ADDENDUM No. 1

RFP No. 23-09

BROOKS STREET IMPROVEMENTS PROJECT

Due: April 5, 2023 at 10:00 A.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 28 pages and 54 plan sheets.

The Proposer is to acknowledge receipt of this Addendum No. 1, including all attachments in its Proposal by so indicating in the proposal that the addendum has been received. Proposals submitted without acknowledgement of receipt of this addendum may be considered non-conforming.

The following forms provided within the RFP Document should be included in submitted proposal:

- Attachment D - Prevailing Wage Declaration of Compliance
- Attachment E - Living Wage Declaration of Compliance
- Attachment G - Vendor Conflict of Interest Disclosure Form
- Attachment H - Non-Discrimination Declaration of Compliance

Proposals that fail to provide these completed forms listed above upon proposal opening may be rejected as non-responsive and may not be considered for award.

I. CORRECTIONS/ADDITIONS/DELETIONS

Changes to the RFP documents which are outlined below are referenced to a page or Section in which they appear conspicuously. Offerors are 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>
<th>Section/Page(s)</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>III.E/ Pages E1 – E4 Schedule of Pricing/Cost</td>
<td>Modifications to Pay Items and Quantities, shown in bold</td>
</tr>
<tr>
<td>120.1</td>
<td>Maximum amount reduced</td>
</tr>
<tr>
<td>215, 230</td>
<td>Quantity reduced to reflect scope reduction on Bydding</td>
</tr>
<tr>
<td>245</td>
<td>Quantity increased to reflect additional in front of 1311 Brooks</td>
</tr>
<tr>
<td>246</td>
<td>Item renamed and quantity increased to reflect additional area for water service excavations on east side of Brooks, north of Bydding</td>
</tr>
<tr>
<td>315</td>
<td>Quantity increased to reflect revised configuration of the bioretention area</td>
</tr>
<tr>
<td>367.1, 367.2</td>
<td>Quantity revised to reflect R212 change of structure type</td>
</tr>
<tr>
<td>400.3</td>
<td>Quantity increased to reflect additional water main relocation around the bioretention area</td>
</tr>
</tbody>
</table>
410.45 Item added for additional water main relocation around bioretention
481.2 Quantity increased to reflect relocation around bioretention
500.1 Quantity reduced to reflect scope reduction on Bydding
501.1 Quantity reduced to reflect change in pavement removal in Sunset
due to additional water relocation
502.1 Quantity reduced to reflect scope reduction on Bydding
503.1 Quantity corrected
520.1 Quantity reduced to reflect scope reduction on Bydding
520.2 Item added to account for subgrade excavation
521.1 Item renamed to specify backfill type and quantity reduced (as estimated)
521.2 Item added to reflect Subgrade Undercutting backfill type in trench
522.1 Quantity reduced (as estimated)
522.2 Quantity reduced to reflect contingency
524.1 Quantity corrected
525.1 Quantity corrected
530.1 Quantity increased to reflect combination of revision to HMA
pavement cross section thicknesses and types
539.1 Quantity reduced to reflect scope reduction on Bydding
539.2 Quantity corrected
545.1 Quantity increased to correlate to the amount of bumpout curbs
along the east side of Brooks
550.1 Quantity reduced to reflect scope reduction on Bydding, scope
increase at the intersection of Mixtwood and Red Oak, and intent to
protect existing curb as feasible along watermain trench
552.1 Quantity reduced to reflect scope reduction on Bydding, scope
increase at the intersection of Mixtwood and Red Oak, and scope
increase for 4 bus stop pads
554.1 – 554.2
Item added to reflect scope increase at the intersection of Mixtwood
and Red Oak
556.1 Item renamed to reflect inclusion of rip rap cost in the item
557.1 Item added to reflect scope increase at the intersection of Mixtwood
and Red Oak
586.1 Quantity increased to reflect scope increase at the intersection of
Mixtwood and Red Oak
586.2 Quantity and units corrected
587.1 Quantity increased to reflect scope increase at the intersection of
Mixtwood and Red Oak
587.2 Quantity corrected
587.4 – 587.5, 588.1 – 588.3, 640.1
Items added to reflect scope increase at the intersection of Mixtwood and Red Oak
640.2 – 640.4
Item added to reflect additional scope to furnish permanent signs
for City installation
800 Quantity reduced to reflect scope reduction on Bydding
850.1 Item renamed for clarity and quantity corrected
850.2 Item added for clarity of scope
850.3 Item added for clarity of scope
850.4 Item renumbered
850.5 Item added to scope
851.01 – 851.08
Quantity revised for overall reduction of types Bioretention area plantings, number of plantings, and specified in multiples typically available for purchase
885.1 Item renamed to reflect scope increase in revised configuration of the bioretention area

Comment: The intent with this change is to simply replace the Pages E1 - E4 provided in the RFP Document with the updated Pages Add1-E1 – Add1-E4 provided herein.

VI/ Page DS-25 Maintenance of Traffic Detailed Spec:
Additional information inserted as 3rd paragraph in Maintenance of Local Traffic section, “School buses will traverse the site via the intersection of Brooks and Hiscock Monday through Friday 7:45-8:30 a.m. and 2:45-3:30 p.m. during the school year.”

Comment: The intent with this change is to alert contractor of anticipated school bus traffic to be maintained.

VI/ Page DS-87 HMA Pavement Removal Detailed Specification (DS):
The first paragraph shall be replaced with the following two paragraphs:
Comment: The intent with this change is to account for removal of materials for backfilling and machine grading.

VI/ Page DS-91-97 Machine Grading DS:
Revisions to the first two paragraphs, the Removal of Trees and Vegetation section, the Protection of Utilities and Vaults/Structures section, and the Measurement and Payment section.

Comment: The intent with this change is to indicate additional separate pay items that relate to “Machine Grading”, and to add the “Excavation, Earth” Pay Item.

VI/ Page DS-98 Subgrade Undercutting DS:
Revisions to specify types of backfill.

VI/ Page DS-102 Subbase and Aggregate Base DS:
Revisions to the Description section and the Materials section for adherence to MDOT type materials and not to be more restrictive with regard to gradation and loss by weight.

VI/ Page DS-111 Concrete Curb, Sidewalk, Drive Approach, and Pavement DS:
Revisions to the Materials section, eliminating 3000 psi concrete mixture and specifying patterned concrete pavement.

VI/ Page DS-132 Pavement Marking DS:
Revisions to the Contract Pay Items
VI/ Page DS-134  Infiltration Trench DS:
Replaced with Bioretention and Adjacent Plantings Detailed Specification.

VI/ New section  Trees and Plantings DS:
Added.

Plan Sheet 5  Typical Edge Drain Trench specifies MDOT Class 2NS Sand Backfill

Plan Sheet 7  Additional Curb details to reflect scope increase at the intersection of Mixtwood and Red Oak

Plan Sheet 8  Cross sections updated with additional subgrade preparation; HMA Application Table Top and Leveling revised

Plan Sheets 9-11  Cross sections updated to remove sand subbase

Plan Sheet 19  Quantities and units updated

Plan Sheets 21-23, 38, 40, 51  Added 4 bus stop pads and revised location of Mixtwood and Brooks crosswalk

Plan Sheets 23, 42, 46, 49  Reduced scope on Bydding. Match lines eliminated.

Plan Sheets 24, 45  Increased scope at the intersection of Mixtwood and Red Oak

Plan Sheet 28  Added 16-inch watermain relocation around the bioretention area, and removal of 16-inch watermain under the bioretention area

Plan Sheet 33  Revised R-212 structure type, inverts and depth at R-214, and eliminated sump on R-214; revised perforated pipe under bioretention

Plan Sheet 34  Bioretention quantities (Cut and Geotextile fabric) added

Plan Sheets 39, 41  Addition of Thermoplastic Crosswalk Pavement markings

Offerors are responsible for any conclusions that they may draw from the information contained in the Addendum.
### E. Schedule of Pricing/Cost – 20 Points

Company: ________________________________

**Project: Brooks Street Improvements**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Estimated Quantity</th>
<th>Unit Price</th>
<th>Total Price</th>
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<tbody>
<tr>
<td>101.1</td>
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<td>Certified Payroll Compliance and Reporting</td>
<td>LS</td>
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<td>201</td>
<td>Allowance for Unforeseen Site Conditions</td>
<td>DLR</td>
<td>25,000</td>
<td>1.00</td>
<td>25,000.00</td>
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<td>210</td>
<td>Minor Traffic Devices, Max $40,000</td>
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<td>215</td>
<td>&quot;No Parking&quot; Sign</td>
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<td>216</td>
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<td>Grabber Cone, High Intensity, 42 Inch</td>
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<tr>
<td>236</td>
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<td>237</td>
<td>Tree Removal, Greater than 24-inch</td>
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<td>240</td>
<td>Exploratory Excavation (0-10’ deep)</td>
<td>EA</td>
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<td>245</td>
<td>Hand Dig, Sidewalk</td>
<td>SYD</td>
<td>300</td>
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<tr>
<td>246</td>
<td><strong>Hand Dig, Watermain Depth</strong></td>
<td>SYD</td>
<td>275</td>
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<td>$</td>
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<tr>
<td>305</td>
<td>6 inch SDR 35 PVC Sanitary Lead, Trench Detail 1A</td>
<td>FT</td>
<td>50</td>
<td>$</td>
<td>$</td>
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<td>315</td>
<td>6 Inch AASHTO M252 Perf. HDPE Storm Pipe w/ Slow Release Orifice</td>
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<td>36</td>
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<td>320</td>
<td>12 Inch CL IV RCP Storm Sewer Pipe, Trench Detail 1A</td>
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<td>321</td>
<td>36 Inch CL IV RCP Storm Sewer Pipe, Trench Detail 1A</td>
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<td>359.1</td>
<td>Sewer Tap, 12 inch</td>
<td>EA</td>
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<td>$</td>
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<tr>
<td>360.1</td>
<td>Dr Structure MH, 60 inch dia</td>
<td>EA</td>
<td>1</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>360.2</td>
<td>Dr Structure MH, 72 inch dia</td>
<td>EA</td>
<td>1</td>
<td>$</td>
<td>$</td>
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<td>360.3</td>
<td>Dr Structure MH, 72 inch dia, Weir Wall, Vortex Valve, Including Depth</td>
<td>EA</td>
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<td>$</td>
<td>$</td>
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<tr>
<td>365.1</td>
<td>Dr Inlet Junction Structure, 36 inch dia</td>
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<td>2</td>
<td>$</td>
<td>$</td>
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<tr>
<td>365.2</td>
<td>Dr Inlet Junction Structure, 60 inch dia</td>
<td>EA</td>
<td>3</td>
<td>$</td>
<td>$</td>
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<tr>
<td>365.3</td>
<td>Dr Inlet Junction Structure, 72 inch dia</td>
<td>EA</td>
<td>1</td>
<td>$</td>
<td>$</td>
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</tbody>
</table>
### E. Schedule of Pricing/Cost

**Project: Brooks Improvements Project**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Estimated Quantity</th>
<th>Unit Price</th>
<th>Total Price</th>
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<tr>
<td>365.4</td>
<td>Dr Inlet Junction Structure, 60 inch dia, Add Depth</td>
<td>FT</td>
<td>6</td>
<td>$</td>
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<td>367.1</td>
<td>Dr Inlet Structure, 24-inch dia</td>
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<td>367.2</td>
<td>Dr Structure, Low Point, 48-inch dia</td>
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<td>368.1</td>
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<td>Sewer Remove, Any Size or Depth</td>
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<td>Structure Remove, Any Size or Depth</td>
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<td>2,502</td>
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<td>8 x 6 Inch Reducer</td>
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<td>11</td>
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<td>410.6</td>
<td>16 x 8 Inch Reducer</td>
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<td>8 x 8 x 8 inch Tee</td>
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<td>Fire Hydrant Assembly</td>
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<td>8 Inch Gate Valve-in-Box</td>
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<td>8 Inch Gate Valve-in-Well</td>
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<td>460</td>
<td>Excavate &amp; Backfill for Water Service Tap and Lead</td>
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<td>Water Main, Remove</td>
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<td>195</td>
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<td>$</td>
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<td>Gate Valve-in-Box, Abandonment</td>
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<td>483.1</td>
<td>Gate Valve-in-Well, Abandonment</td>
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<tr>
<td>484.1</td>
<td>Fire Hydrant Assembly, Remove</td>
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<td>Cold-Milling, 1.5 Inches</td>
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<td>Item</td>
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<td>521.1</td>
<td>Subgrade Undercutting, Cl. II Backfill</td>
<td>CYD</td>
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<td>Subgrade Undercutting, 6A Limestone Backfill</td>
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<td>Non-Hazardous Contaminated Material Handling &amp; Disposal</td>
<td>CYD</td>
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<td>Hazardous Contaminated Material Handling &amp; Disposal - Contingency</td>
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<td>HMA Hand Patching</td>
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<td>553.2</td>
<td>6 Inch Concrete Drive or Sidewalk - High Early</td>
<td>SFT</td>
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<td>554.1</td>
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<td>Driveway Opening, Conc, Detail M</td>
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<td>Driveway Opening, Conc, Detail M - High Early</td>
<td>FT</td>
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<tr>
<td>556.1</td>
<td>Spillway, Conc, Modified, including rip rap</td>
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<td></td>
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<tr>
<td>557.1</td>
<td>Detectable Warning, Cast In Place</td>
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<td>98</td>
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<td>563.1</td>
<td>Structure Covers</td>
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<td>566.1</td>
<td>Adjust Structure Cover</td>
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<td>567.1</td>
<td>Adjust Monument Box or Gate Valve Box</td>
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<td>568.1</td>
<td>Additional Depth Structure Adjust/Repair</td>
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<td>586.1</td>
<td>Recessing Pavt Mrkg, Longit</td>
<td>FT</td>
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<td>586.2</td>
<td>Recessing Pavt Mrkg, Transv</td>
<td>SFT</td>
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<tr>
<td>587.1</td>
<td>Pavt Mrkg, Polyurea, 12 inch, Crosswalk</td>
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<td>587.2</td>
<td>Pavt Mrkg, Polyurea, 24 inch, Stop Bar</td>
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<td>587.4</td>
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<td>587.5</td>
<td>Pavt Mrkg, Polyurea, 6 inch, Yellow</td>
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<td>588.1</td>
<td>Pavt Mrkg, Thermoplastic, 12 inch, Crosswalk</td>
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E. Schedule of Pricing/Cost
Project: Brooks Improvements Project

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Estimated Quantity</th>
<th>Unit Price</th>
<th>Total Price</th>
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<td>Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, Yellow, Temp</td>
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<td>Bioretention Plantings, Rudbeckia Fulgida</td>
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<td><strong>TOTAL BID AMOUNT</strong></td>
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# DETAILED SPECIFICATIONS

<table>
<thead>
<tr>
<th>Detailed Specification</th>
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<tbody>
<tr>
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<td>3</td>
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<tr>
<td>General Conditions</td>
<td>3</td>
</tr>
<tr>
<td>Audio Visual Recording</td>
<td>3</td>
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<tr>
<td>Project Supervision</td>
<td>4</td>
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<tr>
<td>Certified Payroll Compliance and Reporting</td>
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<tr>
<td>Allowance for Unforeseen Site Conditions</td>
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<tr>
<td>Coordination and Cooperation with Others and Work by Others</td>
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<td>General Construction Notes</td>
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<td>Protection of Utilities</td>
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<td>Quantities and Unit Prices</td>
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<td>Materials and Supplies Certifications</td>
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<td>Soil Boring Pavement Section and Geotechnical Data</td>
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<td>Vacuum Type Street and Utility Cleaning Equipment</td>
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<td><strong>Maintenance of Traffic</strong></td>
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<td>Minor Traffic Control</td>
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<td>Traffic Control Signs and Barricades</td>
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<td>Temporary Pedestrian Access Route (TPAR) Facilities</td>
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<td>Protective Fencing</td>
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<td>Exploratory Excavation</td>
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<td>Drainage Structures</td>
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<td>Sewer Removal and Abandonment</td>
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<td>Water Main and Appurtenances</td>
<td>26</td>
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<td>Water Main Abandonment</td>
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<td><strong>HMA Pavement Removal</strong></td>
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<td>Concrete Removal</td>
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<td><strong>Machine Grading, Modified</strong></td>
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<tr>
<td><strong>Subgrade Undercutting</strong></td>
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<td><strong>Subbase and Aggregate Base</strong></td>
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<tr>
<td>HMA Paving</td>
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<td>6-Inch Wrapped Underdrain</td>
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<tr>
<td><strong>Concrete Curb, Sidewalk, Driveway Approach and Pavement</strong></td>
<td>5</td>
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<tr>
<td>Concrete Durability</td>
<td>7</td>
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<td>Concrete Placement and Protection</td>
<td>2</td>
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<tr>
<td>Detectable Warning, Cast in Place</td>
<td>2</td>
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<td>Structure Covers</td>
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<tr>
<td>Structure Cover Adjustments</td>
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<td><strong>Pavement Markings</strong></td>
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<tr>
<td>Soil Erosion and Sedimentation Control</td>
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<tr>
<td>Restoration</td>
<td>3</td>
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<tr>
<td>Protect Irrigation System</td>
<td>2</td>
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<tr>
<td><strong>Bioretention and Adjacent Plantings</strong></td>
<td>3</td>
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<tr>
<td><strong>Trees and Plantings</strong></td>
<td>2</td>
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<tr>
<td><strong>Permanent Signs</strong></td>
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</tbody>
</table>
Description

Traffic shall be maintained in accordance with the City of Ann Arbor Public Services Department Standard Specifications and as specified in Sections 104.11, 812, and 922 of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction, the 2011 Michigan Manual of Uniform Traffic Control Devices (MMUTCD), and as described herein.

The Contractor shall furnish, erect, maintain and, upon completion of the work, remove all traffic control devices and barricade lights as required on the project for the safety and protection of local traffic. This includes, but is not limited to, temporary advance, regulatory, and warning signs; barricades and channelizing devices at intersections and on streets where traffic is to be maintained; barricades at the ends of the project and at right-of-way lines of intersecting streets, and traffic control devices for moving construction operations.

Materials

The materials and equipment shall meet the requirements specified in the corresponding sections of the MDOT 2020 Standard Specifications for Construction and the 2011 MMUTCD.

Maintenance of Local Traffic

Unless otherwise indicated on the plans, all side roads shall not be closed to through traffic except during construction operations of short duration and only upon written approval of the Engineer.

Local access shall be maintained at all times for emergency vehicles, refuse pick-up, mail delivery, school buses, and ingress/egress to public and private properties.

School buses will traverse the site via the intersection of Brooks and Hiscock Monday through Friday 7:45-8:30 a.m. and 2:45-3:30 p.m. during the school year.

Contractor must accommodate the safe access to the residential buildings and businesses located within construction area.

Driveways shall not be blocked for extended periods of time unless arrangements can be made with the affected property owner(s). When it becomes necessary to temporarily block driveways, the Contractor shall notify the affected property owners in advance to coordinate the work and allow sufficient time for vehicles to vacate from properties. It may be necessary to allow for vehicles to temporarily park in the roadway at locations that do not interfere with the Contractor’s work. During these periods the owners of the respective vehicles must be available to, with proper notice, move their vehicles if it becomes necessary to accommodate the work.

At times, when it becomes necessary to temporarily obstruct local traffic during the performance of the work, the Contractor shall provide traffic regulator control in conformance with Chapter 6E of the MMUTCD, Sections 6E.01 thru 6E.08. A minimum of two traffic regulators are required. The cost of traffic regulator control shall be included in the contract pay item "Minor Traffic Control, Max $______".

Add1-DS-25
Aggregate base materials are specified to be either removed or added to the job-site to properly complete the work. The addition of such materials shall be paid for as the Item of Work: “21AA Limestone, C.I.P” or “Class II Granular Material, C.I.P.” Such materials to be removed shall be paid with the Item of Work, “Excavation, Earth”, unless the removal of materials is incidental to utility installation.

Where the Engineer directs additional materials to be removed and replaced for subgrade stabilization, it will paid for as the Item of Work, “Subgrade Undercutting, ____ Backfill.”

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

The Contractor shall remove the full depth of the pavement unless otherwise shown on the plans or directed by the Engineer.

The Contractor shall construct butt-joints, and trim butt-joints just prior to HMA paving as shown on the Plans, and as directed by the Engineer.

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 any additional compensation for the use of smaller equipment, lighter equipment, or work task deferral.

**Measurement and Payment**

The completed work, as described, will be measured, and paid for at the respective Contract unit prices for the following respective pay items:

<table>
<thead>
<tr>
<th>Contract Item (Pay Item)</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMA Pavement Removal, Any Depth</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Cold Milling, __ inches</td>
<td>Square Yard</td>
</tr>
</tbody>
</table>

All saw-cutting required for removals shall be included in the appropriate item of work and will not be paid for separately.

The unit prices for these items of work shall include all material disposal, labor, material, and equipment costs to perform all the work specified in the Standard Specifications and as modified by this Detailed Specification.
**Description**

The pay item "Machine Grading" shall be completed in accordance with Section 205 the Michigan Department of Transportation 2020 Standard Specifications for Construction (MDOT 2020 SSC) and shall include all work indicated in the MDOT 2020 SSC, shown on the plans, and as specified herein, with the exception that "Subgrade Undercutting, ___ Backfill," "Excavation, Earth," “Class II Granular Material, C.I.P.,” “21AA Limestone, C.I.P.,” “___ Contaminated Material Handling & Disposal”, “Bioretention Excavation”, “Bioretention Aggregate”, “Tree Removals, ___ inch”, “Transplant Tree”, and “Turf Establishment” shall be paid for separately when separate pay items for the respective items are included in the proposal. "Machine Grading" shall include all the work specified herein for which there is no separate pay item.

“Excavation, Earth” shall include excavation and removal of soil to provide subgrade elevations. This shall include the roadway, curb, sidewalk, and incidental cross-section removal of existing aggregate to establish planned subgrades. This pay item shall exclude excavation and removal incidental to utility installation and bioretention installation, which shall be paid for separately. Areas that are deemed by the Engineer to require subgrade undercutting with engineered backfill to provide a stable subgrade shall be paid for as “Subgrade Undercutting, ___ Backfill”.

The following abbreviated table of contents for Section 205 (Roadway Earthwork) of the MDOT 2020 SSC is provided for reference. It is not a complete table of contents for all Section 205 work required to complete the project.

<table>
<thead>
<tr>
<th>SECTION/TITLE</th>
<th>PAGE</th>
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<tbody>
<tr>
<td>205.01 Description</td>
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</tr>
<tr>
<td>205.02 Materials</td>
<td>2-18</td>
</tr>
<tr>
<td>205.03 Construction</td>
<td>2-19</td>
</tr>
<tr>
<td>A. Preparing Roadway Foundation</td>
<td>2-19</td>
</tr>
<tr>
<td>1. Removing and Salvaging Topsoil</td>
<td>2-19</td>
</tr>
<tr>
<td>B. Rock Excavation</td>
<td>2-20</td>
</tr>
<tr>
<td>E. Subgrade Undercutting</td>
<td>2-21</td>
</tr>
<tr>
<td>F. Subgrade Manipulation</td>
<td>2-22</td>
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<tr>
<td>G. Earth Excavitation</td>
<td>2-22</td>
</tr>
<tr>
<td>H. Roadway Embankment</td>
<td>2-23</td>
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<tr>
<td>4. Placing and Compacting Embankment</td>
<td>2-24</td>
</tr>
<tr>
<td>205.04 Measurement and Payment</td>
<td>2-31</td>
</tr>
</tbody>
</table>

**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.

**Materials**

All materials and mixtures shall meet the requirements as specified in Section 205 of the MDOT
General Provisions

The contractor shall:

1. Grade around mailboxes, trees, light poles, power poles, and the like, which are to remain in place. The Contractor shall be responsible for any damage caused to such structures.

2. Maintain the work in a finished condition until it is accepted by the Engineer.

Removal of Trees and Vegetation

The Contractor shall remove and properly dispose of off-site all vegetation; brush; roots; and stumps, as shown on the plans and as directed by the Engineer as required to complete the project. Unless the size of the tree is otherwise provided in the Tree Removal pay items or shall be transplanted as directed by the Engineer and paid for as such, this work will be paid for as “Machine Grading” and will not be paid for separately.

Removal and Salvaging of Topsoil

The removal, salvaging and stockpiling of topsoil, and all related work, shall be performed in accordance with Section 205.03.A.1 (Removing and Salvaging Topsoil) of the MDOT 2020 SSC.

Miscellaneous Removals

“Machine Grading” 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.

Protection of Grade

The work shall be kept well drained at all times. Foundation, roadway embankment or subgrade that becomes 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. Any damage caused by traffic or the Contractor’s operations, to the foundation, roadway embankment or subgrade shall be remedied by the Contractor at his/her sole expense.

The Contractor shall conduct his/her 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
Protection of Utilities and Vaults/Structures

Utility lines, vaults, and structures may become exposed at, above, or below, the foundation or subgrade elevation during machine grading or subgrade undercutting operations. If this occurs, the Contractor shall protect facilities and excavate around, above and/or below the utility lines, as directed, to complete the machine grading or subgrade undercutting operations. Payment, at contract unit prices, for “Machine Grading” or “Subgrade Undercutting” or “Exploratory Excavation,” whichever applies, will be considered as payment in full for this work. The contractor shall protect vaults and structures and not undermine or damage facilities.

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. Where the inverts of abandoned, or to be abandoned or removed, conduits or pipe are less than 16 inches below the bottom of any earth excavation or undercut, the conduits and/or pipe shall be removed and the resulting void filled with an Engineer approved material. The fill material shall be compacted to 95% of its maximum unit weight in lifts not exceeding 12 inches. No separate payment will be made for removal of conduit or pipe, or any of the work, described in this section.

Foundation Preparation

Foundation is defined as the original earth grade upon which roadway embankment is placed. The foundation work shall be completed in accordance with Section 205.03.A (Preparing Roadway Foundation) of the MDOT 2020 SSC as shown on the plans, and as specified herein.

The foundation shall be compacted to 95% of its maximum unit weight, as measured by the AASHTO T-180 method, to a depth of at least 10 inches. If this cannot be achieved, in the opinion of the Engineer, he/she will direct the Contractor to perform “Subgrade Undercutting” as described herein, on the foundation.

Roadway Embankment Construction

Roadway embankment is defined as the construction of earth on the prepared foundation to form the subgrade. Roadway embankment work shall be completed in accordance with Section 205.03 H (Roadway Embankment) of the MDOT 2020 SSC 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.
Subgrade Construction

Subgrade is defined as the final earth grade which extends from grading limit to grading limit. The subgrade shall be constructed by performing earth excavation and roadway embankment work in accordance with Section 205.03.G (Earth Excavation) and Section 205.03.H (Roadway Embankment) of the MDOT 2020 SSC, as shown on the plans, and as specified herein.

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

1. Removal and disposal off-site of any surplus or unsuitable materials.
2. Furnishing from off-site any additional Engineer approved fill materials necessary.
3. Moving existing and/or furnished materials longitudinally and transversely as necessary.
4. Cutting, placing, compacting, and trimming existing and/or furnished materials to construct the roadway embankment and subgrade to the specified tolerances.
5. Stockpiling, and moving again, any cut materials which cannot be immediately placed upon excavation due to construction staging.

The subgrade shall be graded 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 which the subgrade supports.

The subgrade shall be prepared so as to ensure uniform support for the pavement structure. The finished subgrade shall be placed 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 this cannot be achieved, in the opinion of the Engineer, he/she may direct the Contractor to perform "Subgrade Undercutting" as described herein.

Proof Rolling

The Contractor shall proof-roll the foundation and/or subgrade with a pneumatic tired roller with a suitable body for ballast loading and a gross load capacity that can be varied from 25 and 40 tons. In lieu of this test roller, with the approval of the Engineer, the Contractor may use a fully loaded single axle or tandem axle dump truck.

Subgrade Undercutting

“Subgrade Undercutting” shall be performed on the foundation or subgrade in accordance with Section 205.03.E (Subgrade Undercutting) of the MDOT 2020 SSC, as shown on the plans, as specified herein, and as directed by the Engineer.
Rock Excavation

Rock excavation shall be performed in accordance with Section 205.03.B (Rock Excavation) of the MDOT 2020 SSC, as shown on the plans, and as directed by the Engineer.

The pay item “Rock Excavation” will apply only to boulders over ½ cubic yard in volume. Boulders will be measured individually, and the volume computed from the average dimension measured in three directions. The removal of rocks, concrete and masonry less than ½ cubic yard in volume shall not be included in the pay item “Rock Excavation,” but shall be included in the pay item “Machine Grading”.

If the proposal does not include a pay item for “Rock Excavation,” rocks measuring over ½ cubic yard in volume shall be paid for as extra work.

Lowering Structures

All structures shall be lowered prior to Machine Grading, paid for as part of “Adjust Structure Cover” or “Adjust Monument Box or Gate Valve Box”.

Structure and Sewer Cleanliness

All sewers, and structures, including manholes, gate wells, valve boxes, inlet structures and curbs shall be protected from damage and contamination by debris and construction materials. Structures shall be maintained clean of construction debris and properly covered at all times during the construction. The Contractor shall immediately clean any structures and/or sewers that become contaminated with construction debris. The Contractor shall be responsible for all direct and indirect damages which are caused by sewers or structures which have been made unclean or have been damaged by the Contractor.

Contractor’s Calculations

Existing and proposed cross sections are provided in the plans. The Contractor shall perform his/her own computations and is responsible to inspect the site to determine his/her own estimate of the quantities of work involved.

Deviations between the existing contours and the existing and proposed cross-sections shown on the plans shall not be cause for additional compensation.

Construction Method

The Contractor shall construct earth grades as required to develop the typical and/or detailed cross-section(s) as shown on the Plans, as detailed in the Specifications, and as directed by the Engineer. This shall include, but not be limited to, the excavation of miscellaneous concrete and miscellaneous HMA pavement, soil, rocks of any size, stumps, trees less than 6-inches, logs, and bricks; the removal and proper disposal off-site of surplus excavated material; the scarifying, plowing, disking, moving and shaping of earth; the trimming, grading, compaction and proof-rolling.
of the prepared subgrade; the importing, furnishing, placement and compaction of embankment and/or fill materials; the full depth saw-cutting of pavement at the removal limits; the grading of sideslopes; general restoration in accordance with the Detailed Specifications elsewhere herein and the general items of the work as specified herein. Road subbase and base materials shall be paid for separately.

The Contractor shall remove, add to, re-shape, re-grade, and re-compact the existing roadbed materials, and shall construct the roadway to the cross-section(s) as indicated on the Plans, as detailed in the Specifications, and as directed by the Engineer. The Contractor shall use blade graders, maintainers, vibratory rollers, and/or other equipment as necessary, and as detailed in the Specifications and as directed by the Engineer, for this work. Use of each specific piece of equipment is subject to the approval of the Engineer.

The Contractor shall remove, dispose or salvage, deliver to any location within the City limits, and neatly stack/stockpile all bricks, if present, as directed by the Engineer.

Signs in the grading limits shall be salvaged and provided to City as directed by the Engineer.

The Contractor shall move excavated and/or imported materials longitudinally and/or transversely where necessary, and as directed by Engineer.

The Contractor shall keep the work well graded and drained at all times.

The Contractor shall not use rubber-tired equipment on the subgrade, when its use causes or may cause, in the opinion of the Engineer, damage to the subgrade. The Contractor shall conduct its operation(s), and provide all necessary equipment, to insure the satisfactory completion of the work without damaging the subgrade. This includes the transporting, stockpiling, re-handling, and movement of materials over additional distances, in-lieu-of driving on an unprotected, or partially unprotected, subgrade.

The Contractor is solely responsible for the maintenance and protection of the subgrade. Further, any damage to the subgrade which, in the opinion of the Engineer, is caused as a result of the Contractor's operation(s), or its subcontractors' or suppliers' operation(s), shall be repaired by the Contractor at the Contractor's expense. This includes any additional earthwork and/or maintenance materials as directed by the Engineer, for the purposes of the Contractor's maintenance and protection of the subgrade. The Contractor shall not be entitled to any additional compensation for the implementation of these procedures.

The Contractor shall perform all rough and/or finish grading and compaction to the grades shown on the Plans, as detailed in the Specifications, and as directed by the Engineer.

The Contractor shall proof roll all graded and compacted surfaces in the presence of the Engineer as detailed in the Specifications. The Engineer will monitor the proof rolling operation to locate deleterious and/or uncompacted materials and will direct undercuts, as necessary.

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 any additional compensation for the use of smaller equipment, lighter equipment, or work task deferral.

The Contractor shall coordinate with the City Forester prior to the removal of any tree roots 1½ - inch or larger in size.

**Measurement and Payment**

Measurement for payment for the item “Machine Grading” shall be measured as the site area of disturbance within the limits of the work. The measurement shall exclude areas protected by tree fence and any area outside the limits of disturbance provided in the plans.

The completed work as measured for this item of work will be paid for at the Contract unit price for the following Contract (Pay) Item:

<table>
<thead>
<tr>
<th>Contract Item (Pay Item)</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine Grading</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Excavation, Earth</td>
<td>Cubic Yard</td>
</tr>
</tbody>
</table>

“Machine Grading” shall be paid for one time per square yard regardless of any re-working that may be necessary.

The pay item “Machine Grading” 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 per plans.

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

The Contractor is advised that due to the phasing of the project and the probable unsuitability of some or all of the excavated material for use as approved fill material, there may be imbalances between the amount of earth cut which is suitable for reuse as fill, and the amount of earth needed to construct the lines and grades 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 importing/furnishing, placement, and compaction of the material, as well as the cost of stockpiling and re-handling of imported and/or on-site Engineer approved materials as necessary to complete the work of constructing the embankment and subgrade to the cross sections shown on the plans.
**Description**

This work includes removal of unsuitable subgrade material(s) in the areas and limits identified by the Engineer and backfill with Class II Granular Material or 6A Limestone in accordance with the 2020 MDOT Standard Specifications for Construction, and the City of Ann Arbor Public Services Department Standard Specifications, except as modified herein.

**Materials**

Materials will be in accordance with those specified in Sections 902 and 910 of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction.

**Construction**

After the pavement has been removed, and/or after rough/finish grading, and/or at the time of proof rolling, the Engineer may inspect the grade to determine the need for, and the limits of, undercuts. Backfill areas of Subgrade Undercutting with Granular Material Class II or such other such material as directed by the Engineer. After undercut areas are excavated to the depths as directed by the Engineer, the areas shall be trimmed, shaped, evenly graded, and re-compacted to not less than 95% of the soils maximum unit weight as determined by the AASHTO T-180 test. The Contractor shall properly dispose of all excess materials.

During trenching activities, should ground water not feasibly be sufficiently controlled and destabilization of the grade is occurring, the Engineer may determine the need for, and the limits of, undercuts. Backfill areas of Subgrade Undercutting with 6A Limestone or such other such material as directed by the Engineer. Encapsulate 6A aggregate with geotextile separator, and ensure stable subgrade.

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 any additional compensation for the use of smaller equipment, lighter equipment, or work task deferral.

**Measurement and Payment**

These items of work shall be measured for payment by calculating the volume of the undercut excavation prior to the placement of backfill. The completed work as measured for these items of work will be paid for at the Contract Unit Price for the following Contract (Pay) Item:

<table>
<thead>
<tr>
<th>Contract Item (Pay Item)</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subgrade Undercutting, _____ Backfill</td>
<td>...................................................... Cubic Yard</td>
</tr>
</tbody>
</table>

The unit price for this item of work shall include all labor, material, and equipment costs to perform all the work specified by this Detailed Specification, including backfill aggregate and geotextile separator.
Description

This work shall consist of constructing subbase and/or aggregate base courses, on either a prepared subgrade or subbase as indicated on the Plans or where directed by the Engineer. This work shall be performed in accordance with Sections 301, 302, 306, and 307 of the 2020 MDOT Standard Specification for Construction and the City of Ann Arbor Public Services Department Standard Specifications, except as modified herein.

Materials

The material used for this work shall meet the requirements of Sections 301, 302, 306, 307 and 902 of MDOT 2020 Standard Specification for Construction, except that the aggregate base shall be 21AA limestone (permanent and temporary applications) and any subbase shall be Class II Granular Material.

Construction Method

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

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

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

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

Base course aggregate shall be handled and/or stockpiled on-site in a manner that minimizes segregation. Base course aggregate shall be deposited from trucks or through a spreader in a manner that will minimize segregation of material and that is approved by the Engineer. The re-handling of base course aggregate by the Contractor will not be considered sufficient cause to allow the material to become segregated. The Contractor may be required to wet the materials prior to and/or during placement to minimize segregation and to aid in compaction of the material should it be necessary.

Aggregate base courses shall be placed in uniform layers such that when compacted, they have the thicknesses shown on the Plans, or as directed by the Engineer. The loose measure of any layer shall not be more than 9-inches or less than 4-inches.
Description

This work shall consist of constructing concrete items including curb, gutter, curb and gutter, sidewalks, drive approaches, and drive openings, all of any type and/or dimensions, all of either regular, and/or high-early concrete, in accordance with Sections 801, 802, and 803 of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction, except as specified herein, as shown on the Plans, as described in this Detailed Specification, and as directed by the Engineer.

The Contractor is responsible to construct all sidewalks, sidewalk ramps, curbs, and all other concrete items within ADAAG (ADA Accessibility Guidelines) compliance. All sidewalks and curb ramps must be constructed in accordance with MDOT Standard Plan R-28 latest version of standard plan/detail in place at time of the bid letting.

In addition, all concrete items of work shall comply with the Detailed Specifications for Concrete Durability and Concrete Placement and Protection.

Materials

Concrete mixtures shall be as follows (or as directed by the Engineer), and concrete materials shall meet the requirements specified in the referenced sections of the MDOT Standard Specifications for Construction:

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Concrete Mixture</th>
<th>MDOT Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Items Except High Early</td>
<td>3500</td>
<td>1004</td>
</tr>
<tr>
<td>All High Early Items</td>
<td>4500</td>
<td>1004</td>
</tr>
</tbody>
</table>

Patterned concrete pavement shall be a stamped brick or similar pattern. The contractor shall submit a sample pattern to the Engineer for approval.

Construction Method

General

Curb, gutter, curb and gutter, sidewalk, sidewalk ramps, drive openings, and drives shall be replaced the same day they are removed unless otherwise prohibited by the required construction.

Concrete items, including sidewalk, non-integral curb/gutter, drives, and structure adjustments shall be completed prior to the placement of pavement.

All subgrade work shall be completed prior to placing concrete items, unless directed or approved by the Engineer.

The subbase shall be trimmed to final elevation before placing curb. Curb shall not be placed on a pedestal or mound.
Description

This work consists of providing and placing permanent pavement markings in accordance with the Michigan Manual of Uniform Traffic Control Devices (MMUTCD), lastest version published at time of advertisement. Provide pavement markings that conform to the Plans, the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction, MDOT Pavement Marking Standard Plans, City of Ann Arbor Special Details, and as specified herein.

Materials


Construction Methods

The preparation and placement of permanent markings shall conform to Section 811 of the MDOT 2020 Standard Specifications, the Plans, and as specified herein.

Measurement and Payment

Completed work, as described, will be measured, and paid for at Contract unit prices for the following Contract (pay) items:

<table>
<thead>
<tr>
<th>Contract Item (Pay Item)</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pavt Mrkg, Polyurea, ___-inch, White</td>
<td>Foot</td>
</tr>
<tr>
<td>Pavt Mrkg, Polyurea, ___-inch, Yellow</td>
<td>Foot</td>
</tr>
<tr>
<td>Recessing Pavt Mrkg, Longit</td>
<td>Foot</td>
</tr>
<tr>
<td>Recessing Pavt Mrkg, Transv</td>
<td>Square Foot</td>
</tr>
<tr>
<td>Pavt Mrkg, Polyurea, 12-inch Crosswalk</td>
<td>Foot</td>
</tr>
<tr>
<td>Pavt Mrkg, Polyurea, 24-inch Stop Bar</td>
<td>Foot</td>
</tr>
<tr>
<td>Pavt Mrkg, Polyurea, _____ Sym</td>
<td>Each</td>
</tr>
<tr>
<td>Pavt Mrkg, Polyurea, _____ Legend</td>
<td>Each</td>
</tr>
<tr>
<td>Pavt Mrkg, Thermoplastic, ___-inch, Yellow</td>
<td>Foot</td>
</tr>
<tr>
<td>Pavt Mrkg, Thermoplastic, 12-inch Crosswalk</td>
<td>Foot</td>
</tr>
<tr>
<td>Pavt Mrkg, Thermoplastic, 12-inch Cross Hatch</td>
<td>Each</td>
</tr>
</tbody>
</table>

Guide lines are included in “Recessing Pavt Mrkg, Longit”.

The unit prices for these items of work shall include all labor, material, and equipment costs to perform all the work specified in the MDOT 2020 Standard Specifications for Construction and as modified by this Detailed Specification.
Description

This work shall consist of constructing the bioretention and adjacent planting areas as shown on the plans and as directed by the Engineer, in accordance with MDOT 2020 Standard Specifications for Construction, and the City of Ann Arbor Public Services Department Standard Specifications, as modified herein.

Materials

The materials used for this work shall conform to MDOT 2020 Standard Specifications for Construction including:

- 6A limestone.
- 50% imported, Engineer-approved, topsoil and 50% compost (no peat moss).
- Herbaceous plugs
- Annual ryegrass
- Fescue seed mix

Native seed shall be fresh, clean, new seed of native plant material of genotypes from the north central states only (IL, IN, MI, OH) and from a recognized nursery of this region. Seed mix shall be composed of seed with the purity, germination, and proportions by acre, as indicated on the drawings.

Seed weights listed for native seed mixes are shown as pure live seed (PLS) and indicate the total amount of fresh, new crop seed per acre for all species listed. The native seed mixture shall be by weight and proportions as shown on the plans.

Seed sources for all the native seed are available through The Michigan Wildflower Farm, Portland, Michigan, (517) 647-6010; JFNew, Walkerton, IN (574) 586-2412; or LaFayette Home Nursery, LaFayette IL, (309) 995-3311, or approved substitution.

Mulch for native seed shall be clean chopped straw from oats to protect seeded areas from invasive species frequently found in common straw. No other type of mulch is acceptable. It shall be natural and suited for horticultural use and not contain lumps, roots or other foreign matter over one inch in diameter. It shall be free of seeds and noxious weeds. Mulch shall not contain more than 35% moisture by weight. Mulch is not necessary under straw mulch blanket.

Seed for bioretention plantings crop cover shall be Annual Rye, *Lolium multiflorum*.

Compost can be purchased from the City of Ann Arbor compost facility at 4170 Platt Road for reduced cost for Capital Projects.
Construction

The entire bioretention area shall be excavated to subgrade prior to installing geotextile fabric. Completely remove all roots and deleterious material from the excavated area. Avoid compaction of subgrade soil and scarify compacted subgrade soils to a minimum depth of 6 inches. Do not place geotextile until subgrade surface has been inspected and approved by the Engineer.

Begin installation of stone reservoir immediately after approval of subgrade preparation by placing geotextile in accordance with Manufacturer’s standards and recommendations, with minimum 16 inches overlap. Place stone aggregate in uniform layers to the dimensions shown on the Plans. Wrap the stone completely in geotextile fabric.

Soil preparation and placement will not be allowed when materials are wet and/or saturated. Compost stockpiled on-site must be kept dry, and silt fence shall be placed around stockpiles. It is the responsibility of the Contractor to estimate and achieve adequate quantities to cover the planting area to the depth indicated on the plans.

Prepare all bioretention and adjacent planting bed areas to the limits as shown on the plans in accordance with Section 816.03.A.1. All areas of the proposed bioretention shall be considered Class A slopes and shall be prepared in accordance with Section 205.03.N except that all stones and rocks 1½-inch in diameter and greater, roots, brush, litter, and any other deleterious matter shall be removed and properly disposed of off-site.

In order to develop the contours and elevations as shown on the plan sheets, it may be necessary to use smaller equipment, hand methods, raking, grooming, or other techniques to achieve the required results. All work necessary to develop the plan contours as staked in the field shall be deemed to be included this item of work and shall not be paid for separately.

Place Bioretention soil mix in accordance with Section 816.03.A.2. Bioswale soil mix shall be placed to a minimum depth as indicated on the plans.

Repair prepared soil surface as directed by the Engineer so that finish grades are met.

Final grades will be reviewed and approved by the Engineer prior to planting.

Planting for herbaceous plugs shall be performed after May 1st and before June 15th or, after August 15th but before September 15th, or as otherwise approved by the PSAA, and subject to the following requirements:

1. All containers and packaging material shall be removed before planting and removed from site;
2. Plants shall be set plumb;
3. Root structure shall not be damaged;
4. Root matter shall be thoroughly soaked with water; and
5. Where plugs are planted in areas of mulch blankets, planting shall be through the mulch blanket after its installation.
Establishment of a dense stand of wet meadow perennial grasses and/or flowers as specified in Plans is the responsibility of the Contractor. Any part of the area that fails to thrive shall be re-planted until a dense planting in these areas is established.

Acceptance of Rain Garden and Bioswale and Adjacent Planting Areas

- Provisional Acceptance shall be granted when 90% total cover with no bare areas as large as 4 square feet exist as determined by the Engineer. The PSAA will utilize a meander/search method for reviewing the area(s). Bare areas as large as 4 square feet shall be “re-plugged” by the Contractor without additional compensation.
- Final Acceptance shall be granted when no bare areas as large as 1.5 square feet exist as determined by the PSAA. Bare areas as large as 1.5 square feet shall be “re-plugged” by the Contractor without additional compensation.

**Measurement and Payment**

The completed work, as described, will be measured and paid for at the approved price for the following pay item:

<table>
<thead>
<tr>
<th>Contract Item (Pay Item)</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention Area Excavation</td>
<td>Cubic Yard</td>
</tr>
<tr>
<td>Bioretention Geotextile Fabric</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Bioretention Aggregate</td>
<td>Cubic Yard</td>
</tr>
<tr>
<td>Bioretention Soil Mix (Topsoil and Compost)</td>
<td>Cubic Yard</td>
</tr>
<tr>
<td>Bioretention Plantings, _____</td>
<td>Each</td>
</tr>
<tr>
<td>Bioretention Annual Ryeseed</td>
<td>Pounds</td>
</tr>
<tr>
<td>Fescue Seed Mix</td>
<td>Pounds</td>
</tr>
</tbody>
</table>

Payment includes furnishing the labor, equipment, and materials for excavation, disposing of excavated material, and constructing the bioretention area, complete with preparation, geotextile fabric, stone reservoir, bioretention soil mix and plantings.

Geotextile fabric shall be measured in covered area of bed, and will not include overlapped fabric separately.

HMA Pavement Removal, Remove Concrete Curb & Gutter, Remove Concrete Sidewalk, Sewer Remove, Structure Remove, Water Main Remove and Abandonment, and new pipe, spillway & riprap, and overflow structure shall be paid for separately.
**Description**

This work shall consist of planting trees or shrubs, and placement of shredded bark mulch at the locations shown on the plans or as directed by the Engineer. Work shall be in accordance with Sections 815, 816 and 917 of the 2020 Michigan Department of Transportation Standard Specifications for Construction with the following amendments or additions.

Watering, removing weeds, and completing all necessary tasks to maintain a healthy stand of plants, and Balled and Burlapped (B&B) Trees shall be included in this work. Extent of work shall include a two year warranty and maintenance period, including but not limited to the following:

1. Watering
2. Weed Control
3. Mulching
4. Disease and Insect Control
5. Pruning
6. Fertilizer Application
7. Removal of Tree Support and Tags

The Contractor shall attend a site walkthrough to review final plantings within the project area.

Tree drip irrigation bags are in addition to planting specifications 815, 816 and 917 of the 2020 Michigan Department of Transportation Standard Specifications.

**Materials**

All planting methods and materials shall conform to Sections 815, 816 and 917 and the planting details shown on the plans. In addition, tree planting shall include and Tree Drip Irrigation Bags and Watering and Cultivating. Tree and plant types shall be as shown on the Drawings or as directed by the Engineer.

Tree Drip Irrigation Bags shall be Treecator Original 20-gallon slow release watering bags, or approved substitution.

Fertilizer shall be slow release, at minimum 50% derived from a natural, organic source, 12-0-6 or approved substitution.

The Contractor shall submit a minimum size sample of ½-gallon sized container of structural soil and topsoil for approval prior to installation.

The Contractor shall submit to the ENGINEER sources for all plant material.

**Construction Methods**

The construction methods shall be in accordance with the 2020 Michigan Department of Transportation Standard Specifications for Construction Section 815.03 unless otherwise stated.
in this special provision.

All open tree pits shall be excavated to the full extent of their dimensions as shown in the details.

Watering and Cultivating shall follow the schedule in the 2020 Michigan Department of Transportation Standard Specifications for construction Section 815 with the adjustment of filling the tree drip irrigation bags with water and using the fertilizer as dictated in this special provision. For each watering and cultivating visit, verification in the form of a report of maintenance activities and certified payroll covering visits, shall be provided to the OWNER by the end of each month that the visits have taken place.

**Measurement and Payment**

The completed work as measured shall be paid for at the Contract unit price for the following Contract items (pay items):

<table>
<thead>
<tr>
<th>Contract Item (Pay Item)</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree, ___ inch caliper</td>
<td>Each</td>
</tr>
</tbody>
</table>

Measurement and payment for the item Trees and Plantings shall include excavation, backfill, topsoil, shredded bark mulch, tree drip irrigation bags, water, and all other equipment necessary, and as described herein, for a complete installation. Warranty and maintenance for two seasons shall also be included in the prices provided under this allowance.

The final inspection of all planting work under the Contract will be made by the Contractor and Engineer at the end of the maintenance and establishment periods. Before final acceptance is given, the terms of the establishment shall be met and the site shall be cleared of all debris, soil and containers.
CITY OF ANN ARBOR  
DETAILED SPECIFICATION  
FOR  
PERMANENT SIGNS

BMS:TCB 1 of 1 3/28/23

Description

This work shall consist of fabricating, shipping and installing permanent signs and similar materials. Signs to be installed by the City of Ann Arbor are indicated as “furnished” and shall be delivered to the Wheeler Service Center, 4251 Stone School Road, Ann Arbor, MI 48108, Attn: Signs and Signals. Work shall be in accordance with Sections 810 and 919 of MDOT 2020 Standard Specifications.

Materials

Signs are to be fabricated in accordance with Section 919.02 Traffic Signs of the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction and the 2011 Michigan Manual of Uniform Traffic Control Devices (MMUTCD).

The plans indicate the signs to be fabricated. Materials for traffic signs include steel posts and hardware needs to install signs.

Signs to be installed by City (furnish only) are to be delivered to the City of Ann Arbor at a location designed by the Engineer in an undamaged condition.

R1-6 base shall be manufactured by Qwick Kurb, Inc, model number L60 in yellow color. End sections shall be model number L61. The assembly shall include L65 reflective arcs, a reboundable flex boot with bolt in construction, with a 224 sq. in. reflective crosswalk marker panel MDOT sign R1-6. All pavement mounting hardware shall be stainless steel meeting the dimensional and strength capacity of the manufacturer’s recommendation.

Construction

Signs shall be installed per manufacturer’s specifications at locations determined by the Engineer.

Measurement and Payment

The completed work will be measured and paid for the following pay items:

<table>
<thead>
<tr>
<th>Contract Item (Pay Item)</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent Sign, ___., furnish..................................................</td>
<td>Each</td>
</tr>
<tr>
<td>Permanent Sign, ___., furnish and install ..................................</td>
<td>Each</td>
</tr>
</tbody>
</table>

The approved price for this item shall include all labor, material, and equipment costs required to complete the work.
CITY OF ANN ARBOR
ENGINEERING

BROOKS STREET IMPROVEMENTS

RFP No. 23-09, FILE No. 2021016
**CONSTRUCTION NOTES:**

The issuance of permits for the building, road, and utility improvement prior to the beginning of construction shall be in accordance with the City of Ann Arbor Public Services Engineering's regulations and procedures. The Contractor shall be responsible for securing the necessary permits and ensuring compliance with all applicable codes and regulations. The permits shall be obtained through the City of Ann Arbor Public Services Engineering.

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

- PERMIT ISSUING AUTHORITY

**STANDARD NOTES:**

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

**PERMIT ISSUING AUTHORITY**

**CONTACT INFORMATION**

**PUBLIC UTILITIES**

**OWNER**

**CONTACT**

**PRIVATE UTILITIES**

**OWNER**

**CONTACT**

**SOIL EROSION AND SEDIMENT CONTROL NOTES:**

The construction activity shall be controlled by the following measures to prevent soil erosion and sedimentation:

- **Soil Erosion and Sedimentation Control Plan:** A soil erosion and sedimentation control plan shall be submitted to the City of Ann Arbor Public Services Engineering for approval.
- **Silt Fence:** A silt fence shall be installed along the construction site to prevent soil erosion and sedimentation.
- **Temporary Slope Stabilization:** Temporary slope stabilization measures shall be implemented to prevent soil erosion.
- **Drainage Ditches:** Drainage ditches shall be installed to collect and dispose of water originating on or near the construction site.
- **Temporary Sediment Basins:** Temporary sediment basins shall be installed to trap sediment and prevent it from entering waterways.

**CONSTRUCTION NOTES:**

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

BARREN STREET IMPROVEMENTS
MISC. DETAILS
MAILBOX NEWSPAPER TUBE
INSTALLATION AND RELOCATION
BARRIER CURB AND GUTTER
TREE PROTECTION

SIDEWALK CURB AND GUTTER JOINTS
INLET PROTECTION

SIDEWALK AND CURB & GUTTER JOINT SPACING

LEGEND:
SIDEWALK AND CURB & GUTTER JOINT SPACING
SIDEWALK CURB AND GUTTER JOINTS
INSTALLATION DETAIL
SIDE VIEW INSTALLED
CONTRACTION JOINT
EXPANSION JOINT
SIDEWALK CURB AND GUTTER JOINTS
MOUNTABLE CURB AND GUTTER
E BARRIER CURB
PLAN: NTS

Know what's below. Call before you dig.

MIXTWOOD RD & BROOKS ST TYPICAL SECTIONS

MIXTWOOD ROAD TYPICAL SECTION

- HMA APPLICATION ESTIMATE
  
  **HMA PAVEMENT**
  
  **HMA PAVEMENT LEVELING**
  
  **HMA APPROACH TOP**
  
  **HMA APPROACH LEVELING**
  
  **HAND PATCHING**
  
  **ASPHALT EMULSION**

- AREA FACTOR
  
  **HMA AREA**
  
  **DATE OF APPLICATION**
  
  **THICKNESS (INCHES)**
  
  **AWI (MIN.)**
  
  **BINDER LOCATION/NOTES**

- MATERIAL
  
  **HMA PAVEMENT**
  
  **HMA PAVEMENT LEVELING**
  
  **HMA APPROACH TOP**
  
  **HAND PATCHING**
  
  **ASPHALT EMULSION**

- APPLICATIONS
  
  **HMA PAVEMENT**
  
  **HMA PAVEMENT LEVELING**
  
  **HMA APPROACH TOP**
  
  **HAND PATCHING**
  
  **ASPHALT EMULSION**

- QUANTITY
  
  **HMA PAVEMENT**
  
  **HMA PAVEMENT LEVELING**
  
  **HMA APPROACH TOP**
  
  **HAND PATCHING**
  
  **ASPHALT EMULSION**

- BASIS
  
  **HMA PAVEMENT**
  
  **HMA PAVEMENT LEVELING**
  
  **HMA APPROACH TOP**
  
  **HAND PATCHING**
  
  **ASPHALT EMULSION**

- COST
  
  **HMA PAVEMENT**
  
  **HMA PAVEMENT LEVELING**
  
  **HMA APPROACH TOP**
  
  **HAND PATCHING**
  
  **ASPHALT EMULSION**

- INCLUDE IN COST OF
  
  **HMA PAVEMENT**
  
  **HMA PAVEMENT LEVELING**
  
  **HMA APPROACH TOP**
  
  **HAND PATCHING**
  
  **ASPHALT EMULSION**

- CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

- 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

- 2021016 - 8

- BROOKS STREET IMPROVEMENTS

- MIXTWOOD RD & BROOKS ST TYPICAL SECTIONS

- BROOKS STREET TYPICAL SECTION

- MIXTWOOD ROAD TYPICAL SECTION

- DRAWN & DESIGNED BY

- CHECKED & SHEETED BY

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

SECTION AA

SECTION BB

CURB DETAIL

DETAIL 1

CONCRETE SPEED TABLE DETAIL

GENERAL NOTES

1. Raised intersections shall follow the same taper requirement as the speed humps detailed herein.

2. Paint for pavement markings for speed humps and raised intersections shall be included in the respective bid items and shall not be paid for separately.
CONCRETE RAISED CROSS WALK DETAIL

PLAN VIEW

SECTION AA

SECTION BB

CURB DETAIL

DETAIL 1

PAVEMENT MARKING DETAIL

GENERAL NOTES

1. TRAFFIC INTERSECTIONS SHALL FOLLOW THE SAME TAPE REQUIREMENT AS THE SPEED HUMPS DETAILED HEREIN.

2. PAVEMENT FOR PAVEMENT MARKINGS FOR SPEED HUMPS AND RAISED INTERSECTIONS SHALL BE INCLUDED IN THE RESPECTIVE BD ITEMS AND SHALL NOT BE PAID FOR SEPARATELY.

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2021016

BROOKS STREET IMPROVEMENTS

CONCRETE RAISED CROSS WALK DETAIL
PEDESTRIAN DETOUR USING OPPOSITE SIDE OF STREET

GENERAL NOTES

1. PEDESTRIAN TEMPORARY TRAFFIC CONTROL NOTES

SPECIFIC NOTES

1. PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR.
2. PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES. FOR ROADWAYS WITH NO
   PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS SHALL BE COVERED
   WITH A DRAGON HORN, AND THE PRIMARY TEMPORARY PEDESTRIAN DETOUR recovering
   SIDEWALK CLOSURE.
3. PROVIDE THE APR ON THE SAME SIDE OF THE STREET AS THE DISRUPTED ROUTE
   WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE
   STREET.
4. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME SIDE APR, PROVIDE A DETOUR ON THE
   OTHER SIDE OF STREET DETOUR OR DETOUR WITH TRAILBLAZING SIGNS
   IF POSSIBLE. SIGNS AND BARRICADES SHALL BE USED TO PROVIDE ADVANCE
   NOTICE OF THE CLOSURE AND THE ROUTE OF ANY PEDESTRIAN DETOURS. THE
   CONTRACTOR SHALL MAINTAIN PEDESTRIAN THROUGH MOVEMENTS FROM
   ONE END OF THE CONSTRUCTION AREA TO THE OTHER, ON AT LEAST ONE SIDE OF
   THE STREET DURING CONSTRUCTION. ANY SIDEWALK CLOSURES SHALL MEET THE
   REQUIREMENTS OF THE MMUTCD, PART 6.
5. PROVIDE A TEMPORARY PEDESTRIAN TRAFFIC CONTROL PLAN FOR REVIEW
   OF THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOULD BE DISPLAYED WHEN ANY WALKWAY
   THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE TPAR COMPLIANT. THE SYMBOL OF
   ACCESSIBILITY SHALL NOT BE DISPLAYED IF PERSONS WITH DISABILITIES SHOULD NOT USE THE
   WALKWAY. IF POSSIBLE, SIGNS AND BARRICADES SHALL BE USED TO PROVIDE ADVANCE
   NOTICE OF THE CLOSURE AND THE ROUTE OF ANY PEDESTRIAN DETOURS. THE
   CONTRACTOR SHALL MAINTAIN PEDESTRIAN THROUGH MOVEMENTS FROM
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   REQUIREMENTS OF THE MMUTCD, PART 6.
6. PROVIDE THE APR ON THE SAME SIDE OF THE STREET AS THE DISRUPTED ROUTE
   WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE
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7. PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES. FOR ROADWAYS WITH NO
   PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS SHALL BE COVERED
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12. PROVIDE THE APR ON THE SAME SIDE OF THE STREET AS THE DISRUPTED ROUTE
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   THE STREET DURING CONSTRUCTION. ANY SIDEWALK CLOSURES SHALL MEET THE
   REQUIREMENTS OF THE MMUTCD, PART 6.
Provide temporary walkway surface:

4" minimum
5' desirable

Pedestrian channelizers:

6" minimum
7' desirable

Temporary truncated domes required if crossing a minor road or commercial driveway.

Minimize disruption to pedestrians to the maximum extent feasible by providing devices shall be delineated with flags or other engineer-approved devices at no post.

Posts mounted signs located adjacent to a sidewalk shall have a 7 foot minimum.

Provide a smooth, continuous, hard surface through the length of the apr.

Firm, stable, and slip resistant temporary walkway surface to cover short segments of rough, soft, or uneven ground.

Provide the apr on the same side of the street as the disrupted route.

Provide the apr on the other side of the street.

Where it is not feasible to provide a same side apr, provide a detour on the other side of the street.

When it is not feasible to provide an apr on the other side of the street, provide a detour on the adjacent available.

General notes:

When closing or redirecting crossings or intersections, the contractor shall provide temporary traffic control devices, and if necessary, road markings.

Temporary traffic control devices for pedestrians are shown. Other devices may be necessary to control vehicular traffic, please work as necessary, to provide an alternate pedestrian route (app. at all times). For visibility, no additional barricades are allowed.

Provide a smooth, continuous, hard surface throughout the length of the apr.

Consider the impact on road safety and the potential for lower speeds in work areas.

Provide a smooth, continuous, hard surface to cover short segments of rough, soft, or uneven ground.

The pedestrian traffic channelizers consist of either 6" or 7" channelizers to be centered or placed in the center of the apr or crossover.

Pedestrian ramps and channelizers are designed for use with high vision markings. A pedestrian crossing requires a 45 degree prior to the beginning of work that requires a sidewalk closure or curtail.

Post mounted signs located adjacent to a sidewalk shall have a 4' minimum.

Where the engineer determines that the contractor's operations or placement will impact pedestrian safety, the contractor shall provide temporary pedestrian channelizers, temporary pedestrian channelizers, or temporary pedestrian channelizers.

Prior to the beginning of work that requires a sidewalk closure or curtail, temporary pedestrian channelizers shall be provided.

When closing or redirecting crossings or intersections, the contractor shall provide temporary traffic control devices at no post.

Provide temporary traffic control devices with detectable markings.

The apr shall be provided with a sign or device to indicate that pedestrians should use the apr.

Signage for a temporary pedestrian detour shall include: a) availability of such a detour; b) the detour is non-compliant to TPAR standards; c) the duration of the pedestrian detour (beginning and end dates) and a project contact number for 24/7 questions or reporting hazards.

Specific notes:

Temporary curb ramps with detectable markings.

5' minimum.

1. Provide a sign or device to indicate that pedestrians should use the apr.
2. Where it is not feasible to provide a same side apr, provide a detour on the other side of the street.
3. Where it is not feasible to provide a same side apr, provide a detour on the other side of the street.
4. Provide temporary traffic control devices as necessary, to provide an alternate pedestrian route as shown on the project plans.

Legend:

Markings:

Pedestrian surface
Sidewalk or parking lane
Temporary pedestrian surface
Pedestrian channelizer device
Work area
Sign
Traffic control device
Barrier
Sidewalk signage
Direction of traffic
Traffic control device

See project plans for guidance on placement and usage of barrier.

When the engineer determines that the contractor's operations or placement will impact pedestrian safety, the contractor shall provide temporary pedestrian channelizers, temporary pedestrian channelizers, or temporary pedestrian channelizers.

Typical sign message for a temporary pedestrian detour shall include: a) availability of such a detour; b) the detour is non-compliant to TPAR standards; c) the duration of the pedestrian detour (beginning and end dates) and a project contact number for 24/7 questions or reporting hazards.

Note: May only be used on roadway with posted speed of 45 MPH or less.

Additional cost to the project.

Public Services - Engineering
City of Ann Arbor
Brooks Street Improvements
P.O. Box 8647
Ann Arbor, MI 48107-8647
www.a2gov.org

Report hazards before you dig.

 calle before you dig.
CURB RAMPS SHALL BE 48” MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. PROTECTIVE EDGING WITH A 2.5” MIN. HEIGHT ABOVE THE RAMP SURFACE IS PLACED HORIZONTALLY. CURB RAMP OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3” OR MORE PER FOR 1:6 SLOPING GAP. STEPS должны быть защищены защитным ограждением. ЭКСКЕТШЕ ОГРАЖДЕНИЕ ДОЛЖНО БЫТЬ УСТАНОВЛЕНО КОГДА КУРБ РАМПЫ ИЛИ ПЛАТФОРМЫ ИМЕЮТ ВЕРТИКАЛЬНОЕ ПАДЕНИЕ 6” ИЛИ БОЛЬШЕ ИЛИ СТОРОННИЙ ПРЕУЗОР ОГРАЖДЕНИЯ СТРЕПЕРЫ 1:3. ЭКСКЕТШЕ ОГРАЖДЕНИЕ ДОЛЖНО БЫТЬ РАССМОТРЕНО КОГДА КУРБ РАМПЫ ИЛИ ПЛАТФОРМЫ ИМЕЮТ ВЕРТИКАЛЬНОЕ ПАДЕНИЕ 3” ИЛИ БОЛЬШЕ.

DETECTABLE EDGING ANYTIME A HANDRAIL IS REQUIRED, AND ANYTIME THE PATH CHANGES DIRECTION. THIS INCLUDES A TURN ONTO THE RAMP FROM THE PATH. DETECTABLE EDGING SHOULD BE CONSIDERED A MAXIMUM OF 2" ABOVE THE RAMP SURFACE AND EXTEND AT LEAST 6" ABOVE THE RAMP SURFACE. CONTRASTING COLOR SHALL BE PLACED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS). DETECTABLE EDGING МОЖЕТ БЫТЬ УСТАНОВЛЕНО КОГДА СТЕПЕНЬ ИЗМЕНЕНИЯ ПОКРЫТИЯ ИЛИ ПОДХОДЯЩЕЕ К УГЛОМ 1:2 между 1/4" AND 1/2" HEIGHT.

CURB RAMPS AND LANDINGS SHALL HAVE A 2% MAX. CROSS SLOPE. CLEAR SPACE OF 48” x 48” MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP. THE EDGE TREATMENT SHALL BE SHOWN WITH A CONTRASTING COLOR, 2" TO 4" WIDE MARKING. THE MARKING IS OPTIONAL WHERE COLOR CONTRASTING EDGING IS USED.

WATER FLOW IN THE GUTTER SYSTEM SHALL NOT BE IMPeded. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH. CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHOULD BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2" HEIGHT.

TEMPORARY CURB RAMP
PARALLEL TO CURB

EXTENDING EDGE 0.5 INCH MAXIMUM

EDGE TREATMENT

LEADING EDGE

0.25 INCH MAXIMUM

TEMPORARY CURB RAMP
PERPENDICULAR TO CURB

SHOWN WITH PROTECTIVE EDGE

CROSS SLOPE 2% MAX.

EDGE TREATMENT

DIAGRAM 1

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
301 EAST HURON STREET
P.O. BOX 8647
ANN ARBOR, MI 48107-8647
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2021016

BROOKS STREET IMPROVEMENTS

TPAR RAMPS
TEMPORARY PEDESTRIAN ACCESS

2' MIN.

TEMPORARY WALKWAY SURFACE

2% MAX. CROSS SLOPE

PEDESTRIAN CHANNELIZER

LEADING EDGE

0.5 INCH MAXIMUM

1 INCH MAXIMUM

DETECTABLE EDGE

2' MAX.

TEMPORARY WALKWAY SURFACE

PEDESTRIAN CHANNELIZER USING A BARRIER

(MINIMUM REQUIREMENTS)

PEDESTRIAN CHANNELIZER

(MINIMUM REQUIREMENTS)

200' MAX. SPACING

FROM LAST PASSING SPACE

200' MAX. SPACING

FROM LAST PASSING SPACE

NARROW TEMPORARY PEDESTRIAN ACCESS ROUTE PASSING DETAIL

GENERAL NOTES

PEDESTRIAN DEVICES MAY PROTRUDE A MINIMUM OF 8 INCHES INTO THE WALKWAY CLEAR SPACE WHERE LOCATED A MINIMUM OF 12 INCHES ABOVE THE WALKWAY SURFACE.

ANY PEDESTRIAN DEVICES USED TO PROVIDE POSITIVE PROTECTION FOR PEDESTRIANS OR WORKERS SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS APPROPRIATE FOR THE BARRIER'S APPLICATION.

PEDESTRIAN DEVICES SHALL BE PLACED CONTINUOUSLY ALONG THE ENTIRE WIDTH OF THE WALKWAY CLEAR SPACE.

SPECIFIC NOTE

1. TEMPORARY ACCESS IN THE WALKWAY NEEDS A DETECTABLE EDGE. BALLAST SHALL BE LOCATED DIRECTLY UNDER THE DEVICE. ANY SUPPORT ON THE FRONT OF THE DEVICE SHALL NOT EXTEND INTO THE 2 INCH MINIMUM WALKWAY CLEAR SPACE AND SHALL NOT EXCEED 1 INCH IN HEIGHT ABOVE THE WALKWAY SURFACE.

2. PEDESTRIAN DEVICES SHALL BE CONTINUOUS AND A MINIMUM OF 6 INCHES IN HEIGHT ABOVE THE WALKWAY SURFACE.

3. DEVICES SHALL NOT BLOCK WATER DRAINAGE FROM THE WALKWAY. A GAP HEIGHT OF 2 INCHES OR MORE IS ALLOWED FOR DRAINAGE PURPOSES.

4. DEVICES SHALL BE USED TO CHANNELIZE PEDESTRIAN FLOW SUCH THAT GAPS DO NOT ALLOW PEDESTRIANS TO STRAY FROM THE INTENDED CHANNELIZED PATH.

5. A WALKWAY SURFACE SHALL BE FIRM, STABLE, AND SLIP RESISTANT. COMPACTED GRAVEL, AGGREGATE, OR SLAG MATERIALS ARE NOT ALLOWED.

6. LONGITUDINAL CHANNELIZING DEVICES FOR PEDESTRIANS SHALL BE 32 INCHES IN HEIGHT OR GREATER.

7. PROVIDE A HANDRAIL ON BOTH SIDES OF THE RAMP IF THE RAMP IS NOT EXPOSED TO VEHICLE TRAFFIC AND HAS A TOTAL RISE GREATER THAN 6 INCHES.

8. THE HANDRAIL IS 1.25 AND 1.5 INCHES WIDE AND CONFIGURED TO BE A “GRASPABLE” CROSS-SECTION.

9. GENERAL NOTES

- ENSURE THE HANDRAIL IS 1.25 AND 1.5 INCHES WIDE AND CONFIGURED TO BE A “GRASPABLE” CROSS-SECTION.

SIDEWALK BARRICADE

TYPICAL AUDIBLE MESSAGE

DEVICE LOCATION WHEN USED

2" M/R.

WALKWAY SURFACE

2" M/R.

3" M/R.

PUBLICSERVICES - ENGINEERING

1. GENERAL NOTES

- PROVIDE A HANDRAIL ON BOTH SIDES OF THE RAMP IF THE RAMP IS NOT EXPOSED TO VEHICLE TRAFFIC AND HAS A TOTAL RISE GREATER THAN 6 INCHES.

- THE HANDRAIL IS 1.25 AND 1.5 INCHES WIDE AND CONFIGURED TO BE A “GRASPABLE” CROSS-SECTION.

- GENERAL NOTES

- ENSURE THE HANDRAIL IS 1.25 AND 1.5 INCHES WIDE AND CONFIGURED TO BE A “GRASPABLE” CROSS-SECTION.

- SIDEWALK BARRICADE

- TYPICAL AUDIBLE MESSAGE

- DEVICE LOCATION WHEN USED

- 2" M/R.

- WALKWAY SURFACE

- 2" M/R.

- 3" M/R.
Know what's below.
Call before you dig.
Know what's below. Call before you dig.
Know what's below. Call before you dig.
WATER MAIN STRUCTURE TABLE

<table>
<thead>
<tr>
<th>STRUCTURE</th>
<th>TYPE</th>
<th>STATION</th>
<th>FT</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>07</td>
<td>8 x 6&quot; DD</td>
<td>0465</td>
<td>95A-23</td>
<td>0.28</td>
</tr>
<tr>
<td>01</td>
<td>8 x 6&quot; DD</td>
<td>0465</td>
<td>95A-23</td>
<td>0.28</td>
</tr>
</tbody>
</table>

HYDRANT H1

PLAN:
1" = 20'
PROFILE: 1" = 4'

Call before you dig.

Know what's below.
Know what's below. Call before you dig.
STORM SEWER STRUCTURE TABLE

<table>
<thead>
<tr>
<th>STRUCTURE</th>
<th>UTILITY STATION</th>
<th>TYPE</th>
<th>RM</th>
<th>NODES</th>
<th>DEPTH (Foot)</th>
<th>CMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-300</td>
<td>0+20</td>
<td>2&quot; W 300 psi (Concrete)</td>
<td>621.20</td>
<td>12&quot; W 622.25</td>
<td>12&quot; W 623.21</td>
<td>1.25</td>
</tr>
<tr>
<td>R-301</td>
<td>0+22</td>
<td>2&quot; W 300 psi (Concrete)</td>
<td>624.18</td>
<td>12&quot; W 625.20</td>
<td>12&quot; W 626.10</td>
<td>1.70</td>
</tr>
<tr>
<td>R-302</td>
<td>0+30</td>
<td>2&quot; W 300 psi (Concrete)</td>
<td>622.04</td>
<td>12&quot; W 623.01</td>
<td>12&quot; W 624.03</td>
<td>1.07</td>
</tr>
<tr>
<td>R-303</td>
<td>0+30</td>
<td>2&quot; W 300 psi (Concrete)</td>
<td>623.75</td>
<td>12&quot; W 624.77</td>
<td>12&quot; W 625.79</td>
<td>1.54</td>
</tr>
<tr>
<td>R-304</td>
<td>0+30</td>
<td>3&quot; W 300 psi (Concrete)</td>
<td>622.20</td>
<td>12&quot; W 623.20</td>
<td>12&quot; W 624.20</td>
<td>1.50</td>
</tr>
<tr>
<td>R-305</td>
<td>0+30</td>
<td>3&quot; W 300 psi (Concrete)</td>
<td>623.20</td>
<td>12&quot; W 624.20</td>
<td>12&quot; W 625.20</td>
<td>1.50</td>
</tr>
<tr>
<td>R-306</td>
<td>0+33</td>
<td>3&quot; W 300 psi (Concrete)</td>
<td>623.20</td>
<td>12&quot; W 624.20</td>
<td>12&quot; W 625.20</td>
<td>1.50</td>
</tr>
<tr>
<td>R-307</td>
<td>0+34</td>
<td>3&quot; W 300 psi (Concrete)</td>
<td>623.20</td>
<td>12&quot; W 624.20</td>
<td>12&quot; W 625.20</td>
<td>1.50</td>
</tr>
<tr>
<td>R-308</td>
<td>0+40</td>
<td>3&quot; W 300 psi (Concrete)</td>
<td>623.20</td>
<td>12&quot; W 624.20</td>
<td>12&quot; W 625.20</td>
<td>1.50</td>
</tr>
</tbody>
</table>

CAUTION
HAZARDOUS
OR FLAMMABLE
MATERIAL
### A. PLANT SCHEDULE

<table>
<thead>
<tr>
<th>QTY</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Size</th>
<th>Spacing</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>141</td>
<td>CAREX VULPINOIDEA</td>
<td>FOX SEDGE</td>
<td>PLUGS</td>
<td>24&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>87</td>
<td>ECHINACEA PURPUREA</td>
<td>PURPLE CONEFLOWER</td>
<td>PLUGS</td>
<td>24&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>109</td>
<td>EUPATORIUM PERFOLIATUM</td>
<td>BONE SET</td>
<td>PLUGS</td>
<td>24&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>ANEMONE CANADENSIS L.</td>
<td>CANADIAN ANEMONE</td>
<td>PLUGS</td>
<td>24&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>OLIGONEURON RIDDELLII</td>
<td>RIDDELL'S GOLDEN ROD</td>
<td>PLUGS</td>
<td>24&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>LIATRIS SPICATA</td>
<td>BLAZING STAR</td>
<td>PLUGS</td>
<td>24&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>PENSTEMON DIGITALIS</td>
<td>BEARDTONGUE</td>
<td>PLUGS</td>
<td>24&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>RATIBIDA PINNATA</td>
<td>YELLOW CONEFLOWER</td>
<td>PLUGS</td>
<td>24&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>87</td>
<td>RUDBECKIA FULGIDA</td>
<td>BLACK EYED SUSAN</td>
<td>PLUGS</td>
<td>24&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>SCHIZACHYRIUM SCOPARIUM</td>
<td>LITTLE BLUESTEM</td>
<td>PLUGS</td>
<td>24&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>SILPHIUM PERFOLIATUM</td>
<td>CUP PLANT</td>
<td>PLUGS</td>
<td>24&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>SILPHIUM TERBINTHINACEUM</td>
<td>PRAIRIE DOCK</td>
<td>PLUGS</td>
<td>24&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>VERBENA HASTATA</td>
<td>BLUE VERVAIN</td>
<td>PLUGS</td>
<td>24&quot; o.c.</td>
<td></td>
</tr>
</tbody>
</table>

### B. LOW FESCUE SEED MIX

<table>
<thead>
<tr>
<th>Mix Proportions</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Min. Purity</th>
<th>Min. Germination</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.3 LBS</td>
<td>FESTUCA RUBRA VAR CUMMUTATA &quot;SRS 100&quot;</td>
<td>CHEWINGS FESCUS</td>
<td>98%</td>
<td>85%</td>
</tr>
<tr>
<td>4.2 LBS</td>
<td>FESTUCA OVINA</td>
<td>SHEEP FESCUE</td>
<td>98%</td>
<td>85%</td>
</tr>
<tr>
<td>2.2 LBS</td>
<td>FESTUCA RUBRA &quot;DAWSON&quot;</td>
<td>SAWSON RED FESCUE</td>
<td>98%</td>
<td>85%</td>
</tr>
<tr>
<td>2.2 LBS</td>
<td>FESTUCA RUBRA</td>
<td>CREEPING RED FESCUS</td>
<td>98%</td>
<td>85%</td>
</tr>
<tr>
<td>1 LBS</td>
<td>Lolium Multiforum</td>
<td>ANNUAL RYE GRASS</td>
<td>98%</td>
<td>95%</td>
</tr>
</tbody>
</table>
CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING

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

BROOKS STREET IMPROVEMENTS
PROPOSED ROAD - BROOKS STREET
STA. 5+50 - STA. 10+00

CONSTRUCTION KEY

<table>
<thead>
<tr>
<th>KEY</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>HMA</td>
<td>Hot Mix Asphalt</td>
</tr>
<tr>
<td>HMA APP</td>
<td>Hot Mix Asphalt Applicator</td>
</tr>
<tr>
<td>HP</td>
<td>Hot Patcher</td>
</tr>
<tr>
<td>CG</td>
<td>Cold Planer</td>
</tr>
<tr>
<td>DO-M</td>
<td>Drum Compactor - Motorized</td>
</tr>
<tr>
<td>DC-6</td>
<td>Drum Compactor - 6-ton</td>
</tr>
<tr>
<td>SW-4</td>
<td>Smooth Drum - 4-ton</td>
</tr>
<tr>
<td>SWR-6</td>
<td>Smooth Drum Rubber Tired - 6-ton</td>
</tr>
<tr>
<td>DWS</td>
<td>Dewatering System</td>
</tr>
<tr>
<td>ABO</td>
<td>approaching blockout</td>
</tr>
</tbody>
</table>

BROOKS ST

Know what's below. Call before you dig.

PLAN: 1" = 20'
PROFILE: 1" = 4'

CAUTION: HAZARDOUS OR FLAMMABLE MATERIAL

37 OF 54
BROOKS STREET IMPROVEMENTS
PROPOSED ROAD - BROOKS STREET
STA. 14+50 - STA. 19+00

CONSTRUCTION KEY

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
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<tbody>
<tr>
<td>HMA</td>
<td>Hot Mix Asphalt</td>
</tr>
<tr>
<td>HMA APP</td>
<td>Hot Mix Asphalt Applicator</td>
</tr>
<tr>
<td>HP</td>
<td>Hot Mix Asphalt Paving</td>
</tr>
<tr>
<td>CG</td>
<td>Cold Mix Asphalt</td>
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BROOKS STREET IMPROVEMENTS

PROPOSED ROAD - BROOKS STREET
STA. 19+00 - STA. 23+50

CONSTRUCTION KEY

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<tr>
<th>DESCRIPTION</th>
<th>Code</th>
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<th>Code</th>
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<td>HMA</td>
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<tr>
<td>HMA APP</td>
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<tr>
<td>CG</td>
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<tr>
<td>DO-M</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>DC-6</td>
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</tr>
<tr>
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</tbody>
</table>

CAUTION
HAZARDOUS
OR FLAMMABLE
MATERIAL

40 OF 54
Know what's below.
Call before you dig.
Know what's below. Call before you dig.

CITY OF ANN ARBOR - PUBLIC SERVICES - ENGINEERING
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

BROOKS STREET IMPROVEMENTS
PROPOSED ROAD - MIXTWOD
STA. 0+00 - STA. 3+00

CONSTRUCTION KEY

<table>
<thead>
<tr>
<th>CAT</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMA</td>
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</tr>
<tr>
<td>HMA APP</td>
<td></td>
</tr>
<tr>
<td>HP</td>
<td></td>
</tr>
<tr>
<td>CG</td>
<td></td>
</tr>
<tr>
<td>DO-M</td>
<td></td>
</tr>
<tr>
<td>DC-6</td>
<td></td>
</tr>
<tr>
<td>SW-4</td>
<td></td>
</tr>
<tr>
<td>SWR-6</td>
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<tr>
<td>DWS</td>
<td></td>
</tr>
<tr>
<td>ABO</td>
<td></td>
</tr>
</tbody>
</table>

CAUTION
HAZARDOUS OR FLAMMABLE MATERIAL
Know what's below. Call before you dig.
BROOKS STREET IMPROVEMENTS

BROOKS ST SIDEWALK LEFT
STA. 3+50 - STA. 8+00

SIDEWALK CONSTRUCTION KEY

<table>
<thead>
<tr>
<th>KEY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW-4</td>
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<tr>
<td>SWR-6</td>
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<tr>
<td>DWS</td>
<td></td>
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<tr>
<td>ISW-CB</td>
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<tr>
<td>ABO</td>
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<tr>
<td>HD</td>
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</tr>
</tbody>
</table>

CAUTION
HAZARDOUS OR FLAMMABLE MATERIAL
BROOKS STREET IMPROVEMENTS
BROOKS ST SIDEWALK LEFT
STA. 8+00 - STA. 9+75

SIDEWALK CONSTRUCTION KEY

DESCRIPTION
SW-4
SWR-6
DWS
ISW-CB
ABO
HD

CAUTION HAZARDOUS OR FLAMMABLE MATERIAL