PROJECT MANUAL

WASHTENAW COMMUNITY COLLEGE
ANN ARBOR, MICHIGAN

CAMPUS WIDE MAIN LOOP ROAD REPAIR
COMMUNITY PARK ROAD WIDENING
ANN ARBOR, MICHIGAN

ISSUED FOR BIDS

JUNE 1, 2026

PROJECT NO. #75295 PART 1

CIVIL ENGINEER:

WASHTENAW ENGINEERING COMPANY

Issued for Bids June 1, 2026	Firm	Section	Title
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SECTION 00 0107 – SEALS PAGE

PART I GENERAL

1.01 ENGINEER

I hereby certify this plan, specification, or report was prepared by myself or under my direct supervision and I am a duly Registered Professional Engineer under the laws of the State of Michigan.

_____	_____
Signed	Date
_____	_____
Printed Name	Registration No.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01 1100 – SUMMARY OF WORK

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Division 00 – Procurement and Contracting Requirements, and Division 01 – General Requirements, are hereby made part of this Section.

1.02 PROJECT

A. The work of this bid category includes but is not limited to providing all labor, equipment, materials and incidentals to complete the concrete work in accordance with the specifications, drawings and applicable codes. All work is to be performed as shown on the plans and specified herein.
B. Contractor to manage and coordinate with all other trades necessary to complete the work per Drawings and Specifications.
C. The contractor shall provide a schedule/work plan on obtaining all necessary permits, materials, and procurement of long-lead items, to begin work and complete the work as scheduled for review by the Owner within 2 weeks of award.
D. This Campus is located in Ann Arbor Township. Contractor shall coordinate permitting approval for work pertaining to the township's jurisdiction.
E. The construction schedule for this contract will be phased based on the following timelines: Construction start 10/10/26. Project Completion will be 11/30/26.
F. Provide barricades, including shoring and fencing required to maintain required safety regulations as defined by OSHA.
G. Contractor to provide portable toilets, to be placed according to phasing and staging plan.
H. Coordinate and adhere to all State and local building codes relative to this Contractor's work.
I. This Contractor is to obtain and pay for all special permits associated with this category.
J. See bid documents for Staging and Parking.
K. Contractor shall maintain free access for traffic around project site on campus drive; including access to adjacent building service drives and loading docks. A minimum of 1 lane of traffic shall remain open during the project except for one week during the concrete culvert replacement work.
L. Contractor is responsible for total removal and disposal of all waste generated from construction activities.
M. Contractor to provide protection and daily cleanup of work space and routes in and out of the work zones.
N. Contractor to provide dumpsters for the project if one is required.
O. Contractor to coordinate and adhere to all state and local building codes relative to this contractor's work. This contractor is to obtain and pay for all special permits associated with the work.
P. Contractor to clean-up of all trash or construction debris is by the trade contractors daily.
Q. This contractor MUST comply with MI-OSHA requirements for this work. This will be closely monitored.
R. Contractor and all its sub-contractors are to observe the College's no smoking policy.
S. Contractor's and employees' vehicles to be parked in designated parking lots as noted on site staging plan.
T. Unloading areas for tools and materials will be available at the site on a temporary basis.
U. Contractor to provide its own equipment and tools necessary to complete this contract.
V. Contract to field verify all dimensions and quantities needed for this project.
W. Contractor to coordinate with WCC on timing and impacts to building.
X. All material and equipment that will be purchased as part of the project will be the responsibility of the Contractor to be delivered to the jobsite with just in time approach. NO deliveries will be

accepted at WCC Shipping and Receiving. Any costs associated with contract items will be paid by Contractor.

Y. Contractor will schedule, set up and manage bi-weekly meetings with designers, subcontractors and WCC reps. These can be virtual. On-site meetings will be set up as needed.

1.03 CONTRACT

A. WCC requests that this bid includes a mandatory Allowance of $ 20,000. This amount will be used for potential changes or added scope and will be dictated for use by WCC. Remaining amounts will be returned at job close-out

B. The contractor shall provide a schedule/workplan on obtaining the necessary permits, materials, and procurement of long-lead items, to begin work and complete the work as scheduled for review by the Owner within 2 weeks of award.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01 1800 - UTILITY COORDINATION

PART 1 GENERAL

A. Public Utilities may be located within the Project Limits.

B. **On all projects: "72 Hours before you Dig - Call MISS DIG - Toll Free".....800-482-7171.**

C. The Owners of public or private utilities which will not interfere with the completed project and which do not present a hazard to the public or an extraordinary hazard to the Contractor's operations will not be required to move their facilities on or from the highway right-of-way. This does not relieve the Contractor of the responsibility of notifying utility owners who may not be a part of the "Miss Dig" alert system.

D. When utilities which are not shown on the plans must be moved to new locations, no additional compensation will be paid to the Contractor for reasonable delays beyond the control of the Owner.

E. Work stoppages by employees of utility companies which delay utility revisions on any portion of this project may be considered as a basis of claim for an extension of time for project completion.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01 2100 - ALLOWANCES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Division 00 – Procurement and Contracting Requirements, and Division 01 – General Requirements, are hereby made part of this Section.

1.02 SECTION INCLUDES

A. Allowance

1.03 ALLOWANCE

A. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Allowance.

B. Funds will be drawn from the allowance only by Change Order.

C. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

1.04 ALLOWANCES SCHEDULE

A. Include an allowance of $20,000 for Owner approved changes.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01 2200 – UNIT PRICES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Division 00 – Procurement and Contracting Requirements, and Division 01 – General Requirements, are hereby made part of this Section.

1.02 SECTION INCLUDES

A. List of unit prices, for use in preparing Bids.
B. Measurement and payment criteria applicable to Work performed under a unit price payment method.
C. Defect assessment and non-payment for rejected work.

1.03 COSTS INCLUDED

A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.04 UNIT QUANTITIES SPECIFIED

A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

1.05 MEASUREMENT OF QUANTITIES

A. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.
B. Take all measurements and compute quantities. Measurements and quantities will be verified by Owner.
C. Assist by providing necessary equipment, workers, and survey personnel as required.
D. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
E. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
F. Measurement by Area: Measured by square dimension using mean length and width or radius.
G. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
H. Stipulated Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.
I. Perform surveys required to determine quantities, including control surveys to establish measurement reference lines. Notify Engineer prior to starting work.

1.06 PAYMENT

A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Engineer, multiplied by the unit price.
B. Payment will not be made for any of the following:
    1. Products wasted or disposed of in a manner that is not acceptable.
    2. Products determined as unacceptable before or after placement.
    3. Products not completely unloaded from the transporting vehicle.

1.07 DEFECT ASSESSMENT

A. Replace Work, or portions of the Work, not complying with specified requirements.
B. If, in the opinion of Engineer, it is not practical to remove and replace the Work Engineer will direct one of the following remedies:
   1. The defective Work may remain, but the unit price will be adjusted to a new unit price at the discretion of Engineer.
   2. The defective Work will be partially repaired to the instructions of the Engineer, and the unit price will be adjusted to a new unit price at the discretion of Engineer.
C. If, in the opinion of Owner, it is not practical to remove and replace the Work, Owner will direct one of the following remedies:
   1. The defective Work may remain, but the unit price will be adjusted to a new unit price at the discretion of Owner.
   2. The defective Work will be partially repaired to the Instructions of the Owner, and the unit price will be adjusted to a new unit price at the discretion of Owner.
D. The individual specification sections may modify these options or may identify a specific formula or percentage price reduction.
E. The authority of Engineer to assess the defect and identify payment adjustment is final.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01 2500 - SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Division 00 - Procurement and Contracting Requirements, and Divis ion 01 - General Requirements, are hereby made part of this Section.

1.02 SECTION INCLUDES

A. Administrative and procedural requirements for handling requests for substitutions made after award of the Contract.

1.03 DEFINITIONS

A. Definitions used in this Article are not intended to change or modify the meaning of other terms used in the Contract Documents.

B. Substitutions: Requests for changes in products, materials, assemblies, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions". The following are NOT considered substitutions:
   1. Substitutions requested by Bidders during the bidding period, and accepted prior to award of Contract, are considered as included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
   2. Revisions to Contract Documents requested by the Owner or Engineer.
   3. Specified options of products and construction methods included in Contract Documents.
   4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.04 REQUESTS FOR SUBSTITUTION

A. Substitutions: For a period of 15 working days after Subcontract Award, Engineer will consider written requests from Contractor for substitution of products. Requests received more than 15 working days after Subcontract award may be considered or rejected at the discretion of the Engineer.
   1. Engineer will consider substitutions after 15 days of Subcontract award only if one of the following conditions applies.
      a. Specified products are no longer manufactured.
      b. Owner will realize an additional cost savings over and above the original Bid cost.
      c. Owner will receive a superior product to those specified and/or realize a significant maintenance and operating cost savings.
      d. Overall construction time will be reduced (not just the time for the trade offering the substitution.

B. A request for substitution constitutes a representation that the Contractor:
   1. Has investigated the proposed product and determined it is equal to or exceeds the quality level in all respects of the specified product and that it will perform adequately in the application intended.
   2. Will provide the same warranties or bonds for substitution as for product specified.
   3. Will coordinate installation as an accepted substitution into the Work, and make such other changes as may be required to make the work complete in all respects with no additional cost to the Owner or other contractors.
   4. Waives all claims for additional costs or time extension under his responsibility which may subsequently become apparent.
   5. Will pay all Engineer’s redesign cost, special inspections, and all other cost caused by substitutions.

C. Submit a separate request for each product. Each request shall be on a separate "Substitution Request" form, use CSI/CSC Form 13.1A a sample of which is included at the end of this Section. Provide complete data, drawings and samples as appropriate, with each request, including:
   1. Comparison of qualities of proposed substitution with that specified.
   2. Changes required in other elements of work because of substitution.
   3. Effect on construction schedule.
   4. Cost data comparing proposed substitution with product specified.
   5. Any required license fees or royalties.

D. Engineer will be judge of acceptability of proposed substitution except where cost is involved.

E. Substitutions WILL NOT be considered when they are indicated or implied on shop drawings or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

F. Engineer will review requests for substitutions with reasonable promptness and notify Contractor in writing of decision to accept or reject requested substitution.

1.05 SUBMITTAL REQUIREMENTS

A. Submit one electronic copy of each request for substitution for consideration. Submit requests on the "Substitution Request" form included at the end of this Section and in accordance with procedures required for Change Order proposals.
   1. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
      a. Certification by the Contractor and Supplier that the substitution proposed is equal-to or exceeds the specified product in every significant respect to that required by the Contract Documents, and will perform adequately in the application indicated.

B. For products:
   1. Product identification, including manufacturer's name.
   2. Manufacturer's literature, marked to indicate specific model, type, size, and options to be considered:
      a. Product description.
      b. Performance and test data.
      c. Reference standards.
      d. Difference in power demand, air quantities, etc.
      e. Dimensional differences from specified unit.
   3. Full size samples if requested.
   4. Engineer reserves right to retain sample until physical units are installed on Project for comparison purposes.
   5. Requester pay all costs of furnishing and return of samples.
   6. Engineer is not responsible for loss of, or damage to, samples.
   7. Name and address of at least 3 similar projects and name of Owner's Representative Engineer can contact; to discuss product, installation, and field performance data.

C. For construction methods:
   1. Detailed description of proposed method.
   2. Illustrate with drawings.

D. Itemized comparison of proposed substitute to specified item; indicate variations including size, weight, durability, and visual effect.

E. Data relating to changes in construction schedule.

F. Effect and changes required on separate or other contracts.

G. Coordination information necessary to accommodate the proposed substitute. Include a list of changes or modifications needed to other parts of the Work and to construction performed by separate contractors.

H. Complete breakdown of costs, of proposed substitution which shall include additional costs and saving generated by proposed substitution and shall indicate amount, if any, to be deducted from Contract Sum if proposed substitution is accepted.

I. Availability of maintenance and repair services, and sources of repair or replacement items.

PART 2 PRODUCTS

2.01 SUBSTITUTIONS

A. Conditions: Contractor's substitution request will be received and considered by the Engineer when the following conditions are satisfied, as determined by the Engineer; otherwise requests will be returned without action except to record noncompliance with these requirements.
   1. Extensive revisions to Contract Documents are not required.
   2. Proposed changes are in keeping with the general intent of Contract Documents.
   3. The request is timely, fully documented and properly submitted.
   4. The specified products or method of construction cannot be provided within the Contract Time. Request will not be considered if product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
   5. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
   6. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear, including but not limited to costs incurred by the Owner due to redesign and re-engineering that the Engineer must engage in to modify Contract Documents and any (re)submissions to the Authorities Having Jurisdiction (AHJ) to accommodate the Substitution..
   7. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certified that the proposed substitution will provide the required warranty.

B. Substitutions WILL NOT be considered if:
   1. Substitutions are not submitted in conformance with this Section.
   2. Acceptance will require substantial revision to the Contract Documents, or building spaces.
   3. Request for substitution does not indicate specific item for which request is submitted.
   4. Request Form is not properly executed
   5. Acceptance of manufacturer only will not be made.
   6. Requested directly by a Subcontractor or supplier.
   7. Insufficient information submitted.

C. Engineer’s Action: Within one week of receipt of the request for substitution, the Engineer will request additional information or documentation necessary for evaluation of the request. Within 2 weeks of receipt of the request, or one week of receipt of the additional information or documentation, which ever is later, the Engineer will notify the Contractor of acceptance or rejection of the proposed substitution. Acceptance will be in the form of a Change Order.
   1. If a decision on use of proposed substitute cannot be made or obtained within the time allocated, use the product specified by name.

D. The Contractor's submittal and Engineer's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents

does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01 2600 – CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Division 00 – Procurement and Contracting Requirements, and Division 01 – General Requirements, are hereby made part of this Section.

1.02 SECTION INCLUDES

A. Administrative and procedural requirements for handling and processing Contract Modifications.

1.03 MINOR CHNAGES IN THE WORK

A. Supplemental instructions authorizing minor changes in the Work not involving an adjustment to the Contract Sum or Contract Time may be issued by the Engineer with supplemental instructions.

1.04 CHANGE ORDER PROPOSAL REQUEST

A. Owner/Engineer initiated proposal requests: Proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time will be issues by the Owner or Engineer with a detailed description of the proposed change and supplemental or revised drawings and specifications, if necessary.
   1. Proposal requests issued by the Owner or Engineer are for information only. Do not either stop work in progress or execute any proposed change based on any description or instruction. Continue work in areas surrounding the proposed change as possible, but only to extent it will not increase the Contract Sum or Contract Time.
   2. Unless otherwise indicated in the proposal request, submit an estimate of the cost necessary to execute the proposed change to Owner/Engineer for review within 21 days of receipt of the proposal request. Include a list of quantities of product(s) and unit cost(s), a statement indicating the effect the proposed changes in the Work will have on the Contract Time.

B. Contractor initiated Change Order proposal requests: When unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the Owner/Engineer. Include a statement outlining the reasons for the Change, list of quantities and unit costs along with the total amount of work.

1.05 CONSTRUCTION CHANGE DIRECTIVE

A. When the Owner and the Contractor are not in total agreement on the terms of a Change Order Proposal Request, the Engineer may issue a Construction Change Directive instructing the Contractor to proceed with a change in the work for subsequent inclusion in a Change Order.
   1. The Construction Change Directive will contain a complete description of the change in the work and designate the method to be followed to determine change in the Contract Sum or Contract Time.

B. Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
   1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.06 CHANGE ORDER PROCEDURES

A. Upon Owner's approval of a Request for Change Order, Contractor will issue a Change Order with Engineer's concurrence for signatures of the Owner and Contractor as provided in the Conditions of the Contract.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01 2613 - REQUEST FOR INTERPRETATION (RFI)

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Division 00 - Procurement and Contracting Requirements, and Division 01 - General Requirements, are hereby made part of this Section.

1.02 SECTION INCLUDES

A. Administrative and procedural requirements for handling and processing Requests For Information.

1.03 DEFINITIONS

A. Definitions used in this article are not intended to change or modify the meaning of other terms in the Contract Documents.

B. Request for Interpretation (RFI): A request for information by the Contractor to the Engineer of Record for clarification of intent of any portion of the Contract Documents after the Award of Contract and during the construction of the Project.

C. The following are NOT Requests for Information.
   1. Change Orders.
   2. Construction Change Directives.
   3. Substitution Request.
   4. Bulletin.
   5. Field Order.
   6. Shop Drawings.
   7. Normal questions contained in a typical shop drawing submittal.
   8. Clarifications during Bidding.

D Day: For purpose of processing RFI's, a day is a working day and excludes weekends and holidays.

1.04 REQUESTS FOR INTERPRETATION (RFI'S) DURING CONSTRUCTION

A. RFI’s are logged-in at the Engineer’s Office, not necessarily with same date as indicated by the Contractor on RFI form. The response time will commence upon the date of receipt by the Engineer.
   1. RFI’s received on or after a Friday after 2:00 PM are to be dated the following Monday, holidays excepted.
   2. RFI's received on any day after 2:00 PM will be dated received the following Working Day.

B. Requests for Interpretation (RFI): If clarification of any portion of Construction Documents is required, submit a Request for Interpretation to the Engineer of Record and the Owner’s Representative in accordance with the following procedures:
   1. RFI Format:
      a. Submit on a standard form developed by the Contractor.
      b. RFI's shall be sequentially numbered; and include the following:
         1) Date
         2) Project name and number
         3) Contractor’s name, address, telephone number and fax number.
         4) Description of subject and discipline (trade) in question.
         5) Adequate space for Engineer of Record to respond, sign, and date.
      c. Contractor shall submit a copy of the format to the Engineer of Record and Owner’s Representative at start of Project for review and comment.

C. RFI Inquiry:
   1. Clearly state and completely define the issue requiring interpretation. Provide drawing and detail numbers, specification section numbers and paragraphs, sketches and other reference information.
   2. Provide potential solutions to issues when possible.
   3. Provide cost and schedule implications, if any.
   4. Ambiguous RFI’s will be returned to Contractor without action taken.

D. RFI Submission Process:
   1. The Contractor shall submit an RFI, in writing, to Engineer of Record immediately with a copy to the Owner's Representative when any issue requiring clarification arises.
      a. Unless specifically stated on RFI, the Engineer of Record and the Owner will assume adjustments to the Contract Amount and the Project Schedule are NOT REQUIRED.
   2. The Engineer of Record will review and respond only to RFI's received in writing from the Contractor.
   3. Submit electronic copy of each RFI and Engineer of Record response, including any supplemental drawings and additional instructions, to the Owner's Representative for record purposes.
   4. The Contractor shall allow seven (7) working days for the Engineer of Record to review and respond to the RFI.
   5. RFI's submitted to the Engineer of Record without following these submission procedures will result in rejection of the submission.

E. RFI Log:
   1. Contractor shall maintain an RFI log indicating the RFI number, subject, date, response date and impact, if any on schedule and cost.
   2. Contractor shall publish the log at least bi-monthly to the Engineer of Record and Owner's Representative.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01 3113 - PROJECT COORDINATION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Division 00 - Procurement and Contracting Requirements, and Division 01 - General Requirements, are hereby made part of this Section.

1.02 SECTION INCLUDES

A. Administrative and procedural requirements for project coordination.

B. Employ and pay for services of a full-time project superintendent for duration of construction work.
   1. Provide additional administrative and supervisory personnel including services of a project manager and expeditor as required for performance of the work including coordination of subcontractors.

1.03 QUALITY ASSURANCE

A. Project Coordinator Qualifications: Not less than five years experience performing project coordination work on projects of similar size and scope.

B. Coordination: Coordinate construction activities included under various Sections of these Specifications to assure efficient and orderly installation of each part of the work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection and operation.
   1. Where installation of one part of the work is dependent on installation of other components, either before or after its own installation, schedule construction activities in sequence required to obtain best results.
   2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
   3. Make adequate provisions to accommodate items scheduled for later installation.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the work.

D. Conservation: Coordinate construction activities to ensure operations are carried out with consideration given to conservation of energy, water and materials.

1.04 PROJECT COORDINATION

A. Each contractor is responsible for coordinating its construction operations with those of other contractors and related parties. Coordinate operations with operations of other contractors, including those in other Sections and Bid Packages to ensure proper installation, connection, sequence, operation, in an efficient and orderly fashion.
   1. Schedule construction operations in the sequence required to obtain the best results without resulting in rework.
   2. Coordinate installation of components with other contractors to ensure proper performance of equipment and to maintain accessibility for required maintenance, service and repair.
   3. Coordinate and make provision to accommodate installation of items scheduled for later installation.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01 3119 – PROJECT MEETINGS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Division 00 – Procurement and Contracting Requirements, and Division 01 – General Requirements, are hereby made part of this Section.

1.02 SECTION INCLUDES

A. Administrative and procedural requirements for project meetings including pre-construction conference, coordination meetings and progress meetings.

B. Contractor is specifically responsible for:
   1. Preparing agenda for each meeting which includes specified topics.
   2. Providing written notice of each meeting including agenda to all attendees not less than four days in advance of meeting date.
   3. Making physical arrangements for each meeting.
   4. Presiding at each meeting.
   5. Recording minutes of each meeting including but not limited to all significant proceedings, decisions, action required and persons assigned to action.
   6. Reproducing and distributing minutes of each meeting to all attendees and other parties affected by decisions made at meeting not later than three days after each meeting.

1.03 PRE-CONSTRUCTION CONFERENCE

A. Schedule a pre-construction conference and organizational meeting for the Project at project site or other convenient location no later than 15 days after execution of Agreement and prior to commencement of construction activities. Conduct meeting to review goals, responsibilities and personnel assignments.

B. Contractor shall submit the following prior to meeting and such additional items as Engineer may direct:
   1. Signed Contract.
   2. Bonds as required.
   3. Proof of insurance.
   4. Required permits.
   5. Preliminary construction schedule.
   6. List of subcontractors.
   7. Schedule of values.
   8. Preliminary payment schedule.
   9. Project directory.
   10. Safety plan and name of Safety Officer.

C. Attendees: Owner, Engineer and its consultants, Contractor and its project manager, project coordinator and project superintendent, major subcontractors, manufacturers and suppliers. Other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work.

D. Agenda: Discuss items of significance that could affect progress including such topics as:
   1. List of subcontractors, manufacturers and suppliers.
   2. Tentative construction schedule.
   3. Critical work sequencing.
   4. Designation of responsible personnel.

5. Procedures for processing field decisions and Change Orders.
6. Procedures for processing applications for payment.
7. Distribution of Contract Documents.
8. Submittals of shop drawings, product data and samples, including that at exposed construction ceilings, coordination drawings will be required as part of the shop drawing process to facilitate the locations and finish appearances of all materials exposed to view
9. Preparation of record documents.
10. Use of premises.
11. Office, work and storage areas.
12. Temporary facilities and controls.
13. Equipment deliveries and priorities.
14. Safety procedures.
15. First aid.
16. Security.
17. Housekeeping.
18. Working hours both within and outside of the Building.

E. Record meeting results and distribute copies within 24 hours to everyone in attendance and to others affected by decisions or actions resulting from each meeting

1.04 PROGRESS MEETINGS

A. Conduct progress meetings at Project site at regularly scheduled intervals, but not less frequently than every other week. Notify Owner and Engineer of scheduled meeting dates. Coordinate dates of meetings with preparation of payment requests. Prepare construction schedule update for each meeting to discuss.

B. Attendees: In addition to representatives of Owner, Engineer and Contractor, each subcontractor, supplier or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall be represented at these meetings by persons familiar with the Project and authorized to conclude matters relating to progress.

C. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to current status of the Project.
   1. Contractor's Construction Schedule: Review progress since the last meeting.
      a. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule.
      b. Determine how construction behind schedule will be expedited, at no additional cost to the Owner; secure commitments from parties involved to do so.
      c. Discuss whether schedule revisions are required to ensure current and subsequent activities will be completed within the Contract Time.
   2. Review present and future needs of each entity present, including such items as:
      a. Interface requirements.
      b. Time.
      c. Sequence of operations
      d. Resolution of BIM component conflicts.
      e. Status of submittals
      f. Status of sustainable design documentation
      g. Deliveries.

h. Off-site production quotas and fabrication problems.
i. Access.
j. Site utilization.
k. Temporary facilities and services.
l. Hours of work.
m. Hazards and risks.
n. Housekeeping.
o. Quality and work standards.
p. Change Orders.
q. Documentation of information for payment requests.

D. Reporting: Record meeting results including agreements and disagreements, and distribute copies of minutes of each meeting to each party present and to other parties who should have been present. Include a brief summary, in narrative form, of progress since previous meeting and report.
1. Schedule Updating: Revise construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01 3300 – SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Division 00 – Procurement and Contracting Requirements, and Division 01 – General Requirements, are hereby made part of this Section.

1.02 SUMMARY:

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

B. Related Requirements are Included in the Following Sections:
   1. Payment Procedures for submitting Applications for Payment and the schedule of values.
   2. Project Record Documents for submitting record Drawings, record Specifications, and record Product Data.

1.03 DEFINITIONS:

A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device independent and display resolution independent fixed layout document format.

PART 2 - PRODUCTS

2.01 SUBMITTAL PROCEDURES:

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
   1. Post electronic submittals as PDF electronic files directly to Project Web site specifically established for Project.
      a. Engineer will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
   2. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

B. 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 Engineer's digital data drawing files.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
   a. Identification of products.
   b. Schedules
   c. Compliance with specified standards
   d. Notation of coordination requirements
   e. Seal and signature of professional engineer if specified
2. Sheet Size: Except for templates, patterns, and similar full size drawings, submit Shop Drawings on sheets at least 8 1/2 x 11 inches.
3. Submit Shop Drawings as PDF electronic files.

PART 3 - EXECUTION

3.01 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 Engineer.

B. Project Closeout and Maintenance Material Submittals:

C. 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.

3.02 ENGINEER'S ACTION:

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

B. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Engineer.

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

D. Submittals not required by the Contract Documents may be returned by the Engineer without action.

END OF SECTION

SECTION 01 5526 - TRAFFIC CONTROL

PART I – GENERAL

1.01 DESCRIPTION

A. Protect, regulate, warn, guide, and maintain traffic through and around the Construction Influence Area (CIA). Protect the construction work area during the life of the contract.
B. Furnish, install, light, operate, move, clean, preserve, maintain, cover and remove traffic control devices.
C. All temporary traffic control devices supplied by the Contractor will remain the property of the Contractor.
D. Temporary traffic control devices include but are not limited to signs and posts.
E. All temporary control devices must meet the design requirements of the MMUTCD, Part VI, in addition to the requirements of this section.
F. The Contractor must furnish the Engineer with certification that the materials and devices conform to these specifications. This certification does not waive inspection, sampling, or testing of materials and devices, as determined by the Engineer.

PART 2 – PRODUCTS

2.01 TEMPORARY SIGNS

A. Sign Panel and Supports. Sign panel materials and supports must meet NCHRP-350 crashworthy requirements.
B. Reflective Sheeting. Prismatic grade reflective sheeting must meet the requirements for ASTM D 4956 Type VII prismatic sheeting or higher. All prismatic orange reflective must be florescent. Engineer grade reflective sheeting must meet the requirements for ASTM D 4956 Type I engineer grade sheeting.
C. Legend. Legend must be fabricated and applied as detailed on the plans. The lettering and spacing on all signs must conform to the *FHWA Standard Alphabets for Highway Signs and Pavement Markings*.

2.02 CHANNELIZING DEVICES

Channelizing devices include, but are not limited to, cones, drums, Type III barricades and temporary concrete barrier. Reflective sheeting for all channelizing devices must meet the requirements of ASTM D 4956 Type III high intensity sheeting.

A. Cones. Traffic cones must have a minimum height of 28 inches. The manufacturer must supply certification to the purchaser that the cone meets NCHRP-350 crashworthy requirements.
B. Drums. Drums must be composed of a low density polyethylene plastic. High density polyethylene plastic is not permitted. The manufacturer must supply certification to the purchaser that the drum meets NCHRP-350 crashworthy requirements. Reflectorized sheeting used on drums must meet the requirements of ASTM D 4956 flexible Type III high intensity and must be 5-inch stripes. Drum striping design must conform to Standard Plan 125-R Series.
C. Drums with Lights. Drums with warning lights attached must be approved by the FHWA as meeting NCHRP-350 crashworthy requirements
D. Type III Barricades. Type III Barricades consist of three horizontal reflectorized rails, supports and warning lights. When called for, both sides of the rails must be reflectorized. Sheet the rails with orange and white diagonal striped ASTM Type III high intensity sheeting. All newly manufactured or purchased Type II Barricades must meet NCHRP-350 crash worthy criteria.

E. Warning Lights. Warning lights must have light emitting diode technology and meet the current *Institute of Transportation Engineers Purchase Specification for Flashing and Steady Burn Warning Lights*. Lights must be powered by two 6-volt or four D-cell batteries and maintained. The following types of warning lights are permitted:
   1. Type A-Low intensity flashing warning light, yellow lens, battery operated.
   2. Type B-High intensity flashing warning light, yellow lens, battery operated. Type B lights must have a visor affixed which will shield the lens from overhead sunlight.
   3. Type C-Steady burn warning light, yellow lens, battery operated.

PART 3 EXECUTION

3.01 CONTRACTOR NOTIFICATION

Notify the Engineer before starting work or installing traffic control devices on the project. Provide sufficient time so that arrangements may be made for traffic maintenance.

3.02 CONTRACTOR DAMAGED HIGHWAY FACILITIES

Restore all Contractor damaged facilities and devices. Furnish, install, and operate all traffic control devices required to warn and protect traffic from Contractor damaged facilities. All costs associated with this work will be borne by the Contractor.

3.03 CHANGES IN STAGE CONSTRUCTION PLANS

Provide reasonable notice, in writing to the Engineer, before making changes in stage construction. The Department will:

A. Approve all changes in stage construction in writing.

3.04 DEFICIENT TRAFFIC CONTROL OPERATIONS

The Engineer will submit written notification of deficient, inadequate, or improperly placed traffic control devices, or unsafe conditions within the CIA. A statement of the required corrective action will accompany the notice. The Engineer may take the following action(s) in the event of failure to take immediate correction action:

A. Stop work on the project until corrective action is taken.
B. In interest of public safety, order corrective action by outside forces. All costs associated with this work will be borne by the Contractor.

3.05 PLACING TRAFFIC CONTROL DEVICES

A. Provide traffic control devices meeting the quality requirements in the current addition of the Quality Standards for Work Zone Traffic Control Devices published by the American Traffic Safety Services Association (ATSSA).
B. Apply and place all traffic control devised within the CIA limits according to the MMUTCD, as shown on the plans, or as directed in writing.
C. Display only traffic control devices appropriate to conditions. Cover, remove, modify, or move existing temporary or permanent signs that have legends that are not applicable. When temporary signs are not in use, placing them with the sign face parallel to traffic is not acceptable.
D. Make daily inspections of the traffic control devices at a frequency that will insure all devices are in place, properly positioned, aligned and oriented. During periods of inactivity inspect at a frequency agreed to by the Engineer. Record these inspections; make the records available to the Engineer biweekly. The Department will take possession of the inspection records at completion of the project.

E. The Contractor will be responsible for actions of subcontractors regarding the condition, placement, maintenance, and removal of traffic control devices required on the project.
F. Remove temporary traffic control devices from the project when no longer required.

3.06 TEMPORARY SIGNS

A. Erect temporary construction signs as directed and according to the following:
   1. Ground driven or portable supports are acceptable.
   2. Mount signs at a minimum bottom height of 5 feet above the near edge of pavement.
   3. Mount signs at a minimum bottom height of 7 feet above ground if erected behind the curb or within 6 feet of a pedestrian walkway.
   4. If a secondary sign is required below the primary sign, mount it with bottom height 1 foot less than the 5 or 7 foot height specified.
   5. Erect signs with supports vertical and the legend or symbol horizontal.
B. Light construction warning signs during hours of darkness with one Type A warning light equipped with a one-way lens. Securely fasten the light to the top of the sign on the side nearest the traffic lane. Type A warning lights are not required on temporary construction signs with prismatic retro-reflective sheeting.
C. Use flexible roll-up signs with fluorescent, prismatic retro-reflective sheeting only during daylight hours in signing sequences for moving operations. The Engineer must approve use of flexible roll-up signs.
D. Do not use mesh signs.
E. The Engineer will approve such temporary or permanent signs for the safety and direction of traffic. The placing agency will be responsible for such signs, as prescribed herein.

3.07 SIGN COVERS

A. Cover the entire front of the sign panel for temporary and permanent signs mounted on fixed supports. For permanent signs, mount the sign coverings by approved methods that will not damage the existing sign sheeting. Do not apply fastening devices such as nails, staples, screws, or adhesive materials directly on the reflective sheeting. Use spacers providing 2 inches of air space between the cover and the sign face to protect the sheeting from damage. Do not use burlap or similar material to cover signs.
B. Install sign covers on Type I signs shown in the proposal or staging plans so that all of the conflicting information is obscured. Submit shop drawings of the Type I sign covers to the Engineer for approval before covering any Type I sign on the project.
C. Do not use sign plaque overlays that alter part of a sign's legend or symbol.

3.08 SIGN SUPPORTS

A. Meet MDOT and current NCHRP crash worthy criteria.
B. Place and construct sign supports to resist swaying, turning, or displacement. Steel posts may be painted or galvanized.
C. Mount construction signs on portable sign support standards only when fixed supports are not possible.

3.09 SUPPLEMENTAL WEIGHTS

A. Maintain traffic control devices upright and in proper alignment during use. When supplemental weights are necessary to achieve stability, use sand bags or an approved alternate.

3.10 TYPE III BARRICADE

A. Use Type III barricades to accentuate delineation or warning and for total or partial road closures. When used for a complete road closure, extend the barricades completely across a roadway and its shoulders or from curb to curb.
B. Light Type III barricades during hours of darkness with two light-weight Type C warning lights securely fastened to the uprights. Place all construction signs used at the Type III barricades behind the barricades on their own supports. Place the bottom of the signs above the top rail of the barricade. Stripes on the retro-reflective sheeting must slope downward in the direction traffic is to pass. Place sheeting on both sides of Type III Barricades when traffic passes from both directions.
C. Do not place Type III barricades parallel to approaching traffic.
D. When the Department prohibits through traffic, use Type III barricades including the specified construction signs and lights. Arrange barricades and erect signs to permit the passage of local traffic and effectively discourage the passage of through traffic. Install a sign with the appropriate legend concerning permissible use by local traffic.

3.11 MAINTAINING LIGHTS

A. Position and maintain Type A and Type C lights to be visible on a clear night from a distance of 3000 feet. Maintain Type B high intensity lights to be visible on a sunny day from a distance of 1000 feet when viewed without the sun directly on or behind the light. Replace batteries when the lights do not meet these requirements. Provide and maintain Type C LED lights that meet or exceed all requirements in the MMUTCD. Maintain the intensity requirement of 2 candela in the field. This requirement does not preclude the Engineer from determining that a battery change is necessary.
B. Inspect each light in use immediately before initial use and at least once every seven days after that. Service if necessary. Supply the Engineer with a written certification of maintenance on electrical devices at least once every seven days. Provide certification in the following format and include all types of battery-operated warning lights and other Contractor-furnished electrical devices. Include a written summary on the number of warning lights, by type, which are currently operating on the project.

3.12 CLEANING TRAFFIC CONTROL DEVICES

A. Clean the entire or partial inventory of plastic drums, signs, barricades, and attached lights in operation on the project as directed by the Engineer. Adjust cleaning frequency to the exposure to unfavorable environmental conditions, and the dirt accumulated on the devices.

END OF SECTION

SECTION 01 7113 - MOBILIZATION

PART I GENERAL

1.01 DESCRIPTION

Mobilization consists of preparatory work and operations, including, but not limited to the following:

A. The movement of personnel, equipment, supplies, and incidentals to the project site.

B. The establishment of the Contractor's offices, buildings, and other facilities to work on the project.

C. Other work and operations that must be performed.

D. Expenses incurred, prior to beginning work on the various contract items on the project site.

E. Pre-construction costs, exclusive of bidding costs, which are necessary direct costs to the project rather than directly attributable to other pay items under the contract.

F. Contractor to provide and maintain a sufficient number of portable temporary toilets in locations approved by the owner. They must comply with all Federal, State and local code requirements. The Contractor must maintain the temporary toilets in a sanitary condition at all times and must remove them when the work under this contract is complete. The Contractor's employees are not allowed to use any existing toilet facility.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

SECTION 01 7423 - FINAL CLEANUP

PART I GENERAL

1.01 DESCRIPTION

A. Removal and dispose of all debris; including excess soil and all other rubbish from within the project limits. Place topsoil, seed and mulch all disturbed areas.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 CONSTRUCTION

A. Project cleanup will be an ongoing operation. Fill all holes and ruts resulting from construction operations with approved materials; compact, level, and restore.

Clean out any existing culverts, sewers, or drainage structures that contain sediment or debris from the construction operation.

The related work of preparing the foundation, furnishing and placing 4” topsoil, sowing the seed, and placing straw mulch or mulch blankets.

END OF SECTION

SECTION 01 7700 - CLOSEOUT PROCEDURES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Division 00 - Procurement and Contracting Requirements, and Division 01 - General Requirements, are hereby made part of this Section.

1.02 SECTION INCLUDES

A. Administrative and procedural requirements for project closeout.

1.03 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following, listing exceptions in the request:
   1. In the Application for Payment that coincides with, or first follows the date Substantial Completion claimed, show 100 percent completion for the portion of Work claimed as substantially complete. Include supporting documentation for completion as required and a statement showing an accounting of change to the Contract Sum. Comply with requirements of the General Conditions.
      a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction and reasons the Work is not complete.
   2. Advise Owner of pending insurance changeover requirements.
   3. Submit specified warranties, maintenance agreements, final certifications and similar documents as required by the General Conditions.
   4. Obtain and submit releases enabling Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
   5. Submit record documents including maintenance manuals, damage or settlement survey, property survey and similar final record information.
   6. Complete final cleaning requirements.

B. Inspection Procedures: On receipt of a request for inspection, Engineer will either proceed with inspection or advise Contractor of unfilled requirements. Engineer will prepare the Certificate of Substantial Completion following inspection, or advise Contractor of construction that must be completed or corrected before the certificate will be issued.
   1. Engineer will repeat inspection when requested and assured the Work has been substantially completed.
   2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.04 FINAL REVIEW

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following, listing exceptions in request:
   1. Submit final payment request with releases and supporting documentation not previously submitted and accepted. Comply with requirements of the General Conditions.
   2. Submit an updated final statement, accounting for final additional changes to Contract Sum.
   3. Submit a certified copy of Engineer's final inspection list of items to be completed or corrected, stating each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by Engineer.
   4. Submit record drawings and similar final record documents.
      a. Each drawing shall be labeled “Project Record”, dated and signed by the Contractor.
      b. Each project record document shall be labeled ”Project Record Document”.

5. Submit consent of surety to final payment.
6. Submit evidence of final continuing insurance coverage complying with insurance requirements.

B. Re-inspection Procedure: Engineer will re-inspect Work upon receipt of notice the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to Engineer.
   1. Upon completion of reinspection, Engineer will prepare Certificate of Final Acceptance, or advise Contractor of incomplete Work or of obligations not been fulfilled but required for final acceptance.
   2. If necessary, reinspection will be repeated for final acceptance.

SECTION 02 4113.13 - REMOVE PAVEMENT

PART 1 GENERAL

1.01 DESCRIPTION

A. This work shall consist of removing and properly disposing of bituminous surface and base of any thickness from any aggregate base without the removal of the aggregate base.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 CONSTRUCTION METHODS

A. The work of removing bituminous pavement shall conform to 2020 Michigan Department of Transportation Standard Specifications for Construction Section 204.04.A.2 Removing Miscellaneous Structures And Materials except as modified herein.
B. Cutting of bituminous surface for removal shall be by saw or other methods approved by the Engineer.
C. Butt joints shall be trimmed just prior to bituminous paving, and will not be paid for separately.

END OF SECTION

SECTION 31 2500 - EROSION CONTROL

PART 1 GENERAL

1.01 DESCRIPTION

A. This work shall consist of the construction and maintenance of erosion controls required to minimize the erosion of soil and the sedimentation of water courses as shown on the project plans or at the direction of the Engineer.

PART 2 – PRODUCTS

2.01 MATERIALS

A. All materials used shall meet the 2020 Michigan Department of Transportation Standard Specifications for Construction:

Coarse Aggregate, 6A	902
Granular Material Class II	902
Dense-Graded Aggregate 21AA, 22A	902
Open-Graded Aggregate, 34R.	902
Fencing Materials	907
Culvert Pipe	909
Geosynthetics	910
Rip Rap	916
Heavy Rip Rap	916
Coarse Aggregate, 3X1	916
Cobblestone	916
Temporary Plastic Sheet	916
Sand and Stone Bags	916

PART 3 EXECUTION

3.1 CONSTRUCTION METHODS

A. This work shall be done according to 2020 Michigan Department of Transportation Standard Specifications for Construction Section 208. Soil Erosion and Sedimentation Controls except as modified herein.

END OF SECTION

SECTION 32 1123 - AGGREGATE BASE COURSES

PART 1 GENERAL

1.01 DESCRIPTION

A. This work shall consist of an aggregate base course constructed on an existing aggregate surface or on a prepared subbase or subgrade.

PART 2 PRODUCTS

2.01 MATERIALS

A. The material used for this work shall meet the requirements of the following 2020 Michigan Department of Transportation Standard Specifications for Construction:

DENSE-GRADED AGGREGATE 21AA, 21A, 22A.....902

PART 3 EXECUTION

3.01 CONSTRUCTION METHODS

A. This work of constructing Aggregate Base Course shall conform to the 2020 Michigan Department of Transportation Standard Specifications for Construction Section 302.03 AGGREGATE BASE COURSES except as modified herein.

B. Aggregate base courses shall not be placed when there are indications that the mixture may become frozen before the maximum unit weight is obtained, and in no case shall be placed on a frozen subgrade or subbase.

C. The subbase shall be shaped to the crown and grade specified in the Plans and maintained in a smooth condition. If, in the opinion of the Engineer the subgrade, subbase or aggregate base becomes damaged due to the Contractor's equipment or by local traffic, the subgrade, subbase, and base course shall be restored by the Contractor as directed by the Engineer to the condition required by the Plans and Specifications at no extra cost to the Owner. Restoration may include removal of the aggregate or subbase courses for examination of the subgrade, including performing undercuts, all at the Contractor's expense.

D. No aggregate base shall be placed until the subbase has been compacted to not less than 95 percent per 2020 Michigan Department of Transportation Standard Specifications for Construction Section 301.03 and a "Permit to Place" has been issued by the Engineer. The aggregate base course shall be compacted to not less than 98% of the unit weight, at the optimum moisture content, obtained by AASHTO T 180 test method 2020 Michigan Department of Transportation Standard Specifications for Construction Section 302.03.

E. Aggregate base and surface courses shall be deposited from trucks or through a spreader in a manner that will minimize segregation of material and which is approved by the Engineer.

F. All Structures, including manholes, valve boxes, inlet structures and curbs shall be protected from damage. Manholes & inlet structures shall be maintained clean of construction debris and properly covered by the Contractor at all the times during the construction.

3.02 TESTING

A. The Contractor before Aggregate Base construction commences shall provide the Engineer with the source and location of the material to be used so that a Sieve Analysis and Proctor may be developed by an independent testing firm 48 hours prior to placement of Aggregate Base material. This initial cost will be to the Client. Cost of in place compaction testing (Nuclear Density Method) will be to the Client. If the Contractor elects during the course of construction, to change the source and/or location of an approved material, the Contractor shall pay for all Sieve Analysis and Proctors to complete the construction of the Aggregate Base. Forty-eight (48) hours notification will be required to the Engineer to collect and deliver samples to an independent testing firm before placement. Any material placed by the Contractor without approval will be removed. If in the opinion of the Engineer, the material differs from the approved material, the Contractor shall test material at the Contractor's expense.

END OF SECTION

SECTION 32 1216 - HMA PAVING

PART I GENERAL

1.01 DESCRIPTION
A. Prepare the existing base and construct hot mix asphalt (HMA) pavements, shoulders, and approaches. Provide a pavement meeting plan requirements, which is uniform in texture, density and smoothness with no measurable segregation.

1.02 REFERENCE
A. 2020 Michigan Department Of Transportation Standard Specifications For Construction.

1.03 SUBMITTALS
A. Design Data: Marshall Mix designs.

B. Product Data: Pavement Marking.

1.04 TESTING
A. The owner will provide a qualified testing company to perform all required testing.

1.05 QUALITY ASSURANCE
A. Perform work in accordance with MDOT standard specifications, 2020 edition.
B. Mixing Plant. Conform with MDOT standard specifications, 2020 edition.
C. Obtain materials from same source throughout.
D. Grade Control: Established and maintain required lines and elevations.

1.06 ENVIRONMENTAL REQUIREMENTS
A. Do not place asphalt when ambient air or base surface temperature is less than 40 degrees F, or surface is wet or frozen.

PART 2 PRODUCTS

2.01 MATERIALS
A. General: All materials shall conform to current MDOT Specifications.
B. Aggregate
   1. Base for HMA: As indicated per plan per cross section and depth
C. Asphalt-Aggregate Mixture
   1. For HMA provide plant-mixed, hot-laid bituminous concrete mixture complying with MDOT specifications as called out on plans.
D. Bituminous pavement shall be per Plan.
E. Tack coat: Shall be SS-1h.

2.02 ENVIRONMENTAL REQUIREMENTS
A. Do not place asphalt when ambient and/or base surface temperature is less than 40 degrees F. or surface is wet or frozen.

PART 3 EXECUTION

3.01 EXAMINATION
A. Verify gradients and elevations of base.

B. Verify compacted subbase is dry and ready to support base and paving and imposed loads.

3.02 INSTALLATION

A. Surface Preparation
   1. Proof roll prepared base surface to check for unstable areas and areas requiring additional compaction.
   2. Notify Engineer of unsatisfactory conditions.
   3. Soft or yielding areas which cannot be mechanically stabilized shall be removed and replaced with approved compacted granular material.
   4. Do not begin paving work until deficient base areas have been corrected and are ready to receive paving.

B. Transportation of Mix:
   1. Transportation of paving materials through site to be tandem axel trucks to prevent damage to existing pavement. Larger trucks may be allowed at owner's discretion.

C. Placing Mix:
   1. Machine place each course to required grade, cross section, and thickness when compacted. Temperature shall be between 350°F to 250°F.
   2. Compact to a density of 97% of the maximum Marshall Unit Weight (50 blows).
   3. Apply tack coat over base and leveling course at a uniform rate of 0.10 gallons per square yard when either 24 hours have elapsed between placement of courses or the surface of the pavement has been contaminated with dirt, dust, or other foreign material. Surface must be cleaned before application.
   4. Place wearing course within 24 hours of placing and compacting leveling course or after tack coat has been property cured.

D. Rolling
   1. Compact each layer of HMA to the required density, free of all roller marks.
   2. Use tandem steel-wheeled rollers for the final rolling operation on each layer of HMA. Operate vibratory rollers in the static mode when used for finish rolling or pinching the joint.
   3. Keep the surface of the steel roller wheels completely moist with water when rolling.
   4. Start rolling longitudinally at the extreme sides of the lanes and go toward the center of the pavement, overlapping on successive trips by at least half the width of the drive wheel of the roller. Vary the lengths of alternate passes of the roller.
   5. When compacting an adjoining lane, and not restricted by traffic, roll the vertical longitudinal bumped joint first with the roller supported on the cold lane with only 2 to 6 inches of the roller extending onto the freshly placed HMA mixture.

3.03 PATCHING

A. Remove and replace defective paving areas.
B. Cut out such areas and fill with fresh, hot asphalt concrete.
C. Patch test holes.
D. Compact by rolling to maximum surface density and smoothness.

3.04 FIELD QUALITY CONTROL

A. Representatives of the testing laboratory will supervise the placing of the asphalt materials.
B. The Owner reserves the right to require the Contractor, at his own expense, to patch holes in the bituminous surface to determine the compaction, thickness and design mix by an independent laboratory. The laboratory fee will be paid for by the Owner.

3.05 CONSTRUCTION TOLERANCES

A. Flatness: Maximum variation of ¼ inch measured with 10 foot straight edge.
B. Scheduled Compacted Thickness: Within ¼ inch of design thickness.
C. Variation from Indicated Elevation: Within 1 inch.

3.06 PROTECTION OF FINISHED WORK

A. Immediately after placement, protect pavement from mechanical injury for 24 hours or until surface temperature is less than 140 degrees F.

END OF SECTION

SECTION 32 1600 - CONCRETE CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS, AND RAMPS

PART I – GENERAL

1.01 DESCRIPTION
A. Concrete curbs, combination curb and gutter, sidewalk and ramps. Sidewalks and ramps include a 4" compacted sand subbase. Curb placed on an 8" 21AA base or existing base if approved by the Engineer.

1.02 REFERENCES
A. American Concrete Institute:
   1. ACI 301 – Specifications for Structural Concrete.
   2. ACI 304 – Guide for Measuring, Mixing, Transporting, and Placing Concrete.

B. ASTM International:
   1. ASTM C33 – Standard Specification for Concrete Aggregates.
   2. ASTM C94/C94M – Standard Specification for Ready-Mixed Concrete.
   3. ASTM C150 – Standard Specification for Portland Cement.
   4. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
   5. ASTM C309 - Standard Specification for for Liquid Membrane-Forming Compounds for Curing Concrete.
   6. ASTMC494/C494M - Standard Specification for Chemical Admixtures for Concrete.
   7. ASTM C1315 - Standard Specification for Liquid Membrane-Forming.
   8. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
   9. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.

1.03 SUBMITTALS
A. Product Data: Submit product information, data on joint filler, admixtures, curing compounds, and all items in this section.
B. Design Data: Submit mix design with supporting history breaks.

1.04 QUALITY ASSURANCE
A. Perform work in accordance with ACI 301.
B. Obtain cementitious materials from same source throughout.

1.05 ENVIRONMENTAL REQUIREMENTS
A. Do not place concrete when base surface is wet or frozen.

PART 2 – PRODUCTS

2.01 CONCRETE FOR CURB, GUTTER, SIDEWALK AND RAMPS
A. Forms: Wood material, profiled to suit conditions.
B. Joint Filler: ASTM 1751, Asphalt impregnated wood fiberboard, ½ inch thick, with removable cap for sealant.
C. Cement: ASTM C150 Normal Type Portland type, gray color.
D. Fly Ash: ASTM C618 Type C.

E. Fine and Coarse Aggregates: Fine aggregate MDOT designated 2NS Course MDOT Designated 6A.
F. Water: Clean and not detrimental to concrete.

G. Admixtures:
   1. Manufacturers:
      a. Degussa Admixtures, Inc. (Master Builders)
      b. Euclid Chemical Co.
      c. Fritzpak Concrete Admixtures Co.
      d. Grace Construction Products.
      e. Larsen Products Corp.
      f. L & M Construction Chemicals.
      g. Sika Chemical Co.
      h. W.R. Meadows Inc.
   2. Air Entrainment Admixture: ASTM C260.
   3. Mid-Range Water Reducing Admixture: ASTM C494.
   4. High-Range Water Reducer (Super Plasticizer) Admixture: ASTM C494 Type F.

H. Exterior Curing Compound: Water borne, white pigmented: ASTM C309, Type 2
   1. Manufacturers:
      a. Grace.
      b. Meadows.
      c. Euclid.
      d. L & M.

I. Dowels, etc.

1. Use deformed steel bars meeting the requirements of ASTM A 706 or the requirements for Grades 40, 50 or 60 of ASTM A 615, A 616, or A 617 as applicable.

2.02 CONCRETE MIX

A. Ready Mixed Concrete: Mix and deliver concrete in accordance with ASTM C94/C94M, Option C:
   1. Option C requires concrete supplier to provide concrete to specified performance criteria. Specifier must identify minimum mix cement content.
   2. No water will be added to the mix once batched. Any added will be cause for rejection of load.

B. Furnish concrete for exterior work of the following characteristics:
   1. Compressive Strength at 28 days: 3500 psi..
   2. Minimum Cement Content: 6 bags/cu yd. 1564 lbs/cu yd.
   3. Slump: 3 to 5 inches maximum.
   4. Air Entrainment: 5 – 7 percent.

C. Select admixture proportions for normal weight concrete in accordance with ACI 301 Method 1, and ACI 318.

D. Fiber Reinforcement: Fibrillated Polypropylene Fibers ¾” long complying with ASTM C1116, Type III.

E. Chloride shall not be used.

F. Each load of concrete delivered shall have three (3) copies of delivery tickets including complete concrete mix information.
   1. Contractor.
   2. Testing Company.
   3. Inspector.

2.03 DETECTABLE WARNING STRIPS, TRUNCATED DOMES

A. Refer to drawings and details for locations, configurations, and dimensions.

B. Detectable Warning: Vitrified Polymer Composite (VPC) Cast in Place Detectable/Tactile Warning Surface Tiles shall be an epoxy polymer composition with an ultra violet stabilized coating employing aluminum oxide particles in the truncated

domes. The tile shall incorporate an in-line pattern of truncated domes measuring nominal 0.2" height, 0.9" base diameter, and 0.45" top diameter, spaced center-to-center 2.35" as measured on a diagonal and 1.67" as measured side by side. For wheelchair safety the field area shall consist of a non-slip surface with a minimum of 40 – 90° raised points 0.045" high, per square inch; "Armor-Tile" as manufactured by Engineered Plastics Inc., Telephone: 800-682-2525, or approved equal, color Red.

QUALIFIED PRODUCTS LIST (QPL)

Spec # and Material Name	Product Name	Manufacturers or Suppliers
803.02B Detectable Warning Surfaces (ADA Compliant Sidewalk Ramps).		
1. Cast-in-Place	Access Tile Cast in Place Replaceable	Access Products, Inc., Buffalo, NY
	AlertCast	AlertTiles, Wilmington, NC
	Cast in Place Truncated Dome Warning System	ADA Solutions, North Billerica, MA
	Composite Wet Set Replaceable, Rectangular and Radius	ADA Solutions, North Billerica, MA
	DetecTile Replaceable Tactile Panel	DetecTile Corporation
	EJIW Detectable Warning Plate	East Jordan Iron Works, East Jordan, MI
	Armor – Tile Cast in Place Stainless	Engineered Plastics Inc., Williamsville, NY
	Armor – Tile Cast in Place Composite	Engineered Plastics Inc., Williamsville, NY
	NF Detectable Warning Plate	Neenah Foundry Company, Neenah, WI
2. Surface Applied* *NOTE: Surface applied detectable warning surfaces may only be used to retrofit existing concrete.	Surface Applied Panel System with Beveled Edges	ADA Solutions, North Billerica, MA
	Alertile	Detectable Warning Systems, Williamsville, NY
	Armor-Tile Surface Applied Composite Warning System	Engineered Plastics Inc., Williamsville, NY
	TopMark	Flint Trading Inc., Thomasville, NC

2.04 SOURCE QUALITY CONTROL AND TESTS

A. Submit proposed mix design of each class of concrete for review prior to commencement of work.
B. Tests on cement, aggregates, and mixes will be performed by Owner's Testing agency to ensure conformance with specified requirements and will test samples in accordance with ACI 301.

PART 3 EXECUTION

3.01 EXAMINATION AND PREPARATION

A. Verify gradients and elevations of base.
B. Verify compacted subgrade is ready to support paving and imposed loads.
C. Moisten substrate to minimize absorption of water from fresh concrete.

3.02 FORMING

A. Place and secure forms to correct location, dimension, and profile.
B. Place joint filler in joints, vertical in position, in straight lines. Secure to formwork.
C. Separate pavement from vertical surfaces with ½ inch thick joint filler.
D. Place joint filler in pavement pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
E. Extend joint filler from bottom of pavement to within 1/4 inch of finished surface.

F. Place expansion joints at 20 foot, or as approved by the Engineer, intervals or as indicated on drawings. Align curb, gutter, and sidewalk joints.
G. Tool or saw cut control joints as indicated on drawings to prevent cracking. Cut all reinforcing at control joints. Sawcut within 24 hours of placement with 3/16 inch thick blade to a depth of 1/5 of thickness.

3.03 PLACING CONCRETE

A. Place concrete in accordance with ACI 301.
B. Do not disturb reinforcement or formwork components during concrete placement.
C. Place concrete continuously between predetermined joints.
D. Placement of concrete in:
   1. Hot weather work in accordance with ACI 305.
   2 Cold weather work in accordance with ACI 306.
E. Do not add water to the concrete during delivery, at the project site or during placement.
F. Do not move or displace concrete with vibrators or by vibration.

3.04 FINISHING

A. Finish concrete paving surfaces in accordance with ACI 301 and ACI 302.1.
B. Uniformly spread, screed, and float concrete.
C. Paving and sidewalk surfaces: light broom finish perpendicular to normal traffic direction, radiused and trowel joint edges.
D. Apply curing compound on exposed concrete surfaces immediately after finished at a rate of 1 gallon per 200 square feet.

3.05 TOLERANCES

A. Maximum Variation of Surface Flatness: ¼ inch in 10 ft.
B. Maximum Variation from True Position: ¼ inch.

3.06 FIELD QUALITY CONTROL

A. Perform field inspection and testing in accordance with ACI 301 and ACI 318.
B. Reinforcement Inspection:
   1. Inspect for correct materials, fabrication, sizes, locations, spacing, concrete cover, and splicing.
C. Materials testing will be provided by the Owner. Cooperate with testing agency in preparation of samples. Tests include: slump, air content, temperature and (4) cylinders.

3.07 DEFECTIVE CONCRETE

A. Modify or replace concrete not conforming to required lines, details and elevations, or deviating from these specifications, as directed by Engineer.

3.08 PATCHING CONCRETE

A. Defects in formed concrete surfaces shall be repaired within 24 hours of placement, to the satisfaction of the Engineer and Owner. Defective concrete shall be replaced within 48 hours after the adjacent forms have been removed. All concrete which is honeycombed or otherwise defective, shall be cut out and removed to sound concrete, with edges square cut to avoid feathering, minimum depth of removal shall be 1 inch deep.

B. Except as modified herein, concrete repair work shall conform to ACI 301 and shall be performed in a manner that will not interfere with thorough curing of surrounding concrete. All repair work shall be adequately cured.
C. Where authorized by Engineer and Owner, repair may be accomplished by patching conducted as specified herein. However, permission to patch shall not waive the Owner's right to have the defective work complete removed if the patch or repairs do not, in the Engineer and Owner's opinion, satisfactorily restore the quality and appearance of the work. Contractor shall submit plans and procedures for Engineer and Owner's review.

3.09 CONCRETE SURFACE REPAIRS

A. Patching Defective Areas: Repair and patch defective areas within 24 hours placement with cement mortar immediately after removing forms, when acceptable to the Engineer and Owner.
B. Mix dry pack mortar, consisting of one part Portland cement to 2½ parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing.
    1. Cut out honeycombs, rock pockets, voids over ¼ inch in any dimension, and holes left by tie rods and bolts down to solid concrete but in no case to a depth less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush coat the area to be patched with bonding agent. Place patching mortar before bonding agent has dried.
    2. For surfaces exposed to view, blend white Portland cement and standard Portland cement so that, when dry, patching mortar will match surrounding color. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
C. Repairing Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Owner. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pickets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes and fill with dry pack mortar or precast cement cone plugs secured in place with bonding agent.
    1. Repair concealed formed surfaces, where possible, containing defects that affect the concrete's durability. If defects cannot be repaired, remove and replace the concrete.
D. Repairing Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface tolerances specified for each surface and finish. Correct low and high areas as specified. Test unformed surfaces for trueness of slope and smoothness by using a template having the required slope.
    1. Repair finished unformed surfaces containing defects that affect the concrete's durability. Surface defects include crazing and cracks in excess of 0.01 inch wide or that penetrate to the reinforcement or complete through nonreinforced sections regardless of width, spalling, popouts, honeycombs, rock pockets, and other objectionable conditions.
    2. Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.
    3. Correct low areas in unformed surfaces during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
    4. Repair defective areas, except random cracks and single holes not exceeding 1 inch in diameter, by cutting out and replacing with fresh concrete. Remove

defective areas with clean, square cuts and expose reinforcing steel with at least ¾ inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish blending with adjacent finished concrete. Cure in same manner as adjacent concrete.

E. Repair isolated random cracks and single holes 1 inch or less in diameter by dry pack method. Groove top of cracks and cut out holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces any apply bonding compound. Place dry pack before bonding agent has dried. Compact dry pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
F. Repair methods not specified above may be used, subject to acceptance of Owner.

3.10 CLEANING

A. Leave no debris of any kind, including bags, pallets, and banding; clean up on a daily basis.

3.11 PROTECTION

A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury.
B. Do not permit pedestrian and vehicular traffic over pavement for 2 days minimum after finishing.

END OF SECTION

SECTION 32 1613 - INTEGRAL CURB AND SIDEWALK

PART 1 GENERAL

1.01 DESCRIPTION

A. This work shall consist of constructing portland cement integral curb and sidewalk, as shown on the plans, or as authorized. Class II Granular Base and backfilling will be considered part of the work.

PART 2 PRODUCTS

2.01 MATERIALS

A. The materials shall meet the requirements of the following 2020 Michigan Department of Transportation Standard Specifications for Construction:

Sound Earth……	205
Concrete, Grade P2, P1…….....……	601
Concrete, Grade S3, S2……	701
Mortar Type R2.....……..	702
Curing Compound.....……	903
Granular Material Class II.....……	902
Steel Reinforcement.....……	905
Geotextile Liner……	910
Lane Ties……..	914
Joint Fillers.....……	914

PART 3 EXECUTION

3.01 CONSTRUCTION METHODS

A. The work of constructing Integral Curb and Sidewalk shall be done according to the 2020 Michigan Department of Transportation Standard Specifications for Construction Sections 802, 803 and project plans.

END OF SECTION

SECTION 32 1723 - PERMANENT PAVEMENT MARKINGS

PART 1 GENERAL

1.01 DESCRIPTION

A. This work shall consist of furnishing and applying retro-reflective permanent pavement markings according to the current Michigan Manual of Uniform Traffic Control Devices. All markings, shapes, spacing, and dimensions must conform to the MDOT Pavement Marking Typical Plans or as directed by the Engineer.

PART 2 PRODUCTS

2.01 MATERIALS

A. All materials shall conform to current 2020 Michigan Department of Transportation for Construction Standard Specifications for Construction, Section 811.02.

Glass Beads……..	920
Waterborne Marking Material……..	920
Regular Dry Marking Material……..	920
Epoxy Pavement Marking Materials……	920
Cold Plastic Pavement Marking Material……	920
Thermoplastic Pavement Marking Material…	920
Raised Pavement Markers……..	920

PART 3 EXECUTION

3.01 CONSTRUCTION METHODS

A. All construction, application, temperature and seasonal restrictions shall conform to the 2020 Michigan Department of Transportation for Construction Standard Specifications for Construction, Section 811.03.
B. Prepare new Portland cement concrete (PCC) surfaces and PCC surfaces free of oil drips, residue, debris, and temporary or permanent markings by removing the curing compound from the area required for pavement markings.
C. Prepare existing HMA or PCC surfaces that do not have existing markings by scarifying the marking area using non-milling grinding teeth or shot blasting. The Engineer will allow the use of water blasting to scarify the marking area on PCC surfaces.
D. An approved concrete sealant shall be placed over scarified area after recommended time per pavement marking manufacturer.

END OF SECTION

SECTION 32 2000 - CONCRETE SIDEWALK, RAMPS AND STEPS

PART 1 GENERAL

1.01 DESCRIPTION

A. This work shall consist of constructing portland cement concrete sidewalks, sidewalk ramps and steps on a prepared base as shown on the plans or as authorized. Backfilling will be considered part of the work, unless otherwise provided.

PART 2 PRODUCTS

2.01 MATERIALS

A. The materials shall conform to the following 2020 Michigan Department of Transportation Standard Specifications for Construction, Section 803.02.

Sound Earth…….	205
Concrete, Grade P2, P1…….…….	601
Concrete, Grade S3, S2……	701
Granular Material Class II…….	902
Curing Compound…….……	903
Steel Reinforcement……..	905
Joint Fillers……..	914

PART 3 EXECUTION

3.01 CONSTRUCTION METHODS

A. This work of constructing Concrete Sidewalks, Sidewalk Ramps and Steps of the size and kind specified shall include excavation and backfilling and shall conform to the 2020 Michigan Department of Transportation Specification Section 803 Concrete Sidewalks, Sidewalk Ramps and Steps.

B. Concrete sidewalks with integral curb shall be constructed in accordance with Michigan Department of Transportation 2020 Standard Specifications for Construction Section 803 and as specified herein.

END OF SECTION

SECTION 33 0516 - RECONSTRUCT STRUCTURE, ADJUST STRUCTURE COVER, ADJUST MONUMENT OR GATE VALVE BOX, ADDITIONAL DEPTH STRUCTURE ADJUSTMENT/REPAIR POINT EXISTING STRUCTURE

PART 1 GENERAL

1.01 DESCRIPTION

A. This work shall consist of repairing and/or adjusting existing drainage structures (manholes and inlets) and gate wells of portland cement concrete and concrete block masonry; replacing existing metal covers and/or castings; valve boxes; excavation, backfill and patching in accordance with Section 403 of the 2020 Michigan Department of Transportation (MDOT) Standard Specifications for Construction, except as specified herein.

PART 2 PRODUCTS

2.01 MATERIALS

A. Materials shall meet the requirements of the 2020 MDOT Standard Specifications for Construction Sections 403.02, except that concrete for backfill around the structure shall be S2-6 sack as described in Section 701.03 of said MDOT Specifications.

PART 3 EXECUTION

3.01 CONSTRUCTION METHODS

A. Manhole covers, water valve boxes and all other public utility underground access or control point covers shall be adjusted to conform to the finished surface section and elevation. The adjusting of castings in a lawn area shall be done in a one-step process. The adjusting of castings in a bituminous pavement area shall be done in two steps: step one is the lowering of the structure cover to below the subgrade elevation and plating of the structure; step two is the final adjustment to finish grade made prior to placing the bituminous wearing surface.

B. All structures final adjustments are to be to the elevation which results in their top surface being no more than 1/4 inch below finished grade. This work is to be accomplished and checked by using a 10 foot straight edge parallel with the pavement centerline. Failure to meet these conditions will result in the readjustment of the structure and finish patching of the area, as directed by the Engineer, at the Contractor's expense.

C. All private utility manhole and valve covers (Edison, Gas, Ameritech, etc.) will be adjusted during this project by the Utility. It is the responsibility of the Contractor to coordinate with these private utilities by giving adequate notice and arranging for any adjustment of structures or valves by these utilities.

D. The Contractor shall replace covers and/or castings, as directed by the Engineer.

E. All drainage structure covers, utility covers, monuments, and gate valve boxes shall be backfilled with Grade S2-6 sack concrete from the depth of excavation necessary for adjustment to an elevation two inches below the top flange or adjusted casting. This work shall be included in the respective items of work, and will not be paid for separately.

F. There is a possibility that the Contractor may find hidden utility structures during the work. It is the Contractor's responsibility to inform the respective utility owner(s) of the findings. In such instances, the Engineer may direct the Contractor to adjust the structure(s) to grade. This work will be paid as "Adjust Structure Covers" or reconstruct structures.

G. Adjust Structure Cover: This item of work includes the removing of existing frame and cover, the adjusting up or down of the structure and the replacing of the frame and cover, as directed by the Engineer. The maximum vertical adjustment for this item shall be 15 inches. No additional compensation will be paid to the Contractor for the two step adjusting process for structures in paved areas as described elsewhere herein.

H. Additional Depth Structure Adjustment/Repair: Where the dimension between the existing elevation and the finished grade of that structure exceeds 15 inches, that portion of the dimension in excess of 15 inches will be measured as Additional Depth Adjustment, and will be paid by the vertical foot or fraction thereof, at the Contract Unit Price. This shall also cover the repair of manholes and structures where less than total reconstruction of the structure, as determined by the Engineer, is required.

I. Point Drainage Structure: This item shall consist of the pointing of existing drainage structures as indicated on the plans or as directed by the Engineer. The removal of existing loose mortar and proper disposal off-site of same shall also be included in this item.

J. Adjusting Monument or Gate Valve Box: This item of work includes the adjustment of existing boxes up or down to their proposed finish grade elevations. The maximum vertical adjustment for this item is 15 inches. This item also includes the replacement of the top half of the valve box where required.

K. Reconstruct Structure: This item includes all labor, materials and equipment necessary to reconstruct an inlet-junction chamber, inlet, double inlet, or manhole structure of any depth and diameter, from bottom to top, and the final adjustment of the structure casting. It shall also include the removal and proper disposal off-site of the existing structure, salvaging the existing casting and/or cover, and the backfill of Class II sand around the structure compacted to 95% of its maximum unit weight as determined by the AASHTO T-180 test.

L. There is a possibility that the Contractor may find hidden utility structures during the work. It is the Contractor's responsibility to inform the respective utility owner(s) of these findings. In such instances, the Engineer may direct the Contractor to adjust the structure(s) to grade. This work will be paid as "Adjusting Structure Covers" or reconstruct structure.

END OF SECTION

SECTION 33 4100 - STORM SEWERS

PART 1 GENERAL

1.01 DESCRIPTION

A. This work shall consist of installing lines of sewer pipe, of the required class and specified inside diameter, and shall include excavation and backfilling.

PART 2 PRODUCTS

2.01 MATERIALS

A. The materials used for this work shall meet the requirements of the following 2020 Michigan Department of Transportation Standard Specifications for Construction, Section 402.02 or the local unit of government having jurisdiction for this construction.

Concrete, Grade S3……..	701
Mortar Type R-2…….	702
Granular Material Class II, III, IIIA……	902
Aggregate 6A……..	902
Sewer Pipe……...	909
Sealers for Sewer Joints……...	909
Steel Pipe (for jacking in place)……..	909
Geosynthetics……	910

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B. All material used must be from approved stock with certification from a reliable testing laboratory that the materials meet these specifications.

PART 3 EXECUTION

3.01 CONSTRUCTION METHODS

A. The work of installing Sewers of the size and kind specified shall conform to the 2020 Michigan Department of Transportation Standard Specifications for Construction, Section 402 Storm Sewers except that all construction shall meet the standards of the local unit of government having jurisdiction.

END OF SECTION

SECTION 33 4616 - UNDERDRAINS

PART I GENERAL

1.01 DESCRIPTION

A. Construct and install underdrains, place trench backfill, tap existing structure.

PART 2 PRODUCTS

2.01 MATERIALS

Use materials meeting the following:

A. Corrugated Plastic Tubing for Underdrain. Conform to AASHTO M 252 for polyethylene (PE) tubing or ASTM F 949 for polyvinyl chloride (PVC) tubing. The perforations for both PE and PVC tubing must conform to AASHTO M 252.

B. Drainage Geocomposites. Prefabricated geocomposites for drainage applications must consist of a geotextile bonded to or wrapped around a polymer core having corrugated, dimpled, tubular, or net (mesh) configurations. Furnish geocomposites with sufficient flexibility and durability to withstand installation, handling, and permanent loading stresses.

All fittings used in geocomposite installations must meet the published specifications of, or be manufactured by the geocomposite manufacturer. Seal connections with tape manufactured with adhesive resistant to moisture and organic growth and recommended by the manufacturer for underground service conditions.

2.02. PIPE

A. Wrap perforated pipe and tubing used for underdrains in geotextile. Use non-perforated pipe and tubing for underdrain outlets and do not wrap with geotextile.

2.03 AGGREGATE FOR TRENCH BACKfiLL.

A. Use granular material Class II as backfill for all underdrains.

PART 3 EXECUTION

3.01 CONSTRUCTION

The plans will show locations for underdrain and underdrain outlets, or a miscellaneous quantity of pipe for use on the project will be established. The line and grade of the underdrain will be shown on the plans or determined by the Engineer. Place the outlets at intervals shown on the plans and at locations that will ensure positive drainage.

A. Excavating the Trench. Excavate underdrain trenches using a wheel or chain trencher or other trenching methods approved by the Engineer. Grade trench bottoms to the shape of the underdrain pipe.

B. Laying Underdrains. Place the underdrains to the line and grade shown on the plans or to grades established by the Engineer. Provide a firm bearing throughout the length of the pipe. Place 1 to 2 inches of CL II in the lined trench before pipe placement. Place compatible end caps on the upgrade ends of all underdrain pipes. Remove and re-lay to the original grades pipe which is displaced from line and grade or which is damaged.

C. Tap the existing drainage structure by coring or other method approved by the Engineer. Place the underdrain in the cored hole and seal with mortar.

D. Backfill and Compaction. Place backfill for trenches only after the Engineer approves the underdrain line and grade.

1. Foundation, Bank and Subgrade Underdrains and Underdrain Outlets. Backfill foundation, bank, and subgrade underdrains and underdrain outlets with granular material Class II. Place the granular material around the pipe until the drain is covered to a depth of 2 inches. Place the remainder of the backfill in layers not exceeding 8 inches. Compact the trench backfill material within the roadbed to 95 percent of modified proctor maximum unit weight. Compact trenches outside the roadbed as directed by the Engineer.

END OF SECTION

SECTION 33 4900 - DRAINAGE STRUCTURES

PART 1 GENERAL

1.01 DESCRIPTION

A. This work shall consist of constructing drainage structures of portland cement concrete, portland cement concrete block or brick masonry and pre-cast concrete drainage structure sections, furnishing and placing metal covers and shall include excavation and backfilling.

The term drainage structure, as used herein, refers to manholes, catch basins, leaching basins, inlets and drop inlets.

PART 2 PRODUCTS

2.01 MATERIALS

A. The materials used for this work shall meet the requirements of the following 2020 Michigan Department of Transportation Standard Specifications for Construction:

Concrete, Grade S3…….. 701
Mortar Type R-2.....…… 702
Granular Material Class II, III.....……. 902
Steel Reinforcement…….. 905
Miscellaneous Metal Products……. 908
Castings.....…….,,, 908
Culvert, Sewer Pipe & Box Sections…… 909
Geosynthetics……. 910
Masonry Units.....…….. 913

PART 3 EXECUTION

3.01 CONSTRUCTION METHODS

A. The work of constructing Drainage Structures shall conform to the 2020 Michigan Department of Transportation Standard Specifications for Construction Section 403 Drainage Structures except as modified herein.

END OF SECTION

SECTION 33 9200 - TURF ESTABLISHMENT

PART 1 GENERAL

1.01 DESCRIPTION

A. This work shall consist of preparing the foundation, topsoiling, fertilizing the soil, sowing seeds of the class specified and/or placement of sod on all unsodded areas within the construction limits or as shown on the plans and furnishing, hauling, spreading, and anchoring mulch materials on areas which have been seeded.

PART 2 PRODUCTS

2.01 MATERIALS

A. The materials shall meet the requirements of the following 2020 Michigan Department of Transportation Standard Specifications for Construction, Section 816.02:

Water……	911
Compost……	917
Topsoil……	917
Fertilizer……	917
Seed……	917
Sod……	917
Mulch……	917
Mulch Anchoring…….	917
Mulch Netting……..	917
Mulch Blankets……	917
Weed Control…….	917

PART 3 EXECUTION

3.01 CONSTRUCTION METHODS

A. The work of Turf Establishment shall be done according to the 2020 Michigan Department of Transportation Standard Specifications for Construction Section 816.03 Turf Establishment except as modified herein.

END OF SECTION