ADDENDUM No. 2

ITB No. 4477

Street Resurfacing - 2017

Bids Due: March 30, 2017 at 10:00 A.M. (local time)

The following changes, additions, and/or deletions shall be made to the Invitation to Bid for Street Resurfacing - 2017, ITB No. 4477, on which proposals will be received on/or before March 30, 2017, 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 187 pages.**

Bidder is to acknowledge receipt of this Addendum No. 2, including all attachments (if any) in its Bid by so indicating on page ITB-1 of the Invitation to Bid Form. Bids submitted without acknowledgment of receipt of this addendum will be considered nonconforming.

The following forms provided within the ITB Document must be included in submitted bids at bid opening.

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

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

I. CORRECTIONS/ADDITIONS/DELETIONS/CLARIFICATIONS

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

Item #1: Pre-Bid Conference Summary and Attendance Record/Sign-In Sheet pages Addendum-2-4 thru Addendum-2-6.

Item #2: Bid Forms, pages BF-1 thru BF-8; replace these pages with attached pages Addendum-2-7 thru Addendum-2-14.

Item #3: Schedule of Streets pages DS-13 and DS-14; replace with attached pages ADD-2-15 and Addendum-2-16.

Item #4: Insert Detailed Specification for Landscape Boulder page Addendum-2-17.

Item #5: Insert Detailed Specification for Parking Blocks page Addendum-2-18.

Item #6: Detailed Specification for Drainage and Utility Structures page DS-26; replace with attached page Addendum-2-19.

Item #7: Detailed Specification for Adjusting Structure Covers pages DS-29 and DS-30; replace with attached pages Addendum-2-20 and Addendum-2-21.

Item #8: Detailed Specification for HMA Application Estimate page DS-36; replace with attached page Addendum-2-22.

Item #9: Insert Detailed Specification for Geosynthetic Paving Layer pages Addendum-2-23 and Addendum-2-24.

Item #10: Detailed Specification for Concrete Sidewalk, Sidewalk Ramps, and Driveway Approaches pages DS-51 and DS-52; replace with attached pages Addendum-2-25 and Addendum-2-26.

Item #11: Detailed Specification for Sidewalk Retaining Walls pages DS-53 and DS-55; replace with attached pages Addendum-2-27 and Addendum-2-30.

Item #12: Insert Detailed Specification for Cast Iron Detectable Warning Surface page Addendum-2-31.

Item #13 Remove Detailed Specification for Pavement Markings page DS-69.

Item #14 Insert Specification for Wet Reflective Liquid Applied Pavement Markings pages Addendum-2-32 and Addendum-2-33.

Item #15 Detailed Specification for Maintenance of Traffic pages DS-70 thru DS-74; replace with attached pages Addendum-2-34 thru Addendum-2-38.

Item #16 Insert Specification for Temporary Pedestrian Type II Barricade pages Addendum-2-41 and Addendum-2-42.

Item #17 Insert Specification for Parking Meters pages Addendum-2-39 and Addendum-2-40.

Item #18: Include in Appendix Notice to Bidders for Parking Meter Removal and Covers page Addendum-2-43.

Item #19: Remove from Appendix Special Provision for Acceptance of HMA Mixtures, City of Ann Arbor (10 pages).

Item #20: Include in Appendix Special Provision for Acceptance of Hot Mix Asphalt Mixture on Local Agency Projects pages Addendum-2-44 and Addendum-2-50.

Item #21: Include in Appendix Special Provision for Hot Mix Asphalt Price for Adjustments page Addendum-2-51.

Item #22: Contract Plan Set; replace Bid issued plan set (sheets 1 thru 136) with that issued for this Addendum 2 (sheets 1 thru 136).

Changes include the following:

Plan Sheets 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 29, 31, 51, 59, 64, 68, 74, 82, 116, 122 and 133 of 136 (Location Cover Sheets) – Revised QUANTITY TABLE and QUANTITY TABLE for Sign, Type B, Temp, Prismatic to reflect correct pay items and quantities respective to each location, revised CONSTRUCTION METHOD AND SEQUENCING notes to reflect work required at each respective location.

Bidders are responsible for any conclusions that they may draw from the information contained in the Addendum.

Street Resurfacing – 2017 (ITB No. 4477)
Pre-Bid Conference Summary

March 16, 2017, 2:30 p.m.,
4th Floor South Conference Room, City Hall

I. Introductions

II. General

a. Project Overview

Proposed work is a program larger in size and scope than the 2016 program mainly due to the proposed work on S. Division St. It again will utilize City and County Street/Road Millage funds approved for fiscal years 2017 and 2018 together with other funding sources.

Bid Opening – *Project bids are due on Tuesday, March 28, 2018, by 10:00 a.m., and the responsible low bidder and all subcontractors assigned to the Bid must be MDOT Prequalified in order to receive award of the Contract.*

b. Standard Specifications and Detailed Specifications

i. Construction Specifications (MDOT 2012 Standard Specifications for Construction)

ii. Project Schedule & Payment

- Starting Date – May 8, 2017
- Completion Date – October 28, 2017
- Project Phasing

There is no particular phasing required of the project and the detailed "Schedule of Streets" shows the proposed work locations and scheduling requirements/restrictions for each. Anticipated minor changes to this schedule are forthcoming. An addendum will address these changes.

- Hours of Work: 7:00 am – 8:00 pm Monday thru Saturday (Sundays w/approval)

iii. General Conditions

Attention was given to this Detailed Specification, and those in attendance work were advised to review its requirements.

iv. Project Supervision

Attention was given to this Detailed Specification, and those in attendance work were advised to review its requirements.

v. NEW PAY ITEM – Certified Payroll Compliance and Reporting

Attention was given to this Detailed Specification, and those in attendance work were advised to review its requirements.

III. Construction

a. Construction Methods and Sequencing

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

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

All work on Major Streets as part this year's project will require maintenance of traffic in one direction only with traffic in the opposite direction operating on posted detours. Detailed M.O.T. plans are included in the plan set, and in the process of being updated with minor changes for release in a future addendum.

c. Special Concerns (local traffic access, pedestrians access, tree protection…)

IV. Addendum Items

No addenda have been issued to date for this project; however, Addendum 1 is expected to be released by Tuesday, March 21, 2017, or Wednesday, March 22, 2017, at the latest unless other necessary revisions are encountered requiring its release be delayed further. This addendum will address changes to the plans regarding incorrect quantity tables, construction keys, construction method and sequencing notes, missing or incorrect detailed specification and special details, and any missing geotechnical information. It was noted that all questions related to the bid are due by 5:00 p.m. Monday, March 20, 2017.

V. Other Items

Attendees were informed that the City is currently working with DTE Energy (Michcon) to replace gas mains on several of the streets proposed as part of this year's project. Major Streets include Arlington Blvd and Miller Rd. Minor Streets include 3rd St, 4th St, 5th St, 6th St, Arella Blvd, W Davis Ave, W Jefferson St, and Wilder Pl. DTE Energy (Michcon) will be required to coordinate this work with the Contractor awarded the project, they have been informed that gas main repalcement work must not interfere with or delay that associated with this project.

VI. Questions

1. *An inconsistency was identified on the S Division St plans between the typical cross sections and the construction methods and sequencing notes related the proposed HMA thickness. This issue will be addressed in an addendum.*
2. *Concern was expressed with the Detailed Specification for Adjusting Structure Covers and the handling of existing structure covers that are designated for removal from the jobsite. The City will review the requirements of this detailed specification related to this concern and issue any changes in an addendum if necessary.*
3. *Inconsistencies were identified on the Green Rd Non-motorized Path plans related to the type of proposed HMA material. There was also an inquiry related to a quantity shown for cold milling when this work item was not identified on the plans. These issues will be addressed in an addendum.*
4. *Concerns were expressed with the use of the City's Special Provision for Acceptance of HMA Mixtures. This special provision will be reviewed further to determine if revisions are required, or if it should be removed from the bid documents and replaced with an alternate.*

Contact Information:

David Dykman
Project Manager
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Fax: (734) 994-1744
E-mail: ddykman@a2gov.org

PRE-BID CONFERENCE SIGN-IN SHEET

PROJECT: STREET RESURFACING - 2016 (ITB No. 4477)

DATE: 03/16/2017

PLEASE PRINT

NAME	REPRESENTING	MAILING ADDRESS	TELEPHONE	EMAIL
David Dykman Project Manager	City of Ann Arbor - Project Management	Address: 301 E. Huron Street, P.O. Box 8647 City, State: Ann Arbor, MI Zip: 48107-8647	Office: (734) 794-6410, x43685 Mobile: Fax: (734) 994-1744	ddykman@a2gov.org
Gary Shively Civil Engineering Specialist (Project Inspector)	City of Ann Arbor - Project Management	Address: 301 E. Huron Street, P.O. Box 8647 City, State: Ann Arbor, MI Zip: 48107-8647	Office: (734) 794-6410, x43652 Mobile: Fax: (734) 994-1744	gshively@a2gov.org
David Clemons Supervisor - Civil Engineering Specialists	City of Ann Arbor - Project Management	Address: 301 E. Huron Street, P.O. Box 8647 City, State: Ann Arbor, MI Zip: 48107-8647	Office: (734) 794-6410, x43612 Mobile: Fax: (734) 994-1744	dclemons@a2gov.org
JOHN SENKOWSKI	DOAN COMPANIES	Address: 3670 CARPENTER RD City, State: YPSILANTI Zip: 48197	Office: (734) 971 4678 Mobile: (248) 866 0796 Fax No. (734) 971 4415	jsenkowski@doancompanies.com
WANDA DWYER	CADILLAC	Address: 857 S. WAGNER RD City, State: AZ Zip: 48105	Office: ( ) Mobile: (734) 216-7006 Fax No. ( )	WANDA.DWYER@mipmc.com
Rhonda Mosher	Bailey Excavating	Address: 1073 Toro Dr City, State: Jackson MI Zip: 49201	Office: (517) 750-3030 Mobile: ( ) Fax No. 517 750-1095	jacobbailey@bailey-excavating.com
MIKE ANDREWS	MICHAEL ANDREWS CONCRETE LLC	Address: 9561 CARSON HWY City, State: TECUMSEH MI Zip: 49286	Office: (517) 431-2091 Mobile: (734) 476-2180 Fax No. ( )	MIKE ANDREWS CONCRETE@YAHOO.COM
Chris Rachwal	A2	Address: City, State: Zip:	Office: ( ) Mobile: (734) 812-7932 Fax No. ( )	C.Rachwal@A2GOV.ORG

BID FORM

Section 1 - Schedule of Prices

Street Resurfacing - 2017
File No. 2017-004
Bid No. 4477

Line No.	Item No.	Item Description	Unit	Estimated Quantity	Unit Price	Total Price
10	1047051	_General Conditions, Max $75,000.00	LSUM	1.000	$	$
20	1047051	_Project Supervision, Max $100,000.00	LSUM	1.000	$	$
30	1047051	_Certified Payroll Compliance and Reporting	LSUM	1.000	$	$
40	2030011	Dr Structure, Rem	Ea	82.000	$	$
50	2030015	Sewer, Rem, Less than 24 inch	Ft	806.000	$	$
60	2047001	_Curb, Gutter, and Curb and Gutter, Any Type, Rem	Ft	7,422.000	$	$
70	2047011	_Conc Pavt, Any Thickness, Rem	Syd	1,783.000	$	$
80	2047011	_Sidewalk, Sidewalk Ramp, and Driveway Approach, Any Thickness, Rem	Syd	5,021.000	$	$
90	2047050	_Exploratory Excavation (0-10' Deep) Tr Det I	Ea	11.000	$	$
100	2047050	_Parking Blocks, Rem	Ea	20.000	$	$
110	2047050	_Landscape Boulder, Rem and Salvage	Ea	60.000	$	$
120	2050010	Embankment, CIP	Cyd	239.000	$	$
130	2050016	Excavation, Earth	Cyd	303.000	$	$
140	2050023	Granular Material, Cl II	Cyd	188.000	$	$
150	2057011	_Grading, Driveway Approach	Syd	241.000	$	$
160	2057011	_Grading, Sidewalk	Syd	1,255.660	$	$
170	2057011	_Grading, Sidewalk Ramp	Syd	894.330	$	$
180	2057011	_Machine Grading, Special	Syd	47,674.440	$	$
190	2057021	_Subgrade Undercutting, Type IIA	Cyd	6,348.000	$	$
200	2057021	_Subgrade Undercutting, Type IIB	Cyd	1,500.000	$	$
210	2080020	Erosion Control, Inlet Protection, Fabric Drop	Ea	223.000	$	$

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220	2080036	Erosion Control, Silt Fence	Ft	2,500.000	$	$
230	2090001	Project Cleanup	LSUM	1.000	$	$
240	3010002	Subbase, CIP	Cyd	50.000	$	$
250	3020001	Aggregate Base	Ton	1,365.000	$	$
260	3020050	Aggregate Base, Conditioning	Syd	3,500.000	$	$
270	3027011	_Aggregate Base, 8 inch, 21AA	Syd	1,823.000	$	$
280	3027021	_Aggregate Base, CIP, 21AA	Cyd	25.000	$	$
290	3060020	Maintenance Gravel	Ton	350.000	$	$
300	3070001	Approach, Cl I	Ton	250.000	$	$
310	3070101	Shoulder, Cl I	Ton	150.000	$	$
320	3080010	Geotextile, Stabilization	Syd	100.000	$	$
330	3087011	_Geosynthetic Paving Layer	Syd	9,929.000	$	$
340	4020987	Sewer, Cl IV, 12 inch, Tr Det B	Ft	822.000	$	$
350	4021260	Trench Undercut and Backfill	Cyd	10.000	$	$
360	4030200	Dr Structure, 24 inch dia	Ea	77.000	$	$
370	4030210	Dr Structure, 48 inch dia	Ea	12.000	$	$
380	4030306	Dr Structure, Tap, 6 inch	Ea	5.000	$	$
390	4037001	_Dr Structure, Adj, Add Depth, Modified	Ft	5.000	$	$
400	4037050	_Dr Structure Cover, Special	Ea	1.000	$	$
410	4037050	_Dr Structure Cover, Type B, Modified	Ea	132.000	$	$
420	4037050	_Dr Structure Cover, Type D, Modified	Ea	2.000	$	$

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430	4037050	_Dr Structure Cover, Type E, Modified	Ea	2.000	$	$
440	4037050	_Dr Structure Cover, Type K, Modified	Ea	84.000	$	$
450	4037050	_Dr Structure, Adj, Case 1, Modified	Ea	320.000	$	$
460	4037050	_Dr Structure, Adj, Case 2, Modified	Ea	19.000	$	$
470	4037050	_Dr Structure, Cleaning, Modified	Ea	25.000	$	$
480	4037050	_Dr Structure, Double Inlet	Ea	2.000	$	$
490	4037050	_Dr Structure, Point	Ea	15.000	$	$
500	4037050	_Dr Structure, Reconstruct	Ea	1.000	$	$
510	4037050	_Dr Structure, Temp Lowering, Modified	Ea	243.000	$	$
520	4047001	_Underdrain, Subgrade, 6 inch, Special	Ft	3,000.000	$	$
530	5010001	Pavt, Cleaning	LSUM	1.000	$	$
540	5010003	Cold Milling HMA Surface	Ton	23,747.000	$	$
550	5010005	HMA Surface, Rem	Syd	3,623.880	$	$
560	5010015	Joint and Crack, Cleanout	Ft	2,500.000	$	$
570	5010020	Pvmt Joint and Crack Repr, Detail 7	Ft	240.000	$	$
580	5010021	Pvmt Joint and Crack Repr, Detail 8	Ft	120.000	$	$
590	5010025	Hand Patching	Ton	510.000	$	$
600	5010045	HMA, 3E3	Ton	287.000	$	$
610	5010051	HMA, 4E3	Ton	1,739.000	$	$
620	5010057	HMA, 5E3	Ton	4,153.000	$	$
630	5010061	HMA, Approach	Ton	1,134.000	$	$

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Line No.	Item No.	Item Description	Unit	Estimated Quantity	Unit Price	Total Price
640	5010703	HMA, LVSP	Ton	17,146.000	$	$
650	5017011	_HMA, Raised Crosswalk	Syd	60.000	$	$
660	5017011	_HMA, Raised Intersection	Syd	175.000	$	$
670	5017011	_HMA, Speed Hump	Syd	35.000	$	$
680	5017031	_HMA, Wedging, 36A	Ton	87.000	$	$
690	5017031	_Cold Milling for Curb Reveal	Ton	184.000	$	$
700	5017050	_HMA Surface, Around Structure Cover, Rem	Ea	123.000	$	$
710	6027021	_Flowable Fill	Cyd	226.852	$	$
720	6030005	Cement	Ton	24.000	$	$
730	8017011	_Driveway, Nonreinf Conc, 6 inch, Modified	Syd	220.000	$	$
740	8017011	_Driveway, Nonreinf Conc, 8 inch, Modified	Syd	37.000	$	$
750	8027001	_Curb and Gutter, Conc	Ft	6,112.000	$	$
760	8027001	_Driveway Opening, Conc, Det M, Modified	Ft	1,536.500	$	$
770	8037001	_Detectable Warning Surface, Modified	Ft	610.000	$	$
780	8037001	_Detectable Warning Surface, Cast Iron	Ft	80.000	$	$
790	8037001	_Fence, Protective, Modified	Ft	1,250.000	$	$
800	8037010	_Sidewalk Ramp, Conc, 6 inch, Modified	Sft	7,092.000	$	$
810	8037010	_Sidewalk Retaining Wall, Integral, 6 inch to 18 inch Height	Sft	350.000	$	$
820	8037010	_Sidewalk Retaining Wall, Integral, 18 inch to 30 inch Height	Sft	150.000	$	$
830	8037010	_Sidewalk, Conc or Clay Brick Pavers, Rem and Reinstall	Sft	70.000	$	$
840	8037010	_Sidewalk, Conc, 4 inch, Modified	Sft	5,858.000	$	$

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850	8037010	_Sidewalk, Conc, 6 inch, Modified	Sft	307.000	$	$
860	8037010	_Sidewalk Ramp, Conc, 8 inch, Modified	Sft	1,058.000	$	$
870	8037010	_Sidewalk, Conc, 8 inch, Modified	Sft	3,601.000	$	$
880	8050020	Curb Vertical, HMA	Ft	791.000	$	$
890	8060040	Shared use Path, HMA	Ton	890.400	$	$
900	8110049	Pavt Mrkg, Ovly Cold Plastic, Direction Arrow Sym, Bike	Ea	31.000	$	$
910	8110058	Pavt Mrkg, Ovly Cold Plastic, Bike, Small Sym	Ea	29.000	$	$
920	8110079	Pavt Mrkg, Ovly Cold Plastic, Sharrow Symbol	Ea	7.000	$	$
930	8110520	Pavt Mrkg, Wet Retrflec, Thermopl, 4 inch, White	Ft	16,844.000	$	$
940	8110521	Pavt Mrkg, Wet Retrflec, Thermopl, 6 inch, White	Ft	16,919.000	$	$
950	8110524	Pavt Mrkg, Wet Retrflec, Thermopl, 4 inch, Yellow	Ft	31,745.000	$	$
960	8110332	Rem Raised Pavt Marker	Ea	105.000	$	$
970	8110343	Rem Spec Mrkg	Sft	375.000	$	$
980	8110450	Recessing Pavement Markings, Longit	Ft	3,127.000	$	$
990	8110451	Recessing Pavement Markings, Transv	Sft	2,744.000	$	$
1000	8110500	Pavt Mrkg, Wet Retrflec, Polyurea, 4 inch, White	Ft	910.000	$	$
1010	8110501	Pavt Mrkg, Wet Retrflec, Polyurea, 6 inch, White	Ft	1,903.000	$	$
1020	8110504	Pavt Mrkg, Wet Retrflec, Polyurea, 4 inch, Yellow	Ft	314.000	$	$
1030	8117001	_Pavt Mrkg, Wet Retrflec, Polyurea, 24 inch, Stop Bar	Ft	403.000	$	$
1040	8117001	_Pavt Mrkg, Wet Retrflec, Polyurea, 12 inch, Crosswalk	Ft	1,756.000	$	$
1050	8117001	_Pavt Mrkg, Wet Retrflec, Polyurea, 4 inch, Parking Sym, White	Ft	512.000	$	$

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Line No.	Item No.	Item Description	Unit	Estimated Quantity	Unit Price	Total Price
1060	8117001	_Pavt Mrkg, Wet Retrflec, Thermopl, 6 inch, Crosswalk	Ft	2,582.000	$	$
1070	8117001	_Pavt Mrkg, Wet Retrflec, Thermopl, 12 inch, Crosswalk	Ft	3,196.000	$	$
1080	8117001	_Pavt Mrkg, Wet Retrflec, Thermopl, 12 inch, Cross Hatching, White	Ft	250.000	$	$
1090	8117001	_Pavt Mrkg, Wet Retrflec, Thermopl, 12 inch, Cross Hatching, Yellow	Ft	125.000	$	$
1100	8117001	_Pavt Mrkg, Wet Retrflec, Thermopl, 24 inch, Stop Bar	Ft	1,440.000	$	$
1110	8117001	_Pavt Mrkg, Wet Retrflec, Thermopl, 4 inch, Parking Sym, White	Ft	1,024.000	$	$
1120	8117050	_Pavt Mrkg, Wet Retrflec, Polyurea, Lt Turn Arrow Sym	Ea	2.000	$	$
1130	8117050	_Pavt Mrkg, Wet Retrflec, Polyurea, Only	Ea	4.000	$	$
1140	8117050	_Pavt Mrkg, Wet Retrflec, Polyurea, Rt Turn Arrow Sym	Ea	1.000	$	$
1150	8117050	_Pavt Mrkg, Wet Retrflec, Polyurea, Thru Arrow Sym	Ea	1.000	$	$
1160	8117050	_Pavt Mrkg, Wet Retrflec, Thermopl, Lt Turn Arrow Sym	Ea	14.000	$	$
1170	8117050	_Pavt Mrkg, Wet Retrflec, Thermopl, Rt Turn Arrow Sym	Ea	7.000	$	$
1180	8117050	_Pavt Mrkg, Wet Retrflec, Thermopl, Thru and Rt Turn Arrow Sym	Ea	5.000	$	$
1190	8117050	_Pavt Mrkg, Wet Retrflec, Thermopl, Thru and Lt Turn Arrow Sym	Ea	5.000	$	$
1200	8117050	_Pavt Mrkg, Wet Retrflec, Thermopl, Only	Ea	18.000	$	$
1210	8117050	_Pavt Mrkg, Wet Retrflec, Thermopl, School	Ea	6.000	$	$
1220	8117050	_Pavt Mrkg, Wet Retrflec, Thermopl, Railroad Sym	Ea	2.000	$	$
1230	8117050	_Pavt Mrkg, Wet Retrflec, Thermopl, Speed Hump Chevron, White	Ea	1.000	$	$
1240	8120012	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	Ea	145.000	$	$
1250	8120013	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	Ea	145.000	$	$
1260	8120030	Channelizing Device, 42 inch, Furn	Ea	500.000	$	$

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BID FORM

Section 1 - Schedule of Prices

Street Resurfacing - 2017
File No. 2017-004
Bid No. 4477

Line No.	Item No.	Item Description	Unit	Estimated Quantity	Unit Price	Total Price
1270	8120031	Channelizing Device, 42 inch, Oper	Ea	500.000	$	$
1280	8120140	Lighted Arrow, Type C, Furn	Ea	22.000	$	$
1290	8120141	Lighted Arrow, Type C, Oper	Ea	16.000	$	$
1300	8120210	Pavt Mrkg, Longit, 6 inch or Less Width, Rem	Ft	250.000	$	$
1310	8120235	Pavt Mrkg, Wet Retrflec, Type NR, Paint, 4 inch, White, Temp	Ft	2,500.000	$	$
1320	8120236	Pavt Mrkg, Wet Retrflec, Type NR, Paint, 4 inch, Yellow, Temp	Ft	7,500.000	$	$
1330	8120245	Pavt Mrkg, Wet Retrflec, Type R, Tape, 4 inch, White, Temp	Ft	2,760.000	$	$
1340	8120246	Pavt Mrkg, Wet Retrflec, Type R, Tape, 4 inch, Yellow, Temp	Ft	2,000.000	$	$
1350	8120260	Plastic Drum, High Intensity, Lighted, Furn	Ea	1,644.000	$	$
1360	8120261	Plastic Drum, High Intensity, Lighted, Oper	Ea	1,644.000	$	$
1370	8120310	Sign Cover	Ea	50.000	$	$
1380	8120330	Sign, Portable, Changeable Message, Furn	Ea	12.000	$	$
1390	8120331	Sign, Portable, Changeable Message, Oper	Ea	25.000	$	$
1400	8120350	Sign, Type B, Temp, Prismatic, Furn	Sft	6,460.500	$	$
1410	8120351	Sign, Type B, Temp, Prismatic, Oper	Sft	6,460.500	$	$
1420	8120370	Traf Regulator Control	LSUM	1.000	$	$
1430	8127050	_No Parking Sign	Ea	451.000	$	$
1440	8127051	_Minor Traffic Control, Max $50,000.00	LSUM	1.000	$	$
1450	8157060	_Irrigation System, Protection and Maintenance	Dlr	2,500.000	$	$
1460	8167011	_Slope Restoration	Syd	5,514.280	$	$
1470	8190159	Conduit, Schedule 80, 3 inch	Ft	100.000	$	$

TOTAL THIS PAGE $ _____

BID FORM

Section 1 - Schedule of Prices

Street Resurfacing - 2017
File No. 2017-004
Bid No. 4477

Line No.	Item No.	Item Description	Unit	Estimated Quantity	Unit Price	Total Price
1480	8197050	_Handhole Assembly, 12 Inch x 18 Inch	Ea	2.000	$	$
1490	8197050	_Handhole Assembly, 17 Inch x 30 Inch	Ea	2.000	$	$
1500	8197050	_Handhole Assembly, 24 inch x 36 inch	Ea	2.000	$	$
1510	8217050	_Monument Box Adjust	Ea	12.000	$	$
1520	8230431	Gate Box, Adj, Case 1	Ea	52.000	$	$
1530	8230432	Gate Box, Adj, Case 2	Ea	1.000	$	$
1540	8257050	_Remove Parking Meters	Ea	18.000	$	$
1550	8257050	_Install Parking Meters	Ea	14.000	$	$

TOTAL THIS PAGE $

TOTAL FROM PAGE BF-1 $

TOTAL FROM PAGE BF-2 $

TOTAL FROM PAGE BF-3 $

TOTAL FROM PAGE BF-4 $

TOTAL FROM PAGE BF-5 $

TOTAL FROM PAGE BF-6 $

TOTAL FROM PAGE BF-7 $

TOTAL BASE BID $

Street Resurfacing – 2017

Schedule of Streets

Location (Street)	Limits of Work	Start of Work	Completion of Work	Restricted Dates	Maximum Calendar Days for Completion	Liquidated Damages per Calendar Day
MAJOR STREETS						
Arlington Boulevard	Washtenaw Ave to Geddes Ave		07/03/2017	MMRL	54	$750.00
Catherine Street	N Main St to Glen Ave			AAAF, MMRL, INDP, LABR, UMSM	24	$1,000.00
Church Street	S University Ave to Geddes Ave			DDA, LABR, UMFB, UMSM	21	$1,000.00
South University Avenue	E University Ave to Washtenaw Ave					
Green Road Non-motorized Path	Nixon Rd to Burbank Dr / Gettysburg Rd			MMRL, INDP, LABR	21	$500.00
Hill Street	Onondaga St to Geddes Ave	07/05/2017		LABR	28	$750.00
Miller Avenue	City Limits to N Maple Rd			CAA2	21	$750.00
South Division Street	E Jefferson Ave to E Huron St		07/15/2017	MMRL, INDP	63	$1,000.00
West Liberty Road	Scio Ridge Rd to S Maple Rd			WCRC, LABR	24	$750.00
West Stadium Boulevard	S Main St to Hutchins Ave			CAA1, LABR, UMFB	14	$1000.00
MINOR (LOCAL) STREETS						
4th Street	W Madison St to W William St			AAPS, AAAF	75	$750.00
5th Street	Princeton St to W Liberty St					
West Jefferson Street	S 7th St to S Main St					
5th Street	W Hoover Ave to W Davis Ave			AAAF, MMRL, INDP, LABR	60	$500.00
West Davis Avenue	S 7th to 3rd St					
Wilder Place	W Hoover Ave to W Davis Ave					
3rd Street	W Madison St to W William St	08/21/2017		LABR	35	$500.00
6th Street	W Madison St to W Jefferson St					

Street Resurfacing – 2017

Schedule of Streets

Location (Street)	Limits of Work	Start of Work	Completion of Work	Restricted Dates	Maximum Calendar Days for Completion	Liquidated Damages per Calendar Day
MINOR (LOCAL) STREETS - CONTINUED						
High Orchard Drive	Geddes Rd to City Limit			MMRL, INDP, LABR	18	$500.00
High Orchard Court	End (cul-de-sac) to High Orchard Dr					
Alley (south of West Madison St)	S Seventh St to End	07/01/2017		INDP, LABR	14	$500.00
Arella Boulevard	Martha Ave to Pauline Blvd	07/01/2017		INDP, LABR	30	$500.00
Island Drive	Canal St to Wall St			MMRL, INDP, LABR	21	$500.00

AAPS – No work permitted when Ann Arbor Public Schools are in session (before June 19, 2017 or after September 1, 2017).

AAAF – No work permitted from July 20, 2017 thru July 23, 2017 due to the Ann Arbor Street Art Fairs.

CAA1 – No work permitted until the City of Ann Arbor East Stadium Boulevard construction project is open to traffic (anticipated by August 15, 2017).

CAA2 – No work permitted until the City of Ann Arbor North Maple Road/Miller Avenue sidewalk construction project is complete (anticipated by September 30, 2017).

DDA – No work permitted until after the Ann Arbor Street Art Fairs or the completion of the Ann Arbor Downtown Development Authority South University Avenue Streetscape project, which occurs later (DDA project anticipated to be complete by August 19, 2017)

INDP – No work during the Independence Day holiday period from 3:00 p.m. July 3 to 7:00 a.m. July 5, 2017.

LABR – No work during the Labor Day holiday period from 3:00 p.m. September 1 to 7:00 a.m. September 5, 2017.

MMRL – No work during the Memorial Day holiday period from 3:00 p.m. May 26 to 7:00 a.m. May 30, 2017.

UMFB – No work permitted on University of Michigan home football game days.

UMSM – No work permitted during University of Michigan Student Move-in (September 1, 2017 thru September 4, 2017).

WCRC – No work permitted until the Scio Church Rd and Wagner Rd roundabout construction project is open to traffic (anticipated by July 28, 2017).

Notes:

1. Construct Church Street and South University Avenue concurrently.
2. Construct 4th Street, 5th Street (Princeton St to W Liberty St), and West Jefferson Street concurrently.
3. Construct 5th Street (W Hoover St to W Davis Ave), West Davis Avenue, and Wilder Pl concurrently.
4. Construct High Orchard Drive and High Orchard Court concurrently.
5. Construct 3rdStreet and 6th Street concurrently.

CITY OF ANN ARBOR

DETIALED SPECIFICATION
FOR
LANDSCAPE BOULDER

AA:DAD 1 of 1 03/23/17

a. Description. Removal, salvage, and reinstallation in new locations all landscape boulders around the perimeter of the existing aggregate parking and driveway areas in Riverside Park as described herein, and as directed by the Engineer.

b. Materials. The bedding material shall meet the requirements of MDOT Class III Granular Material unless otherwise approved by the Engineer.

c. Construction. Remove and store on site all landscape boulders identified for relocation, and place them at their new locations as directed by the Engineer.

Prepare bedding material as required to create a level area for the permanent placement of the landscape boulder(s). The bedding material shall be placed and compacted in no greater than 6-inch lifts.

Place boulders individually using equipment capable of setting it in a final position at release and also capable of repositioning it after release, if necessary, in such a manner to avoid displacing, cracking, chipping, scratching or placing undue impact force on underlying materials. Re-handling of individual boulders shall be anticipated by the Contractor to achieve satisfactory final placement. Do not cast or drop boulders.

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

Pay Item	**Pay Unit**
Landscape Boulder, Rem and Salvage	Each

This item of work will be measured in place by unit each and paid for at the contract unit price for each, which price shall be payment in full for all labor, materials, and equipment needed to accomplish this work. It shall include, but not be limited to; all required excavation necessary to remove or install the boulder; removing, transporting, and storing the boulder in an area safe from other construction activities; furnishing, placing, compacting all bedding material; placing the boulders; and the clean-up and removal off-site of all excess excavated materials at the completion of the landscape boulder relocation.

CITY OF ANN ARBOR

DETIALED SPECIFICATION
FOR
PARKING BLOCKS

AA:DAD 1 of 1 03/23/17

a. Description. This work consists of excavating, as required, removing existing concrete parking blocks and disposing of removed materials, and backfilling the resulting excavated sites in accordance with section 204 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, as specified herein, and as directed by the Engineer.

b. Materials. Provide materials in accordance with subsection 204.02 of the MDOT 2012 Standard Specifications for Construction, unless otherwise directed by the Engineer.

c. Construction. Breakdown and remove existing concrete parking blocks in accordance with subsection 204.03.A of the MDOT 2012 Standard Specifications for Construction, and as directed by the Engineer.

Dispose all materials in accordance with subsection 204.03.B of the MDOT 2012 Standard Specifications for Construction, and as directed by the Engineer.

Backfill excavated sites in accordance with subsection 204.03.C of the MDOT 2012 Standard Specifications for Construction, and as directed by the Engineer.

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

Pay Item	**Pay Unit**
Parking Blocks, Rem	Each

Parking Blocks, Rem will be measured in place by the unit each and paid for at the contract unit price for each, which price shall be payment in full for all labor, materials, and equipment needed to accomplish this work.

The cost of breaking down and removing, sawing, disposing of materials, and providing, placing, and compacting backfill is included in the unit price for **Parking Blocks, Rem**.

CITY OF ANN ARBOR

DETIALED SPECIFICATION
FOR
DRAINAGE AND UTILITY STRUCTURES

AA:DAD 1 of 1 03/23/17

a. Description. This work consists of cleaning, pointing, reconstructing, and temporary lowering drainage and utility (storm, sanitary, and water) structures as required whether shown or not shown on the plans, and as herein provided.

b. Materials. Provide materials in accordance with section 403 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, unless otherwise directed by the Engineer.

c. Construction. Clean, point, reconstruct, and temporary lower drainage and utility structures in accordance with section 403 of the MDOT 2012 Standard Specifications for Construction, and as directed by the Engineer.

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

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

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

Pay Item	**Pay Unit**
Dr Structure, Adj, Add Depth, Modified	Foot
Dr Structure, Cleaning, Modified	Each
Dr Structure, Point	Each
Dr Structure, Reconstruct	Each
Dr Structure, Temp Lowering, Modified	Each

These items will be measured in place by their respective unit and paid for at their respective contract unit price, which price shall be payment in full for all labor, materials, and equipment needed to accomplish this work.

CITY OF ANN ARBOR

SPECIAL PROVISION
FOR
ADJUSTING STRUCTURE COVERS

AA:DAD 1 of 2 03/27/17

a. Description. This work shall include the final adjustment of all drainage and utility structure covers in accordance with section 403 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, as shown on the plans, and as specified herein. Utility structures comprise gate valve wells/manholes, sanitary sewer manholes, gate valve boxes, monument boxes, and electrical/traffic signal handholes.

The Contractor shall also be required to coordinate the adjustment of private utility structure covers and ensure that the adjustment has been properly performed with the respective utility prior to placing any final paving materials.

b. Materials. In hot mix asphalt (HMA) pavement areas, adjustments shall be made using MDOT P-NC concrete (658 lbs/cyd) as specified in section 601 of the MDOT 2012 Standard Specifications for Construction. In areas of concrete pavement, adjustments shall be made at the time of paving and encased with the grade of concrete used in the roadway.

c. Construction. Structure covers, monument boxes, water valve boxes and all other public utility underground access or control point covers shall be adjusted to conform to the finished surface section and elevation. The adjusting of covers in lawn areas shall be performed in a one-step process. The adjusting of covers in HMA pavement area shall be performed in two steps: step one is the lowering of the structure cover to below the subgrade elevation and plating of the structure; step two is the final adjustment to finish grade made prior to placing the HMA top course. In areas of concrete pavement, the final adjustment of the structure to finish grade shall be made at the time of concrete pavement forming. All structures in areas of concrete pavement shall be approved by the Engineer prior to the placement of any concrete pavement.

All structures final adjustment is to be to the elevation which results in their top surface being flush with the finished grade. The work is to be accomplished and checked by using a 10 foot straight edge that is placed parallel, and then perpendicular to, the pavement centerline. Failure to meet these conditions will result in the readjustment of the structure and finish patching of the area, as directed by the Engineer, at the Contractor's expense.

All private utility (Electric, Gas, Telecommunications, etc.) structure and valve covers will be adjusted during this project by the Utility. It is the responsibility of the Contractor to coordinate with these private utilities by giving adequate notice and arranging for any adjustment of structures or valves by these utilities. It shall be the sole responsibility of the Contractor to ensure that this work is completed in a timely manner.

The Contractor shall replace existing structures covers, top portions of valve boxes and monument boxes as shown on the plans and as directed by the Engineer.

All existing structure covers removed for salvage shall be stockpiled on site at a location mutually agreed upon by the Contractor and Engineer, and within two days of their removal be delivered to the City’s Wheeler Service Center (4251 Stone School Rd, Ann Arbor, MI) by the Contractor.

All adjustments in areas HMA pavement shall be backfilled with Grade P-NC concrete from the depth of excavation necessary for adjustment to an elevation flush with the HMA leveling course. This material shall be included in this item of work and will not be paid for separately.

Structure covers shall be adjusted to between flush and ¼ inch below final pavement surfaces.

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

Pay Item	**Pay Unit**
Dr Structure Cover, Adj, Case 1, Modified	Each
Dr Structure Cover, Adj, Case 2, Modified	Each

Dr Structure Cover, Adj, Case 1, Modified and **Dr Structure Cover, Adj, Case 2, Modified** will be measured and paid for at the respective contract unit prices for each structure that is adjusted, which price shall be payment in full for all labor, equipment and material needed to accomplish this work.

Where the required adjustment of a structure is more than 6 inches above/below the proposed finished grade of the structure, it will be measured and paid for as **Dr Structure Cover, Adj, Add Depth, Modified**. This shall also cover the repair of manholes and structures where less than the substantial rebuilding of the structure, as determined by the Engineer, is required.

There is a possibility that the Contractor may find hidden utility structures during the work. It is the Contractor's responsibility to inform the respective utility owner(s) of the findings. In such instances, the City may direct the Contractor to adjust the structure(s) to grade. This work will be paid as either **Dr Structure Cover, Adj, Case 1, Modified** or **Dr Structure Cover, Adj, Case 2, Modified** depending on the location of the hidden structure(s).

Payment for adjusting for new drainage or utility structures, monuments boxes, and valve boxes shall be included in their respective items of work and will not be paid for under this item. The work for adjusting these items, however, shall be performed in accordance with this detailed specification.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
HMA APPLICATION ESTIMATE

AA:DAD 1 of 1 03/27/17

a. Description. Perform this work in accordance with the requirements of section 501 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, and as herein specified.

b. Materials.

PAY ITEM	HMA MIX	APPLICATION RATE	ESTIMATED THICKNESS	PERFORMANCE GRADE	AWI (min)
HMA, 5E3 HMA, 4E3	5E3 (top) 4E3 (leveling) Major Streets	165-220 lb/syd 220-275 lb/syd	1.5-2.0 inches 2.0-2.5 inches	PG 64-28 PG 64-28	260 N/A
HMA, LVSP HMA, LVSP	LVSP (top) LVSP (leveling) Local Streets	220 lb/syd 220 lb/syd	2.0 inches 2.0 inches	PG 58-28 PG 58-28	220 N/A
HMA, Approach	5E3 Major Streets LVSP Local Streets	220 lb/syd	Thickness may vary with maximum layer = 2.0 inches	PG 64-28 PG 58-28	260 220
Shared use Path, HMA	36A	Yield may vary between 165 and 330 lb/syd	Thickness may vary between 1.5 and 3.0 inches	PG 58-28	220
HMA, Wedging, 36A	36A	Yield may vary between 110 and 330 lb/syd	Thickness may vary between 1.0 and 3.0 inches	PG 58-28	220
Hand Patching	5E3 Major Streets LVSP Local Streets	Yield may vary with maximum = 330 lb/syd	Thickness may vary with maximum layer = 3.0 inches	PG 64-28 PG 58-28	N/A

Use the respective mixes indicated above on Major and Local streets unless otherwise noted on plans, or directed by the Engineer.

The Performance Grade asphalt binder range for the HMA mixture shall be as noted above. Apply Bond Coat material accordance with the requirements of the Detailed Specification entitled “HMA Paving”. The uniform rate of application shall be a minimum of 0.10 gallons per square yard, and be approved by the Engineer. This work will not be paid for separately, but shall be included in the cost of the HMA pay items.

c. Measurement and Payment. The work shall be measured and paid for as provided elsewhere in the contract documents.

CITY OF ANN ARBOR

SPECIAL PROVISION
FOR
GEOSYNTHETIC PAVING LAYER

AA:JN/DAD 1 of 2 03/26/17

a. Description. This work shall consist of prepping the surface, furnishing, and installing a geosynthetic paving layer on the leveling course prior to placing the new HMA top course as shown on the plans.

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

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

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

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

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

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

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

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

Apply bond coat using a motorized distributor (spreader) that is capable of adjusting spray rates by 0.10 gal/syd. The valves on the distributor bar must fan in an overlap fashion at the application rate. The recommended application is 0.15 gal/syd. Install geosynthetic material over hot asphalt tack coat.

Place the geosynthetic paving layer material using a tractor or a distributor truck with a fabric

applicator attached to the back. Install paving layer material using mechanically powered equipment, or by hand as required and approved by the Engineer. Mechanical equipment shall be capable of installing rolls 3.0 feet in width. Only install material by hand in areas needing specially cut sections, and/or where mechanically installed methods are not feasible. Use brooms or squeegees to remove any air bubbles and ensure paving layer material is in complete contact with the underlying surface. Cut or smooth folds and wrinkles encountered during lay down operations, and apply additional bond coat material as needed to achieve complete adhesion.

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

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

Pay Item	**Pay Unit**
Geosynthetic Paving Layer	Square Yard

Geosynthetic Paving Layer will be measured in place by the square yard and paid for at the contract unit price per square yard. This price shall be payment in full for all labor, equipment, and material needed to accomplish this work. The Engineer will make no allowance for overlaps, splices, or cut off and/or wasted material.

Any deviations, alterations, and/or any work not specifically called for on the plans and determined necessary to install the paving layer as approved by Engineer will not be paid for separately and shall be included in this item of work.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
CONCRETE SIDEWALK, SIDEWALK RAMPS, AND DRIVEWAY APPROACHES

AA:DAD 1 of 2 03/22/17

a. Description. This work shall consist of constructing concrete sidewalks, sidewalk ramps, or driveway approaches of the types as indicated on the plans in accordance with attached details, and as directed by the Engineer. All work shall be in accordance with sections 801 and 803 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, and as specified herein.

b. Materials. The materials shall meet the requirements as specified sections 801 and 803 of the MDOT 2012 Standard Specifications for Construction and as required herein. The concrete mixture for driveway approaches shall be Grade P-NC (658 lbs/yd^3 cement content) as specified in section 601 of the MDOT 2012 Standard Specifications.

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

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

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

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

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

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

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

All sidewalk ramps shall be installed with detectable warning units. Reference the Detailed Specification entitled "Detectable Warning Surface" for additional requirements.

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

Pay Item	**Pay Unit**
Driveway, Nonreinf Conc, 6 inch, Modified	Square Yard
Driveway, Nonreinf Conc, 8 inch, Modified	Square Yard
Sidewalk, Conc, 4 inch, Modified	Square Foot
Sidewalk, Conc, 6 inch, Modified	Square Foot
Sidewalk, Conc, 8 inch, Modified	Square Foot
Sidewalk Ramp, Conc, 6 inch, Modified	Square Foot
Sidewalk Ramp, Conc, 8 inch, Modified	Square Foot

The above items will be measured by area in square feet and be paid for at their respective contract unit price, which price shall be payment in full for all labor, equipment and material needed to accomplish this work. The unit price shall also include all costs associated with sawcutting curbs to provide openings for sidewalk ramps as indicated on the plans.

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

Excavation for placement of Granular Material Class II bedding material for driveways, sidewalk and sidewalk ramps shall be included in the respective items of work **Grading, Driveway Approach**; **Grading, Sidewalk**; and **Grading, Sidewalk Ramp**; and shall not be paid for separately.

Detectable warning units shall be paid for in accordance with the Detailed Specification for Detectable Warning Surface.

CITY OF ANN ARBOR

DETIALED SPECIFICATION
FOR
SIDEWALK RETAINING WALLS

a. Description. This work consists of constructing concrete retaining walls adjacent to sidewalks in accordance with the requirements and special details included herein, and as directed by the Engineer.

b. Materials. Provide concrete Grade P-NC, unless otherwise directed by the Engineer, meeting the requirements of section 602 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction.

c. Construction. Construct retaining walls in accordance with special details includes herein. Curb face exposure shall be 6 inches to 36 inches.

The Contractor shall excavate, cut, remove stumps, remove brush, remove pavement, grade, and trim as needed and as directed, and shall furnish, place, grade, and compact any materials needed to perform the work.

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

At locations where the subgrade, subbase or base becomes either disturbed, saturated or otherwise damaged, and where directed by the Engineer, the Contractor shall remove a minimum 6-inch thick layer of the subgrade, subbase or base, and replace it with approved 21AA Aggregate material, compacted in place.

The Contractor shall coordinate with the City Forester prior to the removal of any tree roots 2 inches in diameter or greater.

The Contractor shall maintain on-site at all times, a sufficient quantity of adequate materials to protect concrete items. The Engineer may suspend or defer concrete placement if rain protection is not available. The Contractor shall not be entitled to any additional compensation due to work suspension or deferral resulting from a lack of adequate rain protection.

The Contractor is responsible for any damage to concrete items, including but not limited to vandalism; vehicular, pedestrian and/or miscellaneous structural damage; surface texture damage; and rain damage.

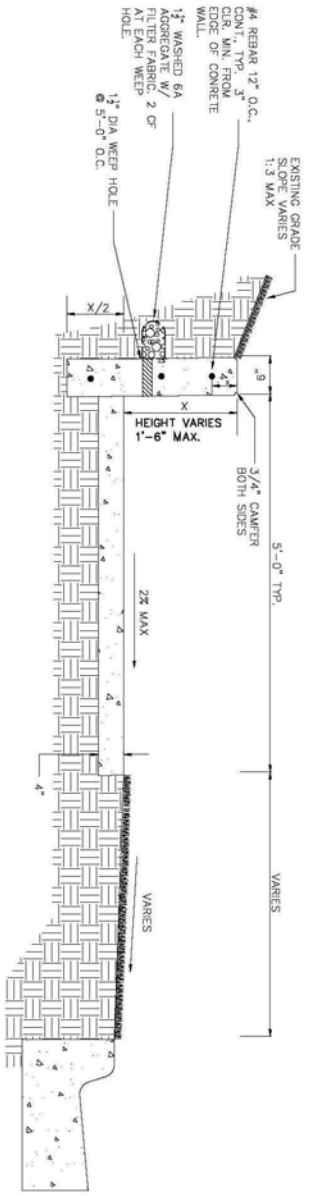
d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit prices for the following pay items:

Pay Item	**Pay Unit**
Sidewalk Retaining Wall, Integral, 6 inch to 18 inch Height	Square Foot
Sidewalk Retaining Wall, Integral, 18 inch to 30 inch Height	Square Foot

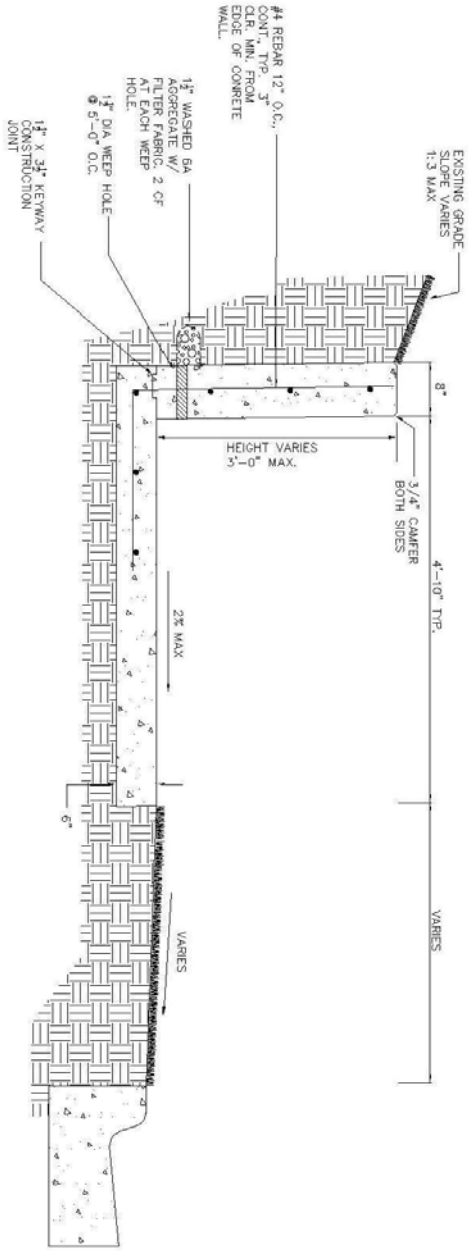
Sidewalk Retaining Wall, Integral, __ inch to __ inch Height shall be measured in place by the exposed face area above the sidewalk in square feet. The unit price for this item of work shall include all labor, materials, and equipment needed to accomplish this work.

All sidewalk work performed adjacent to any retaining wall will be paid for separately.

INTEGRAL SIDEWALK RETAINING WALL (6" – 18") DETAIL



INTEGRAL SIDEWALK RETAINING WALL (18"-36") DETAIL



CITY OF ANN ARBOR

DETIALED SPECIFICATION
FOR
CAST IRON DETECTABLE WARNING SURFACE

AA:JN 1 of 1 02/04/16

a. Description. This work consists of constructing and/or reconstructing sidewalk ramps with cast iron detectable warning surfaces at the specified location(s). Complete this work according to the standard specifications and Standard Plan R-28 Series, except as modified herein.

b. Materials. Use detectable warning surfaces that provide tactile and visual warning and contrast visually with adjacent walking surfaces, either light-on-dark or dark-on-light. Provide cast iron detectable warning surfaces that conform to the dimensions shown on Standard Plan R-28 Series. Select one of the following products, or provide an approved equal, for this project.

Neenah Foundry
2121 Brooks Ave
Neenah, WI 54956
Phone: 920-725-7000
Product Name: NF Detectable Warning Plates

East Jordan
301 Spring Street
East Jordan, MI 49727
Phone: 800-874-4100
Product Name: EJ Cast Iron Detectable Warning Plate

Provide all detectable warning surfaces from the same manufacturer unless otherwise approved by the Engineer.

c. Construction. Construct sidewalk ramps according to subsection 803.03 of the Standard Specifications for Construction and Standard Plan R-28 Series, except that the ramps must be the thickness as shown on the plans. Install detectable warning surfaces according to the manufacturer's instructions and Standard Plan R-28 Series.

When replacing gutters in addition to sidewalk ramps, transition the gutter cross section in advance of the sidewalk ramp to meet the dimensions and profile in Standard Plan R-28-series.

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

Pay Item	**Pay Unit**
Detectable Warning Surface, Cast Iron	Square Foot

Detectable Warning Surface, Cast Iron will be measured in place by the area of detectable warning material installed at specified locations. Payment includes all labor, materials, and equipment to install detectable warning surface.

All concrete work required for this work will be measured and paid for as specified elsewhere in this contract.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
WET REFLECTIVE LIQUID APPLIED PAVEMENT MARKINGS

a. Description. This work consists of furnishing and installing wet night retroreflective (WR) beads and/or elements and liquid applied pavement marking materials.

b. Materials.

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

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

Table 1: WR Markings

Average Initial Retroreflectivity at 30 meter geometry in mcd/lux/m^2		
Test Method	Color	
	White	Yellow
Dry (ASTM E 1710)	700	500
Wet Recovery (ASTM E 2177)	250	200

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

Submit to the Engineer prior to the start of work:

A. The Manufacturer's recommended application rate of the beads/elements and the liquid applied pavement marking binder to be used on the project. If the Manufacturer's recommended application rate differs from the specified rate in Table 811-1 of the Standard Specifications for Construction, the Manufacturer's recommended rate supersedes the table values.

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

2. Binder. Provide a liquid pavement marking product of the binder type specified in the contract documents from section 811 of the Qualified Products List or as specified by special provision, or use an alternative binder as approved by the Engineer.

c. Construction. Place the binder and beads in accordance with the Manufacturers' recommendations and sections 811 and 920 of the Standard Specifications for Construction except as noted above.

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

Pay Item	Pay Unit
Pavt Mrkg, Wet Retrflec Polyurea, 12 inch, Crosswalk	Foot
Pavt Mrkg, Wet Retrflec Polyurea, 24 inch, Stop Bar	Foot
Pavt Mrkg, Wet Retrflec Polyurea, 4 inch, Parking Sym, White	Foot
Pavt Mrkg, Wet Retrflec Polyurea, Lt Turn Arrow Sym	Each
Pavt Mrkg, Wet Retrflec Polyurea, Rt Turn Arrow Sym	Each
Pavt Mrkg, Wet Retrflec Polyurea, Only	Each
Pavt Mrkg, Wet Retrflec Thermopl, 6 inch, Crosswalk	Foot
Pavt Mrkg, Wet Retrflec Thermopl, 12 inch, Crosswalk	Foot
Pavt Mrkg, Wet Retrflec Thermopl, 12 inch, Cross Hatching, White	Foot
Pavt Mrkg, Wet Retrflec Thermopl, 12 inch, Cross Hatching, Yellow	Foot
Pavt Mrkg, Wet Retrflec Thermopl, 24 inch, Stop Bar	Foot
Pavt Mrkg, Wet Retrflec Thermopl, 4 inch, Parking Sym, White	Foot
Pavt Mrkg, Wet Retrflec Thermopl, Lt Turn Arrow Sym	Each
Pavt Mrkg, Wet Retrflec Thermopl, Rt Turn Arrow Sym	Each
Pavt Mrkg, Wet Retrflec Thermopl, Thru and Lt Turn Arrow Sym	Each
Pavt Mrkg, Wet Retrflec Thermopl, Thru and Rt Turn Arrow Sym	Each
Pavt Mrkg, Wet Retrflec Thermopl, Only	Each
Pavt Mrkg, Wet Retrflec Thermopl, Railroad Sym	Each
Pavt Mrkg, Wet Retrflec Thermopl, School	Each
Pavt Mrkg, Wet Retrflec Thermopl, Speed Hump Chevron, White	Each

The unit price for these items of work shall include all labor, material, and equipment costs to perform all the work.

CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
MAINTENANCE OF TRAFFIC

a. Description. Traffic shall be maintained by the Contractor at the locations identified on the "Schedule of Streets" for duration of the work in accordance with the plans, subsection 104.11 and section 812 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, the Michigan Manual of Uniform Traffic Control Devices (MMUTCD), applicable supplemental specifications, as directed by the Engineer, and as herein specified.

The following, and herein included, Michigan Department of Transportation (MDOT) Maintaining Traffic Typicals and Work Zone Device Details apply to the project: M0020a, M0040a, M0110a, M0140a, M0240a WZD-100-A, and WZD-125-E.

These maintaining traffic provisions are subject to change in the event of special community activities.

The permanent pavement marking items are included in the contract and shall be placed per the MDOT 2012 Standard Specifications for Construction prior to the removal of any devices required to temporarily maintain traffic during construction, and also prior to opening the project to traffic.

b. Materials. Materials for all devices used to temporarily control and maintain traffic shall meet the requirements of section 812 of the MDOT 2012 Standard Specifications for Construction, the MMUTCD, and the applicable MDOT typicals and details included herein.

All signs shall be of sizes shown on the plans, unless otherwise directed by the Engineer. Temporary signs, which are to remain in the same place for 14 days or more, shall be installed on driven posts. All other temporary signs may be installed on portable supports. All signs shall have a minimum bottom height of 7.0 feet.

Channelizing devices required for all lane closures shall be plastic drums. 42 inch channelizing devices are permissible at certain locations with approval from the Engineer.

c. Construction. Construction methods shall meet the requirements of section 812 of the MDOT 2012 Standard Specifications for Construction.

The Contractor shall furnish and place all necessary temporary traffic control devices to maintain traffic during construction. All work, construction equipment, and material storage shall be kept behind the curb, or behind barricades or channelizing devices, all in combination with protective fencing, if required to protect open excavations, and shall not in any way hamper vehicle movement or impair traffic vision. The contractor shall also provide protection to all uncured concrete sidewalk, driveways, and curb and gutter as may be needed until all traffic, either foot or otherwise, can cross without damage. Additional barricades and protective fencing shall be installed at the end of each day to insure no disturbance to the work area.

Distances between warning, regulatory, and guide signs as shown on the typicals and details are approximate, and may require field adjustment, as directed by the Engineer.

The Contractor shall maintain two-way traffic as shown on the plans, access for local traffic on local streets, and keep all intersections open to traffic at all times, unless specifically authorized in writing by the Engineer.

The Contractor shall maintain traffic such that no vehicle shall be required to drive into active work areas. Patch areas which extend more than halfway across the roadway shall be removed and replaced so as to provide a minimum of half the pavement width at all times for maintaining traffic.

The Contractor shall remove existing pavement markings and place temporary pavement markings as directed by the Engineer.

All temporary traffic/pedestrian control devices furnished by the Contractor shall remain the property of the Contractor. The City shall not be responsible for stolen or damaged signs, barricades, plastic drums and other traffic maintenance items. The Contractor shall replace missing and/or damaged traffic control devices immediately, at no additional cost to the City.

1. Construction Influence Area (CIA). The CIA shall consist of, at each location, the width of the right-of-way and easements, and the limits of any advance temporary construction signing shown on the plans and applicable maintaining traffic typicals along the street under construction and any/all cross streets. Posted detour routes are not considered part of the CIA.

The Contractor shall furnish, erect, maintain, and upon completion of the work, remove all traffic control devices within and around the CIA, and along posted detour routes, for the safety and protection of traffic. This includes, but is not limited to, regulatory and warning signs, barricades, channeling devices and other minor devices where required by the Engineer.

The Contractor shall coordinate its operations with all subcontractors, utilities, and/or other contractors performing work on this and other projects within, or adjacent to, the Construction Influence Area (CIA). The contractor shall avoid conflicts in maintaining traffic operations, signing, and orderly progress of other contract work.

2. Permits. Prior to the start of construction, the Contractor shall obtain a "Right-of-Way" Permit from City of Ann Arbor Customer Services Unit. The Contractor shall notify the Project Engineer and obtain a "Traffic Detour or Lane Closure" Permit from City of Ann Arbor Project Management Services Unit a minimum of 72 business hours prior to the implementation of any traffic shifts, lane closures and street closures. The fees for these permits will be waived.

3. Work Times and Restrictions. All work shall be conducted Monday through Saturday between 7:00am and 8:00pm; unless an alternate plan identifying the days and hours of work has been authorized by the City prior to commencement of construction. Should night work be required for any reason, the Project Engineer must be notified three (3) working days (72 hours) in advance of such work, and the work must have the approval of the City prior to commencement.

Only work of an emergency nature or work required to insure traffic safety shall be performed on Sunday and only with prior approval by the City.

No road work shall be performed nor traffic interruptions be permitted, including lane closures, on Sundays, and during the Memorial Day, July 4th, and Labor Day holiday periods unless otherwise authorized by the Engineer. All streets and sidewalks that can be opened shall be opened. Trucking on or off site will not be permitted.

During non-working periods, any area with uncompleted work shall have plastic drums at specific locations and protective fencing, as directed by the Engineer, and at no additional cost to the project.

4. Traffic Restrictions. The Contractor shall, at all times, conduct its work to insure the least possible obstruction to traffic and inconvenience to the general public, businesses, and residents in the vicinity of the work.

Traffic on major streets should not be impacted between the hours of 7:00 a.m. to 9:00 a.m. and from 3:30 p.m. to 6:00 p.m. unless otherwise approved by the Engineer or as specified on the Lane Closure Permit. All major changes in traffic control shall be made either between 9:00 a.m. and 3:30 p.m. or between 7:00 p.m. and 6:30 a.m. in order to minimize interference with rush hour traffic. All traffic controls must be in place and ready for traffic each day by 6:30 a.m. and 3:30 p.m. Temporary obstruction of traffic for loading and unloading of trucks will be permitted if the Contractor provides traffic regulators (flag persons) in conformance with Part VI of the MMUTCD. During temporary obstructions, a minimum of two traffic regulators are required. The cost of traffic regulators (flag control) shall be included in the contract pay item "Minor Traffic Control, Modified, Max $___".

Access to businesses, residences, and side street(s) within the CIA shall be maintained for the duration of the project. The Contractor shall make every effort to coordinate its operations to minimize interruptions impacting this access. The Contractor shall notify the Project Engineer forty-eight (48) hours in advance of any work to be performed on or near business or residential driveways, and stage work so that it is part-width when it is necessary to work in these areas. Prohibiting access to businesses and residences will not be allowed during any phase of construction, and flagging will be required at the discretion of the Engineer.

A minimum of one lane of traffic in each direction must be maintained on Pauline Blvd at all times by use of signage and other traffic control devices unless other authorized by the Engineer.

Lane width shall be a minimum of 9 feet wide. Contractor shall schedule work so that under no circumstances traffic is stopped. The work within the CIA shall be suspended, during peak traffic hours and/or when traffic is being unduly hampered or delayed by all construction activity, at the discretion of the Engineer.

5. Emergency Services. The Contractor shall notify local police, fire departments and emergency response units a minimum of three business days (72 hours) prior to the closure of any lanes, or traffic shifts causing restricted movements of traffic or restricted access. Fire hydrants in or adjacent to the work shall be kept “live” and fire fighting forces made aware of their availability at all times during construction.

6. Project Phasing (S Division St)**.** The Contractor shall notify the Engineer a minimum of 72 hours prior to the implementation of lane or road closures. See Maintenance of Traffic plans for details and limits of construction.

A. **Stage 1 Phase 1** The work zone is limited to the east half of South Division Street from the POB to the north quadrant of East William Street. The Jefferson Street will be closed upon commencement of bumpout construction.

Jefferson Street may remain closed for the duration of the project unless directed other by the Engineer.

B. **Stage 1 Phase 2A & 2B** The work zone is extended to include the east half of South Division Street to East Huron Street. Implement lane restrictions and detours on East Williams, Liberty, and East Washington. Traffic restrictions will remain in place for the duration of the project.

C. **Stage 1 Phase 3** The south lane of East Huron Street may not be closed until cold milling operations are set to begin. Upon placing the top course, open East Huron Street.

D. **Stage 2 Phase 1** The work zone is limited to the west half of South Division Street from the POB to the north quadrant of East William Street. The Jefferson Street will be closed upon commencement of bumpout construction.

Jefferson Street may remain closed for the duration of the project unless directed other by the Engineer.

E. **Stage 2 Phase 2A & 2B** The work zone is extended to include the west half of South Division Street to East Huron Street. Traffic restrictions of intersection streets from Stage 1 are still in effect.

F. **Stage 2 Phase 3** The south lane of East Huron Street may not be closed until cold milling operations are set to begin. Upon placing the top course, open East Huron Street.

d. Measurement and Payment. The completed work for maintaining traffic, as described, will be paid for at the contract unit prices for the following items in accordance with subsection 812.04 of the Standard Specifications for Construction.

Pay Item	**Pay Unit**
Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	Each
Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	Each
Channelizing Device, 42 inch, Furn	Each
Channelizing Device, 42 inch, Oper	Each
Pavt Mrkg, Longit, 6 inch or Less Width, Rem	Foot
Pavt Mrkg, Type NR, Paint, 4 inch, White, Temp	Foot
Pavt Mrkg, Type NR, Paint, 4 inch, Yellow, Temp	Foot
Pavt Mrkg, Type R, 4 inch, White, Temp	Foot
Pavt Mrkg, Type R, 4 inch, Yellow, Temp	Foot
Lighted Arrow, Type C, Furn	Each

Lighted Arrow, Type C, Oper ..... Each
Plastic Drum, High Intensity, Lighted, Furn ..... Each
Plastic Drum, High Intensity, Lighted, Oper ..... Each
Sign, Portable, Changeable Message, Furn ..... Each
Sign, Portable, Changeable Message, Oper ..... Each
Sign, Type B, Temp, Prismatic, Furn ..... Square Foot
Sign, Type B, Temp, Prismatic, Oper ..... Square Foot
Traf Regulator Control ..... Lump Sum
Minor Traffic Control, Modified, Max $___ ..... Lump Sum

The estimated quantities for maintaining traffic are based on the signing and related traffic control devices deemed necessary for this project as shown on the plans and applicable MDOT Maintaining Traffic Typicals, and include traffic regulators, lighted arrows and minor traffic devices.

Payment for furnishing and operating Type III Barricades and 42 inch Channelizing Devices shall be for the maximum quantity in use at any one time during the work for the entire project (all streets).

Measurement and payment for furnishing Lighted Arrows and Portable Changeable Message Signs will be based on the maximum number of units required for the entire project at any one time. Measurement and payment for operating Lighted Arrows and Portable Changeable Message Signs will be based on the maximum number of units in operation at any one time and will be paid after the initial placement into service and for each relocation to another street that follows.

Payment for furnishing and operating Plastic Drums and Temporary Type B Signs shall be for the maximum quantity in use on each street at any one time.

No Parking Signs will be measured as the maximum number installed on each street at any one time. The unit price includes the removal and return of No Parking signs to the City upon completion of the project. The Contractor shall be charged for the replacement cost for each damaged or unreturned sign.

Any additional signing or maintaining traffic devices required to expedite the construction shall be at the Contractor's expense unless approved by the Engineer.

Temporary traffic control devices will be paid for only once irrespective of the number of times moved. Traffic control devices not paid for separately shall be included in the payment for the pay item "Minor Traffic Control, Modified, Max $___".

CITY OF ANN ARBOR

DETIALED SPECIFICATION
FOR
PARKING METERS

AA:DAD 1 of 2 03/27/17

a. Description. This work shall consist of removing parking meter standards and installing new meter standards where directed.

b. Materials. Republic Parking will supply all standards. Standards are steel tubes 60” to 63” in length and 2” square.

All sand shall meet the gradation of MDOT Class II granular material in accordance with Section 902 of the 2012 MDOT Standard Specifications for Construction.

Concrete shall be Grade P2 in accordance with Section 601 of the MDOT 2012 Standard Specifications for Construction.

c. Construction.

1. Removal. Meter standards requiring removal will be marked by the City. Prior to removal, contact Republic Parking at (734) 761-7235 for the removal of the parking meter heads. The Contractor is not permitted to remove the meter heads, nor remove the standard with the meter head still in place.

The Contractor shall removal the standard and concrete foundation. The void is to be backfilled with Class II Granular Material or Engineer approved backfill. The standards and concrete will then become of the property of the Contractor and shall be properly disposed of offsite.

2. Installation. The City will stake the location for the new meter locations. The location is approximately 18" to 24” from curb line, and 48” from front end of stall for parallel parking.

A. Installation in sidewalk/concrete. Core an 8” diameter hole through the concrete sidewalk at the meter location points. When working in close proximity of underground lines, use caution to avoid drilling beyond the thickness of the sidewalk in order to prevent damage to lines. For installation in new sidewalk, the standard may be installed prior to placing walk, or the walk may be placed around a form in the location of the proposed standard.

After drilling through the sidewalk, excavate approximately 30” deep, with an 8” diameter opening, and tapering outward to 10” at the bottom.

Set the standards into the concrete filled holes with the REAMED END to the TOP and WEEP HOLE on LOWER END FACING THE STREET. The meter standard is to project 37” above the sidewalk level.

Check the vertical plumb with the surface level, first in one direction and then in the other and then hold the standard securely in position with forms until the concrete has set.

After the standards have been plumbed, check the vertical alignment down the street and the height uniformity, making such corrections and adjustments as necessary.

B. Installation in soil. Excavate holes approximately 30" deep, with an 8" diameter opening, and tapering outward to 10" at the bottom.

Set the standards into the concrete filled holes with the REAMED END to the TOP and WEEP HOLE on LOWER END FACING THE STREET. The meter standard is to project 37" above the finished grade.

Check the vertical plumb with the surface level, first in one direction and then in the other and then hold the standard securely in position with forms until the concrete has set.

After the standards have been plumbed, check the vertical alignment down the street and the height uniformity, making such corrections and adjustments as necessary.

The Contractor is responsible for the protection of the standard until the concrete foundation has set. If the standard is not plumb upon curing of the foundation, then the standard will be removed and reset at the contractor's expense. The Contractor shall use plastic drums and caution tape, "Wet Paint" signs, or other methods to protect the standards.

Meter heads will be installed by Republic Parking upon installation of the standards.

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

Pay Item	**Pay Unit**
Remove Parking Meters	Each
Install Parking Meters	Each

Remove Parking Meters and **Install Parking Meters** will be measured and paid for at the respective contract unit prices for each meter that is removed and each meter that is installed, which price shall be payment in full for all labor, equipment and material needed to accomplish this work.

Disposal of standards, concrete foundations, and all excavated material is included in each respective unit price for the above items.

Material to backfill voids after removing the standards is included in the pay item "Remove Parking Meters".

DETAILED SPECIFICAITON
FOR
TEMPORARY PEDESTRIAN TYPE II BARRICADE

a. Description. This work consists of furnishing, installing, maintaining, relocating, and removing a 4-foot wide temporary pedestrian Type II barricade section as identified in the proposal or on the plans. Use temporary pedestrian Type II barricades to close non-motorized facilities including sidewalks, bicycle paths, pedestrian paths, and shared use paths that are not part of the roadway. One pedestrian Type II barricade is defined as a 4-foot barricade section including all supports, ballast, and hardware. Damaged temporary pedestrian barricades must be replaced as directed by the Engineer.

b. Materials. Provide a temporary pedestrian Type II barricade that meets the requirements of *National Cooperative Highway Research Program Report 350 (NCHRP 350)* or *Manual for Assessing Safety Hardware* (MASH), in addition to meeting the following requirements:

1. Provide 4-foot wide barricade sections designed to interconnect to ensure a continuous *Americans with Disabilities Act (ADA)* compliant tactile barrier. Ensure the connection includes provisions to accommodate non-linear alignment as well as variations in elevation at the installation area.

2. Ensure the top surface of the barricade is designed to function as a hand-trailing edge, and has a height between 32 and 38 inches. Ensure the lower edge of the barricade is no more than 2 inches above the surface of the non-motorized facility. Ensure the top edge of the bottom rail of the barricade is a minimum of 8 inches above the surface of the non-motorized facility. The barricade may have a solid continuous face. Finally, all features on the front face of the barricade (the face in contact with pedestrians) must share a common vertical plane.

3. Equip both sides of the barricade with alternating orange and white vertical stripes of reflective sheeting. If the barricade consists of two rails, ensure both rails are sheeted. If the barricade has a solid face, two 6-inch bands of sheeting will be required; one near the top and one near the bottom of each section. Ensure this sheeting meets or exceeds the requirements of *ASTM D 4956* Type IV sheeting. Ensure the stripes of reflective sheeting are aligned vertically.

c. Construction. Construct the temporary pedestrian Type II barricade in accordance with the manufacturer's recommendations, ADA, the plans, and the following requirements:

1. Install the barricade at the 'hard closure' of each area of sidewalk replacement or closure, as shown on the plans and as directed by the Engineer. Interconnect all barricade sections using hinge components if necessary to ensure a continuous detectable edge for the entire installation. Ensure the barricade is ballasted according to the manufacturer's recommendations to ensure stability during wind events and contact with pedestrians.

2. When the barricade is installed near motor vehicle traffic, ensure reflective sheeting is visible to motorists.

3. When pedestrian Type II barricades are used to close a non-motorized facility, ensure a sufficient number of 4-foot sections are used to block the entire width of the facility.

The barricade may extend outside the edge of the non-motorized facility but must not be less than the full width of the facility.

4. If sections of multiple colored barriers are used (i.e. safety orange and white) install the sections such that the colors alternate to increase conspicuity.

5. Ensure pedestrian Type II barricades are not used to close a motor vehicle facility. Ensure these barricades are not used to guide pedestrian traffic on a motor vehicle facility in the presence of active traffic. This prohibition includes bicycle/shared use lanes or shoulders in the presence of active traffic.

d. Measurement and Payment. The completed work, as described, will be included in the item “Minor Traffic Control, Maximum $”, which includes all labor, equipment, and materials to furnish, install, maintain, relocate, and remove one 4-foot barricade section. This includes all rails, supports, ballast, hinge points, reflective sheeting, and miscellaneous hardware needed to install and maintain a barricade section.

CITY OF ANN ARBOR

NOTICE TO BIDDERS

AA:JN 1 of 1 3/11/16

Parking Meter Removal and Covers

The proposed work and/or staging area will be along streets which contain parking meters for on-street parking. The Contractor shall coordinate directly with Republic Parking, telephone (734) 761-7235 for the removal of meter heads from standards requiring removal and for the provision of Parking Meter Covers (Meter Bags), which, when properly installed by the Contractor in a timely manner, will prohibit parking at metered parking spaces.

Parking Meter Covers
Meter Bags must be installed a minimum of 24-hours prior to the desired time of enforcement. Written documentation and/or visual inspection by City personnel may be required to adequately verify this requirement. The Parking Enforcement Office will be unable to enforce the desired "No-Parking Zone" unless the Contractor installs the Meter Bags in a proper and timely manner.

The Contractor has the sole responsibility for obtaining the Meter Bags from Republic Parking, placement, and maintenance. Delays due to on-street parking shall not be cause for any extra payments to the Contractor.

Information regarding obtaining the Meter Bags, and the temporary prohibition of on-street parking, is available from Republic Parking, telephone (734) 761-7235.

Republic Parking is waiving all Meter Bag rental fees for this project. The Contractor will be responsible for all costs associated with obtaining, installing, and maintaining the Meter Bags.

Parking Meter Removals
The project will require the removal and/or relocation of Parking Meters. The Contractor must contact Republic Parking at (734) 761-7235 at least three (3) days prior to removing the standards marked for removal. Republic Parking will remove the meter heads from the existing standards. The standards may not be removed until the meter heads have been removed by Republic Property. The Contractor may not remove the meter heads.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
ACCEPTANCE OF HOT MIX ASPHALT MIXTURE ON LOCAL AGENCY PROJECTS

CFS:KPK 1 of 7 APPR:CJB:JWB:07-05-16
FHWA:APPR:07-05-16

a. Description. This special provision provides sampling and testing requirements for local agency projects using the roller method and the nuclear density gauge testing. Provide the hot mix asphalt (HMA) mixture in accordance with the requirements of the standard specifications, except where modified herein.

b. Materials. Provide aggregates, mineral filler (if required), and asphalt binder to produce a mixture proportioned within the master gradation limits shown in the contract, and meeting the uniformity tolerance limits in Table 1.

Table 1: Uniformity Tolerance Limits for HMA Mixtures

Parameter			Top and Leveling Course		Base Course	
Number	Description		Range 1 (a)	Range 2	Range 1 (a)	Range 2
1	% Binder Content		-0.30 to +0.40	±0.50	-0.30 to +0.40	±0.50
2	% Passing	# 8 and Larger Sieves	±5.0	±8.0	±7.0	±9.0
		# 30 Sieve	±4.0	±6.0	±6.0	±9.0
		# 200 Sieve	±1.0	±2.0	±2.0	±3.0
3	Crushed Particle Content (b)		Below 10%	Below 15%	Below 10%	Below 15%

a. This range allows for normal mixture and testing variations. The mixture must be proportioned to test as closely as possible to the Job-Mix-Formula (JMF).
b. Deviation from JMF.

Parameter number 2 as shown in Table 1 is aggregate gradation. Each sieve will be evaluated on one of the three gradation tolerance categories. If more than one sieve is exceeding Range 1 or Range 2 tolerances, only the one with the largest exceedance will be counted as the gradation parameter.

The master gradation should be maintained throughout production; however, price adjustments will be based on Table 1. Aggregates which are to be used in plant-mixed HMA mixtures must not contain topsoil, clay, or loam.

c. Construction. Submit a Mix Design and a JMF to the Engineer. Do not begin production and placement of the HMA until receipt of the Engineer's approval of the JMF. Maintain the binder content, aggregate gradation, and the crushed particle content of the HMA mixture within the Range 1 uniformity tolerance limits in Table 1. For mixtures meeting the definition of top or leveling course, field regress air void content to 3.5 percent with liquid asphalt cement unless

specified otherwise on HMA application estimate. For mixtures meeting the definition of base course, field regress air void content to 3.0 percent with liquid asphalt cement unless specified otherwise on HMA application estimate.

Ensure all persons performing Quality Control (QC) and Quality Assurance (QA) HMA field sampling are "Local Agency HMA Sampling Qualified" samplers. At the Pre-Production or Pre-Construction meeting, the Engineer will determine the method of sampling to be used. Ensure all sampling is done in accordance with *MTM 313 (Sampling HMA Paving Mixtures)* or *MTM 324 (Sampling HMA Paving Mixtures Behind the Paver)*. Samples are to be taken from separate hauling loads.

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

Obtain samples that are representative of the day's paving. Sample collection is to be spaced throughout the planned tonnage. One sample will be obtained in the first half of the tonnage and the second sample will be obtained in the second half of the tonnage. If planned paving is reduced or suspended, when paving resumes, the remaining sampling must be representative of the original intended sampling timing.

Ensure all persons performing testing are Bit Level One certified or Bit QA/QC Technician certified.

Ensure daily test samples are obtained, except, if the first test results show that the HMA mixture is in specification, the Engineer has the option of not testing additional samples from that day.

At the Pre-Production or Pre-Construction meeting, the Engineer and Contractor will collectively determine the test method for measuring asphalt content (AC) using *MTM 319 (Determination of Asphalt Content from Asphalt Paving Mixtures by the Ignition Method)* or *MTM 325 (Quantitative Extraction of Bitumen from HMA Paving Mixtures)*. Back calculation will not be allowed for determining asphalt content.

Ensure all labs performing local agency acceptance testing are qualified labs per the *HMA Production Manual* and participate in the MDOT round robin process, or they must be *AASHTO Materials Reference Laboratory* (AMRL) accredited for *AASHTO T 30* or *T 27*, and *AASHTO T 164* or *T 308*. Ensure on non-National Highway System (NHS) routes, Contractor labs are made available, and may be used, but they must be qualified labs as previously stated. Contractor labs may not be used on NHS routes. Material acceptance testing will be completed by the Engineer within 14 calendar days, except holidays and Sundays, for projects with less than 5,000 tons (plan quantity) of HMA and within 7 calendars days, except holidays and Sundays, for projects with 5,000 tons (plan quantity) or more of HMA, after the Engineer has obtained the samples. QA test results will be provided to the Contractor after the Engineer receives the QC test results. Failure on the part of the Engineer or the laboratory to provide Quality Assurance test results within the specified time frame does not relieve the Contractor of their responsibility to provide an asphalt mix within specifications.

The correlation procedure for ignition oven will be established as follows. Asphalt binder content based on ignition method from MTM 319. Gradation (*ASTM D 5444*) and Crushed particle content *(MTM 117)* based on aggregate from *MTM 319*. The incineration temperature will be established at the Pre-Production Meeting. The Contractor will provide a laboratory mixture sample to the acceptance laboratory to establish the correction factor for each mix. Ensure this sample is provided to the Engineer a minimum of 14 calendar days prior to production.

For production/mainline type paving, the mixture may be accepted by visual inspection up to a quantity of 500 tons per mixture type, per project (not per day). For non-production type paving defined as driveways, approaches, and patching, visual inspection may be allowed regardless of the tonnage.

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

Contractor operations will be suspended when the mixture is determined to be out-of-specification, but contract time will continue to run. The Engineer may issue a Notice of Non-Compliance with Contract Requirements (Form 1165), if the Contractor has not suspended operations and taken corrective action. Submit a revised JMF or proposed alterations to the plant and/or materials to achieve the JMF to the Engineer. Effects on the Aggregate Wear Index (AWI) and mix design properties will be taken into consideration. Production and placement cannot resume until receipt of the Engineer's approval to proceed.

Pavement in-place density will be measured using one of two approved methods. The method used for measuring in-place density will be agreed upon at a pre-production or pre-construction meeting.

Pavement in-place density tests will be completed by the Engineer during paving operations and prior to traffic staging changes. Pavement in-place density acceptance testing will be completed by the Engineer prior to paving of subsequent lifts and being open to traffic.

Option 1 – Direct Density Method

Use of a nuclear density gauge requires measuring the pavement density using the Gmm from the JMF for the density control target. The required in-place density of the HMA mixture must be 92.0 to 98.0 percent of the density control target. Nuclear density testing and frequency will be in accordance with the *MDOT Density Testing and Inspection Manual*.

Option 2 – Roller Method

The Engineer may use the Roller Method with a nuclear or non-nuclear density gauge to document achieving optimal density as discussed below.

Use of the density gauge requires establishing a rolling pattern that will achieve the required in-place density. The Engineer will measure pavement density with a density gauge using the Gmm from the JMF for the density control target.

Use of the Roller Method requires developing and establishing density frequency curves, and meeting the requirements of Table 2. A density frequency curve is defined as the measurement and documentation of each pass of the finished roller until the in-place density results indicate a decrease in value. The previous recording will be deemed the optimal density. The Contractor is responsible for establishing and documenting an initial or QC rolling pattern that achieves the optimal in-place density. When the density frequency curve is used, the Engineer will run and document the density frequency curve for each half day of production to determine the number of passes to achieve the maximum density. Table 5, located at the end of this special provision, can be used as an aid in developing the density frequency curve. The Engineer will perform density tests using an approved nuclear or non-nuclear gauge per the manufacturer's recommended procedures.

Table 2: Minimum Number of Rollers Recommended Based on Placement Rate

Average Laydown Rate, Square Yards per Hour	Number of Rollers Required (a)	
	Compaction	Finish
Less than 600	1	1 (b)
601 - 1200	1	1
1201 - 2400	2	1
2401 - 3600	3	1
3601 and More	4	1

a. Number of rollers may increase based on density frequency curve.
b. The compaction roller may be used as the finish roller also.

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

Ensure the initial breakdown roller is capable of vibratory compaction and is a maximum of 500 feet behind the paving operations. The maximum allowable speed of each roller is 3 miles per hour (mph) or 4.5 feet per second. Ensure all compaction rollers complete a minimum of two complete rolling cycles prior to the mat temperature cooling to 180 degrees Fahrenheit (F). Continue finish rolling until all roller marks are eliminated and no further compaction is possible. The Engineer will verify and document that the roller pattern has been adhered to. The Engineer can stop production when the roller pattern is not adhered to.

d. Measurement and Payment. The completed work, as described, will be measured and paid for using applicable pay items as described in subsection 501.04 of the Standard Specifications for Construction, or the contract, except as modified below.

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

If acceptance tests, as described in section c. of this special provision, show that a Table 1 mixture parameter exceeds the Range 1, but not the Range 2, tolerance limits, that mixture parameter will be subject to a 10 percent penalty. The 10 percent penalty will be assessed based on the acceptance tests only unless the Contractor requests that the 10,000 gram sample part retained for possible dispute resolution testing be tested. The Contractor has 4 calendar days from receipt of the acceptance test results to notify the Engineer, in writing, that dispute resolution testing is requested. The Contractors QC test results for the corresponding QA test results must result in an overall payment greater than QA test results otherwise the QA tests will not be allowed to be disputed. The Engineer has 4 calendar days to send the dispute resolution sample to the lab once dispute resolution testing is requested. The dispute resolution sample will be sent to an independent lab selected by the Local Agency, and the resultant dispute test results will be used to determine the penalty per parameter, if any. Ensure the independent lab is a MDOT QA/QC qualified lab or an AMRL HMA qualified lab. The independent lab must not have conflicts of interest with the Contractor or Local Agency. If the dispute testing results show that the mixture parameter is out-of-specification, the Contractor will pay for the cost of the dispute resolution testing and the contract base price for the material will be adjusted, based on all test result parameters from the dispute tests, as shown in Table 3 and Table 4. If the dispute test results do not confirm the mixture parameter is out-of-specification, then the Local Agency will pay for the cost of the dispute resolution testing and no price adjustment is required.

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

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

The laboratory (MDOT Central Laboratory or independent lab) will complete all Dispute Resolution testing and return test results to the Engineer, who will provide them to the Contractor, within 13 calendar days upon receiving the Dispute Resolution samples.

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

Table 3: Penalty Per Parameter

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

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

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

Table 4: Calculating Total Price Adjustment

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

Table 5: Density Frequency Curve Development

Tested by: _____ Date/Time: _____

Route/Location:		Air Temp:
Control Section/Job Number:		Weather:
Mix Type:	Tonnage:	Gauge:
Producer:	Depth:	Gmm:

Roller #1 Type:

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Roller #2 Type:

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Roller #3 Type:

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Summary: _____

_____

_____

_____

_____

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
HOT MIX ASPHALT PRICES FOR ADJUSTMENTS

AA:DAD 1 of 1 APPR:LFS:BCW:11-25-15

a. Description. This special provision identifies the price(s) that will be used in all payment adjustments for work related to hot mix asphalt item(s) used in conjunction with this contract.

If the Contractors bid is lower than the established base price any positive adjustment will use the Contractors bid in the calculation for the adjustment. If the Contractors bid is lower than the established base price any negative adjustment will use the base price established herein in the calculation for the adjustment.

If the Contractors bid is higher than the established base price any positive adjustment will use the Contractors bid in the calculation for the adjustment. If the Contractors bid is higher than the established base price any negative adjustment will use the Contractors bid in the calculation for the adjustment.

b. Base Unit Prices. The base price(s) shown below will be used as specified above in calculating adjustments for the pay item(s) listed herein:

Pay Item Code	Pay Item Name	Unit	Base Price
5010025	Hand Patching	Ton	$83.78
5010034	HMA, 36A	Ton	$60.80
5010045	HMA, 3E3	Ton	$56.48
5010051	HMA, 4E3	Ton	$60.26
5010057	HMA, 5E3	Ton	$62.10
5010061	HMA Approach	Ton	$86.48
5010703	HMA, LVSP	Ton	$54.11