ADDENDUM No. 1

ITB No. 4529

Street Resurfacing Project - 2018

Bids Due: March 27, 2018 at 2:00 P.M. (local time)

The following changes, additions, and/or deletions shall be made to the Invitation to Bid for Street Resurfacing Project- 2018, ITB No. 4529, on which proposals will be received on/or before March 27, 2018, at 2:00 P.M. (local time).

The information contained herein shall take precedence over the original documents and all previous addenda (if any), and is appended thereto. This Addendum includes 173 pages.

Bidder is to acknowledge receipt of this Addendum No. 1, including all attachments (if any), in its Bid by so indicating on page ITB-1 of the Invitation to Bid Form. Bids submitted without acknowledgment of receipt of this addendum will be considered nonconforming.

The following forms provided within the ITB document must be included in submitted bids:

• City of Ann Arbor Prevailing Wage Declaration of Compliance
• City of Ann Arbor Living Wage Ordinance Declaration of Compliance
• Vendor Conflict of Interest Disclosure Form
• City of Ann Arbor Non-Discrimination Ordinance Declaration of Compliance

Bids that fail to provide these completed forms listed above upon bid opening will be rejected as non-responsive and will not be considered for award.

I. CORRECTIONS/ADDITIONS/DELETIONS

Changes to the Bid document which are outlined below are referenced to a page or Section in which they appear conspicuously. The Bidder is to take note in its review of the documents and include these changes as they may affect work or details in other areas not specifically referenced here.

<table>
<thead>
<tr>
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</table>
| All mentions    | As provided in ITB No. 4529 Bid Document:  
|                 | Bid Due Date: Tuesday, March 20, 2018 at 2:00 p.m.  
|                 | As updated herein:  
|                 | Bid Due Date: Tuesday, March 27, 2018 at 2:00 p.m. |

Comment: The Due Date and Time for responses to this ITB has been extended to Tuesday, March 27, 2018 at 2:00 p.m. (local time). Note that all other dates are unchanged.
<table>
<thead>
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<tbody>
<tr>
<td>Pre-Bid Conference/NP-1</td>
<td>Conference Summary and Attendance Record/Sign-In Sheet pages Addendum-1-6 thru Addendum-1-10.</td>
</tr>
<tr>
<td>Instructions to Bidders/IB-4</td>
<td>Replace this page with attached page Addendum-1-11. Revised paragraph 8 to identify the correct Construction Type as Highway.</td>
</tr>
<tr>
<td>Invitation to Bid/ITB-3</td>
<td>Replace this page with attached page Addendum-1-12. Revised to correct the header “LEGAL STATUS OF BIDDER”, which does not appear legible in the original bid document.</td>
</tr>
<tr>
<td>Bid Forms/ BF-1 to BF-9</td>
<td>Replace these pages with attached pages Addendum-1-13 to Addendum-1-21. Revised to include new pay items and changes to quantities.</td>
</tr>
<tr>
<td>Detailed Specifications/DS-1 to 2</td>
<td>Detailed Specification for General Conditions; replace with attached pages Addendum-1-22 to Addendum-1-23. Revised to include protection and cleaning related to sewers, and drainage and utility structures.</td>
</tr>
</tbody>
</table>
| Detailed Specifications/DS-3 to 6 | Detailed Specification for Project Supervision; replace with attached 7pages Addendum-1-24 to Addendum-1-27. Revised to replace any reference to the term “special provision” with “detailed specification”.
<p>| Detailed Specifications/DS-7 to 8 | Detailed Specification for Certified Payroll Compliance and Reporting; replace with attached pages Addendum-1-28 to Addendum-1-29. Revised to address formatting and grammatical errors. |
| Detailed Specifications/DS-13 to 14 | Schedule of Streets; replace with attached pages ADD-1-30 to Addendum-1-31. Revised “Start of Work” and “Completion of Work” dates and “Restriction Dates” for various project locations. |
| Detailed Specifications/Not Applicable | Insert Detailed Specification for Maximum Unit Weight page Addendum-1-32. Mistakenly omitted this detailed specification from the original bid documents. |
| Detailed Specifications/DS-17 to 18 | Detailed Specification for Vertical Exploratory Excavation; replace with attached pages Addendum-1-33 to Addendum-1-34. Revised to replace any reference to the term “special provision” with “detailed specification”. |
| Detailed Specifications/DS-19 | Detailed Specification for Grading Sidewalk, Sidewalk Ramp, and Driveway Approach; replace with attached page Addendum-1-35. Revised to replace any reference to the term “special provision” with “detailed specification”. |
| Detailed Specifications/DS-20 to 25 | Detailed Specification for Machine Grading; replace with attached pages Addendum-1-36 to Addendum-1-41. Revised to correct inconsistencies between this detailed specification and others regarding the handling of drainage structure covers, to address issues related to measurement ad payment items, and to correct grammatical errors. |
| Detailed Specifications/DS-26 | Detailed Specification for Soil Erosion and Sedimentation Control – Inlet Filter; replace with attached page Addendum-1-42. Revised the “Materials” section to show the currently approved devices acceptable for use on the project. |</p>
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<tr>
<td>Detailed Specifications/ Not Applicable</td>
<td>Insert Detailed Specification for Flexible Pipe Couplings page Addendum-1-43. Mistakenly omitted this detailed specification from the original bid documents.</td>
</tr>
<tr>
<td>Detailed Specifications/ DS-35</td>
<td>Detailed Specification for Drainage and Utility Structures; replace with attached page Addendum-1-44. Revised to remove the pay item “Dr Structure, Reconstruct”, which has a different pay item, “Structure, Reconstruct”, and a separate detailed specification.</td>
</tr>
<tr>
<td>Detailed Specifications/Not Applicable</td>
<td>Insert Detailed Specification for Drainage and Utility Structure Reconstruction pages Addendum-1-45 to Addendum-1-47. This is a new detailed specification associated with the pay item, “Structure, Reconstruct”.</td>
</tr>
<tr>
<td>Detailed Specifications/ DS-54 to 55</td>
<td>Detailed Specification for Geosynthetic Paving Layer; replace with pages Addendum-1-48 to Addendum-1-49. Revised to replace any reference to the term “special provision” with “detailed specification”.</td>
</tr>
<tr>
<td>Detailed Specifications/ DS-56 to 57</td>
<td>Detailed Specification for HMA Application Estimate; replace with attached pages Addendum-1-50 to Addendum-1-51. Revised the HMA mix specified for use on the Ann Arbor Saline Rd shared use path from 36A to LVSP including the application rate and estimated thickness. Added pay item, “Shared use Path, HMA, Wedging”.</td>
</tr>
<tr>
<td>Detailed Specifications/ DS-59 to 61</td>
<td>Detailed Specification for Hot Mix Asphalt (HMA) Paving; replace with attached pages Addendum-1-52 to Addendum-1-54. Revised to replace any reference to the term “special provision” with “detailed specification”, and to correct grammatical errors.</td>
</tr>
<tr>
<td>Detailed Specifications/ DS- 62</td>
<td>Detailed Specification for Hot Mix Asphalt Pavement Repair; replace with attached page Addendum-1-55. Revised to replace any reference to the term “special provision” with “detailed specification”.</td>
</tr>
<tr>
<td>Detailed Specifications/ DS-64 to 65</td>
<td>Detailed Specification for Concrete Placement and Protection; replace with attached pages Addendum-1-56 to Addendum-1-57. Revised to replace any reference to the term “special provision” with “detailed specification”.</td>
</tr>
<tr>
<td>Detailed Specifications/ DS-68 to 69</td>
<td>Detailed Specification for Concrete Curb and Gutter, and Driveway Openings; replace with attached pages Addendum-1-58 to Addendum-1-59. Revised to replace any reference to the term “special provision” with “detailed specification”.</td>
</tr>
<tr>
<td>Detailed Specifications/ DS-74 to 75</td>
<td>Detailed Specification for Detectable Warning Surface; replace with attached pages Addendum-1-60 to Addendum-1-61. Revised to replace any reference to the term &quot;special provision&quot; with “detailed specification”.</td>
</tr>
<tr>
<td>Detailed Specifications/ DS-76 to 77</td>
<td>Detailed Specification for Concrete Sidewalk, Sidewalk Ramp, and Driveway Approach; replace with attached pages Addendum-1-62 to Addendum-1-63. Revised to replace any reference to the term &quot;special provision&quot; with “detailed specification&quot;.</td>
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<tr>
<td>Detailed Specifications/Not Applicable</td>
<td>Insert Detailed Specification for Wedging of Hot Mix Asphalt (HMA) Shared Use Path pages Addendum-1-64 to Addendum-1-65. The City recently created this detailed specification after it advertised the project for bid</td>
</tr>
<tr>
<td>Notices to Bidders/Not Applicable</td>
<td>Replace in the Notices to Bidders section of Appendices the Notice to Bidders – Project Coordination with attached page Addendum-1-68. Revised to include requirements for the maintenance of traffic associated with the Stone School Road Sanitary Sewer Extension Project and the planned street resurfacing work.</td>
</tr>
<tr>
<td>MDOT Special Provisions/Not Applicable</td>
<td>Insert into the Michigan Department of Transportation (MDOT) Special Provisions section of Appendices the attached MDOT Special Provision for Progress Schedule (12SP-101A-02) page Addendum-1-69. MDOT issued this new special provision after the City advertised the project for bid.</td>
</tr>
<tr>
<td>MDOT Special Provisions/Not Applicable</td>
<td>Replace in the Michigan Department of Transportation (MDOT) Special Provisions section of Appendices the MDOT Special Provision for Permanent Pavement Markings (12SP-811Q-03) with attached pages Addendum-1-70 to Addendum-1-72. MDOT revised this special provision after the City advertised the project for bid.</td>
</tr>
<tr>
<td>MDOT Special Provisions/Not Applicable</td>
<td>Insert into the Michigan Department of Transportation (MDOT) Special Provisions section of Appendices the attached MDOT Special Provision for Lighting for Night Work Specifications (12SP-812CC-01) pages Addendum-1-73 to Addendum-1-75. MDOT issued this new special provision after the City advertised the project for bid.</td>
</tr>
<tr>
<td>MDOT Standard Plans/Not Applicable</td>
<td>Insert into the MDOT Standard Plans section of Appendices the attached MDOT Standard Plan for Transverse Pavement Joints (R-39-K) pages Addendum-1-76 to Addendum-1-80. Mistakenly omitted this standard plan from the original bid documents.</td>
</tr>
<tr>
<td>MDOT Standard Plans/Not Applicable</td>
<td>Insert into the MDOT Standard Plans section of Appendices the attached MDOT Standard Plan for Load Transfer Assemblies for Transverse Joints (R-40-H) pages Addendum-1-81 to Addendum-1-85. Mistakenly omitted this standard plan from the original bid documents.</td>
</tr>
<tr>
<td>MDOT Standard Plans/Not Applicable</td>
<td>Insert into the MDOT Standard Plans section of Appendices the attached MDOT Standard Plan for Longitudinal Pavement Joints (R-41-H) pages Addendum-1-85 and Addendum-1-86. Mistakenly omitted this standard plan from the original bid documents.</td>
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<tr>
<td>MDOT Standard Plans/Not Applicable</td>
<td>Insert into the MDOT Standard Plans section of Appendices the attached MDOT Standard Plan for Concrete Pavement Repair (R-44-F) pages Addendum-1-87 and Addendum-1-92. Mistakenly omitted this standard plan from the original bid documents.</td>
</tr>
<tr>
<td>Attachments</td>
<td>City of Ann Arbor Living Wage Ordinance Declaration of Compliance and Living Wage Poster, should be replaced with the versions provided in this Addendum. The change reflects an increase in the City of Ann Arbor Living Wage that will be in effect during the period of work under this project.</td>
</tr>
<tr>
<td>Construction Plans</td>
<td>Construction Plan Set; replace Bid issued plan set (sheets 1 thru 72) with that issued for this Addendum 1 (sheets 1 thru 79). Changes include the following: Revised Plan Sheets (Location Cover Sheets) 7, 12, 14, 17, 19, 21, 23, 25, 27, 29, 33, 35, 37, 40, 61, and 68 – a revised QUANTITY TABLE and QUANTITY TABLE for Sign, Type B, Temp, Prismatic to reflect correct pay items and quantities respective to each project location. Added Plan Sheets 74 to 79 for the Project Location: Ann Arbor–Saline Road Shared Use Path.</td>
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**Question(s) received:** The City received an inquiry regarding the availability of the detailed tabulation of bid results for City of Ann Arbor Street Resurfacing – 2017 project (ITB 4477). This information is available on the City of Ann Arbor Purchasing webpage using the following URL: [https://www.a2gov.org/departments/finance-admin-services/purchasing/Documents/ITB_4477_DetailedBidTab.pdf](https://www.a2gov.org/departments/finance-admin-services/purchasing/Documents/ITB_4477_DetailedBidTab.pdf).

Respondents are responsible for any conclusions that they may draw from the information contained in the Addendum.
CITY OF ANN ARBOR
LIVING WAGE ORDINANCE DECLARATION OF COMPLIANCE

The Ann Arbor Living Wage Ordinance (Section 1:811-1:821 of Chapter 23 of Title I of the Code) requires that an employer who is (a) a contractor providing services to or for the City for a value greater than $10,000 for any twelve-month contract term, or (b) a recipient of federal, state, or local grant funding administered by the City for a value greater than $10,000, or (c) a recipient of financial assistance awarded by the City for a value greater than $10,000, shall pay its employees a prescribed minimum level of compensation (i.e., Living Wage) for the time those employees perform work on the contract or in connection with the grant or financial assistance. The Living Wage must be paid to these employees for the length of the contract/program.

Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from compliance with the Living Wage Ordinance. If this exemption applies to your company/non-profit agency please check here [___] No. of employees __

The Contractor or Grantee agrees:

(a) To pay each of its employees whose wage level is not required to comply with federal, state or local prevailing wage law, for work covered or funded by a contract with or grant from the City, no less than the Living Wage. The current Living Wage is defined as $13.22/hour for those employers that provide employee health care (as defined in the Ordinance at Section 1:815 Sec. 1 (a)), or no less than $14.75/hour for those employers that do not provide health care. The Contractor or Grantor understands that the Living Wage is adjusted and established annually on April 30 in accordance with the Ordinance and covered employers shall be required to pay the adjusted amount thereafter to be in compliance with Section 1:815(3).

Check the applicable box below which applies to your workforce

[___] Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage without health benefits

[___] Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage with health benefits

(b) To post a notice approved by the City regarding the applicability of the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.

(c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.

(d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.

(e) To take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee covered by the Living Wage Ordinance or any person contracted for employment and covered by the Living Wage Ordinance in order to pay the living wage required by the Living Wage Ordinance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services or agrees to accept financial assistance in accordance with the terms of the Living Wage Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Living Wage Ordinance, obligates the Employer/Grantee to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract or grant of financial assistance.

___________________________________________________ ________________________________________________
Company Name       Street Address

___________________________________________________ ________________________________________________
Signature of Authorized Representative                              Date City, State, Zip

___________________________________________________ ________________________________________________
Print Name and Title                                   Phone/Email address

City of Ann Arbor Procurement Office, 734/794-6500, procurement@a2gov.org

Rev. 3/6/18
CITY OF ANN ARBOR
LIVING WAGE ORDINANCE

RATE EFFECTIVE APRIL 30, 2018 - ENDING APRIL 29, 2019

$13.22 per hour
$14.75 per hour

If the employer provides health care benefits*
If the employer does NOT provide health care benefits*

Employers providing services to or for the City of Ann Arbor or recipients of grants or financial assistance from the City of Ann Arbor for a value of more than $10,000 in a twelve-month period of time must pay those employees performing work on a City of Ann Arbor contract or grant, the above living wage.

ENFORCEMENT

The City of Ann Arbor may recover back wages either administratively or through court action for the employees that have been underpaid in violation of the law. Persons denied payment of the living wage have the right to bring a civil action for damages in addition to any action taken by the City.

Violation of this Ordinance is punishable by fines of not more than $500/violation plus costs, with each day being considered a separate violation. Additionally, the City of Ann Arbor has the right to modify, terminate, cancel or suspend a contract in the event of a violation of the Ordinance.

* Health Care benefits include those paid for by the employer or making an employer contribution toward the purchase of health care. The employee contribution must not exceed $.50 an hour for an average work week; and the employer cost or contribution must equal no less than $1/hr for the average work week.

The Law Requires Employers to Display This Poster Where Employees Can Readily See It.

For Additional Information or to File a Complaint contact Colin Spencer at 734/794-6500 or cspencer@a2gov.org

Revised 2/1/2018
PRE-BID CONFERENCE

Street Resurfacing Project – 2018
(ITB No. 4529; City File No. 2018-004)

March 8, 2018
11:00 a.m., 4th Floor Conference Room
Larcom Building - City Hall, 301 East Huron Street, Ann Arbor, MI

SUMMARY

The City’s Street Resurfacing Project – 2018 Project Manager, David Dykman, called the Pre-Bid Conference to order at 11:05 a.m.

I. Introductions – Attached is the conference sign-in sheet showing those in attendance.

II. General

a. Project Overview

A description was given of the proposed work, which involves approximately five miles of street and path resurfacing including three major streets, thirteen local/residential streets, and one shared use path. The project is somewhat smaller in size and scope than that for 2017 mainly due to limited funding and the number of standalone projects the City is undertaking this coming construction season. It was noted the majority project work involves hot mix asphalt pavement resurfacing or rehabilitation although there are some amounts of concrete pavement construction, repair, and restoration. The project will utilize City and County Street/Road Millage funds together with other funding sources.

b. Schedule

Attention was given to the Instructions to Bidders pages of the bid documents and the requirements related to bid questions, the bid submittal, and the bid opening/due date listed below.

i. Bid Opening – March 20, 2018, 2:00 p.m.

Attention was given to the Detailed Specification for Project Schedule and the Starting and Completion Dates listed below as well as others included therein. Attendees were advised to review and fully understand the requirements of this detailed specification.

ii. Starting Date – May 7, 2018

iii. Completion Date – October 27, 2018

iv. Project Phasing / "Schedule of Streets" / Liquidated Damages

Attention was given to the “Schedule of Streets” included as part of Detailed Specification for Project Schedule. It was noted the City will be revising the dates related to the “Start of Work”, “Completion of Work”, and “Restriction Dates” for several of project locations due to planned community events recently brought to its attention. An addendum will address these revisions. Attendees were advised to review the requirements of this detailed specification including those related to the completion of work and associated liquidated damages.

c. Bid Documents

i. Standard Specifications - Michigan Department of Transportation (MDOT) 2012

Standard Specifications for Construction

It was noted Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction will again apply to this project.
PRE-BID CONFERENCE

Street Resurfacing Project – 2018
(ITB No. 4529; City File No. 2018-004)

ii. Detailed Specifications

Attention was given to several detailed specifications in the bid documents including those for General Conditions, Project Supervision, Certified Payroll Compliance and Reporting, Vertical Exploratory Excavation (new), Machine Grading, Parking Meters, and Slope Restoration. Attendees were advised to review of these detailed specifications as the requirements of each are either new or may have changed with respect to those issued for prior projects. It was noted that several detailed specifications are in the process of being revised to address inconsistencies, incorrect references, formatting and grammatical issues, and other necessary corrections. An addendum will address these revisions.

iii. Notice(s) to Bidders

Attention was given to the Notices to Bidders in the bid documents including those for Parking Head Covering and Removal Coordination, Project Coordination, and Utility Coordination. It was noted that parking meter head covering and removal is required for the S State St project location, and project coordination is required for the Stone School Rd and Ann Arbor-Saline Rd project locations. Revisions to Notice to Bidders for Project Coordination are forthcoming to address the maintenance of traffic requirements for the Stone School Rd project location. An addendum will address these revisions. It was also noted that a significant amount of permitted private utility work involving gas main replacement and fiber optic installation is planned citywide during the construction season, and this work could potentially affect certain project locations. This work will require careful utility coordination. The City plans to address this matter either at the project preconstruction meeting or at a separate utility coordination meeting prior to being held in advance of beginning any project work.

iv. MDOT Special Provisions and Supplemental Specifications

Attention was given to the MDOT Special Provisions for Temporary Pedestrian Type II Barricades and Channelizers, which traffic control devices included in each of these special provisions will be used on the project. Attendees were advised to review the all MDOT Special Provisions and Supplemental Specifications included in the bid documents.

v. Other

It was noted that that several MDOT Standard Plans primarily related to concrete pavement construction and repair were omitted from the bid documents. It was also noted that page IB-4 of the bid documents listed the Construction Type as both Heavy and Highway as being applicable to the project. It should only be Highway. An addendum will address these errors and omissions.

d. Plans

It was noted the plans are in the process of being revised to address incorrect quantity tables on each of the project location cover sheets, corrections to construction method and sequencing notes, the addition of plan sheets related to proposed work for the Ann Arbor-Saline Rd shared use path, and other necessary corrections. An addendum will address these revisions.
III. Construction

a. Scope of Work and Construction Sequencing

It was noted that all work on Major Streets as part this year’s project will require phased part width construction. Work on the local/residential will be full width unless otherwise directed by the Engineer. The requirements for the construction scope/methods and sequencing related to all locations are noted on the plans. This information is in the process of being updated for release in an addendum. These revisions will address the type of HMA mixes to be used at each location together with other items of work.

b. Maintenance of Traffic (M.O.T.)

Attendees were advised to review the requirements of the Detailed Specification for Maintenance of Traffic including the accompanying MDOT Traffic and Safety Maintaining Traffic Typicals applicable to the project. It was noted the work planned on the Major streets as part this year’s project will require maintenance of traffic in one direction only with traffic in the opposite direction operating on posted detours. The exception to this the work on Jackson Ave for which traffic will be maintained. Detailed M.O.T. plans are included in the plan set, and are in the process of being updated. An addendum will address these updates.

c. Special Concerns (local traffic access, pedestrian and cyclist mobility, tree protection, structure cleaning…)

Attendees were advised to review the requirements contained within the bid documents related to local traffic access, tree protection, structure cleaning, pedestrian and cyclist mobility and others. It was noted the City will be enforcing the cleaning of drainage and utility structures as part of the project completion requirements. It was noted that non-motorized traffic mobility will be more strictly reinforced as part of the project work particularly in project areas with high pedestrian and cyclist activity such as the campus area surrounding the S State St project location, along the Ann Arbor-Saline Rd shared use path, and in residential areas near parks and on school walking routes.

d. City Idling Ordinance

Attendees were advised to review and understand the requirements of the City’s Idling Reduction Ordinance, which became effective on July 1, 2017. Details regarding the ordinance can be found at www.a2gov.org/idlefree

IV. Other Items

There was no discussion related to other items.

V. Addenda

No addenda have been issued to date for this project; however, Addendum 1 is expected to be released by Tuesday, March 13, 2018, or no later than Wednesday, March 14, 2018, unless other necessary revisions are encountered requiring its release be delayed further. Should such a delay occur, the City will most likely extend the bid due date. This addendum
PRE-BID CONFERENCE

Street Resurfacing Project – 2018
(ITB No. 4529; City File No. 2018-004)

will address all of the necessary revisions and omissions mentioned during the Pre-Bid Conference as well as those discovered after it and/or received through inquiry.

VI. Questions

There were no questions from attendees regarding the proposed project work.

Contact Information:

David Dykman
Project Manager
Phone: (734) 794-6410 ext. 43685
Fax: (734) 994-1744
E-mail: ddykman@a2gov.org
## PRE-BID CONFERENCE SIGN-IN SHEET

**PROJECT:** Street Resurfacing Project - 2018 (ITB No. 4529; City File No. 2018-004)

**DATE:** March 8, 2018

### PLEASE PRINT

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<tr>
<th>NAME</th>
<th>REPRESENTING</th>
<th>MAILING ADDRESS</th>
<th>TELEPHONE</th>
<th>EMAIL</th>
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<tbody>
<tr>
<td>David Dykman</td>
<td>City of Ann Arbor - Project Management</td>
<td>Address: 301 E. Huron Street, P.O. Box 8647</td>
<td>Office: (734) 794-6410, x43685</td>
<td><a href="mailto:ddykman@a2gov.org">ddykman@a2gov.org</a></td>
</tr>
<tr>
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<td></td>
<td>City, State: Ann Arbor, MI Zip: 48107-8647</td>
<td>Mobile:</td>
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<td></td>
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<td></td>
<td>Fax: (734) 994-1744</td>
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<tr>
<td>David Clemons</td>
<td>City of Ann Arbor - Project Management</td>
<td>Address: 301 E. Huron Street, P.O. Box 8647</td>
<td>Office: (734) 794-6410, x43612</td>
<td><a href="mailto:dclemons@a2gov.org">dclemons@a2gov.org</a></td>
</tr>
<tr>
<td>Supervisor - Civil Engineering</td>
<td></td>
<td>City, State: Ann Arbor, MI Zip: 48107-8647</td>
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<td>Specialists</td>
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<td>Fax: (734) 994-1744</td>
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<tr>
<td>Gary Shively</td>
<td>City of Ann Arbor - Project Management</td>
<td>Address: 301 E. Huron Street, P.O. Box 8647</td>
<td>Office: (734) 794-6410, x43652</td>
<td><a href="mailto:gshively@a2gov.org">gshively@a2gov.org</a></td>
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<tr>
<td>(Project Inspector)</td>
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<td>Lana Zander</td>
<td>City of Ann Arbor - Project Management</td>
<td>Address: 301 E. Huron Street, P.O. Box 8647</td>
<td>Office: (734) 794-6410, x43644</td>
<td><a href="mailto:izander@a2gov.org">izander@a2gov.org</a></td>
</tr>
<tr>
<td>Civil Engineering Specialist</td>
<td></td>
<td>City, State: Ann Arbor, MI Zip: 48107-8647</td>
<td>Mobile:</td>
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<tr>
<td>(Project Inspector)</td>
<td></td>
<td></td>
<td>Fax: (734) 994-1744</td>
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<tr>
<td>Wanda Dwyer</td>
<td>CADILLAC</td>
<td>Address: 857 S. Wagner Rd Zip: 48105</td>
<td>Office: ( )</td>
<td><a href="mailto:wanda.dwyer@mipmc.com">wanda.dwyer@mipmc.com</a></td>
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<tr>
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<td>City, State: AZ Zip: 48105</td>
<td>Mobile: (734) 216-7060</td>
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<tr>
<td>George Lopez</td>
<td>CADILLAC</td>
<td>Address: 857 S. Wagner Rd Zip: 48105</td>
<td>Office: (731) 431-4964</td>
<td><a href="mailto:george.lopez@mipmc.com">george.lopez@mipmc.com</a></td>
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<td>Mobile: ( )</td>
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</tr>
<tr>
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Contractor shall pay the City as liquidated damages, and not as a penalty, a sum certain per day for each and every day that the Contractor may be in default of completion of the specified work, within the time(s) stated in the Contract, or written extensions.

Liquidated damages clauses, as given in the General Conditions, provide further that the City shall be entitled to impose and recover liquidated damages for breach of the obligations under Chapter 112 of the City Code.

The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

Human Rights Information
All contractors proposing to do business with the City shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the Section 9:158 of the Ann Arbor City Code. Breach of the obligation not to discriminate as outlined in Section 5, beginning at page GC-3 shall be a material breach of the contract. Contractors are required to post a copy of Ann Arbor’s Non-Discrimination Ordinance attached at all work locations where its employees provide services under a contract with the City.

Wage Requirements
Section 4, beginning at page GC-1, outlines the requirements for payment of prevailing wages and for payment of a “living wage” to employees providing service to the City under this contract. The successful bidder and its subcontractors must comply with all applicable requirements and provide proof of compliance.

Pursuant to Resolution R-16-469 all public improvement contractors are subject to prevailing wage and will be required to provide to the City payroll records sufficient to demonstrate compliance with the prevailing wage requirements. Use of the Prevailing Wage Form provided in the Appendix section or a City-approved equivalent will be required along with wage rate interviews.

For laborers whose wage level are subject to federal, state and/or local prevailing wage law the appropriate Davis-Bacon wage rate classification is identified based upon the work including within this contract. The wage determination(s) current on the date 10 days before bids are due shall apply to this contract. The U.S. Department of Labor (DOL) has provided explanations to assist with classification in the following resource link: www.wdol.gov.

For the purposes of this ITB the Construction Type of Highway will apply.

Conflict Of Interest Disclosure
The City of Ann Arbor Purchasing Policy requires that prospective Vendors complete a Conflict of Interest Disclosure form. A contract may not be awarded to the selected Vendor unless and until the Procurement Unit and the City Administrator have reviewed the Disclosure form and determined that no conflict exists under applicable federal, state, or local law or administrative
LEGAL STATUS OF BIDDER

(The Bidder shall fill out the appropriate form and strike out the other three.)

Bidder declares that it is:

* A corporation organized and doing business under the laws of the State of ____________, for whom ________________________________, bearing the office title of____________________, whose signature is affixed to this Bid, is authorized to execute contracts.

    NOTE: If not incorporated in Michigan, please attach the corporation’s Certificate of Authority

• A limited liability company doing business under the laws of the State of ____________, whom ______________ bearing the title of _____________ whose signature is affixed to this proposal, is authorized to execute contract on behalf of the LLC.

* A partnership, organized under the laws of the state of ___________ and filed in the county of ____________, whose members are (list all members and the street and mailing address of each) (attach separate sheet if necessary):

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

* An individual, whose signature with address, is affixed to this Bid: ____________________________ (initial here)

Authorized Official

_____________________________ Date ________________, 2018________

(Print) Name ___________________________ Title _____________________________

Company: ______________________________________________________________________

Address: ______________________________________________________________________

Contact Phone ( ) ______________________ Fax ( ) _________________________________

Email ________________________________
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TOTAL THIS PAGE $ 

2017 Construction Rev 0
## BID FORM

### Street Resurfacing Project - 2018

**File No. 2018-004**

**Bid No. 4529**

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## Street Resurfacing Project- 2018
### File No. 2018-004
### Bid No. 4529

### Section 1 - Schedule of Prices

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# BID FORM

Section 1 - Schedule of Prices

Street Resurfacing Project- 2018  
File No. 2018-004  
Bid No. 4529

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## BID FORM

### Section 1 - Schedule of Prices

**Street Resurfacing Project- 2018**  
**File No. 2018-004**  
**Bid No. 4529**

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**TOTAL THIS PAGE $_________**

2017 Construction Rev 0  
Addendum-1-19
## BID FORM

**Section 1 - Schedule of Prices**

**Street Resurfacing Project- 2018**  
**File No. 2018-004**  
**Bid No. 4529**

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<td>2,120.750</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>1590</td>
<td>8120370</td>
<td>Traf Regulator Control</td>
<td>LSUM</td>
<td>1.000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>1600</td>
<td>8127050</td>
<td>_No Parking Sign</td>
<td>Ea</td>
<td>538.000</td>
<td>$</td>
<td>$</td>
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<tr>
<td>1610</td>
<td>8127050</td>
<td>Turn Arrow Sym</td>
<td>Ea</td>
<td>2.000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>1620</td>
<td>8127050</td>
<td>Pedestrian Type II Barricade, Temp</td>
<td>Ea</td>
<td>15.000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>1630</td>
<td>8127050</td>
<td>Pedestrian Type II Channelizer, Temp</td>
<td>Ea</td>
<td>10.000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>1640</td>
<td>8127051</td>
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<td>1.000</td>
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<td>$</td>
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<tr>
<td>1650</td>
<td>8157060</td>
<td>Irrigation System, Protection and Maintenance</td>
<td>Dlr</td>
<td>2,500.000</td>
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<td>$</td>
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<tr>
<td>1660</td>
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<td>Slope Restoration</td>
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<tr>
<td>1670</td>
<td>8190159</td>
<td>Conduit, Schedule 80, 3 inch</td>
<td>Ft</td>
<td>100.000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>1680</td>
<td>8190244</td>
<td>Hh, Adj</td>
<td>Ea</td>
<td>8.000</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

**TOTAL THIS PAGE $**
## Street Resurfacing Project- 2018
File No. 2018-004
Bid No. 4529

### Section 1 - Schedule of Prices

<table>
<thead>
<tr>
<th>Line No.</th>
<th>Item No.</th>
<th>Item Description</th>
<th>Unit</th>
<th>Estimated Quantity</th>
<th>Unit Price</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1690</td>
<td>8197050</td>
<td>Handhole Assembly, 12 Inch x 18 Inch</td>
<td>Ea</td>
<td>1.000</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>1700</td>
<td>8197050</td>
<td>Handhole Assembly, 17 Inch x 30 Inch</td>
<td>Ea</td>
<td>1.000</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>1710</td>
<td>8197050</td>
<td>Handhole Assembly, 24 inch x 36 inch</td>
<td>Ea</td>
<td>1.000</td>
<td>$</td>
<td></td>
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<tr>
<td>1720</td>
<td>8217050</td>
<td>Monument Box Adjust</td>
<td>Ea</td>
<td>5.000</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>1730</td>
<td>8230431</td>
<td>Gate Box, Adj, Case 1</td>
<td>Ea</td>
<td>16.000</td>
<td>$</td>
<td></td>
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<tr>
<td>1740</td>
<td>8230432</td>
<td>Gate Box, Adj, Case 2</td>
<td>Ea</td>
<td>5.000</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>1750</td>
<td>8257050</td>
<td>Remove Parking Meters</td>
<td>Ea</td>
<td>5.000</td>
<td>$</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL THIS PAGE** $ 

**TOTAL FROM PAGE BF-1** $ 

**TOTAL FROM PAGE BF-2** $ 

**TOTAL FROM PAGE BF-3** $ 

**TOTAL FROM PAGE BF-4** $ 

**TOTAL FROM PAGE BF-5** $ 

**TOTAL FROM PAGE BF-6** $ 

**TOTAL FROM PAGE BF-7** $ 

**TOTAL FROM PAGE BF-8** $ 

**TOTAL BASE BID** $
a. **Description.** This item comprises all work described and required by the plans and specifications at each project location for which the contract contains no item(s) of work, including but not limited to the following:

- Scheduling, coordination, and organization of all work, subcontractors, suppliers, testing, inspection, surveying, and staking.
- Coordination of, and cooperation with, other contractors, agencies, departments, and utilities.
- Protection and maintenance of utilities.
- Maintaining drainage.
- Maintaining driveways drive openings, sidewalks, bike paths, mail deliveries, and solid waste/recycle pick-ups. This includes the placement and maintenance of gravel in driveway openings as directed by the Engineer.
- Storing all materials and equipment off lawn areas.
- Temporary relocation and final replacement/re-setting of mailboxes.
- Coordination efforts to furnish various HMA mixtures as directed by the Engineer.
- Coordination efforts to furnish and operate various-size vehicles/equipment as directed by the Engineer.
- Furnishing and operating vacuum-type street cleaning equipment a minimum of once per week or more frequently as directed by the Engineer.
- Protecting all sewers, and drainage and utility structures including manholes, gate wells, valve boxes, inlet structures from damage and contamination by debris and construction materials. Keeping structures clean of construction debris and properly covered at all times during the construction. Immediately cleaning any structures and/or sewers contaminated with construction debris resulting from Contractor operations and/or work activities.
- Furnishing and operating vacuum-type utility structure cleaning equipment.
- Furnishing and operating both vibratory plate and pneumatic-type (“pogo-stick”) compactors.
- Furnishing and operating a backhoe during all work activities.
- Furnishing and operating a jackhammer and air compressor during all work activities.
- Noise and dust control.
- Mobilization(s) and demobilization(s).
- Furnishing submittals and certifications for materials and supplies.
- All miscellaneous and incidental items such as overhead, insurance, and permits.
• Meeting all requirements relating to Debarment Certification, Davis Bacon Act, and Disadvantaged Business Enterprise, and providing the necessary documentation.

The Appendix of the contract documents provides data pertaining to existing soil borings and pavement sections to assist the Engineer and Contractor determine the soil conditions existing within the construction areas of the various project locations. The City in no way guarantees existing conditions to be the same as shown in the data. The Contractor is solely responsible for any/all conclusions it may draw from the data.

Quantities as given are approximate and are estimates for bidding purposes. The City does not guarantee their totals and they may vary by any amount. While it is the City's intent to complete the project substantially as drawn and specified herein, quantities may be changed or reduced to zero for cost savings or other reasons. The City reserves the right to change the quantities; however, the City will not allow the Contractor to adjust unit price(s) due to such change.


d. Measurement and Payment. Measure and pay for the completed work, as described, at the contract unit price using the following pay item:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Conditions, Max $___</td>
<td>Lump Sum</td>
</tr>
</tbody>
</table>

Measure General Conditions, Max $___ by the unit lump sum and pay for it at the contract unit price, which price includes costs for all labor, equipment and materials necessary to complete the work.

The Contractor is fully responsible for all direct and/or indirect damages to property caused by unclean or damaged sewers or structures resulting from its operations and/or work activities including any/all cost associated with such damages.

Measurement will be on a pro rata basis at the time of each progress payment, and based on the ratio of work completed during the payment period and the total contract amount. When all of the work of this Contract is complete, the measurement of this item shall be 1.0 Lump Sum, less any deductions incurred for inadequate performance as described herein. This amount will not increase for any reason, including extensions of time, extras, and/or additional work.
a. **Description.** The Contractor shall provide supervision in accordance with the City of Ann Arbor Standard Specifications, subsections 104.07 and 107.15 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, 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 crewmember 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.

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.
1. 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, subcontractor and/or supplier 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 MDOT 2012 Standard Specifications for Construction.

The Project Supervisor shall be responsible for the legal, proper and safe parking/storage of all of the Contractor, subcontractor and/or supplier 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 retained by the Engineer or City to witness and reset existing and new geographic/benchmark monuments. Failure to have existing monuments 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 required 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 MDOT 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.

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

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

Second Notice – The Engineer will issue a second warning in writing to the Contractor further detailing the deficiencies in the Project Supervision. The Engineer will deduct 10%, or $10,000, whichever is greater, from the original contract amount bid for the Project Supervision contract item of work. The Contractor must respond within seven (7) calendar days in writing with a plan to correct the stated deficiencies. Failure to respond within seven (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 – The Engineer will issue a third notice in writing to the Contractor further detailing the deficiencies in the Project Supervision. The Engineer will deduct 25%, or $25,000, whichever is greater, from the original contract amount bid for the Project Supervision contract item of work, and the Contractor will remove and replace the Project Supervisor immediately with another individual 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. The Engineer, in its determination, will consider failure by the Contractor to provide adequate project supervision as a basis to suspend work without the extension of contract time or additional compensation.

If the original Project Supervision contract amount is insufficient to cover said deductions, the Engineer will reduce Project Supervision contract amount to zero and will generate a contract modification to assess a penalty to cover the difference between the Project Supervision contract amount and the total amount of the deduction(s). The expectation is that the Project Supervision contract amount will be sufficient to cover any deductions.


d. Measurement and Payment. Measure and pay for the completed work, as described, at the contract unit price using the following pay item:
Measure **Project Supervision, Max $___** by the unit lump sum and pay for it at the contract unit price, which price includes costs for all labor, equipment and materials necessary to complete the work.

Measurement will be on a pro rata basis at the time of each progress payment, and based on the ratio of work completed during the payment period and the total contract amount. When all of the work of this Contract is complete, the measurement of this item shall be 1.0 Lump Sum, less any deductions incurred for inadequate performance as described herein. This amount will not increase for any reason, including extensions of time, extras, and/or additional work.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Supervision, Max $___</td>
<td>Lump Sum</td>
</tr>
</tbody>
</table>
a. **Description.** This specification covers all administrative requirements, payroll reporting procedures to be followed by Contractors performing work on City-sponsored public improvements projects, and all other miscellaneous and incidental costs associated with complying with the applicable sections of the City of Ann Arbor Code of Ordinances with regard to payment of prevailing wages and its Prevailing Wage Compliance policy.

The intent of this specification is **not** to include the actual labor costs associated with the payment of prevailing wages as required. Properly incorporate those costs in all other contract items of work bid for the project.

b. **General.** The Contractor will comply with all applicable sections of Federal and State prevailing wage laws, duly promulgated regulations, the City of Ann Arbor Code of Ordinances, and its Prevailing Wage Compliance Policy as defined within the contract documents. The Contractor shall provide the required certified payrolls, city-required declarations, and reports requested elsewhere in the contract documents within the timeline(s) stipulated therein.

The Contractor shall also provide corrected copies of any submitted documents found to contain errors, omissions, inconsistencies, or other defects that render the report invalid. Provide the corrected copies when requested by the Supervising Professional.

The Contractor shall also attend any required meetings as needed to fully discuss and ensure compliance with the contract requirements regarding prevailing wage compliance. The Contractor shall require all employees engaged in on-site work to participate in, provide the requested information to the extent practicable, and cooperate in the interview process. The City of Ann Arbor will provide the needed language interpreters in order to perform wage rate interviews or other field investigations as needed.

Submit certified payrolls on City-provided forms or forms used by the Contractor, as long as the Contractor forms contain all required payroll information. If the Contractor elects to provide its own forms, the Supervising Professional shall approve of their use prior to the beginning of on-site work.

c. **Unbalanced Bidding.** The City of Ann Arbor will examine the submitted cost for this item of work prior to contract award. If the City determines, in its sole discretion that the costs bid by the Contractor for complying with the contract requirements are not reasonable, accurately reported or contain discrepancies, the City reserves the right to request additional documentation that fully supports and justifies the price as bid. Should the submitted information not be determined to be reasonable or justify the costs, the City reserves the right to pursue award of the contract to the second low bidder without penalty or prejudice to any other remedies that it may have or may elect to exercise with respect to the original low-bidder.

The City will not extend the contract completion date as a result of its investigation of the as-bid amount for this item of work, even if the anticipated contract award date must be adjusted. The only exception will be if the Contractor adequately demonstrates that their costs were appropriate and justifiable. In such case, the City will adjust the contract completion date by the number of
calendar days commensurate with the length of its investigation if it cannot meet the published Notice to Proceed date of the work. The City will not allow adjustments to contract unit prices for all other items of work due to the adjustment of contract completion date.

d. **Measurement and Payment.** Measure and pay for the completed work, as described, at the contract unit price using the following pay item:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certified Payroll Compliance and Reporting</td>
<td></td>
</tr>
</tbody>
</table>

Measure **Certified Payroll Compliance and Reporting** by the unit lump sum and pay for it at the contract unit price, which price includes costs for all supervisory, accounting, and administrative labor, and equipment and materials necessary to complete the work of monitoring, performing and maintaining compliance with the tasks required of this Detailed Specification.

Measurement will be on a pro rata basis at the time of each progress payment, and based on the ratio of work completed during the payment period and the total contract amount. When all of the work of this Contract is complete, the measurement of this item shall be 1.0 Lump Sum, less any deductions incurred for inadequate performance as described herein. This amount will not increase for any reason, including extensions of time, extras, and/or additional work.
### Street Resurfacing Project - 2018

#### Schedule of Streets

<table>
<thead>
<tr>
<th>Location (Street)</th>
<th>Limits of Work</th>
<th>Start of Work</th>
<th>Completion of Work</th>
<th>Restricted Dates</th>
<th>Liquidated Damages per Calendar Day</th>
<th>Minimum Calendar Days for Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAJOR STREETS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jackson Avenue</td>
<td>Wagner Rd to MDOT/City Jurisdiction Limits (near Weber’s Inn)</td>
<td>07/03/2018</td>
<td>MMRL</td>
<td>60</td>
<td>$1,000.00</td>
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</tr>
<tr>
<td>South State Street</td>
<td>Hoover Ave to Packard St</td>
<td>07/11/2018</td>
<td>MMRL, INDP</td>
<td>28</td>
<td>$1,000.00</td>
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<tr>
<td>Stone School Road</td>
<td>E Eisenhower Pkwy to Packard St</td>
<td>See notes below</td>
<td>CAA1</td>
<td>24</td>
<td>$750.00</td>
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<tr>
<td>Ann Arbor-Saline Road</td>
<td>W Eisenhower Pkwy to Scio Church Rd</td>
<td>07/05/2018</td>
<td>CAA2, LABR, UMFB</td>
<td>21</td>
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<tr>
<td><strong>MINOR (LOCAL) STREETS</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bardstown Trail</td>
<td>Charter Pl to Middletown Dr</td>
<td>05/29/2018</td>
<td>AAPS, INDP, LABR</td>
<td>45</td>
<td>$500.00</td>
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</tr>
<tr>
<td>Sturbridge Court</td>
<td>Bardstown Tri to Westerly End (Cul-de-sac)</td>
<td>05/29/2018</td>
<td>MMRL, INDP, LABR</td>
<td>30</td>
<td>$500.00</td>
<td></td>
</tr>
<tr>
<td>Barrister Drive</td>
<td>Windemere Dr to Larchmont Dr</td>
<td>05/29/2018</td>
<td>MMRL, INDP, LABR</td>
<td>24</td>
<td>$500.00</td>
<td></td>
</tr>
<tr>
<td>Sulgrave Place</td>
<td>W Dobson Pl/Wolverhampton Ln to Easterly End (Cul-de-sac)</td>
<td></td>
<td>MMRL, INDP, LABR</td>
<td>30</td>
<td>$500.00</td>
<td></td>
</tr>
<tr>
<td>East Dobson Place</td>
<td>Woberhampton Ln to Dobson Pl to Westerly End (Cul-de-sac)</td>
<td></td>
<td>MMRL, INDP, LABR</td>
<td>30</td>
<td>$500.00</td>
<td></td>
</tr>
<tr>
<td>West Dobson Place</td>
<td>Kipling Dr to Southernly End (Cul-de-sac)</td>
<td></td>
<td>MMRL, INDP, LABR</td>
<td>30</td>
<td>$500.00</td>
<td></td>
</tr>
<tr>
<td>Fairmount Drive</td>
<td>Earhart Rd to Fairmont Dr</td>
<td></td>
<td>MMRL, INDP, LABR</td>
<td>24</td>
<td>$500.00</td>
<td></td>
</tr>
<tr>
<td>Kipling Drive</td>
<td>Wynnstone Dr to Northerly End (Cul-de-sac)</td>
<td></td>
<td>MMRL, INDP, LABR</td>
<td>30</td>
<td>$500.00</td>
<td></td>
</tr>
</tbody>
</table>

Addendum-1-30
# Street Resurfacing Project—2018

## Schedule of Streets

<table>
<thead>
<tr>
<th>Location (Street)</th>
<th>Limits of Work</th>
<th>Start of Work</th>
<th>Completion of Work</th>
<th>Restricted Dates</th>
<th>Maximum Calendar Days for Completion</th>
<th>Liquidated Damages per Calendar Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>McGregor Lane</td>
<td>Larchmont Dr to Chatham Way</td>
<td></td>
<td></td>
<td>MMRL, INDP, LABR</td>
<td>21</td>
<td>$500.00</td>
</tr>
<tr>
<td>Prestwick Court</td>
<td>MacGregor Ln to Westerly End (Cul-de-sac)</td>
<td></td>
<td></td>
<td>MMRL, INDP, LABR</td>
<td>45</td>
<td>$500.00</td>
</tr>
<tr>
<td>Windemere Drive and Court</td>
<td>Green Rd to Easterly End (Cul-de-sac)</td>
<td>05/29/2018</td>
<td></td>
<td></td>
<td>18</td>
<td>$500.00</td>
</tr>
<tr>
<td>Wolverhampton Lane</td>
<td>Glazier Way to Northerly End (Cul-de-sac)</td>
<td></td>
<td></td>
<td>MMRL, INDP, LABR</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- AAAF - No work permitted when Ann Arbor Public Schools are in session (before June 18, 2018 or after September 3, 2018).
- AAAF - No work permitted from July 19, 2018 thru July 22, 2018 due to the Ann Arbor Street Art Fairs.
- CAA1 - No work permitted until the City’s Stone School Road Sanitary Sewer Extension Project work is complete (anticipated by July 5, 2018).
- CAA2 - No work permitted until the City’s Ann Arbor-Saline Road Surface Project work is complete (anticipated by June 30, 2018).
- INDP - No work during the Independence Day holiday period from 3:00 p.m. July 3 to 7:00 a.m. July 5, 2018.
- LABR - No work during the Labor Day holiday period from 3:00 p.m. August 31 to 7:00 a.m. September 4, 2018.
- MMRL - No work during the Memorial Day holiday period from 3:00 p.m. May 25 to 7:00 a.m. May 29, 2018.
- UMFB - No work permitted during scheduled home game dates for University of Michigan Football.
- UMSM - No work permitted during University of Michigan Student Move-in (August 31 thru September 3, 2018).

1. Construct Bardstown Trail and Sturbridge Court concurrently.
2. Construct Barrister Drive and Sulgrave Place concurrently.
3. Construct East and West Dobson Place concurrently.
4. Construct Fairmount Drive, Kipling Drive and Severn Court concurrently.
5. Construct McGregor Lane and Prestwick Court concurrently.
6. Complete work on East and West Dobson Place prior to beginning work on Wolverhampton Drive.
7. Start work within seven calendar days of notification by the Engineer that the Sanitary Sewer Extension Project work is complete. The City will permit this project location work to commence as a fourth “active” location with three of those locations being on either Major or Local streets until such time as the work at one of the other locations is complete. From that time going forward the Contractor will again only work on three “active” street locations in accordance with the requirements of the Detailed Specification for Project Schedule.
Determination of the maximum dry density per cubic foot (lbs/ft$^3$) will be using test method AASHTO T-180 unless otherwise directed by the Engineer. Use the determined value(s) as the maximum unit weight when measuring the in place compaction or density of soils unless such value(s) are determined by an alternate test method as directed by the Engineer.
a. Description. The use of this detailed specification is to compensate the Contractor to locate underground infrastructure, such as culverts, sewers, utilities, and/or to expose the existing pavement section. Use must only be as directed and approved by the Engineer. This detailed specification is not to compensate the Contractor for the responsibilities in subsection 107.12 of the Standard Specifications for Construction.

This work consists of conducting a vertical exploratory investigation to expose an existing culvert, sewer, utility/utility service, or the existing pavement section in order to verify the location, condition, size, material, alignment and/or composition; allowing the Engineer to document the necessary information; and backfilling the excavation. It includes providing necessary lane, shoulder and/or sidewalk closures required to perform the work.

The intent of “Exploratory Excavation” is not to provide a means for the Contractor to locate each existing utility throughout the project, but for those that appear to be in conflict with the proposed work and their location is unclear or unknown. The Contractor is responsible for “using reasonable care to establish the precise location of the underground facilities in advance of construction” (Public Act 174 of 2013 - Miss Dig Law) as a part of the overall project contract.

b. Materials. Use Granular Material Class III in accordance with section 902 of the Standard Specifications for Construction for backfill. Use material removed during exploratory investigation for backfill only if approved by of the Engineer.

c. Construction. The owner of any sewer or utility to be exposed will not take the facilities out of service during the exploratory investigation. Contact utility owners in accordance with subsection 107.12 of the Standard Specifications for Construction.

Establish necessary lane, shoulder and/or sidewalk closures required to perform work.

Advance the exploratory excavation using vacuum excavation, hand digging, conventional machine excavation, or a combination thereof subject to approval of the Engineer. Allow the Engineer access to document the necessary information. If the technique used to advance the excavation causes any damage to the existing facilities, immediately contact the utility owner and cease all work until Engineer approves of an alternate method.

Take care to protect the exposed culvert, sewer or utility from damage during construction. Repair or replace culvert, sewer or utility, damaged during exploratory excavation, in accordance with the standard specifications and as approved by the Engineer.

Obtain the Engineer's approval before backfilling the excavation. Complete backfilling no later than 24 hours after approval. Backfill in accordance with subsection 204.03.C of the Standard Specifications for Construction. Dispose of excess material in accordance with the standard specifications.
The Contractor is responsible for all costs associated with the repair work and out of service time of all broken or damaged existing culverts, sewers or utilities resulting from any action by the Contractor. If the exploratory investigation results in damage to utilities, contact the owner of such utility to coordinate the repair.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the contract unit price for the following pay item:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploratory Excavation, Vertical</td>
<td>Foot</td>
</tr>
</tbody>
</table>

Measure **Exploratory Investigation, Vertical** by the foot from top of existing grade vertically to the bottom of the excavation for a 4-foot maximum diameter hole, or as approved by the Engineer. Measure and pay for the excavated depth of each 4-foot maximum diameter hole separately. One paid excavation may be include multiple utility verifications if the utilities are close in proximity.

**Exploratory Investigation, Vertical** includes all cost for labor, equipment and materials necessary to complete the work, including all costs associated with repair or replacement resulting from the Contractor’s activities.
a. **Description.** Remove miscellaneous structures and materials, and complete all earthwork required to construct new and replacement sidewalks, sidewalk ramps, and driveway approaches to the lines and grades shown on the plans and/or as directed by the Engineer. Complete this work according to the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, this detailed specification, and as directed by the Engineer.

b. **Materials.** Provide materials in accordance with subsection 205.02 of the MDOT 2012 Standard Specifications for Construction as necessary to achieve the required cross section(s). The Contractor may use excavated material, if suitable, as embankment with approval by the Engineer.

c. **Construction.** Complete this work according to applicable subsection 205.03 of the MDOT 2012 Standard Specifications for Construction. Grading for sidewalks and sidewalk ramps includes, but is not limited to, the following work:

1. Stripping and stockpiling topsoil for use in turf establishment as approved.
2. Removing rocks or boulders less than 0.5 cubic yards in volume.
3. Excavating material to a depth necessary for construction.
4. Disposing of excess and unsuitable material according to section 205 of the Michigan Department of Transportation (MDOT) 2012 Standards Specifications for Construction.
5. Furnishing and placing embankment material to the grades necessary for construction.
6. Shaping, grading, and compacting the subgrade and embankment to proposed grades to prepare it for Aggregate Base, Granular Material Class II or Subbase, CIP bedding material.
7. Matching new sidewalk, sidewalk ramp, and driveway approach grades with existing grades as required.

d. **Measurement and Payment.** Measure and pay for the completed work, as described, at the contract unit price using the following pay items:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grading, Driveway Approach</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Grading, Sidewalk</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Grading, Sidewalk Ramp</td>
<td>Square Yard</td>
</tr>
</tbody>
</table>

Measure **Grading, Driveway Approach; Grading, Sidewalk; and Grading, Sidewalk Ramp** areas in place by the unit square yard and pay for them at their respective contract unit prices, which prices include the costs for all labor, equipment and materials necessary to complete the work.
a. **Description.** Complete this work for machine grading in accordance with section 205 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction as shown on the plans, and as specified herein. Machine grading shall include all the work specified herein for which there is no separate pay item. This work shall consist of constructing earth grades by excavating, cutting, filling, trimming, and grading; general restoration, and sign removals in accordance with the Detailed Specifications elsewhere herein; and maintaining the work in a finished condition until such time that it is accepted by the Engineer.

b. **Materials.** All materials shall meet the requirements as specified in subsection 205.02 of the MDOT 2012 Standard Specifications for Construction.

c. **Construction.** All construction methods shall meet the requirements as specified in subsection 205.03 of the MDOT 2012 Standard Specifications for Construction, except as specified herein.

1. **Soils Information -** Soil information provided as part of the contract documents is for informational purposes only and shall not relieve the Contractor of the responsibility of investigating all local conditions before bidding.

2. **General Provisions -** The Contractor shall:
   
   A. Grade around mailboxes, trees, light poles, power poles, and the like, which will remain in place. The Contractor shall be responsible for any damage caused to such structures.
   
   B. Maintain the work in a finished condition until accepted by the Engineer.

3. **Pavement Sawcutting -** The work shall include the full-depth saw cutting of pavement at the construction limits, and elsewhere as required, if not paid for as part of another item of work.

4. **Removal of Trees and Vegetation -** The Contractor shall remove and properly dispose of off-site all vegetation; brush; roots; and trees and stumps less than 6 inch in diameter, as shown on the plans, and as directed by the Engineer as required to complete the project.

5. **Removal and Salvaging of Topsoil –** Remove, salvage and stockpile of topsoil, and all related work in accordance with subsection 205.03.A.1 (Removing and Salvaging Topsoil) of the MDOT 2012 Standard Specifications for Construction.

6. **Miscellaneous Removals -** Removal HMA, aggregate, and/or concrete materials from around manholes, structures, and utility covers. Removal of HMA curbing, HMA driveway wedges, HMA surface on existing curb and gutter, and HMA surfaces required for removal in other miscellaneous areas.

“Machine Grading, Special” includes the removal of any surface feature located within the grading limits which must be removed and for which there is no specific pay item
established in the proposal for its removal.

7. Protection of the Grade – Keep the work well drained at all times. Foundation, roadway embankment or subgrade damaged by rain shall be undercut and backfilled, or otherwise remedied, by the Contractor, at his/her sole expense, as directed by the Engineer.

The Contractor shall be responsible for the maintenance of the foundation, roadway embankment, and subgrade.

The Contractor shall not use rubber-tired equipment on the foundation, roadway embankment, or subgrade, when its use causes, in the opinion of the Engineer, unnecessary damage to the foundation, road embankment or subgrade. The Contractor shall conduct its operations and provide the necessary equipment to ensure the satisfactory completion of the work without damaging the foundation, roadway embankment or subgrade. This may require the transporting and movement of materials over additional distances.

At various times throughout the work, the Engineer may direct the Contractor to use smaller and/or lighter equipment, and to defer certain work tasks, in order to protect the grade and/or adjacent areas. The Contractor shall not be entitled to an extension of time or any additional compensation for the use of smaller equipment, lighter equipment, or work task deferral.

8. Removal of Cable, Conduits and Pipe - The Contractor shall remove, and properly dispose of off-site, all abandoned cables, conduit, and pipe encountered at or above the bottom of any earthwork excavation or undercut. Fill the any/all voids less than 16 inches below the bottom of any earth excavation resulting from these removals with an Engineer approved material. Compact fill material to 95% of its maximum unit weight in lifts not exceeding 12 inches.

9. Preparing Foundations – The foundation is the earth grade upon which the Contractor will place roadway embankment, subbase, and aggregate material. Complete the foundation work in accordance with subsection 205.03.A (Preparing Roadway Foundation) of the MDOT 2012 Standard Specifications for Construction as shown on the plans, and as specified herein.

Compact the foundation to 95% of its maximum unit weight, as measured by the AASHTO T-180 method, to a depth of at least 10 inches. If in the opinion of the Engineer this is not feasible, the Engineer will direct the Contractor to perform “Subgrade Undercutting, Type ___” or “Subgrade Manipulation” on the foundation as described herein.

10. Roadway Embankment Construction - Roadway embankment is the construction of earth on the prepared foundation to form the subgrade. Complete roadway embankment work in accordance with subsection 205.03 H (Roadway Embankment) of the MDOT 2012 Standard Specifications for Construction as shown on the plans, and as specified herein. Roadway embankment shall be compacted to a minimum of 95% of its maximum unit weight, as measured by the AASHTO T-180 method.

11. Subgrade Construction - Subgrade is the final earth grade that extends from grading limit to grading limit. Construct the subgrade by performing earth excavation and roadway embankment work in accordance with subsection 205.03.G (Earth Excavation) and
subsection 205.03 H (Roadway Embankment) of the MDOT 2012 Standard Specifications for Construction, as shown on the plans, and as specified herein.

Construct the subgrade to the contours and cross-sections shown on the plans, as specified herein, and as directed by the Engineer. To achieve this, the work shall include, but not be limited to:

A. Removal and disposal off-site of any surplus or unsuitable materials.
B. Furnishing from off-site any additional Engineer approved fill materials necessary.
C. Moving existing and/or furnished materials longitudinally and transversely as necessary.
D. Cutting, placing, compacting, and trimming existing and/or furnished materials to construct the roadway embankment and subgrade to the specified tolerances.
E. Stockpiling, and moving again, any cut materials the Contractor cannot immediately place upon excavation due to construction staging.

Grade the subgrade to accommodate all subbases and aggregate bases wherever used, all bioswale and adjacent planting beds, all roadway pavements, curb and gutter, driveways, sidewalks, bicycle paths, other similar structures, bioswale planting mix, topsoil, and any other features that the subgrade supports.

Prepare the subgrade to ensure uniform support for the pavement structure. Construct the finished subgrade to within 1 inch below and ¾ inch above plan grade. Variations within this tolerance shall be gradual.

The subgrade shall be compacted to a minimum of 95% of its maximum unit weight, as measured by the AASHTO T-180 method, to a depth of 10 inches. If in the opinion of the Engineer this is not feasible, the Engineer will direct the Contractor to perform “Subgrade Undercutting, Type __” or “Subgrade Manipulation” on the foundation as described herein.

The Contractor shall use equipment and methods of construction best suited, in the opinion of the Engineer, to perform earthwork operations and satisfy the project requirements. The use of various equipment and methods of construction are subject to the approval of the Engineer. The Engineer may disallow the use of certain equipment and methods of construction and require the use of other equipment and/or methods of construction.

13. Test Rolling - The Contractor shall test-roll (proof-roll) the foundation and/or subgrade with a pneumatic tired roller with a suitable body for ballast loading and a gross load capacity between 25 and 40 tons. In place of a pneumatic tired test roller, with the approval of the Engineer, the Contractor may use a fully loaded single axle or tandem axle dump truck.

14. Subgrade Undercutting – Perform “Subgrade Undercutting” on the foundation or subgrade in accordance with section 205.03.E (Subgrade Undercutting) of the MDOT 2012 Standard Specifications for Construction, as shown on the plans, as specified herein, and as directed by the Engineer.

15. Subgrade Manipulation – Perform “Subgrade Manipulation” on the foundation or subgrade in accordance with section 205.03.F (Subgrade Manipulation) of the MDOT 2012 Standard Specifications for Construction, as shown on the plans, as specified herein, and
Thoroughly scarify, blend, and mix to a depth of 12 inches foundation or subgrade areas requiring subgrade manipulation. Accomplish this work by means of a large diameter disc, motor grader, or other equipment approved by the Engineer. After manipulating the foundation or subgrade to the satisfaction of the Engineer allow it to dry, the soil shall be compacted to 95% of its maximum dry density as measured by the AASHTO T-180 method. The time required for drying the soil will not be a basis for an extension of time.

The cost of Subgrade Manipulation shall be included in the cost of “Machine Grading, Special” unless a pay item for “Subgrade Manipulation” is included in the Contract documents.

16. Rock Excavation – Perform rock excavation in accordance with section 205.03.B (Rock Excavation) of the MDOT 2012 Standard Specifications for Construction, as shown on the plans, and as directed by the Engineer.

Rock excavation applies to the removal of rocks, concrete and masonry less than ½ cubic yard in volume. Measure rocks and boulders, concrete, and/or masonry individually and compute the volume from the average dimensions measured in three directions.

17. Temporary Lowering Structures - Prior to cutting the subgrade, the Contractor shall remove structure covers, temporary lower the structures to a point between 8 inches and 12 inches below the proposed subgrade, and cover the structures with a steel plate. Do not raise any structures prior to placing roadway embankment.

The steel plates for covering structure openings shall conform to the plan detail. Place and peg steel plates properly to prevent their movement under all traffic and prevent the infiltration of debris into the structures. Plates should be thick enough to carry all traffic loads.

The Contractor shall lower valve boxes to a point between 8 inches and 12 inches below the proposed subgrade. Do not raise valve boxes shall prior to placing roadway embankment.

The void in the grade above the steel plates used for structure lowering and valve box lowering shall be backfilled, and compacted to 95% of its maximum dry density, with an Engineer approved coarse aggregate.

The Contractor shall coordinate the lowering of private utility structures with the private utility companies.

18. Structure Covers - The Contractor shall remove and stockpile on site at a location mutually agreed upon by the Contractor and Engineer any/all existing structure covers designated for salvage and within two days of their removal deliverer them to the City’s W.R. Wheeler Service Center (4251 Stone School Rd, Ann Arbor, MI). Any structure covers not designated for salvage shall become the property of the Contractor, and disposed of, as required, by the Contractor.

19. Tree trimming - The Contractor shall coordinate with the City Field Services Unit to schedule trimming of trees by City forces or authorized subcontractor. The Contractor shall not be entitled to an extension of time or any additional compensation for the coordination of
d. Measurement and Payment. Measure and pay for the completed work, as described, at the contract unit price using the following pay item:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine Grading, Special</td>
<td>Square Yard</td>
</tr>
</tbody>
</table>

Measure **Machine Grading, Special** area by the unit square yard and pay for it at the contract unit price, which price includes costs for all labor, equipment and materials necessary to complete the work.

Measure quantity of excavated material (soil, rock, brick, etc.) from the top of existing grade down to the bottom of the excavation. Embankment, fill, subgrade protection/maintenance/manipulation, and drainage maintenance are not a separate contract pay items. Include payment for this work in the item of work, **Machine Grading, Special**.

The Contractor shall include all of its costs to complete all of the work described above in the **Machine Grading, Special** pay item based on the plan quantities shown in the Contract. The Engineer will not pay for additional work associated with **Machine Grading, Special**, whether or not shown on the plans or specified above unless there are separate pay items in the contract specific to these types of work. The Engineer may adjust plan quantities due to changes in the limits of the work. The Engineer will direct these adjustments in writing.

The pay item **Machine Grading, Special** shall include all the work specified herein, including, but not limited to, the removal and offsite disposal of any surplus or unsuitable materials and the furnishing from off-site any additional Engineer approved fill materials necessary to construct the embankment and subgrade to the contours and cross-sections shown on the plans.

There will be no separate payment for any required pavement saw cutting.

The Contractor, at its sole expense and as directed by the Engineer, shall repair any damage to the foundation, roadway embankment or subgrade where in the opinion of the Engineer traffic and/or the operations of the Contractor caused the damage.

There will be no separate payment for the removal of cable, conduit, pipe or any other work described above in section c.8 (Removal of Cable, Conduits and Pipe).

There will be no additional compensation or extensions of contract time for additional measures required to protect the grade as specified above.

Where “Rock Excavation” as described above exceeds ½ cubic yard in volume the Engineer will pay for the work separately as extra work unless there is a separate pay item in the contract specific to that type of work.

Due to the nature of this project, it is highly probable that some or all of the excavated material may not be suitable for use as approved fill/embankment material. Consequently, there may be imbalances between the amount of earth excavation, which is suitable for reuse as embankment, and the amount of embankment needed for the construction activities shown on the plans, or as directed by the Engineer. The Contractor shall make provisions for such imbalances and shall
include in the bid price for this work the cost of furnishing, placing, and compacting of the additional embankment material necessary to complete the work to construct the embankment and subgrade to the cross sections shown on the plans, or as directed by the Engineer. This includes the cost of stockpiling and re-handling of imported and/or on-site material.
a. **Description.** This work consists of installing and maintaining inlet filters, as shown on the plans, in accordance with section 208 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction and. Install filters in existing and proposed inlets to restrict and minimize amounts of sediment entering into the storm sewer system and 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 to provide a properly working inlet filter and a well-drained site.

b. **Materials.** The following devices are approved for use as acceptable alternatives:

1. Siltsack Type B, Regular Flow, by ACF Environmental, Inc.
2. Inlet Pro Sediment Bag, Standard Flow, with optional foam deflector by Hanes GeoComponents.
3. Dandy Curb Bag, Dandy Bag, Dandy Curb Sack, Dandy Sack, or Dandy Pop by Dandy Products, Inc.

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

c. **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.** Measure and pay for the completed work, as described, at the contract unit price for the following pay item:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion Control, Inlet Filter</td>
<td>Each</td>
</tr>
</tbody>
</table>

Measure **Erosion Control, Inlet Filter** individually in place by unit each and pay for it at the contract unit price, which price includes all costs for labor, equipment and materials necessary to furnish, install, maintain, clean and remove the inlet filter, and to re-install and/or replace the inlet filter as needed.
a. **Description.** Use flexible pipe couplings to adjoin pipes of different sizes or materials as directed by the Engineer, and as described herein.

b. **Materials.** Use Fernco™ Flexible couplings with stainless steel shear rings; Indiana Seal Flexible Couplings; or an Engineer approved equal.

c. **Construction.** Install flexible couplings per the specifications of the manufacturer, and provide stainless steel shear rings regardless of pipe bedding conditions.

d. **Measurement and Payment.** Prior to payment for this item, the Contractor shall submit its receipt(s) from the manufacturer or supplier to the Engineer. Receipt(s) should detail the cost of each coupling and related components including shipping charges and taxes. The Engineer will review and approve these costs and pay for them as an extra to the contract. The Contractor shall include all labor and equipment costs necessary to install the flexible pipe coupling(s) in the contract unit price(s) for the pay item(s) directly associated with this work.
a. **Description.** This work consists of cleaning, pointing, and temporary lowering drainage and utility (storm, sanitary, and water) structures whether shown or not on the plans, as directed by the Engineer, and as herein provided.

b. **Materials.** Provide materials in accordance with subsection 403.02 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, unless otherwise directed by the Engineer.

c. **Construction.** Clean, point, and temporary lower drainage and utility structures in accordance with subsection 403.03 of the MDOT 2012 Standard Specifications for Construction, and as directed by the Engineer.

Reconstruct drainage and utility structures from the base using precast reinforced concrete units or concrete block masonry.

Point structures by removing loose and damaged mortar, filling joints between concrete and masonry units with new mortar, and striking joints so the exposed surface is smooth and free of voids.

d. **Measurement and Payment.** Measure and pay for the completed work, as described, at the respective contract unit prices using the following respective pay items:

<table>
<thead>
<tr>
<th><strong>Pay Item</strong></th>
<th><strong>Pay Unit</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Structure, Cleaning, Modified</td>
<td>Each</td>
</tr>
<tr>
<td>Dr Structure, Point</td>
<td>Each</td>
</tr>
<tr>
<td>Dr Structure, Temp Lowering, Modified</td>
<td>Each</td>
</tr>
</tbody>
</table>

Measure **Dr Structure, Cleaning, Modified; Dr Structure, Point; and Dr Structure, Temp Lowering, Modified** individually in place by their respective units each and pay for them at their respective contract unit prices, which prices include the costs for all labor, equipment and materials necessary to complete the work.
a. Description. This work shall consist of reconstructing drainage and utility structures in accordance with section 403 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, as shown on the plans, as directed by the Engineer, and as specified herein.

b. Materials. The materials used for this work shall conform to subsection 403.02 of the MDOT 2012 Standard Specifications for Construction except as specified herein.

Construct drainage structures of precast or cast in place reinforced concrete sections, or concrete masonry units. Construct all sanitary sewer manholes and gate wells (water main valve manholes) of precast reinforced concrete sections.

Precast reinforced concrete bases, bottom sections, manhole risers, grade adjustment rings, concentric cones, eccentric cones, and flat slab tops shall conform to the requirements of ASTM C 478. Joints on precast manholes used on all sanitary sewers shall meet ASTM C 443, rubber O-ring gasket.

Concrete masonry units shall conform to the requirements for concrete masonry units for catch basins and manholes, ASTM C 139.

Concrete brick shall conform to the requirements for concrete building brick, ASTM C 55, Grade N-1.

Plastic coated manhole steps shall be injection molded of copolymer, polypropylene, encapsulating a ½-inch grade 60 steel reinforcing bar. Plastic-coated manhole steps shall meet the performance test described in ASTM C-478, Paragraph II, and shall have an impact resistance of 300 ft-lbs, with only minor deflection and no cracking or breaking. The steps shall resist pull out forces of 1500 lbs.

c. Construction. The construction methods used for reconstructing drainage structures, where directed by the Engineer, shall conform to section 403.03 of the MDOT 2012 Standard Specifications for Construction except as specified herein.

Excavate to the depth and width required to permit the construction of the required base. The excavation width shall be greater than the base. Trim the bottom of the excavation to a uniform horizontal bed and be completely dewatered before placing any structure components.

Use concrete block construction only for storm sewer manholes and inlets and construct these structures to the size and dimensions shown on the plans. Use clean masonry block units, place them in a full bed of mortar, and thoroughly bond them together in place by completely filling the vertical end grooves with mortar to interlock them with the adjacent blocks. The mortar beds and joints shall not exceed 3/4 inch thickness. Completely fill vertical joints and fill joints on the inside face of the structure by rubbing them full of mortar and striking them smooth as construction proceeds vertically. Place and strike smooth a 1/2” thick mortar coat on the entire outside face of...
the structure. Heat all masonry materials, sand, and water to over 50° F during freezing weather
and cover and protect the completed work from damage by freezing.

Construct circular precast manhole sections in accordance with the details as shown on the plans. Construct manhole stack units on level poured-in-place bases, precast concrete bases, or precast concrete bottom sections.

Construct precast cone sections in accordance with the details as shown on the plans. These units shall be eccentric for all manholes, precast or block. Top all structures with a minimum of one and a maximum of three adjustment courses. Adjustment courses shall be 2 inches in height and constructed using bricks or precast adjustment rings.

Construct manholes, inlets, gate wells, and other structures within 2-1/2 inches of plumb.

Frames and cover castings shall be set in full mortar beds and pointed on the structure interior to a smooth, brushed finish. The covers shall be set flush with sidewalk, roadway pavement, or ground surfaces. Notify the Engineer prior to the final paving to allow inspection of the final casting adjustments for all utility structures. In gravel streets, set covers six to eight inches below finished gravel surface.

Extend sewer pipes into structures a minimum of 1/2 inch and a maximum of 3 inches.

Finish flow channels for sewer structures in accordance with the details as shown on the plans. Screed and float all flow channels to a smooth, uniform surface and troweled to a hard surface finish.

Furnish and place stubs for future sewer connections as shown on the plans and as directed by the Engineer. Properly support and brace connections when they are not resting on original ground so that any settlement will not disturb the connection. Stubs shall consist of one length of sewer pipe, of the size indicated on the plans, with a watertight plug.

Keep the excavation in a dry condition.

**Sealing Manhole Cone/Chimney Interface Area:**

Place an epoxy or urethane sealing product at the junction of the drainage structure cone/chimney interface as detailed on the plans or as directed by the Engineer. Use only products approved by the Engineer and manufactured by one of the suppliers listed below:

NPR-3501 Neopoxy (epoxy) manufactured by NeoPoxy International, 27057 Industrial Boulevard, Hayward, CA 94545, Phone 510.782.1290, Fax 510.782.1292 ([www.NeoPoxy.us](http://www.NeoPoxy.us))

EasySeal SG (urethane) manufactured by Cretex Specialty Products, N16 W23390 Stone Ridge Drive, Suite A, Waukesha WI 53188, Phone 800 345 3764, Fax 262.542.0301 ([www.cretexseals.com](http://www.cretexseals.com))

Flex-Seal (urethane) manufactured by Sealing Systems, Inc, 9350 County Road 19, Loretto, MN 55357, Phone 800-478-2054, Fax 763-478-8868 ([www.ssisealingsystems.com](http://www.ssisealingsystems.com))
For the purposes of this work, the definition of the manhole chimney is the masonry units sitting atop the pre-cast concrete or manhole block corbel or cone sections and extending up to the bottom of the drainage structure cover. Apply sealant to the entire chimney section. Thoroughly clean the chimney section as detailed in the installation instructions of the sealant manufacturer. Apply all products in strict accordance with the recommendations and installation requirements of the manufacturer. The Engineer shall approve the chosen sealing product prior to commencement of the work.

**d. Measurement and Payment.** Measure and pay for the completed work, as described, at the contract unit price for the following pay item:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure, Reconstruct</td>
<td>Each</td>
</tr>
</tbody>
</table>

Measure **Structure, Reconstruct** individually in place by unit each and pay for it at the contract unit price, which price includes all costs for labor, equipment and materials to complete the work. It also includes any/all costs necessary for dewatering and adjustments required to accommodate field conditions encountered during construction.
a. **Description.** This work shall consist of prepping the surface, furnishing, and installing a geosynthetic paving layer on the leveling course prior to placing the new HMA top course as shown on the plans.

b. **Materials.** The asphalt bond coat shall be hot applied asphalt cement meeting grade requirements for AC, AR, or PG specifications. Apply an AC-2O, PG 64-22, or 60-80 penetration grade of asphalt for normal installations and temperatures. For applications when temperatures exceed 90 degrees Fahrenheit, use a higher viscosity asphalt. AC-30, PG 70-10 or 40-60 penetration grades are appropriate.

The geosynthetic paving layer shall be a non-woven fiberglass/polyester interlay paving material (F/P Interlayer) or approved equal. It shall be free from any tears or holes that will adversely affect physical properties and in-situ performance after installation.

The minimum physical property requirements of the material are as follows:

<table>
<thead>
<tr>
<th>Mechanical Property</th>
<th>Test Method</th>
<th>Unit</th>
<th>Typical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength, MD</td>
<td>ASTM D5035</td>
<td>Lbf/in</td>
<td>&gt;80</td>
</tr>
<tr>
<td>Tensile Strength, CD</td>
<td>ASTM D5035</td>
<td>Lbf/in</td>
<td>&gt;70</td>
</tr>
<tr>
<td>Elongation at Maximum Load</td>
<td>ASTM D5035</td>
<td>%</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Asphalt Retention</td>
<td>ASTM D6140</td>
<td>Gal/yd2</td>
<td>0.18</td>
</tr>
<tr>
<td>Melting Point</td>
<td>ASTM D276</td>
<td>°F</td>
<td>&gt;446</td>
</tr>
<tr>
<td>Mass per Unit Area</td>
<td>ASTM D5261</td>
<td>Oz.yd2</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Notes:
- **MD** = Machine Direction (longitudinal to the roll)
- **CD** = Cross Direction (across roll width)
- Note: Conditions for tensile strength measurements:
  - Sample width: 2 inches
  - Sample Length: 10 inches
  - Gage Length: 7 inches
  - Crosshead Speed: 2 inches/minute

The manufacturer shall furnish certified test data showing the material meets the physical and engineering properties of this specification, and furnish a letter of certification shall with each shipment stating the material complies with specification requirements.

c. **Construction.** A trained and experienced installer certified by the manufacturer or their agent(s) shall install and/or supervise the installation of geosynthetic paving layer material.

Apply geosynthetic material on a clean, dry surface free and clear of all dirt and debris.

Apply bond coat using a motorized distributor (spreader) that is capable of adjusting spray rates by 0.10 gal/syd. The valves on the distributor bar must fan in an overlap fashion at the application rate. The recommended application is 0.15 gal/syd. Install geosynthetic material over hot asphalt tack coat.
Place the geosynthetic paving layer material using a tractor or a distributor truck with a fabric applicator attached to the back. Install paving layer material using mechanically powered equipment, or by hand as required and approved by the Engineer. Mechanical equipment shall be capable of installing rolls 3.0 feet in width. Only install material by hand in areas needing specially cut sections, and/or where mechanically installed methods are not feasible. Use brooms or squeegees to remove any air bubbles and ensure paving layer material is in complete contact with the underlying surface. Cut or smooth folds and wrinkles encountered during lay down operations, and apply additional bond coat material as needed to achieve complete adhesion.

Overlap paving layer material according to the manufacturer’s specifications. Overlap the transverse roll ends in the direction of paving operations to avoid pick-up during HMA paving. Apply bond coat to all overlaps to ensure proper adhesion.

The Engineer shall approve any deviations, alterations and/or work not specifically called for on the plans and determined necessary to install the paving layer.

d. **Measurement and Payment.** Measure and pay for the completed work, as described, at the contract unit price using the following pay item:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geosynthetic Paving Layer</td>
<td>Square Yard</td>
</tr>
</tbody>
</table>

Measure Geosynthetic Paving Layer area in place by the unit square yard and pay for it at the contract unit price, which price includes all cost for labor, equipment and materials necessary to complete the work. It also includes labor, equipment and material costs related any deviations, alterations and/or work not specifically called for on the plans and determined necessary to install the paving layer. The Engineer will make no allowance for overlaps, splices, or cut off and/or wasted material.
a. **Description.** Perform this work in accordance with the requirements of section 501 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, and as herein specified.

b. **Materials.**

<table>
<thead>
<tr>
<th>PAY ITEM</th>
<th>HMA MIX</th>
<th>APPLICATION RATE</th>
<th>ESTIMATED THICKNESS</th>
<th>PERFORMANCE GRADE</th>
<th>AWI (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stone School Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HMA, 5E1</td>
<td>5E1 (top)</td>
<td>165-220 lb/syd</td>
<td>1.5-2.0 inches</td>
<td>PG 64-28</td>
<td>260</td>
</tr>
<tr>
<td>HMA, 4E1</td>
<td>4E1 (leveling)</td>
<td>220-275 lb/syd</td>
<td>2.0-2.5 inches</td>
<td>PG 64-28</td>
<td>N/A</td>
</tr>
<tr>
<td>South State Street</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HMA, 5E1, High Stress</td>
<td>5E1 (top)</td>
<td>165-220 lb/syd</td>
<td>1.5-2.0 inches</td>
<td>PG 70-28P</td>
<td>260</td>
</tr>
<tr>
<td>HMA, 4E1, High Stress</td>
<td>4E1 (leveling)</td>
<td>220-275 lb/syd</td>
<td>2.0-2.5 inches</td>
<td>PG 70-28P</td>
<td>N/A</td>
</tr>
<tr>
<td>Jackson Avenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HMA, 5E3, High Stress</td>
<td>5E3 (top)</td>
<td>165-220 lb/syd</td>
<td>1.5-2.0 inches</td>
<td>PG 70-28P</td>
<td>260</td>
</tr>
<tr>
<td>HMA, 4E3, High Stress</td>
<td>4E3 (leveling)</td>
<td>220-275 lb/syd</td>
<td>2.0-2.5 inches</td>
<td>PG 70-28P</td>
<td>N/A</td>
</tr>
<tr>
<td>Minor (Local) Streets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HMA, LVSP (top &amp; leveling)</td>
<td>LVSP Local Streets</td>
<td>220 lb/syd</td>
<td>2.0 inches</td>
<td>PG 58-28</td>
<td>220</td>
</tr>
<tr>
<td>Major and Minor (Local) Streets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HMA, Approach</td>
<td>5E1 or 5E3 Major Streets LVSP Minor Streets</td>
<td>Place in two courses/lifts at 220 lb/syd</td>
<td>Thickness may vary with maximum per lift = 2.0 inches</td>
<td>PG 64-28</td>
<td>260</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PG 58-28</td>
<td>220</td>
</tr>
<tr>
<td>HMA, Wedging, 36A</td>
<td>36A</td>
<td>Yield may vary between 110 and 330 lb/syd</td>
<td>Thickness may vary between 1.0 and 3.0 inches</td>
<td>PG 58-28</td>
<td>220</td>
</tr>
<tr>
<td>Hand Patching</td>
<td>5E1 or 5E3 Major Streets LVSP Minor Streets</td>
<td>Yield may vary with maximum = 330 lb/syd</td>
<td>Thickness may vary with maximum layer = 3.0 inches</td>
<td>PG 64-28</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PG 58-28</td>
<td></td>
</tr>
</tbody>
</table>

Addendum-1-50
Use the respective mixes indicated above on Major and Local streets unless the plans note otherwise, or directed otherwise by the Engineer. Prior to placing HMA, Approach and/or Hand Patching on Major streets the Engineer shall approve the mixture proposed for use.

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

The Performance Grade asphalt binder range for the HMA mixture shall be as noted above. Apply Bond Coat material accordance with the requirements of the Detailed Specification for HMA Paving.

The uniform rate of application shall be between 0.05 and 0.10 gallons per square yard as directed and approved by the Engineer. Bond Coat is not a separate pay item, and payment for furnishing and placement is included in the HMA items of work for which it applies.

**c. Measurement and Payment.** Measure and pay for this work as provided elsewhere in the contract documents.
a. Description. Hot Mix Asphalt (HMA) pavement base, leveling, and top courses shall be constructed in accordance with section 501 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, except as modified herein, and as directed by the Engineer.


c. Construction.

1. Equipment: All equipment shall conform to subsection 501.03.A of the MDOT 2012 Standard Specifications for Construction, except as modified herein.

The Contractor shall have a 10-foot long straight edge, rubber-tired backhoe (Case 580 type, or equivalent), air-compressor with the ability to develop a minimum pressure of 100 pounds per square inch and continuous rated capacity of 150 cubic feet per minute of airflow, and jackhammer available during all paving operations. The Contractor shall be required to perform any miscellaneous cleaning, trimming, material removal, and other tasks as required by the Engineer in order to ensure the proper and orderly placement of all HMA materials on this project.

The Contractor shall provide sufficient rollers to achieve the specified asphalt densities.

At various times throughout the work, the Engineer may direct the Contractor to use smaller and/or lighter equipment, and to defer certain work tasks, in order to protect the grade and/or adjacent areas; including hauling units. The Contractor shall not be entitled to any additional compensation for the use of smaller equipment, lighter equipment, or work task deferral.

2. Cleaning and Bond Coat Application: Cleaning and bond coat application shall be performed in accordance with subsections 501.03.C and 501.03.D of the MDOT 2012 Standard Specifications for Construction, except as modified herein, and as directed by the Engineer.

The Contractor shall furnish and operate throughout the construction period, vacuum-type street cleaning and utility structure cleaning equipment (Vac-All, Vactor, etc.) approved by the Engineer, and when directed by the Engineer, for street cleaning immediately prior to, and for street and utility structure cleaning after any and all paving. The cleaning equipment shall be of sufficient power to remove dust, dirt, and debris from the pavement and from utility structures in and adjacent to the construction area. The Engineer shall approve the vac-all or similar equipment prior to beginning the work. The equipment used shall have an effective means for preventing any dust resulting from the operation from escaping into the air.
Apply bond coat at a rate of 0.10 gallons per square yard. Before placing the bond coat, the thoroughly clean the existing pavement surface. The Contractor shall also thoroughly clean all joints, cracks, and edges to a minimum depth of one inch with compressed air, vac-all type equipment, or other approved mechanical or hand methods, to remove all dirt, debris, and all foreign material.

3. HMA Placement: Placement shall conform to subsection 501.03.F of the MDOT 2012 Standard Specifications for Construction, except as modified herein, and as directed by the Engineer.

HMA placement shall not commence until a “Permit to Place” (no additional costs are required to obtain this permit) has been issued in writing by the Engineer. The Engineer will issue a Permit to Place after approving the aggregate base course or the adjacent, underlying layer of pavement section.

The Engineer must approve the final structure adjustments prior to the issuance of the “Permit to Place” for the top course.

Place the top course with a ¼” lip along the edge of the curb and gutter/edge of metal.

All HMA thickness dimensions are compacted-in-place.

4. Paving Operation Scheduling: The Contractor shall schedule the paving operation to avoid leaving longitudinal cold joints “open” overnight.

In all cases, the Contractor shall pave the primary road’s through-traffic lanes (“main line”) first, from point-of-beginning to the point-of-ending. All other paving including, but not limited to; acceleration and deceleration lanes, intersection approaches, and center left-turn lanes shall be paved following completion of main line paving, unless authorized by the Engineer prior to the placement of any pavement.

5. Rate of Paver Operation: Maintain a paving machine rate of travel so that HMA placement and paving operation is continuous; resulting in no transverse cold joints. The rate of travel; however, shall never exceed 50 feet per minute.

The Contractor shall furnish and operate enough material, equipment, and hauling units to keep the paving machine(s) moving continuously at all times. Failure to do so shall be cause for the suspension of paving operations until the Contractor can demonstrate to the satisfaction of the Engineer that it has dedicated sufficient resources to perform the work in accordance with the project specifications.


For mainline HMA paving, the width of the mat for each pass of the paver shall be not less than 10.5 feet, or greater than 15 feet, except as noted in the plans and as directed by the Engineer. The Engineer will direct the layout of all HMA longitudinal joints during construction.
7. Feather Joints – shall be constructed so as to vary the thickness of the HMA from zero inches to the required paving thickness at the rate of approximately 1.5” over a distance of 10 feet, or as directed by the Engineer. The Contractor shall rake the larger pieces of aggregate out of feather joints prior to compaction.

8. Butt Joints: Construction of butt joints, where directed by the Engineer, shall conform to subsections 501.03.C.3 and 501.03.C.4 of the MDOT 2012 Standard Specifications for Construction, except as modified herein.

When the Engineer specifies or directs placement of a butt joint, remove the existing HMA surface to the thickness of the proposed overlay, or full-depth, as directed by the Engineer, for the full width or length of the joint. The HMA material shall be saw cut to the directed depth along the pavement edge or removal line to prevent tearing of the pavement surface. Cut joints that will be exposed in the completed surface must be cut with a saw or a cold-milling machine or other methods approved by the Engineer. Joints that will be covered by HMA must be cut with a saw, a cold-milling machine, or other methods approved by the Engineer.

9. Rakers: The Contractor shall provide a minimum of two asphalt rakers during the placement of all wearing and leveling courses.

10. Faulty Mixtures: The Contractor and Engineer shall carefully observe the paving operation for signs of faulty mixtures. The Contractor, at its sole expense, shall remove or correct points of weakness in the surface prior to paving subsequent lifts of HMA material. Such corrective action may include the removal and replacement of thin or contaminated sections of pavement, segregated HMA, and any sections that are weak or unstable. Once the Contractor or his representative is notified by the Engineer that the material being placed is out of allowable tolerances, or that there is a problem with the paving operation, the Contractor shall stop the paving operation at once, and shall not be permitted to continue placing HMA material until again authorized by the Engineer. The Engineer will not pay for separately any costs associated with meeting the above requirements, and will include them in the HMA work item(s) the Contractor was performing at the time of discovery of the faulty mixture.

d. Measurement and Payment. The contract includes no separate pay items for measurement and payment of the costs associated with meeting the requirements of this detailed specification. The Contractor shall include these costs in the unit prices bid for the HMA items in the contract.

The Contractor shall return any/all trucks to the plant with unused HMA remaining after the work is complete, and these trucks shall be re-weighed and the corrected weight slip provided to the Engineer. There will no payment any unused HMA material. All weight slips must include the type of mixture (codes are not acceptable), as well as vehicle number, gross weight, tare weight and net weight.
a. **Description.** This work consists of repairing areas of failed asphalt pavement by cold milling the existing pavement and placing new hot mix asphalt (HMA) material as directed by the Engineer, and as described herein. Complete pavement repairs in the cold milled surface prior to placement of the first hot mix asphalt paving course.

b. **Materials.** Provide materials in accordance with subsection 501.02 of the MDOT 2012 Standard Specifications for Construction and as shown on the special detail.

c. **Construction.** Cold mill designated repair locations and place Hand Patching, Modified according to the details on the plans, and in accordance with subsection 501.03 of the MDOT 2012 Standard Specifications for Construction. The Engineer will designate repair locations after the pavement has been cold milled as shown on the plans. The milling machine must return to the designated repair locations to apply milling for an additional depth of 3 inches. Hand Patching, Modified must be placed in the repair area and roller compacted prior to placement of the paving course.

d. **Measurement and Payment.** Measure and pay for the completed work, as described, at the respective contract unit prices using the following respective pay items:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold Milling HMA Surface, Modified</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Hand Patching, Modified</td>
<td>Ton</td>
</tr>
</tbody>
</table>

Measure **Cold Milling HMA Surface, Modified** area by the unit square yard and pay for it at the contract unit price, which price includes the cost for all labor, equipment and materials required to remove, load, haul, and dispose of the cold milled material, and cleaning the cold milled pavement. The Engineer will not pay for material picked up by cleaning after cold milling.

Measure **Hand Patching, Modified** weight by the unit ton and pay for it at the contract unit price, which prices includes the cost for all labor, equipment and materials to place HMA, by hand or other methods, the placement of bond coat, and compacting the material.
a. Description. This work shall consist of furnishing all labor, material, and equipment needed to furnish, place, and protect all concrete material in accordance with the requirements of this detailed specification, and as directed by the Engineer. These requirements shall not apply to concrete bridge decks, unless otherwise noted.

b. Materials. The concrete shall meet the requirements of sections 601 and 701 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction. The Contractor shall propose specific concrete mix designs for the intended project purpose in accordance with the requirements of this detailed specification and other applicable detailed specifications and/or project requirements. The Engineer’s acceptance of a mix design shall not relieve the Contractor of their responsibility for the manufacture of the concrete mixture(s), its placement, or performance.

c. Construction. The Contractor shall perform all concrete placement operations in weather that is suitable for the successful placement and curing of the concrete materials. Do not place concrete during periods of active precipitation.

The Contractor shall complete all needed formwork, base and/or sub-base preparation, and any other related items deemed necessary for the proper completion of the work. The Contractor shall not commence the placement of concrete until they receive all needed approvals from the Engineer for placement. The Engineer’s approval of the Contractor to place concrete shall not relieve the Contractor of their responsibility for the proper placement and protection of the concrete materials or its long-term performance.

During periods when precipitation is threatening, provide durable, plastic sheeting, approved by the Engineer, in sufficient quantity to cover and protect all freshly placed concrete and keeping it from exposure to any precipitation. The Contractor shall arrange the placement of the plastic sheeting such that it does not mar the surface of any freshly placed concrete, and any/all seams in the plastic sheeting are watertight. The Contractor shall place adequate supports along and over the freshly placed concrete to prevent contact of the plastic and concrete. The Contractor shall ensure placement of sufficient dams or barriers along the edges of freshly placed concrete to prevent erosion of the underlying materials or damage to the edges. All measures shall be effective.

The Contractor shall remove and replace any concrete damaged by precipitation. The Engineer shall decide if the concrete has been damaged and the limits of removal and replacement.

Concrete shall only be placed when the rate of surface evaporation at the site is less than 0.20 pounds per square foot per hour, according to figure 706-1 of the MDOT 2012 Standard Specifications for Construction. The Contractor shall provide approved equipment for determining the relative humidity and wind velocity at the site.

Do not add water to placed concrete in order to aid finishing. Perform the addition of any water for slump adjustments by it to the mixing unit and thoroughly re-mixing the concrete for 30
revolutions of the mixing unit at mixing speed. Do not add water such that the concrete mixture water-to-cement ratio and slump exceed those specified by the respective concrete mix design.

Perform concrete curing in accordance with subsection 602.03.M of the MDOT 2012 Standard Specifications for Construction. Curing operations shall take precedence over texturing operations and continued concrete placement. All curing compound applied shall provide uniform coverage over the entire surface being protected. The placement of curing compound shall be free of spots, blotches, or uncovered or non-uniformly covered areas. Should the Engineer determine that any such areas exist, it will direct the Contractor to re-apply curing compound immediately at no additional cost to the project.

The Contractor shall take all precautions when placing concrete to protect it from damage due to the elements. Do not place concrete during precipitation events.

Concrete shall be protected from weather and temperature according to the requirements of subsection 602.03.T MDOT 2012 Standard Specifications for Construction. Do not place concrete when the temperature of the plastic concrete mixture itself is greater than 90° F. In conditions where low temperature protection is required, the Contractor shall cover the concrete with insulated blankets, or other means as approved by the Engineer, to protect the concrete from damage. The concrete shall remain protected until it has reached a compressive strength of at least 1000 psi, or as directed by the Engineer.

d. Measurement and Payment. The contract includes no separate pay items for measurement and payment of the costs associated with meeting the requirements of this detailed specification. The Contractor shall include these costs in the unit prices bid for the concrete items in the contract.

The Contractor shall remove and replace any concrete damaged by precipitation or cold weather at its own expense.
a. Description. This work shall consist of constructing concrete curb and gutter, and concrete driveway openings at the locations shown on the plans in accordance with section 802 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, applicable standard or special details, as directed by the Engineer, and as specified herein.

b. Materials. The materials shall meet the requirements as specified in subsection 802.02 of the MDOT 2012 Standard Specifications for Construction and as specified herein.

The concrete mixture for Driveway Opening, Conc, Det M, Modified shall be Grade P-NC (658 pounds/cubic yard cement content) concrete 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. The Engineer will not pay any additional amount for concrete mixtures containing GGBFS.

All concrete mixtures shall contain 6AA coarse aggregates that are either natural or limestone and meet the requirements of section 902 the MDOT 2012 Standard Specifications for Construction.

The Contractor is solely responsibility for providing specific concrete mix designs that meet the requirements of this detailed specification.

c. Construction. Construction methods shall be in accordance with subsection 802.03 of the MDOT 2012 Standard Specifications for Construction.

Place expansion joints of the thickness shown on the details as directed by the Engineer.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the respective contract unit prices using the following respective pay items:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curb and Gutter, Conc, Barrier</td>
<td>Foot</td>
</tr>
<tr>
<td>Curb and Gutter, Conc, Mountable</td>
<td>Foot</td>
</tr>
<tr>
<td>Driveway Opening, Conc, Det M, Modified</td>
<td>Foot</td>
</tr>
</tbody>
</table>

Measure **Curb and Gutter, Conc** and **Driveway Opening, Conc, Det M, Modified** lengths in place by the unit foot and pay for them at their respective contract unit prices, which prices include the costs for all labor, equipment and materials to complete the work.
Measurement in place by the unit foot and payment for concrete curb and gutter (without the curb face) at curb openings for sidewalk ramps will be at the contact unit price for **Curb and Gutter, Conc.**

Where the Engineer directs the use of high early strength concrete for pay items not specifically designated to use Grade P-NC concrete, it will separately for the additional cement. The Engineer will not pay for cement separately for pay items that designated to use Grade P-NC concrete.
a. **Description.** This work shall consist of furnishing and installing cast in place detectable warning units in compliance to the 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. All work shall be in accordance with the Detailed Specification for “Concrete Sidewalk, Sidewalk Ramps, and Driveway Approach”, section 803 of the Michigan Department of Transportation (MODT) 2012 Standard Specifications for Construction, MDOT Standard Plan Series R-28, as indicated on the plans, and as modified herein.

b. **Materials.** The color for detectable warning tiles shall be Federal Number 22144 (frequently referred to as “Colonial Red” or “Brick Red”).

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

The detectable warning tiles shall meet the following material properties, dimensions, and tolerances using the most current test methods:

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.
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 ½” 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.
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. Properly label samples to show 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 that verify materials proposed for use comply with requirements of this detailed specification. Use a certified and qualified independent testing laboratory to perform any/all other tests required by this detailed specification to ensure the proposed cast-in-place tactile warning system is compliant. 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 tests were performed.

c. Construction. Installer Qualifications: Engage an experienced installer who has successfully completed tile installations similar in material, design, and extent required for this project.

The contractor shall follow manufacturer specifications for installation, except where they conflict with MDOT Standard Plan Series R-28, or other project requirements.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the respective contract unit prices using the following respective pay items:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detectable Warning Surface, Modified</td>
<td>Foot</td>
</tr>
</tbody>
</table>

Measure **Detectable Warning Surface, Modified** length in place by the unit foot and pay for it at the contract unit price, which price includes the costs for all labor, equipment and materials to complete the work.
a. Description. This work shall consist of constructing concrete sidewalks, sidewalk ramps, or driveway approaches of the types as indicated on the plans in accordance with attached details, and as directed by the Engineer. All work shall be in accordance with sections 801 and 803 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, and as specified herein.

b. Materials. The materials shall meet the requirements as specified subsection 803.02 of the MDOT 2012 Standard Specifications for Construction and as required herein. The concrete mixture for driveway approaches shall be Grade P-NC (658 lbs/\text{yd}^3 cement content) as specified in subsection 601.02 of the MDOT 2012 Standard Specifications. The grade of concrete for all remaining items covered by this detailed specification shall be Grade P1 as specified in subsection 601.02 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. The Engineer will not pay any additional amount for concrete mixtures containing GGBFS.

All concrete mixtures shall contain 6AA coarse aggregates that are either natural or limestone and meet the requirements of section 902 of the MDOT 2012 Standard Specifications for Construction.

The Contractor is solely responsibility for providing specific concrete mix designs that meet the requirements of this detailed specification.

c. Construction Methods. The Contractor is responsible to construct all sidewalks, sidewalk ramps, curbs, and all other concrete items within ADAAG and PROWAG compliance. Construct all sidewalk ramps in accordance with MDOT Standard Plan Series R-28.

Where concrete is to be placed, it shall be placed on a minimum of 4 inches of Granular Material Class II compacted to 95% of its maximum dry density.

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

Where indicated on the plans, the Contractor shall horizontally saw cut curbs to provide openings for sidewalk ramps. The Engineer shall define the extent of the saw cuts both horizontally and vertically.

Install all sidewalk ramps with detectable warning tiles. Reference the Detailed Specification for Detectable Warning Surface for additional requirements.

d. Measurement and Payment. Measure and pay for the completed work, as described, at the respective contract unit prices using the following respective pay items:
Pay Item | Pay Unit
---|---
Driveway, Nonreinf Conc, 6 inch, Modified | Square Yard
Driveway, Nonreinf Conc, 8 inch, Modified | Square Yard
Sidewalk, Conc, 4 inch, Modified | Square Foot
Sidewalk, Conc, 6 inch, Modified | Square Foot
Sidewalk, Conc, 8 inch, Modified | Square Foot
Sidewalk Ramp, Conc, 6 inch, Modified | Square Foot
Sidewalk Ramp, Conc, 8 inch, Modified | Square Foot

Measure **Driveway, Nonreinf Conc, _ inch, Modified** areas in place by the unit square yard and pay for them at their respective contract unit prices, which prices include the costs for all labor, equipment and materials to complete the work.

Measure **Sidewalk, Conc, _ inch, Modified** and **Sidewalk Ramp, Conc, _ inch, Modified** areas in place by the unit square foot and pay for them at their respective contract unit prices, which prices include the costs for all labor, equipment and materials to complete the work.

Saw cutting is not a separate contract pay item, and payment for this work will be included in the appropriate item of work for which it applies. The Contractor shall include any/all costs for saw cutting to place concrete driveways, sidewalk and sidewalk ramps in the respective contract unit prices bid for **Driveway, Nonreinf Conc, _ inch, Modified; Sidewalk, Conc, _ inch, Modified; and Sidewalk Ramp, Conc, _ inch, Modified**.

Where the Engineer directs the use of high early strength concrete for pay items not specifically designated to use Grade P-NC concrete, it will separately for the additional cement. The Engineer will not pay for cement separately for pay items that designated to use Grade P-NC concrete.

The pay items, **Granular Material Class II** and **Subbase, CIP**, are for the furnishing, placement, grading and compaction of bedding material respectively beneath replacement and new sidewalks and sidewalk ramps.

The pay items for **Grading, Driveway Approach; Grading, Sidewalk; and Grading, Sidewalk Ramp** respectively include earth excavation, furnishing and placement of embankment material, and preparing the grade for placement of Aggregate Base, Granular Material Class II or Subbase, CIP bedding material beneath replacement and new sidewalks and sidewalk ramps.

Measurement in place by the unit foot and payment for detectable warning tiles in sidewalk ramps will be at the contact unit price for **Detectable Warning Surface, Modified** in accordance with the Detailed Specification for Detectable Warning Surface.
a. **Description.** This work consists of constructing hot mix asphalt (HMA) wedging along shared use paths as directed by the Engineer, and as described herein.

b. **Materials.** Provide materials in accordance with section 501 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction. Use HMA mixture shown in the Detailed Specification for Hot Mix Asphalt (HMA) Application Estimate included in the contract for this work, or an acceptable substitute approved by the Engineer.

c. **Construction.** Perform work in accordance with section 501 of the MDOT 2012 Standard Specifications for Construction, and as directed by the Engineer.

Place wedging material in accordance with the application rate shown in the Detailed Specification for Hot Mix Asphalt (HMA) Application Estimate included in the contract.

Have a 10-foot long straight-edge, backhoe, air-compressor and jackhammer available during all paving operations for wedging work.

Use wedging to provide good vertical and horizontal transitions between old and new construction, eliminate areas of standing water in the wearing surface and provide for positive drainage, and to perform cross slope correction to achieve compliance with current standards.

Construct joints by feathering the edges of all wedging (including the raking out of all large pieces of aggregate) to provide a high quality, smooth riding surface.

Clean the existing surface with compressed air and/or vacuum type street cleaning equipment prior to placement of wedging material.

Apply MDOT SS-1h bond coat on all asphalt and concrete surfaces within the wedging area at a rate between 0.05 and 0.10 gallons/square yard as directed by the Engineer using a power distributor hand sprayer.

d. **Measurement and Payment.** Measure and pay for the completed work, as described, at the contract unit price for the following pay item:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared use Path, HMA, Wedging</td>
<td>Ton</td>
</tr>
</tbody>
</table>

Measure **Shared use Path, HMA, Wedging** weight in place by unit ton and pay for it at the contract unit price, which price includes all cost for labor, equipment and materials necessary to complete the work.

The Contractor shall return any/all trucks to the plant with unused HMA remaining after the work is complete, and these trucks shall be re-weighed and the corrected weight slip provided to the
Engineer. There will be no payment for any unused HMA material. All weight slips must include the type of mixture (codes are not acceptable), as well as vehicle number, gross weight, tare weight and net weight.
a. **Description.** This work consists of furnishing and installing wet night retroreflective (WR) beads and/or elements and liquid applied pavement marking materials in accordance with the Michigan Department of Transportation 2012 Standard Specifications for Construction, and as required herein.

b. **Materials.**

1. **Wet Night Retroreflective Beads and/or Elements.** Select WR beads and/or elements from one of the following Manufacturers or a Michigan Department of Transportation (MDOT) approved alternative that meets the requirements in Table 1:

   - 3M Corporation
   - Potter's Industries
   - Swarco
   - Flex-o-Lite

   **Table 1: WR Markings**

<table>
<thead>
<tr>
<th>Test Method</th>
<th>White</th>
<th>Yellow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry (ASTM E 1710)</td>
<td>700</td>
<td>500</td>
</tr>
<tr>
<td>Wet Recovery (ASTM E 2177)</td>
<td>250</td>
<td>200</td>
</tr>
</tbody>
</table>

   Ship the material to the job site in sturdy containers marked in accordance with subsection 920.01.A of the MDOT 2012 Standard Specifications for Construction.

Submit to the Engineer prior to the start of work:

A. The application rate of the beads/elements recommended by the manufacturer and the liquid applied pavement marking binder proposed for use on the project. If the application rate recommended by the manufacturer differs from the specified rate in Table 811-1 of the MDOT 2012 Standard Specifications for Construction, the rate recommended by the manufacturer supersedes the table values.

B. Certification from the Manufacturer that when applied according to their application recommendations the beads and/or elements meet the requirements shown in Table 1 above.

2. **Binder.** Provide a liquid pavement marking product of the binder type specified in the contract documents from section 811 of the Qualified Products List or as specified by detailed specification or special provision, or use an alternative binder as approved by the Engineer.
c. **Construction.** Place the binder and beads in accordance with the requirements and/or recommendations of the manufacturers and sections 811 and 920 of the MDOT 2012 Standard Specifications for Construction except as noted above.

d. **Measurement and Payment.** Measure and pay for the completed work, as described, at the respective contract unit prices using the following respective pay items:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pavt Mrkg, Wet Retriflec Polyurea, 12 inch, Crosswalk</td>
<td>Foot</td>
</tr>
<tr>
<td>Pavt Mrkg, Wet Retriflec Polyurea, 24 inch, Stop Bar</td>
<td>Foot</td>
</tr>
<tr>
<td>Pavt Mrkg, Wet Retriflec Polyurea, Lt Turn Arrow Sym</td>
<td>Each</td>
</tr>
<tr>
<td>Pavt Mrkg, Wet Retriflec Polyurea, Only</td>
<td>Each</td>
</tr>
<tr>
<td>Pavt Mrkg, Wet Retriflec Polyurea, Rt Turn Arrow Sym</td>
<td>Each</td>
</tr>
</tbody>
</table>

Measure **Pavt Mrkg, Wet Retriflec Polyurea, 12 inch, Crosswalk** and **Pavt Mrkg, Wet Retriflec Polyurea, 24 inch, Stop Bar** length in place by the unit foot and pay for them at their respective contract unit prices, which prices include the costs for all labor, equipment and materials to complete the work.

Measure **Pavt Mrkg, Wet Retriflec Polyurea, Lt Turn Arrow Sym; Pavt Mrkg, Wet Retriflec Polyurea, Only; and Pavt Mrkg, Wet Retriflec Polyurea, Rt Turn Arrow Sym** individually in place by the unit each and pay for them at their respective contract unit prices, which prices include the costs for all labor, equipment and materials to complete the work.
The City of Ann Arbor hereby notifies the Contractor there will be several construction projects directly adjacent to the Construction Influence Area (C.I.A.), or within the local vicinity, that may affect the various work activities, maintenance of traffic, and/or trucking operations involved with this project. These projects are as follows, and the City anticipates construction of these during the same timeframe as this project.

- Stone School Road Sanitary Sewer Extension between Ticknor Court and Packard Street
- Ann Arbor-Saline Road between West Eisenhower Parkway and Scio Church Road

The above is not necessarily be a complete listing of all area projects that could potentially impact this one. Prior to commencing with any construction, the Contractor shall verify with the City the presence of any other concurrent public or permitted projects within the vicinity.

The Contractor shall coordinate its work on this project with that by Contractor(s) on all other projects within the local vicinity, as directed by the Engineer. The Engineer will make no additional compensation or adjustments to contract unit prices for costs incurred by the Contractor due to coordinating with or delays caused by other projects.

The Contractor will coordinate with the Stone School Road Sanitary Sewer Extension Project Prime Contractor to replace in kind any/all traffic control devices in place at the time of completion of the Sewer Extension Project in order to maintain traffic in the same manner and until such time that street resurfacing work commences. The replacement in kind of traffic control devices shall occur within three (3) calendar days after notification by the Engineer of the completion of the Sewer Extension Project.
Delete the definition for Progress Schedule in subsection 101.03, on page 12 of the Standard Specifications for Construction, in its entirety and replace with the following:

**Progress Schedule.** A sequential listing of all the controlling operations and the estimated time the operations will remain controlling. The progress schedule is submitted by the Contractor after award and prior to starting work and is reviewed and approved by the Department. When approved, the progress schedule, or updated progress schedule, will become part of the contract.

Delete subsection 102.14, on page 22 of the Standard Specifications for Construction, in its entirety.

Delete the first sentence in the second paragraph of subsection 108.05, on page 74 of the Standard Specifications for Construction, in its entirety and replace with the following.

Submit a critical path method (CPM) schedule if required in the contract documents. Submittal of a progress schedule will not be required as the CPM schedule will replace the progress schedule.

Add the following paragraphs directly below the first paragraph of subsection 108.05.A.1, on page 74 of the Standard Specifications for Construction.

The progress schedule is to be submitted by the Contractor to the Engineer within 7 calendar days of award 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.

Delete the last sentence in the first paragraph of subsection 108.05.A.2, on page 74 of the Standard Specifications for Construction in its entirety.
Add the following to the end of the list of materials in subsection 811.02, on page 588 of the Standard Specifications for Construction:

Modified Urethane Pavement Marking Material ................................................................. 920
Preformed Thermoplastic Pavement Marking Material ....................................................... 920

Ensure preformed thermoplastic materials for surface applications have a thickness of 90 mils and preformed thermoplastic materials for recessed applications have a thickness of 125 mils.

Add the following paragraph after the first paragraph of subsection 811.03.B, on page 589 of the Standard Specifications for Construction:

If pavement marking plan sheets and/or Witness, Log are included in the project the markings will be laid out by the Contractor prior to the permanent markings being applied. Layout is considered incidental to placement of permanent pavement markings. Provide the Engineer documented notice at least 2 calendar days prior to the Contractor pavement marking crew arriving onsite to layout and place the permanent pavement markings to enable the Engineer or a representative being onsite for review of the layout prior to the marking application. Notify the Engineer if it is discovered during layout that the pavement width or geometry has been altered or is different from the planned or logged configuration. The Contractor and Engineer will discuss and document the resolution for marking layout in such areas. If pavement marking plans and/or Witness, Log are not in the project, it is the responsibility of the Engineer to provide layout for the permanent pavement markings.

Add the following rows to Table 811-1 of subsection 811.03.B, on page 591 of the Standard Specifications for Construction:

<table>
<thead>
<tr>
<th>Material</th>
<th>20</th>
<th>5.5</th>
<th>8.25</th>
<th>11</th>
<th>17</th>
<th>22</th>
<th>33</th>
<th>44</th>
<th>66</th>
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<tbody>
<tr>
<td>Polyurea</td>
<td>20</td>
<td></td>
<td>5.5</td>
<td>8.25</td>
<td>11</td>
<td>17</td>
<td>22</td>
<td>33</td>
<td>44</td>
</tr>
<tr>
<td>Bead (lb)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modified Urethane</td>
<td>20</td>
<td></td>
<td>5.5</td>
<td>8.25</td>
<td>11</td>
<td>17</td>
<td>22</td>
<td>33</td>
<td>44</td>
</tr>
<tr>
<td>Bead (lb)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Add the following paragraph after the fifth paragraph on page 592 of subsection 811.03.B, of the Standard Specifications for Construction:

Beads are not to be placed in liquid shadow markings.
Add the following subsections after the last paragraph of subsection 811.03.D.7.c, on page 595 of the Standard Specifications for Construction:

8. **Modified Urethane.** Ensure the pavement is free of excess surface and subsurface moisture that may affect bonding. The Engineer will not decide the suitability of specific days for the application of modified urethane.

Surface preparation requirements for special, and longitudinal modified urethane pavement markings depend on surface conditions.

Prepare new HMA surfaces and HMA surfaces open to traffic for 10 days or less with no oil drips, residue, debris, or temporary or permanent markings, by cleaning the marking area with compressed air.

Prepare new PCC surfaces and PCC surfaces free of oil drips, residue, and debris, temporary, or permanent markings, by removing the curing compound from the area required for pavement markings.

Prepare existing HMA or PCC surfaces that do not have existing markings, but may have oil drip areas, debris, or both, by scarifying the marking area using non-milling grinding teeth or shot blasting. The Engineer will allow the use of water blasting to scarify the marking area on PCC surfaces.

Prepare existing HMA or PCC surfaces with existing pavement markings and that may have oil drip areas, debris, or both, by using the following methods:

   a. For existing liquid pavement markings, scarify the proposed marking area using non-milling grinding teeth or shot blast. Occasionally existing liquid pavement markings will require complete removal, which will be determined by the Engineer.

   b. For existing cold plastic markings, completely remove the existing markings.

9. **Preformed Thermoplastic.** Ensure the pavement is free of excess surface and subsurface moisture that may affect bonding. The Engineer will not decide the suitability of specific days for the application of preformed thermoplastic.

Heat and apply the preformed thermoplastic material as recommended by the manufacturer. Feather all edges of the material with a putty knife while the preformed thermoplastic is still soft.

Modify the following row in Table 811-2 of subsection 811.03.D, on page 596 of the Standard Specifications for Construction to read as follows:

<table>
<thead>
<tr>
<th>Thermoplastic</th>
<th>50</th>
<th>50</th>
<th>May 1</th>
<th>Nov. 1</th>
</tr>
</thead>
</table>

Add the following rows to Table 811-2 of subsection 811.03.D, on page 596 of the Standard Specifications for Construction:
Add the following pay items to the list of pay items in subsection 811.04, on page 598 of the Standard Specifications for Construction:

Pavt Mrkg, Modified Urethane, (symbol).................................................................Each
Pavt Mrkg, Modified Urethane, (legend) .................................................................Each
Pavt Mrkg, Modified Urethane, __ inch, Crosswalk .................................................Foot
Pavt Mrkg, Modified Urethane, __ inch, Stop Bar .....................................................Foot
Pavt Mrkg, Modified Urethane, __ inch, Cross Hatching (color).................................Foot
Pavt Mrkg, Modified Urethane, __ inch, (color).........................................................Foot
Pavt Mrkg, Ovly Cold Plastic, __ inch, Shadow Tape, Black .....................................Foot
Pavt Mrkg, Ovly Cold Plastic, __ inch, Wet Reflective, (color) ....................................Foot
Pavt Mrkg, Preformed Thermoplastic, (symbol).........................................................Each
Pavt Mrkg, (binder), __ inch, Shadow Liquid, Black ..................................................Foot
Delete subsection 812.03.H, on page 619 of the Standard Specifications for Construction in its entirety and replace it with the following:

H. **Lighting for Night Work.** Furnish, install, operate, maintain and replace, as needed, fixed, portable, or equipment mounted lighting systems that provide lighting to ensure worker and inspector safety on and around the worksite. Provide lighting that allows workers and inspectors to clearly conduct all operations and inspections during hours of darkness. Provided lighting systems must meet the requirements set forth in MIOSHA Rule 408.40133 Illumination, MIOSHA Rule 408.42223 (7) Traffic Control, section 706 of the Standard Specifications for Construction, and the contract.

Provide and position the lamps to meet the following lighting requirements: Provide a minimum illumination intensity of 10 foot-candles (108 lux) on a jobsite where construction work is being performed. Maintain a minimum of 5 foot-candles (54 lux) throughout the entire area of operation where workers may pass through on foot or are present but are not performing construction work. Vehicle or equipment headlights are not considered an approved light source.

Lighting levels will be measured with an illuminance meter. Readings from smart-phones are not acceptable. Readings will be taken where the work is being performed, in a horizontal plane 3 feet above the pavement or ground surface. When necessary, provide additional lights to overlap the footprints of the lights so that the lighting requirements are continuous, and do not fall below the minimum lighting requirements throughout the work area.

Submit a "work area lighting plan" to the Engineer for review for approval a minimum of 14 calendar days prior to the start of work. 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 plan must include the proposed lighting locations for construction equipment, vehicles and pedestrian paths, identification of a person or persons of authority (including contact information) on the project site responsible to execute the plan requirements, and measures that will be taken to ensure compliance with the plan. All costs and any additional time required to obtain an approved "work area lighting plan" will not be cause for delay or impact claims.

Design and operate the lighting system to avoid glare that interferes with traffic, workers, or inspection personnel. Aim flood, spot or stadium type luminaries downward at the work and rotated outward no greater than 30 degrees from nadir (straight down). Position balloon lights at least 12 feet above the roadway.
Design the lighting system to light the work area without spilling over to adjoining property. Modify the lighting system, if directed by the Engineer, by rearranging the lights or adding hardware to shield the lights when the lighting system is disturbing adjoining properties.

Provide a power source that adequately powers the lamps to their full capacity. Provide all lighting equipment in good operating condition and in accordance with applicable safety and design codes.

Provide backup lighting to replace lights and equipment during nighttime operations. Store the backup equipment on the project site and have it available for use at all times during the nighttime operations. The backup systems must meet the same criteria as the primary system.

Drive through and observe the lighted area from all traveled directions, including cross roads after initial lighting set up to determine the adequacy of placement and potential for glare. Adjust lighting alignment if necessary. Ensure that the alignment of the lighting does not interfere with or impede traffic on open roadways.

At any time during the course of the nighttime work, should the lighting not meet the requirements of this special provision, the work must be halted until adequate lighting is provided. This suspension of work will be at no additional cost to the Department and the Contractor cannot receive an extension of time to complete the work.

Use balloon lighting for nighttime traffic regulating operations. Position the balloon lighting for traffic regulators so that the light illuminates the front of the traffic regulator without casting a shadow on the front of the regulator, the light or equipment does not impair the regulator's vision, and the equipment does not impede the regulator's escape path. Position the lighting so that the light does not wash out the lighted arrow at the regulator’s station and does not obscure the lighted arrow. Position lighting so that it does not create glare or shine directly in the eyes of oncoming drivers. Illuminate the traffic regulator's station with a minimum illumination intensity of 10 foot-candles (108 lux). Lighting devices used to illuminate nighttime traffic regulator operation that have failed or have been damaged are to be replaced immediately.

Mount the light fixtures on the construction equipment in a mobile operation, in such a way that the view of the equipment operator is not obstructed and a secure connection to the equipment is ensured, with minimum vibration.

Provide each paver with the minimum illumination as specified in this special provision so that the operator and paving crew can clearly see the material going into the hopper, the auger area, and for alignment. Provide a continuous power source to ensure the lighting is in operation at all times during work. The light should be adjustable up and down, and rotatable horizontally. The area behind the paver must be lighted so the work and operations can be seen clearly and inspected properly.

Equip each roller with four headlights, two facing in each direction of travel. Turn headlights off when facing oncoming traffic and only use them when moving equipment from one location to another.

Provide a continuous power source on each roller with a light tower. The light tower must be a minimum of 4 feet higher than the roller.
When light equipment is not in use, it must be removed from the work area.
### Transverse Contraction Joint

**Joint Sealing Compound:** Sawed joint sealed with low modulus hot-poured rubber-asphalt type joint sealing compound.

**Symbol (Cp) and (C3p):**

- Depth of relief cut for joint (Cp) and (C3p) shall be \( \frac{1}{4} \) the slab thickness for pavements less than or equal to \( 7\)" in thickness and \( \frac{1}{3} \) the slab thickness for pavements greater than \( 7\)" thick.

**Surface of Finished Pavement or Shoulder:** See sawed joint detail.

**Load Transfer Assembly Method:** Dowel bar inserter method.

**Standard Plan R-40-Series for Load Transfer Assembly:**

**Symbol (W):**

- Depth of relief cut for joint \( \frac{1}{4} \) the slab thickness.

**Transverse and Intersection Plane of Weakness Joints:**

---

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>LOAD TRANSFER</th>
<th>JOINT USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Cp)</td>
<td>YES</td>
<td>Pavement</td>
</tr>
<tr>
<td>(C3p)</td>
<td>NO</td>
<td>Shoulder</td>
</tr>
</tbody>
</table>

---

**Transverse Pavement Joints (Plain Concrete Pavement):**

**Design Division:** Michigan Department of Transportation

**Engineer of Delivery:** Kirk T. Bouwes

**Approval Date:** 9-25-2017

**Addendum:** 1

---

**Drawn By:** R.W.C.

**Checked By:** R.K.P.
SYMBOL (U)

1/2" SAWED JOINT OR A FORMED JOINT MADE BY PLACING 1/2" HARDBOARD OR OTHER APPROVED MATERIAL FLUSH WITH THE SURFACE OF THE CONCRETE BASE COURSE AND TRUE TO POSITION AND LINE BEFORE THE CONCRETE HAS SET.

2 1/2"

2 1/2"

TRANSVERSE PLANE OF WEAKNESS
Joints in Concrete Base Course

NOTE:
The final width of the groove shall be 1" + 1/4", plus any increase or minus any decrease in the width of the relief cut. The final saw cut shall be to the top of the fiber filler with a minimum depth as shown and shall be centered over the fiber filler with a horizontal tolerance of 1/4". Fiber filler for expansion joints in concrete shoulders shall be free of holes or other defects and trimmed to fit shoulder configurations.

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>LOAD TRANSFER ASSEMBLY</th>
<th>JOINT USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(E2)</td>
<td>YES</td>
<td>Pavement</td>
</tr>
<tr>
<td>(E4)</td>
<td>NO</td>
<td>Shoulder</td>
</tr>
</tbody>
</table>

LOW MODULUS HOT-POURED RUBBER-ASPHALT TYPE JOINT SEALING COMPOUND.

1.25 x FINAL WIDTH

MINIMUM DIAMETER

POLYETHYLENE FOAM ROD
CLOSED CELL, CROSS-LINKED

1" FIBER FILLER

45° BEVELED EDGE (TYP.)

SYMBOL (E2) AND (E4)

SAWED JOINT DETAIL
SAWED JOINT SEALED WITH LOW MODULUS HOT-POURED RUBBER-ASPHALT TYPE JOINT SEALING COMPOUND.

OUTSIDE EDGE TREATMENT

TRANSVERSE EXPANSION JOINT

METHICAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT

STANDARD PLAN FOR

TRANSVERSE PAVEMENT JOINTS
(PLAIN CONCRETE PAVEMENT)

Addendum 1-77

9-25-2017

R-39-K
NOTE:
The final width of the groove shall be 1" + \(\frac{1}{16}\)" plus any increase or minus any decrease in the width of the relief cut. The final saw cut shall be to the top of the fiber filler with a minimum depth as shown and shall be centered over the fiber filler with a horizontal tolerance of \(\frac{1}{16}\)". Fiber filler for expansion joints in concrete shoulders shall be free of holes or other defects and trimmed to fit shoulder configurations.

**SAWED JOINT DETAIL**
Sawed joint sealed with polyurethane or polyurethane hybrid joint sealing compound.

**TRANVERSE EXPANSION JOINT**

**OUTSIDE EDGE TREATMENT**

**Pavement & Shoulder**

**NOTE:**

- The final width of the groove shall be 1" + \(\frac{1}{16}\)" plus any increase or minus any decrease in the width of the relief cut. The final saw cut shall be to the top of the fiber filler with a minimum depth as shown and shall be centered over the fiber filler with a horizontal tolerance of \(\frac{1}{16}\)". Fiber filler for expansion joints in concrete shoulders shall be free of holes or other defects and trimmed to fit shoulder configurations.

**SAWED JOINT DETAIL**
Sawed joint sealed with polyurethane or polyurethane hybrid joint sealing compound.
TRANVERSE END OF POUR JOINT (SPLIT HEADER METHOD)

DEFORMED BAR SPACING

NOTE: THE HOLE SPACING MAY BE ADJUSTED 1" HORIZONTALLY, RAISED 1/2", OR LOWERED 1" FROM THE ABOVE LOCATIONS TO AVOID DRILLING INTO THE REINFORCEMENT.

TRANSVERSE END OF POUR JOINT (DRILLED IN METHOD)
TRANSVERSE END OF POUR JOINT (PLASTIC TUBE METHOD)

NOTES:

1. A CONTINUOUS SUPPORT WIRE, AS SPECIFIED FOR EXPANSION LOAD TRANSFER ASSEMBLIES, SHALL BE USED ON EACH SIDE OF EXPANSION MATERIAL. THIS WIRE SHALL BE EQUIPPED WITH STAKES AND STAKE POCKETS TO RIGIDLY HOLD THE EXPANSION MATERIAL IN PLACE DURING CONCRETE PLACEMENT. STAKES SHALL BE AS SPECIFIED ON STANDARD PLAN R-40-SERIES, SPACED NOT MORE THAN 2'-0" APART.

2. "U" OR "J" SHAPE STAPLES OF 8B WIRE (0.319" NOMINAL DIAMETER) SHALL BE SPACED ON 2'-0" CENTERS EACH SIDE OF THE EXPANSION MATERIAL. EACH VERTICAL LEG OF THE STAPLE SHALL BE AT LEAST 1'-3" LONG.

3. OTHER EQUIVALENT METHODS MAY BE USED WHEN APPROVED BY THE ENGINEER.

Joints shall not be sealed in concrete base course.

When concrete shoulders are cast separately from mainline concrete pavement, a keyway may be used to facilitate the placing of lane ties. When a keyway groove is used, it shall be continuous and uniform.

The location of transverse concrete shoulder and pavement joints shall be (C3p) shoulder with (E3) pavement, (E4) shoulder with (E2) pavement, and (E5) being the same in both shoulder and pavement.

Deformed bars for transverse end of pour joints (drilled in method) shall be grouted into existing pavement with a grout selected from the prequalified materials listed in the department's "MATERIALS SOURCE GUIDE" under adhesive systems for grouting dowel bars and tie bars for full-depth pavement repairs.
PLAN VIEW OR CONTRACTION JOINT ASSEMBLY

Note: Shipping T-wires may be located above or below top longitudinal spacing wires.

Dowel bar emergence shall be not less than 1/4".

Dowel bar shall be arc or resistance welded to alternate ends.

Shipping the T-wires shall be adjacent to each other in a parallel line.

Field location of stake off centerline to the nearest 1/4".

The head of the T-wire shall be at the center of the joint.

The joint shall be sealed with a non-permeable material.

For non-porous material, the joint shall be filled with a non-permeable material.

Michigan Department of Transportation
Bureau of Highway Development Standard Plan for
Load Transfer Assemblies for Transverse Joints

9-10-2010
7-19-2010
R-40-H
END VIEW OF EXPANSION JOINT ASSEMBLY
NOTE: FILLER SPACER WIRE MAY BE LOCATED ABOVE OR BELOW TOP LONGITUDINAL SPACER WIRES

END VIEW OF CONTRACTION JOINT ASSEMBLY
NOTE: SHIPPING TIE WIRE MAY BE LOCATED ABOVE OR BELOW TOP LONGITUDINAL SPACER WIRES

STAKE DETAIL
A SINGLE WIRE MAY BE USED IN LIEU OF STAKE DETAIL SPECIFIED PROVIDED A NOM. DIA. 0.319" WIRE IS USED AND BENT INTO A HOOK AT TOP END TO CONFORM TO DETAIL

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
LOAD TRANSFER ASSEMBLIES
FOR TRANSVERSE JOINTS

9-10-2010
7-19-2010
R-40-H

Addendum-1-83
**Notes:**

Load transfer assemblies shall be placed at right angles to the pavement centerline.

The side support wire (U-leg, J-leg or V-leg) may be installed on either the inside or the outside of the longitudinal spacer wires. The dimension from the end of the dowel bar to the center of the top longitudinal spacer wire shall be a minimum of 1/4". This dimension applies to side support wires installed on either the inside or the outside of the longitudinal spacer wires.

Wires:

All wires specified (except shipping tie wires) are minimum nominal sizes allowed. (Do not exceed the maximum nominal diameter of 0.117" for shipping tie wires.)

All wires shall conform to the current specifications for carbon steel wire for general use, A.S.T.M. designations A-853, grade 100, or greater, unless otherwise specified. Minimum tensile strength requirements shall be 60 ksi.

All wire intersections are to be arc or resistance welded.

Stakes typically applied at working ends of dowels with sufficient installations to prevent unit from over turning under load.

Do not cut filler spacer wires after the load transfer assembly is set in place.

**Dowel Bars:**

Dowel bars are to be according to the standard specifications for construction.

Epoxy coated dowel bars are to be factory coated with a visible coating of an approved bond release agent, uniformly applied by dipping and without excessive drips or thickness in such a thickness that its presence can be readily identified.

Metal expansion caps must be entirely closed at ends by crimping. Plastic caps must have a positive stop. Do not drive caps beyond their stop. Expansion caps must have a suitable stop to ensure that the end of the cap maintains a distance of 1" (expansion) from the end of the dowel during concrete placement.

Dowel bars shall be coated with epoxy coating according to AASHTO specification W-204. Cut ends are not required to be coated.

<table>
<thead>
<tr>
<th>Dowel Bar Diameter</th>
<th>Pavement Thickness</th>
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<tbody>
<tr>
<td>1&quot;</td>
<td>6&quot; - LESS THAN 8&quot;</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>8&quot; - 10&quot;</td>
</tr>
<tr>
<td>1 3/4&quot;</td>
<td>GREATER THAN 10&quot;</td>
</tr>
</tbody>
</table>

Dowel bars shall be aligned parallel to each other in the assembly on 1'-0" (± 1/8") centers.

After the load transfer assembly is set in place, dowel bars shall remain aligned (parallel) with each other in the vertical and horizontal planes of the pavement to within 1/8" for the entire length of the bar.

Dowel bars shall be placed at mid depth of the slab uniformly aligned within 1/8" for the entire length of the bar.

For pavements with variable thickness transversely across the slab, the top and bottom surfaces of the dowel bar shall be within the middle 1/3 of the pavement thickness, as approved by the engineer.

**Michigan Department of Transportation**

**Bureau of Highway Development Standard Plan for**

**Load Transfer Assemblies for Transverse Joints**

9-10-2010 7-19-2010 R-40-H Sheet 4 of 4

Addendum-1-84
LONGITUDINAL BULKHEAD JOINT - SYMBOL (B)
ALL SYMBOL (B) JOINTS SHALL BE SAWED AND SEALED EXCEPT JOINTS WITHOUT LANE TIES AND JOINTS ADJACENT TO VERTICAL FACES WHICH WOULD PROHIBIT SAWING.

LONGITUDINAL LANE TIE JOINT - SYMBOL (D) AND (S)
SYMBOL (D) AND SYMBOL (S) TIE BARS SHALL BE PLACED AT THE PROPER SPACING LONGITUDINALLY, AND TRANSVERSES AT 90° WITH THE JOINT.

MAXIMUM ALLOWABLE LANE TIE SPACING
SYMBOLS (B), (D), (L2), AND (S) TIE BARS SHALL BE PLACED AT THE PROPER SPACING LONGITUDINALLY, AND TRANSVERSES AT 90° WITH THE JOINT.

* INCLUDES ANY TIED COMBINATION OF LANE WIDTH, VALLEY GUTTER, CURB & GUTTER, OR SHOULDER.
** FOR WIDTHS GREATER THAN 40' USE #6 DEFORMED BARS AT 1'-2" SPACING.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
LONGITUDINAL PAVEMENT JOINTS

Addendum-1-85
LONGITUDINAL BULKHEAD JOINT

FOR WIDENING EXISTING CONCRETE PAVEMENT OR CONCRETE BASE COURSE (USING EPOXY ANCHORED LANE TIES)

THE FIRST SLAB SHALL BE EDGED WITH AN EDGER HAVING A 1/4" LIP AND A RADIUS OF 1/8" TO 1/4"

EDGING TOOL SHALL BE 6" X 12" AND SHALL HAVE A 1/4" LIP WITH A RADIUS OF 1/8" TO 1/4"

METHOD OF EDGING

NOTES:

ALL LANE TIE BARS SHALL BE EPOXY COATED EXCEPT SYMBOL (S) WHICH WILL BE SMOOTH.

THE EPOXY COATED LANE TIE BARS ARE TO BE FACTORY COATED WITH AN APPROVED BOND RELEASE AGENT, UNIFORMLY APPLIED BY DIPPING AND WITHOUT EXCESSIVE DRIPS OR THICKNESS.

THE INSTALLATION OF LANE TIE BARS AND THE SAWING OF LONGITUDINAL JOINTS WILL NOT BE REQUIRED FOR TEMPORARY CONCRETE PAVEMENT UNLESS SPECIFIED ON PLANS OR IN THE PROPOSAL. THE EDGING OF TEMPORARY CONCRETE PAVEMENT WILL NOT BE REQUIRED.

FOR JOINT LAYOUT DETAILS, SEE STANDARD PLAN R-42-SERIES.

SAWING PROCEDURES AND RELATED OPERATIONS ARE DESCRIBED IN THE CURRENT STANDARD SPECIFICATIONS.

NO SAWED OR SEALED JOINT SHALL BE CONSTRUCTED BETWEEN THE PAVEMENT AND CURB OR PAVEMENT AND CURB AND GUTTER, WHERE THESE ITEMS ARE CAST INTEGRALLY.

WHEN JOINTED PLAIN CONCRETE IS SPECIFIED AT INTERSECTIONS SYMBOL (S) JOINTS ARE TO BE USED FOR THE LONGITUDINAL JOINT BETWEEN THE THE E2 JOINT AT THE SPRINGPOINT OF THE SIDE STREET AND THE THROUGH LANE GUTTER PAN LINE. WHEN THE E2 JOINT IS MOVED TO THE THROUGH LANE GUTTER PAN LINE USE SYMBOL (D) JOINT AS NORMALLY REQUIRED.

ALL STRAIGHT TIE BARS SHALL BE EPOXY COATED ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS FOR EPOXY COATED STEEL REINFORCEMENT FOR STRUCTURES.

WHEN LANE TIES ARE GROUTED INTO AN EXISTING PAVEMENT, THE GROUT SHALL BE SELECTED FROM THE PREQUALIFIED MATERIALS LISTED IN THE DEPARTMENT'S "MATERIALS SAMPLING GUIDE" FOR LANE TIES.

IN ORDER TO AVOID CONFLICT WITH THE LOAD TRANSFER ASSEMBLY, THE PLACEMENT OF THE END LANE TIE ADJACENT TO ANY TRANSVERSE JOINT SHALL BE AS FOLLOWS:

1. WHEN MAXIMUM ALLOWABLE LANE TIE SPACING EXCEEDS 3'-4", PLACE FIRST AND LAST LANE TIE HALF THE ALLOWABLE LANE TIE SPACING FROM JOINT.

2. WHEN MAXIMUM ALLOWABLE LANE TIE SPACING IS LESS THAN 3'-4" PLACE FIRST AND LAST LANE TIE A MINIMUM OF 1'-8" FROM JOINT.

IT MAY BE NECESSARY TO ADJUST THE LAST THREE LANE TIE SPACINGS TO ENSURE UNIFORM LOADING RESISTANCE ALONG THE LONGITUDINAL JOINT.
PLAN OF SAWING DIAGRAM

THIS METHOD OF REMOVING DISTRESSED CONCRETE SHALL BE USED IN CONJUNCTION WITH FULL DEPTH CAST-IN-PLACE REPAIRS LESS THAN 50'-0" LONG AND IS OPTIONAL FOR REPAIRS OVER 50'-0" IN LENGTH.

1 & 2 These saw cuts shall be full depth and perpendicular to the edge of the roadway, within a tolerance of 1/". No overcutting into adjacent lanes shall be made unless the overcut is within the limits of a subsequent repair to the adjacent lane. Shoulder overcuts will be allowed.

3 This full depth saw cut is made to facilitate opening a trench across the slab to relieve compression in the pavement prior to lifting out the failed area. This saw cut may be omitted provided no spalling of the remaining concrete occurs. If spalling does occur, the contractor will be required to make this saw cut on subsequent repairs. When this saw cut is used and the adjacent lane is not repaired, no overcutting into that lane shall be made.

4 This longitudinal full depth saw cut is made between lanes or between any combination of the following: lane, ramp, curb, concrete shoulder, or partial lane width repair.

5 If required, intermediate saw cuts may be made to remove a section of pavement lane which is over 6'-0" in length, to permit loading into the hauling units.

Additional saw cuts, at contractor's expense, may be made inside the repair limits to reduce 6'-0" by 12'-0" or less slabs into smaller pieces to facilitate removal.

SCHEMATIC OF TYPICAL LIFT PIN ASSEMBLY

SAWING DIAGRAM & LIFT PIN FOR REMOVING OLD SLAB

MORE THAN ONE LANE REPAIRED BUT REPAIR LESS THAN FULL WIDTH
(3 - LANE ROADWAY SHOWN)

FORMING REQUIREMENTS FOR CAST-IN-PLACE REPAIRS 12'-0" OR LESS

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

CONCRETE PAVEMENT REPAIR

9-10-2010 8-9-2010 R-44-F SHEET 1 OF 6

Addendum-1-87
MORE THAN ONE LANE REPAIRED
BUT REPAIRS ARE OFFSET
(3 - LANE ROADWAY SHOWN)

FORMING NOTES:
WHERE REPAIRS LONGER THAN 12'-0" ARE REQUIRED, A NEW GAGE MUST BE ESTABLISHED ALONG THE OLD PAVEMENT INNER JOINT LINE INDEPENDENT OF THE OLD PAVEMENT SURFACE, SO THAT SCREEDING MAY BE DONE PERPENDICULAR TO THE CENTERLINE AND INDEPENDENT OF THE OLD PAVEMENT GRADE.
STAKES USED TO HOLD HMA FILLER OR HARDBOARD IN PLACE DURING CONCRETE PLACEMENT SHALL BE REMOVED BEFORE SCREEDING THE CONCRETE.
ADJACENT LANE REPAIRS MAY BE CAST INTEGRALLY, WHEN APPROVED BY THE ENGINEER.

CAST-IN-PLACE REPAIR JOINTS USING GROUTED DOWEL OR DEFORMED BARS

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

CONCRETE PAVEMENT REPAIR
Dowel or Deformed Bar Spacing for Concrete Repairs

**Epoxy Anchored Lane Tie**

- **First Pour:**
  - 4' to 6' centered on original joint

- **Second Pour:**
  - Or Crg (future) vs. Crg (future)

**Single Lane or Full Width Repair**

- **Repair Length 6'-15' with One Joint Near an Existing Joint** (Single Lane Repair)
  - 2' min., 4' max.

- **Repair Lengths over 15' with Cp Joint** (Single Lane Repair)
  - 4' to less than 15'

- **Offsetting Lane Repairs with Cp Joint**
  - 4' to less than 15'

Michigan Department of Transportation
Bureau of Highway Development Standard Plan for

Concrete Pavement Repair

Addendum-1-89
Addendum-1-90

LONG REPAIR SHOWING
Cp JOINT ALIGNMENTS AND LANE TIES

EXISTING LONG JOINT SPACING

PLACE Cp EVERY 15'
ALIGN Cp WITH Crq

NEW 15' JOINT SPACING

FULL WIDTH MULTI-LANE REPAIRS
WITH OFFSET IN ONE LANE

EXISTING JOINT SPACING

OVER 10'
BUT LESS THAN 15'

PLACE Cp EVERY 15'

OVER 15'

REPAIR OF 12’ - 16’ JPCP WITH
ONLY ONE MID-PANEL CRACK
(IF THE PANEL HAS MORE THAN ONE MID-PANEL CRACK REPLACE ENTIRE PANEL)
(SINGLE LANE OR FULL WIDTH REPAIR)

MID PANEL CRACK REPAIR

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

CONCRETE PAVEMENT REPAIR
REPAIRING CONTINUOUSLY REINFORCED CONCRETE

CASE I
HMA REPAIR OF CONCRETE PAVEMENT
REMOVE LOOSE DETERIORATED CONCRETE. (NOT TO EXCEED PAVEMENT THICKNESS)

CASE II
HMA REPAIR OF CONCRETE PAVEMENT WITH HMA SURFACE
REMOVE HMA OVERLAY TO CONCRETE SURFACE.

CASE III
HMA REPAIR OF CONCRETE PAVEMENT WITH HMA SURFACE
REMOVE HMA OVERLAY AND LOOSE DETERIORATED CONCRETE. (NOT TO EXCEED PAVEMENT THICKNESS)

FOR CASES I, II, & III, THE REMOVED MATERIAL SHALL BE REPLACED WITH A HMA TOP COURSE MIXTURE.
THE HMA SHALL BE COMPACTED WITH A MACHINE VIBRATOR OR APPROVED ROLLER WITH BASE LIFT
THICKNESSES NOT TO EXCEED 3" AND WITH THE TOP LIFT THICKNESS NOT TO EXCEED 2". THE FINAL
SURFACE OF THE REPAIR SHALL BE FLUSH WITH THE EXISTING PAVEMENT SURFACE.

SURFACE REPAIR FOR JOINT OR CRACK (TRANSVERSE OR LONGITUDINAL)

CASE IV
FULL DEPTH HMA REPAIR OF CONCRETE PAVEMENT
REMOVE THE DETERIORATED CONCRETE FULL DEPTH, COMPACT LOOSE EXISTING BASE, REPLACE AND
COMPACT WITH HMA ANY LOST BASE.

FOR CASES IV & V, THE REMOVED MATERIAL SHALL BE REPLACED WITH A HMA TOP COURSE MIXTURE.
THE HMA SHALL BE COMPACTED WITH A MACHINE VIBRATOR OR APPROVED ROLLER WITH BASE LIFT
THICKNESSES NOT TO EXCEED 3" AND WITH THE TOP LIFT THICKNESS NOT TO EXCEED 2". THE FINAL
SURFACE OF THE REPAIR SHALL BE FLUSH WITH THE EXISTING PAVEMENT SURFACE.

FULL DEPTH REPAIR FOR JOINT OR CRACK (TRANSVERSE OR LONGITUDINAL)

CONCRETE PAVEMENT REPAIR

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

Addendum-1-91
NOTES:

When pressure relief joint is to be constructed through concrete shoulder, trenching below concrete may be necessary to allow room for 1/2" filler.

PRESSURE RELIEF JOINT
This detail also applies to HMA surfaced concrete pavement requiring pressure relief joints.

NOTES:

Concrete pavement repairs (including joint types) or pressure relief details shall be as specified on the plans or in the log of project.

If the existing pavement has a HMA surface, the saw cuts shall extend through the underlying Portland cement concrete.

Sawed cuts in adjacent lane, shoulder, ramp, and gutters that will remain in place shall be cleaned and then sealed with hot-poured rubber-asphalt.

When the concrete pavement repair is constructed in preparation for an overlay, Crg joint reservoirs and sealants shall be omitted and expansion joints (Erg) shall have the fiber joint filler kept flush to the pavement surface.

Expansion caps shall be according to standard plan R-40-series.

Transverse contraction Cg and expansion E2 joints shall be according to standard plan R-39P-series.

Dowel and deformed bars used in Trg, Crg, and Erg joints shall be epoxy coated according to the current standard specifications.

Dowel bars and deformed bars for tie joints shall be grouted into existing pavement with a grout selected from the prequalified materials listed in the Department's Materials Source Guide under adhesive systems for grouting dowel bars and tie bars for full-depth concrete pavement repairs.

The backer rod shall meet the requirements of the standard specifications for construction.

The same type joint shall extend across adjacent lane repairs.

After grouting in-place, RC-250 or an approved bond breaker shall be applied to that portion of Crg and Erg dowel bars that extend into the cast concrete.

Repaired concrete pavements require that 1" of Erg expansion joints be distributed throughout a given 1000' section.


ddendum-1-92

Addendum-1-92

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

CONCRETE PAVEMENT REPAIR

9-10-2010  8-9-2010  R-44-F  SHEET
9-10-2010  8-9-2010  R-44-F  SHEET

Addendum-1-92
GENERAL NOTES:

1. Necessary site and project coordination, groundwater protection, and erosion control; all water diversions shall be considered as part of the site plan and project submittals. A project site plan shall be submitted to the City Engineer for review and approval. The project site plan shall include a site plan, a construction plan, and a set of plans showing the location of all site work and the location of all proposed underground utilities and facilities.

2. The location and depth of all existing utilities and other underground facilities shall be to the best knowledge of the Contractor and shall be marked in accordance with the City Engineer's requirements. The Contractor shall perform all necessary testing to determine the location and depth of all existing utilities and other underground facilities before any work is begun.

3. Any proposed modification of existing utilities or other underground facilities shall be submitted to the City Engineer for review and approval. The Contractor shall be responsible for any damage to existing utilities or other underground facilities that may occur during the construction of the project.

4. The City Engineer shall provide all necessary information and instructions to the Contractor regarding the construction of the project. The Contractor shall be responsible for all work performed on the project, including the construction of all proposed underground utilities and facilities.

5. The contractor shall be responsible for all work performed on the project, including the construction of all proposed underground utilities and facilities. The contractor shall be responsible for all damage to existing utilities or other underground facilities that may occur during the construction of the project.

6. The contractor shall be responsible for all work performed on the project, including the construction of all proposed underground utilities and facilities. The contractor shall be responsible for all damage to existing utilities or other underground facilities that may occur during the construction of the project.

PERMITS REQUIRED TO BE OBTAINED BY THE CONTRACTOR PRIOR TO THE BEGINNING OF CONSTRUCTION:

<table>
<thead>
<tr>
<th>PERMIT</th>
<th>ISSUING AUTHORITY</th>
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<tbody>
<tr>
<td>LAKE CLOSURE PERMIT</td>
<td>CITY OF ANN ARBOR ENGINEERING</td>
</tr>
<tr>
<td>GRADING/SOIL EROSION &amp; SEDIMENTATION CONTROL PERMIT</td>
<td>CITY OF ANN ARBOR CUSTOMER SERVICE</td>
</tr>
<tr>
<td>RIGHT-OF-WAY PERMIT</td>
<td>CITY OF ANN ARBOR CUSTOMER SERVICE</td>
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* NO COST TO CONTRACTOR

CONTACT INFORMATION

PUBLIC UTILITIES

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PRIVATE UTILITIES

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PROJECT NAME: BENCHMARKS

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<th>BM #</th>
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<tr>
<td>1</td>
<td>924.310</td>
<td>CHISELED SQUARE IN CONCRETE ON NORTH SIDE OF STRAIN POLE IN THE SOUTHEAST CORNER OF W. STADIUM BLVD. AND S. SEVENTH ST.</td>
</tr>
<tr>
<td>2</td>
<td>921.230</td>
<td>S.W. BOLT LOCATED ON LIGHT POLE ON EAST SIDE OF S. SEVENTH ST. APPROX. 600' SOUTH OF WEST STADIUM BLVD.</td>
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PUBLIC UTILITIES

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# CITY OF ANN ARBOR
## ENGINEERING
### PROJECT LOCATION: BARDSTOWN TRAIL

| ITB No. | FILE No. | 2018004 |

## CONSTRUCTION METHOD AND SEQUENCING

1. The work to be completed on this street shall be done, but not be limited to the following: All work shall be coordinated and constructed in phases, as directed by the Engineer.
2. Improvements with the Contractor's plans, and as directed by the Engineer.
3. Use a means of notification, materials and equipment on plans. If any item requires additional work, it shall be completed by the Contractor, prior to work start.
4. Perform operations and/or make repairs as directed by the Engineer.
5. Complete all necessary work and as directed by the Engineer.

## QUANTITIES

### SIGN, TYPE B, PRE-ENGINEERED

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<th>Units</th>
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## CONSTRUCTION KEY

### NOTES

- All work shall be coordinated and constructed in phases, as directed by the Engineer.
- Improvements with the Contractor's plans, and as directed by the Engineer.
- Use a means of notification, materials and equipment on plans. If any item requires additional work, it shall be completed by the Contractor, prior to work start.
- Perform operations and/or make repairs as directed by the Engineer.
- Complete all necessary work and as directed by the Engineer.
- Complete all miscellaneous construction requiring clean-up and final inspection.
Know what's below. Call before you dig.

ENGINEERING - PUBLIC SERVICES - CITY OF ANN ARBOR
CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48107-8647
734-794-6410
www.a2gov.org

STREET RESURFACING PROJECT - 2018
BARDSTOWN TRAIL
STA. 10+00 - STA. 15+00

PLAN: Custom

MATCH LINE
STA: 15+00
MATCH LINE
STA: 15+00

STURBRIDGE CT
CHARTER PL
BARDSTOWN TRL

8 OF 79
The diagram shows a street resurfacing project on BARDSTOWN TRAIL from STA:15+00 to STA:26+00. The project includes various street sections, road signs, and other markings indicative of a city engineering project. The diagram is labeled with street names and project references such as 'MATCH LINE' and 'PLAN: 1:40'. There are also contact details for the City of Ann Arbor's Engineering and Public Services department, including phone numbers and a website link. The project seems to be related to engineering work and public services in the city.
ENGINEERING - PUBLIC SERVICES - CITY OF ANN ARBOR

STREET RESURFACING PROJECT - 2018

BARDSTOWN TRAIL STATION 26+00 - 37+00
Know what's below. Call before you dig.

CITY OF ANN ARBOR

ENGINEERING - PUBLIC SERVICES - CITY OF ANN ARBOR

PUBLIC SERVICES
301 EAST HURON STREET
P.O. BOX 8647
ANN ARBOR, MI 48107-8647
734-794-6410
www.a2gov.org

STREET RESURFACING PROJECT - 2018
BARDSTOWN TRAIL
STA. 37+00 - STA. 38+76

LIMITS
CONSTRUCTION METHOD AND SEQUENCING

1. THE WORK TO BE COMPLETED ON THIS STREET SHALL BE PERFORMED BUT NOT LIMITED TO THE FOLLOWING SERVICES. THE ORDER OF CONSTRUCTION SHALL BE COMPLETED UNLESS OTHERWISE AS DIRECTED BY THE ENGINEER.

2. INSTALL ANY PROPOSED STREET FURNITURE AND CURB, GUTTER, SIDEWALKS, STREET FURNITURE, AND STREET FURNITURE SHOULDER IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE CONTRACTOR.

3. INSTALL ALL SITE IMPROVEMENTS, INCLUDING CURB, GUTTER, SIDEWALKS, AND STREET FURNITURE, IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE CONTRACTOR.

4. PERMIT ALL CONSTRUCTION WORK, INCLUDING PAVING, IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE CONTRACTOR.

5. PERMIT ALL CONSTRUCTION WORK, INCLUDING PAVING, IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE CONTRACTOR.

6. INSTALL ANY PROPOSED STREET FURNITURE, CURB, GUTTER, SIDEWALKS, STREET FURNITURE SHOULDER, AND STREET FURNITURE IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE CONTRACTOR.

7. INSTALL ALL SITE IMPROVEMENTS, INCLUDING CURB, GUTTER, SIDEWALKS, AND STREET FURNITURE, IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE CONTRACTOR.

8. INSTALL ANY PROPOSED STREET FURNITURE, CURB, GUTTER, SIDEWALKS, STREET FURNITURE SHOULDER, AND STREET FURNITURE IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE CONTRACTOR.

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10. INSTALL ANY PROPOSED STREET FURNITURE, CURB, GUTTER, SIDEWALKS, STREET FURNITURE SHOULDER, AND STREET FURNITURE IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE CONTRACTOR.

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12. INSTALL ANY PROPOSED STREET FURNITURE, CURB, GUTTER, SIDEWALKS, STREET FURNITURE SHOULDER, AND STREET FURNITURE IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE CONTRACTOR.

13. INSTALL ALL SITE IMPROVEMENTS, INCLUDING CURB, GUTTER, SIDEWALKS, AND STREET FURNITURE, IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE CONTRACTOR.

14. INSTALL ANY PROPOSED STREET FURNITURE, CURB, GUTTER, SIDEWALKS, STREET FURNITURE SHOULDER, AND STREET FURNITURE IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE CONTRACTOR.
### Construction Method and Sequencing

1. The work to be completed on this street shall be done but not be limited to the following. The work of construction shall be done only during times designated or approved by the Engineer.
2. Access for utilities, maintenance, and soil erosion control is in accordance with the plans and as directed by the Engineer.
3. Install all proposed storm sewer and other utilities as shown on the plans and as directed by the Engineer.
4. Locate all underground utilities, including valve and manhole covers.
5. Perforate all concrete work, including pavement, in accordance with the plans and as directed by the Engineer.
6. Have a copy of information materials before starting work that may require underground work above ground. Contact shall be determined by the Engineer.
7. Perform underground and/or make repairs as directed by the Engineer.
8. Grade, shape, and re-grade the existing roadway back as required, and as directed by the Engineer.
9. Paint 3 inches of the surfacing as specified or directed, as the leading course.
10. Apply all structural changes, including minor land use changes to be performed elevations.
11. Paint 3 inches of the surfacing as specified or directed, as the leading course.
12. Complete all pavement markings in accordance with the plans, and as directed by the Engineer.
13. Complete all miscellaneous construction requiring all clean-up and final restoration.
14. Provide all expert control service as required and as directed.

### Quantities

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### Construction Key

- **A1**: Rock, Gravel and Grind, Any Type, Rand
- **A2**: Rock, Gravel and Grind, Any Type, Rand
- **A3**: Rock, Gravel and Grind, Any Type, Rand
- **A4**: Rock, Gravel and Grind, Any Type, Rand
- **B1**: Rock, Gravel and Grind, Any Type, Rand
- **B2**: Rock, Gravel and Grind, Any Type, Rand
- **B3**: Rock, Gravel and Grind, Any Type, Rand
- **B4**: Rock, Gravel and Grind, Any Type, Rand
- **C1**: Rock, Gravel and Grind, Any Type, Rand
- **C2**: Rock, Gravel and Grind, Any Type, Rand
- **C3**: Rock, Gravel and Grind, Any Type, Rand
- **C4**: Rock, Gravel and Grind, Any Type, Rand
- **D1**: Rock, Gravel and Grind, Any Type, Rand
- **D2**: Rock, Gravel and Grind, Any Type, Rand
- **D3**: Rock, Gravel and Grind, Any Type, Rand
- **E1**: Rock, Gravel and Grind, Any Type, Rand
- **E2**: Rock, Gravel and Grind, Any Type, Rand

### Notes

- Known by what's below. Call before you dig.
Know what's below.
Call before you dig.
CITY OF ANN ARBOR
ENGINEERING

PROJECT LOCATION: KIPLING DRIVE

ITB No. 4529   FILE No. 2018004

CONSTRUCTION METHOD AND SEQUENCING

1. THE WORK TO BE COMPLETED ON THIS STREET SHALL BE COMPLETED BUT NOT BE LIMITED TO THE FOLLOWING ITEMS: THE CONTRACTOR SHALL BE AS CONSIDERED NECESSARY AS DIRECTED BY THE ENGINEER.

2. INSTALL ANY PROPOSED SYSTEM TRENCHES AND UNDERTAKE AS DIRECTED BY THE CONTRACTOR.

3. COMPLETE ALL IN-SERVICE ITEMS AS DIRECTED.

NOTES

- Know what's below.
- Call before you dig.
Know what's below. Call before you dig.
CONSTRUCTION METHOD AND SEQUENCING

1. The work to be completed on this street shall be performed but not be limited to the following time. The hours of construction shall be as shown unless otherwise specified in this contract.

2. Benefit from run-off, and soil erosion control installed in accordance with the plans, and as directed by the Engineer.

3. Install any proposed storm sewer, and underground utilities are shown on the plans, and as directed by the Engineer.

4. Lower all underground utilities, including valve and manhole boxes.

5. Perform all storm sewer work, including restoration, in accordance with the plans, and as directed by the Engineer.

6. Use a number of materials furnished from existing sources that may reduce highway work more efficiently. Depths to be determined by the Engineer. Pavement work will be full depth.

7. Perform underground and/or take repairs as directed by the Engineer.

8. Issue, share, and re-compute the existing road base as required, and as directed by the Engineer.

9. Place 3 inches of the finished work as specified or directed, as the leading course in one lift.

10. Anchor all drainage and manholes to stay within the proposed elevations.

11. Place 2 inches of the finished work as specified or directed, as the leading course in one lift.

12. Construct all pavement materials in accordance with the plans, and as directed by the Engineer.

13. Complete all miscellaneous construction required. (1st phase upon completion of the 2nd phase).

APPROVED

The following are your authorized representatives for this project:

City of Ann Arbor

313 East Huron Street, P.O. Box 8647
Ann Arbor, Michigan 48107-8647

734-794-6410 www.a2gov.org

19 OF 79
Know what's below.
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CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
P.O. BOX 8647
ANN ARBOR, MI 48107-8647
734-794-6410
www.a2gov.org

STREET RESURFACING PROJECT - 2018
PRESTWICK COURT
STA. 10+00 - STA. 12+05

22 OF 79
CONSTRUCTION METHOD AND SEQUENCING

1. THE WORK TO BE COMPLETED ON THIS STREET SHALL BE COMPLETED, BUT NOT BE LIMITED TO THE FOLLOWING ITEMS: THE WORK OF CONSTRUCTION SHALL BE AS SHOWN UNLESS OTHERWISE MENTIONED OR DIRECTED BY THE ENGINEER.

2. INSTALLATION OF WATER METERS AND SHUTOFF VALVES, ETC., IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER.

3. INSTALLATION OF POWER METER BOXES, ETC., IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER.

4. LAYER ALL SURFACE COATINGS, HOLLOWING VALVES AND MANHOLE RINGS.

5. PERMITTING ALL STRUCTURAL WORK, INCLUDING REINFORCEMENT, IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER.

6. HARDEN ALL SURFACE COATINGS, HOLLOWING VALVES AND MANHOLE RINGS. ETC., IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER.

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13. HARDEN ALL SURFACE COATINGS, HOLLOWING VALVES AND MANHOLE RINGS. ETC., IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER.
Know what's below.
Call before you dig.

ENGINEERING - PUBLIC SERVICES - CITY OF ANN ARBOR
CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
P.O. BOX 8647
ANN ARBOR, MI 48107-8647
734-794-6410
www.a2gov.org

STREET RESURFACING PROJECT - 2018
SEVERN COURT
STA. 10+00 - STA. 14+04
LIMITS
CONSTRUCTION METHOD AND SEQUENCING

1. THE WORK TO BE COMPLETED ON THIS STREET SHALL BEGIN BUT NOT BE LIMITED TO THE FOLLOWING: THE VARIOUS STAGES OF CONSTRUCTION SHALL BE AS SHOWN UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER.

2. ADEQUATE BARRIERS, WARNING, AND SOIL EROSION CONTROL IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER.

3. INSTALL ANY PROPOSED DRAINAGE TRENCHES AND UNDERGROUND DRAINAGE AS SHOWN ON THE PLANS, AND AS DIRECTED BY THE ENGINEER.

4. LINER ALL UNDERGROUND CONDUCTORS INCLUDING VALVES AND METER BOXES.

5. PERFORM ALL ENGINEERED WORK, INCLUDING RESTORATION, IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER.

6. HAVE A REASONABLE MATERIALS FROM ENSURING PROPER TIME TO COMPLETE WORK. DEPTH TO RELANDSCAPE IS TO BE DETERMINED BY THE ENGINEER. PRICES WILL BE FULL INCOME.

7. PERFORM UNDERWATER AND/OR MAKE REPAIRS AS DIRECTED BY THE ENGINEER.

8. ISSUE, PLACE, AND RE-CONNECT THE ENDING ROAD BASE AS REQUIRED, AND AS DIRECTED BY THE ENGINEER.

9. PAY 2 INCHES OF THE ENDING BASE AS SPECIFIED OR DIRECTED, AS THE LEADING COURSE, IN ONE LAY.

10. ALIGN ALL STRUCTURAL CONDUCTORS, MANHOLE MANHOLE BASES TO THEIR FINISHED ELEVATIONS.

11. PAY 2 INCHES OF THE ENDING BASE AS SPECIFIED OR DIRECTED, AS THE ENDING COURSE, IN ONE LAY.

12. COMPLETE ALL PAVEMENT MATERIALS IN ACCORDANCE WITH THE PLANS, AND AS DIRECTED BY THE ENGINEER.

13. COMPLETE ALL URBANIZATION CONSTRUCTION INCLUDING LEXAN AND UPSIDE RESTORATION.

14. SERVE ALL UTILITY CONTROL PANELS AND REPAIRS AS DIRECTED.

NOTES

CITY OF ANN ARBOR
ENGINEERING

PROJECT LOCATION: STURBRIDGE COURT

ITB No. 4529 FILE No. 2018004

CONSTRUCTION METHOD AND SEQUENCING

1. THE WORK TO BE COMPLETED ON THIS STREET SHALL BEGIN BUT NOT BE LIMITED TO THE FOLLOWING: THE VARIOUS STAGES OF CONSTRUCTION SHALL BE AS SHOWN UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER.

2. ADEQUATE BARRIERS, WARNING, AND SOIL EROSION CONTROL IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER.

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CITY OF ANN ARBOR
ENGINEERING

PROJECT LOCATION: STURBRIDGE COURT

ITB No. 4529 FILE No. 2018004

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7. PERFORM UNDERWATER AND/OR MAKE REPAIRS AS DIRECTED BY THE ENGINEER.

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CITY OF ANN ARBOR
ENGINEERING

PROJECT LOCATION: STURBRIDGE COURT

ITB No. 4529 FILE No. 2018004

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6. HAVE A REASONABLE MATERIALS FROM ENSURING PROPER TIME TO COMPLETE WORK. DEPTH TO RELANDSCAPE IS TO BE DETERMINED BY THE ENGINEER. PRICES WILL BE FULL INCOME.

7. PERFORM UNDERWATER AND/OR MAKE REPAIRS AS DIRECTED BY THE ENGINEER.

8. ISSUE, PLACE, AND RE-CONNECT THE ENDING ROAD BASE AS REQUIRED, AND AS DIRECTED BY THE ENGINEER.

9. PAY 2 INCHES OF THE ENDING BASE AS SPECIFIED OR DIRECTED, AS THE LEADING COURSE, IN ONE LAY.

10. ALIGN ALL STRUCTURAL CONDUCTORS, MANHOLE MANHOLE BASES TO THEIR FINISHED ELEVATIONS.

11. PAY 2 INCHES OF THE ENDING BASE AS SPECIFIED OR DIRECTED, AS THE ENDING COURSE, IN ONE LAY.

12. COMPLETE ALL PAVEMENT MATERIALS IN ACCORDANCE WITH THE PLANS, AND AS DIRECTED BY THE ENGINEER.

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14. SERVE ALL UTILITY CONTROL PANELS AND REPAIRS AS DIRECTED.

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CITY OF ANN ARBOR
ENGINEERING

PROJECT LOCATION: STURBRIDGE COURT

ITB No. 4529 FILE No. 2018004

CONSTRUCTION METHOD AND SEQUENCING

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2. ADEQUATE BARRIERS, WARNING, AND SOIL EROSION CONTROL IN ACCORDANCE WITH THE PLANS AND AS DIRECTED BY THE ENGINEER.

3. INSTALL ANY PROPOSED DRAINAGE TRENCHES AND UNDERGROUND DRAINAGE AS SHOWN ON THE PLANS, AND AS DIRECTED BY THE ENGINEER.

4. LINER ALL UNDERGROUND CONDUCTORS INCLUDING VALVES AND METER BOXES.

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6. HAVE A REASONABLE MATERIALS FROM ENSURING PROPER TIME TO COMPLETE WORK. DEPTH TO RELANDSCAPE IS TO BE DETERMINED BY THE ENGINEER. PRICES WILL BE FULL INCOME.

7. PERFORM UNDERWATER AND/OR MAKE REPAIRS AS DIRECTED BY THE ENGINEER.

8. ISSUE, PLACE, AND RE-CONNECT THE ENDING ROAD BASE AS REQUIRED, AND AS DIRECTED BY THE ENGINEER.

9. PAY 2 INCHES OF THE ENDING BASE AS SPECIFIED OR DIRECTED, AS THE LEADING COURSE, IN ONE LAY.

10. ALIGN ALL STRUCTURAL CONDUCTORS, MANHOLE MANHOLE BASES TO THEIR FINISHED ELEVATIONS.

11. PAY 2 INCHES OF THE ENDING BASE AS SPECIFIED OR DIRECTED, AS THE ENDING COURSE, IN ONE LAY.

12. COMPLETE ALL PAVEMENT MATERIALS IN ACCORDANCE WITH THE PLANS, AND AS DIRECTED BY THE ENGINEER.

13. COMPLETE ALL URBANIZATION CONSTRUCTION INCLUDING LEXAN AND UPSIDE RESTORATION.

14. SERVE ALL UTILITY CONTROL PANELS AND REPAIRS AS DIRECTED.
Know what's below.
Call before you dig.
CONSTRUCTION METHOD AND SEQUENCING

1. The work to be completed on this street shall begin, but not be limited to the following: Prior to the start of construction, all water valves shall be left open and as directed by the Engineer.

2. All construction materials and soil erosion controls shall be in accordance with the plans, and as directed by the Engineer.

3. All signs, barriers, and pre-contact the existing road base as directed, and as directed by the Engineer.

4. Complete all payment vouchers in accordance with the plans, and as directed by the Engineer.

5. Complete all miscellaneous construction requiring clean-up and final restoration.

6. This is an important document. Thoroughness and accuracy are expected.

NOTES

Know what's below. Call before you dig.
# Construction Method and Sequencing

1. The work to be completed on this street shall proceed but not be limited to the following. The order of construction shall be as shown unless otherwise noted on the Plan Set.
2. Intermediate lifts, maintenance, and soil erosion controls in accordance with the Plan Set and as directed by the Engineer.
3. Install any required street signs, and undercuts as shown on the plans and as directed by the Engineer.
4. Lay all structure gravel, including value and movement-based.
5. Perform all structure work, including restoration, in accordance with the Plan Set, and as directed by the Engineer.
6. Have a crew of professional workers for assisting regional work that may require special handling to become operational. Depth to be determined by the Engineer. Work will not start until the depth has been approved.
7. Perform undercutting and/or make repairs as directed by the Engineer.
8. Issue, hand, and re-compress the ending road base as required, and as directed by the Engineer.
9. Place 2 inches of the surfacing mix as specified or directed as the leading course in one lift.
10. Align all structure gravel, maintain shoulder, and value to top of paved elevations.
11. Place 2 inches of the surfacing mix as specified or directed as the leading course in one lift.
12. Complete all pavement work in accordance with the Plan Set, and as directed by the Engineer.
13. Complete all full-depth construction in accordance with local and final restoration.
14. Perform all traffic control devices, signs, and barriers.

---

## Project Location: Windemere Drive

**ITB No. 4529**  **FILE No. 2018004**

### Quantities

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## Construction Key

### Notes

Know what's below. Call before you dig.

---

**City of Ann Arbor Engineering**

**City of Ann Arbor Public Services**

301 East Huron Street

P.O. Box 8647

Ann Arbor, Michigan 48107-8647

734-794-6410  www.a2gov.org
Know what's below. Call before you dig.
Know what's below.
Call before you dig.
PROJECT LOCATION: WEST DOBSON PLACE

CONSTRUCTION METHOD AND SEQUENCING

1. The work to be completed on this street shall be limited, but not be limited to, the following: Resurfacing, street drainage, curb and gutter, and sidewalk.
2. Submitting contractor shall post a sign indicating a job site on the adjacent street.
3. Install any proposed storm sewers and underground utilities as shown on the plans, and as directed by the Engineer.
4. Leman all underground utilities, including valves and manhole boxes.
5. Perform all concrete work, including restoration, in accordance with the plans and specifications.
6. Use a balance of available materials within the budget. The time to be determined by the Engineer.
7. Perform underground and/or raise manholes as directed by the Engineer.
8. Issue, issue, and reissue the existing road base as required, and as directed by the Engineer.
9. Provide 2 inches of the existing road as specified or directed, at the leading course in one lift.
10. Install all flexible curbs, maintain proper 1/2" concrete elevations, and as directed by the Engineer.
11. Provide 2 inches of the existing road as specified or directed, at the leading course in one lift.
12. Complete all pavement materials in accordance with the plans, and as directed by the Engineer.
13. Complete all miscellaneous construction including clean-up and proper restoration.
14. Perform all traffic control procedures to the benefit of the public.

NOTES

CALL BEFORE YOU DIG!

ENGINEERING - PUBLIC SERVICES - CITY OF ANN ARBOR

301 EAST HURON STREET, P.O. BOX 8647
ANN ARBOR, MI 48107-8647
734-794-6410  www.a2gov.org
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PUBLIC SERVICES
301 EAST HURON STREET
P.O. BOX 8647
ANN ARBOR, MI 48107-8647
734-794-6410
www.a2gov.org
CONSTRUCTION METHOD AND SEQUENCING

1. THE WORK TO BE COMPLETED ON THIS STREET SHALL BE PERFORMED IN A MANNER THAT WILL NOT CAUSE UNPLANNED INTERRUPTIONS OR DISRUPTIONS TO THE PUBLIC.
2. ALL WORK PERFORMED ON THIS STREET SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS PROVIDED.
3. INSTALL ALL STRUCTURAL DRILLED PILES UPON INVOICING AND AS DIRECTED BY THE ENGINEER.
4. COMPLETE ALL UTILITIES CONSTRUCTION REQUIREMENTS BEFORE OPEN-UP AND PRIME TIME.
5. PROVIDE ALL TRAFFIC CONTROL MEASURES PRIOR TO THE MONITOR-DIRTY PASSAGES.

NOTES

- KNOW WHAT'S BELOW.
- CALL BEFORE YOU DIG.
- ALL WORK PERFORMED ON THIS STREET SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS PROVIDED.
- PROVIDE ALL TRAFFIC CONTROL MEASURES PRIOR TO THE MONITOR-DIRTY PASSAGES.

PROJECT LOCATION: EAST DOBSON PLACE

ITB No. 4529  FILE No. 2018004
Know what’s below. Call before you dig.
CONSTRUCTION METHOD AND SEQUENCING

1. DEMOLISH CURB, GUARDRAIL, AND SIDEWALK AS SHOWN ON ATTACHED PLANS AND AS DIRECTED BY THE ENGINEER.

2. INSTALL NECESSARY CURB AND CURB AND GUTTER INFILL AND SLOPE INSTALLATION THROUGH A MIX OF METHODS AS DIRECTED BY THE ENGINEER.

3. INSTALL MEDIATOR CURB, GUARDRAIL AND SIDEWALK AS SHOWN ON ATTACHED PLANS AND AS DIRECTED BY THE ENGINEER.

4. LAYER ALL STRUCTURAL LAYERING MATERIALS AND SURFACE MATERIALS TO MEET THE REQUIREMENTS DESCRIBED IN THE ENGINEER'S SPECIFICATIONS.

5. PERFORM ALL GROOVE, DRAIN, AND RE-CONNECT THE EXISTING ROAD BASE AS DIRECTED, AND AS DIRECTED BY THE ENGINEER.

6. PAVE 2 INCHES OF THE SURFACING MIX AS SPECIFIED OR DIRECTED, AS THE LAYING COURSE, IN ONE LIFT.

7. APPLY ALL STRUCTURAL LAYERING MATERIALS, INCLUDING NON-VISUAL VALUES HOE TO THE PREFERRED ELEVATIONS.

8. PAVE 2 INCHES OF THE SURFACING MIX AS SPECIFIED OR DIRECTED, AS THE MOLDING COURSE IN ONE LIFT.

9. COMPLETE ALL PAVEMENT WORK IN ACCORDANCE WITH THE PLANS, AND AS DIRECTED BY THE ENGINEER.

10. COMPLETE ALL OTHER CONSTRUCTION REQUIREMENTS, INCLUDING CLEANUP AND REPAIR, AS DIRECTED.

NOTES

- Know what's below.
- Call before you dig.
Know what's below.
Call before you dig.

ENGINEERING - PUBLIC SERVICES - CITY OF ANN ARBOR

CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
P.O. BOX 8647
ANN ARBOR, MI 48107-8647
734-794-6410
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STREET RESURFACING PROJECT - 2018
WOLVERHAMPTON LN
STA. 10+00 - STA. 18+50
Know what's below.
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CITY OF ANN ARBOR ENGINEERING

PROJECT LOCATION: EB & WB JACKSON AVENUE

CONSTRUCTION METHOD AND SEQUENCING

Know what’s below. Call before you dig.

1. EPSD SURFACE MAINTENANCE IN 0.5 YD3 PLAN, AND INSTALL THE EXISTING FERRO AND REINFORCEMENT CONTROL MEASURES.
2. COMPLETE GENERAL WORK RELATED TO PERFORMANCE, ORANGE, AND CONCRETE MIVE WITH EXCEPTION TO CEMENT.
3. INSTALL PROPOSED DRAINAGE STRUCTURES, STORM SEWER, AND UNDRAIN AS REQUIRED.
4. PERFORMANCE ALL ASH WORK, REMOVING RETAINING WALLS, TEMPORARILY LEAVE ALL STRUCTURE COVERS LOCATED WITHIN THE EXISTING FERRO AREA, INCLUDING CEMENT AND FOOTING ISSUES.
5. REMOVE ITEMS 1, 2, 3, 5, 6, AND 7 FROM THE SPORT DRAINAGE ABOVE.
6. REMOVE 300 YARDS OF EXISTING MADE SURFACES BY SCALING. END THE PROJECT ON OR BEFORE THE EXISTING MADE SURFACES VARIOUS ALONG MI 8667, THE CITY OF ANN ARBOR PUBLIC SERVICES.
7. PERFORMANCE ALL ACID AND OTHER MATERIALS MOUNTING FERRO, INCLUDING MOUNTING AND REQUIRED AS REQUIRED.
8. COMPLETE THE EXISTING FERRO AREA AS REQUIRED.
9. COMPLETE ALL STRUCTURAL WORKS, INCLUDING CEMENT AND FOOTING ISSUES, TO THEIR FINAL ELEVATION.
10. CLEAN FERRO AND PLACE 2.0 INCH LEADING COVER MADE AND ORMENT S.
11. CLEAN FERRO AND PLACE 2.0 INCH LEADING COVER MADE AND ORMENT S.
12. COMPLETE AND CONFIRM ALL PAVEMENT IMPAIRMENTS.
13. COMPLETE ALL UNDRAINING CONSTRUCTION including ALL CLEAN UP AND FINAL RESTORATION.
14. REMOVE ALL TRAFFIC CONTROL DEVICES, AND WIN ONE PLAS.

PROJECT MANAGERS: CITY OF ANN ARBOR PUBLIC SERVICES
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EB & WB JACKSON AVENUE
STA. 18+50 - STA. 29+50 PHASE 1

LIMITS
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2018004

STREET RESURFACING PROJECT - 2018
JACKSON AVENUE
STA. 0+00 - STA. 10+00 TRAFFIC CONTROL PHASE 1 / PHASE 2

WORK ZONE BEGINS

END ROAD WORK

PHASE 1 & 2
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50 OF 79

2018004

- 50

JACKSON AVENUE
STA. 10+00 - STA. 18+50
TRAFFIC CONTROL PHASE 1

LIMITS

PHASE 1

35

1375x1017

STA: 18+50

ONLY

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PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

JACKSON AVENUE
STA. 10+00 - STA. 18+50
TRAFFIC CONTROL PHASE 1

LIMITS

PHASE 1

35

1375x1017

STA: 18+50

ONLY

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Know what's below. Call before you dig.
Call before you dig.
Know what's below. Call before you dig.
Know what's below. Call before you dig.
Know what's below. Call before you dig.
Know what's below. Call before you dig.
**PROJECT LOCATION: STONE SCHOOL ROAD**

**ITB No. 4529 FILE No. 2018004**

**CONSTRUCTION METHOD AND SEQUENCING**

1. The work to be completed on this street shall be performed, but not be limited to the following items. The order of construction shall be at the option of the Engineer as directed by the Executive.

   - Excavation
   - Placement of granular base
   - Placement of full-depth asphalt
   - Placement of hot mix asphalt
   - Placement of street class concrete
   - Placement of curb and gutter
   - Placement of median
   - Placement of sidewalk
   - Placement of street lighting

2. All items shall be completed in accordance with the plans and as directed by the Executive.

3. Notice shall be given to notify the public of the proposed work at least 10 days prior to the date of commencement of work.

4. The City of Ann Arbor reserves the right to require the performance of any necessary work or services not specifically included in the plans or specifications as directed by the Executive.

5. All work shall be subject to inspection by the City of Ann Arbor at any time during the construction process.

**QUANTITIES**

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Item Description</th>
<th>Unit</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>841101</td>
<td>Curb, Sleeper and Cut and Cover, Any Type, Calc.</td>
<td>ft</td>
<td>28.00</td>
</tr>
<tr>
<td>841102</td>
<td>Curb, Sleeper and Cut and Cover, Any Type, Blended</td>
<td>ft</td>
<td>20.00</td>
</tr>
<tr>
<td>841103</td>
<td>Curb, Sleeper and Cut and Cover, Any Type, Concrete</td>
<td>ft</td>
<td>20.00</td>
</tr>
<tr>
<td>841104</td>
<td>Curb, Sleeper and Cut and Cover, Any Type, Curbstone</td>
<td>ft</td>
<td>20.00</td>
</tr>
<tr>
<td>841105</td>
<td>Curb, Sleeper and Cut and Cover, Any Type, Cut and Cover</td>
<td>ft</td>
<td>20.00</td>
</tr>
<tr>
<td>841106</td>
<td>Curb, Sleeper and Cut and Cover, Any Type, Concrete, Cut and Cover</td>
<td>ft</td>
<td>20.00</td>
</tr>
<tr>
<td>841107</td>
<td>Curb, Sleeper and Cut and Cover, Any Type, Concrete, Cut and Cover</td>
<td>ft</td>
<td>20.00</td>
</tr>
<tr>
<td>841108</td>
<td>Curb, Sleeper and Cut and Cover, Any Type, Concrete, Cut and Cover</td>
<td>ft</td>
<td>20.00</td>
</tr>
<tr>
<td>841109</td>
<td>Curb, Sleeper and Cut and Cover, Any Type, Concrete, Cut and Cover</td>
<td>ft</td>
<td>20.00</td>
</tr>
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**CONSTRUCTION KEY**

<table>
<thead>
<tr>
<th>KEY</th>
<th>ASSOCIATED ITEM NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100% Street, 80% Street, 10% Driveway</td>
</tr>
<tr>
<td>B</td>
<td>80% Street, 10% Street, 10% Driveway</td>
</tr>
<tr>
<td>C</td>
<td>10% Street, 80% Street, 10% Driveway</td>
</tr>
<tr>
<td>D</td>
<td>10% Street, 10% Street, 80% Driveway</td>
</tr>
<tr>
<td>E</td>
<td>50% Street, 50% Street</td>
</tr>
<tr>
<td>F</td>
<td>50% Street, 50% Street, 50% Driveway</td>
</tr>
<tr>
<td>G</td>
<td>50% Street, 50% Street, 50% Driveway</td>
</tr>
<tr>
<td>H</td>
<td>50% Street, 50% Street, 50% Driveway</td>
</tr>
<tr>
<td>I</td>
<td>50% Street, 50% Street, 50% Driveway</td>
</tr>
<tr>
<td>J</td>
<td>50% Street, 50% Street, 50% Driveway</td>
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<td>K</td>
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<td>R</td>
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<td>X</td>
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<tr>
<td>Y</td>
<td>50% Street, 50% Street, 50% Driveway</td>
</tr>
<tr>
<td>Z</td>
<td>50% Street, 50% Street, 50% Driveway</td>
</tr>
</tbody>
</table>

**NOTES**

- The City of Ann Arbor Public Services 301 East Huron Street, P.O. Box 8647, Ann Arbor, Michigan 48107-8647 734-794-6410 www.a2gov.org

- All work shall be subject to inspection by the City of Ann Arbor at any time during the construction process.

- Items shall be completed in accordance with the plans and as directed by the Executive.

- Notice shall be given to notify the public of the proposed work at least 10 days prior to the date of commencement of work.

- The City of Ann Arbor reserves the right to require the performance of any necessary work or services not specifically included in the plans or specifications as directed by the Executive.

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CALL BEFORE YOU DIG

STONE SCHOOL RD
STA. 18+00 - STA. 23+59

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PUBLIC SERVICES
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STREET RESURFACING PROJECT - 2018
STONE SCHOOL RD
Match Line
STA: 18+00

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67 OF 79

2018004-67

Street Resurfacing Project - 2018
Stone School Rd
STA. 18+00 - STA. 23+59  PMARK
## Construction Method and Sequencing

1. The work to be completed on this street shall be done, but not be limited to, the following phases: the order of construction shall be as shown unless otherwise instructed on the plan or drawings.

2. Maintain traffic control, and temporary construction control in accordance with the plans and as directed by the engineer.

3. Provide any proposed support towers and underreams as shown on the plans and as directed by the engineer.

4. Lower all structure covers, including valve and manhole boxes.

5. Perform all concrete work, including pavement, in accordance with the plans and as directed by the engineer.

6. Haul 3 loads of construction materials from existing roadway. This may include gravel or sand. This work is to be performed by the contractor from truck to fill truck. Perform underreams and/or base repair as directed by the engineer.

7. Cause, create, and re-construct the existing road base as required, and as directed by the engineer.

8. Have all bores of the undergrounds as specified on the plans as the engineered course, in one lift.

9. Adjust all structure covers, manholes, and valve boxes to their finished elevations.

10. Have 1 item of the philosophy as specified on the plans, and as directed by the engineer.

11. Complete all miscellaneous construction including all clean-up and final restoration.

12. Perform all traffic control devices, removing and placing.

### Traffic Control & Warning Devices

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>UNITS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>206</td>
<td>Remove HMA Pavement</td>
<td>S.Y.</td>
<td>28</td>
</tr>
<tr>
<td>207</td>
<td>Cold Miling Pavement</td>
<td>Tons</td>
<td>270</td>
</tr>
<tr>
<td>209</td>
<td>Subgrade Undercutting - Type II</td>
<td>C.Y.</td>
<td>160</td>
</tr>
<tr>
<td>220</td>
<td>HMA Patching</td>
<td>Tons</td>
<td>3</td>
</tr>
<tr>
<td>222</td>
<td>HMA Pavement Leveling, Regular</td>
<td>Tons</td>
<td>180</td>
</tr>
<tr>
<td>224</td>
<td>HMA Pavement Wearing, 36A</td>
<td>Tons</td>
<td>90</td>
</tr>
<tr>
<td>230</td>
<td>Rem. Curb &amp; Gutter, Any Type</td>
<td>L.F.</td>
<td>490</td>
</tr>
<tr>
<td>232</td>
<td>Rem. Conc. Sidewalk &amp; Drive - Any Thickness</td>
<td>S.F.</td>
<td>300</td>
</tr>
<tr>
<td>237</td>
<td>Conc. Curb &amp; Gutter - Any Type  - Fixed Form</td>
<td>L.F.</td>
<td>490</td>
</tr>
<tr>
<td>240</td>
<td>4&quot; Sidewalk or Ramp</td>
<td>S.F.</td>
<td>0</td>
</tr>
<tr>
<td>241</td>
<td>6&quot; Drive, Sidewalk or Ramp</td>
<td>S.F.</td>
<td>300</td>
</tr>
<tr>
<td>245</td>
<td>Detectable Warning, Cast in Place</td>
<td>S.F.</td>
<td>0</td>
</tr>
<tr>
<td>247</td>
<td>Integral Sidewalk Ret. Wall (6&quot;-18&quot;)</td>
<td>S.F.</td>
<td>0</td>
</tr>
<tr>
<td>250</td>
<td>2' Dia. Structure</td>
<td>Each</td>
<td>0</td>
</tr>
<tr>
<td>254</td>
<td>Lower Structure Cover</td>
<td>Each</td>
<td>4</td>
</tr>
<tr>
<td>255</td>
<td>Lower Mon./Gate Valve Box</td>
<td>Each</td>
<td>0</td>
</tr>
<tr>
<td>256</td>
<td>Adjust Structure Cover</td>
<td>Each</td>
<td>4</td>
</tr>
<tr>
<td>257</td>
<td>Adjust Curb Inlet Structure Cover</td>
<td>Each</td>
<td>0</td>
</tr>
<tr>
<td>258</td>
<td>Adjust Mon. or Gate Valve Box</td>
<td>Each</td>
<td>0</td>
</tr>
<tr>
<td>259</td>
<td>Manhole Flange &amp; Cover (MDOT Type A)</td>
<td>Each</td>
<td>3</td>
</tr>
<tr>
<td>261</td>
<td>Pt. Drain Structures</td>
<td>Each</td>
<td>2</td>
</tr>
<tr>
<td>264</td>
<td>12&quot; Sewer, Trench Detail I, Modified</td>
<td>L.F.</td>
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</tr>
<tr>
<td>268</td>
<td>Flowable Fill</td>
<td>C.Y.</td>
<td>14</td>
</tr>
<tr>
<td>271</td>
<td>21AA Limestone - C.I.P.</td>
<td>C.Y.</td>
<td>160</td>
</tr>
<tr>
<td>282</td>
<td>Plastic Drum - Lighted - Furn. &amp; Operate</td>
<td>Each</td>
<td>18</td>
</tr>
<tr>
<td>283</td>
<td>Barricade Type III - Furn. &amp; Operate</td>
<td>Each</td>
<td>2</td>
</tr>
<tr>
<td>284</td>
<td>Temp Signs Type - B</td>
<td>S.F.</td>
<td>101</td>
</tr>
<tr>
<td>285</td>
<td>No Parking Sign</td>
<td>Each</td>
<td>13</td>
</tr>
<tr>
<td>291</td>
<td>12&quot; Thermo. White or Yellow</td>
<td>L.F.</td>
<td>0</td>
</tr>
<tr>
<td>594</td>
<td>4&quot; White Thermo.</td>
<td>L.F.</td>
<td>0</td>
</tr>
<tr>
<td>595</td>
<td>4&quot; Yellow Thermo.</td>
<td>L.F.</td>
<td>0</td>
</tr>
<tr>
<td>596</td>
<td>6&quot; White Thermo.</td>
<td>L.F.</td>
<td>70</td>
</tr>
<tr>
<td>597</td>
<td>24&quot; White Thermo.</td>
<td>L.F.</td>
<td>15</td>
</tr>
<tr>
<td>598</td>
<td>Pavement Marking Symbol</td>
<td>Each</td>
<td>0</td>
</tr>
</tbody>
</table>

### Notes

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72 OF 79
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# CITY OF ANN ARBOR ENGINEERING

**PROJECT LOCATION:** ANN ARBOR - SALINE ROAD SHARED USE PATH

ITB No. 4529  FILE No. 2018004

## CONSTRUCTION METHOD AND SEQUENCING

This is the project name and number. It is clear and legible.

## QUAINTIES

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Description</th>
<th>Area (sq ft)</th>
<th>Taken (sq ft)</th>
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<tbody>
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<td>2.0</td>
<td>Resin Bound Pavement</td>
<td>5,000</td>
<td>5,000</td>
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<tr>
<td></td>
<td>Stabilized Soil Mix</td>
<td>1,500</td>
<td>1,500</td>
</tr>
<tr>
<td>1.0</td>
<td>Unpaved</td>
<td>3,000</td>
<td>3,000</td>
</tr>
<tr>
<td>1.2</td>
<td>Gravel Base</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>1.1</td>
<td>Main Road</td>
<td>2,000</td>
<td>2,000</td>
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## CONSTRUCTION KEY

<table>
<thead>
<tr>
<th>VALUE</th>
<th>KEY</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
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<tr>
<td>BB</td>
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<tr>
<td>DD</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

## NOTES

This section contains project-related information, including details about the project location, shared use path, and construction method and sequencing.

- **CONSTRUCTION METHOD AND SEQUENCING**
  - Construction method and sequencing information is clear and detailed.
  - Instructions for construction are specific and easy to follow.

- **QUAINTIES**
  - Quantities are accurately listed with areas and taken areas.

- **CONSTRUCTION KEY**
  - Construction key is straightforward and easy to understand.

- **NOTES**
  - Notes section is well-organized and contains all necessary information.

Overall, the document is clear, organized, and easy to read. The project information is presented in a logical and straightforward manner, making it accessible for all stakeholders involved in the project.
BROOKFIELD DR
ANN ARBOR-SALINE RD
W EISENHOWER PKWY
LIMITS
SEE SHEET 76
STA: 17+00

PLAN: 1:40

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Know what's below.
Call before you dig.

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STREET RESURFACING PROJECT - 2018
ANN ARBOR - SALINE RD BIKEPATH
STA. 27+00 - STA. 37+00