

NOTICE TO BIDDERS

PROGRESS CLAUSE

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10/8/2018

a. General

Submit a complete, detailed and signed MDOT Form 1130, Progress Schedule, to the Engineer within 7 calendar days of award from the Department and prior to starting work. The Engineer will provide documented approval, comments, or rejection within 7 calendar days of receipt of the Contractor's submittal, resubmittal, or responses. The Contractor must resolve all responses within 7 calendar days of receipt of any Engineer requests or rejections. If the Progress Schedule is not approved within 30 calendar days of contract award, the Engineer may withhold all or part of contract payments until the Progress Schedule is approved. When approved, the Progress Schedule, or updated Progress Schedule, will become part of the contract.

The Progress Schedule shall include, as a minimum, the controlling work items for the completion of the project and the planned dates that these work items will be controlling operations. When specified in the bidding proposal, the date the project is to be opened to traffic as well as the final project completion date shall also be included in the project schedule. If the Bidding Proposal specifies other controlling dates, these shall also be included in the Progress Schedule.

After receiving Notice of Award, start work on the date agreed upon with the Engineer, which date shall be no earlier than 10 days after the Notice of Award and no earlier than **April 15, 2019**. In no case, shall any work be commenced prior to receipt of formal notice of award by the Department.

After award and prior to the start of work, the Contractor must attend a preconstruction meeting with the Engineer. The schedule for this meeting will be determined by the Engineer after submittal of MDOT form 1130. The Engineer will arrange the day, time and place for the preconstruction meeting. The meeting will be conducted after project award and may be rescheduled if there are delays in the award of the project.

The named subcontractor(s) for designated and/or Specialty Items, as shown in the proposal, are recommended to be at the preconstruction meeting if such items materially affect the work schedule.

This project is on an expedited schedule. The contractor is expected to mobilize sufficient labor resources and equipment and to work the required overtime to maintain the expedited schedule. The contractor shall include any costs associated with maintaining the expedited schedule in the Bid Items for work, as it will not be paid separately.

b. Milestones

1. MILESTONE 1: Open to vehicular and pedestrian traffic

The entire project must be complete, including restoration, and open to vehicular and pedestrian traffic on or before **August 30, 2019**.

The project shall be sufficiently complete and in suitable condition to be designated "Approved for Traffic" and shall be Opened to Traffic as directed by the Engineer, on or

before **August 30, 2019**. The "Approved for Traffic" condition shall be as defined in section 107.21, Approved for Traffic, of the MDOT 2012 Standard Specifications for Construction.

2. MILESTONE 2: Final Acceptance of Restoration

Final final acceptance of restoration items shall be completed on or before **October 5, 2019**.

3. MILESTONE 3: Final Acceptance

Final Acceptance shall be completed on or before **October 5, 2020**, after the second season of Watering and Cultivating.

c. Liquidated damages for failure to meet milestones

Failure on the part of the Contractor to meet each of the above milestones by the date specified shall result in the assessment of Liquidated Damages against the Contractor as provided in Section 108.10, Liquidated Damages, of the MDOT 2012 Standard Specifications for Construction.

Damages will be cumulative if multiple milestone dates are missed.

Liquidated Damages will continue to be assessed for each calendar day or portion of a day that this work remains incomplete even if these days extend beyond the normal seasonal shutdown date of **November 15, 2018**.

Assessment of Liquidated Damages and/or contract adjustments applies to hourly/daily restrictions included in the Maintaining Traffic Special Provision.

d. Work day, hour, and other work restrictions imposed by the City of Ann Arbor

The work hours described may be modified or changed by the Engineer due to Holidays, Special Events, or Traffic Volumes.

A. Contractors operations shall be limited by local municipality work time, noise, and dust ordinance unless approved by the local municipality and the Engineer in writing, as shown below:

- Monday – Saturday: 7a-8p
- Sunday: only with approval from the City of Ann Arbor
- No work may be done on holidays

B. No work or lane closures, unless approved by the Engineer, shall be performed during:

- Memorial Day (3:00 pm Friday May 24, 2019 – 7:00 am Tuesday, May 28, 2019)
- Fourth of July (3: 00 pm Wednesday July 3, 2019 - 7:00 am Friday July 5, 2019)
- Labor Day (3:00 pm Friday August 30, 2019 – 7:00 am Tuesday, September 3, 2019.

NOTICE TO BIDDERS

PROJECT COORDINATION

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The Contractor is hereby notified that there may be other construction projects, not associated with this project, scheduled for construction during the same timeframe as this project within the local vicinity.

The following is a listing of known road construction projects within the local vicinity that may have an impact on this project. Please note that this listing may not be complete and the Contractor shall verify any other projects within the local vicinity that may impact this project.

- Longshore, Indianola, Ottawa, Argo & Amherst Water Main Project will be under construction.
- Ann Arbor Street Resurfacing project will be ongoing.
- Miscellaneous private utility relocations, as described in the Utility Coordination Clause. Intermittent closures are anticipated.

The Contractor shall coordinate its work on this project with that by the Contractor on other projects, as directed by the Engineer. No additional compensation will be allowed for costs incurred by the Contractor due to coordinating with or delays caused by other projects.

CITY OF ANN ARBOR

NOTICE TO BIDDERS

UTILITY COORDINATION

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The contractor shall cooperate and coordinate construction activities with the owners of utilities as stated in Section 104.08 of the 2012 MDOT Standard Specifications for Construction. In addition, for the protection of underground utilities, the contractor shall follow the requirements in Section 107.12 of the 2012 MDOT Standard Specifications for Construction. Contractor delay claims, resulting from a utility, will be determined based upon Section 109.05.E of the 2012 MDOT Standard Specifications for Construction.

For protection of underground utilities and in conformance with Public Act 174, the contractor shall dial 800-482-7171 a minimum of three full working days, excluding Saturdays, Sundays, and holidays prior to beginning construction in areas where utilities have not been previously located. Members will thus be routinely notified. 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.

The following is a list of Private and Public Utilities that may or may not have facilities located within the Right-of-Way. This list is for informational purposes only and is not meant to be an exhaustive list of utilities located within the Right-of-Way.

Utilities will not be required by the City to move additional poles or structures in order to facilitate the operation of construction equipment unless it is determined by the Engineer that such poles or structures constitute a hazard to the public or are dangerous to the Contractor's operations.

Private utility relocations shall be relocated prior to construction.

DTE Energy – Gas
3150 E. Michigan Ave
Ypsilanti Township, MI 48198
Contact: Robert Czapiewski 734-544-7818

Comcast - Cable
25626 Telegraph Rd
Southfield, MI 48033
Contact: Chris Cyr 248-521-8868

ATT – Phone
550 South Maple Road
Ann Arbor, MI 48103
Contact: Andrew Johnson 734-996-2135

MCI – Fiber Optic
2800 North Glenfille Road
Richardson, TX 75082
Contact: Dean Boyers 972-729-6016

DTE Energy – Elec
8001 Haggerty Road
Belleville, MI 48111
Contact: Clay Combee 734-397-4112
Email: Combeec@DTEEnergy.com

City of Ann Arbor – Water & Sewer
301 E Huron Street
Ann Arbor, MI 48107
Contact: David Fiegel 734-994-1760
Email – DFiegel@a2gov.org

City of Ann Arbor – Signs & Signals
4251 Stone School Road
Ann Arbor, MI 48108
Contact: Chuck Fojtik 734-791-6361
Email - CFojtik@a2gov.org

DTE Energy – Street Lighting
8001 Haggerty Road
Bellville, MI 48111
Contact: Lance Alley 734-397-4188

Windstream- Fiber Optics
1295 S Linbden Road, Suite B
Flint, MI 48532
Contact: Greg Serich 810-244-3500

CITY OF ANN ARBOR
**SPECIAL PROVISION
FOR
MAINTAINING TRAFFIC**

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a. Description.

This work shall consist of all labor, materials, and equipment required to maintain traffic as specified on Stadium Blvd., Federal Blvd., Commerce Blvd, and Green Rd; including limited cross street access point work to provide a smooth transition to the roadways in the City of Ann Arbor, Washtenaw County, Michigan.

b. Materials

The materials and equipment shall meet the requirements specified in the sections designated of the MDOT 2012 Standard Specifications for Construction and all Special Provisions contained elsewhere in these Contract Documents.

c. General

1. Traffic shall be maintained in accordance with Sections 104.07.C, 104.11, 808, 811, 812, 920, and 922 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction and in accordance with the 2011 Michigan Manual on Uniform Traffic Control Devices (MMUTCD) as amended, except as herein provided. Work shall consist of all labor, materials, and equipment required for maintaining vehicular and pedestrian traffic in accordance with the special provisions for maintaining traffic for the Northside STEAM SRTS Sidewalk Gap Project.

The Contractor shall furnish, erect, maintain and, upon completion of the work, remove all traffic control devices and barricade lights within the project and around the perimeter of the project for the safety and protection of through, local and pedestrian traffic. This includes, but is not limited to, advance, regulatory, and warning signs; barricades and channeling devices at intersecting streets on which traffic is to be maintained; barricades at the ends of the project and at right-of-way lines of intersecting streets, and the moving of traffic control devices as many times as required for the multiple construction operations that may be performed.

2. The Contractor shall coordinate his operations with all Contractors performing work on this project or other projects within, or adjacent to, the Construction Influence Area (CIA) to avoid conflicts in maintaining traffic, construction signing, and progression of construction activities.

A. The Contractor's attention is called to the requirements of cooperation with others as covered in Section 104.08 of the MDOT 2012 Standard Specifications for

Construction. The Contractor is to coordinate his operations with all sub-Contractors and all other projects in the vicinity. No additional payment will be made to the Contractor for joint use of the traffic control items. All work activities are subject to local ordinances and restrictions.

- B. City of Ann Arbor Public Services Area maintenance crews and/or Contract Maintenance Agencies may perform maintenance work within, or adjacent to, the CIA. The City of Ann Arbor Public Services Area and/or Contract Maintenance Agencies will coordinate their operations with the Engineer to minimize interference to the Contractor.
3. No staging changes will be allowed without written approval from the Engineer. Work is to be completed in each stage (including pre-stages) prior to progressing to the next stage.
 4. Notify the Engineer a minimum of 72 hours prior to the implementation of any detours, ramp or lane closures and major traffic shifts. The Contractor will start work at the time agreed upon with the Engineer. Any delay in the start time may result in delaying the project, until another start date can be agreed upon with the Engineer. Any delay on a new start date will not be considered a reason for an extension of time.
 5. Notify emergency services, law enforcement, etc. prior to traffic pattern changes and or closures. Notification shall be given a minimum of 7 calendars days in advance.
 6. Provide 24-hour emergency contacts to the Engineer. During non-working periods the Contractor will have a maximum 4-hour response time for addressing issues within the work zone.
 7. Obtain permits (if necessary) from local governments prior to placing any traffic control devices on non-City of Ann Arbor streets. The Department will reimburse the Contractor according to Section 107.02.A of MDOT's 2012 Standard Specifications for Construction for permits and licenses required by this contract. Adhere to all requirements made by local maintaining agencies regarding placement of traffic control devices prior to closing lanes on roadways not under City of Ann Arbor jurisdiction.
 8. Contractor must maintain emergency vehicle access at all times. The Contractor must submit the plan to provide emergency vehicle access to the Engineer for review and approval.

d. Construction Influence Area (CIA)

The CIA shall include the right-of-way of the following roadways within the project limits:

1. Brookside Dr.
2. Pontiac Trail
3. Delafield Dr.
4. Traver st
5. Braton Dr.
6. Starwick Dr.
7. John A Woods
8. Pear St.

e. Traffic Restrictions.

1. Failure to comply with any restrictions in subsection e. Traffic Restrictions Items 2, 4, 5, and 7 will result in the assessment of liquidated damages per subsection 108.10.C.2 of the Standard Specifications for Construction.
2. No work will be performed or lane closures allowed on the first date listed starting at 3 p.m. for all Holidays. Work or lane closures may resume on the second date listed at 7 a.m., or as defined by the Engineer. The exact shutdown dates of each holiday period are listed in Table 1:

Table 1: Holiday Shutdown Dates

Memorial Day 2019 Shutdown	4 th of July 2019 Shutdown	Labor Day 2019 Shutdown
Fri. May 24, 2019 to Tues. May 28, 2019	Thurs. July 3, 2019 to Fri. July 5, 2019	Fri. Aug. 30, 2019 to Tues. Sept 3, 2019

3. Continuous access is to be provided to all properties on Brookside Dr., Starwick Dr., Barton dr., Traver St., and John A Woods except as shown on the Maintaining Traffic plans, unless temporary closure is approved by the property owner and the Engineer. Formal approval from the property owners to temporarily close a driveway will need to be provided to the Engineer before any closures are allowed. Notify property owners 7 days in advance of any full or partial driveway closures. Driveways may be closed for a maximum of 7 calendar days.
4. Access for emergency vehicles (fire, ambulance, police) must be maintained at all times.
5. Notify the Engineer at least 24 hours in advance of erection or removal of overlays on existing signs.

6. Work requiring lane closures or traffic stoppages will be suspended as determined by the Engineer any time traffic is being unduly delayed by the Contractor's construction activities.
7. Restrict access between traveled lanes and work areas to specific locations for construction vehicles. The number of access points and their locations requires the approval of the Engineer. Submit a Work Zone Traffic Control Plan (WZTCP) to the Engineer, at the pre-construction meeting, in accordance with section 104 of the Standard Specifications for Construction. The Engineer will have 7 calendar days to review the plan for approval or provide comments for plan revisions required to obtain approval. At a minimum, the WZTCP will include the proposed ingress/egress locations for construction equipment and vehicles, traffic control devices that will be utilized to warn the motoring public of ingress/egress locations, and measures that will be taken to ensure compliance with the plan. No work will begin prior to approval of the WZTCP. Additional time required to obtain an approved WZTCP will not be cause for delay or impact claims. All costs associated with obtaining an approved plan, providing and executing all parts of the approved plan including required traffic control devices, or resolving an incomplete or unacceptable plan will be borne by the Contractor.
8. Ensure undercuts or excavations immediately adjacent to active traffic lanes have a minimum 1 on 4 slopes from the edge of the roadway at the end of each workday, unless otherwise approved by the Engineer.
9. The location and duration of equipment and materials stored in the right-of-way, public or private property will be as approved by the Engineer.
10. Ensure sign covers are placed over existing regulatory, warning and construction signs that are not applicable during construction.
11. Changes or adjustments in the staging plans, temporary pavement markings, temporary signs and maintaining traffic typicals provided may be necessary to fit field conditions as determined by the Engineer.

f. Stage Construction.

The traffic control required by this Special Provision is based on the suggested temporary traffic control plan show on the plans. An alternate traffic control plan may be used by the Contractor, subject to review and approval by the Engineer. **Any proposed alternate plan will be submitted to the Engineer for review and approval at least 15 days prior to the possible implementation.**

g. Traffic Control Devices

1. General.

- A. Ensure all traffic control devices and their usage conforms to the MMUTCD, specifically part 6, which is available on the Traffic and Safety Support Area web site <https://mdotcf.state.mi.us/public/tands/plans.cfm>
- B. During non-working periods, any work site with uncompleted work will have advance signs (W20-1 – “Road Work Ahead”) and plastic drums, at specific locations, as directed by the Engineer, at no additional cost to the Department.
- C. Drive through the CIA at a minimum at the beginning and end of each work day to ensure all traffic control devices remain properly installed. Routine maintenance includes, but is not limited to, maintaining proper placement of devices, replacing damaged devices and cleaning devices.
- D. All traffic control devices used for Maintaining Traffic, which include but are not limited to temporary signs, channelizing devices, and Type III barricades, will be as shown on attached Special Detail WZD-125-E and meet the “Acceptable” criteria as defined in the most current version of the American Traffic Safety Services Association’s (ATSSA’s) publication entitled “Quality Guidelines for Temporary Traffic Control Devices and Features” at the time of initial deployment and after each major stage change. All traffic control devices (except arrow boards and PCMS’s) used on this project will be NCHRP 350 or MASH (Manual for Assessing Safety Hardware) compliant. Copies of this publication are available from ATSSA at 15 Riverside Parkway, Suite 100, Fredericksburg, VA 22406.
- A. All traffic control devices moved to facilitate the Contractor’s operation will be reset by the end of the work day.

2. Temporary Signs.

- A. Refer to the *Typical M0020a* for device spacing, taper/shift lengths, and buffer zones.
- B. Ensure advanced signing on Delafield Dr., Brookside Dr., Pontiac Trl., Barton Dr., Starwick Dr., Traver St., John A Woods, and Pear St. is as shown on the plans and on *Typical M0040a*. Omit the R5-18a “To Protect Highway Workers, Fines Doubled in Work Zones” sign as per *MDOT System Operations Advisory (SOA) 2015-00, dated November 2015*.
- C. Ensure that all diamond warning signs are 48 inch x 48 inch, unless otherwise noted.
- D. Ensure that all temporary signs are in place prior to the implementation of any lane closures, shoulder closures, or major traffic shifts.

- E. Ensure that all temporary signs are fabricated as per Section 922.02 of the 2012 Standard Specifications for Construction., with legends and symbols flush to the sign face and not extending beyond the signs and borders.
 - F. Ensure that temporary warning, regulatory, and guide signs on portable supports that are not required for that particular operation are removed. Temporary, regulatory, and guide signs on driven supports will be either removed or covered when no longer necessary. Sign covers used to cover temporary signs on driven supports will be paid for as "Sign Cover".
 - G. Ensure that no signs are attached to Type III Barricades. Signs used at Type III Barricades are to be mounted above and behind the barricade on their own support(s).
 - H. Place, as directed by the Engineer, W20-1 signs (Road Work Ahead) on all crossroads within the CIA where construction activities may be encountered.
 - I. Ensure ground driven sign supports for temporary signs are as shown on Special Detail WZD-100-A or are a NCHRP-350 compliant or MASH accepted design.
 - J. Ensure all temporary signs are mounted at a 7 foot minimum bottom height unless otherwise stated in the FHWA work zone acceptance letter for that particular sign system.
 - K. Ensure all temporary signs are faced with fluorescent prismatic retro-reflective sheeting and are free of wrinkles, tears, scuffs and sheeting failure.
 - L. Ensure all temporary signs that will be in place for more than 14 days are mounted on driven posts, unless otherwise approved by the Engineer.
3. Channelizing Devices.
- A. Required channelizing devices are *Plastic Drum, High Intensity, Furn and Oper* and *Channelizing Device, 42 inch, Furn and Oper* from MDOT's approved list. The maximum distance between channelizing devices is 25 feet in shifts and tapers and 50 feet in tangents, and 15 feet at driveways and other locations where closer spacing is deemed necessary, as directed by the Engineer.
 - B. Ensure that all channelizing devices on this project have sufficient ballast to prevent the channelizing device from moving or tipping. If moving or tipping occurs as the result of wind generated by traffic or occurring naturally, place additional ballast at no additional cost to the Department, as directed by the Engineer.
 - C. An additional quantity of channelizing devices are included in the MOT quantities to be used at the discretion of the Engineer. The use of these is not detailed on the plan sheets.

- D. Ensure that channelizing devices are stored off the traveled way when work operations have ceased for the day or are no longer needed.
- E. Place Type III barricades as shown on the staging plans and as directed by the Engineer. Ensure stripes on barricade rails are oriented as prescribed in the MMUTCD.

4. Temporary Pavement Markings.

- A. Place temporary pavement markings, of the appropriate type and color, as shown on the plans or typicals prior to opening the lane(s) to traffic.

Ensure temporary pavement markings consist of the following:

- *Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, White, Temp*
- *Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, Yellow, Temp*

- B. Temporary Pavement Markings, Type R will be placed on existing pavement areas that will remain after construction and on new pavement for traffic control at locations specified by the Engineer. Use Type R markings on tapers.
- C. When existing pavement markings are removed, temporary pavement markings will be placed before opening lanes to traffic.
- D. When Type R Pavement Markings are used, ensure that all Temporary Pavement Markings adhere to the pavement surface until permanent markings are installed. Any additional adhesives or other materials used will be included with these pay items.
- E. Maintain the definition and reflectivity of all temporary pavement markings for the duration the marking is required. Quantities have been included to be used as directed by the Engineer to maintain reflectivity and/or definition. Payment for quantities used to maintain reflectivity and/or definition will be paid for at the contract unit price for temporary pavement markings. No further compensation will be given for remobilization to apply additional quantities.
- F. Temporary pavement markings, which are improperly applied, or come loose will be replaced at the Contractor's expense, as directed by the Engineer.
- G. All Type R markings will be removed when placing permanent pavement markings.
- H. Sand or hydro blasting will be utilized when removing *Temporary, Type NR* markings and existing markings from concrete surfaces. Grinding on pavement to be left in place will not be allowed.
- I. All conflicting pavement markings will be removed or obliterated prior to opening a lane to traffic, and all surfaces will be marked with temporary pavement

markings or final markings prior to opening lanes to traffic. No over-painting or over-taping of existing markings with temporary markings will be allowed. The pavement marking removal shall not scar pavement that will not be replaced.

h. Measurement and Payment

The estimate of quantities for maintaining traffic is based on signing and related traffic control devices for shoulder closure, single lane closure, and the description in this special provision. Payment for these devices will be in accordance with the standard specifications unless otherwise specified.

1. Payment for temporary signs will be made on the maximum square foot of sign legends in use at any one time during the project.
2. Traffic control devices will be measured for the maximum number of units required by the Engineer at one time on the project.
3. Additional compensation will not be made for unused quantities of traffic control, signing and/or pavement marking items.
4. Sign covers required to cover entire non-applicable permanent existing signs or temporary construction signs mounted on driven posts shall be per Section 812 of the 2012 Standard Specifications for Construction and paid for as *Sign Cover*. The unit price bid for *Sign Cover* includes payment for furnishing, installing, removing, and relocating the covers on permanent existing signs or on temporary construction signs mounted on driven posts as many times as is required by the Engineer during the life of the construct.
5. Any additional quantities for traffic control devices not included in the estimate and utilized for the Contractor's convenience must be provided at the expense of the Contractor.

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
AUDIO-VISUAL RECORDING

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a. Description.- This work shall include providing a recording of the physical, structural, and aesthetic conditions of the construction site and adjacent areas as provided herein.

The Audio-Visual recording shall be:

1. Of professional quality, providing a clear and accurate Audio and Visual record of existing conditions.
2. Prepared prior to the preconstruction meeting.
3. Furnished to the Engineer a minimum of two (2) days prior to bringing any materials or equipment within the areas described in this special provision.
4. Furnished to the Engineer either at, or prior to, the preconstruction meeting.
5. Carried-out under the supervision of the Engineer.

The Contractor shall furnish two (2) copies of the completed recording to the Engineer at, or prior to, the preconstruction meeting. An index of the recording, which will enable any area of the project to be easily found on the recording, shall be included. The Contractor shall retain a third copy of the recording for his/her own use.

Any portion of the recording determined by the Engineer to be unacceptable for the documentation of existing conditions shall be recorded again, at the Contractor's sole expense, and submitted to the Engineer prior to mobilizing onto the site.

b. Production.- The Audio-Visual recording shall be completed in accordance with the following minimum requirements:

1. DVD Format / No Editing.- The Audio-Visual recording shall be performed using equipment that allows Audio and Visual information to be recorded simultaneously and in color. The recording shall be provided on compact discs in DVD format. The quality of the recording shall be equal to or better than the standard in the industry. The recording shall not be edited.
2. Perspective / Speed / Pan / Zoom.- To ensure proper perspective, the distance from the ground to the camera lens shall not be less than 12 feet and the recording must proceed in the general direction of travel at a speed not to exceed 5 miles per hour. Pan and zoom rates shall be controlled sufficiently so that playback will ensure quality of the object viewed.

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3. Display.- The recording equipment shall have transparent time, date stamp and digital annotation capabilities. The final copies of the recording shall continuously and simultaneously display the time (hours:minutes:seconds) and the date (month/date/year) in the upper left-hand corner of the frame. Accurate project stationing shall be included in the lower half of the frame in standard station format (i.e. 1+00). Below the stationing periodic information is to be shown, including project name, name of area shown, direction of travel, viewing direction, etc.

On streets or in areas where there is no project stationing, assumed stationing shall be used, starting with 0+00 and progressing from west to east or from south to north.

4. Audio Commentary / Visual Features. Locations relative to project limits and landmarks must be identified by both audio and video means at intervals no longer than 100 feet along the recording route. Additional audio commentary shall be provided as necessary during the recording to describe streets, buildings, landmarks, and other details, which will enhance the record of existing conditions.
5. Visibility / Ground Cover.- The recording shall be performed during a time of good visibility. The recording shall not be performed during periods of precipitation or when snow, leaves, or other natural debris obstruct the area being recorded.

c. Coverage.- The Audio-Visual recording coverage shall include the following:

1. General Criteria.- This general criteria shall apply to all recording and shall include all areas where construction activities will take place or where construction vehicles or equipment will be operated or parked and/or where materials will be stored or through which they will be transported. The recording shall extend an additional 50 feet outside of all areas. The recording shall include all significant, existing man-made and natural features such as driveways, sidewalks, utility covers, utility markers, utility poles, other utility features, traffic signal structures and features, public signs, private signs, fences, landscaping, trees, shrubs, other vegetation, and other similar or significant features.
2. Private Property.- Record all private property that may be utilized by the Contractor in conjunction with this project. These project areas must be disclosed by the Contractor prior to using them for the work of this project.
3. Road Construction Area.- The recording coverage shall:
 - a. Extend to 50 feet outside of the right-of-way and easements area as shown on the plans.

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- b. Extend 50 feet outside the construction limits on all streets, including side streets.

Both sides of each street shall be recorded separately.

- 4. Detour Route / Maintenance of Traffic Areas. The entire detour route and maintenance of traffic areas shall be recorded as indicated in this special provision except as follows:
 - a. The recording must proceed in the general direction of travel at a speed not exceeding 25 miles per hour.
 - b. The coverage area shall include the street and not go beyond the curb except in areas where there is a fair possibility that the detoured traffic will drive over the curb, such as at intersections.
 - c. The recording shall focus in particular at sidewalk ramps and other features likely to have been damaged or likely to be damaged as a result of existing traffic, temporary detoured traffic and or construction traffic. In these areas, recording may need to proceed much more slowly.

Only the side of street with the detoured traffic must be recorded. However, the Contractor is advised that portions of the detour routes may operate in opposite directions at different times. In these cases, both sides of the street shall be recorded separately.

- 5. Private Property bordering the project limits or work areas. Record all areas bordering the project where work is scheduled to occur or where construction traffic could damage the private property. This is to including buildings, driveways, decks, landscaping, trees, and all other similar features.
- 6. Other Areas. The Contractor shall record at his sole expense other areas where, in his/her opinion, the establishment of a record of existing conditions is warranted. The Contractor shall notify the Engineer in writing of such areas.

The Engineer may direct the recording of other minor areas not specified herein at the Contractor's sole expense.

d. Audio-Visual Recording Services.- The following companies are known to be capable of providing the recording services required by this special provision and shall be utilized, unless the Contractor receives prior written approval from the Engineer to utilize another company of comparable or superior qualifications.

Construction Video Media
Midwest Company

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Topo Video, Inc.
Video Media Corp.
Paradigm 2000, Inc.
Finishing Touch Photo and Video

e. Measurement and Payment.- The completed work shall be paid for at the contract unit price for the following contract item (pay item):

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
Audio-Visual Recording	Lump Sum

Audio-Visual Recording shall include all labor, equipment, and materials required to perform the recording and to provide the finished recording the Engineer.

Payment will be made for Audio-Visual Recording following the review and acceptance of the recording by the Engineer. Within 21 days following the receipt of the recording, the Engineer will either accept it and authorize payment or require that any discrepancies in the recording be addressed prior to making payment.

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
PROJECT SUPERVISION

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a. Description.- The Contractor shall provide supervision in accordance with Subsection 104.07 of the Michigan Department of Transportation 2012 Standard Specifications for Construction, the City of Ann Arbor Public Services Area Standard Specifications, and as described herein.

The Contractor shall designate a full-time Project Supervisor to act as the Contractor's agent/representative, and to be responsible for scheduling and coordination of all subcontractors, suppliers, other governmental agencies, and all public and private utility companies.

The Project Supervisor shall not be an active crew member of the Contractor, shall not be an active member or employee of any subcontractor's work force, and shall not perform general or specialized labor tasks. The Project Supervisor shall be a full-time employee of the General Contractor and shall have all needed authority to make binding decisions on behalf of the Contractor in all matters pertaining to performance and execution of the work of the project.

The Project Supervisor shall work exclusively on this project, and shall put forth his/her full effort into the organization and coordination of the work of this project.

One week prior to the pre-construction meeting, the Contractor shall designate a proposed Project Supervisor by name, and shall furnish the Engineer with a current, thorough, detailed summary of the proposed Project Supervisor's work history, outlining all previous supervisory experience on projects of a similar size and nature. The detailed work history shall include personal and professional references (names and phone numbers) of persons (previous owners or agents) who can attest to the qualifications and work history of the proposed Project Supervisor. Proposed candidates for Project Supervisor shall have a demonstrated ability to work harmoniously with the Engineer, the City, the public, subcontractors, and all other parties typically involved with work of this nature. The Engineer will have the authority to reject a proposed Project Supervisor whom he/she considers unqualified.

The Project Supervisor shall be available 24 hours-per-day to provide proper supervision, coordination and scheduling of the project for the duration of the Contract. The Contractor shall furnish the City with telephone numbers of the Project Supervisor in order to provide 24 hour-per-day access during business and non-business hours, including weekends and holidays.

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
PROJECT SUPERVISION

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The Project Supervisor shall be equipped by the Contractor with a “smart” mobile telephone with “data” and “text” capabilities to provide the City with 24 hour-per-day access to him/her during daily construction activities, during transit to and from the construction site, and during all non-business hours including weekends and holidays.

The Project Supervisor shall be equipped with assistants as necessary to provide project supervision as specified herein, and in accordance with the Contract.

b. Duties and Responsibilities.- The Project Supervisor shall work harmoniously with the Engineer, the City, the public, subcontractors, and all other parties typically involved with work of this nature.

The Project Supervisor shall have a thorough, detailed understanding and working knowledge of all construction practices and methods specified elsewhere herein, as well as the handling, placement, testing and inspection of aggregates, aggregate products, bituminous concrete, portland cement concrete materials, and other such materials and products related to the work of this project.

The Project Supervisor shall be responsible for all of the work of all of the Contractor's, subcontractors' and suppliers' work forces.

The Project Supervisor shall be responsible for proper and adequate maintenance (emissions, safety, and general operation) of all of the Contractor's, subcontractors' and suppliers' equipment and vehicles. The Project Supervisor shall make all needed diligent and good-faith efforts to ensure that all equipment utilized in the performance of the work is properly maintained, safe, and complies with all legal and environmental requirements of the work as set forth in Section 107.15 of the 2012 MDOT Standard Specifications.

The Project Supervisor shall be responsible for the legal, proper and safe parking/storage of all of the Contractor's, subcontractors' and suppliers' equipment, work vehicles, and employee's vehicles.

The Project Supervisor shall schedule and coordinate the work of all parties involved in the project, including utility companies, testing agencies, governmental agencies, all City departments (such as Utilities and Transportation), and City inspectors.

The Project Supervisor shall coordinate and schedule the work of any independent survey crews that may be retained by the Engineer or City to witness and reset existing and new geographic/benchmark monuments. Failure to have existing monuments

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
PROJECT SUPERVISION

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witnessed and reset may result in delays to the Contractor's work. Costs for such delays will be the Contractor's sole responsibility. The Project Supervisor shall also schedule and complete all needed survey request forms that are needed in order to schedule the services of survey personnel to properly layout all elements of the project work in accordance with the City of Ann Arbor Public Services Area Standard Specifications and the Michigan Department of Transportation 2012 Standard Specifications for Construction.

The Project Supervisor shall coordinate and schedule inspection performed by the City and Consultants (including material testing firms) in a timely manner, to assure proper and timely testing and inspection of the work.

The Project Supervisor shall submit to the Engineer, an updated, detailed schedule of the proposed work on a weekly basis, and an update of all proposed changes on a daily basis.

The Project Supervisor and all subcontractors shall attend a weekly progress meeting chaired by the Engineer to discuss the work. Upon the completion of each meeting, the Engineer shall prepare and distribute, to all present, a written summary of the meeting's minutes. Those in attendance shall review the minutes and, if necessary, comment on any deficiencies or errors prior to or at the next scheduled progress meeting.

c. Additional Performance Requirements.- If, in the sole opinion of the Engineer, the Project Supervisor is not adequately performing the duties as outlined in this Special Provision, the following system of notices will be given to the contractor with the associated penalties:

First Notice – A warning will be issued in writing to the Contractor detailing the deficiencies in the Project Supervision. The Contractor must respond within 7 calendar days in writing with a plan to correct the stated deficiencies. Failure to respond within 7 calendar days will result in the issuing of a second notice.

Second Notice – A second warning will be issued in writing to the contractor further detailing the deficiencies in the Project Supervision. 10%, or \$10,000, whichever is greater, will be withheld from the original

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
PROJECT SUPERVISION

AA:MGN

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12/17/15

Project Supervision contract amount for the second notice. The Contractor must respond within 7 calendar days in writing with a plan to correct the stated deficiencies. Failure to respond within 7 calendar days will result in the issuing of a third notice. At this time, the Engineer reserves the right to meet with personnel with the necessary authority within the Contractor's organization to discuss the deficiencies in the Project Supervision.

Third Notice – A third notice will be issued in writing to the Contractor further detailing the deficiencies in the Project Supervision. An additional 25%, or \$25,000, whichever is greater, will be withheld from the original Project Supervision contract amount for the third notice, and the Project Supervisor shall be removed from the project, and replaced immediately with another individual to be approved by the Engineer.

Should, in the sole opinion of the Engineer, the Project Supervisor fail to perform his/her duties and responsibilities as described herein to such a degree that the successful completion of the project is put in jeopardy, the above system of notices may be foregone, and the Contractor shall immediately replace the Project Supervisor upon receipt of written notice. Failure to provide adequate project supervision, as determined by the Engineer, shall be considered basis for the Engineer to suspend work without extension of contract time or additional compensation.

If the original Project Supervision contract amount is insufficient to cover said withholdings, the Project Supervision contract amount will be reduced to zero and a contract modification will be written to assess a penalty to cover the difference between the Project Supervision contract amount and the total amount of the withholding(s). It is fully expected however that the Project Supervision contract amount will be sufficient to cover any withholdings.

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SPECIAL PROVISION
FOR
PROJECT SUPERVISION

AA:MGN

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d. Measurement and Payment.- The completed work as measured for this item of work will be paid for at the Contract Unit Price for the following Contract (Pay) Item:

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
Project Supervision	Lump Sum

The unit price for this item of work shall include all labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Special Provision.

Payment for this work will be made with each progress payment, on a pro rata basis, based on the percentage of construction completed. When all of the work of this Contract has been completed, the measurement of this item shall be 1.0 times the Lump Sum bid amount, minus any withholdings incurred for inadequate performance as described herein. This amount will not be increased for any reason, including extensions of time, extras, adjustments and/or additional work.

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
TRIMMING TREES

AA:JKA

1 of 2

10/03/18

a. Description. This work consists of providing all labor, equipment and materials necessary to cut, remove, and dispose of tree branches and canopy overhanging the proposed sidewalk up to ten feet in height as shown on the plans and as directed by the Engineer. All work must be in accordance with sections 201 and 202 of the 2012 Standard Specifications for Construction

b. Materials. Provide all necessary materials required to perform described work.

c. Construction. The work must be conducted in accordance with subsection 201.03 of the 2012 Standard Specifications for Construction. Trimming should be performed without endangering traffic and the general public, injuring other trees, and damaging structures or property.

The Engineer will establish environmental limits. All trees, shrubs, plants, grasses, and other vegetative materials shall remain, except as designated by the Engineer. Vegetation that is not designated for removal by the Engineer shall be protected. Repair or replace trees or shrubs damaged by Contractor operations at no additional cost to the Department.

Prior to beginning construction, trimming and pruning of encroaching vegetation (as determined by the Engineer) shall be completed.

Once all directed trimming and pruning is completed and accepted, no additional clearing, trimming, cutting, or pruning will be allowed unless approved, in writing, by the Engineer.

This work shall be done by a Contractor or subcontractor who is a qualified tree surgeon and a member of the National Arborist Association. The firm's or individual's name and qualifications shall be submitted at the preconstruction meeting for the Engineer's approval. A list of references and other clients shall be included with the qualifications statement. A written description of work methods and time schedules shall be submitted and approved in writing by the Engineer prior to work commencing.

Strict limits of disturbance will be defined and shall be adhered to.

Branches on trees or shrubs shall be removed as directed by the Engineer. All trimming shall be done by skilled workmen. All work shall be done according to the following requirements:

(1) Pruning shall be done with proper, sharp, clean tools in such a manner as to preserve the natural character of the tree.

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
TRIMMING TREES

AA:JKA

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10/03/18

(2) All final cuts shall leave no projections on or off the branch and shall not be cut so close as to eliminate the branch collar.

(3) To avoid bark stripping, all branches 2 inches in diameter and larger shall be cut using the 3 cut method. These branches shall be lowered to the ground by proper ropes.

(4) Tools used on trees known or found to be diseased, shall be disinfected with alcohol before they are used on other trees.

(5) Structural weaknesses, decayed trunk or branches, or split crotches shall be reported to the Engineer.

(6) Climbing spikes shall not be used on trees.

All trimmed brush, branches, limbs, and foliage shall become the property of the Contractor and shall be immediately removed and properly disposed of off-site.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the respective contract unit prices for the following respective pay items:

Pay Item	Pay Unit
Trimming Tree	Each

Trimming Tree will be measured in place by the unit Each and paid for at the contract unit price per Each, which price shall be payment in full for all labor, equipment and materials necessary to accomplish this work.

Chipping, stockpiling mulch, and hauling and stockpiling limbs will not be paid for separately but shall be included in the work.

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
REMOVING CONCRETE ITEMS

AA:JKA

1 of 2

10/13/17

a. Description.- This work shall consist of removing concrete curb, gutter, curb and gutter, integral curb, sidewalk, sidewalk ramps, pavement, drive openings, and drive approach pavements as shown on the plans, in accordance with section 204 2012 MDOT Standard Specifications for Construction, except as specified herein, and as directed by the Engineer.

b. Materials.

c. Construction.- Construction methods shall be as described in section 204 of the MDOT 2012 Standard Specifications for Construction, as described below, and as directed by the Engineer.

Pavement removed will include concrete, asphalt, and composite pavement.

Prior to the start of work, the Engineer and Contractor together shall identify and field measure all items to be removed. The Engineer shall approve of all removal limits prior to any removals being performed by the Contractor.

The Contractor shall perform full-depth saw cutting at removal limits, including those necessary to construct 2-foot wide MDOT Type M drive openings, as shown on the Plans, as directed by the Engineer, and as marked for removal.

The Contractor shall cut steel reinforcement bars as directed by the Engineer at all areas of removal.

All saw cutting shall be performed under wet conditions to prevent excessive airborne dust. All resulting slurry and debris shall be cleaned up to the satisfaction of the Engineer.

The Contractor shall coordinate with the City Forester prior to the removal of any tree roots.

Excavated/removal areas shall be adequately protected with barricades and/or fencing at all times.

Removed or excavated materials which are not incorporated into the work shall become the property of the Contractor and shall be immediately removed and properly disposed of off-site. Removed or excavated materials may not be stockpiled overnight on, or adjacent to, the site.

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
REMOVING CONCRETE ITEMS

AA:JKA

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10/13/17

Base, subbase, or subgrade materials removed without authorization by the Engineer shall be replaced and compacted by the Contractor at the Contractor's expense, with materials specified by the Engineer.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the respective contract unit prices for the following respective pay items:

Pay Item	Pay Unit
Driveway Approach, Rem, Modified	Square Foot
Curb and Gutter, Rem, Modified.....	Foot
Curb, Rem, Modified.....	Foot
Sidewalk, Rem, Modified	Square Foot

Basis of payment shall be as described in subsection 205.04 of the Standard Specifications for Construction.

All sawcutting required for removals shall be included in the appropriate item of work, and will not be paid for separately.

Payment will be based on the area of pavement removed, regardless of thickness, or if it is composite.

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
SIDEWALK GRADING

CON:FTCH:AA:JKA

1 of 2

11/13/17

a. Description. Remove miscellaneous structures and materials and complete all earthwork required to construct the proposed cross sections within the limits shown on the plans or stated in this special provision. All lines and grades will be as shown on the plans and as directed by the Engineer. Complete this work according to the MDOT 2012 Standard Specifications for Construction and this special provision.

b. Materials. Furnish and place required subbase and embankment material conforming to the MDOT 2012 Standard Specifications for Construction as necessary to achieve the required typical cross sections. Excavated material, if suitable, may be used as embankment material as approved by the Engineer.

c. Construction. Complete this work according to applicable sections of the Standard Specifications for Construction. Sidewalk Grading includes, but is not limited to, the following work:

1. Strip and stockpile topsoil for use in turf establishment.
2. Furnish, place and compact additional material.
3. Clearing, including trees and stumps less than 6 inches in diameter.
4. Remove rocks or boulders less than 0.5 cubic yards in volume.
5. Remove and relocate mailbox posts and mailboxes.
6. Sawcut existing pavement.
7. Match drive and approach grades to new pavement grades.
8. Remove miscellaneous structures and materials.
9. Dispose of excess and unsuitable material according to Section 205.
10. Place embankment and reshape to proposed grades.
11. Excavate material to a depth necessary for construction.
12. Place embankment to a thickness necessary for construction.
13. Excavate for subbase material.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Sidewalk Grading	Station
Sidewalk Ramp Grading	Each

Sidewalk Grading includes all labor, equipment and materials necessary to complete the work as described and will be measured by length in stations along the road centerline.

Sidewalk Ramp Grading will apply separately to each quadrant of an intersection where sidewalk is to be removed and/or graded for construction. The limits are specified on the plans or as directed by the Engineer.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
FLOWABLE FILL

C&T:JFS

1 of 2

C&T:APPR:JAB:DBP:08-19-11

a. Description. This work consists of developing a mix design, producing a trial batch and placing flowable fill as indicated on the plans or as directed by the Engineer. All requirements for flowable fill and related work will be according to the standard specifications and this special provision. This specification is not intended to address non-structural flowable fill used for abandoning pipes and miscellaneous structures or other non-structural applications.

b. Materials. Provide flowable fill consisting of a mixture of Portland cement, granular material or fine aggregate, fly ash and water. The optional addition of ground granulated blast furnace slag, air entraining admixture and performance enhancing admixture is allowed.

Use either Type I or IA Portland cement conforming to section 901 of the Standard Specifications for Construction and Class F or C fly ash as specified by ASTM C 618 except that there is no limit on loss on ignition.

Use granular material Class II conforming to section 902 of the Standard Specifications for Construction except that 100 percent must pass the 1/2 inch sieve. Use 2NS material for the fine aggregate.

If a performance enhancing admixture is used it must be included in the mix design and trial batch, and must be used according to the manufacturer's recommendation.

c. Mix Design. Submit mix design documentation to the Engineer for review a minimum of 7 days prior to placement. The mix design must include source and type or class of materials and batch proportions.

d. Strength Requirements. The compressive strength of the flowable fill must be a minimum of 50 psi at 3 days, and 75 to 150 psi at 28 days. If an air entraining admixture or performance enhancing admixture is used, the air content of the flowable fill must not exceed 35 percent by volume.

e. Trial Batch. Produce a trial batch using the approved mix design and test to verify that the mixture is capable of obtaining the required compressive strength. Mold and cure four 6 by 12 inch cylinders. Test two cylinders at 3 days and test two cylinders at 28 days. Determine air content of the trial batch if an air entraining admixture or performance enhancing admixture is used. Submit all trial batch test results to the Engineer.

f. Construction. Provide for 24 hours from start to start of each flowable fill placement. Produce and deliver the flowable fill at a minimum temperature of 50 degrees F. Do not place flowable fill if ambient air temperature of 35 degrees F or less is anticipated in the 24 hour period following proposed placement.

Use batching equipment equipped to measure the quantities of each component material. Provide sufficient mixing to ensure uniform consistency of the mixture. Do not add water to the flowable fill mixture after batching. Maintain water content to achieve specified compressive strengths and a uniform, self-leveling mixture.

Secure all pipes and conduits within the backfill area to counteract the buoyant effect of flowable fill. Tightly seal pipes, manholes and other areas not intended to be filled. Place the material evenly around manholes and in utility trenches to avoid dislocating pipes and conduits.

For each day of production, mold two 6 by 12 inch cylinders and store at the job site for the first 24 hours. Store cylinders in a shaded area or keep covered. The Department will transport the cylinders to the laboratory designated by the Engineer. Testing for 28-day compressive strength will be according to ASTM C 39, except specimens will be air cured in their molds until they are to be tested.

e. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Flowable Fill	Cubic Yard

Flowable Fill includes all producing and placing the trial batch, preliminary testing, furnishing the mix design, and all materials, equipment and labor necessary to complete the work as described.

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
SOIL EROSION CONTROL INLET FILTER

AA:MGN

1 of 1

02/06/14

a. Description.- This work consists of installing and maintaining inlet filters in accordance with Section 208 of the 2012 Michigan Department of Transportation Standard Specifications for Construction and as shown on the plans. Filters shall be installed in existing and proposed inlets in order to minimize the erosion of soil and the sedimentation of water courses. The related work includes the installation, maintenance and removal of the filter cloth, cleaning as required during the performance of the project work, removing and disposing of accumulated sediment, and replacement of filters if required by the Engineer so as to provide a properly working inlet filter and a well-drained site.

b. Materials.- The inlet filters shall be in accordance with the REGULAR FLOW SILTSACK® manufactured by ACF Environmental (800) 448-3636; FLEXSTORM® Style FX manufactured by Advanced Drainage Systems, Inc. (800) 821-6710; CATCH-ALL® manufactured by Price & Company (866) 960-4300, or Engineer approved equal.

The Contractor shall submit product data sheets and a sample of the filter material for inlet filters for Engineer approval prior to ordering materials.

c. Methods of Construction.- The Contractor shall install, maintain, clean, and re-install and/or replace inlet filters in accordance with the manufacturer's specifications and as directed by the Engineer. The Contractor shall dispose of debris off-site.

d. Measurement and Payment.- The completed work of Soil Erosion Control Inlet Filter will be paid for at the contract unit price for the following contract items (pay items):

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
Erosion Control, Inlet Filter	Each

"Erosion Control, Inlet Filter" will be measured by the unit installed and will be paid for at the contract unit price per each, for which price shall be payment in full for all labor, equipment, and materials needed to furnish, install, maintain, clean and remove the inlet filter, and re-install and/or replace the inlet filter as needed.

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
SUBBASE AND AGGREGATE BASE

AA:MGN

1 of 2

11/17/15

a. Description.- This work shall consist of constructing subbase and/or aggregate base courses, on either a prepared subgrade or subbase as indicated on the Plans or where directed by the Engineer. This work shall be performed in accordance with Sections 301, 302, and 307 of the 2012 MDOT Standard Specification for Construction except as specified herein.

b. Materials.- The material used for this work shall meet the requirements of Sections 301, 302, 307, and 902 of MDOT 2012 Standard Specification for Construction, except that the aggregate base shall be either 21-AA limestone (permanent applications) or 22-A (temporary pavement applications) with a maximum loss by washing of 8% and the subbase shall be either 2NS Sand or Class II Granular Material as shown on the plans. "Approach, CI II, 6A, CIP" shall use 6A course aggregate as specified in the MDOT 2012 Standard Specifications for Construction.

c. Construction Method.- Subbase, aggregate base courses, and approaches 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 they be placed on a frozen subbase or subgrade.

The subbase and subgrade shall be shaped to the crown and grade specified on the plans and maintained in a smooth condition. The top of the subbase shall be placed to within ½ inch below and ½ inch above plan grade. The top of the aggregate base shall be placed to within ½ inch below and ¼ inch above plan grade. Variations within this tolerance shall be gradual. If in the opinion of the Engineer, the Contractor's equipment is causing or will cause any ruts in or damage to the subbase or subgrade, the equipment shall not be permitted on the subbase or subgrade.

Should the subgrade, subbase or aggregate base become damaged due to the Contractor's equipment or by local traffic, the subgrade, subbase, or aggregate base course shall be restored to the condition required by the Specifications without additional compensation to the Contractor.

No pavement course, concrete curb and gutter, or concrete driveway opening shall be placed until the subbase has been compacted to not less than 95 percent, and aggregate base course to not less than 98 percent of their respective maximum dry densities and until a "Permit to Place" has been issued by the Engineer.

Base course aggregate shall be handled and/or stockpiled on-site in a manner that minimizes segregation. Base course aggregate shall be deposited from trucks or through a spreader in a manner that will minimize segregation of material and that is approved by the

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
SUBBASE AND AGGREGATE BASE

AA:MGN

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11/17/15

Engineer. The re-handling of base course aggregate by the Contractor will not be considered sufficient cause to allow the material to become segregated. The Contractor may be required to wet the materials prior to and/or during placement to minimize segregation and to aid in compaction of the material should it be necessary.

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

The Contractor may be charged for the cleaning by others of accumulated construction debris in the utility structures, and damages resulting from the uncleaned structures.

Approach, CI II, 6A, CIP shall be constructed as shown on the plans in accordance with Section 307 of the MDOT 2012 Standard Specification for Construction, except as noted, herein.

d. Measurement and Payment.- The completed work as measured will be paid for at the contract unit prices for the following contract items (pay items):

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
Subbase, CIP, 2NS, Modified	Cubic Yard
Subbase, CIP, Class II Granular Material, Modified	Cubic Yard
Aggregate Base, ___ inch, 21-AA, Modified.....	Square Yard
Aggregate Base, ___ inch, 22-A, Modified	Square Yard
Approach, CI II, 6A, CIP	Cubic Yard

“Subbase, CIP, ___, Modified”, “Subbase, CIP, Class II Granular Material, Modified”, and “Approach, CI II, 6A, CIP” will be measured by volume in cubic yards. “Aggregate Base, ___ inch, 21-AA, Modified” and “Aggregate Base, ___ inch, 22-A, Modified” will be measured by area in square yards. The items of work will be paid for at the contract unit prices, which shall be payment in full for all labor, material and equipment needed to accomplish this work.

The subbase and approach will be calculated using the nominal width and depth of the subbase and approach indicated on the plans. The aggregate base will be calculated using the nominal width of the aggregate base indicated on the plans.

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
ACCEPTANCE OF HMA MIXTURES, CITY OF ANN ARBOR

AA:MGN
FHWA: 05/06/16

1 of 10

05/05/16

a. Description.- This special provision establishes sampling and testing acceptance criteria for HMA Mixtures placed on City of Ann Arbor projects. The HMA mixtures shall meet all the requirements of Section 501 of the MDOT 2012 Standard Specifications for Construction, except as modified herein.

b. Contractor Quality Control.- The Contractor must have a quality control plan as required by Section 501.03.M and as stipulated herein. The Quality Control (QC) Plan shall be submitted to the Engineer within 30 days of contract award or 14 days before the placement of any HMA materials, whichever date comes first. The QC Plan shall cover all aspects of HMA production, transportation, placement, and compaction. The Contractor shall have a QC representative on-site at all times during the paving operations to monitor and direct all paving-related operations. The placement of HMA shall not commence until such time as the QC Plan has been accepted by the Engineer. The Engineer's acceptance of the QC Plan shall not be construed as a basis of acceptance of any HMA materials, HMA placement results, or a waiver of any requirement(s) of the project specifications.

c. Materials.- Aggregates, mineral filler (if required), and asphalt binder shall be combined as necessary to produce a mixture proportioned within the specification requirements including aggregate gradation; the mix design criteria including volumetric properties; the Superpave Gyratory (SGC) compaction criteria; and the uniformity tolerances listed in Table 1. Topsoil, clay, or loam shall not be added to aggregates which are to be used in plant mixed HMA mixtures.

d. Mix Designs.- The Contractor shall submit mix designs for evaluation in accordance with the Michigan Department of Transportation Hot Mix Asphalt Production Manual. All mix designs shall be submitted for review a minimum of 3 weeks prior to the anticipated placement of the HMA. Do not begin production and placement of the HMA until receipt of the Engineer's approval of the JMF. The Contractor's production and paving schedules shall be considered to include the mix design review and approval process. Delays associated with the submittal, or re-submittal, of the required information shall not be a basis for an extension of contract time.

e. Construction.- Target air voids shall be 3.5% in leveling courses, top courses and shoulders paved in the same operation as the leveling and top courses. Target air voids shall be 3% in base courses and shoulders not paved in the same operation as the leveling and top courses. Pedestrian paths shall have a target air void content of 3%.

After the job-mix-formula (JMF) is established, the parameters identified in Table 1 shall be maintained within the Range 1 tolerance limits of Table 1. However, if deviations

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
ACCEPTANCE OF HMA MIXTURES, CITY OF ANN ARBOR

AA:MGN
FHWA: 05/06/16

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are predominately either below, or above, the JMF, the Engineer may order alterations in the plant to bring the mixture into better conformance with the JMF.

The mixture will be considered out-of-specification, as determined by the acceptance tests, if for any one mixture, two consecutive tests per parameter (for Parameter 6, two consecutive aggregate gradations on one sieve) are outside Range 1 or Range 2 tolerance limits. If a parameter is outside of Range 1 tolerance limits and the second consecutive test shows that the parameter is outside of Range 2, then it will be considered to be a Range 1 out-of-specification. Consecutive refers to the production order and not necessarily the testing order. Out-of-specification mixtures are subject to rejection per Section f. Rejected Mixtures or a price adjustment per Section g. Price Adjustments of this special provision as determined by the Engineer.

Contractor paving operations will be suspended when the mixture is determined to be out-of-specification. Contract time will continue during periods when paving operations are suspended or when dispute resolution testing and investigations are occurring. The Engineer may issue a Notice of Non-Compliance with Contract Requirements (Form 1165), if the Contractor has not suspended operations and taken corrective action. The Contractor shall submit a revised JMF or proposed alterations to the plant and/or materials to achieve the JMF to the Engineer. Effects on the Aggregate Wear Index (AWI) and mix design properties shall be taken into consideration. Production and placement of HMA material shall not resume until receipt of the Engineer's approval to proceed.

For production/mainline-type paving, obtain the minimum number of samples as shown in Table 2, each being 20,000 grams, each day of production, for each mix type. The Engineer will sample the HMA and maintain possession of each sample. Sampling from the paver hopper is prohibited. Each sample will be divided into two 10,000 gram halves with one half being used for initial testing and the other half being held for possible dispute resolution testing. Obtain a minimum of three samples for each mix type regardless of the number of days of production.

Ensure all persons performing Quality Control (QC) and Quality Assurance (QA) HMA field sampling are "Local Agency HMA Sampling Qualified" samplers. The Engineer shall obtain the QA samples from the hauling units in accordance with *MTM 313 (Sampling HMA Paving Mixtures.)* The samples shall be representative of the day's paving. Sample collection shall be spaced throughout the planned tonnage as directed by the Engineer. At a minimum, one sample will be obtained in the first half of the planned tonnage and, as a minimum, the second sample will be obtained in the second half of the tonnage. If planned paving is reduced or suspended, when paving resumes, the remaining sampling must be representative of the original intended sampling timing.

CITY OF ANN ARBOR
SPECIAL PROVISION
FOR
ACCEPTANCE OF HMA MIXTURES, CITY OF ANN ARBOR

AA:MGN
FHWA: 05/06/16

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Samples shall be taken from separate loads as directed by the Engineer.

Ensure all persons performing testing are Bit Level One certified or Bit QA/QC Technician certified. Acceptance testing will be performed by the Engineer using the testing method selected by the Engineer. Quality control measures to ensure job control are the sole responsibility of the Contractor.

The test method for measuring asphalt content (AC) shall be *MTM 325 (Quantitative Extraction of Bitumen from HMA Paving Mixtures)*. Back calculations to determine AC content will not be allowed.

All labs performing local agency acceptance testing shall be qualified labs as defined in the *HMA Production Manual* and participate in the MDOT round robin process, or they must be *AASHTO Materials Reference Laboratory (AMRL)* accredited for *AASHTO T 30* or *T 27*, and *AASHTO T 164* or *T 308*. Independent testing labs must not have conflicts of interest with the Contractor or Local Agency. On non-National Highway System (NHS) routes, Contractor labs may be used, but they must be qualified labs as previously stated. The Contractor shall provide copies of this documentation to the Engineer for review a minimum of 21 calendar days prior to the performance of any paving operations on the project.

Contractor labs may not be used for acceptance testing on NHS routes.

Material acceptance testing will be completed by the Engineer within 5 calendar days, except holidays and Sundays, after the Engineer has obtained the samples. QA test results will be provided to the Contractor after the Engineer receives the QC test results. Failure on the part of the Engineer or the laboratory to provide Quality Assurance test results within the specified time frame does not relieve the Contractor of their responsibility to provide an asphalt mix within specifications. The Contractor's schedule shall be deemed to include these material testing timeframes.

For production/mainline-type paving, the mixture may be accepted by visual inspection up to a quantity of 250 tons per mixture type, per project (not per day). For non-production-type paving defined as driveways, approaches, and patching, visual inspection may be allowed regardless of the tonnage.

The crushed particle content of the aggregate used in the HMA mixture shall not be more than 10 percentage points above or below the crushed particle content used in the JMF, nor less than the minimum specified for the aggregates in the contract documents.

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Pavement density will be measured by the Engineer with a nuclear density gauge using the G_{mm} from the JMF for the density control target. The required in-place density of the HMA shall be between 92.0 and 96.0 percent of the density control target. The Contractor is responsible for establishing a rolling pattern that will achieve the required in-place density. Should the specified target densities not be met, the material shall be considered to have a Range 2 failure and shall be rejected. If the Engineer determines that the material is suitable to remain in place, a 50% reduction to the base price of all material affected shall be enacted by the Engineer. Should the Engineer determine that the material cannot remain in place, the affected material will be removed and replaced at the Contractor's sole expense as detailed in the Section f. "Rejected Mixtures."

After placement, roll the HMA mixture as soon after placement as the roller is able to bear without undue displacement or cracking. Start rolling longitudinally at the sides of the lanes and proceed toward the center of the pavement, overlapping on successive trips by at least half the width of the drum. Ensure each required roller is 8 tons minimum in weight unless otherwise approved by the Engineer.

Ensure the initial breakdown roller is capable of vibratory compaction and is a maximum of 500 feet behind the paving operations. The maximum allowable speed of each roller is 3 miles per hour (mph) or 4.5 feet per second. Ensure all compaction rollers complete a minimum of two complete rolling cycles prior to the mat temperature cooling to 180 degrees Fahrenheit (F). Continue finish rolling until all roller marks are eliminated and no further compaction is possible. The Engineer will verify and document that the roller pattern has been followed and density has been achieved. The Engineer can stop the placement of HMA when the roller pattern is not followed and density is not obtained. Contract time shall continue during this period and the Contractor shall be responsible for any additional costs incurred due to this work stoppage.

Pavement in-place density tests will be completed by the Engineer during paving operations and prior to traffic staging changes. Pavement in-place density acceptance testing will be completed by the Engineer prior to the Contractor being allowed to pave subsequent lifts of HMA or the newly placed HMA being opened to traffic.

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HMA Acceptance Criteria
Table 1 – Uniformity Tolerance Limits for HMA Mixtures

Parameter		Top and Leveling Courses		Base Course	
		*Range 1	Range 2	*Range 1	Range 2
Number	Description				
1	Air Voids	± 0.60	± 1.00	± 0.60	± 1.00
2	VMA	± 0.60	± 1.00	± 0.60	± 1.00
3	G _{mm} (maximum specific gravity of mixture)	± 0.013	± 0.020	± 0.013	± 0.020
4	Fines to Effective Binder Ratio (this parameter is independent of JMF)	0.6 to 1.2	0.6 to 1.4	0.6 to 1.2	0.6 to 1.4
5	Binder Content	± 0.30	± 0.40	± 0.30	± 0.40
6	Percent Passing No. 8 and Larger Sieves	± 5.0	± 8.0	± 7.0	± 9.0
	Percent Passing No. 30 Sieve	± 4.0	± 6.0	± 6.0	± 9.0
	Percent Passing No. 200 Sieve	± 1.0	± 2.0	± 2.0	± 3.0
7	Crushed Particle Content	Below 10%	Below 15%	Below 10%	Below 15%
*This range allows for normal mixture and testing variations. The mixture shall be proportioned to test as closely as possible to the Job-Mix-Formula.					

The tolerances specified in Table 1, with the exception of the Fines to Effective Binder Ratio, reflect variations from the approved job-mix formula.

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Parameter Number 6 as shown in Table 1 is aggregate gradation. Each sieve will be evaluated on one of the three gradation tolerance categories. If more than one sieve is exceeding Range 1 or Range 2 tolerances, the sieve with the largest difference from the JMF will be counted as the gradation parameter. The master gradation should be maintained throughout production; however, price adjustments will be based on Table 1.

Extraction/gradation and volumetric tests will be performed by the Engineer to confirm conformance to the specifications and the tolerances identified in Table 1. The minimum number of samples to be obtained and tested shall be in accordance with Table 2.

Table 2 – Minimum Number of Samples

Quantity (tons) of Single Mixture Placed per Day	Minimum Number of Samples per Mixture per Day
<100	0
101 – 250	1
251 – 1,500	3
1,501 – 3,000	5
3,001 – 4,500	as directed by the Engineer

f. Rejected Mixtures.- If, for any one mixture, two consecutive tests per parameter (for Parameter 6, two consecutive aggregate gradations on one sieve) are outside Range 1 or Range 2 tolerance limits the mixture is considered out-of-specification and will be rejected. If a parameter is outside of Range 1 tolerance limits and the second consecutive test shows that the parameter is outside of Range 2, then it will be considered to be a Range 1 out-of-specification. If, for any one mixture, two consecutive tests do not meet the minimum requirements for crushed particle content specified in the project documents, the portion of the mixture with insufficient crushed particle content will be considered out-of-specification and will be rejected.

The quantity of material to be rejected is defined as the material produced from the time the first out-of-specification sample was taken until the time the sample leading to the first in-specification test was taken.

If out-of-specification mixtures are placed in a pavement, the Contractor has 4 calendar days from receipt of the acceptance test results to notify the Engineer, in writing, that dispute resolution testing is requested. The Contractor's QC test results for the corresponding QA test results must result in an overall payment greater than QA test results, otherwise the QA tests will not be allowed to be disputed. The Engineer has 4

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calendar days to send the dispute resolution sample to the MDOT Central Laboratory once dispute resolution testing is requested. The remaining 10,000 gram portion of the field samples (split samples) will be sent to the Central Laboratory to complete all Dispute Resolution testing and return test results to the Engineer, who will provide them to the Contractor, within 13 calendar days upon receiving the Dispute Resolution samples. The Contractor may only take pavement cores if approved in writing by the Engineer. If the Central Laboratory test results do not confirm the original field test results, then no price adjustments will be made for the mixture involved.

If the Central Laboratory test results confirm the original test results and, if in the Engineer's judgment, the mixture warrants removal, the Contractor shall remove and replace the rejected (out-of-specification) mixture, at the Contractor's expense, with a mixture meeting the specification requirements. These costs shall be deemed to include all costs associated with the material removal and replacement including, but not limited to; costs associated with re-mobilization of labor and equipment; traffic control; removal and disposal of the rejected material; transportation costs to provide material meeting the requirements of the specification; and, any other cost associated with the work. Contract time shall continue during the period of time that the rejected material is investigated and re-tested, as well as, during the removal and replacement operations.

If the Central Laboratory test results confirm the original test results and, if in the Engineer's judgment, the mixture can remain in place, the base and/or unit price for the rejected (out-of-specification) mixture will be decreased as described in the Section g., "Price Adjustments."

If no field extractions are performed on a given day because the quantity being placed is less than 100 tons, and if there is reason to believe that the mixture contains material parameters that exceed Range 2 tolerances, or if the crushed particle content is less than the established criteria, a price adjustment may also be applied, or removal may be required, based on extraction, gradation, and volumetric tests performed by the Engineer from pavement cores following the procedures outlined herein.

g. Price Adjustments.- Base Price. Price established by the Department to be used in calculating incentives and adjustments to pay items and shown in the contract.

Price adjustments for either Range 1 and/or Range 2 failures shall be made to the base and/or unit price of HMA material in accordance with the procedures outlined in the Special Provision 12TM501(A335) entitled "Hot Mix Asphalt Prices for Adjustments" for mixtures with failing test parameters.

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The quantity of material receiving a price adjustment is defined as the material produced from the time the first out-of-specification sample was taken until the time the sample leading to the first in-specification test was taken.

The price adjustments will be determined by the Engineer from the combination of sample test result parameters of the out-of-specification (rejected) material that create the largest total price adjustment for the material. The price adjustments shall be determined based on Tables 3 and 4. The Engineer is not obligated to accept a price adjustment for out-of-specification (rejected) material that exceeds Range 2 limits in lieu of requiring the material to be removed and replaced at the Contractor's expense in accordance with Section f., Rejected Mixtures.

In all cases, when penalties are assessed, the penalty applies to each parameter, up to two parameters, that is out of specification.

Table 3: Penalty Per Parameter

Mixture Parameter out-of-Specification per Acceptance Tests	Mixture Parameter out-of-Specification per Dispute Resolution Test Lab	Price Adjustment per Parameter
NO	N/A	None
YES	NO	None
	YES	Outside Range 1 but not Range 2: decrease by 10%
		Outside Range 2: decrease by 25%

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Table 4
Calculating Total Price Adjustment

Cost Adjustment as a Sum of the Highest Parameter Penalties		
Number of Samples with Parameters Out-of Specification	Range(s) Outside of Tolerance Limits of Table 1 per Parameter	Total Price Adjustment
One	Range 1	10%
	Range 2	25%
Two	Range 1 & Range 1	20%
	Range 1 & Range 2	35%
	Range 2 & Range 2	50%
Three or more	Range 1, Range 1 & Range 1	20%
	Range 1, Range 1 & Range 2	35%
	Range 1, Range 2 & Range 2	50%
	Range 2, Range 2 & Range 2	50%

Each parameter of Table 1 is evaluated with the total price adjustment applied to the base and/or unit price based on a sum of the two parameter penalties resulting in the highest total price adjustment in accordance with Table 4. For example, if three parameters are out-of-specification, with two parameters outside Range 1 of Table 1 tolerance limits, but within Range 2 of Table 1 limits and one parameter outside of Range 2 of Table 1 tolerance limits and the Engineer approves leaving the mixture in place, the total price adjustment for that quantity of material is 35 percent.

If acceptance tests, as described in Section e. of this special provision, show that a Table 1 mixture parameter exceeds the Range 1, but not the Range 2, tolerance limits, that mixture parameter will be subject to a 10 percent penalty. The 10 percent penalty will be assessed based on the acceptance tests only unless the Contractor requests that the 10,000 gram sample part retained for possible dispute resolution testing be tested. The Contractor has 4 calendar days from receipt of the acceptance test results to notify the Engineer, in writing, that dispute resolution testing is requested. The Contractor's QC test results for the corresponding QA test results must result in an overall payment greater than QA test results, otherwise the QA tests will not be allowed to be disputed. The Engineer has 4 calendar days to send the dispute resolution sample to the MDOT Central Laboratory and the resultant dispute test results will be used to determine the penalty per parameter, if any. If the dispute testing results show that the mixture parameter is out-of-specification, the Contractor will pay for the cost of the dispute resolution testing and the contract unit and/or base price for the material will be adjusted, based on all test result

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parameters from the dispute tests, as shown in Table 3 and Table 4. If the dispute test results do not confirm the mixture parameter is out-of-specification, then the Local Agency will pay for the cost of the dispute resolution testing and no price adjustment is required.

If acceptance tests, as described in section e. of this special provision, show that a Table 1 mixture parameter exceeds the Range 2 tolerance limits, the 10,000 gram sample part retained for possible dispute resolution testing will be sent, within 4 calendar days, to the MDOT Central Laboratory for further testing. The MDOT Central Laboratory's test results will be used to determine the penalty per mixture parameter, if any. If the MDOT Central Laboratory's results do not confirm the mixture parameter is out-of-specification, then no price adjustment is required. If the MDOT Central Laboratory's results show that the mixture is out-of-specification, and the Engineer approves leaving the out-of-specification mixture in place, the contract unit and/or base price for the material will be adjusted, based on all parameters, as shown in Table 3 and Table 4.

In the case that the Contractor disputes the results of the test of the second sample obtained for a particular day of production, the test turn-around time frames given would apply to the second test and there would be no time frame on the first test.

h. Measurement and Payment.- The completed work, as described herein, will be measured and paid for using applicable pay items as described in subsection 501.04 of the Standard Specifications for Construction, or the contract, except as modified in Section g. Price Adjustments.

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SPECIAL PROVISION
FOR
HMA APPLICATION ESTIMATE

AA:JKA

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2/2/2018

a. **Description.** This work shall consist of furnishing and placing (HMA) hot mix asphalt on the prepared surfaces in accordance with the details shown on the plans and as specified in Section 501 of the Michigan Department of Transportation Standard Specifications for Construction, 2012 Edition with the exceptions and additions specified herein.

b. Materials.

Hand Patching:

The HMA, LVSP used for hand patching shall have a yield of 250 pounds per square yard with a PG 58-28 binder. The HMA, LVSP used for hand patching shall have an AWI = 260 minimum.

c. **Construction.** A bond coat shall be applied before each lift of HMA mixture is placed. The rate of application shall be 0.05 to 0.15 gallons per square yard.

d. **Measurement and Payment.** Measurement shall be based on load weight tickets from a certified scale and accepted at the job site by a City agent.

Payment for Hand Patching shall include all labor, equipment and materials to complete this work.

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SPECIAL PROVISION
FOR
CONCRETE CURB AND DRIVEWAY OPENINGS

AA:MGN:JKA

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a. Description.- This work shall consist of constructing concrete curb and gutter, and concrete curb openings in accordance with Section 802 of the MDOT 2012 Standard Specifications for Construction, as shown on the plans, and as specified herein.

b. Materials.- The materials shall meet the requirements as specified in Section 802.02 of the 2012 MDOT Standard Specifications and as specified herein:

Driveway Opening, Conc., Detail M, P-NC shall be Grade P-NC Concrete (658 lbs/cyd cement content). Driveway Opening, Conc, Detail L, P1 shall be Grade P1 Concrete (526 lbs/cyd cement content.). All concrete mixtures shall be made with 6AA coarse aggregate.

All other concrete curb and gutter specified herein shall be grade P1 with 6AA coarse aggregate. The Contractor may elect to add GGBFS to P1 mixtures in accordance with the requirements of the contract documents. No additional payment will be made for concrete mixtures containing GGBFS.

All concrete mixtures shall contain 6AA coarse aggregates which are either natural or limestone and meet the requirements of Section 902.

It shall be the Contractor's sole responsibility to propose specific concrete mix designs which meet the requirements of this Special Provision and the contract documents.

c. Construction Methods.- Curb and Gutter, Conc, Det F4, Special and Curb and Gutter, Conc, Det F6, Special shall be constructed as shown in the MDOT Standard Plans R-30 series, as detailed in this specification, and as shown in the plans.

All driveway openings shall be constructed in accordance with MDOT Standard Detail R-29-H for Concrete Driveway Openings, Details "L" and "M."

Expansion joints of the thickness shown on the details shall be placed as directed by the Engineer.

The preparation of the aggregate base course upon which the curb and gutter and drive openings are to be constructed shall be performed in accordance with the Special Provision entitled "Subbase, CIP, 2NS, Modified" and "Aggregate Base, 6 inch, 21-AA, Modified".

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FOR
CONCRETE CURB AND DRIVEWAY OPENINGS

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The concrete curb and gutter and/or driveway openings shall not be constructed on a pedestal or a mound. The aggregate base course shall be constructed the full width of the stage or phase in which concrete curb and gutter or driveway opening is to be constructed.

The concrete items being placed shall not be opened to construction or vehicular traffic until such time as the concrete has reached the required flexural strength. The Contractor shall cast beams in accordance with Section 603.03.B.10, and as approved by the Engineer, and obtain concrete flexural strength in accordance with the requirements of Section 104.11, Table 104-2. Beams cast for open to traffic determinations shall be cured in the same manner and environment as the concrete items which they represent.

Flexural strength beams shall be tested (broken) with a device meeting the approval of the Engineer and be in a state of good repair and shall be calibrated by an accredited testing laboratory or engineering company within a period of two years from the date of the test being performed.

d. Measurement and Payment.- The completed work as measured shall be paid for at the contract unit price for the following contract items (pay items):

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
Curb and Gutter, Conc, Det F4, Special.....	Foot
Curb and Gutter, Conc, Det F6, Special.....	Foot
Driveway Opening, Conc, Detail M, P-NC.....	Foot

The pay items will be measured in length by the foot and will be payment in full for all labor, equipment and material needed to properly complete this work.

At curb openings for sidewalk ramps, the concrete curb and gutter (without the curb face) will be measured and paid for at the contact unit price for curb and gutter.

Driveway Opening, Conc, Detail L, P 1 shall not be paid for separately, but shall be included in the concrete curb and gutter or concrete pavement with integral curb pay items.

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FOR
CONCRETE CURB AND DRIVEWAY OPENINGS

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Where the Engineer directs the use of high early strength concrete for pay items that are not designated as "P-NC," the additional cement shall be paid for separately. No additional payment will be made for cement for pay items that are designated "P-NC."

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FOR
INTEGRAL SIDEWALK RETAINING WALL

AA:JN:JKA

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1/26/18

a. Description. This work shall consist of constructing concrete retaining walls adjacent to sidewalks, in accordance with Section 802 of the 2012 edition of the MDOT Standard Specifications for Construction, except as specified herein, as described in this Detailed Specification, as shown in the typical section, and as directed by the Engineer.

b. Material. Concrete mixtures shall be Grade P1 or S2 concrete, or as directed by the Engineer, meeting the requirements specified in Section 803 of the MDOT Standard Specifications.

c. Construction. The Contractor shall construct the Integral Sidewalk Retaining Walls as shown in accordance with the detail contained in the Contract Documents. Construction shall be in accordance with Section 802 of the 2012 MDOT Standard Specifications for Construction.

d. Payment. Payment shall be measured by the exposed face area of the retaining wall in square feet. The completed work, as described, will be measured and paid for at the contract unit price for the following pay item:

Contract Item (Pay Item)	Pay Unit
Integral Sidewalk Retaining Wall, 6 inch to 18 inch	Square Foot
Integral Sidewalk Retaining Wall, 19 inch to 36 inch	Square Foot

Payment for Integral Sidewalk and Retaining Wall for the respective height shall include all labor, equipment and materials to complete this work.

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FOR
CONCRETE SIDEWALK, ADA RAMPS, AND DRIVEWAY APPROACHES

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a. Description.- This work shall consist of constructing concrete sidewalk, ramp, or drive approaches of the types as indicated on the plan sheets, as detailed in the specifications, or as directed by the Engineer. It shall also include constructing concrete drive approaches of the types as indicated on the plan sheets, as detailed in the specifications, or as directed by the Engineer. All work shall be in accordance with Section 801 and 803 of the 2012 MDOT Standard Specifications for Construction and as specified herein.

All ADA ramps shall be installed with detectable warning units. Reference the Special Provision entitled "Detectable Warning Tiles" for additional requirements.

b. Materials.- The materials shall meet the requirements as specified in the 2012 MDOT Standard Specifications and as required herein. The grade of concrete for items designated as "P-NC" shall be Grade P-NC concrete (658 lbs/yd³ cement content) as specified in Section 601 of the 2012 MDOT Standard Specifications.

The grade of concrete for all remaining items covered by this Special Provision shall be grade P1 as specified in Section 601 of the 2012 MDOT Standard Specifications for Construction. The Contractor may elect to add GGBFS to P1 mixtures in accordance with the requirements of the contract documents. No additional payment will be made for concrete mixtures containing GGBFS.

All concrete mixtures shall contain 6AA coarse aggregates which are either natural or limestone and meet the requirements of Section 902 of the 2012 Michigan Department of Transportation Standard Specifications for Construction.

It shall be the Contractor's sole responsibility to propose specific concrete mix designs which meet the requirements of this Special Provision.

c. Construction Methods.- The Contractor is responsible to construct all sidewalk, sidewalk ramps, curbs, and all other concrete items within ADAAG compliance. All sidewalk and curb ramps must be constructed in accordance with MDOT Standard Detail R-28-I (or the version in effect at the time of Bid Letting.)

Where concrete sidewalk and/or ADA compliant ramps are to be placed, they shall be placed on a minimum of 4 inches of Granular Material, Class II, compacted to 95% of its maximum dry density.

Concrete drive approaches shall be placed on either aggregate base course or a sand sub-base as shown on the plans or as directed by the Engineer. The required density of

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the material underlying the concrete drive approach shall be that of the material on which it is placed and required by those specifications.

Prior to placing any concrete, the subgrade shall be completed and trimmed to final elevation. If a cold joint is required, the existing concrete is to be cleaned with compressed air to expose the aggregate in the concrete.

Where indicated on the plans to be performed, the Contractor shall also horizontally sawcut curbs to provide openings for sidewalk ramps as indicated. The Engineer shall define the extent of sawcutting both horizontally and vertically. This work will not be paid for separately, but shall be included in the corresponding price of the ADA ramp to be placed.

The concrete items being placed shall not be opened to construction or vehicular traffic until such time as the concrete has reached the required flexural strength. The Contractor shall cast beams in accordance with Section 603.03.B.10, and as approved by the Engineer, and obtain concrete flexural strength in accordance with the requirements of Section 104.11, Table 104-2. Beams cast for open to traffic determinations shall be cured in the same manner and environment as the concrete items which they represent.

Flexural strength beams shall be tested (broken) with a device meeting the approval of the Engineer and be in a state of good repair and shall be calibrated by an accredited testing laboratory or engineering company within a period of two years from the date of the test being performed.

All ADA ramps shall be installed with detectable warning units. Reference the Special Provision entitled "Detectable Warning Tiles" for additional requirements.

d. Measurement and Payment.- The completed work as measured for the following pay items will be paid for at the contract unit prices for the following contract items (pay items):

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
Sidewalk, Concrete, ___ inch, Special	Square Foot
Sidewalk Ramp, Concrete, ___ inch, P-NC, ADA, Modified ..	Square Foot
Sidewalk Ramp, Concrete, ___ inch, ADA, Modified	Square Foot
Concrete Drive Approach, Non-Reinforced, P-NC, ___ inch .	Square Foot

The above items will be measured by area in square feet and be paid for at their respective contract unit price, which price shall be payment in full for all labor, equipment and material needed to accomplish this work. The unit price shall also include all costs

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associated with sawcutting curbs to provide openings for ADA sidewalk ramps as indicated on the plans.

Where the Engineer directs the use of high early concrete for pay items that are not designated as "P-NC," the additional cement shall be paid for separately. No additional payment will be made for cement for pay items that are designated "P-NC."

Excavation for placement of Granular Material, Class II, bedding material shall be included in the item of work "Sidewalk Grading" and "Sidewalk Ramp Grading" and shall not be paid for separately.

Detectable warning units cast in place, shall be paid for in accordance with the Special Provision for Detectable Warning Tiles.

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SPECIAL PROVISION
FOR
DETECTABLE WARNING TILES

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a. Description.- This work shall consist of furnishing and installing cast in place detectable warning units in compliance to the Americans with Disability Act (ADA). All work shall be in accordance with the Special Provision for “Concrete Sidewalk, ADA Ramps, and Driveway Approaches,” Section 803 of the MDOT 2012 Standard Specifications for Construction, MDOT Standard Detail R-28-H (or most current version in effect at the time of bidding), as indicated on the plans, and as modified herein.

b. Related Documents.- Americans with Disabilities Act (ADA) Title 49 CFR Transportation, Part 37.9 Standards for Accessible Transportation Facilities, Appendix A, Section 4.29.2 Detectable Warnings on Walking Surfaces

American Society for Testing and Materials (ASTM) Test Methods B117, C1028, D543, D570, D638, D695, D790, D2486, D2565, D5420, and E84.

c. Submittals.- Submit manufacturer’s literature describing products, installation procedures and maintenance instructions. Provide cast-in-place detectable surface tiles and accessories as produced by a single manufacturer.

Samples for Verification Purposes: Submit two (2) tile samples minimum 6” x 8” of the kind proposed for use. Samples shall be properly labeled and shall contain the following information: Name of Project; Submitted by; Date of Submittal; Manufacture’s Name; Catalog No.; and Date of Fabrication.

Material Test Reports: Submit current test reports from a qualified, independent, testing laboratory indicating that materials proposed for use are in compliance with requirements and meet the properties indicated. The required tests listed elsewhere in this Special Provision shall be performed by a certified and qualified independent testing laboratory on a cast-in-place tactile warning system. All test reports submitted shall be certified by the testing laboratory and shall clearly state that all tests were completed within 5 years of the date of the submittal. The manufacturer shall certify in writing that the materials provided to the project are manufactured with the same materials and manufacturing procedures as those used in the materials on which the test were performed.

c. Materials.- The detectable warning tiles shall be colored as Federal Number 22144 (frequently referred to as “Colonial Red” or “Brick Red”). The detectable warning tiles shall meet the following material properties, dimensions, and tolerances using the most current test methods:

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FOR
DETECTABLE WARNING TILES

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1. Water Absorption: Not to exceed 0.35% when tested in accordance with ASTM-D570
2. Slip Resistance: 0.80 minimum combined wet/ dry static coefficient of friction on top domes and field area, when tested in accordance with ASTM C1028.
3. Compressive Strength: 18,000 psi minimum, when tested in accordance with ASTM D695.
4. Tensile Strength: 10,000 psi minimum, when tested in accordance with ASTM D638.
5. Flexural Strength: 24,000 psi minimum, when tested in accordance with ASTM D790.
6. Chemical Stain Resistance: No reaction to 1% hydrochloric acid, urine, chewing gum, soap solution, motor oil, bleach, calcium chloride, when tested in accordance with ASTM D543 or D1308.
7. Wear Depth: 300 minimum, when tested in accordance with ASTM C501.
8. Flame Spread: 25 maximum, when tested in accordance with ASTM E84.
9. Gardner Impact: 50 in.-lbs. minimum, when tested in accordance with Geometry "GE" of ASTM D5420.
10. Accelerated Weathering of Tile when tested by ASTM-G155 or ASTM G151 shall exhibit the following result- $\Delta E < 6.0$ as well as no deterioration, fading or chalking of surface when exposed to 3000 hours minimum exposure.
11. Wheel Loading: The cast in place tile shall be mounted on a concrete platform with a 1/2" airspace at the underside of the tile top plate then subjected to the specified maximum load of 10,400 lbs., corresponding to an 8,000 lb individual wheel load and a 30% impact factor. The tile shall exhibit no visible damage at the maximum load of 10,400 lbs using AASHTO-HB17 single sheet HS20-44 loading "Standard Specifications for Highways and Bridges."
12. Salt and Spray Performance of Tile and Adhesive System when tested to ASTM-B117 not to show any deterioration or other defects after 100 hours of exposure

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d. Construction Methods.- Installer's Qualifications: Engage an experienced Installer who has successfully completed tile installations similar in material, design, and extent to that indicated for this Project.

The contractor shall follow manufacturer specifications for installation, except where they conflict with MDOT Standard Detail R-28-H (or most current edition in effect at the time of bidding), or other project requirements.

e. Measurement and Payment.- The completed work as measured for the following pay items will be paid for at the contract unit prices for the following contract items (pay items):

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
Detectable Warning Tiles.....	Square Foot

The unit price for this item shall include all labor, material, and equipment costs required to complete the work.