RAYMOND L. SMITH BUILDING

NEW WAVE POOL

CONCRETE, PLUMBING & ELECTRICAL PACKAGE

20-17-02

SEPTEMBER 22, 2017
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Reference Drawings:

Original Building Drawings:

- A-05    Sub-Basement Floor Plan
- M-01    Foundation Plumbing
- M-02    Sub-Basement Plumbing
- M-03    Basement Plumbing
- E-03    Power Sub-Basement
- E-04    Lighting Sub-Basement

Edinburgh Design Drawing (Wave tank manufacturer)

- Sheet 1 of 4  MTU-GA01  MTU flume tank
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INVITATION TO BID

PROJECT: Wave pool concrete, plumbing and electrical work in the Raymond L. Smith (ME-EM) Building

DUE DATE: Until 3:00P.M. Local time (EDT) on October 9th, 2017, the Owner will receive sealed proposals for the work as herein set forth at the offices of:

Attn. Cameron O’Connell- Facilities Management
100 Facilities Building - Waterfront
1400 Townsend Drive
Michigan Technological University
Houghton, MI 49931

at which time and place all proposals will be publicly opened and read aloud.

DOCUMENTS: Bidding documents consisting of proposal forms, plans, specifications, and other pertinent data can be viewed and downloaded from the Facilities Management web site at the following address: http://www.mtu.edu/facilities/planning/bids/ Please call Project Engineer, Jim Rathbun at 906-487-2305, if you have technical questions.

SITE INSPECTIONS: Bidders are to attend a mandatory Pre-Bid Walk-through 2 PM Wednesday, October 4th, 2017 at the 1st floor elevator lobby of the Raymond A. Smith Building (MEEM) on the Michigan Tech campus, Houghton, Michigan.

PROPOSAL GUARANTEE: All bidders submitting bids in excess of $50,000 must provide a certified check or bank draft payable to Michigan Technological University - or- a satisfactory Bid Bond executed by the Bidder and surety company, in an amount equal to but not less than five percent (5%) of the maximum proposal amount.

CONTRACT SECURITY: The successful bidders will be required to furnish a satisfactory performance bond and labor and material payment bond in amounts each of one-hundred percent (100%) of the accepted bid.

EQUAL EMPLOYMENT OPPORTUNITY: All bidders shall comply with all current Federal and State Equal Employment Opportunity requirements.

Michigan Technological University reserves the right to reject any or all bids and to waive any informality or irregularity in any bid received.

Michigan Technological University is an equal opportunity educational institution/equal opportunity employer, which includes providing equal opportunity for protected veterans and individuals with disabilities.
Attn: Cameron O’Connell - Facilities Management
Michigan Technological University
1400 Townsend Drive
Houghton, MI 49931-1295

Having carefully read the specifications and drawings dated September 22, 2017 for Wave pool concrete and plumbing & electrical work in the Raymond L. Smith (ME-EM) Building, the undersigned agrees to perform the work in accordance with Invitation to Bid No. 20-17-02

The undersigned also agrees to complete all work for this project by December 20th, 2017 or sooner

A) Our bid to place concrete, demo electrical & plumbing tie-ins in the Raymond L. Smith (ME-EM) in accordance with Drawing and Specifications dated 9/22/17:

$______________________________

(Bid price in numbers and words)

Bidder acknowledges receipt of the following addenda:

Addendum No. _____________ Dated: ______________
Addendum No. _____________ Dated: ______________
Addendum No. _____________ Dated: ______________

Name: ___________________________ Date: _________
(Signature)

Name: ___________________________
(Print)

Title: _____________________________

Firm: _____________________________

Sealed proposals will be received at Facilities Management, Bldg. 44, on the waterfront of Michigan Technological University, Houghton, Michigan until 3:00 P.M. on October 9th, 2017.

(Return one copy to Facilities Management. Retain one copy for your files.)
Owner: Michigan Tech University, 1400 Townsend Dr., Houghton, MI
Project: Wave pool concrete, electrical and plumbing work - Raymond L. Smith (ME-EM) Building
MTU Project Number: 20-17-02
Contract for: Installation of three pool walls, waterproofing, electrical demolition and plumbing work in preparation for new wave tank in the Raymond A. Smith building.
Contractor: TBD
Contract Start Date: October 16th, 2017
Contract Completion Date: December 20th, 2017 or Date of Final Payment

This Agreement, is authorized and made to be effective as of this day of __________ between Michigan Technological University, a Michigan constitutional corporation located in Houghton, Michigan, (the “University”) and < >, (the “Contractor”), a corporation located at < >, for contract services to be provided by the Contractor, to the University for, and in connection with, the following described project located at the University’s campus in Houghton, Michigan. The Contractor and the Owner, agree as follows:

ARTICLE 1 - THE CONTRACT DOCUMENTS:

The Contract Documents consists of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Specifications, Construction Plans/Drawings, etc. as listed in this Agreement and Modifications issued after execution of this Agreement; these form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents other than Modifications, appears in Article 6.

ARTICLE 2 - SCOPE OF THE WORK:

The Contractor shall furnish all of the materials and perform all of the Work shown on Drawings and described in the Specifications for Wave pool concrete and plumbing work in the Raymond L. Smith (ME-EM) Building - Project 20-17-02, prepared by Michigan Tech Facilities Management, 1400 Townsend Dr., Houghton, MI, 49931.
ARTICLE 3 - TIME OF COMPLETION:

The Work to be performed under this Contract shall begin on or about October 19, 2017 or Date of Notice to Proceed, and shall be substantially completed on or before the Completion Date, December 20th 1st, 2018 or Date of Final Payment.

ARTICLE 4 - PROGRESS PAYMENTS:

Michigan Tech shall make payments as provided in Articles 1.2.14 of the General Requirements and 012900 Payment Procedures and conditions set forth and agreed upon herein:

Based upon Applications for Payment submitted to Michigan Tech by the Contractor and Certificates for Payment issued by Michigan Tech, Michigan Tech shall make payments on the Total Contract Amount to the Contractor as provided below and elsewhere in the Contract Documents.

The period covered by each Application for Payment shall be one month ending on the 14th of each month.

Each Application for Payment and Conditional Waiver and Release on Progress Payment shall be based upon schedule of values consistent with format of AIA Documents G702, G703. The schedule of values (G703) shall allocate the entire Total Contract Amount among the various portions of the Work and supported by such data to substantiate its accuracy as Michigan Tech may require. This schedule of values, unless objected to by Michigan Tech, shall be used as a basis for reviewing the Contractor's Application for Payment.

Applications for Payment shall indicate the percentage of completion of each portion of Work as of the end of the period covered by the Application for Payment. The amount of each Application for Payment (progress payment) shall be computed by:

1) Multiply the percentage complete of each portion of the work by the share of the Total Contract Amount allocated to that portion of the Work in the schedule of values, less retainage of ten (10%). Pending final determination of cost to Michigan Tech of changes in the Work, changes for amounts not in the dispute may be included per Section 1.2.8 of the General Requirements. The Total Contract Amount must be adjusted to reflect the changes in the Work by Change Order, then payment shall be allocated as to the completed portion of the Work in the adjusted schedule of values, less retainage of ten (10%).

2) The portion of the Total Contract Amount that is materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by Michigan Tech, suitably stored off the site at a location agreed upon...
in writing), may be included in the Application for Payment less retainage ten (10%).

3) The amount of the Application for Payment requested shall not include any previous payments made by Michigan Tech.

4) The amount of the Application for Payment requested shall not include any previous amounts that Michigan Tech has withheld or a nullified Application for Payment.

5) Michigan Tech shall review the Application for Payment and sign it certifying it, thus it will become a Certificate of Payment.

6) Provided an Application for Payment and Conditional Waiver and Release on Progress Payment are received and approved by Michigan Tech, Michigan Tech shall make payment to the Contractor not later than thirty (30) days after receipt of the Application for Payment.

ARTICLE 5 - ACCEPTANCE AND FINAL PAYMENTS:

Final Payment, constituting the entire unpaid balance of the Total Contract Amount, shall be made by Michigan Tech to the Contractor when (1) the Contract has been fully performed by the Contractor except for the Contractor’s responsibility to correct nonconforming Work as provided in Subparagraph 1.2.12. of the General Conditions and to satisfy other requirements, if any, which necessarily survive final payment; and (2) a Final Certificate for Payment has been issued by Michigan Tech.

1) The Contractor may request in writing that Michigan Tech issue Substantial Completion. Upon receipt of written notice that the Work is ready for inspection and acceptance, Michigan Tech shall promptly inspect the Work.

2) When the Work has been Substantially Completed and accepted, Michigan Tech shall issue upon request by the contractor, Substantial Completion and a Final Completion Checklist as necessary. Upon completion of the Final Completion Checklist and upon request by the Contractor, Michigan Tech shall complete a Certificate of Completion. Michigan Tech shall make payments up to ninety-five percent (95%); less such amounts as determined by Michigan Tech for incomplete Work, unsettled claims, and any Work that is materially delayed through no fault of the Contractor; of the Total Contract Amount of the balance due for that portion of the Work Substantially Completed and accepted.

3) The Contractor may request in writing that Michigan Tech issue a Certificate of Final Completion and Final Payment upon completion of the Final Completion Checklist. Upon receipt of written notice that the Work is ready for final inspection and acceptance, Michigan Tech shall promptly inspect the Work.

4) When Michigan Tech finds the work is sufficiently complete per the Final Completion Checklist and Contract Documents in their entirety, Michigan Tech shall promptly issue the
Certificate of Final Completion that states that the Work provided in this Contract is complete, and that the Final Payment is due the Contractor, as noted in the Certificate of Substantial Completion. Final payment shall be due thirty (30) days after the Contract is fully performed.

ARTICLE 6 - THE CONTRACT DOCUMENTS:

The Contract Documents, together with this Agreement, form the Contract, and they are as fully a part of the Contract as attached:
- Specifications for this project dated 09/22/17 as listed in the Table of Contents
- Any Addendum issued prior to the bid date.

The Contractor's signature on this Agreement indicates that the Contractor has read and will comply with each of these documents.

ARTICLE 7 - THE CONTRACT AMOUNT:

The **Contract Lump Sum** is as noted below.

The amount shown below shall be both in words and in figures. In case of discrepancy, the amount shown in words shall govern.

*Place concrete, demo electrical & plumbing tie-ins in the Raymond L. Smith (ME-EM) in accordance with Drawing and Specifications dated 9/22/17:*

$\text{__________________________________________} \quad \text{(Bid price in numbers and words)}
IN WITNESS, WHEROF, each of the parties has caused this Contract to be executed by its duly authorized representatives on the date first mentioned above.

FOR THE CONTRACTOR

________________________________________ / ________________

Signature Date

Title

FOR MICHIGAN TECHNOLOGICAL UNIVERSITY

________________________________________ Date________________________

Kerri Sleeman

Executive Director – Facilities Management
010000 - GENERAL REQUIREMENTS

1. INSTRUCTION TO BIDDERS

1.1. PREPARATION OF PROPOSALS: All proposals shall include supplying all materials, equipment, and labor, and shall be submitted on the attached proposal form. The forms are to be filled out in ink or typewritten, with the bidder's authorized agent's signature in longhand. Each proposal shall be delivered in an opaque sealed envelope marked with the project name, Bid No., and bidders name.

1.1.1. BID FORM: No telephonic, telegraphic or digital facsimile (FAX) bid or telephonic, telegraphic or digital facsimile (FAX) modification of a bid will be considered. No bids received after the time fixed for receiving them will be considered. Late bids will be filed unopened.

1.1.2. BID GUARANTEE: Each proposal for which the base bid exceeds $50,000.00 shall be accompanied by either a certified or cashier's check on an open, solvent bank or a bid bond with an authorized surety company in the amount of 5% of the base bid, payable to Michigan Technological University, as a guarantee of good faith. If the successful bidder fails to furnish satisfactory bonds and insurance as required by the General Conditions within 7 days after notice of award, such guarantee shall be forfeited to the Owner as liquidated damages and the Owner shall be entitled at its sole option to immediately cancel, revoke, withdraw, or rescind its award. The guarantees of the three lowest bidders will be retained until the bond and insurance of the Contractor have been approved by the University. The guarantees of all other bidders will be returned within 10 days after the bid opening.

1.1.3. CONTRACT: Upon acceptance of any proposal by the Owner, the successful bidder shall furnish evidence of proper and satisfactory bonds and insurance as required by the General Conditions within 7 days after notice of award, such guarantee shall be forfeited to the Owner as liquidated damages and the Owner shall be entitled at its sole option to immediately cancel, revoke, withdraw, or rescind its award. The guarantees of the three lowest bidders will be retained until the bond and insurance of the Contractor have been approved by the University. The guarantees of all other bidders will be returned within 10 days after the bid opening.

1.2. GENERAL CONDITIONS

1.2.1. DEFINITIONS
UNIVERSITY OR OWNER - Michigan Technological University

EXECUTIVE DIRECTOR OF FACILITIES MANAGMENT – Kerri A. Sleeman
DIRECTOR OF ENGINEERING SERVICES - Gregg Richards
CONTRACTOR - The Bidder whose proposal is accepted by the University.

CONTRACT DOCUMENTS - This document, a purchase order, drawings, and specifications.

1.2.2. CONFLICT AND OMISSIONS: The intent of the Contract Documents is to provide everything necessary for the proper execution of the work. In case of conflict among or ambiguity in the Contract Documents the Contractor shall immediately notify the Director of Engineering Services and the work shall not proceed until a decision has been agreed upon by all parties concerned. Any adjustment or interpretation by the Contractor without such agreement shall be at his own risk and expense. No work stoppage by the Contractor will extend the time for completion.

1.2.3. ROYALTIES, PATENTS, NOTICES, AND FEES: The Contractor shall give all notices and pay all royalties and fees, shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, and shall comply with all laws, ordinances, and codes applicable to any portion of the work.

1.2.4. EXAMINATION OF PREMISES: The Contractor shall become familiar with local and on-site conditions affecting the job and the cost thereof, shall take independent measurements and make an examination and determination of all physical conditions affecting the work, and be responsible for the correctness of same even if they differ from those anticipated or indicated in the Contract. The Contractor shall be held to have made such examinations prior to bid submission and no allowances will be made in his behalf nor will any additional expenses be recoverable by reason of any error, omission, or misunderstanding on the part of the Contractor even if such actual conditions differ from those anticipated or indicated in the Contract. If any part of the Contractor's work depends for proper results upon existing work or the work of another contractor the Contractor shall examine such work and notify, before commencing work, the Director of Engineering Services of all defects or conditions that will affect the results. Failure to so notify will constitute acceptance of the conditions and render the Contractor responsible and liable for the results of any such defects or conditions which would have been revealed by complete examination and testing.

1.2.5. MOVING MATERIALS: If at any time it becomes necessary for the operation of the University to move materials temporarily located which are to enter into the final construction the Contractor furnishing the material shall, when so directed and without expense to the Owner, move them to another location.

1.2.6. MATERIALS AND WORKMANSHIP: All materials and workmanship shall be of first-class in every respect and, unless otherwise specified, all materials and equipment shall be new and of the latest design. Should any disputes arise as to the quality and fitness of materials, equipment, materials or items, the decisions shall rest strictly with the University, and shall be based upon the requirements of the Contract Documents. The Contractor shall, if requested by the University, furnish evidence as to quality and fitness of materials, at no additional cost to the University.

1.2.7. EMPLOYEES AND SUPERINTENDENCE: The UNIVERSITY OR OWNER - Michigan Technological University
Contractor shall enforce good order among his employees and shall not employ on the work any negligent, disorderly, intemperate or unfit person, or anyone not skilled in the work assigned. All work shall be performed in a skillful and workmanlike manner. The Contractor, or an authorized representative, shall be at the site at all times, and shall have the plans and specifications available.

1.2.8. EXTRA WORK AND CHANGES IN WORK: The Owner, without invalidating the Contract, may order extra work or make changes by altering, adding to or deducting from the work, the Contract sum being adjusted accordingly. All such work shall be executed under the conditions of the original contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change.

In giving instructions, the Owner shall have authority to make minor changes in the work, not involving extra cost, and not inconsistent with the purposes of the work, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order from the Owner and no claim for an addition to the Contract sum shall be valid unless as ordered.

When so directed, the Contractor shall promptly submit his itemized estimate and proposal for such extra work or changes, as well as separate unit prices on work for both additions to and deductions from the Contract.

Adjustments in the Contract sum for any such extra work or change shall be determined by one or more of the following methods:

Method Number 1: By an acceptable estimate and lump sum proposal from the Contractor.

Method Number 2: By unit prices stated in the Contract or subsequently agreed upon.

Method Number 3: By actual cost of all labor and materials and a percentage or fixed fee for all other charges, such as overhead, profit, insurance, taxes and bonds. On any change which involves a net credit to the Owner, no allowance for overhead and profit shall be figured.

If none of the foregoing methods is agreed upon, the Contractor, upon receipt of an order as herebefore stated, shall proceed with the work. In such case and also under Method Number 3, the Contractor shall keep and present in such form as the Owner may direct, a correct account of the cost, together with vouchers. In any case, the Owner shall certify to the amount including the specified allowance for overhead and profit, due the Contractor.

The allowable fee for added work by Contractor's own forces shall not exceed 15% of additional cost and his fee on work performed by Subcontractors shall not exceed 15% of additional cost. Quotations by Subcontractors at all times shall be subject to these same limitations.

1.2.9. OTHER CONTRACTS: The Owner may let other contracts in connection with the work and the Contractor shall properly connect and coordinate all work with the work of such other contractors. The Owner shall not be liable for any damages or increased cost occasioned by the failure of other contractors to execute their work as may be anticipated by these

Contract Documents. No contractor shall commit any act which will interfere with the performance of the work by any other contractor.

1.2.10. INSURANCE: No work connected with this Contract shall be started until the Contractor has submitted evidence, satisfactory to the Owner, depicting insurance coverage in accordance with the following:

1. Worker's Disability Insurance

The Contractor shall procure and shall maintain, during the life of this contract, Worker's Disability Insurance in work on the project under this Contract. In case any such work is sublet, the Contractor shall require the Subcontractor similarly to provide Worker's Disability Insurance for all of the latter's employees engaged in such work unless such employees are covered by the protection afforded by the Contractor's Worker's Disability Insurance. In case any class of employees engaged in hazardous work on the project under this Contract is not protected under the Worker's Disability Statute, the Contractor shall provide and shall cause each Subcontractor to provide Employer's General Liability Insurance for the protection of all such employees not otherwise protected.

2. General Liability Insurance

The Contractor shall carry, from the beginning of this Contract until completion of the same, general liability in the amount of $1,000,000 for each occurrence and $2,000,000 aggregate.

3. Property Insurance

The Contractor shall carry, from the beginning of this Contract until completion of the same, $100,000 for each property accident other than the property covered by this Contract.

4. Builders' Risk Insurance

The Contractor will assume all risk of loss for the first $100,000 on any single occurrence of damage to property of Owner or any third party, including the subject of this contract. This may be effected by purchase of insurance or by self-insurance, and must be primary and non-contributory. The Owner will assume all risk of loss for property damage in excess of $100,000 for any single occurrence.

5. Worker's Compensation/Employer's Liability

The Contractor shall carry, from the beginning of this Contract until completion of the same, Worker's Compensation Employer's Liability in accordance with Statutory required by the State and $500,000 per accident.

6. Automobile Liability

The Contractor shall carry, from the beginning of this Contract until the completion of the same, $1,000,000 in automobile insurance for each occurrence and the
Partial payments shall not relieve the Contractor from full responsibility for any claim 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.

The Contractor will indemnify and hold harmless the University from and against all claims, judgments, liability and expense of any nature due to bodily injury, personal injury or damage to property arising out of, on account of or in connection with contractors (or any employee, subcontractor or agent of contractor) performance of the work or activity pursuant to the contract.

1.2.11. BONDS: The successful Contractor of a project for which the base bid exceeds $50,000.00 shall furnish in form and with sureties acceptable to the Owner, a performance bond and a labor and material bond, each in the amount of 100% of the Contract sum, as security for the faithful performance of all Work under the Contract, and payment of all charges in connection therewith. The cost of the aforesaid bonds shall be paid by the Contractor and included in the Contract Sum. No work connected with the Project shall be started until the Contractor has placed bonds, in proper form, on file with the University.

1.2.12. NONCOMPLIANCE

WITH CONTRACT-TERMINATION: The Owner, at its option, may order suspension of the Work in whole or in part for such time as it deems necessary because of the failure of the Contractor to comply with the contractual requirements. The contract completion date shall not be extended on account of any such suspension order by the Owner. In the event the Owner orders an suspension of the work, the Contractor shall not be entitled to any costs or damages resulting from such suspension; the Owner shall not in any manner be liable or responsible for such costs or damages. The rights of the Owner provided in this clause are in addition to any other rights or remedies provided under this Contract or by law.

In addition to all other rights and remedies contained herein, or at law or equity, the Owner may terminate this Contract when any default is not stopped immediately and corrected within a reasonable length of time after notification by the Owner. In the event of such termination the Owner may complete the contracted work and the Contractor and his surety will be liable for any excess cost occasioned by the Owner. In such case the Owner may take possession of and utilize in completing the work such necessary materials and equipment as may be on the Site.

1.2.13. GUARANTEE: The Contractor shall provide a written guarantee warranting all work under this Contract against faulty workmanship and defective materials, and to make good, at his own expense and promptly upon request by the Owner, all defective work and all damage to other work caused by such defective work, for 1 year from the date of signing of the Owner's Certificate of Substantial Completion form. The provisions of this express warranty shall not affect or impair any of the Owner's rights under any other applicable, implied, or expressed warranties.

1.2.14. PAYMENT: Payment for the work will be made in one sum at the completion of the contract except that partial payments aggregating 90% of the value of the completed work may be made at monthly intervals. If the contractor expects to request partial payments he shall submit a schedule of costs and quantities of the various parts of the work aggregating the total contract sum. When applying for partial or full payments, the Contractor shall submit a statement based upon this schedule, itemized and supported as the Director of Facilities Management may require and a Sworn Statement and Conditional Waiver and Release on Progress Payment setting forth the amounts due each subcontractor, supplier, and laborer.

The Contract will not be considered complete until the work has been finally accepted by the Director of Facilities Management and the following have been furnished: (1) the required guarantee, and (2) a sworn statement that all payrolls, material bills, and other indebtedness connected with the work have been paid, including such lien waivers as the M may request.

No presence, inspection, supervision, testing, or monitoring by the Owner or by any agent or representative thereof shall relieve the Contractor of responsibility for compliance with the terms of and performance pursuant to the Contract and the Contract Documents; nor shall any such conduct of the Owner or its agents or representatives constitute or be interpreted as constituting a waiver of any rights whatsoever or serve to stop them from requiring full performance by the Contractor.

1.2.15. NON-DISCRIMINATION CLAUSE: In connection with the performance of work under this Contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, national origin, age, sex, height, weight, or marital status. The Contractor will take affirmative action to assure that applicants are employed and that employees are treated during employment without regard to their race, religion, color, national origin, age, sex, height, weight, or marital status. Such action shall include, but not be limited to, the following: employment upgrading; demotion or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, national origin, age, sex, height, weight, or marital status.

3. The Contractor or his collective bargaining representative will send, to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice advising the said labor union or worker's representative of the Contractor's commitments under this section.

4. The Contractor will comply with all published rules, regulations, directives, and orders of the Michigan Civil Rights Commission relevant to Article 6, 1976 PA 453, as amended, which may be in effect prior to the taking of bids for any individual State project.

5. The Contractor will furnish and file compliance reports...
within such time and upon such forms as provided by the Michigan Civil Rights Commission; said forms may also elicit information as to the practices, policies, program, and employment statistics of each Subcontractor as the Contractor himself, and said Contractor will permit access to his books, records, and accounts by the Michigan Civil Rights Commission, and/or its agent, for purposes of investigation to ascertain compliance with this Contract and with rules, regulations, and orders of the Michigan Civil Rights Commission relevant to Article 6, 1976 PA 453, as amended.

6. In the event that the Civil Rights Commission finds, after a hearing held pursuant to its rules, that a contractor has not complied with the contractual obligations under this agreement, the Civil Rights Commission may, as part of its order based upon such findings, certify said findings to the State Administrative Board of the State of Michigan, which the Board may order the cancellation of the Contract found to have been violated, and/or declare the contractor ineligible for future contracts with the State and its political and civil subdivisions, departments, officers, and including the governing boards of institutions of higher education, until the contractor complies with said order of the Civil Rights Commission. Notice of said declaration of future ineligibility may be given to any or all of the persons with whom the contractor is declared ineligible to contract as a contracting party in future contracts. In any case before the Civil Rights Commission in which cancellation of an existing contract is a possibility, the contracting agency shall be notified of such possible remedy and shall be given the option by the Civil Rights Commission to participate in such proceedings.

7. The Contractor will include, or incorporate by reference, the provisions of the foregoing paragraphs "1" thru "6" in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Michigan Civil Rights Commission and will provide in every subcontract or purchase order that said provisions will be binding upon each subcontractor or seller.

1.2.16 PERMITS, FEES AND NOTICES: The Contractor Secure and pay for all permits, fees, and licenses required by State or Local governments necessary for the proper execution and completion of the work. The Contractor shall specifically secure Houghton County permits for Electrical, Mechanical and Plumbing work and schedule work inspections as required for approval. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations, and orders of any public authority bearing on the performance of the work. The University retains full jurisdiction of construction on campus and will make final determination of all variances.

1.2.17. USE OF SERVICES: The Contractor may use the Owner's water and power by contacting Michigan Tech Facilities Management for arrangements.

1.2.18. SCHEDULING: The Contractor shall meet with the Director of Engineering Services as follows: (1) prior to the start of work; (2) to schedule any interruption of University services; and (3) monthly, or as directed, to review the progress of work.

At the time work is commenced on the project, the Contractor shall prepare a progress schedule showing the dates for the commencement and completion of the various stages of construction. This schedule shall be coordinated with the Owner's required use of the facilities and other contractors' construction schedules, and shall be arrived at in consultation with the Director of Engineering Services and approved by all affected parties.

The Contractor shall furnish sufficient forces and construction plant and equipment to insure protection and progress of the work in accordance with the schedule.

Any changes in the work schedule are to be approved in advance by the Director of Engineering Services.

1.2.19. TEMPORARY CONSTRUCTION FACILITIES: All temporary construction facilities shall be neatly constructed and arranged on the Site in an orderly manner.

Suitable weather tight storage sheds, with raised floors, of capacity required to contain all materials which might be damaged by storage in the open shall be provided.

Construction equipment and other facilities such as ladders, ramps, etc., shall be strong, substantial, safe, and suitable for the purpose intended and shall comply with all University, Federal, State, and local requirements so as to maintain adequate and safe temporary access to all existing facilities. Temporary walkways, bridges, etc., shall be built with proper handrails, curbs, etc.

The Contractor will assume all risk of loss for any damage or destruction to the Contractor's temporary office, equipment, shanties, protective fence, scaffolding, staging, and all other miscellaneous materials and items owned or rented by the Contractor or any subcontractor used in the performance of this contract.

A temporary dust-proof enclosure of the work area, including existing machines and equipment, must be erected and maintained throughout the length of the project where required in the various Divisions herein.

1.2.20. CLEANLINESS OF THE WORK: The work and any public or private property occupied by the Contractor shall be kept in a neat and orderly condition at all times. Waste materials, rubbish, and debris shall be removed daily.

At the completion of the work all the Contractor's temporary buildings, equipment, tools, surplus or waste materials, and rubbish of every nature shall be removed from all occupied public and private premises and such premises shall be restored, as nearly as practicable, to the original condition. Such restoration shall be subject to the approval of the Director of Engineering Services.

Debris removed from the site must be disposed of in a licensed landfill as required by the Solid Waste Management Act, 1978 PA 614, as amended, being MCLA 299.402; MSA 13.29(1) and the administrative rules applying to the Act contained in the Michigan Administrative Code R 299.4101. The Contractor shall provide the Director of Engineering Services with written, dated and verified receipt of proper disposal.
verification that all debris removed has been disposed of in a licensed landfill. Any cost incurred by the Owner as a result of the failure of the Contractor to comply with this paragraph will be a charge against the Contractor.

All exposed surfaces of the work shall be left clean and free from all mud, grease, stains, or other extraneous materials.

The streets and service roads occupied or used by the Contractor shall be continuously kept clean of waste materials and refuse resulting from the work operations. Should the Contractor be negligent in the duties of maintaining proper cleanliness, the Owner will take steps to cause the required cleaning to be done and will deduct the cost thereof from any monies due the Contractor.

The elevators, if used, shall not be overloaded and suitable protection for the walls, floor, and ceiling shall be provided during use. Any damage to the elevators must be repaired to the Facilities Management Manager of Planning, Engineering, and Construction satisfaction.

1.2.21. FIRE PROTECTION DURING CONSTRUCTION: The Contractor shall have on the Site at all times fire protection equipment as required by applicable codes and ordinances and requirements of the Owner's insurance carriers. Prior to start of work, the Contractor shall be knowledgeable and proficient in Hot Work safety and in the Owner’s Hot Work policies, procedures and requirements. The Contractor shall faithfully follow the Owner's Hot Work Policy, which regulates any temporary operation involving open flames or producing heat and/or sparks. The Contractor shall designate a Fire Safety Supervisor and Fire Watch for each Hot Work operation. The Fire Safety Supervisor shall not permit a hot work operation to proceed unless and until the provisions and required precautions checklist of the Owner's Hot Work permit are adequately addressed. The Fire Watch shall monitor the Hot Work area during and after the hot work operation to take measures to prevent fires and to respond to fires if they start.

During all construction operations in occupied building space, the Contractor shall construct and maintain a one-hour fire resistance separation between the part of the building under construction and the occupied part of the building, per the Life Safety Code NFPA 101, Section 1-3.11, 1997 Edition.

1.2.22. PARKING AND USE OF ROADS: Immediately after the award of the Contract, the Contractor shall consult with the Director of Engineering Services to determine authorized parking and access to the Site, routing of all construction vehicles, and re-routing of other traffic during construction, and shall organize the work in relation thereto.

At the beginning of the field work, the Contractor shall post signs limiting construction parking, if available, to the construction area. Parking for worker's cars is not guaranteed and is the Contractor's responsibility.

During construction, when use of roads or sidewalks is restricted by construction work, the Contractor shall erect temporary barricades, post notices and warning lights, and when required during working hours, direct traffic to prevent congestion. The Contractor shall maintain such as long as temporary work requires and then remove from the public areas.

1.2.23. SAFETY PRECAUTIONS: During the progress of the work, the Contractor shall maintain adequate facilities for the protection and safety of all persons and property. All local, state, and federal laws, ordinances, rules, and regulations pertaining to the kind, use, and loading of all apparatus and equipment shall be complied with. Work shall be done to conformance with "General Safety Rules and Regulations for the Construction Industry" published by the Department of Labor, Construction Safety Standards Commission, Lansing, Michigan 48926.

The contractor will immediately report all accidents involving persons and property to the University Public Safety Dept. A copy of the accident report must be filed with the Public Safety Dept.

The contractor shall conduct safety meetings during the progress of work. A copy of the minutes of these meetings must be submitted to the University. Contractor shall acknowledge Owner's Safety Requirements.

1.2.24. SUBSTITUTIONS:
1. The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

2. No substitution directly related to an "or equal" clause or similar language in the contract documents will be considered unless written request for approval has been submitted by the Bidder and has been received by the University at least ten days prior to the date for receipt of bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance, and test data and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment, or work that incorporation of the substitute would require shall be included. A burden of proof of the merit of the proposed substitute is upon the proposer. The University's decision of approval or disapproval of a proposed substitution shall be final.

3. If the University approves any proposed substitution, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

After receipt of bids, the University will consider a request for substitution only for the following reasons:

1. Products listed are no longer available.

2. Where the specified product or method cannot be provided within the Contract Time. However, the request will not be considered if the product or method cannot be provided as a result of the Contractor's failure to pursue the work promptly or to coordinate the various activities properly.

3. Where the specified product or method cannot receive necessary approval by a governing authority and the requested substitution can be approved.

Where a substantial advantage is offered to the University, in terms of cost, time, energy conservation, or other consideration of merit, after deducting offsetting responsibilities the University may be required to bear. These additional responsibilities may include such considerations as additional compensation to the Architect for redesign and evaluation services, the increased cost of other work by the University or separate contractors, an
similar considerations.

4. When the specified product or method cannot be provided in a manner which is compatible with other materials of the work, and where the contractor certifies that the substitution will overcome the incompatibility.

5. When the specified product or method cannot be properly coordinated with other materials in the work, and where the Contractor certifies that the proposed substitution can be properly coordinated.

6. When the specified product or method cannot receive a warranty as required by the Contract Documents and where the Contractor certifies that the proposed substitution receive the required warranty.

1.2.25. SUBCONTRACTS: The Contractor shall, as soon as practicable after the execution of the contract, notify the Owner in writing of the names of proposed subcontractors for the work. If the Contractor submits a list of proposed subcontractors prior to the execution of the contract, the Owner must be notified in writing of any change of subcontractor after the contract is executed. The Contractor will not employ any subcontractor that the Owner may, within a reasonable time, object to as incompetent or unfit.

The Contractor agrees to be fully responsible to the Owner for the acts and omissions of his subcontractors and of persons either directly or indirectly employed by them, as he is for persons directly employed by him.

Nothing contained in the contract documents shall create any contractual relationship between any subcontractor and the Owner.

Should material or workmanship, or parties furnishing same prove objectionable under the provisions of the contract, or should violations of the contract exist at the building or elsewhere, and continue after the contractor has received from the Owner a reasonable warning, then, upon request of the Owner, such objectionable parties shall be dismissed, removed, and excluded from the building or work. Such work shall be remedied and continued by others satisfactory to the Owner.

1.2.26. RELATIONS OF CONTRACTOR AND SUBCONTRACTOR: The Contractor agrees to bind every subcontractor and every subcontractor agrees to be bound by the terms of the Contract Documents as applicable to his work, unless specifically noted to the contrary in a subcontract approved in writing by the Owner.

1.2.27. UNIVERSITY RULES AND REGULATIONS: The Contractor shall comply with all laws, ordinances, rules, regulations, and orders of the Owner, and be responsible for and shall direct his employees to conduct themselves so as not to interfere with or disrupt the University educational activities.

The Contractor, Subcontractors, and their employees and suppliers shall not use or interfere with the Owner's existing accesses, drives, walks, and roads except as specifically indicated or by prior arrangement with the Owner.

The Contractor shall confine his activities, equipment, and personnel to the area within the construction limits, except for minor operations as noted and by prior arrangement with the permission of the Owner. Existing areas disturbed outside the scope of the work shall be restored to their original state.

1.2.28. PREVAILING WAGE: Rates of wages and fringe benefits to be paid to each class of mechanics employed by the contractor and all subcontractors, shall be not less than the wage and fringe benefit rates prevailing in the locality in which the work is to be performed. Every Contractor and Subcontractor shall keep an accurate record showing the name and occupation of, and the actual wages and benefits paid to each construction mechanic employed by him in connection with said contract. This record shall be available for reasonable inspection by the Department of Labor and the University. 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 wage and fringe benefit rates prescribed in a contract. Every contractor and subcontractor shall keep an accurate certified payroll record showing the name and occupation of and the actual wages and benefits paid to each construction mechanic employed by him in connection with said contract. 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 and Hour Division. The department will investigate and attempt to resolve the complaint informally. Executive Order Number 2003-001 requires that contractors doing business with the State of Michigan be in compliance with state and federal law. A violation of Act 166 of 1965, as amended, the Prevailing Wages on State Projects act or Act 390 of 1978, as amended, the Payment of Wages and Fringe Benefits Act, may result in the debarment of a contractor from being awarded a contract for the provision of goods and services to the State of Michigan for a period of up to eight (8) years.

1.2.29. COMPLIANCE WITH ALL APPLICABLE LAWS, RULES AND REGULATIONS: Notwithstanding any other specific provision herein, contractor (and any subcontractor) shall, at its sole expense, comply with all applicable federal, state, local and other laws, ordinances, rules and regulations in any manner applicable to the performance of the work or contractors’ activities in furtherance of or in connection with the work. Contractor will indemnify and hold harmless the University from and against any and all costs, claims, expenses or orders (including any penalties or fines assessed to University) incurred as a result of contractor’s failure to comply or contractor’s failure to perform any obligation imposed by the contract documents.
SUPPLEMENTARY GENERAL CONDITIONS

PART 1 PROTECTION - Contractor shall properly protect all new and existing work from damage. Proper safety provisions shall be made at all times for the protection of all persons and property. Contractor shall contact "Miss Dig" for all underground construction work as required by Michigan Public Act No. 53, 1974 and amended by P.A. 204, 1975.

PART 2 SHOP DRAWINGS:

Shop drawings as required to review configuration of all components and utilities as well as build outs of equipment room. Drawings required for proper installation and service are to be provided to owner for review.

PART 3 DEFINITIONS

A. Furnish: This term means procurement or fabrication of materials, equipment or components; or the performance of services to the extent indicated. Where used with respect to materials, equipment, or components, the term shall include delivery to and unloading at the Project site but is not intended to include the installation of the item, either temporary or final.

B. Install: This term means the placement of materials, equipment, or components including the receiving, unloading, transporting, storage, and installing; and the performance of such testing and finish work as is compatible with the degree of installation specified.

C. Provide: This term means to Furnish and Install, complete and in place, including all accessories, finishes, tests, and services as required to render the item so specified completely ready for use.

PART 4 AS-BUILT DRAWINGS - each contractor shall record, legibly and to scale, all field change and deviations from the contract drawings as they occur. This record shall be kept on a set of contract drawings. This set of drawings shall be turned over to the University prior to final payment.

PART 5 OPERATION AND MAINTENANCE MANUALS: Submit available manuals.

PART 6 SCHEDULE OF VALUES: Not required.

PART 7 DOCUMENT CLARIFICATION - All inquiries regarding project specifications and drawings shall be made to Jim Rathbun, the University’s engineer for the project, at 906-487-2305.

PART 8 CONTRACT COMPLETION - Completion of the Contract shall be on or before December 20th, 2017.
PART 9  SECTION REMOVED

PART 10  ASBESTOS -  This is not an asbestos abatement project  The Contractor shall not start any work in any area that has not been inspected for asbestos by the Owner’s Occupational Safety and Health Services, or a qualified representative of the Owner, and found to be safe. If asbestos is found, safety measures as recommended by the Owner’s Occupational Safety and Health Services, or a qualified representative of the Owner, shall be implemented by the Owner before work is started. The Contractor is prohibited from using or supplying any asbestos containing materials for this project. Asbestos containing material (ACM) is present in the pipe insulation used the Raymond L. Smith (ME-EM) Building. No work or attachments are to be made to these elements.

PART 11  SUMMARY OF WORK

The project consists of, but is not limited to, the following items:

A. Saw cut floor and remove concrete as required for new drains, pump boxes valve boxes and sanitary sewer connections. Tie-in new floor drains to existing sanitary sewer.

B. Install concrete anchors to existing slab, tie-in new rebar and re-pour slab around new floor drains.

C. Install all re-bar, anchors, set forms and pour concrete to create three walls of a new wave pool. Please note tolerances in setting forms. Fourth wall and all pool equipment will be provided and set by the wave pool supplier.

D. Install removable flood barrier walls surrounding the south side of the pool. All supports and anchorages are to be designed by the flood wall supplier. Flood wall must include a three foot section where the panels can be removed to provide a clear floor area for carts and access. All panels shall be removable.

E. Apply Sikagard 62 water proofing, primers and sealers on new pool walls per manufacturer’s requirements.

F. Install new piping to domestic water for pool water supply.

G. Remove all electrical devices: outlets, disconnects, breaker boxes, conduit, etc. on the north wall of the sub-basement wall. Remove all devices from the main 480V Panel (Located on the opposite side of the movable partition) and plug all unused holes.

H. Design and install new lighting over the pool and work area (up to the two columns in the room – approximate area 20 ft by 40 ft). New LED lighting shall provide 65 foot candles at a height of 1 meter AFF. New fixtures are to be hung from the ceiling, in three rows of continuous fixtures. Use wraparound style lights, similar to existing. Remove existing light fixtures (or move as required) to accommodate new lighting. All old lighting fixtures that remains shall be relamped with direct drive LED fixtures.
I. The freight elevator in the building may be used for equipment moves, but contractor use will be restricted to 10 minutes before and after class change due to high student demand. Contractor should plan to use the elevator prior to 7:50am.

J. Access and use of the lifting hatch and hoist in the area will be facilitated by crews from the ME-EM Building. Use must be scheduled 48 hours in advance.

K. Provide all required barricades, construction warning tape, cones and warning signs as required for safe work area. This includes the loading dock and lifting hatch on the basement level during material lifts.

L. Protect all adjacent wall, ceiling and floor finishes. Clean the work area at the end of each work day.

M. Restore all public space wall finishes to “as new” condition.

N. All unused and obsolete equipment is to be removed and properly disposed.

END OF SECTION
PART 1 – GENERAL

1.1 SUMMARY
A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 SCHEDULE OF VALUES
A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
   1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
      a. Application for Payment forms with continuation sheets.
      b. Submittal schedule.
      c. Items required to be indicated as separate activities in Contractor's construction schedule.

   2. Submit the schedule of values to Michigan Tech at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use Project Specifications table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
   1. Identification: Include the following Project identification on the schedule of values:
      a. Project name and location.
      b. Michigan Tech.
      c. Michigan Tech's project number.
      d. Contractor's name and address.
      e. Date of submittal.

   2. Arrange schedule of values consistent with format of AIA Documents G702, G703.

   3. Provide a breakdown of the Total Contract Amount in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Specifications table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Total Contract Amount.
      a. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Total Contract Amount and subcontract amount.

   4. Round amounts to nearest whole dollar; total shall equal the Total Contract Amount.
      a. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
      b. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.

   5. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders result in a change in the Total Contract

PAYMENT PROCEEDURES
010002 - 1
9/22/17
1.3 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Michigan Tech and paid for by Owner.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Michigan Tech and the Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Michigan Tech will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts of Change Orders issued before last day of construction period covered by application.

E. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Michigan Tech by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

F. Waivers of Lien: With each Application for Payment, submit waivers of lien as indicated in the Agreement.

G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Schedule of unit prices.
5. Submittal schedule (preliminary if not final).
6. List of Contractor's staff assignments.
7. List of Contractor's principal consultants.
10. Initial progress report.
12. Certificates of insurance and insurance policies.

H. Application for Payment at Substantial Completion: After Michigan Tech issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Total Contract Amount.

I. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Total Contract Amount.
4. Completion of the Final Completion Checklist.
5. Evidence that claims have been settled.
6. Final liquidated damages settlement statement.

END OF SECTION 010002
APPLICATION AND CERTIFICATION FOR PAYMENT

TO OWNER: PROJECT:

APPLICATION NO:

FROM CONTRACTOR: VIA ARCHITECT:

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

1. ORIGINAL CONTRACT SUM $ 0.00
2. Net change by Change Orders $ 0.00
3. CONTRACT SUM TO DATE (Line 1 + 2) $ 0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) $ 0.00
5. RETAINAGE:
   a. 10 % of Completed Work $ 0.00
      (Column D + E on G703)
   b. % of Stored Material $ 0.00
      (Column F on G703)

   Total Retainage (Lines 5a + 5b or Total in Column I of G703) $ 0.00
6. TOTAL EARNED LESS RETAINAGE $ 0.00
   (Line 4 Less Line 5 Total)
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate) $ 0.00
8. CURRENT PAYMENT DUE $ 0.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less 6) $ 0.00

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED . . . . . . . $ (Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: Date:

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

CHANGE ORDER SUMMARY

<table>
<thead>
<tr>
<th>CHANGE ORDER SUMMARY</th>
<th>ADDITIONS</th>
<th>DEDUCTIONS</th>
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<tr>
<td>Total changes approved in previous months by Owner</td>
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<td>Total approved this Month</td>
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<td>TOTALS</td>
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<td>NET CHANGES by Change Order</td>
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My Commission expires on:

County of: State of:  
Notary Public:  

Subscribed and sworn to before me this day of , 2009

Architect: By: Date:
AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.

In tabulations below, amounts are stated to the nearest dollar.

Use Column I on Contracts where variable retainage for line items may apply.

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION OF WORK</th>
<th>SCHEDULED VALUE</th>
<th>WORK COMPLETED FROM PREVIOUS APPLICATION (D + E)</th>
<th>WORK COMPLETED THIS PERIOD</th>
<th>MATERIALS PRESENTLY STORED (NOT IN D OR E)</th>
<th>TOTAL COMPLETED AND STORED TO DATE (D+E+F)</th>
<th>% (G ÷ C)</th>
<th>BALANCE TO FINISH (C - G)</th>
<th>RETAINAGE (IF VARIABLE RATE)</th>
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GRAND TOTALS

$0.00 $0.00 $0.00 $0.00 $0.00

Users may obtain validation of this document by requesting of the license a completed AIA Document D401 - Certification of Document’s Authenticity.
010008 Certificate of Substantial Completion

| Project: Wave pool concrete and plumbing work in the Raymond L. Smith (ME-EM) Building | Owner: Michigan Technological University 1400 Townsend Drive Houghton, MI 49931 |
| Project Number: 20-17-02 | Contract Date: |
| Contract for: Wave pool concrete and plumbing work in the Raymond L. Smith (ME-EM) Building | Contractor: |

**Substantial Completion Date and Final Completion Checklist:**
The Work performed under this Contract as reviewed by the Contractor is substantially complete by the Contractor’s knowledge, information, and belief; the condition of the work is sufficiently complete per Contract Documents and the Owner can occupy for intended use.

The Contractor hereby requests that Michigan Tech issue Substantial Completion notification for the project noted above.

If necessary, any Remaining Items to be completed and/or corrected are included on the 010010 Final Completion Checklist. The list does not alter the responsibility of the Contractor to complete Work per Contract Documents.

By signing below, the Contractor acknowledges that they will complete and/or correct the Remaining Items as documented on the Final Completion Checklist by the date listed as Completion Date on the Agreement, or as modified by subsequent Change Orders.

Contractor Signature By Date

**Owner’s Issuance of agreement for Substantial Agreement:**
Michigan Technological University’s representative hereby agrees that the project is substantially completed, and that this date shall be the Date of Commencement of Warranties for all items as established by the Contract Documents, including any listed in the Final Completion Checklist.

Owners Signature By Date
# 010010 Final Completion Checklist

<table>
<thead>
<tr>
<th>Space</th>
<th>Items to Complete</th>
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**Project:** Wave pool concrete and plumbing work in the Raymond L. Smith (ME-EM) Building  
**Owner:** Michigan Technological University  

**Project Number:** 20-17-02  
**Contract for:** Wave pool concrete and plumbing work in the Raymond L. Smith (ME-EM) Building  
**Contractor:**  

**Contract Date:**  

**General Items:**  
1. Provide product warranties for all supplied items:  
2. Provide extra material as follows:  
3. Provided Guaranty (attached).  
4. Provide Consent of Surety for final payment (attached).  
5. Provide Sworn Statement (attached).  
6. Provide Full Unconditional Waiver of Lien from Contractor and major suppliers (attached).  

**List of Remaining Items to be completed and/or corrected:**  

1.  
2.  
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**FINAL COMPLETION CHECKLIST**  
010010 - 1  
9/19/17
The CONTRACTOR, as a condition precedent to final payment, shall execute this Guaranty to the OWNER, guaranteeing for five (5) year from the date of final payment, to keep in good order and repair any defect in all the work completed under the Agreement. This includes work which may develop during said period due to improper materials, defective equipment, improper materials workmanship, or arrangements and in any work which may be affected in correcting any repairs or defects. This Guaranty will be binding upon the CONTRACTOR, his subcontractors and/or material suppliers and will be without any expense to the OWNER.

OWNER:  
CONTRACTOR:

Print  
Print

Signature  
Signature

Date  
Date
CONSENT OF SURETY
TO FINAL PAYMENT
AIA Document G707
(Instructions on reverse side)

OWNER D
ARCHITECT D
CONTRACTOR D
SURETY D
OTHER D

TO OWNER:
(Name and address)

ARCHITECT’S PROJECT NO.:

PROJECT:
(Name and address)

CONTRACT FOR:

ARCHITECT'S PROJECT NO.:

PROJECT:

CONTRACT DATED:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(insert name and address of Contractor)

on bond of

(insert name and address of Contractor)

SURETY, hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety of

any of its obligations to

(insert name and address of Owner)

as set forth in said Surety's bond.

IN WITNESS WHEREOF, the Surety has hereunto set its hand on this date:

(Surety)

Attest:

(Printed name and title)

CAUTION: You should sign an original AIA document that has this caution printed in red. An original assures that changes will not be obscured as may occur when documents are reproduced. See Instruction Sheet for Limited License for Reproduction of this document.
INSTRUCTION SHEET
FOR AIA DOCUMENT G707, CONSENT OF SURETY TO FINAL PAYMENT

A. GENERAL INFORMATION

1. Purpose

This document is intended for use as a companion to AIA Document G706, Contractor's Affidavit of Payment of Debts and Claims, on construction projects, where the Contractor is required to furnish a bond. By obtaining the Surety's approval of final payment to the Contractor and its agreement that final payment will not relieve the Surety of any of its obligations, the Owner may preserve its rights under the bond.

2. Related Documents

This document may be used with most of the AIA's Owner-Contractor agreements and general conditions, such as A201 and its related family of documents. As noted above, this is a companion document to AIA Document G706.

3. Use of Current Documents

Prior to using an AIA document, the user should consult the AJA, an AIA component chapter or a current AJA Documents List to determine the current edition of each document.

4. Limited License for Reproduction

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B. CHANGES FROM THE PREVIOUS EDITION

Changes in the location of various items of information were made, without revising to the: substantial use of this document.

C. COMPLETING THE G707 FORM

GENERAL: The bond form is the usual source of required information such as the contract date and the names and addresses of the Surety, Owner, Contractor, and Project.

ARCHITECT'S PROJECT NO.: This information is typically supplied by the Architet and enters: on the form by the Contractor.

CONTRACT FORM: This refers to the scope of the contract, such as "General Construction" or "Mechanical Work".

D. EXECUTION OF THE DOCUMENT

The G707 requires both the Surety's seal and the signature of the Surety's authorized representative.
State of Michigan

County of ____________________________, being duly sworn, deposes and says:

That ________________________________ is the (contractor) (subcontractor) for an improvement to the following described real property situated in County, Michigan, described as follows:

______________________________

______________________________

______________________________

______________________________

______________________________

______________________________

______________________________

(Insert legal description of property)

That the following is a statement of each subcontractor and supplier and laborer with whom the (contractor) (subcontractor) has (contracted) (subcontracted) for performance under the contract with the owner or lessee thereof, and that the amounts due to the persons as of the date hereof are correctly and fully set forth opposite their names, as follows:

<table>
<thead>
<tr>
<th>Name of subcontractor, supplier, or laborer</th>
<th>Type of improvement furnished</th>
<th>Total contract price</th>
<th>Amount already paid</th>
<th>Amount currently owing</th>
<th>Accrued fringe benefits contributions (if applicable)</th>
<th>Balance to complete</th>
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</table>

SWORN STATEMENT

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9/22/17
Totals

That the contractor has not procured material from, or subcontracted with, any person other than those set forth on the reverse side and owes no money for the improvement other than the sums set forth on the reverse side.

Deponent further says that he or she makes the foregoing statement as the (contractor) (subcontractor) or as ___________________________ of the (contractor) (subcontractor) for the purpose of representing to the owner or lessee of the premises described on the reverse side and his or her agents that the property described on the reverse side is free from claims of construction liens, or the possibility of construction liens, except as specifically set forth on the reverse side.

WARNING: AN OWNER OR LESSEE OF THE PROPERTY DESCRIBED ON THE REVERSE SIDE MAY NOT RELY ON THIS SWORN STATEMENT TO AVOID THE CLAIM OF A SUBCONTRACTOR, SUPPLIER, OR LABORER WHO HAS PROVIDED A NOTICE OF FURNISHING TO THE DESIGNEE OR TO THE OWNER OR LESSEE IF THE DESIGNEE IS NOT NAMED OR HAS DIED.

_____________________________________
Deponent

Subscribed and sworn to before me this__________ day of ____________________________, 20____

____________________________________
Notary Public

______________________________ County, Michigan

My Commission Expires: ____________________
010018 FULL UNCONDITIONAL WAIVER

My/our contract with ________________________________ to provide

(Other contracting party)

________________________ for the improvement of the property described as

Wave pool concrete and plumbing work in The Raymond L. Smith (ME-EM) Building having been fully paid and satisfied, with respect to our rights under the Payment / Lien Bond covering said Project and all of our rights to pursue payment under the Payment/Lien Bond No. issued by <<name of prime contractor>> as principal and <<name of payment bond surety>> as surety, together with any rights, demands, or causes of action we may have against <<name of prime contractor>> or <<name of payment bond surety>>, by signing this waiver, all my/our construction lien rights against such property are hereby waived and released.

________________________
(Printed Name of Lien Claimant)

________________________
(Signature of lien claimant)

Signed on: __________________ Address: __________________

________________________

Telephone: __________________

DO NOT SIGN BLANK OR INCOMPLETE FORMS. RETAIN A COPY.

END OF SECTION 010018
010020 Certificate of Final Completion

<table>
<thead>
<tr>
<th>Project:</th>
<th>Owner:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wave pool concrete and plumbing work in the Raymond L. Smith (ME-EM) Building</td>
<td>Michigan Technological University</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Number:</th>
<th>20-17-02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract for: Construction</td>
<td>Contractor:</td>
</tr>
<tr>
<td>Contract Date:</td>
<td></td>
</tr>
<tr>
<td>TBD or Date of Notice to Proceed</td>
<td></td>
</tr>
</tbody>
</table>

Substantial Completion Date ________________________
Final Completion Checklist Date ________________________

The Contractor certifies that the Work and all other requirements have been completed in accordance with the Contract for Construction, including, but not limited to:

1. submission and approval of all remaining change order proposals, claims, and Applications for Payment
2. submission of “as-built” plans and specifications, shop drawings, and other record documents
3. completion of all discrepancies: List of Remaining Items noted on the Final Completion Checklist at the time of Substantial Completion:
   a. submission of all final closeout deliverables/document
   b. submission of Guaranty
   c. submission of Consent of Surety for Final Payment
   d. submission of Sworn Statement
   e. submission of Full Unconditional Waiver of Lien

The Contractor further certifies that:
4. no liens have been attached against the Project
5. no suits are pending by reason of Work on the Contract
6. all Workers’ compensation claims are covered by Workers’ Compensation Insurance as required by law
7. all insurance required of the Contractor beyond final payment, if any, is in effect and will not be cancelled or allowed to be expired without notice to the Owner

CERTIFICATE OF FINAL COMPLETION
010020 - 1
9/22/17
8. all public liability claims are adequately covered by insurance and that the Contractor shall save, protect, defend, indemnify, and hold the Owner harmless from and against any and all claims which arise as a direct or indirect result of any transaction, event occurrence, or omission related to performance of the Work contemplated under said Contract.

Upon execution below, this project will be considered complete. This consideration does not relieve the Contractor from its post-construction responsibilities, including correction of discrepancies noted during the first year after Substantial Completion, warranty issues, latent defects, and other requirements of the Contract or State law.

Name of Contractor: Notary Public:

__________________________________________

Personally appeared before me this day of

known (or made known) to me to be

the_____________________________(title)

of_____________________________(firm),

who, being by me duly sworn, subscribed to

the forgoing affidavit in my presence.

By: _____________________________________

Authorized Representative

My Commission Expires:

__________________________________________

(date)

Owner _______________ Owner Signature ____________ Final Completion Date ____________

End of Section 010020
CHANGE ORDER NO.
PROJECT: Wave pool concrete and plumbing work in the Raymond L. Smith (ME-EM) Building
PROJECT No.: 20-17-02

OWNER: Michigan Technological University
1400 Townsend Dr., Houghton, MI, 49931

DATE OF ISSUE: EFFECTIVE DATE:

The Contractor is hereby directed to make the following changes in the Contract Documents:

Description:

Reason for Change Order:

Attachments: (List documents supporting change and justifying cost and time)

<table>
<thead>
<tr>
<th>CHANGE IN CONTRACT PRICE:</th>
<th>CHANGE IN CONTRACT TIMES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Contract Price: $</td>
<td>Original Contract Times: (calendar days or dates)</td>
</tr>
<tr>
<td>Net changes from previous C. O.’s No. to $</td>
<td>Net changes from previous C. O.’s No. to (calendar days)</td>
</tr>
<tr>
<td>Contract Price Prior to this Change Order: $</td>
<td>Contract Times prior to this Change Order: (calendar days or dates)</td>
</tr>
<tr>
<td>Net Increase (decrease) of this Change Order: $</td>
<td>Net Increase (decrease) of this Change Order: (calendar days)</td>
</tr>
<tr>
<td>Contract Price with all Approved Change Orders: $</td>
<td>Contract Times with all Approved Change Orders: (calendar days or dates)</td>
</tr>
</tbody>
</table>

RECOMMENDED: (Owner’s Representative)
By:
Date:

APPROVED: (Owner): Michigan Tech University
By:
Date:

ACCEPTED: (Contractor)
By:
Date:

REVIEWED: (Funding Agency)
By:
Date:

CHANGE ORDER
010022 - 1
9/22/17
01100-1 SUMMARY OF WORK

PART 1 GENERAL

1.1 PROJECT 011000 SUMMARY OF WORK

A. Project Name: Raymond L. Smith (ME-EM) Building – Wave pool concrete and plumbing work

B. Owner's Name: Michigan Technological University.

1.2 CONTRACT DESCRIPTION

A. A single prime contract based on a Stipulated Price.

1.3 DESCRIPTION OF WORK

The project consists of, but is not limited to, the following items:

A. Saw cut floor and remove concrete as required for new drains, pump boxes valve boxes and sanitary sewer connections. Tie-in new floor drains to existing sanitary sewer.

B. Install concrete anchors to existing slab, tie-in new rebar and re-pour slab around new floor drains.

C. Install all re-bar, anchors, set forms and pour concrete to create three walls of a new wave pool. Please note tolerances in setting forms. Fourth wall and all pool equipment will be provided and set by the wave pool supplier.

D. Install removable flood barrier walls surrounding the south side of the pool. All supports and anchorages are to be designed by the flood wall supplier. Flood wall must include a three foot section where the panels can be removed to provide a clear floor area for carts and access. All panels shall be removable.

E. Apply Sikagard 62 water proofing, primers and sealers on new pool walls per manufacturer's requirements.

F. Install new piping to domestic water for pool water supply.

G. Remove all electrical devices: outlets, disconnects, breaker boxes, conduit, etc. on the north wall of the sub-basement wall. Remove all devices from the main 480V Panel (Located on the opposite side of the movable partition) and plug all unused holes.

H. Design and install new lighting over the pool and work area (up to the two columns in the room – approximate area 20 ft by 40 ft). New LED lighting shall provide 65 foot candles at a height of 1 meter AFF. New fixtures are to be hung from the ceiling, in three rows of continuous fixtures. Use wraparound style lights, similar to existing. Remove existing light fixtures (or move as required) to accommodate new lighting. All old lighting fixtures that remains shall be relamped with direct drive LED fixtures.
I. The freight elevator in the building may be used for equipment moves, but contractor use will be restricted to 10 minutes before and after class change due to high student demand. Contractor should plan to use the elevator prior to 7:50am.

J. Access and use of the lifting hatch and hoist in the area will be facilitated by crews from the ME-EM Building. Use must be scheduled 48 hours in advance.

K. Provide all required barricades, construction warning tape, cones and warning signs as required for safe work area. This includes the loading dock and lifting hatch on the basement level during material lifts.

L. Protect all adjacent wall, ceiling and floor finishes. Clean the work area at the end of each work day.

M. Restore all public space wall finishes to “as new” condition.

N. All unused and obsolete equipment is to be removed and properly disposed.

1.4 ITEMS TO BE SALVAGED BY CONTRACTOR – None

1.5 WORK BY OWNER

A. Owner will remove lowering hatch covers and operate the lift as required. 48 hour notice is required for use of the hatch.

1.5 OWNER OCCUPANCY

A. Michigan Tech will occupy the adjacent areas during the entire construction period.
B. Cooperate with Michigan Tech to minimize conflict and to facilitate Michigan Tech’s operations.
C. Time Restrictions: The freight elevator in the building may be used for equipment moves, but contractor use will be restricted to 10 minutes before and after class change due to high student demand. Contractor should plan to use the elevator prior to 7:50am.

1.6 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: Limited to actual construction area. Work in adjacent areas will be only as necessary for the project, and must be coordinate with Michigan Tech’s project manager.

B. Arrange use of site and premises to:
   1. Limit use of the Corridor outside the work area.
   2. Keep all areas outside of the construction area clean and protect existing finishes in all areas. Contractor will be responsible for damages to these areas caused by construction activities.
   3. Parking is limited, and parking permits will be required at the site (there will not be a...

SUMMARY OF WORK
011000-2
9/22/17
charge for the permits). Limit the amount of vehicles and trailers to the extent possible,
and coordinate with the Michigan Tech Project Manager.

C. Provide access to and from site as required by law and by Michigan Tech:
   1. Emergency Building Exits During Construction: Keep all exits required by code open
during construction period; provide temporary exit signs if exit routes are temporarily
   altered.
   2. Do not obstruct roadways, sidewalks, or other public ways without permit
   3. Tobacco Free site: The entire site is tobacco free. See the Michigan Tech
      website for specific details.

E. Utility Outages and Shutdown:
   1. Limit disruption of utility services to hours the building is unoccupied.
   2. Prevent accidental disruption of utility services to other facilities.

1.7 WORK SEQUENCE

A. Coordinate system tie-ins, service interruptions, communication system tests and signal tests with
   Michigan Tech Public Safety and Police Services.

END OF SECTION 011000
013300 SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY
A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.2 DEFINITIONS
A. Action Submittals: Written and graphic information and physical samples that require Michigan Tech's responsive action.

B. Informational Submittals: Written and graphic information and physical samples that do not require Michigan Tech's responsive action. Submittals may be rejected for not complying with requirements.

1.3 ACTION SUBMITTALS
A. Prior to ordering materials and construction, provide an Action Submittal for items specified throughout the contract documents that include the phrase 'as approved by Michigan Tech,' if the exact item as specified cannot be obtained and a similar item must be provided. This is not intended to be a substitution procedure, substitutions must follow requirements of section 012500.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS
A. Electronic copies of digital data files of the specified items can be provided by Michigan Tech for Contractor's use in preparing submittals.

B. Processing Time: Provide submittals within one week after award of contract to insure sufficient lead time for materials in time to meet the construction schedule. Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Michigan Tech's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 7 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Michigan Tech will advise Contractor when a submittal being processed must be delayed for coordination.

2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.

3. Resubmittal Review: Allow 7 days for review of each resubmittal.

C. Electronic Submittals (preferred method of transmittal): Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.

2. Name file with submittal number or other unique identifier, including revision identifier.
   a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).

3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Michigan Tech.
Containing the following information:
   a. Project name.
   b. Date.
   c. Name of General Contractor.
   d. Name of firm or entity that prepared submittal.
   e. Names of subcontractor, manufacturer, and supplier.
   f. Category and type of submittal.
   g. Submittal purpose and description.
   h. Specification Section number and title.
      1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
   i. Specification paragraph number or drawing designation and generic name for each of multiple items.
   j. Drawing number and detail references, as appropriate.
   k. Location(s) where product is to be installed, as appropriate.
   l. Related physical samples submitted directly.
   m. Indication of full or partial submittal.
   n. Transmittal number, numbered consecutively.
   o. Submittal and transmittal distribution record.
   p. Other necessary identification.
   q. Remarks.
   r. Signature of transmitter

D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
   1. Indicate name of firm or entity that prepared each submittal on label or title block.
   2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Michigan Tech.
   3. Include the following information for processing and recording action taken:
      a. Project name.
      b. Date.
      c. Name of General Contractor.
      d. Name of firm or entity that prepared submittal.
      e. Names of subcontractor, manufacturer, and supplier.
      f. Category and type of submittal.
      g. Submittal purpose and description.
      h. Specification Section number and title.
         1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
      i. Specification paragraph number or drawing designation and generic name for each of multiple items.
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      o. Submittal and transmittal distribution record.
      p. Other necessary identification.
      q. Remarks.
MICHIGAN TECHNOLOGICAL UNIVERSITY
RAYMOND L. SMITH BUILDING (ME-EM)
NEW WAVE POOL - CONCRETE, PLUMBING & ELECTRICAL PACKAGE
20-17-02

4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Michigan Tech observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

E. Options: Identify options requiring selection by Michigan Tech.

F. Deviations: Identify deviations from the Contract Documents on submittals.

G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
   1. Note date and content of previous submittal.
   2. Note date and content of revision in label or title block and clearly indicate extent of revision.
   3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Michigan Tech's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements:
   1. Submit electronic submittals via email as PDF electronic files.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
   1. Mark each copy of each submittal to show which products and options are applicable.
   2. Include the following information, as applicable:
      a. Manufacturer's catalog cuts.
      b. Manufacturer's product specifications.
      c. Standard color charts.
      d. Statement of compliance with specified referenced standards.
      e. Testing by recognized testing agency.
      f. Application of testing agency labels and seals.
      g. Notation of coordination requirements.
      h. Availability and delivery time information.
   3. Submit Product Data before or concurrent with Samples.
   4. Submit Product Data in the following format:
      a. PDF electronic file.
C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents.
2. Include the following information, as applicable:
   a. Identification of products.
   b. Schedules.
   c. Compliance with specified standards.
   d. Notation of coordination requirements.
   e. Notation of dimensions established by field measurement.
   f. Relationship and attachment to adjoining construction clearly indicated.
   g. Seal and signature of professional engineer if specified.

3. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
4. Submit Shop Drawings in the following format:
   a. PDF electronic file.
   b. Four opaque (bond) copies of each submittal. Michigan Tech will return two copy(ies).

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:
   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of applicable Specification Section.

3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
   a. Number of Samples: Submit one full set(s) of available choices where color, pattern,
texture, or similar characteristics are required to be selected from manufacturer’s product line. Michigan Tech will return submittal with options selected.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

   a. Number of Samples: Submit one sets of Samples. Michigan Tech will retain.
      1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Application for Payment and Schedule of Values: Comply with requirements specified in Section 010001 Payment Procedures.

F. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017000 Closeout Procedures.

G. Manufacturer Certificates: Submit written statements on manufacturer’s letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

H. Product Certificates: Submit written statements on manufacturer’s letterhead certifying that product complies with requirements in the Contract Documents.

I. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency’s standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

J. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

2.2 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

   1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Michigan Tech.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Michigan Technological University.

B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017000 Closeout Procedures.

3.2 Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.3 MICHIGAN TECH'S ACTION

A. General: Michigan Tech will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Michigan Tech will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

C. Informational Submittals: Michigan Tech will review each submittal and will not return it, or will return it if it does not comply with requirements. Michigan Tech will forward each submittal to appropriate party.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300
Michigan Technological University
Raymond L. Smith Building (ME-EM) - New Wave Pool
MTU Project #20-17-02

Michigan Technological University
Raymond L. Smith Building (ME-EM) - New Wave Pool
MTU Project #20-17-02

Area of Work
Sub-Basement (S001)

Project Location
R.L. Smith Building (#20), Sub-Basement
Houghton, MI

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Cover Sheet
1. NEW CONCRETE WALL (SEE DETAILS, SHEET S101)
2. NEW FLOOR PLAN (SEE PLUMBING PLAN FOR DETAILS)
3. APPLY SIKAFLEX-2C SEALANT IN ALL CORNERS (FLOOR AND VERTICAL) — FOLLOW ALL MANUFACTURER'S REQUIREMENTS INCLUDING PRIMING WITH SIKAFLEX 429 PRIMER.
4. AFTER SEALANT (ITEM 3) HAS CURED, APPLY SIKAGARD 62 SEALANT TO EXISTING FLOOR AND INTERIOR OF NEW WALLS. FOLLOW ALL MANUFACTURER'S REQUIREMENTS, CLEAN AND STRIP FLOORS AS REQUIRED.
5. NEW ALUMINUM STACKING FLOOD CONTROL BARRIER BY FLOOD CONTROL INTERNATIONAL (HTTP://WWW.FLOODCONTROLINTERNATIONAL.US) OR SIMILAR. HEIGHT OF BARRIER TO BE 3'-6". COMPLETE DESIGN, SUPPORTS AND FLOOD BARRIERS FROM ONE MANUFACTURER. SUPPORT SPACING IS TO BE DETERMINED (SEE NOTE 6).
6. PROVIDE A 3'-FOOT WIDE ACCESS OPENING IN THE FLOOD PANEL SYSTEM. PROVIDE PANELS FOR THIS SPACE TO COMPLETE THE FLOOD WALL.
7. REPAINT WALLS, DOORS AND FRAMES AT THE COMPLETION OF THE PROJECT — UP TO, BUT NOT INCLUDING, THE ROLLING PARTITION.
8. SUMP PIT - SEE PLUMBING PLAN FOR DETAILS
WALL SECTION - TYP

3/4" = 1'-0"

1. REINFORCING BARS SHALL BE EPOXYED INTO EXISTING SLAB W/ B-100 EPOXY MORTAR SYSTEM, OR OTHER APPROVED. FOLLOW COMPLETE MANUFACTURER’S REQUIREMENTS TO DEGLOOF STRENGTH OF BARS.

2. INSTALL (21) BEADS OF SIKAWALL S-2 EXTRUDABLE SWELLING WATER STOP. FOLLOW ALL MANUFACTURER’S REQUIREMENTS. BEADS MUST BE A MINIMUM OF 4" FROM THE CONCRETE FORMS.

3. SIKAFLEX-2C CORNER SEALANT, APPLY AT ALL CONCRETE JOINTS.

NEW SLAB SECTION VIEW

3/4" = 1'-0"

NOTE: ALL SLAB REPLACEMENTS SHALL BE MADE WITH #4 DOWELS AT 8" O.C. DRILLED AND EPOXYED INTO CONCRETE SLAB.
EXISTING 8" SANITARY LINE (LOCATION SHALL BE VERIFIED IN FIELD BY CONTRACTOR)

EXISTING 8" SANITARY LINE LOCATION SHALL BE VERIFIED IN FIELD BY CONTRACTOR

1" = 10'-0"

S001 PLUMBING PLAN

1. RUN NEW 1 1/2" COPPER COLD WATER LINE FROM THE SOUTH WALL OF ROOM B003 (DIRECTLY ABOVE ROOM S001). RUN PIPE THROUGH THE BASEMENT FLOOR AND END 4' ABOVE FINISH FLOOR OF THE SUB-BASEMENT. INSTALL A BALL VALVE AND COUPLING SYSTEM TO A 25 FOOT 1 1/2" HOSE TO FILL THE POOL. INSULATE ALL NEW PIPING WITH WRAPPED FIBERGLASS. PROVIDE AN ALLOWANCE TO INSTALL 50 FEET OF WRAPPED FIBERGLASS INSULATION FOR GAPS ON EXISTING PIPING IN THE BASEMENT LEVEL.

2. NEW FLOOR DRAIN - JOSAM MODEL 30006 OR SIMILAR (2 REQUIRED). SAW CUT FLOOR AND TIE-IN TO EXISTING 8" SANITARY LINE. SEW 6" SCHEDULE 80 PVC PIPE AND TIE-IN TO EXISTING SANITARY WITH FERNCO STRAP-ON CONNECTOR. IN-LINE DRAINS CAN SHARE A P-TRAP. ARRANGE DRAINS BASED ON ACTUAL SANITARY LINE LOCATION.

3. PROVIDE A SUMP PIT AND PUMP FOR A REMOVABLE PUMP. PIT IS TO BE APPROXIMATELY 18" WIDE AND A MINIMUM OF 6" DEEP. COORDINATE WITH CONCRETE CONTRACTOR TO SEAL NEW CONCRETE TO EXISTING SLAB. NO LIP ALLOWED EXTENDING ABOVE THE EXISTING FLOOR. PROVIDE A 1/2 HP VERTICAL PUMP, CLEAN WATER PUMP WITH LOW WATER SHUT-OFF. PROVIDE CONNECTIONS AND 100 FEET OF HOSE TO DRAIN THE POOL TO THE NEW FLOOR DRAIN.
S001 ELECTRICAL PLAN

1. REMOVE ALL ELECTRICAL DEVICES, CONDUIT, AND WIRE FROM THIS AREA. REMOVAL INCLUDES ALL EXPOSED CONDUIT BACK TO FEEDER PANEL. CAP HOLES AS REQUIRED AT FEEDER PANEL.

2. PROVIDE NEW ROOM LIGHTING IN AN EAST WEST CONFIGURATION (UP TO ROLLING PARTITION). RE-USE EXISTING CIRCUITS AND SWITCHING. USE LED, WRAP AROUND FIXTURES AND DESIGN TO 65 FOOT CANDLES AT 4 FEET ABOVE FINISH FLOOR.

3. USING REFERENCE DRAWINGS AND CONDUIT TRACING DEVICES, LOCATE CONDUIT BURIED IN EXISTING CONCRETE FLOOR PRIOR TO CONCRETE CUTTING.
8x 0.7m flap paddles
independent drive system with force feedback control

sloped beach
galvanised steel frame with plastic covering

concrete tank

holes lasercut in top channel to allow addition of instrument rail in the future

one side of the tank is made from glass powdercoated steel frame
Plan

Tank can be moved around building as required

MTU flume tank
MTU-GA01

DATE: 11/07/2017
SHEET 2 OF 4

SCALE: 1:50
PROJECTION: Third Angle

MATERIAL: Material <not specified>
FINISH: as cast
WEIGHT (kg): 65889713.47

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A

DETAIL A
SCALE 1 : 15

Wavemaker Module

MTU flume tank
MTU-GA01

DATE: 11/07/2017
MATERIAL: Material <not specified>
FINISH: as cast
SCALE: 1:150
PROJECTION: Third Angle

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inside of this wall only should be as straight and true as possible otherwise wave quality will be reduced.

±5mm minimum on this surface

Concrete should be reinforced

General tolerances ±10mm acceptable