BID OF _____

2014

PROPOSAL, CONTRACT, BOND AND SPECIFICATIONS

FOR

2014 PARKING GARAGE MAINTENANCE

CONTRACT NO. 7283

IN

MADISON, DANE COUNTY, WISCONSIN

AWARDED BY THE COMMON COUNCIL
MADISON, WISCONSIN ON _____

CITY ENGINEERING DIVISION
1600 EMIL STREET
MADISON, WISCONSIN 53713

https://bidexpress.com/login

2014 PARKING GARAGE MAINTENANCE
CONTRACT NO. 7283

INDEX

This Proposal, and Agreement have
been prepared by:

CITY ENGINEERING DIVISION
CITY OF MADISON
MADISON, DANE COUNTY, WISCONSIN

David C. Dryer, P.E., City Traffic Engineer

RFP:

SECTION A: ADVERTISEMENT FOR BIDS AND INSTRUCTIONS TO BIDDERS

REQUEST FOR BID FOR PUBLIC WORKS CONSTRUCTION
CITY OF MADISON, WISCONSIN

A BEST VALUE CONTRACTING MUNICIPALITY

PROJECT NAME:	2014 PARKING GARAGE MAINTENANCE
CONTRACT NO.:	7283
SBE GOAL	5%
BID BOND	5%
PRE BID MEETING (1:00 P.M.)	4/4/2014
PREQUALIFICATION APPLICATION DUE (1:00 P.M)	4/11/2014
BID SUBMISSION (1:00 P.M.)	4/11/2014
BID OPEN (1:30 P.M.)	4/11/2014
PUBLISHED IN WSJ	3/21/2014, 3/28/2014 & 4/4/2014

PRE BID MEETING: Representatives of the Affirmative Action Department will be present to discuss the Small Business Enterprise requirements at 1600 Emil Street, Madison Wisconsin.

PREQUALIFICATION APPLICATION: Forms are available on our website, www.cityofmadison.com/business/pw/forms.cfm. If not currently prequalified in the categories listed in Section A, an amendment to your Prequalification will need to be submitted prior to the same due date. Postmark is not applicable.

BIDS TO BE SUBMITTED by hand to 1600 EMIL ST., MADISON, WI 53713 or online at www.bidexpress.com.

THE BID OPENING is at 1600 EMIL ST., MADISON, WI 53713.

STANDARD SPECIFICATIONS

The City of Madison's Standard Specifications for Public Works Construction - 2014 Edition, as supplemented and amended from time to time, forms a part of these contract documents as if attached hereto.

These standard specifications are available on the City of Madison Public Works website, www.cityofmadison.com/Business/PW/specs.cfm.

The Contractor shall review these Specifications prior to preparation of proposals for the work to be done under this contract, with specific attention to Article 102, "BIDDING REQUIREMENTS AND CONDITIONS" and Article 103, "AWARD AND EXECUTION OF THE CONTRACT." For the convenience of the bidder, below are highlights of three subsections of the specifications.

SECTION 102.1: PRE-QUALIFICATION OF BIDDERS

In accordance with Wisconsin State Statutes 66.0901 (2) and (3), all bidders must submit to the Board of Public Works proof of responsibility on forms furnished by the City. The City requires that all bidders be qualified on a biennial basis.

Bidders must present satisfactory evidence that they have been regularly engaged in the type of work specified herein and they are fully prepared with necessary capital, materials, machinery and supervisory personnel to conduct the work to be contracted for to the satisfaction of the City. All bidders must be pre-

qualified by the Board of Public Works for the type of construction on which they are bidding prior to the opening of the bid.

In accordance with Section 39.02(9)(a)l. of the General Ordinances, all bidders shall submit in writing to the Affirmative Action Division Manager of the City of Madison, a Certificate of Compliance or an Affirmative Action Plan at the same time or prior to the submission of the proof of responsibility forms.

The bidder shall be disqualified if the bidder fails to or refuses to, prior to opening of the bid, submit a Certificate of compliance, Affirmative Action Plan or Affirmative Action Data Update, as applicable, as defined by Section 39.02 of the General Ordinances (entitled Affirmative Action) and as required by Section 102.11 of the Standard Specifications.

SECTION 102.4 PROPOSAL

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

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

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

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

Each proposal shall be placed, together with the proposal guaranty, in a sealed envelope, so marked as to indicate name of project, the contract number or option to which it applies, and the name and address of the Contractor or submitted electronically through Bid Express (www.bidexpress.com). Proposals will be accepted at the location, the time and the date designated in the advertisement. Proposals received after the time and date designated will be returned to the bidder unopened.

The Bidder shall execute the Disclosure of Ownership form. REFER TO SECTION F.

SECTION 102.5: BID DEPOSIT (PROPOSAL GUARANTY)

All bids, sealed or electronic, must be accompanied with a Bid Bond equal to at least 5% of the bid or a Certificate of Annual/Biennial Bid Bond or certified check, payable to the City Treasurer. Bid deposit of the successful bidders shall be returned within forty-eight (48) hours following execution of the contract and bond as required.

PREVAILING WAGE RATES

Prevailing Wage Rates may be required and are attached in Section J of the contract. See Special Provisions to determine applicability.

Bidders for this Contract(s) must be Pre-Qualified for at least one of the following type(s) of construction denoted by an ☒

Building Demolition

101 | Asbestos Removal
120 ☐ House Mover
110 ☐ Building Demolition

Street, Utility and Site Construction

201 ☒ Asphalt Paving
205 | Blasting
210 | Boring/Pipe Jacking
215 ☒ Concrete Paving
220 ☒ Con. Sidewalk/Curb & Gutter/Misc. Flat Work
221 ☒ Concrete Bases and Other Concrete Work
222 ☒ Concrete Removal
225 | Dredging
230 | Fencing
235 | Fiber Optic Cable/Conduit Installation
240 | Grading and Earthwork
241 ☒ Horizontal Saw Cutting of Sidewalk
242 | Infrared Seamless Patching
245 | Landscaping, Maintenance
250 ☒ Landscaping, Site and Street
251 ☒ Parking Ramp Maintenance
252 | Pavement Marking
255 | Pavement Sealcoating and Crack Sealing
260 | Petroleum Above/Below Ground Storage Tank Removal/Install
265 | Retaining Walls, Precast Modular Units
270 | Retaining Walls, Reinforced Concrete
275 ☒ Sanitary, Storm Sewer and Water Main Construction
276 ☒ Sawcutting
280 | Sewer Lateral Drain Cleaning/Internal TV Insp.
285 | Sewer Lining
290 | Sewer Pipe Bursting
295 | Soil Borings
300 | Soil Nailing
305 ☒ Storm & Sanitary Sewer Laterals & Water Svc.
310 ☒ Street Construction
315 | Street Lighting
318 | Tennis Court Resurfacing
320 | Traffic Signals
325 | Traffic Signing & Marking
332 | Tree pruning/removal
333 | Tree, pesticide treatment of
335 | Trucking
340 | Utility Transmission Lines including Natural Gas, Electrical & Communications
399 | Other_____

Bridge Construction

501 ☐ Bridge Construction and/or Repair

Building Construction

401 ☐ Floor Covering (including carpet, ceramic tile installation, rubber, VCT
402 ☐ Building Automation Systems
403 ☒ Concrete
404 ☐ Doors and Windows
405 ☐ Electrical - Power, Lighting & Communications
410 ☐ Elevator - Lifts
412 ☐ Fire Suppression
413 ☐ Furnishings - Furniture and Window Treatments
415 ☐ General Building Construction, Equal or Less than $250,000
420 ☐ General Building Construction, $250,000 to $1,500,000
425 ☐ General Building Construction, Over $1,500,000
428 ☐ Glass and/or Glazing
429 ☐ Hazardous Material Removal
430 ☐ Heating, Ventilating and Air Conditioning (HVAC)
433 ☐ Insulation - Thermal
435 ☐ Masonry/Tuck pointing
437 ☒ Metals
440 ☐ Painting and Wallcovering
445 ☒ Plumbing
450 ☐ Pump Repair
455 ☒ Pump Systems
460 ☒ Roofing and Moisture Protection
464 ☐ Tower Crane Operator
461 ☐ Solar Photovoltaic/Hot Water Systems
465 ☐ Soil/Groundwater Remediation
466 ☐ Warning Sirens
470 ☐ Water Supply Elevated Tanks
475 ☐ Water Supply Wells
480 ☐ Wood, Plastics & Composites - Structural & Architectural
499 ☐ Other_____

State of Wisconsin Certifications

1 ☐ Class 5 Blaster - Blasting Operations and Activities 2500 feet and closer to inhabited buildings for quarries, open pits and road cuts.
2 ☐ Class 6 Blaster - Blasting Operations and Activities 2500 feet and closer to inhabited buildings for trenches, site excavations, basements, underwater demolition, underground excavations, or structures 15 feet or less in height.
3 ☐ Class 7 Blaster - Blasting Operations and Activities for structures greater than 15 ' in height, bridges, towers, and any of the objects or purposes listed as “Class 5 Blaster or Class 6 Blaster”.
4 ☐ Petroleum Above/Below Ground Storage Tank Removal and Installation (Attach copies of State Certifications.)
5 ☐ Hazardous Material Removal (Contractor to be certified for asbestos and lead abatement per the Wisconsin Department of Health Services, Asbestos and Lead Section (A&LS).) See the following link for application: www.dhs.wisconsin.gov/Asbestos/Cert. State of Wisconsin Performance of Asbestos Abatement Certificate must be attached.
6 ☐ Certification number as a Certified Arborist or Certified Tree Worker as administered by the International Society of Arboriculture
7 ☐ Pesticide application (Certification for Commercial Applicator For Hire with the certification in the category of turf and landscape (3.0) and possess a current license issued by the DATCP)
8 ☒ State of Wisconsin Master Plumbers License.

SECTION B: PROPOSAL

Please refer to the Bid Express Website at https://bidexpress.com look up contract number and go to Section B: Proposal Page

You can access all City of Madison bid solicitations for FREE at www.bidexpress.com

Click on the “Register for Free” button and follow the instructions to register your company and yourself. You will be asked for a payment subscription preference, since you may wish to bid online someday. Simply choose the method to pay on a ‘per bid’ basis. This requires no payment until / unless you actually bid online. You can also choose the monthly subscription plan at this time. You will, however, be asked to provide payment information. Remember, you can change your preference at anytime. You will then be able to complete your free registration and have full access to the site. Your free access does not require completion of the ‘Digital ID’ process, so you will have instant access for viewing and downloading. To be prepared in case you ever do wish to bid online, you may wish to establish your digital ID also, since you cannot bid without a Digital ID.

If you have any problems with the free registration process, you can call the bidexpress help team, toll free at 1-888-352-2439 (option 1, option1).

Estimated Quantities Spreadsheet
City of Madison 2014 Parking Ramp Maintenance

13-5576/2014 Restoration Specifications

Item	Type of Work	CSN	SSCo	SSCL	GE	Total	Unit
1	Topside slab repair at unbonded overlay	0	400	0	1,230	1,630	Sq. Ft.
2	Topside slab repair below one layer of reinforcing steel	0	400	0	1,530	1,930	Sq. Ft.
3	Topside slab repair below two layers of reinforcing steel	0	600	0	3,070	3,670	Sq. Ft.
4	Full depth slab replacement	0	0	0	310	310	Sq. Ft.
5	Concrete removal and replacement at bottom of slab and beams	0	30	0	200	230	Sq. Ft.
6	Concrete replacement at previously removed concrete at underside of slab	0	0	0	785	785	Sq. Ft.
7	Patch removal areas using quickset concrete	0	20	0	400	420	Sq. Ft.
8	Concrete repair at vertical surfaces	0	20	30	60	110	Sq. Ft.
9	Install supplemental reinforcing steel	0	0	0	300	300	Lbs
10	Replace sealant at horizontal and vertical surfaces	300	500	400	0	1,200	Lin. Ft.
11	Rout and seal cracks	100	500	100	0	700	Lin. Ft.
12	Full system membrane placement	500	10500	1,300	0	12,300	Sq. Ft.
13	Membrane wear coat and top coat placement	28,500	0	13,000	0	41,500	Sq. Ft.
14	Fabricate and install vehicle barrier-level 2,3,4 at SSCL ramp	0	0	555	0	555	Lin. Ft.
15	Storm Sewer Modifications at SSCo	0	1	0	0	1	Lump Sum

PROPOSAL
2014 PARKING RAMP MAINTENANCE

CONTRACT # 7283

_____

Name of Bidder

Item No.	Type of Work	Est Qty	Unit	Unit Price	Total Bid
1	Topside slab repair at unbonded overlay	1,630	SF		$ -
2	Topside slab repair below one layer of reinforcing steel	1,930	SF		$ -
3	Topside slab repair below two layers of reinforcing steel	3,670	SF		$ -
4	Full depth slab replacement	310	SF		$ -
5	Concrete removal and replacement at bottom of slab and beams	230	SF		$ -
6	Concrete replacement at previously removed concrete at underside of slab	785	SF		$ -
7	Patch removal area using quickset concrete	420	SF		$ -
8	Concrete repair at vertical surfaces	110	SF		$ -
9	Install supplemental reinforcing steel	300	Lbs		$ -
10	Replace sealant at horizontal and vertical surfaces	1,200	LF		$ -
11	Rout and seal cracks	700	LF		$ -
12	Full System Membrane placement	12,300	SF		$ -
13	Membrane wear coat and top coat placement	41,500	SF		$ -
14	Fabricate and install vehicle barrier-level 2,3,4 at SSCL ramp	555	LF		$ -
15	Storm Sewer Modifications	1	LS		$ -
	Grand Total				$ -

SECTION C: SMALL BUSINESS ENTERPRISE

Instructions to Bidders
City of Madison
SBE Program Information

2 Small Business Enterprise (SBE) Program Information

2.1 Policy and Goal

The City of Madison reaffirms its policy of nondiscrimination in the conduct of City business by maintaining a procurement process which remains open to all who have the potential and ability to sell goods and services to the City. It is the policy of the City of Madison to allow Small Business Enterprises (SBE) maximum feasible opportunity to participate in City of Madison contracting. The bidder acknowledges that its bid has been submitted in accordance with the SBE program and is for the public's protection and welfare.

Please refer to the "ADVERTISEMENT FOR BIDS" for the goal for the utilization of SBEs on this project. SBEs may participate as subcontractors, vendors and/or suppliers, which provide a commercially useful function. The dollar value for SBE suppliers or 'materials only' vendors shall be discounted to 60% for purposes of meeting SBE goals.

A bidder which achieves or exceeds the SBE goal will be in compliance with the SBE requirements of this project. In the event that the bidder is unable to achieve the SBE goal, the bidder must demonstrate that a good faith effort to do so was made. Failure to either achieve the goal or demonstrate a good faith effort to do so will be grounds for the bidder being deemed a non-responsible contractor ineligible for award of this contract.

A bidder may count towards its attainment of the SBE goal only those expenditures to SBEs that perform a commercially useful function. For purposes of evaluating a bidder's responsiveness to the attainment of the SBE goal, the contract participation by an SBE is based on the percentage of the total base bid proposed by the Contractor. The total base bid price is inclusive of all addenda.

Work performed by an SBE firm in a particular transaction can be counted toward the goal only if it involves a commercially useful function. That is, in light of industry practices and other relevant considerations, does the SBE firm have a necessary and useful role in the transaction, of a kind for which there is a market outside the context of the SBE Program, or is the firm's role a superfluous step added in an attempt to obtain credit towards goals? If, in the judgment of the Affirmative Action Division, the SBE firm will not perform a commercially useful function in the transaction, no credit towards goals will be awarded.

The question of whether a firm is performing a commercially useful function is completely separate from the question of whether the firm is an eligible SBE. A firm is eligible if it meets the definitional criteria and ownership and control requirements, as set forth in the City of Madison's SBE Program.

If the City of Madison determines that the SBE firm is performing a commercially useful function, then the City of Madison must then decide what that function is. If the commercially useful function is that of an SBE vendor / supplier that regularly transacts business with the respective product, then the City of Madison will count 60% of the value of the product supplied toward SBE goals.

To be counted, the SBE vendor / supplier must be engaged in selling the product in question to the public. This is important in distinguishing an SBE vendor / supplier, which has a regular trade with a variety of customers, from a firm which performs supplier-like functions on an ad hoc basis or for only one or two contractors with whom it has a special relationship.

A supplier of bulk goods may qualify as an eligible SBE vendor / supplier if it either maintains an inventory or owns or operates distribution equipment. With respect to the distribution equipment; e.g., a fleet of trucks, the term "operates" is intended to cover a situation in which the supplier leases the equipment on a regular basis for its entire business. It is not intended to cover a situation in which the firm simply provides drivers for trucks owned or leased by another party; e.g., a prime contractor, or leases such a party's trucks on an ad hoc basis for a specific job.

If the commercially useful function being performed is not that of a qualified SBE vendor / supplier, but rather that of delivery of products, obtaining bonding or insurance, procurement of personnel, acting as a broker or manufacturer's representative in the procurement of supplies, facilities, or materials, etc., only the fees or commissions will apply towards the goal.

For example, a business that simply transfers title of a product from manufacturer to ultimate purchaser; e. g., a sales representative who re-invoices a steel product from the steel company to the Contractor, or a firm that puts a product into a container for delivery would not be considered a qualified SBE vendor / supplier. The Contractor would not receive credit based on a percentage of the cost of the product for working with such firms.

Concerning the use of services that help the Contractor obtain needed supplies, personnel, materials or equipment to perform a contract: only the fee received by the service provider will be counted toward the goal. For example, use of a SBE sales representative or distributor for a steel company, if performing a commercially useful function at all, would entitle the Contractor receiving the steel to count only the fee paid to the representative or distributor toward the goal. This provision would also govern fees for professional and other services obtained expressly and solely to perform work relating to a specific contract.

Concerning transportation or delivery services: if an SBE trucking company picks up a product from a manufacturer or a qualified vendor / supplier and delivers the product to the Contractor, the commercially useful function it is performing is not that of a supplier, but simply that of a transporter of goods. Unless the trucking company is itself the manufacturer or a qualified vendor / supplier in the product, credit cannot be given based on a percentage of the cost of the product. Rather, credit would be allowed for the cost of the transportation service.

The City is aware that the rule's language does not explicitly mention every kind of business that may contribute work on this project. In administering these programs, the City would, on a case-by-case basis, determine the appropriate counting formula to apply in a particular situation.

2.2 Contract Compliance

Questions concerning the SBE Program shall be directed to the Contract Compliance Officer of the City of Madison Department of Civil Rights, Affirmative Action Division, 210 Martin Luther King, Jr. Blvd., Room 523, Madison, WI 53703; telephone (608) 266-4910.

2.3 Certification of SBE by City of Madison

The Affirmative Action Division maintains a directory of SBEs which are currently certified as such by the City of Madison. Contact the Contract Compliance Officer as indicated in Section 2.2 to receive a copy of the SBE Directory or you may access the SBE Directory online at www.cityofmadison.com/dcr/aaTBDir.cfm.

All contractors, subcontractors, vendors and suppliers seeking SBE status must complete and submit the **Targeted Business Certification Application** to the City of Madison Affirmative Action Division by the time and date established for receipt of bids. A copy of the Targeted Business Certification Application is available by contacting the Contract Compliance Officer at the address and telephone indicated in Section 2.2 or you may access the Targeted Business Certification Application online at www.cityofmadison.com/dcr/aaTBDir.cfm. Submittal of the Targeted Business Certification Application by the time specified does not guarantee that the applicant will be certified as a SBE eligible to be utilized towards meeting the SBE goal for this project.

2.4 Small Business Enterprise Compliance Report

2.4.1 Good Faith Efforts

Bidders shall take all necessary affirmative steps to assure that SBEs are utilized when possible and that the established SBE goal for this project is achieved. A contractor who self performs a portion of the work, and is pre-qualified to perform that category of work, may subcontract that portion of the work, but shall not be required to do so. When a bidder is unable to achieve the established SBE goal, the bidder must demonstrate that a good faith effort to do so was made. Such a good faith effort should include the following:

2.4.1.1 Attendance at the pre-bid meeting.

2.4.1.2 Using the City of Madison's directory of certified SBEs to identify SBEs from which to solicit bids.

2.4.1.3 Assuring that SBEs are solicited whenever they are potential sources.

2.4.1.4 Referring prospective SBEs to the City of Madison Affirmative Action Division for certification.

2.4.1.5 Dividing total project requirements into smaller tasks and/or quantities, where economically feasible, to permit maximum feasible SBE participation.

2.4.1.6 Establishing delivery schedules, where requirements permit, which will encourage participation by SBEs.

2.4.1.7 Providing SBEs with specific information regarding the work to be performed.

2.4.1.8 Contacting SBEs in advance of the deadline to allow such businesses sufficient time to prepare a bid.

2.4.1.9 Utilizing the bid of a qualified and competent SBE when the bid of such a business is deemed reasonable (i.e. 5% above the lowest bidder), although not necessarily low.

2.4.1.10 Contacting SBEs which submit a bid, to inquire about the details of the bid and confirm that the scope of the work was interpreted as intended.

2.4.2 Reporting SBE Utilization and Good Faith Efforts

The Small Business Enterprise Compliance Report is to be submitted by the bidder with the bid: This report is due by the specified bid closing time and date. Bids submitted without a completed SBE Compliance Report as outlined below

shall be deemed non-responsible and the bidder ineligible for award of this contract.

2.4.2.1 If the Bidder meets or exceeds the goal established for SBE utilization, the Small Business Enterprise Compliance Report shall consist of the following:

2.4.2.1.1 **Cover Page,** Page C-6; and
2.4.2.1.2 **Summary Sheet,** C-7.

2.4.2.2 If the bidder does not meet the goal established for SBE utilization, the Small Business Enterprise Compliance Report shall consist of the following:

2.4.2.2.1 **Cover Page,** Page C-6;
2.4.2.2.2 **Summary Sheet,** C-7; and
2.4.2.2.3 **SBE Contact Report,** C-8 and C-9. (A separate Contact Report must be completed for each applicable SBE which is not utilized.)

2.5 Appeal Procedure

A bidder which does not achieve the established goal and is deemed non-responsible for failure to demonstrate a good faith effort to achieve such goal and subsequently denied eligibility for award of contract may, within 72 hours of receiving such notification, appeal that decision to a special appeals committee composed of three (3) members of the Affirmative Action Commission, three (3) members of the Board of Public Works and a seventh member appointed by the Mayor. All appeals must be made in writing to the City Engineer and received within 72 hours of City of Madison's notice. Postmark not applicable.

2.6 SBE Requirements After Award of the Contract

The successful bidder shall identify SBE subcontractors, suppliers and vendors on the subcontractor list in accordance with the specifications. The Contractor shall submit a detailed explanation of any variances between the listing of SBE subcontractors, vendors and/or suppliers on the subcontractor list and the Contractor's SBE Compliance Report for SBE participation.

No change in SBE subcontractors, vendors and/or suppliers from those SBEs indicated in the SBE Compliance Report will be allowed without prior approval from the Engineer and the Affirmative Action Division. The contractor shall submit in writing to the City of Madison Affirmative Action Division a request to change any SBE citing specific reasons which necessitate such a change. The Affirmative Action Division will use a general test of reasonableness in approving or rejecting the contractor's request for change. If the request is approved, the Contractor will make every effort to utilize another SBE if available.

The City will monitor the project to ensure that the actual percentage commitment to SBE firms is carried out.

2.7 SBE Definition and Eligibility Guidelines

A Small Business Enterprise is a business concern awarded certification by the City of Madison. For the purposes of this program a Small Business Enterprise is defined as:

A. An independent business operated under a single management. The business may not be a subsidiary of any other business and the stock or ownership may not be held by any individual or any business operating in the same or a similar field. In determining whether an entity qualifies as a SBE, the City shall consider all factors relevant to being an independent business including, but not limited to, the date the business was established, adequacy of its resources for the work in which it proposes to involve itself, the degree to which financial, equipment leasing and other relationships exist with other ineligible firms in the same or similar lines of work. SBE owner(s) shall enjoy the customary incidents of ownership and shall share in the risks and profits commensurate with their enjoyment interests, as demonstrated by an examination of the substance rather than form or arrangements that may be reflected in its ownership documents.

B. A business that has averaged no more than $4.0 million in annual gross receipts over the prior three year period and the principal owner(s) do not have a personal net worth in excess of $1.32 million.

Firm and/or individuals that submit fraudulent documents/testimony may be barred from doing business with the City and/or forfeit existing contracts.

SBE certification is valid for one (1) year unless revoked.

2014 PARKING GARAGE MAINTENANCE
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Small Business Enterprise Compliance Report

This information may be submitted electronically through Bid Express or submitted with bid in sealed envelope.

Cover Sheet

Prime Bidder Information

Company:_____

Address:_____

Telephone Number:_____ Fax Number:_____

Contact Person/Title:_____

Prime Bidder Certification

I,_____,_____of
Name Title

_____certify that the information
Company

contained in this SBE Compliance Report is true and correct to the best of my knowledge and belief.

_____ _____
Witness' Signature Bidder's Signature

_____
Date

2014 PARKING GARAGE MAINTENANCE
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Small Business Enterprise Compliance Report

Summary Sheet

SBE Subcontractors Who Are NOT Suppliers

Name(s) of SBEs Utilized	Type of Work	% of Total Bid Amount
		%
		%
		%
		%
		%
		%
		%
		%
		%
		%
		%
		%

Subtotal SBE who are NOT suppliers: _____ %

SBE Subcontractors Who Are Suppliers

Name(s) of SBEs Utilized	Type of Work	% of Total Bid Amount
		%
		%
		%
		%
		%
		%

Subtotal Contractors who are suppliers: _____ % x 0.6 = _____ % (discounted to 60%)

Total Percentage of SBE Utilization: _____ %.

2014 PARKING GARAGE MAINTENANCE
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Small Business Enterprise Compliance Report

SBE Contact Report

Submit separate copy of this form for each SBE which you are not able to utilize towards meeting the SBE goal for this project. Attach separate sheets if necessary.

SBE Information

Company: _____

Address: _____

Telephone Number: _____

Contact Person/Title: _____

1. Outline below all efforts to solicit a bid from the above SBE. Include date, means of contact, who from your company made this contact and the result.

   _____

   _____

   _____

2. Describe the information provided to the aforementioned SBE regarding the scope of work for which he/she was to provide a bid.

   _____

   _____

   _____

   Is this the same scope of work on which the subcontractor you intend to utilize based his/her bid?

   ☐ Yes ☐ No

3. Did this SBE submit a bid? ☐ Yes ☐ No

4. Is the General Contractor pre-qualified to self-perform this category of work?

   ☐ Yes ☐ No

5. If you responded “Yes” to Question 3, please check the items below which apply and provide the requested detail. If you responded “No” to Question 3, please skip ahead to item 6 below.

☐ The SBE listed above is unavailable for work on this project for the following reasons. Provide specific detail for this conclusion.

_____

_____

☐ The SBE listed above is unqualified for work on this project. Provide specific details for this conclusion.

_____

_____

☐ The SBE listed above provided a price that was unreasonable (i.e. more than 5% above the lowest bidder). Provide specific detail for this conclusion including the SBE’s price and the price of the subcontractor you intend to utilize.

_____

_____

☐ A contract with the SBE listed above may constitute a breach of the bidder’s collective bargaining agreements. Provide specific detail for this conclusion including, but not limited to, correspondence from the SBE indicating it will not sign a project labor agreement and/or correspondence from the applicable trade union indicating a project labor agreement will not be allowed at the time of project bidding.

_____

_____

☐ Other; please specify reason(s) other than listed above which made it impossible for you to utilize this SBE on this project.

_____

_____

6. Describe any other good faith efforts:

_____

_____

SECTION D: SPECIAL PROVISIONS

2014 PARKING GARAGE MAINTENANCE
CONTRACT NO. 7283

It is the intent of these Special Provisions to set forth the final contractual intent as to the matter involved and shall prevail over the Standard Specifications and plans whenever in conflict therewith. In order that comparisons between the Special Provisions can be readily made, the numbering system for the Special Provisions is equivalent to that of the Specifications.

Whenever in these Specifications the term "Standard Specifications" appears, it shall be taken to refer to the City of Madison Standard Specifications for Public Works Construction and Supplements thereto.

SECTION 102.10: PREVAILING WAGE

For this project, payment of prevailing wages (white sheet) shall be required unless the box indicating prevailing wages are not required is checked below.

☐ Prevailing wages shall not be required when this box is checked.

If prevailing wages (white sheets) are required, the wages and benefits paid on the contract shall not be less than those specified in the Prevailing Wage Determination included with these contract documents for the following types of work:

☒ Building and Heavy Construction
☒ Sewer, Water, and Tunnel Construction
☒ Local Street and Miscellaneous Paving Operations
☐ Residential and Agricultural Construction

SECTION 102.12: BEST VALUE CONTRACTING

This Contract shall be considered a Best Value Contract if the Contractor's bid is equal to or greater than $54,000 for a single trade contract; or equal to or greater than $264,500 for a multi-trade contract pursuant to MGO 33.07(7).

GENERAL REQUIREMENTS

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1.1 WORK COVERED BY CONTRACT DOCUMENTS

A. This work covers repairs at the Capitol Square North (CSN), State Street Capitol (SSCo), State Street Campus-Lake (SSCL), and Government East (GE) parking ramps in Madison, Wisconsin and Plumbing modifications for the Storm Water system at SSCo. Work includes concrete repair of slabs, top and underside, and columns, sealant replacement at slab cracks and joints, traffic coating placement, and metal work. Plumbing work includes modifications to the storm water piping within SSCo including placement of a new sand/oil interceptor, new storm water piping within the ramp and a connection to the storm sewer below Johnson Street.

B. At Contractor's Option, Hydro-demolition shall be considered for concrete removal, See Section 02 41 17 "Removal of Existing Concrete and Surface Preparation".

C. The repair work and plumbing modifications to be done are shown on the plans/details and described in these specifications.

D. Ramp construction
   1. Capitol Square North (CSN): post-tensioned cast-in-place concrete
   2. State Street Capitol (SSCo):
   a. mild steel reinforced cast-in-place concrete (levels L-3)
   b. post-tensioned cast-in-place concrete (levels 4-6)
   3. State Street Campus Lake (SSCL): mild steel reinforced cast-in-place concrete (beams are post-tensioned concrete)
   4. Government East (GE): mild reinforced cast-in-place concrete

1.2 CONTRACTOR'S DUTIES

A. Except as specifically noted, provide and pay for:
   1. Labor, materials, and equipment.
   2. Tools, construction equipment, and machinery.
   3. Water, heat and utilities required for construction not part of the existing ramp system.
   4. Other facilities and services necessary for proper execution and completion of work.

B. Pay legally required sales, consumer and use taxes.

Secure and pay for, as necessary for proper execution and completion of work and as applicable at time of receipt for bids:
   1. Permits
   2. Government fees
   3. Licenses

C. Give required notices.

D. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities, which bear on performance of work.

E. Contractor is responsible for complying with City Affirmative Action and Best Value Engineering requirements.

F. Promptly submit written notice to Engineer of observed variance of Contract Documents from legal requirements. It is not Contractor's responsibility to make certain that drawings and specifications comply with codes and regulations.

G. Appropriate modifications to Contract Documents will adjust necessary changes.

H. Assume responsibility for work known to be contrary to such requirements, without notice.

I. Enforce strict discipline and good order among employees. Do not employ on work, unfit persons or persons not skilled in assigned task.

1.3 CONTRACTS

A. Construct work under a unit price contract with unit prices included to account for changes in the quantity of work from that estimated. Review proposal form for work to be completed as Lump Sum.

1.4 TIME OF COMPLETION AND LIQUIDATED DAMAGES

A. Construction is anticipated to start on or before June 2, 2014 and to be completed by September 5, 2014.

B. The successful Contractor must agree to commence work on a date to be specified in a written Notice to Proceed and to fully complete by dates specified.

C. Liquidated damages for failure to complete construction by given date shall be as stated in the third paragraph of Section 109.9 of the City of Madison Standard Specifications for Public Works Construction – most current year.

D. Completion shall include all construction as outlined in the plans and specifications as well as removal of all materials, debris, barricades, and other construction related items from the site.

E. Final project closeout shall be completed within 30 days of the construction completion date for all work addressed above. Final project closeout shall include, but not be limited to, submittal of warranties, lien waivers, wage rate compliance affidavits, documents of completed work, and proper pay applications

F. Each day shall be defined as a twenty-four (24) hour period beginning at 12:01 AM.

1.5 WORK SEQUENCE

A. The Contractor will be allowed 70 parking stalls out of service at each ramp for the work. This will include the top side of the deck being restored and the level below. The parking structure will be open during the weekends. Additional parking spaces may be made available upon request and will be reviewed on a case by case basis. The Contractor shall make as many spaces available as possible other than those designated for restoration.

B. No parking or traffic will be allowed above areas being restored on the underside of the slab or below the areas being restored on the topside of the slab. This area will be included in the Contractor's work area. Contractor shall keep ramp attendant and cashier informed about the number of parking stalls out of service.

C. Contractor shall conduct their work between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday unless written request for special circumstances is acceptable to the Owner. Contractor shall plan work and make request in writing at least seven days prior to deviation from normal.

D. Concrete pours shall be scheduled between 9:00 a.m. and 2:30 p.m. to avoid conflicts with peak hour traffic. Contractor shall provide the Engineer and Owner with their schedule for concrete pours.

E. **Dust protection must be in place prior to beginning work; refer to Traffic/Dust/Debris section (1.15).**

F. Prior to the weekend, the Contractor shall clean the site adequately and secure equipment to prevent vandalism, personal injury, or theft.

G. The Contractor will be asked to reduce the number and type of parking spaces out of service for Special Events dates. The city will provide the Contractor with a schedule of dates. These dates will include but not be limited to Art Fair on the Square, IronMan, Taste of Madison, Mad City Marathon, Maxwell Street Days, and Freakfest (Halloween).

H. Prior to start of work, the Contractor shall survey the existing utilities within and around the structure. Existing utilities include electrical lighting and conduits, water piping including sprinklers, and mechanical duct work. Existing utilities that are broken shall be brought to the attention of the Engineer. The Contractor at the Contractor's expense shall remove and/or protect in place existing utilities. Existing utilities damaged by the Contractor shall be replaced by the Contractor at the Contractor's expense.

I. Prior to the start of work, the Contractor in the presence of the Engineer and Owner shall inspect the condition of the drains in areas affected by the Contractor's work to determine that they are clean and in proper working order. During and at the completion of the project, the drains shall be in similar condition and working order as observed in the initial inspection.

1.6 CONTRACTOR USE OF PUBLIC RIGHTS-OF-WAY

A. The General Contractors proposed use of the site may require a Street Occupancy Permit.

B. The General Contractor shall make application for a Street Occupancy Permit before proceeding with work in any public right-of-way. At the time of application for a Street Occupancy Certificate, the Contractor shall provide a drawing showing construction site fencing, construction entrances, proposed placement of equipment, and traffic routing.

C. A copy of the Street Occupancy Permit shall be at the job site during working hours.

D. Peak hour traffic flow in Madison occurs between the hours of 7:00 and 8:30 a.m. and between 3:30 and 5:30 p.m., Monday through Friday. During these hours work that will interfere with the flow of traffic shall not be permitted on or in the street governed by this permit.

E. All signing or barricading shall be done in conformance with the Federal "Uniform Manual on Traffic Control Devices".

F. All pavement markings removed, disturbed or damaged shall be restored or replaced, in kind, by the City at the expense of the city.

G. For removal or replacement of traffic and parking signs, contact the City of Madison Traffic Engineering Field Operations, 1120 Sayle Street 266-4767, 8:00 a.m. - 4:00 p.m., 24 hours in advance of when you need the sign removed. This service is provided free of charge. If you remove the signs, you will be billed for reinstallation and any damage to the sign installation.

H. NO MATERIALS shall be stored in the street or street right of way.

I. A fence may be required around the occupancy area and the construction site depending on the Contractor's intended use. The occupancy area shall be considered part of the construction site. No stopping, standing or parking signs shall be installed, by the contractor, on the fence surrounding the construction site.

J. A clean, safe access route shall be provided to the parking ramp at all locations desired by the City of Madison, Parking Utility.

K. Sidewalk Closed Use Other Side signs shall be installed at each end of the block when a portion of the block is closed to pedestrian traffic.

1.7 CONTRACTOR USE OF PREMISES

A. Confine operations at the site to areas permitted by law, ordinance, permits, and contract documents

B. Do not unreasonably encumber site with materials and equipment.

C. Do not load structure with weight that will endanger structure.

D. Assume full responsibility for protection and safekeeping of products stored on the premises. Construction equipment, shoring, tools, etc. shall not be stored in areas of the Owner's continued use.

E. Move any stored products which interfere with operations of Owner or other Contractor.

F. There is no storage for materials outside of Contractor's work area.

1.8 DEFINITIONS

A. CONTRACT DOCUMENTS - Contract documents for this project include but are not limited to:

1. Specifications and Drawings for "City of Madison 2014 Parking Ramp Maintenance".
2. General Conditions, which are included in the Standard Specifications for Public Works Construction, most current year, of the City of Madison, Department of Public Works. The Standard Specifications described above are available on request from the City Engineer, City Engineering Division, Room 115, City-County Building, Madison, Wisconsin 53709.
3. Architectural and structural drawings for the original construction. Drawings are available for review at the City Department of Transportation office, Room 100, Madison Municipal Building, Madison, Wisconsin 53701.

B. UNSOUND CONCRETE - Concrete which contains internal and/or surface cracking or loss of density, and which in the judgment of the Engineer is detrimental to the strength and serviceability of the structure. Unsound concrete is also associated with concrete surface spalling and crumbling, infiltration of moisture and salts, corrosion of reinforcement, rust staining, increased porosity, and reduced strength.

C. DELAMINATION - Planar cracking of concrete usually initiated by bursting stresses due to expansion of corrosion by-products of embedded reinforcing.

D. SOUND CONCRETE - Firm, dense, homogeneous concrete which contains in the judgment of the Engineer no significant detriments to its strength or serviceability.

E. REMOVAL - Removal of unsound and sound concrete, epoxy patches and asphalt using chipping hammers or other means.

F. SCARIFYING - The process of making numerous cuts into a concrete surface, which results in fracturing the cement paste and aggregate, exposing a new roughened surface free of contaminants.

G. SLAB - Flat, horizontal or ramped layers of reinforced concrete which spans and is supported by columns, beams or walls.

H. SUPPORT BARS - Reinforce bars used to support the main reinforcing bars and not shown on the original drawings as main reinforcing bars themselves.

I. DRAWINGS - Graphical description of the work to be performed, designated.

J. SPECIFICATIONS - Written description of the work to be performed, designated.

1.9 UNIT PRICES

A. Work is to be paid for on a Unit Price basis and bid on estimated quantities. The work items and basis of payment are listed in abbreviated form below. These work items are to be installed and completed as per specifications and as shown on the drawings.

B. Costs for mobilization, shoring, traffic control, shop drawings, permits, fees, and such items as required to provide a complete and usable project shall be included in the unit prices below.

Item	Type of Work	Unit Price
1	Topside slab repair at unbonded overlay including removal of overlay concrete to a variable depth of 1" to 4", sandblasting of the newly exposed concrete surface, and placing "ready-mix" concrete fill (pre-packaged concrete at Contractor's option). Refer to Specification Sections 02 41 17, 03 30 00, and 03 31 45. Payment based on area of concrete placed at top surface of slab.	$/Sq. Ft.
2	Topside slab repair below one layer of reinforcing steel including removal of concrete to an estimated variable depth of 3" to 6" from top of slab, sandblasting of the newly exposed concrete surface and reinforcing steel, and placing "ready-mix" concrete fill (pre-packaged concrete at Contractor's option). Refer to Specification Sections 02 41 17, 03 30 00, and 03 31 45. Payment based on area of concrete placed at top surface of slab.	$/Sq. Ft.
3	Topside slab repair below two layers of reinforcing steel including removal of concrete to an estimated variable depth of 4" to 7" from top of slab, sandblasting of the newly exposed concrete surface and reinforcing steel, and placing "ready-mix" concrete fill (pre-packaged concrete at Contractor's option). Refer to Specification Sections 02 41 17, 03 30 00, and 03 31 45. Payment based on area of concrete placed at top surface of slab.	$/Sq. Ft.
4	Full depth slab replacement including removal of concrete, sandblasting of the newly exposed concrete slab at the opening perimeter and reinforcing steel, and placing "ready-mix" concrete fill (pre-packaged concrete at Contractor's option). Also included is the support of all formwork for the full depth patches. Refer to Specification Sections 02 41 17, 03 30 00, and 03 31 45. Payment based on area of concrete placed at top surface of slab.	$/Sq. Ft.
5	Concrete repair at bottom of slab and beams including removal of concrete, sandblasting of the newly exposed concrete surface and reinforcing steel, and placing pre-packaged or shotcrete/gunnite concrete fill. Refer to Specification Sections 02 41 17, 03 31 45, 03 37 12 and 03 37 13. Payment based on exposed area of concrete placed.	$/Sq. Ft.

6	Concrete replacement at previously removed areas at bottom of slab and beams including, sandblasting of the exposed concrete surface and reinforcing steel, and placing pre-packaged or shotcrete/gunnite concrete fill. Refer to Specification Sections 02 41 17, 03 31 45, 03 37 12 and 03 37 13. Payment based on exposed area of concrete placed.	$/Sq. Ft.
7	Place pre-packaged concrete material at select areas of parking ramp. Cost is additional to the cost of items 1, 2, and 3, assumed as a 4" depth. It is intended to be used at critical areas selected by the Engineer. Note that it may also be used at Contractor's option in bid items 1, 2, 3, and 4 but will only be paid by bid item 7 as directed by the Engineer. These areas will require quick cure time for reduced down time for vehicular and foot traffic. Refer to Specification Section 03 31 45. Payment is based on area of concrete placed at the top surface.	$/Sq. Ft.
8	Concrete repair at vertical surfaces including removal of concrete, sandblasting of the newly exposed concrete surface and reinforcing steel, and placing pre-packaged concrete fill. Refer to Specification Sections 02 41 17 and 03 31 45. Payment based on exposed surface area of concrete placed.	$/Sq. Ft.
9	Install supplemental reinforcing steel including fabrication, supply, detailing, storing, and placing replacement and supplemental reinforcing steel. Refer to Specification Section 03 21 13. Payment based on nominal rebar weights per installed length.	$/Lbs
10	Replace sealant at horizontal and vertical surfaces including removal of existing sealant from cracks and joints, grinding crack and joint edges, installing backer rod or bond breaker tape, and installing new sealant. Joint width varies. Refer to Specification Section 07 92 00. Payment based on length of sealant installed.	$/Lin. Ft.
11	Rout and seal cracks including grinding crack and joint edges, installing backer rod or bond breaker tape, and installing sealant. Refer to Specification Section 07 92 00. Payment based on length of sealant installed.	$/Lin. Ft.
12	Full system membrane placement including surface preparation of existing membrane and exposed concrete surfaces at existing and new concrete patch areas. Work shall include surface preparation, primer, base coat, wear coat, and top coat. Refer to Specification Section 07 18 00. Payment based on area of membrane installed.	$/Sq. Ft.
13	Membrane wear coat and top coat placement including surface preparation of existing membrane system. Work includes placement of wear coat and top coat membrane over existing areas with exposed membrane (base coat) and areas with heavily worn or weathered membrane. Refer to Specification Section 07 18 00. Payment based on area of membrane installed.	$/Sq. Ft.
14	Fabricate and Install vehicular barrier at west end of SSCL ramp. Vehicle barrier to be placed on existing concrete parapet at three parking levels. Refer to Specification Section 05 50 00. Payment based on length of rail placed.	$/Lin. Ft
15	Modify existing storm sewer system at SSCo. This will include selective demolition and re-routing storm water piping, placement of new piping and a 4000 gallon sand/oil interceptor and connecting the system to the existing storm sewer system below Johnson Street.	$/Lump Sum

1.10 MEASUREMENT OF QUANTITIES

A. Work to be performed on a unit price basis shall be measured according to the quantities described in the above work items. Payment will be made for work actually performed, based on quantities recorded by the Contractor and approved by the Engineer. Unless stated otherwise, records described below shall consist of both plan view drawings and tables cross-referenced to the drawings with the required measured quantities. Unless otherwise stated, the Engineer will verify the accuracy of the record by visual examination of the work performed and measuring the quantities with a measuring tape, wheel, or other appropriate device.

B. The Contractor shall notify the Owner and the Engineer at once in writing of any unit price work that deviates materially from the prescribed basis for bidding and for which an adjustment in Unit Price is desired. The Contractor shall measure and quantify all such deviations, subject to the Engineer's verification, prior to any repair work which might make verification impossible. No adjustments in Unit Prices will be considered unless supporting field measurements are provided, and subject to the Owner's prior approval. Adjustments will only be considered if all repairs of a given type have been measured and all deviations, both plus and minus have been included in the determination of the average deviation from the Unit Price basis.

C. Removal of slab concrete
   1. The Contractor shall maintain a record of the location and quantity of concrete removed, identified by unit price item. This record shall be submitted to the Engineer on a weekly basis. The quantities shall be reported in the form of ¼" = 1'-0" scale maps along with tables cross-referenced to the drawings.

D. Placing replacement and supplemental reinforcing
   1. The Contractor shall maintain a record of the location and quantity of reinforcement placed. This record shall show the quantity and size placed. Replacement and supplemental reinforcement records shall be associated with the concrete removal maps. This record shall be submitted to the Engineer on a weekly basis.

E. Installation of slab crack and joint sealant
   1. The Contractor shall maintain a record of the location and quantity of cracks and joints sealed. Drawings in the form of 1/8” = 1’-0” scale maps along with tables cross-referenced to the drawings shall show length of crack and joint sealed and related work item.

1.11 PROJECT MEETINGS

A. Pre-Bid Meeting
   1. Refer to Section A: Advertisement for Bids and Instructions to Bidders

B. Pre-Construction Meeting
   1. Soon after award of Contract and prior to the start of construction, each Prime Contractor shall attend a pre-construction conference with representatives of the Owner and Engineer.
   2. The Contractor shall have at the meeting responsible representatives from subcontractors who are to perform the work.
   3. The Contractor shall submit the following information at the Pre-Construction Meeting:

a. Construction Schedule
b. List of Sub-Contractors
c. Procedures for demolition
d. Procedures for dust control
e. Procedures for noise control

4. The Construction Schedule submitted by the 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. A representative of the Owner may also be present to discuss work to be completed by others in conjunction with this project and the Owner' partial occupancy and use of the garage during construction.
5. Any other questions that the Contractor or subcontractors have about the work or its scheduling shall be raised at this meeting.
6. Requirements for contract administration and construction operations will be defined for participants.
7. Prepare in reproducible form approved by the Engineer and include:

a. Breakdown of work activities in categories approved by Engineer, segmented as necessary to allow close monitoring of progress of the work during construction.
b. Order of work necessary to meet Time for Completion.
c. Breakdown of the work of all Subcontractors scheduled in cooperation with the Contractor's work.
d. Signatures of all Contractors.
e. Space for the additional display of actual performance on the schedule.

8. After necessary revisions and approval by the Engineer, provide two prints of project construction schedule to the Engineer.
9. Time, date and place of the meeting will be determined by the Engineer.

C. Progress Meetings

1. Biweekly project meetings will be held at the project site by the Engineer's representative and Owner's representative for the purpose of coordinating and expediting the Work progress.
2. Attendance at project meetings by all Prime Contractors, or their authorized representative, is mandatory.
3. Date and time of the meetings will be determined at the pre-construction meeting.
4. Contractors shall give verbal reports of progress on the project, discuss the work schedule for the coming period and present all conflicts, discrepancies or other difficulties for resolution.
5. Upon request of the Engineer, update the schedule to reflect changes required by actual conditions and indicate actual work completed. Provide the Engineer with same number of copies as required for original submission.
6. Show changes occurring since previous submission of schedule such as:

a. Major changes in scope.
b. Activities modified since previous submission.
c. Revised projections of progress and completion.
d. Other identifiable changes.

7. Provide a narrative report as needed to define:

a. Problem areas, anticipated delays, and the impact on the schedule.
b. Corrective action recommended, and its effect.
c. The effect of changes in schedules of other Prime Contractors.

8. Where work is not performed according to the Construction Schedule, a short narrative should be written describing the cause of delay and intended action to remedy the delay.
9. When the work performed is not meeting the construction schedule, the Engineer may request that the contractor increase the labor and equipment being furnished in order to meet the schedule. Should the contractor choose not to follow the engineer's request he shall provide a written submittal explaining how the schedule is to be met without an increase in labor and equipment.

1.12 JOB SITE ADMINISTRATION

A. The Contractor shall have at the site of the work at all times, while work is in progress, a superintendent or foreman having authority both to receive orders from the Engineer and to act for the Contractor.

B. The Engineer will have a representative visit the site during the progress of the work.

C. The Engineer's inspections and project coordination shall take place between regular business hours of 7 a.m. to 5 p.m. The Contractor will take all necessary steps to allow the Engineer to carry out the Engineer's duties without interference by noise, dust, or other construction activities.

1.13 SUBMITTALS

A. General
   1. Refer to General Conditions for basic requirements for all submittals.
   2. Refer to technical specifications for all submittals required.

B. Submittal Requirements
   1. Project information shall be first sent to the Engineer.
   2. Schedule submittals at least 14 days before the time that reviewed and approved submittals will be needed.
   3. Accompany submittals with transmittal letter containing the date, project title and number, Contractor's name and address, the quantity of items submitted, notifications of any deviations from Contract Documents, the Section of Work and other pertinent data.

C. Schedules
   1. Refer to Project Meetings

D. Subcontractor and Materials List
   1. The Subcontractor and major suppliers list shall be submitted on or before the first pre-construction meeting.
   2. The Engineer will promptly review list and indicate in writing approval or disapproval of subcontractors and/or materials. Resubmit revised list, upon disapproval of any item, until such time as approval of all items has been obtained from the Engineer.
   3. Use of unspecified or unapproved materials and equipment will not be permitted.

E. Schedule of Values
   1. Before the first Application for Payment, the Contractor shall submit to the Engineer a schedule of values of the various portions of the Work, including quantities if required by the Engineer, aggregating the total Contract Sum, divided so as to facilitate payments to Subcontractors.
   2. Prepare a schedule of values in such form and supported by such substantiating data as the Engineer may require. Each item in the schedule of values shall include its proper share of overhead and profit. This schedule, when approved by the Engineer, shall be used only as a basis for the Contractor's Applications for Payment.

F. Material Safety Data Sheets
   1. Contractor shall submit Material Safety Data Sheets for all products (sealants, concrete, etc.) they intend to use on the project.

G. Test Reports and Data

1. Submit test reports and data where required by technical specifications. Results of testing, including concrete cylinder breaks, shall be submitted to the Contractor and the Engineer.

H. Application for Payment

1. For each progress payment (no more frequent than once a month) the Contractor shall submit to the Engineer an itemized Application for Payment supported by the following data: record scale maps with cross-referenced tables of removal and replacement areas approved by the Engineer. Work not complete at the time of the itemized Application for Payment submittal will not be included in that payment. Contractor shall use AIA Documents G702 and G703 Application and Certificate for Payment or similar.

I. Record Drawings

1. The Contractor shall provide and maintain in proper order, in good, clean condition, in field office at the project site, one complete set of prints of all drawings.
2. At time of final acceptance and prior to final payment present these corrected prints to the Owner through the Engineer. Note all data and changes on these record drawings in sufficient detail, clarify and provide information necessary for preparation of "as-built" drawings.

J. Guarantees, Warranties, and Certificates

1. Submit all guarantees, warranties and certificates to the Engineer prior to final payment.

1.14 TEMPORARY UTILITIES

A. The Contractor shall arrange for, obtain and pay for all temporary utilities necessary to complete the work except as stated otherwise in these specifications.

B. WATER: The Owner, during non-freezing conditions, will provide needed water for the Contractor's use. This shall consist of the existing water supply in the ramp. Water requirements beyond what is supplied in the garage shall be the responsibility of the Contractor and paid for by the Contractor. Water shall be used prudently. Connections are the responsibility of the Contractor.

1. The Contractor shall not permit water to run uncontrolled off of their work or be carried airborne off the site or onto vehicles and persons occupying part of the site. To prevent this, suitable enclosures shall be provided.
2. The Contractor shall meet the DNR waste water regulations for construction site runoff requirements.

C. ELECTRICAL AND LIGHTING: The Contractor shall provide all temporary electric power and connections necessary for the Contractor’s work. The Contractor can use the existing 110/220 volt service in the ramp. The Owner will provide the existing lighting. Supplementary lighting, if necessary, shall be provided by the Contractor.

D. DRAINS, SUMPS AND SEWERS: The Contractor shall not permit debris, or other deleterious contaminants to be washed down drains within the garage and be discharged into the City sewer system. The Contractor shall meet the DNR waste water regulations of 40 milligrams of solids per liter measured at the discharge from the sump pit. The Contractor shall provide filters, settling tanks or other methods necessary to meet these requirements.

E. TELEPHONE: The Contractor shall provide temporary telephone service to the job site. This service shall consist of at least a cellular phone for the Contractor’s purpose.

F. TOILETS: The Contractor shall provide and maintain suitable, weather tight, sanitary toilet facilities for all workers during construction period. When toilet facilities are no longer required, promptly remove from site, disinfect and clean or treat the area as required.

1. The Contractor shall keep all toilet facilities clean and supplied with toilet tissue at all times. Maintain facilities in accordance with requirements of applicable building codes.

G. PROJECT SIGN: No individual advertising signs, plaques or credits, temporary or permanent, will be permitted on the building or premises, except the name of each contractor on their office or material shed.

H. EXPLOSIVES: Use of explosives, for any purpose, is prohibited.

I. FIRST AID: The Contractor shall provide temporary first-aid facilities on the site.

J. FIRE PROTECTION: The Contractor shall provide temporary fire protection as required by federal, state, and local laws and ordinances.

1.15 TRAFFIC/DUST/DEBRIS

A. The Contractor shall provide personnel, signs, barricades, lights and warning devices to control the orderly flow of traffic, both inside and outside of the garage where needed, and prevent pedestrians and cars from entering areas of the Contractor's operations. The traffic devices shall meet the requirements of the U.S. Department of Transportation Manual on Uniform Traffic Control Devices.

B. The Owner will continue to use the building during the renovation. The Contractor must schedule and arrange the work so as to maintain access to undisturbed parking areas. Short interruptions in traffic flow may be permitted but must be scheduled and written approval given by the Engineer seven (7) days prior to the planned interruption. During these interruptions, the Contractor shall provide personnel and signage to direct traffic within the structure.

C. Traffic control signs may be necessary several bays removed from the actual work area to maintain an orderly flow of traffic. The Owner shall make the final determination as to the required limit of traffic control.

D. The Contractor shall move these signs, barricades, lights and warning devices as necessary as the location of the work within the garage changes and previously worked-in areas are occupied by the Owner.

E. Contractor will provide appropriate signage warning the public of the construction area and directing them to exits. They shall provide and maintain necessary walkway with appropriate protective railings and enclosures required to prevent bodily injury to the public and maintain normal public usage during course of construction.

F. The General Contractor shall provide temporary barriers around areas of overhead removal to prevent damage or injury from flying debris associated with this work. Barriers shall consist of plywood screen walls or reinforced polyethylene extending from the top of floor to the underside of the floor above and supported by steel post shores or Ellis post shores.

G. Where possible, hoses, electrical cords, etc. shall be located overhead. Whenever such items are located in traffic paths, plywood coverings with adequate signs shall be provided.

H. General Contractor shall provide and maintain necessary safe passage through the areas being restored to prevent bodily injury to the public and to maintain normal public usage during course of construction. Engineer's approval required for all proposed temporary exit ways or walkways.

I. The Contractor shall erect temporary enclosures around the area of work, including areas adjacent to stairwells, driving lanes, parapets, walkways, etc. The Contractor shall provide adequate protection to prevent damage or injury from flying debris associated with this work. Barriers shall consist of plywood screen walls or reinforced polyethylene extending from the top of floor to the underside of the floor above and supported by steel post shores or Ellis post shores.

J. Dust protection is required around work area and shall be fastened tight to the floor and ceiling above. Flexible duct work or similar shall be used in addition to fans to vent work areas to the outside. Exhaust air shall be filtered, and filters maintained to prevent escaping dust. Dust protection must be in place prior to any concrete removal.

K. The Contractor shall be responsible for maintaining any means of egress required by governing codes, for the continued use of the parking facility. Enclosures which limit the means of egress from the structure shall have provisions for emergency egress through the partitions.

L. Dust filters shall be erected to limit dust being carried from the site. Contractor shall use crack router with vacuum attachment to eliminate dust from this process. Water shall be used during concrete removal, sawing, etc. to hold down dust.

M. Removal areas need to be covered during times contractor is not present to prevent pedestrians from entering Contractor's area of work. Removal areas in public pathways shall be covered with steel plates.

N. The Contractor shall maintain access to undisturbed parking areas throughout the concrete restoration and membrane placement.

O. All Contractors shall comply with applicable OSHA regulations.

P. All plastic sheeting shall be new or like new with no holes or rips that will allow the escape of dust. Plastic sheeting shall be replaced when it becomes torn.

Q. All plastic sheeting shall conform to NFPA 701

1.16 SPECIAL CONTROLS

A. NOISE CONTROL: Contractor shall confine hours of work from 7:00am to 7:00pm Monday through Friday except holidays. Noise levels shall be held to a minimum at all times considering the nature of the work and are subject to City ordinance.

1. Contractor shall erect noise control around work areas for primary goal of minimizing construction work noise affecting the parking attendant's booth. Noise control shall consist of insulating blankets, batt insulation, or other similar means. Noise control shall be erected along edge of work area directly in line with attendant booths and shall return along the work area a distance sufficient in controlling the construction noise.
2. The Contractor shall erect sound barriers around all equipment including air compressors that will sit outside the ramp.

B. SPECIAL RESPONSIBILITIES: The Contractor shall be responsible for damages to vehicles in or near the garage, resulting from their operations. The Contractor shall settle claims within 30 days of receipt of claim.

C. POLLUTION CONTROL: All internal combustion engines used in the Contractor's work and operating in a fixed location while running shall have their exhaust piped to the outside of the building and directed away from this building or any adjacent structures so as to prevent accumulation of fumes or carbon stains on the surfaces of the structure.

1. Compressors may be located on the roof level of the ramp. Care shall be taken to prevent the exhaust from entering the attendant booth air intake ducts.
2. Place plywood or other suitable material below compressors to protect the substrate from grease, oil, and other debris.

1.17 PARKING

A. Parking of vehicles and equipment required for construction purposes shall be in the Contractor's designated work areas. No parking will be provided for employees of any Contractor on site. Any vehicle in the parking ramp not parked within the construction area, which are required for this project, will be charged for parking.

B. All Contractors and their employees shall cooperate with the General Contractor and others in the parking of vehicles to avoid interference with normal construction activities.

C. Do not obstruct existing service drives and parking areas outside the Contractor's work area with equipment, materials and/or vehicles. Keep accessible for Owner's use at all times.

1.18 SECURITY

A. The Contractor shall provide for the security of materials and equipment stored at the site. Material and equipment shall not be stored in areas which the Owner continues to use. The Contractor may store equipment and materials in areas in which the Contractor is working; otherwise they shall be removed from the site.

1.19 CLEANING

A. General
1. Each Contractor shall keep premises free of accumulation of surplus materials and debris resulting from their operations and the operations of Subcontractors.
   a. Do not throw debris from ramp.
   b. Remove all debris from premises.
   c. No burning of debris on premises allowed.
   d. Do not use Owner’s dump containers.
2. At a minimum, remove debris dumpster weekly and additionally as required by the Engineer. Keep interior of ramp free at all times of unattended combustible debris.
3. Drive lanes, adjacent to work area, shall be cleaned daily to eliminate airborne dust.
4. Remove all tools, equipment, scaffolding and temporary facilities immediately when no longer required for execution of the work.
5. The Contractor shall "broom clean" all floors within and adjacent to work areas as construction progresses to eliminate dirt and trash accumulation and maintain proper project cleanliness. Stair towers and areas of pedestrian traffic flow shall be “broom-clean” daily. Unless work area is secured against entry by pedestrians, all rubble shall be removed from ramp surface and all open holes shall be covered with steel plates.

B. Safety Requirements
1. Store volatile wastes in covered metal containers and remove from premises daily.
2. Prevent accumulation of wastes which create hazardous conditions.
3. Provide adequate ventilation during use of volatile or noxious substances.
4. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
5. Do not burn or bury waste materials on the project site.

6. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm and sanitary drains.

C. Materials
   1. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
   2. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

D. Submittals
   1. Submit plan for disposal of waste.

E. Cleaning During Construction
   1. Execute cleaning to ensure that building, grounds and public properties are maintained free from accumulation of waste materials.
   2. Wet down dry materials to lay dust and prevent blowing dust.
   3. At daily intervals during progress of work, clean site and public properties, and dispose of waste materials. Prior to any removal, the Contractor shall submit their plan for confining, collecting, and disposal of waste material as a result of the Contractor's removal operations.
   4. Provide on-site dump container for collection of waste materials. Contractor shall coordinate with Owner for location of dumpster.
   5. Remove waste materials in a controlled manner with as few handlings as possible. Do not drop or throw materials from heights.
   6. Schedule cleaning operations so that dust and other contaminants resulting from the cleaning process will not fall on wet, newly painted surfaces or adjacent parked cars.

F. Final Cleaning
   1. Immediately prior to final inspection, the Contractor shall clean all surfaces to condition acceptable for immediate occupancy by the Owner and remove all foreign matter from all finished items.
   2. The Contractor shall leave all work clean in all respects, ready for use and occupancy by the Owner without additional work.
   3. Employ experienced workers, or professional cleaners, for final cleaning.
   4. In preparation of substantial completion or occupancy, conduct final inspection of sight exposed interior and exterior surfaces, and of concealed spaces.
   5. Repair, patch, and touch up marred surfaces to specified finish, to match adjacent surfaces.
   6. Water blast and broom clean to remove dust and debris from paved surfaces, walls, ceilings and stairs. Hand wash with rags, sponges or equivalent, all railings, pipes, windows, door frames, light fixtures, etc. and rinse, from within work areas and other areas affected by construction. If dust protection is not erected and maintained to prevent dust and debris from being tracked through the structure, the Contractor will be required to perform final cleaning procedures throughout the structure from the top level to the basement.
   7. Remove debris from drains and sumps and check that drains are again operable.

1.20 PROJECT CLOSEOUT

A. Completion
   1. All work shall be complete when written notice requesting final inspection is submitted to the Engineer.

B. Guarantees, Bonds, and Affidavits
   1. Required prior to final payment is made. Submit all required written documents including guarantees, bonds, and affidavits.
   2. Guarantees shall extend the full period of the required guarantee period after:

a. Replacement of work found defective during guarantee period at any time after Completion.
b. Repair of inoperative items or adjustments to proper working condition of items not operating properly at time of inspection at Completion.
c. Completion of work not completed at time of Completion.

3. Items of equipment or material bearing a guarantee of the manufacturer or supplier longer than that described in the City of Madison Standard Specifications for Public Works Construction – most current year, shall not serve to release the manufacturer or supplier from their obligation to repair or replace such items within the limits of their guarantee after expiration of guarantees required by these specifications.

1.21 RECORD DRAWINGS

A. Required prior to final payment is made.

SECTION 02 41 17
REMOVAL OF EXISTING CONCRETE AND SURFACE PREPARATION

PART 1 - GENERAL

1.1 RELATED WORK

A. Applicable provisions of Division 01 shall govern work of this section.

B. Related work specified elsewhere:
1. Section 03 11 15 - Shoring
2. Section 03 21 13 - Reinforcing Steel
3. Section 03 30 00 - Cast-in-Place Concrete
4. Section 03 31 45 - Repair of Structural Concrete
5. Section 03 37 12 - Gunite
6. Section 03 37 13 - Shotcrete

1.2 SUMMARY

A. Include materials, labor, services and incidentals necessary for completion of this Section of Work.

B. Include the removal of unsound concrete, examination of exposed reinforcing, sandblasting of acceptable reinforcing, replacement of unacceptable reinforcing with new, and cleaning of the newly exposed underlying sound concrete prior to casting new fill concrete.

C. Sandblasting of exposed reinforcing steel and concrete surfaces is not required with Hydro-demolition concrete removal option. Concrete and steel surfaces shall be thoroughly cleaned of all slurry and residue following removal, prior to application of rebar coating and bonding agent.

D. The removal work shall be carried out in a manner so as to create a minimum disturbance with the continued use of the parking structure.

E. Warning: Concrete slabs at Capitol Square North are reinforced with post-tensioned (P/T) tendons. Contractor shall locate P/T tendons prior to removal of concrete. Contractor shall exercise extreme caution when chipping so as not to damage nor displace P/T tendons or anchorages. Any damage shall be repaired at Contractor's expense.

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. CHIPPING HAMMERS: Use chipping hammers with a total weight not to exceed:

1. At Government East and State Street Capitol (except levels 4-6) parking slabs:

a. 60 pounds and equipped with flat chisel-type points with a cutting edge not less than ¾" or greater than 2½" in width may be used for initial removal to the level of the top layer of reinforcing steel

b. 30 pounds to remove concrete to the elevation of the second, lower elevation of reinforcing provided the removal is one layer of reinforcing.

c. Chipping hammers with a total weight not to exceed 15 pounds must be used once the reinforcing is exposed.

d. If, in the opinion of the Engineer, it appears that the 30 pound hammer is having detrimental effects on the existing concrete slab and encased reinforcing steel, its use shall be discontinued and nothing heavier than a 15 pound hammer will be allowed.

e. Use chipping hammers of nominal 15 pound class or less for removal of concrete from beneath reinforcing.

2. At State Street Campus Lake and Capitol Square North:

a. 15 pounds and equipped with flat chisel-type points with a cutting edge not less than ¾" or greater than 2½" in width.

B. HYDRO-DEMOLITION: At Contractor's Option, hydro-demolition shall be used for concrete removal at Government East and State Street Capitol ramps.

a. Sandblasting of reinforcing steel and exposed concrete surfaces will not be required with this concrete removal option.

b. Water shall be collected and filtered and not allowed to run uncontrolled to the City sewer system.

c. See Section 1.14 (D.) Temporary Utilities for additional related requirements.

C. SANDBLASTING EQUIPMENT: Sandblasting equipment shall be capable of removing rust from the exposed reinforcement and laitance from newly exposed concrete surfaces.

D. COMPRESSED AIR EQUIPMENT: Compressed air equipment shall be capable of removal of dust and dirt from concrete repair areas.

PART 3 - EXECUTION

3.1 CONCRETE REMOVAL

A. Prior to removal, the Contractor shall submit the Contractor's plan for confining dust and water run-off, collecting and disposal of broken concrete, steel reinforcement and other waste material as a result of the Contractor's removal operations. This plan shall be submitted to the Engineer and the Owner prior to start of construction. Dumpster location shall be coordinated with the Engineer and the Owner.

Stockpiling of removal debris within parking garage is not allowed unless authorized and coordinated with the Engineer.

B. Shore the structure as required. Shoring design, supply, and installation is the responsibility of the Contractor.

C. Contractor responsible for removing and reinstalling or protection in place of mechanical, electrical, and plumbing utilities including electrical lighting and conduits as required for repair work.

D. At slab areas with a membrane place plywood protection on the topside of slab for overhead concrete removal above to prevent damage to the membrane floor coating.

E. Delaminated areas which require removal of unsound concrete will be identified and marked by the Engineer. The unsound concrete shall be removed by chipping to sound concrete. The marking by the Engineer in the field does not guarantee that unsound concrete is not present in areas beyond those marked. Additional concrete removal may be required after the Contractor's initial removal. The Engineer will review the removal areas prior to concrete replacement.

F. Where possible, the areas removed shall be rectangular in shape in plan view. Do not feather edges, but chip edges square or slightly undercut.

G. Following the initial removal of concrete and visual location of P/T tendons (at CSN) in area of patch, perimeter of removal area shall be saw cut to square the area of removal prior to placing new concrete.

H. During the chipping process in deteriorated concrete areas, care shall be exercised to avoid cracking of the underlying sound concrete.

I. During removal of unsound concrete, if more than half of the reinforcing bar diameter is exposed or if the bar is not firmly bonded to the surrounding concrete, or if the bar is corroded, then the remaining concrete around the bar shall be removed. The clearance between the bar and the concrete shall be a minimum of ¾". Support bars for the main reinforcing steel shall not be exposed provided there is no corrosion on these bars.

J. The newly exposed sound concrete shall be cleaned by blowing away loose material with a deep sandblast, with chipping hammer removal option, followed by cleaning with a compressed air jet. Sandblasting is not required with the hydro-demolition removal option.

K. The Engineer shall be allowed 24 hours for the inspection of properly prepared concrete surfaces and reinforcement, before the scheduled concrete placement.

3.2 REINFORCEMENT CLEANING AND REPLACEMENT

A. Exposed reinforcing shall be thoroughly cleaned by sandblasting, to remove rust and unsound concrete with chipping hammer removal option. Sandblasting is not required with the hydro-demolition removal option.

B. Bars that are damaged or that have lost more than 10 percent of their original area at any point along the length shall be considered unacceptable and shall be removed and replaced with an equivalent new bar of equal length at the Engineer's direction. No. 8 bars and smaller that have lost between 5 percent and 10 percent of their original area at any point can be blast-cleaned and reused as long as a new full-length #4 bar is used as supplemental steel next to the old cleaned bar at the Engineer's direction.

C. Exposed or supplemental reinforcing bars shall be no closer than ¾" measured radially from existing concrete. The elevation of exposed or supplemental reinforcing shall be maintained at the original height.

D. Where portions of reinforcing bars are exposed, the Engineer will determine if the embedded portion of the bar is soundly bonded to the remaining concrete. If, in the Engineer's judgment, the bar is not soundly bonded, the Contractor shall remove concrete around and under the bar for a length as determined by the Engineer.

E. Install additional reinforcing bars as detailed.

F. Drill and epoxy in dowels as detailed.

G. Cleaned reinforcing shall be coated with protective rebar primer prior to casting new concrete.

3.3 CLEAN UP

A. Contractor shall remove loose concrete from the site and leave the area broom clean.

B. Debris shall not be flushed down the existing floor drains.

SECTION 03 11 15
SHORING

PART 1 - GENERAL

1.1 RELATED WORK

A. Applicable provisions of Division 01 shall govern Work of this Section.

1.2 SUMMARY

A. Include materials, labor, services and incidentals necessary for completion of this Section of Work.

B. Include materials related to shoring as described below.

C. Shoring shall be designed by Contractor to temporarily support members whose support is to be removed by partial demolition and concrete removal.

1.3 SUBMITTALS

A. The Contractor shall submit to Engineer, a record of reference elevations of shored members at various stages as described below.

1.4 QUALITY ASSURANCE

A. Contractor shall obtain reference elevations of members supported by shoring prior to concrete removal, during concrete removal, after concrete removal, during and after concrete replacement, and after shoring removal.

B. When reference elevations indicate unanticipated movements, shoring shall be adjusted to minimize adverse effects of that movement.

PART 2 - PRODUCTS

2.1 VERTICAL LOAD SHORES

A. Shores supporting vertical loads shall be adjustable through positive means, such as by adjustable screw jacks, in order to compensate for elastic shortening of shores during loading and other effects. Ellis Shore clamps shall not be used.

B. Shores shall be effectively cross-braced to prevent buckling failure of individual members and overall shoring stability failure.

C. Shores shall be provided to carry full weight of floor system for entire bay in which work is being performed. Shores shall be in place prior to removal of unsound slab concrete and shall be supported on 1 structural level or to grade.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Shores shall be installed snug, plumb and square.

B. Shores shall be adjusted as required during progress of work as indicated by movements measured during relative elevation surveys of shored members.

3.2 REMOVAL

A. Shores shall only be removed when compressive strength results of replacement concrete reaches 75 percent of its specified 28-day strength. If Contractor chooses to have supplemental strength tests, it shall be the responsibility of the Contractor to make and pay for costs of these tests. Supplemental cylinders shall be stored on the structure in vicinity of the area they represent and shall be cured in the same manner as that portion of the structure.

B. Shores that have been removed shall not be stored in such a manner that they interfere with Owner's continued use of the structure. If shoring is not to be used within the structure it shall be removed from the structure or stored in the area in which Contractor is working.

SECTION 03 12 00
CONCRETE FORMWORK

PART 1 - GENERAL

1.1 RELATED WORK

A. Applicable provisions of Division 01 shall govern all work of this Section.

1.2 WORK INCLUDED

A. Include materials, labor, services and incidentals necessary for completion of this Section of Work.

B. Include formwork for cast-in-place concrete as required by Concrete Contractor.

C. Notify trades in ample time for each to install own work required in conjunction with formwork.

D. Inserts, sleeves and other miscellaneous embedded items required by mechanical, electrical or plumbing trades shall be supplied and installed by those respective trades.

E. Provide and install inserts, sleeves and other miscellaneous embedded items other than those required by mechanical, electrical or plumbing trades.

F. Supply, install and maintain shoring and re-shoring related to concrete formwork.

1.3 QUALITY ASSURANCE

A. Industry Standards, Specifications and Codes:

1. General:

a. Comply with provisions of the following codes and standards except as modified herein.

b. Referenced codes and standards including revisions and commentaries shall be the most currently adopted as of the date of these Contract Documents.

2. American Concrete Institute (ACI)

a. ACI 301 Specifications for Structural Concrete for Buildings

b. ACI 318 Building Code Requirements for Structural Concrete

c. ACI 347 Guide to Formwork for Concrete

3. National Forest Products Association (NFPA)

a. NDS National Design Specification for Wood Construction including Design Values for Wood Construction

4. The Engineered Wood Association (APA)

a. Plywood Design Specification

1.4 DESIGN CRITERIA

A. Design forms, shores and bracing. Include factors pertaining to safety of formwork structure such as live load, dead load, weight of equipment on formwork, concrete mix, height of concrete drop, vibration reactions and similar factors.

B. Design formwork to be readily removable without impact, shock or damage to cast-in-place concrete surfaces and adjacent materials.

1.5 ALLOWABLE TOLERANCES

A. Flatwork true to plane: 1/4 inch in 10 feet

B. Vertical surfaces true to plane: 1/4 inch floor to floor

C. Formwork displacement: Maximum 1/4 inch

D. Deviation of building dimensions indicated on drawings and position of columns, walls and partitions: 1/4 inch

E. Deviation in cross sectional dimensions of columns, piers or beams or in thickness of slabs and walls: plus/minus 1/4 inch

PART 2 - PRODUCTS

2.1 FORM MATERIALS

A. General: Plywood, metal-framed plywood-faced or other acceptable panel type materials to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practical sizes to minimize number of joints. Provide form material with sufficient thickness to withstand pressure of newly placed concrete without bow or deflection.

B. Formed Surfaces Exposed To View: New plywood complying with U.S. Standard PS-1 Plyform Class I, B-B Concrete Form Plywood, B-Matte MDO Plywood by Simpson, 5/8 inch or 3/4 inch thick without defects, mill oiled and edge sealed or wood forms lined with 3/16 inch tempered pressed wood or 1/4 inch thick plywood B-B conforming to EXT-DFPA as large a size as possible to minimize joints.

C. Formed Surfaces Concealed From View: Clean straight lumber dressed on face and edges, nominal 1 inch thickness or plywood 5/8 inch or 3/4 inch thick conforming to EXT-DFPA or metal forms smooth and as large a size as possible.

D. Reveals and Chamfers: Wood or purpose-made plastic or high density plastic foam to achieve sharp, true lines.

2.2 FORMWORK ACCESSORIES

A. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sizes as required of sufficient strength and character to maintain formwork in place while placing concrete.

B. Form Ties:
1. For Unexposed Concrete: Adjustable length removable or snap-off type which will leave holes no larger than 1 inch in diameter in face of concrete and when forms are removed no metal will be within 1 inch of finished concrete surface.
2. For Exposed Concrete: Ties shall be snap-off type (break point 1 inch or more from surface) with plastic cones added to form a 1-1/4 inch diameter, 1-1/2 inch deep recess around tie, which shall be grouted flush to match adjacent concrete surface.
3. No wire ties or site fabricated ties permitted.

2.3 FORM COATINGS

A. Form coatings for exposed concrete shall consist of an approved non-staining form oil, lacquer or plastic. Plywood approved for reuse shall be recoated as directed by Engineer. When oil is used, excess shall be wiped off with rags. When lacquer is used, a light coating of form oil over lacquer will be permitted provided excess is wiped off. When factory-applied plastic coatings are used, follow manufacturer's instructions. Contact surface of forms shall be free of foreign matter, including dust. Form oil shall be applied to forms before reinforcing is erected. Form oil shall be of type which will not affect bonding of specified exterior finish.

2.4 CONSTRUCTION JOINT MATERIALS

A. Solid Wood Lumber: Spruce-Pine-Fur (SPF) #2 or equivalent.

PART 3 - EXECUTION

3.1 PREPARATION

A. Verify lines, levels and centers before proceeding with formwork. Ensure dimensions agree with Drawings.

3.2 COORDINATION

A. Coordinate work of other sections and cooperate with trades involved in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors and other inserts. Do not perform work unless specifically indicated on Drawings or reviewed prior to installation.

3.3 FORMWORK ERECTION

A. Erect, support, brace and maintain formwork to support vertical and lateral loads that might be applied until such loads can be supported by concrete structure. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation and position.

B. Construct forms to sizes, shapes, lines and dimensions shown on Drawings and to obtain accurate alignment, location and grades. Level and plumb work. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in work. Use selected materials to obtain required finishes. Solidly butt joints and provide back-up at joints to prevent leakage of cement paste.

C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses and like to prevent swelling and for easy removal.

D. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement and for placement of concrete. Securely brace temporary openings and set tightly to forms to prevent loss of concrete mortar. Locate temporary openings on forms at inconspicuous locations.

E. At all exposed corners of concrete walls, beams, columns, slab edges and miscellaneous items not specified or indicated, provide 3/4 inch, 45 degree chamfer.

F. Install ties so portion remaining within concrete after removal is at least 1 inch inside concrete. Remove so surrounding concrete is not disfigured and cleanout hole remains to be patched.

G. Coat contact surfaces of forms with form-coating compound before reinforcement is placed.

H. Thin form coating compounds only with thinning agent of type and in amount and under conditions of form coating compound manufacturer's directions. Do not allow excess form coating material to accumulate in forms or to come into contact with concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.

3.4 INSERTS, EMBEDDED PARTS AND OPENINGS

A. Plumbing, Heating and Electrical Items:

1. Premanufactured items including inserts, sleeves and other embedded items required by mechanical, electrical and plumbing trades shall be supplied, accurately located, and installed by respective trades.

2. Site fabricated box outs for chases, sleeves and other miscellaneous openings for mechanical, electrical and plumbing trades shall be supplied and installed by Formwork Contractor.
3. Location of mechanical, electrical and plumbing inserts, embedded parts, openings and recesses shall be coordinated with respective trades by General Contractor.

B. Other Items:
1. Other inserts, embedded parts, box outs for openings, chases, reveals and recesses except those specifically mentioned above by mechanical, electrical or plumbing trades, shall be installed by Formwork Contractor. Special inserts, embedded parts or other special requirements needed by specific trades shall be supplied by that respective trade to Formwork Contractor for installation. General Contractor shall have overall responsibility for coordinating location of inserts, embedded parts, openings and recesses.
2. Install concrete accessories in accordance with manufacturer's recommendations; straight, level and plumb. Ensure items are not disturbed during concrete placement.
3. Set and build into Work, anchorage devices and other embedded items required for other work attached to or supported by cast-in-place concrete. Use setting drawings, diagrams, instructions and directions provided by suppliers of items to be attached.

3.5 JOINTS AND EDGE FORMS

A. Locate construction joints as shown on Drawings or as approved by Engineer. Form with keyway. Place perpendicular to main reinforcement. Continue reinforcement through joint, except slabs-on-grade, and locate joint so as not to affect structural integrity or appearance of structure. Includes joint between wall and footing.

B. Set edge forms or bulkheads and intermediate screed strips for slabs to obtain required elevations and contours in finished slab surface. Provide and secure units of sufficient strength to support types of screeds required. Align concrete surface to elevation of screed strips by use of strike-off templates or accepted compacting type screeds.

3.6 CLEANING

A. Clean forms as erection proceeds to remove foreign matter. Remove cuttings, shavings and debris from within forms. Flush with water or use compressed air to remove remaining foreign matter. Ensure water and debris drain to exterior through clean-out ports. Retighten forms after concrete placement if required to eliminate mortar leaks.

3.7 FIELD QUALITY CONTROL

A. Inspect and check completed formwork, shoring and bracing to ensure work is in accordance with formwork design and supports, fastenings, wedges, ties and parts are secured.

B. Clean and repair surfaces of forms to be reused in Work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable. Apply new form coating compound material to concrete contact form surfaces as specified for new formwork.

C. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joints to avoid offsets. Do not use "patched" forms for exposed concrete surfaces. Do not use metal cover plates for repairing defects in forms for exposed concrete work.

D. Inform Engineer when formwork is complete and has been cleaned to allow for inspection. Obtain review prior to placing concrete.

E. For exposed to view concrete surfaces do not reuse plywood formwork.

F. Allow Engineer to inspect each section of plywood type formwork prior to reuse.

3.8 FORMWORK REMOVAL

A. Notify Engineer and Owner's field representative prior to removing formwork, centering, shoring and reshoring.

B. Remove forms in a manner to insure safety of structure at all times. Where entire structure is supported on shores; beam and girder sides, columns and similar vertical forms may be removed after 48 hours, providing concrete is sufficiently hard not to be injured thereby. In no case shall supporting forms or shoring be removed until members have acquired sufficient strength to support their weight and load safely. Coordinate removal with work of other trades.

C. Remove forms according to ACI-347. However, the following schedule shall govern the minimum waiting period after placing concrete before bottom forms and shores of similar falsework supporting flexural members such as girders, beams, joists, slabs, etc. may be disturbed or stripped:

Structural Members	Waiting Period
Columns, walls and beam sides	2 days
Spans less than 12 foot - slabs and beam bottoms	7 days
Spans between 12 foot and 30 foot - slabs and beam bottoms	14 days
Spans greater than 30 foot - slabs and beam bottoms	28 days

D. The above schedule applies to daily curing temperatures above 50 degrees. For lower daily curing temperatures, increase waiting period. In addition to above requirements, do not remove forms until concrete has attained 80 percent of minimum design strength.

E. Re-shore removed area before removing additional adjacent formwork.

F. Retain re-shores in place for a minimum of 14 days and concrete has attained 100 percent of minimum design strength. Retain re-shores in place until concrete construction above has attained sufficient strength to not require shoring below.

SECTION 03 21 13
REINFORCING STEEL

PART 1 - GENERAL

1.1 RELATED WORK

A. Applicable provisions of Division 01 shall govern all work of this Section.

1.2 WORK INCLUDED

A. Include materials, labor, services and incidentals necessary for completion of this Section of Work.

B. Work includes fabrication and placement of reinforcement for cast-in-place concrete including bars, welded wire fabric, ties, dowels, stirrups, supports and accessories required.

C. Work also includes the addition of supplemental reinforcing to replace bar cross section loss due to corrosion.

1.3 QUALITY ASSURANCE

A. Industry Standards, Specifications and Codes:
   1. General:
   a. Comply with provisions of the following codes and standards except as modified herein.
   b. Referenced codes and standards including revisions and commentaries shall be the most currently adopted as of the date of these contract documents.
   2. American Concrete Institute (ACI):
   a. ACI 301 Specifications for Structural Concrete for Buildings
   b. ACI 318 Building Code Requirements for Structural Concrete
   c. ACI 315 Details and Detailing of Concrete Reinforcement
   3. Concrete Reinforcing Steel Institute (CRSI):
   a. Manual of Standard Practice
   b. Recommended Practice for Placing Reinforcing Bars
   4. American Society for Testing and Materials (ASTM):
   a. Specific ASTM numbers are noted in later text.

1.4 QUALIFICATIONS

A. Acceptable Manufacturers:
   1. Shall be regularly engaged in the manufacture of steel bar, welded wire fabric reinforcing and mechanical splicing devices.

B. Installer Qualifications:
   1. Shall have 3 years experience in installation of steel bar and welded wire fabric reinforcing.

C. Source Quality Control:
   1. Mill test certificates identifying chemical and physical analysis of each load of reinforcing steel delivered if requested.

1.5 SUBMITTALS

A. Submit in accordance with Division 01 requirements.

B. Steel Properties:
   1. Submit certification of grade, chemical analysis and tensile properties of steel furnished if requested.

PART 2 - PRODUCTS

2.1 REINFORCING STEEL

A. Reinforcing Bars:
   1. Conform to ASTM A-615 "Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement".

2. Reinforcing bars shall be deformed, except that plain bars may be used for spirals.
3. Main reinforcing bars and other bars not listed above shall be Grade 60, unless noted otherwise on Contract Documents.

B. Welded Wire Fabric:
1. Conform to ASTM A-185 "Standard Specification for Welded Steel Wire Fabric, Plain for Concrete Reinforcement".
2. Welded wire fabric shall be electrically welded and 65,000 psi yield strength.

2.2 ACCESSORIES

A. Supports For Reinforcement:
1. Provide supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcement in place.
2. Use wire bar type supports complying with CRSI recommendations unless otherwise indicated. Do not use wood, brick and other unacceptable materials, e.g., mortar blocks, coarse aggregates.
3. For exposed-to-view concrete surfaces, where legs of supports are in contact with forms, provide supports with legs which are plastic protected. For sandblasted or bush-hammered concrete provide stainless steel protected or special stainless bar supports.
4. In areas of concrete removal, short lengths of reinforcing bar shall be used to provide support for bars on chipped or rough concrete surfaces using similar spacing of supports.

2.3 FABRICATION

A. Shop fabricate reinforcing bars to conform to required shapes and dimensions. In case of fabricating errors, do not re-bend or straighten reinforcement in a manner that will injure or weaken materials.

B. Reinforcement shall be bent cold unless otherwise permitted by Engineer.

C. Unacceptable Materials:
1. Reinforcement with any of the following defects will not be permitted in Work:
a. Bar lengths, depths and bends exceeding specified fabrication tolerances.
b. Bends or kinks not indicated on Drawings or final Shop Drawings.
c. Bars with reduced cross-section due to excessive rusting or other cause.

2.4 PRODUCT DELIVERY, STORAGE AND HANDLING

A. General:
1. Deliver reinforcement to project site in bundles marked with metal tags indicating bar size, lengths and other information corresponding to markings shown on placement drawings.
2. Handle and store materials to prevent dirt or excessive rust.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine formwork and other conditions under which concrete reinforcement is to be placed and notify Formwork Contractor of unsatisfactory conditions. Do not proceed with work until unsatisfactory conditions have been corrected in a manner to your satisfaction.

3.2 PLACEMENT

A. Comply with specified codes and standards and CRSI "Recommended Practice for Placing Reinforcing Bars" for details and methods of reinforcement placement and supports and as specified.

B. Clean reinforcement to remove loose rust and mill scale, earth, ice and other materials which reduce or impair bond with concrete.

C. Position, support and secure reinforcement against displacement by formwork, construction or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers and hangers as required.

D. Place reinforcement to obtain coverage for concrete protection as indicated on Contract Documents. Arrange, space and securely tie bars and bar supports together with 16 gage wire to hold reinforcement accurately in position during concrete placement operations. Set wire ties so ends are directly away from exposed concrete surfaces.

E. Exposed or additional reinforcing shall be no closer than 3/4 inch measured radially from existing concrete. Elevation of exposed or additional reinforcing shall be maintained at original height.

F. At openings in structural slabs, provide two #4 bars top and bottom of slab at 45 degrees on all 4 corners, each bar 48 inch minimum length.

G. At openings in concrete slabs additionally provide a minimum of two #5 bars around opening.

H. Provide two #4 bars 3 inches apart on 4 sides of floor drains in slabs.

I. Unless permitted by Engineer, reinforcing shall not be bent after being embedded in hardened concrete.

J. Welded wire fabric shall lap one full mesh at side and end laps and must be wired together.

K. Provide sufficient number of supports and sizes as required to carry reinforcement. Maximum spacing of chairs is 48 inches on center. Do not place reinforcing bars more than 2 inches beyond the last leg of any continuous bar support. Do not use supports as bases for runways for concrete conveying equipment and similar construction loads.

3.3 WELDING OF REINFORCEMENT

A. Welding of reinforcement covered by this Section is prohibited.

3.4 FIELD QUALITY CONTROL

A. Notify Engineer when reinforcing is in place so he or she may review reinforcing placement. Engineer shall have a minimum of 24 hour notice prior to placement of concrete.

B. Tend to reinforcing at all times during concrete placement and make necessary adjustments to reinforcing which has been dislodged by concrete placement or workmen.

C. Bar Placement Tolerances:
1. 1/4 inch (plus/minus) between bars
2. 1/4 inch (plus/minus)vertically for members 8 inches deep or less
3. 1/2 inch (plus/minus)vertically for members over 8inches deep and less than 2 foot deep
4. 1 inch (plus/minus)vertically for members 2 foot or deeper

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

A. Applicable provisions of Division 01 shall govern work of this Section.

1.2 WORK INCLUDED

A. Include materials, labor, services, and incidentals necessary for completion of this section of Work.

B. Extent of cast-in-place concrete work is shown on Drawings.

C. Notify other trades of the date for concrete placement in ample time for each to install their own work.

D. Install anchor bolts, embedded plates, inserts and similar items furnished by other trades.

1.3 NOTIFICATION

A. Contractor shall notify the inspection/testing agency and Engineer at least 24 hours prior to major concrete pour.

1.4 PROTECTION OF ADJACENT WORK

A. Contractor shall be responsible to see that due care is exercised to avoid staining adjacent finished material during concrete work. Contractor, without expense, shall make such damage good to Owner.

1.5 QUALITY ASSURANCES

A. Industry Standards, Specifications and Codes:
1. General:

a. Comply with provisions of the following codes and standards except as modified herein.

b. Referenced codes and standards including revisions and commentaries shall be the most currently adopted as of the date of these Contract Documents.

2. American Concrete Institute (ACI):

a. ACI 117 Standard Specifications for Tolerances for Concrete Construction and Materials

b. ACI 301 Specifications for Structural Concrete

c. Additional ACI sections are noted in later text.

3. American Society For Testing And Materials (ASTM):

a. Specific ASTM standards are noted in later text.

1.6 ALLOWABLE TOLERANCES

A. Flatwork tolerance for random-traffic floors should be measured in accordance with ASTM E 1155.

B. Floor tolerance measurements shall be made within 16 hours after completion of final troweling operation, and where applicable, before removal of supporting shores.

C. Floor slabs shall conform to the following ACI F-number requirements:

1. Slab-On-Grade and Level Suspended Slabs Shored Until After Testing:

a. Specified Overall Values - FF30/FL20

b. Minimum Local Values - FF15/FL10

2. Unlevel Shored Suspended Slabs and Unshored Suspended Slabs:

a. Specified Overall Value - FF25

b. Minimum Local Value - FF15

D. See ACI 117 for other tolerances not stated herein.

1.7 SUBMITTALS

A. Submit in accordance with Division 01 requirements.

B. Mix Designs:

1. Prepare design mixtures for each class of concrete on the basis of laboratory trial mixtures or field test data, or both in accordance with ACI 301. Design mixtures shall meet the requirements listed in Table 33000-1. Submit material content per cubic yard of each class of concrete furnished including:
2. Weight of cementitious materials.
3. Saturated surface-dried weights of fine and coarse aggregates.
4. Quantities, type and name of admixtures.
5. Weight of mixing water or water/cementious material ratio.

C. Submit to Engineer mix designs, certification that materials used in concrete mixtures meet ASTM and other applicable specifications, and documentation indicating proposed concrete proportions will produce an average compressive strength equal to or greater than the required compressive strength as specified in ACI 301. Obtain approval prior to placing concrete.

D. Test Reports:

1. Submit reports of concrete testing including, compressive strength, density (unit weight), air content, temperature and slump. Furnish copies to General Contractor, Consulting Engineer, Concrete Supplier and Owner Representative. Test results shall be reported in writing within 2 days that tests are made.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Hydraulic Cement:
   1. For normal concrete, hydraulic cement shall meet requirements of ASTM C 150, ASTM C 595, or ASTM C 1157.
   2. For air-entrained concrete, cement shall meet requirements of ASTM C 150 cement specified for normal concrete used with an air-entraining admixture conforming to ASTM C 260.

B. Slag Cement:
   1. Slag cement shall meet requirements of ASTM C 989.

C. Silica Fume Cement:
   1. Silica fume shall meet the requirements of ASTM C 1240.

D. Fly ash:
   1. Fly ash shall meet the requirements of ASTM C 618.

E. Aggregates:
   1. Normal weight aggregate shall comply with requirements of ASTM C 33. Lightweight aggregates shall comply with requirements of ASTM C 330.

F. Water:
   1. Water used for batching concrete shall meet the requirements of ASTM C 1602.

2.2 ADMIXTURES

A. No other admixtures will be allowed except those listed without Engineer's approval.

B. Air-Entraining:
   1. Shall Conform to ASTM C 260, certified by the manufacturer to be compatible with other required admixtures. The Entrained air content shall be controlled at 6½ percent for ¾" aggregate concrete and 5½ percent for 1½" aggregate concrete within limits of plus or minus 1½ percent each.

   2. Products: Subject to compliance with requirements, provide one of the following:
      a. "Darex II" – W.R. Grace, www.na.graceconstruction.com
      b. "AEA 92S" – The Euclid Chemical Company, www.euclidchemical.com
      c. "Catexol AE 260" – Axim Concrete Technologies, www.aximconcrete.com
      d. "Micro-Air" – BASF Admixtures, Inc., www.basfadmixtures.com
      e. "MB AE 90" – BASF Admixtures, Inc.

C. Water Reducing:
   1. Shall conform to ASTM C 494, Type A
   2. Products: Subject to compliance with requirements, provide one of the following:
      a. "WRDA 82" – W.R. Grace
      b. "Eucon WR-91" – The Euclid Chemical Company
      c. "Catexol 1000N" – Axim Concrete Technologies
      d. "Pozzolith 200N" – BASF Admixtures, Inc.

D. Mid-Range Water Reducing:
   1. Shall conform to ASTM C 494, Type A or Type F

2. Products: Subject to compliance with requirements, provide one of the following:

a. "Daracem 65" – W.R. Grace
b. "Eucon MR" - The Euclid Chemical Company
c. "Catexol 3500N" – Axim Concrete Technologies
d. "Polyheed 997" - BASF Admixtures, Inc.

E. High-Range Water Reducing (Super Plasticizer):

1. Shall conform to ASTM C 494, Type F or Type G.
2. Products: Subject to compliance with requirements, provide one of the following:

a. "Daracem 19" - W.R. Grace & Co.
b. "ADVA 100" - W.R. Grace & Co.
c. "Eucon 37" - The Euclid Chemical Company
d. "Catexol 1000SP-MN" – Axim Concrete Technologies
e. "Rheobuild 1000" - BASF Admixtures, Inc.

F. Water Reducing, Non-Chloride Accelerator:

1. Shall conform to ASTM C 494, Type C or Type E.
2. Products: Subject to compliance with requirements, provide one of the following:

a. "Polarset" - W.R. Grace & Co.
b. "Accelguard 90" - The Euclid Chemical Company
c. "Catexol 2000RHE" – Axim Concrete Technologies
d. "Pozzutec 20" - BASF Admixtures, Inc.

G. Water Reducing, Retarding:

1. Shall conform to ASTM C 494, Type D.
2. Products: Subject to compliance with requirements, provide one of the following:

a. "Daratard 17" - W.R. Grace & Co.
b. "Eucon Retarder 100" - The Euclid Chemical Company
c. "Catexol 1000R" – Axim Concrete Technologies
d. "Pozzolith 100XR" - BASF Admixtures, Inc.

3. Grace or Rheocrete CNI by BASF Admixtures, Inc.
4. Admixtures shall not contain calcium chloride as an intentionally added ingredient. Calcium chloride as an admixture is not permitted. Admixtures containing more than ½ of 1 percent (0.5 percent) chloride ions by weight of admixture are not permitted.

2.3 RELATED MATERIALS

A. Evaporation Retardant and Finishing Aid: Shall be "Eucobar" by The Euclid Chemical Company or "Confilm" by BASF Admixtures, Inc.

B. Slab-On-Grade Poly Fiber Reinforcement Systems:

1. Synthetic Structural Fiber Reinforcement: Provide synthetic structural fibers complying with the following requirements:

a. Synthetic structural fibers shall meet requirements of ASTM C 1116, Paragraph 4.1.3, Type III.
b. Synthetic structural fibers shall be monofilament, made of polypropylene or polypropylene/polyethylene blend.
c. Synthetic structural fibers shall have a minimum length of 1.38 inches (35 mm) and a maximum length of 2.00 inches (51 mm).
d. Specific gravity between 0.90 and 0.95
e. Synthetic structural fibers shall have an aspect ratio (length divided by equivalent diameter of fiber) between 60 and 100.
f. Dosage rate:

1) 5.0 lbs/cubic yard or the addition rate to achieve the concrete required minimum equivalent flexural strength, fe3 of 165 psi for a concrete with a compressive strength of 4,000 psi at 28 days. This shall be determined from the manufacturer's test data verifying fiber performance in concrete based on ASTM C1609-05, utilizing the beam size 6" x 6"x 20" (fe3) calculated using JCI-SF4 method.

g. Synthetic structural fibers shall be:

1) Grace STRUX® 90/40 synthetic fiber
2) Novomesh® 950 synthetic fiber by Propex Concrete Systems
3) Tuf-Strand SF by Euclid Chemical Company

C. Absorptive Cover: Burlap cloth made from jute or Kenaf, weighing approximately 9 ounces per square yard, complying with AASHTO M182, Class 2.

D. Moisture-Retaining Cover: One of the following, complying with ASTM C 171, Type 1 or 2:

1. Polyethylene Film
2. Polyethylene Coated Burlap

E. Liquid Membrane-Forming Curing Compound: Liquid type membrane-forming curing compound complying with ASTM C 1315 "Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete", Type I, Class A unless other type acceptable to Architect. Moisture loss not more than 0.040 gr./square cm. In 72 hours when applied at 300 sq. ft./gal. Material must be compatible with resilient flooring and carpeting adhesives. Concrete contractor shall verify compatibility before applying curing compound.

1. Products: Subject to compliance with requirements, provide one of the following:

a. "Diamond Clear" by The Euclid Chemical Company
b. "Kure-N-Seal 25" by BASF/Sonneborn
c. "TK AS-1, 1315" by TK Products, Inc.
d. "Cure and Seal" - Symons Corp.

F. Isolation Joint Filler: Shall be bituminous (1/2 inch and ¼ inch thicknesses) conforming to ASTM D 994.

G. Control Joint Insert: Shall be hardboard or fiberboard.

H. Expansion Joint Filler: Shall be extruded polystyrene.

I. Rebar Coating

a. "Emaco P24" by BASF
b. "Sika Armatec 110 EpoCem" by Sika
c. "Duralprep AC,
d. The Euclid Chemical Company.
e. Or approved equal

2.4 READY MIXED CONCRETE

A. Ready mixed concrete shall be measured, mixed and delivered according to ASTM C94, except as modified herein.

B. Prepare design mixtures for each class of concrete on the basis of laboratory trial mixtures or field test data, or both in accordance with ACI 301. Design mixtures shall meet the requirements listed in Table 33000-1

C. Addition of water is permitted for batches of material with insufficient slump at the job site but is limited to the lesser of; 1 gallon per cubic yard or the quantity of water indicated on the delivery ticket such that the mixing water content on approved mix design is not exceeded.

D. Ready Mixed Concrete Delivery Tickets:

1. Furnish 2 delivery tickets with each batch of concrete before unloading at site; 1 for Contractor and 1 for Engineer on which is printed, stamped or written the following information:

a. Name of ready-mix batch plant
b. Serial number of ticket
c. Date and truck number
d. Name of Contractor
e. Job name and location
f. Specific class or designation of concrete
g. Amount of concrete (cubic yards)
h. Time loaded or of first mixing of cement and aggregates
i. Type, name and amount of admixture
j. Type, brand and amount of cement
k. Total water content by producer (or W/C ratio)
l. Maximum size of aggregate
m. Weights of fine and course aggregates

E. Mix Proportioning:

1. Minimum amount of cementitious material identified in the following mix proportions shall apply for mixes for which field experience or trial mixture information required is not provided.

Table 33000-1

Class	Type of Construction	Specified Comp. Strength @ 28 Days (PSI)	Max. Agg. Size (In.)	Air Entrain-ment % +/- 1½%	Notes
1	Slab Replacement	4000	0.75	6.0	(1)(2)(3)(4)
2	Grout				(5)

Notes:

(1) Maximum water-cementitious ratio by weight shall be 0.45.

(2) A maximum of 30 percent total replacement of Portland cement with GGBFS (Ground Granulated Blast-Furnace Slag) and fly ash at a 1:1 ratio; up to 350 pounds, with a maximum 25 percent fly ash. If fly ash is used alone, limit maximum replacement to 25 percent.

(3) Corrosion inhibitor.

(4) Slump shall be such that the finished surface follows that of the existing inclined ramps with no sagging or bulging due to gravity on the plastic mix.

(5) Grout for bonding replacement concrete to existing concrete. Grout shall consist of equal parts by weight of cement and sand. It shall be mixed with sufficient water to form a stiff slurry. The consistency of this slurry shall be such that it can be applied with a stiff brush or broom to the old concrete in a thin, even coating that will not run or puddle in low spots. For use on vertical joints, this grout shall be thinned to paint consistency.

PART 3 - EXECUTION

3.1 GENERAL

A. Clean all mixing and transportation equipment. Wet forms and exposed concrete surfaces thoroughly. Remove all ice, excess water, mud and other debris from within forms and from restoration surfaces and reinforcement. Notify Engineer prior to placing in ample time for inspection of forms, exposed concrete surfaces and reinforcing.

B. A pre-construction meeting shall take place prior to placing concrete. Topic of discussion shall include: concrete handling, placing, finishing and curing.

3.2 PLACEMENT OF CONCRETE

A. Pre-Placement Inspection:

1. Before placing concrete, inspect and complete formwork installation, reinforcing steel and items to be embedded or cast-in-place. Notify other Contractors to permit installation of their work; cooperate with other trades in setting such work as required. Thoroughly wet wood forms immediately before placing concrete as required where form coatings are not used. Notify inspection agency and Engineer 24 hours in advance of pouring.

B. Placing Concrete In Forms:

1. Deposit concrete in forms in horizontal layers not deeper than 18 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
2. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause formation of seams or planes of weakness within the section. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete as nearly as practicable to its final location to avoid segregation due to rehandling or flowing.
3. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use vibrators designed to operate with vibratory element submerged in concrete, maintaining a speed of not less than 6000 impulses per minute. Alternate methods of consolidating concrete including the use of self-consolidating concrete may be submitted to the Engineer for approval.
4. Do not use vibrators to move concrete inside of forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.

C. Placing Concrete Slabs:

1. Deposit and consolidate concrete slabs in a continuous operation until placing of a panel or section is completed.
2. Place suspended slabs in sections as large as practicable to complete finishing, within limits acceptable to Engineer.
3. Consult with Engineer with regard to limits of single placements prior to commencing work.
4. Consolidate concrete during placing operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
5. Bring slab surfaces to correct level with a straightedge and strikeoff. Use bull floats or darbies to smooth surface, leaving it free of humps or hollows. Do not sprinkle water on plastic concrete surface. Do not disturb slab surfaces prior to beginning finishing operations. “Wet Screed” placement of slabs is not allowed.

6. Maintain reinforcing in the proper position during concrete placement operations.

D. Cold Weather Placing:
   1. Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions or low temperatures in compliance with ACI 301.
   2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
   3. Do not use calcium chloride, salt or other materials containing anti-freeze agents or chemical accelerators other than approved, non-chloride accelerating admixtures.
   4. Do not allow carbon dioxide from heating units to contact freshly placed concrete surfaces for 48 hours. Vent heaters outside of enclosure.

E. Hot Weather Placing:
   1. When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 301.
   2. Wet forms thoroughly before placing concrete.
   3. Do not use retarding admixtures without the written permission of the Engineer.

3.3 CONCRETE JOINTS

A. Construction Joints:
   1. Locate as directed by Engineer or as shown on Drawings. Form keyway. Place perpendicular to main reinforcement. Continue reinforcement through joint. Locate joint so as not to affect structural integrity or appearance of the structure. Includes joint between wall and footing.

B. Isolation Joints:
   1. Form with keyway with bituminous (preformed filler, 1/4 inch or 1/2 inch as called for) thick full depth of slab-on-grade. Reinforcement is non-continuous. Locate at points of contact between slab-on-grade and vertical structural concrete.

C. Control Joints:
   1. Locate on grid lines or on lines as shown on Drawings or as directed by Engineer. Joint size shall be 1/4 inch wide by 1/5 to 1/4 of slab depth. Continue reinforcement through joint. Contractor's option to tool or use inserts. Do not tool joints in slabs to receive a finished flooring material. Control joints should be made within first 24 hours of concrete pour.

3.4 FINISHING

A. General:
   1. Strike and level concrete. Allow to set before floating. Power float on disappearance of water sheen. Hand float areas inaccessible to power float. Applicable to flat work to obtain smooth, uniform, granular texture. Floors shall be flat and level within tolerances given in Part 1, except where drains occur or sloped floors are indicated, in which case tolerance applies to planes indicated.

B. Troweled Finish:
   1. Power trowel to smooth finish. Hand trowel areas inaccessible to power trowel. Applicable to flatwork to receive finished flooring material.

C. Broom Finish:
   1. Draw broom across surface after floating to form a regular, parallel pattern. Applicable to parking ramps, drives, ramps and stairs. Direction of brooming shall be perpendicular to traffic pattern.

D. Formed Concrete:
1. Top of concrete: Strike concrete smooth then float and trowel surface to texture comparable to formed surface.
2. Formed Surface: As cast finish, patch holes and defects after form removal. Remove fins.
3. Rubbed Surface: Rub with rubbing stone to remove all projections and round corners. Wet surface and brush evenly with cement grout mixture. Provide rubbed concrete surfaces in finished areas to be left to view in stairwells, where concrete is exposed to view in a finished area and wherever else a rubbed surface is called for on architectural plans.
4. Slope exterior steps down 1/8 inch.

3.5 CURING

A. Comply with ACI 301.

B. Class B Concrete Curing:
1. Concrete items listed below shall be sheet cured per ACI 308 2.3.1 Plastic Film or 2.3.2 Reinforced Paper only, for 7 days after placement. Curing system joints shall be sealed and moisture added daily to maintain concrete surface in a damp condition. Insulating blankets used during cold weather do not need sealed joints as long as concrete surface is damp.

C. Formed Surfaces:
1. Cure formed concrete surfaces including walls, columns, underside of beams, supported slabs and other similar surfaces by moist curing with forms in place for full curing period or until forms are removed. If forms are removed, continue curing by membrane curing.

D. Protection:
1. Protect concrete from damaging mechanical disturbances including load stresses, heavy shock, excessive vibration, and from damage caused by rain or flowing water. Protect finished concrete surfaces from damage by subsequent construction operations.

3.6 CONCRETE REPAIR PROCEDURES

A. Concrete Surface Repairs:
1. Comply with ACI 301 “Specifications for Structural Concrete”.
2. Remove and replace, at no additional cost, concrete not formed as shown on Drawings, concrete out of alignment, surfaces beyond required tolerances or defective surfaces which cannot be properly repaired or patched, including concrete failing to meet strength requirements as determined by testing laboratory.
3. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to Architect. Cut out honeycomb, rock pockets, voids over 1/4 inch in any dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1 inch. Make edges of cuts perpendicular to concrete surface. Thoroughly clean, dampen with water and brush coat area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried.
4. For exposed to view surfaces, blend white Portland cement and standard Portland cement so that, when dry, patching mortar will match color surrounding. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.
5. Repair of Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Architect. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections

on surface and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes, fill with dry pack mortar or precast cement cone plugs secured in place with bonding agent.

6. Repair concealed formed surfaces, where possible, that contain defects that affect durability of concrete. If defects cannot be repaired, remove and replace concrete.
7. Repair of Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface plane to tolerances specified for each surface and finish. Correct low and high areas as specified. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness, using a template having required slope.
8. Repair finished unformed surfaces that contain defects that affect durability of concrete. Surface defects, include crazing, cracks in excess of 0.01 inch wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, popouts, honeycomb, rock pockets and other objectionable conditions.
9. Correct high areas in unformed surfaces by grinding, after concrete has cured at least 14 days.
10. Correct low areas in unformed surfaces during or immediately after completion of surface finishing operations by cutting out low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Proprietary leveling compounds may be used when acceptable to Architect.
11. Repair defective areas, except random cracks and single holes not exceeding 1 inch diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least 3/4 inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding compound. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
12. Repair isolated random cracks and single holes not over 1 inch in diameter by dry-pack method. Groove top of cracks and cut out holes to sound concrete and clean of dust, dirt and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Mix dry-pack, consisting of 1 part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Place dry-pack after bonding compound has dried. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for not less than 72 hours.
13. Do not use repair methods not specified above and do not perform structural repairs, except with prior written approval of Architect for method and procedure, using specified epoxy adhesive mortar.

3.7 QUALITY CONTROL TESTING DURING CONSTRUCTION

A. General:
   1. Sample fresh concrete to conform to ASTM C 172.

B. Aggregate Tests:
   1. Chloride content in aggregate shall be tested in accordance with ASTM D 1411. Tests shall be made and results must be approved by Engineer before the aggregate is used in concrete.

C. Slump:
   1. In accordance with ASTM C 143. One slump test at point of discharge from ready mix truck for each set of test cylinders taken, unless noted otherwise, with additional tests when concrete consistency seems to have changed. Slump tests, when taken, shall be conducted after site addition of superplasticizer, however a visual estimate of slump shall be recorded prior to site

addition of superplasticizer to a mix. Visual slump should only be used after correlation has been established with actual slump tests.

D. Air Content:

1. Only for air entrained concrete, in accordance with ASTM C 231 pressure method for normal weight concrete and ASTM C 173 for lightweight concrete. One air content test for each set of strength test cylinders made unless noted otherwise. If measured air content falls outside limits specified, a check test shall be made immediately on another portion of the same sample. In the event of a second failure, concrete will be considered to have failed to comply with Specifications. In compliance with ASTM C 94, site addition of additional air entrainment admixture is permissible until plant adjustments have been made. For site added superplasticizer, air should only be checked after the addition of superplasticizer.

E. Concrete Temperature:

1. In accordance with ASTM C 1064 each time a set of compression test specimen is made.

F. Strength Tests:

1. Strength test for any class of concrete shall consist of 4 standard cylinders made from a composite sample secured from a single load of concrete in accordance with ASTM C 172, except when in the opinion of the Engineer, he may require additional specimens.
2. All Concrete:

a. Make test cylinders in accordance with ASTM C 31. Each test shall consist of a minimum of 4 cylinders.

b. After 24 hours, 3 cylinders to be carefully transported to testing laboratory for moist curing.

c. 1 laboratory cured cylinder to be tested at 7 days and 2 laboratory cured cylinders to be tested at 28 days, the fourth cylinder shall be held.

3. Test results at 28 days shall be the average strength of specimens determined in accordance with ASTM C 39.
4. Strength test shall be made for each truck.
5. Strength of each concrete class shall be deemed satisfactory when both of the following criteria are met:

a. The average of three consecutive compressive-strength tests equals or exceeds specified compressive strength.

b. Any individual compressive-strength test result does not fall below specified compressive strength by more than 500 psi.

6. Testing shall be performed in compliance with Division 01 provisions by an approved testing laboratory at Owner's expense**, which shall submit complete reports of tests to General Contractor, Concrete Supplier, Engineer and Owner's representative.** Reports of compressive strength tests shall contain project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, weather at time of placement and compressive breaking strength and type of break. An individual having ACI Level 1 Technician certification shall complete testing, including test cylinder production. Site protection of test cylinders shall be made in compliance with ASTM C 31.
7. If Engineer has reason to believe cylinder strength tests are not representative of strength of concrete in place, he shall require drilled cores to be cut and tested at Contractor's expense. Coring and testing shall be in accordance with ASTM C 42 “Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete”. Acceptance or rejection of concrete shall be based on cylinders made from concrete sampled at point of discharge. Impact hammer, sonoscope or other nondestructive device may be permitted, but shall not be used as the sole basis for acceptance or rejection.

8. Extent of Testing:

a. Class A: Trucks shall be tested for air content and slump at truck during discharge. After a consistent slump has been established, alternate slump tests may be a visual estimate. Test reports shall be sent to A/E immediately upon completion.

SECTION 03 31 45
REPAIR OF STRUCTURAL CONCRETE

PART 1 - GENERAL

1.1 RELATED WORK

A. Applicable provisions of Division 01 shall govern work of this Section.

B. Related work specified elsewhere:
1. Section 02 41 17 - Removal of Existing Concrete and Surface Preparation
2. Section 03 30 00 - Cast-in-Place Concrete
3. Section 03 37 12 - Gunite
4. Section 03 37 13 - Shotcrete

1.2 SUMMARY

A. Include materials, labor, services and incidentals necessary for completion of this Section of Work.

B. Work includes supplying, placing, finishing, and curing concrete over properly prepared existing concrete surfaces as indicated on Drawings and as specified.

1.3 QUALITY ASSURANCE

A. Pre-Construction Meeting
1. A pre-construction meeting is required with Contractor in order to coordinate work schedule and inspection required by Engineer.

B. Guarantee
1. Contractor shall assume Total Responsibility Guarantee for Material and Labor.

C. Installer Qualifications
1. Concrete patching repair work shall be performed under the immediate control of a person experienced in this type of work. The system installer's superintendent assigned to this project shall have a minimum of 5 years experience on projects of similar magnitude and scope and shall be present during system installation.

D. Inspection
1. Installer must examine substrate and conditions under which work is to be performed and must notify Contractor in writing of unsatisfactory conditions. Do not proceed with work until unsatisfactory conditions have been corrected.

1.4 SUBMITTALS

A. Manufacturers Data
   1. Submit manufacturer's product data for concrete repair materials, indicating physical and chemical characteristics, technical specifications, limitations, installation instructions and general recommendations regarding each material.

PART 2 - PRODUCTS

2.1 ACCEPTABLE PRODUCTS

A. Overhead and Vertical Repair Mortar
   1. "Emaco S88 CI" by BASF
   2. "SikaTop 123 Plus" by Sika
   3. "Duraltop Gel" by The Euclid Chemical Company
   4. Or approved equal with corrosion inhibitor.

B. Horizontal Repair Mortar
   1. "Emaco S66 CI" by BASF
   2. "SikaTop 111 Plus" by Sika
   3. "Eucocrete Supreme" by The Euclid Chemical Company
   4. Or approved equal

C. Rebar Coating
   a. "Emaco P24" by BASF
   b. "Sika Armatec 110 EpoCem" by Sika
   c. "Duralprep AC" by The Euclid Chemical Company
   d. Or approved equal.

D. Consult with manufacturers for product limitations.

PART 3 - EXECUTION

3.1 PREPARATION OF SURFACES TO RECEIVE PATCHING CONCRETE

A. Refer to Specification Section 02 41 17 "Removal of Existing Concrete and Surface Preparation" for requirements.

B. Remove unsound material, dirt, oil, grease and other bond-inhibiting materials.

C. Remove rust and loose concrete on exposed reinforcing steel by sandblasting.

D. Concrete substrate shall be saturated surface dry with no standing water prior to application and shall be saturated for a minimum of two hours prior to application.

E. Conform to additional specific preparation requirements specified by manufacturer or ACI Standard for each patching product as applicable.

F. Cavities will be examined prior to commencement of patching operations. Sounding the surface shall be part of the examination. Delamination noted during the sounding shall be removed as specified.

G. Airblasting is required as a final step to remove sand and debris. Debris shall be removed from the site prior to the start of patching.

H. Coat exposed reinforcing steel with rebar primer. Apply per manufacturer's instructions.

3.2 MIXING, APPLICATION, AND FINISHING

A. Conform to manufacturer's specifications or ACI Standard for each patching product, as applicable.

B. Install repair mortar over the patch area and work into the substrate with proper finishing tools.

C. Finished surface shall be struck off flush with existing surfaces. Finish shall match existing or be lightly brushed.

3.3 CURING

A. Concrete shall be maintained above 50°F and in a moist condition for at least the first 7 days after placing.

B. Curing shall be accomplished by burlap covers kept continuously wet, continuous waterproof paper or 4 mil polyethylene sheeting conforming to ASTM C-171 with edges lapped and tightly sealed by sand, wood planks, pressure-sensitive tape, mastic or glue.

C. For concrete surfaces receiving no overlay a spray applied curing compound may be used in accordance with ASTM C-309. Two applications shall be made; the second shall be within an hour of the first application.

D. The concrete shall be sounded by the Contractor in the presence of the Engineer with a chain drag after the curing time. Hollowness shall be corrected by the Contractor by removing the concrete at these locations and recasting at no extra cost to the Owner.

E. Adequate protection shall be provided for concrete during freezing or near freezing weather. Concrete materials, reinforcement, forms, filler and ground with which concrete is to come in contact shall be free of frost, ice and show. Whenever air temperature is below 40°F, the minimum temperature of concrete when discharged shall be 65°F and concrete during the required curing period shall be maintained at a temperature not less than 50°F. Throughout heating period concrete shall be kept moist as specified. Placement and curing of concrete during cold weather shall conform to requirements of ACI 306R.

F. Placement and curing of concrete during hot weather shall be in conformance with the requirements of ACI 305R.

SECTION 03 37 12
GUNITE

PART 1 - GENERAL

1.1 RELATED WORK

A. Applicable provisions of Division 01 shall govern work of this section.

B. The word "Gunite" used in this specification shall mean the dry mix process as described in ACI 506R.

C. Specification Section 03 37 13 “Shotcrete” which refers to the wet mix process as described in ACI 506R.

1.2 SUMMARY

A. Include all material, labor, services and incidentals necessary for the completion of this section of the work.

B. Furnish the necessary equipment and materials to apply gunite patches on the underside of the parking structure slab, columns or beams

1.3 REFERENCES

A. INDUSTRY STANDARDS, SPECIFICATIONS AND CODES

B. GENERAL:
1. Comply with all provisions of the following codes and standards except as modified herein.
2. All referenced codes and standards including all revisions and commentaries shall be the most currently adopted as of the date of these contract documents.

C. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
1. ASTM C-33 Specification for Concrete Aggregate
2. ASTM C-39 Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
3. ASTM C-42 Standard Method of Obtaining and Testing Drilled Cored and Sawed Beams of Concrete
4. ASTM C-150 Specification for Portland Cement
5. ASTM C-309 Standard Specification for Liquid Membrane - Forming Compounds for Curing Concrete
6. ASTM E-329 Specification for Inspection and Testing Agencies for Concrete, Steel and Bituminous materials as used in Construction
7. Additional ASTM numbers are noted in later text.

D. AMERICAN CONCRETE INSTITUTE (ACI)
1. ACI 301 Specification for Structural Concrete in Buildings
2. ACI 305 Recommended Practice for Hot Weather Concreting
3. ACI 306 Recommended Practice for Cold Weather Concreting
4. ACI 318 Building Code Requirements for Reinforced Concrete
5. ACI 506 Guide to Shotcrete
6. ACI 506.2 Specification for Materials, Proportioning and Application of Shotcrete

Field guide to Concrete Repair Application Procedures:
RAP Bulletin # 12 Concrete Repair by Shotcrete Application

1.4 SUBMITTALS

A. The Contractor shall submit trial mix proportions with compressive strength results as described later in this section.

B. The Contractor shall submit test results of gunite core tests after each day's gunning as described later in this section.

1.5 APPLICATOR QUALIFICATIONS

A. The Contractor shall have three years of experience in performing work similar to that shown in the drawings and specifications. The foreman of the gunite crew shall have a minimum of two years' experience as a gunite nozzleman, finisher and gunman. The nozzleman shall have certification or a minimum 3000 hours experience as a nozzleman and completed at least one similar application as a nozzleman.

B. The Contractor shall submit a list of three projects in which similar work to that specified was successfully completed. This list shall contain the following for each of the three projects:
   1. Project Name
   2. Owner of project
   3. Owner's representative, address and phone number
   4. One-sentence description of work
   5. Cost of this gunite work
   6. Total restoration cost of project
   7. Date of completion

C. The sum of the costs for gunite work of the five projects provided above shall be a minimum of $100,000.

1.6 DELIVERY, STORAGE AND HANDLING

A. Cement shall be stored in weathertight enclosures which shall provide protection from dampness and contamination. Aggregate stockpiles shall be arranged and used in a manner to avoid segregation or contamination with foreign matter or other aggregates. Reinforcement shall be stored so as to avoid contact with the ground.

PART 2 - PRODUCTS

A. Contractor's option to use batched material or use of pre-portioned bag mix.

2.2 PRE-PORTIONED BAG MIX

A. MS-D1 Synthetic Fiber Shotcrete by King Packaged Materials Company, Ontario CA

2.3 CONCRETE TYPE, STRENGTHS AND USES

A. The minimum compressive strength indicated, based on 3" diameter, 3" long core specimens shall be as follows:

Concrete Type	Strength	Use
Gunite	7 days - 3300 PSI 28 days - 4000 PSI	Beams and underside of slab repair

B. Ends of the test specimens shall be properly prepared for testing as described in ASTM C-42 "Obtaining and Testing Drilled Cores and Sawed Beams of Concrete".

2.4 MATERIALS

A. CEMENT

1. Shall be Portland Cement conforming to ASTM C-150, Type 1.

B. ADMIXTURES
   1. Admixtures shall be submitted to the Engineer for approval.
   2. The total chloride ion content of the mix shall not exceed 0.10% by weight of cement.
   3. Silica fume shall be used in the mix for exterior exposure or a silane sealer with 40% solids shall be applied over the gunite repair.

C. WATER
   1. Mixing water shall be fresh, clean and potable.

D. REINFORCING
   1. Corroded reinforcing shall be prepared per Section 02 41 17 "Removal of Existing Concrete and Surface Preparation".

E. AGGREGATES
   1. Aggregates shall be clean, free of salt and organic impurities and conform to the requirements of ASTM C-33. The combined gradation shall conform to one of the gradations shown below:

GRADATION LIMITS FOR COMBINED AGGREGATE - GRADATION NO.1

Sieve Size U.S. Standard Square Mesh	Percent by Weight Passing
1/2"	-
3/8"	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	10-30
No. 100	2-10

2.5 MIX PROPORTIONS AND PRECONSTRUCTION TESTING

A. The required gunite mix shall be developed prior to the actual application of gunite to any surface forming a permanent part of the repair work. A trial mix shall be made with the same ingredients and tested in the same mixing and placing equipment that is proposed for use in the work. The mix design proposed for use, when tested as described below shall have a minimum compressive strength of 3300 PSI at 7 days and 4000 PSI at 28 days.

B. A sand to cement ratio of 3½ to 4.0 is recommended, the actual mix proportions used will be at the discretion of the Contractor so long as the requirements for strength and proper steel encasement are met. The lowest water-cement ratio compatible with the above parameters is recommended.

C. Mix designs of each separate mix shall be prepared and the following data shall be submitted to the Engineer for each mix design. The Contractor shall be responsible for costs relating to testing.

1. Sieve analysis for fine and coarse aggregate
2. Test for aggregate organic impurities
3. Proportions of all materials
4. Mixing method
5. Mill certificates for cement
6. Slump at the pump
7. Air content at the pump

D. Two test panels shall be made using the trial mix by one of the nozzlemen expected to work on the job. The panel shall be at least 18" x 18" x 3"; they shall be gunned in an upside-down horizontal position simulating actual field conditions. At least 6 cubes or cores shall be cut from each of the test panels. These specimens shall be cut from the gunited test panels not earlier than 5 days after gunning. The specimens shall be examined by the Engineer for sand pockets or lamination. Three specimens shall be tested for compressive strength at 7 and 28 days. For cube specimens and core cylinders with a length/diameter ratio less than 2, the minimum compressive strength shall be at least equal to the specified strength divided by 0.85. During storage, the specimens shall be kept continuously moist. **Costs for cutting and testing shall be paid by the Owner.**

E. The proportions of materials determined on the basis of developed mix proportions and trial mix testing along with compressive strength data shall be submitted to the Engineer for approval. After approval by the Engineer, these proportions shall be used in the actual application of gunite and shall not be varied without further approval.

PART 3 - EXECUTION

3.1 PREPARATION OF CHIPPED-OUT SURFACES TO RECEIVE GUNITE

A. The Engineer will locate and mark the areas to be repaired.

B. Refer to section 02 41 17 “Removal of Existing Concrete and Surface Preparation”.

3.2 EQUIPMENT

A. GENERAL

1. Placing equipment shall consist of spray nozzle for providing ejection of dry materials and water in the mixture; separate hoses deliver dry materials and water to the nozzle; a suitable machine to introduce the dry materials to the delivery hose under air pressure; and air and water supply systems. The entire system shall be so arranged that the nozzleman may use air and water in any combination to prepare the surfaces or to clean completely. In addition, a separate air hose and blow pipe shall be available to remove dust and rebound during gunite application. Equipment shall be provided to allow application of gunite to all surfaces at a minimum range of one foot from the nozzle.

B. WATER SYSTEM

1. The water system shall be capable of supplying sufficient quantity at 90 PSI minimum pressure through a regulating valve, easily and accurately controlled by the nozzleman.

C. AIR SUPPLY

1. The air supply shall be capable of supplying the delivery machine at the pressures and volumes recommended by the manufacturer of the machine. No air supply system shall be used that delivers air contaminated by oil.

D. DELIVERY MACHINE

1. The delivery machine shall be capable of introducing dry materials to the delivery hose at a uniform rate, with ejection from the nozzle at velocities that apply materials to the treated surface with minimum rebound and maximum adherence and density.

3.3 BATCHING AND MIXING

A. Weight batching shall be used to control mix proportions. With the Engineer's permission, volume batching may be used during gunite operations provided that a minimum of one weight batching check is made every 8 hours for control purposes. Cement may be batched by integral bags.

B. Aggregate and cement shall be thoroughly mixed in the surface dry state before being deposited in the placing equipment. The moisture content of the combined aggregate at the time of mixing shall meet the approval of the inspector and should be in the range of 3% to 6% of weight of the oven-dry (110˚C) aggregate.

C. The water content of the mix should be such as to produce the minimum slump that can be handled by the pump. A slump in the range of 1½" to 3" at the pump is normally suitable. The applied mix shall be dry enough to prevent sagging or sloughing from the repair surface.

3.4 PLACEMENT OF GUNITE

A. The provisions of "Guide to Shotcrete" (ACI 506) and "Specification for Materials, Proportioning and Application of Shotcrete" (ACI 506.2) should be followed insofar as they apply to the work.

B. The thickness of any given layer of gunite shall be such as to preclude sagging or falling away. If wind or air currents cause separation of the nozzle stream during placement, gunite shall be discontinued or suitable means shall be provided to screen the nozzle stream.

C. The surface of freshly placed gunite shall be broomed or scraped to remove any loose material if additional layers of gunite are to be applied thereto after hardening. Such surfaces shall also be dampened before applying succeeding layers.

D. No gunite shall be placed if drying or stiffening of mix takes place at any time prior to delivery to the nozzle. Under no circumstances shall any rebound or previously expended material be included in the work or used in the gunite mix.

E. If during the placement of gunite there is any overspray on adjacent surfaces including replacement subsequently to be gunited, all such overspray or rebound shall be removed prior to final set and before placement of gunite on such surfaces.

F. Gunite which lacks uniformity, exhibits segregation, honeycombing, or lamination, or which contains any dry patches, voids or sand pockets shall be removed and replaced.

G. The nozzle shall be held at such a distance and angle so that material shall be fully placed behind reinforcement before any material is allowed to accumulate on its face.

H. Provide alignment wires to establish thickness and plane surfaces. Install alignment wires at corners and offsets not established by form work. Ensure alignment wires are tight, true to line and placed to allow further tightening.

3.5 FINISHING

A. Scraping with a featheredge or screed to remove high spots shall not be done until the gunite has become stiff enough to withstand the pull of the screeding device.

B. The final surface finish shall be troweled for architectural appearance. The finished surface shall retain the original architectural form. Partial forming of edges and corners with multiple passes of gunite shall be provided as directed by the Engineer.

3.6 CURING

A. Freshly applied gunite shall be protected from premature drying and temperatures below 40 F and shall be maintained with minimal moisture loss at a relatively constant temperature.

B. Gunite shall be kept continuously moist for at least 7 days. The following method shall be used:

1. Apply a curing compound in accordance with ASTM C-309 "Specifications for Liquid Membrane – Forming Compounds for Curing Concrete". Two applications shall be made; the second shall be within an hour of the first application. Curing compounds shall not be used on any surface which additional shotcrete or other cementitious materials are to be bonded. Curing compounds shall be compatible with the surface sealer to be used.

3.7 LIMITATIONS OF OPERATIONS

A. No traffic shall be permitted in the bay above during the gunite work for 48 hours thereafter.

B. Traffic and pedestrian movement through the work area shall be limited to prevent damage or injury resulting from the work. Adjacent surfaces shall be protected, as much as possible, and shall be cleaned after the gunite work is completed.

3.8 FIELD QUALITY CONTROL

A. Specimens for determining compressive strength shall be made by the Contractor for each 8-hour period that gunite is placed.

B. A test panel with minimum dimensions of 18" x 18" x 3" shall be gunned in the same position as the work represented and field cured in the same manner as the work. The panels shall be gunned by the nozzleman doing most of the work.

C. At least three 3" diameter cores or 3" cubes shall be cut from each panel for testing. Panels shall not be removed prior to 12 hours after shotcreting. Specimens shall not be cut until immediately prior to testing. All cutting and testing shall be performed by a qualified approved testing laboratory which meets the requirements of ASTM E-329 and their reports will be sent to the Engineer and the Contractor. **Cost for fabrication of the test panel shall be paid for by the Contractor. Cost for cutting and testing shall be paid for by the Owner.**

D. Testing of cores and cubes shall be in accordance with ASTM C-42. Each test report shall contain the following information for each set:

1. Individual test specimen strength, type of failure
2. Specimen number

3. Portion of structure represented by the concrete tested
4. Date cast
5. Date tested
6. Concrete properties specified
7. Notice if tests indicate concrete is not in conformance with specifications.

E. The specimens shall be tested at an age of 7 days. Strength of concrete shall be considered satisfactory if average of two 7-day tests in each set of cores or cubes equals or exceeds 3300 PSI and neither of the 7-day tests is 500 PSI or more below the specified 7-day strength.

F. Should results of test not meet preceding requirements associated gunite work will either be rejected by the Engineer or additional testing will be performed at 28 days. If strength acceptance criteria are not met by core tests at 28 days, the Contractor shall remove and replace all questionable areas of concrete at the Contractor's expense. The costs of additional tests shall be paid for by the Contractor.

G. Contractor may choose to have cores removed and tested from the work in place rather than the test panels at his expense.

H. The Engineer may perform additional destructive and non-destructive testing to detect voids in the gunite repairs. If any voids are found, the costs of these initial tests as well as all subsequent tests shall be paid by the Contractor. The Contractor shall also remove and replace at no cost to the Owner, all gunite repairs found to contain voids. If no voids are found, the costs of all tests will be paid by the Owner.

SECTION 03 37 13
SHOTCRETE

PART 1 - GENERAL

1.1 RELATED WORK

A. Applicable provisions of Division 01 shall govern work of this section.

B. The word "Shotcrete" used in this specification shall mean the wet mix process as described in ACI 506R.

C. Related work includes Specification Section 03 37 12 "Gunite" which refers to the dry mix process as described in ACI 506R and Section 02 41 17 “Removal of Existing Concrete and Surface Preparation”.

1.2 SUMMARY

A. Include all materials, labor, services and incidentals necessary for the completion of this section of the work.

B. Furnish the necessary equipment and materials to apply shotcrete patches on the underside of the parking structure slab, columns or beams.

1.3 REFERENCES

A. INDUSTRY STANDARDS, SPECIFICATIONS AND CODES

B. GENERAL
1. Comply with all provisions of the following codes and standards except as modified herein.
2. All referenced codes and standards including all revisions and commentaries shall be the most currently adopted as of the date of these contract documents.

C. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
1. ASTM C-33 Specification for Concrete Aggregate
2. ASTM C-39 Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
3. ASTM C-42 Standard Method of Obtaining and Testing Drilled Cored and Sawed Beams of Concrete
4. ASTM C-150 Specification for Portland Cement
5. ASTM C-260 Standard Specification for Air Entrained Admixtures for Concrete
6. ASTM C-309 Standard Specification for Liquid Membrane - Forming Compounds for Curing Concrete
7. ASTM E-329 Specification for Inspection and Testing Agencies for Concrete, Steel and Bituminous Materials as used in Construction
8. Additional ASTM numbers are noted in later text.

D. AMERICAN CONCRETE INSTITUTE (ACI)
1. ACI 301 Specification for Structural Concrete in Buildings
2. ACI 305 Recommended Practice for Hot Weather Concreting
3. ACI 306 Recommended Practice for Cold Weather Concreting
4. ACI 318 Building Code Requirements for Reinforced Concrete
5. ACI 506 Guide to Shotcrete
6. ACI 506.2 Specification for Materials, Proportioning and Application of Shotcrete
7. Field Guide to Concrete Repair Application Procedures:
8. RAP Bulletin # 12 Concrete Repair by Shotcrete Application

1.4 SUBMITTALS

A. The Contractor shall submit trial mix proportions with compressive strength results as described later in this section.

B. The Contractor shall submit test results of shotcrete core tests after each day's gunning as described later in this section.

1.5 APPLICATOR QUALIFICATIONS

A. The Contractor shall have three years of experience in performing work similar to that shown in the drawings and specifications. The foreman of the shotcrete crew shall have a minimum of two years experience as a shotcrete nozzleman, finisher and gunman. The nozzleman shall have certification or a minimum 3000 hours experience as a nozzleman and completed at least on similar application as a nozzleman.

B. The Contractor shall submit a list of three projects in which similar work to that specified was successfully completed. This list shall contain the following for each of the three projects:
1. Project Name

2. Owner of project
3. Owner's representative, address and phone number
4. One-sentence description of work
5. Cost of this shotcrete work
6. Total restoration cost of project
7. Date of completion

C. The sum of the costs for shotcrete work of the five projects provided above shall be a minimum of $100,000.

1.6 DELIVERY, STORAGE AND HANDLING

A. Cement shall be stored in weathertight enclosures which shall provide protection from dampness and contamination. Aggregate stockpiles shall be arranged and used in a manner to avoid segregation or contamination with foreign matter or other aggregates. Reinforcement shall be stored so as to avoid contact with the ground.

PART 2 - PRODUCTS

A. Contractor’s option to use batched material or use of pre-portioned bag mix.

2.2 PRE-PORTIONED BAG MIX

A. MS-W1 Synthetic Fiber Shotcrete by King Packaged Materials Company, Ontario CA

2.3 CONCRETE TYPE, STRENGTHS AND USES

A. The minimum compressive strength indicated, based on 3" diameter, 3" long core specimens shall be as follows:

Concrete Type	Strength	Use
Shotcrete	7 days - 3300 PSI 28 days - 4000 PSI	Beams and underside of slab repair

B. Ends of the test specimens shall be properly prepared for testing as described in ASTM C-42 "Obtaining and Testing Drilled Cores and Sawed Beams of Concrete".

2.4 MATERIALS

A. CEMENT
1. Shall be Portland Cement conforming to ASTM C-150, Type 1.

B. ADMIXTURES
1. Admixtures shall be submitted to the Engineer for approval.
2. The total chloride ion content of the mix shall not exceed 0.10% by weight of cement.

C. AIR ENTRAINING
1. Shall conform to ASTM C-260. The entrained air content shall be controlled in a range of 6% to 8% of total air at the pump.
2. Air entraining shall be required for all shotcrete used in exterior applications.

D. WATER

1. Mixing water shall be fresh, clean and potable.

E. REINFORCING

1. Corroded reinforcing shall be prepared per Section 02 41 17 “Removal of Existing Concrete and Surface Preparation”.

F. AGGREGATES

1. Aggregates shall be clean, free of salt and organic impurities and conform to the requirements of ASTM C-33. The combined gradation shall conform to one of the gradations shown below:

GRADATION LIMITS FOR COMBINED AGGREGATE - GRADATION NO.1

Sieve Size U.S. Standard Square Mesh	Percent by Weight Passing
1/2"	-
3/8"	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	10-30
No. 100	2-10

2.5 MIX PROPORTIONS AND PRECONSTRUCTION TESTING

A. The required shotcrete mix shall be developed prior to the actual application of shotcrete to any surface forming a permanent part of the repair work. A trial mix shall be made with the same ingredients and tested in the same mixing and placing equipment that is proposed for use in the work. The mix design proposed for use, when tested as described below shall have a minimum compressive strength of 3300 PSI at 7 days and 4000 PSI at 28 days.

B. A sand to cement ratio of 3½ to 4.0 is recommended, the actual mix proportions used will be at the discretion of the Contractor so long as the requirements for strength and proper steel encasement are met. The lowest water-cement ratio compatible with the above parameters is recommended.

C. Mix designs of each separate mix shall be prepared and the following data shall be submitted to the Engineer for each mix design. The Contractor shall be responsible for costs relating to testing.

1. Sieve analysis for fine and coarse aggregate
2. Test for aggregate organic impurities
3. Proportions of all materials

4. Mixing method
5. Mill certificates for cement
6. Slump at the pump
7. Air content at the pump

D. Two test panels shall be made using the trial mix by one of the nozzlemen expected to work on the job. The panel shall be at least 18" x 18" x 3"; they shall be gunned in an upside-down horizontal position simulating actual field conditions. At least 6 cubes or cores shall be cut from each of the test panels. These specimens shall be cut from the shotcreted test panels not earlier than 5 days after shotcreting. The specimens shall be examined by the Engineer for sand pockets or lamination. Three specimens shall be tested for compressive strength at 7 and 28 days. For cube specimens and core cylinders with a length/diameter ratio less than 2, the minimum compressive strength shall be at least equal to the specified strength divided by 0.85. During storage, the specimens shall be kept continuously moist. Costs for cutting and testing shall be paid by the Owner.

E. The proportions of materials determined on the basis of developed mix proportions and trial mix testing along with compressive strength data shall be submitted to the Engineer for approval. After approval by the Engineer, these proportions shall be used in the actual application of shotcrete and shall not be varied without further approval.

PART 3 - EXECUTION

3.1 PREPARATION OF CHIPPED-OUT SURFACES TO RECEIVE SHOTCRETE

A. The Engineer will locate and mark the areas to be repaired.

B. Refer to section 02 41 17 “Removal of Existing Concrete and Surface Preparation”.

3.2 BATCHING AND MIXING

A. Weight batching shall be used to control mix proportions. With the Engineer's permission, volume batching may be used during shotcreting operations provided that a minimum of one weight batching check is made every 8 hours for control purposes. Cement may be batched by integral bags.

B. Aggregate and cement shall be thoroughly mixed in the surface dry state before being deposited in the placing equipment. The moisture content of the combined aggregate at the time of mixing shall meet the approval of the inspector and should be in the range of 3% to 6% of weight of the oven-dry (110˚C) aggregate.

C. The water content of the mix should be such as to produce the minimum slump that can be handled by the pump. A slump in the range of 1½" to 3" at the pump is normally suitable. The applied mix shall be dry enough to prevent sagging or sloughing from the repair surface.

3.3 PLACEMENT OF SHOTCRETE

A. The provisions of "Guide to Shotcrete" (ACI 506) and "Specification for Materials, Proportioning and Application of Shotcrete" (ACI 506.2) should be followed insofar as they apply to the work.

B. The thickness of any given layer of shotcrete shall be such as to preclude sagging or falling away. If wind or air currents cause separation of the nozzle stream during placement, shotcreting shall be discontinued or suitable means shall be provided to screen the nozzle stream.

C. The surface of freshly placed shotcrete shall be broomed or scraped to remove any loose material if additional layers of shotcrete are to be applied thereto after hardening. Such surfaces shall also be dampened before applying succeeding layers.

D. No shotcrete shall be placed if drying or stiffening of mix takes place at any time prior to delivery to the nozzle. Under no circumstances shall any rebound or previously expended material be included in the work or used in the shotcrete mix.

E. If during the placement of shotcrete there is any overspray on adjacent surfaces including replacement subsequently to be shotcreted, all such overspray or rebound shall be removed prior to final set and before placement of shotcrete on such surfaces.

F. Shotcrete which lacks uniformity, exhibits segregation, honeycombing or lamination, or which contains any dry patches, voids or sand pockets shall be removed and replaced.

G. The nozzle shall be held at such a distance and angle so that material shall be fully placed behind reinforcement before any material is allowed to accumulate on its face.

H. Provide alignment wires to establish thickness and plane surfaces. Install alignment wires at corners and offsets not established by form work. Ensure alignment wires are tight, true to line and placed to allow further tightening.

3.4 FINISHING

A. Scraping with a featheredge or screed to remove high spots shall not be done until the shotcrete has become stiff enough to withstand the pull of the screeding device.

B. The final surface finish shall be troweled for architectural appearance. The finished surface shall retain the original architectural form. Partial forming of edges and corners with multiple passes of shotcrete shall be provided as directed by the Engineer.

3.5 CURING

A. Freshly applied shotcrete shall be protected from premature drying and temperatures below 40˚F and shall be maintained with minimal moisture loss at a relatively constant temperature.

B. Shotcrete shall be kept continuously moist for at least 7 days. The following method shall be used:

1. Applying a curing compound in accordance with ASTM C-309 "Specifications for Liquid Membrane – Forming Compounds for Curing Concrete". Two applications shall be made; the second shall be within an hour of the first application. Curing compounds shall not be used on any surface which additional shotcrete or other cementitious materials are to be bonded. Curing compounds shall be compatible with the surface sealer to be used.

3.6 LIMITATIONS OF OPERATIONS

A. No traffic shall be permitted in the bay above during the shotcreting work for 48 hours thereafter.

B. Traffic and pedestrian movement through the work area shall be limited to prevent damage or injury resulting from the work. Adjacent surfaces shall be protected as much as possible and shall be cleaned after the shotcrete work is completed.

3.7 FIELD QUALITY CONTROL

A. Specimens for determining compressive strength shall be made by the Contractor for each 8-hour period that shotcrete is placed.

B. A test panel with minimum dimensions of 18" x 18" x 3" shall be gunned in the same position as the work represented and field cured in the same manner as the work. The panels shall be gunned by the nozzleman doing most of the work.

C. At least three 3" diameter cores or 3" cubes shall be cut from each panel for testing. Panels shall not be removed prior to 12 hours after shotcreting. Specimens shall not be cut until immediately prior to testing. All cutting and testing shall be performed by a qualified approved testing laboratory which meets the requirements of ASTM E-329 and their reports will be sent to the Engineer and the Contractor. **Cost for fabrication of the test panel shall be paid for by the Contractor. Cost for cutting and testing shall be paid for by the Owner.**

D. Testing of cores and cubes shall be in accordance with ASTM C-42. Each test report shall contain the following information for each set:

1. Individual test specimen strength, type of failure
2. Specimen number
3. Portion of structure represented by the concrete tested
4. Date cast
5. Date tested
6. Concrete properties specified
7. Notice if tests indicate concrete is not in conformance with specifications.

E. The specimens shall be tested at an age of 7 days. Strength of concrete shall be considered satisfactory if average of two 7-day tests in each set of cores or cubes equals or exceeds 3300 PSI and neither of the 7-day tests is 500 PSI or more below the specified 7-day strength.

F. Should results of test not meet preceding requirements, associated shotcrete work will either be rejected by the Engineer or additional testing will be performed at 28 days. If strength acceptance criteria are not met by core tests at 28 days, the Contractor shall remove and replace all questionable areas of concrete at the Contractor's expense. The costs of additional tests shall be paid for by the Contractor.

G. Contractor may choose to have cores removed and tested from the work in place rather than the test panels at his expense.

H. The Engineer may perform additional destructive and non-destructive testing to detect voids in the shotcrete repairs. If any voids are found, the costs of these initial tests as well as all subsequent tests shall be paid by the Contractor. The Contractor shall also remove and replace at no cost to the Owner, all shotcrete repairs found to contain voids. If no voids are found, the costs of all tests will be paid by the Owner.

SECTION 05 50 00
METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED WORK

A. Applicable provisions of Division 01 shall govern work of this section.

1.2 WORK INCLUDED

A. Include labor, materials, services and incidentals for completion of the Section of Work.

B. Supply and install Vehicular Barrier railing including base plates and epoxied-in anchors.

1.3 PERFORMANCE REQUIREMENTS

A. Thermal Movements: Provide exterior metal fabrications that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
   1. Temperature Change (Range): 120 deg F (67 deg C), ambient material surfaces.

1.4 SUBMITTALS

A. Product Data: For the following:
   1. Threaded Rod Anchors
   2. Epoxy Adhesive

B. Shop Drawings: Show fabrication and installation details for metal fabrications.

C. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

D. Provide templates for anchors and bolts specified for installation under other Sections.

E. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

F. Welding certificates.

G. Qualification Data: For professional engineer.

1.5 QUALITY ASSURANCE

A. Welding: Qualify procedures and personnel according to the following:
   1. AWS D1.1, "Structural Welding Code--Steel."
   2. AWS D1.3, "Structural Welding Code--Sheet Steel."

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of parapet walls and other construction contiguous with metal fabrications by field measurements before fabrication and indicate measurements on Shop Drawings.
   1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating metal fabrications without field measurements. Coordinate existing parapet wall and other contiguous construction to ensure that actual dimensions correspond to established dimensions. Provide allowance for trimming and fitting at site.

1.7 COORDINATION

A. Coordinate installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
   1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
   2. Products: Subject to compliance with requirements, provide one of the products specified.
   3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
   4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces, unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

2.3 FERROUS METALS

A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

B. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.

C. Steel Pipe: ASTM A 53/A 53M, standard weight (Schedule 40), unless another weight is indicated or required by structural loads.

2.4 FASTENERS

A. General: Unless otherwise indicated, provide Type 304 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.

B. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with hex nuts, ASTM A 563 (ASTM A 563M); and, where indicated, flat washers.

C. Stainless-Steel Bolts and Nuts: Regular hexagon-head annealed stainless-steel bolts, nuts and, where indicated, flat washers; ASTM F 593 (ASTM F 738M) for bolts and ASTM F 594 (ASTM F 836M) for nuts, Alloy Group 1 (A1).

D. Anchor Bolts: ASTM F 1554, Grade 36.
   1. Provide hot-dip or mechanically deposited, zinc-coated anchor bolts where item being fastened is indicated to be galvanized.

E. Machine Screws: ASME B18.6.3 (ASME B18.6.7M).

F. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).

G. Plain Washers: Round, ASME B18.22.1 (ASME B18.22M).

H. Lock Washers: Helical, spring type, ASME B18.21.1 (ASME B18.21.2M).

I. Expansion Anchors: Anchor bolt and sleeve assembly with capability to sustain, without failure, a load equal to four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
   1. Material for Anchors in Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5.
   2. Material for Anchors in Exterior Locations: Alloy Group 1 (A1) stainless-steel bolts complying with ASTM F 593 (ASTM F 738M) and nuts complying with ASTM F 594 (ASTM F 836M).

2.5 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

B. Shop Primers: Provide primers that comply with Division 09 painting Sections.

C. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.
   1. Use primer with a VOC content of 420 g/L (3.5 lb/gal.) or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
   2. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.

D. Zinc-Rich Primer: Complying with SSPC-Paint 20 or SSPC-Paint 29 and compatible with topcoat.
   1. Use primer with a VOC content of 420 g/L (3.5 lb/gal.) or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
      Products:
      a. Benjamin Moore & Co.; Epoxy Zinc-Rich Primer CM18/19.
      b. Carboline Company; Carbozinc 621.
      c. ICI Devoe Coatings; Catha-Coat 313.

d. International Coatings Limited; Interzinc 315 Epoxy Zinc-Rich Primer.
e. PPG Architectural Finishes, Inc.; Aquapon Zinc-Rich Primer 97-670.
f. Sherwin-Williams Company (The); Corothane I GalvaPac Zinc Primer.
g. Tnemec Company, Inc.; Tneme-Zinc 90-97.

E. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.

F. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for exterior applications.
Products:
1. Euclid, Dry Pack Grout
2. Sika, Sika Grout 212
3. Or approved equal

G. Concrete Materials and Properties: Comply with requirements in Division 03 Section "Cast-in-Place Concrete" for normal-weight, air-entrained, ready-mix concrete with a minimum 28-day compressive strength of 4000 psi, unless otherwise indicated.

2.6 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm), unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form exposed work true to line and level with accurate angles and surfaces and straight edges.

E. Weld corners and seams continuously to comply with the following:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) screws or bolts, unless otherwise indicated. Locate joints where least conspicuous.

G. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

2.7 MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.

B. Fabricate units from steel shapes, plates, and bars of welded construction, unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction retained by framing and supports. Cut, drill, and tap units to receive hardware, hangers, and similar items.

C. Galvanize miscellaneous framing and supports where indicated.

D. Prime miscellaneous framing and supports with zinc-rich primer where indicated.

2.8 LOOSE BEARING AND LEVELING PLATES

A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction. Drill plates to receive anchor bolts and for grouting.

B. Galvanize plates after fabrication.

C. Prime plates with zinc-rich primer.

2.9 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish metal fabrications after assembly.

2.10 STEEL AND IRON FINISHES

A. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:

1. Exteriors (SSPC Zone 1B) and Items Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
2. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."

B. Shop Priming: Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes and those to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Field Welding: Comply with the following requirements:
   1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
   2. Obtain fusion without undercut or overlap.
   3. Remove welding flux immediately.
   4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors.

E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

3.3 INSTALLING BEARING AND LEVELING PLATES

A. Clean concrete bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates.

B. Set bearing plates on wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with grout.
   1. Use nonshrink nonmetallic grout, in concealed locations where not exposed to moisture; use nonshrink, nonmetallic grout in exposed locations, unless otherwise indicated.
   2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.4 ADJUSTING AND CLEANING

A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
   1. Apply by brush or spray to provide a minimum 2.0-mil (0.05-mm) dry film thickness.

B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Division 09 painting Sections.

C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

SECTION 07 18 00
TRAFFIC COATINGS

PART 1 - GENERAL

1.1 RELATED WORK

A. Applicable provisions of Division 01 shall govern work of this Section.

1.2 SUMMARY

A. Include materials, labor, services and incidentals necessary for completion of this Section of work.

B. Work includes surface preparation and application of a fully adhered, fluid applied, traffic coating to areas indicated on drawings and as specified.

C. Includes removal of unbonded traffic coating at various ramps.

D. Includes removal of bonded traffic coating at various ramps.

E. Detail work including cove sealants is included in cost of traffic coating.

F. The Owner will repaint line stripes after floor coating is applied and cured.

1.3 QUALITY ASSURANCE

A. Industry Standards, Specifications and Codes
   1. General:
   a. Comply with provisions of the following codes and standards except as modified.
   b. Referenced codes and standards including revisions and commentaries shall be the most currently adopted as of the date of these Contract Documents.
      2. American Society for Testing and Materials (ASTM):
   a. Specific ASTM numbers are noted in later text.

B. Pre-Construction Meeting
   1. A pre-construction meeting is required with Contractor in order to coordinate work schedule and inspection required by Engineer. Stepped sample of coating system shall be reviewed and

agreed to for surface texture. Approved surface texture shall be used throughout. Areas deemed to vary from sample shall be recoated at no additional cost. These primarily are areas devoid of surface aggregates that present a slippery surface when wet.

C. APPLICATOR QUALIFICATIONS

1. System applicator shall be licensed or trained to install selected traffic coating system and shall have experience in application of fluid applied deck coatings. Contractor or their subcontractor shall submit qualifications to A/E showing traffic coating applicator has experience in installing specified traffic coating. Traffic coating applicator shall have completed a minimum of 200,000 s.f. of traffic coating application. Qualifications shall consist of a minimum of 5 projects completed within the past 5 years using traffic coating Contractor proposes to install for this Project. List shall include name of project, location, areas of product application, and contact person with phone number. Projects listed shall be a minimum of 10,000 s.f. per project listed.
2. Applicator shall check wet film (mil) thickness and maintain a daily record.

D. Manufacturer's Qualifications

1. System manufacturer shall provide a representative who will instruct applicator's crews on proper methods and techniques of mixing and applying materials.

1.4 SUBMITTALS

A. Applicator Qualifications

B. Sample

1. Submit stepped sample of coating system applied to 1/4 inch by 6 inch by 6 inch plywood or similar rigid base showing each component for each duty grade to be applied. Sample shall be noted with component mil thicknesses and aggregate size and manufacturer. Also submit sample of aggregate to be used.

C. Manufacturer's Literature

1. Submit manufacturer's literature for products furnished including appropriate material safety data sheets.

D. Applicator's License Certificate

1. Submit copy of 'Certificate of License' issued to system applicator by traffic coating manufacturer.

E. Maintenance Manual

1. Upon completion of work required by this Section, submit maintenance manual, identified with project name, location and date; type of coating system applied and surface to which system was applied, including sketches where necessary. Include recommendations for periodic inspections, care and maintenance and snow removal guideline. Identify common causes of damage with instructions for temporary patching until permanent repair can be made.

F. Guarantee

1. Installer shall review surface condition of slab prior to the installation of traffic coating system. Written notice shall be provided to Engineer stating any condition which will impair performance of traffic coating system, including compatibility with existing traffic coating were present. Installation of traffic coating system shall constitute acceptance of surface by Installer.

2. Completed installation shall be guaranteed jointly and severally on a single document, by traffic coating manufacturer and applicator, against defects of materials and workmanship for a period of 5 years.
3. Installer and manufacturer shall provide labor and materials to repair deficiencies or defects which develop due to normal use. Snowplows, abrasive maintenance equipment, and vandalism are not normal traffic use and are exempt from the warranty.

1.5 JOB CONDITIONS

A. General
1. Install traffic coating materials in strict accordance with safety and weather conditions required by manufacturer product literature, material safety data sheets or as modified by applicable rules and regulations of local, State and Federal authorities having jurisdiction.
2. Job conditions are restricted only to inspection and preparation of top surface of substrate to be coated.
3. Post 'No Smoking' signs in area during and for at least 8 hours following application period.
4. Open fires and spark producing equipment shall not be in application areas until vapors have dissipated.

B. Environmental Conditions
1. Rain shall not be anticipated within 8 hours of application.
2. Substrate surface temperatures shall be above 40 degrees F and lower than 110 degrees F.
3. Proper notices shall be given prior to start of membrane application.
4. Positive ventilation for interior applications is to be continuously supplied throughout application period and 8 hours after. Installer is responsible for fume control. Air intakes for buildings are to be protected against infiltration of fumes into ventilation systems.

PART 2 - PRODUCTS

2.1 GENERAL

A. Components shall be products of selected traffic coating system or shall be certified as compatible with components produced by system manufacturer.

B. Traffic coating system shall be a fully adhered, fluid applied, traffic bearing, elastomeric membrane system. System shall be capable of preventing infiltration of water, salts, gasoline and other fluids into concrete.

C. Installer shall not change traffic coating system after selection of system has been made without approval of A/E.

D. Installer shall verify slab surface condition prior to installation of system. Areas of heavy wear or slab irregularities shall be filled prior to traffic coating placement to assure a level, uniform surface. This shall be done according to membrane manufacturers recommendations.

E. Areas identified having a topping system shall be manufacturer’s heavy duty system. These systems shall consist of a primer, base coat or membrane, wear coat and top coat.

F. Wear coats are to be saturated with aggregate.

G. Material thicknesses are wet film thicknesses. Thickness listed for wear coat does not include aggregate.

H. Approved traffic coating systems include systems described for Full System replacement. At placement for worn membrane the replacement will consist of wear coat and finish or top coat:

I. State Street Campus (Lake) and State Street Capitol ramps:
   1. "Auto-Guard FC Double Texturing System" by Neogard Corp. System shall consist of primer, base coat, two wear coats, and finish coat. Total dry film thickness shall be 52 mils exclusive of aggregate. Thickness does not include primer.
   2. "Conipur II Heavy Duty Traffic System" by BASF. System shall consist of primer, base coat, intermediate coat, and finish coat. Total wet film thickness shall be 50 mils exclusive of aggregate. Thickness does not include primer.
   3. Duraldeck System by The Euclid Chemical Company
   4. or approved equal

J. Capitol Square North Ramp:
   1. "Kelmar Exposure 2" by Technical Barrier Systems. System shall consist of primer, base coat, wear coat, and finish coat. Total wet film thickness shall be 62 mils exclusive of aggregate. Thickness does not include primer.

K. Where lapping onto existing traffic coating, new traffic coating shall be compatible and match existing. Contractor shall perform "pull off" bond test or similar to prove compatibility with existing.

L. Color
   1. Top coat color varies and shall match existing.

2.2 RELATED MATERIALS

A. Installer shall furnish related materials required for crack repair, cant sealant, overbanding and flashing per system manufacturers' requirements to achieve a complete waterproof system.

2.3 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver materials to job site in sealed, undamaged containers. Each container shall be identified with material name, date of manufacture and lot number.

B. Materials shall be stored indoors or covered at temperatures not exceeding 90 degrees F. Higher temperatures will reduce shelf life of product.

C. Drums shall be stored on sides, pails shall be stored inverted.

PART 3 - EXECUTION

3.1 GENERAL

A. Work shall be performed in accordance with manufacturer's specifications.

3.2 CONDITION OF SURFACES

A. Before coating work is commenced, top surface of slab shall be shotblasted to remove laitance concrete from existing, replaced, or new concrete slab. Areas of worn or heavily weathered membrane to receive a new wear coat shall also be shotblasted prior to application. Surfaces shall be cleaned with oil free compressed air jet following shotblasting.

B. Concrete slabs shall be prepared using a shotblast machine followed by cleaning with a compressed air jet. Prepared concrete shall have a surface profile of CSP 3-4 (Concrete Surface Preparation 3-4 as established by International Concrete Repair Institute #310.2-1997). Surface appearance shall be verified and approved by Owner and Engineer prior to sealer application. Note: CSP 3-4 is the typical deck coating MFG. recommendation ICRI #310.2-1997 is the new designation.

C. Areas inaccessible to shotblast machine shall be sandblasted to achieve CSP 1 surface profile.

D. Additional cleaning to remove deposits, which hinder bond of traffic coating to concrete surface, shall be done by traffic coating applicator as part of application with no additional cost to Owner.

E. Remove foreign projections on deck by grinding or other suitable methods.

F. Honeycomb, voids, deteriorated, or unsound concrete shall be repaired to produce a sound, uniform surface in accordance with Engineer's recommendations and as shown on Drawings.

G. Concrete surfaces shall be visibly dry and pass a 4-hour rubber mat test (no condensation) prior to application of coating system. Mat shall be black and taped to deck on edges.

H. Verify curing methods used for concrete are compatible with surface requirements for coating system.

I. Top surfaces of substrates other than concrete shall be treated as required by traffic coating manufacturer.

J. Commencement of coating installation implies acceptance of top surface of substrate area only, as suitable to accept traffic coating. Responsibility for other aspects of substrate shall be responsibility of others.

3.3 PREPARATION

A. Rout or sawcut cracks exceeding 1/16 inch in width and fill with sealant as detailed.

B. Traffic coating system shall bridge cracks that open up in substrate up to 1/16 inch in width maximum. Acceptable width of caulked joints is per system manufacturers' specification.

C. Fill expansion, control and construction joints to be overcoated by deck coating with sealant. Joints larger than 1 inch shall be reviewed with traffic coating system specification.

D. Protect adjacent surfaces with drop cloths or masking tape as required.

3.4 FLASHINGS

A. At projections through deck coatings where projections are structurally and rigidly connected to substrate, such as posts, vents, pipes, stanchions, railings, rigidly connected wall/slab intersections and similar connected items having limited movement, provide a bead of sealant. Tool sealant to form a cant and allow to cure before overcoating. Tooled sealant shall be overlain with a fluid applied integral membrane flashing.

B. At locations of potential high movement such as wall/slab intersections which are not structurally and rigidly connected, provide sheet flashing or reinforce coating with uncoated, woven fiberglass cloth. Where sheet flashings are used, they shall be free or unbonded to substrate near meeting angle but shall be fully bonded away from meeting angle. Do not use precured sheet flashings over expansion joints in horizontal surfaces.

3.5 PRIMER

A. Prime concrete, masonry and metal surfaces at manufacturers recommended rate. Concrete primer shall be compatible for use intended. Note traffic coating on horizontal surface shall be placed on concrete while vertical placement may be on concrete or brick.

3.6 DETAIL WORK

A. Apply non-flowing type coating over flashings (sheet flashings, sealant cants and rigid corners). Extend coating beyond flashing out onto adjacent deck surface and extend above top of flashing and terminate in a straight line. Use masking tape.

B. Apply non-flowing type detail coats over cracks, construction joints, cant joints, patch perimeters, etc. Detail coats shall be included in deck coating cost.

C. Allow detail work to cure prior to installation of coating system.

3.7 BASE COAT

A. In areas identified by Project Drawings to receive traffic coating, apply coating material at film thickness specified. Extend coating over fluid applied flashings and detail coatings.

B. Allow to cure per by manufacturers requirements.

3.8 WEAR COAT

A. Apply wear coating material at thickness specified to horizontal areas indicated on Project Drawings to receive traffic coating. Vertical surface will not receive a wear coat.

B. While coating is still fluid, uniformly broadcast aggregate over surface. Aggregate to be applied to saturation for wear coat.

C. Allow to cure per by manufacturers requirements.

D. Remove excess aggregate from deck surface by manual sweeping or mechanical vacuum, followed by air blast.

3.9 TOP COAT

A. Apply a top coat of material as recommended by manufacturer, to encapsulate top layer of aggregate. Application of top coat is not to eliminate non-slip surface texture of membrane system in place.

B. Allow finished installation to cure per by manufacturer before permitting traffic on surfaces.

3.10 CLEANING

A. Clean stains from adjacent surfaces per manufacturer’s instructions.

B. Note: When using solvents for cleanup, extinguish sources of ignition in the area and observe proper precautionary measures for handling materials.

C. Remove foreign matter from finished coating surfaces.

3.11 MAINTENANCE

A. Damaged surfaces may be cleaned and have liquid coating and grit applied to match surrounding surface. Where a regular maintenance and cleaning program is required, surfaces may be washed with commercial detergents or chlorinated solvents.

SECTION 07 92 00
JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED WORK

A. Applicable provisions of Division 01 shall govern work of this Section.

1.2 SUMMARY

A. Include materials, labor, services and incidentals necessary for completion of this Section of Work.

B. Sealants are required at, but are not necessarily limited to the following general locations:
1. Routed random cracks, concrete control joints and construction joints.
2. Masonry and concrete control joints exterior and interior.
3. Isolation joints between structure and other elements.
4. Joints at penetrations of walls, decks and floor by piping and other services and equipment.
5. Joints between items of equipment and other construction.
6. Around hollow metal windows.
7. Joints associated with flashing and sheet metal.
8. Specific drawing details requiring caulking. Wherever caulking is called for on Drawings it shall mean "sealant".

1.3 QUALITY ASSURANCE

A. Applicator Qualifications
1. Contractor shall have a minimum of 3 years of experience in performing work similar to that shown in Drawings and Specifications.

B. Guarantee
1. The completed installation shall be guaranteed jointly and severally on a single document, by sealant manufacturer and installer agreeing to repair or replace sealants which fail to perform as airtight and watertight joints or fail in joint adhesion, cohesion, abrasion resistance, weather resistance, extrusion resistance, migration resistance, stain resistance or general durability or appear to deteriorate in other manner not clearly specified by submitted manufacturer's data as an inherent quality of material for exposure indicated.
2. Guarantee period shall be 5 years.

1.4 SUBMITTALS

A. Manufacturer's Data

1. Submit manufacturer's specifications, recommendations and installation instructions for each type of sealant, caulking compound and associated miscellaneous material required. Include manufacturer's published data, letter of certification or certified test laboratory report indicating each material complies with requirements and is intended generally for applications shown. Show by transmittal that 1 copy of each recommendation and instruction has been distributed to installer.

B. Guarantee
   1. Submit sample copy prior to start of work.

C. Samples
   1. Submit samples of each color required for each type of sealant or caulking compound exposed to view. Compliance with other requirements is exclusive responsibility of Contractor.

D. Applicator Qualifications
   1. Contractor shall submit a list of 5 projects in which similar work to that specified was successfully completed. List shall contain the following for each of the 5 projects:
      a. Project name
      b. Owner of project
      c. Owner's representative, address and telephone number
      d. One-sentence description of work
      e. Cost of portion of work similar to that specified in this section
      f. Total restoration cost of projects
      g. Date of completion of work
   2. The sum of costs of the projects shall be a minimum of $50,000.00.

PART 2 - PRODUCTS

2.1 SEALANT

A. Traffic-bearing, 2 component, Type 1 self-leveling, as applicable, unmodified polyurethane sealant containing no asphalt, fillers or plasticizers. Follow manufacturer’s previously submitted recommendations for type required at joints. Sealants shall conform to Federal Specification TT-S-00227E.
   1. Acceptable Productions and Manufacturers:
      a. For slab cracks and joints subject to vehicular traffic:
         1) "Sikaflex-2C NS/SL" by Sika
         2) “Sonolastic NP2/SL2” by Sonneborn
         3) “THC-900/901 for self leveling by Tremco
         4) “Dymeric 240 FC for gun grade by Tremco
         5) or approved equal
      b. For joints not subject to vehicular traffic including exterior façade sealants or where noted as such:
         1) “Sikaflex - 15 LM” by Sika
         2) “Sonolastic 150” by Sonneborn
         3) “dymonic FC by Tremco
      c. Sealant color will be chosen at time of construction from manufacturer’s standard color pallet.

2.2 JOINT CLEANER

A. Provide type of joint cleaning compound recommended by sealant or caulking compound manufacturer for joint surfaces to be cleaned.

2.3 JOINT PRIMER/SEALER

A. Provide type of joint primer/sealer recommended by the sealant manufacturer for joint surfaces to be primed or sealed.

2.4 BOND BREAKER TAPE

A. Polyethylene tape or other plastic tape as recommended by sealant manufacture shall be applied to sealant-contact surfaces where bond to substrate or joint filler must be avoided for proper performance of sealant. Provide self-adhesive tape wherever applicable.

2.5 SEALANT BACKER ROD

A. Compressible rod stock polyethylene foam, polyethylene jacketed polyurethane foam or other flexible, permanent, durable non-absorptive material as recommended for compatibility with sealant by sealant manufacturer which control joint depth for sealant placement, break bond of sealant at bottom of joint, form optimum shape of sealant bead on back side and provide a highly compressible backer to minimize possibility of sealant extrusion when joint is compressed. Backer rod shall be at least 1/4 inch larger than width of joint.

PART 3 - EXECUTION

3.1 PRE-INSTALLATION MEETING

A. The installer, Engineer, sealant manufacturer's technical representative and other trades involved in coordination with sealant work shall meet with Contractor at Project Site to review procedures and time schedule proposed for installation of sealants and coordination with other work. Review each major sealant application required on the Project.

3.2 WEATHER CONDITIONS

A. Do not proceed with installation of sealants under adverse weather conditions or when temperatures are below or above manufacturer's recommended limitations for installation. Proceed with work only when forecasted weather conditions are favorable for proper cure and development of high early bond strength. Coordinate time schedule with Contractor to avoid delay of project.

3.3 JOINT SURFACE PREPARATION

A. Removal of sealants by means of waterblasting is not permitted.

B. Complete removal of existing sealant is required prior to installation of new sealants.

C. At location of weld plate or flange connectors, sandblast exposed steel to near white metal condition and coat with zinc rich coating. Install bond breaker tape over horizontal steel surface prior to sealant installation.

D. Clean joint surfaces immediately before installation of sealant or caulking compound. Grind or sandblast joint blackouts to remove dirt, coatings, existing sealant, moisture and other substances which interfere with bond of sealant or caulking compound.

E. Installer must examine joint surfaces, backing and anchorage of units forming sealant rabbet and conditions under which sealant work is to be performed and notify Contractor in writing of conditions detrimental to proper and timely completion of work and performance of sealants. Do not proceed with sealant work until unsatisfactory conditions have been corrected in a manner acceptable to installer.

3.4 INSTALLATION

A. Comply with sealant manufacturer's printed instructions except where more stringent requirements are shown or specified and except where manufacturer's specific recommendations directs otherwise.

B. Contractor shall saw and grind surface of cracks and joints. Edges of cracks or joints to be sealed shall be of sound substrate. Prior to installing sealant, surfaces shall be cleaned of foreign debris and edges ground. Joint edges shall be slightly rounded. Rout out random cracks to a nominal depth of 3/8” and a width of ¼”

C. Prime or seal joint surfaces wherever shown or recommended by the sealant manufacturer. Do not allow primer or sealant to spill or migrate onto adjoining surfaces.

D. Install backer rod for sealants except where specifically noted to be omitted or recommended to be omitted by sealant manufacturer for application shown.

E. Install bond breaker tape wherever required by manufacturer's recommendations

F. Employ only proven installation techniques so sealants will be deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of joint bond surfaces equally on opposite sides. Except as otherwise indicated, fill sealant rabbet to a slightly concave surface slightly below adjoining surfaces. Where horizontal joints are between a horizontal surface and a vertical surface, fill joint to form a slight cove so joint will not trap moisture and dirt.

G. Install sealant to depths as recommended by sealant manufacturer.

3.5 CURE AND PROTECTION

A. Cure sealants and caulking compounds in compliance with manufacturer's instructions and recommendations to obtain high early bond strength, internal cohesive strength and surface durability.

B. Installer shall advise Contractor of procedures required for the curing and protection of sealants and caulking compounds during construction period to avoid deterioration or damage (other than normal wear and weathering) prior to time of Owner's acceptance.

C. After completion of sealant work, Contractor shall water test structure and demonstrate to the satisfaction of Engineer that the structure is waterproofed.

SECTION 22 30 00
PLUMBING EQUIPMENT

PART 1 – GENERAL

1.01 SECTION INCLUDES
A. This section includes specifications for tanks and other equipment used for plumbing applications.
   1. Sand Interceptors

1.02 RELATED WORK
A. Applicable provisions of Division 1 shall govern work under this section.
B. Section 22 05 23 - General-Duty Valves for Plumbing Piping
C. Section 22 07 00 - Plumbing Insulation

1.03 SUBMITTALS
A. Refer to Section 22 05 00 – Common Work Results for Plumbing, Submittals.
B. Include data concerning dimensions, capacities, materials of construction, ratings, certifications, weights, manufacturer's installation requirements, manufacturer's performance limitations, and appropriate identification.

1.04 QUALITY ASSURANCE
A. Substitution of Materials: Refer to Division 1.

1.05 OPERATION AND MAINTENANCE DATA
A. All operations and maintenance data shall comply with the submission and content requirements specified under in Section 22 05 00 – Common Work Results for Plumbing.

PART 2 – PRODUCTS

2.01 SAND INTERCEPTOR
A. Manufacturers: Highland Tank, Chicago Boiler, or approved equal
B. 4,000 gallon horizontal atmospheric type steel tank, constructed of high strength mild carbon steel to ASTM specifications and coated inside and outside with high-solids polyurethane coating. Tank shall be maximum of 6’ 0” diameter X 19’ 0” long complete with factory welded 8” diameter minimum inlet and outlet connections, factory welded discharge drop leg extending 24” minimum below wawter line, UL steel tank saddles, minimum of two 24” diameter manways with extensions, gaskets, and bolts.
C. Warranty: Non-prorated 1 year warranty for tank against any failure. Provide factory warranty with shop drawing submittals and operation and maintenance manuals.
D. Manhole Frame and Lids: Heavy duty round cast iron for slab construction with solid lid. Neenah Foundry R-6060

PART 3 – EXECUTION

3.01 INSTALLATION
A. Install plumbing equipment where indicated in accordance with manufacturer's recommendations. Locate equipment and arrange plumbing piping to provide access space for servicing all components.
B. Set sand interceptors on concrete pads. Adjust and level equipment.
C. Connect equipment to drain piping using unions or flanges and isolation valves.

END OF SECTION

SECTION 22 14 00
FACILITY STORM DRAINAGE

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. This section contains specifications for plumbing pipe and pipe fittings for this project.
   1. Storm Drainage
   2. Piping System Leak Tests

1.02 RELATED WORK

A. Applicable provisions of Division 1 govern work under this section.
B. Section 22 05 14 – Plumbing Specialties
C. Section 22 05 29 – Hangers and Supports for Plumbing Piping and Equipment

1.03 SUBMITTALS

A. Refer to Section 22 05 00 – Common Work Results for Plumbing, Submittals.
B. Schedule from the contractor indicating the ASTM or CISPI specification number of the pipe being proposed along with its type and grade if known at the time of submittal, and sufficient information to indicate the type and rating of fittings for each service.
C. Statement from manufacturer on his letterhead that pipe furnished meets the ASTM or CISPI specification contained in this section.

1.04 REFERENCE STANDARDS

A. ASTM A53 Pipe, Steel, Black and Hot-Dipped, Zinc Coated Welded and Seamless
B. ASTM A74 Cast Iron Soil Pipe and Fittings
C. ASTM A105 Forgings, Carbon Steel, for Piping Components
D. ASTM A126 Gray Cast Iron Castings for Valves, Flanges, and Pipe Fittings
E. ASTM A888 Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications
F. ASTM C76 Reinforced Concrete Culvert, Storm Drain and Sanitary Pipe
G. ASTM C425 Compression Joints for Vitrified Clay Pipe & Fittings
H. ASTM C443 Joints for Circular Concrete Pipe Sewer and Culvert Pipe Using Rubber Gaskets
I. ASTM C564 Rubber Gaskets for Cast Iron Soil Pipe and Fittings
J. ASTM C1540 Heavy Duty Shielded Couplings for Joining Hubless Cast Iron Soil Pipe and Fittings
K. ASTM D1785 Poly Vinyl Chloride (PVC) Plastic Pipe
L. ASTM D2241 Poly Vinyl Chloride (PVC) Pressure-Rated Pipe (SDR Series)
M. ASTM D2464 Threaded Poly Vinyl Chloride (PVC) Plastic Pipe Fittings, Schedule 80
N. ASTM D2466 Poly Vinyl Chloride (PVC) Plastic Pipe Fittings, Schedule 40
O. ASTM D2564 Solvent Cements for Poly Vinyl Chloride (PVC) Plastic Pipe and Fittings
P. ASTM D2665 Poly Vinyl Chloride (PVC) Plastic Drain, Waste and Vent Pipe and Fittings
Q. ASTM D2729 Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings
R. ASTM D2855 Making Solvent Cemented Joints with Poly Vinyl Chloride (PVC) Pipe and Fittings
S. ASTM D3034 Type PSM Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings
T. ASTM D3212 Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
U. ASTM D3311 Drain, Waste and Vent (DWV) Plastic Fitting Patterns
V. ASTM F656 Primers for Use in Solvent Cement Joints of Poly Vinyl Chloride (PVC) Plastic Pipe and Fittings
W. CISPI 301 Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications
X. CISPI 310 Couplings For Use In Connection With Hubless Cast Iron Soil Pipe And Fittings For Sanitary And Storm Drain, Waste And Vent Piping Applications

1.05 QUALITY ASSURANCE

A. Substitution of Materials: Refer to Division 1.

B. Order all pipe with each length marked with the name or trademark of the manufacturer and type of pipe; with each shipping unit marked with the purchase order number, metal or alloy designation, temper, size, and name of supplier.
C. Any installed material not meeting the specification requirements must be replaced with material that meets these specifications without additional cost to the owner.

1.06 DESIGN CRITERIA

A. Use only new material, free of defects, rust and scale, and meeting the latest revision of ASTM or CISPI specifications as listed in this specification.
B. Construct all piping for the highest pressures and temperatures in the respective system.
C. Non-metallic piping will be acceptable only for the services indicated.
D. Where ASTM A53 type F pipe is specified, grade A type E or S, or grade B type E or S may be substituted at Contractor's option. Where the grade or type is not specified, Contractor may choose from those commercially available.

1.07 DELIVERY, STORAGE AND HANDLING

A. Promptly inspect shipments to insure that the material is undamaged and complies with specifications.
B. Cover pipe to prevent corrosion or deterioration while allowing sufficient ventilation to avoid condensation. Do not store materials directly on grade. Protect pipe, tube, and fitting ends so they are not damaged. Where end caps are provided or specified, take precautions so the caps remain in place. Protect fittings, flanges, and unions by storage inside or by durable, waterproof, above ground packaging.
C. Offsite storage agreements will not relieve the contractor from using proper storage techniques.
D. Storage and protection methods must allow inspection to verify products.

PART 2 – PRODUCTS

2.01 STORM DRAINAGE

A. Interior Above Ground:
   1. Hubless cast iron soil pipe and fittings, ASTM A888; with no-hub couplings, CISPI 301, CISPI 310, ASTM A74. Pipe and fittings shall be marked with the collective trademark of the Cast Iron Pipe Institute.
      a. Manufacturers: A B & I Foundry, Charlotte Pipe and Foundry, Tyler Pipe
   2. PVC plastic pipe, Schedule 40, Class 12454-B (PVC 1120), ASTM D1785; PVC plastic drain, waste and vent pipe and fittings, ASTM D2665; fitting patterns, ASTM D3311; primer, ASTM F656; solvent cement, ASTM D2564.
B. Pressurized Interior Above Ground:
   1. Galvanized steel pipe, Schedule 40, Type F, Grade A, ASTM A53; with cast iron threaded drainage fittings, ASTM B16.12.
C. Interior Below Ground 15" and Smaller:
   1. Cast iron soil pipe and fittings, hub and spigot, service weight, CISPI 301, ASTM A74; ASTM A888 with neoprene rubber compression gaskets, ASTM C564 and CISPI HSN 85. Pipe and fittings shall be marked with the collective trademark of the Cast Iron Pipe Institute.
      a. Manufacturers: A B & I Foundry, Charlotte Pipe and Foundry, Tyler Pipe
   2. PVC plastic pipe, Schedule 40, Class 12454-B (PVC 1120), ASTM D1785; PVC plastic drain, waste and vent pipe and fittings, ASTM D2665; fitting patterns, ASTM D3311; primer, ASTM F656; solvent cement, ASTM D2564.
D. Exterior Below Ground 12" and Larger:
   1. Reinforced concrete culvert, storm drain and sewer pipe, Class III, ASTM C76; rubber gasket joints, ASTM C443; bell and spigot or tongue and groove ends.

PART 3 – EXECUTION

3.01 GENERAL

A. Install pipe and fittings in accordance with reference standards, manufacturer's recommendations and recognized industry practices.

3.02 PREPARATION

A. Cut pipe ends square. Ream ends of piping to remove burrs. Clean scale and dirt from interior and exterior of each section of pipe and fitting prior to assembly.

3.03 ERECTION

A. Install all piping parallel to building walls and ceilings and at heights which do not obstruct any portion of a window, doorway, stairway, or passageway. Where interferences develop in the field, offset or reroute piping as required to clear such interferences. Coordinate locations of plumbing piping with piping, ductwork, conduit and equipment of other trades to allow sufficient clearances. In all cases, consult drawings for exact location of pipe spaces, ceiling heights, door and window openings, or other architectural details before installing piping.

B. Install underground warning tape 6"-12" below finished grade above all exterior below ground piping. Where existing underground warning tape is encountered, repair and replace.

C. Maintain piping in clean condition internally during construction.

D. Provide clearance for installation of insulation, access to valves and piping specialties.

E. Install all valves and piping specialties, including items furnished by others, as specified and/or detailed. Provide access to valves and specialties for maintenance. Make connections to all equipment, fixtures and systems installed by others where same requires the piping services indicated in this section.

3.04 THREADED PIPE JOINTS

A. Use a thread lubricant or Teflon tape when making joints; no hard setting pipe thread cement or caulking will be allowed.

3.05 SOLVENT WELDED PIPE JOINTS

A. Install in accordance with ASTM D2855 "Making Solvent Cemented Joints With PVC Pipe and Fittings". Saw cut piping square and smooth. Tube cutters may be used if they are fitted with wheels designed for use with PVC pipe that do not leave a raised bead on pipe exterior. Support and restrain pipe during cutting to prevent nicks and scratches. Bevel ends 10-15 degrees and deburr interior. Remove dust, drips, moisture, grease and other superfluous materials from pipe interior and exterior. Check dry fit of pipe and fittings. Reject materials which are out of round or do not fit within close tolerance. Use heavy body solvent cement for large diameter fittings.

B. Maintain pipe, fittings, primer and cement between 40 and 100 degrees during application and curing. Apply primer and solvent using separate daubers (3" and smaller piping only) or clean natural bristle brushes about 1/2 the size of the pipe diameter. Apply primer to the fitting socket and pipe surface with a scrubbing motion. Check for penetration and reapply as needed to dissolve surface to a depth of 4-5 thousandths. Apply solvent cement to the fitting socket and pipe in an amount greater than needed to fill any gap. While both surfaces are wet, insert pipe into socket fitting with a quarter turn to the bottom of the socket. Solvent cement application and insertion must be completed in less than 1 minute. Minimum of 2 installers is required on piping 4" and larger. Hold joint for 30 seconds or until set. Reference manufacturer's recommendations for initial set time before handling and for full curing time before pressure testing. Cold weather solvent/cement may be utilized only under unusual circumstances and when specifically approved by the Owner's Project Representative.

3.06 MECHANICAL HUBLESS PIPE CONNECTIONS

A. Place the gasket on the end of one pipe or fitting and the clamp assembly on the end of the other pipe or fitting. Firmly seat the pipe or fitting ends against the integrally molded shoulder inside the neoprene gasket. Slide the clamp assembly into position over the gasket. Tighten fasteners to manufacturer's recommended torque.

3.07 STORM

A. Verify invert elevations and building elevations prior to installation. Install exterior piping pitched to drain at indicated elevations and slope. Install interior piping pitched to drain at minimum slope of 1/8" per foot where possible and in no case less than 1/16" per foot for piping 3" and larger.

3.08 PIPING SYSTEM LEAK TESTS

A. For hydrostatic tests, use clean water and remove all air from the piping being tested. Measure and record test pressure at the high point in the system.

B. Inspect system for leaks. Where leaks occur, repair the area with new materials and repeat the test. Caulking will not be acceptable.

C. Entire test must be witnessed by the owner's representative. All pressure tests are to be documented.

System	Test Medium	Initial Test Pressure	Duration	Final Test Pressure	Duration
Storm	Water	N/A		10' water	2 hr.

END OF SECTION

SECTION 22 07 00
PLUMBING INSULATION

PART 1 **– GENERAL**

1.01 **SECTION INCLUDES**

A. This section includes insulation specifications for plumbing piping and equipment.
   1. Insulation
      a. Rigid Fiberglass Insulation
      b. Semi-Rigid Fiberglass Insulation
      c. Calcium Silicate Insulation
      d. Elastomeric Insulation
      e. Polyolefin Insulation
      f. Phenolic Insulation
      g. Extruded Polystyrene Insulation
      h. Urethane Insulation
      i. Cellular Glass Insulation
      j. Fireproofing Insulation
   2. Covers and Jackets
      a. PVC Fitting Covers and Jackets
      b. Metal Jackets
   3. Insulation Inserts And Pipe Shields
   4. Accessories

1.02 **RELATED WORK**

A. Applicable provisions of Division 1 govern work under this section.
B. Section 22 05 00 – Common Work Results for Plumbing
C. Section 22 05 29 – Hangers and Supports for Plumbing Piping and Equipment
D. Section 22 14 00 – Facility Storm Drainage
E. Section 22 30 00 – Plumbing Equipment

1.03 **SUBMITTALS**

A. Refer to Section 22 05 00 – Common Work Results for Plumbing, Submittals. In addition to the general content specified under Section 22 05 00 – Common Work Results for Plumbing, supply the following submittals:
   1. Insulation
      a. Rigid Fiberglass Insulation
      b. Semi-Rigid Fiberglass Insulation
      c. Calcium Silicate Insulation
      d. Elastomeric Insulation
      e. Polyolefin Insulation
      f. Phenolic Insulation
      g. Extruded Polystyrene Insulation
      h. Urethane Insulation
      i. Cellular Glass Insulation
      j. Fireproofing Insulation
   2. Covers and Jackets
      a. PVC Fitting Covers and Jackets
      b. Metal Jackets
   3. Insulation Inserts And Pipe Shields
   4. Accessories
B. Submit a schedule of all insulating materials to be used on the project, including adhesives, fastening methods, fitting materials along with material safety data sheets and intended use of each material. Include manufacturer's technical data sheets indicating density, thermal characteristics, jacket type, and manufacturer's installation instructions.

1.04 **REFERENCE STANDARDS**

A. ASTM B209 Aluminum and Aluminum Alloy Sheet and Plate
B. ASTM C165 Test Method for Compressive Properties of Thermal Insulations
C. ASTM C177 Heat Flux and Thermal Transmission Properties
D. ASTM C195 Mineral Fiber Thermal Insulation Cement
E. ASTM C240 Cellular Glass Insulation Block
F. ASTM C302 Density of Preformed Pipe Insulation
G. ASTM C303 Density of Preformed Block Insulation
H. ASTM C449 Mineral Fiber Hydraulic Setting Thermal Insulation Cement
I. ASTM C518 Heat Flux and Thermal Transmission Properties
J. ASTM C533 Calcium Silicate Block and Pipe Thermal Insulation
K. ASTM C534 Preformed Flexible Elastomeric Thermal Insulation
L. ASTM C547 Mineral Fiber Preformed Pipe Insulation
M. ASTM C552 Cellular Glass Block and Pipe Thermal Insulation
N. ASTM C553 Mineral Fiber Blanket and Felt Insulation
O. ASTM C578 Preformed, Block Type Cellular Polystyrene Thermal Insulation
P. ASTM C591 Preformed Rigid Cellular Polyurethane Thermal Insulation
Q. ASTM C610 Expanded Perlite Block and Thermal Pipe Insulation
R. ASTM C612 Mineral Fiber Block and Board Thermal Insulation
S. ASTM C921 Properties of Jacketing Materials for Thermal Insulation
T. ASTM C1136 Flexible Low Permeance Vapor Retarders for Thermal Insulation
U. ASTM E84 Surface Burning Characteristics of Building Materials
V. MICA National Commercial & Industrial Insulation Standards
W. NFPA 225 Surface Burning Characteristics of Building Materials
X. UL 723 Surface Burning Characteristics of Building Materials

1.05 **QUALITY ASSURANCE**

A. Substitution of Materials: Refer to Division 1.
B. Label all insulating products delivered to the construction site with the manufacturer's name and description of materials.

1.06 **OPERATION AND MAINTENANCE DATA**

A. All operations and maintenance data shall comply with the submission and content requirements specified in Section 22 05 00 – Common Work Results for Plumbing.

1.07 **DESCRIPTION**

A. Furnish and install all insulating materials and accessories as specified or as required for a complete installation. The following types of insulation are specified in this section:
   1. Pipe Insulation
   2. Equipment Insulation
B. Install all insulation in accordance with the latest edition of MICA (Midwest Insulation Contractors Association) Standard and manufacturer's installation instructions. Exceptions to these standards will only be accepted where specifically modified in these specifications, or where prior written approval has been obtained from the Owner’s Project Representative.

1.08 **DEFINITIONS**

A. Concealed: shafts, furred spaces, space above finished ceilings, utility tunnels and crawl spaces. All other areas, including walk-through tunnels, shall be considered as exposed.

PART 2 **– PRODUCTS**

2.01 **MATERIALS**

A. Materials or accessories containing asbestos will not be accepted.

B. Use composite insulation systems (insulation, jackets, sealants, mastics, and adhesives) that have a flame spread rating of 25 or less and smoke developed rating of 50 or less, with the following exceptions:
   1. Insulation which is not located in an air plenum may have a flame spread rating not over 25 and a smoke developed rating no higher than 150.

2.02 **INSULATION AND JACKETS**

A. Manufacturers: Armstrong, Certainteed Manson, Childers, Dow, Extol, Halstead, H.B. Fuller, Imcoa, Knauf, Owens-Corning, Pittsburgh Corning, Rubatex, Johns-Mansville, or approved equal.
B. Insulating materials shall be fire retardant, moisture and mildew resistant, and vermin proof. Insulation shall be suitable to receive jackets, adhesives and coatings as indicated.
C. Rigid Fiberglass Insulation:
   1. Minimum nominal density of 3 lbs. per cu. ft., and thermal conductivity of not more than 0.23 at 75 degrees F, minimum compressive strength of 25 PSF at 10% deformation, rated for service to 450 degrees F.
   2. White kraft reinforced foil vapor barrier all service jacket, factory applied to insulation with a self-sealing pressure sensitive adhesive lap, maximum permeance of .02 perms and minimum beach puncture resistance of 50 units.
D. Semi-Rigid Fiberglass Insulation:
   1. Minimum nominal density of 3 lbs. per cu. ft., thermal conductivity of not more than 0.28 at 75 degrees F, minimum compressive strength of 125 PSF at 10% deformation, rated for service to 450 degrees F. Insulation fibers perpendicular to jacket and scored for wrapping cylindrical surfaces.
   2. White kraft reinforced foil vapor barrier all service jacket, factory applied to insulation with a maximum permeance of 0.02 perms and minimum beach puncture resistance of 50 units.
E. Calcium Silicate Insulation:
   1. Rigid hydrous calcium silicate, ASTM C533, Type I, minimum dry density of 12.5 lbs. per cu. ft., thermal conductivity of not more than 0.44 at 300 degrees F, maximum water absorption of 90% by volume, minimum compressive strength 140 psi at 5% deformation, rated for service range of 0 degrees F to 1,200 degrees F. Material to be visually coded or marked to indicate it is asbestos free.

2.03 **INSULATION INSERTS AND PIPE SHIELDS**

A. Manufacturers: B-Line, Pipe Shields, Value Engineered Products
B. Construct inserts with calcium silicate, minimum 140 psi compressive strength. Piping 12” and larger, supplement with high density 600 psi structural calcium silicate insert. Provide galvanized steel shield. Insert and shield to be minimum 180 degree coverage on bottom of supported piping and full 360 degree coverage on clamped piping. On roller mounted piping and piping designed to slide on support, provide additional load distribution steel plate.
C. Where contractor proposes shop/site fabricated inserts and shields, submit schedule of materials, thicknesses, gauges and lengths for each pipe size to demonstrate equivalency to pre-engineered pre-manufactured product described above. On low temperature systems, extruded polystyrene may be substituted for calcium silicate provided insert and shield length and gauge are increased to compensate for lower insulation compressive strength.
D. Pre-compressed 20# density molded fiberglass blocks, Hamfab, of same thickness as adjacent insulation may be substituted for calcium silicate inserts with one 1”x 6” block for piping through 2-1/2” and three 1” x 6” blocks for piping through 4”. Submit shield schedule to demonstrate equivalency to pre-engineered/pre-manufactured product described above.
E. Wood blocks will not be accepted.

2.04 **ACCESSORIES**

A. All products shall be compatible with surfaces and materials on which they are applied, and be suitable for use at operating temperatures of the systems to which they are applied.
B. Adhesives, sealants, and protective finishes shall be as recommended by insulation manufacturer for applications specified.

C. Insulation bands to be 3/4 inch wide, constructed of aluminum or stainless steel. Minimum thickness to be .015 inch for aluminum and .010 inch for stainless steel.
D. Tack fasteners to be stainless steel ring grooved shank tacks.
E. Staples to be clinch style.
F. Insulating cement to be ANSI/ASTM C195, hydraulic setting mineral wool.
G. Finishing cement to be ASTM C449.
H. Fibrous glass or canvas fabric reinforcing shall have a minimum untreated weight of 6 oz./sq. yd.
I. Bedding compounds to be non-shrinking and permanently flexible.
J. Vapor barrier coatings to be non-flammable, fire resistant, polymeric resin.
K. Fungicidal water base coating (Foster 40-20) to be compatible with vapor barrier coating.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Install insulation, jackets and accessories in accordance with manufacturer's instructions and under ambient temperatures and conditions recommended by manufacturer. Surfaces to be insulated must be clean and dry.
B. Do not insulate systems or equipment which are specified to be pressure tested or inspected, until testing, inspection and any necessary repairs have been successfully completed.
C. Install insulation with smooth and even surfaces. Poorly fitted joints or use of filler in voids will not be accepted. Cover and seal exposed fiberglass insulation when insulation is terminated, no raw fiberglass insulation is allowed. Provide neat and coated terminations at all nameplates, uninsulated fittings, or at other locations where insulation terminates. Install with longitudinal joints facing wall or ceiling.
D. Install fabric reinforcing without wrinkles. Overlap seams a minimum of 2 inches.
E. Use full-length material (as delivered from manufacturer) wherever possible. Scrap piecing of insulation or pieces cut undersize and stretched to fit will not be accepted.
F. Insulation shall be continuous through sleeves and openings. Vapor barriers shall be maintained continuous through all penetrations.
G. Provide a complete vapor barrier for insulation on the following systems:
    1. Storm Water
    2. Equipment piping with a surface temperature below 65 degrees F

3.02 PIPING, VALVE AND FITTING INSULATION

A. General:
    1. Install insulation with butt joints and longitudinal seams closed tightly. Provide minimum 2" lap on jacket seams and 2" tape on butt joints, firmly cemented with lap adhesive. Additionally secure with staples along seams and butt joints. Coat staples with vapor barrier mastic on systems requiring vapor barrier.
    2. Install insulation continuous through pipe hangers and supports with hangers and supports on the exterior of insulation. Where a vapor barrier is not required, hangers and supports may be attached directly to piping with insulation completely covering hanger or support and jacket sealed at support rod penetration. Where riser clamps are required to be attached directly to piping requiring vapor barrier, extend insulation and vapor barrier jacketing/coating around riser clamp.
B. Insulation Inserts and Pipe Shields:
    1. Provide insulation inserts and pipe shields at all hanger and support locations. Inserts may be omitted on 3/4" and smaller copper piping provided 12" long 22 gauge pipe shields are used.
C. Fittings and Valves:
    1. Fittings, valves, unions, flanges, couplings and specialties may be insulated with factory molded or built up insulation of the same thickness as adjoining insulation. Cover insulation with fabric reinforcing and mastic or where temperatures do not exceed 150 degrees, PVC fitting covers. Secure PVC fitting covers with tack fasteners and 1-1/2" band of mastic over ends, throat, seams or penetrations. On systems requiring vapor barrier, use vapor barrier mastic.
D. Pipe Insulation Schedule:
    1. Provide insulation on new and existing remodeled piping as indicated in the following schedule:

Service	Insulation Types	Insulation Thickness by Pipe Size				
		1” and smaller	1-1/4” to 2”	2-1/2” to 4”	5” to 6”	8” and larger
All Horizontal Storm Piping and 4'-0" of vertical Piping thereafter	Rigid Fiberglass	0.5”	0.5”	0.5”	0.5”	0.5”

3.03 **EQUIPMENT INSULATION**

A. Do not insulate over equipment access manholes, fittings, nameplates or ASME stamps. Bevel and seal insulation at these locations.

B. Semi-Rigid Fiberglass:

1. Apply insulation to equipment shells using weld pins, bonding adhesive, banded and wired in place. Fill all joints, seams and depressions with insulating cement to a smooth, even surface. Cover with reinforcing fabric and 2 coats of mastic. Use vapor barrier mastic on systems requiring a vapor barrier.

C. Equipment Insulation Schedule:

1. Provide equipment insulation as follows:

Equipment	Insulation Type	Thickness	Remarks
Sand Interceptor	Semi-Rigid Fiberglass	2”	

END OF SECTION

SECTION 22 05 29
HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. This section includes specifications for supports of all plumbing equipment and materials as well as piping system anchors.
   1. Structural Supports
   2. Pipe Hangers And Supports
   3. Pipe Hanger Rods
   4. Concrete Inserts
   5. Equipment Stands
   6. Corrosive Atmosphere Coatings

1.02 RELATED WORK

A. Applicable provisions of Division 1 shall govern work under this section.
B. Section 03 10 00 – Concrete Formwork for equipment pads
C. Section 03 30 00 – Cast-in-Place Concrete for equipment pads
D. Section 22 07 00 – Plumbing Insulation for insulation protection at support devices

1.03 SUBMITTALS

A. Refer to Section 22 05 00 – Common Work Results for Plumbing. In addition to the general content specified under Section 22 05 00 – Common Work Results for Plumbing, supply the following submittals:
   1. Structural Supports
   2. Pipe Hangers And Supports
   3. Pipe Hanger Rods
   4. Concrete Inserts
   5. Equipment Stands
   6. Corrosive Atmosphere Coatings
B. Schedule of all hanger and support devices indicating attachment methods and type of device for each pipe size and type of service.
C. All submittals are to comply with submission and content requirements specified within Section 22 05 00 – Common Work Results for Plumbing.

1.04 REFERENCE STANDARDS

A. MSS SP-58 Pipe Hangers and Supports - Materials, Design and Manufacture
B. MSS SP-69 Pipe Hangers and Supports - Selection and Application

1.05 QUALITY ASSURANCE

A. Substitution of Materials: Refer to Division 1.

1.06 DESCRIPTION

A. Provide all supporting devices as required for the installation of plumbing equipment and materials. All supports and installation procedures are to conform to the latest requirements of the ANSI Code for building piping.
B. Fasteners depending on soft lead for holding power or requiring powder actuation will not be accepted.
C. Support material under all conditions of operation, variations in installed and operating weight of equipment and piping, to prevent excess stress, and allow for proper expansion and contraction.
D. Protect insulation at all hanger points; see Related Work above.

1.07 DESIGN CRITERIA

A. Materials and application of pipe hangers and supports shall be in accordance with MSS Standard Practice SP-58 and SP-69 unless noted otherwise.

PART 2 – PRODUCTS

2.01 STRUCTURAL SUPPORTS

A. Provide all supporting steel required for the installation of plumbing equipment and materials, including angles, channels, beams, etc. to suspended or floor supported tanks and equipment. All of this steel may not be specifically indicated on the drawings.

2.02 PIPE HANGERS AND SUPPORTS

A. Manufacturers: Anvil, B-Line, Grinnell, Pate, Piping Technology, Roof Products & Systems.
B. Hangers for Pipe Sizes 1/2" through 2":
   1. Carbon steel, adjustable swivel ring.
   2. Carbon steel, adjustable clevis, standard.
C. Hangers for Pipe Sizes 2" and Larger:
   1. Carbon steel, adjustable clevis, standard.
D. Multiple or Trapeze Hangers:
   1. Steel channels with welded spacers and hanger rods.
E. Wall Support:
   1. Carbon steel welded bracket with hanger.
   2. Perforated, epoxy painted finish, 16-12 gauge, min., steel channels securely anchored to wall structure, with interlocking, split-type, bolt secured, galvanized pipe/tubing clamps. When copper piping is being supported, provide flexible elastomeric/thermoplastic isolation cushion material to completely encircle the piping and avoid contact with the channel or clamp.
F. Vertical Support:
   1. Carbon steel riser clamp for above floor use.
G. Floor Support:
   1. Carbon steel pipe saddle, stand and bolted floor flange.

2.03 PIPE HANGER RODS

A. Steel Hanger Rods:
   1. Threaded both ends, threaded one end, or continuous threaded, complete with adjusting and lock nuts.
   2. Size rods for individual hangers and trapeze support as indicated in the following schedule.
   3. Total weight of equipment, including valves, fittings, pipe, pipe content, and insulation, are not to exceed the limits indicated.

Maximum Load (Lbs.) (650°F Maximum Temp.)	Rod Diameter (inches)
610	3/8
1130	1/2
1810	5/8
2710	3/4
3770	7/8
4960	1
8000	1-1/4

2.04 CONCRETE INSERTS

A. Drilled Fasteners:
   1. Carbon steel expansion anchors, vibration resistant, with ASTM B633 zinc plating. Use drill bit of same manufacturer as anchor. Hilti, Rawl, Redhead.

2.05 EQUIPMENT STANDS

A. Use structural steel members welded to and supported by pipe supports. Clean, prime and coat with three coat rust inhibiting alkyd paint or one coat epoxy mastic. Where exposed to weather, treat with corrosive atmosphere coatings.

2.06 CORROSIVE ATMOSPHERE COATINGS

A. Factory coat supports and anchors used in corrosive atmospheres with hot dip galvanizing after fabrication, ASTM A123, 1.5 ounces/square foot of surface each side. Mechanical galvanize threaded products, ASTM B695 Class 50, 2.0 mil coating. Field cuts and damaged finishes to be field covered with zinc rich paint of comparable thickness to factory coating.
B. Corrosive atmospheres include the following locations:
   1. Exterior locations
   2. Parking ramps

PART 3 – EXECUTION

3.01 INSTALLATION

A. Size, apply and install supports and anchors in compliance with manufacturers recommendations.
B. Install supports to provide for free expansion of the piping system. Support all piping from the structure using concrete inserts, beam clamps, ceiling plates, wall brackets, or floor stands. Fasten ceiling plates and wall brackets securely to the structure and test to demonstrate the adequacy of the fastening.
C. Coordinate hanger and support installation to properly group piping of all trades.
D. Perform welding in accordance with standards of the American Welding Society.

3.02 HANGER AND SUPPORT SPACING

A. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
B. Place a hanger within 12 inches of each horizontal elbow, valve, or similar piping specialty item.
C. Use hangers with 1-1/2 inch minimum vertical adjustment.
D. Support riser piping independently of connected horizontal piping.
E. Adjust hangers to obtain the slope specified in the piping section of these specifications.
F. Space hangers for pipe as follows:

Pipe Material	Pipe Size	Max. Horiz. Spacing	Max. Vert. Spacing
Cast Iron	2" and larger	5'-0"	15'-0"
Steel	1/2" through 1-1/4"	7'-0"	15'-0"
Steel	1-1/2" through 6"	10'-0"	15'-0"
Steel	8" through 12"	14'-0"	20'-0"

3.03 RISER CLAMPS

A. Support vertical piping with clamps secured to the piping and resting on the building structure or secured to the building structure below at each floor.

END OF SECTION

SECTION 22 05 23
GENERAL DUTY VALVES FOR PLUMBING PIPING

PART 1 **– GENERAL**

1.01 **SECTION INCLUDES**

A. This section includes valve specifications for all plumbing systems except where indicated under Related Work.
   1. Valves
      a. Butterfly Valves

1.02 **RELATED WORK**

A. Applicable provisions of Division 1 govern work under this section.
B. Section 22 14 00 – Facility Storm Drainage
C. Section 22 30 00 – Plumbing Equipment

1.03 **SUBMITTALS**

A. Refer to Section 22 05 00 – Common Work Results for Plumbing, Submittals. In addition to the general content specified under Section 22 05 00 – Common Work Results for Plumbing, supply the following submittals:
   1. Valves
B. Schedule of all valves indicating type of service, dimensions, materials of construction, and pressure/temperature ratings for all valves to be used on the project. Temperature ratings specified are for continuous operation.

1.04 **QUALITY ASSURANCE**

A. Substitution of Materials: Refer to Division 1.

1.05 **DESIGN CRITERIA**

A. Where valve types (ball, butterfly, etc.) are specified for individual plumbing services (i.e. domestic water, gas, etc.), each valve type shall be of the same manufacturer unless prior written approval is obtained from the Owner.
B. Valves to be line size unless specifically noted otherwise.

1.06 **OPERATION AND MAINTENANCE DATA**

A. All operations and maintenance data shall comply with the submission and content requirements specified in Section 22 05 00 – Common Work Results for Plumbing.

PART 2 **- PRODUCTS**

2.01 **VALVES**

A. Manufacturers: Apollo, Asco, Conbraco, Crane, Hammond, Jomar, Lunkenheimer, Milwaukee Valve, Nibco, Stockham, Watts
B. All water system valves to be rated at not less than 125 water working pressure at 240 degrees F unless noted otherwise.
C. Butterfly valves:
   1. 2½” and larger: Cast or ductile iron body; stainless steel shaft; bronze, copper or teflon bushings; EPDM resilient seat; EPDM seals; bronze, aluminum-bronze, EPDM encapsulated ductile iron or stainless steel disc. 200 psig WOG through 12", 150 psig WOG through 24". Valve assembly to be bubble tight to 175 psig with no downstream flange/pipe attached. Use tapped lug type valves with stud bolts or cap screws, or grooved end connection valves, permitting removal of downstream piping while using the valve for system shutoff. Nibco LD2000/LC2860
   2. Provide 10 position locking lever handle actuators for valves 6" and smaller. Provide worm gear operators with external position indication for valves 8" and larger.

PART 3 **EXECUTION**

3.01 **GENERAL**

A. Properly align piping before installation of valves. Install and test valves in strict accordance with valve manufacturer's installation recommendations. Do not support weight of piping system on valve ends.
B. Mount valves in locations which allow access for operation, servicing and replacement.
C. Provide valve handle extensions for all valves installed in insulated piping.
D. Install all valves with the stem in the upright or horizontal position. If possible, install butterfly valves with the stem in the horizontal position. Valves installed with the stems down will not be accepted.
E. Prior to flushing of piping systems, place all valves in the full-open position.

3.02 **SHUT OFF VALVES**

A. Install shut-off valves at each piece of equipment and elsewhere as indicated.

END OF SECTION

SECTION 22 05 14
PLUMBING SPECIALTIES

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. This section includes specifications for drains, cleanouts, and other miscellaneous plumbing specialties.
   1. Cleanouts

1.2 RELATED WORK
A. Applicable provisions of Division 1 shall govern work under this section.
B. Section 22 14 00 – Facility Storm Drainage

1.3 SUBMITTALS
A. Refer to Section 22 05 00 – Common Work Results for Plumbing.
B. Include data concerning dimensions, capacities, materials of construction, ratings, certifications, weights, manufacturer's installation requirements, manufacturer's performance limitations, and appropriate identification.

1.4 QUALITY ASSURANCE
A. Substitution of Materials: Refer to Division 1.

1.5 OPERATION AND MAINTENANCE DATA
A. All operations and maintenance data shall comply with the submission and content requirements specified in Section 22 05 00 – Common Work Results for Plumbing.

PART 2 – PRODUCTS

2.1 CLEANOUTS
A. Manufacturer: Josam, Smith, Wade, Watts, Zurn.
B. Interior Concrete Floor Areas: Enameled cast iron body with round adjustable scoriated polished nickel bronze cover, tapered threaded ABS closure plug. Zurn ZN-1400
C. Interior Exposed Vertical Stacks: Line type cleanout tee with tapered threaded ABS closure plug. Zurn Z-1445
D. Interior Horizontal Lines: Cast iron hub with tapped ferrule and tapered threaded ABS or PVC closure plug, or no-hub coupling and blind plug.

PART 3 EXECUTION

3.1 INSTALLATION
A. Coordinate location and setting of plumbing specialties with adjacent construction. Install in accordance with manufacturers recommendations.

END OF SECTION

SECTION 22 05 00
COMMON WORK RESULTS FOR PLUMBING

PART 1 – GENERAL

1.01 SCOPE OF WORK

A. It is the intent of these specifications to provide complete and workable plumbing systems as shown on the accompanying plans and as specified herein except such parts as are specifically exempted herein. Provide all necessary supervision, coordination, labor, materials, equipment, fixtures, drayage, hoisting, tools, transportation, plant services and facilities, machinery and connections to utilities for the installation of complete and operable plumbing systems. If details or special conditions are required in addition to those shown on drawings, provide all material and equipment usually furnished with such systems or required to complete their installation, whether noted in plans and specification or not.

B. Materials and labor shall be new (unless noted otherwise), first class and workmanlike and shall be subject at all times to the A/E's inspections, tests and approval from the commencement until the acceptance of the completed work.

C. The layout shown on the drawings is necessarily diagrammatic but shall be followed as closely as other work will permit. The drawings provide design intent. The Contractor shall verify all dimensions at the site and be responsible for their accuracy.

D. Because of the scale of the Drawings, certain basic items, such as, pipe fittings, duct fittings, access panels, and sleeves, may not be shown. Where such items are required by Code or by other Sections, or where required for proper installation of the Work, such items shall be included, whether shown or not.

E. In the event of any inconsistencies between the specifications, drawings, contract documents, applicable laws, statutes, ordinances, building codes, rules and regulations, the contractor shall provide the better quality or greater quantity of work and comply with or conform its work to the most stringent legal or contractual requirements.

F. Changes from these drawings required to make this work conform to the building construction shall be made only with prior written approval of the Architect/Engineer. All proposed changes shall be shown on shop drawings. All measurements shall be verified by actual observation and all work shall fit in place meeting the approval of the Architect/Engineer.

G. Equipment Specification may not deal individually with minute items required, such as, components, parts, controls, and devices which may be required to produce the equipment performance specified or as required to meet the equipment warranties. Where such items are required to make the system operational, they shall be included by the supplier of the equipment at no additional cost, whether or not specifically called for.

1.02 SECTION INCLUDES

A. This section includes information common to two or more technical plumbing specification sections or items that are of a general nature, not conveniently fitting into other technical sections.

1. Submittals
2. Reference Standards
3. Quality Assurance
4. Guarantee
5. Operation And Maintenance Instructions
6. Record Documents
7. Continuity Of Existing Services
8. Protection Of Finished Surfaces
9. Sealing And Firestopping
10. Off Site Storage
11. Regulatory Requirements
12. Certificates And Inspections
13. Demolition And Existing Requirements
14. Sleeves And Openings

15. Omissions
16. Definitions
17. Project/Site Conditions
18. Work Sequence And Scheduling
19. Salvage Materials
20. Training
21. Identification
22. Bedding And Backfill
23. Demolition
24. Excavation And Backfill
25. Concrete Work
26. Cutting And Patching
27. Building Access
28. Equipment Access
29. Housekeeping And Clean Up
30. Sheeting, Shoring And Bracing
31. Surface Restoration

1.03 RELATED WORK

A. Applicable provisions of Division 1 govern work under this section.
B. This section applies to all Division 22 sections of plumbing.

1.04 SUBMITTALS

A. Submit shop drawings for equipment under each section per requirements listed in that section, as well as per Division 1.
B. Submit for all equipment and systems as indicated in the respective specification sections, marking each submittal with that specification section number. Mark general catalog sheets and drawings to indicate specific items being submitted and proper identification of equipment by name and/or number, as indicated in the contract documents. Failure to do this may result in the submittal(s) being returned to the Contractor for correction and resubmission. Do not submit hard copies of web pages. Failing to follow these instructions does not relieve the Contractor from the requirement of meeting the project schedule.
C. On request from the A/E, the successful bidder shall furnish additional drawings, illustrations, catalog data, performance characteristics, etc.
D. Submittals shall be grouped to include complete submittals of related systems, products, and accessories in a single submittal. Mark dimensions and values in units to match those specified.
E. The submittals must be approved before fabrication is authorized.
F. Provide electronic copies of all submittals for review.
G. Not more than two weeks after award of contract but before any shop drawings are submitted, contractor to submit the following plumbing system data sheet. List piping material type for each piping service on the project, ASTM number, schedule or pressure class, joint type, manufacturer and model number where appropriate. List valves and specialties for each piping service, fixture and equipment with manufacturer and model number. The approved plumbing system data sheet(s) will be made available to the owner's project representative for their use on this project.

Plumbing System Data Sheet:

Item	Pipe Service/Sizes	Manufacturer/Model No.	Remarks
Pipe			
Fittings			
Unions			
Valves			
Pipe Specialties			
Hangers & Supports			
Insulation			
Plumbing Specialties			
Plumbing Equipment			

H. Shop drawing submittals are to be bound, labeled, contain the project manual cover page and a material index list page showing item designation, manufacturer and additional items supplied with the installation. Submit for all equipment and systems as indicated in the respective specification sections, marking each submittal with that specification section number. Mark general catalog sheets and drawings to indicate specific items being submitted and proper identification of equipment by name and/or number, as indicated in the contract documents. Include wiring diagrams of electrically powered equipment.

I. Submit sufficient quantities of data sheets and shop drawings to allow the following distribution:

1.	Operating and Maintenance Manuals	2 copies
2.	Owner	1 copy
3.	Architect/Engineer	2 copies

1.05 REFERENCE STANDARDS

A. Abbreviations of standards organizations referenced in this and other sections are as follows:

1.	ABMA	American Boiler Manufacturers Association
2.	ANSI	American National Standards Institute
3.	ARI	Air Conditioning and Refrigeration Institute
4.	ASME	American Society of Mechanical Engineers
5.	ASSE	American Society of Sanitary Engineering
6.	ASTM	American Society for Testing and Materials
7.	AWWA	American Water Works Association
8.	AWS	American Welding Society
9.	CISPI	Cast Iron Soil Pipe Institute
10.	CGA	Compressed Gas Association
11.	CS	Commercial Standards, Products Standards Sections, Office of Eng. Standards Service, NBS
12.	EPA	Environmental Protection Agency
13.	FS	Federal Specifications, Superintendent of Documents, U.S. Government Printing Office
14.	IAPMO	International Association of Plumbing & Mechanical Officials
15.	MICA	Midwest Insulation Contractors Association
16.	MSS	Manufacturer's Standardization Society of the Valve & Fitting Industry, Inc.
17.	NBS	National Bureau of Standards
18.	NEMA	National Electrical Manufacturers Association
19.	NFPA	National Fire Protection Association
20.	NSF	National Sanitation Foundation
21.	PDI	Plumbing and Drainage Institute
22.	STI	Steel Tank Institute
23.	UL	Underwriters Laboratories Inc.

B. Standards referenced in this section:

1.	ACI 614	Recommended Practice for Measuring, Mixing and Placing of Concrete
2.	ASTM D1557	Standard Test Method for Moisture-Density Relations of Soils
3.	ASTM E814	Standard Test Method for Fire Tests of Through-Penetration Fire Stops
4.	ASTM E84	Standard Test Method for Surface Burning Characteristics of Building Materials
5.	UL1479	Fire Tests of Through-Penetration Firestops
6.	UL723	Surface Burning Characteristics of Building Materials

1.06 QUALITY ASSURANCE

A. Substitution of Materials: Refer to Division 1 for equals and substitutions.
   1. Where the following conflicts with Division 1, the requirements of Division 1 shall govern.
   2. If the Contractor wishes to submit an alternate to the named manufacturers for any equipment, he may submit a voluntary alternative minimum 7 days prior to bid, stating the manufacturer’s name, model number, written, detailed product data.
   3. Where materials or equipment are specified by name the proposed material or equipment must be identical to the specified material or equipment in all characteristics of quality, function and serviceability, regardless of application in the Project. Any proposed equal shall be submitted to

Architect/Engineer for prior approval, which Architect/Engineer may approve or disapprove in its sole discretion. Work performed or constructed with unapproved equals is at Contractor's risk and any required correction of work incorporating unapproved equals shall be at Contractor's sole cost and expense.

4. In all instances, Contractor shall assume full responsibility for proof of equality of the statute to the equipment hereinafter specified. All data and information necessary for proof of equality, function and space requirements shall be prepared and accompany the submittal of the substitution to the Architect/Engineer. Approval by the Architect/Engineer of equipment other than the specified does NOT relieve Contractor of this responsibility.

B. All products and materials used are to be new, undamaged, clean and in good condition. Existing products and materials are not to be reused unless specifically indicated.

C. Where equipment or accessories are used which differ in arrangement, configuration, dimensions, ratings, or engineering parameters from those indicated on the contract documents, the contractor is responsible for all costs involved in integrating the equipment or accessories into the system, including, but not limited to, coordination with other trades and any required changes by other trades and for obtaining the intended performance from the system into which these items are placed.

1.07 GUARANTEE

A. Refer to Division 1 for guarantees and warranties. In addition to the requirements in Division 1, this Contractor shall meet the following requirements.

B. In entering into a contract covering this work, the contractor accepts the specifications and guarantees that the work will be carried out in accordance with the requirements of this specification or such modifications as may be made under the contract documents.

C. Contractor further guarantees that the workmanship and material will be of the best procurable and that none but experienced workmen familiar with each particular class of work will be employed.

D. Contractor further guarantees to replace and make good at his own expense, including travel time, all defects, which may develop within 1 year after final payment and acceptance by the Architect/Engineer, due to faulty workmanship or material, upon, receipt of written notification from the Owner.

1.08 OPERATION AND MAINTENANCE INSTRUCTIONS

A. Refer to Division 1 for all operations and maintenance instructions.

B. In addition to the general content specified under Division 1 supply the following additional documentation:

1. Copies of all approved submittals along with approval letters
2. Records of tests performed a to certify compliance with system requirements
3. Manufacturer's wiring diagrams for electrically powered equipment
4. Certificates of inspection by regulatory agencies
5. Valve schedules
6. Parts lists for fixtures, equipment, valves and specialties.
7. Manufacturers' installation, operation and maintenance recommendations for fixtures, equipment, valves and specialties.
8. Additional information as indicated in the technical specification sections

1.09 RECORD DOCUMENTS

A. Refer to Division 1 for record documents.

B. In addition to the general content specified under Division, follow the following procedures.

1. During the progress of the work, Contractor shall maintain a current (daily) record set of the drawings and specifications, indicating thereon all work installed at variance with such Contract Documents including, without limitation, work covered by Addenda, Field Work Orders, Change Orders and Engineers additional instructions, interpretations and clarification. All changes or deviations from the original layout of the work and all critical dimensions of buried or concealed work shall be recorded. It shall be Contractor's responsibility to assure that said record sets are complete, accurate and up-to-date, Engineer shall have the right to inspect and review such record sets.

2. At the completion of the work, Contractor shall indicated on record sets all record changes and such additional details necessary or appropriate to provide a complete reference document for use by Engineer. If variations and details cannot be shown clearly thereon, the Contractor shall prepare supplemental drawings adequate to impart the information. The foregoing drawings collectively shall constitute the "Record" drawings for the work.
3. All indication on "Record" drawings shall be executed in a legible manner at Contractor's cost, using methods and legend presentations compatible with the overall scheme of the record drawings with respect to scale, drawing sheet sizes and sequential indexing. All changes shall be marked clearly in red and clouded.
4. Engineer may review Contractor's "Record" drawings and notify Contractor of observed discrepancies or deviations. Contractor shall promptly correct discrepancies, deviations or illegible markups at Contractor's expense and resubmit revised drawings for Engineer review.
5. Contractor shall provide final electronic record drawings to the Owner through the Engineer.
6. Engineer will provide final electronic record drawings to the Owner based on Contractor's markups.

1.10 CONTINUITY OF EXISTING SERVICES

A. Do not interrupt or change existing services without prior written approval from the Owner's Project Representative. When interruption is required, coordinate scheduling of down-time with the Owner to minimize disruption to his activities. Unless specifically stated, all work involved in interrupting or changing existing services is to be done during normal working hours.

B. Each Contractor shall thoroughly familiarize himself with existing systems which will affect and be affected by relocation of existing equipment and installation of new lines and equipment. They shall plan installation of their work so that interruptions of services to any building or portion thereof will be a minimum and such interruptions shall occur only when system is not required, if possible. If not possible, each Contractor shall insure the operation of services by whatever means possible, such as, installing bypasses, capping of services or providing temporary service. Each interruption shall be for as short a duration as possible.

C. No extra costs will be paid to the Contractor for such outages which must occur outside of regular weekly working hours.

D. This Contractor shall restore any circuit interruption as a result of this work to proper operation as soon as possible. Note that institutional operations are on a seven day week schedule.

1.11 PROTECTION OF FINISHED SURFACES

A. Refer to Division 1.

1.12 SEALING AND FIRESTOPPING

A. Sealing and firestopping of sleeves/openings between piping, etc. and the sleeve or structural opening shall be the responsibility of the contractor whose work penetrates the opening. The contractor responsible shall hire individuals skilled in such work to do the sealing and fireproofing. These individuals hired shall normally and routinely be employed in the sealing and fireproofing occupation.

B. Contractor shall request current life safety drawings from Architect/Owner.

1.13 OFF SITE STORAGE

A. If payment will be requested for approved offsite stored material, then the Contractor shall complete an "Offsite Storage Agreement" which is available from the Owner. Prior approval by Owner's personnel for offsite storage will be needed. No material will be accepted for offsite storage unless submittals for the material have been approved.

1.14 REGULATORY REQUIREMENTS

A. Comply with requirements of Wisconsin Administrative Code and local Authority Having Jurisdiction (AHJ) regarding materials and installation.

1.15 CERTIFICATES AND INSPECTIONS

A. Refer to Division 1 for permits, regulations, utilities and taxes.

B. Obtain and pay for all required local or State installation inspections. Deliver originals of these certificates to the Owner. Include copies of the certificates in the Operating and Maintenance Instructions.
C. Coordinate and provide inspections as required by the Authority Having Jurisdiction over the site.

1.16 DEMOLITION AND EXISTING REQUIREMENTS

A. Existing active services: water, gas, ventilation, sanitary waste, sanitary vent, storm electric, and any other building systems when encountered shall be protected against damage. Where existing services are to be abandoned, the services shall be removed back to the point of origin and removed from the site unless otherwise directed by the Owner's Representative.
B. Submit a "Sequence of Work Schedule" in respect to all temporary and permanent utility and service cutovers after final determination. This schedule shall be submitted for approval to the Owner and Architect/Engineer. The submittal shall designate priority order, service or utility affected, date of cutover, and time of day to start and finish.
C. Bidders should inspect the site to become familiar with conditions of the site which will affect the Work. Bidders should verify points of connection with utilities, routing of outside piping to include required clearances from any existing structures, or other obstacles.
D. Extra payment will not be allowed for changes in the Work required because of the successful bidder's failure to make this inspection.

1.17 REQUEST AND CERTIFICATION FOR PAYMENT

A. Within 10 days after Notice to Proceed, the successful bidder will submit to the Owner's Project Representative in a form prescribed by Division 1, a cost breakdown of the proposed values for work performed which, if approved by the owner, will become the basis for construction progress and monthly payments. The cost breakdown items shall reflect actual work progress stages as closely as feasible.
B. In addition, if payment is requested for approved off-site stored material, then that material shall be listed as a line item in the request and certification for payment cost breakdown.

1.18 SLEEVES AND OPENINGS

A. Openings required in new or existing construction that may be necessary for the installation of new work shall be provided by the respective contractor and all patching and repairing shall be done by workmen competent in the trade required, at the expense of the respective contractor. The respective contractor shall be responsible for arranging the work so that minimum cutting will be required. All rubbish and excess materials involved in such cutting shall be promptly removed from the site and disposed of by the contractor. Cutting through the floor or roof systems or load bearing walls shall be done only with the prior written approval of the Architect/Engineer so as to avoid damaging the structural system.

1.19 OMISSIONS

A. No later than ten (10) days before bid opening, the Contractor shall call the attention of the A/E to any materials or apparatus the Contractor believes to be inadequate and to any necessary items of work omitted.

1.20 DEFINITIONS

A. Wherever the words "the Contractor", "this Contractor" or "Plumbing Contractor" appear in this division, they refer to the Contractor for Plumbing work.
B. The term "provide" includes such labor, methods, materials, equipment and transportation or other facilities required to complete the Contract and the performance of all duties thereby upon the Contractor.

1.21 PROJECT/SITE CONDITIONS

A. Install Work in locations shown on Drawings, unless prevented by Project conditions.
B. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other Sections. Obtain permission of A/E before proceeding.

C. Tools, materials and equipment shall be confined to areas designated by the Owner’s project representative.

1.22 WORK SEQUENCE AND SCHEDULING

A. Install work in phases to accommodate Owner's occupancy requirements. During the construction period coordinate schedule and operations with Owner's Construction Representatives.

1.23 SALVAGE MATERIALS

A. No materials removed from this project shall be reused (except as specifically noted below). All materials removed shall become the property of and shall be disposed of by the Contractor.

1.24 TRAINING

A. The contractor shall have the following responsibilities:
   1. Provide designated owner personnel with comprehensive orientation and training in the understanding of the systems and the operation and maintenance of each piece of equipment that makes up the system.
   2. Training shall normally start with classroom sessions followed by hands-on demonstration/training on each piece of equipment.
   3. During any demonstration, should the system fail to perform in accordance with the requirements of the O&M manual or sequence of operations, the system shall be repaired or adjusted as necessary and the demonstration repeated at another scheduled time, if necessary.
   4. The training sessions shall follow the outline in the table of contents of the operation and maintenance manual and illustrate whenever possible the use of the O&M manuals for reference.
   5. Training shall include:
      a. Use of the printed installation, operation and maintenance instruction material included in the O&M manuals.
      b. Discussion of relevant health and safety issues and concerns.
      c. Discussion of warranties and guarantees.
      d. Common troubleshooting problems and solutions.
      e. Explanatory information included in the O&M manuals.
      f. Discussion of any peculiarities of equipment installation or operation.
      g. Classroom sessions shall include the use of overhead projections, slides, video/audio-taped material as might be appropriate.
B. Provide a minimum of 2 hours of instruction.
C. Provide additional training as specified in other specification sections for specific equipment.

PART 2 – PRODUCTS

2.01 IDENTIFICATION

A. Manufacturers: EMED Company, W.H. Brady, Seton Nameplate Company, Thor Enterprises, Carlton, MSI Marking Services.
B. Engraved Name Plates:
   1. White letters on a black background, 1/16 inch thick plastic laminate, beveled edges, screw mounting.
C. Snap-Around Pipe Markers:
   1. One-piece, preformed, vinyl construction, snap-around or strap-around pipe markers with applicable labeling and flow direction arrows, ¾" min. size for lettering. Provide nylon ties on each end of pipe markers.
D. Valve Tags:
   1. Round brass tags with 1/2 inch numbers, 1/4 inch system identification abbreviation, 1-1/4 inch minimum diameter, with brass jack chains, brass "S" hooks or one piece nylon ties around the valve stem.
E. Underground Warning Tape:

1. Detectable underground warning tape, 5.0 mil overall thickness, 6" width, .0035" thick aluminum foil core with polyethylene jacket bonded to both sides. Color code tape and print caution along with name of buried service in bold letters on face of tape.
2. Underground Tracer Wire:
3. All underground non-metallic sewers/mains and water services/mains shall be provided with tracer wire installations. Tracer wire shall be continuous solid copper or steel plastic coated with split bolt or compression-type connectors.

2.02 BEDDING AND BACKFILL

A. Bedding up to a point 12" inches above the top of the pipe shall be thoroughly compacted sand or crushed stone chips meeting the following gradations:

Gradation for Bedding Sand		Gradation for Crushed Stone Chip Bedding	
Sieve Size	% Passing (by Wt.)	Sieve Size	% Passing (by Wt.)
1 inch	100	1/2 inch	100
No. 16	45 - 80	No. 4	75 - 100
No. 200	2 - 10	No. 100	10 - 25

B. Backfill above the bedding under existing and future utilities, paving, sidewalks, curbs, roads and buildings shall be granular materials, pit run sand, gravel, or crushed stone, free from large stones, organic, perishable and frozen materials.

2.03 SLEEVES AND OPENINGS

A. General:
   1. Pipe sleeves shall be constructed of standard weight ASTM A53 or ASME B36.10 steel with an anchor plate constructed of A36/A36M steel welded to the pipe. The sleeve shall be sized a minimum of 1” larger than piping insulation diameter. The entire assembly shall be hot-dip galvanized after fabrication.
   2. Duct sleeves and piping sleeves passing through interior walls shall be constructed of 24 gauge galvanized steel minimum thickness.

B. Sleeves Through Below Grade Walls:
   1. Provide steel pipe sleeve, ASTM A53, pressure sealing with membrane clamp ring, gasket, water stop ring, external rings, and nitrile rubber link seals. The assembly shall be hot-dip galvanized after fabrication.
      a. Seals: Modular mechanical type seals, consisting of interlocking nitrile rubber links shaped to continuously fill the annular space between the pipe and the sleeve and electrically isolate the carrier pipe from the steel sleeve.
      b. Sealing Element: Polychloroprene rubber material compounded to resist aging, ozone, sunlight, hydrocarbon gases, water, and chemical action.
      c. Hardware: Type 300 series stainless steel fasteners. Threads rolled to produce smooth uniform threads and unbroken flow lines.
      d. Compression Plates: Fiberglass-reinforced polyester plastic, injection molded for high physical properties, dielectric strength and non-cold flow creep characteristics, having high resistance to acidic and alkaline soils.
   2. For sleeves located 15 feet or more below grade provide cast iron sleeve ASTM A74 with compression seals.

2.04 SEALING AND FIRESTOPPING

A. Fire and/or Smoke Rated Penetrations:
   1. Manufacturers: 3M, Hilti, Rectorseal, STI/SpecSeal, Tremco.
   2. All firestopping systems shall be provided by the same manufacturer.
   3. Fire stop systems shall be UL listed or tested by an independent testing laboratory approved by the Owner and the Authority Having Jurisdiction (AHJ).
   4. Submittals: Contractor shall submit product data for each firestop system. Submittals shall include product characteristics, performance and limitation criteria, test data, MSDS sheets, installation details and procedures for each method of installation applicable to this project. For non-standard conditions where no UL tested system exists, submit manufacturer's drawings for UL system with known performance for which an engineering judgment can be based upon.

5. Use a product that has a rating not less than the rating of the wall or floor being penetrated. Reference architectural drawings for identification of fire and/or smoke rated walls and floors.
6. Use firestop putty, caulk sealant, intumescent wrapstrips, intumescent firestop collars, firestop blocks, firestop mortar or a combination of these products to provide a UL listed system for each application required for this project. Provide mineral wool backing where specified in manufacturer's application detail.
7. All sealants shall meet the intent of LEED® VOC requirements, <250 g/L VOC contents (less H_20 and exempt solvents).

B. Non-Rated Penetrations:
1. Pipe Penetrations Through Below Grade Walls: In exterior wall openings below grade, use a modular mechanical type seal consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the uninsulated pipe and the cored opening or a water- stop type wall sleeve. The operating bolts of the mechanical type seal shall be accessible from the interior of the building.
2. Pipe Penetrations: At pipe penetrations of non-rated interior partitions, floors and exterior walls, use urethane caulk in annular space between pipe insulation and sleeve. For non-rated drywall, plaster or wood partitions where sleeve is not required use urethane caulk in annular space between pipe insulation and wall material.

PART 3 – EXECUTION

3.01 DEMOLITION

A. Perform all demolition as indicated on the drawings to accomplish new work. Where demolition work is to be performed adjacent to existing work that remains in an occupied area, construct temporary dust partition to minimize the amount of contamination of the occupied space. Where pipe is removed and not reconnected with new work, cap ends of existing services as if they were new work. Coordinate work with the Owner to minimize disruption to the existing building occupants.

B. All pipe, fixtures, equipment, wiring and associated conduit, insulation and similar items demolished, abandoned, or deactivated are to be removed from the site by the Contractor except as specifically noted otherwise. All designated equipment is to be turned over to the owner for their use at a place and time so designated. Maintain the condition of material and/or equipment that is indicated to be reused equal to that existing before work began.

C. All contractors requiring the personnel/ material hoist and or temporary construction elevator (i.e. new elevators, temporarily protected) at times other than outlined in the temporary facilities specifications will make arrangements directly with the general contractor. The general contractor is responsible for all coordination and scheduling of the use of any hoisting equipment so the flow of the project is smoothly maintained and all workers have access to the work areas to perform their work and deliver material to the areas needed according to the project schedule.

3.02 EXCAVATION AND BACKFILL

A. Perform all excavation and backfill work necessary to accomplish indicated plumbing systems installation. Excavate to bottom of pipe and structure bedding, 4" in stable soils, 6" in rock or wet trenches and 8" in unstable soil. Finish bottoms of excavations to true, level surface.

B. Remove sidewalk and curb in areas of excavation to the nearest joint. Remove pavements, curbs and gutters to neat and straight lines to the limits of removal. Make sawcut lines parallel to existing joints, or parallel or perpendicular to pavement edges to form a neat patch. Carefully remove remaining pavement within the sawcut area. Leave existing base materials between the area disturbed by the work and the sawcut line undisturbed by the sawcutting, pavement removal, or pavement replacement processes.

C. At no time place excavated materials where they will impede surface drainage unless such drainage is being safely rerouted away from the excavation.

D. Excavate whatever materials are encountered as required to place at the elevations shown, all pipe, manholes, and other work. Remove debris and rubbish from excavations before placing bedding and backfill material.

E. Remove surplus excavated materials from site.

F. Verify the locations of any water, drainage, gas, sewer, electric, telephone or steam lines which may be encountered in the excavation. Underpin and support all lines. Cut off service connections encountered which are to be removed at the limits of the excavation and cap.
G. Provide and maintain all fencing, barricades, signs, warning lights, and/or other equipment necessary to keep all excavation pits and trenches and the entire subgrade area safe under all circumstances and at all times. No excavation shall be left unattended without adequate protection.
H. Elevations shown on the plans are subject to such revisions as may be necessary to fit field conditions. No adjustment in compensation will be made for adjustments up to two (2) feet above or below the grades indicated on the plans.
I. Bed pipe up to a point 12" above the top of the pipe. Take care during bedding, compaction and backfill not to disturb or damage piping.
J. Mechanically compact bedding and backfill to prevent settlement. The initial compacted lift to not exceed 24" compacted to 95% density per Modified Proctor Test (ASTM D-1557). Subsequent lifts under pavements, curbs, walks and structures are not to exceed 12" and be compacted to 95% density per Modified Proctor Test. In all other areas where construction above the excavation is not anticipated within 2 years, mechanically compact backfill in lifts not exceeding 24" to 90% density per Modified Proctor Test. Route the equipment over each lift of the material so that the compaction equipment contacts all areas of the surface of the lift.

3.03 CONCRETE WORK

A. Plumbing related cast-in-place concrete on the exterior of the building to be provided by this Contractor in conformance with requirements of Division 3. This includes pipe supports, manholes, catch basins, etc.

3.04 CUTTING AND PATCHING

A. Refer to Division 1 for cutting and patching. In addition to the requirements in Division 1:
B. Each Contractor shall coordinate the placing of openings in the new structure as required for the installation of each Contractor’s work.
C. Each Contractor shall furnish to the General Contractor the accurate locations and sizes for required openings in the new work, but this shall not relieve each Contractor of the responsibility of checking to assure that properly sized openings are provided. When additional patching is required due to the Contractor's failure to inspect this work, then the Contractor shall make arrangements for the patching required to properly close the openings to include patch painting, and the Contractor shall pay any additional cost incurred in this respect.
D. If cutting and patching of the new structure is made necessary due to the Contractor's failure to install piping, sleeves, or equipment on schedule, or due to the Contractor's failure to furnish on schedule the information required for the leaving of openings, then it shall be the Contractor's responsibility to make arrangements and obtain approval from the General Contractor and Architect/Engineer for this cutting and patching, and the Contractor shall pay any additional cost incurred in this respect. The Contractor shall also reimburse the Owner for any additional costs incurred to the Architect/Engineer for additional services caused by the Contractor in this respect.
E. The Contractor shall provide cutting and patching and patch painting in the existing structure as required for the installation of his Work. Cutting of structural support members will not be permitted without prior approval of the Architect/Engineer. Extent of cutting shall be minimized; use core drills, power saws, or other machines which will provide neat, minimum openings. Patching shall match adjacent materials and surfaces and shall be performed by craftsmen skilled in the respective craft required.

3.05 BUILDING ACCESS

A. Arrange for the necessary openings in the building to allow for admittance or removal of all apparatus. When the building access was not previously arranged and must be provided by this contractor, restore any opening to its original condition after the apparatus has been brought into the building.

3.06 EQUIPMENT ACCESS

A. Install all piping, conduit and accessories to permit access to equipment for maintenance and service. Coordinate the exact location of wall and ceiling access panels and doors with the General Contractor,

making sure that access is available for all equipment and specialties. Access doors in general construction are to be furnished by the Plumbing Contractor and installed by the General Contractor.

3.07 COORDINATION

A. Coordinate all work with other contractors prior to installation. Any work that is not coordinated and that interferes with other contractor's work shall be removed or relocated at the installing contractor's expense.

B. Verify that all devices are compatible for the type of construction and surfaces on which they will be used.

3.08 IDENTIFICATION

A. Identify interior piping not less than once every 50 feet, not less than once in each room, adjacent to each access door or panel, and on both side of the partition where accessible piping passes through walls or floors. Place flow directional arrows at each pipe identification location.

B. Identify all exterior buried piping for entire length with underground warning tape except for sewer piping which is routed in straight lines between manholes or cleanouts. Place tape 6"-12" below finished grade along entire length of pipe. Extend tape to surface at building entrances, meters, hydrants and valves. Where existing underground warning tape is broken during excavation, replace with new tape identifying appropriate service and securely spliced to ends of existing tape.

C. Identify valves with brass tags bearing a system identification and a valve sequence number. Provide a typewritten valve schedule schedule indicating the valve number and the equipment or areas supplied by each valve and the symbols used for pipe identification. Locate schedules in mechanical room and in each Operating and Maintenance manual. Schedule in mechanical room to be framed under clear plastic.

3.09 SLEEVES AND OPENINGS

A. General:
   1. Sleeves are not required for piping and ducts passing through interior non-rated drywall, plaster, or wood partitions and interior poured concrete walls that have been saw cut or core drilled.
   2. Pack annular space between sleeves and pipe or ducts with fiberglass insulation and seal.
   3. Piping sleeves that pass through fire rated floors, walls, or ceilings shall be provided with a UL listed fire stop material meeting UL 1479 to seal the opening between the pipe and the pipe sleeve to maintain the fire rating.
   4. Provide escutcheon plates on piping to cover sleeve and insulation in finished areas.
   5. Refer to Division 1, General Requirements for additional information on sleeves and openings.

B. Sleeves Through Floors/Ceilings:
   1. Sleeves shall be installed to extend 1 inch above finished floor with a watertight sealant between floor and sleeve in all mechanical rooms and wet rooms listed below.
   2. If a sleeve is not provided, provide 1-1/2 inch angle ring with urethane caulk between the angle and the floor and seal at the corners to form a watertight seal.
      a. Wet Locations:
      1) Mechanical Rooms
      2) Parking Ramps

3.10 SEALING AND FIRESTOPPING

A. The Contractor shall refer to building life safety drawings for all smoke and fire rates in addition to the mechanical drawings. Any discrepancies shall be brought to the attention of the Architect/Engineer before final addendum.

B. Fire and/or Smoke Rated Penetrations:
   1. Install approved product in accordance with the manufacturer's instructions where pipes penetrate a fire/smoke rated surface. When pipe is insulated, use a product which maintains the integrity of the insulation and vapor barrier.
   2. Where firestop mortar is used to infill large fire-rated floor openings that could be required to support weight, provide permanent structural forming. Firestop mortar alone is not adequate to support any substantial weight.

C. Non-Rated Partitions:
   1. In exterior wall openings below grade, assemble rubber links of mechanical seal to the proper size for the pipe and tighten in place, in accordance with manufacturer's instructions.
   2. At all interior partitions and exterior walls, pipe penetrations are required to be sealed. Apply sealant to both sides of the penetration in such a manner that the annular space between the pipe sleeve or cored opening and the pipe or insulation is completely blocked.

3.11 HOUSEKEEPING AND CLEAN UP

A. The Contractor shall clean up and remove from the premises, on a daily basis, all debris and rubbish resulting from its work and shall repair all damage to new and existing equipment resulting from its work. When job is complete, this Contractor shall remove all tools, excess material and equipment, etc., from the site.

3.12 SHEETING, SHORING AND BRACING

A. Provide shoring, sheet piling and bracing in conformance with the Building Code to prevent earth from caving or washing into the excavation. Shore and underpin to properly support adjacent or adjoining structures. Abandon in place shoring, sheet piling and underpinning below the top of the pipe, or, if approved in advance by the engineer, maintained in place until other permanent support approved by the engineer is provided.

3.13 SURFACE RESTORATION

A. Completely restore the surface of all disturbed areas to a like condition of the surface prior to the work. Level off all waste disposal areas and clean up all areas used for the storage of materials or the temporary deposit of excavated earth. Remove all surplus material, tools and equipment.
B. Curb and Gutter: Concrete curb and gutter conforming to local requirements.
C. Sidewalk and Walkways: Non-reinforced concrete conforming to local requirements, thickness to match existing, cross slope of one-fourth inch per foot, scored into squares approximately equal to width.

END OF SECTION

SECTION E: BIDDERS ACKNOWLEDGEMENT

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Bidder must state a Unit Price and Total Bid for each item. The Total Bid for each item must be the product of quantity, by Unit Price. The Grand Total must be the sum of the Total Bids for the various items. In case of multiplication errors or addition errors, the Grand Total with corrected multiplication and/or addition shall determine the Grand Total bid for each contract. The Unit Price and Total Bid must be entered numerically in the spaces provided. All words and numbers shall be written in ink.

1. The undersigned having familiarized himself/herself with the Contract documents, including Advertisement for Bids, Instructions to Bidders, Form of Proposal, City of Madison Standard Specifications for Public Works Construction - 2014 Edition thereto, Form of Agreement, Form of Bond, and Addenda issued and attached to the plans and specifications on file in the office of the City Engineer, hereby proposes to provide and furnish all the labor, materials, tools, and expendable equipment necessary to perform and complete in a workmanlike manner the specified construction on this project for the City of Madison; all in accordance with the plans and specifications as prepared by the City Engineer, including Addenda to the Contract Nos. _____ through _____ issued thereto, at the prices for said work as contained in this proposal. (Electronic bids submittals shall acknowledge addendum under Section E and shall not acknowledge here)
2. If awarded the Contract, we will initiate action within seven (7) days after notification or in accordance with the date specified in the contract to begin work and will proceed with diligence to bring the project to full completion within the number of work days allowed in the Contract or by the calendar date stated in the Contract.
3. The undersigned Bidder or Contractor certifies that he/she is not a party to any contract, combination in form of trust or otherwise, or conspiracy in restraint of trade or commerce or any other violation of the anti-trust laws of the State of Wisconsin or of the United States, with respect to this bid or contract or otherwise.
4. I hereby certify that I have met the Bid Bond Requirements as specified in Section 102.5. *(IF BID BOND IS USED, IT SHALL BE SUBMITTED ON THE FORMS PROVIDED BY THE CITY. FAILURE TO DO SO MAY RESULT IN REJECTION OF THE BID).*
5. I hereby certify that all statements herein are made on behalf of _____(name of corporation, partnership, or person submitting bid) a corporation organized and existing under the laws of the State of _____ a partnership consisting of_____; an individual trading as _____; of the City of_____State of_____; that I have examined and carefully prepared this Proposal, from the plans and specifications and have checked the same in detail before submitting this Proposal; that I have fully authority to make such statements and submit this Proposal in (its, their) behalf; and that the said statements are true and correct.

_____
SIGNATURE

_____
TITLE, IF ANY

Sworn and subscribed to before me this
_____day of_____, 20_____.

_____
(Notary Public or other officer authorized to administer oaths)
My Commission Expires _____
Bidders shall not add any conditions or qualifying statements to this Proposal.

SECTION F: DISCLOSURE OF OWNERSHIP & BEST VALUE CONTRACTING

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State of Wisconsin
Department of Workforce Development
Equal Rights Division
Labor Standards Bureau

Disclosure of Ownership

Notice required under Section 15.04(1)(m), Wisconsin Statutes. The statutory authority for the use of this form is prescribed in Sections 66.0903(12)(d) and 103.49(7)(d), Wisconsin Statutes. The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes. Personal information you provide may be used for secondary purposes.

(1) On the date a contractor submits a bid to or completes negotiations with a state agency or local governmental unit, on a project subject to Section 66.0903 or 103.49, Wisconsin Statutes, the contractor shall disclose to such state agency or local governmental unit the name of any "other construction business", which the contractor, or a shareholder, officer or partner of the contractor, owns or has owned within the preceding three (3) years.

(2) The term "other construction business" means any business engaged in the erection, construction, remodeling, repairing, demolition, altering or painting and decorating of buildings, structures or facilities. It also means any business engaged in supplying mineral aggregate, or hauling excavated material or spoil as provided by Sections 66.0903(3), 103.49(2) and 103.50(2), Wisconsin Statutes.

(3) This form must ONLY be filed, with the state agency or local governmental unit that will be awarding the contract, if **both (A) and (B) are met**.

(A) The contractor, or a shareholder, officer or partner of the contractor:
(1) Owns at least a 25% interest in the "other construction business", indicated below, on the date the contractor submits a bid or completes negotiations.
(2) Or has owned at least a 25% interest in the "other construction business" at any time within the preceding three (3) years.

(B) The Wisconsin Department of Workforce Development (DWD) has determined that the "other construction business" has failed to pay the prevailing wage rate or time and one-half the required hourly basic rate of pay, for hours worked in excess of the prevailing hours of labor, to any employee at any time within the preceding three (3) years.

Other Construction Business

Not Applicable ☐

Name of Business			
Street Address or P O Box	City	State	Zip Code
Name of Business			
Street Address or P O Box	City	State	Zip Code
Name of Business			
Street Address or P O Box	City	State	Zip Code

I hereby state under penalty of perjury that the information, contained in this document, is true and accurate according to my knowledge and belief.

Print the Name of Authorized Officer	
Signature of Authorized Officer	Date Signed
Name of Corporation, Partnership or Sole Proprietorship	

Street Address or P O Box	City	State	Zip Code

If you have any questions call (608) 266-0028

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Best Value Contracting

1. The Contractor shall indicate the non-apprenticeable trades used on this contract.

_____

_____

2. Madison General Ordinance (M.G.O.), 33.07(7), does provide for some exemptions from the active apprentice requirement. Apprenticeable trades are those trades considered apprenticeable by the State of Wisconsin. Please check applicable box if you are seeking an exemption.

☐ Contractor has a total skilled workforce of four or less individuals in all apprenticeable trades combined.

☐ No available trade training program; The Contractor has been rejected by the only available trade training program, or there is no trade training program within 90 miles.

☐ Contractor is not using an apprentice due to having a journey worker on layoff status, provided the journey worker was employed by the contractor in the past six months.

☐ First-time Contractor on City of Madison Public Works contract requests a onetime exemption but intends to comply on all future contracts and is taking steps typical of a "good faith" effort.

☐ Contractor has been in business less than one year.

☐ Contractor doesn't have enough journeyman trade workers to qualify for a trade training program in that respective trade

3. The Contractor shall indicate on the following section which apprenticeable trades are to be used on this contract. Compliance with active apprenticeship, to the extent required by M.G.O. 33.07(7), shall be satisfied by documentation from an applicable trade training body; an apprenticeship contract with the Wisconsin Department of Workforce Development or a similar agency in another state; or the U.S Department of Labor. This documentation is required prior to the Contractor beginning work on the project site.

☐ The Contractor has reviewed the list and shall not use any apprenticeable trades on this project.

LIST APPRENTICABLE TRADES (check all that apply to your work to be performed on this contract)

- ☐ BRICKLAYER
- ☐ CARPENTER
- ☐ CEMENT MASON / CONCRETE FINISHER
- ☐ CEMENT MASON (HEAVY HIGHWAY)
- ☐ CONSTRUCTION CRAFT LABORER
- ☐ DATA COMMUNICATION INSTALLER
- ☐ ELECTRICIAN
- ☐ ENVIRONMENTAL SYSTEMS TECHNICIAN / HVAC SERVICE TECH/HVAC INSTALL / SERVICE
- ☐ GLAZIER
- ☐ HEAVY EQUIPMENT OPERATOR / OPERATING ENGINEER
- ☐ INSULATION WORKER (HEAT & FROST)
- ☐ IRON WORKER
- ☐ IRON WORKER (ASSEMBLER, METAL BLDGS)
- ☐ PAINTER & DECORATOR
- ☐ PLASTERER
- ☐ PLUMBER
- ☐ RESIDENTIAL ELECTRICIAN
- ☐ ROOFER & WATER PROOFER
- ☐ SHEET METAL WORKER
- ☐ SPRINKLER FITTER
- ☐ STEAMFITTER
- ☐ STEAMFITTER (REFRIGERATION)
- ☐ STEAMFITTER (SERVICE)
- ☐ TAPER & FINISHER
- ☐ TELECOMMUNICATIONS (VOICE, DATA & VIDEO) INSTALLER-TECHNICIAN
- ☐ TILE SETTER

SECTION G: BID BOND

KNOW ALL MEN BY THESE PRESENT, THAT_____(a corporation of the State of_____) (individual), (partnership), hereinafter referred to as the "Principal") and_____, a corporation of the State of_____(hereinafter referred to as the "Surety") and licensed to do business in the State of Wisconsin, are held and firmly bound unto the City of Madison, (hereinafter referred to as the "Obligee"), in the sum of five per cent (5%) of the amount of the total bid or bids of the Principal herein accepted by the Obligee, for the payment of which the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The conditions of this obligation are such that, whereas the Principal has submitted, to the City of Madison a certain bid, including the related alternate, and substitute bids attached hereto and hereby made a part hereof, to enter into a contract in writing for the construction of:

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1. If said bid is rejected by the Obligee, then this obligation shall be void.

2. If said bid is accepted by the Obligee and the Principal shall execute and deliver a contract in the form specified by the Obligee (properly completed in accordance with said bid) and shall furnish a bond for his/her faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be void.

   If said bid is accepted by the Obligee and the Principal shall fail to execute and deliver the contract and the performance and payment bond noted in 2. above executed by this Surety, or other Surety approved by the City of Madison, all within the time specified or any extension thereof, the Principal and Surety agree jointly and severally to forfeit to the Obligee as liquidated damages the sum mentioned above, it being understood that the liability of the Surety for any and all claims hereunder shall in no event exceed the sum of this obligation as stated, and it is further understood that the Principal and Surety reserve the right to recover from the Obligee that portion of the forfeited sum which exceed the actual liquidated damages incurred by the Obligee.

   The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by an extension of the time within which the Obligee may accept such bid, and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, on the day and year set forth below.

Seal

_____ _____

Principal Date

By: _____

_____

Name of Surety

By: _____ _____

Date

This certifies that I have been duly licensed as an agent for the above company in Wisconsin under License No._____for the year_____, and appointed as attorney in fact with authority to execute this bid bond and the payment and performance bond referred to above, which power of attorney has not been revoked.

_____ _____

Date Agent

_____

Address

_____

City, State and Zip Code

_____

Telephone Number

NOTE TO SURETY & PRINCIPAL

The bid submitted which this bond guarantees shall be rejected if the following instrument is not attached to this bond:

Power of Attorney showing that the agent of Surety is currently authorized to execute bonds on behalf of the Surety, and in the amounts referenced above.

Certificate of Biennial Bid Bond

TIME PERIOD - VALID (FROM/TO)
NAME OF SURETY
NAME OF CONTRACTOR
CERTIFICATE HOLDER City of Madison, Wisconsin

This is to certify that a biennial bid bond issued by the above-named Surety is currently on file with the City of Madison.

This certificate is issued as a matter of information and conveys no rights upon the certificate holder and does not amend, extend or alter the coverage of the biennial bid bond.

Cancellation: Should the above policy be cancelled before the expiration date, the issuing Surety will give thirty (30) days written notice to the certificate holder indicated above.

_____

Signature of Authorized Contractor Representative

_____

Date

SECTION H: AGREEMENT

THIS AGREEMENT made this _____ day of _____ in the year Two Thousand and Fourteen between_____hereinafter called the Contractor, and the City of Madison, Wisconsin, hereinafter called the City.

WHEREAS, the Common Council of the said City of Madison under the provisions of a resolution adopted _____, and by virtue of authority vested in the said Council, has awarded to the Contractor the work of performing certain construction.

NOW, THEREFORE, the Contractor and the City, for the consideration hereinafter named, agree as follows:

1. **Scope of Work.** The Contractor shall, perform the construction, execution and completion of the following listed complete work or improvement in full compliance with the Plans, Specifications, Standard Specifications, Supplemental Specifications, Special Provisions and contract; perform all items of work covered or stipulated in the proposal; perform all altered or extra work; and shall furnish, unless otherwise provided in the contract, all materials, implements, machinery, equipment, tools, supplies, transportation, and labor necessary to the prosecution and completion of the work or improvements:

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2. **Completion Date/Contract Time.** Construction work must begin within seven (7) calendar days after the date appearing on mailed written notice to do so shall have been sent to the Contractor and shall be carried on at a rate so as to secure full completion SEE SPECIAL PROVISIONS, the rate of progress and the time of completion being essential conditions of this Agreement.

3. **Contract Price.** The City shall pay to the Contractor at the times, in the manner and on the conditions set forth in said specifications, the sum of_____($_____) Dollars being the amount bid by such Contractor and which was awarded to him/her as provided by law.

4. **Wage Rates for Employees of Public Works Contractors**

   General and Authorization. The Contractor shall compensate its employees at the prevailing wage rate in accordance with section 66.0903, Wis. Stats., DWD 290 of the Wisconsin Administrative Code and as hereinafter provided unless otherwise noted in Section D: Special Provisions, Subsection 102.10 – Minimum Rate of Wage Scale.

   "Public Works" shall include building or work involving the erection, construction, remodeling, repairing or demolition of buildings, parking lots, highways, streets, bridges, sidewalks, street lighting, traffic signals, sanitary sewers, water mains and appurtenances, storm sewers, and the grading and landscaping of public lands.

   "Building or work" includes construction activity as distinguished from manufacturing, furnishing of materials, or servicing and maintenance work, except for the delivery of mineral aggregate such as sand, gravel, bituminous asphaltic concrete or stone which is incorporated into the work under contract with the City by depositing the material directly in final place from transporting vehicle.

   "Erection, construction, remodeling, repairing" means all types of work done on a particular building or work at the site thereof in the construction or development of the project, including without limitation, erecting, construction, remodeling, repairing, altering, painting, and decorating, the transporting of materials and supplies to or from the building or work done by the employees of the Contractor, Subcontractor, or Agent thereof, and the manufacturing or furnishing of

materials, articles, supplies or equipment on the site of the building or work, by persons employed by the Contractor, Subcontractor, or Agent thereof.

“Employees working on the project” means laborers, workers, and mechanics employed directly upon the site of work.

“Laborers, Workers, and Mechanics” include pre-apprentices, helpers, trainees, learners and properly registered and indentured apprentices but exclude clerical, supervisory, and other personnel not performing manual labor.

Establishment of Wage Rates. The Department of Public Works shall periodically obtain a current schedule of prevailing wage rates from DWD. The schedule shall be used to establish the City of Madison Prevailing Wage Rate Schedule for Public Works Construction (prevailing wage rate). The Department of Public Works may include known increases to the prevailing wage rate which can be documented and are to occur on a future specific date. The prevailing wage rate shall be included in public works contracts subsequently negotiated or solicited by the City. Except for known increases contained within the schedule, the prevailing wage rate shall not change during the contract. The approved wage rate is attached hereto.

Workforce Profile. The Contractor shall, at the time of signature of the contract, notify the City Engineer in writing of the names and classifications of all the employees of the Contractor, Subcontractors, and Agents proposed for the work. In the alternative, the Contractor shall submit in writing the classifications of all the employees of the Contractor, Subcontractors and Agents and the total number of hours estimated in each classification for the work. This workforce profile(s) shall be reviewed by the City Engineer who may, within ten (10) days, object to the workforce profile(s) as not being reflective of that which would be required for the work. The Contractor may request that the workforce profile, or a portion of the workforce profile, be submitted after the signature of the contract but at least ten (10) days prior to the work commencing. Any costs or time loss resulting from modifications to the workforce profile as a result of the City Engineer’s objections shall be the responsibility of the Contractor.

Payrolls and Records. The Contractor shall keep weekly payroll records setting forth the name, address, telephone number, classification, wage rate and fringe benefit package of all the employees who work on the contract, including the employees of the Contractor’s subcontractors and agents. Such weekly payroll records must include the required information for all City contracts and all other contracts on which the employee worked during the week in which the employee worked on the contract. The Contractor shall also keep records of the individual time each employee worked on the project and for each day of the project. Such records shall also set forth the total number of hours of overtime credited to each such employee for each day and week and the amount of overtime pay received in that week. The records shall set forth the full weekly wages earned by each employee and the actual hourly wage paid to the employee.

The Contractor shall submit the weekly payroll records, including the records of the Contractor’s subcontractors and agents, to the City Engineer for every week that work is being done on the contract. The submittal shall be within twenty-one (21) calendar days of the end of the Contractor’s weekly pay period.

Employees shall receive the full amounts accrued at the time of the payment, computed at rates not less than those stated in the prevailing wage rate and each employee’s rate shall be determined by the work that is done within the trade or occupation classification which should be properly assigned to the employee.

An employee’s classification shall not be changed to a classification of a lesser rate during the contract. If, during the term of the contract, an employee works in a higher pay classification than the one which was previously properly assigned to the employee, then that employee shall be considered to be in the higher pay classification for the balance of the contract, receive the appropriate higher rate of pay, and she/he shall not receive a lesser rate during the balance of the

contract. For purposes of clarification, it is noted that there is a distinct difference between working in a different classification with higher pay and doing work within a classification that has varying rates of pay which are determined by the type of work that is done within the classification. For example, the classification “Operating Engineer” provides for different rates of pay for various classes of work and the Employer shall compensate an employee classified as an “Operating Engineer” based on the highest class of work that is done in one day. Therefore, an “Operating Engineer’s” rate may vary on a day to day basis depending on the type of work that is done, but it will never be less than the base rate of an “Operating Engineer”. Also, as a matter of clarification, it is recognized that an employee may work in a higher paying classification merely by chance and without prior intention, calculation or design. If such is the case and the performance of the work is truly incidental and the occurrence is infrequent, inconsequential and does not serve to undermine the single classification principle herein, then it may not be required that the employee be considered to be in the higher pay classification and receive the higher rate of pay for the duration of the contract. However, the Contractor is not precluded or prevented from paying the higher rate for the limited time that an employee performs work that is outside of the employee’s proper classification.

Questions regarding an employee’s classification, rate of pay or rate of pay within a classification, shall be resolved by reference to the established practice that predominates in the industry and on which the trade or occupation rate/classification is based. Rate of pay and classification disputes shall be resolved by relying upon practices established by collective bargaining agreements and guidelines used in such determination by appropriate recognized trade unions operating within the City of Madison.

The Contractor, its Subcontractors and Agents shall submit to interrogation regarding compliance with the provisions of this ordinance.

Mulcting of the employees by the Contractor, Subcontractor, and Agents on Public Works contracts, such as by kickbacks or other devices, is prohibited. The normal rate of wage of the employees of the Contractor, Subcontractor, and Agents shall not be reduced or otherwise diminished as a result of payment of the prevailing wage rate on a public works contract.

Hourly contributions. Hourly contributions shall be determined in accordance with the prevailing wage rate and with DWD. 290.01(10), Wis. Admin. Code.

Apprentices and Subjourney persons. Apprentices and sub journeypersons performing work on the project shall be compensated in accordance with the prevailing wage rate and with DWD 290.02, and 290.025, respectively, Wis. Admin. Code.

Straight Time Wages. The Contractor may pay straight time wages as determined by the prevailing wage rate and DWD 290.04, Wis. Admin. Code.

Overtime Wages. The Contractor shall pay overtime wages as required by the prevailing wage rate and DWD 290.05, Wis. Admin. Code.

Posting of Wage Rates and Hours. A clearly legible copy of the prevailing wage rate, together with the provisions of Sec. 66.0903(10)(a) and (11)(a), Wis. Stats., shall be kept posted in at least one conspicuous and easily accessible place at the project site by the Contractor and such notice shall remain posted during the full time any laborers, workers or mechanics are employed on the contract.

Evidence of Compliance by Contractor. Upon completion of the contract, the Contractor shall file with the Department of Public Works an affidavit stating:

a. That the Contractor has complied fully with the provisions and requirements of Sec. 66.0903(3), Wis. Stats., and Chapter DWD 290, Wis. Admin. Code; the Contractor has received evidence of compliance from each of the agents and subcontractors; and the

names and addresses of all of the subcontractors and agents who worked on the contract.

b. That full and accurate records have been kept, which clearly indicate the name and trade or occupation of every laborer, worker or mechanic employed by the Contractor in connection with work on the project. The records shall show the number of hours worked by each employee and the actual wages paid therefore; where these records will be kept and the name, address and telephone number of the person who will be responsible for keeping them. The records shall be retained and made available for a period of at least three (3) years following the completion of the project of public works and shall not be removed without prior notification to the municipality.

Evidence of Compliance by Agent and Subcontractor. Each agent and subcontractor shall file with the Contractor, upon completion of their portion of the work on the contract an affidavit stating that all the provisions of Sec. 66.0903(3), Wis. Stats., have been fully complied with and that full and accurate records have been kept, which clearly indicate the name and trade or occupation of every laborer, worker or mechanic employed by the Contractor in connection with work on the project. The records shall show the number of hours worked by each employee and the actual wages paid therefore; where these records shall be kept and the name, address and telephone number of the person who shall be responsible for keeping them. The records shall be retained and made available for a period of at least three (3) years following the completion of the project of public works and shall not be removed without prior notification to the municipality.

Failure to Comply with the Prevailing Wage Rate. If the Contractor fails to comply with the prevailing wage rate, she/he shall be in default on the contract.

5. **Affirmative Action.** In the performance of the services under this Agreement the Contractor agrees not to discriminate against any employee or applicant because of race, religion, marital status, age, color, sex, disability, national origin or ancestry, income level or source of income, arrest record or conviction record, less than honorable discharge, physical appearance, sexual orientation, gender identity, political beliefs, or student status. The Contractor further agrees not to discriminate against any subcontractor or person who offers to subcontract on this contract because of race, religion, color, age, disability, sex, sexual orientation, gender identity or national origin.

The Contractor agrees that within thirty (30) days after the effective date of this agreement, the Contractor will provide to the City Affirmative Action Division certain workforce utilization statistics, using a form to be furnished by the City.

If the contract is still in effect, or if the City enters into a new agreement with the Contractor, within one year after the date on which the form was required to be provided, the Contractor will provide updated workforce information using a second form, also to be furnished by the City. The second form will be submitted to the City Affirmative Action Division no later than one year after the date on which the first form was required to be provided.

The Contractor further agrees that, for at least twelve (12) months after the effective date of this contract, it will notify the City Affirmative Action Division of each of its job openings at facilities in Dane County for which applicants not already employees of the Contractor are to be considered. The notice will include a job description, classification, qualifications and application procedures and deadlines. The Contractor agrees to interview and consider candidates referred by the Affirmative Action Division if the candidate meets the minimum qualification standards established by the Contractor, and if the referral is timely. A referral is timely if it is received by the Contractor on or before the date started in the notice.

Articles of Agreement
Article I

The Contractor shall take affirmative action in accordance with the provisions of this contract to insure that applicants are employed, and that employees are treated during employment without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national original and that the employer shall provide harassment free work environment for the realization of the potential of each employee. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training including apprenticeship insofar as it is within the control of the Contractor. The Contractor agrees to post in conspicuous places available to employees and applicants notices to be provided by the City setting out the provisions of the nondiscrimination clauses in this contract.

Article II

The Contractor shall in all solicitations or advertisements for employees placed by or on behalf of the Contractors state that all qualified or qualifiable applicants will be employed without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national origin.

Article III

The Contractor shall send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice to be provided by the City advising the labor union or worker's representative of the Contractor's equal employment opportunity and affirmative action commitments. Such notices shall be posted in conspicuous places available to employees and applicants for employment.

Article V

The Contractor agrees that it will comply with all provisions of the Affirmative Action Ordinance of the City of Madison, including the contract compliance requirements. The Contractor agrees to submit the model affirmative action plan for public works contractors in a form approved by the Affirmative Action Division Manager.

Article VI

The Contractor will maintain records as required by Section 39.02(9)(f) of the Madison General Ordinances and will provide the City Affirmative Action Division with access to such records and to persons who have relevant and necessary information, as provided in Section 39.02(9)(f). The City agrees to keep all such records confidential, except to the extent that public inspection is required by law.

Article VII

In the event of the Contractor's or subcontractor's failure to comply with the Equal Employment Opportunity and Affirmative Action Provisions of this contract or Section 39.03 and 39.02 of the Madison General Ordinances, it is agreed that the City at its option may do any or all of the following:

1. Cancel, terminate or suspend this Contract in whole or in part.

2. Declare the Contractor ineligible for further City contracts until the Affirmative Action requirements are met.

3. Recover on behalf of the City from the prime Contractor 0.5 percent of the contract award price for each week that such party fails or refuses to comply, in the nature of liquidated damages, but not to exceed a total of five percent (5%) of the contract price, or five thousand dollars ($5,000), whichever is less. Under public works contracts, if a subcontractor is in noncompliance, the City may recover liquidated damages from the prime Contractor in the manner described above. The preceding sentence shall not be construed to prohibit a prime Contractor from recovering the amount of such damage from the non-complying subcontractor.

Article VIII

The Contractor shall include the above provisions of this contract in every subcontract so that such provisions will be binding upon each subcontractor. The Contractor shall take such action with respect to any subcontractor as necessary to enforce such provisions, including sanctions provided for noncompliance.

Article IX

The Contractor shall allow the maximum feasible opportunity to small business enterprises to compete for any subcontracts entered into pursuant to this contract. (In federally funded contracts the terms “DBE, MBE and WBE” shall be substituted for the term “small business” in this Article.)

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IN WITNESS WHEREOF, the Contractor has hereunto set his/her hand and seal and the City has caused these presents to be sealed with its corporate seal and to be subscribed by its Mayor and City Clerk the day and year first above written.

Countersigned:

Company Name

Witness Date

President Date

Witness Date

Secretary Date

CITY OF MADISON, WISCONSIN

Provisions have been made to pay the liability that will accrue under this contract.

Approved as to form:

Finance Director

City Attorney

Signed this_____day of_____, 20_____

Witness

Mayor Date

Witness

City Clerk Date

SECTION I: PAYMENT AND PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____ as principal, and _____ Company of _____ as surety, are held and firmly bound unto the City of Madison, Wisconsin, in the sum of _____ ($_____) Dollars, lawful money of the United States, for the payment of which sum to the City of Madison, we hereby bind ourselves and our respective executors and administrators firmly by these presents.

The condition of this Bond is such that if the above bounden shall on his/her part fully and faithfully perform all of the terms of the Contract entered into between him/herself and the City of Madison for the construction of:

2014 PARKING GARAGE MAINTENANCE
CONTRACT NO. 7283

in Madison, Wisconsin, and shall pay all claims for labor performed and material furnished in the prosecution of said work, and save the City harmless from all claims for damages because of negligence in the prosecution of said work, and shall save harmless the said City from all claims for compensation (under Chapter 102, Wisconsin Statutes) of employees and employees of subcontractor, then this Bond is to be void, otherwise of full force, virtue and effect.

Signed and sealed this _____ day of _____

Countersigned:

_____
Company Name (Principal)

_____ _____
Witness President Seal

_____
Secretary

Approved as to form:

_____
Surety Seal
☐ Salary Employee ☐ Commission

_____ By _____
City Attorney Attorney-in-Fact

This certifies that I have been duly licensed as an agent for the above company in Wisconsin under License No. _____ for the year 20_____, and appointed as attorney-in-fact with authority to execute this payment and performance bond which power of attorney has not been revoked.

_____ _____
Date Agent Signature

SECTION J: PREVAILING WAGE RATES

State of Wisconsin Department of Workforce Development Equal Rights Division	**DEPARTMENTAL ORDER**

ISSUE DATE: 1/6/2014

PROJECT:

ALL PUBLIC WORKS PROJECTS UNDER SEC 66.0903, STATS - CITY OF MADISON
MADISON CITY, DANE COUNTY, WI
Determination No. 201400001

PROJECT OWNER:	**REQUESTER:**
ROBERT F. PHILLIPS, CITY ENGINEER CITY OF MADISON-ENGINEERING 210 MARTIN L KING JR BLVD, RM 115 MADISON, WI 53703	ROBERT F. PHILLIPS, CITY ENGINEER CITY OF MADISON-ENGINEERING 210 MARTIN L KING JR BLVD, RM 115 MADISON, WI 53703

ADDITIONAL CONTACT:

NORMAN DAVIS, CONTRACT COMPLIANCE
CITY OF MADISON - CIVIL RTS
210 M L KING JR BLVD, RM 130
MADISON, WI 53703

The department received an application for prevailing wage rate determination for the above-captioned project. The department conducted a survey to determine the prevailing wage rate for the trade(s) or occupation(s) needed to complete the project. The survey's findings appear in the attached project determination.

If you believe that the wage rate for any trade or occupation does not accurately reflect the prevailing wage rate in the city, village or town where the project is located, you may ask the department to conduct an administrative review of such wage rate. You must submit this request in writing within 30 days from the date indicated above. Additionally, your request must include wage rate information from at least three similar projects in the city, village or town where the proposed project is located and on which some work has been performed by the contested trade(s) during the current survey period and was previously considered by the department in issuing the attached determination. See DWD 290.10 of the Wisconsin Administrative Code and either s. 66.0903(3)(br), Stats., or s. 103.49(3)(c), Stats., for a complete explanation of the administrative review process.

Enclosures

It is hereby ordered that the prevailing wage rates set forth in the attached project determination shall only be applicable to the above referenced project. This order is a **FINAL ORDER** of the department unless a timely request for an administrative review is filed with the department.

ISSUED BY:

Equal Rights Division
Labor Standards Bureau
Construction Wage Standards Section
P.O. Box 8928, Madison, WI 53708-8928
(608)266-6861

Web Site: http://dwd.wisconsin.gov/er/

PREVAILING WAGE RATE DETERMINATION
Issued by the State of Wisconsin
Department of Workforce
Development Pursuant to s. 66.0903,
Wis. Stats. Issued On: 1/6/2014

DETERMINATION NUMBER: 201400001

EXPIRATION DATE: Prime Contracts MUST Be Awarded or Negotiated On Or Before 12/31/2014. If NOT, You MUST Reapply.

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

PROJECT LOCATION: MADISON CITY, DANE COUNTY, WI

CONTRACTING AGENCY: CITY OF MADISON-ENGINEERING

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: Time and one-half must be paid for all hours worked:
- 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.

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.

A DOT Premium (discussed below) may supersede this time and one-half requirement.

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, whevenever 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 journeyperson'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

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
101	Acoustic Ceiling Tile Installer	30.48	15.90	46.38
102	Boilermaker Future Increase(s): Add $1.50/hr on 1/01/2015; Add $1.50/hr. on 01/01/2016	32.05	28.04	60.09
103	Bricklayer, Blocklayer or Stonemason 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.	32.01	17.35	49.36
104	Cabinet Installer	30.48	15.90	46.38
105	Carpenter	30.48	15.90	46.38
106	Carpet Layer or Soft Floor Coverer	30.48	15.90	46.38
107	Cement Finisher	31.58	16.13	47.71
108	Drywall Taper or Finisher	24.80	16.60	41.40
109	Electrician 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.	34.07	19.25	53.32
110	Elevator Constructor	42.86	23.84	66.70
111	Fence Erector	24.72	0.00	24.72
112	Fire Sprinkler Fitter	36.07	18.73	54.80
113	Glazier	38.03	13.42	51.45
114	Heat or Frost Insulator	33.68	24.31	57.99
115	Insulator (Batt or Blown)	15.00	9.50	24.50
116	Ironworker	31.25	19.46	50.71
117	Lather	30.48	15.90	46.38

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
118	Line Constructor (Electrical)	38.25	17.31	55.56
119	Marble Finisher	26.89	19.18	46.07
120	Marble Mason	32.01	17.35	49.36
121	Metal Building Erector	22.00	10.00	32.00
122	Millwright	32.11	15.95	48.06
123	Overhead Door Installer	20.95	4.94	25.89
124	Painter	24.50	16.60	41.10
125	Pavement Marking Operator	30.00	0.00	30.00
126	Piledriver	30.98	15.90	46.88
127	Pipeline Fuser or Welder (Gas or Utility)	30.79	19.74	50.53
129	Plasterer	31.03	17.71	48.74
130	Plumber Future Increase(s): Add $1/hr on 6/1/2014.	36.42	16.87	53.29
132	Refrigeration Mechanic	41.60	16.71	58.31
133	Roofer or Waterproofer	29.40	6.25	35.65
134	Sheet Metal Worker	34.45	22.57	57.02
135	Steamfitter Future Increase(s): Add $1.70/hr on 6/1/2014.	42.95	17.81	60.76
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.	22.25	12.24	34.49
138	Temperature Control Installer	32.94	18.80	51.74
139	Terrazzo Finisher	26.89	19.18	46.07
140	Terrazzo Mechanic	30.20	18.42	48.62
141	Tile Finisher	23.85	17.18	41.03
142	Tile Setter	29.81	17.18	46.99
143	Tuckpointer, Caulker or Cleaner	35.25	13.15	48.40
144	Underwater Diver (Except on Great Lakes)	34.48	15.90	50.38
146	Well Driller or Pump Installer	25.32	15.65	40.97
147	Siding Installer	25.92	18.04	43.96

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	29.16	14.34	43.50
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	30.60	14.86	45.46
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	26.78	13.63	40.41
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	24.86	12.97	37.83
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	28.74	17.27	46.01

TRUCK DRIVERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
201	Single Axle or Two Axle	32.39	18.46	50.85
203	Three or More Axle	18.00	22.88	40.88
204	Articulated, Euclid, Dumptor, Off Road Material Hauler	32.89	18.96	51.85
205	Pavement Marking Vehicle	18.00	22.88	40.88
207	Truck Mechanic	18.00	22.88	40.88

LABORERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
301	General Laborer Premium Increase(s): Add $1.00/hr for certified welder; Add $.25/hr for mason tender	24.21	14.63	38.84
302	Asbestos Abatement Worker	24.36	14.44	38.80
303	Landscaper	21.01	9.37	30.38
310	Gas or Utility Pipeline Laborer (Other Than Sewer and Water)	21.01	13.63	34.64
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.	18.33	13.65	31.98
314	Railroad Track Laborer	23.46	3.30	26.76
315	Final Construction Clean-Up Worker	16.00	0.00	16.00

HEAVY EQUIPMENT OPERATORS
SITE PREPARATION, UTILITY OR LANDSCAPING WORK ONLY

Fringe Benefits Must Be Paid On All Hours Worked

CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
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).	33.42	18.96	52.38
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).	32.89	18.96	51.85
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.	30.82	18.96	49.78
504	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	38.80	18.98	57.78
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.	38.80	18.98	57.78
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.	34.50	18.98	53.48

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.	34.50	18.98	53.48

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

Fringe Benefits Must Be Paid On All Hours Worked

CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
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): Add $.50/hr for >200 Ton / Add $1/hr at 300 Ton / Add $1.50/hr at 400 Ton / Add $2/hr at 500 Ton & Over.	35.62	18.96	54.58
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).	36.35	6.95	43.30
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).	33.42	18.96	52.38
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).	32.89	18.96	51.85

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
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; 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.	30.82	18.96	49.78
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; Robotic Tool Carrier (With or Without Attachments); Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack.	24.19	17.89	42.08
514	Gas or Utility Pipeline, Except Sewer & Water (Primary Equipment).	36.34	21.14	57.48
515	Gas or Utility Pipeline, Except Sewer & Water (Secondary Equipment). Future Increase(s): Add $1.60/hr on 06/01/2014; Add $1.65/hr on 06/01/2015.	32.32	18.55	50.87
516	Fiber Optic Cable Equipment Future Increase(s): Add $1.75/hr on 02/01/2014.	27.89	17.20	45.09

SEWER, WATER OR TUNNEL CONSTRUCTION

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

SKILLED TRADES

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
103	Bricklayer, Blocklayer or Stonemason 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.	35.10	18.40	53.50
105	Carpenter Future Increase(s): Add $1.25/hr on 6/2/2014. 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.	33.68	19.81	53.49
107	Cement Finisher Future Increase(s): 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.	33.51	16.13	49.64
109	Electrician 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.	32.82	22.61	55.43
111	Fence Erector	24.72	0.00	24.72
116	Ironworker	31.25	19.46	50.71
118	Line Constructor (Electrical)	38.25	17.31	55.56
125	Pavement Marking Operator	16.00	7.35	23.35
126	Piledriver	30.98	15.90	46.88
130	Plumber	33.75	14.07	47.82
135	Steamfitter	42.45	16.71	59.16
137	Teledata Technician or Installer	21.89	11.85	33.74

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
143	Tuckpointer, Caulker or Cleaner	35.25	13.15	48.40
144	Underwater Diver (Except on Great Lakes)	38.80	18.98	57.78
146	Well Driller or Pump Installer	25.32	15.65	40.97
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	29.16	14.34	43.50
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	30.60	14.86	45.46
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	26.78	13.63	40.41
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	24.86	12.97	37.83
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	12.70	34.45

TRUCK DRIVERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
201	Single Axle or Two Axle	30.00	15.00	45.00
203	Three or More Axle	16.00	7.35	23.35
204	Articulated, Euclid, Dumptor, Off Road Material Hauler	32.89	18.96	51.85
205	Pavement Marking Vehicle	16.00	7.35	23.35
207	Truck Mechanic	16.00	7.35	23.35

LABORERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
301	General Laborer Premium Increase(s): Add $.20 for blaster, bracer, manhole builder, caulker, bottomman and power tool; Add $.55 for pipelayer; Add $1.00 for tunnel work 0-15 lbs. compressed air; Add $2.00 for over 15-30 lbs. compressed air; Add $3.00 for over 30 lbs. compressed air.	25.60	14.62	40.22
303	Landscaper	25.28	11.46	36.74
304	Flagperson or Traffic Control Person	24.70	10.72	35.42
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	18.31	12.67	30.98
314	Railroad Track Laborer	23.46	3.30	26.76

HEAVY EQUIPMENT OPERATORS
SEWER, WATER OR TUNNEL WORK

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
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): Add $.25/hr for all >45 Ton lifting capacity cranes	34.62	18.96	53.58
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).	33.42	18.96	52.38
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).	32.89	18.96	51.85

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
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. Future Increase(s): Add $1.05/hr on 6/2/2014; Add $1.55/hr on 6/1/2015. Premium Increase(s): Add $.25/hr for operating tower crane.	35.11	19.45	54.56
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.	30.19	20.94	51.13
526	Boiler (Temporary Heat); Forklift; Greaser; Oiler.	24.19	17.89	42.08
527	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	38.80	18.98	57.78
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.	38.80	18.98	57.78
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.	34.50	18.98	53.48
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.	34.50	18.98	53.48

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

Fringe Benefits Must Be Paid On All Hours Worked

CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
103	Bricklayer, Blocklayer or Stonemason	32.01	17.35	49.36
105	Carpenter	30.48	15.90	46.38
107	Cement Finisher Future Increase(s): 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.	33.51	16.13	49.64
109	Electrician 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.	34.07	19.25	53.32
111	Fence Erector	24.72	0.00	24.72
116	Ironworker	31.25	19.46	50.71
118	Line Constructor (Electrical)	38.25	17.31	55.56
124	Painter	21.87	11.37	33.24
125	Pavement Marking Operator	30.00	0.00	30.00
126	Piledriver	30.98	15.90	46.88
133	Roofer or Waterproofer	29.40	6.25	35.65
137	Teledata Technician or Installer	21.89	11.85	33.74
143	Tuckpointer, Caulker or Cleaner	35.25	13.15	48.40
144	Underwater Diver (Except on Great Lakes)	34.48	15.90	50.38
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	34.43	15.24	49.67
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	35.50	15.89	51.39

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	26.78	13.63	40.41
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	24.86	12.97	37.83
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	12.70	34.45

TRUCK DRIVERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
201	Single Axle or Two Axle	34.22	19.90	54.12
203	Three or More Axle Future Increase(s): Add $1.30/hr on 6/1/2014. 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.	24.52	17.77	42.29
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Future Increase(s): Add $1.75/hr on 6/1/14; Add $1.25/hr on 6/1/15; Add $1.30/hr on 6/1/16; Add $1.25/hr on 6/1/17. 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 $1.50/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot. wi.gov/hcci/labor-wages-eeo/index.shtm.	29.27	20.40	49.67
205	Pavement Marking Vehicle	23.31	17.13	40.44
206	Shadow or Pilot Vehicle	34.22	19.90	54.12
207	Truck Mechanic	23.31	17.13	40.44

LABORERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
301	General Laborer Future Increase(s): Add $1.60/hr on 6/1/2014. Premium Increase(s): Add $.10/hr for topman, air tool operator, vibrator or tamper operator (mechanical hand operated), chain saw operator and demolition burning torch laborer; Add $.15/hr for bituminous worker (raker and luteman), formsetter (curb, sidewalk and pavement) and strike off man; Add $.20/hr for blaster and powderman; Add $.25/hr for bottomman; Add $.35/hr for line and grade specialist; Add $.45/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).	29.32	14.63	43.95
302	Asbestos Abatement Worker	24.36	14.44	38.80
303	Landscaper Future Increase(s): Add $1.60/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).	29.32	14.63	43.95
304	Flagperson or Traffic Control Person Future Increase(s): 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.	25.67	14.63	40.30
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	18.31	12.67	30.98
314	Railroad Track Laborer	23.46	3.30	26.76

HEAVY EQUIPMENT OPERATORS
AIRPORT PAVEMENT OR STATE HIGHWAY CONSTRUCTION

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
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 $1.75/hr on 6/1/2014; Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. 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 $1.50/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm.	36.72	20.40	57.12
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 $1.75/hr on 6/1/2014; Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. 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 $1.50/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm.	36.22	20.40	56.62

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
533	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 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); 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. Future Increase(s): Add $1.75/hr on 6/1/2014; Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. 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 $1.50/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm.	35.72	20.40	56.12

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
534	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 Sawer (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. Future Increase(s): Add $1.75/hr on 6/1/2014; Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. 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 $1.50/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm.	35.46	20.40	55.86
535	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. Future Increase(s): Add $1.75/hr on 6/1/2014; Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. 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 $1.50/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm.	35.17	20.40	55.57
536	Fiber Optic Cable Equipment.	26.69	16.65	43.34
537	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	38.80	18.98	57.78
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.	38.80	18.98	57.78

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
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.	34.50	18.98	53.48
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.	34.50	18.98	53.48

LOCAL STREET OR MISCELLANEOUS PAVING CONSTRUCTION

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	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
103	Bricklayer, Blocklayer or Stonemason	32.01	17.35	49.36
105	Carpenter	32.93	19.93	52.86
107	Cement Finisher	31.48	15.68	47.16
109	Electrician	31.27	22.81	54.08
111	Fence Erector	24.72	0.00	24.72
116	Ironworker	31.25	19.46	50.71
118	Line Constructor (Electrical)	38.25	17.31	55.56
124	Painter	24.50	16.60	41.10
125	Pavement Marking Operator	30.00	0.00	30.00
126	Piledriver	30.98	15.90	46.88
133	Roofer or Waterproofer	29.40	6.25	35.65
137	Teledata Technician or Installer	21.89	11.85	33.74
143	Tuckpointer, Caulker or Cleaner	35.25	13.15	48.40
144	Underwater Diver (Except on Great Lakes)	38.80	18.98	57.78
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	34.43	15.24	49.67
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	30.60	14.86	45.46
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	26.78	13.63	40.41
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	24.86	12.97	37.83
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	12.70	34.45

TRUCK DRIVERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
201	Single Axle or Two Axle	30.00	15.00	45.00

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
203	Three or More Axle	17.00	0.00	17.00
204	Articulated, Euclid, Dumptor, Off Road Material Hauler	32.89	18.96	51.85
205	Pavement Marking Vehicle	17.00	0.00	17.00
206	Shadow or Pilot Vehicle	30.00	15.00	45.00
207	Truck Mechanic	17.00	0.00	17.00

LABORERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
301	General Laborer	28.07	13.25	41.32
303	Landscaper Future Increase(s): Add $1.60/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).	29.04	14.63	43.67
304	Flagperson or Traffic Control Person	24.70	10.72	35.42
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	18.31	12.67	30.98
314	Railroad Track Laborer	23.46	3.30	26.76

HEAVY EQUIPMENT OPERATORS
CONCRETE PAVEMENT OR BRIDGE WORK

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
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 $1.75/hr on 6/1/2014; Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. 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 $1.50/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm.	36.72	20.40	57.12
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 $1.75/hr on 6/1/2014; Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. 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 $1.50/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm.	36.22	20.40	56.62

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
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. Future Increase(s): Add $1.75/hr on 6/1/2014; Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. 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 $1.50/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm.	35.72	20.40	56.12
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 Sawer (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.	33.96	19.79	53.75
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.	30.32	18.46	48.78
546	Fiber Optic Cable Equipment.	26.69	16.65	43.34

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
547	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	38.80	18.98	57.78
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.	38.80	18.98	57.78
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.	34.50	18.98	53.48
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.	34.50	18.98	53.48

HEAVY EQUIPMENT OPERATORS
ASPHALT PAVEMENT OR OTHER WORK

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
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.	35.12	18.46	53.58
552	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 $1.75/hr on 6/1/2014; Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. 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 $1.50/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm.	36.22	20.40	56.62

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
553	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.	32.89	18.96	51.85
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 Sawer (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.	33.67	19.48	53.15
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 $1.75/hr on 6/1/2014; Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. 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 $1.50/hr night work premium. See DOT's website for details about the applicability of this night work premium at: http://roadwaystandards.dot.wi.gov/hcci/labor-wages-eeo/index.shtm.	35.17	20.40	55.57
556	Fiber Optic Cable Equipment.	26.69	16.65	43.34

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

Fringe Benefits Must Be Paid On All Hours Worked

CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
101	Acoustic Ceiling Tile Installer Future Increase(s): Add $1.25/hr on 6/2/2014.	33.68	19.81	53.49
102	Boilermaker	26.00	4.73	30.73
103	Bricklayer, Blocklayer or Stonemason	32.01	13.26	45.27
104	Cabinet Installer	22.00	1.05	23.05
105	Carpenter	30.48	3.24	33.72
106	Carpet Layer or Soft Floor Coverer	23.68	3.20	26.88
107	Cement Finisher	20.93	5.94	26.87
108	Drywall Taper or Finisher	22.50	0.88	23.38
109	Electrician	27.50	7.47	34.97
110	Elevator Constructor	42.86	23.84	66.70
111	Fence Erector	18.52	4.89	23.41
112	Fire Sprinkler Fitter	52.82	5.54	58.36
113	Glazier	38.03	13.42	51.45
114	Heat or Frost Insulator	30.00	0.00	30.00
115	Insulator (Batt or Blown)	19.00	14.33	33.33
116	Ironworker	31.25	19.46	50.71
117	Lather	30.48	3.24	33.72
119	Marble Finisher	26.89	19.18	46.07
120	Marble Mason	32.01	13.26	45.27
121	Metal Building Erector	17.00	3.82	20.82
123	Overhead Door Installer	12.00	0.00	12.00
124	Painter	20.00	4.22	24.22

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
125	Pavement Marking Operator	30.00	0.00	30.00
129	Plasterer	25.00	0.00	25.00
130	Plumber	30.00	10.62	40.62
132	Refrigeration Mechanic	19.75	8.56	28.31
133	Roofer or Waterproofer	17.00	3.72	20.72
134	Sheet Metal Worker	21.03	3.40	24.43
135	Steamfitter	31.72	16.10	47.82
137	Teledata Technician or Installer	24.75	8.09	32.84
138	Temperature Control Installer	22.50	0.70	23.20
139	Terrazzo Finisher	26.89	19.18	46.07
140	Terrazzo Mechanic	30.20	18.42	48.62
141	Tile Finisher	23.77	16.50	40.27
142	Tile Setter	21.00	0.00	21.00
143	Tuckpointer, Caulker or Cleaner	32.50	3.21	35.71
146	Well Driller or Pump Installer	27.60	5.80	33.40
147	Siding Installer	20.18	0.00	20.18

TRUCK DRIVERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
201	Single Axle or Two Axle	28.05	4.16	32.21
203	Three or More Axle	18.00	2.37	20.37
205	Pavement Marking Vehicle	18.00	2.37	20.37
207	Truck Mechanic	19.00	1.85	20.85

LABORERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
301	General Laborer	18.14	10.16	28.30
302	Asbestos Abatement Worker	17.00	3.86	20.86

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
303	Landscaper	30.00	0.00	30.00
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	18.31	12.67	30.98
315	Final Construction Clean-Up Worker	16.00	0.00	16.00

HEAVY EQUIPMENT OPERATORS
RESIDENTIAL OR AGRICULTURAL CONSTRUCTION

CODE	Fringe Benefits Must Be Paid On All Hours Worked 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, TImbco, 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.	29.70	20.08	49.78
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.	29.70	16.00	45.70

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

Department of Workforce Development
Equal Rights Division
P.O. Box 8928
Madison, WI 53708·8928
Telephone: (608) 266·6860
Fax: (608) 267-4592
TTY: (608) 264-8752

STATE OF WISCONSIN

€®®DWD

Department of Workforce Development

The documents following the Prevailing Wage Rate Determination consist of 18 pages of various forms/documents that will be used throughout the completion of the project. The chart below lists the form number, form/document name, the party who uses the document, and the document's number of pages. If you have any questions regarding these forms please call the Prevailing Wage Office at (608)266-6861.

ERD Form Number	Form Name	Party Who Uses the Form	Pages
16056	Post the White Sheet	Contracting agency	1
16770	Public Works and Publicly Funded Projects, §103.503, Wis. Stats.	contractors on public works and publicly funded private construction projects	1
10908	Consolidated List of Debarred Contractors	Any party someone to complete work on a prevailing wage project	2
7777	Disclosure of Ownership	Contractors that meet the set out in (3)(A)&(B) of the form	1
5724	Prime Contractor Affidavit of Compliance	Pri contractor agency upon completion of the before receiving final payment	2
1	Agent or Compliance	with their awarding contractor upon completion of their work on the project before receiving final payment	2
10880	Request to Employ Subjourneyperson	Contractors wishing to employ a subjourneyperson(s)	
	Prevailing Wage - Public Entity Project Owners	Explanation of project owner responsibilities	2
	Prevailing Wage – Contractors	Explanation of contractor responsibilities	2
	Summary of Prevailing Wage Law Changes Effective July 1, 2011	Information for public entity or any other interested party	4

09/01/12

State of Wisconsin
Department of Workforce Development
Equal Rights Division
Labor Standards Bureau

POST THE WHITE SHEET

As the public entity receiving this prevailing wage rate determination, YOU ARE REQUIRED by law to post the prevailing wage rate determination (i.e., white sheet) in at least one conspicuous and easily accessible place on the project site that is available to all construction workers. The white sheet must remain posted from the onset of the project until all construction labor on the project has been completed.
[See, Wis. Admin. Code §DWD 290.12(1)]

Posting the white sheet inside the general contractor's trailer does not meet this requirement. That placement is not available/accessible to all workers and is not a location over which you have control.

If you have questions about posting, please call (608)266-6861 and ask for prevailing wage intake.

Disclaimer

Employers performing work on public works and publicly funded private construction projects in Wisconsin are required to have a written substance abuse testing program in place. The provisions of this requirement are contained in Sec. 103.503, Wis. Stats. The Department of Workforce Development is neither responsible for enforcement of this law nor authorized to answer questions concerning its provisions. For legal advice on complying with Sec. 103.503, Wis. Stats., you may wish to consult with a private attorney.

103.503 Substance abuse prevention on public works and publicly funded projects. (1) DEFJNITJONS. In this section:

(a) "Accident" means an incident caused, contributed to, or otherwise involving an employee that resulted or could have resulted in death, personal injury, or property damage and that occurred while the employee was performing the work described ins. 66.0903 (4), 66.0904 (3), or 103.49 (2m) on a project.

(b) "Alcohol" has the meaning given ins. 340.01 (lq).

(c) "Contracting agency" means a local governmental unit, as defined ins. 66.0903 (l) (d), a state agency, as defined ins. 103.49 (l) (f), or an owner or developer under s. 66.0904 that has contracted for the performance of work on a project.

(d) "Drug" means any controlled substance, as defined ins. 961.01 (4), or controlled substance analog, as defined ins. 961.01 (4m), for which testing is required by an employer under its substance abuse prevention program under this section.

(e) "Employee" means a laborer, worker, mechanic, or truck driver who performs the work described ins. 66.0903 (4), 66.0904 (3), or I03.49 (2m) on a project.

(t) "Employer" means a contractor, subcontractor, or agent of a contractor or subcontractor that performs work on a project.

(g) "Projecf' mean a project of public works that is subject to s. 66.0903 or I03.49 or a publicly funded private construction project that is subject to s. 66.0904.

(2) SUBSTANCE ABUSE PROHIBITED. No employee may use, possess, attempt to possess, distribute, deliver, or be under the influence of a drug, or use or be under the influence of alcohol, while performing the work described ins. 66.0903 (4), 66.0904 (3), or 103.49 (2m) on a project. An employee is considered to be under the influence of alcohol for purposes of this subsection if he or she has an alcohol concentration that is equal to or greater than the amount specified ins. 885.235 (!g) (d).

(3} SUBSTANCE ABUSE PREVENTION PROGRAMS REQUIRED. (a) Before an employer may commence work on a project, the employer shall have in place a written program for the prevention of substance abuse among its employees. At a minimum, the program shall include all of the following:

1. A prohibition against the actions or conditions specified in sub. (2).

2. A requirement that employees performing the work described ins. 66.0903 (4), 66.0904 (3), or 103.49 (2m) on a project submit to random, reasonable suspicion, and post-accident drug and alcohol testing and to drug and alcohol testing before commencing work on a project, except that testing of an employee before commencing work on a project is not required if the employee has been participating in a random testing program during the 90 days preceding the date on which the employee commenced work on the project.

3. A procedure for notifying an employee who violates sub. (2), who tests positive for the presence of a drug in his or her system, or who refuses to submit to drug or alcohol testing as required under the program that the employee may not perform work on a project until he or she meets the conditions specified in sub. (4) (b) I. and 2.

(b) Each employer shall be responsible for the cost of developing, implementing, and enforcing its substance abuse prevention program, including the cost of drug and alcohol testing of its employees under the program. The contracting agency is not responsible for that cost, for the cost of any medical review of a test result, or for any rehabilitation provided to an employee.

(4} EMPLOYEE ACCESS TO PROJECT. (a) No employer may permit an employee who violates sub. (2), who tests positive for the presence of a drug in his or her system, or who refuses to submit to drug or alcohol testing as required under the employer's substance abuse prevention program under sub. (3) to perform work on a project until he or she meets the conditions specified in par. (b) I. and 2. An employer shall immediately remove an employee from work on a project if any of the following occurs:

1. The employee violates sub. (2), tests positive for the presence of a drug in his or her system, or refuses to submit to dmg or alcohol testing as required under the employer's substance abuse prevention program.

2. An officer or employee of the contracting agency has a reasonable suspicion that the employee is in violation of sub. (2) and requests the employer to immediately remove the employee from work on the project.

(b) An employee who is barred or removed from work on a project under par. (a) may commence or retum to work on the project upon his or her employer providing to the contracting agency documentation showing an of the following:

I.That the employee has tested negative for the presence of drugs in his or her system and is not under the influence of alcohol as described in sub. (2).

2. That the employee has been approved to commence or return to work on the project in accordance with the employer's substance abuse prevention program.

(c) Testing for the presence of drugs or alcohol in an employee's system and the handling of test specimens shall be conducted in accordance with guidelines for laboratory testing procedures and chain-of-custody procedures established by the substance abuse and mental health services administration of the federal department of health and human services.

(5} LOCAL ORDINANCES; STRICT CONFORMITY REQUIRED. A local governmental unit, as defined ins. 66.0903 (l) (d), may enact an ordinance regulating the conduct regulated under this section only if the ordinance strictly conforms to this section.

History: 2005 a. 181; 2009 a. 28.

Consolidated List of Debarred Contractors
Prepared and Issued By
State of Wisconsin
Department of Workforce Development

This list has been prepared in accordance with the provisions of s. 66.0903(12), s. 66.0904(10) and s. 103.49(7), Stats. and Chapter DWD 294 of the Wisconsin Administrative Code. All contractors on this list were found to have committed a "debarable offense" related to certain labor standard provisions determined or established for a state or local public works project or publicly funded private construction project. No state agency, local governmental unit or owner or developer may knowingly solicit bids from, negotiate with or award any contracts to or approve or allow any subcontracts with a debarred contractor, including all divisions, affiliates or other organizational elements of such contractor that are engaged in construction business activiti s, until the debarment is terminated. The name of each debarred contractor must remain on this list for a period of three (3) years from the termination date indicated below. The contractor is, however, only "debarred" from the "effective date" through the "termination date" indicated for that contractor. Questions regarding this list should be addressed to Julie Eckenwalder, Equal Rights Division, P. 0. Box 8928, Madison, WI 53708 or call (608) 266-3148. Deaf, hearing or speech-impaired callers may contact the department by calling its TDD number (608) 264-8752.

Name of Contractor	Address	Effective Date	Termination Date	Cause Code	Date of Violation(s)	Limitations/Deviations
Abel, Mike	*See,* Abel Electric, Inc					
Abel Electric, Inc	3385 Belmar Rd Green Bay, WI 54313	9/1/12	8/31/2015	1	2011	None
Atkins, Scott	*See,* Freedom Insulation, Inc					
Boecker, Roger	*See,* R-Way Pumping, Inc					
Castlerock Commercial Construction, Inc	PO Box 11699 Milwaukee, WI 53211-0699	2/1/12	1/31/15	1, 2 and 4	2009 & 2010	None
Custom Heating & Air LLC	283 Tony Lane Green Bay, WI 54304	12/1/06	11/30/09	1, 2 and 4	2003 & 2004	None
Dem/Ex Group, Inc	805 S Adams St Manito, IL 61546	12/1/11	11/30/14	1 and 2	2010	None
Fisher, Ed &/or Fisher, Rhonda	*See,* Dem/Ex Group, Inc					
Freedom Insulation, Inc	117925 219th Ave Chippewa Falls, WI 54729	9/1/11	8/31/14	1	2008-2010	None

Name of Contractor	Address	Effective Date	Termination Date	Cause Code	Date of Violation(s)	Limitations/Deviations
JT Roofing, Inc	350 Tower Dr Saukville, WI 53080	6/1/11	5/31/15	1,2 and4	2007 & 2008	None
Jinkins, Richard	*See,* Castlerock Commercial Construction, Inc.					
Joseph Stoller Company	N8426 Hwy42 Algoma, WI 54201	2/1/07	1/31/10	1 and 2	2004& 2005	None
Keiver, David	*See,* Custom Heating & Air LLC					
Ofstie, Darin	*See,* Precision Excavating and Grading, LLC					
Precision Excavating and Grading, LLC or Precision Excavating Enterprises, LLC	2104 Pierce Saint Croix Rd Baldwin, WI 54002	5/1/11	4/30/14	1, 2 and4	2006-2008	None
R-Way Pumping, Inc	3023 Lake Maria Rd	3/1/12	2/28/15	1, 2	2008	
	None Freeport, MN 56331	None		and4		
Stoller Enterprises LLC	N8426 Hwy 42 None Algoma, WI 54201-9552	2/1/2007	1/31/10	1 and 2	2005 to 2006	
Stoller, Joseph	*See,* Joseph Stoller Company					
Stoller, Patrick J	*See,* Stoller Enterprises LLC					
Thull, Gerald T	*See,* JT Roofing, Inc.					

Cause Code: 1 = Failure to Pay Straight Time 2 = Failure to Pay Overtime 3 = Kickback 4 = Payroll Records.

State of Wisconsin
Department of Workforce Development
Equal Rights Division

Disclosure of Ownership

The statutory authority for the use of this form is prescribed in Sections 66.0903(12)(d), 66.0904(10)(d) and 103.49(7)(d), Wisconsin Statutes.
The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.
Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1) (m), Wisconsin Statutes]

(1) On the date a contractor submits a bid to or completes negotiations with a state agency, local governmental unit, or developer, investor or owner on a project subject to Section 66.0903, 66.0904 or 103.49, Wisconsin Statutes, the contractor shall disclose to such state agency, local governmental unit, or developer, investor or owner, the name of any "other construction business", which the contractor, or a shareholder, officer or partner of the contractor, owns or has owned within the preceding three (3) years.

(2) The term "other construction business" means any business engaged in the erection, construction, remodeling, repairing, demolition, altering or painting and decorating of buildings, structures or facilities. It also means any business engaged in supplying mineral aggregate, or hauling excavated material or spoil as provided by Sections 66.0903(3), 66.0904(2), 103.49(2) and 103.50(2), Wisconsin Statutes.

(3) This form must ONLY be filed, with the state agency project owner, local governmental unit project owner, or developer, investor or owner of a publicly funded private construction project that will be awarding the contract, if both (A) and (B) are met.
(A) The contractor, or a shareholder, officer or partner of the contractor:
(1) Owns at least a 25% interest in the "other construction business", indicated below, on the date the contractor submits a bid or completes negotiations.
(2) Or has owned at least a 25% interest in the "other construction business" at any time within the preceding three (3) years.
(B) The Wisconsin Department of Workforce Development (DWD) has determined that the "other construction business" has failed to pay the prevailina *waae* rate or time and one-half the required hourly basic rate of pay, for

Other Construction Business

Name of Business			
Street Address or P O Box	City	State	Zip Code
Name of Business			
Street Address or P O Box	City	State	Zip Code
Name of Business			
Street Address or P O Box	City	State	Zip Code
Name of Business			
Street Address or P O Box	City	State	Zip Code

I hereby state under penalty of perjury that the mformatton, contamed m thts document, ts true and accurate accordm g to my know 1ed1ge and be lfte f,

Print the Name of Authorized Officer	
Signature of Authorized Officer	Date Signed
Name of Corporation, Partnership or Sole Proprietorship	
Street Address or P O Box	City / State / Zip Code

If you have any questions call (608) 266-6861

Stale of Wisconsin
Department of Workforce Development
Equal Rights Division

Prime Contractor Affidavit of Compliance With Prevailing Wage Rate Determination

Authorization for this form is provided under Sections 66.0903(9)(c), 66.0904(7)(c) and 103.49(4r)(c) Wisconsin Statutes.
The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.
Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m), Wisconsin Statutes].

This form must **ONLY** be filed with the **Awarding Agency** indicated below.

State Of)	Project Name	
	DWD Determination Number	Project Number (if applicable)
)SS	Date Determination Issued	Date of Contract
County Of)	Awarding Agency	
	Date Work Completed	

After being duly sworn, the person whose name and signature appears below hereby states under penalty of perjury that

- **I am** the duly authorized officer of the corporation, partnership, sole proprietorship or business indicated below and have recently completed all of the work required under the terms and conditions of a contract with the above-named awarding agency and make this affidavit in accordance with the requirements set forth in Section 66.0903(9)(c), 66.0904(7)(c) or 103.49(4r)(c), Wisconsin Statutes and Chapter DWD 290 of the Wisconsin Administrative Code in order to obtain FINAL PAYMENT from such awarding agency.
- **I have** fully complied with all the wage and hour requirements applicable to this project, including all of the requirements set forth in the prevailing wage rate determination indicated above which was issued for such project by the Department of Workforce Development on the date indicated above.
- **I have** received the required affidavit of compliance from each of my agents and subcontractors that performed work on this project and have listed each of their names and addresses on page 2 of this affidavit.
- **I have** full and accurate records that clearly indicate the name and trade or occupation of every worker(s) that I employed on this project, including an accurate record of the hours worked and actual wages paid to such worker(s).
- I **will** retain the records and affidavit(s) described above and make them available for inspection for a period of at least three (3) years from the completion date indicated above at the address indicated below and shall not remove such records or affidavit(s) without prior notification to the awarding agency indicated above.

Name of Corporation, Partnership, Sole Proprietorship, Business, State Agency or Local Governmental Unit			
Street Address	City	State	Zip Code / Telephone Number
Print Name of Authorized Officer			Date Signed
Signature of Authorized Officer			

List of Agents and Subcontractors

Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		

If you have any questions call (608) 266-6861

State of Wisconsin
Department of Workforce Development
Equal Rights Division

Agent or Subcontractor Affidavit of Compliance With Prevailing Wage Rate Determination

Authorization for this form is provided under Sections 66.0903(9)(b), 66.0904(7)(b) and 103.49(4r)(9b), Wisconsin Statutes. The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.
Personal information you provide may be used for secondary purposes [Privacy Law, Section 15.04(1)(m), Wisconsin Statutes].

This form must **ONLY** be filed with the **Awarding Contractor** indicated below.

State Of _____)	Project Name	
	DWD Determination Number	Project Number (if applicable)
)SS	Date Determination Issued	Date of Subcontract
County Of)	Awarding Contractor	
	Date Work Completed	

After being duly sworn, the person whose name and signature appears below hereby states under penalty of perjury that

- **I am** the duly authorized officer of the corporation, partnership, sole proprietorship or business indicated below. We have recently completed all of the work required under the terms and conditions of a subcontract with the above-named awarding contractor. We make this affidavit in accordance with the requirements set forth in Section 66.0903(9)(b), 66.0904(7)(b) or 103.49(4r)(b), Wisconsin Statutes and Chapter DWD 290 of the Wisconsin Administrative Code in order to obtain FINAL PAYMENT from such awarding contractor.
- I **have** fully complied with the entire wage and hour requirements applicable to this project, including all of the requirements set forth in the prevailing wage rate determination indicated above which was issued for such project by the Department of Workforce Development on the date indicated above.
- I **have** received the required affidavit of compliance from each of my agents and subcontractors that performed work on this project and have listed each of their names and addresses on page 2 of this affidavit.
- **I have** full and accurate records that clearly indicate the name and trade or occupation of every worker(s) that I employed on this project, including an accurate record of the hours worked and actual wages paid to such worker(s).
- I **will** retain the records and affidavit(s) described above and make them available for inspection for a period of at least three (3) years from the completion date indicated above at the address indicated below and shall not remove such records or affidavit(s) without prior notification to the awarding contractor.

Name of Corporation, Partnership, Sole Proprietorship, Business, State Agency or Local Governmental Unit			
Street Address or PO Box	City	State	Zip Code / Telephone Number ( )
Print Name of Authorized Officer			Date Signed
Authorized Officer Signature			

List of Agents and Subcontractors

Name	Name
Street Address	Street Address
City | State | Zip Code	City | State | Zip Code
Telephone Number ( )	Telephone Number ( )
Name	Name
Street Address	Street Address
City | State | Zip Code	City | State | Zip Code
Telephone Number ( )	Telephone Number ( )
Name	Name
Street Address	Street Address
City | State | Zip Code	City | State | Zip Code
Telephone Number ( )	Telephone Number ( )
Name	Name
Street Address	Street Address
City | State | Zip Code	City | State | Zip Code
Telephone Number ( )	Telephone Number ( )
Name	Name
Street Address	Street Address
City | State | Zip Code	City | State | Zip Code
Telephone Number ( )	Telephone Number ( )
Name	Name
Street Address	Street Address
City | State | Zip Code	City | State | Zip Code
Telephone Number ( )	Telephone Number ( )

If you have any questions call (608) 266-6861

State of Wisconsin
Department of Workforce Development
Equal Rights Division
Labor Standards Bureau

Request to Employ Subjourneyperson

The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.
Personal information you provide may be used for secondary purposes (Privacy Law, s. 15.04(1)(m), Wisconsin Statutes].
The employer indicated below requests that the Department of Workforce Development (DWD) determine the prevailing wage rate(s) and related qualifications to enable such employer to use a subjourneyperson(s) on the following prevailing wage project, in accordance with the provisions of Section DWD 290.025, Wisconsin Administrative Code.

1. Name of Project Appearing on the Project Determination	
County	City, Village or Town
DWD Project Determination Number	Project Number (if applicable)
2. Job Classification(s) for which you request a subjourney rate (i.e., carpenter, electrician, plumber, etc.)	
a.	b.
c.	d.
3. Employer Name (Print)	Requester Name (Print)
Address	City | State | Zip Code
Telephone Number ( )	Requester Title
Email address (if you prefer to receive your response via email)	Fax Number (if you prefer to receive your response via fax) ( )

READ CAREFULLY: I understand that this request is ONLY applicable to the project and job classification(s) listed above and that subjourney employees primarily work under the direction of and assist a skilled trade employee by frequently using the tools of a skilled trade and will NOT regularly perform the duties of a general laborer, heavy equipment operator or truck driver. If the subjourney employee regularly performs the work of a different trade or occupation, he/she will be compensated for such work at the applicable journeyperson prevailing wage rate. I agree to com_l)ensate subiournev employees in strict accordance with the directions received from the DWD.

\| Requester Signature Date Signed

MAIL the completed request to:
EQUAL RIGHTS DIVISION, LABOR STANDARDS BUREAU
PO BOX 8928, MADISON WI 53708
OR
FAX the completed request to: (608) 267-0310 / DO NOT e-mail your request.
Call (608) 266-6861 for assistance in completing this form.

ERD-10880 (R. 11/2010)

Department of Workforce Development
Equal Rights Division
P.O. Box 8928
Madison, WI 53708-8928
Telephone: (608) 266-6860
Fax: (608) 267-4592
TTY: (608) 264-8752

STATE OF WISCONSIN
€®®DWD
Department of Workforce Development

PREVAILING WAGE- Public Entity Project Owners

Any public works project that has a total estimated project cost that equals or exceeds single-trade or multiple-trade project thresholds requires a prevailing wage rate determination issued by the Department of Workforce Development (DWD). Public works include erecting, constructing, remodeling, repairing, demolishing, alterations, painting and decorating projects for a local governmental unit or state agency. State law excludes minor service or maintenance work, warranty work, or work under a supply-and-installation contract. There is a statutory definition for each of these exclusions. The prevailing wage law that applies to local governmental units is §66.0903, Wis. Stats. The prevailing wage law that applies to state agencies is §103.49, Wis. Stats. The applicable administrative rules for all public entities are DWD 290 and DWD 294, Wis. Adm. Code.

Thresholds

A "single-trade project of public works" means a project in which a single trade accounts for 85% or more of the total labor cost of the project. The single trade threshold is $48,000.

A "multiple-trade project of public works" means a project in which no single trade accounts for 85% or more of the total labor cost of the project.

(a) The multiple-trade threshold is $100,000, unless a municipality falls under the description in (b).

(b) The multiple-trade threshold of $234,000 applies to public works projects erected, constructed, repaired, remodeled, or demolished by a private contractor for •a city or village with a population less than 2500 or •a town.

Effective July 1, 2011, a local governmental unit or state agency that has a public works project that equals or exceeds the prevailing wage thresholds must do all of the following:

- Request a prevailing wage rate determination for the project from DWD at least 30 days before soliciting bids or negotiating contracts. An Application for Prevailing Wage Rate Determination is available on the DWD website: http:ljdwd.wisconsin.gov/er/prevailing_wage_rate/default.htm
  To avoid waiting for a project determination use the on-line application system that permits the user to generate a determination immediately and save all documents in PDF form to the user's computer. Use this project determination on line application at the following address:

http:Udwd.wisconsin.gov/er/prevailing_wage_rate/pw_online_determinations.htm

- Tell potential contractors the project is subject to state prevailing wage law when soliciting bids.

- Include the prevailing wage rate determination in the construction contract, or if there is no written contract, provide a copy of the project determination to each prime contractor.

- Award contracts to contractors who do *not* appear on the {/Consolidated List of Debarred Contractors."

- Post the prevailing wage rate determination on the project site. (This document is often referred to as {/the white sheet.")

- Notify project contractors that if DWD finds that a contractor violated the prevailing wage law, DWD will assess liquidated damages of 100% of the wages owed to employees.

- Obtain an Affidavit of Compliance from each prime contractor before making final payment for the project.

If the total estimated cost of the project exceeds the prevailing wage thresholds, a local governmental unit or state agency also must obtain a prevailing wage rate determination under the following circumstances:

- when a completed facility is leased, purchased, lease-purchased or otherwise acquired by or dedicated to a public entity in lieu of the public entity contracting for the project,

- when one public entity does work for another public entity,

- when a *private* entity will construct a road, street, bridge, sanitary sewer or water main project and dedicate it to a local governmental unit or the state for its ownership or maintenance (except for some residential subdivisions).

For more information, visit the prevailing wage website: http:ljdwd.wisconsin.gov/er/prevailing_wage_rate/default.htm. For further assistance, call the Equal Rights Division at 608-266-6861 and ask for prevailing wage.

Department of Workforce Development
Equal Rights Division
P.O. Box 8928
Madison, WI 53708-8928
Telephone: (608) 266-6860
Fax: (608) 267-4592
TIY: (608) 264-8752

STATE OF WISCONSIN

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Department of Workforce Development

PREVAILING WAGE- Contractors

Any public works project that has a total estimated project cost that equals or exceeds prevailing wage project thresholds requires a prevailing wage rate ·determination issued by the Department of Workforce Development (DWD). Public works include erecting, constructing, remodeling, repairing, demolishing, alterations, painting and decorating projects for a local governmental unit or state agency. State law excludes minor service or maintenance work, warranty work, or work under a supply-and-installation contract. There is a statutory definition for each of these exclusions. The prevailing wage law that applies to local governmental units and their contractors is §66.0903, Wis. Stats. The prevailing wage law that applies to state agencies and their contractors is §103.49, Wis. Stats. The applicable administrative rules for all prevailing wage projects are DWD 290 and DWD 294, Wis. Adm. Code. These laws include provisions that apply to all contractors and subcontractors working on prevailing wage projects. ·

Effective July 1, 2011, any contractor or subcontractor working on a local governmental unit or state agency's public works project that equals or exceeds current prevailing wage project thresholds must do all of the following:

- Receive and review the project's prevailing wage rate determination (i.e., white sheet).
- Tell subcontractors the project is subject to state prevailing wage law and include the prevailing wage rate determination in the construction contract, or if there is no written contract, provide a copy of the project determination to each subcontractor.
- Hire subcontractors who do *not* appear on the "Consolidated List of Debarred Contractors."
- Notify subcontractors that if DWD finds that a contractor or subcontractor violated the prevailing wage law, DWD will assess liquidated damages of 100% of the wages owed to employees.

- Apply to DWD for subjourney wage rates prior to employing these individuals on the project.

- Receive and retain a completed Affidavit of Compliance from each subcontractor brought on to the project before providing final payment to those subcontractors.

- Submit a completed Affidavit of Compliance to the contractor who brought the subcontractor on to the project before receiving final payment for the project.

- Maintain payroll records for 3 years that comply with §§66.0903(10)(a) or 103.49(5)(a), Stats. and DWD 274.06.

- Respond to requests from DWD or the project owner to provide payroll records and/or respond to prevailing wage complaints filed by employees or third parties.

For more information, visit the prevailing wage website: http:ljdwd.wisconsin.gov/er/prevailing_wage_rate/default.htm. For further assistance, call the Equal Rights Division at 608-266-6861 and ask for prevailing wage.

SUMMARY OF PREVAILING WAGE LAW CHANGES EFFECTIVE JULY 1,2011

document **07/27/11)**

For further updates on this topic, refer to the prevailing wage website at:
http://dwd.wisconsin.gov/er/prevailing_wage_rate/default.htm

The recently approved State budget bill (2011 Wisconsin Act 40) includes major changes to prevailing wage laws (§§66.0903, 66.0904, 103.49 & 103.50, Wis. Stats.) effective JULY 1, 2011. Significant ch;am!esare described below.

Topic		Brie equirement under §66.0903 or §103.49
Thresholds	All public entities & Contractors	The $25,000 threshold for public works projects has been changed to single-trade and multiple-trade project thresholds as noted below. The new thresholds apply to prevailing wage projects whose contract is awarded after June 2011.
Non-applicability: Threshold for Single-Trade Projects	All public entities & Contractors	Any single-trade project of public works with an estimated cost of completion of less than $48,000 does not require a prevailing wage rate determination. "Single-trade project of public works" means a project of public works in which a single trade accounts for 85 percent or more ofthe total labor cost of the
Non-applicability: Threshold for Multiple-Trade Projects	All public entities except cities, towns & villages as noted below& Contractors	Any multiple-trade project of public works with an estimated cost of completion of less than $100,000 does not require a prevailing wage rate determination. "Multiple-trade project of public works" means a project of public works in which no single trade accounts for 85 percent or more of the total labor cost of the project.
Non-applicability: Threshold for Multiple-Trade Projects	Cities or villages with a popula-tion less than 2500& Towns & Contractors	A multiple trade project of public works erected, constructed, repaired, remodeled, or demolished by a private contractor for a city or village with a population less than 2500, or a town with an estimated cost of completion of less than $234,000 does not require a prevailing wage rate determination. "Multiple-trade project of public works" means a project of public works in which no single trade accounts for 85 percent or more of the total labor cost of the
Non-applicability: Minor service & maintenance work	Towns & Contractors	The following TOWN projects only do not require a prevailing wage rate determination: • A project not funded under §86.31, Stats. (TRIP projects) that is limited to minor crack filling, chip or slurry sealing or other minor pavement patching, not including overlays. • The depositing of gravel on an existing gravel road applied solely to maintain the road; • Road shoulder maintenance; • Cleaning drainage or sewer ditches or structures; • Any other limited, minor work on public facilities or equipment that is routinely performed to prevent breakdown or deterioration.
Non-applicability: Work which a contractor or individual donates to a blic	All public entities	Prevailing wage laws §§66.0903 & 103.49, Stats., do not apply to work performed on a project of public works for which the local governmental unit or the state or the state agency contracting for the project is not required to compensate any contractor, subcontractor, contractor's or subcontractor's a••n• or individual for the work.

	Who's affected?	Brief description of requirement under §66.0903 or §103.49
Non-applicability: Residential	All public entities	A prevailing wage rate determination is not required for the erection, construction, repair, remodeling, or demolition of a residential [illegible] units or less.
Non-applicability: Residential subdivision infrastructure	All public entities	A prevailing wage rate determination is not required for a road, street, bridge, sanitary sewer, or water main project that is a part of a development in which at least 90 percent of the lots contain or will contain 2 dwelling units or less, as determined by the local governmental unit at the time of approval of the development, and that, on completion, is acquired by, or dedicated to, a local governmental unit (including under §236.13(2), Stats.), or the state, for ownership or maintenance [illegible] the local [illegible] ental unit or the state.
Non-applicability: Certain nursing homes	All public entities	Prevailing wage law §66.0903, Stats., does not apply to a project of public works involving the erection, construction, repair, remodeling, or demolition of a nursing home in a county having a population of less than 50,000 when the project commences no later than [illegible] 2012.
Electronic s certified payroll record	Contractor	The requirement that every contractor on a prevailing wage project submit to DWD monthly a certified record of employees who worked on the project and that DWD post these certified records on its Internet website is discontinued effective July 1, 2011. However, contractors who worked on prevailing wage projects during the period January 1, 2010 through June 30, 2011, must comply with the repealed law for work completed on [illegible] duri [illegible] that [illegible] of time
Payroll record inspection request by any person	Contractors & Complainants	Any person may request DWD to inspect the payroll records of any contractor working on a prevailing wage project. On receipt of such a request, the contractor must submit to DWD a certified record of its payroll records, other than personally identifiable information relating to an employee of the contractor, for no longer than a 4-week period. DWD may request records from a contractor under this provision no more than once per calendar quarter for each project of public works on which the contractor is performing work. The department may not charge a requester a fee for obtaining that information. DWD must make these certified records available for [illegible] ublic inspection
Complaints	Complainants	There are no longer i
Statewide uniformity	Local govern-mental units	A local governmental unit may not enact & administer a prevailing wage ordinance/provision for public works or publicly funded private construction projects. Any extant laws to that effect are void.

Topic	Who's affected?	Brief description of requirement under §66.0903, §103.49 or §103.50
Covered employees	Truck drivers & Other workers & Contractors	A laborer, worker, mechanic, or truck driver who is employed to process, manufacture, pick up, or deliver materials or products from a commercial establishment that has a fixed place of business from which the establishment supplies processed or manufactured materials or products or from a facility that is not dedicated exclusively, or nearly so, to a project of public works is NOT entitled to receive the prevailing wage rate UNLESS any of the following applies: 1) the laborer, worker, mechanic, or truck driver is employed to go to the source of mineral aggregate such as sand, gravel, or stone and deliver that mineral aggregate to the site of a project of public works by depositing the material directly in final place, from the transporting vehicle or through spreaders from the transporting vehicle. 2) the laborer, worker, mechanic, or truck driver is employed to go to the site of a project of public works, pick up excavated material or spoil from the site of the project, and transport that excavated material or spoil away from the site of the ect.
Annual Prevailing Wage Survey	All public entities	When establishing yearly prevailing wage rates, DWD may not use data from any construction work that is performed by a local ental unit or a state
Prevailing Wage Rates	DOT & Contractors & Employees	For state highway prevailing wage rates, DWD is required to include wage rates for work performed on Sundays, holidays and shift differentials based on the time of day or night when work is n<>o·fno·m•>n

The 2009-2011 State budget bill (2009 Wisconsin Act 28) created a new prevailing wage law (§66.0904, Wis. Stats.) for PUBLICLY FUNDED PRIVATE CONSTRUCTION PROJECTS effective January 1, 2010. The current 2011-2013 State budget bill (2011 Wisconsin Act 32) REPEALS this law. So the publicly funded private construction projects law only applies to projects that awarded the prime contract during the **period January 1,** 2010 _ June 2011 . Rll!i

SINGLE & MULTIPLE TRADE PROJECT THRESHOLDS FOR §§66.0903 & 103.49, Wis. Stats. Effective July 1, 2011

The $25,000 threshold for public works projects has been changed to single-trade and multiple-trade project thresholds as described below. Projects of public works with total estimated costs of completion that equal or exceed these thresholds require a prevailing wage rate determination.

SINGLE-TRADE THRESHOLD

A "single-trade project of public works" means a project in which a single trade accounts for 85 percent or more of the total labor cost of the project.

The single trade threshold is $48,000.

MULTIPLE-TRADE THRESHOLDS

A "multiple-trade project of public works" means a project in which no single trade accounts for 85 percent or more of the total labor cost of the project.

(a) The multiple-trade threshold is $100,000, unless a municipality falls under the description in (b).

(b) The multiple-trade threshold of $234,000 applies to public works projects erected, constructed, repaired, remodeled, or demolished by a private contractor for:

- a city or village with a population less than 2500, or
- a town

APPLYING **THE** NEW THRESHOLDS

The department will apply the new single-trade & multiple-trade prevailing wage thresholds to projects of public works for which the prime contract is awarded on or after July 1, 2011.