer, Caulker or Cleaner	32.50	1.62	34.12
146	Well Driller or Pump Installer	27.60	0.00	27.60
147	Siding Installer	16.00	0.00	16.00

TRUCK DRIVERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
201	Single Axle or Two Axle	16.25	2.25	18.50
203	Three or More Axle	17.00	7.63	24.63
205	Pavement Marking Vehicle	19.25	10.84	30.09
207	Truck Mechanic	19.00	1.75	20.75

LABORERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked				
CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
		\$	\$	\$
301	General Laborer	17.50	6.16	23.66
302	Asbestos Abatement Worker	17.00	2.21	19.21
303	Landscaper	11.00	2.07	13.07
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	17.09	14.40	31.49

**HEAVY EQUIPMENT OPERATORS
RESIDENTIAL OR AGRICULTURAL CONSTRUCTION**

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked				
CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
		\$	\$	\$
557	Asphalt Heater, Planer & Scarifier; Asphalt Milling Machine; Asphalt Screed; Backhoe (Track Type); Backhoe (Mini, 15,000 Lbs. & Under); Bituminous (Asphalt) Plant & Paver, Screed; Boring Machine (Directional, Horizontal or Vertical); Bulldozer or Endloader; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Conveyor System; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump, Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane With a Lifting Capacity of 25 Tons or Under; Crane, Shovel, Dragline, Clamshells; Forestry Equipment, Timberco, Tree Shear, Tub Grinder, Processor; Grader or Motor Patrol; Grout Pump; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Manhoist; Material or Stack Hoist; Mechanic or Welder; Milling Machine; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Trencher (Wheel Type or Chain Type); Winches & A-Frames.	32.56	10.76	43.32
558	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Backfiller; Belting, Burlap, Texturing Machine; Boiler (Temporary Heat); Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Farm or Industrial Type Tractor; Forklift; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Jeep Digger; Lift Slab Machine; Mulcher; Oiler; Post Hole Digger or Driver; Power Subgrader; Pump (3 Inch or Over) or Well Points; Robotic Tool Carrier (With or Without Attachments); Rock, Stone Breaker; Roller (Rubber Tire, 5 Tons or Under); Screed (Milling Machine); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Stump Chipper; Telehandler; Vibratory Hammer or Extractor, Power Pack.	17.40	0.44	17.84

***** END OF RATES *****

END OF SECTION 00 73 43

SECTION 00 83 00 - PARTIAL PAYMENTS FOR STORED MATERIALS

PART 1 - GENERAL

1.1 As stated in the General Conditions, the Commissioner of Public Works may grant an estimate of the amount of properly stored fabricated or manufactured materials and components specified, previously paid for by the Contractor. Said payments will be made in accordance with "Procedure Rules of the Commissioner of Public Works for Progress Estimates".

1.2 For inspection of properly stored materials located outside Milwaukee County, the City shall be reimbursed by the Contractor for all transportation costs, travel time wages, overtime and incidental expenses for City employees performing said inspection.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

PART 4 - MEASUREMENT AND PAYMENT (Not Applicable)

END OF SECTION 00 83 00

SECTION 01 11 00 – SUMMARY OF WORK

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. The Contractor for this work shall refer to the “General Specifications” of the Department of Public Works dated January 31, 1992 and all subsequent addenda, as he shall be held responsible for all requirements listed herein. The Contractor shall visit the site, consult the drawings and specifications, be familiar with the project, and determine for himself all conditions affecting the work.
- B. Failure by a Contractor to be familiar with the project shall not release him from any obligation undertaken under the contract to complete the work in strict conformity with the plans and specifications and all City, State or Federal codes or regulations pertaining thereto.
- C. The drawings accompanying these specifications illustrate the nature and intent of the work and with the specifications form a part of the contract documents. Wherever the clauses “as shown”, “as directed” or similar expressions are used, it shall be understood that reference to drawings is made.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. It is understood that the submittal of a proposal shall include all labor, materials, equipment and incidentals necessary for completion of the work required, including that which may not be directly shown on the drawings or in the specifications but are necessary for proper operation and approval.
- B. The contractor shall locate and be responsible for all lines, elevations and measurements of the structure and other work executed by the Contractor under the contract. The Contractor must exercise proper precaution to verify areas to be worked on the drawing before laying out work and will be held responsible for any error resulting from failure to exercise such precaution.
- C. Contractor shall verify grades, lines, levels, locations and dimensions as shown on drawings and report any errors or inconsistencies to the Engineer before commencing work or fabrication of materials. Starting of work by the Contractor shall imply acceptance of existing conditions.

1.3 DEFINITIONS

- A. The word provide, when used in this specification shall mean that the provider shall furnish and install complete the referenced item or items.

1.4 DESCRIPTION OF PROJECT

- A. This project involves concrete surface repairs, epoxy injection, vehicular traffic coating, expansion joint replacement, pavement markings, and additional work as detailed in the contract drawings and specifications. This work involves, but is not limited to, the following:

1. Concrete Surface Repair
2. Concrete Joist Repair
3. Concrete Step Replacement
4. Heavy Duty Vehicular Traffic Deck Coating
5. Epoxy Traffic Deck Coating
6. Epoxy Injection Crack Repair
7. Compression Seal Replacement
8. Pavement Markings
9. Incidental Related Work

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION

3.1 HOURS OF WORK

- A. The contractor shall coordinate hours of work with the City of Milwaukee. Work may be required on weekends and after normal working hours to accommodate garage operations.

3.2 EXAMINATION OF SITE

- A. All existing conditions, elevations and dimensions shall be verified at the site by the Contractor. Prior to submitting his proposal, the Contractor shall visit the site, consult the drawings and specifications and determine for himself all conditions affecting the work.
- B. Contractor shall become acquainted with the location of overhead conduits and piping, etc. which may be encountered or be affected by the Contractor's work, and shall be responsible for any damage caused by neglect to provide proper precautions or protection.
- C. Information pertaining to existing conditions that appear on the drawings are based on current construction. While such data has been collected with reasonable care, there is no expressed or implied guarantee that conditions so indicated are entirely representative of those actually existing or that unforeseen developments may not occur. They are merely provided to assist the Contractor in the investigation of conditions.
- D. Contractor shall obtain complete data at the site and inspect the area that is to receive the work before proceeding with his work.
- E. The Contractor shall notify the Engineer in case of discrepancies between existing work and drawings.

3.3 SUPERVISION OF WORK

- A. The Contractor shall provide all necessary supervision, scheduling, planning and control to perform the work and coordinate the work of all trades on the project.

- B. The contractor shall furnish the services of an experienced superintendant at all times when work is being performed.
- C. The superintendant shall be constantly in charge of the installation of the work together with all subcontractors, skilled workman, helpers, and labor required to perform the work.
- D. The Contractor shall be thoroughly acquainted with and be responsible for the various Subcontractors' work so that it is properly coordinated and supervised to the satisfaction of the Commissioner of Public Works or his representative.
- E. Upon written notice to the Contractor of the lack of such coordination and supervision, the Commissioner of Public Works may authorize such services as may be required and deduct the cost of this service at an hourly rate of \$75.00 per hour per person from the contract for the work.

3.4 STORAGE OF MATERIALS

- A. The Contractor shall assume full responsibility for the protection and safekeeping of products stored on the premises.
- B. The Contractor shall store materials within the confines of his work space or in other areas or locations negotiated by the Contractor.
- C. Materials are to be so stored as to assure the preservation of their quality and fitness for the work. When considered necessary, materials shall be placed on wooden platforms or other hard, clean surfaces, and not on the ground, and they shall be placed under cover.

3.5 PROTECTION AND REPAIRS

- A. The Contractor shall continuously maintain adequate protection of all his work and materials, whether worked or unworked, on or off the site of the project, and shall protect the work and materials of all other Contractors and the City of Milwaukee's property from damage arising in connection with their contracts.
- B. The Contractor shall be responsible for any damages caused by his operations to vehicles, landscaping, persons or property. The contractor, during all operations shall take precautions necessary for the full protection of traffic, parked vehicles, property upon and in the vicinity of the structures and utilities.
- C. Whenever damage or destruction of property of any character resulting from neglect, misconduct or omission due to the manner or method of execution or non-execution of the work or caused by defective work or the use of improper materials, the Contractor shall be held responsible and not released until the work shall have been corrected, completed, and the requirements and intent of these documents complied with.
- D. All damages of each and every kind resulting from neglect or refusal of the Contractor to protect such work materials, and property during erection, construction and completion of the project shall be made good by the Contractor to the satisfaction of the City.

- E. No damaged or imperfect materials, equipment accessories, etc., will be accepted. All materials, equipment, accessories, etc. furnished or installed by this Contractor must function perfectly and as designed. If any argument should arise in regard to this requirement, the City will replace the parts and deduct the costs from the contract price.
- F. The Contractor shall repair all damages that he, any of his employees or his subcontractors may do to any other parts of the structures. Repairs must be done in a neat and workmanlike manner to match existing construction and must meet with the approval of the Commissioner of Public Works or his representative.
- G. If any faults are found with the Contractor's work, he shall repair or replace any of the parts he has furnished or installed as directed without any additional costs to the City of Milwaukee.
- H. The Contractor shall restore, repair, refinish or replace, as part of this contract any surfaces that are damaged or left incomplete or unsightly as a result of the removal of existing equipment.

PART 4 – MEASUREMENT AND PAYMENT (Not Applicable)

END OF SECTION 01 11 00

SECTION 01 22 00 – UNIT PRICES

Part 1 – General

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions, Cleaning and Project Closeout, and other Division 1 Specifications Sections apply to this section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for unit prices.

1.3 DEFINITIONS

- A. Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services.

1.4 EXTRA WORK

- A. Extra work shall be performed in accordance with the Department of Public Works General Specifications Section 2.6.0 “Extra Work and Credits”

1.5 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, labor, insurance, overhead, profit, and applicable taxes.
- B. Measurement and Payment:
 - 1. All work completed under the contract will be measured by the Engineer according to United States standard measure. The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.
 - 2. The completed work will be measured for final payment by the Engineer, as specified for the various items elsewhere in these specifications, to determine the quantities of such items of work performed, except when agreements have been made providing for compensation on the basis of plan quantities as hereinafter provided or when contract change orders have been executed providing for other methods of measurement. The Contractor will be paid for the actual amount of work performed in accordance with the contract, as shown by the final measurements or upon the basis of plan quantities.

3. If the Contractor and the Engineer agree in writing that the quantities of certain items or portions of items of work as set forth in the contract or on the plans, as originally drawn or subsequently corrected or revised, are in substantial agreement with the actual quantities of work performed, compensation therefore will be made based on the quantities set forth in the contract or on the plans, as originally drawn or subsequently corrected or revised, without measurement thereof, and the contractor shall accept such compensation as full payment for such items or portions of items.
 4. When standard manufactured items are specified such as fences, 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.
- C. The items listed in the bid documents shall be considered as sufficient to complete the work in accordance with the plans and specifications. Any portion of the work not listed in the bid form shall be deemed to be a part of the item which it is most closely associated with and shall be included in the cost of the unit shown on the bid form. Payment for the unit shown on the bid form shall be considered to cover the cost of all labor, material, equipment and performing all operations necessary to complete the work in place. The unit of measurement shall be the unit shown on the bid form. Payment shall be based upon the actual quantity multiplied by the unit prices. Where work is to be performed at a lump sum price, the lump sum shall include all operations and elements necessary to complete the work. No payment will be made for any material wasted, unused, rejected, or used for the convenience of the Contractor.
- D. Quantities and measurement of work completed shall be agreed to by both the Contractor and Project Inspector prior to submission of progress payment(s).
- E. The Owner reserves the right to add or remove quantities of work from the project after the project is awarded.
- F. Final payment and release of retainage will be processed following final acceptance by the Engineer. Payment will only be released once all contract requirements are fulfilled and punch-list items are marked as acceptably complete. Punch-list work is incidental to the project quantities.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

PART 4 – MEASUREMENT AND PAYMENT (Not Applicable)

END OF SECTION 01 22 00

SECTION 01 26 00 – CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General Conditions and other Division 1 specification sections, apply to this section.

1.2 SUMMARY

- A. This section specifies administrative and procedural requirements for handling and processing contract modifications.

1.3 MINOR CHANGES IN THE WORK

- A. The Engineer will issue supplemental instructions authorizing minor changes in the work, not involving adjustment to the contract sum or contract time.

1.4 CHANGE ORDERS

- A. Change orders shall be requested and processed in accordance with Department of Public Works General Specifications, Chapter 2.1.26 and as herein specified.
- B. The Contractor shall submit all change order requests to the City in a timely manner. Each request should include a description of the proposed change, the reason for the change, and a complete breakdown of the proposed cost including supporting information to substantiate the claim.
- C. The Contractor shall include with the change order request the impact, if any, the proposed change will have on the Contractor's schedule. If a time extension to the schedule is requested, then the Contractor shall include supporting information to substantiate the claim.
- D. All change order requests shall be submitted as soon as possible after the above information can be compiled. Change order requests submitted after one month of occurrence may not be granted.
- E. Change orders requested to be paid on a time and material basis shall have all work documented on a daily basis. Contractor's superintendent and the Project Inspector shall sign off on a daily basis all labor hours and materials used and charged to the change orders.

01 26 00/2

- F. Approval of the change order work and method and/or amount of payment shall be approved prior to Contractor proceeding with change order as outlined in the Department of Public Works General Specification.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

PART 4 – MEASUREMENT AND PAYMENT (Not Applicable)

END OF SECTION 01 26 00

SECTION 01 31 13 – PROJECT COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General Conditions and other Division 1 specification sections, apply to this section.

1.2 SUMMARY

- A. The General Contractor shall assume and take responsible charge of the project and shall coordinate the work of each Subcontractor so as to complete the project in an orderly and timely manner.
- B. Each Contractor shall:
 - 1. Coordinate the work of his own employees
 - 2. Expedite his work to assure compliance with schedules.
 - 3. Coordinate the work with that of other Contractors and City of Milwaukee.

PART 2- PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 COORDINATION PROCEDURES

- A. Cooperate with the City and other persons of all trades engaged in the work in such a manner and to such extent as will best facilitate the work of each and the prompt completion of the work.
- B. Maintain progress of the work, order materials and let subcontracts promptly, and schedule and expedite work so as to avoid delay.
- C. Notify other Contractors, trades and City of Milwaukee whose work is in any way connected to, combined with, or influences by the Contractor's work and allow them reasonable time to complete their work.
- D. Carefully examine the drawings and specifications to ascertain the extent of the work of all trades.
- E. Coordinate access to and use of the site and storage of materials on the site with the subcontractors.
- F. Coordinate Contractor's work with adjacent work and cooperate with all other trades so as to facilitate the general progress of the project. Afford all other trades every reasonable opportunity for the installation of their work and for the storage of their material. In no case exclude from the

premises or work, any other Contractor or Subcontractor or their employees; nor interfere with any Contractor or Subcontractor in the execution or installation of his work.

- G. Perform work in proper sequence in relation to that of other trades. Pay all costs caused by defective or ill-timed work.
- H. Arrange work and dispose of materials so as not to interfere with the work or storage of materials of other Contractors and join his work to that of others in accordance with the intent of the drawings and specifications.
- I. Notify the City of unforeseen conditions found in the field.

3.2 EXAMINATION OF DRAWINGS

- A. Examine all drawings together with the specifications applicable to the contract.
- B. After examination of the contract documents, bring to the attention of the City any questions with regard to the intent of these documents, in a timely manner, prior to commencing with the work.

3.3 BULLETIN BOARD

- A. Furnish and maintain a bulletin board for the posting of wage, employment data, etc.

PART 4 - MEASUREMENT AND PAYMENT (Not Applicable)

END OF SECTION 01 31 13

SECTION 01 31 19 – PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General Conditions and other Division 1 specification sections, apply to this section.

1.2 SUMMARY

- A. This section specifies administrative and procedural requirements for project meetings, including, but not limited to, the following:
 - 1. Pre-Construction Meeting
 - 2. Progress Meetings
- B. Related Sections: The following sections contain requirements that relate to this section:
 - 1. Division 1 Section 01 31 13 “Project Coordination” for procedures for coordinating project meetings with other construction activities.
 - 2. Division 1 Section 01 33 01 “Submittals/Permits” for submitting the contractor’s construction schedule.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PRE-CONSTRUCTION MEETING

- A. Soon after award of contract and prior to the start of construction, the Contractor shall attend a Pre Construction meeting with representatives of the City.
- B. The Contractor shall have at the meeting responsible representatives from subcontractors who are to furnish the required materials and perform the following work:
 - 1. Heavy Duty Vehicular Traffic Coating
 - 2. Epoxy Traffic Coating
 - 3. Concrete Surface Repair
 - 4. Concrete Joist Repair
 - 5. Concrete Step Replacement
 - 6. Epoxy Injection Crack Repair
 - 7. Compression Seal Replacement
 - 8. Pavement Markings

- C. The Contractor shall submit the construction schedule to the Engineer at this meeting. It must include all of the Contractor's work and all the work of subcontractors. The schedule shall include the following:
 - 1. List of starting and completion dates for each major item
 - 2. Running schedule of a week-by-week charting and allowing for charting of:
 - a. Expected progress on major items.
 - b. Actual progress on major items.
 - c. The Contractor shall submit an updated schedule at each progress meeting.
- D. Contractor shall describe in detail when each portion of the work is to be accomplished and subcontractors shall participate in the discussion. The Engineer will serve to interpret the contract documents should such questions arise.
- E. Any other questions that the Contractor/Subcontractors have about the work or its scheduling shall be raised at this meeting.
- F. Requirements for contract administration and construction operations will be defined for participants.
- G. Time, date and place of the meeting will be determined by the Engineer.

3.2 PROGRESS MEETINGS

- A. Weekly project meetings will be held at the project site by the City's representative for the purpose of coordinating and expediting the work progress.
- B. Attendance at project meetings by the Contractor is mandatory. These meetings shall also be attended by representatives of each subcontractor who is either working at the site or is affected by work being done at the site. The Contractor shall submit an updated construction schedule at these meetings and a short narrative should be written describing the cause of any delays and intended action to remedy the delays.
- C. Contractors shall give written reports of progress on the project, discuss the work schedule for the coming period and present all conflicts, discrepancies, or other difficulties for resolution.

PART 4 – MEASUREMENT AND PAYMENT (Not Applicable)

END OF SECTION 01 31 19

SECTION 01 33 01 – SUBMITTALS AND PERMITS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General Conditions and other Division 1 specification sections, apply to this section.

1.2 SUMMARY

- A. This section includes administrative and procedural requirements for submittals and permits required for performance of the work.
- B. The Contractor shall submit six (6) copies of the following submittals including but not limited to:
 - 1. Shop Drawings and Submittals:
 - a. Heavy Duty Vehicular Traffic Coating product data sheets and warranty
 - b. Epoxy Traffic Coating product data sheets and warranty
 - c. Concrete Repair Mortar product data sheets
 - d. Epoxy Injection product data sheets
 - e. Compression Seal product data sheets and warranty
 - f. Pavement Marking product data sheets
- C. The rulings, regulations and laws of the following shall be complied with in the completion of this project.
 - 1. United States Department of Labor – Occupational Safety and Health Administration (OSHA)
 - 2. Wisconsin Department of Workforce Development
 - 3. City of Milwaukee Building Code
 - 4. Wisconsin Administrative Code
 - 5. Ordinances of the City of Milwaukee
 - 6. National Electrical Code

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 SUBMITTALS AND SAMPLES

- A. Comply with the requirements of the Department of Public Works General Conditions and as follows:
 - 1. Forward submittals not more than 30 calendar days after the Award of Contract for all materials to be used on the project. No work, indicated on any one shop drawing, hardware list, etc., shall be started until such information has been approved.

2. Include with each submittal a transmittal letter signed by the Contractor containing the following:
 - a. Name of Contractor
 - b. Name of Project
 - c. List of Submittals with Specification Section references
 - d. Name of Manufacturer or Supplier
 - e. Additional information as required for the items being provided.
3. Coordinate transmittal of different types of submittals for related elements of the work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
4. Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.
 - a. Allow 2 weeks for initial review. Allow additional time if the Engineer must delay processing to permit coordination with subsequent submittals.
 - b. If an intermediate submittal is necessary, process the same as the initial submittal.
 - c. Allow 2 weeks for reprocessing each submittal.
 - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Engineer sufficiently in advance of the work to permit processing.
5. Approvals: Wherever the words "or equal" or "approved equal" or similar terms are used, it shall mean as approved by the Commissioner of Public Works or agent. All shop drawings, bulletins, manufacturer's cut sheets and data necessary for an approval shall be submitted with six (6) copies sent to the City Engineer. Four (4) copies are required for the City's use, and two (2) copies will be returned to the Contractor.
6. Questions on the plans and project specifications during the contract bidding phase should be directed to:

Jonathan D. Thomas
Civil Engineer
Infrastructure Services Division
Room 907, Frank P. Zeidler Municipal Building
841 North Broadway
Milwaukee, WI 53202
(414) 286-0463

All correspondence including submittals, payment requests (3 copies), change order proposals, construction time letters (delays, suspensions), and any construction related matters shall be addressed as follows:

Construction Supervisor
ATTN: 2012 2ND and Plankinton Repairs and Deck Coating
Infrastructure Services Division
Room 701, Frank P. Zeidler Municipal Building
841 North Broadway
Milwaukee, WI 53202

Note: A specific Construction Supervisor will be assigned at the Preconstruction Meeting. All Correspondence shall be address to that individual.

All correspondence concerning the following items; Minority, Woman, Small Business Enterprise program Reports, Residency Preference Program, Apprentice Program, Wage and Hour Reports, Insurance Certificates, Subcontractor Approval Forms, and all affidavits should be sent to:

Ms. Barbara A Tribble
Department of Public Works
Room 507, Frank P. Zeidler Municipal Building
841 North Broadway
Milwaukee, WI 53202
(414) 286-3309

- B. Approvals: Wherever the words “or equal” or “approved equal” or similar terms are used, it shall mean as approved by the Commissioner of Public Works or agent. All shop drawings, bulletins, manufacturer’s cut sheets and data necessary for an approval shall be submitted with six (6) copies sent to the City Engineer. Four (4) copies are required for the City’s use, and two (2) copies will be returned to the Contractor.

3.2 CODES AND PERMITS

- A. The contractor shall obtain and pay for all permits, charges, fees and licenses, if any are necessary for the prosecution of the work.
- B. The contractor shall comply with all laws, ordinances, rules and regulations bearing in the conduct of the work including the giving of notices.
- C. The cost of special equipment, enclosures, protective coverings, etc., as may be required to comply with codes and ordinances shall be included in the price bid for the work.
- D. If any material or work is specified contrary to such rules or omitted from the specifications or drawings but required by such rules, it shall be altered as required by the contractor to meet these rules and regulations.

PART 4 - MEASUREMENT AND PAYMENT (Not Applicable)

END OF SECTION 01 33 01

SECTION 01 35 13 - SPECIAL PROJECT PROCEDURES

PART 1 – GENERAL

1.1 SPECIAL REQUIREMENTS

A. Related Sections:

1. Section 01 11 00 – Summary of Work
2. Section 01 55 30 – Traffic Control and Construction Staging

B. This project has special requirements regarding the coordination of the work due to the continued use of the parking structure during construction operations.

C. To meet these special requirements, the Contractor shall submit a plan for the scheduling of the work and staging coordination at the first preconstruction meeting. This plan will be reviewed and is subject to approval by the City.

D. Corrosion Inhibitor

1. Protectosil Corrosion Inhibitor will be supplied by Protectosil/Hanson Building Specialites, Inc. for installation on all horizontal and overhead concrete surface repairs within the two helix ramps. The Contractor must follow the surface preparation requirements as stated within these specifications and the Manufacturer's product data sheet and applications instructions.
2. Contact James Hanson of Hanson Building Specialties, Inc. at (262) 512-9570 to coordinate delivery of material.
3. No additional Measurement or Payment will be made for the installation of the Protectosil Corrosion Inhibitor within the helix concrete surface repairs. The contractor must include the installation cost with the unit price for horizontal and overhead concrete surface repairs.

E. Deck Coating

1. The contractor shall select Heavy Duty Vehicular Traffic Coating, and Epoxy Vehicular Traffic Coating systems manufactured by the same Manufacturer.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

PART 4 – MEASUREMENT AND PAYMENT (Not Applicable)

END SECTION 01 35 13

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General Conditions and other Division 1 specification sections, apply to this section.

1.2 SUMMARY

- A. This section includes requirements for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.
- B. Temporary utilities may include, but are not limited to, the following:
 - 1. Water service and distribution
 - 2. Temporary electric power and light.
 - 3. Temporary heat
 - 4. Ventilation
 - 5. Telephone service
- C. Support facilities may include, but are not limited to, the following:
 - 1. Temporary enclosures
 - 2. Hoists and scaffolding
 - 3. Temporary project identification signs and bulletin boards
 - 4. Waste disposal services
 - 5. Construction aids and miscellaneous services and facilities
- D. Security and protection facilities may include, but are not limited to, the following:
 - 1. Barricades, delineators, warning signs, and lights
 - 2. Enclosure fence for the site
 - 3. Environmental protection

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 TEMPORARY OR TRIAL USAGE

- A. The owner shall have the right to make temporary or trial usage of any mechanical device, machinery, apparatus, equipment, work, material, or construction supplied under contract before final completion or acceptance of the work, and the same shall not be construed as evidence of acceptance of the work by the owner.

3.2 TEMPORARY POWER

A. The Contractor shall provide all power required.

1. OSHA regulations require that employers use either ground fault circuit interrupters or an assured equipment grounding conductor program in addition to any other regulation or equipment ground connectors.

PART 4 – MEASUREMENT AND PAYMENT (Not Applicable)

END OF SECTION 01 50 00

SECTION 01 55 30 – TRAFFIC CONTROL AND CONSTRUCTION STAGING

PART 1 - GENERAL

1.1 SPECIAL CONTROL

- A. The work shall consist of providing safe and adequate control for vehicular and pedestrian traffic.
- B. The contractors shall provide dust partitions, and traffic devices such as signs, barricades, lights, traffic control cones, and flagmen to control the orderly flow of traffic within the garage and prevent pedestrians and cars from entering areas of the contractor's operations. Whenever possible, hoses, conduits, electrical cords, etc., shall be located overhead. Whenever such items are located in traffic paths, plywood coverings with adequate signs shall be provided. The traffic devices shall meet the requirements of the U.S. Department of Transportation Federal Highway Administration Manual on Uniform Traffic Control Devices, latest edition along with any subsequent revisions.

1.2 SUBMITTALS

- A. The contractor shall submit his proposed work areas on drawings for each stage of construction
- B. The work area drawing shall show:
 - 1. Delineate the areas to be occupied by the contractor
 - 2. Locations and types of barricades
 - 3. Locations and types of signs
 - 4. Locations and types of traffic control cones
 - 5. Locations and types of temporary lights
 - 6. Contractor entrance and exits from the work area
- C. The work area drawings must be included with the project progress reports and construction schedule.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 CONTRACTOR'S RESPONSIBILITY

- A. The Contractor shall move the dust partitions and barricades as necessary as the location of this work changes and previously worked-in areas are occupied by the Public.
- B. The Contractor shall use preventative measures to ensure paint, dust and debris stay inside the Contractor's enclosed area and out of the elevators, stair wells, ventilation and occupied areas. The Contractor will need to erect temporary enclosures of dust and paint partition walls around his area of work and any additional areas deemed necessary by the Engineer to prevent dust and paint from the Contractor's work from entering other parts of the garage or building. Special

protection should be provided to prevent dust and paint from entering elevator vestibule or stair wells. Fans with filters shall be used in the enclosed areas to vent dust out of the Contractor's work area. Fans to be vented to the outside of building away from any intake vents along building.

- C. The Contractor must schedule, arrange his work, and maintain access to undisturbed parking areas. Short interruptions in traffic flow may be permitted but must be scheduled at least 48 hours in advanced and approval given by the Engineer. At no time can access to the garage be eliminated. Generally, the parking structure has excess space during normal operations to allow the Contractor to close off 95 parking spaces which is approximately equal to one and one half levels. The Contractor shall not cause more than the area described above to be closed at any time without the prior written permission of the City. Only areas that the Contractor is actively working in may be closed at any given time; areas where no work is being performed must remain open to the public.
- D. The Contractor may only work in one helix ramp at any given time. The Contractor must ensure that all access points of the helix ramp actively being worked in have been properly closed to ensure the safety of pedestrians, drivers, and workers.
- E. The Contractor shall submit a traffic control plan at the preconstruction meeting for approval prior to start of work.

3.2 VEHICULAR TRAFFIC REQUIREMENTS

- A. The Contractor shall maintain a drive lane on all levels during construction to allow traffic to flow through the structure at all times.
- B. The Contractor must notify the Engineer at least 48 hours in advance of a proposed closure to any area.
- C. Two consecutive entrances to the helix ramps cannot be closed at the same time, i.e. If the entrance at ramp level 3 is closed, the entrance on ramp level 4 must be open for traffic. At no time are customers to be required to drive up two or more parking floors to enter the helix for exiting the structure.
- D. No reverse traffic flow shall be allowed. Traffic flow in the helix must remain as the primary exit, and traffic flow in the parking ramps must remain as the primary entrance.
- E. Entrances and exits for the parking structure shall remain open at all times. For work to be completed at entrances and exits, only one lane shall be closed at any given time. The Contractor shall provide two working days notice to the City prior to closure of any entrance or exit lanes.

3.3 PEDESTRIAN CONTROL

- A. Due to Fire Department requirements, the stair towers must remain open, unless the contractor is actively working in the stair tower. At the time of concrete Step replacements, or coating application to the concrete stairs, the contractor must sign the stairway as closed and direct pedestrians to the nearest elevator and stairs.

- B. Locks and/or barricades shall be placed on stair tower doors at construction levels which will allow exit from the ramp area into the stair tower but will not allow exit from the stair tower to the ramp areas under construction.
- C. Passageways for pedestrian traffic in a construction area shall be delineated by plywood barricades installed tight to the deck above, or by other approved method to protect pedestrians and prevent pedestrians from entering the construction area. The contractor shall provide temporary light in all passageways.
- D. The City of Milwaukee will turn off the elevator access to the garage levels under construction. The elevator will remain operational.
- E. All vehicular requirements of section 3.2 also apply to pedestrian control.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. The City will measure Traffic Control and Construction Staging, completed in accordance to the contract and accepted, as a single complete unit of work.

4.2 PAYMENT

- A. The City will pay for the measured quantity at the contract unit price under the following bid item:

<u>ITEM</u>	<u>UNIT</u>
1. Traffic Control and Construction Staging	LS

- B. Payment is full compensation for constructing, assembling, painting, hauling, erecting, re-erecting, maintaining, restoring, and removing traffic signs, drums, barricades, and similar control devices; for providing, placing, and maintaining lights; for providing, applying, and removing temporary pavement markings; for providing, erecting, re-erecting, maintaining, restoring, and removing temporary dust partitions; and for furnishing all labor, material, and incidentals necessary to complete the work.

END OF SECTION 01 55 30

SECTION 01 60 01 – MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.1 MATERIALS

- A. Furnish materials of the type, qualities and characteristics specified. The specification of a trade name and catalog number is intended to establish quality, type, character and operating characteristics of the material required. Materials by other manufacturer's meeting the approval of the Engineer of equal specifications will be considered excepting as may be specifically stated otherwise. Samples and/or demonstrations may be requested.
- B. Materials shall be delivered adequately protected, in merchantable condition and in original unbroken packages if normally packaged. They shall be stored and handled so as to protect and maintain their merchantable condition. Packages shall have stamped on them the date of manufacture and shelf life, if applicable.
- C. The Commissioner of Public Works or his representative shall have the right to reject material not in compliance with specifications as well as damaged material and the Contractor shall remove such material from the construction site when as directed.

1.2 MATERIAL STORAGE

- A. Storage areas are available within the Contractor's occupancy limits.
- B. Refer to Section 01 11 00 Summary of Work, Storage of Materials.

1.3 EQUIPMENT

- A. Internal combustion engine and compressors shall be equipped with mufflers to reduce noise to a minimum, and shall not be operated in enclosed areas without adequate ventilation.
- B. All materials and work procedures used shall be in accordance with all air pollution control regulations in effect at the work site.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

PART 4 - MEASUREMENT AND PAYMENT (Not Applicable)

END OF SECTION 01 60 01

SECTION 01 70 01 – CLEANING AND PROJECT CLOSE-OUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General Conditions and other Division 1 specification sections, apply to this section.
- B. Article 2.5.4 of the General Specifications of the City of Milwaukee Department of Public Works shall be supplemented as specified hereafter.

1.2 SUMMARY

- A. This section includes administrative and procedural requirements for cleaning and project closeout including, but not limited to, the following:
 - 1. Project record document submittal
 - 2. Submittal of warranties
 - 3. Final cleaning

1.3 AS-BUILT DRAWINGS

- A. At the completion of work and prior to final payment, the contractor shall provide the City with a marked up set of “as-built” drawings showing all changes or variations from contract drawings, including those specified on change order drawings heretofore issued. Contractors providing buried or concealed piping, conduit or similar items shall locate such items by dimensions and elevations.
- B. Marked up sets of prints will be acceptable providing they are in first class condition for record purposes. Each contractor shall be responsible for accuracy of record drawings.

1.4 GUARANTEE

- A. This Contractor shall guarantee to replace or repair promptly at their own expense, as directed by the Commissioner of Public Works or his agent, all workmanship in which defects may develop within one (1) year from the date of final acceptance of his work excepting as may be hereinafter specified. This guarantee includes all damage done by the City due to faulty equipment, poor installation or poor construction. The City shall also receive any extended guarantees or warranties normally supplied by any vendor or manufacturer for material or equipment incorporated in the work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 SAFETY CLEANING

- A. Safety cleaning: Each Contractor is responsible for safety cleaning, which includes but is not limited to the following:
 - 1. Work areas, passageways, ramps, stairs, must be kept free of debris and scrap.
 - 2. Scrap lumber shall have nails withdrawn or bent over and lumber shall be stacked or removed.
 - 3. Spills of paint, oil, grease, or other liquids shall be removed immediately.
- B. Protect automobiles and users that will be using the structure during construction. The contractor will be liable for any and all costs incurred due to damage from construction operations.

3.2 PROGRESS CLEANING

- A. Prime Contractor and subcontractor shall remove his rubbish and debris from the site promptly upon its accumulation.
- B. Combustible waste shall be stored in fire resistive containers and disposed of regularly.
- C. Oily, flammable or hazardous wastes such as caustics, acids, harmful dusts, etc., shall be stored in appropriate covered containers.
- D. The Contractor is not allowed to wash debris or other harmful contaminants down drains that would be discharged into City Sewers. Filters shall be inserted in the drain where it is likely debris may accumulate.

3.3 DISPOSAL

- A. All demolished materials required for this work shall be carefully collected and removed from site.
- B. No burning or rubbish or debris will be allowed at site. No rubbish shall be thrown from heights without proper protection. When dust will be generated or flying debris is likely to occur, provide dust tight chutes or other means to control dust.
- C. Containers: Contractor shall provide mobile industrial type waste containers in the number and size required, placed at adequate locations to handle debris or provide other methods of disposing of debris.

3.4 FINAL CLEANING

- A. Complete final cleaning immediately prior to substantial completion.
- B. Contractors shall expedite or perform thorough cleaning, sweeping, and washing of work to remove from work area under his contract, all foreign matter, so as to put all such work including finishes, in a complete and finished condition ready for acceptance and use intended.

- C. Remove debris from drain and flush clean.
- D. Employ trained experienced workmen for the final cleaning.

3.5 CHARGES

- A. If Prime Contractors do not remove rubbish or clean the project site as specified above, the City reserves the right to have work done by others at Contractor's expense.
- B. Employees of the City who are required to clean up any rubbish or sweep any floors will record all hours involved to complete such work.
- C. The cost incurred by the City for this special cleaning and sweep-up work shall be charged against the contract price of the Contractor as determined by the City.

PART 4 - MEASUREMENT AND PAYMENT (Not Applicable)

END OF SECTION 01 70 01

SECTION 01 71 13 – MOBILIZATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Mobilization shall include the work and operations necessary to move personnel, equipment, supplies, and incidentals to the project site and to establish all of the contractor's offices, buildings, sanitary accommodations, and other facilities necessary to work on the project. It also includes all other work and operations whose performance is required, or for costs necessarily incurred before beginning work on various items on the project site.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. The City will measure the Mobilization bid item as a single lump sum unit for each in the proposal and acceptably completed.

4.2 PAYMENT

- A. The City will pay for the contract lump sum 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 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.

<u>ITEM</u>	<u>UNIT</u>
1. Mobilization and General Conditions	LS

- B. Payment is full compensation for supplying and providing all materials, facilities, services, and for performing all work necessary to complete this contract bid item.

END OF SECTION 01 71 13

SECTION 03 01 01 – CONCRETE SURFACE REPAIR

PART 1 - GENERAL

1.1 SUMMARY

- A. Work in this section consists of furnishing all labor, materials, equipment and incidentals as necessary to complete concrete surface repair to delaminations and spalled areas located on the ceilings, columns, decks and walls.

1.2 SUBMITTALS

- A. Submit Manufacturer's product data sheets including instructions for mixing, handling and placement of concrete repair mortar before starting repair work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Concrete repair mortars are to be polymer-modified, Portland-cement, 2-component, fast-setting, trowel-grade patching mortar with corrosion inhibitor formulated for either horizontal or vertical and overhead surfaces, depending on the application.
- B. Approved repair mortars for overhead and vertical surfaces are Duraltop Gel or SpeedCrete PM as manufactured by The Euclid Chemical Company, 19218 Redwood Rd., Cleveland, OH 44110. Sika Top 123 Plus as manufactured by Sika Corporation, 201 Polito Avenue, Lyndhurst, New Jersey 07071. Masterbuilders Gel Patch as manufactured by BASF Building Systems, 889 Valley Park Drive, Shakopee, MN 55379, or approved equal for overhead and vertical surfaces.
- C. Approved repair mortars for horizontal surfaces are EupoCrete as manufactured by The Euclid Chemical Company, 19218 Redwood Rd., Cleveland, OH 44110. Sika Top 122 Plus as manufactured by Sika Corporation, 201 Polito Avenue, Lyndhurst, New Jersey 07071. Masterbuilders 10-60 Rapid Mortar as manufactured by BASF Building Systems, 889 Valley Park Drive, Shakopee, MN 55379, or approved equal for horizontal surfaces.
 - 1. For large areas of Concrete Surface Repairs – Horizontal in the helix ramps, an approved ready mix design with a proven record of past performance may be substituted. The contractor will be required to submit three (3) locations where the mix design has been previously used including, facility name and location, date, and square footage.
- D. Approved bonding agent/anti-corrosion coating for bonding repair mortar to existing concrete and reinforcing steel while protecting reinforcing steel from corrosion is Duralprep A.C. as manufactured by The Euclid Chemical Company, 19218 Redwood Rd., Cleveland, OH 44110, Sika Armatec 110 EpoCem as manufactured by Sika Corporation, 201 Polito Avenue, Lyndhurst, New Jersey 07071. Masterbuilders EMACO P24 as manufactured by BASF Building Systems, 889 Valley Drive, Shakopee, MN 55379, or approved equal.

- E. For horizontal and overhead concrete surface repairs in the two helix ramps, the Contractor must coordinate work with Protectosil and Hanson Building Specialites, Inc. Protectosil will provide Protectosil Corrosion Inhibitor, which shall be applied by the Contractor in conformance with the product instructions. No additional payment will be made for this work. See Section 01 35 13 Special Project Procedures for additional details.
- F. Other repair mortars and bonding agent/anti-corrosion coating meeting or exceeding the performance criteria and test properties of the approved repair materials may be submitted for approval.
- G. The Contractor shall have a competent, technical representative of the Manufacturer of the concrete repair products onsite at the beginning of the work to approve in writing that preparation and application of the materials is in accordance with the Manufacturer's recommendations. Work shall not begin until such approval is submitted to the Engineer.

PART 3 - EXECUTION

3.1 SUMMARY

- A. Remove deteriorated, unsound and spalled concrete on ceiling, walls, decks, and columns in the 2nd and Plankinton Parking Structure. Locate unsound concrete by chain dragging and hammer sounding while listening for hollow sound. Mark areas requiring concrete repair in presence of Inspector. Sandblast clean any exposed reinforcing bars and prepare concrete for patching in accordance with Manufacturer's printed instructions. Apply bonding agent/anti-corrosion coating to existing concrete prior to applying the concrete repair mortar.
- B. Concrete repairs beyond 5" in depth, are considered Deep Concrete Surface Repairs. See Section 03 01 02 for specifications for this type of repair.

3.2 SURFACE PREPARATION

- A. Remove all deteriorated concrete, dirt, oil, grease, and all bond inhibiting materials from the surface. Be sure the repair area is not less than 1/8-inch in depth. Preparation work should be done by scabber or other appropriate mechanical means to obtain an aggregate fractured surface with a minimum surface profile equal to CSP 6-8 in accordance with ICRI Guideline 310.2. Saw cut perimeter of repair area 1/2-inch deep maximum. "Pencil Point" chipping hammers shall not be used.
- B. Hand chip 0.75-inch minimum around and under exposed rebar if corrosion is present or if bar is exposed greater than 50% of its circumference after chipping. Either saw cut above rebar or hand chip a right angle cut 1-inch into sound concrete measured from last visible sign of rebar corrosion. Existing, exposed reinforcing bars shall be sandblasted clean and coated with Duralprep A.C., Sika Armatec 110 EpoCem, or Masterbuilders EMACO P24. For horizontal and overhead repairs in the helix, the Contractor shall apply Protectosil Corrosion Inhibitor according to the Manufacturer's instructions as provided by the City.

3.3 APPLICATION AND FINISH

- A. Existing rebar exposed shall be sandblasted thoroughly clean and coated with Duralprep A.C., Sika Armatec 110 EpoCem, or Masterbuilders EMACO P24 to protect from corrosion. Apply to exposed rebar with stiff bristle brush or spray 20 mils thick covering all exposed steel. Cure to tack-free 2-3 hours. Apply a second coat at 20 mils. Allow to dry again before applying repair mortar. For horizontal and overhead repairs in the helix, the Contractor shall apply Protectosil Corrosion Inhibitor according to the Manufacturer's instructions as provided by the City.
- B. Pre-wet repair surface to saturated surface dry (SSD). The Contractor shall continually wet the surface for 3 to 4 hours for the concrete to be considered SSD.
 - 1. Apply Duralprep A.C., Sika Armatec 110, or Masterbuilders EMACO P24 as a bonding bridge between existing concrete and repair mortar. Apply by stiff bristle brush or spray apply with "Goldblatt" pattern pistol or equal equipment. Place repair mortar while coating is still wet or dry up to 24 hours.
- C. Repair area should not be less than 1/8-inch in depth. At the time of application surfaces should be SSD with no standing water. Repair bonding agent must be scrubbed into the substrate, filling all pores and voids. Apply Duraltop Gel or SpeedCrete PM by The Euclid Company, Sika Top 123 Plus by Sika Corporation, or Masterbuilders Gel Patch by BASF Building Systems up to the maximum Manufacturer open time for overhead or vertical repairs. Apply EupoCrete, Sika Top 122 Plus, or Masterbuilders 10-60 Rapid Mortar up to the maximum Manufacturer open time for horizontal surfaces.
- D. For applications greater than 1-1/2 inch in depth, apply Duraltop Gel, SpeedCrete, Sika Top 123 Plus, or Masterbuilders Gel Patch in lifts. Score the top surface of each lift to produce a roughened surface for the next lift. Allow preceding lift to reach final set.
- E. Allow mortar or concrete to set to desired stiffness then finish with wood or sponge float for a smooth surface. Where rough finish is required, use a broom or burlap drag.
- F. Cure repair area using a fine mist of water, wet burlap or non-solvent, water based curing compound which has been pre-approved by the Engineer. To prevent freezing, cover with insulating material.

PART 4 – MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. The City will measure Concrete Surface Repair by the square foot (SF) acceptably completed, measured as the exposed surface area, following removal. The depth of the removal will be measured as the distance from the existing surface to the prepared final surface to a maximum depth of 5 inches. Concrete repairs beyond 5-inches in depth are considered Deep Concrete Surface Repairs and will be paid for under that bid item. Quantities will be verified by the Project Inspector.

4.2 PAYMENT

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A. The City will pay for measured quantities at the contract unit price under the following bid items:

<u>ITEM</u>	<u>UNIT</u>
1. Concrete Surface Repair – Vertical and Overhead	SF
2. Concrete Surface Repair – Horizontal	SF

B. Payment is full compensation for removing unsound concrete; blast cleaning and providing additional reinforcement as necessary; furnishing and placing concrete; applying Protectosil Corrosion Inhibitor provided by the City at horizontal and overhead repairs in the helix; and for furnishing all labor, scaffolding, formwork, tools, materials, equipment, and incidentals necessary to complete the work.

END OF SECTION 03 01 01

SECTION 03 01 02 – DEEP CONCRETE SURFACE REPAIR

PART 1 - GENERAL

1.1 SUMMARY

- A. Work in this section consists of furnishing all labor, materials, equipment and incidentals as necessary to complete Deep Concrete Surface Repair to delaminations and spalled areas located on the ceilings, columns, decks, and walls. Deep Concrete Surface Repairs pertain to areas greater than a depth of 5-inches.

1.2 SUBMITTALS

- A. Submit Manufacturer's product data sheets including instructions for mixing, handling and placement of concrete repair mortar before starting repair work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Concrete repair mortars are to be polymer-modified, Portland-cement, 1 or 2-component, fast-setting, trowel-grade repair mortar with corrosion inhibitor formulated for horizontal, overhead and vertical surfaces.
- B. Approved repair mortars are Verticoat Supreme as manufactured by The Euclid Chemical Company, 19218 Redwood Rd., Cleveland, OH 44110, Sika Top 123 Plus as manufactured by Sika Corporation, 201 Polito Avenue, Lyndhurst, New Jersey 07071, EMACO S88-CI as manufactured by BASF Building Systems, 889 Valley Park Drive, Shakopee, MN 55379, or approved equal.
 - 1. For large areas of Deep Concrete Surface Repairs – Horizontal in the helix ramps, an approved ready mix design with a proven record of past performance may be substituted. The contractor will be required to submit three (3) locations where the mix design has been previously used including, facility name and location, date, and square footage.
- C. Approved bonding agent/anti-corrosion coating for bonding repair mortar to existing concrete and reinforcing steel while protecting reinforcing steel from corrosion is Duralprep A.C. as manufactured by The Euclid Chemical Company, Sika Armatec 110 EpoCem, as manufactured by Sika Corporation, 201 Polito Avenue, Lyndhurst, New Jersey 07071, or Masterbuilders EMACO P24, as manufactured by BASF Building Systems, 889 Valley Park Drive, Shakopee, MN 55379, or approved equal.
- D. Other repair mortars and bonding agent/anti-corrosion coating meeting or exceeding the performance criteria and test properties of the approved repair materials may be submitted for approval.

- E. The Contractor shall have a competent technical representative of the Manufacturer of the concrete repair products onsite at the beginning of the work to approve in writing that preparation and application of the materials is in accordance with the Manufacturer's recommendations. Work shall not begin until such approval is submitted to the Engineer.

PART 3 - EXECUTION

3.1 SUMMARY

- A. Remove deteriorated, unsound and spalled concrete on ceiling, walls, decks, and columns in 2nd and Plankinton Parking Structure. Locate unsound concrete by chain dragging and hammer sounding while listening for hollow sound. Mark areas requiring concrete repair in presence of Inspector. Sandblast clean any exposed reinforcing bars and prepare concrete for repair in accordance with Manufacturer's printed instructions. Apply bonding agent/anti-corrosion coating to existing concrete prior to placing the concrete repair material.
- B. Concrete repairs up to a depth of 5-inches are considered Concrete Surface Repairs and are paid for under that bid item, see Section 03 01 01. The depth of removal for Concrete Surface Repairs is measured as the distance from the outermost concrete surface to the innermost location of concrete repair. Repairs that extend beyond the 5" depth of normal Concrete Surface Repairs are paid for under Deep Concrete Surface Repairs. Measurements for Deep Concrete Surface Repairs begin at a depth of 5" from the outermost concrete surface and continue to the innermost location of repair.

3.2 SURFACE PREPARATION

- A. Remove all deteriorated concrete, dirt, oil, grease, and all bond inhibiting materials from the surface. Be sure the repair area is not less than 1/8-inch in depth. Preparation work should be done by scabblers or other appropriate mechanical means to obtain an aggregate fractured surface with a minimum surface profile equal to CSP 6-8 in accordance with ICRI Guideline 310.2. Saw cut perimeter of repair area 1/2-inch deep maximum. "Pencil Point" chipping hammers shall not be used.
- B. Hand chip 0.75-inch minimum around and under exposed rebar if corrosion is present or if bar is exposed greater than 50% of its circumference after chipping. Either saw cut above rebar or hand chip a right angle cut 1-inch into sound concrete measured from last visible sign of rebar corrosion. Existing, exposed reinforcing bars shall be sandblasted clean and coated with Duralprep A.C., Sika Armatec 110 EpoCem, or Masterbuilders EMACO P24.

3.3 APPLICATION AND FINISH

- A. Existing rebar exposed shall be sandblasted clean and coated with Duralprep A.C., Sika Armatec 110 EpoCem, or Masterbuilders EMACO P24 to protect from corrosion. Apply to exposed rebar with stiff bristle brush or spray 20 mils thick covering all exposed steel. Cure to tack-free 2-3 hours. Apply a second coat at 20 mils. Allow to dry again before applying repair mortar.

- B. Pre-wet repair surface to saturated surface dry (SSD). The Contractor shall continually wet the surface for 3 to 4 hours for the concrete to be considered SSD.
 - 1. Apply Duralprep A.C. by Euclid Chemical, Sika Armatec 110 EpoCem, or Masterbuilders EMACO P24 as a bonding bridge between existing concrete and repair mortar. Apply by stiff bristle brush or spray apply with "Goldblatt" pattern pistol or equal equipment. Place bonding repair agent in accordance with Manufacturer's written recommendations.
- C. At the time of application surfaces should be SSD with no standing water. Bonding repair agent must be scrubbed into the substrate, filling all pores and voids. Follow manufacturer's recommendations for bonding agent and apply Verticoat Supreme by Euclid Chemical, Sika Top 123 Plus by Sika Corporation, or Masterbuilders EMACO S88-CI by BASF Building Systems.
- D. Apply Verticoat Supreme by Euclid Chemical, Sika Top 123 Plus in lifts, or Masterbuilders EMACO S88-CI. Score the top surface of each lift to produce a roughened surface for the next lift. Allow preceding lift to reach final set.
- E. Allow mortar or concrete to set to desired stiffness then finish with wood or sponge float for a smooth surface. Where rough finish is required, use a broom or burlap drag.
- F. Cure repair area using a fine mist of water, wet burlap or non-solvent, water based curing compound which has been pre-approved by the Engineer. To prevent freezing in cold temperatures, cover with insulating material.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. The City will measure Deep Concrete Surface Repair by the cubic foot acceptably completed, measured as the exposed volume, following removal. The depth of the removal will be measured as the distance from the existing surface to the prepared final surface minus 5 inches. This depth will be used to find the actual volume of the deep concrete surface repair. Concrete repairs up to a depth of 5-inches will be paid under Concrete Surface Repairs and will be paid under that bid item. Quantities will be verified by the Project Inspector.

4.2 PAYMENT

- A. The City will pay for measured quantities at the contract unit price under the following bid items:

<u>ITEM</u>	<u>UNIT</u>
1. Deep Concrete Surface Repair – Overhead and Vertical	CF
2. Deep Concrete Surface Repair – Horizontal	CF

- B. Payment is full compensation for removing unsound concrete; blast cleaning and providing additional reinforcement as necessary; furnishing and placing concrete; and for furnishing all labor,

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scaffolding, formwork, tools, materials, equipment, and incidentals necessary to complete the work. Concrete repairs less than 5 inches in depth will be paid for separately.

END OF SECTION 03 01 02

SECTION 03 01 03 – EPOXY-INJECTED CRACK REPAIR

PART 1 - GENERAL

1.1 SUMMARY

- A. Provide all labor, equipment, and materials necessary for repair of all well-defined cracks or fractures in the 2nd and Plankinton Parking Structure by means of an epoxy injection system as specified herein.

1.2 DESIGN REQUIREMENTS

- A. The epoxy injection system shall consist of a paste epoxy used to seal the surface cracks, and an injection epoxy used under low pressure (200 psi max.) to penetrate and fill the cracks and bond the crack surface together.

1.3 APPROVALS

- A. The Project Engineer prior to the start of the crack repair shall approve the epoxy injection system proposed for use by the Contractor.
- B. To obtain this approval, the Contractor shall furnish certification from the epoxy Manufacturer stating that the furnished materials comply in all respects to the referenced ASTM specification and its provisions.
- C. The Contractor shall also furnish a copy of comprehensive preparation, mixing and application instructions, which have been developed especially for use with the proposed epoxy injection system.
- D. Approval of the proposed system shall be based upon evaluation of instructions and certified test data, or open laboratory tests of material samples, or the evaluation of both certified test data and test samples.
- E. AASHTO T237 shall determine epoxy bond strength.
- F. Concrete compressive strength shall be reached prior to adhesive failure.
- G. Testing shall be the Contractor's responsibility.
- H. The project personnel shall also be furnished with a copy of the approved epoxy application instructions. The Project Engineer shall approve any significant changes to these instructions, which are recommended by the Manufacturer's representative for an anticipated situation.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. The paste and injection epoxies shall be materials produced in the United States by a company recognized as an established manufacturer of chemical products.
- B. The epoxy injection system shall be one that is described in similar application situations.
- C. The injection epoxy adhesive shall conform to ASTM C 881, Type 1, Grade Class B or C, depending upon temperature.
- D. The epoxy materials shall be designed to bond to damp or dry surfaces; however, field applications shall be made to dry surfaces.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Concrete surfaces adjacent to the cracks to be sealed shall be cleaned only to the extent necessary to achieve an adequate bond with the past epoxy, and only by procedures, which will not cause abrasive grits or concrete dust to penetrate the cracks.
- B. Substrate temperatures shall be limited to not less than 45 degrees during epoxy application.
- C. Cracks greater than 0.5 millimeter in width at the surface of the member being repaired shall have injection ports installed in them. The Manufacturer's representative may deem necessary additional injection ports, along cracks less than 0.5 millimeter in width. At the direction of the Engineer, the Contractor shall install and use such additional ports.
- D. Unless otherwise specified or directed, injection ports shall be spaced at 6 to 12 inches vertically and 6 to 18 inches horizontally.
- E. Ports shall be set in dust-free holes made either with vacuum drills or chipping hammers.
- F. After injection ports have been inserted into the holes, all surface cracks in the areas to be repaired shall be sealed with paste epoxy to ensure retention of the pressure-injected epoxy within the confines of the member.
- G. Epoxy injection shall begin at the bottom of the fractured area and progress upward using a port filling sequence, which will ensure the filling of the lowermost injection ports first.
- H. Injection procedures, depths, and spacing of holes at injection ports shall be established with due consideration of the crack widths and depths compatible with flow characteristics of the epoxy and injection pressure to ensure that no further damage will be done to the member being repaired.
- I. The injection of epoxy shall first fill the innermost portion of the cracked concrete and that the potential for creating voids within the crack or epoxy shall be minimized.

- J. After the fractured area has been filled and the epoxy has partially cured (24 hours at ambient temperature not less than 60 degrees Fahrenheit, otherwise, not less than 48 hours), the injection ports and paste epoxy shall be removed flush with the concrete surface.
- K. The surfaces of the repaired area shall be abraded to achieve a reasonably uniform surface texture matching the texture of the existing panel.
- L. Any injection epoxy runs or spills shall be removed from concrete surfaces.

3.2 PROTECTION OF FINISHED WORK

- A. Protect the repaired area from damage by other trades.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. The City will measure Epoxy-Injected Crack Repair by the linear foot (LF) acceptably completed, and quantities shall be verified by the Project Inspector.

4.2 PAYMENT

- A. The City will pay for measured quantities at the contract unit price under the following bid items:

<u>ITEM</u>	<u>UNIT</u>
1. Epoxy-Injected Crack Repair	LF

- B. Payment is full compensation cleaning and preparing the surface, for injecting the epoxy material, for cleaning and removing excess material after the installation, and for all labor, equipment, tools, and incidentals necessary to complete the work.

END OF SECTION 03 01 03

SECTION 03 01 04 – CONCRETE JOIST REPAIR

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This item consists of removing loose, cracked, spalling and deteriorated concrete from the concrete joists and patching these joist areas with cementitious mortar to the original contour, in accordance with these specifications and/or as directed by the Engineer.
- B. Joist areas marked on the plans on all levels shall be repaired following the procedures outline in these specifications.
- C. This work shall also include the following:
 - 1. Sandblasting of the areas to be patched and any exposed reinforcement after complete removal of deteriorated concrete.
 - 2. Furnishing and applying an epoxy modified bonding compound to any exposed reinforcement after cleaning.
 - 3. Temporarily removing, storing and reinstalling electrical conduit in order to perform repairs to joists.
- D. The Contractor shall not perform any additional repair work without prior approval of the Engineer for locations, limits, and type of repairs.

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. Chipping hammers shall not be larger than 15lbs and if the hammer is having a detrimental effect on the concrete or reinforcing, in the opinion of the Engineer, lighter hammers may be required.
- B. Dustless saws from SAWTEC, a division of MK Diamond Products, Inc., 1325 Storm Parkway, Torrance, CA 90501, or equivalent shall be used for concrete sawcutting and crack chasing.
- C. Sandblasting, capable of removing rust and laitance from the exposed reinforcement or for the repair area preparation.
- D. Compressed air for removal of dust, dirt, water and debris from the repair areas.
- E. Self-powered, hand-loaded, rotary or turbine mixers and pumps for grout and mortar mixing and pumping.
- F. Scaffolding of various types to provide the proper working platforms at all locations for access to the joists of the parking structures.

- G. The Contractor is encouraged to develop or demonstrate the usefulness of other equipment to perform the work in a viable and safe manner; the above is given as equipment that has been used on similar repairs with good results.
- H. The Contractor shall have a competent technical representative of the Manufacturer of the concrete repair products onsite at the beginning of the work to approve in writing that preparation and application of the materials is in accordance with the Manufacturer's recommendations. Work shall not begin until such approval is submitted to the engineer.

2.2 MATERIALS

- A. Approved bonding agent/anti-corrosion coating for bonding repair mortar to existing concrete and reinforcing steel while protecting reinforcing steel from corrosion is Duralprep A.C. as manufactured by The Euclid Chemical Company, 19218 Redwood Rd., Cleveland, OH 44110, Sika Armatec 110 as manufactured by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071, and Masterbuilders EMACO P24 as manufactured by BASF Building Systems, 889 Valley Park Drive, Shakopee, MN 55379, or approved equal.
- B. Repair mortar for trowel applied repairs:
 - 1. The Contractor may use one of the following products or an approved equal:
 - a. Tamms Structural Mortar as manufactured by Euclid Chemical 19218 Redwood Rd., Cleveland, OH 44110.
 - b. SikaTop 123 as manufactured by Sika, 201 Polito Avenue, Lyndhurst, NJ.
 - c. EMACO S88-CI as manufactured by BASF Building Systems, 889 Valley Park Drive, Shakopee, MN 55379.
 - 2. Water content is critical. Do not deviate from the Manufacturer's recommended water content printed on the product bag.
 - 3. For repairs greater than 1-1/2" in depth, and the Contractor, with the recommendation of the technical advisor from the Manufacturer, may extend the mix by adding coarse aggregate. Refer to Manufacturer's technical data guides for application recommendations.
- C. Repair mortar for form and pump repairs:
 - 1. The Contractor may use one of the following products or an approved equal:
 - a. Tamms Form & Pour as manufactured by Euclid Chemical Company, 19218 Redwood Rd., Cleveland, OH 44110.
 - b. Sikacrete 211 SCC Plus as manufactured by Sika, 201 Polito Avenue, Lyndhurst, NJ.
 - c. Masterbuilders LA40 as manufactured by BASF Building Systems, 889 Valley Park Drive, Shakopee, MN 55379.

2. Water content is critical. Do not deviate from the Manufacturer's recommended water content printed on the product bag.
 3. For repairs greater than 1-1/2" in depth the Contractor shall refer to the Manufacturer's technical data guides for the recommended aggregate extended mixes.
- D. Bonding Agent/Anti Corrosion coating for the cleaned reinforcement shall be Sika Armatec 110, by Sika, 201 Polito Avenue, Lyndhurst, NJ, Duralprep A.C. by The Euclid Chemical Company, 19218 Redwood Rd., Cleveland, OH 44110, or Masterbuilders EMACCO P24 by BASF Building Systems or approved equal.
- E. Welded wire fabric (mesh) shall be W2 wires spaced at 2 inches each way (2x2-W20.0 x W2.0).
- F. Anchors for securing welded wire fabric shall be stainless steel, 1/4" minimum diameter attached to concrete in one of the following manners:
1. Installed in predrilled holes with chemical adhesive; Hilti HVA or equal.
 2. Expansion bolts in predrilled holes; Hilti Kwik Bolt or equal.
 3. Powder-driven anchors; Not acceptable
- G. Tie wires for attaching welded wire fabric to anchors shall be epoxy or plastic coated.
- H. Curing materials shall consist of wet burlap fabric or a curing compound with plastic film of 6 mil or greater thickness and complying with the latest ASTM C171. Two-inch wide duct tape shall be used to seal the film to the adjacent concrete surface.

PART 3 – EXECUTION

3.1 CONCRETE REMOVAL FOR CONCRETE REPAIR WORK

- A. The chipping shall be done for areas to be repaired, so as to minimize damage to sound concrete and reinforcement. Saw cutting the edge of the repair area, a minimum of 1 inch deep, shall be done whenever possible.
- B. Concrete will be removed throughout the repair area to a minimum vertical depth of 4 inches and deeper where unsound concrete is found, and rebar access must be provided. Chipped surfaces shall be vertical and horizontal. The minimum surface profile shall be equal to CSP 6-8 in accordance with ICRI Guideline 310.2.
- C. Joists shall be repaired which exhibit one or more problems. These problems are, but not limited to, spalls, cracking, loose pieces of concrete, delaminated areas and failed patched areas. Section of joists to be repaired will be the deteriorated joist sections plus one-half (1/2) foot horizontally each side of the identified deterioration. Deteriorated sections adjacent to beams shall not be extended into the beam unless there is deterioration in the beam. Center joist sections shall be repaired in the same manner.

3.2 CONCRETE REMOVAL FOR PUBLIC SAFETY

- A. Concrete ceiling areas which have been spalled, delaminated, or deteriorated on the slabs and joists, but are not included in the marked joist areas to be repaired shall be removed during construction if they pose a public safety risk. The Contractor shall notify the Engineer of locations for removal beyond that shown on the plans.

3.3 REINFORCEMENT

- A. Exposed reinforcement shall be sandblasted thoroughly clean and coated with Duralprep A.C., Sika Armatec 110 EpoCem, or Masterbuilders EMACO P24 to protect from corrosion. Apply to exposed rebar with stiff bristle brush or spray 20 mils thick covering all exposed steel. Cure to tack free 2-3 hours. Apply a second coat at 20 mils. Allow to dry again before applying repair mortar.
- B. If removal of deteriorated concrete exposes less than or equal to one-half of a reinforcing bar or wire cross-section, concrete behind the reinforcing bar need not be removed. If more than one-half of the perimeter of the bar is exposed or the reinforcing bar has evidence of corrosion, concrete must be removed a minimum $\frac{3}{4}$ inch around and under the bar so that new mortar in the repair can surround the bar.
- C. If the exposed bar has more than 20% of its cross-section lost to corrosion or is broken during concrete removal, a supplemental splice bar shall be placed beside the bar. The splice bar shall be a deformed bar, and will lap each side of the weakened area by 12 inches. The size of the splice bar shall match the size of the existing bar. Additional concrete shall be removed to make these laps, as directed by the Engineer. The splice bar shall be wire tied to the existing bars.
- D. If any joist repair requires removal deeper than 4 inches from the bottom of the joist, welded wire fabric shall be added in the patch. The fabric shall have minimum W2 wires in each direction on a 2 inch grid (2x2-W2.0xW2.0). The mesh shall be tied to the exposed reinforcing bars 6 inches or less on center in a manner that provides at least 1 inch cover over the mesh. Where the mesh is not tied to the reinforcement, it shall be tied to anchors specified in Section 2.2. The mesh shall be bent into the shape of the joist around existing reinforcing bars and shall be tied to anchors anchored at the top of the patched section as specified in Section 2.2.

3.4 CLEANING SURFACES PRIOR TO REPAIRS

- A. Prior to placing any concrete repair material or grout, all surfaces shall be cleaned of any dust, dirt, debris or bond inhibiting materials by sandblasting or mechanical cleaning and compressed air, to obtain a sound clean porous surface.

3.5 CONCRETE REPAIR

- A. The Contractor shall define and submit the repair procedure to be used for the joist repairs to the Engineer prior to starting repair work. Repair areas which are equal to or less than 4 inches deep and 2'-0" long can be repaired using the hand troweling method described below. Repair areas larger than 4 inches deep and 2'-0" long shall be formed with the repair material pumped as described below.

- B. The areas to be repaired shall be prepared by the outlined requirements of this specification. The repair material must be supported by form work until bonded and cured. Shoring shall be used as required. The mortar shall be placed by pumping or other methods which provide specified concrete strength.
- C. At the time of application the surface shall be saturated with clean water. Surfaces shall be saturated surface dry (SSD), wet to the touch, with no standing water. Bonding agent shall be applied if required by the Manufacturer for adequate surface preparation.
- D. If the hand troweling method is used, bonding agent MUST BE SCRUBBED into the substrate, filling all pores and voids. Force material against edge of repair, working toward center. After filling repair, consolidate, then screed. Material may be applied in multiple lifts. The thickness of each lift shall be 1/8 inch minimum and may vary depending on the conditions of the repair area. Where multiple lifts are required, score top surface of each lift to produce a roughened surface for next lift. Allow proceeding lift to reach final set, 30 minutes minimum, before applying fresh material. Saturate surface of the lift with clean water. Scrub fresh mortar into the proceeding lift. Allow mortar to set to desired stiffness, and then finish as required to match the surrounding surfaces.
- E. Additional steel reinforcement shall be attached using approved means specified in Section 3.3, as required.
- F. Extreme care shall be taken to achieve complete consolidation of the mortar in the area to be repaired. This may require the use of "pencil vibrator" if the Engineer determines that the Contractor has not performed this task adequately.

3.6 FORM REMOVAL, FINISHING AND CURING

- A. Forms shall be left in place at least 16 hours when the average air temperature is above 50 degrees Fahrenheit, or as directed by the Engineer in colder conditions.
- B. If honeycombed areas appear when the forms are removed, the Engineer shall be notified. The Engineer will determine if the honeycombed areas are major or minor. Repairs containing major honeycombs shall be removed and replaced. Minor honeycombs shall be repaired by filling the voids with freshly mixed repair material.
- C. As soon as the forms are removed, the repaired concrete shall be covered with a wet burlap wrap or coated with a curing compound approved by the repair mortar Manufacturer or by another method approved by the Engineer and the Manufacturer. The application rate of the curing compound shall be as recommended by the Manufacturer. Immediately after placing and securing the wet burlap wrap or within three hours of the application of the curing compound, the patch area shall be covered with a 6-mil polyethylene film. The polyethylene film shall be held in place by 2-in wide duct tape applied around the entire perimeter of the film to also seal it. If the forms are left in place at least 5 days during which the average temperature is above 50 degrees Fahrenheit, or 7 days in the average temperature is below 50 degrees Fahrenheit, the wet burlap wrap or the curing compound and polyethylene film need not be applied.

D. After the curing period, all fins and repair mortar/concrete defects shall be removed.

3.7 CLEANUP

A. All curing materials shall be removed and surfaces shall be cleaned as specified in Division 1.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. The City will measure Concrete Joist Repair by the linear foot (LF) acceptably completed to a depth of 4 inches, following removal. Repair areas with a depth greater than 4 inches, as averaged depth shall be determined and the linear foot measurement will be increased by a ratio based on the actual average depth in inches divided by 4 inches. Each repair area will be measured only once for payment purposes, irrespective of the number of operations for removing concrete from that area. Quantities will be verified by the Project Inspector.

4.2 PAYMENT

A. The City will pay for measured quantities at the contract unit price under the following bid items:

<u>ITEM</u>	<u>UNIT</u>
1. Concrete Joist Repair	LF

B. Payment is full compensation for removing unsound concrete, blast cleaning and providing additional reinforcement as necessary; furnishing and placing concrete; and for furnishing all labor, scaffolding, formwork, tools, materials, equipment, and incidentals necessary to complete the work. No payment will be made for areas which are unnecessarily damaged during the repairs unless authorized by the Engineer. All such damaged areas shall be repaired at the Contractor's expense.

END OF SECTION 03 01 04

SECTION 03 01 05 – CONCRETE STEP REPLACEMENT

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This item consists of removing loose and deteriorated concrete at the stair treads and risers, and repairing these areas as well as spalled areas with cementitious mortar to the original contour, in accordance with these specifications and/or as directed by the Engineer. Metal nosings that are in good condition are to be salvaged and reused. New metal nosings shall be provided by the Contractor and shall match the existing.
- B. This work shall also include the following:
 - 1. Sandblasting or mechanical cleaning of the areas to be repaired and any exposed reinforcement after complete removal of deteriorated concrete.
 - 2. Furnishing and applying an epoxy modified bonding compound to any exposed reinforcement after cleaning.
- C. The Contractor shall not perform any repair work without prior approval of the Engineer for locations, limits, and type of repairs. Stair areas requiring repair can be found in the plans.

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. Chipping hammers shall not be larger than 15lbs and if the hammer is having a detrimental effect on the concrete or reinforcing, in the opinion of the Engineer, lighter hammers may be required.
- B. Dustless saws from SAWTEC, a division of MK Diamond Products Inc., 1315 Storm Parkway, Torrance, CA 90501, or equivalent shall be used for concrete sawcutting and crack chasing.
- C. Sandblasting capable of removing rust and laitance from the exposed reinforcement or for the repair area preparation.
- D. Compressed air for removal of dust, dirt, water and debris from the repair areas.
- E. Self-powered, hand-loaded, rotary or turbine mixers and pumps for grout and mortar mixing and pumping.
- F. Scaffolding of various types to provide the proper working platforms at all locations for access to the stairs of the parking structure.
- G. The Contractor is encouraged to develop or demonstrate the usefulness of other equipment to perform the work in a viable and safe manner; the above is given as equipment that has been used on similar repairs with good results.

2.2 MATERIALS

- A. Bonding agent shall be Duralprep A.C. by Euclid Chemical, Sika Armatec 110 EpoCem, by Sika Corporation, or Masterbuilders EMACO P24 by BASF Systems.
- B. Repair mortar for trowel applied:
 - 1. The Contractor may use one of the following products or an approved equal:
 - a. Tamms Structural Mortar as manufactured by Euclid Chemical Company, 19218 Redwood Rd., Cleveland OH.
 - b. Sika Repair 224 as manufactured by Sika, 201 Polito Avenue, Lyndhurst, NJ.
 - c. EMACO S88 – CI as manufactured by BASF Building Systems, 889 Valley Park Drive, Shakopee, MN.
 - 2. Water content is critical. Do not deviate from the Manufacturer's recommended water content printed on the product bag.
 - 3. For repairs greater than 1-1/2" in depth the Contractor shall refer to Manufacturer's technical data guide regarding aggregate extended mixes.
- C. Anti-corrosion coating for the cleaned reinforcement shall be Duralprep A.C. by Euclid Chemical, 19218 Redwood Rd., Cleveland OH, Sika Armatec 110 EpoCem, by Sika 201 Polito Avenue, Lyndhurst, NJ, or Masterbuilders EMACO P24 by BASF Building Systems, 889 Valley Park Drive, Shakopee, MN 55379, or approved equal.
- D. Welded wire fabric (mesh) shall be W2 wires spaced at 2 inches each way (2x2-W20.0 x W2.0).
- E. Anchors for securing welded wire fabric shall be stainless steel, 1/4" minimum diameter attached to concrete in one of the following manners:
 - 1. Installed in predrilled holes with chemical adhesive; Hilti HVA or equal.
 - 2. Expansion bolts in predrilled holes; Hilti Kwik Bolt or equal.
 - 3. Powder-driven anchors; not acceptable.
- F. Tie wires for attaching welded wire fabric to anchors shall be epoxy or plastic coated.
- G. Curing materials shall consist of wet burlap fabric or a curing compound with plastic film of 6 mil or greater thickness and complying with the latest ASTM C171. Two-inch wide duct tape shall be used to seal the film to the adjacent concrete surface.

PART 3 - EXECUTION

3.1 CONCRETE REMOVAL

- A. Chipping shall be done for areas to be repaired, so as to minimize damage to sound concrete and reinforcement. Saw cutting the edge of the repair area, a minimum of 1/2 inch deep, shall be done whenever possible.
- B. Concrete will be removed throughout the repair area to a minimum vertical depth of 1 1/2 inches and deeper where unsound concrete is found, and rebar access must be provided. The minimum surface profile shall be equal to CSP 6-8 in accordance with ICRI Guidelines 310.2.
- C. Stair nosing shall be cleaned and straightened or replaced with an approved equal.

3.2 REINFORCEMENT

- A. Exposed reinforcement shall be thoroughly cleaned of rust, laitance, dust, dirt and bond inhibiting materials. A coat of anti-corrosion coating shall be put on the exposed reinforcement and allowed to harden. Care shall be required that the anti-corrosion coating does not spill on the adjacent concrete. Prior to placing repair mortar, a second coat of anti-corrosion coating shall be put on the exposed reinforcement. The concrete shall be placed while the second coat of anti-corrosion coating is tacky. The anti-corrosion coating shall be placed after all supplemental splices or replacement bars have been placed.
- B. If removal of deteriorated concrete exposes less than or equal to one-half of a reinforcing bar or wire cross-section, concrete behind the reinforcing bar need not be removed. If more than one-half of the perimeter of the bar is exposed, the reinforcing bar has evidence of corrosion, or the bar is corroding, concrete must be removed a minimum $\frac{3}{4}$ inch around and under the bar so that new mortar in the repair can surround the bar.
- C. If the exposed bar has more than 20% of its cross-section lost to corrosion or is broken during concrete removal, a supplemental splice bar shall be placed beside the bar. The splice bar shall be a deformed bar, and will lap each side of the weakened area by 12 inches. The size of the bar will match the size of the existing bar. Additional concrete will be removed to make these laps, as directed by the Engineer. The splice bar shall be wire tied to the existing bars.

3.3 CLEANING SURFACES PRIOR TO REPAIRING

- A. Prior to placing any concrete repair material or grout, all surfaces shall be cleaned of any dust, dirt, debris or bond inhibiting materials by sandblasting or mechanical cleaning and compressed air, to obtain a sound clean porous surface.

3.4 CONCRETE REPAIR

- A. The mortar shall be placed by troweling or other methods which provide the required concrete strength.
- B. Hand troweling of mortar without formwork has not given acceptable results in the past and is not acceptable for this project.
- C. Stair nosing shall be put on the stair treads to ensure proper anchorage.

- D. At the time of application the surface shall be saturated with clean water. Surfaces shall be saturated surface dry (SSD), wet to the touch, with no standing water. Bonding agent shall be applied only if required by the Manufacturer for adequate surface preparation. Mortar MUST BE SCRUBBED into the substrate, filling all pores and voids. Force material against edge of repair, working toward center. After filling repair, consolidate, then screed. Material may be applied in multiple lifts. The thickness of each lift, shall be 1/8 inch minimum, and may vary depending on the conditions of the repair area. Where multiple lifts are required score top surface of each lift to produce a roughened surface for next lift. Allow preceding lift to reach final set, 30 minutes minimum, before applying fresh material. Saturate surface of the lift with clean water. Scrub fresh mortar into preceding lift. Allow mortar to set to desired stiffness, and then finish as required to match the surrounding surfaces.
- E. Additional steel reinforcement shall be attached using approved means specified in section 3.2, as required.
- F. Extreme care shall be taken to achieve complete consolidation of the mortar in the area to be repaired. This may require the use of "pencil vibrator" if the Engineer determines that the Contractor has not performed this task adequately.

3.5 FORM REMOVAL, FINISHING AND CURING

- A. Forms shall be left in place at least 16 hours when the average air temperature is above 50 degrees Fahrenheit, or as directed by the Engineer in colder conditions.
- B. If honeycombed areas appear when the forms are removed, the Engineer shall be notified. The Engineer will determine if the honeycombed areas are major or minor. Repairs containing major honeycombs shall be removed and replaced. Minor honeycombs shall be repaired by filling the voids with freshly mixed repair material.
- C. As soon as the forms are removed, the repair concrete shall be covered with a wet burlap wrap or coated with a curing compound approved by the repair mortar Manufacturer or by another method approved by the Engineer and the Manufacturer. The application rate of the curing compound shall be in compliance with Manufacturer's recommendations. Immediately after placing and securing the wet burlap wrap or within three hours of the application of the curing compound, the repair area shall be covered with a 6-mil polyethylene film. The polyethylene film shall be held in place by 2-in wide duct tape applied around the entire perimeter of the film to also seal it. If the forms are left in place at least 5 days during which the average temperature is above 50 degrees Fahrenheit, or 7 days in the average temperature is below 50 degrees Fahrenheit, the wet burlap wrap or the curing compound and polyethylene film need not be applied.
- D. After the curing period, all fins and repair mortar/concrete defects shall be removed.

3.6 CLEANUP

- A. All curing materials shall be removed and surfaces shall be cleaned as specified in Division 1.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. The City will measure Concrete Step Replacement by each successfully completed.

4.2 PAYMENT

- A. The City will pay for measured quantities at the contract unit price under the following bid items:

<u>ITEM</u>	<u>UNIT</u>
1. Concrete Step Replacement	EA

- B. Payment is full compensation for removing unsound concrete, blast cleaning, and providing additional reinforcement as necessary; furnishing and placing concrete; rehabilitating or furnishing and replacing stair nosings as necessary; and for furnishing all labor scaffolding, formwork, tools, materials, equipment, and incidentals necessary to complete the work. No payment will be made for areas which are unnecessarily damaged during repairs unless authorized by the Engineer. All such damaged areas shall be repaired at the Contractor's expense.

END OF SECTION 03 01 05

SECTION 04 01 20 – REPAIR OF UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General Conditions and other Division 1 specification sections, apply to this section.
- B. Provide a copy of all applicable Drawings, including Shop Drawings, and Specifications at the site during work.

1.2 SUMMARY

- A. This section includes requirements for Masonry Pointing, and Masonry Lintel Replacement.
 - 1. Masonry Pointing includes all work associated with the removal of existing material, cleaning of all surfaces, and installing new pointing mortar at locations on the east and west stair towers and the north ally.
 - 2. Concrete Lintel Replacement includes all work associated with the removal of the exiting lintel, cleaning of all surfaces, and installation of new lintel, on the Ramp 8 west stair tower.

1.3 SUBMITTALS

- A. Submit the following items in accordance with Section 01 33 01 – Submittals and Permits.
 - 1. Contractor Qualifications
 - a. Contractor performing the work under this section must have a minimum of five years experience in comparable work and must submit a list, with references, of three buildings on which they worked in the last five years, employing workers skilled in the restoration processes and operations indicated.
 - b. List building name and address, architect, general contractor, and appropriate subcontractors with phone numbers and contact person.
 - 2. Product Data
 - a. Manufacturer's literature for all materials specified or proposed for use on the project, properly labeled and referenced to the appropriate specification section.
 - b. Material Safety Data Sheets (MSDS) for each material where appropriate.
 - c. Mortar samples for color matching. Provide a range of 4 samples for the Engineer. If none are acceptable, provide an additional range of 4 samples for the Engineer.

- d. Joint profile; provide written description or drawing of the joint profile for each material to be painted.
 - e. Certifications by the manufacturer stating that all materials supplied comply with all the requirements of the referenced standards, and that all materials are suitable for the use specified herein.
3. Material Samples
- a. Samples of all materials specified, each properly labeled, and Manufacturer's product data and installation recommendations.
4. Masonry Pointing Survey
- a. Conduct a survey of all mortar joints scheduled to remain. Coordinate survey with the Engineer so that he/she can be present at the beginning of the survey. As a minimum record the following: Identify all locations of missing, cracked or friable mortar. In addition, identify all locations of changes in mortar color.

1.4 TEST AREA

- A. With the Engineer, select a three linear foot test area. Remove mortar and repoint, using approved sample. If sample is approved by the City, proceed with work. If sample is unacceptable to the City, remove and replace with a new sample. Do not proceed with the work before the review process is complete and the sample is approved by the City.

1.5 QUALITY ASSURANCE

- A. Attend a preconstruction conference to discuss and coordinate the work covered under this Section.
- B. Attend progress meetings during the course of the work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials at temperatures above 40 degrees. Do not allow materials to freeze. In hot weather, store material in a cool place out of direct sunlight.
- B. Protect all materials in original unopened, labeled containers and packaging, and in compliance with manufacturer's directions.
- C. Protect mortar materials and other materials from deterioration by moisture and temperature.

1.7 PROJECT CONDITIONS

- A. Comply with all applicable safety codes and regulations that govern the work, including OSHA and EPA regulations that cover wastewater disposal, VOC regulation, and governing air-quality management district.
- B. Provide safe access for the Engineer to review the test area.

1.8 WARRANTY

- A. Guarantee all work under this Section in a document stating that if, within two years of the date of Substantial Completion of the Work, any of the work of this Section is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the Project Inspector to do so. State that the obligation of these Guarantees shall run directly to the Owner, and may be enforced by the Owner against the Contractor, shall survive the termination of the Contract, and shall not be limited by conditions other than the Contract.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer's products and specifications are generally referred to for identification; the products of other manufactures meeting the specifications and standards of the specified systems may be submitted for review. THE BURDEN OF PROOF FOR "EQUAL" MATERIALS IS ON THE CONTRACTOR, who shall bear the costs and delays involved in the Engineer's review of substitutions. Check all specified items upon Contract signing and initiate submittals in a time to allow early ordering, so the work is not delayed. All materials are to be new, unless designated otherwise.

2.2 MATERIALS

- A. Water: Potable
- B. Mason's Sand: ASTM C144, fineness modulus 2.0 to 2.5
- C. Hydrated Lime: ASTM C207, Type S
- D. Portland Cement ASTM C150, Type I (non-staining), low alkali white and gray required.
- E. Mortar Pigment: ASTM C979, Integral coloring material shall consist of inert, non-fading, finely ground, alkali-fast material oxides made especially for cement/lime mortars. Limit coloring additive so as not to exceed 1-% of the weight of portland cement. Do not use carbon black as a coloring additive.
- F. Mortar for Pointing: ASTM C370, Type N. Proportions by volume 1:1:6 (portland cement:hydrated lime:mason's sand). Do not use ground limestone or prepared masonry mortar mixes. Use the same brands of cement and lime and the same source of sand throughout the project. Mortar colors must match the test area.

G. Removal Tools:

1. Power Tool: 4 ½ inch right angle grinder fitted with 0.080 inch thick dry cutting diamond masonry blade.
2. Hand Tool: Small mason's mallet and toothed chisels modified to accommodate joint width.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Plans and dimensions under which the work is to be performed are based on the visual survey of existing conditions. No additional compensation or time extension will be made for dimensional errors or inaccuracies and about existing conditions.

3.2 GENERAL PROCEDURES

- A. Hot weather above 90 degrees: Do not work when concrete surface temperature is above 90 degrees. Protect the mortar from direct sunlight and exposure to wind at temperatures over 80 degrees to prevent rapid evaporation of water in the mortar before, during and after pointing.
- B. Cold Weather (below 40 degrees): Do not work in average daily temperatures below 40 degrees without providing cold weather protection as described in ACI 530 and outlined in the table below. Continue to operate heaters overnight with appropriate supervision. Do not use heaters that produce oily deposits on the concrete. If any deposits occur, submit for review the proposed method to remove deposits. Remove deposits at the Contractor's expense.

Temp.	WORK IN PROGRESS		COMPLETED WORK	
	Masonry	Mortar	Assemblage	Assemblage –First 24hr Period
Above 40° F	No Requirements	No Requirements	No Requirements	No Requirements
40° F to 25° F	Remove visible ice using hot-air blowers	Heat during mixing to between 40° F and 120° F. Maintain above freezing while in use.	No Requirements	Protect masonry with a weather-resistive cover for 24 hours after construction. Completely cover masonry when temperature is less than 32° F.
25° F to 20° F	Remove visible ice.	Heat during mixing to between 40° F and 120° F. Maintain above freezing while in use.	Use heat sources on both sides of wall. Install wind breaks when velocity is over 15 mph.	Completely cover with insulated blanket for 24 hours after construction.

Below 20° F	Heat to above 20° F; remove visible ice.	Heat during mixing to between 40° F and 120° F. Maintain above freezing while in use.	Provide an enclosure and use heat sources to maintain temperature above 32° F within the enclosure.	Provide an enclosure and use heat sources to maintain temperature above 32° F within the enclosure.
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3.3 MORTAR MIXES

- A. Measurement: Measure cementitious and aggregate material in a dry condition by volume. Measure materials using volumetric device acceptable to the Engineer, and not by shovel.
- B. For Pointing only use pre-hydrated mortar prepared as follows: Mix materials in a clean mechanical batch mixer. Thoroughly mix cementitious and aggregate materials together before adding any water, then mix again adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for one hour. Add remaining water in small rations until mortar is desired consistency (somewhat stiffer than bed mortar) is reached. Use within 60 minutes of final mixing. Do not use partially hardened material.
- C. Do not use admixtures of any kind in mortar, unless specifically reviewed by the Engineer.

3.4 MASONRY POINTING

- A. Procedure for removing existing mortar shall be decided through completion of test area and review process. Areas of mortar removal will be decided at the completion of the mortar survey.
- B. Remove existing mortar by cutting down the center of the joint with power tools, and then removing remaining mortar with hand tools. To prevent joint enlargement, do not chip or cut into the adjacent concrete. Do not over cut into concrete.
- C. Remove mortar from joints scheduled for pointing to depths equal to 2 ½ times their widths, but not less than 5/8 inch. Leave no cavities in the existing mortar, and remove all deteriorated mortar.
- D. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and exposed masonry sides for contact with pointing mortar.
- E. Rinse joint surfaces with water to remove dust and mortar particles. Time application of rinsing so that, at time of pointing, excess water has evaporated or run off, and joint surfaces are damp but free of standing water.
- F. Apply first layer of pointing mortar to areas where existing mortar was removed to depths greater than surrounding areas. Apply mortar in layers of equal depths, a maximum of 3/8 inch thick, until joint is full. Compact each layer thoroughly and allow each layer to become thumbprint-hard before applying next layer. Allow at least 24 hours to pass between successive stages of mortar application, to allow for mortar shrinkage between stages. Where existing masonry may have

rounded edges, recess final layer slightly from face. Take care not to spread mortar over edges onto exposed surfaces.

- G. When mortar at exterior face is thumbprint-hard, tool to form the specified joint type, with edges flush with the face of the masonry. Tool using a flat tool slightly larger than the joint size to compact mortar against masonry joint surface. Remove excess mortar from edge of joint by brushing. When areas of newly pointed mortar are required to blend in with adjacent existing weathered mortar, consult with the Architect to determine how best to obtain a uniform appearance.

- 1. Concrete joint geometry: to match existing.

- H. Do not wash the newly pointed mortar.

3.5 MASONRY LINTEL

- A. Remove existing lintel. Procedure for removal must be approved by the Engineer prior to starting work. Do not damage the existing door frame.
- B. Construct lintel using concrete fill and reinforcing specified on plans. Concrete block and/or concrete mix design must be approved by the Engineer prior to starting work.
- C. Use reinforcing bars of one-piece lengths only.
- D. Place and consolidate fill without disturbing reinforcing.
- E. Allow lintels to reach strength before removing temporary supports.
- F. At bearing points, fill masonry core with concrete fill minimum 12" form opening.
- G. Caulk all joints in door frame which need repair following the work.

3.6 FIELD QUALITY CONTROL

- A. The City's Project Inspector will periodically conduct field sampling and testing of fresh mortar in accordance with ASTM C780, Test Methods A4 and A5. Provide fresh mortar samples as required by the Engineer at no cost to the Owner.

3.7 FINAL CLEANING

- A. After mortar has fully hardened, and within thirty days, thoroughly clean exposed masonry surface of excess mortar and foreign matter, using stiff nylon or bristle brushes and clean water that is spray-applied at low pressure.
- B. Do not use metal scrapers or brushes.
- C. Do not use acid or alkali cleaning agents.

PART 4–MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. The City will measure Masonry Pointing by the linear foot (LF) acceptably completed, and quantities shall be verified by the Project Inspector.
- B. The City will measure Remove and Replace Masonry Lintel as a single lump sum (LS) unit acceptably completed.

4.2 PAYMENT

- A. The City will pay for measured quantities at the contract unit price under the following bid items:

<u>ITEM</u>	<u>UNIT</u>
1. Masonry Pointing	LF
2. Remove and Replace Masonry Lintel	LS

- B. Payment for Masonry Pointing is full compensation for removing existing mortar material, for cleaning and preparing the surface, for installing the proposed pointing mortar, and for cleaning and removing excess material after the installation, and for all labor, equipment, tools, and incidentals necessary to complete the work.
- C. Payment for Remove and Replace Masonry Lintel is full compensation for removing and replacing the existing masonry lintel, for preparing the existing surface for the proposed masonry lintel, for cleaning and removing excess material after the installation, for recaulking existing door frame, and for all labor, equipment, tools, and incidentals necessary to complete the work.

END OF SECTION 04 01 20

SECTION 07 18 17 – HEAVY DUTY VEHICULAR TRAFFIC COATINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Applicable requirements of General Conditions of Contract, Supplementary Conditions of Contract, and Division 1 apply to work specified in this Section.
- B. The work of this Section includes, but is not limited to, the furnishing of all labor, materials, tools, and equipment to perform the surface preparation and installation of a system consisting of a fluid applied two-component, elastomeric polyurethane coating system and a chemical and abrasion resistant non-skid traffic topping incorporating selected aggregate.
- C. Areas to receive the heavy duty vehicular traffic coating system are as follows:
 - 1. Recoating selected areas over existing traffic coating on the first, second, and third levels and selected areas in both stairwells of the 2nd and Plankinton Parking Structure with a two component system.
 - 2. Any bare areas worn down to concrete or new concrete repairs shall be coated with a 4-layer (primer, base coat, wear coat, and top coat) traffic deck coating to a minimum thickness of 50 mils including aggregate.

1.2 RELATED SECTIONS

- A. Section 01 55 30 – Traffic Control & Construction Staging
- B. Section 07 91 13 – Compression Seal
- C. Section 07 92 00 – Joint Sealant
- D. Section 09 92 00 – Pavement Marking

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM International)
 - 1. ASTM C957 – Standard Specification for High-Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with Integral Wearing Surface.
 - 2. ASTM D822 – Standard Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Exposure Apparatus.
 - 3. ASTM D903 – Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.
 - 4. ASTM D1004 – Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting.
 - 5. ASTM D1044 – Standard Test Method for Resistance of Transparent Plastics to Surface Abrasion.
 - 6. ASTM D1360 – Standard Test Method for Fire Retardancy of Paints (Cabinet Method).
 - 7. ASTM D2240 – Standard Test Method for Rubber Property – Durometer Hardness.
 - 8. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 9. ASTM E96 – Standard Test Methods for Water Vapor Transmission of Materials.

B. Underwriters Laboratories, Inc. (UL)

1. UL – Fire Resistance Directory.

1.4 SYSTEM DESCRIPTION

- A. Elastomeric urethane coatings providing continuous, seamless waterproofing coating resistant to specified traffic wear exposures meeting and exceeding ASTM C957.
- B. Heavy Duty System: Multi-coat system consisting of primer, membrane base coat, wear coat, and a finish top coat, applied to all areas indicated on the plans.

1.5 SUBMITTALS

- A. Section 01 33 01 – Submittals/Permits.
- B. Submit two samples of each heavy duty vehicular traffic coating system applied to ¼ x 4 x 6 inch plywood or similar rigid base illustrating each layer, color, surface texture, and variations.
- C. Submit six copies of Manufacturer's product literature for all products furnished, Manufacturer's installation instructions, appropriate Material Safety Data Sheets (MSDS) and other safety requirements.
- D. Submit a current copy of the Applicator's License Certificate, issued by the Manufacturer. The certificate shall verify the applicator's qualifications to properly install the Manufacturer's system. The certificate shall commit the Manufacturer to the acceptance of the applicator under the joint and several warranty provisions required by this Section.
- E. Submit an unsigned sample of the warranty that will be used on the project.
- F. Submit a written statement from the Manufacturer describing shelf life for materials and products to be furnished and used on this project as further detailed in Subsection 1.10.

1.6 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 – Cleaning and Project Closeout.
- B. Operation and Maintenance Data: Upon completion of work required by this Section, submit written maintenance recommendations, identified with project name, location and date, type of membrane coating system applied, and surface to which system was applied, including sketches where necessary. Include recommendations for periodic inspections, care and maintenance. Identify common causes of damage with instructions for temporary patching until permanent repair can be made.
- C. Warranty: Submit written warranty statement as specified in Section 1.11. Ensure that the forms have been completed in Owner's name and registered with Manufacturer.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years documented experience.
- B. Work specified herein shall be performed by and be the responsibility of the Installation Contractor authorized, approved, and qualified by the Manufacturer of materials used; having necessary equipment and facilities to fulfill requirements of this Section.
- C. The minimum acceptable experience of the Contractor, using methods and materials planned for use on this project, is three (3) installations totaling at least 200,000 square feet in area with similar climates and three years of installation experience. At least three (3) weeks prior to commencing work of this section, this Contractor shall submit a list of prior projects showing evidence of experience. Include for each installation referenced: facility name and location, date and square footage of installation, designation of system used, and the name and phone number of a representative of the Owner familiar with the installation and material performance.

1.8 TEST AREA

- A. Before start of general application, apply the heavy duty vehicular traffic coating as specified in a representative test area. The area shall be approximately 100 square feet. The area to be covered by the coating shall include all site conditions such as corners, and projections through coating. Location of the test area shall be determined by the Engineer, and after approval, shall serve as an example for the remaining work.
- B. Contractor and Manufacturer to coordinate an adhesion test in conformance with ASTM D903 performed by an independent testing laboratory of base/intermediate coat to existing membrane material. Allow test area to cure a minimum of 7 days prior to performing test.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 – Materials and Equipment.
- B. Deliver material to project in sealed, original packages or containers bearing name and brand of Manufacturer and date manufactured.
- C. Upon delivery, supplies will be checked by the Engineer. Only materials brought to the area and approved may be used.
- D. Store materials in single place designated by Engineer.
- E. Every precaution shall be taken to avoid danger of fire. Store hazardous materials in accordance with local ordinances. Provide dry chemical or CO₂ fire extinguishers in areas. Allow no smoking or open containers of solvents. Store solvents in safety cans.

- F. Store materials at temperatures not exceeding those recommended by the Manufacturer.
- G. Manufacturer shall submit to the Engineer a written statement of materials; shelf life and proper storage conditions. Materials that have been improperly stored or that have an expired shelf life shall not be installed.
- H. Keep away from fire or open flame.
- I. At no time shall the weight of the stored materials placed on a slab area exceed 50 pounds per square foot (psf). Between the time slab repairs are accomplished and the time the concrete has reached its specified 28 day strength, the weight of the stored material placed on a repaired slab shall not exceed 25 psf.

1.10 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 – Materials and Equipment.
- B. Do not install materials when temperature is below 40 degrees F or above 90 degrees F without written permission from the Manufacturer and the Engineer.
- C. Maintain this temperature range, 24 hours before, during and 72 hours after application.
- D. Restrict traffic from area where materials are being installed or are curing.
- E. Heavy duty vehicular traffic coating shall not be applied if weather is too cold, raining, snowing or if any other conditions exist that will not permit proper application or curing of coating. Follow Manufacturer's written directions. Maintain humidity at recommended level during application and curing. Provide adequate ventilation for application and curing. Coating Contractor shall take adequate measures to prevent fumes from entering Owner occupied areas. Protection required for proper installation and curing shall be the responsibility of the Coating Contractor and shall be reflected in the bid.

1.11 WARRANTY

- A. Section 01700 – Cleaning and Project Closeout.
- B. Materials Manufacturer and Installation Contractor shall be jointly and severally responsible and shall submit an affidavit signed by both parties warranting the installation system for a period of five (5) years from date of final completion.
- C. Warranty shall cover loss of waterproofing and excessive wear and may exclude fire, structural failure, acts of God, or willful damage other than intended usage.
- D. Tears, leaks, and damaged or worn surfaces under warranty shall be repaired or replaced at no cost to the Owner within 1 month of notification by Owner.

PART 2 – PRODUCTS

2.1 TRAFFIC MEMBRANE

A. The following traffic bearing membrane coating systems manufacturers are approved:

1. Sikalastic 720/745 Traffic System as manufactured by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071
2. Conipur II Deck Coating System (76/265-Z/295UV) as manufactured by BASF Building System, 889 Valley Park Drive, Shakopee, MN 55379
3. Auto-Gard FC System (FC7500/FC7690/FC7510/FC7961/FC7540/FC7962) as manufactured by Neogard a Division of Jones-Blair, 2728 Empire Central, Dallas, TX 75235
4. Or approved equal

2.2 COMPONENTS

A. Membrane: Fluid applied polyurethane waterproof compound, conforming to the following:

<u>Property</u>	<u>ASTM Test</u>	<u>Result</u>
Tensile Strength	D412	1500 psi minimum
Elongation	D412	500% minimum
Adhesion	D4541	400 psi minimum
Crack Bridging	C957	System Passes

B. Topping: Two component fast curing polyurethane topcoat:

<u>Property</u>	<u>ASTM Test</u>	<u>Result</u>
Tensile Strength	D412	2200 psi minimum
Hardness	D2240	84 minimum
Elongation	D412	80% minimum
Abrasion Resistance	D4060	125mg loss/1000 rev

C. The color of the wear coat and final top coat shall be light gray.

2.3 ACCESSORIES

- A. Surface Primer: Compatible with existing and proposed heavy duty vehicular traffic coating; as recommended by coating Manufacturer.
- B. Joint and Crack Sealant: As specified in Section 07 92 00, acceptable to Manufacturer.
- C. Detail Coat: Base coat supplied by Manufacturer applied 20-32 mils wet film thickness.
- D. Aggregate: uniformly graded, with mesh gradation as recommended by Manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 31 13 – Project Coordination.
- B. Verify substrate surfaces are free of frozen matter, dampness, loose particles, cracks, pits, shots, projections, penetrations, or foreign matter detrimental to adhesion or application of waterproofing system.
- C. Verify that substrate surfaces are smooth, free of honeycomb or pitting, and not detrimental to full contact bond of waterproofing materials.
- D. Do not begin work until concrete substrate has cured a minimum of 14 days and measured moisture content is not greater than 16 percent.
- E. Commencement of coating installation implies acceptance of slab surface as suitable for application of coating system.
- F. It is the responsibility of the Contractor to make certain that the selected product be compatible with the existing membrane.

3.2 PROTECTION

- A. Protect adjacent surfaces and materials with covering, masking, drop clothes, etc. as required during surface preparation and coating application. Upon completion, remove protection and clean. Surfaces soiled or damaged by surface preparation or special coating shall be cleaned or replaced at no cost to Owner.
- B. Seal all floor drains completely prior to heavy duty vehicular traffic coating installation. Drains clogged by new coating materials will be cleaned out at the Contractor's expense. Remove seals after coating installation. Trim around drains for proper fit of drain gratings.

3.3 SURFACE PREPARATION

- A. Areas shall be cleaned by mechanical methods (heavy shot blast) to remove traffic lines, oil, grease, dirt, paint, etc. and shall be prepared according to Manufacturer's written directions. Prior

to the heavy shot blast, the Contractor shall power wash all areas where oil or other contaminants are present such as in parking stalls and driving lanes. Contractor shall use a strong non-sudsing detergent and water pressure between 2100 to 2500psi. Submit materials to be used and method for cleaning for review prior to preparation. The prepared surface shall meet at a minimum the surface profile equal to CSP 3-4 in accordance with ICRI Guidelines 310.2.

- B. Sawcut all control and construction joints and all cracks 1/16-inch in width or greater in areas where needed. Apply primer to sides and bond breaker to bottom of sawcut. Fill with sealant approved by coating Manufacturer.
- C. Provide a ½ inch bead of sealant at all locations where a horizontal surface abuts a vertical surface, in areas where needed.
- D. Repair concrete/coating substrate with filler to produce level surface conducive to bond, in areas where needed.

3.4 INSTALLATION/APPLICATION HEAVY DUTY VEHICULAR TRAFFIC COATING SYSTEM

- A. Materials shall be installed by a Manufacturer's approved Contractor in strict accordance with the Manufacturer's written specifications. All procedures for installation shall comply with recommendations of Manufacturer of products being used.
- B. A Manufacturer's representative shall be on site during the installation of the heavy duty vehicular traffic coating system.
- C. Cold joints and visible hairline cracks (up to 1/16" in width) shall be cleaned, primed and treated with a detail coat a minimum distance of 2 inches on each side of the crack or joint, in areas where needed. There is no separate bid item for this work. It is to be included with the unit price for Heavy Duty Vehicular Traffic Coating.
- D. Large visible cracks (1/16" or greater in width) shall be routed and sealed with a sealant approved by the Manufacturer. Sealant shall be supplied to inside area of crack only. Sealed cracks shall be cleaned, primed, and treated with a detail coat a minimum distance of 2 inches on each side of the crack, in areas where needed. There is no separate bid item for this work. It is to be included with the unit price for Heavy Duty Vehicular Traffic Coating.
- E. Apply a 4 inch strip on the adjacent vertical surfaces of concrete curbs and walls in all areas to receive traffic coating.
- F. Apply primer to prepared substrate to dry film thickness of 6-8 mils, in areas where substrate is visible. A self priming coating base coat may be used in accordance with Manufacturer's printed instructions.
- G. In areas where the existing coating base coat is in sound condition, apply an intermediate coating to the wet film thickness recommended by the Manufacturer or having a minimum 12 mils wet film thickness, whichever is greater. Intermediate coating shall be squeegeed and backrolled to ensure uniform thickness.

- H. Following curing of the intermediate coating, remove the excess aggregate and apply the top coating. The top coating shall be in accordance with the Manufacturer recommendations or have a minimum of 20 mils wet film thickness using a flat squeegee, whichever is greater. Immediately backroll to evenly level top coat.
- I. If a waterproof membrane is required in any area prior to the intermediate coat either because membrane has worn through to substrate or in areas where no membrane is present, apply waterproof membrane in strict accordance with the Manufacturer's latest instructions. Waterproof membrane layer shall have a minimum of 20 mils wet film thickness.
- J. Extra heavy duty system coating shall be non-skid, abrasion resistant, integral aggregate traffic topping capable of protecting waterproof membrane base coat.
- K. Verify mil thickness of all coats by use of wet-mil thickness gauge in presence of Project Inspector.
- L. Provide heavy duty vehicular traffic coating at base of columns, walls, and pipes to produce a 4-inch high base.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01 70 00 – Cleaning and Project Closeout.
- B. Do not permit traffic over unprotected surfaces.

3.6 CLEANING

- A. Damaged, spotted or smeared parts of building and equipment shall be repaired and cleaned by the Contractor.
- B. Work or material damaged beyond repair, in opinion of Engineer shall be replaced by the Contractor.
- C. Remove all masking protection, debris, containers, equipment, materials, etc. from site and from surfaces upon project completion as outlined in Division 01.

PART 4 – MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. The City will measure Heavy Duty Vehicular Traffic Coatings, by the square foot (SF) acceptably completed.

4.2 PAYMENT

- A. The City will pay for the measured quantity at the contract unit price under the following bid item:

ITEM

UNIT
SF

1. Heavy Duty Vehicular Traffic Coating

- B. Payment is full compensation for preparing the surface, coordinating and providing through an independent laboratory an adhesion pull off test, crack repair and detailing, and installation of the heavy duty vehicular traffic coating system on the traffic decks and vertical curb faces and walls in accordance with the Manufacturer's recommendations; and for all labor, tools, materials, equipment, and incidentals necessary to complete the work.

END SECTION 07 18 17

SECTION 07 18 18 – EPOXY VEHICULAR TRAFFIC COATINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Applicable requirements of General Conditions of Contract, Supplementary Conditions of Contract, and Division 1 apply to work specified in this Section.
- B. The work of this Section includes, but is not limited to, the furnishing of all labor, materials, tools, and equipment to perform the surface preparation, crack repair, and installation of a system consisting of a fluid applied urethane/epoxy and a chemical and abrasion resistant non-skid traffic topping incorporating selected aggregate.
- C. Areas to receive the epoxy vehicular traffic coating system are as follows:
 - 1. All areas of Helix Ramps 1 and 2 as shown on the plans at the 2nd and Plankinton Parking Structure that are not slab on grade.

1.2 RELATED SECTIONS

- A. Section 01 55 30 – Traffic Control & Construction Staging
- B. Section 03 01 01 – Concrete Surface Repair
- C. Section 03 01 02 – Deep Concrete Surface Repair
- D. Section 07 91 13 – Compression Seal
- E. Section 07 92 00 – Joint Sealant

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM International)
 - 1. ASTM C957 – Standard Specification for High-Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with Integral Wearing Surface.
 - 2. ASTM D822 – Standard Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Exposure Apparatus.
 - 3. ASTM D903 – Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.
 - 4. ASTM D1004 – Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting.
 - 5. ASTM D1044 – Standard Test Method for Resistance of Transparent Plastics to Surface Abrasion.
 - 6. ASTM D1360 – Standard Test Method for Fire Retardancy of Paints (Cabinet Method).
 - 7. ASTM D2240 – Standard Test Method for Rubber Property – Durometer Hardness.
 - 8. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 9. ASTM E96 – Standard Test Methods for Water Vapor Transmission of Materials.
- B. Underwriters Laboratories, Inc. (UL)

1. UL – Fire Resistance Directory.

1.4 SYSTEM DESCRIPTION

- A. Elastomeric urethane/epoxy coatings providing continuous, seamless waterproofing coating resistant to specified traffic wear exposures meeting and exceeding ASTM C957.
- B. Epoxy System: Multi-coat system consisting of primer, elastomeric, crack-bridging polyurethane detail and base coat, low-modulus epoxy coat, and finish top coat, applied to all areas of the helix ramps, as shown on the plans, that are not slab on grade.

1.5 SUBMITTALS

- A. Section 01 33 01 – Submittals/Permits.
- B. Submit two samples of each epoxy vehicular traffic coating system applied to ¼ x 4 x 6 inch plywood or similar rigid base illustrating individual layers, color, surface texture, and variations.
- C. Submit six copies of Manufacturer's product literature for all products furnished, Manufacturer's installation instructions, appropriate Material Safety Data Sheets (MSDS) and other safety requirements.
- D. Submit a current copy of the Applicator's License Certificate, issued by the Manufacturer. The certificate shall verify the applicator's qualifications to properly install the Manufacturer's system. The certificate shall commit the Manufacturer to the acceptance of the applicator under the joint and several warranty provisions required by this Section.
- E. Submit an unsigned sample of the warranty that will be used on the project.
- F. Submit a written statement from the Manufacturer describing shelf life for materials and products to be furnished and used on this project as further detailed in Subsection 1.10.

1.6 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 – Cleaning and Project Closeout.
- B. Operation and Maintenance Data: Upon completion of work required by this Section, submit written maintenance recommendations, identified with project name, location and date, type of epoxy coating system applied, and surface to which system was applied, including sketches where necessary. Include recommendations for periodic inspections, care and maintenance. Identify common causes of damage with instructions for temporary patching until permanent repair can be made.
- C. Warranty: Submit written warranty statement as specified in Section 1.11. Ensure that the forms have been completed in Owner's name and registered with Manufacturer.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years documented experience.
- B. Work specified herein shall be performed by and be the responsibility of the Installation Contractor authorized, approved, and qualified by the Manufacturer of materials used; having necessary equipment and facilities to fulfill requirements of this Section.
- C. The minimum acceptable experience of the Contractor, using methods and materials planned for use on this project, is three (3) installations totaling at least 200,000 square feet in area with similar climates and three years of installation experience. At least three (3) weeks prior to commencing work of this section, this Contractor shall submit a list of prior projects showing evidence of experience. Include for each installation referenced: facility name and location, date and square footage of installation, designation of system used, and the name and phone number of a representative of the Owner familiar with the installation and material performance.

1.8 TEST AREA

- A. Before start of general application, apply the epoxy vehicular traffic coating as specified in a representative test area. The area shall be approximately 100 square feet. The area to be covered by the coating shall include all site conditions such as corners, and projections through coating. Location of the test area shall be determined by the Engineer, and after approval, shall serve as an example for the remaining work.
- B. A competent Manufacturer's representative shall be onsite for instruction on application in the test area. Due to the 14% grade in the helix additional formwork or lifts may be required to meet proper thicknesses for each layer.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 – Materials and Equipment.
- B. Deliver material to project in sealed, original packages or containers bearing name and brand of Manufacturer and date manufactured.
- C. Upon delivery, supplies will be checked by the Engineer. Only materials brought to the area and approved may be used.
- D. Store materials in single place designated by Engineer.
- E. Every precaution shall be taken to avoid danger of fire. Store hazardous materials in accordance with local ordinances. Provide dry chemical or CO₂ fire extinguishers in areas. Allow no smoking or open containers of solvents. Store solvents in safety cans.

- F. Store materials at temperatures not exceeding those recommended by the Manufacturer.
- G. Manufacturer shall submit to the Engineer a written statement of materials; shelf life and proper storage conditions. Materials that have been improperly stored or that have an expired shelf life shall not be installed.
- H. Keep away from fire or open flame.
- I. At no time shall the weight of the stored materials placed on a slab area exceed 50 pounds per square foot (psf). Between the time slab repairs are accomplished and the time the concrete has reached its specified 28 day strength, the weight of the stored material placed on a repaired slab shall not exceed 25 psf.

1.10 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 – Materials and Equipment.
- B. Do not install materials when temperature is below 40 degrees F or above 90 degrees F without written permission from the Manufacturer and the Engineer.
- C. Maintain this temperature range, 24 hours before, during and 72 hours after application.
- D. Restrict traffic from area where materials are being installed or are curing.
- E. Epoxy vehicular traffic coating shall not be applied if weather is too cold, raining, snowing or if any other conditions exist that will not permit proper application or curing of coating. Follow Manufacturer's written directions. Maintain humidity at recommended level during application and curing. Provide adequate ventilation for application and curing. Coating Contractor shall take adequate measures to prevent fumes from entering Owner occupied areas. Protection required for proper installation and curing shall be the responsibility of the Coating Contractor and shall be reflected in the bid.

1.11 WARRANTY

- A. Section 01700 – Cleaning and Project Closeout.
- B. Materials Manufacturer and Installation Contractor shall be jointly and severally responsible and shall submit an affidavit signed by both parties warranting the installation system for a period of five (5) years from date of final completion.
- C. Warranty shall cover loss of waterproofing and excessive wear and may exclude fire, structural failure, acts of God, or willful damage other than intended usage.
- D. Tears, leaks, and damaged or worn surfaces under warranty shall be repaired or replaced at no cost to the Owner within 1 month of notification by Owner.

PART 2 – PRODUCTS

2.4 TRAFFIC MEMBRANE

- A. The following elastomeric urethane/epoxy vehicular traffic coating systems manufacturers are approved:
1. Sikalastic 22 Lo-Mod Traffic System as manufactured by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071
 2. Auto-Gard F as manufactured by NEOGARD a Division of Jones-Blair, 2728 Empire Central, Dallas, TX 75235
 3. Conipur E Deck Coating System (76/265-Z/295UV) as manufactured by BASF Building System, 889 Valley Park Drive, Shakopee, MN 55379
 4. Or approved equal

2.5 COMPONENTS

- A. Membrane: Fluid applied polyurethane waterproof compound, conforming to the following:

<u>Property</u>	<u>ASTM Test</u>	<u>Result</u>
Tensile Strength	D412	1500 psi minimum
Elongation	D412	500% minimum
Adhesion	D4541	400 psi minimum

- B. Wear Coat: Fluid applied low-modulus flexible epoxy, conforming to the following:

<u>Property</u>	<u>ASTM Test</u>	<u>Result</u>
Tensile Strength	D638	2,000 psi minimum
Hardness Shore D	D2240	62 minimum
Elongation	D638	25% minimum
Abrasion Resistance	D4060	25mg

- C. Topping: Fluid applied low-modulus flexible epoxy or polyurethane, as recommended by the manufacturer, conforming to the following:

<u>Property</u>	<u>ASTM Test</u>	<u>Result</u>
Tensile Strength	D412	2,500 psi minimum
Hardness	D2240	75 minimum

Elongation

D638

400% minimum

- D. The color of the final top coat shall be light gray.

2.6 ACCESSORIES

- A. Surface Primer: Compatible with epoxy vehicular traffic coating; as recommended by coating Manufacturer.
- B. Joint and Crack Sealant: As specified in Section 07 92 00, acceptable to Manufacturer.
- C. Detail Coat: Base coat supplied by Manufacturer applied 20-32 mils wet film thickness, as recommended by the manufacturer.
- D. Aggregate: Furnish aggregates that have a proven record of performance in applications of this type. Furnish aggregates that are non-polishing, clean, fractured or angular in shape; free from surface moisture, silt, clay, asphalt, or other organic materials; and meet the following properties and gradation requirements:

Aggregate Properties:

Property	Requirement	Test Method
Moisture Content	≤0.2%	ASTM C566
Hardness	≥7.0	Mohs Scale

Gradation:

Sieve Size	Percent Passing by Weight
No. 8 Sieve	95-100%
No. 10 Sieve	65-75%
No. 12 Sieve	25-45%
No. 14 Sieve	0-20%
No. 16 Sieve	0-5%
No. 20 Sieve	0%

PART 3 - EXECUTION

3.7 EXAMINATION

- A. Section 01 31 13 – Project Coordination.
- B. Verify substrate surfaces are free of frozen matter, dampness, loose particles, cracks, pits, projections, penetrations, or foreign matter detrimental to adhesion or application of waterproofing system.
- C. Verify that substrate surfaces are free of honeycomb or pitting, and not detrimental to full contact bond of waterproofing materials.

- D. Do not begin work until concrete substrate has cured a minimum of 14 days and measured moisture content is not greater than 16 percent, or as recommended by the Manufacturer.
- E. Commencement of coating installation implies acceptance of slab surface as suitable for application of coating system.

3.8 PROTECTION

- A. Protect adjacent surfaces and materials with covering, masking, drop clothes, etc. as required during surface preparation and coating application. Upon completion, remove protection and clean. Surfaces soiled or damaged by surface preparation or special coating shall be cleaned or replaced at no cost to Owner.
- B. Seal all floor drains completely prior to epoxy vehicular traffic coating installation. Drains clogged by new coating materials will be cleaned out at the Contractor's expense. Remove seals after coating installation. Trim around drains for proper fit of drain gratings. The Contractor shall note any slow moving drains prior to beginning work in the presence of the Inspector.
- C. Protect compression seal located at entrance to helix from each floor from loose aggregate and urethane/epoxy material.

3.9 SURFACE PREPARATION

- A. Areas shall be cleaned by mechanical methods (heavy shot blast) to remove oil, grease, dirt, paint, etc. and shall be prepared according to Manufacturer's written directions. Prior to the heavy shot blast, the Contractor shall power wash all areas where oil or other contaminants are present such as in parking stalls and driving lanes. Contractor shall use a strong non-sudsing detergent and water pressure between 2100 to 2500psi. Submit materials to be used and method for cleaning for review prior to preparation. The prepared surface shall meet at a minimum the surface profile equal to CSP 3-4 in accordance with ICRI Guidelines 310.2.
- B. Sawcut all control and construction joints and all cracks 1/16-inch in width or greater in areas where needed. Apply primer to sides and bond breaker to bottom of sawcut. Fill with sealant approved by coating Manufacturer.
- C. Provide a ½ inch bead of sealant at all locations where a horizontal surface abuts a vertical surface, in areas where needed.
- D. Repair concrete/coating substrate with filler to produce level surface conducive to bond, in areas where needed.
- E. Contractor must ensure that the applied epoxy vehicular traffic coating system is flush with the installed compression seal at the helix/ramp joint. This may be done through grinding of the concrete surface.

3.10 INSTALLATION/APPLICATION EPOXY VEHICULAR TRAFFIC COATING SYSTEM

- A. Materials shall be installed by a Manufacturer's approved Contractor in strict accordance with the Manufacturer's written specifications. All procedures for installation shall comply with recommendations of Manufacturer of products being used.
- B. A Manufacturer's representative must be on site at all times during the installation of the epoxy vehicular traffic coating system.
- C. Cold joints and visible hairline cracks (up to 1/16" in width) shall be cleaned, and primed. The helix ramps exhibit extensive cracking which the contractor should inspect prior to bidding. There is no separate bid item for crack repair, the cost of crack repair shall be including in the unit price of epoxy vehicular traffic coating.
- D. Large visible cracks (1/16" or greater in width) shall be routed and sealed with a sealant approved by the coating supplier. Sealant shall be supplied to inside area of crack only. Sealed cracks shall be cleaned, and primed. The helix ramps exhibit extensive cracking which the contractor should inspect prior to bidding. There is no separate bid item for crack repair, the cost of crack repair shall be included in the unit price of epoxy vehicular traffic coating.
- E. Apply an initial detail coat of 20-32 wet mils, as recommended by the Manufacturer on all surfaces due to the high density of hairline cracks including horizontal and vertical surface of the concrete curbs in areas shown on plans or as directed by Engineer.
- F. Apply primer to prepared substrate to dry film thickness of 6-8 mils. A self priming coating base coat may be used in accordance with Manufacturer's printed instructions.
- G. Once the detail coat has cured, the polyurethane base coat shall be applied at the minimum application rate as recommended by the manufacturer, or a minimum of 25 wet mils, whichever is greater. The base coat shall be squeegeed and backrolled to ensure uniform thickness.
- H. The epoxy wear coat shall be installed to the minimum thickness recommended by the Manufacturer or a minimum of 32 wet mils, whichever is greater. The epoxy wear coat shall be squeegeed and backrolled to ensure uniform thickness, and immediately broadcast the approved aggregate evenly, into the wet coating to rejection. Due to the 14% grade in the helix additional formwork or lifts may be required to meet proper thicknesses for each layer.
- I. Once the wear coat is dry, remove excess aggregate, and apply top coat to yield a thickness of 24 wet mils. Apply a UV tolerant top coat at the Ramp 7 and Ramp 8 helix entrance.
- J. Verify mil thickness of all coats by use of wet-mil thickness gauge in presence of Project Inspector.
- K. Provide urethane/epoxy vehicular traffic coating at base of columns, walls, curbs, and pipes to produce a 4-inch high base.

3.11 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01 70 00 – Cleaning and Project Closeout.
- B. Do not permit traffic over unprotected surfaces.

3.12 CLEANING

- A. Damaged, spotted or smeared parts of building and equipment shall be repaired and cleaned by the Contractor.
- B. Work or material damaged beyond repair, in opinion of Engineer shall be replaced by the Contractor.
- C. Remove all masking protection, debris, containers, equipment, materials, etc. from site and from surfaces upon project completion as outlined in Division 01.

PART 4 – MEASUREMENT AND PAYMENT

4.3 MEASUREMENT

- A. The City will measure Epoxy Vehicular Traffic Coatings, by the square foot (SF) acceptably completed.

4.4 PAYMENT

- A. The City will pay for the measured quantity at the contract unit price under the following bid item:

<u>ITEM</u>	<u>UNIT</u>
1. Epoxy Vehicular Traffic Coating	SF

- B. Payment is full compensation for preparing the surface, crack repair, and installation of the epoxy vehicular traffic coating system in accordance with the Manufacturer's recommendations; and for all labor, tools, materials, equipment, and incidentals necessary to complete the work.

END SECTION 07 18 18

07 91 13 – COMPRESSION SEAL

PART 1 - GENERAL

1.1 SCOPE

- A. The work shall consist of furnishing all materials, labor and equipment necessary for the surface preparation and the installation of the watertight compression seal in accordance with the details shown of the plans and these specifications. The designs for the deck condition utilize an extruded compression seal profile bonded in place with a strong, two-component, structural epoxy adhesive. The design is arranged to flex in response to joint movement and to seal against the intrusion of deck drainage.

1.2 REFERENCES

- A. ASTM D412
- B. ASTM D471
- C. ASTM D573
- D. ASTM D1149
- E. ASTM D2240

1.3 Related Sections:

- A. Section 03 01 01 – Concrete Surface Repair
- B. Section 03 01 02 – Deep Concrete Surface Repair
- C. Section 03 01 03 – Epoxy Injected Crack Repair
- D. Section 07 18 17 – Heavy Duty Vehicular Traffic Coating
- E. Section 07 18 18 – Epoxy Vehicular Traffic Coating

1.4 SUBMITTALS

- A. Comply with pertinent provisions of Section 01 31 01
- B. Contractor shall submit a removal procedure for the existing compression seal to the Engineer for approval prior to the start of work.
- C. Product Data
 - 1. Materials list of items proposed to be provided under this section.
 - 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
 - 3. Shop Drawings or catalog illustrations in sufficient detail to show installation and interface of the work of this section with the work of adjacent trades. Indicate dimensioning, membrane size, model number, general construction, specific medications, and installation procedures (specifically the mixing and application of the structural adhesive) plus the following specific requirements on shop drawings:

- a. Temperature/adjustment table, indicating joint width at various temperatures
 - b. Dimensions based on anticipated movement for the joint location, as supplied by the Engineer
4. Manufacturer's current recommended installation procedures which, when reviewed by the Engineer will become the basis for accepting or rejecting actual installation procedures used on the work.
 5. Expansion joint system Manufacturer's affidavit that expansion joint system is verified compatible with applicable waterproofing coating system.
 6. Standard Drawings – Submit typical expansion joint cross-section(s) indicating pertinent dimension, general construction, and product data information. Approved installers shall prepare and submit details of all special conditions to the Manufacturer for review and approval prior to installation.
 7. Written documentation of applicator's qualifications, including reference projects of similar scope and complexity, with current phone contacts of engineers and owners for verification.

1.5 QUALITY ASSURANCE

- A. The Manufacturer of the compression seal shall provide a technically qualified representative to train the installer of the proper techniques for installing the seal. Each installation will be registered and approved by the Manufacturer.
- B. For the purpose of designating type and quality for work of this section, drawings and specifications are based on products manufactured or furnished by the Manufacturer listed in Part 2 of the Section.
- C. Do not proceed with the work until surfaces to receive the compression seals have been inspected by the Engineer and approved by the Manufacturer. Correct any deficiencies in the surfaces to receive the seals, as recommended by the Manufacturer and Engineer.
- D. Do not proceed with the work when temperatures are below 45°F or expected to fall below 45°F. Do not proceed with the work when temperatures are above 90°F, unless approved in writing by the Manufacturer.
- E. Manufacturer will have a minimum of five (5) years of experience specializing in expansion joint systems for similar applications.
- F. Use adequate numbers of skilled workmen thoroughly trained and experience in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this section.
- G. Installer qualifications:

1. Installer shall have at least three years experience in installing materials of types specified and shall have successfully completed at least three projects of similar scope and complexity.
 2. Installer shall designate a single individual as project foreman who shall be on site at all times during construction.
 3. Execute work of this Section by skilled, trained applicators, conforming to installation methods and procedures in accordance with the Manufacturer's printed instructions. The applicator must be licensed by the Manufacturer or approved by the Manufacturer. In the latter case, the Manufacturer's technical representative must be present for the installation of three (3) joint lengths – equaling no less than 100 LF of joint.
 4. The approved installer shall be insured and also licensed, as required, by the local state agency within the project's jurisdiction.
- H. Convene a pre-installation job site meeting four weeks prior to commencing work of this section.
1. Secure attendance by Engineer, Contractor, installer, and authorized representative of the expansion joints system Manufacturer and interfacing trades.
 2. Examine Drawings and Specifications affecting work of this section, verify all conditions, review installation procedures, and coordinate scheduling with interfacing portions of the work.
- I. The Manufacturer shall provide the owner a preventive maintenance guideline for parking structure expansion control systems.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with pertinent provisions of Section 01 60 00.
- B. Deliver materials to job site in Manufacturer's unopened containers with all labels intact and legible at time of use. Store under shelter in a dry location with temperatures above 40 degrees until installed. Store off ground, protect from freezing, direct sun exposure in elevated temperatures and construction activities.
- C. Maintain the products in accordance with Manufacturer's recommendations with proper precaution to ensure fitness of material when installed.
- D. Store materials in accordance with Manufacturer's recommendations in areas protected from weather, moisture, open flame, and sparks. Adhesive must be stored at temperatures between 40°F and 90°F

1.7 WARRANTY

- A. The expansion system when installed by the Manufacturer's approved installer program shall be warranted for a period of five (5) years for normal traffic usage under specified movements and design conditions. Normal traffic is considered to include snow removal equipment following

proper guidelines as described by the National Parking Association Publication "Parking Garage Maintenance Manual." The warranty shall cover leaks, adhesion failure, and tears in the gland.

- B. The provided five (5) year warranty shall be a joint and several performance warranty. Intending that each party, approved installer, and Manufacturer, will jointly warrant and provide at no charge, all materials and labor needed to properly repair or replace defective or damaged product within the term of the provided warranty.
- C. In the event of either party's non-performance, the full burden and responsibility for any warranty repair shall fall upon the remaining party.
- D. Work that does not conform to the specified requirements will be corrected and/or replaced at no cost to the City as directed by the Manufacturer and Engineer.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Approved products for the two-part epoxy seal system:
 - 1. J-Series seal profiles and structural adhesive as manufactured by Erie Metal Specialties, Inc., 13311 Main Road, Akron, NY 14001
 - 2. Jeene Structural Sealing Joint System and adhesive as manufactured by Watson Bowman Acme Corp, 95 Pineview Drive, Amherst, NY 14228
 - 3. Or approved equal

2.2 COMPONENTS AND MATERIALS

- A. Provide watertight compression seal with the extruded profile made from neoprene. The material will have a minimum 2000 psi, tensile strength requirement and 250% elongation at break. The profile shall be structured to that its cross-section features multi-celled, web design that exerts a constant pressure on the joint wall interfaces.
- B. The adhesive shall be a high strength, two-part, modified, epoxy based material approved by the joint Manufacturer.
- C. Compression seal shall be continuous at all horizontal changes in direction such as the curb face. Provide seal with factory heat welded splices such as 90 degree corners, tees, and crosses. All factory fused connections shall incorporate bonding of the complete seal profile including all internal and external web configurations.

PART 3 – EXECUTION

3.1 INSPECTION

- A. Prior to installation of the expansion joint profile, the installer shall visit the site and notify the City in writing of any conditions, which might be detrimental to the installation or the performance of the expansion joint. Coordinate the installation with related work.

- B. The Contractor shall field verify all dimensions relative to the expansion joint, including but not limited to joint opening, and length of expansion joint.

3.2 PREPARATION OF THE SURFACES OF THE JOINT OPENING IN DECK

- A. All surfaces to receive the compression seal will be dry, clean, sound concrete free of loose, cracked, delaminated and spalled sections. Repair any section that does not meet these criteria. The surfaces to receive the compression seal shall be sandblasted to exposed aggregate to create greater surface area for the joint and to remove all laitance and other bond-inhibiting materials.

3.3 PREPARATION OF JOINT INTERFACES

- A. Form or saw cut the joint opening to the recommended width for the specified compression seal size. Assure that the interfaces, whether concrete or steel, run parallel to each other for the length of the run. The vertical sides of the joint opening should be plumb to the top surface of the concrete and spaced at a consistent width across the joint. Unsound concrete must be removed and repaired.
- B. Clean dirt, stones, and standing water from the joint opening. Use a stiff bristled brush and compressed air to remove all dust. Sandblast the vertical sides of the joint opening to remove laitance and contaminants and increase bond area for the adhesive.

3.4 INSTALLATION

- A. Immediately prior to installation, the interface shall be blown out again.
- B. Uncoil the seal and allow it to relax. Apply the condition to the sidewalls of the seal and use a wire-brush to abrade the surface of the seal that will receive the two-part epoxy adhesive. When the process is done properly, the shine of the surfaces will be removed. A roughened, dull tacky finish shall be obtained.
- C. Mix the adhesive to the Manufacturer's specifications. Apply the adhesive to the joint sidewalls, interfaces and into the ribs of the seal using a 2" margin trowel. The ribs must be completely filled with adhesive.
- D. Insert the seal in the gap to the proper depth. Check the ribs for proper adhesive coverage, fill any voids. If joint is too tight, draw a vacuum of the bottom two chambers to forms a "V" shape which will drive the seal into the proper depth. Release the vacuum on the seal, and remove any additional adhesive using organic solvents.
- E. Allow the adhesive to cure a minimum of twenty four hours before opening to traffic.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. The City shall measure Compression Seals by linear feet (LF) being installed.

4.2 PAYMENT

A. The City will pay for measured quantities at the contract unit price under the following bid item:

<u>ITEM</u>	<u>UNIT</u>
1. Compression Seal	LF

B. Payment is full compensation for removing the existing compression seals, incidental concrete repair adjacent to the joint, furnishing and installing compression seals, and for all labor, materials, equipment, and incidentals required.

END OF SECTION 07 91 13

SECTION 07 92 00 – JOINT SEALANT

PART 1 – GENERAL

1.1 SCOPE

- A. The work covered under this section consists of furnishing all labor, material equipment, supervision and incidentals required to install joint sealant, slab-on-grade cracks, crack joints, and control joints at the 2nd and Plankinton Parking Structure, as shown on the plans.

1.2 GENERAL

- A. The sealant Contractor shall have a minimum of three years of experience in performing work similar to that shown in the drawings and specifications.

1.3 SUBMITTALS

- A. A detailed statement describing the sealant systems to be installed shall be submitted for approval four (4) weeks prior to installation. Literature, details, samples, shop drawings, warranties, etc., shall be included in the submittal as requested.

1.4 DESIGN CONSULTATION

- A. The sealant system Manufacturer shall review and give written approval of joint layouts, methods of providing joints, concrete curing and finishing methods and related details prior to construction.
- B. A site inspection shall be made by authorized Manufacturer's representatives prior to commencing installation of the system for purposes of reviewing and approving related conditions affecting performance requirements of this specification.

1.5 WARRANTY

- A. The sealant system Manufacturer shall furnish a written single-source performance warranty that the sealant system will be free of defects related to workmanship or material deficiency for a five (5) year period from the date of substantial completion. The following problems shall be specifically covered under the warranty.
 - 1. Cohesive or adhesive failure of the seal.
 - 2. Weathering deficiencies resulting in failure of the seal.
 - 3. Abrasion or tear failure of the seal resulting from normal traffic use (snowplows, abrasive maintenance equipment, truck traffic and construction traffic are not normal traffic use and related problems are exempted from the warranty.)
 - 4. Water leakage through the seal.
- B. The system Manufacturer shall submit a detailed warranty statement consistent with the terms of this specification prior to construction for approval. The approved warranty shall be made part of the contractual agreement and shall represent the sole warranty statement for the project.

- C. Without additional cost to the City, repair any damage or imperfections which may develop during the guarantee period, and any damage to other work caused by the repair of such imperfections.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. All sealant used in the sealant joint system shall be a polyurethane type as follows:
 - 1. Tremco Dymeric 240FC as manufactured by Tremco Commercial Sealants and Waterproofing, 3735 Green Road, Beachwood, OH, 44122.
 - 2. Sika-Flex-2c NS (non-sag), as manufactured by Sika Corporation, 201 Polito Avenue, Lindhurst, NJ 07071.
 - 3. Sonneborn Sonolastic NP2 as manufactured by, BASF Corporation Building Systems, 889 Valley Park Drive, Shakopee, MN 55379
 - 4. Eucolastic II by Euclid Chemical, 19218 Redwood Road, Cleveland, OH 44110
 - 5. Or approved equal
- B. Primers, bond breakers, and miscellaneous materials required to install the sealant joint system shall be in accordance with Manufacturer's recommendations.
- C. The joint sealants shall be multi-component polyurethane sealants of the chemically curing type containing no asphalt, fillers or plasticizers. The sealant shall be used with a compatible primer prescribed by the Manufacturer. All sealants shall be produced by a single Manufacturer. The sealant materials shall have a minimum durometer hardness of 35 + 5 as described in the specifications.
- D. Bond breaker type shall be a non-absorptive material with adhesive on one side such that good adherence to the concrete in the bottom of the groove is attained. The material width shall be approximately the same as the nominal groove width.
- E. Control joint sealant shall satisfy the requirements of Federal Specifications TT-S-00227E, Type I, and Type II, self-leveling and non-sag sealants.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Prior to sealing, joints shall be thoroughly cleaned in accordance with the sealant system Manufacturer's recommendations.
- B. Work shall not proceed until unsatisfactory conditions have been corrected in a manner acceptable to the system Manufacturer.
- C. Joints and surfaces that are to be resealed shall have all old sealants removed. Interfaces of joints shall be clean, dry, and free of dust, and other foreign matter.

- D. Slab on grade cracks shall be routed.
- E. Clean the joint interfaces by grinding and a light sandblast.
- F. Remove chipped, spalled or loose concrete adjacent to the joint surfaces.
- G. Joint dimensions for sealant should be reviewed and installed in accordance with sealant Manufacturer's printed instructions. In no case should the sealant application be less than 1/4 inch deep.
- H. Do not caulk joints until they are in compliance with requirements of the approved Manufacturer of the materials, the details as shown on the drawings and the specific requirements of other sections of the specifications.
- I. Installation procedures shall be in accordance with the system Manufacturer's recommendations.

3.2 APPLICATION

- A. Install joint backing with a blunt instrument so as not to puncture the surface skin. Size of joint backing should be determined by taking the joint width and adding 25% to assure proper compression of backer rod.
- B. Prime the joint interfaces with primer.
- C. Apply sealant with a caulking gun, using proper nozzles.
- D. After joints have been completely filled, they shall be neatly tooled to eliminate air pockets or voids, and to provide a smooth, neat appearing finish in intimate contact with interfaces. After tooling, surface of sealant shall be free of ridges, wrinkles, sags, air pockets, and embedded impurities.
- E. Immediately clean adjacent materials that have been soiled; leave work in a neat, clean condition.

3.3 WORKMANSHIP

- A. Workmanship shall be of the highest quality in accordance with the best practice and strict compliance with the recommendations of the Manufacturer of the materials being used. The Contractor shall be prepared to show evidence of workmanship of jobs at least three years old.
- B. Protect surfaces from traffic until material is cured.

PART 4 – MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. The City will measure Joint Sealant for crack repairs by the linear foot (LF) acceptably completed. The City will measure Caulk at Railing Bases as each (EA) acceptably completed.

4.2 PAYMENT

A. The City will pay for measured quantities at the contract unit price under the following bid item:

<u>ITEM</u>	<u>UNIT</u>
1. Joint Sealant	LF
2. Caulk at Railing Bases	EA

B. Payment is full compensation for removing old sealant if necessary; routing, cleaning, and preparing the surface; installing backer rod as necessary; and incidental concrete repairs for installation of the joint sealant and Caulk at Railing Bases according to the Manufacturer's recommendations. And for all labor, tools, materials, equipment, and incidentals necessary to complete the work.

END OF SECTION 07 92 00

SECTION 09 92 00 – PAVEMENT MARKING

PART 1 – GENERAL

1.1 SCOPE

- A. Furnish all labor, materials, equipment and services to plan the following items of the types patterns, sizes and colors as shown on the plans:
 - 1. Clean and prepare existing stripes, handicap signs, hash marks, curb faces, and arrows that remain after shotblasting or traffic coating as required within the work area.
 - 2. Repaint all parking stripes, including areas which were not shotblasted, also including handicap signs, hash marks, curb faces, and arrows for the selected portions of the parking structure to receive pavement markings, as shown on the plans, to match existing striping, handicap signs, hash marks, curb faces, and arrows or as directed by Engineer.
 - 3. The work includes areas on Level 1, 1A, 2, 2A, 3, 3A, and the stairwells.
 - 4. Contractor to provide striping layout for approval by the Engineer of any existing areas which were removed by the shotblast or traffic coating prior to painting.

1.2 REFERENCES

- A. American Association of State Highway and Transportation Officials AASHTO M248 – Ready-Mixed White and Yellow Traffic Paints.

1.3 RELATED SECTIONS

- A. Section 07 18 17 – Heavy Duty Vehicular Traffic Coatings

1.4 SUBMITTALS

- A. Section 01 33 01 – Submittal Procedures: Manufacturer's technical information, application instructions and samples of materials being furnished.
- B. Submit certified report of test or analysis provided by Manufacturer indicating that actual results of test made by independent testing laboratory indicating that materials being supplied meet or exceed materials specified.
- C. Provide Hazardous Material Data Sheets for materials furnished under this Section.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to site in accordance with Section 01 60 01 – Materials and Equipment.
- B. Components shall be shipped to site in unopened containers, plainly marked with Manufacturer's

name and address, color of material (colored container lids permitted), date of manufacture, batch number and component.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Marking materials shall not exude fumes, toxic or injurious, to persons or property during application.
- B. Material not used within 1 year of date of manufacture indicated on container shall be rejected.
- C. Application surface shall be dry, free from frost, contaminants and debris that would prevent proper bonding.
- D. Material shall be capable of curing fully under following minimum constant surface temperatures; +40 degrees Fahrenheit for slow set; +25 degrees Fahrenheit for regular set; +20 degrees Fahrenheit for rapid set.

PART 2 – PRODUCTS

2.1 MARKING MATERIALS

- A. The following pavement marking system Manufacturers are approved:
 - 1. Corothane I, Aliphatic Finish Coat (B65 Series) as manufactured by Sherwin-Williams.
 - 2. Approved equal.
- B. Color shall be “Traffic Yellow” and shall visually match color chip No. 13538 of Federal Standard 595A.
- C. It is the responsibility of the pavement marking Contractor to coordinate with the coating Contractor and to select a pavement marking paint that will properly adhere to the traffic coating.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Contractor shall verify that surface upon which materials are to be applied is dry, at a proper temperature as recommended by the manufacturer, and free from frost, dust, dirt, glaze, oil, grease, debris, other materials, or contaminants which would prevent proper bonding.
- B. Contractor shall remove such materials prior to application.
- C. Do not paint or finish any surface which is wet or damp.
- D. Layout striping to match existing striping and as shown on plans. Report any discrepancies, interferences, or changes in the striping due to field conditions to Engineer prior to painting. Remove any striping not applied in strict accordance with the plans.

- E. Handicap symbols shall meet current ADA Standards.

3.2 INSTALLATION – PAINTED MARKINGS

- A. Pavement markings (lines, arrows, and symbols) shall be placed at locations and to dimensions to match existing and as shown on the plans.
- B. Apply paint in a single coat. At the direction of the Engineer, markings showing light spots may receive additional coats.
- C. Applied lines shall have a uniform cross section.
- D. Lines shall have true, sharp edges and ends.
- E. Paint shall be applied in accordance with Manufacturer's recommendations but not less than 417 sq. ft/gallons of 4-inch continuous line and to a minimum wet film thickness of 6 mils.
- F. Protect lines from traffic until sufficiently dry to prevent pickup.

3.3 TOLERANCES

- A. Lines shall have a uniform width with a tolerance of plus or minus $\frac{1}{4}$ inch for 4 and 6 inch lines and plus or minus $\frac{1}{2}$ inch for 8, 12, 18 and 24 inch lines.

3.4 CLEANING

- A. Damaged, spotted or smeared parts of the building and equipments shall be repaired and cleaned by the Contractor.
- B. Work or material damaged beyond repair, in opinion of Engineer shall be replaced by the Contractor.
- C. Remove all masking protection, debris, containers, equipment, materials, etc. from site and from surfaces upon project completion in accordance with Division 01.

PART 4 – MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. The City will measure Pavement Marking as a single lump sum (LS) unit acceptably completed.

4.2 PAYMENT

- A. The City will pay for measured quantities at the contract unit price for the following bid items:

09 92 00/4

ITEM

UNIT

1. Pavement Marking

LS

- B. Payment is full compensation for surface preparation; for furnishing and applying pavement marking materials, for protecting traffic and property; for field repairs, and for all labor, materials, equipment, and incidentals.

END SECTION 09 92 00