MICHIGAN DEPARTMENT OF NATURAL RESOURCES and ENVIRONMENT - OFFICE OF LAND AND FACILITIES

MINOR CONSTRUCTION PROJECT BID PACKAGE

Issued by Authority of The Michigan Department of Natural Resources and Environment

This is an invitation for a sealed bid for furnishing labor, material, supplies and equipment to complete the project detailed on the Proposal and Contract Form and in the attached specifications. Bid security performance bond and labor and material bond **are not** required for this project.

The State reserves the right to award to that responsive and responsible bidder offering the best value to the State for the quality of the service to be supplied, conformity with specifications and suitability to the requirements of the State, or to reject any and all bids in whole or in part if the best interest of the State will be served.
It is the vendor's responsibility to read, understand and follow the Instructions To Bidders, General Conditions and General Requirements attached to this packet.

Questions regarding these terms should be directed to:	
The Issuing Officer: **PATRICK AVENDT**	Telephone No.: **(517) 373-9902**
Address: **OFFICE OF LAND AND FACILITIES** **MI DEPT OF NATURAL RESOURCES and ENVIRONMENT** **STEVENS T. MASON BUILDING – 8TH FLOOR** **530 WEST ALLEGAN STREET** **P.O. BOX 30033** **LANSING, MICHIGAN 48909** (This Zip Code for P.O. Box only.) (Street Address Zip Code is 48933.)	

Questions regarding the project should be directed to:		
Site Contact/Project Manager's Name: PAUL STODDARD, RA (517) 373-9906 - Technical PATRICK AVENDT (517 373-9902 - Contractual		
Division/Office Name: DNRE FOREST MANAGEMENT DIVISION		
Field Unit Name: MULTIPLE STATE FOREST CAMPGROUNDS		
Street Address of Headquarters: 530 WEST ALLEGAN STREET		
City: LANSING	State: MI	ZIP: 48933

This Bid Package contains:
A. This instructional cover sheet
B. The "Proposal and Contract for DNRE" (Form PR-1625).
C. Instructions to Bidders, General Conditions, General Requirements
D. Technical specification and other attachments, if any required.

THE ATTACHED CONTRACT DOCUMENTS ARE FOR: Bid Number**: 26-3953-3**

PROJECT LOCATION (location where the work is being done)	COUNTY:
Au Sable State Forest Campground & Canoe Camp (26N, 3W, S4) and Upper Manistee State Forest Campground & Canoe Camp (27N, 4W, S7)	CRAWFORD
NAME OF CONSTRUCTION PROJECT: REMOVAL/ABANDONMENT OF EXISTING VAULT TOILETS AND REPLACE WITH NEW VAULTS & BUILDINGS	
MANDATORY PRE-BID OPEN HOUSE: NONE SCHEDULED – However, it is highly recommended that potential bidders visit the site prior to bidding.	

BID OPENING:	DATE: **FRIDAY, JULY 9, 2010**	TIME (local time): **2:00 P.M.**

TO BID FOR THIS WORK, SUBMIT A PROPOSAL FOLLOWING THE INSTRUCTIONS BELOW.

1) Complete the "bidder's" portion on the "Proposal and Contract for DNRE" (Form PR-1625).
   - **DO NOT** change the bid form or qualify the bid. Only bid on the contract as written. If the bidder wishes to alter the bid price, it may be done by sending in the amount of change (addition or reduction) to the original bid by the bid opening time. The original bid sum must not be revealed. Bid prices must be good for sixty days.
2) If an Addendum was issued, confirm receipt by returning two signed copies.
3) Seal two completed copies of the "Proposal and Contract for DNRE" (Form PR-1625) in an envelope.
4) On the mailing envelope, ensure that the following information is completed on the label:
   a) Bid number b) Bid opening date and time c) That the actual bid is enclosed

- It is the responsibility of the bidder to ensure that correctly identified bids are delivered on time. The Michigan DNRE can not be responsible for mail delivery services.
- On or before the due date and time specified on the "Proposal and Contract for DNRE" (Form PR-1625), sealed bids must be received and time stamped at 530 WEST ALLEGAN STREET-8th FLOOR, LANSING MI 48933, to be considered as on time.
- The bids will be publicly opened and read aloud. Bid results will be available to the public after the opening.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES and ENVIRONMENT – OFFICE OF LAND AND FACILITIES

PROPOSAL AND CONTRACT for DNRE

Submittal of this information constitutes a valid proposal as required by Authority of Act 431, PA 1984, to provide the services as specified.

BID OPENING DATE and TIME:	Site Contact/Project Manager's Name:	For DNRE Issuing Officer
FRIDAY, JULY 9, 2010 2:00 p.m. Local Time	PAUL STODDARD, RA (517) 373-9906 - Technical Questions PATRICK AVENDT (517 373-9902 - Contractual Questions PROJECT NUMBER: **26-3953-3**	CONTRACT NO. COMMODITY CODE:

DEPARTMENT(751):	DIVISION /OFFICE NAME	PROJECT NAME
DNRE -	FOREST MANAGEMENT DIVISION	REPLACE TOILET VAULTS AND BUILDINGS

FIELD UNIT NAME AND LOCATION :

Au Sable SFCG & Canoe Camp (26N, 3W, S4) and Upper Manistee SFCG & Canoe Camp (27N, 4W, S7)

SCOPE OF WORK: The Work to be completed under this contract includes: Providing all labor, materials, and equipment to remove/abandon the existing toilet vaults and buildings and replace with new vaults and buildings, and related items as shown on the drawings and specified herein, at the Au Sable State Forest Campground & Canoe Camp (26N, 3W, S4) and Upper Manistee State Forest Campground & Canoe Camp (27N, 4W, S7), Crawford County, Michigan. The Owner has applied for the campground permit. Work shall not begin until the permit is obtained.

Time of Completion: Upon acceptance of the Proposal and Contract by the State, the Contractor agrees to complete all work **AUGUST 31, 2010.**

BIDDER's Section: (See attached Instructions To Bidders, General Conditions And General Requirements.)

- Do Not Alter or Qualify This Proposal and Contract. This Proposal May Be Rejected If This Form Is Altered or Qualified.

BIDDER 'S NAME AND COMPLETE ADDRESS	TELEPHONE NUMBER
STREET ADDRESS	FEDERAL I.D. NUMBER (if none, SOCIAL SECURITY NUMBER) (Protected information required for processing payments)
CITY STATE ZIP CODE	

Base Proposal Sum: $ _____ (This figure shall be valid for a period of sixty (60) days from the Bid Opening Date.)

NOTE: BID GUARANTEE & BONDS ARE NOT REQUIRED ON THIS PROJECT.

Bidder Acknowledges receipt of the following addenda: _____ Dated: _____

We propose to furnish all labor, materials, equipment, tools, and services required to complete the work in accordance with the specifications and conditions contained herein in consideration of the sum(s) stated above and agree that this document and attached General Terms and Requirements will constitute the contract if accepted by the State.

Signatures and Authorizations: *Bids may be rejected as being incomplete without this authorization*

- ***Corporations*** *shall include with the bid, a copy of the resolution giving the person signing the bid, power to bind the company in a legal contract.*
- ***Partnerships*** *may have all partners sign this "Proposal and Contract for DNRE" (Form PR-1625) or may submit a Power of Attorney.*
- ***Sole proprietorships*** *need only to have their signatures witnessed.*

BIDDER'S SIGNATURE (s)	DATE
WITNESS' SIGNATURE	DATE

Submit 2 copies of this Proposal To:

OFFICE OF LAND AND FACILITIES
MI DEPT OF NATURAL RESOURCES AND ENVIRONMENT
STEVENS T. MASON BUILDING – 8TH FLOOR
530 WEST ALLEGAN STREET
P.O. BOX 30033
LANSING, MICHIGAN 48909 (This Zip Code for P.O. Box only.)

ACCEPTANCE: THIS PROPOSAL IS ACCEPTED BY THE STATE OF MICHIGAN

DNRE ISSUING OFFICER'S SIGNATURE	DATE
WITNESS' SIGNATURE	DATE

INSTRUCTIONS TO BIDDERS

1. **Preparation of Bid:** Execute bid fully and properly. Submit in duplicate on this form in a sealed envelope to this office.

2. **Signatures:** All bids, notifications, claims, and statements must be signed as follows:

   a. Corporations: Signature of official shall be accompanied by a certified copy of the resolution of the Board of Directors authorizing the individual signing to bind the corporation.

   b. Partnerships: Signature of one partner shall be accompanied by a **certified** copy of the power of attorney authorizing the individual signing to bind all partners. If bid is signed by **all** partners, no authorization is required.

   c. Individual: No authorization is needed. Each signature must be witnessed.

3. The bidder acknowledges the right of the owner to reject any or all bids and to waive any informality or irregularity in any bid received. In addition. the bidder recognizes the right of the owner to reject a bid:

   a. if the bid is in any way incomplete or irregular;

   b. if the bidder's performance as a contractor was unsatisfactory under a prior contract for the construction, repair, modification or demolition of a facility with the owner, or a contractor in privity of contract with the owner, which was funded, directly or indirectly, by the owner;

4. It is the intent of the owner to award a contract to the lowest responsible bidder, provided the bid has been submitted in accordance with the requirements of the bidding documents, and does not exceed the funds available.

5. Individuals needing special services to fully participate in the bidding process due to a physical challenge may contact the building superintendent or the facility manager.

6. **Electronic Funds Transfer Payment** Public Act 533 of 2004 requires all vendors doing business with the State of Michigan to receive payment by electronic funds transfer (EFT) for services and goods provided to the State. Please log on to the contractor and payment website at www.michigan.gov/cpexpress to register your company or you may contact the C&P Express Help Desk toll-free at 888-734-9749

7. **Interpretation of Contract Documents:** If any person contemplating submitting a bid for this project is in doubt as to the true meaning of any part of the drawings, specifications or other contract documents, he/she may submit a written request to the director for an interpretation not later than nine days prior to due date of bids. The person submitting the request will be responsible for its prompt delivery. An interpretation of the documents will be made by the requesting office and an addendum issued and mailed or delivered to each person who has received a set of drawings and specifications. All addenda issued shall be made a part of the contract requirements. The state will not be responsible for any other explanation or interpretation of the contract documents.

8. **Substitution of Materials:** Any bidder wishing to use manufacturers or materials other than those specified shall submit a written request to the director not later than nine days prior to due date for bids. Request shall be accompanied by product data to permit evaluation and comparison with specified products or materials. The person submitting the request will be responsible for its prompt delivery. An examination and evaluation of product data will be made by the state unit and, if found acceptable, an addendum will be issued and mailed or delivered to each person who has received a set of drawings and specifications. All addenda issued shall be made a part of the contract requirements.

9. **Time of Completion:** Upon acceptance by the state of the Proposal and Contract, the contractor agrees to complete all work required in the time frame required on the Proposal and Contract.

10. **Michigan Products and Recycled Products:** All contractors and suppliers are encouraged to provide Michigan-made products and/or recycled products whenever possible where price, quality, and performance are equal to, or superior to, non-Michigan products and the requirements of the contract documents.

11. **Rejection:** The state reserves the right to reject any bids and to waive any defects in bids.

12. **Contract:** Upon acceptance by the state, this document will constitute the contract and the executed duplicate will be returned to the contractor. The contract shall not be in force until the contractor has complied with all of the requirements of insurance.

GENERAL CONDITIONS

1. **Definitions: "State",** the State of Michigan; "**Director**", the director of the State Unit or his/her authorized representative; "**State Unit**", any state department, board, commission or institution; "**Contractor**", the bidder whose proposal is accepted by the state; "**Notification**", written notice delivered in person or by mail; "**Contract Documents**", this document and supplemental specifications and drawings.

2. **Unfair Labor Practice:** Public Act No. 278 of 1980 prohibits the state from awarding a contract or subcontract to an employer who has been found in contempt of court by a Federal Court of Appeals, on not less than three occasions involving different violations during the preceding seven years, for failure to correct an unfair labor practice as prohibited by Section 8 of Chapter 372 of the National Labor Relations Act, 29 U.S.C. 158. A contractor for the state may not, in relation to that contract subcontract with such an employer.

3. **Safety Regulations:** The contractor shall conform to the "General Safety Rules and Regulations" for the construction industry, as prescribed by the Construction Safety Commission, Department of Labor and Economic Growth, Bureau of Safety and Regulations, Lansing, Michigan, and the Occupational Safety and Health Standards of the United States Department of Labor. This shall be made a condition of each subcontract entered into pursuant to the contract.

4. **Taxes:** The contractor shall include and be deemed to have included in the bid and contract price all Michigan sales and use taxes currently imposed by legislative enactment and as administered by the Michigan Department of Treasury's Revenue Division on the bid date.

5. **Nondiscrimination:** For all state contracts for goods or services in amount of *$5,000 or* more, or for contracts entered into with parties employing three or more employees; in connection with the performance of work under this contract, the contractor shall comply with all published rules, regulations, directives, and orders of the Michigan Civil Rights Commission relevant to Section 6, 1976 PA 453 as amended, which may be in effect at the time of bidding for any individual State project.

6. **Conflicts and Omissions:** The intent of the contract documents is to provide everything necessary for the proper execution of the work. In case of conflict, the work shall not proceed until a decision has been agreed upon by all parties concerned.

7. **Royalties, Patents, Notices, and Fees:** Contractor shall give all notices and pay all royalties, building permits, and fees. He/she shall defend all suits or claims for infringement of any patent rights and shall save the state harmless from loss on account thereof. He/she shall comply with all laws, ordinances, and codes applicable to any portion of the work.

8. **Examination of Premises:** Bidder shall familiarize himself/herself with local conditions affecting the job. He/she shall take his/her own measurements and be responsible for the correctness of same. Bidder shall be held to have made such examinations and no allowances will be made in his/her behalf by reason of error or omission on his/her part. If any part of the contractor's work depends for proper results upon existing work or the work of another contractor, the contractor shall notify the director before commencing work of any defects that will affect the results. Failure to so notify the director will constitute his/her acceptance of the conditions.

9. **Working Conditions:** All work shall be done in accordance with all regulations governing the state unit wherein the work is to be performed and with minimum possible interference with the proper functioning of the activities of that state unit. Materials, tools, equipment, etc., shall be confined so as not to unduly encumber the premises. Each bidder shall be held to have visited the site and checked with the authorities the working conditions and the methods of carrying out the work and to have included in his/her proposal all costs for meeting such working conditions.

10. **Materials:** Unless otherwise specified, all materials shall be new and of the best grade of the representative kinds for the purpose.

    a. Whenever material, an item of equipment, or a system is described by a performance specification, written as a proprietary product, or uses the name of a manufacturer or vendor, the term "or equal' if not inserted, shall be implied.

11. **Permits:** The Contractor is responsible for all necessary permits for this project, unless otherwise indicated on the Bid Form, Technical Specifications, or Drawings.

    All work shall be executed in accordance with the State of Michigan's Construction Codes, except where work is specified or shown to be above such standard. The work shall be executed in conformity with the drawings and these specifications.

    If the contractor performs any work knowing it to be contrary to the State of Michigan's Construction Codes, the contractor shall assume full responsibility and shall bear all attributable costs.

12. **Employees and Superintendence:** Contractor shall enforce good order among his/her employees and shall not employ on the work any disorderly, intemperate, or unfit person or anyone not skilled in the work assigned to him/her. Contractor or a competent person having authority to act for him/her shall be at the work at all times. He/She shall have the plans and specifications available on the site at all times.

    a. Michigan Residency: Pursuant to 1988 PA 504, *50* percent of the persons working on this project and employed by the prime contractor or subcontractors shall have been residents of the State of Michigan for not less than one year before beginning work.

13. **Other Contracts:** The state may let other contracts in connection with the work and the contractor shall properly connect and coordinate his/her work with the work of such other contractors. The state shall not be liable for any damages or increased costs occasioned by the failure of other contractors to execute their work as may be anticipated by these documents.

14. **Protection:** The contractor shall be responsible for the protection of state property during the period of construction and shall exercise care to prevent damage to structures, utility services, storm and sanitary drainage systems, lawns, trees, plant material, fences, walks, drives, roadways, and other improvements in and adjacent to the area of work under the contract.

15. **Insurance:** No work connected with this contract shall be started until the contractor has submitted original signed certificates of insurance covering general liability and workers' compensation indicating (a) all workers are insured to protect him/her from claims for damages for personal injury or death which may arise from operations under this contract as required by Michigan statute and

that (b) he/she has the following liability insurance coverage: Commercial General Liability limits shall be $2,000,000.00 each occurrence, $2,000,000.00 general aggregate, $2,000,000.00 products and completed operations aggregate, $1,000,000.00 personal and advertising injury. Commercial Automobile Liability limits shall be $2,000,000.00 combined single limit, $1,000,000 Each Occurrence Limit, $500,000 Fire Damage Limit (any one fire). All of the above insurance shall be maintained during the life of this contract. Partial payments shall not relieve the contractor from full responsibility for any damage which may result from any cause including fire or other casualty until completion of the contract and final payment. Any casualties shall not relieve the contractor from performing the contract.

Insurance Companies must have a rating of "A—" or better as listed by A.M. Best Company. The State of Michigan must be named as an additional insured.

16. **Michigan Right-to-Know Law:** All contractors must conform to the provisions of the Michigan Right-to-Know Law, 1986 PA 80 which requires employers to:

    a. develop a communication program designed to safeguard the handling of hazardous chemicals through labeling of chemical containers and development and availability of Material Safety Data Sheets;

    b. provide training for employees who work with these chemicals.

    c. develop a written hazard communications program.

17. **Changes:** Contractor shall make changes in the contracted work only as ordered in writing by the director.

18. **Inspection:** Contractor shall at all times permit and facilitate inspection of the work by the director. The state unit will designate an inspector for this contract. It will be the responsibility of this contractor to notify the inspector of the date operations are to start and to contact the inspector periodically during the course of the work to insure that work is being performed in accordance with the conditions of this contract.

19. **Termination for Breach:** The state may terminate this contract when violations are not stopped immediately and corrected within a reasonable length of time after notification by the director or when the approved progress schedule is not met because of failure of the contractor to prosecute the work. In the event of such termination, the state may complete the contracted work and the contractor will be liable for any excess cost occasioned the state thereby and in such case the state may take possession of and utilize in completing the work such materials and equipment as may be on the site and necessary.

20. **Clean Up:** Contractor shall at all times keep the premises free from accumulations of waste material or rubbish caused by his/her employees or work and at the completion of the work. he/she shall remove all his/her waste, tools, equipment, staging and surplus materials from the structure and grounds and leave his/her work clean and ready for use.

21. **Guarantee:** Contractor shall furnish the state with a written guarantee to remedy any defects due to faulty materials or labor which appear in the work within one year from the date of final acceptance by the state.

22. **Payment:** Payment for the work will be made in one sum at the completion of the contract except that a single progress payment may be made at any time during the construction period for the value of the work completed, except in no case shall the amount of the payment exceed 50 percent of the value of the contract. If contractor expects to request partial payment, he/she shall submit a schedule of costs and quantities of the various parts of the work aggregating the total contract sum, such as the director may request. When requested, the contractor shall submit a statement based upon this schedule, itemized and supported as the director may require. Contract will not be considered complete until the work has been accepted as final by the state unit and the director and the attached "Guarantee and Statement" (DMB-437) has been completed and signed by the contractor. Payments will be made within 30 days after the Director has certified to the Owner that work is in place in the portion of the facility covered by the applicable request for payment in accordance with the Contract documents. Process of progress payments by the Owner may be deferred by the Owner until Work having a prior sequence, as provided in the Contract documents, is in place and is approved. Each Application of Payment shall certify that all monies owed by the Contractor to Subcontractors and Suppliers for which payment previously has been sought have been paid from the payments received.

23. **Prevailing Wage Rates:** The Prevailing Wage Law, Act 166 of the Public Acts of 1965 is applicable to this Contract. By law, prevailing wage rates are the rates contained in collectively bargained agreements covering the location of the state project. The purpose of establishing prevailing wage rates is to provide rates of pay for workers on construction projects for which the state or a school district is the contracting agent and which is financed or supported by the state. The Prevailing Wage Law requires that every contractor and subcontractor shall post a copy of all prevailing wage and fringe benefit rates prescribed in the contract at the construction site. An accurate record showing the name and occupation of and the wages and benefits paid to each construction mechanic must be kept by the employer and available for inspection by the department. Please pay special attention to the overtime requirements. A worker who believes he or she has not been paid the prevailing wage rate on a state project may file a complaint with the Wage Hour Administration, Bureau of Safety and Regulation, Department of Labor and Economic Development, 7150 Harris Drive, P.O. Box 30476, Lansing, Michigan 48909-7976, Phone: (517) 322-1825.

24. **Protection of Utility Services:** It is a requirement of this Contract, in accordance with Public Act 53 of 1974, as amended, that the Contractor give notice of construction intent to public utilities. "Miss Dig" (telephone number

1-800-482-7171, toll free) shall be notified a minimum of 72 hours (three working days) prior to construction activities. The Contractor shall provide for the protection of all public utility underground and above ground facilities that are to remain. Damage to any such utility services resulting from the Contractor's operations shall be repaired or replaced by the Contractor without additional cost to the State.

GENERAL REQUIREMENTS

1. The state unit will provide the following work:

   a. **State Salvage:** The state reserves the right to salvage certain items and equipment. Such items will be identified to the bidder at the time of his/her inspection of the proposed work. Salvaged items will be removed by state prior to commencement of work under the contract.

   b. **Moving Furnishings and Equipment:** The contractor shall give timely notice to state unit of all furnishings, window covering and movable equipment that will interfere with his/her work or which the contractor cannot protect with coverings of paper, plastic, drop cloths or clean tarpaulin. The contractor shall furnish, install. maintain and remove all coverings used to protect furnishings. window coverings and movable equipment.

2. **Project Coordination:**

   a. Prior to beginning work the contractor shall **meet** with the state unit and arrange the schedule for the project. Once the project is started, it shall be carried to completion without delay.

   b. Any building utility service interruptions or outages required by the contractor in performing the work shall be prearranged with the staff of the state unit and shall occur only during those scheduled times.

3. **Cutting and Patching:**

   a. The contractor shall do all cutting, fitting or patching of the work that may be required to make its several parts fit together properly or make new work join with the existing structure. The contractor shall take proper precautions so as not to endanger any existing work. The contractor shall not cut or alter existing structural members or foundations.

   b. Holes or openings cut in exterior walls and roofs for installation of materials or equipment shall be waterproofed by appropriate, approved materials and methods.

   c. All adjacent finished surfaces that are damaged by the new work shall be patched with materials matching existing surfaces. Joints between patched and existing material shall be straight smooth and flush. All patching material shall be applied by workers skilled in its installation.

4. **Mechanical Alteration Procedures:**

   a. All work which will necessitate shutting down of existing mechanical equipment or systems shall be made at such time as will not interfere with the normal use of the existing building.

   b. Any cutting of floors, walls, roofs or ceilings required to run new work or remove old shall be performed by the contractor requiring same and all patching on his/her work shall be done by the contractor to full satisfaction of the state unit.

   c. All piping in existing building shall be run concealed as far as practical in pipe spaces, ceiling spaces, tunnels, crawl spaces or similar areas, except as approved or directed by the state unit.

5. **Project Meetings:**

   a. **Preconstruction Conferences:** The state unit may schedule a preconstruction conference to be attended by the, state unit staff, and the contractors. Once the project has been started, the contractor shall carry it to completion without delay.

   b. **Meetings:** The state unit may schedule meetings to be held on the job site whenever needed to supply information necessary to prevent job interruptions, to observe the work or to inspect completed work. The contractor shall be represented at each meeting by persons with full authority to act for the contractor in regard to all portions of the work.

6. **Shop Drawings and Project Data:**

   a. Before the delivery of any material or equipment to the job site, the contractor shall submit to the state unit a complete list of material suppliers, subcontractors, and brand names of all materials proposed to be used in the project.

   b. The contractor shall check and verify all field measurements and shall submit to the state unit a minimum of five copies of shop drawings, product data catalogs, material schedules, safety data sheets, etc. Following examination by the state unit, three copies will be retained for the state's use and the remaining copies will be returned to the contractor with indication of approval or with notations for correction.

7. **Temporary Utilities:**

   a. The contractor shall furnish and install all temporary facilities and controls required by the work, shall remove them from state property upon completion of the work, and the grounds and existing facilities shall be restored to their original condition.

   b. Water and electricity will be available in the area where work will be performed. The contractor will not be charged for reasonable use of these services for construction operation. The contractor shall pay costs for installation and removal of any temporary connections including necessary safety devices and controls. Use of services shall not disrupt or interfere with operations of the state unit.

c. Temporary Sanitary Facilities: The Contractor shall provide and maintain portable temporary toilets in locations approved by the State Unit. There shall be sufficient number for the work force and they shall comply with all federal, state and local code requirements. The Contractor shall maintain all temporary toilets in a sanitary condition at all times and shall remove them when the Work under this Contract is complete.

d. Heating units, If required, shall be of type approved by the state unit. Equipment and surroundings shall be kept clean and in safe condition All direct fired space heaters, if used, shall be vented directly to the outside. The contractor shall pay for all fuel and/or electricity used for temporary heat.

8. **Construction Aids:**

a. The contractor shall furnish, install, and maintain as long as necessary and remove when no longer required, safe and adequate scaffolding, ladders, staging, platforms, chutes, railings, hoisting equipment, etc., as required for proper execution of the work. All construction aids shall conform to federal, state, and local codes or laws for protection of workers and the public.

b. **Debris Chute:** The contractor shall use a chute to lower debris resulting from his/her work. The chute shall be the enclosed type with its discharge directly into the truck.

9. **Barriers and Enclosures:** The contractor shall furnish, install and maintain as long as necessary and remove when no longer required adequate barriers, warning signs or lights at all dangerous points throughout the work for protection of property, workers and the public. The contractor shall hold the State of Michigan harmless from damage or claims arising out of any injury or damage that may be sustained by any person or persons as a result of the work under the contract.

10. **Contract Close Out:**

a. **Substantial Completion:** The contractor shall notify the state unit when the work will be substantially complete and ready for inspection and preparation of a list of minor replacement, correction and adjustment items. The contractor shall be represented on the job site at the time this inspection is made and thereafter shall complete all work by the date set for final acceptance by the owner.

b. **Cleaning:**

(1) **Regular Cleaning:** All scrap or removed material, debris or rubbish shall be regularly removed from the project at the end of each working day. No discarded material shall be deposited on the grounds of the state unit without the express permission of the physical plant engineer or administrative officer. No salvage or surplus material may be sold on the premises of the state unit.

(2) **Final Cleaning:** Just prior to final acceptance by the state unit, the contractor shall clean all of the work and existing surfaces, building elements and contents that were soiled by his/her operations and make repairs for any damage or blemish that was caused by the work.

11. **Project Record Documents:** The contractor shall furnish to state unit with the request for final payment reproducible drawings or plans, and any sections or details necessary, clearly showing the actual path and location of material and equipment installed in this project.

12. **Warranties:** The contractor shall forward to the state unit Form PR-1628E covering statements concerning guarantee and indebtedness, and any other special warranties or requirements of the contract documents.

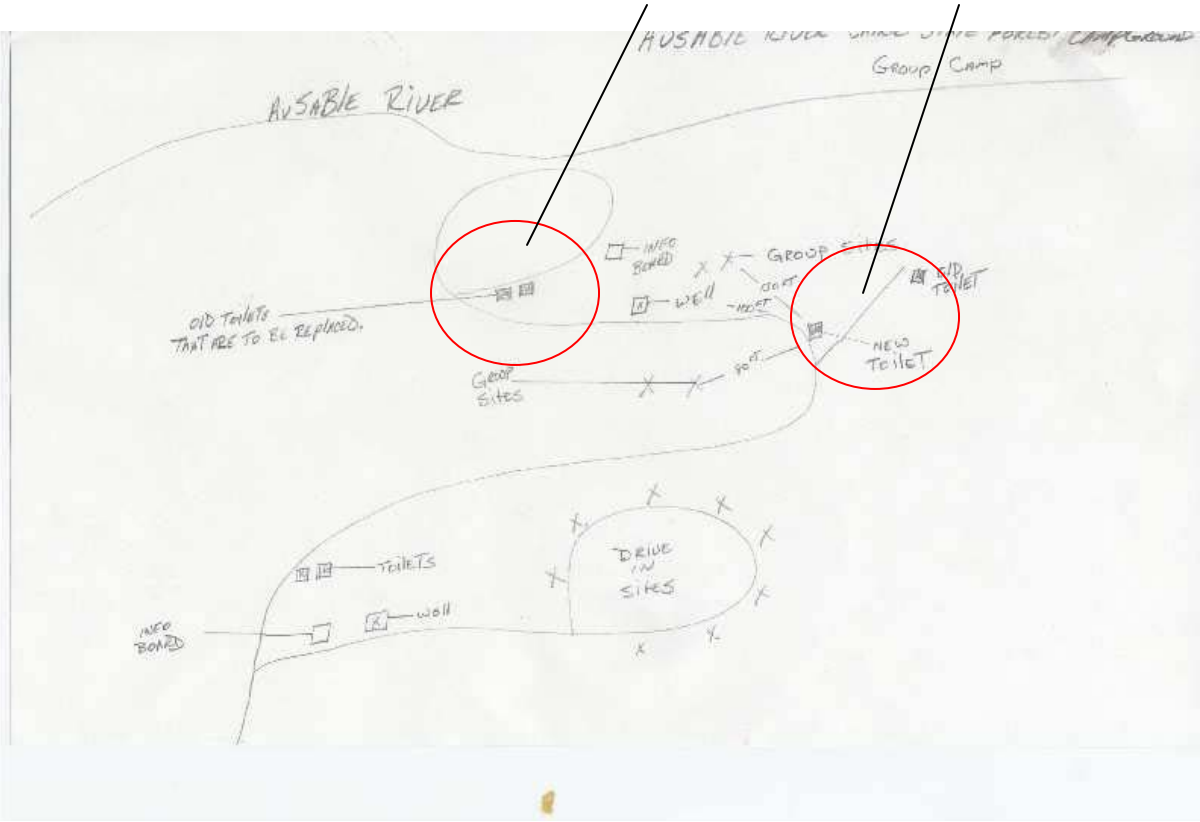
LOCATION AND AREA MAPS

AU SABLE RIVER SFC AND CANOE CAMP: Crawford County, Grayling Township, T26N, R3W, Section 4

UPPER MANISTEE RIVER SFC: Cawford County,Fredric Township, R27N, R4W, Section 7

PLACEMENT AND PHOTOGRAPHS FOR
AuSABLE RIVER STATE FOREST CAMPGROUND

Site Plan: Site #1 Site #2



Project Description for Site #1: Remove the existing toilets as defined in the Demolition Specification 02070. Vault will be removed per specification section 3.02(C). Install new vaults and toilets within same footprint and near the same grades and existing toilets. Placement of additional crushed limestone around new concrete pad may be required to achieve smooth transition into toilet. Sign one toilet as an accessible "Men's" and the other as an accessible "Women's". A pre-construction meeting will be scheduled with contractor to confirm placement.

Photographs of existing toilets at Site #1

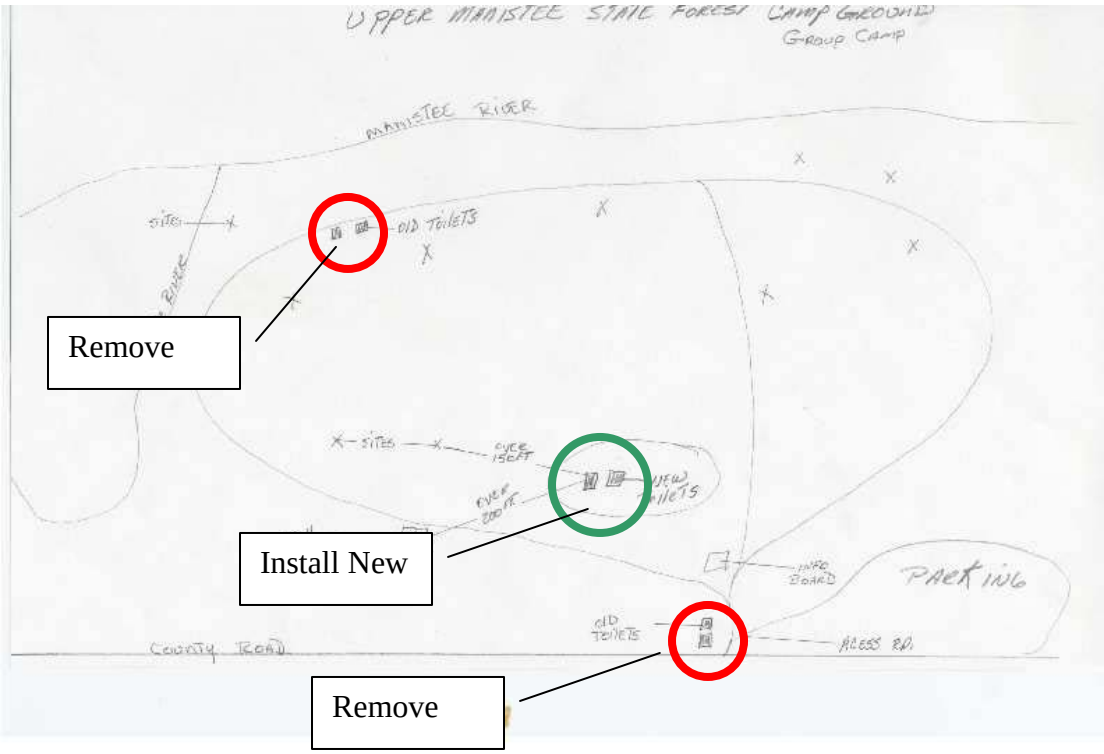
PLACEMENT AND PHOTOGRAPHS FOR
AuSABLE RIVER STATE FOREST CAMPGROUND

Project Description for Site #2: Remove the existing vault toilet and abandon existing vault as defined in the Demolition Specification 02070.3.02(B). Install new vault and building closer to entrance road. Some site grading may be required provide drainage away from toilet while achieving barrier free access to entrance. Sign this toilet as an accessible "Unisex" toilet.

Photograph of stakes reflect location of new toilet building at Site #2. Toilet in background is the toilet to be removed.

PLACEMENT AND PHOTOGRAPHS FOR
MANISTEE RIVER STATE FOREST CAMPGROUND

Site Plan:



Project Description: Remove 4 existing vault toilets per Demolition specification 02070.3.02(B). Install 2 new vault toilets as shown on plan. Some site grading may be required to ensure proper drainage away from structures while providing barrier free access to structures. Sign one toilet as and accessible "Men's toilet and the other as an accessible ""Women toilet. A pre-construction meeting will be held on site with the contractor to confirm locations.

Photos: Shows location of new vault toilets.

State of Michigan
Department of Energy, Labor and Economic Growth

Wage and Hour Division
7150 Harris Dr.
PO Box 30476
Lansing, MI 48909-7976
Telephone: 517-322-1825
Fax: 517-322-6352
www.michigan.gov/wagehour

Official Request #: 705
Requestor: DEPT. OF NATURAL RESOURCES & ENVIRONMENT
Project Description: Vault Toilet Upgrades Project
Project Number: AU Sable River SFCG--Upper Mainistee River SFCG

Crawford County
Official 2010 Prevailing Wage Rates for State Funded Projects

Issue Date: 5/11/2010
Contract must be awarded by: 8/9/2010

Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Asbestos & Lead Abatement Laborer							
Asbestos & Lead Abatement Laborer		MLDC	8/6/2009	$35.55	$47.67	$59.78	H H H X X X X D Y
4 ten hour days @ straight time allowed Monday-Saturday, must be consecutive calendar days							
Asbestos & Lead Abatement, Hazardous Material Handler							
Asbestos and Lead Abatement, Hazardous Material Handler		AS207	11/4/2009	$35.55	$48.15	$60.75	H H H X X X X D Y
4 ten hour days @ straight time allowed Monday-Saturday,							
Bricklayer							
Bricklayer		BR9-40	10/30/2009	$38.33	$50.88	$63.43	H H H X X X X D Y
	Apprentice Rates:						
	0-749 hours			$28.29	$35.82	$43.35	
	750-1499 hours			$29.55	$37.71	$45.87	
	1500-2249 hours			$30.80	$39.59	$48.37	
	2250-2,999 hours			$32.05	$41.46	$50.87	
	3000-3749 hours			$33.31	$43.35	$53.39	
	3750-4499 hours			$34.57	$45.24	$55.91	
	4500-5249 hours			$35.82	$47.11	$58.41	
	5250-6000 hours			$37.07	$48.99	$60.91	
Carpenter							
Carpenter and Floor Layer		CA202	1/28/2009	$32.17	$42.86	$53.54	H H H H H H H D Y
	Apprentice Rates:						
	1st year			$21.42	$26.76	$32.10	
	2nd year			$23.56	$29.97	$36.38	
	3rd year			$26.77	$34.78	$42.80	
	4th year			$28.90	$37.98	$47.06	
Cement Finisher							
Cement Finisher		BR9-40-CF	10/30/2009	$34.49	$45.36	$56.22	H H D X X X D D Y
	Apprentice Rates:						
	0-749 hours			$26.88	$33.94	$41.00	
	750-1499 hours			$27.97	$35.58	$43.18	
	1500-2249 hours			$29.06	$37.21	$45.36	
	2250-2999 hours			$30.14	$38.83	$47.52	
	3000-3749 hours			$31.23	$40.46	$49.70	
	3750-4499 hours			$32.32	$42.10	$51.88	

Official Rate Schedule
Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Cement Mason

Cement Mason Four 10s allowed Monday-Thursday with Friday or Saturday inclement weather make up days. Saturday hours for inclement weather make up shall be paid straight rate unless over 40 hours worked.	PL16-13	10/16/2009	$33.42	$44.72	$56.01	H H H H H H H D Y
Apprentice Rates:						
1st year			$25.51	$32.85	$40.19	
2nd year			$27.77	$36.24	$44.71	
3rd year			$30.03	$39.63	$49.23	

Electrician

Inside Wireman Double time pay required after 12 hours worked Monday - Friday	EC-498-IW	3/28/2008	$38.74	$55.07	$71.40	H H H H H H D D Y
Apprentice Rates:						
Period 1			$16.41	$22.02	$27.63	
Period 2			$17.79	$24.10	$30.39	
Period 3			$20.71	$28.48	$36.23	
Period 4			$22.13	$30.60	$39.07	
Period 5			$25.31	$35.37	$45.43	
Period 6			$28.20	$39.71	$51.21	
Subdivision of county All Townships EXCEPT Lovells.						
Inside Wireman	EC-692-IW-Z2	10/16/2009	$40.84	$57.66	$74.48	H H H H H H H D Y
Apprentice Rates:						
Period 1			$20.51	$27.92	$35.32	
Period 2			$22.14	$30.37	$38.58	
Period 3			$25.44	$35.31	$45.18	
Period 4			$27.08	$37.77	$48.46	
Period 5			$30.37	$42.71	$55.04	
Period 6			$33.65	$47.63	$61.60	
Subdivision of county Lovells Township ONLY.						
Sound and Communication Installer/Technician	EC-692-SC	12/1/2005	$25.88	$36.33	$46.78	H H H H H H H D Y
Apprentice Rates:						
1st 6 months			$11.76	$16.99	$22.21	
2nd 6 months			$12.81	$18.57	$24.31	
3rd 6 months			$14.90	$21.69	$28.49	
4th 6 months			$15.94	$23.26	$30.57	
5th 6 months			$18.03	$26.39	$34.75	
6th 6 months			$20.12	$29.53	$38.93	
Subdivision of county Lovells township						
Lineman/Technician outside utility and commercial power and high voltage pipe type cable work and electrical underground. Four 10s allowed Monday-Thursday with Friday makeup or Tuesday-Friday with Monday makeup.	EC-876	11/18/2009	$47.05	$68.11	$89.17	H H H H H H H D Y
Apprentice Rates:						
1st period			$30.20	$42.69	$55.26	
2nd period			$32.32	$46.02	$59.70	
3rd period			$34.42	$49.16	$63.90	
4th period			$36.53	$52.33	$68.12	
5th period			$38.63	$55.47	$72.32	
6th period			$40.74	$58.64	$76.54	
7th period			$42.84	$61.79	$80.74	

Ironworker

Fence, Sound Barrier & Guardrail erection/installation and Exterior Signage work Four ten hour work days may be worked during Monday-Saturday.	IR-340-F2	8/13/2009	$26.80	$36.63	$46.45	X X H X X X H D N

Apprentice Rates:						
60% Level			$18.70	$24.59	$30.49	
65% Level			$19.71	$26.10	$32.48	
70% Level			$20.73	$27.61	$34.49	
75% Level			$21.74	$29.11	$36.48	
80% Level			$22.75	$30.61	$38.47	
Laborer						
Class A Laborer: building and heavy construction work, demolition, mortar mixers, mason tender, carpenter tender, fire watch, heater tender, all 3" pumps and below, furniture mover, material mixers, vibrator operators, operators of concrete mixers, chipping hammers, tamping machines, sand blasters, concrete breakers (90 lb hammer or less), cement gun nozzelman, operators of motor driven buggies, plaster mixers and plaster tenders, pipe or crock layers, caisson work in buildings only, except others falling within class B.	L1098-N-A	11/9/2009	$26.74	$34.63	$42.51	H H H H H H H D Y
Cleaning and clearing of all debris, including wire brushing of windows, scraping of floors, removal of surplus material from all fixtures within confines of structure and cleaning all debris in building and construction area. The general cleanup, including sweeping, cleaning, washdown and wiping of construction facility, equipment and furnishings and removal and loading or burning of all debris including crates, boxes, packaging waste material. Washing and cleaning of walls, partitions, ceilings, windows, bathrooms, kitchens, laboratory, and all fixtures and facilities therein. Cleanup, mopping, washing, waxing and polishing or dusting of all floors or areas.						
Apprentice Rates:						
0-1,000 work hours			$22.80	$28.71	$34.63	
1,001-2,000 work hours			$23.59	$29.90	$36.21	
2,001-3,000 work hours			$24.37	$31.07	$37.77	
3,001-4,000 work hours			$25.95	$33.44	$40.93	
Class B Refractory Work: inside or outside digester, tanks, lime kilns, chests, boilers, and boiler tubes, including the handling of acid, chlorine, chemicals, epoxies, liquids and cleaning of existing precipitators, hydro blasting, hydro washing, and sandblasting.	L1098-N-B	7/16/2009	$27.74	$36.13	$44.51	H H H H H H H D Y
Apprentice Rates:						
0-1,000 work hours			$23.55	$29.84	$36.13	
1,001-2,000 work hours			$24.39	$31.10	$37.81	
2,001-3,000 work hours			$25.22	$32.35	$39.47	
3,001-4,000 work hours			$26.90	$34.87	$42.83	
Laborer Underground - Tunnel, Shaft & Caisson						
Class I - Tunnel, shaft and caisson laborer, dump man, shanty man, hog house tender, testing man (on gas), and watchman.	LAUCT-Z2-1	9/10/2009	$32.34	$43.03	$53.71	H H H H H H H D Y
Apprentice Rates:						
0-1,000 work hours			$27.37	$35.57	$43.77	
1,001-2,000 work hours			$28.37	$37.07	$45.77	
2,001-3,000 work hours			$29.36	$38.56	$47.75	
3,001-4,000 work hours			$31.35	$41.54	$51.73	

Class II - Manhole, headwall, catch basin builder, bricklayer tender, mortar man, material mixer, fence erector, and guard rail builder	LAUCT-Z2-2	9/10/2009	$32.43	$43.16	$53.89	H	H	H	H	H	H	H	D	Y
Apprentice Rates:														
0-1,000 work hours			$27.44	$35.68	$43.91									
1,001-2,000 work hours			$28.44	$37.18	$45.91									
2,001-3,000 work hours			$29.44	$38.68	$47.91									
3,001-4,000 work hours			$31.43	$41.66	$51.89									
Class III - Air tool operator (jack hammer man, bush hammer man and grinding man), first bottom man, second bottom man, cage tender, car pusher, carrier man, concrete man, concrete form man, concrete repair man, cement invert laborer, cement finisher, concrete shoveler, conveyor man, floor man, gasoline and electric tool operator, gunnite man, grout operator, welder, heading dinky man, inside lock tender, pea gravel operator, pump man, outside lock tender, scaffold man, top signal man, switch man, track man, tugger man, utility man, vibrator man, winch operator, pipe jacking man, wagon drill and air track operator and concrete saw operator (under 40 h.p.).	LAUCT-Z2-3	9/10/2009	$32.53	$43.31	$54.09	H	H	H	H	H	H	H	D	Y
Apprentice Rates:														
0-1,000 work hours			$27.51	$35.78	$44.05									
1,001-2,000 work hours			$28.52	$37.30	$46.07									
2,001-3,000 work hours			$29.52	$38.80	$48.07									
3,001-4,000 work hours			$31.53	$41.81	$52.09									
Class IV - Tunnel, shaft and caisson mucker, bracer man, liner plate man, long haul dinky driver and well point man.	LAUCT-Z2-4	9/10/2009	$32.69	$43.55	$54.41	H	H	H	H	H	H	H	D	Y
Apprentice Rates:														
0-1,000 work hours			$27.63	$35.96	$44.29									
1,001-2,000 work hours			$28.65	$37.49	$46.33									
2,001-3,000 work hours			$29.66	$39.00	$48.35									
3,001-4,000 work hours			$31.68	$42.04	$52.39									
Class V - Tunnel, shaft and caisson miner, drill runner, keyboard operator, power knife operator, reinforced steel or mesh man (e.g. wire mesh, steel mats, dowel bars)	LAUCT-Z2-5	9/10/2009	$32.95	$43.94	$54.93	H	H	H	H	H	H	H	D	Y
Apprentice Rates:														
0-1,000 work hours			$27.83	$36.26	$44.69									
1,001-2,000 work hours			$28.85	$37.79	$46.73									
2,001-3,000 work hours			$29.88	$39.34	$48.79									
3,001-4,000 work hours			$31.93	$42.41	$52.89									
Class VI - Dynamite man and powder man.	LAUCT-Z2-6	9/10/2009	$33.26	$44.41	$55.55	H	H	H	H	H	H	H	D	Y
Apprentice Rates:														
0-1,000 work hours			$28.06	$36.60	$45.15									
1,001-2,000 work hours			$29.10	$38.16	$47.23									
2,001-3,000 work hours			$30.14	$39.72	$49.31									
3,001-4,000 work hours			$32.22	$42.84	$53.47									
Class VII - Restoration laborer, seeding, sodding, planting, cutting, mulching and topsoil grading and the restoration of property such as replacing mail boxes, wood chips, planter boxes and flagstones.	LAUCT-Z2-7	9/10/2009	$25.53	$32.81	$40.09	H	H	H	H	H	H	H	D	Y
Apprentice Rates:														
0-1,000 work hours			$22.27	$27.92	$33.57									
1,001-2,000 work hours			$22.92	$28.90	$34.87									
2,001-3,000 work hours			$23.57	$29.87	$36.17									
3,001-4,000 work hours			$24.88	$31.84	$38.79									

Operating Engineer

Class C- Regular equipment operator, crane, stiff leg derrick, scraper dozer, grader, front end loader, hoist, job mechanic, head grease man, concrete pump truck and hydro excavators Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work not performed due to weather,	EN-324-BH2C	9/28/2009	$44.95	$58.47	$71.99	H H H H H H H D Y

Apprentice Rates:

1st 6 months	$36.34	$45.81	$55.27
2nd 6 months	$37.69	$47.83	$57.97
3rd 6 months	$39.04	$49.85	$60.67
4th 6 months	$40.39	$51.88	$63.37
5th 6 months	$41.75	$53.92	$66.09
6th 6 months	$43.10	$55.95	$68.79

Class D- Air tugger (single drum), material hoist, boiler operator, sweeping machine, winch truck, Bob Cat and similar equipment, elevators (when operated by an operating engineer), and fork truck over 20' lift Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work not performed due to weather, Monday-Thursday may be scheduled on Friday.	EN-324-BH2D	9/28/2009	$40.15	$51.27	$62.39	H H H H H H H D Y
Class E- Pump 6" or over, well points, freeze systems, boom truck (non-swinging), end dumps and laser/power screed, concrete wire saw 20 h.p. and over and brokk concrete breaker Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work not performed due to weather, Monday-Thursday may be scheduled on Friday.	EN-324-BH2E	9/28/2009	$39.55	$50.37	$61.19	H H H H H H H D Y
Class F- Air compressor, welder, generators, conveyors, pumps under 6", Grease man, and fork truck 20' or less lift Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work not performed due to weather, Monday-Thursday may be scheduled on Friday.	EN-324-BH2F	9/28/2009	$37.10	$46.70	$56.29	H H H H H H H D Y
Class G- Oiler, fireman and heater operator Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work not performed due to weather, Monday-Thursday may be scheduled on Friday.	EN-324-BH2G	9/28/2009	$35.40	$44.15	$52.89	H H H H H H H D Y
Class A- Crane w/ main Boom & Jib 220' or longer Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work unabled to be performed due to weather, Monday-Thursday may be scheduled on Friday.	EN-OSA	9/28/2009	$46.30	$60.50	$74.69	H H H H H H H D Y
Class A- Crane w/ main Boom & Jib 300' or longer Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work unabled to be performed due to weather, Monday-Thursday may be scheduled on Friday.	EN-OSA3	9/28/2009	$47.80	$62.75	$77.69	H H H H H H H D Y
Class A- Crane w/ main Boom & Jib 400' or longer Four 10 hour days may be scheduled Monday-Thursday or	EN-OSA4	9/28/2009	$49.30	$65.00	$80.69	H H H H H H H D Y

Tuesday-Friday. Work not performed due to weather, Monday-Thursday may be scheduled on Friday.

Class B- Crane Operator with main boom and jib 140' or longer, tower cranes, gantry crane, whirley derrick	EN-OSB	9/28/2009	$46.05	$60.12	$74.19	H	H	H	H	H	H	H	D	Y

Four 10 hour days may be scheduled Monday-Thursday or Tuesday-Friday. Work unabled to be performed due to weather, Monday-Thursday may be scheduled on Friday.

Painter

Painter	PT-1803-P	10/9/2009	$32.68	$43.57	$54.46	H	H	H	H	H	H	H	D	Y

4 10 hour days allowed on consecutive days, Monday-Friday. Make up day allowed M-F for work missed due to holidays or inclement weather.

Apprentice Rates:			
1st year	$20.90	$25.90	$30.90
2nd year	$25.06	$32.14	$39.22
3rd year	$28.32	$37.03	$45.74

Plasterer

Plasterer	PL16-1	8/18/2009	$32.36	$43.10	$53.84	H	H	H	H	H	H	H	D	N

Apprentice Rates:			
1st year	$24.84	$31.82	$38.80
2nd year	$26.99	$35.04	$43.10
3rd year	$29.14	$38.27	$47.40

Plumber, Pipefitter, Welder

Plumber, Pipefitter, Welder	PL-85-Z2	5/7/2009	$46.49	$60.94	$75.38	H	H	H	H	H	H	H	D	Y

Apprentice Rates:			
1st 6 months	$27.47	$34.69	$41.91
2nd 6 months	$29.43	$37.38	$45.32
3rd 6 months	$31.39	$40.06	$48.72
4th 6 months	$33.36	$42.75	$52.14
5th 6 months	$35.32	$45.43	$55.54
6th 6 months	$37.29	$48.12	$58.96
7th 6 months	$39.25	$50.80	$62.36
8th 6 months	$41.22	$53.50	$65.78
9th & 10th 6 months	$43.18	$56.18	$69.18

Roofer

Commercial Roofer	RO-149-NL	8/18/2008	$29.18	$38.00	$46.81	X	X	X	X	X	X	X	D	Y

Straight time is not to exceed ten (10) hours per day or forty (40) hours per week.

Apprentice Rates:			
Apprentice 1	$18.02	$23.08	$28.14
Apprentice 2	$21.34	$26.68	$32.02
Apprentice 3	$22.55	$28.45	$34.35
Apprentice 4	$23.76	$30.23	$36.69
Apprentice 5	$24.97	$32.00	$39.02
Apprentice 6	$26.20	$33.79	$41.39

Sheet Metal Worker														
Sheet Metal Worker	SHM-7-3		$44.08	$57.31	$70.53	H	H	D	H	H	H	D	D	Y
4 10s allowed as consecutive days, M-Th or T-F		9/9/2009												
	Apprentice Rates:													
	1st 6 months		$14.76	$19.89	$25.03									
	2nd 6 months		$17.17	$22.95	$28.73									
	3rd 6 months		$18.93	$25.35	$31.77									
	4th 6 months		$21.30	$28.36	$35.42									
	5th 6 months		$23.08	$30.79	$38.49									
	6th 6 months		$25.47	$33.82	$42.16									
	7th 6 months		$27.25	$36.24	$45.23									
	8th 6 months		$29.62	$39.25	$48.88									
Truck Driver														
of all trucks of 8 cubic yd capacity or over	TM-RB2	9/17/2009	$36.84	$36.44		H	H	H	H	H	H	H	H	Y
of all trucks of 8 cubic yard capacity or less	TM-RB2A	9/17/2009	$36.74	$36.29		H	H	H	H	H	H	H	H	Y
on euclid type equipment	TM-RB2B	9/17/2009	$36.99	$36.66		H	H	H	H	H	H	H	H	Y

STATE OF MICHIGAN

JENNIFER M. GRANHOLM
GOVERNOR

DEPARTMENT OF ENERGY, LABOR & ECONOMIC GROWTH
LANSING

STANLEY "SKIP" PRUSS
DIRECTOR

REQUIREMENTS OF THE PREVAILING WAGES ON STATE PROJECTS ACT, PUBLIC ACT 166 OF 1965

The Michigan Department of Labor & Economic Growth determines prevailing rates pursuant to the Prevailing Wages on State Projects Act, Public Act 166 of 1965, as amended. The purpose of establishing prevailing rates is to provide minimum rates of pay that must be paid to workers on construction projects for which the state or a school district is the contracting agent and which is financed or financially supported by the state. By law, prevailing rates are compiled from the rates contained in collectively bargained agreements which cover the locations of the state projects. The official prevailing rates provide an hourly rate which includes wage and fringe benefit totals for designated construction mechanic classifications. The overtime rates also include wage and fringe benefit totals. Please pay special attention to the overtime and premium pay requirements. Prevailing wage is satisfied when wages plus fringe benefits paid to a worker are equal to or greater than the required rate.

State of Michigan responsibilities under the law:

- The department establishes the prevailing rate for each classification of construction mechanic ***requested by a contracting agent*** prior to contracts being let out for bid on a state project.

Contracting agent responsibilities under the law:

- If a contract is not awarded or construction does not start within 90 days of the date of the issuance of rates, a re-determination of rates must be requested by the contracting agent.
- Rates for classifications needed but not provided on the Prevailing Rate Schedule, ***must*** be obtained ***prior*** to contracts being let out for bid on a state project.
- The contracting agent, by written notice to the contractor and the sureties of the contractor known to the contracting agent, may terminate the contractor's right to proceed with that part of the contract, for which less than the prevailing rates have been or will be paid, and may proceed to complete the contract by separate agreement with another contractor or otherwise, and the original contractor and his sureties shall be liable to the contracting agent for any excess costs occasioned thereby.

Contractor responsibilities under the law:

- Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing rates prescribed in a contract.
- Every contractor and subcontractor shall keep certified payrolls, as used in the industry, of each and every construction mechanic, and verification of such certified payroll in writing by either a representative or auditor/certified accountant at the end of such a

DELEG is an equal opportunity employer/program.
Auxiliary aids, services and other reasonable accommodations are available upon request to individuals with disabilities.

WAGE & HOUR DIVISION
P.O. BOX 30476 • LANSING, MICHIGAN 48909-7976
www.michigan.gov/wagehour • (517) 335-0400 • FAX (517) 335-0077

certified payroll. These records should include the occupation and indicate the hours worked on each project for each classification and the actual wages and benefits paid. This record shall be available for reasonable inspection by the contracting agent or the department.

- Each contractor or subcontractor is separately liable for the payment of the prevailing rate to its employees.
- The prime contractor is responsible for advising all subcontractors of the requirement to pay the prevailing rate prior to commencement of work.
- The prime contractor is secondarily liable for payment of prevailing rates that are not paid by a subcontractor.
- A construction mechanic shall only be paid the apprentice rate if registered with the United States Department of Labor, Bureau of Apprenticeship and Training and the rate is included in the contract.

Enforcement:

A person who has information of an alleged prevailing wage violation on a state project may file a complaint with the Wage & Hour Division. The department will investigate and attempt to resolve the complaint informally. During the course of an investigation, if the requested records and posting certification are not made available in compliance with Section 5 of Act 166, the investigation will be concluded and a referral to the Office of Attorney General for civil action will be made. The Office of Attorney General will pursue costs and fees associated with a lawsuit if filing is necessary to obtain records.

A violation of Act 166 may result in the contractor's name being added to the Prevailing Wage Act Violators List published on the division's website, updated monthly. This list includes the names and addresses of contractors and subcontractors the division has found in violation of Act 166 based on complaints from individuals and third parties. The Prevailing Wage Act Violators List is intended to inform contracting agents of contractors that have violated Act 166 for use in determining who should receive state-funded projects.

Michigan Department Energy, Labor & Economic Growth
Wage & Hour Division
Overtime Provisions for MICHIGAN PREVAILING WAGE RATE
COMMERCIAL SCHEDULE

1. Overtime is represented as a nine character code. Each character represents a certain period of time after the first 8 hours Monday thru Friday.

	Monday thru Friday	Saturday	Sunday & Holidays	Four 10s
First 8 Hours		**4**	**8**	**9**
9th Hour	**1**	**5**		
10th Hour	**2**	**6**		
Over 10 hours	**3**	**7**		

Overtime for Monday thru Friday after 8 hours:
the 1st character is for time worked in the 9th hour *(8.1 - 9 hours)*
the 2nd character is for time worked in the 10th hour *(9.1 - 10 hours)*
the 3rd character is for time worked beyond the 10th hour *(10.1 and beyond)*

Overtime on Saturday:
the 4th character is for time worked in the first 8 hours on Saturday *(0 - 8 hours)*
the 5th character is for time worked in the 9th hour on Saturday *(8.1 - 9 hours)*
the 6th character is for time worked in the 10th hour *(9.1 - 10 hours)*
the 7th character is for time worked beyond the 10th hour *(10.01 and beyond)*

Overtime on Sundays & Holidays
The 8th character is for time worked on Sunday or on a holiday

Four Ten Hour Days
The 9th character indicates if an optional 4-day 10-hour per day workweek can be worked ***between Monday and Friday*** **without paying overtime after 8 hours worked, unless otherwise noted in the rate schedule. To** ***utilize a 4 ten workweek, notice is required from the employer to employee prior to the start of work on the project.***

2. Overtime Indicators Used in the Overtime Provision:
H - means TIME AND ONE-HALF due
X - means TIME AND ONE-HALF due after 40 HOURS worked
D - means DOUBLE PAY due
Y - means YES an optional 4-day 10-hour per day workweek can be worked without paying overtime after 8 hours worked
N - means NO an optional 4-day 10-hour per day workweek *can not* be worked without paying overtime after 8 hours worked

3. EXAMPLES:
HHHHHHHDN - This example shows that the 1½ rate must be used for time worked after 8 hours Monday thru Friday *(characters 1 - 3);* for all hours worked on Saturday, 1½ rate is due *(characters 4 - 7).* Work done on Sundays or holidays must be paid double time *(character 8).* The N *(character 9)* indicates that 4 ten-hour days is not an acceptable workweek at regular pay.

XXXHHHHDY - This example shows that the 1½ rate must be used for time worked after 40 hours are worked Monday thru Friday *(characters 1-3);* for hours worked on Saturday, 1½ rate is due *(characters 4 – 7).* Work done on Sundays or holidays must be paid double time *(character 8).* The Y *(character 9)* indicates that 4 ten-hour days is an acceptable alternative workweek.

(REV 09/29/09)

ENGINEERS - CLASSES OF EQUIPMENT LIST

UNDERGROUND ENGINEERS

CLASS I

Backfiller Tamper, Backhoe, Batch Plant Operator, Clam-Shell, Concrete Paver (2 drums or larger), Conveyor Loader (Euclid type), Crane (crawler, truck type or pile driving), Dozer, Dragline, Elevating Grader, End Loader, Gradall (and similar type machine), Grader, Power Shovel, Roller (asphalt), Scraper (self propelled or tractor drawn), Side Broom Tractor (type D-4 or larger), Slope Paver, Trencher (over 8' digging capacity), Well Drilling Rig, Mechanic, Slip Form Paver, Hydro Excavator.

CLASS II

Boom Truck (power swing type boom), Crusher, Hoist, Pump (1 or more 6" discharge or larger gas or diesel powered by generator of 300 amps or more, inclusive of generator), Side Boom Tractor (smaller than type D-4 or equivalent), Tractor (pneu-tired, other than backhoe or front end loader), Trencher (8' digging capacity and smaller), Vac Truck.

CLASS III

Air Compressors (600 cfm or larger), Air Compressors (2 or more less than 600 cfm), Boom Truck (non-swinging, non-powered type boom), Concrete Breaker (self-propelled or truck mounted, includes compressor), Concrete Paver (1 drum, ½ yard or larger), Elevator (other than passenger), Maintenance Man, Mechanic Helper, Pump (2 or more 4" up to 6" discharge, gas or diesel powered, excluding submersible pump), Pumpcrete Machine (and similar equipment), Wagon Drill Machine, Welding Machine or Generator (2 or more 300 amp or larger, gas or diesel powered).

CLASS IV

Boiler, Concrete Saw (40HP or over), Curing Machine (self-propelled), Farm Tractor (w/attachment), Finishing Machine (concrete), Firemen, Hydraulic Pipe Pushing Machine, Mulching Equipment, Oiler (2 or more up to 4", exclude submersible), Pumps (2 or more up to 4" discharge if used 3 hrs or more a day-gas or diesel powered, excluding submersible pumps), Roller (other than asphalt), Stump Remover, Vibrating Compaction Equipment (6' wide or over), Trencher (service) Sweeper (Wayne type and similar equipment), Water Wagon, Extend-a-Boom Forklift.

HAZARDOUS WASTE ABATEMENT ENGINEERS

CLASS I

Backhoe, Batch Plant Operator, Clamshell, Concrete Breaker when attached to hoe, Concrete Cleaning Decontamination Machine Operator, Concrete Pump, Concrete Paver, Crusher, Dozer, Elevating Grader, Endloader, Farm Tractor (90 h.p. and higher), Gradall, Grader, Heavy Equipment Robotics Operator, Hydro Excavator, Loader, Pug Mill, Pumpcrete Machines, Pump Trucks, Roller, Scraper (self-propelled or tractor drawn), Side Boom Tractor, Slip Form Paver, Slope Paver, Trencher, Ultra High Pressure Waterjet Cutting Tool System Operator, Vactors, Vacuum Blasting Machine Operator, Vertical Lifting Hoist, Vibrating Compaction Equipment (self-propelled), and Well Drilling Rig.

CLASS II

Air Compressor, Concrete Breaker when not attached to hoe, Elevator, End Dumps, Equipment Decontamination Operator, Farm Tractor (less than 90 h.p.), Forklift, Generator, Heater, Mulcher, Pigs (Portable Reagent Storage Tanks), Power Screens, Pumps (water), Stationary Compressed Air Plant, Sweeper, Water Wagon and Welding Machine.

Revised: 05/23/08

JENNIFER M. GRANHOLM
GOVERNOR

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STANLEY "SKIP" PRUSS
DIRECTOR

Informational Sheet: Prevailing Wages on State Projects
General Information Regarding Fringe Benefits

Certain fringe benefits **may** be credited toward the payment of the Prevailing Wage Rate:

- If a fringe benefit is paid directly to a construction mechanic
- If a fringe benefit contribution or payment is made on behalf of a construction mechanic
- If a fringe benefit, which may be provided to a construction mechanic**,** is pursuant to a written contract or policy
- If a fringe benefit is paid into a fund, for a construction mechanic

When a fringe benefit is not paid by an hourly rate, the hourly credit will be calculated based on the annual value of the fringe benefit divided by 2080 hours per year (52 weeks @ 40 hours per week).

The following is an example of the types of fringe benefits allowed and how an hourly credit is calculated:

Vacation	40 hours X $14.00 per hour = $560/2080 =	$.27
Dental insurance	$31.07 monthly premium X 12 mos. = $372.84 /2080 =	$.18
Vision insurance	$5.38 monthly premium X 12 mos. = $64.56/2080 =	$.03
Health insurance	$230.00 monthly premium X 12 mos. = $2,760.00/2080 =	$1.33
Life insurance	$27.04 monthly premium X 12 mos. = $324.48/2080 =	$.16
Tuition	$500.00 annual cost/2080 =	$.24
Bonus	4 quarterly bonus/year x $250 = $1000.00/2080 =	$.48
401k Employer Contribution	$2000.00 total annual contribution/2080 =	$.96
Total Hourly Credit		$3.65

Other examples of the types of fringe benefits allowed:

- Sick pay
- Holiday pay
- Accidental Death & Dismemberment insurance premiums

The following are examples of items that **will not** be credited toward the payment of the Prevailing Wage Rate

- Legally required payments, such as:
  - Unemployment Insurance payments
  - Workers' Compensation Insurance payments
  - FICA (Social Security contributions, Medicare contributions)
- Reimbursable expenses, such as:
  - Clothing allowance or reimbursement
  - Uniform allowance or reimbursement
  - Gas allowance or reimbursement
  - Travel time or payment
  - Meals or lodging allowance or reimbursement
  - Per diem allowance or payment
- Other payments to or on behalf of a construction mechanic that are not wages or fringe benefits, such as:
  - Industry advancement funds
  - Financial or material loans

STANDARD VAULT TOILETS

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08111	Hollow Metal Doors and Frames
08710	Door Hardware

STANDARD VAULT TOILETS

SECTION 02070 DEMOLITION

PART I - GENERAL

1.01 Description

A. This Work shall consist of providing all labor, material, and all tools and equipment required for demolition work which includes, but is not necessarily limited to the following:

1. Concrete or wood building
2. Concrete slabs
3. Concrete footings
4. Abandoning septic tank
8. Topsoil, grading, and seeding of the site

B. The building consists of:

1. Roof

2. Walls, Doors and all framing

3. Concrete Floor

4. Vent Stack

5. Toilet riser

PART II - PRODUCTS

2.01 Salvaged Materials

A. All materials resulting from demolition work shall become the property of the Contractor and removed from the site.

B. The Contractor will not be permitted to sell salvaged material on State property.

C. No persons other than the Contractor's employees shall be allowed to remove salvage from the site.

PART III - EXECUTION

3.01 Protective Measures and Wrecking Operations

A. Demolition work shall be executed in an orderly and careful manner and shall not involve undue hazards or risks to the workers.

3.02 Demolition

A. The structures to be demolished shall be completely removed, including all piping, concrete walks, concrete floors, concrete foundation walls, concrete walks, concrete footings, and roof .

B. If existing septic tank is designated to be left in place on the plans, then the septic tank top and sides shall be removed to 2' below grade, bottom broken, and backfilled with earth fill in 9" lifts and compacted to adjacent grade.

C. If removal of the existing septic tank is designated on the plans, then the septic tank must be excavated and removed in tact from the site.

D. If existing septic tank is designated to be re-used, then the septic tank shall be power washed and inspected for leaks.

E. Prior to any demolition effort, all effluent and sludge within the septic tank shall be pumped out by an approved, licensed pumping unit. Effluent will not be permitted to drain onto adjacent land.

F. Obliterated areas shall receive four (4) inches of topsoil, then seeded with grass seed.

3.03 Grading

A. After demolition, all areas shall be brought to a uniform level of the adjoining grades.

B. All holes or trenches resulting from removing slabs, pipes, septic tank, or the foundation wall shall be backfilled with compacted layers of backfill acceptable to the Architect/Engineer.

C. The site shall be left clean upon completion of the work.

3.04 Removal of Surplus Material

A. All material resulting from the demolition work shall become the property of the Contractor and removed from the site unless otherwise specified.

B. Debris shall be disposed of in State approved landfills or other acceptable site.

C. Effluent and sludge shall become the property of the Contractor and disposed of in accordance with local health department and Michigan Departments of Community Health and Environmental Quality's established guidelines.

END OF SECTION

SECTION 02100 SITE CLEARING

PART I – GENERAL

1.1 SUMMARY

A. This Section includes the following:
1. Protecting existing trees, shrubs, groundcovers, plants, and grass to remain.
2. Clearing and grubbing.
3. Stripping and stockpiling topsoil, if any.
4. Removing above- and below-grade site improvements.

1.2 MATERIAL OWNERSHIP

A. Except for stripped topsoil or other materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.3 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

B. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

C. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

D. All clearing and vegetation removal work in this section shall be considered incidental to other pay items and no separate payment will be made.

PART II – PRODUCTS

2.01 Satisfactory Soil Materials: Requirements for satisfactory soil materials are specified in Section 02200 “Earth Moving.”

A. Obtain approved borrow soil materials off-site when satisfactory soil materials are not available on-site.

PART III – EXECUTION

3.01 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Locate and clearly flag trees and vegetation to remain or to be relocated.

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.02 TREE PROTECTION

A. Erect and maintain temporary fencing around tree protection zones before starting site clearing. Remove fence when construction is complete.
B. Do not excavate within tree protection zones, unless otherwise indicated.
C. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Engineer.

3.03 CLEARING AND GRUBBING

A. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
   1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.04 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.
B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.
C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.

3.05 DISPOSAL

A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

END OF SECTION

SECTION 02760 SITE AMENTITIES

PART I - GENERAL

1.01 Description

The Contractor shall furnish all site amenities called for in the plans and specifications unless otherwise called for to be furnished. This work consists of procuring all site amenities, in accordance with the plans, specifications, and manufacturer's recommendations. Contractor to provide detailed instructions on the assembly of all site amenities required for complete erection.

PART II - PRODUCTS

2.01 General

All site amenities shall be as designated on the plans or approved equals.

2.02 Interior Grab Bars

Interior grab bars must be brushed or gnarled stainless steel 1-1/2 inch O.D. 42 inches long and 36 inches long with stainless steel flange as distributed by Tubular Specialties Manufacturing, Inc., Los Angeles, CA, or equal

2.03 Toilet Paper Dispenser

Toilet paper dispenser shall be locking stainless steel, 2-roll, thin bar with rubber sleeve, 13 inches x 3 inches long, 3/16 inch thick, 304 stainless steel, 2" wide non-rolling bar, 1-1/4" narrow free-rolling bar, 1-1/4" bar w/friction sleeve as distributed by Romtec, Inc., Roseburg, OR or equal.

2.04 Toilet Riser

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White cross-linked polyethylene I S inches high 5 inch flanged skirt, 20-5/8 inch x 16 1/2 inch thick, as distributed by Romtec Inc., Roseburg, or equal.

2.05 Signs

The toilet accessibility sign shall be located on the door handle side of the toilet building, 60 inches to the center of the sign above the concrete pad.

Rusic Toilet ADA Sign and Mens/Womens or Unisex Toilet Sign Available from: Midwest Sign Company Wayland, Michigan 1-800-245-5800.

2.06 **Pump Out Port**

Pump out port shall be East Jordan 8201 13 5/8" SQ. or equal Square Manhole Cover with Heavy Duty Concealed Hinge and Heavy Duty Hasp or equal.

PART III - EXECUTION

Pump Out Port - Port shall be installed and attached as per manufacturer's instructions in location shown on plans. See Cut Sheets following this section. Pump Out Port shall be attached to Concrete Floor Cap complete with any hardware required for completion of amenity provided.

Toilet Riser - Installation of Riser Adapter be installed and attached as per manufacturer's instructions in location shown on plans.

END OF SECTION

SECTION 02912 RESTORATION SEEDING

PART I - GENERAL

1.01 **Description**

This work consists of restoration seeding of all areas disturbed during construction, or as indicated on the plans, including the finish grading, tilling and cleaning the seed bed; seeding; fertilizing; mulching; weed control; and maintaining the seeded areas until grass cover is established.

PART II - PRODUCTS

2.01 Grass seed shall be applied at the rate of six pounds (6#) per thousand square feet in the following named mixtures. A mixture of one third (1/3) Premium Ecology Seed Mix and one third (1/3) Olde English Seed Mix and one third (1/3) Caroline Seed Mix.

SEED **(Premium Ecology)** **(3# per Thousand Sq. Ft.)**	MINIMUM PERCENT/ WEIGHT	PERCENT GERMINATION
Brigade Hard Fescue	80%	90%
Magic Chewing Fescue	20%	90%
	100%	

SEED **(Olde English)** **(3# per Thousand Sq. Ft.)**	MINIMUM PERCENT/ WEIGHT	PERCENT GERMINATION
Creeping Red Fescue	15%	90%
Kentucky Blue Grass 98/85	15%	90%
Anthem II Tall Fescue	30%	90%
Affinity Ryegrass	20%	90%
Annual Rye	20%	90%
	100%	

SEED **(Caroline)*** **(3# per Thousand Sq. Ft.)**	MINIMUM PERCENT/ WEIGHT	PERCENT GERMINATION
Lavender Hyssop	4%	90%
Wild columbine	1%	90%
Arrow-leaved aster	1%	90%
Seed Oats	70%	90%
BEAK GRASS	3%	90%
Bottlebrush grass	9%	90%
Annual rye	12%	90%
	100%	

*Available from J.F.New Native Plant Nursery 1.574.586.2414

2.02 Mulch shall be threshed straw of either oats or wheat, free from matured seed or noxious weeds, or species detrimental to the development of the grass seedbed.

2.03 Tackifier for mulch shall be GeoPro Matrix as available from Price & Company, Inc., telephone 1-800-248-8230.

2.04 Straw/Coconut fiber combination blanket shall be by North American Green, number SC150BN, as available from Price & Company, Inc., telephone 1-800-248-8230.

PART III - EXECUTION

3.01 **Seeding Operations**

The Contractor shall till; fine grade; remove sticks, stones, debris, clay lumps, sod clods and other undesirable materials in the top four (4") inches of soil and have the Landscape Architect approve the seed bed before seeding.

The Contractor shall incorporate an equal ratio, complete fertilizer such as 10-10-10 or 12-12-12 in the top two inches (2") of soil at a rate of four hundred pounds per acre (400#/acre).

After the seedbed has been prepared and approved by the Landscape Architect, the Contractor shall sow six pounds (6#) per thousand square feet of the specified seed mixture with a broadcast seeder. The Landscape Architect may approve other methods of sowing.

Entire seedbed shall be mulched with straw. The straw must be placed within one (1) day after the seed has been placed. Mulching operations shall not be performed during periods of excessively high winds, which may prevent the proper placing of the straw. Straw shall be spread uniformly at a rate of two (2) tons per acre, or about one (1) bale per thousand square feet, to provide a minimal coverage of ¼".

Immediately after placement of the straw, Contractor shall stabilize the entire straw mulched area with GeoPro Matrix at a rate to completely stabilize and control any blowing or movement of the straw mulch. These rates shall be in accordance with the recommendation of the manufacturer/distributor. GeoPro Matrix is available through Price & Company, Inc., telephone 1-800-248-8230.

For slopes of 5 on 1 (20%) or greater, and other areas as shown on the plans, the contractor shall cover the entire area with the straw/coconut fiber combination blanket in accordance with the manufacturer's recommendations.

3.02 **Repairs**

The Contractor shall be responsible for the repair of any damage to existing site areas, which may result from his work and such repairs shall be made swiftly in a thorough and workmanlike manner, with minimum inconvenience to the Owner and users of the site. Repairs shall be made to the satisfaction of the Landscape Architect.

Where site areas have been disturbed or damaged, the damaged areas, ruts and depressions shall be cultivated, filled with topsoil, settled to proper grades and seeded to the satisfaction of the Landscape Architect.

3.03 **Maintenance**

This work consists of all labor, equipment, materials and means necessary to completely nurture, cultivate, sustain, care for or otherwise establish all seeded lawn areas including reseeding, over seeding, additional straw mulch, additional GeoPro Matrix, additional fertilization and weed control as required to achieve a uniform, healthy coverage.

All seeded areas shall be maintained by the Contractor until fully established and for a minimum period of sixty (60) days following germination.

3.04 **Acceptance**

All seeded areas shall be 85% covered after three (3) months from the germination date. Re-application of seed will be required at that time if the areas seeded do not meet the coverage requirements.

3.05 **Season**

The normal seasonal dates for seeding shall be August 20 through October 10 and April 1 to May 25. Dormant seeding at other times of the year may be approved by the Landscape Architect. Seeding shall not be done when the ground is excessively wet, snow covered, frozen or otherwise intillable.

END OF SECTION

SECTION 03300 CONCRETE FLOOR CAP

PART I - GENERAL

1.01 Description

This work shall consist of all labor, equipment, and materials necessary for fabrication of concrete floor cap as detailed in the plans and details.

1.02 Testing

Standard 6-inch cylinders for compression tests of the concrete shall be prepared from each lot. Concrete for test specimens and assistance for making them on the project will be furnished by the Contractor. The furnishing of molds, the actual making of the test cylinders and all testing will be performed by the Contractor.

The method of forming the floors shall be at the option of the contractor and shall follow MDOT Specifications 706.03. Forms shall be of such thickness and so constructed that the forms will remain true to shape and dimensions as shown on the plan.

All floors shall be constructed to the shape and dimensions as shown on the plan. Any floors not constructed to the plan shape and dimensions will be rejected.

Floors shall be stored for a minimum of 30 days before delivery. One test cylinder shall be furnished for each batch in pouring the concrete floors and dates marked on each floor and cylinder. The test cylinders shall conform to ASTM Specification C31. Provide compression test results with completed floors to agency upon delivery.

Steel reinforcing bars shall meet MDOT Specification 905.03 and shall be installed as shown in the typical detail on the Plan Sheet.

PART II - PRODUCTS

2.01 Concrete

The concrete floors shall be pre-cast.

Concrete shall be Type A, air-entrained concrete with a slump of not less than 3 inches, nor more than 4 inches, unless otherwise specified.

Portland Cement shall conform to the requirements of the current ASTM Specifications for Air-Entraining Portland Cement.
Fine Aggregate shall conform to the requirements for "Natural Sand, 2NS" of the current Standard Specifications of the Michigan Department of Transportation.

Course Aggregate shall conform to the requirements for Course Aggregate, 6A (limestone) of the current Standard Specifications of the Michigan Department of Transportation.

Water for mixing and curing the concrete shall meet MDOT requirements 911.01. Water shall be clean, clear and free from any debris, additives, etc.

2.02 **Reinforcing**

Steel Reinforcement Materials shall conform to the requirements of current Standard Specifications of the Michigan Department of Transportation. All reinforcing shall have a minimum space of 2” from the edge of any concrete.

Steel reinforcing bars shall meet MDOT Specification 905.03 and shall be installed as shown in the typical detail on the Plan Sheet.

2.03 **Additives**

Calcium chloride shall not be used in any concrete.

Ready mix concrete shall conform to the requirements of ASTM C 94. Batch plants must meet the requirements of ACI 304. Hand mixing will not be permitted.

Air entraining admixtures shall conform to ASTM C 260 and shall be constituted so that the total air content is not less than 5% nor more than 8%.

2.04 **Synthetic Fiber Reinforcing**

Synthetic fiber reinforcing shall be 100% virgin homo polymer polypropylene fibrillated fibers as manufactured by the Fibermesh Company, 125 Meridan, Dearborn, Michigan, (313) 278-7205, by Forta Corporation, 100 Forta Drive, Grove City, Pennsylvania 16127 (1-800-245-0306), or approved equal.

Synthetic fibers shall be incorporated into all concrete whether indicated on the drawings or not. The incorporation of said fibers shall be documented.

Fibers shall be added to the concrete in strict accordance with manufacturer's printed instructions. Synthetic fibers shall be 3/4" in length and shall be added at a rate of 1-1/2 lbs./cubic yard of concrete.

PART III - EXECUTION

3.01 **Concrete Mixing**

The proportioning of aggregates and cement shall be by weight in accordance with the current Michigan Department of Transportation "Mortar Voids" theory with the quantities

of each shown on the delivery tickets for each batch.

Concrete shall be mixed only as required for immediate use and any which has developed initial set shall not be used. Concrete which has partially hardened, shall not be retempered or remixed. The use of a fractional sack of cement will not be permitted unless the fractional part is measured by weight. The mixer shall be cleaned thoroughly each time when out of operation for more than 30 minutes.

Concrete mixes will be measured as described in the current "Method of Slump Test for Consistency of Portland Cement Concrete" of the ASTM Designation C-143. The concrete shall at all times be of such consistency and workability, that it can be puddled readily into corners and angles of the forms and around joints, dowels, tie bars and reinforcement without excessive spading, segregation or undue accumulation of water or laitance on the surface.

The mixing of concrete in truck mixers enroute from the batching plant to the site of the work will be permitted only for mixers equipped with an approved revolution counter which will either record the number of revolutions of the mixer drum at mixing speeds and the number of revolutions at agitating speeds, for each batch, or will record the revolutions of the mixer drum only when the mixer is operating at mixing speeds. Truck mixers not so equipped shall mix the concrete at the batching plant site. Truck mixing shall be done on a reasonable level area, sloping not more than 2 percent in any direction.

The concrete shall be discharged within a period of one hour after the introduction of the mixing water with the dry materials or within a period of 1-1½ hours after the cement has been placed in contact with the aggregates. Concrete shall be used only if it is within the specified limits for consistency and air content and is not segregated.

3.02 Forming

Concrete floor caps which are improperly formed, is out of alignment or level, or displays surface defects will not be accepted, and must be replaced by the Contractor at no additional cost to the Owner.

Forms shall be metal or wood, straight and free from distortion, and of sufficient strength to resist springing during the process of depositing and finishing the concrete. Wood forms or flexible steel forms shall be used on circular curb or special sections and shall be defined as any curved section of curb or wall constructed on a radius of 150 feet or less. They shall be of an approved section with a flat surface on top. The forms shall be of the full depth of the structure and shall be well built, substantial and unyielding. They shall be securely staked, braced, and tied to the required line and grade and sufficiently tight to prevent leakage of mortar. The inside surface of the forms shall be oiled with a light, clear paraffin-base oil which will not discolor or otherwise injuriously affect the concrete.

The method of forming the floors shall be at the option of the contractor and shall follow MDOT Specifications 706.03. Forms shall be of such thickness and so constructed that the forms will remain true to shape and dimensions as shown on the plan.

All floors shall be constructed to the shape and dimensions as shown on the plan. Any floors not constructed to the plan shape and dimensions will be rejected.

Floors shall be stored for a minimum of 30 days before delivery. One test cylinder shall be furnished for each batch in pouring the concrete floors and dates marked on each floor and cylinder. The test cylinders shall conform to ASTM Specification C31. These test cylinders shall be available at the end of 21 days of curing, to make a 28-day strength test.

3.03 **Reinforcement**

All steel reinforcement shall be accurately placed in the position shown on the approved plans and firmly held during the placing of concrete. When placed in the work, it shall be free from dirt, rust, mill scale, paint, oil or other foreign material. Bars shall be placed with a variation in spacing between adjacent bars of not more than one-sixth of the spacing shown on the plans, and the clear distance from the near surface of the concrete to the reinforcement shall not vary from the distance shown on the plans by more than one-fourth the plan distance. Bars shall be tied at all intersections except where the spacing is less than one foot in each direction in which case alternative intersections shall be tied. Supports for reinforcement which are to remain in the work shall be either precast concrete blocks of approved shape and dimensions, or approved preformed steel bar-chairs. Bars shall not be spliced

3.04 **Finishing**

Edges on all concrete shall be rounded to a radius of 1/4 inch with an approved finishing tool unless otherwise specified. All joints shall be rounded with an approved double edging tool having a radius of 1/4 inch on each side and the surface shall then be brushed lightly to produce a slightly roughened surface and remove the finishing tool marks.

3.05 **Protection**

Protection of Concrete shall be performed in an enclosed area in the following manner:

Sealant for curing shall be applied immediately in accordance with manufacturers recommendations. (See part 3.05a)

Temperature of Area - Casting of concrete shall not be cast in an area that exceeds 90º F or is below 25º F.

3.05a **Sealant**

The floor of the vault toilet will be sealed with a quality, slip resistant concrete sealer. Do not paint concrete floors.

Sealant for curing shall be Kure-N-Seal 25 LV by Sonneborn or equal. Sealant shall be applied at a coverage rate of 250 square feet per gallon. For application, proper surface preparation and drying time, consult the coatings manufacturer for more instructions. Sealant must comply with ASTM C 1315-96 Type I, Class A. Kure-N-Seal 25 LV by

Sonneborn is available from S. A. Morman & Co. ph. 1.800.968.8012.

3.06 **Curing**

Forms shall be left in place for a period of not less than 12 hours. Immediately after they have been removed, all porous or honeycomb areas thus uncovered shall be filled smooth with mortar consisting of one part cement and two parts fine aggregate.
Curing of the concrete shall be performed by one of the appropriate methods as specified for "Concrete Curing Agents" in the current Standard Specifications of the Michigan Department of Transportation.

3.07 **Curing Agents**

Only clear curing agents or other methods that will not affect the natural colorations of the concrete will be permitted. Care shall be taken to avoid using agents or methods that affect the future use of specified sealants.

END OF SECTION

SECTION 03320 CONCRETE FLATWORK

PART I - GENERAL

1.01 **Description**

This work shall consist of all labor, equipment, and materials necessary for complete installation of site concrete work as called for in the plans and details.

1.02 **Testing**

Standard 6-inch cylinders for compression tests of the concrete shall be prepared from each pour. Concrete for test specimens and assistance for making them on the project will be furnished by the Contractor. The furnishing of molds, the actual making of the test cylinders and all testing will be performed by the Contractor.

The sample shall be tested in accordance with the specification of the American Society for Testing Materials, Serial Designation C-31 or the current Michigan Department of Transportation Specifications. If the average results from test specimens cured at an average temperature of 70º F are below the 28 day required compressive strength it will be sufficient reason for rejecting for further use the materials entering into the concrete.

PART II - PRODUCTS

2.01 **Concrete**

Concrete shall be Type A, air-entrained concrete with a slump of not less than 3 inches nor more than 4 inches unless otherwise specified.

Portland Cement shall conform to the requirements of the current ASTM Specifications for Air-Entraining Portland Cement.

Fine Aggregate shall conform to the requirements for "Natural Sand, 2NS" of the current Standard Specifications of the Michigan Department of Transportation.

Course Aggregate shall conform to the requirements for Course Aggregate, 6 A (limestone) of the current Standard Specifications of the Michigan Department of Transportation.

Course aggregate for exposed aggregate and sandblasted concrete to be natural, dense graded 5/8 inch round stone with a maximum of five percent (5%) fines with the stone. Washed and graded stone will be accepted. Crushed stone will not be accepted. Aggregate with soft, porous, calicious or other low quality stone will be rejected. Color of aggregate to be natural stone with a predominance of buff or brown stone.

Water for mixing and curing the concrete shall be taken from the City's Watermains, unless otherwise specified.

2.02 **Reinforcing**

Steel Reinforcement Materials shall conform to the requirements of current Standard Specifications of the Michigan Department of Transportation.

2.03 **Additives**

Curing of the concrete shall be performed by one of the appropriate methods as specified for "Concrete Curing Agents" in the current Standard Specifications of the Michigan Department of Transportation. Only clear curing agents or other methods that will not affect the natural colorations of the concrete will be permitted. Care shall be taken to avoid using agents or methods that affect the future use of specified sealants.

Calcium chloride shall not be used in any concrete without written approval from the Landscape Architect.

Ready mix concrete shall conform to the requirements of ASTM C 94. Batch plants must meet the requirements of ACI 304. Hand mixing will not be permitted except in emergencies or for very small quantities.

Air entraining admixtures shall conform to ASTM C 260 and shall be constituted so that the total air content is not less than 5% nor more than 8%.

2.04 **Synthetic Fiber Reinforcing**

Synthetic fiber reinforcing shall be 100% virgin homo polymer polypropylene fibrillated fibers as manufactured by the Fibermesh Company, 125 Meridan, Dearborn, Michigan, (313) 278-7205, by Forta Corporation, 100 Forta Drive, Grove City, Pennsylvania 16127 (1-800-245-0306), or approved equal.

Synthetic fibers shall be incorporated into all concrete whether indicated on the drawings or not. The incorporation of said fibers shall be documented on the delivery ticket from the ready mix producer.

Fibers shall be added to the concrete in strict accordance with manufacturer's printed instructions. Synthetic fibers shall be 3/4" in length and shall be added at a rate of 1-1/2 lbs./cubic yard of concrete.

PART III - EXECUTION

3.01 **Concrete Mixing**

The proportioning of aggregates and cement shall be weight in accordance with the current Michigan Department of Transportation "Mortar Voids" theory with the quantities of each shown on the delivery tickets for each batch.

Concrete shall be mixed only as required for immediate use and any which has developed initial set shall not be used. Concrete which has partially hardened, shall not be retempered or remixed. The use of a fractional sack of cement will not be permitted unless the

fractional part is measured by weight. The mixer shall be cleaned thoroughly each time when out of operation for more than 30 minutes.

Concrete mixes will be measured as described in the current "Method of Slump Test for Consistency of Portland Cement Concrete" of the ASTM Designation C-143. The concrete shall at all times be of such consistency and workability, that it can be puddle readily into corners and angles of the forms and around joints, dowels, tie bars and reinforcement without excessive spading, segregation or undue accumulation of water or laitance on the surface.

The mixing of concrete in truck mixers enroute from the batching plant to the site of the work will be permitted only for mixers equipped with an approved revolution counter which will either record the number of revolutions of the mixer drum at mixing speeds and the number of revolutions at agitating speeds, for each batch, or will record the revolutions of the mixer drum only when the mixer is operating at mixing speeds. Truck mixers not so equipped shall mix the concrete at the batching plant site. The mixing shall be done on a reasonable level area, sloping not more than 2 percent in any direction.

The concrete shall be discharged within a period of one hour after the introduction of the mixing water with the dry materials or within a period of 1-1½ hours after the cement has been placed in contact with the aggregates, and it shall be within the specified limits for consistency and air content and it shall not be segregated.

3.02 **Forming**

Concrete which is improperly formed is out of alignment or level or displays surface defects shall be removed and replaced by the Contractor at no additional cost to the Owner unless patching or other corrective measures are approved. Approved permission to patch or otherwise correct such defects does not waive the Owners Agent's right to require complete removal of the defective work if the corrective measures do not adequately restore the quality and appearance of the concrete.

Forms shall be metal or wood, straight and free from distortion, and of sufficient strength to resist springing during the process of depositing and finishing the concrete. Wood forms or flexible steel forms shall be used on circular curb or special sections and shall be defined as any curved section of curb or wall constructed on a radius of 150 feet or less. They shall be of an approved section with a flat surface on top. The forms shall be of the full depth of the structure and shall be well built, substantial and unyielding. They shall be securely staked, braced, and tied to the required line and grade and sufficiently tight to prevent leakage of mortar. The inside surface of the forms shall be oiled with a light, clear paraffin-base oil which will not discolor or otherwise injuriously affect the concrete as on the walls to be treated with Thoroseal or equal.

Placing concrete shall not be permitted until the subgrade and forms have been approved by the Landscape Architect. The subgrade shall be wetted and the concrete deposited to the proper depth. The concrete shall be spaded sufficiently to eliminate all voids and tamped to bring the mortar to the surface, after which it shall be floated smooth and even by means of a wooden float.

3.03 **Reinforcement**

All steel reinforcement shall be accurately placed in the position shown on the approved plans and firmly held during the placing of concrete. When placed in the work, it shall be free from dirt, rust, mill scale, paint, oil or other foreign material. Bars shall be placed with a variation in spacing between adjacent bars of not more than one-sixth of the spacing shown on the plans, and the clear distance from the near surface of the concrete to the reinforcement shall not vary from the distance shown on the plans by more than one-fourth the plan distance. Bars shall be tied at all intersections except where the spacing is less than one foot in each direction in which case alternative intersections shall be tied. Supports for reinforcement which are to remain in the work shall be either precast concrete blocks of approved shape and dimensions, or approved preformed steel bar-chairs.

Bars shall not be spliced except as provided on the plans or as authorized by the Landscape Architect.

3.04 **Finishing**

Edges on all concrete shall be rounded to a radius of 1/4 inch with an approved finishing tool unless otherwise specified. All joints shall be rounded with an approved double edging tool having a radius of 1/4 inch on each side and the surface shall then be brushed lightly to produce a slightly roughened surface and remove the finishing tool marks except where otherwise specified.

All Portland Cement Concrete shall be finished with a light broom finish in the direction indicated on the plans, unless otherwise specified.

Exposing Aggregate: Begin exposing aggregate when paving will bear weight of cement mason on knee boards without indentation. Brush with stiff bristle broom and fine water spray to remove excess mortar until exposure of aggregate is uniform and at proper depth as approved by the Landscape Architect.

3.05 **Protection**

Protection of Concrete shall be performed in the following manner:

Sealant for curing shall be applied immediately in accordance with manufacturer's recommendations. (See part 3.05a)

Protection against Rain - The Contractor shall take such precautions as are necessary to protect the concrete from damage.

Hot Weather Limitations - Casting of concrete during hot weather shall be limited by the temperature of the concrete at the time of placing. Concrete shall not be cast when the temperature of the concrete is above 90 F. Care shall be taken to properly wet and protect all concrete placed in direct sun or in hot weather.

Cold Weather Limitations - No concrete shall be placed unless the temperature of the air in the shade and away from artificial heat is at least 25º F. and rising unless specifically

approved.

Protection from Cold Weather - The Contractor shall be responsible for the concrete placed during cold weather and any concrete injured by frost action shall be removed and replaced at his expense.

3.05a **Sealant**

Sealant for curing shall be Kure-N-Seal 25 LV by Sonneborn. Sealant shall be applied at a coverage rate of 250 square feet per gallon. For application, proper surface preparation and drying time, consult the coatings manufacturer for more instructions. Sealant must comply with ASTM C 1315-96 Type I, Class A. Kure-N-Seal 25 LV by Sonneborn is available from S. A. Morman & Co. ph. 1.800.968.8012.

Sealant for curing of exposed aggregate and sandblasted concrete shall be Kure-N-Seal 30 by Sonneborn. Sealant shall be applied at a coverage rate of 250 square feet per gallon. For application, proper surface preparation and drying time, consult the coatings manufacturer for more instructions. Sealant must comply with ASTM C 1315-96 Type I, Class A. Kure-N-Seal 30 by Sonneborn is available from S. A. Morman & Co. ph. 1.800.968.8012.

For subsequent coating applications, use Sonosil Curing aid, hardening and dustproofing compound for concrete. For application, proper surface preparation and drying time, consult the coatings manufacturer for more instructions. Sonosil by Sonneborn is available from S. A. Morman & Co. ph. 1.800.968.8012.

3.06 **Curing**

Forms shall be left in place for a period of not less than 12 hours. Immediately after they have been removed, all porous or honeycomb areas thus uncovered shall be filled smooth with mortar consisting of one part cement and two parts fine aggregate. Also, the ends of all expansion joints shall be cut open to the full width of the expansion joint material.

The main supporting forms, including all shoring and bracing shall remain in place for a period of not less than seven (7) days, and for such longer period as the Architect may direct.

END OF SECTION

SECTION 06200 WOOD

PART I - GENERAL

1.01 Description

This work consists of providing all labor, equipment, and materials necessary for complete construction of wood elements and related structures and equipment including all wood, hardware, fasteners, and related construction materials as called for in the plans and details.

PART II - PRODUCTS

2.01 Materials

The standard for interior walls is 1/2 inch A.C. 4 foot x 8 foot plywood conforming to ASTM and MDOT Standard Specifications for Construction, Section 912. The sill plates of the toilet walls shall be treated 2 x 4's.

Wood framing material for construction of Toilet Buildings shall be No. 2 Grade Southern Yellow Pine as called for on the plans. Wood shall be mill finished unless otherwise specified.

Wood to be used for Sill Plates of Toilet Buildings shall be No. 2 Grade Southern Yellow Pine treated to a minimum retention of 0.40 pounds per cubic foot of Alkaline Copper Quaternary (ACQ) or an approved equal; as called for on the plans.

Rough sawn lumber or timbers shall not be used unless specifically called for on the plans.

Soft Woods, thickness as detailed on drawings shall meet requirements of the latest edition of U.S. Product Standard PS-1. Identify each plywood panel with appropriate APA trademark. Interior grade A-C one side exposed A-A two sides exposed

2.02 Fasteners

All fasteners and related hardware used to fasten or attach to ***untreated lumber*** shall be ***hot-dipped, galvanized steel*** (Type 304 and 316). All hot-dipped galvanized products shall be manufactured with a G185 coating, 1.85 oz/ft² per ASTM A653.

All fasteners and related hardware used to fasten or attach to ***pressure treated lumber*** shall be ***stainless steel*** (Type 304 and 316).

Fasteners and anchors shall conform to ASTM A123, and connectors shall conform to ASTM A153.

Nails shall not protrude through the backside in any situation unless called for. On pressure-treated lumber, use "Maze Storm guard PTL" anchor-down or screw-down nails or approved equal.

Fasteners shall be the proper type, size, material and finish for each application and conform to the following:

Nails and Staples: FS FF-N-105

Wood Screws: FS FF-S-111

Bolts and Studs: FS FF-B-575

Nuts: FS FF-N-836

Washers: FS FF-W-92

Lag Screws and Lag Bolts: FS FF-B-561

Masonry Anchoring Devices: For Expansion Shields, Nails and Drive Screws, Comply with FS FF-S-325

Toggle Bolts: FS FF-B-588

Bar or Strap Anchors: ASTM A 575 Carbon Steel Bars

PART III - EXECUTION

3.01 Construction Methods

Set carpentry work accurately to required grades and layout with members plumb and true. Fit carpentry work accurately to assure maximum strength at all joints by using adequate fastening, blocking and bracing as shown on the plans.

Discard units of material which are unsound, warped, bowed, twisted, improperly treated, not adequately seasoned or too small to fabricate the work with a minimum of joints or the optimum jointing arrangement.

Do not wax or lubricate fasteners that depend on friction for holding power.

Tighten bolts and lag screws at installation and retighten as required for tight connections prior to closing in or at completion of work.

Sand all cuts smooth and remove all splinters and rough areas from all exposed lumber.

3.02 **Special Treatment**

All cuts on pressure treated lumber (not scheduled for staining) to be brushed with a generous coat of Cuprinal Clear No. 20 wood preservative, copper napthenate or approved equal.

All lumber and plywood (exterior glue) noted on the drawings or specified to be treated with a wood preservative shall be pressure treated as herein specified in accordance with the current American Wood Preservers Institute (AWPI) Standard LP-2. All milling shall be done prior to pressure treatment.

END OF SECTION

SECTION 07466 FIBER CEMENT SIDING

PART I - GENERAL

1.01 SECTION INCLUDES

A. Siding panels.

B. Accessories and trim.

1.02 WARRANTY

A. Register manufacturer's warranty, made out in Owner's name, with copy to Owner.

PART II - PRODUCTS

2.01 MANUFACTURER

A. CertainTeed Corporation, Siding Products Group, P.O. Box 860, Valley Forge, Pennsylvania 19482. ASD. Tel: (800) 233-8990 (professional) or (800) 782-8777 (consumer). www.certainteed.com

B. Or Approved Equal.

2.02 PANELS

A. Fiber Cement Board Panels - General: Cement and cellulose fiber formed under high pressure into boards with integral surface texture; complying with ASTM C 1186 Type A Grade II; machined edges; for nail attachment.
   1. Surface Burning Characteristics: Flame spread index of 0, smoke developed index of 6, maximum; when tested in accordance with ASTM E 84 (Class I/A).
   2. Flammability: Noncombustible, when tested in accordance with ASTM E 136.
   3. Flexural Strength: At least 1450 psi (10 MPa) when in equilibrium condition, and at least 1015 psi (7 MPa) when in wet condition, tested in accordance with ASTM C 1185.
   4. Coefficient of Thermal Expansion: Less than 1 x 10^-5/inch/inch/degree F (0.5 x 10^-5/degree C), when tested in accordance with ASTM E 228.
   5. Water Vapor Transmission: Less than 7.0 perm-inch (10 ng/(Pa s m), when tested in accordance with ASTM E 96.
   6. Freeze Thaw Resistance: At least 80 percent flexural strength retained, when tested in accordance with ASTM C 1185.
   7. UV Resistance: No cracking, checking, or erosion, when tested for 2000 hours in accordance with ASTM G 26.
   8. Water Tightness: No water droplets on underside, when tested in accordance with ASTM C 1185.

B. Board and Batten Siding: Certainteed WeatherBoards FiberCement Siding.
   1. Thickness: 1/2 inch , nominal.

2. Length: 10 feet (3657 mm), nominal.
3. Style: Rough Cedar
   a. Vertical: 8 inches wide.

2.03 ACCESSORIES

A. Trim: Fiber cement board, cut from siding material; cut edges primed.

B. Provide the following trim:
   1. Starter strip for lap siding.
   2. Outside corners, butted to siding.
   3. Fascia board.

C. Sealant: Paintable, 100 percent acrylic latex caulk complying with ASTM C 920.

D. Sheet Metal Flashing: Minimum 26 gauge hot-dipped galvanized steel sheet, or aluminum.

E. Nails: Length as required to penetrate minimum 1-1/4 inch (32mm) into solid backing; hot-dipped galvanized or stainless steel.

F. Building Paper: Kraft or bituminous paper; not polyethylene or foil.

G. Field Finish Paint: 100 percent acrylic latex as specified in Section 09900.

PART III - EXECUTION

3.01 EXAMINATION

A. Prior to commencing installation, verify governing dimensions of building and condition of substrate.

3.02 PREPARATION

A. Examine, clean, and repair as necessary any substrate conditions that would be detrimental to proper installation.

B. Do not begin installation until unacceptable conditions have been corrected.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions and drawing details.
   1. Read warranty and comply with all terms necessary to maintain warranty coverage.
   2. Install in accordance with conditions stated in model code evaluation report applicable to location of project.
   3. Use trim details indicated on drawings.
   4. Touch up all field cut edges before installing.
   5. Pre-drill nail holes if necessary to prevent breakage.

B. Over Wood and Wood-Composite Sheathing: Fasten siding through sheathing into studs.

C. Allow space between both ends of siding panels that butt against trim for thermal movement; seal joint between panel and trim with exterior grade sealant.

D. Joints in Horizontal Siding: Avoid joints in lap siding except at corners; where joints are

inevitable stagger joints between successive courses.

E. Joints in Vertical Siding: Install Z-flashing in horizontal joints between successive courses of vertical siding.

F. Furred Installation: Leave space at top and bottom open; top may be behind soffit; at bottom install insect screen over opening by wrapping a strip of screen over bottom ends of vertical furring strips.

G. Install sheet metal flashing above door and window casings and horizontal trim in field of siding.

H. Do not install siding less than 6 inches (150 mm) from surface of ground nor closer than 1 inch (25 mm) to roofs, patios, porches, and other surfaces where water may collect.

I. After installation, seal all joints except lap joints of lap siding. Seal around all penetrations. Paint all exposed cut edges.

3.04 CLEANING

A. At completion of work, remove debris caused by siding installation from project site.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07630 ROOF SPECIALITIES

PART I - GENERAL

1.01 DESCRIPTION OF WORK:

A. Extent and locations of roof accessories is indicated on the drawings and by provisions of this section.

1.02 SUBMITTALS:

A. Product Data, Roof Accessories: Submit manufacturer's technical product data, rough-in diagrams, details, installation instructions and general product recommendations.

1.03 QUALITY ASSURANCE:

A. Standards: Comply with "NRCA Roofing and Waterproofing Manual" details for installation of units.

PART II - PRODUCTS

2.01 GENERAL PRODUCT REQUIRMENTS:

A. Provide manufacturer's standard units modified as necessary to comply with requirements. Shop-fabricate each unit to greatest extent possible.

B. Roof shall be constructed of corrugated fiberglass panels on each side. Use enough white panels as shown to provide sufficient light into the building. Eaves are to be boxed in and vented

2.02 VENTILATORS:

A. General: Provide units of sizes, style and profile indicated; fabricated from the following materials and including the following features:

- Zinc-coated steel sheet, prime painted.
- Aluminum sheet, prime painted.
- Aluminum sheet, mill finish.
- Equip with bird screens, ½" stainless steel hardware cloth.
- Equip with insect screens, 14 x 18 anodized aluminum screen, rewireable in removable frames.

PART III - EXECUTION

3.01 INSTALLATION:

A. General: Comply with manufacturer's instructions and recommendations. Coordinate with installation of roof deck and other substrates to receive accessory units, and vapor barriers, roof insulations, roofing and flashing; as required to ensure that each element of the work performs properly, and that combined elements are waterproof and weather-tight. Anchor units securely to supporting structural substrates, adequate to withstand lateral and thermal stresses as well as inward and outward loading pressures.

Except as otherwise indicated install roof accessory items in accordance with construction details of "NRCA Roofings and Waterproofings Manual".

B. Isolation: Where metal surfaces of units are to be installed in contact with non-compatible metal or corrosive substrates, including wood, apply bituminous coating on concealed metal surfaces, or provide other permanent separation.

C. Flange Seals: Except as otherwise indicated, set flanges of accessory units in a thick bed of roofings cement, to form a seal.

D. Cap Flashing: Where cap flashing is required as component of accessory, install to provide adequate waterproof overlap with roofing or roof flashing (as counter-flashing). Seal with thick bead of mastic sealant, except where overlap is indicated to be left open for ventilation.

E. Operational Units: Test operate units with operable components. Clean and lubricate joints and hardware. Adjust for proper operation.

3.02 CLEANING AND PROTECTION:

A. Clean exposed metal and plastic surfaces in accordance with manufacturer's instructions. Touch-up damaged metal coatings.

B. Clean and polish plastic skylight units, inside and out, not more that 5 days prior to date of substantial completion.

END OF SECTION

SECTION 08111 HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Standard hollow metal doors and frames.

1.02 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Include elevations, door edge details, frame profiles, metal thicknesses, preparations for hardware, and other details.

C. Samples for Initial Selection: For units with factory-applied color finishes.

D. Samples for Verification: For each type of exposed finish required.

E. Schedule: Prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:

1. Amweld Building Products, LLC.
2. Benchmark; a division of Therma-Tru Corporation.
3. Ceco Door Products; an Assa Abloy Group company.
4. Curries Company; an Assa Abloy Group company.
5. Steelcraft; an Ingersoll-Rand company.

2.02 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, CS, Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, CS, Type B.

C. Metallic-Coated Steel Sheets: ASTM A 653/A 653M, Commercial Steel (CS), Type B, with an A40 zinc-iron-alloy (galvannealed) coating; stretcher-leveled standard of flatness.

D. Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), 40Z (12G) coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

F. Grout: ASTM C 476, except with a maximum slump of 4 inches (102 mm), as measured according to ASTM C 143/C 143M.

G. Mineral-Fiber Insulation: ASTM C 665, Type I.

H. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil (0.4-mm) dry film thickness per coat.

2.03 STANDARD HOLLOW METAL DOORS

A. General: Provide doors of sizes, thicknesses, and designs indicated with the following criteria:
1. Flush galvanized top cap x inverted galvanized bottom channel.
2. Continuous welded edge seams.
3. lifetime warranty on welded edge seams.

B. Exterior Doors: Provide doors complying with requirements indicated below by referencing ANSI A250.8 for level and model and ANSI A250.4 for physical-endurance level:

1. Level III and Physical Performance Level A (Extra Heavy Duty), Model 2 (Full Flush seamless).
2. Steel thickness: 16 gauge Galvanealed.

C. Hardware Reinforcement: ANSI/SDI A250.6.

2.04 STANDARD HOLLOW METAL FRAMES

A. General: Provide steel frames for doors, transoms, sidelights, borrowed lights, and other openings that comply with ANSI A250.8 and with details indicated for type and profile. Conceal fastenings, unless otherwise indicated.

B. Frames 16 gauge for:

1. Level II & Level III steel doors.

C. Door Silencers: Except on weather-stripped frames, fabricate stops to receive three silencers on strike jambs of single-door frames and two silencers on heads of double-door frames.

D. Plaster Guards: Provide 0.016-inch- thick, steel sheet plaster guards or mortar boxes to close off interior of openings; place at back of hardware cutouts where mortar or other materials might obstruct hardware operation.

E. Supports and Anchors: Fabricated from not less than 0.042-inch- thick, electrolytic zinc-coated or metallic-coated steel sheet.

1. Wall Anchors in Masonry Construction: 0.177-inch- diameter, steel wire complying with ASTM A 510 may be used in place of steel sheet.

F. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where zinc-coated items are to be built into exterior walls, comply with ASTM A 153/A 153M, Class C or D as applicable.

G. Frame minimum steel thickness: 16 gauge.

H. Provide ½" thick by 1-3/4" wide full height filler strip of styrofoam behind hinge jamb to allow for drilling and topping for continuous hinge in field.

2.05 FABRICATION

A. General: Fabricate steel door and frame units to comply with ANSI A250.8 and to be rigid, neat in appearance, and free from defects including warp and buckle. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at Project site.

B. Exterior Door Construction: For exterior locations and elsewhere as indicated, fabricate doors, panels, and frames from metallic-coated, Galvanealed steel sheet. Close top and bottom edges of doors flush as an integral part of door construction or by addition of 0.053-inch- thick, metallic-coated steel channels with channel webs placed even with top and bottom edges.

C. Core Construction: Manufacturer's standard core construction that produces a door complying with SDI standards.

D. Core Construction: One of the following manufacturer's standard core materials that produce a door complying with SDI standards:

1. Polystyrene.
2. Polyurethane.

E. Clearances for Non-Fire-Rated Doors: Not more than 1/8 inch at jambs and heads, except not more than 1/4 inch between pairs of doors. Not more than 1/4 inch at bottom to flooring or thresholds. Coordinate with other trades.

F. Single-Acting, Door-Edge Profile: Beveled edge, unless square edge is indicated.

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

H. Fabricate concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either cold- or hot-rolled steel sheet.

I. Exposed Fasteners: Provide countersunk flat or oval heads for exposed screws and bolts where acceptable by the Architect.

J. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements in ANSI A250.6 and ANSI A115 Series specifications for door and frame preparation for hardware.

1. For concealed overhead door closers, provide space, cutouts, reinforcement, and provisions for fastening in top rail of doors or head of frames, as applicable.

K. Frame Construction: Fabricate frames to shape shown.

1. Fabricate frames with mitered or coped and continuously welded corners and seamless face joints.
2. For exterior applications, fabricate frames with mitered or coped and continuously welded corners and seamless face joints.
3. Provide welded frames with temporary spreader bars.
4. Provide terminated stops where indicated.

L. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.

M. Locate hardware as indicated on Shop Drawings or, if not indicated, according to ANSI A250.8.

N. Astragals: As required by NFPA 80 to provide fire ratings indicated.

2.06 STEEL FINISHES

A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.

1. Shop Primer: ANSI/SDI A250.10.

B. Factory-Applied Paint Finish: ANSI/SDI A250.3.

1. Color and Gloss: As selected by Owner from manufacturer's full range.

PART 3 - EXECUTION

3.01 INSTALLATION

A. General: Install steel doors, frames, and accessories according to Shop Drawings, manufacturer's data, and as specified.

B. Placing Frames: Comply with provisions in SDI 105, unless otherwise indicated. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.

1. Except for frames located in existing walls or partitions, place frames before construction of enclosing walls and ceilings.

C. Door Installation: Comply with ANSI A250.8. Fit hollow-metal doors accurately in frames, within clearances specified in ANSI A250.8. Shim as necessary to comply with SDI 122 and ANSI/DHI A115.1G.

3.02 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.

B. Prime-Coat Touchup: Immediately after installation, sand smooth any rusted or damaged areas of prime coat and apply touch up of compatible air-drying primer.

C. Protection Removal: Immediately before final inspection, remove protective wrappings from doors and frames.

END OF SECTION

SECTION 08710 FINISH HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. Work included:
1. Furnish hardware required to complete the work as shown on the drawings and as specified herein;
2. Furnish trim attachments and fastenings, specified or otherwise required, for proper and complete installation.
3. Deliver to the job site those items of finish hardware scheduled to be installed at the job site; and delivered to other points of installation those items of finish hardware scheduled to be factory installed, including:
   a. Butt Hinges
   b. Lock cylinders and keys
   c. Lock and latch sets
   d. Push/pull units
   e. Closers
   f. Door trim units
   g. Protection plates
   h. Weather-stripping (except where provided with aluminum entrance doors)
   i. Thresholds
   j. Wall or floor stops

B. Related work:
1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. Section 08100: Metal doors and frames

1.02 REFERENCES

A. Michigan Building Code – 2006 Edition

C. American National Standards Institute (ANSI):
1. ANSI A 156 Standards series.
2. ANSI A117.1-1998 Accessible and Usable Buildings and Facilities

D. National Electric Code – 2002 Edition

1.03 DEFINITIONS

A. "Finish Hardware": Items required for swinging, sliding and folding doors, except special types of unique and non-matching hardware specified under door and frame Sections of these Specifications.

1.04 SYSTEM DESCRIPTION

A. Design requirements:
1. Review of hardware requirements:

a. Thoroughly review finish hardware schedule, comparing it with the floor plan, door schedule, and door details to verify hardware requirements, quantities, door swings, finishes, and sizes.
b. If an inconsistency or error in the proposed construction documents is suspected, the hardware supplier is to bring it immediately to the attention of the Architect. If the quantity of items is questioned, for bidding purposes, assume the higher quantity is required and price accordingly.
c. Architect's review of Submittals is for design concept only, and does not relieve the Contractor of the responsibility to furnish sufficient material and functions required for a complete, and code-worthy installation. Determination of all quantities is the responsibility of the Contractor.

B. Performance requirements:
1. Furnish finish hardware complying with the requirements of laws, codes, ordinances and guidelines of governmental authorities having jurisdiction:
a. NFPA 101, "Life Safety Code", 2000 edition
b. NFPA 80, "Installation of Fire Doors and Windows", 1999 edition
c. Michigan Building Code - 2003 Edition
d. ANSI A117.1-1998 Accessible and Usable Buildings and Facilities

1.02 SUBMITTALS

A. Comply with pertinent provisions of Section 01340.

B. Product data:
1. Initial submittal of the proposed "Finish Hardware Schedule" in the following format:
a. Vertically-typed, double-spaced;
b. Organized into "hardware sets", indicating complete designations of every item required for each door or opening. Include the following information for each item of finish hardware:
(1) Manufacturer
(2) Type
(3) Style
(4) Function
(5) Size
(6) Degree and direction of opening swing ("hand")
(7) Finish
(8) Fasteners
(9) Location of hardware set cross-referenced to indications on floor plans, door, schedule, and frame schedule.
(10) Explanation of all abbreviations, symbols, codes, etc. contained in schedule.
(11) Mounting heights and locations for hardware.
(12) Door and frame sizes and materials.
(13) Keying information.

2. Final Finish Hardware Schedule immediately following receipt of the Architect's approval of the initial submittal.

C. Samples:

1. When requested by the Architect or Owner, submit one sample of each type of exposed hardware unit, finished as required, and tagged with a full description for coordination with schedule.
2. Samples will be returned to the supplier.
3. Units which are acceptable and remain undamaged through submittal, review and field comparison procedures may, after final check of operation, be built into the Work, within limitations of keying coordination requirements.

D. Templates: Furnish hardware templates with final submittal of Finish Hardware Schedule.

E. Contract closeout submittals:
1. Operation and maintenance data: Comply with pertinent provisions of Section 01730.
2. Provide two complete sets of finish hardware schedules, and two complete copies of manufacturer's catalog cuts and maintenance instructions for each item furnished under the Work of this Section.

1.03 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the requirements and the methods needed for proper performance of the work of this Section.

B. Supplier qualifications:
1. A recognized architectural finish hardware supplier with warehousing facilities within a 100 mile radius of the project site and a direct distributor of all products listed on the approved finish hardware schedule.
2. Continuously in business of finish hardware supply for not less than 5 years.

C. Provide the service of a qualified Architectural Hardware Specialist to:
1. Be available for consultation with the Architect at no additional cost to the Owner during progress of construction, and:
   a. Inspect installation of all finish hardware items;
   b. Make all minor adjustments required; and
   c. Report to the Architect on completeness of the installation.
2. The hardware consultant may be an employee of the supplier.

D. Installer qualifications: Employ a competent hardware installer with at least five (5) years experience installing commercial grade hardware similar to that proposed for the Work.

E. Source limitations: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from a single manufacturer, although several may be indicated as offering products complying with requirements.

F. Mandatory pre-construction meeting:
1. Immediately following the Architect’s final approval of the submittals, convene a mandatory pre-installation meeting to be attended by the Architect, Contractor, Installer, Supplier, and the Architect’s hardware consultant.
2. Proposed agenda to include review of:
   a. The Contract Documents;
   b. Installation schedule;

c. Hardware Specifications;
d. Hardware locations and opening descriptions;
e. Special installation instructions;
f. Other items of pertinence to the Work.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Comply with pertinent provisions of Section 01620.

B. Product identification:
1. Tag and mark each item separately in manufacturers unopened package, identifying it by product number and architectural opening number, as listed in the approved Finish Hardware Schedule.
2. Include instructions, templates, and fasteners needed for installation.

C. Deliver individually packaged hardware items on a vehicle operated by a direct employee of the Hardware Supplier. Contractor shall immediately, and in the presence of the Hardware Supplier, inventory the contents of the delivery.

D. Hardware supplier: Furnish finish hardware items directly to the factory or mill for factory-installation, where required.

1.05 PROJECT CONDITIONS

A. Provide a secure, dry storage area for the sole purpose of storing finish hardware. Prohibit access to all jobsite personnel, except those employed by the installing contractor.

1.06 WARRANTY

A. Manufacturer's warranty:
1. Warrant all finish hardware items against defects in materials and workmanship for one year.
2. Extended warranty: Extend the above warranty on certain items of finish hardware as follows:
a. Door closers: To ten years
b. Locks and latch sets: To five years
3. Manufacturer agrees to promptly replace (including installation by a factory representative) defective products at no additional cost to the Owner, for the duration of the warranty period.
4. The terms of such warranties extend from the Date of Substantial Completion as that date is defined by the General Conditions.

B. Failures due to defective materials or workmanship is deemed to include, but not to be limited to:
1. Failures in operation of any operating component;
2. Defects which contribute to unsightly appearance,
potential safety hazard, or potential untimely failure of the products furnished under this Section.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

A. Requirements for design, grade, function, finish, size, and other distinctive qualities of each finish hardware item is indicated in the Finish Hardware Schedule at the end of this Section.

B. Product designations:
   1. Provide the product designated or the comparable product listed in this section.

C. ANSI/BHMA designations:
   1. Used to describe hardware items, or to define quality or function. Provide products complying with these standards in addition to additional requirements of this Section.

D. Hand of door: Drawings show direction of slide, swing ("hand") of door leafs.

E. Hardware: Use hardware manufactured to conform to published templates and, generally, prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping sheet metal screws, except as specifically indicated.

2.02 MATERIALS

A. Base metals:
   1. Manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser (commercially-recognized) quality than that specified for applicable hardware units by applicable ANSI A156 series standard for each type hardware item and with ANSI A156.18 for finish designations indicated.
   2. Do not furnish "optional" materials for those indicated, except as otherwise specified.

B. Fasteners:
   1. Furnish Phillips flat-head screws with each hardware item, unless otherwise indicated.
   2. Exposed screws: Match finish of hardware (even where noted to be "prepared for paint").
   3. Use concealed fasteners for hardware units which are exposed when door is closed, except where no standard units of type specified are available with concealed fasteners.
   4. Do not use thru-bolts where bolt head or nut on opposite face would be exposed.
   5. Where adequate reinforcement is not feasible, thru-bolting would only be acceptable if through sleeves, or if sex-screw fasteners are used.

C. Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of finish hardware.

2.03 MANUFACTURED UNITS, GENERAL

A. Reference standards:

Item:	Comply with:
1. Butts and hinges:	ANSI A156.1-1988 (BHMA 101)
2. Locks and lock trim:	ANSI A156.2-1987 (BHMA 601)
3. Exit devices:	ANSI A156.3-1989, Grade 1 BHMA 701)
4. Door controls-closers:	ANSI A156.4-1986,Grade 1 BHMA 301)
5. Architectural door trim:	ANSI A156.6 (BHMA 1001)
6. Template hinge dimensions:	ANSI A156.7
7. Door controls-overhead holders:	ANSI A156.8 (BHMA 311)
8. Mortise locks and latches:	ANSI A156.13-1987, Grade 1
9. Auxiliary hardware:	ANSI A156.16-1989(BHMA 1201)

B. Hardware finishes:
   1. Materials and Finishes Standard: Comply with ANSI A156.18 (BHMA 1301). Finish designations used in schedules are listed, therein.
   2. Provide US10B at all finish hardware exposed to view.
   3. Provide matching finishes for hardware units at each door, unless otherwise indicated.
   4. Match the color and texture of hardware items to manufacturer's standard finish for the latchset, lockset, or push-pull unit.
   5. Provide quality of finish, including thickness of plating or coating, composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than that specified or described by referenced standards.

C. Hardware for fire-rated openings:
   1. Comply with NFPA 80
   2. Tested and listed by Underwriters Laboratory (UL), or Factory Mutual (FM) for type, size and use of door, and complying with requirements of door and door frame label.
   3. Provide UL or FM label on door indicating "Fire door to be equipped with fire-exit hardware".
   4. Provide UL or FM label on exit device indicating "Fire Exit Hardware".

2.04 PRODUCTS

A. Hinges, butts and pivots:
   1. General:
      a. ANSI A156.1 - 1988 for commercial quality.
      b. Provide only template-produced units.
      c. All hinges to be concealed bearing-type.
      d. Hinges at exterior doors shall be of non-ferrous material.
   2. Screws:
      a. At metal doors and frames: Machine screws.
      b. At wood doors and frames: Phillips flat-head wood screws.
      c. Finish screw heads to match surface of hinges or pivots.
   3. Pins:
      a. Steel hinges: Steel
      b. Non-ferrous hinges: Brass or Bronze
      c. Hinges at exterior doors: Non-removable (NRP)
      d. Hinges at out-swing corridor doors: Non-removable (NRP)
      e. Hinges at interior doors: Non-rising
   4. Tips:
      a. Flat button with matching plug
      b. Finish to match leaves, except where hospital tip (HT) indicated.
   5. Number of hinges: Provide number of hinges indicated but not less than 3 hinges.
   6. Hinge sizing:
      a. According to hinge manufacturer’s recommendation for door size and weight, unless otherwise specified.
      b. Hinges for door widths 3 feet, or less: Standard-weight (.134)
      c. Hinges for door widths over 3 feet: Heavy-weight (.180) hinges
   7. Acceptable products:
      a. For interior/exterior standard weight hinges:
         (1) Stanley CB179/CB191*

(2) Hager AB700/AB800

b. For interior/exterior heavy weight hinges:

(1) Stanley CB168/CB199*

(2) Hager AB750/AB850

B. Lock Cylinders and Keying:

1. General:
   a. Meet with Owner and Architect to finalize keying requirements and obtain final written instructions.
2. Cylinders:
   a. Type: Mortise , or rim-type as required by function of locking device.
   b. Provide cams or tail piece as required.
   c. Construct lock cylinder parts from brass/bronze, stainless steel or nickel silver.
   d. Provide solid machined cylinder rings with tension spring to resist wrenching of cylinder. Length, finish and size as required.
3. System:
   a. Except as otherwise indicated, provide BEST cylinders with cores keyed to owners Best IC, 7-pin great grand master key system.
   b. Furnish construction cores for all cylinders.
4. Keying:
   a. Deliver keys and final cores to the hardware installation Contractor for final installation, when directed by the Owner.
   b. Comply with Owner's instructions for master keying and, except as otherwise indicated, provide individual change key for each lock which is not designated to be keyed alike with a group of related locks.
   c. Key material: Nickel silver
   d. Key quantity:
      (1) Three (3) change keys for each lock;
      (2) Five (5) master keys for each master system;
      (3) Five (5) grandmaster keys for each grandmaster system.
      (6) Block out blades -keying directed by owner.

C. Locksets:

1. Mortise Locks
   a. Comply with ANSI A156.13 - 1987, Grade 1 criteria for mortise locks
   b. Function: Indicated in the hardware sets.
   c. Provide appropriate fasteners for lock and strike.
   d. Trim: 15H lever-type equal to Best Lock
   e. Acceptable products: Best* 45H series

D. Thresholds:

1. General:
   a. ANSI A156.21 - 1989, Grade 1 criteria.
   b. Comply with A.D.A. requirements, unless otherwise scheduled.
2. Description:
   a. Flat profile
   b. Installation locations are scheduled.
   c. Provide templates for thresholds to related door suppliers to coordinate proper undercut.
3. Acceptable products:
   a. Durable Products C-200 series.

b. Reese
c. Zero

E. Door Seal:
1. General:
   a. ANSI A156.21 - 1989, Grade 1 criteria.
2. Description:
   a. Flat profile.
   b. Dimensions: Appropriate to door opening size.
   c. Installation locations are scheduled.
   d. Provide templates for thresholds to related door suppliers to coordinate proper undercut.
3. Mounting:
   a. Apply related hardware (closer, foot bracket, strike, etc.) on top of weatherstrip.
   b. Do not notch or splice weather strip.
   c. Adjust related template hardware locations, as required.
4. Acceptable products:
   a. Durable Products* 306 with vinyl insert for jamb and head
   b. Reese
   c. Zero

2.05 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

2.06 HARDWARE FINISHES

A. General:
1. Provide matching finishes for hardware units at each door or opening, to the greatest extent possible and except as otherwise indicated.
2. Reduce differences in color and textures as much as commercially possible where the base metal or metal forming process is different for individual units of hardware exposed at the same door or opening.
3. In general, match items to the manufacturer's standard finish for the latch and lock set (or push/pull units if no latch/lock sets) for color and texture.
4. Provide finishes matching those established by BHMA or, if none established, match the Architect's sample.
5. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness and other qualities complying with manufacturer's standards, but in no case less than that specified for the applicable units of hardware by referenced standards.
6. Finish designations used in schedules and elsewhere listed in ANSI A156.18 "Materials and Finishes Standard", including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.

B. Provide the following hardware finishes, unless otherwise scheduled:
1. Hinge US10B
2. Lock US10B
3. Cylinder US10B
8. Thresholds/door seals DB

C. Base material: Manufacturer's standard high-carbon steel, brass, or bronze.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 COORDINATION

A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

3.03 INSTALLATION

A. General:
   1. Install each item in its proper location firmly anchored into position, level and plumb, and in accordance with the manufacturer's recommendations.
   2. Handing, hardware heights, locations, and degree of opening swing are indicated in the Drawings and Finish Hardware Schedule.
   3. Mount finish hardware units:
      a. At recommended heights and locations as shown in approved finish hardware schedule, complying with requirements of the A.D.A., and pertinent provisions of the Building Code.
      b. To function at proper degree of opening of doors as indicated on approved finish hardware schedule.
      c. By manufacturer's template.
      d. Prior to final finishing of the door. Remove hardware to allow finishing of door, and permanently reinstall hardware upon completion of finishing operation.
   3. Reinforce, where necessary, the substrate to assure proper attachment.
   4. Drill and countersink units which are not factory-prepared for anchorage fasteners.
   5. Space fasteners and anchors in accordance with industry standards.

B. Installing thresholds at exterior doors: Set in full bed of butyl-rubber, or polyisobutylene mastic sealant.

3.04 FIELD QUALITY CONTROL

A. Inspection of final hardware installation: The Contractor, hardware suppliers, and Architectural Hardware Consultant (AHC) shall thoroughly check the quality of the installation and the functionality of each unit of finish hardware at all openings in the Work. The Hardware Supplier shall forward a detailed written report of all operational or installation deficiencies to the Architect and Contractor.

3.05 CLEANING AND ADJUSTING

A. Check and adjust each item of hardware and each door upon completion of final installation. Verify proper function, and replace units which cannot be made to operate freely and smoothly, as intended for the application.

B. Clean adjacent surfaces soiled by hardware installation.

3.06 FINISH HARDWARE SCHEDULE

HARDWARE SET 1

3 ea.	Stainless Butt Hinge LS 4 1/2 x 4 1/2 NRP	32D Amweld Liberty Hardware
1 ea.	Mortise Lock With Indictor RE 13 S VIN	26D Marshall Best Security
1 ea.	Combinated Core IC7	26D Marshall Best Security
1 ea.	Closer LC-4300 ADA (mount room side)	AL Amweld Liberty Hardware
1 ea.	Stop 1270WV or 1211 Type as require	26D Trimco
1 ea.	Kickplate K0050 10 x 1 1/2 LDW B4E	32D Trimco
1 ea.	Threshold S205A	AL Reese
1 ea.	Sweep 353A –Mount pull side	AL Reese
1 ea.	Weatherstrip 854C (hardware compatible)	AL Reese

END OF SECTION