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**City  
of  
Milwaukee**  
**Department  
of  
Public Works  
Infrastructure  
Services  
Division  
Facilities  
Development  
and  
Management Section**

**REROOFING OF:**

**SANITATION FACILITY – SOUTH AREA 1 – OFFICE/STORAGE BLDG, GARAGE & SALT SHED**

2363 South 35th Street  
Milwaukee, Wisconsin

**WINDOW & DOOR REPLACEMENT OF:  
(Alternate Bid)**

**SANITATION FACILITY – SOUTH AREA 1 – OFFICE BLDG**

2363 South 35th Street  
Milwaukee, Wisconsin

October 2011

Project Number: BU11091118  
Official Notice No. 172

CITY OF MILWAUKEE, WISCONSIN  
DEPARTMENT OF PUBLIC WORKS  
INFRASTRUCTURE SERVICES DIVISION  
FACILITIES DEVELOPMENT AND MANAGEMENT SECTION

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PROJECT MANUAL  
GOVERNING THE  
REROOFING OF  
SANITATION FACILITY – SOUTH AREA 1  
OFFICE/STORAGE, GARAGE AND SALT SHED BUILDINGS  
2363 S 35TH STREET  
MILWAUKEE, WISCONSIN

ALSO AS ALTERNATE BID:

WINDOW & DOOR REPLACEMENT OF  
SANITATION FACILITY – SOUTH AREA 1  
OFFICE BUILDING  
2363 S 35TH STREET  
MILWAUKEE, WISCONSIN

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Project No. BU11091118

October 2011

Official Notice No. 172

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00030/1

CITY OF MILWAUKEE  
GENERAL OFFICIAL NOTICE  
TO CONTRACTORS

Separate sealed bids for each project will be received until 10:30 A.M. of the bid opening date at which time bids will be publicly opened and read for furnishing all material and doing all work for each project in accordance with the requirements of the respective Official Notice on the bid form furnished in accordance with plans, specifications, contract documents, and proposed form of contract on file in the office of the Department of Public Works, Municipal Building, 841 N. Broadway, Room 506, Milwaukee, Wisconsin, 53202.

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

AFFIDAVITS OF NO INTEREST MUST ACCOMPANY THE BIDS, AND THE FAILURE OF PROSPECTIVE BIDDERS TO COMPLY WITH THESE REQUIREMENTS MAY DISQUALIFY THE BID.

THE CONTRACTOR/LESSEE AGREES TO COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT OF 1990, 42 U.S.C. § 12101, ET. SEQ. THE TDD NUMBER FOR PUBLIC WORKS IS (414) 286-2025.

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

All contractor(s) and subcontractor(s) are required to furnish or have on file a certificate of insurance in accordance with the insurance provisions of the General Specifications.

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

Copies of the actual work classifications and wage and fringe benefit rates enforced on this project are available in Room 506 of the Municipal Building.

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

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

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

Signed: JEFFREY J. MANTES,  
Commissioner of Public Works

Countersigned: W. MARTIN MORICS,  
City Comptroller

00031/1

CITY OF MILWAUKEE  
SPECIFIC OFFICIAL NOTICE NO. 172

**Important Notice:**

**The Invitation to Bid, all bid documents and the Plans & Specifications for the project listed will be available electronically to prospective bidders via <http://www.mpw.net/bids/docs/172-2011>. Any required addenda or responses related to the listed projects will be posted on said website. Bidders are encouraged to utilize this electronic method of obtaining bid documents as the Department of Public Works intends to solely use this method for future projects. At this time however, a limited number of hard copies of the above documents will also be available at address listed below.**

Sealed bids will be opened on Thursday, December 15, 2011 at 10:30 A.M. for the Reroofing of Sanitation Facility South Area 1 Office/Storage, Garage and Salt Shed Buildings Also as Alternate Bid Window and Door Replacement of Sanitation Facility South Area 1 Office Building - 2363 South 35th Street Milwaukee, WI 53215.

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

Time for Completion: 40 Working Days.  
Project Start Date: March 15, 2012

Liquidated Damages, per diem: \$150.00  
The EBE requirement for this project is 25% of the contract base bid.  
The residency requirement for this project is 40% of all hours worked on the project.

The apprenticeship requirements for this project are: N/A

The contractor shall specifically note the EBE, residency, and apprenticeship forms for this project. If the forms are not filled out properly, it will be cause for rejection of the bid.

Plans and project manual will be furnished to the prospective bidders upon payment of a \$10.00 non-refundable fee in room 506, Frank P. Zeidler Municipal Building, 841 North Broadway, Milwaukee, Wisconsin 53202. For general questions call 414-286-3314.

A \$10.00 per set additional non-refundable fee is required to obtain bid documents by mail. Plans are sent via U.S. mail unless other arrangements are made by the contractor.

Contractor must comply with all provisions of the CITY OF MILWAUKEE GENERAL OFFICIAL NOTICE TO CONTRACTORS published herein and at [http://www.mpw.net/services/bids\\_home](http://www.mpw.net/services/bids_home)

**Pre-Bid Meeting:** A Pre-Bid Meeting is scheduled for Thursday, December 08, 2011, at 2:00 p.m. in Room 618 of the Frank P. Zeidler Municipal Building, 841 North Broadway, Milwaukee, Wisconsin. Bidder participation is urged to become familiar with all aspects of the project and bidding requirements.

Signed:

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GHASSAN KORBAN  
Commissioner of Public Works

SECTION 00100: INSTRUCTIONS TO BIDDERS

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

BID FORM:

Submit a lump sum price for the work as indicated on the drawings and specified herein, complete in every respect.

Bids will not be accepted in any form except on the bid form included with this project manual.

The contractor must recognize and abide by the right of the Owner (City of Milwaukee) to accept or reject any or all bids in the best interests of the City.

ALTERNATE:

Each bidder shall examine the plans and project manual thoroughly to determine what extent the Alternate will affect the bid.

Alternate 1:

State the amount to be added to the Base Bid to perform all work and furnish all materials to replace windows and doors as indicated in the contract documents and Project Manual.

UNIT PRICES:

Each bidder shall provide on the bid proposal the following unit prices that were used in arriving at the Base Bid. The unit prices will be used for additions or deductions from work required under the contract.

Unit Price No. 1:

State the cost per square foot for removal and replacement of roof sheathing determined to be required after existing roofing has been removed on Salt Shed roof.

CONTRACT AWARD:

The Commissioner of Public Works will award the contract on the basis of the Base Bid only as funds permit.

CONTRACT BREAKDOWN:

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

SITE VISIT:

All contractors shall visit the site, consult the drawings and project manual, be familiar with the work of other contractors and determine for himself all conditions affecting the work.

Failure by a contractor to be familiar with the project shall not release him from any obligation under this contract to complete the work in strict conformity with the plans and project manual and all City, State and Federal Codes or regulations pertaining to the work.

TIME FOR COMPLETION:

The time allowed for completion is stated in the Specific Official Notice and shall start with the date on the Notice to Proceed which will be sent to the contractor directly following the signing of the contract. The time allowed includes time required for fabricating and procuring material and doing the work at the building site.

ADDITIONAL PLANS/PROJECT MANUALS

The successful contractor will be responsible for furnishing all additional copies of plans, project manuals, addenda, etc., as may be needed by the contractor and subcontractors. The City will cooperate by making originals available to the contractor's printer of choice.

SECTION 00700: GENERAL CONDITIONS1. SCOPE:A. Index:

1. Scope
2. DPW General Specifications
3. Definitions
4. Control of Work and Materials
5. Samples and Tests
6. Project Coordination
7. Supervision of Work
8. Technical Specifications and Drawings
9. Safety Regulations
10. Code Rules

2. Department of Public Works General Specifications:

Provisions of the Department of Public Works General Specifications dated January 31, 1992, and subsequent addenda except as may be modified or expanded upon in this project manual, shall apply to all contractors and subcontractors working on the project. Copies of the General Specifications may be obtained from the Department of Public Works General Office, Room 501 Zeidler Municipal Building, 841 North Broadway, Milwaukee, Wisconsin, or from the FACILITIES DEVELOPMENT AND MANAGEMENT SECTION, Room 602, Zeidler Municipal Building.

3. Definitions:

- A. Owner: City of Milwaukee.
- B. Facilities Manager: The Facilities Manager of FACILITIES DEVELOPMENT AND MANAGEMENT SECTION.
- C. Project Inspector: The authorized representative of the Commissioner assigned to make detailed inspection of any or all portions of the work and materials thereof. These inspections are not a substitute to those required by the Department of Neighborhood Services for permit and code compliance.
- D. Addenda: Written or graphic instruments issued prior to the execution of the contract which modify or interpret the bidding documents, including drawings and project manual by additions, deletions, clarifications or corrections. Addenda will become part of the contract documents when the contract is executed.
- E. Contract Drawings: Drawings of the work to be done as listed hereafter in Section 00850 Drawing Schedule and/or Section 00870 Plans and Details.
- F. Utility: WE Energies.
- G. End User: City of Milwaukee.

4. Control of Work and Materials:

- A. Detail and Shop Drawings: Shop drawings and other additional drawings which may be required for each contract of the work shall be prepared by each respective contractor

unless

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otherwise directed by the Facilities Manager. Prints shall be the same size as contract documents when practical. Prints of each drawing shall be submitted to the Facilities Manager for approval before proceeding with the work. Changes ordered by the Facilities Manager shall be made and revised prints submitted as above. The Facilities Manager's approval of drawings shall not relieve the contractor of responsibility for errors.

- B. Primary Lines and Grades: The City of Milwaukee will mark two building corners along a line and will establish a benchmark, with a relative elevation, within close proximity to the site. Once established by the City, the contractor shall preserve all points and benchmark as long as needed during construction. The contractor will bear all costs associated with re-establishing points and benchmark.
  - C. Construction Lines and Grades: The contractor must bear sole responsibility for the correct transfer of all construction lines and grades from the primary lines and grades points. He shall take such measurements from existing work as may be necessary to insure the proper construction of his work.
  - D. Material Orders and Shipping Statements: The contractor shall furnish to the Facilities Manager at least two (2) copies of all material orders and shipping statements. Itemized weights of the materials and individual units of finished work shall be shown.
  - E. Weighing of Materials and Fabricated Units: The weighing of materials and fabricated units such as structural steel, casings, etc., when required, shall be done in the presence of the Commissioner's representative. The contractor shall be responsible for the satisfactory weighing of such materials and units.
  - F. Consignment and Delivery of Materials: The materials for the work shall be consigned to the contractor and he shall be responsible for the delivery of all materials required for the completion of the contract.
5. Samples and Tests:
- A. Method of Sampling: Samples of the materials proposed or furnished for the work may be taken by the Commissioner at any time; at the point of manufacture, point of delivery or site of work. They will be selected, as far as practicable, in accordance with standard methods of sampling such materials as specified in the standard of the American Society for Testing Material. All sampling shall be done by authorized representatives of the Commissioner. Selections will be in an orderly and systematic manner, insuring samples representative of the lot.
  - B. A.S.T.M. Standards: Wherever the abbreviation A.S.T.M. is used in connection with the number of a standard specification, the specification referred to shall be the Standard of the American Society for Testing Materials, designated by that number, including all revisions in effect on the date of award of the contract. Should a revised or amended standard be issued by the American Society for Testing Materials which, in the opinion of the Commissioner, conflicts with or causes undesirable changes in the standards referred to herein, the Commissioner reserves the right, by means of addenda to the project manual, to continue under the provisions of the pertinent standard referred to herein.
  - C. Cost of Test Specimens and Samples: All test specimens of metals and all samples of

non-metals required for tests shall be furnished by the contractor without cost to the City.

D. Costs of Tests: All tests on test specimens of metals will be made at the expense of the

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contractor and the original test on samples of non-metals will be made at the expense of the City. In all cases, the testing procedure will be in accordance with Standard A.S.T.M. tests for such materials. Subsequent tests of non-metals requested by the contractor, when such tests are permitted by A.S.T.M. Specifications and approved by the Commissioner or subsequent tests ordered by the Commissioner will be made at the expense of the contractor.

6. Project Coordination:

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

7. Supervision of Work:

- A. Contractors shall furnish the services of an experienced engineer or superintendent.
- B. He shall be constantly in charge of the installation of the work together with all subcontractors, skilled workers, helpers, and labor required to unload, transfer, erect, connect up, adjust, start, operate and test each system.
- C. He shall be thoroughly acquainted with and be responsible for the various subcontractors' work so that it is properly coordinated and supervised to the satisfaction of the Commissioner of Public Works or his representative.
- D. Upon written notice to a contractor of the lack of such coordination and supervision, the Commissioner of Public Works may authorize such services as may be required and deduct the cost of this service at an hourly rate of \$60.00 per hour per worker from the contract for the work.

8. Technical Specifications and Drawings:

A. Governing order of Contract Documents:

1. The following provision modifies DPW General Specifications Item 2.1.3.1:

Anything mentioned in the Technical Specifications and not shown on the drawings or shown on the drawings and not mentioned in the Technical Specifications, shall be as if shown on or mentioned in both. In case of difference between drawings and Technical Specifications, the Technical Specifications shall govern. In case of any discrepancy in drawings or Technical Specifications, the matter shall be immediately submitted to FACILITIES DEVELOPMENT AND MANAGEMENT SECTION for decision. Said discrepancy shall not be adjusted by the contractor.

- B. All contractors shall have complete sets of plans and project manuals on the job site at all times.

9. Safety Regulations:

All work shall be done in accordance with the safety requirements referenced in the International Building Code, as adopted and amended by the State of Wisconsin and OSHA standards.

10. Code Rules:

The rulings, regulations and laws of the following shall be complied with in the completion of this project:

- IBC Existing Building Code, as amended and adopted by the State of Wisconsin (Renovations/Remodeling)
- International Building Code, as amended and adopted by the State of Wisconsin (New Construction)
- Plumbing and Drainage Codes of the City of Milwaukee
- Ordinances of the City of Milwaukee
- National Board of Fire Underwriters
- OSHA
- NFPA
- FAA
- NEC
- IEEE
- UL

00821/1

SECTION 00821: INSPECTION CHARGES

The contractor will be charged a fee for inspection for each and every day such inspection is required after the time allowed for completion has expired.

The amount of the fee for inspection shall be \$325.00 per day.

The time allowed for completion is stated in the Specific Official Notice and shall start with the date on the Notice to Proceed which will be sent to the contractor directly following the signing of the contract. The time allowed includes the time required for fabricating and procuring material and doing the work at the building site.

**PREVAILING WAGE RATE DETERMINATION**

Issued by the State of Wisconsin  
 Department of Workforce Development  
 Pursuant to s. 66.0903, Wis. Stats.  
 Issued On: 01/14/2011  
 Last Amended On: 06/26/2011

**DETERMINATION NUMBER:** 201100110

**EXPIRATION DATE:** Prime Contracts MUST Be Awarded or Negotiated On Or Before 12/31/2011. If NOT, You MUST Reapply.

**PROJECT NAME:** ALL PUBLIC WORKS CONSTRUCTION PROJECTS SUBJECT TO SEC. 66.0903, STATS.-CITY OF MILWAUKEE

**PROJECT LOCATION:** MILWAUKEE CITY, MILWAUKEE COUNTY, WI

**CONTRACTING AGENCY:** CITY OF MILWAUKEE - DEPT OF PUBLIC WORKS

<b>CLASSIFICATION:</b>	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: <a href="http://dwd.wisconsin.gov/er/prevailing_wage_rate/Dictionary/dictionary_main.htm">dwd.wisconsin.gov/er/prevailing_wage_rate/Dictionary/dictionary_main.htm</a> .
<b>OVERTIME:</b>	Time and one-half must be paid for all hours worked: <ul style="list-style-type: none"> <li>- over 10 hours per day on prevailing wage projects</li> <li>- over 40 hours per calendar week</li> <li>- Saturday and Sunday</li> <li>- 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;</li> <li>- The day before if January 1, July 4 or December 25 falls on a Saturday;</li> <li>- The day following if January 1, July 4 or December 25 falls on a Sunday.</li> </ul>
<b>FUTURE INCREASE:</b>	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.
<b>PREMIUM PAY:</b>	If indicated for a specific trade or occupation, the full amount of such pay MUST be added to the "HOURLY BASIC RATE OF PAY" indicated for such trade or occupation, whenever such pay is applicable.
<b>APPRENTICES:</b>	Pay apprentices a percentage of the applicable journey person's hourly basic rate of pay and hourly fringe benefit contributions specified in this determination. Obtain the appropriate percentage from each apprentice's contract or indenture.
<b>SUBJOURNEY:</b>	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.
<b>ELECTRONIC CERTIFIED: PAYROLL REPORTS:</b>	<del>Every contractor working on this project MUST file monthly certified payroll reports in an electronic format that meets the Wisconsin Department of Workforce Development's reporting requirements. These certified payroll reports must be filed by the 7th of the month following the month in which the contractor performed work on this project at the following website: <a href="http://dwd.wisconsin.gov/er/prevailing_wage_rate/default.htm">http://dwd.wisconsin.gov/er/prevailing_wage_rate/default.htm</a>.</del>

N/A

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.

<b>BUILDING OR HEAVY CONSTRUCTION</b>
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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.

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**SKILLED TRADES**

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<u>CODE</u>	<u>TRADE OR OCCUPATION</u>	<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		
		<u>HOURLY BASIC RATE OF PAY</u> \$	<u>HOURLY FRINGE BENEFITS</u> \$	<u>TOTAL</u> \$
101	Acoustic Ceiling Tile Installer	31.38	18.16	49.54
102	Boilermaker	31.09	23.75	54.84
103	Bricklayer, Blocklayer or Stonemason Future Increase(s): Add \$1.95 6/06/2011	35.53	15.92	51.45
104	Cabinet Installer	28.31	14.91	43.22
105	Carpenter Future Increase(s): Add \$2.65 on 6/6/11	31.68	18.41	50.09
106	Carpet Layer or Soft Floor Coverer Future Increase(s): Add \$2.65 on 6/6/11	31.68	18.41	50.09
107	Cement Finisher	29.72	15.23	44.95
108	Drywall Taper or Finisher	28.17	15.39	43.56
109	Electrician Future Increase(s): Add \$1/hr on 6/1/2011. Add \$1.40/hr on 6/1/2012. Add \$1.60/hr on 6/1/2013.	31.10	20.39	51.49
110	Elevator Constructor	40.46	23.33	63.79
111	Fence Erector	22.50	3.65	26.15
112	Fire Sprinkler Fitter	36.82	19.03	55.85
113	Glazier Future Increase(s): Add \$2.10/hr on 6/1/2011; Add \$2.15/hr on 6/1/2012.	32.25	15.94	48.19
114	Heat or Frost Insulator	33.28	21.37	54.65
115	Insulator (Batt or Blown)	17.11	17.69	34.80
116	Ironworker	31.31	21.79	53.10
117	Lather	31.38	16.11	47.49

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
118	Line Constructor (Electrical)	31.66	13.94	45.60
119	Marble Finisher	29.40	14.31	43.71
120	Marble Mason	34.58	14.92	49.50
121	Metal Building Erector	13.00	6.86	19.86
122	Millwright	28.30	23.06	51.36
123	Overhead Door Installer	17.25	3.00	20.25
124	Painter Future Increase(s): Add \$2.10/hr on 6/1/2011; Add \$2.20/hr on 6/1/2012. Premium Increase(s): Add \$.20/hr for paperhanging; Add \$.35/hr for bridge, iron and drywall; Add \$.75/hr for spraying and sandblasting; Add \$.60/hr for EIFS work; Add \$1.00/hr for lead based paint removal.	28.47	16.74	45.21
125	Pavement Marking Operator	25.65	13.10	38.75
126	Piledriver Future Increase(s): Add \$2.65/hr on 6/6/11. Premium Increase(s): Add \$.65/hr for Piledriver Loftzman; Add \$.75/hr for Sheet Piling Loftzman.	28.11	23.76	51.87
127	Pipeline Fuser or Welder (Gas or Utility)	29.85	17.34	47.19
129	Plasterer	29.31	15.83	45.14
130	Plumber	37.42	17.02	54.44
132	Refrigeration Mechanic	34.41	17.59	52.00
133	Roofer or Waterproofofer	28.85	14.60	43.45
134	Sheet Metal Worker	37.20	16.41	53.61
135	Steamfitter	37.21	19.04	56.25
137	Teledata Technician or Installer	24.65	15.17	39.82
138	Temperature Control Installer	35.81	16.98	52.79
139	Terrazzo Finisher	29.40	14.31	43.71
140	Terrazzo Mechanic	29.40	14.31	43.71
141	Tile Finisher	15.05	9.43	24.48
142	Tile Setter	29.95	15.64	45.59
143	Tuckpointer, Caulker or Cleaner Future Increase(s): Add \$1.95 06/06/2011	34.30	15.47	49.77

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b><u>TOTAL</u></b>
<b><u>CODE</u></b>	<b><u>TRADE OR OCCUPATION</u></b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
144	Underwater Diver (Except on Great Lakes)	32.31	14.91	47.22
146	Well Driller or Pump Installer Future Increase(s): Add \$1.60/hr on 6/1/11. Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate.	24.22	14.80	39.02
147	Siding Installer	36.60	15.48	52.08
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	26.88	13.71	40.59
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	27.66	0.00	27.66
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	17.00	8.50	25.50
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	25.44	0.00	25.44
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	17.41	9.80	27.21

**TRUCK DRIVERS**

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b><u>TOTAL</u></b>
<b><u>CODE</u></b>	<b><u>TRADE OR OCCUPATION</u></b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
201	Single Axle or Two Axle	21.42	5.62	27.04
203	Three or More Axle	26.62	17.81	44.43
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Future Increase(s): Add \$1.85/hr on 5/31/2011. Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate.	32.32	16.75	49.07
205	Pavement Marking Vehicle	20.85	11.02	31.87
207	Truck Mechanic	26.62	17.81	44.43

**LABORERS**

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
301	General Laborer Future Increase(s): Add \$2.25/hr on 6/1/2011. Premium Increase(s): Add \$.11 for mortar mixer, fork lift operator, air and electric equipment and power buggy operators; Add \$.22 for jackhammer operator, certified welder, gunite machineman.	27.17	15.01	42.18
302	Asbestos Abatement Worker	23.25	13.91	37.16
303	Landscaper Future Increase(s): Add \$1.00/hr on 6/1/2011; Add \$1.00/hr on 6/1/2012; Add \$1.00/hr on 6/1/2013; Add \$1.00/hr on 6/1/2014.	13.80	15.10	28.90
310	Gas or Utility Pipeline Laborer (Other Than Sewer and Water) Future Increase(s): Add \$1.00/hr. on 6/1/2011	18.74	14.93	33.67
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	15.00	3.09	18.09
314	Railroad Track Laborer	12.50	3.96	16.46

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

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
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). Future Increase(s): Add \$1.85/hr on 5/31/2011. Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate.	32.32	16.75	49.07

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
502	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Environmental Burner; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Jeep Digger; Screed (Milling Machine); Skid Rig; Straddle Carrier or Travel Lift; Stump Chipper; Trencher (Wheel Type or Chain Type Having 8 Inch Bucket & Under).	33.24	17.61	50.85
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. Future Increase(s): Add \$1.85/hr on 5/31/2011. Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate.	32.32	16.75	49.07
504	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	35.05	18.08	53.13
505	Work Performed on the Great Lakes Including Crane or Backhoe Operator; Assistant Hydraulic Dredge Engineer; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder; 70 Ton & Over Tug Operator. Premium Increase(s): Add \$.50/hr for friction crane, lattice boom or crane certification (CCO). On Sunday & holidays, pay two times the hourly basic rate.	37.45	19.45	56.90
506	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or More); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery. Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate.	33.35	19.33	52.68
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.	32.20	18.69	50.89

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

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
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. Future Increase(s): Add \$2.10/hr on 6/1/11 Premium Increase(s): Crane Operators with CCO certification add \$.50/hr. Cranes with boom length over 200 ft. not exceeding 300 ft. OR lifting capacity over 200 ton not exceeding 300 ton add \$.50/hr. Over 300 ton OR 300 ft. add \$.01/hr. per foot OR ton whichever is greater. On Sunday & holidays, pay two times the hourly basic rate.	38.06	18.10	56.16
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). Future Increase(s): Add \$2.10/hr on 6/1/2011. Premium Increase(s): Crane Operators with CCO certification add \$.50/hr. On Sunday & holidays, pay two times the hourly basic rate.	37.56	18.10	55.66
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). Future Increase(s): Add \$2.10/hr on 6/1/11. Premium Increase(s): Crane Operators with CCO certification add \$.50/hr. On Sunday & holidays, pay two times the hourly basic rate.	37.06	18.10	55.16

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
511	<p>Air, Track, Rotary or Percussion Drilling Machine &amp;/or Hammers, Blaster; Bulldozer or Endloader (Over 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width &amp; Over, or Tractor Mounted, Towed &amp; Light Equipment); Concrete Pump (46 Meter &amp; 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).</p> <p>Future Increase(s): Add \$2/hr on 6/1/11.</p> <p>Premium Increase(s): On Sunday &amp; holidays, pay two times the hourly basic rate.</p>	36.47	18.10	54.57
512	<p>Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Compactor (Self-Propelled 84 Ft Total Drum Width &amp; Under, or Tractor Mounted, Towed &amp; 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 &amp; Derrick NOT Performing Work on the Great Lakes); Grout Pump; Hoist (Tugger, Automatic); Industrial Locomotives; Jeep Digger; Lift Slab Machine; Mulcher; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Screw or Gypsum Pumps; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Stump Chipper; Trencher (Wheel Type or Chain Type Having 8-Inch Bucket &amp; Under); Winches &amp; A-Frames.</p> <p>Premium Increase(s): On Sunday &amp; holidays, pay two times the hourly basic rate.</p>	29.82	17.96	47.78
513	<p>Air Compressor (&amp;/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical &amp; 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 (&amp;/or 150 KW or Over); Greaser; Heaters (Mechanical); Loading Machine (Conveyor); Oiler; Post Hole Digger or Driver; Prestress Machine; Pump (3 Inch or Over) or Well Points; Refrigeration Plant or Freeze Machine; Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack.</p> <p>Future Increase(s): Add \$2/hr on 6/1/11.</p> <p>Premium Increase(s): On Sunday &amp; holidays, pay two times the hourly basic rate.</p>	29.44	18.10	47.54
514	Gas or Utility Pipeline, Except Sewer & Water (Primary Equipment).	34.89	19.68	54.57

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b><u>TOTAL</u></b>
<b><u>CODE</u></b>	<b><u>TRADE OR OCCUPATION</u></b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
515	Gas or Utility Pipeline, Except Sewer & Water (Secondary Equipment). Future Increase(s): Add \$1.60/hr on 6/1/2011.	30.21	16.85	47.06
516	Fiber Optic Cable Equipment Future Increase(s): Add \$1.75/hr on 2/1/11.	24.39	15.45	39.84

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

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**SKILLED TRADES**

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<u>CODE</u>	<u>TRADE OR OCCUPATION</u>	<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		
		<u>HOURLY BASIC RATE OF PAY</u> \$	<u>HOURLY FRINGE BENEFITS</u> \$	<u>TOTAL</u> \$
103	Bricklayer, Blocklayer or Stonemason	34.58	14.92	49.50
105	Carpenter	31.38	16.03	47.41
107	Cement Finisher	24.00	18.63	42.63
109	Electrician	32.53	18.34	50.87
111	Fence Erector	22.50	3.65	26.15
116	Ironworker	31.31	21.79	53.10
118	Line Constructor (Electrical)	31.66	13.94	45.60
125	Pavement Marking Operator	25.65	13.10	38.75
126	Piledriver Future Increase(s): Add \$2.65/hr on 6/6/11. Premium Increase(s): Add \$.65/hr for Piledriver Loftsman; Add \$.75/hr for Sheet Piling Loftsman.	28.11	23.76	51.87
130	Plumber	34.45	15.50	49.95
135	Steamfitter	31.65	15.04	46.69
137	Teledata Technician or Installer	24.09	14.48	38.57
143	Tuckpointer, Caulker or Cleaner	33.35	14.47	47.82
144	Underwater Diver (Except on Great Lakes)	32.31	14.91	47.22
146	Well Driller or Pump Installer	24.22	14.80	39.02
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	26.88	13.71	40.59
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	27.66	0.00	27.66
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	17.00	8.50	25.50
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	25.44	0.00	25.44
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	17.41	9.80	27.21

**TRUCK DRIVERS**

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
201	Single Axle or Two Axle	21.42	5.62	27.04
203	Three or More Axle	17.03	12.89	29.92
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate.	31.89	17.96	49.85
205	Pavement Marking Vehicle	20.85	11.02	31.87
207	Truck Mechanic	17.03	12.89	29.92

**LABORERS**

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
301	General Laborer Future Increase(s): Add \$1.67/hr on 6/6/2011; Add \$1.73/hr on 6/4/2012. Premium Increase(s): Add \$1.92 for bottomman; Add \$2.03 for concrete manhole builder, bracer, jointman, or pipelayer; Add \$4.83 for blaster. Add \$2.00 for all tunnel work under 15 lbs. compressed air; Add \$2.00 for 0-30 lbs. compressed air; Add \$3.00 for over 30 lbs. compressed air.	26.65	15.01	41.66
303	Landscaper	13.40	14.50	27.90
304	Flagperson or Traffic Control Person	19.83	15.65	35.48
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	12.50	0.00	12.50
314	Railroad Track Laborer	12.50	3.96	16.46

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

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
521	<p>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 &amp;/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.</p> <p>Future Increase(s): Add \$1.90/hr on 6/6/2011; Add \$2.05/hr on 6/4/2012.</p> <p>Premium Increase(s): Add \$.25/hr for operating tower crane. On Sunday &amp; holidays, pay two times the hourly basic rate except pump/generator operators when employed on non-productive projects.</p>	33.59	17.75	51.34
522	<p>Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. &amp; 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 &amp; Distributor; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &amp;/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. &amp; Under; Dredge (NOT Performing Work on the Great Lakes); Milling Machine; Skid Rig; Telehandler; Traveling Crane (Bridge Type).</p> <p>Future Increase(s): Add \$1.90/hr on 6/6/2011; Add \$2.05/hr on 6/4/2012.</p> <p>Premium Increase(s): Add \$.25/hr for operating tower crane. On Sunday &amp; holidays, pay two times the hourly basic rate except pump/generator operators when employed on non-productive projects.</p>	32.81	17.75	50.56

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
523	<p>Air Track, Rotary or Percussion Drilling Machine &amp;/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 &amp; Under), Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb &amp; 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).</p> <p>Future Increase(s): Add \$1.90/hr on 6/6/2011; Add \$2.05/hr on 6/4/2012.</p> <p>Premium Increase(s): Add \$.25/hr for operating tower crane. On Sunday &amp; holidays, pay two times the hourly basic rate except pump/generator operators when employed on non-productive projects.</p>	31.86	17.75	49.61
524	<p>Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width &amp; Over, or Tractor Mounted, Towed &amp; 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 &amp; 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 &amp; Under); Winches &amp; A-Frames.</p> <p>Future Increase(s): Add \$1.90/hr on 6/6/2011; Add \$2.05/hr on 6/4/2012.</p> <p>Premium Increase(s): Add \$.25/hr for operating tower crane. On Sunday &amp; holidays, pay two times the hourly basic rate except pump/generator operators when employed on non-productive projects.</p>	30.81	17.75	48.56

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
525	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Crusher, Screening or Wash Plant; Farm or Industrial Type Tractor; Fireman (Asphalt Plant NOT Performing Work on the Great Lakes); Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Loading Machine (Conveyor); Post Hole Digger or Driver; Refrigeration Plant or Freeze Machine; Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add \$1.90/hr on 6/6/2011; Add \$2.05/hr on 6/4/2012. Premium Increase(s): Add \$.25/hr for operating tower crane. On Sunday & holidays, pay two times the hourly basic rate except pump/generator operators when employed on non-productive projects.	29.41	17.75	47.16
526	Boiler (Temporary Heat); Forklift; Greaser; Oiler. Future Increase(s): Add \$1.90/hr on 6/6/2011; Add \$2.05/hr on 6/4/2012. Premium Increase(s): Add \$.25/hr for operating tower crane. On Sunday & holidays, pay two times the hourly basic rate except pump/generator operators when employed on non-productive projects.	29.41	17.75	47.16
527	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	35.05	18.08	53.13
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.	35.05	18.08	53.13
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.	32.20	18.69	50.89
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.	32.20	18.69	50.89

<b>AIRPORT PAVEMENT OR STATE HIGHWAY CONSTRUCTION</b>
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Includes all airport projects (excluding buildings) and all projects awarded by the Wisconsin Department of Transportation (excluding buildings).

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**SKILLED TRADES**

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<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
		\$	\$	\$
103	Bricklayer, Blocklayer or Stonemason	33.80	20.37	54.17
105	Carpenter	31.38	16.19	47.57
107	Cement Finisher Future Increase(s): Add \$1.86 on 6/1/11; Add \$1.86 on 6/1/12; Add \$1.87 on 6/1/13; Add \$1.87 on 6/1/14; Add \$1.87 on 6/1/15; Add \$1.75 on 6/1/16. Premium Increase(s): Effective 6/1/2011 for "Airport Pavement or State Highway Construction" project type only, add \$1.40/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night to avoid peak traffic volumes under artificial illumination with traffic control. The work is completed after sunset and before sunrise.	28.17	16.33	44.50
109	Electrician	31.64	21.45	53.09
111	Fence Erector	33.90	21.81	55.71
116	Ironworker	31.31	21.79	53.10
118	Line Constructor (Electrical)	31.66	13.94	45.60
124	Painter	26.54	13.40	39.94
125	Pavement Marking Operator	26.54	13.40	39.94
126	Piledriver	28.11	21.34	49.45
133	Roofer or Waterproofor	28.85	13.60	42.45
137	Teledata Technician or Installer	24.09	14.48	38.57
143	Tuckpointer, Caulker or Cleaner	33.35	14.47	47.82
144	Underwater Diver (Except on Great Lakes)	32.31	14.91	47.22
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	33.23	15.04	48.27
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	28.21	14.71	42.92
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	24.68	12.41	37.09
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	22.92	11.87	34.79

154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	26.75	10.29	37.04
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**TRUCK DRIVERS**

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<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>				
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
		\$	\$	\$
201	Single Axle or Two Axle	21.00	14.51	35.51
203	Three or More Axle	25.09	13.60	38.69
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Future Increase(s): Add \$1.95/hr on 6/1/11; Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate. For "Airport Pavement or State Highway Construction" project type only, add \$1.50/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).	32.07	18.10	50.17
205	Pavement Marking Vehicle	20.06	11.55	31.61
206	Shadow or Pilot Vehicle	21.00	14.51	35.51
207	Truck Mechanic	25.09	13.60	38.69

## LABORERS

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
301	General Laborer Future Increase(s): Add \$1.60/hr on 6/1/2011; Add \$1.60/hr on 6/1/2012; Add \$1.70/hr on 6/1/2013; Add \$1.60/hr on 6/1/2014. Premium Increase(s): Add \$.15/hr for air tool operator, joint sawer and filler (pavement), vibrator or tamper operator (mechanical hand operated), chain saw operator and demolition burning torch laborer; Add \$.35/hr for bituminous worker (raker and luteman), formsetter (curb, sidewalk and pavement) and strike off man; Add \$.50/hr for line and grade specialist; Add \$.65/hr for blaster and powderman; Add \$2.01/hr for topman; Add \$2.46/hr for bottomman; Add \$3.23/hr for pipelayer. "Airport Pavement or State Highway Construction" project type only, 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).	23.71	16.88	40.59
302	Asbestos Abatement Worker	23.25	13.91	37.16
303	Landscaper Future Increase(s): Add \$1.60/hr on 6/1/11; Add \$1.60/hr on 6/1/12; Add \$1.70/hr on 6/1/13; Add \$1.60/hr on 6/1/14. Premium Increase(s): Effective 6/1/09 for "Airport Pavement or State Highway Construction" project type only, 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).	23.71	16.88	40.59
304	Flagperson or Traffic Control Person Future Increase(s): Add \$1.60/hr on 6/1/2011; Add \$1.60/hr on 6/1/2012; Add \$1.70/hr on 6/1/2013; Add \$1.60/hr on 6/1/2014. Premium Increase(s): "Airport Pavement or State Highway Construction" project type only, 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).	20.20	16.88	37.08
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	15.00	3.09	18.09
314	Railroad Track Laborer	12.50	3.96	16.46

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

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
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 \$1.95/hr on 6/1/11; Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate. For "Airport Pavement or State Highway Construction" project type only, add \$1.50/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	33.07	18.10	51.17
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 \$1.95/hr on 6/1/11; Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate. For "Airport Pavement or State Highway Construction" project type only, add \$1.50/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).	32.57	18.10	50.67

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
533	<p>Air Track, Rotary or Percussion Drilling Machine &amp;/or Hammers, Blaster; Asphalt Heater, Planer &amp; 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. &amp; Under); Bituminous (Asphalt) Plant &amp; 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 &amp; Gutter Machine; Concrete Spreader &amp; 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 &amp; A-Frames.</p> <p>Future Increase(s):                      Add \$1.95/hr on 6/1/11; Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14.</p> <p>Premium Increase(s):                      On Sunday &amp; holidays, pay two times the hourly basic rate. For "Airport Pavement or State Highway Construction" project type only, add \$1.50/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).</p>	32.07	18.10	50.17

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
534	<p>Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed &amp; Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver &amp; Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawyer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler; Tining or Curing Machine.</p> <p>Future Increase(s): Add \$1.95/hr on 6/1/11; Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14.</p> <p>Premium Increase(s): On Sunday &amp; holidays, pay two times the hourly basic rate. For "Airport Pavement or State Highway Construction" project type only, add \$1.50/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).</p>	31.81	18.10	49.91
535	<p>Air Compressor (&amp;/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical &amp; Horizontal); Automatic Belt Conveyor &amp; Surge Bin; Boiler (Temporary Heat); Concrete Proportioning Plant; Crusher, Screening or Wash Plant; Generator (&amp;/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack.</p> <p>Future Increase(s): Add \$1.95/hr on 6/1/11; Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14.</p> <p>Premium Increase(s): On Sunday &amp; holidays, pay two times the hourly basic rate. For "Airport Pavement or State Highway Construction" project type only, add \$1.50/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).</p>	31.52	18.10	49.62
536	Fiber Optic Cable Equipment.	22.79	15.30	38.09
537	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	35.05	18.08	53.13
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.	35.05	18.08	53.13

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
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.	32.20	18.69	50.89
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.	32.20	18.69	50.89

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

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**SKILLED TRADES**

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<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		
		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
		\$	\$	\$
103	Bricklayer, Blocklayer or Stonemason	34.58	14.92	49.50
105	Carpenter	31.38	16.29	47.67
107	Cement Finisher	27.12	16.07	43.19
109	Electrician Future Increase(s): Add \$1/hr on 6/1/2011. Add \$1.40/hr on 6/1/2012. Add \$1.60/hr on 6/1/2013.	31.10	20.39	51.49
111	Fence Erector	22.50	3.65	26.15
116	Ironworker	31.31	21.79	53.10
118	Line Constructor (Electrical)	31.66	13.94	45.60
124	Painter	27.82	15.39	43.21
125	Pavement Marking Operator	23.46	9.45	32.91
126	Piledriver	28.11	21.16	49.27
133	Rofer or Waterproofer	28.85	13.60	42.45
137	Teledata Technician or Installer	24.09	14.48	38.57
143	Tuckpointer, Caulker or Cleaner	33.35	14.47	47.82
144	Underwater Diver (Except on Great Lakes)	32.31	14.91	47.22
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	26.88	13.71	40.59
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	28.21	14.30	42.51
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	24.68	16.16	40.84
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	22.92	11.87	34.79
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	29.06	15.39	44.45

**TRUCK DRIVERS**

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
201	Single Axle or Two Axle	21.42	5.62	27.04
203	Three or More Axle	13.00	13.60	26.60
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate.	31.89	17.96	49.85
205	Pavement Marking Vehicle	20.85	11.02	31.87
206	Shadow or Pilot Vehicle	21.42	5.62	27.04
207	Truck Mechanic	13.00	13.60	26.60

**LABORERS**

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
301	General Laborer	23.34	17.30	40.64
303	Landscaper	22.00	5.20	27.20
304	Flagperson or Traffic Control Person	17.19	15.32	32.51
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	15.00	3.09	18.09
314	Railroad Track Laborer	12.50	3.96	16.46

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

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
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.	31.97	16.96	48.93

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
542	<p>Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity of 4,000 Lbs. &amp; Under; Crane, Tower Crane Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &amp;/or Jib Lengths Measuring 175 Ft or Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver.</p> <p>Future Increase(s): Add \$1.95/hr on 6/1/11; Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14.</p> <p>Premium Increase(s): On Sunday &amp; holidays, pay two times the hourly basic rate. For "Airport Pavement or State Highway Construction" project type only, add \$1.50/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).</p>	32.57	18.10	50.67
543	<p>Air Track, Rotary or Percussion Drilling Machine &amp;/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. &amp; 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 &amp; Gutter Machine; Concrete Spreader &amp; 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 &amp; A-Frames.</p>	30.97	16.98	47.95

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
544	Backfiller; Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Jeep Digger; Joint Sawyer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler; Tining or Curing Machine. Future Increase(s): Add \$1.85/hr on 5/31/2011. Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate.	32.32	16.75	49.07
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. Future Increase(s): Add \$1.85/hr on 5/31/2011. Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate.	30.97	16.75	47.72
546	Fiber Optic Cable Equipment.	22.79	15.30	38.09
547	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	35.05	18.08	53.13
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.	35.05	18.08	53.13
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.	32.20	18.69	50.89
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.	32.20	18.69	50.89

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

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
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.	31.97	17.35	49.32
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.	30.42	17.05	47.47
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. Future Increase(s): Add \$1.95/hr on 6/1/11; Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate.	31.52	17.75	49.27

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
554	Backfiller; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawyer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Self-Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler. Future Increase(s): Add \$1.95/hr on 6/1/11; Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate.	31.52	17.75	49.27
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 \$1.95/hr on 6/1/11; Add \$2/hr on 6/1/12; Add \$2/hr on 6/1/13; Add \$1.75/hr on 6/1/14. Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate.	31.52	17.75	49.27
556	Fiber Optic Cable Equipment.	22.79	15.30	38.09

<b>RESIDENTIAL OR AGRICULTURAL CONSTRUCTION</b>
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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.

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**SKILLED TRADES**

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<u>CODE</u>	<u>TRADE OR OCCUPATION</u>	Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		
		<u>HOURLY BASIC RATE OF PAY</u> \$	<u>HOURLY FRINGE BENEFITS</u> \$	<u>TOTAL</u> \$
101	Acoustic Ceiling Tile Installer	35.28	14.02	49.30
102	Boilermaker	31.09	21.82	52.91
103	Bricklayer, Blocklayer or Stonemason	23.56	13.33	36.89
104	Cabinet Installer	26.00	7.06	33.06
105	Carpenter	31.38	5.03	36.41
106	Carpet Layer or Soft Floor Coverer	18.00	0.00	18.00
107	Cement Finisher	23.50	17.24	40.74
108	Drywall Taper or Finisher	25.95	14.52	40.47
109	Electrician	23.10	11.03	34.13
110	Elevator Constructor	40.46	23.33	63.79
111	Fence Erector	17.00	1.19	18.19
112	Fire Sprinkler Fitter	36.82	19.03	55.85
113	Glazier	30.24	14.84	45.08
114	Heat or Frost Insulator	15.00	0.00	15.00
115	Insulator (Batt or Blown)	10.00	3.10	13.10
116	Ironworker	20.00	0.40	20.40
117	Lather	16.00	1.60	17.60
119	Marble Finisher	29.40	14.31	43.71
120	Marble Mason	34.58	14.92	49.50
121	Metal Building Erector	16.75	6.50	23.25
123	Overhead Door Installer	22.00	4.62	26.62
124	Painter	17.87	0.96	18.83
125	Pavement Marking Operator	25.65	13.10	38.75

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
129	Plasterer	25.00	0.00	25.00
130	Plumber	35.93	15.69	51.62
132	Refrigeration Mechanic	23.00	4.81	27.81
133	Roofer or Waterproofer	28.85	6.23	35.08
134	Sheet Metal Worker	27.83	14.28	42.11
135	Steamfitter	21.00	3.66	24.66
137	Teledata Technician or Installer	8.00	0.00	8.00
138	Temperature Control Installer	22.00	2.92	24.92
139	Terrazzo Finisher	29.40	14.31	43.71
140	Terrazzo Mechanic	29.40	14.31	43.71
141	Tile Finisher	18.00	0.92	18.92
142	Tile Setter	17.50	0.74	18.24
143	Tuckpointer, Caulker or Cleaner	32.50	2.44	34.94
146	Well Driller or Pump Installer	26.76	0.00	26.76
147	Siding Installer	16.00	0.00	16.00

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**TRUCK DRIVERS**

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<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
201	Single Axle or Two Axle	16.00	2.25	18.25
203	Three or More Axle	18.00	1.25	19.25
205	Pavement Marking Vehicle	20.85	11.02	31.87
207	Truck Mechanic	15.00	15.00	30.00

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**LABORERS**

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<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>		<b>HOURLY BASIC RATE OF PAY</b>	<b>HOURLY FRINGE BENEFITS</b>	<b>TOTAL</b>
<b>CODE</b>	<b>TRADE OR OCCUPATION</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
301	General Laborer	23.50	6.22	29.72
302	Asbestos Abatement Worker	17.00	7.07	24.07
303	Landscaper	15.00	5.25	20.25

311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	15.00	3.09	18.09
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**HEAVY EQUIPMENT OPERATORS  
RESIDENTIAL OR AGRICULTURAL CONSTRUCTION**

**Fringe Benefits Must Be Paid On All Hours Worked**

<u>CODE</u>	<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u> \$	<u>HOURLY FRINGE BENEFITS</u> \$	<u>TOTAL</u> \$
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.	31.32	8.17	39.49
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. Future Increase(s): Add \$1.85/hr on 5/31/2011. Premium Increase(s): On Sunday & holidays, pay two times the hourly basic rate.	32.32	16.75	49.07

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

**SECTION 00850: DRAWING SCHEDULE**

The following listed drawings accompany and form a part of the project contract documents along with this project manual and generally illustrate the nature of the work.

<u>Sheet No.</u>	<u>Title</u>
	<b><u>ARCHITECTURAL</u></b>
A1.0	TITLE SHEET, SHEET INDEX
A5.1	OFFICE WINDOW & DOOR REPLACEMENT – ELEVATIONS, SCHEDULES & DETAILS (Alternate Bid)
A7.1	OFFICE, GARAGE & SALT SHED RE-ROOFING – ROOF PLANS & DETAILS

SECTION 01010: SUMMARY OF WORK:

1. SCOPE:

A. Index:

1. Scope
2. Project Description
4. Scheduling of Work

2. PROJECT DESCRIPTION:

A. In general, the project includes the removal of the existing roof and the installation of a new fully ballasted EPDM roof, new insulation and new flashing on the existing Office/Storage Building and the existing Garage Building. The project also includes the removal of the existing roof and the installation of a new deck and new fully adhered EPDM roof on the existing Salt Shed.

As an **Alternate bid**, the existing windows and doors on the Office portion of the Office/Storage Building are to be removed and new windows and doors are to be installed.

B. The Department of Public Works will continue to occupy the buildings while this work is being performed. All contract work shall be coordinated with the Department of Public Works. No work by this Contractor shall affect the operations of the Department of Public Works.

C. The following outline is intended to serve as a general guide only and not as a complete listing of work, operations, or material. Consult the table of contents for a complete listing of items, included.

1. Remove existing membrane roofing system other membrane roofing system components down to deck.
2. Inspect deck after tear-off; replace decking if required.
3. Install membrane roofing system.

D. Examine Documents and Visit Site:

1. Before submitting a bid proposal, bidders should carefully examine the drawings and project manual, visit the site of the work, fully inform themselves as to all existing conditions and limitations including those of labor, and shall include in the bid proposal a sum sufficient to cover the cost of all items contemplated by the construction documents.
2. Each sub-bidder further represents that he has inspected the site of the proposed work to ascertain any obstacles that might be encountered and other matters and conditions relevant to this work.
3. The nature of the work required demands thorough review of all drawings and the project manual, and diligent and careful site inspection by all prospective sub-bidders as a means of determining the extent of work and conditions under which the work is to be performed.
4. Additional charges will not be as considered for work which, prior to bidding, could

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reasonably be inferred as appropriate by examination of the drawings and specifications, visiting the site, and closely reviewing the work as indicated above. No representations as to subsurface conditions are made.

3. SCHEDULING OF WORK:

- A. The contractor shall provide a construction schedule that includes all phases of construction, indicating the anticipated completion times for the various phases. The contract shall provide a complete schedule prior to the start of construction.
  
- B. If second shift or weekend work is necessary, all subcontractors and trades will arrange appropriate security measures and lock-up with the Project Inspector in writing. Any work completed at night shall be left weather protected but "open" for City inspection of all work. The contractors shall notify the Project Inspector 24 hours in advance of second shift or weekend work in writing, indicating the type of work to be done and the security measures to be taken by the contractor.

SECTION 01210: PROJECT MEETINGS

1. SCOPE:

A. Index:

1. Scope
2. Pre-Construction Meeting
3. Progress Meetings

2. PRE-CONSTRUCTION MEETING:

- A. Soon after the award of the contract and prior to the start of construction, the contractor shall attend a pre-construction conference with representatives of the City.
- B. The contractor shall have at the meeting responsible representatives from subcontractors who are to perform major work on the project.
- C. The purpose of the meeting is to discuss in detail the plans and specifications. The discussion shall include:
  1. Schedule
  2. Equipment/Delivery Dates
  3. Material Storage
  4. Traffic Control
  5. Inspection Requirements
  6. Protection Procedures for the structure
  7. Hours of Work
- D. The contractor shall submit the construction schedule to the architect/engineer at this meeting and a listing of subcontractors and their work. The contractor shall describe, in detail, when each portion of the work is expected to be accomplished. The subcontractors shall participate in the discussion. The architect/engineer will serve to interpret the contract documents should such questions arise.
- E. Any other questions that the contractor or his subcontractors have about the work or its scheduling shall be raised at these meetings.
- F. Requirements for contract administration and construction operations will be defined for participants.
- G. The architect/engineer will determine time, date, and place of the meeting.

3. PROGRESS MEETINGS:

- A. Bi-weekly meetings will be held for the purpose of coordinating and expediting the work.
- B. Attendance at project meetings by the contractor is mandatory. These meetings shall also be attended by representatives of each subcontractor who is either working at the site or is affected by work being done at the site. The contractor shall submit an updated construction schedule at these meetings and a short narrative should be written, describing the cause of any delays and intended action to remedy these delays.
- C. Contractors shall give a verbal report of progress on the project, discuss the work

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schedule for the coming period, and present all conflicts, discrepancies, or other difficulties  
for resolution.

SECTION 01300: SUBMITTALS/PERMITS

1. SCOPE:

A. Index:

1. Scope
2. Submittals
3. Permits
4. Inspection

2. SUBMITTALS:

A. Comply with the requirements of the General Conditions and as follows:

1. Forward Submittals not more than 20 calendar days after the Notice to Proceed date. No work, as indicated on any shop drawing, samples, hardware list, etc., shall be started until those submittals have been reviewed and work authorized.
2. All submittals must be thoroughly reviewed by the prime contractor for conformance to contract documents, prior to submission to the City, or its agents, for review. Shop drawings and catalog information shall be stamped "Reviewed By" and signed by the contractor's reviewer. The prime contractor shall review all subcontractor submittals prior to submittal to the City for compliance with contract documents and to coordinate all work.
3. Include with each submittal a transmittal letter signed and dated by the prime contractor containing the following:
  - a. Name of Contractor
  - b. Name of Project
  - c. List of Submittals
  - d. Name of Manufacturer or Supplier
  - e. Additional information as required for the items being provided.

B. Shop Drawings, Catalog Information, Calculations, and Samples:

1. Shop Drawings: Submit four (4) blue/black line print review. The City will notify the contractor in writing and return one copy marked "REVIEWED - NO EXCEPTIONS TAKEN" with minor or no notations. The City will also notify the contractor in writing and return one copy, along with comments, when the drawings are marked either "REJECTED" or "REVISE AND RESUBMIT". For those shop drawings, the contractor will be responsible for resubmitting a new print.
2. Catalog Information and Calculations: Submit four (4) copies for City's record and additional numbers of copies required for the contractor's purpose. The City will notify the contractor in writing and return the contractor's copies, with or without notation, marked either "REVIEWED - NO EXCEPTIONS TAKEN", "REVISE AND RESUBMIT", OR "REJECTED". Catalog information or calculations marked "REVISE AND RESUBMIT" or "REJECTED" must be resubmitted in the same quantities as originally required.

3. Samples: Submit two (2) samples of requested materials for the City's records and additional samples, if desired, to be returned to the contractor. The City will notify the contractor in writing, whether the samples are approved or rejected. If they are rejected, new samples must be resubmitted as originally required.
  4. Corrections or comments made on the submittals during the review do not relieve the contractor from compliance with requirements of the contract documents. The check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. Contractors are responsible for conforming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating their work with that of all other trades; and performing their work in a safe manner.
- C. "Or Equal": Whenever the words "or equal" or similar term is used, it shall mean as determined by the Commissioner of Public Works or agent. All drawings, data and bulletins necessary to make an "or equal" determination shall be submitted to the Facilities Manager of FACILITIES DEVELOPMENT AND MANAGEMENT SECTION. Such review shall apply to design only and shall in no way relieve the contractor from the responsibilities as outlined in Item 2B above. Evaluation of "or equal" products will be made at the time of shop drawing submission. Any change required in design and coordination between all contractors, subcontractors, or trades due to the use of "or equal" materials shall become the contractor's responsibility. Any costs for detailed engineering reviews and/or any costs to incorporate "or equal" products will be borne by the contractor.
3. PERMITS:
    - A. The City of Milwaukee will provide the general construction and occupancy permits.
    - B. Contractors shall obtain, from the City of Milwaukee Department of City Development and/or other government or private agencies, all special permits as may be necessary in their work.
    - C. Contractors shall obtain all permits to occupy or work in the public way as may be necessary for their work.
    - D. Contractors shall notify the City and/or appropriate utilities when making utility connections as part of the project.
  4. INSPECTION:
    - A. FACILITIES DEVELOPMENT AND MANAGEMENT SECTION will provide daily inspection to verify compliance with contract documents, identify contractors and crews on the job, verify compliance with contract conditions (EBE, residency, wage requirements), and record job progress and conditions.
    - B. **Contractors shall arrange with the Department of Neighborhood Services/Construction Trades Division and permit issuing agencies for all code compliance inspections as required by all permits including, but not limited to, the general building and all special permits issued by that agency.**
    - D. **Contractors shall arrange with the appropriate City agency for compliance inspections, as required, for all permits including, but not limited to, curb and pavement cuts and patches, and public way occupancy and utility connections.**

SECTION 01500: JOB SITE UTILITIES, FACILITIES, AND SECURITY

1. SCOPE:

A. Index:

1. Scope
2. Building Security
3. Temporary or Trial Usage
4. Occupancy During Construction
5. Temporary Hoists, Lifts
6. Scaffolding
7. Electrical Power
8. Water
9. Temporary Toilet Facilities
10. Site Security
11. Parking

2. BUILDING SECURITY:

A. General:

The Downtown Complex is open to the public from 8:00 am until 4:45 pm, Monday through Friday, excluding holidays. Since most contracted work takes place outside normal business hours, it is essential that contractors and their City agents understand and abide by security policy.

Outlying buildings are not generally open to the public. Contracted work in these buildings can take place at any time. It is essential that contractors and their City agents understand and abide by security policy.

B. Scope:

The following building security policy and procedure statement has been provided in this project manual for bid consideration and shall be distributed at the Pre-Construction Meeting. All City agents/officials responsible for engaging contractors, all contractors, and all subcontractors shall be held responsible for following the procedures.

C. City Agents/Officials:

1. Any City agents/officials who commission outside contractors to work in any of the facilities managed by FACILITIES DEVELOPMENT AND MANAGEMENT SECTION shall provide the following information no less than twenty-four (24) hours in advance of the work:

- a. The names of any contract or subcontract employees who will be present in the facilities (for the purpose of designing badges appropriate to their work area):

Green – Zeidler Municipal Building, 841 North Broadway  
Red – City Hall, 200 East Wells Street  
Yellow – 809 North Broadway  
Gold – Any outlying buildings

These names must be listed on a sign-in sheet available in the Zeidler Municipal Building, Room 602 (FACILITIES DEVELOPMENT AND MANAGEMENT SECTION support staff – Extension 8222). City agents/officials shall be responsible to ensure the sheet and badges are transported to the appropriate location where the work is to be completed (in the Downtown Complex it would go to the City Hall Information Center, for outlying buildings to the person responsible for controlling access in the facility) the day before work is to begin.

- b. A list of keys and/or access cards required for access only to the areas necessary for work involved in the project. The keys and card will be received from the Security Manager or his designee and signed out to the City agents/officials responsible for the contracted work. The City employee will take the keys and/or access cards to the City Hall Information Center or the person responsible for controlling access in the outlying building where they shall be logged under the name of the contractor's company. When a project is complete, the City agents/officials must retrieve the keys/cards and return them to FACILITIES DEVELOPMENT AND MANAGEMENT SECTION support staff in Room 602 of the Zeidler Municipal Building.
- c. The City agents/officials are responsible for communicating the security policy and procedures to contractors. The City agents/officials shall act as liaison for all communication between FACILITIES DEVELOPMENT AND MANAGEMENT SECTION and the contractor.

D. Contractors:

- 1. Contractors shall abide by City security policy and procedures at all times during the scope of their participation in a project. Failure to comply will result in the contracted employee being escorted from the premises and the resulting lost time and expense shall be deducted from the contractor's invoice or penalties of \$50.00 per occurrence as determined by the contracting City agent/official.
  - a. All access should be provided in advance through the City agent/official. Contractors shall enter and exit only through those doors designated by City agents/officials (the Market Street entrance to City Hall and the doors established by the person responsible for access at outlying buildings). All other exterior doors are locked and alarmed and are not to be used as delivery points unless the City agent/official has been provided 24 hour notification to provide additional security coverage at that point while the delivery is in progress.
  - b. All of the contractor's employees and all of the employees of any of his subcontractors shall wear at all times while on the site, in a clearly visible location, an identification card. The identification card is to have a minimum 1" x 1" color photo of the head and shoulders. The photo is to have been taken no more than one year previously. The card is to be laminated with clear plastic and is to contain the company name, employee's name, and the employee's signature, and is to be furnished by the contractor or respective subcontractor.
  - c. **Effective October 1, 2004 – City of Milwaukee Policy Change**

The following policy has been established to maintain control of City Property and to ensure the physical protection of the City Hall Complex.

**Anyone** signing out access cards and/or keys from the Information Center will be following the steps below.

- 1) Sign in on the sheet assigned to the project you are working on and pull that sheet and provide it to the Operator noting that you will need to sign out City property to access the building.
- 2) Provide the Operator your driver's license as collateral for the return of City property.
- 3) Sign out the property in the sign out book as per current policy.
- 4) The Operator will file your driver's license until such time as you sign in and return the City property at which time your license will be returned.
- 5) Sign out at the end of your workday on the sign out sheet.

**Under NO circumstances will keys or cards be disbursed without the user signing for the property and providing the City Hall Operator their driver's license as collateral.**

In the event that keys or cards are not returned daily the contractor in question will have a deduct (security violation) as per the contract. Individuals who loose or fail to return keys will be responsible for the cost of re-keying to the City.

Contractors will sign in on pre-approved forms and also wear the City identification badges (also to be worn at all times on the premises). Keys or access cards will be signed out as provided by the City agent/official and required for the work. These keys, cards, and badges must be returned at the end of each shift before signing out. Failure to do so will result in a \$50.00 penalty for each occurrence.

- d. Contractors shall not ask custodians or mechanics to unlock doors. All access should be provided in advance through the City agent/official. In the rare case where access is not provided, the City Hall Operator may be contacted to assist in providing access. The contractor shall cooperate with security personnel at all times. The contractor should be prepared to allow searches of equipment when leaving, and should remain only in the areas designated on the sign-in sheets. Security will question a contractor who has an identification badge that indicates a work area other than the area he or she is in.
- e. If the contractor requires use of the loading dock in Upper Parking, 24 hour advance notice shall be given to the City agent/official to make arrangements to provide additional security coverage while the delivery is in progress. The contractor or subcontractor shall meet the delivery driver and take delivery at that point. At no time shall a driver be allowed in the facilities without following the access procedure stated above.
- f. If after normal business hours work is required in the outlying buildings, all subcontractors and trades will arrange appropriate security measures and

lock-up procedures with the contractor in writing. Any work completed at night shall be left "open" for City inspection of the work. The contractor shall notify the City agent/official 24 hours in advance of after-hours work in writing, indicating the type of work to be done and the security measures to be taken by the contractor.

- g. The contractor shall provide plywood door and window closures during construction to secure the structure from weather and damage from vandalism. The contractor is responsible to maintain the security of the space where they are working during construction.
- h. If proper notification is not provided to the contractor, the subcontractor or trades shall be liable for any subsequent damage/vandalism/inspection cost, etc., due to lack of security/inspection coordination.
- i. Use of City materials is strictly prohibited unless pre-arranged through the City employee contact.
- j. At no time shall any interior doors that control access or exterior doors be propped open.

3. TEMPORARY OR TRIAL USAGE:

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

4. OCCUPANCY DURING CONSTRUCTION:

The owner will occupy the premises while work is in progress. Contractor is to coordinate his work as to not interfere with the owner's operation or compromise building security.

5. TEMPORARY HOISTS, LIFTS:

Contractors and subcontractors requiring hoists or lifts shall provide their own and remove upon completion of work.

6. SCAFFOLDING:

General Contractor shall provide protective sidewalk scaffolding and any additional measures as required to protect the public and allow safe use of this entrance into the facility during the entire construction period.

All scaffolding, swing stages and lifts as required to perform work defined in this contract document shall be provided and maintained by the General Contractor and shall be removed when no longer needed. The General Contractor is solely responsible for the design, safety and security of any scaffolding erected under this contract for this project. All scaffolding, swing stages and lifts shall be available with operators for access to the project for the Project Engineer, City Liaison and City Inspectors.

Exterior scaffolding access (up & down) shall be provided. Access through to the facility will be strictly limited. Adequate security must be provided by the General Contractor to limit the

opportunity of unauthorized access of scaffolding.

Submittals for the scaffolding and egress protection shall be provided and reviewed before proceeding with erection. Scaffolding and egress protection submittals shall be stamped by a professional engineer. The scaffolding engineer shall design any foundations or anchoring points as required. The scaffolding system shall be properly grounded.

All anchors and other attachments into building shall be limited. All anchors and attachment shall be clearly indicated on submittals. All costs for scaffolding including installation of anchoring, foundation, erection and patching of all anchor and attachment points at the conclusion of the project shall be included in the base bid. Patching of all anchor or attachment points shall match existing façade materials. On site patching sample shall be provided and approved before proceeding with all patch work. Any damage to sidewalks, pavement or landscaped areas shall be restored to existing pre-construction conditions after the removal of the scaffolding.

7. ELECTRICAL POWER:

Contractor may use existing outlets for power. Contractor to verify power available at site. Contractor is to supply his own lines. OSHA regulations require that employers use either ground fault circuit interrupters or an assured equipment grounding conductor program in addition to any other regulations for equipment grounding conductors. The cost of the current used will be paid for by the City.

8. WATER:

Water may be obtained from any existing fixture.

9. TEMPORARY TOILET FACILITIES:

The contractor shall provide temporary toilet facilities during construction.

10. SITE SECURITY:

Contractor shall secure all doors and gates prior to leaving site. Contractor to notify city inspector if exterior security lighting not working.

11. PARKING:

Limited parking on site is available and shall be coordinate with the DPW Sanitation Manager.

SECTION 01505: CONSTRUCTION WASTE MANAGEMENT

**PART 1 - GENERAL**

1.1 SCOPE:

- A. This section specifies requirements for salvaging, recycling and disposing of construction waste for purposes of protecting the environment and reducing project cost.

Requirements include the following:

1. Developing a Construction Waste Management Plan including waste management goals and provisions for waste reduction and recycling.
2. Implementing, monitoring and documenting the waste management plan.
3. Incorporating special programs.
4. Evaluating construction waste management.

1.2 RELATED DOCUMENTS AND SECTIONS:

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Related documents include the following
1. Section 01010 "Summary of Work"
  2. Section 01300 "Submittal & Permits"
  3. Section 001500 "Utilities, Facilities, and Security" for environmental-protection measures during construction.
  4. Section 01735 "Selective Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements **[and for disposition of hazardous waste]**.

1.3 PRECONSTRUCTION MEETING:

- A. After award of Contract and prior to the commencement of the Work, schedule and conduct a meeting with the Owner and Architect to discuss the proposed Construction Waste Management Plan and to develop a mutual understanding regarding details of environmental protection.

1.4 CONSTRUCTION WASTE MANAGEMENT PLAN:

- A. Construction Waste Management Plan
1. The purpose of the Construction Waste Management Plan is to identify construction waste reduction goals, identify targeted materials, and explain specific waste reduction actions to be taken, by whom, and when.
  2. The Contractor shall develop a Construction Waste Management Plan for this Project within 15 working days after Contract award or prior to any waste removal. The Owner and the Architect will furnish the Contractor with information that will assist in the development of the Construction Waste Management Plan. Submit the Construction Waste Management Plan (include document/report form) to the Architect for approval prior to implementing the Plan.

- B. Progress Documentation: Document solid waste disposal and diversion. Include the date of removal, type of waste removed, quantity by weight and volume, final destination and use (recycled, reused or landfilled), and net cost or income.
  - 1. Document on the Form acceptable to the Owner and Architect.
  - 2. With each Application for Payment, submit updated documentation identifying solid waste disposal and diversion.
  - 3. With each Application for Payment, submit manifests, weight tickets, receipts and invoices identifying the Project and construction waste material.
- C. Record Submittals: Submit the following:
  - 1. Summary of solid waste disposal and diversion. Submit on form acceptable to the Owner and Architect.
  - 2. End-of-Project recycling rates and landfill rates demonstrating the percentage of construction waste that was recycled or reused.

1.5 WASTE MANAGEMENT GOALS:

- A. Develop Construction Waste Management Plan that results in end-of-Project rates for the reuse/recycling of **50%** percent by weight or volume of total waste generated by the Project. Record the total construction waste reduction goal on the Construction Waste Management Plan Form.
- B. Reduce: The Project shall generate the least amount of waste and methods shall be used that minimize waste due to error, poor planning, breakage, mishandling, contamination, or similar factors. Promote the resourceful use of materials to the greatest extent possible.
- C. Reuse: The Contractor and Subcontractors shall reuse materials to the greatest extent possible. Reuse includes the following:
  - 1. Salvage reusable materials for resale, for reuse on this Project, or for storage for use on future projects.
  - 2. Return reusable items (e.g., pallets or unused products) to the material suppliers.
- D. Recycle: As many of the waste materials not able to be eliminated in the first place or salvaged for reuse shall be recycled. Waste disposal in landfills shall be minimized to greatest extent possible.

1.6 MATERIALS HANDLING AND SORTING:

- A. Handling:
  - 1. Materials that are contaminated prior to placing in collection containers shall be properly cleaned. Deliver materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to recycling processes.
  - 2. Cover materials with tarps and keep truckloads level so as to prevent spillage.
  - 3. Arrange for collection by or delivery to the appropriate recycling or reuse facility.
  - 4. Hazardous Waste and Hazardous Materials: Handle in accordance with applicable regulations. If encountered, such waste and materials shall be abated under separate contract.
- B. The following sorting methods are acceptable:

1. Sorting recyclable materials at the Project site and transporting them to recycling markets directly from the Project site.
2. Employing haulers who make use of a materials-recovery facility or a transfer station where recyclable materials are sorted from the waste and recycled before disposing of the remainder. If using a hauler or recycling facility to sort out recyclables, verify that the hauler sorts out all construction waste loads and is not limited to those that are not acceptable at the landfill. Also, verify that the hauler or recycling facility recycles at least three types of materials.

**1.7 WASTE MANAGEMENT PLAN IMPLEMENTATION:**

- A. The Contractor shall designate a party (or parties) who shall be responsible for instructing construction personnel and overseeing and documenting results of the Construction Waste Management Plan.
- B. Distribution: The Contractor shall distribute copies of the Construction Waste Management Plan to the Project Foreman, each Subcontractor, the Owner, and the Architect
- C. Instruction: The Contractor shall provide on-site instruction regarding appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all construction personnel at the appropriate phases of the Project.
- D. Separation Facilities: The Contractor shall lay out and identify a specific area on the Project site to facilitate separation of materials for recycling, salvage, reuse, and return. Recycling and waste bin areas shall be kept neat and clean, and clearly marked to avoid contamination of materials. Materials for recycling include concrete, non-fibrous wallboard, paper, clean corrugated cardboard (no pizza boxes), non-treated wood, metals (steel, aluminum and copper), and glass bottles (no windows). Provide separate containers, preferably near the job trailer, with smaller containers located at convenient places throughout the job site. Empty smaller containers into larger containers every night or when full. Cover outdoor containers to keep out rain, snow, and wind-driven debris. Lock containers whenever site is not in use to prevent illegal dumping.
- E. Hazardous Waste: Hazardous waste shall be separated, stored, and disposed of according to applicable regulations.
- F. Application for Payments: With each Application for Payment, the Contractor shall submit a Summary of Waste generated by the Project. Failure to submit this information shall render the Application for Payment void, thereby delaying the Progress Payment. The Summary of Waste shall contain the following information:
  1. The amount (in tons and/or cubic yards) of material landfilled from the Project, the identity of the landfill, and the related disposal cost. Include corresponding manifests, weight tickets, receipts, and invoices.
  2. For each material recycled from the Project, the amount (in tons and/or cubic yards), the date removed from the Project site, the receiving party, the transportation cost, the amount of any money paid or received for the recycled or salvaged material, and the net total cost or savings of recycling. Include corresponding manifests, weight tickets, receipts, and invoices.
- G. Implementing the Plan: The Contractor shall designate a party (or parties) responsible for implementing the Construction Waste Management Plan. This party (or parties) shall explain to Contractor's and Subcontractor's construction personnel, the Plan's goals and methods for achieving those goals.

1.8 SPECIAL PROGRAMS:

- A. The Contractor shall be responsible for final implementation of programs involving tax credits, rebates, or similar incentives related to recycling, if applicable to the Project. Revenues or other savings obtained for recycling or returns shall accrue to the Contractor.
- B. The Contractor shall be responsible for obtaining information packets related to the special programs prior to commencing Work.
- C. The Contractor shall document work methods, recycled materials, etc., as required for the tax credits, rebates, or other savings described above.

**END OF SECTION**

SECTION 01600: MATERIALS AND EQUIPMENT

1. SCOPE:

A. Index:

1. Scope
2. Materials
3. Equipment
4. Hazardous Material Requirements
5. Material Storage
6. Protection
7. Revisions

2. MATERIALS:

- A. Furnish materials of the type, qualities, and characteristics specified. The specification of a trade name and catalog number is intended to establish quality, type, character, and operating characteristics of the material required. Materials by other manufacturers of equal specifications will be accepted, excepting as may be specifically stated otherwise.
- B. Materials shall be delivered adequately protected, in merchantable condition, and in original unbroken packages if normally packaged. They shall be stored and handled so as to protect and maintain their merchantable condition.
- C. The Commissioner of Public Works or his representative shall have the right to reject material not in compliance with the project manual, as well as damaged material, and the contractor shall remove such material from the construction site when and as directed.

3. EQUIPMENT:

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

4. HAZARDOUS MATERIAL REQUIREMENTS:

- A. The requirements set forth in the OSHA Hazard Communication Standard, 29CFR19101.1200, U.S. Environmental Protection Agency (EPA), and Wisconsin Department of Natural Resources in the Wisconsin Administrative Code NR600, shall be met by each on-site contractor.

1. Material Safety Data Sheets (M.S.D.S.):

- a. All contractors, which may/may not include the City of Milwaukee, shall provide the M.S.D.S. for all hazardous chemicals to which any person may be exposed at the work site.
- b. A master list will be kept in the office of the Project Supervisor/Construction Manager and updated as materials are delivered.

2. Container Labeling:

a. Each container of hazardous material at the work site shall be clearly labeled with:

- (1) Identity of the hazardous chemical(s).
- (2) Appropriate hazard warning(s).
- (3) Name and address of the manufacturer.

B. The City of Milwaukee reserves the right to stop the work of a contractor if compliance with OSHA regulations is inadequate. Work will not proceed until all applicable safety and health procedures are implemented by the contractor.

5. MATERIAL STORAGE:

- A. The storage areas shall be kept in good order and free of all rubbish and debris.
- B. Coordinate the delivery and storage of all materials and equipment with the FACILITIES DEVELOPMENT AND MANAGEMENT SECTION Project Inspector.
- C. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- D. Store and protect products in accordance with manufacturer's instructions.
- E. Store with seals and labels intact and legible.
- F. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- G. For exterior storage of fabricated products, place on sloped supports above ground.
- H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- I. Prevent contact with material that may cause corrosion, discoloration, or staining.
- J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

6. PROTECTION:

- A. The premises and the work shall be adequately protected from damage from the commencement of work to the date of final acceptance.

- B. All construction work and traffic shall remain within the construction area.
- C. All damage shall be corrected or repaired by the contractor or contractors causing same at his or their own expense.
- D. All open pipes, pipe threads, fittings, and insulation must be protected during construction.

7. REVISIONS:

The right is reserved to make modifications to a reasonable extent as building conditions may require, or as may be required to conform to code rulings, or manufacturer's standards without extra cost to the City.

SECTION 01700: CLEANING AND PROJECT CLOSE-OUT

1. SCOPE:

A. Index:

1. Scope
2. General
3. Safety Cleaning
4. Progress Cleaning
5. Disposal
6. Final Cleaning
7. Charges
8. Record Drawings
9. Guarantees

2. GENERAL:

Article 2.5.4 of the General Requirements of City of Milwaukee Department of Public Works shall be supplemented as specified hereinafter.

3. SAFETY CLEANING:

Safety cleaning: Each contractor is responsible for safety cleaning, which includes but is not limited to the following:

- A. Keep work areas, passageways, ramps, stairs, free of debris and scrap.
- B. Form and scrap lumber shall have nails withdrawn or bent over and lumber shall be stacked or removed.
- C. Remove spills of oil, grease, or other liquids immediately.
- D. Hazardous material shall be handled in accordance with Section 01600. Each container of hazardous material at the work site shall be clearly labeled with:
  - a. Identity of the hazardous chemical(s)
  - b. Appropriate hazard warning(s).

4. PROGRESS CLEANING:

- A. Prime Contractor and subcontractor shall remove his rubbish and debris from building site promptly upon its accumulation, and prior to the contractor's regular Friday general clean up. Contractor shall perform broom cleaning of all appropriate surfaces each Friday afternoon.
- B. Combustible waste shall be stored in fire resistive containers and disposed of regularly.
- C. Oily, flammable or hazardous wastes such as caustics, acids, harmful dusts, etc., shall be stored in appropriate covered containers.
- D. All solvents and cleaners used on this project must be rated as containing low or no volatile organic compounds (VOC's).

5. DISPOSAL:

- A. No burning of rubbish or debris will be allowed at site. No rubbish shall be thrown through opening or from heights without proper protection. Where dust will be generated or flying debris is likely to occur, provide dust tight chutes or other means to control dust.
- B. Containers: Contractor shall provide mobile industrial type waste containers in the number and size required, placed at adequate locations to handle debris or provide other methods of disposing of debris.
- C. Oil, flammable or hazardous wastes such as, but not limited to, caustics, acids, harmful dusts, etc., shall be placed in properly marked containers as necessary and disposed of at a site designed for such wastes.

6. FINAL CLEANING:

- A. Immediately prior to substantial completion.
- B. Contractors shall expedite or perform thorough cleaning, sweeping, washing and polishing of work to remove from work and equipment provided under his contract, all foreign matter, spots and soil, so as to put all such work and equipment, including finishes, in a complete and finished condition ready for acceptance and use intended.
- C. The contractor is responsible for final sweeping and dusting not covered by other subcontractors. This general cleaning shall include all areas and floors of the building, including the site outside the building.
- D. All solvents and cleaners used on this project must be rated as containing low or no volatile organic compounds (VOC's).

7. CHARGES:

- A. If prime contractor does not remove rubbish or clean building as specified above, the owner reserves right to have work done by others at contractor's expense.
- B. Employees or contracted services of the owner who are required to clean up any rubbish or to sweep any floors because prime contractor failed to do so will record all hours involved to complete such work. The cost incurred by the owner for this special cleaning and sweep-up work shall be charged against the contract price of the contractor as determined by owner.

8. RECORD DRAWINGS:

- A. If the completion of work and prior to final payment, the mechanical and electrical contractors shall provide FACILITIES DEVELOPMENT AND MANAGEMENT SECTION with three (3) marked up sets of prints showing all changes or variations from contract drawings, and not specified on change order drawings theretofore issued. Contractors providing buried or concealed piping, conduit, or similar items shall locate such items by dimensions and elevations.
- B. Other contractors shall provide one (1) marked up set of prints showing all changes or variations from contract drawings.

- C. Drawings shall show complete layout of revised piping, equipment, etc., as actually installed.

9. GUARANTEES:

- A. After completion of the work, the contractor shall present a twenty (20) year total roofing system guarantee as provided by the manufacturer of the roofing membrane to Facilities Development and Management Section.
- B. After completion of the work the contractor shall execute the following two (2) year guarantee covering items of work other than the roof membrane as covered by the manufacturer's guarantee.

01700/4

GUARANTEE: (2 Years)

The following guarantee shall be executed by the Roofing Contractor and furnished to the Director of Facilities Development and Management Services on completion of the roofing:

\_\_\_\_\_  
\_\_\_\_\_ 2011

Whereas, \_\_\_\_\_, Roofing Contractor, has furnished the labor and material required to apply roofing membranes and sheet metal work on the roofs of the CENTRAL REPAIR GARAGE (HEAVY SIDE) 2142 West Canal Street, Milwaukee, Wisconsin, and in consideration of the purchase of the roofing and metal work in accordance with contract terms, has agreed to issue a guarantee to the Director of Facilities Development and Management.

Therefore,

Agrees that for a period of two (2) years from the date thereof, \_\_\_\_\_ will at (his) (its) own expense make any repairs (excepting repairs of injury from any cause other than ordinary wear and tear by the elements) that may become necessary to maintain the roofing and flashing on the roofs of the CENTRAL REPAIR GARAGE (HEAVY SIDE) 2142 West Canal Street, Milwaukee, Wisconsin, in a watertight condition and free from blistering and bleeding.

In Witness Whereof

Contractor, has executed this guarantee.

Witness:

If the roofing contractor is a corporation, the guarantee shall be signed by two (2) authorized officers of the company.

SECTION 02070: SELECTIVE DEMOLITION AND REMOVAL

1. SCOPE: Provide all labor, equipment, and materials necessary to complete the removal of the existing membrane roofs as specified herein.

- A. Index:

1. Scope
2. Removal
3. Asbestos Containing Materials.

- 1.2. RELATED DOCUMENTS AND SECTIONS:

- A. Section 01505: "CONSTRUCTION WASTE MANAGEMENT"

2. REMOVAL:

- A. Remove all existing EPDM roofing, insulation, and built-up roofing to the existing deck on the roof as shown on the plan.
- B. Do not damage existing structure, piping, conduit, etc.
- C. All material to be removed becomes the contractor's property and is to be taken daily from the site. (see section 01505: CONSTRUCTION WASTE MANAGEMENT)
- D. Remove only the area that can be replaced with new roofing in one day. Maintain a watertight roof at all times. Remove all debris from site and broom clean all areas to be re-roofed.
- E. All exploratory cuts into the roofing shall be patched with roofing cement.
- F. The on site location for receiving and removing all materials to be coordinated with Project Inspector and building occupant.

3. ASBESTOS CONTAINING MATERIALS:

- A. Comply with all City of Milwaukee ordinances, laws and regulations, State and Federal laws pertaining to handling and disposal of asbestos containing materials and OSHA regulations. The contractor is responsible to ascertain the extent to which these regulations affect the operations and comply therewith.
1. Asbestos Regulations of the U.S. Department of Labor- Occupational Safety and Health Administration (OSHA): Comply with all regulations concerning the handling of asbestos containing materials as required by OSHA in the following reference:
  - Code of Federal Regulations Title 29, Part 1910 Section 1910.1001.
2. State of Wisconsin Department of Natural Resources:
  - Complete Notice of Demolition – 40 CFR S61.22(d) 10 days prior to commencement of work.

02070/2

3. City of Milwaukee Ordinance No. 870856:
  - Ordinance relating to regulations for building projects involving the disturbance of asbestos materials and establishing fees.
4. In addition to the above references comply with any additional regulations that may be in effect as of the date of commencement of this job.
- B. Arrange for Project Inspector to be on the job when necessary.
- C. Locations of samples that contain asbestos are shown on the drawings. Conditions beyond specific test sites are the responsibility of the contractor.

1 **PART 1 - GENERAL**

2 **1.1 SUMMARY**

3 A. This Section includes the following:

- 4
- 5 1. Wood blocking and nailers.
  - 6 2. Wood furring and grounds.
  - 7 3. Wood sleepers.

8 **1.2 SUBMITTALS**

9 A. Product Data: For each type of process and factory-fabricated product.

- 10 1. Include data for wood-preservative treatment from chemical treatment  
11 manufacturer and certification by treating plant that treated materials  
12 comply with requirements.

13 B. Material Certificates: For dimension lumber specified to comply with minimum  
14 allowable unit stresses. Indicate species and grade selected for each use and  
15 design values approved by the American Lumber Standards Committee Board  
16 of Review.

17 C. Research/Evaluation Reports: For the following, showing compliance with  
18 building code in effect for Project:

- 19 1. Wood-preservative-treated wood.
- 20 2. Power-driven fasteners.
- 21 3. Powder-actuated fasteners.
- 22 4. Expansion anchors.
- 23 5. Metal framing anchors.

24 **PART 2 - PRODUCTS**

25 **2.1 WOOD PRODUCTS, GENERAL**

26 A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no  
27 grading agency is indicated, provide lumber that complies with the applicable  
28 rules of any rules-writing agency certified by the ALSC Board of Review.  
29 Provide lumber graded by an agency certified by the ALSC Board of Review to  
30 inspect and grade lumber under the rules indicated.

- 1 1. Factory mark each piece of lumber with grade stamp of grading agency.
- 2 2. Provide dressed lumber, S4S, unless otherwise indicated.

## 3 **2.2 WOOD-PRESERVATIVE-TREATED LUMBER**

- 4 A. Preservative Treatment by Pressure Process: AWPA C2, except that lumber  
5 that is not in contact with the ground and is continuously protected from liquid  
6 water may be treated according to AWPA C31 with inorganic boron (SBX).
  - 7 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and  
8 containing no arsenic or chromium.
- 9 B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
- 10 C. Mark lumber with treatment quality mark of an inspection agency approved by  
11 the ALSC Board of Review.
- 12 D. Application: Treat items indicated on Drawings, and the following:
  - 13 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping,  
14 and similar members in connection with roofing, flashing, vapor barriers,  
15 and waterproofing.
  - 16 2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed  
17 members in contact with masonry or concrete.

## 18 **2.3 MISCELLANEOUS LUMBER**

- 19 A. General: Provide miscellaneous lumber indicated and lumber for support or  
20 attachment of other construction, including the following:
  - 21 1. Blocking.
  - 22 2. Nailers.
  - 23 3. Furring.
  - 24 4. Grounds.
- 25 B. For items of dimension lumber size, provide Construction or No.2 grade lumber  
26 with 19 percent maximum moisture content of any species.
- 27 C. For concealed boards, provide lumber with 19 percent maximum moisture  
28 content and any of the following species and grades:
  - 29 1. Mixed southern pine, No. 2 grade; SPIB.
  - 30 2. Eastern softwoods, No. 2 Common grade; NeLMA.
  - 31 3. Northern species, No. 2 Common grade; NLGA.
  - 32 4. Western woods, Construction or No.2 Common grade; WCLIB or WWPA.

1   **2.4    FASTENERS**

2       A.   General: Provide fasteners of size and type indicated that comply with  
3       requirements specified.

4           1.   Where rough carpentry is exposed to weather, in ground contact,  
5           pressure-preservative treated, or in area of high relative humidity, provide  
6           fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

7       B.   Power-Driven Fasteners: NES NER-272.

8       C.   Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex  
9       nuts and, where indicated, flat washers.

10   **2.5    METAL FRAMING ANCHORS**

11       A.   Manufacturers: Subject to compliance with requirements, provide products by  
12       one of the following:

- 13           1.   Alpine Engineered Products, Inc.  
14           2.   Cleveland Steel Specialty Co.  
15           3.   Harlen Metal Products, Inc.  
16           4.   KC Metals Products, Inc.  
17           5.   Simpson Strong-Tie Co., Inc.  
18           6.   Southeastern Metals Manufacturing Co., Inc.  
19           7.   USP Structural Connectors.

20       B.   Allowable Design Loads: Provide products with allowable design loads, as  
21       published by manufacturer, that meet or exceed those of products of  
22       manufacturers listed. Manufacturer's published values shall be determined  
23       from empirical data or by rational engineering analysis and demonstrated by  
24       comprehensive testing performed by a qualified independent testing agency.

25       C.   Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with  
26       ASTM A 653/A 653M, G60 coating designation.

27   **PART 3 - EXECUTION**

28   **3.1    INSTALLATION**

29       A.   Set rough carpentry to required levels and lines, with members plumb, true to  
30       line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope  
31       as needed for accurate fit. Locate furring, nailers, blocking, grounds, and  
32       similar supports to comply with requirements for attaching other construction.

- 1 B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood  
2 Frame Construction," unless otherwise indicated.
- 3 C. Framing with Engineered Wood Products: Install engineered wood products to  
4 comply with manufacturer's written instructions.
- 5 D. Metal Framing Anchors: Install metal framing to comply with manufacturer's  
6 written instructions.
- 7 E. Do not splice structural members between supports, unless otherwise indicated.
- 8 F. Comply with AWPAM4 for applying field treatment to cut surfaces of  
9 preservative-treated lumber.
- 10 G. Securely attach rough carpentry work to substrate by anchoring and fastening  
11 as indicated, complying with the following:
- 12 1. NES NER-272 for power-driven fasteners.  
13 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building  
14 Code.  
15 3. Table 23-II-B-1, "Nailing Schedule," and Table 23-II-B-2, "Wood Structural  
16 Panel Roof Sheathing Nailing Schedule," in ICBO's Uniform Building  
17 Code.  
18 4. Table 2305.2, "Fastening Schedule," in BOCA's BOCA National Building  
19 Code.  
20 5. Table 2306.1, "Fastening Schedule," in SBCCI's Standard Building Code.  
21 6. Table R602.3(1), "Fastener Schedule for Structural Members," and  
22 Table R602.3(2), "Alternate Attachments," in ICC's International  
23 Residential Code for One- and Two-Family Dwellings.  
24 7. Table 602.3(1), "Fastener Schedule for Structural Members," and  
25 Table 602.3(2), "Alternate Attachments," in ICC's International One- and  
26 Two-Family Dwelling Code.

27 **3.2 PROTECTION**

- 28 A. Protect wood that has been treated with inorganic boron (SBX) from weather.  
29 If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-  
30 registered borate treatment. Apply borate solution by spraying to comply with  
31 EPA-registered label.

32  
33 **END OF SECTION 06100**

1 **PART 1 - GENERAL**

2 **1.1 SUMMARY**

3 A. This Section includes the following:

- 4  
5 1. Roof sheathing.

6 **1.2 SUBMITTALS**

7 A. Product Data: For each type of process and factory-fabricated product.  
8 Indicate component materials and dimensions and include construction and  
9 application details.

- 10 1. Include data for wood-preserved treatment from chemical treatment  
11 manufacturer and certification by treating plant that treated plywood  
12 complies with requirements.

13 B. Research/Evaluation Reports: For the following:

- 14 1. Preservative-treated plywood.

15 **1.3 QUALITY ASSURANCE**

16 A. Fire-Test-Response Characteristics: For assemblies with fire-resistance  
17 ratings, provide materials and construction identical to those of assemblies  
18 tested for fire resistance per ASTM E 119 by a testing and inspecting agency  
19 acceptable to authorities having jurisdiction.

20 **1.4 DELIVERY, STORAGE, AND HANDLING**

21 A. Stack plywood and other panels flat with spacers between each bundle to  
22 provide air circulation. Provide for air circulation around stacks and under  
23 coverings.

24 **PART 2 - PRODUCTS**

25 **2.1 WOOD PANEL PRODUCTS, GENERAL**

26 A. Plywood: DOC PS 1.

- 1 B. Oriented Strand Board: DOC PS 2.
- 2 C. Thickness: To match existing thickness on Salt Shed roof.

### 3 **2.2 PRESERVATIVE-TREATED PLYWOOD**

- 4 A. Preservative Treatment by Pressure Process: AWPA C9.
- 5 B. Mark plywood with appropriate classification marking of an inspection agency
- 6 acceptable to authorities having jurisdiction.
- 7 C. Application: Treat items indicated on Drawings and plywood in contact with masonry or
- 8 concrete or used with roofing, flashing, vapor barriers, and waterproofing.

### 9 **ROOF SHEATHING**

- 10 D. Plywood Roof Sheathing: Exterior sheathing.
- 11 E. Oriented-Strand-Board Roof Sheathing: Exposure 1, Structural I sheathing.

### 12 **2.3 FASTENERS**

- 13 A. General: Provide fasteners of size and type indicated.
- 14 1. For wall and roof sheathing panels, provide fasteners with corrosion-
- 15 protective coating having a salt-spray resistance of more than 800 hours
- 16 according to ASTM B 117.

## 17 **PART 3 - EXECUTION**

### 18 **3.1 INSTALLATION, GENERAL**

- 19 A. Securely attach to substrate by fastening as indicated, complying with the
- 20 following:
  - 21 1. NES NER-272 for power-driven fasteners.
  - 22 2. Table 2304.9.1, "Fastening Schedule," in ICC's "International Building
  - 23 Code."
  - 24 3. Table 23-II-B-1, "Nailing Schedule," and Table 23-II-B-2, "Wood Structural
  - 25 Panel Roof Sheathing Nailing Schedule," in ICBO's "Uniform Building
  - 26 Code."
  - 27 4. Table 2305.2, "Fastening Schedule," in BOCA's "BOCA National Building
  - 28 Code."

- 1           5. Table 2306.1, "Fastening Schedule," in SBCCI's "Standard Building  
2           Code."  
3           6. Table R602.3(1), "Fastener Schedule for Structural Members," and  
4           Table R602.3(2), "Alternate Attachments," in ICC's "International  
5           Residential Code for One- and Two-Family Dwellings."  
6           7. Table 602.3(1), "Fastener Schedule for Structural Members," and  
7           Table 602.3(2), "Alternate Attachments," in ICC's "International One- and  
8           Two-Family Dwelling Code."
- 9           B. Coordinate sheathing installation with flashing and joint-sealant installation so  
10          these materials are installed in sequence and manner that exclude exterior  
11          moisture.
- 12          C. Do not bridge building expansion joints; cut and space edges of panels to  
13          match spacing of structural support elements.

14   **3.2    SHEATHING JOINT-AND-PENETRATION TREATMENT**

- 15          A. Seal sheathing joints according to sheathing manufacturer's written instructions.
- 16               1. Apply elastomeric sealant to joints and fasteners and trowel flat. Seal  
17               other penetrations and openings.  
18               2. Apply glass-fiber sheathing tape to glass-mat gypsum sheathing board  
19               joints, and apply and trowel silicone emulsion sealant to embed tape in  
20               sealant. Apply sealant to exposed fasteners. Seal other penetrations and  
21               openings.

22  
23   **END OF SECTION 06160**

1 **PART 1 - GENERAL**

2 **1.1 SUMMARY**

- 3 A. This Section includes loosely laid and ballasted membrane roofing system.

4 **1.2 SUBMITTALS**

- 5 A. Product Data: For each product indicated.
- 6 B. Shop Drawings: Include plans, details, and attachments to other Work.
- 7 C. Samples: For each product included in membrane roofing system.
- 8 D. Research/evaluation reports.
- 9 E. Maintenance data.

10 **1.3 QUALITY ASSURANCE**

- 11 A. Installer Qualifications: A qualified firm that is approved, authorized, or licensed  
12 by roofing system manufacturer to install manufacturer's product and that is  
13 eligible to receive manufacturer's warranty.
- 14 B. Source Limitations: Obtain components for membrane roofing system  
15 approved by roofing membrane manufacturer.
- 16 C. Fire-Test-Response Characteristics: Provide membrane roofing materials with  
17 the fire-test-response characteristics indicated as determined by testing  
18 identical products per test method below by UL, FMG, or another testing and  
19 inspecting agency acceptable to authorities having jurisdiction.
- 20 1. Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and  
21 roof slopes indicated.
- 22 D. Pre-Roofing Conference: Prior to installation of roofing and associated work,  
23 meet at project site with installer, roofing manufacturer, installers of related  
24 work, and other entities concerned with roofing performance, including (where  
25 applicable), Owner, Architect, Owner's insurer, testing agencies and governing  
26 authorities. Record discussions and agreements and furnish copy to each  
27 participant. Provide 72 hours advance notice prior to convening pre-roofing  
28 conference.

1   **1.4    PROJECT CONDITIONS**

- 2       A.   Weather Limitations: Proceed with installation only when existing and  
3       forecasted weather conditions permit roofing system to be installed according to  
4       manufacturer's written instructions and warranty requirements.

5   **1.5    WARRANTY**

- 6       A.   Special Warranty: Manufacturer's standard form, without monetary limitation, in  
7       which manufacturer agrees to repair or replace components of membrane  
8       roofing system that fail in materials or workmanship within specified warranty  
9       period. Failure includes roof leaks.  
10      1.   Warranty Period: 10 years from date of Substantial Completion.

11 **PART 2 - PRODUCTS**

12 **2.1    EPDM ROOFING MEMBRANE**

- 13       A.   EPDM Roofing Membrane: ASTM D 4637, Type II, scrim or fabric internally  
14       reinforced uniform, flexible sheet made from EPDM, and as follows:
- 15       B.
- 16           1.   Manufacturers: Subject to compliance with requirements, provide  
17           products by the manufacturers specified.  
18           a.   Carlisle SynTec Incorporated.  
19           b.   Firestone Building Products Company.  
20           c.   Johns Manville  
21           d.   GAF Material Corporation/Everguard Roofing Solutions  
22           2.   Thickness: 60 mils nominal.  
23           3.   Exposed Face Color: Black.

24 **2.2    AUXILIARY MATERIALS**

- 25       A.   General: Auxiliary materials recommended by roofing system manufacturer for  
26       intended use and compatible with membrane roofing.
- 27       B.   Sheet Flashing: 60-mil- thick EPDM, partially cured or cured, according to  
28       application.
- 29       C.   Bonding Adhesive: Manufacturer's standard bonding adhesive.
- 30       D.   Seaming Material: Manufacturer's standard synthetic-rubber polymer primer  
31       and 3-inch- wide minimum, butyl splice tape with release film.

1 E. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting  
2 corrosion-resistance provisions in FMG 4470, designed for fastening membrane  
3 to substrate, and acceptable to membrane roofing system manufacturer.

4 F. Miscellaneous Accessories: Provide lap sealant, water cutoff mastic, metal  
5 termination bars, metal battens, pourable sealers, preformed cone and vent  
6 sheet flashings, preformed inside and outside corner sheet flashings, T-joint  
7 covers, in-seam sealants, termination reglets, cover strips, and other  
8 accessories.

### 9 **2.3 ROOF INSULATION**

10 A. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, felt or glass-fiber  
11 mat facer on both major surfaces.

12 B. Tapered Insulation: Provide factory-tapered insulation boards fabricated to  
13 slope of 1/4 inch per 12 inches, unless otherwise indicated.

14 C. Provide preformed saddles, crickets, tapered edge strips, and other insulation  
15 shapes where indicated for sloping to drain. Fabricate to slopes indicated.

### 16 **2.4 INSULATION ACCESSORIES**

17 A. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting  
18 corrosion-resistance provisions in FMG 4470, designed for fastening roof  
19 insulation to substrate, and acceptable to roofing system manufacturer.

20 B. Cold Fluid-Applied Adhesive: Manufacturer's standard cold fluid-applied  
21 adhesive formulated to adhere roof insulation to substrate.

### 22 **2.5 AGGREGATE BALLAST**

23 A. Aggregate Ballast: Provide aggregate ballast that will withstand weather  
24 exposure without significant deterioration and will not contribute to membrane  
25 degradation, of the following type and size:

26 1. Aggregate Type: Smooth, washed, riverbed gravel or other acceptable  
27 smooth-faced stone.

28 2. Size: ASTM D 448, Size 4, ranging in size from 3/4 to 1-1/2 inches.

**1 PART 3 - EXECUTION****2 3.1 INSULATION INSTALLATION**

- 3 A. Coordinate installing membrane roofing system components so insulation is not  
4 exposed to precipitation or left exposed at the end of the workday.
- 5 B. Comply with membrane roofing system manufacturer's written instructions for  
6 installing roof insulation.
- 7 C. Install tapered insulation under area of roofing to conform to slopes indicated.
- 8 D. Install one or more layers of insulation under area of roofing to achieve required  
9 thickness. Where overall insulation thickness is 2 inches or greater, install 2 or  
10 more layers with joints of each succeeding layer staggered from joints of  
11 previous layer a minimum of 6 inches in each direction.
- 12 E. Loosely Laid Insulation: Loosely lay insulation units.

**13 3.2 LOOSELY LAID AND BALLASTED ROOFING MEMBRANE INSTALLATION**

- 14 A. Install roofing membrane over area to receive roofing according to roofing  
15 system manufacturer's written instructions. Unroll roofing membrane and allow  
16 to relax before installing.
- 17 B. Accurately align roofing membranes, without stretching, and maintain uniform  
18 side and end laps of minimum dimensions required by manufacturer. Stagger  
19 end laps.
- 20 C. Adhere roofing membrane at corners, perimeters, and transitions according to  
21 requirements in ANSI/SPRI RP-4.
- 22 D. Adhesive Seam Installation: Clean both faces of splice areas, apply splicing  
23 cement, and firmly roll side and end laps of overlapping roofing membranes  
24 according to manufacturer's written instructions to ensure a watertight seam  
25 installation. Apply lap sealant and seal exposed edges of roofing membrane  
26 terminations.
- 27 E. Tape Seam Installation: Clean and prime both faces of splice areas, apply  
28 splice tape, and firmly roll side and end laps of overlapping roofing membranes  
29 according to manufacturer's written instructions to ensure a watertight seam  
30 installation. Apply lap sealant and seal exposed edges of roofing membrane  
31 terminations.
- 32 F. Repair tears, voids, and lapped seams in roofing that does not meet  
33 requirements.

- 1 G. Aggregate Ballast: Apply aggregate ballast uniformly over roofing membrane at  
2 the rate required by membrane roofing system manufacturer, but not less than  
3 the following, spreading with care to minimize possibility of damage to  
4 membrane roofing system. Lay ballast as roofing membrane is installed,  
5 leaving roofing membrane ballasted at the end of the workday.  
6 1. Ballast Weight: Size 4 aggregate, 10 lb/sq. ft.; 13 lb/sq. ft. at perimeter  
7 and corners.
- 8 H. Aggregate Ballast: Size 4 at a minimum rate of 13 lb/sq. ft. at perimeter and  
9 corners; minimum 10 lb/sq. ft. elsewhere.

### 10 **3.3 BASE FLASHING INSTALLATION**

- 11 A. Install sheet flashings and preformed flashing accessories and adhere to  
12 substrates according to membrane roofing system manufacturer's written  
13 instructions.
- 14 B. Apply bonding adhesive to substrate and underside of sheet flashing at required  
15 rate and allow to partially dry. Do not apply bonding adhesive to seam area of  
16 flashing.
- 17 C. Flash penetrations and field-formed inside and outside corners with cured or  
18 uncured sheet flashing.
- 19 D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of  
20 overlapping sheets to ensure a watertight seam installation. Apply lap sealant  
21 and seal exposed edges of sheet flashing terminations.
- 22 E. Terminate and seal top of sheet flashings.

### 23 **3.4 FIELD QUALITY CONTROL**

- 24 A. Testing Agency: Owner will engage a qualified independent testing and  
25 inspecting agency to perform roof tests and inspections and to prepare test  
26 reports.
- 27 B. Final Roof Inspection: Arrange for roofing system manufacturer's technical  
28 personnel to inspect roofing installation on completion and submit report to  
29 Architect.
- 30 C. Repair or remove and replace components of membrane roofing system where  
31 test results or inspections indicate that they do not comply with specified  
32 requirements.

33  
34 **END OF SECTION 07500**

## SECTION 07531

### SINGLE-PLY ROOFING – FULLY-ADHERED EPDM

#### PART 1 GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including Bidding Requirements, General Conditions and Requirements shall apply to this section.

##### 1.1 SECTION INCLUDES

- A. EPDM Membrane roofing, base flashings, and all accessories and appurtenances for a complete system.

##### 1.2 RELATED SECTIONS

- A. Section 07090 - Preparations for Re-Roofing
- B. Section 07640 - Sheet Metal Flashing and Trim
- C. Section 06100 – Rough Carpentry

##### 1.3 REFERENCES

- A. ASTM C1289-01 - Type II, Class I, Grade II - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
- B. ASTM D412 - Rubber Properties in Tension.
- C. ASTM D471 - Standard Test Method for Rubber Property - Effect of Liquids.
- D. ASTM D624 - Rubber Property - Tear Resistance.
- E. ASTM D746 - Brittleness Temperature of Plastics and Elastomeric by Impact.
- F. ASTM E96 - Water Vapor Transmission of Materials.
- G. E108 - Standard Test Methods for Fire Tests of Roof Coverings
- H. E119 - Standard Test Methods for Fire Tests of Building Construction and Materials
- I. FM 4470 (Factory Mutual Engineering Corporation) - Roof Assembly Classifications.
- J. NRCA (National Roofing Contractors Association) - Roofing and Waterproofing Manual, latest edition.
- K. UL (Underwriters Laboratories) 790 - Fire Hazard Classifications.

- L. SMACNA - Sheet metal and Air Conditioning Contractor's Association: Architectural Sheet Metal Manual, latest edition.

#### 1.4 SYSTEM DESCRIPTION

- A. Elastomeric Sheet Membrane EPDM Roofing System: Fully adhered 60 mil. single-ply EPDM membrane roofing and flashing, and all accessories and appurtenances for a complete system with a twenty (20) year full roof system warranty.

#### 1.5 SUBMITTALS

- A. Section 01300 - Administrative Requirements: Procedures for submittals.
- B. Submit written certification from the roof system manufacturer that the roofing contractor/subcontractor is an approved applicator of selected roof system for five (5) years or more.
- C. Submit written certification from the proposed SPM manufacturer that all appropriate warranty paper work has been submitted prior to starting the work.
- D. Submit written certification and/or documentation that the foreman and/or crew members have attended the proposed SPM manufacturer's training seminar.
- E. Submit written certification from roofing system manufacturer that all details indicated in the drawings are acceptable to the roofing system manufacturer.
- F. Product Data: Provide characteristics on membrane materials, flashing materials, and all products to be installed as part of roofing system.
  - 1. Material safety and technical information data sheets for all roofing system components
  - 2. EPDM
    - a. Membrane
    - b. Self-adhering flashing
    - c. Adhesives
    - d. Seam Tape
    - e. SPM sealant
    - f. Water cut off mastic
    - g. Lap seam cover strips
  - 3. Mechanical Fasteners
    - a. Nails
    - b. Screw Fasteners
  - 4. Insulation Adhesive
  - 5. SPM manufacturer's specification and instruction manual for all components of roofing system

6. Sample copy of manufacturer's roof system twenty (20) year warranty.
  7. Roof board
  8. Rubber walkway pads
- G. Shop Drawings:
1. Submit shop drawings to the roofing system manufacturer for approval.
  2. Submit Manufacturer-approved shop drawings to the Architect. Shop drawings shall represent standards and detailing as specified herein or as indicated in the drawings.
  3. Minimum scale: 3" = 1'-0", except where otherwise specified.
  4. Submit:
    - a. Base flashing:
      - 1) Utilizing field ply EPDM as base flashing
      - 2) Utilizing reinforced EPDM strip
    - b. Parapet roof edge.
    - c. Mechanical/electrical equipment curbs.
    - d. Roof plumbing vents.
    - e. Roof drains.
    - f. Pipe penetration curb.
    - g. Roof plan:
      - 1) Indicate all roof curbs, penetrations, required saddles, and crickets.
      - 2) NO FLAT SUMPS AT DRAINS PERMITTED.
- H. Samples: Submit two (2) Manufacturer's samples
1. 60 mil EPDM
  2. Semi-cured, self-adhering EPDM cover strip
  3. Fasteners, as indicated on the drawings
    - a. Nails
    - b. Screw fasteners w/stress plates
  4. 1/8" x 1" aluminum termination bar.
  5. Insulation adhesive.
  6. Rubber walkway pads.

#### 1.6 SUBMITTALS FOR INFORMATION

- A. Section 01300 - Administrative Requirements: Procedures for submittals.
- B. Manufacturer's Installation Instructions: Indicate special precautions required for seaming the membrane.
- C. Manufacturer's Field Reports: If required, submit to City Project Manager when requested.
- D. Reports: Contractor shall indicate procedures followed, ambient temperatures, humidity, wind

velocity during application, work-in-progress and observations.

#### **1.7 QUALITY ASSURANCE**

- A. Manufacturer: Company specializing in manufacturing the products specified in this section with twenty-five (25) years of continuous documented experience in the manufacturing of EPDM.
- B. Applicator:
  - 1. Company specializing in performing the work of this section with five (5) continuous years of documented experience as an approved applicator of specified manufacturer.
- C. Have all crew members trained by the SPM manufacturer in the installation of their system. Written certification of same must be forwarded upon request.
- D. Have installed five (5) fully-adhered EPDM roof systems within the last year, 300 squares or larger.
- E. Perform work in accordance with current published manufacturer's instructions and recommendations.

#### **1.8 REGULATORY REQUIREMENTS**

- A. Conform to applicable code for roof assembly fire hazard requirements.

#### **1.9 PRE-INSTALLATION MEETING**

- A. Section 01300 - Administrative Requirements: Pre-installation meeting
- B. Convene one (1) week before starting work on this section.
- C. Roof Foreman for project MUST BE IN ATTENDANCE.

#### **1.10 DELIVERY, STORAGE, AND PROTECTION**

- A. In accordance with Section 01600 – Materials & Equipment: Transport, handle, store, and protect products.
- B. Store products on clean raised pallets in weather protected environment, clear of ground and moisture per manufacturer's recommendations.
- C. Deliver all materials in manufacturer's original, unopened containers and rolls with all labels intact and legible.
- D. Deliver materials requiring fire resistance classification packaged with labels attached as required by the labeling service.
- E. Deliver materials in sufficient time and quality to allow continuity of work and compliance with

approved construction schedule.

- F. Store rolled goods on end and handle rolled goods in manner to prevent damage to edges or ends.
- G. Provide continuous protection of materials against damage or deterioration.
- H. Remove damaged or defective materials from site.
- I. Comply with fire and safety regulations.
- J. SPM splice cleaner to be contained in UL approved safety cans at all times.
- K. All materials shall be new.
- L. Do not store material or park vehicles/dumpsters in front of doors.
- M. No materials shall be stored on any new or existing roofing system.

#### **1.11 ENVIRONMENTAL REQUIREMENTS**

- A. Section 01600 - Product Requirements: Environmental conditions affecting products on site.
- B. Do not apply EPDM roofing membrane during inclement weather and/or when ambient temperatures are below 20 degrees F or above 95 degrees F.
- C. Do not apply roofing membrane to damp or frozen deck surface.
- D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be installed during the same day.
- E. All SPM sealants and adhesives must be kept at 60 degrees F prior to installation when the ambient temperature falls below 40 degrees F.

#### **1.12 COORDINATION**

- A. Coordinate work under provisions of Section 01300.

#### **1.13 PROTECTION**

- A. Avoid heavy traffic of any kind on recently completed roof work.
- B. Restore to original condition or replace all the work or materials damaged by roofing operations.
- C. Protect the paving, grass and building walls adjacent to hoists and kettles prior to starting work.
  - 1. Lap all suitable protective materials at least 6".
  - 2. Secure protective coverings against wind.
  - 3. Leave protective covering in place for duration of roofing work.

4. Repair any damage to existing conditions caused by work of this section.
- D. Remove protection upon completion of the roofing work.

#### 1.14 WARRANTY

- A. Refer to Section 01780 – Close-out Submittals for additional information.
- B. Correct defective work within a two (2) year period after Substantial Completion for damage to building resulting from failure to prevent penetration of water.
- C. General Contractor: To provide manufacturer's twenty (20) year warranty for roofing system, guaranteeing the materials manufacturer will pay for repairs to stop the leaks resulting from the natural deterioration of the membrane or from any errors in application of the membrane.
  1. Carlisle Golden Seal Roofing System Warranty: No. 85-5-938SM
  2. Firestone Red Shield Roofing System Limited Warranty: July, 1994; 7/94 - Item #815.
  3. Warranty shall include the adhesive used to fully adhere to the polyisocyanurate insulation.
- D. The guarantee shall start from the day of inspection by the manufacturer's representative. The date shall be established as the date the Architect and the manufacturer's representative inspect the work and find that all work is complete and newly-installed roof forms a watertight installation.
- E. The roofing contractor shall notify the Architect in writing when the roof is complete for final inspection.
- F. Following raising and reinstallation of the mechanical unit curbs, verify in writing that all units are in working order.
- G. Following the complete installation of the roofing system and sheet metal, all roof drain downspouts are to be rodded clean and a written verification submitted verifying all roof drain downspouts are in working order.
- H. Completed Operations Inspection
  1. Upon completion of installation of EPDM roof system, an inspection of the entire roof system shall be made by Contractor to determine compliance with manufacturer's requirements. Submit written notice of same in accord with Section 01700.
  2. Upon completion of installation of EPDM roof system, Manufacturer shall certify in writing to the Architect, that materials, workmanship, and installation were in accordance with the manufacturer's printed instructions and current recommendations.
- I. See Section 01700 - Cleaning, for additional warranty requirements.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS- MEMBRANE MATERIAL

- A. Firestone Building Products Company, 525 Congressional Blvd., Carmel, IN 46032 Phone: (317) 575-7000.
- B. Carlisle Syntec Incorporated, P.O. Box 7000, Carlisle, PA 1701 Phone: 800-4-SYNTEC.
- C. Substitutions: "Or equal" products as noted in Section 01600, also equal products must be as approved by roofing manufacturer to maintain a Total Roofing System warrantee as noted in Section 07531 and must be approved by City of Milwaukee Project Manager.

### 2.2 MEMBRANE AND ASSOCIATED MATERIALS

- A. Membrane: EPDM non-reinforced, 60 mil thick

Properties	Test	Pass Test
1. Tensile Strength	ASTM D412	1305 psi
2. Elongation	ASTM D412	350%
3. Tear Strength	ASTM D624 Die C	175#/in.
4. Water Absorption	ASTM E96	0.1 perms
5. Moisture Vapor Perms	ASTM E96	0.1 perms
6. Resistant to Outdoor Weathering	ASTM D22	No cracks
7. Low Temperature Brittleness	ASTM D746	-75 degrees F.
8. Ozone Resistance	ASTM D1149	No cracks
9. Color		Black

- B. Seaming Materials: As recommended by membrane manufacturer

### 2.3 ADHESIVE MATERIALS

- A. Surface Conditioner: Compatible with membrane, as recommended by membrane manufacturer.
- B. Membrane Adhesives: As recommended by membrane manufacturer.
- C. Insulation Adhesive: As recommended by roof system warranty holder.
- D. Thinner and Cleaner: As recommended by adhesive manufacturer, compatible with sheet membrane.

### 2.4 FLASHINGS

- A. Flexible Flashings same material as membrane.
- B. Prefabricated copings and fascias, counterflashings and miscellaneous sheet metal: As specified in Section 07640 Sheet Metal Flashings and Trim.

## 2.5 ROOF BOARD

- A. ASTM C 1278/C 1278M, cellulosic-fiber-reinforced, water-resistant gypsum substrate, 1/4 inch thick.
  - 1. USG Corporation; SECUROCK
  - 2. Georgia-Pacific Corporation; Dens Deck
  - 3. Approved equal

## 2.6 ACCESSORIES

- A. Tapered Edge Strips: High density wood fiber, compatible with EPDM. Tapered edge strip to be provided by EPDM membrane manufacturer.
- B. Cover Strips: 6" minimum widths semi-cured self adhering EPDM as supplied by roof system manufacturer and provided by contractor.
- C. Roofing Nails: Ring shank aluminum, size as required to suit application with 1" plastic washer heads.
- D. Sealants: As recommended by membrane manufacturer.
- E. Walkway Pads: 2'-0" x 2'-0" x 2" thick (Sure Seal Rubber Pavers by *Carlisle Syntec Inc.*).
- F. Preformed Boots: Flexible boot with self adhering flange for pipe penetrations through membrane by membrane manufacturer.
- G. SPM Manufacturers Water Cut-Off Mastic: Provide as needed to sheet metal manufacturer.
- H. Termination Bars: 1/8" by 1" minimum as supplied by roof membrane manufacturer.
- I. Portable Pipe Hanger Support System: Type PS-1-2

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is supported and secure.
- C. Verify deck is clean and smooth, free of depressions, waves, or projections, properly sloped to drains.
- D. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set and wood blocking is in place.
- E. Verify that all work of subcontractors which penetrates roof deck, or requires men and

equipment to traverse roof deck, has been completed.

- F. Do not issue a proceed order to the subcontractor or proceed with work until all defects are corrected to satisfaction of, and with written approval of, the roofing system manufacturer.
- G. Repair any damaged roof section providing a smooth, level surface. Refer to 'Preparation for Roofing' section 07090.

### **3.2 INSTALLATION**

- A. Install roofing with flashing systems and accessory items in strict accordance with system manufacturer's printed instructions current at the date of bidding documents. When items of conflict arise between the manufacturer's recommendations and the contract documents, the more stringent will govern unless it violates manufacturer's warranty requirements.
- B. Apply roof systems as directed by manufacturer of roofing system.

### **3.3 MEMBRANE**

- A. Install reinforced 60 mil EPDM termination strip at the perimeter.
- B. Position membrane without stretching over the substrate.
- C. Allow the membrane to relax for approximately 1/2 hour before adhering.
- D. Fold sheet in half longitudinally.
- E. Apply bonding adhesive to SPM after adhesive has dried so it does not string or stick when pushed into with finger.
  - 1. Roll EPDM into bonding adhesive.
  - 2. Broom EPDM flush to substrate to achieve positive bonding.
- F. Repeat steps B through E for remaining portion of the roof.
- G. Membrane should be fully adhered to perimeter wood blocking with bond adhesive and to termination strip with splice adhesive. Membrane should extend up and over perimeter wood blocking and down 1" minimum onto the exterior face. Fully adhere membrane and nail 6" o.c. on the same day installed.
- H. Exposed corners of the perimeter wood blocking are to be flashed with uncured EPDM extending 1" down onto masonry and nailed at 6" o.c.
- I. Install water cut-offs at end of the day's work using water cut-off mastic. Remove water cut-off mastic prior to beginning the next day's work.
- J. Where applicable, fold the EPDM field sheet into corners and create a "pig's ear" to eliminate excess material. Do not cut membrane. Adhere the "pig's ear" to the EPDM with splice

adhesive.

- K. Lap joints shall be a minimum of 5'-0" from roof drains.
  - 1. Seams shall be water lapped.

### **3.7 LAP SEAM TAPE SPLICES**

- A. All field lap seams to be fabricated using tape adhesive.
- B. Shingle-lay membrane 5" towards the roof drain.
- C. Mark 1" to the low side of the overlapping sheet with a crayon.
- D. Tack back the overlaying sheet with primer at 4'-0" o.c.
- E. Thoroughly clean and prime membrane, both on the overlap and the underlap conditions. Allow to dry.
- F. When washing and priming seam, be sure to wash lengthwise across the sheet, except at factory seams where you should wash in direction of factory seam to remove talc.
- G. Install tape in proper alignment so it will protrude out 1/4" to 1/2" beyond the overlaying sheet.
- H. Roll seam tape with 4" hand roller. Using hand pressure only is not acceptable.
- I. Bring overlapping membrane over the top of the seam tape and release the paper.
- J. Remove release paper by pulling at a 45 degree angle.
- K. At seam tape laps, lap seam tape 1".
- L. Untack the EPDM sheet and allow it to fall into place.
- M. Following removal of the release paper, broom membrane into sealant tape.
- N. Roll seam with 1-1/2" silicone roller at a 45 degree angle to the seam.
- O. All products used in seam must be supplied by membrane manufacturer.
- P. All SPM field lap seams to be covered with 6" uncured EPDM, self-adhering EPDM cover strips.

### **3.8 LAP SEAM COVER STRIPS**

- A. Following Architect's inspection of lap seam and the Architect's approval of same, wash the lap seam and EPDM membrane 6" to each side of the lap seam edge to remove any accumulated debris with clean water.
- B. Scrub the power washed lap seam and EPDM membrane with water and soap, using a scrub brush. Rinse thoroughly.

- C. Splice wash cleaned area. Prime 6" to each side of lap splice edge.
- D. Install splice adhesive across the primed membrane with either a roller or a paint brush.
- E. When the splice adhesive has been flashed off and is tacky to a finger-push test, install a 6" piece of self-adhering cured EPDM; center down lap splice edge.
- F. Thoroughly roll the self-adhering cured EPDM cover strip into place with a rubber roller
  - 1. The salvaged adhesive edge of cover strip shall be thoroughly rolled into place.
  - 2. At cover strip laps and laps with other membranes, carefully roll along the covered edge.
- G. At the cover strip laps, tee joints and other membrane location laps, install an uncured EPDM patch large enough to extend a minimum of 3" beyond the lap in all directions. All patch corners are to be ROUNDED.
- H. Splice wash all edges of the cured EPDM cover strip and the uncured EPDM patches.
- I. Install a continuous bead of lap sealant over the edge of the cover strip and patches. Using an SPM lap sealant screed, tool lap sealant into and over the edge of the cover strip and patching membrane.

### **3.9 ROOF CURB AND BASE FLASHING**

- A. Secure field membrane by screwing through metal anchor bar at 6" o.c. with approved screw fasteners where possible install reinforced 60 mil EPDM termination strip previously fastened at 6" o.c.
- B. Extend roofing membrane up wall or vertical surface or over wood blocking nailer, as indicated and fully adhere to reinforcement strip vertical surface.
- C. Nail top of base flashing to wood nailer strip at 6" o.c. with 1" hard roofing nails with cap nails.
- D. All flashings and termination shall be done in accord with the manufacturer's standard details or as detailed, whichever is more stringent.
- E. Use prefabricated, self adhering corners where possible.
- F. Cover anchor bar strips with SPM flashing, extending above anchor bar and 6" out on horizontal roof surface.
- G. Apply appropriate adhesive to both the SPM flashing, the roofing membrane, and the curb wall.
- H. After the lap cement dries to a point where it does not string or stick to the touch, roll the base flashing into the adhesive and roll with steel roller to achieve positive bonding.
- I. Clean the edges of completed SPM flashing laps with an approved splice wash. Then apply the lap sealant along both edges of the SPM flashing and properly feather.

- J. All vertical splice laps shall be covered with a 6" minimum cover strip of uncured EPDM extend 3" beyond horizontally on the flat.
- K. Fold SPM flashing into corners to create a "pig's ear" and eliminate excess material. Do not cut off membrane. Adhere "pig's ear" to SPM.
- L. Cover the vertical surfaces of end wall flashing with the uncured neoprene flashing. Apply SPM lap sealant to exposed edges of uncured neoprene flashing.
- M. Terminate top of flashing on masonry with 1/8" by 1" aluminum termination bar with manufacturer-approved anchors at 6" o.c. (do not use expansion anchors).
  - 1. Install water cut-off mastic between masonry and SPM, prior to installation of termination bar.
  - 2. Cut EPDM flush to top of termination bar.
  - 3. Install SPM lap sealant to top of termination bar.
- N. Terminate vertical flashing ends on masonry with 1/8" aluminum termination bar with manufacturer-approved anchors at 4" o.c. (do not use expansion anchors).
  - 1. Install the water-cut off mastic between masonry and SPM prior to installation of the termination bar.
  - 2. Cut EPDM flush to top of termination bar.
  - 3. Install SPM lap sealant to top of termination bar.
- O. Cover termination bar with metal counterflashing.
- P. Secure top of flashing on plywood and wood blocking with aluminum nails @ 4" o.c. Seal top of flashing with SPM Lap Sealant installed same day as flashing.
- Q. The 1/8" thick aluminum termination bar must be installed atop base flashing on day base flashing is installed.
- R. At all existing mechanical equipment curbs remove and reinstall equipment as required to enable installation of flashings and counterflashings as described above.

### 3.10 PIPE PENETRATIONS

- A. Flash pipe with pre-molded pipe flashings with self adhering flange where installation is possible.
- B. Where the molded pipe flashings cannot be installed, use field-fabricated flashing techniques using uncured EPDM.
- C. Raise the pipe penetrations and roof vents to maintain a minimum 8" projection above surface

of new roof surface. Verify that all pipe penetrations extend a minimum of 8" above the finished roof surface.

- D. Apply lap sealant at all flashing edges.
- E. Provide water cut-off mastic between the pipe and molded pipe flashing.
- F. Install stainless steel clamping ring around pipe at top of pre-molded pipe flashing.
- G. Install SPM lap sealant at top pipe boot/field flashing.
- H. Pre-molded pipe boot:
  - 1. When flashing must be cut to fit pipe penetration and top of pre-molded boot is below 8" above SPM, pipe penetration is to be wrapped in uncured EPDM.
  - 2. Top edge is to be a minimum of 8" above the SPM. Pre-molded pipe boot is then to be installed.
  - 3. Wrap all gas vent pipe penetrations with cured EPDM membrane following completion of field flashing.
    - a. Field Flashings
      - 1) Install stainless steel rain cap around pipe and over tip of field flashing.

### **3.11 ROOF DRAINS**

- A. Seal between the membrane and drain flange with water cut-off mastic, as indicated in manufacturer's standard details.
- B. Set clamping ring and secure drain dome.

### **3.12 DAILY SEAL**

- A. Temporarily seal loose edges of membrane with water cut-off mastic or adhesive at end of the working day. Loose night seals are unacceptable.
  - 1. Surface shall be clean and dry.
  - 2. Apply water cut-off mastic at a rate of 100 linear feet per gallon, 12" back from edge of sheet onto exposed surface.
  - 3. If necessary, use a trowel to spread material in order to achieve complete seal.
- B. After embedding the membrane in night seal, check for continuous contact. Weigh edge, providing continuous pressure over length of the cut off.
- C. When the work is resumed, pull sheet face free before continuing installation.
- D. Cut off and remove a portion of SPM with water cut-off mastic on it.

### **3.13 RUBBER WALKWAY PADS**

- A. Install in full accordance with manufacturer's printed instructions as laid out on the drawings.
- B. Verify location with Architect and Head of Maintenance at building site.

#### **3.14 FIELD QUALITY CONTROL**

- A. Section 01400 - Quality Requirements: Field inspection and Testing.
- B. Correct identified defects or irregularities.

#### **3.15 CLEANING**

- A. Section 01700-6 – Close-out Submittals: Cleaning installed work.
- B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.
- C. Repair or replace defaced or disfigured finishes caused by work of this section.

#### **3.16 EXTRA STOCK**

- A. Upon completion of all roofing work provide to the Owner the following:
  - 1. One (1) case of SPM lap sealant
  - 2. One (1) gallon can of manufacturer's splice wash
  - 3. One (1) gallon of 6" diameter, self-adhering, uncured EPDM patches
- B. Provide MSDS sheets on each material applied as extra stock.

#### **3.17 PROTECTION OF FINISHED WORK**

- A. Section 01700 – Close-out Submittals: Protecting installed work.
- B. Protect building surfaces against damage from roofing work.
- C. Where traffic must continue over finished roof membrane, protect surfaces.

**END OF SECTION**

1 **PART 1 - GENERAL**

2 **1.1 RELATED DOCUMENTS:**

3 Drawings and general provisions of the Contract, including General and  
4 Supplementary Conditions and Division 1 Specification sections, apply to work of  
5 this section.

6 **1.2 SUMMARY:**

7 The extent of each type of flashing and sheet metal work is indicated on the  
8 drawings and by provisions of this Section.

9 The types of work specified in this section include the following:

10 Prefinished metal copings, fascias and miscellaneous flashing.  
11

12 **1.3 PERFORMANCE REQUIREMENTS:**

13 General: Install sheet metal flashing and trim to withstand wind loads, structural  
14 movement, thermally induced movement and exposure to weather without failing.

15 **1.4 SUBMITTALS:**

16 Product Data including manufacturer's material and finish data, installation  
17 instructions, and general recommendations for each specified flashing material and  
18 fabricated product.

19 Samples of sheet metal in the specified finish. Where finish involves normal color  
20 and texture variations, include sample sets composed of two or more units showing  
21 the full range of variations expected.

22 8" square samples of specified sheet materials to be exposed as finished  
23 surfaces.

24 **1.5 QUALITY ASSURANCE:**

25 Installer Qualifications: Engage an experienced Installer who has completed sheet  
26 metal flashing and trim work similar in material, design, and extent to that indicated  
27 for this Project and with a record of successful in-service performance.

28 **1.6 PROJECT CONDITIONS:**

29 Coordinate work of this section with interfacing and adjoining work for proper  
30 sequencing of each installation. Ensure best possible weather resistance and  
31 durability of work and protection of materials and finishes.

32 **PART 2 - PRODUCTS**

33 **2.1 FLASHING AND SHEET METAL MATERIALS:**

34 Prefinished Metal, Fascias and Miscellaneous Flashing:

1 Prefinished Zinc-Coated Steel: Shall be 24 gauge hot-dipped galvanized steel  
2 commercial quality, extra smooth finish on one side with Kynar 500 coating 1.0 total  
3 dry film thickness. Finish to have 20-year warranty.

4 The finish to be smooth dull matte and will be selected from manufacturer's standard  
5 colors.

6 Metal Soffit Panels:

7 Provide panels equal to "PAC-750 Soffit Panel" as manufactured by Petersen  
8 Aluminum Corporation. Panels shall be solid, 12" wide, of .032 aluminum with Kynar  
9 500 finish. Color to be selected from manufacturer's standard colors. Finish shall  
10 have 20-year warranty. Provide matching "J" channel trim.

11 **2.2 MISCELLANEOUS MATERIALS AND ACCESSORIES:**

12 Fasteners: Same metal as flashing/sheet metal or other non-corrosive metal as  
13 recommended by sheet manufacturer. Match finish of exposed heads with material  
14 being fastened.

15 Asphalt Mastic: SSPC - Paint 12, solvent type asphalt mastic, nominally free of  
16 sulfur and containing no asbestos fibers, compounded for 15-mil dry film thickness  
17 per coat.

18 Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-  
19 migrating sealant.

20 Elastomeric Sealant: Generic type recommended by manufacturer of metal and  
21 fabricator of components being sealed; comply with FS TT-S-0027, TT-S-00230, or  
22 TT-S-001543.

23 Epoxy Seam Sealer: 2-part, noncorrosive, aluminum seam-cement compound,  
24 recommended by aluminum manufacturer for exterior and interior nonmoving joints,  
25 including riveted joints.

26 Metal Accessories: Provide sheet metal clips, straps, anchoring devices and similar  
27 accessory units as required for installation of work, matching or compatible with  
28 material being installed, non-corrosive, size and gauge required for performance.

29 **PART 3 - EXECUTION**

30 **3.1 EXAMINATION**

31 Examine substrates and conditions under which sheet metal flashing and trim are to  
32 be installed and verify that Work may properly commence. Do not proceed with  
33 installation until unsatisfactory conditions have been corrected.

34 **3.2 GENERAL:**

35 Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply  
36 with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply  
37 to the design, dimensions, metal and other characteristics of the item indicated.

- 1 Shop-fabricate work to greatest extent possible.
- 2 Comply with details shown to fabricate sheet metal flashing and trim that fit  
3 substrates and result in waterproof and weather-resistant performance once  
4 installed. Verify shapes and dimensions of surfaces to be covered before fabricating  
5 sheet metal. Form work to fit substrate.
- 6 Expansion Provision: Space movement joints at maximum of 10 feet with no joints  
7 allowed within 24" of corner or intersection. Where lapped or bayonet-type  
8 expansion provisions in Work cannot be used, or would not be sufficiently  
9 weatherproof and waterproof, form expansion joints of intermeshing hooked flanges,  
10 not less than 1" deep, filled with mastic sealant (concealed within joints).
- 11 Concealed fasteners and expansion provisions where possible. Exposed fasteners  
12 are not allowed on faces of sheet metal exposed to public view.
- 13 Fabricate cleats and attachment devices from same material as sheet metal  
14 component being anchored or from compatible, noncorrosive metal recommended  
15 by sheet metal manufacturer.
- 16 Size: As recommended by SMACNA manual or sheet metal manufacturer for  
17 application but never less than thickness of metal being secured.

### 18 **3.3 INSTALLATION REQUIREMENTS:**

- 19 Anchor units of work securely in place, providing for thermal expansion of metal  
20 units; conceal fasteners where possible and set units true to line and level as  
21 indicated. Install work with laps, joints and seams which will be permanently  
22 watertight and weatherproof.
- 23 Install exposed sheet metal Work that is without excessive oil canning, buckling, and  
24 tool marks and that is true to line and levels indicated, with exposed edges folded  
25 back to form hems.
- 26 Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate  
27 elastomeric sealant to comply with SMACNA standards. Fill joint with sealant and  
28 form metal to completely conceal sealant.
- 29 Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. For metal  
30 other than aluminum, tin edges to be seamed, form seams, and solder. For  
31 aluminum form seams and seal with epoxy seam sealer and rivet joints for additional  
32 strength.
- 33 Separations: Separate metal from noncompatible metal or corrosive substrates by  
34 coating concealed surfaces, at locations of contact, with asphalt mastic or other  
35 permanent separation recommended by manufacturer.
- 36 **3.4 CLEANING AND PROTECTION:**
- 37 Clean exposed metal surfaces, removing substances which might cause corrosion of  
38 metal or deterioration of finishes.

1 Protection: Installer shall advise Contractor of required procedures for surveillance  
2 and protection of flashings and sheet metal work during construction, to ensure that  
3 work will be without damage or deterioration, other than natural weathering at time of  
4 substantial completion.

5 **END OF SECTION 07600**

6

1 **PART 1 - GENERAL**

2 **1.1 RELATED DOCUMENTS:**

3 Drawings and general provisions of the Contract, including General and  
4 Supplementary Conditions and Division 1 Specification sections, apply to work of  
5 this section.

6 **1.2 SUMMARY**

7 This Section includes sealants for the following applications:

8 Exterior joints in the following vertical surfaces and non-traffic horizontal  
9 surfaces:

- 10 Joints between metal parts.
- 11 Joints between different materials.
- 12 Perimeter joints between frames of doors and windows.

13 Interior joints in the following vertical surfaces and horizontal non-traffic  
14 surfaces:

- 15 Perimeter joints between interior wall surfaces and frames of interior doors  
16 and windows.
- 17 Other joints in interior walls where dissimilar materials butt.

18 Related Sections include the following:

19 Division 8 Section "Glazing" for glazing sealants.

20 **1.3 PERFORMANCE REQUIREMENTS**

21 Provide elastomeric joint sealants that establish and maintain watertight and airtight  
22 continuous joint seals without staining or deteriorating joint substrates.

23 **1.4 SUBMITTALS**

24 Product Data: For each joint-sealant product indicated.

25 Samples for Initial Selection: Manufacturer's color charts consisting of strips of  
26 cured sealants showing the full range of colors available for each product exposed to  
27 view.

28 Warranties: Special warranties specified in this Section.

29 **1.5 QUALITY ASSURANCE**

30 Installer Qualifications: An experienced installer who has specialized in installing  
31 joint sealants similar in material, design and extend to those indicated for this Project  
32 and whose work has resulted in joint-sealant installations with a record of successful  
33 in-service performance.

1 Source Limitations: Obtain each type of joint sealant through one source from a  
2 single manufacturer.

3 **1.6 DELIVERY, STORAGE AND HANDLING**

4 Deliver materials to Project site in original unopened containers or bundles with  
5 labels indicating manufacturer, product name and designation, color, expiration date,  
6 pot life, curing time and mixing instructions for multi-component materials.

7 Store and handle materials in compliance with manufacturer's written instructions to  
8 prevent their deterioration or damage due to moisture, high or low temperatures,  
9 contaminants, or other causes.

10 **1.7 PROJECT CONDITIONS**

11 Environmental Limitations: Do not proceed with installation of joint sealants under  
12 the following conditions:

13       When ambient and substrate temperature conditions are outside limits  
14       permitted by joint sealant manufacturer.

15       When joint substrates are wet.

16 Joint-Width Conditions: Do not proceed with installation of joint sealants where joint  
17 widths are less than those allowed by joint sealant manufacturer for applications  
18 indicated.

19 Joint-Substrate Conditions: Do not proceed with installation of joint sealants until  
20 contaminants capable of interfering with adhesion are removed from joint substrates.

21 **1.8 WARRANTY**

22 General Warranty: Special warranties specified in this Article shall not deprive  
23 Owner of other rights Owner may have under other provisions of the Contract  
24 Documents and shall be in addition to, and run concurrent with, other warranties  
25 made by Contractor under requirements of the Contract Documents.

26 Special Installer's Warranty: Written warranty, signed by Installer agreeing to repair  
27 or replace elastomeric joint sealants that do not comply with performance and other  
28 requirements specified in this Section within specified warrant period.

29       Warranty Period: Two years from date of Substantial Completion.

30 **PART 2 - PRODUCTS**

31 **2.1 PRODUCTS AND MANUFACTURERS**

32 Products: Subject to compliance with requirements, provide one of the products  
33 indicated for each type in the sealant schedules at the end of Part 3.

34 **2.2 MATERIALS, GENERAL**

1 Compatibility: Provide joint sealants, backings, and other related materials that are  
2 compatible with one another and with joint substrates under conditions of service  
3 and application, as demonstrated by sealant manufacturer based on testing and field  
4 experience.

5 Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full  
6 range for this characteristic.

### 7 **2.3 ELASTOMERIC JOINT SEALANTS**

8 Elastomeric Sealant Standard: Comply with ASTM C920 and other requirements  
9 indicated for each liquid-applied chemically curing sealant in the Elastomeric Joint-  
10 Sealant Schedule at the end of Part 3, including those referencing ASTM C920  
11 classifications for type, grade, class and uses.

12 Additional Movement Capability: Where additional movement capability is specified  
13 in the Elastomeric Joint-Sealant Schedule, provide products with the capability,  
14 when tested for adhesion and cohesion under maximum cyclic movement per ASTM  
15 C719, to withstand the specified percentage change in the joint width existing at the  
16 time of installation and remain in compliance with other requirements of ASTM C920  
17 for uses indicated.

18 Suitability for Contact with Food: Where elastomeric sealants are indicated for joints  
19 that will come in repeated contact with food, provide products that comply with 21  
20 CFR 177.2600.

### 21 **2.4 LATEX JOINT SEALANTS**

22 Latex Sealant Standard: Comply with ASTM C 834 for each product of this  
23 description indicated in the Latex Joint-Sealant Schedule at the end of Part 3.

### 24 **2.5 JOINT-SEALANT BACKING**

25 General: Provide sealant backings of material and type that are non-staining; are  
26 compatible with joint substrates, sealants, primers and other joint fillers; and are  
27 approved for applications indicated by sealant manufacturer based on field  
28 experience and laboratory testing.

29 Cylindrical Sealant Backings: ASTM C1330, of size and density to control sealant  
30 depth and otherwise contribute to producing optimum sealant performance.

31 Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by  
32 sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-  
33 filler materials or joint surfaces at back of joint where such adhesion would result in  
34 sealant failure. Provide self-adhesive tape where applicable.

### 35 **2.6 MISCELLANEOUS MATERIALS**

36 Primer: Material recommended by joint sealant manufacturer where required for  
37 adhesion of sealant to joint substrates indicated.

1 Cleaners for Non-porous Surfaces: Chemical cleaners acceptable to manufacturers  
2 of sealants and sealant backing materials, free of oily residues or other substances  
3 capable of staining or harming joint substrates and adjacent non-porous surfaces in  
4 any way, and formulated to promote optimum adhesion of sealants with joint  
5 substrates.

6 Masking Tape: Non-staining, non-absorbent material compatible with joint sealants  
7 and surfaces adjacent to joints.

## 8 PART 3 - EXECUTION

### 9 3.1 EXAMINATION

10 Examine joints indicated to receive joint sealants, with Installer present, for  
11 compliance with requirements for joint configuration, installation tolerances, and  
12 other conditions affecting joint-sealant performance.

13 Proceed with installation only after unsatisfactory conditions have been corrected.

### 14 3.2 PREPARATION

15 Surface Cleaning of Joints: Clean out joints immediately before installing joint  
16 sealants to comply with joint sealant manufacturer's written instructions and the  
17 following requirements:

18 Remove all foreign material from joint substrates that could interfere with  
19 adhesion of joint sealant, including dust, paints (except for permanent,  
20 protective coatings tested and approved for sealant adhesion and compatibility  
21 by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water  
22 repellents, water, surface dirt and frost.

23 Clean porous joint substrate surfaces by brushing, grinding, blast cleaning,  
24 mechanical abrading, or a combination of these methods to produce a clean,  
25 sound substrate capable of developing optimum bond with joint sealants.  
26 Remove loose particles remaining from above cleaning operations by  
27 vacuuming or blowing out joints with oil-free compressed air.

28 Remove laitance and form-release agents from concrete.

29 Clean non-porous surfaces with chemical cleaners or other means that do not  
30 stain, harm substrates, or leave residues capable of interfering with adhesion of  
31 joint sealants.

32 Joint Priming: Prime joint substrates where recommended in writing by joint sealant  
33 manufacturer, or based on prior experience. Apply primer to comply with joint  
34 sealant manufacturer's written instructions. Confine primers to areas of joint-sealant  
35 bond; do not allow spillage or migration onto adjoining surfaces.

36 Masking Tape: Use masking tape where required to prevent contact of sealant with  
37 adjoining surfaces that otherwise would be permanently stained or damaged by such

1 contact or by cleaning methods required to remove sealant smears. Remove tape  
2 immediately after tooling without disturbing joint seal.

### 3 **3.3 INSTALLATION OF JOINT SEALANTS**

4 General: Comply with joint sealant manufacturer's written installation instructions for  
5 products and applications indicated, unless more stringent requirements apply.

6 Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for  
7 use of joint sealants as applicable to materials, applications and conditions indicated.

8 Install sealant backings of type indicated to support sealants during application and  
9 at position required to produce cross-sectional shapes and depths of installed  
10 sealants relative to joint widths that allow optimum sealant movement capability.

11 Do not leave gaps between ends of sealant backings.

12 Do not stretch, twist, puncture or tear sealant backings.

13 Remove absorbent sealant backings that have become wet before sealant  
14 application and replace them with dry materials.

15 Install bond-breaker tape behind sealants where sealant backings are not used  
16 between sealants and back of joints.

17 Install sealants by proven techniques to comply with the following and at the same  
18 time backings are installed:

19 Place sealants so they directly contact and fully wet joint substrates.

20 Completely fill recesses provided for each joint configuration.

21 Product uniform, cross-sectional shapes and depths relative to joint widths that  
22 allow optimum sealant movement capability.

23 Tooling of Non-sag Sealants: Immediately after sealant application and before  
24 skinning or curing begins, tool sealants according to requirements specified below to  
25 form smooth, uniform beads of configuration indicated; to eliminate air pockets; and  
26 to ensure contact and adhesion of sealant with sides of joint.

27 Remove excess sealants from surfaces adjacent to joint.

28 Use tooling agents that are approved in writing by sealant manufacturer and that do  
29 not discolor sealants or adjacent surfaces.

30 Provide concave joint configuration per Figure 5A in ASTM C 11903, unless  
31 otherwise indicated.

32 Use masking tape to protect adjacent surfaces of recessed tooled joints.

### 33 **3.4 CLEANING**

1 Clean off excess sealants or sealant smears adjacent to joints as the Work  
2 progresses by methods and with cleaning materials approved in writing by  
3 manufacturers of joint sealants and of products in which joints occur.

#### 4 **3.5 PROTECTION**

5 Protect joint sealants during and after curing period from contact with contaminating  
6 substances and from damage resulting from construction operations or other causes  
7 so sealants are without deterioration or damage at time of Substantial Completion.  
8 If, despite such protection, damage or deterioration occurs, cut out and remove  
9 damaged or deteriorated joint sealants immediately so installations with repaired  
10 areas are indistinguishable from the original work.

#### 11 **3.6 ELASTOMERIC JOINT-SEALANT SCHEDULE**

##### 12 **Mildew-Resistant Silicone Sealant:**

13 Where joint sealants of this type are indicated, provide products formulated with  
14 fungicide that are intended for sealing interior ceramic tile joints and other non-  
15 porous substrates. Provide one of the following:

- 16 786 Mildew Resistant; Dow Corning.
- 17 Sanitary 1700; GE Silicones.
- 18 898 Silicone Sanitary Sealant, Pecora Corporation
- 19 Tremsil 600 White; Tremco.

20 Type and Grade: S (single component) and NS (non-sag).

21 Class: 25.

22 Use Related to Exposure: NT (non-traffic).

23 Uses Related to Joint Substrates: G, A and as applicable, O.

24 Application:

25 Joints between plumbing fixtures and adjoining walls, floors and counters.

##### 26 **Multi-Component Non-Sag Urethane Sealant:**

27 Where joint sealants of this type are indicated, provide one of the following:

- 28 Dynatrol II; Pecora Corporation.
- 29 Sikaflex - 2c NS; Sika Corporation
- 30 DYmeric 511; Tremco

31 Type and Grade: M (multi-component) and NS (non-sag).

32 Class: 25.

33 Additional Movement Capability: 50 percent movement in extension and 50 percent  
34 in compression for a total of 100 percent movement.

- 1 Use Related to Exposure: NT (non-traffic).
- 2 Uses Related to Joint Substrates: M, G, A and as applicable, O.
- 3 Applications: Install in the following exterior wall joints:
  - 4 Control and expansion joints in unit masonry.
  - 5 Joints in exterior insulation and finish systems (EIFS)
  - 6 Joints between architectural precast concrete units.
  - 7 Joints between metal parts.
  - 8 Joints between different materials listed above.
- 9 **Multi-Component Pourable Urethane Sealant:**
- 10 Where joint sealants of this type are indicated, provide one of the following:
  - 11 Pourthane; W.R. Meadows, Inc.
  - 12 NR-200 Urexpan; Pecora Corporation.
  - 13 Sikaflex - 2c SL; Sika Corporation.
  - 14 SL2; Sonneborn Building Products Div., ChemRex Inc.
  - 15 THC-900; Tremco
  - 16 THC-901; Tremco
- 17 Type and Grade: M (multi-component) and P (pourable).
- 18 Class: 25.
- 19 Uses Related to Exposure: T (traffic).
- 20 Uses Related to Joint Substrates: M, G, A and as applicable, O.
- 21 Applications:
  - 22 Between exterior walks and building walls.
  - 23 All joints in interior horizontal ceramic tile.
  - 24 Exposed control and expansion joints in interior cast-in-place concrete slabs.
- 25 **Single-Component Non-Sag Urethane Sealant:**
- 26 Where joint sealants of this type are indicated, provide one of the following:
  - 27 Dynatrol I; Pecora Corporation.
  - 28 DyMonic; Tremco.
- 29 Type and Grade: S (single component) and NS (non-sag).
- 30 Class: 25.
- 31 Use Related to Exposure: NT (non-traffic).
- 32 Uses Related to Joint Substrates: M, G, A and as applicable, O.
- 33 Applications:

1 Between metal door, window frames and exterior masonry.

2 **3.7 LATEX JOINT-SEALANT SCHEDULE**

3 **Latex Sealant:**

4 Where joint sealants of this type are indicated, provide one of the following:

5 AC-20; Pecora Corporation.

6 Sonolac; Sonneborn Building Products Div., ChemRex, Inc.

7 Tremflex 834; Tremco.

8 Applications: Install in the following interior joints:

9 Control and expansion joints on exposed interior surfaces of exterior walls.

10 Vertical control joints on exposed surfaces of interior unit masonry and concrete  
11 walls and partitions.

12 All joints in interior vertical ceramic tile.

13 Precast joints in rooms where precast is exposed.

14 Perimeter joints between interior wall surfaces and frames of interior doors,  
15 windows and elevator entrances.

16 All other joints in interior walls where dissimilar materials butt.

17 **END OF SECTION 07920**

1 **PART 1 - GENERAL**

2 **1.1 RELATED DOCUMENTS:**

3 Drawings and general provisions of the Contract, including General and  
4 Supplementary Conditions and Division 1 Specification sections, apply to work of  
5 this section.

6 **1.2 DESCRIPTION OF WORK:**

7 Extent of standard metal doors and frames is shown and scheduled on drawings.  
8 Pricing of window & door replacement to be provided as an Alternate bid.

9 **1.3 RELATED SECTIONS:**

10 Finish hardware is specified in Section 08410 – Entrances and Storefronts.

11 **1.4 SUBMITTALS:**

12 Product data for each type of doorframe specified, including details of construction,  
13 materials, dimensions, hardware preparation, label compliance, profiles, and  
14 finishes.

15 Shop Drawings: Submit four (4) copies of shop drawings showing fabrication and  
16 installation of standard metal doorframes. Include details of each frame type,  
17 conditions at openings, details of construction, location and installation requirements  
18 of doorframe hardware and reinforcements, and details of joints and connections.  
19 Show anchorage and accessory items.

20 Provide schedule of doorframes using same reference numbers for details and  
21 openings as those on contract drawings.

22 Label Construction Certification: For door assemblies required to be fire-rated and  
23 exceeding limitations of labeled assemblies, submit manufacturer's certification that  
24 each door frame assembly has been constructed to conform to design, materials  
25 and construction equivalent to requirements for labeled construction.

26 **1.5 QUALITY ASSURANCE:**

27 Provide door and frames complying with Steel Door Institute "Recommended  
28 Specifications Standard Steel Doors and Frames" (ANSI/SDI-100) and as herein  
29 specified.

30 Fire-Rated Door Assemblies: Units that comply with NFPA 80 are identical to door  
31 frame assemblies whose fire resistance characteristics have been determined per  
32 ASTM E 152 and which are labeled and listed by UL, Factory Mutual, Warnock  
33 Hersey, or other testing and inspecting organization acceptable to authorities having  
34 jurisdiction.

35 Source Limitations: Obtain standard steel doors and frames through one source  
36 from a single manufacturer.

**1 1.6 DELIVERY, STORAGE AND HANDLING:**

2 Deliver doorframes cardboard-wrapped or crated to provide protection during transit  
3 and job storage. Provide additional protection to prevent damage to finish of factory-  
4 finished doorframes.

5 Inspect doorframes upon delivery for damage. Minor damages may be repaired  
6 provided finished items are equal in all respects to new work and acceptable to  
7 Architect; otherwise, remove and replace damaged items as directed.

8 Store door frames at building site under cover. Place units on minimum 4" high wood  
9 blocking, or otherwise store on floors in manner that will prevent rust and damage.  
10 Avoid use of non-vented plastic or canvas shelters, which could create humidity  
11 chamber.

**12 PART 2 - PRODUCTS****13 2.1 ACCEPTABLE MANUFACTURERS:**

14 Available Manufacturers: Subject to compliance with requirements, manufacturers  
15 offering standard steel doorframes, which may be incorporated in the work include,  
16 but are not limited to, the following:

**17 Standard Steel Doors and Frames:**

18 Ceco Corp.  
19 Kewanee Corp.  
20 Steelcraft Manufacturing Co.  
21 LaForce, Inc.  
22 Fenestra Corp.  
23 Precision Metals, Inc.

**24 2.2 MATERIALS:**

25 Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and  
26 oiled, complying with ASTM A-569 and ASTM A-568.

27 Cold-Rolled Steel Sheets: Commercial quality carbon steel complying with ASTM A-  
28 366 and ASTM A-568.

29 Supports and Anchors: Fabricate of not less than 18 gauge sheet steel, galvanized  
30 where used with galvanized frames.

31 Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where items are to be  
32 built into exterior walls, hot-dip galvanize in compliance with ASTM A 153, Class C  
33 or D as applicable.

34 Shop Applied Paint: Apply after fabrication.

35 Primer: Rust inhibitive enamel or paint, either air-drying or baking, suitable as a  
36 base for specified finish paints.

1 **2.3 STANDARD METAL DOORS:**

2 General: Provide doors of design indicated, not less than thickness indicated;  
3 fabricated with smooth surfaces, without visible joints or seams on exposed faces,  
4 unless otherwise indicated. Comply with ANSI A250.8.

5 Design: Flush panel.

6 Core Construction: Manufacturer's standard kraft-paper honeycomb,  
7 polystyrene, polyurethane, mineral-board, or vertical steel-stiffener core that  
8 produces doors complying with ANSI A250.8.

9 Fire Door Core: As required to provide fire-protection and temperature-  
10 rise ratings indicated.

11 Thermal-Rated (Insulated) Doors: Where indicated, provide doors  
12 fabricated with thermal-resistance value (R-value) of not less than 4.0  
13 deg F x h x sq. ft./Btu when tested according to ASTM C 1363.

14 Locations: Exterior doors.

15 Vertical Edges for Single-Acting Doors: Square edge.

16 Vertical Edges for Double-Acting Doors: Round vertical edges with 2-1/8-inch  
17 radius.

18 Top and Bottom Edges: Closed with flush or inverted 0.042-inch- thick end  
19 closures or channels of same material as face sheets.

20 Tolerances: Comply with SDI 117, "Manufacturing Tolerances for Standard  
21 Steel Doors and Frames."

22 Exterior Doors: Face sheets fabricated from minimum 0.053" (16 ga.) galvanized  
23 steel sheet. Provide doors complying with requirements indicated below by  
24 referencing ANSI A250.8 for level and model and ANSI A250.4 for physical-  
25 endurance level:

26 Level 3 and Physical Performance Level B (Heavy Duty), Model 2 (Seamless).

27 Hardware Reinforcement: Fabricate reinforcement plates from same material as  
28 door face sheets to comply with the following minimum sizes:

29 Hinges: Minimum 0.123 inch thick by 1-1/2 inches wide by 6 inches longer than  
30 hinge, secured by not less than 6 spot welds.

31 Pivots: Minimum 0.167 inch thick by 1-1/2 inches wide by 6 inches longer than  
32 hinge, secured by not less than 6 spot welds.

33 Lock Face, Flush Bolts, Closers, and Concealed Holders: Minimum 0.067 inch  
34 thick.

35 All Other Surface-Mounted Hardware: Minimum 0.067 inch thick.

**1 2.4 FRAMES:**

2 Provide metal frames for doors, transoms, sidelights, borrowed lights, and other  
3 openings, of types and styles as shown on drawings and schedules. Conceal  
4 fastenings, unless otherwise indicated. Frames to be of width indicated on drawings  
5 and fabricated of minimum 16 gauge cold-rolled steel.

6 Fabricate frames with mitered and welded corners.  
7 Provide galvanized steel frames for all exterior doors.

8 Door Silencers: Except on weather-stripped frames, drill stops to receive three  
9 silencers on strike jambs of single doorframes and two silencers on heads of double  
10 door frames.

11 Manufacturer's "stick-on" silencers will not be acceptable in lieu of drilled type.

12 Plaster Guards: Provide minimum 26 gauge steel plaster guards or mortar boxes at  
13 back of hardware cutouts where mortar or other materials might obstruct hardware  
14 operation and to close off interior of openings.

**15 2.5 FABRICATION:**

16 Fabricate steel doorframe units to be rigid, neat in appearance and free from  
17 defects, warp or buckle. Wherever practicable, fit and assemble units in  
18 manufacturer's plant. Clearly identify work that cannot be permanently factory-  
19 assembled before shipment, to assure proper assembly at project site. Comply with  
20 ANSI/SDI-100 requirements.

21 Tolerances: Comply with SDI 117 "Manufacturing Tolerances Standard Steel Doors  
22 and Frames".

23 Fabricate frames, concealed stiffeners, reinforcement, edge channels and moldings  
24 from either cold-rolled or hot-rolled steel (at fabricator's option).

25 Exposed Fasteners: At existing wall conditions, unless otherwise indicated, provide  
26 countersunk flat Phillips heads for exposed screws and bolts.

27 Hardware Preparation: Prepare doorframes to receive mortised and concealed  
28 hardware in accordance with final Finish Hardware Schedule and templates provided  
29 by hardware supplier. Comply with applicable requirements of ANSI A-115 Series  
30 Specifications for door frame preparation for hardware.

31 Reinforce door frames to receive surface-applied hardware. Drilling and tapping for  
32 surface-applied hardware may be done at project site.

33 Locate hardware as indicated on final shop drawings or, if not indicated, in  
34 accordance with "Recommended Locations for Builder's Hardware on Standard  
35 Steel Doors and Frames" published by Door and Hardware Institute.

36 Shop Painting: Clean, treat and paint exposed surfaces of steel doorframe units.

1        Clean steel surfaces from mill scale, rust, oil, grease, dirt, and other foreign  
2        materials before application of paint.

3        Apply shop coat of prime paint of even consistency to provide a uniformly  
4        finished surface ready to receive finish paint.

5        **PART 3 - EXECUTION**

6        **3.1 INSTALLATION:**

7        General: Install standard steel doorframes and accessories in accordance with final  
8        shop drawings, manufacturer's data, and as herein specified.

9        Placing Frames: Comply with provision of SDI-105 "Recommended Erection  
10       Instructions for Steel Frames", unless otherwise indicated.

11       Except for frames located at existing concrete, masonry or drywall installations,  
12       place frames prior to construction of enclosing walls and ceilings. Set frames  
13       accurately in position, plumbed, aligned and braced securely until permanent  
14       anchors are set. After wall construction is completed, remove temporary braces  
15       and spreaders leaving surfaces smooth and undamaged.

16       In masonry construction locate three wall anchors per jamb adjacent to hinge  
17       location on hinge jamb and at corresponding heights on strike jamb. Acceptable  
18       anchors include masonry wire anchors and masonry Tee anchors.

19       At existing concrete or masonry construction, provide three completed opening  
20       anchors per jamb adjacent to hinge location on hinge jamb and at  
21       corresponding heights on strike jamb, set frames and secure to adjacent  
22       construction with bolts and masonry anchorage devices.

23       Install fire-rated frames in accordance with NFPA Std. No. 80.

24       In metal stud partitions, install at least three wall anchors per jamb at hinge and  
25       strike levels. In closed steel stud partitions, attach wall anchors to studs with  
26       screws.

27       In in-place drywall partitions install knock down slip-on drywall frames.

28       **3.2 ADJUST AND CLEAN:**

29       Prime Coat Touch-Up: Immediately after erection, sand smooth any rusted or  
30       damaged areas of prime coat and apply touch-up of compatible air-drying primer.

31       Final Adjustments: Check and readjust operating hardware items, leaving steel  
32       doorframes undamaged and in complete and proper operating condition.

33       **END OF SECTION 08110**

1 **PART 1 - GENERAL**2 **RELATED DOCUMENTS:**

3 Drawings and general provisions of the Contract, including General and  
4 Supplementary Conditions and Division 1 Specification sections, apply to work of  
5 this section.

6 **DESCRIPTION OF WORK:**

7 Extent of aluminum window frames is shown on drawings and schedules and  
8 includes:

9 Exterior frames, hopper and fixed windows to be replaced in the Office Building.  
10 Pricing of window & door replacement to be provided as an Alternate bid.

11 Lock cylinders are included in Section 08 71 00 - Finish Hardware.

12 Hardware for 08 41 00 shall be included in Section 08 41 00. Refer to Section 08 71  
13 00 - Finish Hardware for specification.

14 Glazing: Refer to Section 08800 - Glass and Glazing for glazing requirements.

15 **SYSTEM PERFORMANCE REQUIREMENTS:**

16 General: Provide window wall assemblies that comply with performance  
17 characteristics specified, as demonstrated by testing the manufacturer's  
18 corresponding stock assemblies according to test methods indicated.

19 Thermal Movement: Design the window wall framing systems to provide for  
20 expansion and contraction of the component materials.

21 The system shall be capable of withstanding a metal surface temperature range  
22 of 180°F. (100°C) without buckling, failure of joint seals, undue stress on  
23 structural elements, damaging loads on fasteners, reduction of performance,  
24 stress on glass, or other detrimental effects.

25 Design Requirements: Provide window wall systems that comply with structural  
26 performance, air infiltration, and water penetration requirements indicated.

27 Wind Loads: Provide window wall assemblies capable of withstanding wind  
28 pressures of 20 psf inward and 20 psf outward acting normal to the plane of the  
29 wall.

30 Structural Performance: Conduct tests for structural performance in accordance with  
31 ASTM E 330. At the conclusion of the tests there shall be no glass breakage or  
32 permanent damage to fasteners, anchors, hardware or actuating mechanism.  
33 Framing members shall have no permanent deformation in excess of 0.2 percent of  
34 their clear span.

- 1        Deflection Normal to the Plane of the Wall: Test pressure required to measure  
2        deflection of framing members normal to the plane of the wall shall be  
3        equivalent to the wind load specified above. Deflection shall not exceed 1/175  
4        of the clear span, when subjected to uniform load deflection test.
- 5        Deflection Parallel to the Plane of the Wall: Test pressures required to measure  
6        deflection parallel to the plane of the wall shall be equal to 1.5 times the wind  
7        pressures specified above. Deflection of any member carrying its full dead load  
8        shall not exceed an amount that will reduce glass bite below 75 percent of the  
9        design dimension and shall not reduce the edge clearance between the  
10       member and the fixed panel, glass or other fixed member above to less than  
11       1/8". The clearance between the member and an operable door or window shall  
12       be at least 1/16".
- 13       Water Penetration: Provide framing systems with no uncontrolled water penetration  
14       (excluding operable door edges) as defined in the test method when tested in  
15       accordance with ASTM E 331 at an inward test pressure differential of 6.24 lbf per  
16       sq. ft.
- 17       Condensation Resistance: Where framing systems are "thermal-break" construction,  
18       provide units tested for thermal performance in accordance with AAMA 1502.7  
19       showing condensation resistance factor (CRF) of not less than 55.
- 20       Thermal Transmittance: Provide framing systems that have an overall U-value of not  
21       more than 0.65 BTU/(hr. x sq. ft. x deg. F) at 15 mph exterior wind velocity when  
22       tested in accordance with AAMA 1503.01.
- 23       **SUBMITTALS:**
- 24       Product Data: Submit manufacturer's specifications standard details and installation  
25       recommendations for components of aluminum entrances and storefronts required  
26       for project, including data that products have been tested and comply with  
27       performance requirements.
- 28       **Hardware Schedule:** Submit **four (4) copies** of the complete hardware schedule  
29       organized into sets based on hardware specified in Section 08 71 00. Coordinate  
30       hardware with doors, frames, and related work to ensure proper size, thickness,  
31       hand, function, and finish. Include item name, name of the manufacturer and  
32       complete designations of every item required for each door opening.
- 33       Samples for Initial Color Selection: Submit pairs of samples of each specified color  
34       and finish on 12-inch long sections of extrusions or formed shapes. Where normal  
35       color variations are anticipated, include two or more units in each set of samples  
36       indicating extreme limits of color variations.
- 37       Samples for Verification Purposes: The Architect reserves the right to require  
38       additional samples that show fabrication techniques and workmanship and design of  
39       hardware and accessories.

1 **Shop Drawings:** Submit four (4) copies of shop drawings for fabrication and  
2 installation of aluminum window wall system, including elevations, detail sections of  
3 typical composite members, anchorages, reinforcement, expansion provisions and  
4 glazing.

5 **QUALITY ASSURANCE:**

6 Drawings: Plans, elevations and details show spacings of members as well as profile  
7 and similar dimensional requirements of aluminum entrances.

8 Single Source Responsibility: Obtain window wall systems from one source and from  
9 a single manufacturer.

10 Field Measurement: Wherever possible, take field measurements prior to  
11 preparation of shop drawings and fabrication, to ensure proper fitting of work.  
12 However, proceed with fabrication and coordinate installation tolerances as  
13 necessary when field measurements might delay work.

14 **DELIVERY, STORAGE AND HANDLING:**

15 Deliver window wall components in the manufacturer's original protective packaging.

16 Store aluminum components in a clean dry location away from uncured masonry or  
17 concrete. Cover components with waterproof paper, tarpaulin or polyethylene  
18 sheeting in a manner to permit circulation of air.

19 Stack framing components in a manner that will prevent bending and avoid  
20 significant or permanent damage.

21 **PART 2 - PRODUCTS**

22 **MANUFACTURERS:**

23 Drawings and specifications are based on products as manufactured by the  
24 Kawneer Company, Inc.

25 Trifab VG 451T Storefront

26

27 Or approved equal.

28

29 **ALUMINUM WINDOW WALL FRAMING:**

30 The drawings and specifications for the frames and windows are based on Kawneer  
31 Framing System Trifab VG 451T for exterior frames.

32 Materials for 451T Frames: Extrusions shall be 6063-T5 alloy and temper (ASTM B-  
33 221 alloy G.S. 10A-T5). The thermal barrier shall consist of a two-part, chemically  
34 curing, high density polyurethane. Fasteners, where exposed, shall be aluminum,  
35 stainless steel or plated steel in accordance with ASTM A 164. Perimeter anchors  
36 shall be aluminum or steel, providing the steel is properly isolated from the  
37 aluminum. Glazing gaskets shall be elastomeric extrusions.

1 Class I Color Anodized Finish: AA-M12C22A42/A44 (Mechanical Finish: as  
2 fabricated, nonspecular; Chemical Finish: etched, medium matte; Anodic Coating:  
3 Class I Architectural, film thicker than 0.7 mil with integral color or electrolytically  
4 deposited color) complying with AAMA 606.1 or AAMA 608.1.

5 Color: To match existing

6 Aluminum Closure Panels: Provide .062" thick aluminum closures and cladding as  
7 indicated on drawings. Finish shall match framing system.

8 Fabrication :

9 The framing system shall provide for flush glazing on all sides with no projecting  
10 stops. Vertical and horizontal framing members shall have a nominal face dimension  
11 of 2" and 4-1/2" for the 451T frames. Overall depth shall be 4-1/2" with glazing set in  
12 center plane.

13 **PART 3 - EXECUTION**

14 **EXAMINATION:**

15 Examine substrates and supports, with the Installer present, for compliance with  
16 requirements indicated, installation tolerances, and other conditions that affect  
17 installation of aluminum entrances and storefronts. Correct unsatisfactory conditions  
18 before proceeding with the installation. Do not proceed with installation until  
19 unsatisfactory conditions are corrected.

20 **INSTALLATION:**

21 Comply with manufacturer's instructions and recommendations for installation.

22 Set units plumb, level, and true to line, without warp or rack of framing members,  
23 doors, or panels. Install components in proper alignment and relation to established  
24 lines and grades indicated. Provide proper support and anchor securely in place.

25 Construction Tolerances: Install window wall to comply with the following tolerances:

26 Variation from Plane: Do not exceed 1/8" in 12 ft. of length or 1/4" in any total  
27 length.

28 Offset from Alignment: The maximum offset from true alignment between two  
29 identical members abutting end to end in line shall not exceed 1/16".

30 Diagonal Measurements: The maximum difference in diagonal measurements  
31 shall not exceed 1/8".

32 Offset at Corners: The maximum out-of-plane offset of framing at corners shall  
33 not exceed 1/32".

34 Separate aluminum and other corrodible metal surfaces from sources of corrosion or  
35 electrolytic action at points of contact with other materials.

- 1 Zinc or cadmium plate steel anchors and other unexposed fasteners after  
2 fabrication.
- 3 Paint dissimilar metals where drainage from them passes over aluminum.
- 4 Paint aluminum surfaces in contact with mortar, concrete or other masonry with  
5 alkali resistant coating.
- 6 Drill and tap frames and doors and apply surface-mounted hardware items. Comply  
7 with hardware manufacturer's instructions and template requirements. Use  
8 concealed fasteners wherever possible.
- 9 Set sill members and other members in bed of sealant as indicated, or with joint  
10 fillers or gaskets as indicated to provide weathertight construction. Comply with  
11 requirements of Division 7 for sealants, fillers, and gaskets.
- 12 **ADJUSTING:**
- 13 Adjust operating hardware to function properly, for smooth operation without binding  
14 and for weathertight closure.
- 15 **CLEANING:**
- 16 Clean the completed system inside and out, promptly after installation, exercising  
17 care to avoid damage to coatings.
- 18 Clean glass surfaces after installation, complying with requirements contained in the  
19 "Glass and Glazing" section for cleaning and maintenance. Remove excess glazing  
20 and sealant compounds, dirt and other substances from aluminum surfaces.
- 21 **PROTECTION:**
- 22 Institute protective measures required throughout the remainder of the construction  
23 period to ensure that aluminum entrances and storefronts will be without damage or  
24 deterioration, other than normal weathering, at time of acceptance.
- 25 **END OF SECTION 08410**

1 **PART 1 - GENERAL**

2 **1.1 RELATED DOCUMENTS:**

3 Drawings and general provisions of the Contract, including General and  
4 Supplementary Conditions and Division 1 Specification sections, apply to work of  
5 this section.

6 **1.2 DESCRIPTION OF WORK:**

7 Definitions: "Glass" includes prime glass, processed glass, laminated glass and  
8 fabricated glass products. "Glazing" includes glass installation and materials used to  
9 install glass. Types of work in this section include glass and glazing for:

10 View windows for replacement in Office building. This work is to be bid as an  
11 Alternate.

12 **1.3 QUALITY ASSURANCE:**

13 Glazing Standards: Comply with recommendations of Flat Glass Marketing  
14 Association (FGMA) "Glazing Manual" and "Sealant Manual" except where more  
15 stringent requirements are indicated. Refer to those publications for definition of  
16 glass and glazing terms not otherwise defined in this section or other referenced  
17 standards.

18 Safety Glazing Standard: Where safety glass is indicated or required by authorities  
19 having jurisdiction, provide type of products indicated which comply with ANSI Z97.1  
20 and testing requirements of 16 CFR Part 1201 for category II materials.

21 Fire Resistance Rated Wire Glass: Provide wire glass products that are identical to  
22 those tested per ASTM E 163 (UL 9) and are labeled and listed by UL or other  
23 testing and inspecting agencies acceptable to authorities having jurisdiction.

24 Single Source Responsibility: Provide materials obtained from one source for each  
25 type of glass and glazing product indicated.

26 **1.4 DELIVERY, STORAGE, AND HANDLING:**

27 Protect glass and glazing materials during delivery, storage and handling to comply  
28 with manufacturer's directions and as required to prevent edge damage to glass and  
29 damage to glass and glazing materials from effects of moisture including  
30 condensation, of temperature changes, of direct exposure to sun, and from other  
31 causes.

32 **1.5 PROJECT CONDITIONS:**

33 Environmental Conditions: Do not proceed with glazing when ambient and substrate  
34 temperature conditions are outside the limits permitted by glazing material  
35 manufacturer or when joint substrates are wet due to rain, frost, condensation or

1 other causes. Install glazing sealants only when temperatures are in middle third of  
2 manufacturer's recommended installation temperature range.

3 **1.6 SPECIFIED PRODUCT WARRANTY:**

4 Warranty on Hermetic Seals: Provide insulating glass manufacturer's written  
5 warranty, agreeing to, within specified warranty period, furnish FOB project site,  
6 replacement units for insulating glass units which have defective hermetic seals  
7 (excluding that due to glass breakage); defined to include intrusion of moisture or  
8 dirt, internal condensation at temperatures above -20°F (-31°C), deterioration of  
9 internal glass coatings and other visual evidence of seal failure or performance  
10 failure; provide manufacturer's instructions for handling, installation, protection and  
11 maintenance have been adhered to during warranty period.

12 Warranty period is ten years after seal date permanently imprinted on unit, but not  
13 less than nine years after date of substantial completion. Any defective materials  
14 shall be replaced, including installation, at no cost to the Owner.

15 **PART 2 - PRODUCTS**

16 Available Manufacturers: Subject to compliance with requirements, manufacturers  
17 offering products which may be incorporated in the work include but are not limited  
18 to the following:

19 AFG Industries, Inc.  
20 Ford Motor Co., Glass Div.  
21 Guardian Industries Corp.  
22 Libbey-Owens-Ford Co.  
23 PPG Industries, Inc.

24 **2.1 GLASS PRODUCTS, GENERAL:**

25 Primary Glass Standard: Provide primary glass which complies with FS DD-G-451  
26 requirements, including those indicated by reference to type, class, quality, and  
27 form.

28 Heat-Treated Glass Standard: Provide heat-treated glass which complies with FS  
29 DD-G-1403 requirements, including those indicated by reference to grade, style,  
30 type, quality, and class.

31 Sizes: Fabricate glass to sizes required for glazing openings indicated, with edge  
32 clearances and tolerances complying with recommendations of glass manufacturer.  
33 Provide thicknesses indicated or, if not otherwise indicated, as recommended by  
34 glass manufacturer for application indicated.

35 **2.2 PRIMARY GLASS PRODUCTS:**

36 Clear Float Glass: Type I, Class I, Quality q3, clear unless otherwise indicated.

37 **2.3 HEAT-TREATED GLASS PRODUCTS:**

1 Clear Tempered Float Glass: Grade B (fully tempered), style I (uncoated surfaces),  
2 type I (float), quality q3 (glazing quality), class 1 (transparent).

3 **2.4 FABRICATED GLASS UNITS:**

4 Insulating Glass:

5 Glass: Provide units of two sheets of 1/4" thick glass with a 1/2" argon gas filled air  
6 space and LowE coating on surface #2, unless otherwise indicated.

7 Provide tempered glass where indicated on drawings and as required by local  
8 and state codes.

9 Edge Construction: Twin primary seals of polyisobutylene; tubular aluminum or  
10 galvanized steel spacer-bar frame with welded or soldered sealed corners and filled  
11 with dessicant; and secondary seal outside of bar, bonded to both sheets of glass or  
12 bar, of polysulfide, silicone or hot-melt butyl elastomeric sealant (fabricator's option).

13 **2.5 GLAZING SEALANTS AND COMPONENTS:**

14 General: Provide color of exposed sealant/compound indicated or if not otherwise  
15 indicated, as selected by Architect from manufacturer's standard colors, or black if  
16 no color is so selected. Comply with manufacturer's recommendations for selections  
17 of hardness, depending upon the location of each application, conditions at time of  
18 installation and performance requirements as indicated. Select materials and  
19 variations or modifications carefully for compatibility with surfaces contacted in the  
20 installation.

21 2-Part Polysulfide Glazing Sealant (2Ps-GS): Elastomeric polysulfide sealant  
22 complying with FS TT-S-227, Class A, Type 2; specially compounded and tested to  
23 show a minimum of 20 years resistance to deterioration in normal glazing  
24 applications.

25 **2.6 MISCELLANEOUS GLAZING MATERIALS:**

26 Compatibility: Provide materials with proven record of compatibility with surfaces  
27 contacted in installation.

28 Cleaners, Primers and Sealers: Type recommended by sealant or gasket  
29 manufacturer.

30 Setting Blocks: Neoprenes or EPDM, 70-90 durometer hardness, with proven  
31 compatibility with sealants used.

32 Spacers: Neoprene or EPDM, 40-50 durometer hardness with proven compatibility  
33 with sealants used.

34 Edge Blocks: Neoprene, EPDM or silicone blocks as required for compatibility with  
35 glazing sealant, of size and hardness required to limit lateral movement (side-  
36 walking) of glass.

1 Compressible Filler (Rod): Closed-cell or waterproof jacketed rod stock of synthetic  
2 rubber or plastic foam, proven to be compatible with sealants used, flexible and  
3 resilient, with 5-10 psi compression strength for 25% deflection.

#### 4 **PART 3 - EXECUTION**

##### 5 **3.1 STANDARDS AND PERFORMANCE**

6 Watertight and airtight installation of each glass product is required, except as  
7 otherwise shown. Each installation must withstand normal temperature changes,  
8 wind loading, impact loading, (for operating sash and doors), without failure including  
9 loss or breakage of glass, failure of sealants or gaskets to remain watertight and  
10 airtight, deterioration of glazing materials and other defects in the work.

11 Protect glass from edge damage during handling and installation, and subsequent  
12 operation of glazed components of the work. During installation, discard units with  
13 significant edge damage or other imperfections.

14 Glazing channel dimensions as shown are intended to provide for necessary bite on  
15 glass, minimum edge clearance, and adequate sealant thickness, with reasonable  
16 tolerances. Adjust as required by job conditions at time of installation.

17 All glass shall be installed in accordance with manufacturer's recommendations.  
18 Comply with combined recommendations and technical reports by manufacturers of  
19 glass and glazing products as used in each glazing channels, and with  
20 recommendations of Flat Glass Marketing Association "Glazing Manual", except  
21 where more stringent requirements are indicated.

22 Install insulating glass units to comply with recommendations by Sealed Insulating  
23 Glass Manufacturers Association, except as otherwise specifically indicated or  
24 recommended by glass and sealant manufacturers.

##### 25 **3.2 PREPARATION FOR GLAZING:**

26 Clean glazing channel and other framing members to receive glass, immediately  
27 before glazing. Remove coatings which are not firmly bonded to substrate. Remove  
28 lacquer from metal surfaces where elastomeric sealants are used.

29 Apply primer or sealant to joint surfaces where recommended by sealant  
30 manufacturer.

##### 31 **3.3 GLAZING:**

32 Install setting blocks of proper size in sill rabbet, located one quarter of glass width  
33 from each corner, but no closer than 6", unless otherwise required. Set blocks in thin  
34 course of sealant which is acceptable for heel bead use.

35 Provide spacers inside and out, of correct size and spacing, to preserve required  
36 face clearances, for glass sizes larger than 50 united inches, except where gaskets  
37 or glazing tapes with continuous spacer rods are used for glazing. Provide 1/8"

- 1 minimum bite of spacers on glass and use thickness equal to sealant width, except  
2 with sealant tape use thickness slightly less than final compressed thickness of tape.
- 3 Provide edge blocking to comply with requirements of referenced glazing standard,  
4 except where otherwise required by glass unit manufacturer.
- 5 Set units of glass in each series with uniformity of pattern, draw, bow and similar  
6 characteristics.
- 7 Provide compressible filler rods or equivalent back-up material, as recommended by  
8 sealant and glass manufacturers, to prevent sealant from extruding into glass  
9 channel weep systems and from adhering to joints back surface as well as to control  
10 depth of sealant for optimum performance, unless otherwise indicated.
- 11 Force sealants into channel to eliminate voids and to ensure complete "wetting" or  
12 bond of sealant to glass and channel surfaces.
- 13 Tool exposed surfaces of sealants to provide a substantial "wash" away from glass.  
14 Install pressurized tapes and gaskets to protrude slightly out of channel, so as to  
15 eliminate dirt and moisture pockets.
- 16 Clean and trim excess glazing materials from glass and stops or frames promptly  
17 after installation, and eliminate stains and discolorations.
- 18 **3.4 CURE, PROTECTION AND CLEANING:**
- 19 Protect exterior glass from breakage immediately upon installation, by use of  
20 crossed streamers attached to framing and held away from glass. Do not apply  
21 markers to surfaces of glass. Remove nonpermanent labels and clean surfaces.
- 22 Protect glass from contact with contaminating substances resulting from construction  
23 operations. If, despite such protection, contaminating substances do come into  
24 contact with glass, remove immediately by method recommended by glass  
25 manufacturer.
- 26 Examine glass surfaces adjacent to or below exterior concrete and other masonry  
27 surfaces at frequent intervals during construction, but not less often than once a  
28 month, for build-up of dirt, scum, alkali deposits or staining. When examination  
29 reveals presence of these forms of residue, remove by method recommended by  
30 glass manufacturer
- 31 Remove and replace glass which is broken, chipped, cracked, abraded or damaged  
32 in other ways during construction period, including natural causes, accidents and  
33 vandalism.
- 34 Installer shall remove all labels and markings from glass and shall leave the  
35 installation free of all heavy construction dirt and sealant smears.
- 36 **END OF SECTION 08800**