Detroit Brownfield Redevelopment Authority  
LAND DEVELOPMENT PROJECT  
Detroit, Michigan

**Bid Package**  
**TERMINAL STREET RECONSTRUCTION AND PARKING LOT PROJECT**  
associated with the  
**DBRA LAND ASSEMBLY PROJECT**

The City of Detroit Brownfield Redevelopment Authority (DBRA) invites experienced, well-qualified, and licensed General Contractors with qualifications to submit a Bid to:

Reconstruction of approximately 1,000 ft. of Terminal Street from E. Jefferson Avenue to Edlie Street. The scope includes demolition of existing concrete roadway, sidewalks, fence, driveways, storm sewers, and fire hydrants. Construct new 36’ wide 10” concrete pavement with integral curb, 12”aggregate base, widening of the E. Jefferson intersection, sidewalks, storm sewer, fire hydrants, fencing, earthwork, ADA ramps, striping and restoration.

Construct a 40’ by 230’ parking lot at the southeast corner of Jefferson and Terminal Street. The scope includes removal of stone surface, demolition of existing buried building slab and foundations, earth excavation, storm sewers, aggregate base, HMA pavement, concrete approach, concrete curb and gutter, lighting, fencing and landscaping.

The document sections identified in the following Table of Contents, together with any addenda subsequently issued by the DBRA in accordance with procedures set forth in this Bid Package constitute the entirety of this solicitation, generally referred to hereafter as the “Bid Package” and the sole basis for the Bids submitted in response to the DBRA’s solicitation.

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SECTION 1  INVITATION TO SUBMIT A RESPONSIVE BID

The City of Detroit Brownfield Redevelopment Authority (DBRA) invites experienced, well-qualified, and licensed General Contractors with qualifications to submit a Bid to:

Reconstruction of approximately 1,000 ft. of Terminal Street from E. Jefferson Avenue to Edlie Street. The scope includes demolition of existing concrete roadway, sidewalks, fence, driveways, storm sewers, and fire hydrants. Construct new 36’ wide 10” concrete pavement with integral curb, 12”aggregate base, widening of the E. Jefferson intersection, sidewalks, storm sewer, fire hydrants, fencing, earthwork, ADA ramps, striping and restoration.

Construct a 40’ by 230’ parking lot at the southeast corner of Jefferson and Terminal Street. The scope includes removal of stone surface, demolition of existing buried building slab and foundations, earth excavation, storm sewers, aggregate base, HMA pavement, concrete approach, concrete curb and gutter, lighting, fencing and landscaping.

Refer to the Scope of Work in Section V.

The selected contractor shall be required to proactively inform and coordinate all aspects of the demolition with the DBRA, City of Detroit’s Buildings, Safety Engineering and Environmental Department (BSEED), City Departments, other DBRA contractors working in the immediate area, and the surrounding area property owners and residents.

A. PURPOSE:
The DBRA is assembling certain properties in Detroit (estimated aggregate total of the properties approximately 200 acres) for the purpose of attracting industrial facility development; generally referred to herein as the Land Assembly Project.

The DBRA intends to obtain Bids in response to this Bid Package and to directly contract with the most responsive Bidder on an expedited basis.

B. ISSUING AGENCY

The issuing entity and owner shall be:

City of Detroit Brownfield Redevelopment Authority (DBRA)
500 Griswold St, Suite 2200
Detroit, MI 48226

The DBRA will directly contract with the Bidder selected by the DBRA as the most responsive in the best interest of the DBRA. The contracted Bidder shall commence the provision of Services only upon written notification by the designated DBRA authorized representative after the DBRA’s acknowledged receipt of the specified and required pre-commencement documentation (including insurance, executed contract or notice to proceed).

C. PRE-BID MEETING

A Pre-Bid Meeting is planned. Bidders are expected to visit the properties and become familiar with the existing conditions.

D. ISSUING OF BID DOCUMENTS

Questions regarding the Bid Package and scope after the Pre-bid Meeting can be submitted by e-mail up to Tuesday, July 11, 2023 to orobertson@degc.org.

E. DUE DATE AND TIME & DELIVERY OF BIDS

Complete Bids shall be received by the DBRA no later than 3PM EST, Friday, July 14, 2023.
Bids shall be emailed with the subject “Bid for the TERMINAL STREET RECONSTRUCTION AND PARKING LOT PROJECT” and addressed to:

  Orobertson@degc.org
  Attn: Mr. Orza Robertson

All Bids shall use best efforts to comply with the prevailing Equal Opportunity and Labor Standard Provisions of the City of Detroit. Each Bidder must demonstrate its ability to obtain CRIO approval, Tax Clearances from the City of Detroit, W-9 and a Certificate of Liability Insurance as a condition of award ability.

Additional information regarding this Bid Package may be requested by email to Orza Robertson at orobertson@degc.org All response to questions during the Bid Period will be responded, as determined necessary by the DBRA, in an Addendum to all Bidders who have attend the Pre-Bid meeting.

F. GENERAL PROJECT DESCRIPTION

The Land Assembly Project was established to assemble, secure ownership, and prepare blighted properties to attract industrial / manufacturing facilities by private developers.

The Work solicited by this Bid Package properly performed are described in Section V – Scope of Work.

The Scope of Services for this Bid Package includes, but is not limited to, the provision of all necessary and incidental labor, equipment, tools, material, supplies, and supervision to properly perform the Services necessary and incidental to provide the full scope of the Work specified in Section III.

G. SUBMITTAL PROCEDURES

The DBRA reserves the right, in the interest of maximizing obtaining fair and competitive Bids, to directly contact and provide to one copy of the Bid Package to prospective Bidders that have previously demonstrated to the satisfaction of the DBRA the capability and experience to expeditiously manage, schedule and complete the Pre-development Site Preparation Activities.

Bids may not be withdrawn for a period of 90 days after the submission of the Bid. The DBRA reserves the right to waive any abnormalities in any Bid, and to reject any or all Bids in whole or in part whenever such waiver or rejection is in the best interest of the DBRA.

Bids shall be submitted only on the unaltered Bid Form included in Section V.

A Bid Bond is required to accompany the submitted bid in the amount of 5% of the Base Bid amount.
THE CITY OF DETROIT BROWNFIELD REDEVELOPMENT AUTHORITY  
LAND ASSEMBLY PROJECT – TERMINAL STREET RECONSTRUCTION AND PARKING LOT PROJECT 
June 2023

SECTION II – INSTRUCTIONS TO BIDDERS

Part I – Project Parameters

Project Name: Land Assembly Project

Contracting Agency: The City of Detroit Brownfield Redevelopment Authority (“DBRA”)  
500 Griswold St, Suite 2200, Detroit, Michigan 48226

Project Area: The Project is located within the City of Detroit, County of Wayne, State of Michigan,

Bid Package Title: Bid Package “TERMINAL STREET RECONSTRUCTION AND PARKING LOT PROJECT”

Pre-Bid Meeting: A Pre-Bid Meeting via ZOOM shall be held Thursday, June 22, 2023 at 10AM EST

Bid Due Date: Friday, July 14, 2023 at 3PM EST.

Deliver Bids To: Email to orobertson@degc.org

Part II – Basis of Bid

This Bid Package sets forth all terms and conditions under which the DBRA and the Bidder shall enter into a Contract for the complete performance of constructing a parking lot as specified in Section V.

Bids, submitted in accordance with the requirements of this Bid Package, will be evaluated by the DBRA staff. Based on DBRA staff recommendations, the DBRA Board may approve the selection of the Bidder deemed, in the best interests of the DBRA, to be the most experienced, well-qualified, appropriately priced and capable of performing the construction of a truck storage yard.

Upon Board authorization, the DBRA will contract with the Bidder, using the a contract similar in form to the Contract form, terms and conditions specified in Section IV incorporating the elements of the Bid and Services deemed in the DBRA’s best interests. The Contract between the DBRA and the Board approved Bidder selected by the DBRA shall be based on the Bid submitted on the Section III Bid Form.

Bids will become on submission the property of the DBRA and will not be opened publicly or returned. Bids shall remain valid for not less than 90 days after the date submitted. The DBRA reserves the right to reject any or all Bids.

The Bidder shall include in the Bid Price the full reimbursement for all wages, labor taxes & fringe benefits, overheads & profits, insurance, personal protection equipment, transportation, communication (cell phones, internet, printing), materials, and equipment. All taxes involved in the completing the Work shall promptly paid to the appropriate taxing entity for all taxes owed in connection with the Work including, but not limited to, Michigan State Sales Tax and Use Tax.

Part III – Framework for Bids

A. GENERAL

Only Bidders with proven and documented qualifications and capacity required to provide the specified Services will be invited to submit a Bid in response to this Bid Package. Bids are to be submitted using only the Bid Form provided in Section III of this Bid Package; Bids submitted in any other format will be deemed non-responsive. A qualified Bidder, for the purpose of this Bid Package, is a Contractor properly licensed to provide services in the State of Michigan, fully insured and experienced in providing the Services specified in the Section V Scope of Services within the City of Detroit, which can identify and commit qualified personnel to perform the Service in a timely and comprehensive manner. A qualified Bidder shall provide examples and evidence of the provision of similar and equal Services upon request by the DBRA.
B. DELIVERY OF BIDS
C. DATE FOR RECEIVING BIDS
Bids shall be delivered to the designated location on or before the Bid due date and time specified in Section I – Invitation to Bidders. Bids transmitted via telephone or a written communication in any format other than the Bid form provided in the Bid Package are invalid and will not receive consideration.

D. BIDDERS’ REPRESENTATION
By submitting a Bid the Bidder represents and certifies to the DBRA that, after thorough examination of the Bid Package Document:

- The Bidder has read and understands the Bid Package and the Bid is voluntarily submitted in accordance with the Bid Package with the understanding that the DBRA has no obligation to award a contract to the Bidder or compensate the Bidder in any way for the preparation and submission of a Bid in response to this Bid Package.
- The Bidder is familiar with the local labor conditions and City of Detroit prevailing wage ordinance.
- The Bidder commits and agrees to use its best efforts to comply with all City of Detroit executive orders governing the provision of Services on behalf of the City of Detroit including certification of Civil Rights, Inclusion and Opportunity (CRIO) department, the STEP program, and approval and City of Detroit tax clearance.
- The Bidder has appropriate licenses and the expertise, capacity and experienced organization to perform and complete the Services in accordance with the Bid Package.
- The Bidder is in the construction industry and is knowledgeable of the quality of workmanship standards customary in the Metropolitan Detroit area and is able to coordinate and provide the Services in accordance with the requirements of the governing City Departments.
- The Bidder agrees to expeditiously execute the Contract similar to the form provided in the Section IV, which incorporates the accepted elements of the Bid.
- The Bidder agrees to proceed with the Services under the Notice to Proceed while the Contract is being finalized for execution.

E. PREADWARD CONFERENCE
Bidders may be required to meet with the DBRA to review their Bid and the Scope of Services prior to Bid award. This meeting is distinct from the pre-Bid meeting and will be arranged by the DBRA.

F. INTERPRETATION OR CORRECTION OF BID PACKAGE
It shall be the Bidder’s responsibility to ensure that all documents identified in the Bid Package are received and that Bidder’s Bid is based upon the complete Bid Package including all addenda that may be issued. Bidders shall promptly notify the DBRA of any ambiguity, inconsistency or error they may discover upon examination of the Bid Package Project Area, or local conditions.

During the Bid Period questions regarding the Bid Package must be submitted by e-mail to:

Orza Robertson at orobertson@degc.org

G. SUBSTITUTIONS – NOT USED

H. ADDENDA
Requirements contained in the Bid Package shall apply to all Addenda, and the general character of the Services called for in the Addenda shall be the same as specified in the Bid Package for similar Services Incidental Work necessitated by Addenda shall be included in the Bids, even though not specifically mentioned.

Addenda shall become a part of the Bid Package, and shall be acknowledged in the Bidder’s Bid.

I. FORM AND STYLE OF BIDS
Bidders shall submit two (2) signed copies of the completed Bid. Each copy of the Bid shall include the legal name of Bidder and a statement that the Bidder is a sole proprietor, a partnership, a corporation, or any other legal entity.

All requested alternates and separate prices shall be included in the Bid. If an alternate price does not involve a change in the base Bid, enter "NO CHANGE". Bidder shall make no additional stipulations in the Bid, or qualify the Bid in any other manner.
J. MODIFICATION OR WITHDRAWAL OF BID
A Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids.

K. REJECTION OF BIDS
The DBRA shall have the right to reject any or all Bids.

L. ACCEPTANCE OF BID (SELECTION)
The DBRA shall have the right to waive any informality, abnormality, or irregularity in any Bid received in determining and selecting the most responsive Bid considered in the best interests of the DBRA, on the basis of the sum of the base Bid along with the alternates and/or separate prices deemed acceptable.

M. TIME OF COMMENCING SERVICES AND COMPLETION OF WORK
The Bidder, if awarded a Contract by the DBRA for the Work, shall be required to commence the Work immediately upon receipt of a Notice to Proceed from the DBRA. The Bidder shall commence and proceed with the Work at all times in close coordination with the DBRA’s Project Manager.

O. SUBCONSULTANTS / SUBBIDDERS / SUPPLIERS
The Bidder shall be a full service provider and shall not be permitted to assign or subcontract the provision of any portion of the Services without the sole written approval of the DBRA.

P. BOND REQUIREMENTS
A Bid Bond in the amount of 5% of the Base Bid amount is required.

Performance and Payment bonds in 100% of the Contract Amount as amended and defined by MCL Act 213 of 1963 Section 129 for Public Works projects shall be required and include in Base Bid Amount.

END OF SECTION
SECTION III – SCOPE OF SERVICES

I.  GENERAL PROJECT DESCRIPTION
The reconstruction of approximately 1,000 ft. of Terminal Street from E. Jefferson Avenue to Edlie Street. The scope includes demolition of existing concrete roadway, sidewalks, fence, driveways, storm sewers, and fire hydrants. Construct new 36’ wide 10” concrete pavement with integral curb, 12” aggregate base, widening of the E. Jefferson intersection, sidewalks, storm sewer, fire hydrants, fencing, earthwork, ADA ramps, striping and restoration.

Construct a 40’ by 230’ parking lot at the southeast corner of Jefferson and Terminal Street. The scope includes removal of stone surface, demolition of existing buried building slab and foundations, earth excavation, storm sewers, aggregate base, HMA pavement, concrete approach, concrete curb and gutter, lighting, fencing and landscaping.

II. SCOPE OF SERVICES
The Construction Services to be provided by the Proposer (hereinafter referred to as the Contractor) upon the written direction of the DBRA shall include all materials, labor, equipment, tools, supervision, incidentals and profit/markup necessary to complete the scope of work noted below and the bid items noted on the bid form.

The Contractor shall perform, without limitation, the following Services required to identify and complete the full scope of Site Preparation Work:

- Attend weekly construction coordination / progress meeting.
- Coordinate onsite work activities with the soil removal contractor that is onsite.
- Supply sufficient labor, equipment and resources required to complete the project within the scheduled timeframe.
- Secure & pay for all permits required to perform the work.
- Clearing, grubbing, removal and legal off-site disposal of trees, brush and vegetation from immediate vicinity of the structures to be demolished.
- Complete demolition, removal, and disposal of all structures.

III. HOURS OF OPERATION & EMERGENCY CONTACT
The Contractor shall establish reasonable and productive hours for performing the Work with due consideration to the residents and surrounding businesses and maintain an on-site manager at all times with a 24 hour monitored cell phone number to receive emergency and public concern notifications.

END OF SECTION

SECTION IV – SAFETY REQUIREMENTS

A. GENERAL CONTRACTOR RESPONSIBILITY FOR SAFETY
The DBRA shall rely on the Project Manager’s knowledge and assurances that every Work activity shall endeavor to:

1. Maintain secure Work areas free from hazardous conditions including establishing barricades, concealed space monitoring & protection equipment, traffic controls, prohibiting dumping or collection of rubbish in the Work area.
2. Provide at all times appropriate personal protection equipment for any employee, subcontracted persons, and the general public associated, involved or affected the Contractor's performance of the Work.
3. Prevent accidents and injuries to anyone working on the Project Site which the Project Manager employs, subcontractors or arranges (knowing or otherwise) to be on the Properties during the Subcontractor's
4. Prevent injury or exposure to injury general public within the influence of the Project during the Contractor’s performance of the Work.

5. Maintain, post and distribute to all employees and workers at the project site, all “Right to Know” information for materials and equipment used by the Contractor in the performance of the Work.

The Contractor shall have the sole responsibility and obligation, to its employees, agents, advisors, consultants and subcontractors, to implement and maintain written OSHA compliant Corporate and Project Safety Program during the entire duration of the contract.

Upon notification of contract award and prior to the commencement of Work, the Project Manager shall obtain a letter, signed by an officer of each subcontractor, outlining the subcontractor’s safety policy and corporate commitment to safety and compliance with the Project Manager’s Corporate and Project Safety Program. The Project Manager will immediately provide evidence and a copy of the Safety Program to the DBRA upon request, notwithstanding, the DBRA is not responsible for assuring or monitoring the Project Manager’s safety performance or program implementation.

In the event of imminent danger or when peril exists to life, limb, or property, the Project Manager’s supervision and site staff shall have the authority and responsibility to immediately stop any or all work activities until any unsafe act or unsafe condition has ceased and otherwise corrected.

B. MIOSHA REQUIREMENTS

The Contractor shall, during execution of the Work for this Contract, promptly and fully comply with the provisions of the Michigan Occupational Safety and Health Act 154 of 1974 with particular attention paid, but not limited to, Occupational Safety and Health Administration, Department of Labor, Safety and Health Regulations for construction, and Occupational Safety and Health Standards, as printed and any changes thereto.

All fatality cases and/or accidents in which five (5) or more persons are injured in any one accident shall be reported to the District and/or Regional Office within forty-eight (48) hours from the time of occurrence:

Michigan Department of Labor Bureau of Safety Regulations
3500 North Logan, P.O. Box 30035
Lansing, Michigan 48909
(517) 3731410

Copies of the Occupational Safety and Health Act 154 of 1974 and related information on education and training programs may be secured from the offices listed above.

END OF SECTION
SECTION V – BID FORM

DBRA: Bid Package – TERMINAL STREET RECONSTRUCTION AND PARKING LOT PROJECT
Project: LAND ASSEMBLY PROJECT

Name of Bidder: __________________________________________________________

Bidder’s Address: _________________________________________________________

City / State / Zip Code: ___________________________________________________

E-Mail Address: ___________________________________________________________

Bidder’s Telephone: (_______)_____________________________________________

Submitted to: The City of Detroit Brownfield Redevelopment Authority
500 Griswold St, Suite 2200
Detroit, MI 48226
Attn: Orza Robertson

A. BID
The Undersigned, as the Authorized Agent for the Bidder, certifies that the Bidder has thoroughly examined the Bid Package and hereby submits this Bid to furnish, for compensation by the DBRA in the amounts stated in this Bid for, all necessary and incidental labor, materials, tools, equipment, all applicable taxes, insurance, and supervision required to provide the Soil Removal, Disposal & Remediation Work in strict conformance with the requirements, terms and conditions set forth in this Bid Package.

The Undersigned certifies that the Bidder understands the provisions, terms and conditions set forth in the Contract included in this Bid Package as Section IV – Contract and that the Bidder is prepared to execute a contract with the DBRA incorporating the accepted provisions of this Bid.

B. STARTING AND COMPLETING WORK
The Undersigned certifies that, upon receipt of a Letter of Intent and Notice to Proceed from the DBRA, the Bidder is prepared to mobilize and commence the provision of Services based on the provisions of the terms and conditions set forth in this Bid Package pending the final preparation and execution of the Contract.

The DBRA intends to contract the Work on an urgent and expedited basis as follows:

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<th>Event</th>
<th>Date/Time</th>
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<tbody>
<tr>
<td>Pre-Bid Meeting</td>
<td>June 22, 2023 at 10am via Zoom</td>
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<tr>
<td>Final Day to submit questions</td>
<td>July 11, 2023</td>
</tr>
<tr>
<td>Bid Due Date</td>
<td>July 14, 2023 by 3pm (Friday)</td>
</tr>
<tr>
<td>DBRA Board approval</td>
<td>July 26, 2023</td>
</tr>
<tr>
<td>Mobilize to Site</td>
<td>August 1, 2023</td>
</tr>
</tbody>
</table>

The Contractor agrees to complete the Work and obtain substantial and final completion in the number of days listed below after the commencement of any earth excavation activities on the Project Site:

Substantial Completion – November 1st, 2023

The Undersigned hereby affirms the Bidder’s understanding that the schedule and sequence for the provision of the Work shall be at the direction of the DBRA.
C. PERFORMANCE AND PAYMENT BONDS
The Undersigned affirms that the cost of a 100% Performance and Payment bonds for the full amount of the Bid Price is included in Bid Price.

D. ADDENDA
The Bidder acknowledges receipt of the following Addenda, which specify revisions to the Bid Package, and states that appropriate adjustments in the Bid Prices, if any, have been included in this Bid:

(1) ADDENDUM NO. ___________ DATED____________________
(2) ADDENDUM NO. ___________ DATED ___________________
(3) ADDENDUM NO. ___________ DATED ____________________

E. BASE BID

SEE ATTACHED – EXHIBIT B

UNIT PRICE SCHEDULE
F. BONDS
The above Bid Prices include the cost of 100% Performance and Payment Bond as required by MCL Act 213 of 1963 Section 129 for Public Works Projects for the full final amended amount of the PM Contract
The Bidder [requires] performance and payment bonds for all subcontracts.

G. SUB-CONSULTANTS / SUB-BIDDERS – NOT USED

H. JOINT VENTURE (For a Joint Venture Bidder Only)
If a Joint Venture Contractor, the undersigned agrees to submit to the DBRA prior to the Bid Award a copy of the Joint Venture Agreement to be entered into by the Joint Venture Partners. The Bidder understands that the Joint Venture Agreement form and content is subject to the sole approval of the DBRA.

I. WITHDRAWAL OF BID
The Bidder agrees that this Bid will remain firm and will not be withdrawn for a period of ninety (90) days after submission date of this Bid.

J. START OF SERVICES
The Bidder agrees to start Services immediately upon receipt of a Notice to Proceed from the DBRA.

K. REJECTION OF BIDS
The Bidder understands that the DBRA reserves the right to evaluate and waive any informality, abnormality, or irregularity in the submission of any Bid deemed, at the sole discretion of the DBRA, to be immaterial to the content, validity and fair – equal competitiveness of the Bid. The DBRA reserves the discretionary right to reject any or all Bids in whole or in part which are not submitted in accordance with the Bid Package terms and conditions, exceed the DBRA budget allocated for the Services, or are not consistent with the anticipated competitive pricing.

L. EQUAL OPPORTUNITY REQUIREMENTS
The Bidder acknowledges and confirms that Bidder upon execution of a Contract with the DBRA will use its best efforts to comply and require all subcontractors to comply with all equal opportunity and labor requirements described in Section IV, H-6, Equal Opportunity & Anti Discrimination Practices, which includes:

- Compliance with Fair Employment Laws (Detroit Fair Employment Practices Ordinance 303-H). The Contractor shall comply with the United States Constitution and all federal, state and local laws, rules and regulations governing fair employment practices and equal employment opportunity.
- City of Detroit Executive Order No. 2003-4. The Contractor shall comply with the goals of the City of Detroit's Executive Order No. 4, dated October 28, 1994, pertaining to the utilization of Detroit-based and small businesses.
- City of Detroit Executive Order No. 2007-1 in the performance of the Services, the Contractor agrees to comply with the goals of the City of Detroit's Executive Order No. 2007-1 (refer to Section IV, Subsection H-6).
- Ordinance No. 20-93. The Contractor agrees to comply in the performance of the Services, and shall require all subcontractors to comply with City of Detroit Ordinance No. 20-93, codified as Detroit City Code 18-5-60 through 18-5-66, Prevailing Wage and Fringe Benefit Rates Required for City Projects, as amended.

The Bidder agrees to submit upon request by the DBRA in a reasonable time the following information:
- A copy of the Bidder’s formally adopted equal employment opportunity policy indicating that the firm does not discriminate in its employment practices and takes affirmative action to recruit and hire minority persons as required by Section 2-7-3 of Ordinance 303-H.
- A statement on company letterhead that it will not start the provision of Services on the Project until it has issued its affidavit of compliance to the Civil Rights, Inclusion and Opportunity (CRI) relative to Ordinance 303-H.
- A copy of the firm’s Affirmative Action Plan.

M. BID SECURITY
The Bidder shall include with the Bid submission a Bid bond in the amount of 5% of the Total Base Bid Amount.
N. PROPOSER’S QUALIFICATIONS
The Undersigned declares that Bidder has had prior experience in the type of Work required by the Bid Package and that Bidder has the necessary finances, personnel and working organization, and equipment available to execute the proposed Services in accordance with the timing and requirements of the Contract Documents.

O. PROPOSER NOT IN ARREARS
The Undersigned certifies that, as of the date of this Bid, Bidder is not in arrears to the City of Detroit for any debts whatsoever (including but not limited to back taxes) as provided for in Sec. 21315, City Code (Ord No. 52H) and further certifies that the Bidder is not in default with respect to any City or DBRA contracts.

P. WAIVER
The Undersigned certifies the price Bid in this Bid is correct and complete and stated as intended by the Undersigned for Services covered by this Bid. The Undersigned further certifies that all information given in or furnished with this Bid is correct, complete, and submitted as intended by the Undersigned, and the undersigned does hereby waive any right or claim Bidder may now have or which may hereafter accrue to the Bidder, by reason of errors, mistakes, or omissions made by the Undersigned in this Bid, to refuse to execute the Contract if awarded to the Bidder, to demand the return of the Bid Security, or to be relieved from any of the Bidder’s obligations as set forth in said Bid Security required with this Bid.

Q. SPECIAL FORMS
Bidders will note that a copy of each of the following documents has been included in this Section:

- Bid Signature Page
- Acknowledgments – Corporation, Partnership, Limited Liability Company and Joint Venture
- Resolution of Authority – Corporation, Partnership, Limited Liability Company and Joint Venture
- Affidavit of Non-Collusion and Non-Conflict of Interest
- Bidder’s Insurance Certification
- Bidder’s Most Recent Income Tax Clearance Form – (attach one copy)
- Bidder’s Taxpayer Identification Number and Certification – W-9 (attach one copy)

Each set of the applicable documents is to be completed, signed, and returned with the Bid. These documents will later be used in preparing the execution Contract for the accepted Bid.

The Undersigned certifies and represents that he / she is authorized to execute, submit and bind this Bid on behalf of the Bidder,

NAME OF PROPOSER: ____________________________________________________________
(Please Print Full Legal Name)

BUSINESS ADDRESS:
(Number and Street)
(City) (State) (Zip Code)

FEDERAL TAX IDENTIFICATION NO.: _____________________________________________
CHECK ONE:

____ CORPORATION, incorporated under the laws of the State of _______________________

If not a Michigan Corporation, are you licensed to do business in the state of Michigan? YES ____ NO _____

____ PARTNERSHIP (Please List Partners)

____ JOINT VENTURE (Please List Partners)

____ LIMITED LIABILITY COMPANY (Please List Managing Members)
THE CITY OF DETROIT BROWNFIELD REDEVELOPMENT AUTHORITY
LAND ASSEMBLY PROJECT – TERMINAL STREET RECONSTRUCTION AND PARKING LOT PROJECT
June 2023

SIGNED and SUBMITTED on ______________________ ____________________, 2023

BY ________________________________

Signature

______________________________  ________________________________

Print Name  Title
CORPORATE ACKNOWLEDGEMENT

STATE OF MICHIGAN ) )SS.
COUNTY OF )

The foregoing instrument was acknowledged before me on the ______ day of ______________, 2023, by ____________________________, the _________________ of _____________________, a corporation of the State of _______________________.

___________________________________
Signature

Notary Public, Wayne County, Michigan

My commission expires: ______________

PARTNERSHIP ACKNOWLEDGEMENT

STATE OF MICHIGAN ) )SS.
COUNTY OF )

The foregoing instrument was acknowledged before me on the ______ day of ______________, 2023, by ____________________________, General Partner, on behalf of ________________________________, a Partnership.

___________________________________
Signature

Notary Public, Wayne County, Michigan

My commission expires: ______________

LIMITED LIABILITY COMPANY ACKNOWLEDGEMENT

STATE OF MICHIGAN ) )SS.
COUNTY OF )

The foregoing instrument was acknowledged before me on the ______ day of ______________, 2023, by ____________________________, Managing Member, on behalf of ________________________________, a Limited Liability Company.

___________________________________
Signature

Notary Public, Wayne County, Michigan

My commission expires: ______________
JOINT VENTURE ACKNOWLEDGEMENT

STATE OF MICHIGAN )
COUNTY OF ) SS.

The foregoing instrument was acknowledged before me on the ________ day of _______________, 2023, by ______________________, Authorized Agent, on behalf of ______________________________, a Joint Venture.

___________________________________
Signature

Notary Public, Wayne County, Michigan

My commission expires: ______________
RESOLUTION OF CORPORATE AUTHORITY

I, ______________________, as ____________ of ______________________, a Corporation of the State of _______________ DO HEREBY CERTIFY that the following individuals are authorized agents of the Corporation:

Name: ______________________  Title: ______________________

________________________________________

I FURTHER CERTIFY that any of the aforementioned officers of the Corporation are authorized to execute or guarantee and commit the Corporation to the terms, conditions, obligations, stipulations and undertakings contained in the Bid Package and that all necessary corporate approvals have been obtained in relationship thereto.

IN WITNESS THEREOF, I affix my signature on the __________ day of ______________, 2023.

CORPORATE SEAL

____________________________ (Signature)

___________________________________ (Title)

RESOLUTION OF PARTNERSHIP AUTHORITY

I, _________________________, as General Partner in _________________________, a Partnership in the State of _______________ DO HEREBY CERTIFY that the following are General Partners and are licensed to conduct in the State of Michigan and the City of Detroit:

________________________________________

________________________________________

________________________________________

I FURTHER CERTIFY that any of the aforementioned General Partners of the Partnership are authorized to execute or guarantee and commit the Partnership to the terms, conditions, obligations, stipulations and undertakings contained in the Bid Package and that all necessary corporate approvals have been obtained in relationship thereto.

IN WITNESS THEREOF, I affix my signature on the __________ day of ______________, 2023.

___________________________________ (General Partner)
RESOLUTION OF LIMITED LIABILITY COMPANY AUTHORITY

I, ______________________, as Managing Member in _________________________, a Limited Liability Company organized in the State of _____________________ DO HEREBY CERTIFY that the following are Managing Members and they and the company are licensed to conduct business in the State of Michigan and the City of Detroit:

_________________________________
_________________________________
_________________________________

I FURTHER CERTIFY that any of the aforementioned Managing Members are authorized to execute or guarantee and commit the Company to the terms, conditions, obligations, stipulations and undertakings contained in the Bid Package and that all necessary corporate approvals have been obtained in relationship thereto.

IN WITNESS THEREOF, I affix my signature on the __________ day of ______________, 2023.

___________________________________
(Managing Member)

RESOLUTION OF JOINT VENTURE AUTHORITY

I, __________________________, as Authorized Agent of ______________________________, a Joint Venture organized under the laws of the State of _________________________ between ____________________ and ________________________ DO HEREBY CERTIFY that the following individuals are Authorized Agents of the Joint Venture and they and/or the Joint Venture members are licensed demolition BIDDERS in the State of Michigan and the City of Detroit:

_________________________________
_________________________________
_________________________________

I FURTHER CERTIFY that any of the aforementioned Authorized Agents of the Joint Venture are authorized to execute or guarantee and commit the Joint Venture to the terms, conditions, obligations, stipulations and undertakings contained in the Bid Package and that all necessary corporate approvals have been obtained in relationship thereto.

IN WITNESS THEREOF, I affix my signature on the __________ day of ______________, 2023.

___________________________________
(Authorized Agent)
AFFIDAVIT OF NONCOLLUSION AND NONCONFlict OF INTEREST

STATE OF MICHIGAN )
COUNTY OF )

_________________________________________________ being first duly sworn deposes and says that:

(1) He / She is ____________________________________________, of ____________________________________________.
   (DBRA, Partner, Officer, Agent, Member) (Bidder)

(2) Bidder is fully informed with respect to the preparation and contents of the Bid as well as all circumstances in
    connection with the same;

(3) Neither the said Bidder nor any of its officers, partners, owners, agents, members, representatives, employees or
    parties in interest, including this affiant, has any way colluded, conspired, connived or agreed directly or indirectly
    with any other Bidder, Firm or person to submit a collusive or sham Bid in connection with the Contract for which
    the Bid has been submitted or to refrain from proposing in connection with such Contract, or has in any manner,
    directly or indirectly, sought by agreement of collusion or communication or conference with any other Bidder, or
    to fix any overhead, profit or cost element of the Bid price or the Bid price of any other
    Bidder, or to secure through
    any collusion, conspiracy, connivance or unlawful agreement any advantage against the DBRA or any person
    interested in the proposed Contractor;

(4) The price or prices quoted in the Bid are fair and proper and are not tainted by any collusion, conspiracy,
    connivance or unlawful agreement on the part of the Contractor or any of its agents, representatives, owners,
    partners, employees, or parties in interest, including this affiant;

(5) The Bidder has no conflict of interest with any federal, state, or local governmental agencies or any persons in
    connection with the Services specified in this Bid Package.

______________________________________________
(Signature)

______________________________________________
(Title)

Subscribed and sworn to before me this _________ day of ____________________________, 2023.

________________________________
Notary Public, Wayne County, Michigan

My Commission Expires: ____________
INSURANCE CERTIFICATION

The Bidder hereby certifies that it will furnish the required insurance coverage, as described in the Contract, Section IV, Subsection H-10.

INSURANCE CARRIER: ____________________________________________

ADDRESS: ________________________________________________________

TELEPHONE NUMBER: ____________________________________________

FAX NUMBER: ______________________________________________________

CONTACT PERSON: _________________________________________________

CITY OF DETROIT TAXPAYER CLEARANCE
Attach Copy

TAXPAYER IDENTIFICATION NUMBER & CERTIFICATION – W-9 FORM
Attach Copy
SECTION VI – SAMPLE CONTRACT

CONTRACT AGREEMENT

AGREEMENT

BETWEEN

THE CITY OF DETROIT
BROWNFIELD REDEVELOPMENT AUTHORITY

AND

1. PARTIES TO THIS AGREEMENT
2. THE WORK
3. CONTRACT TIME, STARTING AND COMPLETING
4. SUBSTANTIAL COMPLETION
5. FINAL COMPLETION / FINAL CLEANING
6. LIQUIDATED DAMAGES
7. PAYMENT
8. SCHEDULE
9. SUBMITTALS
10. CHANGES IN THE WORK
11. CLEAN UP
12. SAFETY
13. EQUAL EMPLOYMENT OPPORTUNITY & ANTI-DISCRIMINATION PRACTICES
14. INDEMNITY AND HOLD HARMLESS
15. RECOURSE BY THE OWNER
16. TERMINATION FOR CONVENIENCE
17. INSURANCE
18. INTEGRATION AND AMENDMENT
19. GENERAL
20. ORDER OF PRECEDENCE
21. CITY COUNCIL AUDIT
22. EXTENT OF AGREEMENT
23. GOVERNMENT REGULATIONS
24. CONTRACTOR WARRANTIES
25. SUBCONTRACTS
26. OTHER CONTRACTS
27. PERMITS
28. SUBSURFACE CONDITIONS
29. NOTICES
30. GENERAL CONDITIONS
31. ASSIGNMENTS

SIGNATURE PAGE

ATTACHMENT A – PAYMENT PROCEDURES
ATTACHMENT B – RELATED DOCUMENTS
ATTACHMENT C – GRANT FUNDING PROVISIONS
1. **PARTIES TO THIS AGREEMENT**

This "Agreement" is entered into and is in full force and effect on this the ____ day of ____ in the year ____ between City of Detroit Brownfield Redevelopment Authority, hereafter referred to as the "Owner", with its principal office at 500 Griswold, Suite 2200, Detroit, Michigan 48226, and __________________________, hereinafter referred to as the “Contractor”, with its principal offices located __________________________, for the Contractor's performance of the "Work" specified herein and the Owner's payment of the Contract Value indicated in Section 7 "Payment" below for the Work properly executed and completed in accordance with this Agreement.

2. **THE WORK**

The Contractor, having submitted a Bid in response to and in accordance with the Owner's solicitation, agrees to furnish to the Owner all labor, materials, tools, equipment, construction administration and supervision necessary for and incidental to the proper execution and full completion of the Work set forth in:

**Bid Package - TERMINAL STREET RECONSTRUCTION AND PARKING LOT PROJECT**

complete, except as modified herein, and in a timely and workmanlike manner, in connection with the:

**LAND ASSEMBLY PROJECT - PRE DEVELOPMENT SITE PREPARATION (the “Project”)**

in the City of Detroit, County of Wayne, Michigan.

The term “Work” as used herein means the provision by the Contractor of all labor, materials, equipment services, construction administration, and coordination necessary to complete the Scope of Work described and specified in Bid Package and the Contract Documents enumerated below, which constitute the entire basis of this Agreement between the Owner and the Contractor. The following documents are hereinafter referred to collectively as the "Contract Documents" and are incorporated by reference into this Agreement:

a) This Agreement, including all exhibits and attachments, and any amendments to this Agreement;
b) Bid Package in which the term "Bidder" shall have the same meaning as "Contractor" in this Agreement;
c) Addenda as indicated in the Bid, if issued;
d) Bulletins and Change Orders, if issued;
e) The Contractor's Bid, dated ____________ and documents from the Contractor thereafter modifying the Contractor's Bid;
f) The documents set forth in Attachment B; and
g) Those documents listed in Article 20 below not otherwise listed in this Section.

3. **CONTRACT TIME, STARTING AND COMPLETING**

The Contractor agrees to start immediately, upon written notice by the Owner, the performance of the Work and diligently pursue the completion of the Work in accordance with a project schedule acceptable to and approved by the Owner (the “Project Schedule”).

The Contractor shall carry on the construction, in accordance with the Project Schedule, including any phasing of operations, continuously without unscheduled stoppage so that all items of the Work are totally complete, including punchlist work, in accordance with the agreed upon completion date and/or any identified interim milestone dates. The Contractor's responsibility to complete the Work in accordance with the schedule shall not relieve the Contractor from the responsibility to coordinate the Work with the others or, as necessary, to sequence the Work, including interrupting the Work as required by the Owner.
The DBRA intends to contract the Work on an urgent and expedited basis as follows:

- **Pre-Bid Meeting**  June 22, 2023 at 10am via zoom XXXXXXXXXXXXXXXXXXX
- **Final Day to submit questions to Owner**  July 11, 2023
- **Bid Due Date**  July 14, 2023 by 3pm (Friday)
- **DBRA Board approval**  July 26, 2023
- **Mobilize to Site**  August 1, 2023

The Contractor agrees to complete the Work and obtain substantial and final completion on the dates listed below:

- **Substantial Completion** – November 1st, 2023

Contract’s obligation to complete the Work in accordance with the schedule listed above shall be tolled by the number of days equal to i) the number of days that frost laws are in effect and which thereby preclude the Contractor from completing the Work, and ii) the number of days that landfill operations in the immediate area are suspended due to inclement weather. Should either of the foregoing events occur, Contractor shall immediately provide notice to the Owner exercising its right to toll the completion dates, its reasoning for exercising such right, and the date that such tolling began. Upon the conclusion of such event, Contractor shall provide notice to Owner of its conclusion and immediately commence the Work.

“Work Day” means each day the Contractor shall perform the Work contemplated herein, which shall be a minimum six (6) days per week, subject to the tolling provisions contained in this Section 3.

4. **SUBSTANTIAL COMPLETION**

Substantial completion of the Work means the point at which the Owner determines that the Work is sufficiently complete in accordance with the approved Construction Documents to permit the Owner, to use the Project for the purposes for which it is intended, subject only to minor items of incomplete construction identified by the Owner. When the Contractor considers that the Work, or a designated portion thereof, which is acceptable to the Owner, is substantially complete, as defined above, the Contractor shall prepare for submission to the Owner a list of items to be completed or corrected. The failure to include any item on such list does not alter the responsibility of the Contractor to complete all of the Work in accordance with the Contract Documents. When the Owner, on the basis of an inspection, determines that the Work, or designated portion thereof, is substantially complete, the Owner will then prepare a Certificate of Substantial Completion, establishing the date of Substantial Completion. The Certificate of Substantial Completion shall detail the responsibilities of the Owner and the Contractor for security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the Contractor shall complete the items listed therein. Warranties required by the Contract Documents shall commence on the Date of Final Completion of the Work, or designated portion thereof, unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be acknowledged by the Contractor in writing indicating acceptance of the responsibilities assigned to the Owner and the Contractor in such Certificate.

5. **FINAL COMPLETION / FINAL CLEANING**

The Contractor shall notify the Owner in writing when the Work, including all punchlist items, is totally complete and ready for final inspection. After satisfactory final inspection of the Work, final payment will be made in accordance with the Agreement. The Contractor shall achieve Final Completion in accordance with the schedule above. The Contractor shall arrange and schedule the final cleaning of the Work with the Owner after the completion of the Work and removal of all tools and excess materials.
6. LIQUIDATED DAMAGES

The Contractor is responsible for the scheduling, sequencing, and completion of the Work in coordination with others and is fully responsible for establishing the means and methods for completing the Work. The Contractor shall be responsible to complete the Work within the Work Days set forth in Section 3 above, subject to any tolling which may occur. Should for any reason the Contractor fail to achieve Final Completion and make the Work available for the intended use by the Owner, the Contract Value shall be reduced by an amount specified in subsection 108.10 of the Michigan Department of Transportation's Standard Specifications for Construction for each Work Day in which the Work remains unavailable for the intended use. The exercise of this clause by the Owner shall not accrue any obligations to any third party. This amount for liquidated damages is included because of the difficulty of assessing the actual damages suffered by the Owner in the event of the failure of the Contractor to complete the Work under this Agreement. Liquidated damages are cumulative for each completion date as set forth in the Bidding and Contract Documents and/or the Project Schedule.

7. PAYMENT

In consideration of the Contractor's full and complete performance of the Work called for in this Agreement, the Contractor shall be paid by unit prices with a total contract amount not to exceed the sum of __________________________ (“Contract Value”), which shall be distributed to the Contractor by the Owner in accordance with the terms and conditions set forth in Attachment A "Payment Procedures" and subject to a retention as set forth in Paragraph 12 of Attachment A. The lump sum amount stated above shall constitute a not-to-exceed Contract Value for the Work that may only be modified in writing by the Owner.

8. SCHEDULE

Time is of the essence of this Agreement. Upon written notice to proceed, the Contractor agrees immediately to commence the Work and to perform, in a punctual and diligent manner, all parts of the Work, according to the Bid Package. The Contractor shall not commence the performance of the Work until given authorization by the Owner.

The Contractor shall coordinate all the Work with the Project Schedule established by the Owner. The Project Schedule may be changed by Owner as deemed necessary or convenient to the benefit of the completion of the Project. The Contractor agrees to, as a material obligation of this Agreement, attend meetings and make sufficient inspections of the progress of the Project; to coordinate the Contractor's Work at all times with the progress of the Project and will, upon the Contractor's initiative, confer with the Owner so as to plan the Work in coordinated sequence with the work of the Owner and others, and be prepared to perform expeditiously the Work at the time most beneficial to the completion of the Project. Nothing contained in this Section shall be construed to obligate the Owner to direct or coordinate the Contractor's Work, or to obligate the Owner to increase the Contract Value as a result of changes made in the Project Schedule.

If the Contractor is not in default in any of the provisions herein, the Owner shall, at its reasonable discretion, expedite the completion of the Project or portions thereof, and if the Owner directs the Contractor to work overtime (or a second shift), it is agreed that the Contractor shall work the overtime (or second shift). It is also understood that the Owner is to pay only the actual extra cost over the rate for regular time of such overtime. Time slips covering such overtime must be checked and approved daily. No overhead or profit is to be charged by the Contractor for such overtime.

The Contractor agrees to man the Project with sufficient crews and equipment necessary to complete the Work as required and will not delay the progress of the Project by limiting the number of crews or equipment working at the site. If additional labor or equipment is required in order not to delay the progress of the Project, the Contractor, at its own expense, agrees to work its forces overtime and/or additional shifts (including weekends and holidays) to remove impacts to the progress of the Project caused by the
Contractor's delays and to recover the Progress Schedule. If the Contractor falls behind in or impedes the progress of the Project for any reason and, after forty-eight (48) hours written notice, fails or refuses to supply sufficient workmen, to deliver materials, or secure equipment to eliminate the delay in the progress of the Project, then the Owner shall have the right, without obligation or the concurrence of the Contractor, to supplement the Contractor's work forces with other workers and equipment and deduct the costs incurred by the Owner from the Contract Value.

Should the Contractor fail, neglect, or refuse to complete the Work within the time period provided in the Project Schedule, Contractor agrees to pay the Owner as liquidated damages, and not as a penalty, the amounts specified in Section 6 of this Agreement. Owner may deduct any liquidated damages from the Contract Value.

9. **SUBMITTALS**

The Contractor shall prepare timely submittals and obtain approvals, as required in the Contract Documents, for all shop drawings, details, samples, warranties, operation manuals, and instructions, and agrees to, on Contractor's own initiative, expedite approvals to assure the timely progression of the Work without interruption. In the event the Contractor fails to make the submittals in a timely manner, the Owner may assign a coordinator to expedite the submittal process on behalf of the Contractor and shall deduct the cost from the Contract Value without the concurrence of the Contractor.

Approval of submittals by the Owner and/or the Owner's design consultant shall not relieve the Contractor of its obligation to perform the Work in strict accordance with the required specifications nor does it relieve the Contractor of its responsibility for the proper matching and fitting of the Work with contiguous work. All submittals shall be transmitted via the most rapid method (i.e., overnight mail or hand delivery) to the responsible reviewers as designated by:

Orza A. Robertson, Sr. Project Manager  
City of Detroit Brownfield Redevelopment Authority  
500 Griswold, Suite 2200  
Detroit, Michigan 48226  
orobertson@degc.org

The Contractor shall be required, at the Owner's option, to submit and maintain a current, all-inclusive "Material and Equipment Status Report" that identifies the promised date of submittals for approval and the delivery to the Project of material and/or equipment to be furnished by the Contractor. This report shall be relied upon by the Owner in analysis of the Contractor's conformance to the Progress Schedule.

10. **CHANGES IN THE WORK**

The Contractor agrees, without nullifying any portions of this Agreement, to incorporate revisions or changes to the scope of the Work made by written orders from the Owner. The Contractor agrees to provide, as a part of the Agreement, price quotations for changes in the Work, proposed or directed by the Owner. The Contractor agrees to provide such quotations within fourteen (14) days or less, as required by the nature of the change. The Contractor agrees to provide a detailed breakdown showing differences in quantity, and value of labor, equipment, and material involved. Wherever possible, the cost submitted shall be based on the unit prices provided in the proposal. The quotation will include any claims made by the Contractor to extend the Project Schedule and will include the Contractor's cost estimate for any time extensions requested. All time extensions will become effective when agreed to by the Owner and will not be an entitlement of the Contractor merely as a result of a change. The time of completion will remain fixed, unless expressly otherwise agreed to by the Owner. If the time is extended, all added costs for same must be included in the original claim for the changes. Otherwise, such added costs will not be subject to reimbursement, except where the Contract Documents specifically allow for such reimbursement.
The Contractor will be required to furnish one (1) original and three (3) copies of each quotation for changes in the Work, whether in the form of a Bulletin, Clarification, or Field Order, which must be itemized in detail as to quantity and pricing to permit checking.

Should the Owner, because of the nature of the change, direct changes in the Work to be performed on a time and material basis in lieu of unit prices, or for a negotiated lump sum, and so notifies the Contractor in writing, the Contractor shall perform the changes in the Work at actual net cost plus overhead and profit with or without a maximum guarantee total cost agreed to, at the Owner's option. Any changes to the Work performed shall not exceed fifteen (15%) percent of the total cost of the Work to be performed by the Contractor or five (5%) of the total cost of the Work to be performed by a subcontractor without an amendment to this Agreement. Overhead and profit shall be charged at the same rate as applied to the rest of the Work under this Contract. Charges for time and material must be supported by records, including certified payrolls, checked and approved daily by the Owner's authorized representative or designee. The Contractor and his subcontractors will permit the Owner and the City of Detroit to audit its books, records, estimates, orders and files, as necessary to check the actual cost of the changed Work involved with time and material charges.

The Contractor shall strictly adhere to the Contract Documents, unless a change in the Work is authorized in writing by the Owner. In such case, the terms of the change shall be understood and agreed upon in writing by the Owner and the Contractor before the commencement of the revisions in the Work. The Contractor agrees to proceed promptly with any disputed work upon the written direction of the Owner, and to submit a claim within five (5) days outlining the reasons the Contractor believes that the claimed Work is not a part of the Agreement and stating the amount of claimed additional compensation being sought.

At the request of either party to this Agreement the Owner may issue a Field Order. The effect of issuing a Field Order shall be to authorize Work that may or may not be the subject to a Change Order for the purpose of allowing the Work to proceed in an efficient manner. It is acknowledged that the issuance of a Field Order is not the equivalent of a Change Order or an amendment to this Agreement.

11. CLEAN UP

Contractor shall identify work and staging zones, traffic patterns, construction signage, traffic and road maintenance plans for Owner approval before implementing. These plans will include identification of a responsible individual that can be contacted 24 hours 7 days a week to answer public inquiries and rectify public concerns. Contractor shall clean up and legally remove the Contractor's debris from the Project Site and adjacent public streets accessing the Project on a daily basis, including the removal of any and all debris or accumulated mud tracked on to adjacent streets and roads by the Contractor's vehicles, due to the Contractor's Work and/or having been created by the Contractor's work force. Should the Contractor fail to do the required cleanup work within twenty-four (24) hours of the written request, the Contractor agrees that the Owner may supplement the Contractor's cleanup effort and deduct the cost from the Contract Value without the concurrence of the Contractor.

12. SAFETY

The Contractor shall, at its own cost and expense, protect its own employees, the employees/consultants/agents of the Owner, and all other persons from risk of death, injury, or bodily harm arising out of or in any way connected with the Work performed under this Agreement. The Contractor shall strictly comply with all safety orders, rules, regulations, or requirements of all federal, state, and local government agencies exercising safety jurisdiction over the Work, including, but not limited to, the federal and state occupational safety regulations. The Contractor shall indemnify and save harmless the Owner, its agents, and the City of Detroit from and against any liability, loss, cost, damage, or expense, including attorneys' fees, suffered or incurred as a result of any cause of action, proceeding, citation, or work stoppage arising out of, or in any way connected with, the alleged violation by the Contractor's work force of any such safety order, rule, regulation, or requirement, whether such violation is ultimately proved or not.
In the event the Owner finds the Contractor's work force in violation of any safety laws or regulations, notice will be given to the Contractor for immediate correction. If the Contractor does not immediately commence to cure the violation and continue to cure the violation without any delay whatsoever, the Owner may invoke the provisions of Section 15 except that the twenty-four (24) hours written notice requirement will not be required.

13. EQUAL EMPLOYMENT OPPORTUNITY AND ANTI-DISCRIMINATION PRACTICES

a. Compliance with Fair Employment Laws. The Contractor agrees that, in connection with the Project, it shall comply with the United States Constitution and all federal, state, and local laws, rules, and regulations governing fair employment practices and equal employment opportunity. The Contractor shall promptly furnish any information requested by the City of Detroit or its Human Rights Department with respect to this subsection a.

b. Human Rights. The Contractor shall comply with the rules and procedures applicable to the Contractor adopted by the Human Rights Department of the City of Detroit pursuant to the 1997 City of Detroit Charter and the Detroit City Code.

c. Ordinance No. 20-93. The Contractor voluntarily agrees that it shall use its best efforts in the performance of the Work, and shall require all subcontractors hired to perform portions of the Work to use their best efforts, to comply with goals equal to those set forth in City of Detroit Ordinance No. 20-93, codified as Detroit City Code 18-5-60 through 18-5-66, "Prevailing Wage and Fringe Benefit Rates Required for City Projects", as amended.

d. Reporting. Upon commencement of the Construction Work, the Contractor shall thereafter submit to the Owner, at the time it makes application for payment pursuant to Attachment A, monthly written reports evidencing its compliance with City of Detroit Executive Order No. 2014-5 and Subsection 13(d). The Contractor shall require similar reports from each of its subcontractors and shall submit the subcontractor's monthly reports along with its report. Upon receipt of such monthly reports they shall be submitted to the City of Detroit Human Rights Department ("HRD") as part of its contract information tracking system ("CITS"). Contractor agrees to provide all information required by HRD to conform to CITS. It further agrees to require by subcontract all if its subcontractors to provide all information required by HRD in relation to the CITS.

e. Notice to Subcontractors. The Contractor shall notify any subcontractor of its obligations under this Section 13 when soliciting subcontractors and shall include all applicable provisions of this Section 13 in any subcontract related to the Work. The Contractor shall take such action with respect to any subcontract as the City may reasonably direct as a means of enforcing such provisions, including sanctions for non-compliance, but shall not otherwise be liable for non-compliance by a contracting party.

f. Executive Order No. 2014-5. The Contractor shall comply with the goals established by the City of Detroit's Executive Order No. 2014-5, effective November 1, 2003, which sets goals for the utilization of Detroit-based businesses and small businesses. The Contractor shall contractually require and enforce compliance by all its lower-tier subcontractors to fulfill the requirements of this Section.

g. DBE, SBE, PARTICIPATION. The Contractor shall, through self-performance or through subcontractor utilization, make every effort ("good faith effort") to utilize Detroit Business Enterprises (DBE) and Small Business Enterprises (SBE) in the performance of the Work consistent with the goals of the City of Detroit's Executive Order 2014-5. The Contractor shall comply with the requirements of the City of Detroit's Executive Order No. 2016-1.

A breach of the terms and conditions of this Section 13 may be regarded as a material breach of this Agreement.
14. INDEMNITY AND HOLD HARMLESS

a. Indemnity Agreement.

To the fullest extent permitted by law, Contractor shall indemnify and hold harmless the Owner, the City of Detroit, their consultants, and their agents, employees, invitees, and guests, from and against any claim, damage, loss, suit, action, administrative proceeding, demand, judgment, royalty, interest, lien, cost, expense, or any liability (including actual attorneys’ fees) of whatsoever kind or nature, whether arising before, during, or after completion of the Contractor's Work, to the proportionate extent caused by the negligent acts or omissions of Contractor or persons for whom Contractor is responsible, occurring in connection with the Agreement or the Work of the Contractor, any subcontractor, or their respective agents, employees, or anyone for whose acts they may be liable.

In the case of any claims against any person or entity indemnified hereunder by any employee of the Contractor, anyone directly or indirectly employed by Contractor, or anyone for whose acts Contractor may be liable, the indemnification obligation set forth above shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor, or any person or entity, under workers' compensation acts, disability benefit acts, or other employee benefit acts.

In the event any claim is made against any person or entity for which Contractor has an indemnity obligation, the Owner may withhold from any payment due or thereafter to become due to the Contractor under the terms of this Contract an amount sufficient in the Owner’s judgment to protect a

b. Hold Harmless Agreement

The Contractor shall assume liability and indemnify the Owner and the City of Detroit and their respective employees and agents from and against any liability and all loss, costs, damages, expenses, including actual attorneys' fees, on account of claims for personal injury, including death, sustained by any person or persons whomsoever, including employees of the Contractor or any subcontractor, and for injury to, or destruction of, property of a person or organization, including loss of use thereof, to the proportionate extent caused by the negligent performance of the Work under this Agreement.

The Contractor hereby accepts and assumes exclusive liability for, and shall indemnify, protect and save harmless the Owner and the City of Detroit from and against the payment of:

(i) All contributions, taxes or premiums (including interest and penalties thereon) which may be payable under the Unemployment Insurance Law of any State, the Federal Social Security Act, Federal, State, County and/or Municipal Tax Withholding laws, or any other law, measured upon the payroll of or required to be withheld from employees, by whomsoever employed, engaged in the Work to be performed and furnished under this Agreement.
THE CITY OF DETROIT BROWNFIELD REDEVELOPMENT AUTHORITY  
LAND ASSEMBLY PROJECT – TERMINAL STREET RECONSTRUCTION AND PARKING LOT PROJECT 
June 2023

(ii) All sales, use, personal property and other taxes (including interest and penalties thereon) required by any Federal, State, County, Municipal or other law to be paid or collected by the Contractor or any of its vendors or any other person or persons acting for, through or under it or any of them, by reason of performance of the Work or the acquisition, ownership, furnishing or use of any materials, equipment, supplies, labor, services, or other items for or in connection with the Work.

(iii) All pension, welfare, vacation, annuity and other union benefit contributions payable under or in connection with respect to all persons, by whomsoever employed, engaged in the Work to be performed, and furnished under this Agreement.

c. Survival. This Section 14 shall survive the completion of the Work and any termination of this Agreement.

15. RECOUSE BY THE OWNER

If the Contractor defaults or at any time fails in any respect to properly and diligently prosecute the Work covered by this Agreement, or is unable to supply a sufficient number of properly skilled trades or materials of proper quality to maintain the sequential progress of the Work, or is adjudged as bankrupt, or files an arrangement proceeding, or commits any act of insolvency, or makes an assignment for benefit of creditors without the Owner's consent, or fails to make prompt payment to material men and laborers, or otherwise fails to perform fully and all of the covenants herein contained, the Owner may, after giving twenty-four (24) hours written notice to the Contractor, secure and provide from any reasonable source supplemental labor, supervision, equipment, and materials, or make payments as may be deemed necessary by the Owner, in its sole and absolute discretion, to complete the Work. Any such supplemental provisions undertaken by the Owner in an attempt to remove delays in the progress of the Project caused in whole or in part by the Contractor's delinquent prosecution of the Work, shall not relieve the Contractor from its responsibility to complete any and all portions of the Work in accordance with the Agreement.

The cost, including the Owner's overhead, incurred by the Owner in its attempt to correct the Contractor's delinquent prosecution of the Work, shall be deducted first from any money due or thereafter to become due to the Contractor under this Agreement; or the Owner may, at its option, terminate the Contractor's right to proceed with the Work and take possession of the site and complete the Work by whatever method the Owner deems expedient. In the event the Owner takes such action as a result of the Contractor's failure or neglect to carry out the Work, the Contractor shall take no action to cancel existing orders for materials necessary to complete the Work.

In case the Owner discontinues the Contractor's right to proceed with the Work, the Contractor shall not be entitled to receive any further payment under this Agreement until the cost of the supplemental Work undertaken by the Owner is fully reimbursed by the Contractor. If the unpaid balance of the amount to be paid under this Agreement exceeds the expenses incurred by the Owner in finishing the Work, such excess shall be paid by the Owner to the Contractor, but, if such expense shall exceed such unpaid balance, then the Contractor shall pay to the Owner the amount by which such expense exceeds such unpaid balance within ten (10) days of demand by the Owner.

The expense incurred by the Owner as herein provided either for furnishing materials or for furnishing work, and any damages incurred by the Owner by reason of the Contractor's default, shall be chargeable to, and paid by the Contractor. The expense to complete the Work of the Contractor shall be the sum of all costs to complete the Work, plus ten (10%) percent thereof and shall include, but not be limited to, the costs of materials, wages, salaries, subsistence, travels, transportation, equipment rentals, equipment maintenance, tools, supplies, freight charges, services, utilities, taxes, insurance, pensions, fringe benefits, office expenses, license fees, legal fees, accounting costs, engineering costs, bonds, penalties, litigation, financing, interest, and all other costs incurred by the Owner in completing the Work. If the Owner elects
not to terminate the Contractor's right to proceed, the Contractor agrees to reimburse the Owner, for losses or damages resulting from the delay in timely progress of the Work, as well as all costs incurred by the Owner as defined above.

Should the Contractor default in the proper and/or timely performance of the Work, thereby causing delay to work by others, the Contractor shall be liable for all loss and damages, including liquidated and consequential damages (if any), sustained by the Owner or by others. The Contractor shall not be liable under this Section 15, if such default is caused by strikes, lockouts, Acts of God, or other reasons beyond the control of Contractor, provided that the Contractor gives written notice of the delay to the Owner within four (4) days following the start of the alleged occurrence.

The Owner reserves the right to terminate this Agreement in the event that any funding agency terminates the Project, or fire or other catastrophe damages the Project. In the event of such termination, the Contractor shall be entitled only to payment in the lesser amount of either:

- Cost of the work actually completed, plus a reasonable percentage of the cost of the work actually completed for field supervision, overhead and profit.
- A percentage of this Agreement amount that reflects the value of work actually completed in proportion to the Agreement amount.

There shall be deducted from any entitled amounts to be paid as provided in this Section 15, the amount of any payments made to the Contractor prior to the date of termination of this Agreement. The Contractor shall not be entitled to any claim, or claim of lien against the Owner or against the City of Detroit for any additional compensation, anticipated profits, anticipated revenues, profits from declined Projects or consequential damages in the event of such termination.

16. TERMINATION FOR CONVENIENCE

The Owner reserves the right to terminate this Agreement without cause at any time, without incurring any further liability whatsoever, other than as stated in this provision, by giving written notice to the Contractor of such termination specifying the effective date thereof, at least fifteen (15) days prior to the effective date of such termination. If this Agreement is terminated, the Owner will pay the Contractor only for the Work completed and stored on site prior to termination, including any retained amounts. The amount of the payment shall be computed by the Owner on the basis of the Work properly installed and such other means which, in the judgment of the Owner, represents fair value of the services provided, less the amount to any previous payments made, which final payment the Contractor agrees shall constitute full and complete payment and satisfaction under this Agreement.

The Owner or the Owner's designee may, at the Owner's option, undertake any part of the Work that is to be performed by the Contractor. In such an event, the Contractor shall not be entitled to any fees on the value of the Work not performed by the Contractor.

17. INSURANCE

The Contractor shall purchase and maintain in force the following insurances for the duration of this Agreement and any additional periods of coverage specified below:

- Insurance Provided by the Contractor

  The Contractor and all subcontractors of the Contractor shall be responsible for insuring their own transit coverage to the job site. If off-site storage is required, the Contractor shall provide separate proof of insurance for the entire value of the stored items and provide a
safe storage area acceptable to the Owner. Deductibles resulting from transit and off-site storage shall be borne by the Contractor.

The Contractor and the Contractor's subcontractors performing work of any type at the Project Site shall maintain and pay for the following insurance coverage with the minimum limits:

1) Workers' Compensation insurance which meets Michigan statutory requirements and Employers' Liability insurance, with minimum limits of $500,000 for each accident, $500,000 each disease, and $500,000 each disease per employee. The Contractor agrees that it will obtain a similar covenant with respect to Workers' Compensation and Employers' Liability insurance from any consultant or subcontractor retained by it to render any of the Services. The Contractor shall keep this insurance in force and effect until the receipt of final payment.

2) Comprehensive General Liability insurance which conforms to the following requirements: the minimum policy limits shall be $2,000,000 each occurrence for bodily injury and $2,000,000 each occurrence for property damage, with a $5,000,000 umbrella including XCU and Products Completed Operations. This insurance shall be kept in force and effect for the entire term of this Agreement.

3) Automobile Liability insurance covering all owned, non-owned, or hired automobiles with minimum limits for bodily injury of $2,000,000 each person and $5,000,000 each accident and property damage of $5,000,000 each accident. Such insurance shall comply with the provisions of the Michigan No Fault Insurance Law. The Contractor shall keep this insurance in force and effect until receipt of final payment. Such insurance can be obtained through an umbrella policy.

4) Pollution Liability Insurance which conforms to the following requirements: the minimum policy limits shall be $5,000,000 each occurrence and in the aggregate. This insurance shall be kept in force and effect for the entire term of this Agreement and shall cover all subcontractors of the Contractor which are contracted to specifically perform trucking services. Contractor hereby agrees and acknowledges that the premium cost for such insurance shall be paid by the Owner at an amount not to exceed $12,650 with such payment being subject to the execution of a change order between the Owner and Contractor.

Notwithstanding the foregoing, all subcontractors of the Contractor which are contracted to specifically perform trucking services for the Contractor shall maintain and pay for the following insurance coverage with the minimum limits:

1) Workers' Compensation insurance which meets Michigan statutory requirements and Employers' Liability insurance, with minimum limits of $500,000 for each accident, $500,000 each disease, and $500,000 each disease per employee. The Contractor agrees that it will obtain a similar covenant with respect to Workers’ Compensation and Employers’ Liability insurance from any consultant or subcontractor retained by it to render any of the Services. The Contractor shall keep this insurance in force and effect until the receipt of final payment.

2) Comprehensive General Liability insurance which conforms to the following requirements: the minimum policy limits shall be $1,000,000 each occurrence for bodily injury and $2,000,000 general aggregate/umbrella liability coverage. This insurance shall be kept in force and effect for the entire term of this Agreement.
3) Automobile Liability insurance covering all owned, non-owned, or hired automobiles with minimum limits for bodily injury of $1,000,000 each person and $1,000,000 each accident and property damage of $1,000,000 each accident. Such insurance shall comply with the provisions of the Michigan No Fault Insurance Law. The Contractor shall keep this insurance in force and effect until receipt of final payment. Such insurance can be obtained through an umbrella policy.

If during the term of this Agreement, changed conditions or other pertinent factors should, in the reasonable judgment of the Owner, render inadequate the foregoing insurance limits, the Contractor shall furnish on demand by the Owner such additional coverage as may reasonably be required under the circumstances. All such insurance shall be effected under valid and enforceable policies, issued by insurers registered to do business in the State of Michigan, of recognized responsibility, which are well-rated by national rating organizations and are acceptable to the Owner.

The Contractor shall be responsible for payments of all deductibles contained in any insurance required hereunder. The provisions under this Section 17 requiring the Contractor to carry the insurance described herein shall not be construed in any matter as waiving or restricting the indemnification, obligation, or any other liability of the Contractor under this Agreement.

Except for Workers’ Compensation Insurance, all policies of insurance required hereunder shall name the Owner and the City of Detroit as additional insureds. These policies shall provide that the insurance provided to the additional insureds shall be primary and non-contributory with respect to the additional insureds.

The Contractor agrees that it will require each subcontractor or consultant utilized by the Contractor in connection with this Agreement and Project to maintain adequate insurance for its respective job, naming the Owner and the City of Detroit as additional insureds. These policies shall provide that the insurance provided to the additional insureds shall be primary and non-contributory with respect to the additional insureds.

Before the Contractor, its subcontractors, or its consultants commences performance of any Work at, prepares material for, or delivers material to, the Project Site, the Contractor and all of the Contractor's subcontractors, at any tier, shall provide Certificates of Insurance evidencing coverage in amounts not less than required above. Each of these required Certificates shall provide that the coverage therein afforded shall not be canceled or reduced except by written notice to the Owner and the City of Detroit given at least thirty (30) days prior to the effective date of such cancellation or reduction. In the event the coverage evidenced by any such Certificate is canceled or reduced, Contractor shall procure and furnish to the Owner new Certificates conforming to the above requirements before the effective date of such cancellation.

18. INTEGRATION AND AMENDMENT

All the terms and provisions of the Agreement, including those Contract Documents incorporated herein by reference, between the parties hereto pertaining to the subject matter hereof are fully set forth herein and no prior understanding or obligation not expressly set forth shall be binding on the parties. If any provision, in whole or in part, of this Agreement should be found legally invalid, void, or unenforceable, the remaining provisions of this Agreement shall not be affected thereby, and the parties hereto shall, by amendment to this Agreement, properly replace such provision with a reasonable new provision which, as far as legally possible, shall approximate what the parties intended by the original provision, to carry out their purpose.
hereunder. No amendment or modification hereof shall be effective unless made in writing and executed by
the duly authorized representatives of both parties.

19. GENERAL

The Contractor represents and states that the Contractor has carefully examined and understands this
Agreement and the Contract Documents, and that the Contractor has investigated the nature, locality, and
site of the Work, and that the Contractor enters into this Agreement on the basis of the Contractor's own
examination, investigation, and evaluation of all such matters. The Contractor further represents that the
Contractor is not in reliance upon any opinions or representations of the Owner, or of any of its officers,
agents, servants, or employees.

No waiver by the Owner of any provision of this Agreement shall be deemed to be a waiver of any other
provision hereof, or a waiver of any subsequent breach by Contractor of the same or any other provision.

The Owner's engagement of the Contractor is based upon the Contractor's representations to the Owner
that it:

a. is experienced in the type of labor and services the Owner is engaging the Contractor to
   perform;
b. is authorized and licensed to perform the type of labor and services for which it is being
   engaged in the State and locality in which the Project is located;
c. is qualified, willing and able to perform the labor and services for the Project; and

d. has the expertise and ability to provide labor and services which will meet the Owner's
   objectives and requirements, and which will comply with the requirements of all
governmental, public and quasi-public authorities and agencies having or asserting
jurisdiction over the Project. Contractor acknowledges that it and its subcontractors are
obligated to pay the prevailing wage and fringe benefit rates for the same or similar work
in the locality in which the work is to be performed. The prevailing wage and fringe benefit
rates shall be determined under 1965 PA 166, MCL 408.551 to 408.558.

20. ORDER OF PRECEDENCE

It is agreed that, in case of conflict between the terms of this Agreement and the terms contained elsewhere
in the Contract Documents, the terms of the Agreement shall take precedence, and the conflicting terms
found elsewhere in the Contract Documents shall be interpreted in accordance with the terms of this
Agreement. Order of precedence for the Contract Documents shall be as follows:

Agreement
- Special Provisions
- Scope of Work
- Contract Proposal
- General Requirements
- Supplemental Specifications
- Standard Specifications
- Construction Plans and Specifications

21. CITY COUNCIL AUDIT

Nothing contained herein shall be construed to or be permitted to operate as any restriction upon the power
granted to the City Council of the City of Detroit by the City Charter to audit and allow all accounts
chargeable against the City.
22. **EXTENT OF AGREEMENT**

Nothing contained in the Contract Documents shall be deemed to create any contractual relationship between any parties other than the Owner and the Contractor. Any contractual relationship between the Contractor and any subcontractor shall arise solely from and by virtue of an express contract between such parties. Nothing in the Contract Documents shall be deemed to give any third party any claim or right of action against the City of Detroit, the Owner, or the Contractor that does not exist without regard to the Contract Documents.

23. **GOVERNMENT REGULATIONS**

The Contractor shall comply with all rules, regulations, orders, etc., of all government agencies applicable to the Work under this Agreement. The Contractor shall cooperate with the Owner in promptly furnishing any information required by such agencies. It shall be an obligation of the Contractor to keep itself informed of governmental rules, regulations, orders, etc., which are applicable to the Work.

The Contractor shall include and contractually obligate all its subcontractors, suppliers, and vendors to specifically conform to all of the requirements of this Section in the performance of the Work.

24. **CONTRACTOR WARRANTIES**

The Contractor warrants and represents that all materials and equipment included in the Work are new, unless otherwise specified, and that the Work is of good quality, free from improper workmanship and defective materials and in conformance with design documents. Any portion of the Work that does not conform to the Contract Documents, including substitutions not properly approved and authorized, may be considered defective and shall be replaced by the Contractor without cost to the Owner upon discovery by the Owner. The Contractor shall correct defects in materials and/or workmanship for a period of one (1) year from the Final Completion Date of the Phase in which such portion of the Work is included or for such longer periods of time as may be agreed upon or specified.

The Contractor shall collect and deliver to the Owner, in bound and indexed form, all written warranties on materials, equipment and installations. All warranties shall commence on the Final Completion Date of the Phase in which such work is included, unless otherwise defined by the Contract Documents.

The Contractor shall warrant by sworn statements and waivers of lien that title to the Work invoiced in the Progress Payment Application will pass to the Owner either by incorporation in the construction or upon receipt payment by the Owner, whichever comes first. The Contractor shall warrant that all completed Work covered by an Application for Payment is free and clear of all liens, claims, security interests, or encumbrances, and that no portions of the Work, materials, or equipment has been acquired by the Contractor, or by any other person performing any portion of the Work, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the other person or can be otherwise imposed on the Contractor by such other persons. The Contractor and all subcontractors shall agree that title will so pass upon the Contractor's receipt of payment from the Owner.

25. **SUBCONTRACTS**

No portion of the Work may be subcontracted without prior written approval of the Owner. The Contractor shall submit the necessary subcontractor approval request forms, insurance certificates, and such other affidavits as may be required by the Agreement. Approval of any subcontractor shall not relieve the Contractor of any responsibilities, duties, and/or liabilities as contained in the Contract Documents.

The Contractor shall require its approved subcontractors to provide an experienced and competent superintendent or foreman at the site of the Work at all times the Work is in progress. The superintendent or foreman shall have full authority to act for and sign on the subcontractor's behalf. The Owner shall have
the right to demand removal of any contractor or subcontractor superintendent or foreman demonstrating a lack of competence or ability to perform the Work in accordance with the Contract Documents.

26. OTHER CONTRACTS

The Work of the Contractor is required to be coordinated with that of the Owner, the construction manager being Mannik & Smith Group, Inc. (the “Construction Manager”), and other contractors that may be employed by the Owner at the site. The Contractor shall fully cooperate and coordinate the Work with the Owner and other contractors in such a manner as the Owner may direct, so that the Work on the entire Project may be performed without delay or interference. No claim for additional costs or damages will be allowed for alleged interference or delay resulting from improper coordination of the Work.

27. PERMITS

The Contractor shall, unless specifically stated otherwise in the Contract Documents, secure and pay for all permits required for the performance of the Work, including, but not limited to, demolition permits, foundation and building permits, plumbing and electrical permits, Fire Marshall reviews, soil erosion permits, drain layer permits, street encroachment permits, and any other required permits, inspections, or fees relating to the Work. Permits shall be secured in a timely manner so as not to delay the start of the Work. Delays caused by the Contractor's failure to obtain the required permits in a timely manner shall not be the basis for any schedule extensions or increases in the Agreement amount.

28. SUBSURFACE CONDITIONS

If the Contractor discovers one or more of the physical conditions on the surface or subsurface at the Work site before disturbing the physical condition, the Contractor shall promptly notify the Owner in writing of the physical condition. The conditions are:

a. A subsurface or latent physical condition at the site is differing materially from those indicated in the Bid Documents or this Agreement.

b. An unknown physical condition at the Work site of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the character of the Work performed pursuant to this Agreement.

If the Owner receives such written notice, the Owner shall, with reasonable promptness, investigate the differing condition. In the event the Owner determines that the physical conditions identified in the written notice differ materially and may cause an increase or impact the costs and/or additional time required to perform the Work, the Owner's determination shall be made in writing and an equitable adjustment or method to determine an equitable adjustment shall be agreed to by the Owner and Contractor, and the Agreement modified accordingly.

The Contractor shall be held to have waived its rights for additional compensation and/or extension of time should the Contractor proceed with the Work associated with a claimed differing condition and fail to comply with the prior written notice requirements of this Section.

The purpose of this provision is to comply with the requirements of the Public Acts of 1998 No. 57. The terms "Contractor", "Governmental Entity", "Improved", "Improvement", "Person", and "Real Property" shall have the meanings set forth in Section 1 of the Act (MCLA §125.1591).

29. NOTICES

All notices shall be in writing and considered duly given if the original is (a) hand delivered; (b) delivered by telex, facsimile, or telecopy; (c) sent by U.S. Mail, postage prepaid, certified return receipt requested, or (d) by recognized overnight delivery service. Notices hand delivered, delivered by overnight delivery
service, or delivered by telex, facsimile, or telecopy shall be deemed given the next business day following the date of delivery. Notices given by U.S. Mail shall be deemed given as of the second business day following the date of posting. All notices shall be given to the following addresses:

If to Owner:  
500 Griswold  
Suite 2200  
Detroit, Michigan 48226  
Attention: Authorized Agent  
Facsimile Number: 313/963-8839

If to Contractor:  

Attention:  
Facsimile Number: 

30. **GENERAL CONDITIONS**

The following General Requirements are in addition and supplementary to the terms and conditions stated in the Agreement. It is the intent of these General Requirements to work together with the specified requirements of the Agreement to define the terms and conditions agreed to between the Owner and the Contractor for the performance of the Work. In the event there are any conflicts or specific contradictions between the Sections, the terms set forth in the Agreement shall take precedence.

A. **RECORD DOCUMENTS.** A set of Record shall be marked as "Record Drawings" and be maintained at the Project site by the Contractor for the purposes of marking all changes, revisions, relocations, reroutes, or variances in the Work that differ from the Construction Documents. The "Record Drawings" shall be made accessible to all of the Contractor's subcontractors for recording any changes, field sketches, revisions, relocations, reroutes, or variances in the Work. The completed set of "Record Drawings" shall be transmitted to the Owner upon completion of the Work provided in a timely manner and in a format acceptable to the City Department having jurisdiction over the Work. Field sketches and installation records, other than shop, fabrication, or field installation drawings, shall not be submitted separately but shall be recorded on the "Record Drawing" set only.

Records of costs, pertaining to the Work performed by the Contractor, shall be kept on the basis of generally accepted construction industry accounting principles, consistently applied. The Contractor shall preserve all such records for a minimum period of three (3) years after the Final Completion Date, or such longer period as may be required by applicable law.

B. **PROJECT MEETINGS.** The Contractor shall arrange, conduct, and attend scheduled bi-weekly progress meetings. Special meetings for the purposes of coordinating and monitoring the Work progress, identifying problems, informing subcontractor and Project participants of Project status, stressing safety, coordinating construction details and inspecting quality conformance shall be conducted as required to assure the smooth and uninterrupted progression of the Work.

C. **CONSTRUCTION PARKING.** The Contractor shall be responsible for its employees' and subcontractors' vehicles while parked on or off the construction site. Any vehicle found to be owned by the Contractor's employee or an employee of the Contractor's subcontractor parked illegally may be towed away by the City or the Owner and charged to the Contractor by Change Order. The Owner reserves the right to deny parking privileges on the Project site to any individual who parks a vehicle improperly or operates any vehicle in an unsafe manner.

D. **EXISTING SITE CONDITIONS.** The information in this Bid Package is intended to orient the Contractor to the site. The Contractor is responsible for thoroughly evaluating the site conditions. It is
the responsibility of the Contractor, in conjunction with the utility companies, to verify the exact types and locations of existing utilities. Any damage to existing utilities caused by the Contractor shall be repaired at Contractor's expense, in accordance with the standard practices of the applicable City department or private utility company.

E. **FIRST AID.** A completely equipped first-aid kit shall be provided and maintained by the Contractor at the site in a clean, orderly condition and shall be readily accessible at all times to all the Contractor's employees. The Contractor shall designate certain employees who are properly instructed to be in charge of first aid. At least one such employee shall be available at the site whenever work is being carried on.

F. **HOURS OF WORK.** The Contractor shall conduct the work during normal working hours in cooperation with the existing property owners and occupants. At the beginning of work on this Agreement, the Contractor shall notify the Owner, in writing, of the schedule of the days and work hours proposed for a normal work week. The Contractor shall be responsible for contacting in advance all involved parties whenever the Contractor intends to depart from the normal work week schedule and resolve to the satisfaction of the Owner any reasonable objections. Any costs incurred, due to the failure of the Contractor to properly notify involved parties, shall be paid by the Contractor or deducted from the Contractor's Contract amount.

The Contractor shall plan and conduct the Work so as not to create a public nuisance or disturb the peace specifically for any residents near or adjacent to the Project site. Should the Contractor be stopped by order of a public authority from working at such times that are contrary to or in violation of any law, ordinance, permit, or license, the Contractor shall not be entitled to an extension of time or additional compensation due to such stoppage.

In an emergency requiring work to be performed outside the normal work week schedule to save or protect life or property, the requirements for the twenty-four (24) hour notification will be waived. The Contractor shall notify the Owner as soon as the Contractor determines that an emergency condition exists necessitating the change in or extension of the normal hours of work. However, the Contractor's determination of the existence of the emergency is subject to the review and revision by the Owner.

The normal work week schedule and/or daily hours of work may be altered as directed by the Owner, when, in its reasonable judgment, such alteration is necessary to maintain the required progress of the Work.

G. **SANITARY REQUIREMENTS.** Committing unnecessary acts of nuisance on the Project site is prohibited. Any employee who violates such provisions shall be promptly removed from the Project by the Contractor and not be permitted to work on the Project site without the written consent of the Owner.

H. **CLEANLINESS OF WORK AND STREETS.** The Work and all public or private property used in connection with the Work shall be kept in a neat, clean, and orderly condition at all times. Stored materials shall be safely stacked and ordered. Waste materials, rubbish, and debris shall be removed daily and shall not be allowed to accumulate. No burning of rubbish is permitted.

The Contractor shall remove unused construction equipment, temporary buildings, and excess materials from the site upon the reasonable request of the Owner. The site shall not be permitted to become a storage yard for the Contractor's equipment and materials not directly involved in the Work. Any stored equipment or unnecessary materials stockpiled shall be removed from the Project site upon the request of the Owner.

During the performance of the Work, the Contractor shall daily inspect and maintain the Project site in a clean condition including control of dust, picking up of scattered construction debris, and removal of splattered materials from the surfaces of the new construction. **Should the Contractor fail to maintain proper**
cleanliness or order on the site, the Owner, upon forty-eight (48) hour notice to the Contractor, shall arrange for the cleaning and removal of extraneous materials accumulated at the site and shall have the right to deduct the costs incurred from the Contract value.

Trucks hauling loose material from or to the project site shall be tight, and their loads trimmed and tarped to prevent spillage on the public streets. This requirement likewise applies to suppliers making deliveries to the Project site. The Contractor will be held responsible to require compliance by the Contractor's suppliers. The Owner shall have the right to deny site access to any subcontractor or supplier who refuses to comply with this requirement. The Contractor shall promptly (daily as a minimum) clean streets, sidewalks and alleys dirtied by any cause arising from the Contractor's operations. Should the Contractor fail to maintain proper street cleanliness, the Owner, upon notice to the Contractor will clean any such public rights-of-way and shall have the right to deduct the costs incurred from the Contract value.

I. SECURITY AND PROTECTION. The Contractor shall secure and protect from theft, loss, or damage all materials and equipment used for or relating to the Work until Final Completion and acceptance by the Owner. The Contractor shall employ and pay for a bonded guard service with a minimum of one (1) mobile guard assigned to the Project site during all non-working hours.

J. WORKING AREA. All the Work under this Agreement shall be performed on the Project site. The Contractor shall access the Project site via City streets and rights-of-way. The Contractor shall review the legal loading limit for the access streets and rights-of-way and shall be responsible for coordinating deliveries and shipments that do not exceed the legal load limits.

The Contractor shall use Flagmen in accordance with MMUTCD whenever trucks or equipment enter public roadways from the Project site.

Should additional working or storage space be desired, the Contractor shall make all arrangements with any property owner and submit to the Owner written evidence that the Contractor has secured permission to use this property for construction purposes. The Contractor shall pay all expense in connection with its use, and in no way involve or obligate the Owner by such use.

The City Zoning Ordinance provides for the restriction of material storage yards in certain residential areas. The Contractor is responsible to verify that any storage location contemplated can be used and, if a permit is required, shall obtain such permit from the Department of Buildings & Safety Engineering and pay all costs in connection therewith.

AA. DISCLAIMER OF SITE INFORMATION. By its own examinations, observations, investigations, and tests, the Contractor shall make its own determination of the existing site conditions. Information contained in this Bid Package is provided solely for the informational use of the Contractor. The Owner and the City of Detroit do not guarantee the accuracy or sufficiency of any site information.

AB. UNIT PRICES. Unit prices, if established during the Project, shall include all labor, material, tool, supervision, equipment, taxes, insurance, and bonding necessary for or incidental to the proper completion of the Work.

31. ASSIGNMENTS.

a. Assignment by Owner. The Owner may freely assign all or a part of its right, title and interest in the Agreement and upon such assignment, the Contractor shall attorn to the assignee of such assignment as if such assignee were an original party to this Agreement.
b. **No Assignment by Contractor.** The Contractor shall not assign, transfer, convey, or otherwise dispose of this Agreement, or the Contractor’s right, title or interest in it or any part thereof, without the previous written consent of the Owner, which consent may be withheld in Owner’s sole and absolute discretion. The Contractor shall not assign, either legally or equitably, by power of attorney or otherwise, any payment due or to become due under this Contract or the Contractor’s claim thereto without the prior written consent of the Owner. The approval by the Owner of a particular assignment, transfer, or conveyance shall not dispense with such approval to any further or other assignments, which may be proposed by the Contractor. The approval of the Owner of any assignment, transfer, or conveyance shall not operate to release the Contractor hereunder from any obligations under this Agreement.
IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized officers or agents as of the date first written above.

a Michigan corporation

By: _____________________________
Print Name: _____________________________
Its: _____________________________

City of Detroit Brownfield Redevelopment Authority
a Michigan public body corporate

By: _____________________________
Print Name: _____________________________
Its: _____________________________

By: _____________________________
Print Name: _____________________________
Its: Authorized Agent

Approved as to form only:
General Counsel to the Owner

By: _____________________________
Rebecca A. Navin, Esq.
ATTACHMENT A

PAYMENT PROCEDURES

The Contractor shall submit all monthly invoices to the Construction Manager for final submission to the Owner. The Contractor shall also submit a Cost Breakdown of the Work for the purpose of developing a Schedule of Values as required by the Owner and/or Funding Source’s accounting requirements and as required to further break down the unit cost in the proposal. The Cost Breakdown shall when totaled equal the Contract Value amount. The developed Schedule of Values shall be incorporated into the Contractor’s invoice and used on a monthly basis to determine the amount earned by the Contractor that month. The cost breakdown must meet with approval of the Construction Manager and Owner and may be revised by either the Construction Manager or Owner at its sole discretion if it reasonably appears unbalanced. The Owner reserves the sole right, and the Contractor acknowledges such right, to withhold progress payments or portions thereof, in amounts judged necessary by the Owner should the Contractor become in default of any of the terms and conditions of the Agreement.

Procedure for Monthly Payment Applications

1. Before the 25th day of each month, the Contractor will contact the Construction Manager and the Owner’s Sr. Project Manager identified in Section 9 of the Agreement and provide an estimate of the quantities and values of Work completed as projected to the end of the month so that a value of Work completed and earned can be agreed upon.

2. The Contractor must verify quantities and values approved and submit in triplicate the detailed invoice before the 1st day of each month. For each of the Line Items in the approved cost breakdown the Contractor shall indicate total charges through the current billing period, total charges through the previous billing period, total charges for the current billing period, quantities and types of units of work performed and the associated unit prices.

3. The monthly payment request shall be in the form of notarized AIA Documents G702 and G703 (“Application for Payment” and “Continuation Sheet” found in Attachment B), together with a spreadsheet of the Schedule of Value approved by the Owner.

4. A Partial Unconditional Waiver of Lien shall be submitted by the Contractor to the Construction Manager at the time payment is made. A Final Unconditional Waiver of Lien acknowledging payment in full to the Contractor and each subcontractor shall be submitted at the time final payment is made.

5. A notarized Contractor’s sworn statement, showing that all labor and material furnished to the date of request has been paid in full shall accompany each monthly invoice.

6. All invoice documents and backup must be clearly identified with the Project name and shall be hand delivered or mailed to:
   Orza Robertson, Project Manager
   City of Detroit Brownfield Redevelopment Authority
   500 Griswold Street, Suite 2200
   Detroit, Michigan 48226

7. Requests for payment for extra work items will be accepted only when covered by Change Order (AIA Document G701) to the Agreement and only when submitted in the appropriate format and after approval by the Owner.

8. Payment will not be made for materials stored off of the Project site.
9. Should the Contractor fail to comply with steps (1) through (8), the monthly estimate presented to the Construction Manager or Owner may not be honored.

10. No payments shall become due under this Agreement until:
    
    a. This Agreement is executed by the Contractor and the Owner.
    b. Such items as Bonds and Certificates of Insurance are furnished satisfactory to the Owner.
    c. Such time as the Owner receives from its Funding Sources funds for the work performed by Contractor, and properly invoiced from Contractor to the Owner.
    d. If the Contractor fails to or is deemed by the Owner to be in willful default of the requirements to comply with the goals set by the City of Detroit's Executive Orders No. 4 and 22.

11. The Owner will pay Contractor the value of work approved by the Owner, less the applicable retainage, for Contractor's approved invoices within thirty (30) days of the receipt, by the Owner.
ATTACHMENT B

RELATED DOCUMENTS

The Contractor shall be responsible to secure copies of the following documents necessary for the proper administration of the Agreement:

AIA Document G701
AIA Document G702
AIA Document G703
Instruction Sheets for AIA G702/G703
Contractor's Sworn Statement
Partial Unconditional Waiver of Lien
Final Unconditional Waiver of Lien
ATTACHMENT C

Maintenance of Records:
Records shall be maintained in accordance with Part 196, Clean Michigan Initiative Implementation, of NREPA.

(a) The Contractor shall maintain full and complete books, ledgers, journals, accounts, documents and records, and any other supporting data (herein collectively called "Records") in auditable form in accordance with generally accepted accounting principles wherein are kept all entries reflecting all of its operations pursuant to this Agreement. The Records shall document all services performed under this Agreement including, but not limited to, all Activities performed pursuant to this Agreement and all financial records associated therewith.

(b) The Contractor shall make available, and shall require any subcontractor to make available, at all reasonable times all Records and project sites directly pertinent to this Agreement for monitoring, audits, inspections and examinations, the making of excerpts and transcriptions, and for the evaluation of costs and pricing of services under this Agreement by the Owner, the City, the Comptroller of the United States, and any other City, State, or Federal agencies.

(c) The Contractor upon request by the Owner, shall provide to the Owner all data and information as necessary to allow the Owner to meet its reporting obligations to the City, including, but not limited to, data and information needed by the Owner for close-out submissions, if any, to the City.

(d) The Contractor shall keep records in sufficient detail and shall report in sufficient detail to the Owner, and shall require its subcontractors to keep records and to report in sufficient detail to the Contractor, so as to enable (1) the City to meet all of its reporting and monitoring obligations, and (2) the Owner to meet any of its reporting and monitoring obligations under the Agreement between the governing jurisdiction for Infrastructure Improvements.

(e) In the event of any dispute between the parties hereto as to the reporting requirements required hereunder or to be required of the subcontractors, the reasonable determination of the Owner shall govern.

The Contractor shall comply with the mandatory standards and policies relating to energy efficiency which are contained in the State Energy Conservation Plan issued in compliance with the Energy Policy and Conservation Act (P.L. 94-163).

The Contractor shall comply with all requirements of the rule entitled "New Restrictions on Lobbying" found at 24 CFR 87 (the "Lobbying Rule"). The Lobbying Rule requires, but is not limited to, requiring that the Contractor and any subcontractor not use any Federal appropriated funds to pay for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, including subawards at all tiers, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement, including subawards at all tiers. If compensation to be paid to the Contractor, as provided in Section 4.01, exceeds $100,000, the Contractor shall submit to the Owner the Certification Regarding Lobbying, Attachment C-1 herein (the "Certification") and, if applicable, Disclosure of Lobbying Activities, Attachment C-2 herein (the "Disclosure"). The Contractor shall require any subcontractors to comply with all requirements of the Lobbying Rule applicable to subcontractors and shall include the language of the Certification, and require that the language of the Certification be included, in the award documents for any subcontracts.
(a) The Contractor shall, directly or indirectly, employ, award contracts to, or otherwise engage the services of, or fund any contractor, subcontractor, or principal, as defined in the Federal regulations at 24 CFR 24.105, during any period of debarment, suspension, or placement in ineligibility status under the provisions of 24 CFR, part 24, or during any period during which the Contractor or subcontractor or principal is proposed for debarment under 48 CFR, part 9, subpart 9.4. If during the term of this Agreement, the Contractor is placed on the HUD debarred list, or is placed in ineligibility status, or is suspended, pursuant to the regulations at 24 CFR, part 24, the professional subcontractor shall immediately notify the Owner.

(b) The Contractor shall submit to the Owner a certification regarding debarment, suspension, ineligibility, and voluntary exclusion utilizing the form attached hereto as Attachment C-3, and in conformance to the instructions thereon.

(c) The Contractor shall require all parties who occupy a position with the Contractor defined in 24 CFR 24.105 as a principal to submit such certification to the Contractor, who in turn, shall submit such certification to the Owner. The Contractor shall require all parties who stand in a lower tier relationship to the Contractor to submit such certification to the Contractor, and the Contractor shall submit such certification to the Owner, if such lower tier relationship is a covered transaction as defined in 24 CFR 24.110.
C-1

CERTIFICATION RE LOBBYING
C-3

CERTIFICATION RE ELIGIBILITY
EXHIBIT A

BID DRAWINGS
TERMINAL STREET RECONSTRUCTION & PARKING LOT CONSTRUCTION

E. JEFFERSON AVE. TO EDLIE ST.

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS, THE PROPOSAL, AND SUPPLEMENTAL SPECIFICATIONS CONTAINED HEREIN, ALL MATERIALS AND WORKSHIPS SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 2020 EDITION.

NOTES

1. LOCATIONS AND DIMENSIONS ARE APPROXIMATE. THIS IS NOT A LEGAL SURVEY.
2. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS, SPECIFICATIONS, AND ORDINANCES OF THE CITY OF DETROIT, WAYNE COUNTY, AND THE STATE OF MICHIGAN WHERE APPLICABLE.
3. THE CONTRACTOR SHALL ADHERE TO ALL LOCAL, COUNTY, AND STATE ORDINANCES GOVERNING HOURS OF OPERATION.
4. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL RUBBLE AND IMPLEMENTING THEIR OWN HEALTH AND SAFETY PLAN.
5. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS TO COMPLETE THE PROJECT. PERMITS TO BE OBTAINED INCLUDE, BUT ARE NOT LIMITED TO, WAYNE COUNTY, AS APPLICABLE.
6. THE CONTRACTOR SHALL NOTIFY THE PUBLIC AND CONTRACTORS PRIOR TO COMMENCING WORK. CONTRACTOR SHALL CONTACT THE OWNER OF ANY UTILITIES TO HAVE THEM OUTSIDE OF THE PUBLIC RIGHT-OF-WAY IDENTIFIED AND LOCATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS TO COMPLETE THE PROJECT.
7. THE CONTRACTOR SHALL PROTECT, OR HAVE RELOCATED, ANY UTILITIES THAT INTERFERE WITH THE CONSTRUCTION. UTILITIES AND ASSOCIATED STRUCTURES SHALL NOT BE REMOVED UNLESS SPECIFIED ON PLANS.
8. THE CONTRACTOR SHALL PROVIDE THE NECESSARY TRAFFIC CONTROL AND SIGNAGE, PER LOCAL UNIFORM TRAFFIC CONTROL REGULATIONS, TO MAINTAIN ACCESS TO RESIDENTIAL PROPERTIES THROUGHOUT CONSTRUCTION. PROVIDE APPROPRIATE BARRICADES AROUND WORK AREAS FOR PEDESTRIAN AND VEHICULAR SAFETY.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL NECESSARY CONSTRUCTION STAKING AND GRADE ALIGNMENT CONTROLS. THE CONTRACTOR SHALL PROVIDE SUFFICIENT GRADE AND ALIGNMENT REFERENCES BY MEANS OF STAKES, STRINGLINES, OR OTHER APPROPRIATE MEANS.
10. THE CONTRACTOR SHALL USE APPROPRIATE MEANS, METHODS, AND EQUIPMENT AND TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO THE EXISTING SITE FEATURES, SUCH AS, BUT NOT LIMITED TO, ROAD SIGNS, DRIVEWAYS, PAVEMENT, DITCHES, MANHOLES, UNDERGROUND UTILITIES, OVERHEAD UTILITIES, CULVERTS, GATES, FENCES, UTILITY POLES, OR UTILITY MARKERS, PUBLIC OR PRIVATE. ANY SITE FEATURE DAMAGE OR DISTURBANCE THAT OCCURS AS A RESULT OF THE CONTRACTOR'S MEANS, METHODS, OR EQUIPMENT SHALL BE REPAIRED AND/OR RESTORED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE OWNER OR THE OWNER'S REPRESENTATIVE SHALL BE THE SOLE JUDGE OF THE ACCEPTABILITY OF ANY SUCH REPAIRS OR REPLACEMENTS.
11. THE CONTRACTOR SHALL PROVIDE SUBMITTALS ON MATERIALS AND EQUIPMENT TO BE INCLUDED IN THE CONSTRUCTION. FOR ALL OF THE ABOVE, THE CONTRACTOR SHALL PROVIDE THE NECESSARY BARRICADES AND SIGNAGE IN ACCORDANCE WITH THE SPECIFICATIONS.
12. ALL CONSTRUCTION SHALL BE COMPLETE TO THE ELEVATIONS NOTED ON THE PLANS.

LOCATION MAP

6/1/2023
PROPOSED TERMINAL ST. NORMAL SECTION
STA 10+00 TO STA 11+95
EX. 60' R.O.W.

PROPOSED TERMINAL ST. NORMAL SECTION
STA 11+95 TO STA 15+40

PROPOSED TERMINAL ST. NORMAL SECTION
STA 15+40 TO STA 19+00

EX. R.O.W.

EX. R.O.W.

EX. R.O.W.

PR R.O.W. VARIES 30' TO 58'

EX. R.O.W.

EXISTING TERMINAL ST. NORMAL SECTION
DEMOLITION PLAN STA 10+00 TO 15+00
E. JEFFERSON AVE.
TERMINAL STREET RECONSTRUCTION & PARKING LOT

INTERSECTION & DRIVE APPROACH DETAILS

SHEET 15

SCALE 1" = 10'

TERMINAL & E. JEFFERSON AVE.
TERMINAL STREET RECONSTRUCTION & PARKING LOT
INTERSECTION & DRIVE APPROACH DETAILS

---

**E. JEFFERSON AVE.**

**TERMINAL ST.**

**SCALE: 1" = 5'**

**NORTHEAST E. JEFFERSON RAMP**

**SOUTHEAST INTERSECTION OF JEFFERSON & TERMINAL**

**SOUTHWEST INTERSECTION OF JEFFERSON & TERMINAL**

**FUTURE PARKING LOT APPROACH**

**SCALE: 1" = 5'**

---

**INTERSECTION & DRIVE APPROACH DETAILS**

---

**DEVELOPER FOR BID 05/23/23**

---

**PLAN REVISIONS**

---

**APPROVED BY:**

---

**DESIGNED BY:** DAVID RYZYI

---

**CHECKED BY:** DAVID RYZYI

---

**DRAWN BY:** DAVID RYZYI

---

**CHECKED BY:** DAVID RYZYI

---

**CONTRACTOR:**

---

**PROJECT CONTROLLER:**

---

**EXHIBIT:**

---

**DRAWING SHEET:**

---

**REQUEST FOR INFORMATION:**

---

**SUBJECT:**

---

**DATE:**

---

**REMARKS:**

---

**CUSTOMER:**

---

**SUBMITTER:**

---

**NOTES:**

---

**DISCLAIMER:**

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**AUTH:**

---

**DATE:**

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**NO.:**

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**DRAWN BY:**

---

**CHECKED BY:**

---

**DESIGNED BY:**

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**APPROVED BY:**

---

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Last saved 6/1/2023 5:43 PM by KCook, plotted 6/1/2023 6:01 PM.
NORTHWEST INTERSECTION TERMINAL & EDLIE
SCALE 1" = 5'

SOUTHWEST INTERSECTION TERMINAL & EDLIE
SCALE 1" = 5'

INTERSECTION & DRIVE APPROACH DETAILS

TERMINAL STREET RECONSTRUCTION & PARKING LOT
INTERSECTION & DRIVE APPROACH DETAILS
PARTIAL WIDTH CONSTRUCTION ON EDLIE STREET, ALLOW ACCESS TO COAST GUARD AND DUMPSTERS THROUGHOUT CONSTRUCTION

BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED, LIGHTED

42" CHANNELIZING DEVICE (TYP)
TERMINAL STREET RECONSTRUCTION & PARKING LOT

MAINTENANCE OF TRAFFIC PLAN - STAGE 3

STAGE 3 WORK ZONE

BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED, LIGHTED

42" CHANNELIZING DEVICE (TYP)

PARTIAL WIDTH CONSTRUCTION ON EDIE STREET, ALLOW ACCESS TO COAST GUARD AND DUMPSTERS THROUGHOUT CONSTRUCTION

E. JEFFERSON AVE

TERMINAL STREET
TERMINAL STREET - STATE 1 MOT
REMOVE 13' OF EXISTING PAVEMENT. CONSTRUCT 12' CONCRETE SECTION. CONSTRUCT STORM SEWER MAIN/SYSTEM

TERMINAL STREET - STAGE 2 MOT
REMOVE/CONSTRUCT MIDDLE 12' SECTION, KEEPING TRAFFIC ON THE OUTSIDE SECTIONS. MAINTAIN CONNECTION TO EXISTING BUSINESSES WITH MAINTENANCE GRAVEL AS NEEDED.

TERMINAL STREET - STAGE 3 MOT
REMOVE CONSTRUCT EAST 12' SECTION, KEEPING TRAFFIC ON TWO (2) 12' LANES FROM THE WEST CURBLINE.
26
PARKING LOT FENCE AND GATE
TERMINAL STREET RECONSTRUCTION & PARKING LOT

NO. DATE DESCRIPTION NO. DATE AUTH DESCRIPTION

DATE: 05/23/2023
IN: 

DESIGNED BY: DAVID RYZYI
APPROVED BY: KCC

CHECKED BY: DAVID RYZYI

05/23/2023

TERMINAL STREET RECONSTRUCTION & PARKING LOT
PARKING LOT FENCE AND GATE

NO. DATE DESCRIPTION NO. DATE AUTH DESCRIPTION

DATE: 05/23/2023
IN: 

DESIGNED BY: DAVID RYZYI
APPROVED BY: KCC

CHECKED BY: DAVID RYZYI

05/23/2023
1. The Contractor shall provide a One-Year Warranty on all plants and installation performed for the landscaping plan. Any plant failures shall be replaced at the Contractor's expense. The Contractor shall assume any cost incurred due to delays or conditions not identified in the plan.

2. The Contractor shall not be responsible for any damages caused by the City of Romulus or any other third parties during the construction period.

3. All materials purchased shall be approved by the City of Romulus prior to installation. Any materials not approved shall be returned to the supplier at the Contractor's expense.

4. Refer to the Landscape Schematic Plan for additional notes. Landscape improvements shall be completed to the latest design of David Rivera.

5. Prevent damage to existing trees and shrubs during installation, and avoid damage to any existing utilities or public infrastructure.

6. Mass shrub planting: 4 inch SS GRAFTED plants to be located at the rear of the property line. Use ground cover materials in the bed area to control weeds and prevent erosion. Appropriate soil amendments shall be incorporated into the planting bed. The Contractor shall provide a one-year warranty on all plants and vegetation proposed within the landscaping plan.

7. Planting trees for establishment: The period of establishment begins immediately upon completion of the planting operations and shall continue until October 1. The Contractor shall provide a one-year warranty on all trees planted. The period of establishment is the time required for a plant to become rooted, establish its root system, and become established in the landscape. During this period, the Contractor shall provide adequate water, fertilization, and pest control to promote healthy growth. The period of establishment shall be one growing season, June 1 through October 1. The Contractor shall provide a one-year warranty on all plants and vegetation proposed within the landscaping plan.

8. All materials used for the construction of the project shall be approved by the City of Romulus. The Contractor shall provide a one-year warranty on all plants and vegetation proposed within the landscaping plan.

9. Landscaping materials shall be in accordance with the latest edition of MDOT Construction and Material Specifications and City of Romulus Ordinances. Refer to the landscape schematic plan for additional notes. Landscape improvements shall conform to the most recent city ordinance and specifications.

10. LANDSCAPE PLANTING

11. Topsoil application: The Contractor shall prepare the planting area with topsoil and amend it with the following:

A. One part topsoil.
B. One part EPA-rated Class IV compost.
C. A slow-release commercial fertilizer (12-12-12 or equal) added at a rate of 5 pounds per cubic yard (3 kg/m³) to the backfill mix.

12. All planting materials: Existing trees to remain shall be pruned to remove broken, low-hanging branches and other undesirable growth. Pruning lines. Replace as required according to the specifications of the original material. Replacement plants shall be pruned to remove broken, low-hanging and other undesirable growth. Pruning lines. Replace as required according to the specifications of the original material.

13. All planting beds: One month before cultivation and after daytime temperatures have warmed to 60°F, planting beds shall be completely rid the planted and mulched areas of weeds and grasses. Begin the first program on or about June 15. Weed and mowing programs around trees, guy stakes, shrubs, and bed edges of such intensity as to prevent the spread of weeds and grasses. The Contractor shall provide a one-year warranty on all plants and vegetation proposed within the landscaping plan.
SESC PLAN NOTES

1. CONTRACTORS TO MAINTAIN EXISTING SHOWN EROSION CONTROL MEASURES DURING CONSTRUCTION AND RETAIN THE DRY EROSION CONTROL MEASURES UNTIL EROSION CONTROL MEASURES CAN BE INSTALLED. CONSTRUCTION HANG SHEET 48 EROSION CONTROL MEASURES TO BE INSTALLED ON REGULAR SCHEDULE TO MINIMIZE THE AMOUNT OF MATERIALS PILED OUT OF THE SITE.

2. DRAIN PINEL CHANGES MAY BE REQUIRED DURING CONSTRUCTION.

3. TOTAL AREA OF DISTURBANCE WAS 14,940 SQ FT.

SESC PLAN (PROPOSED) LEGEND

- Retaining wall
- Erosion control
- Permanent fence
- Temporary fence
- Hardscape area

DEVELOPER FOR BID 05/23/23

58

SESC PLAN

DESIGNED BY: DAVID RYZYI
CHECKED BY: DAVID RYZYI

55

APPROVED BY: 05/23/2023
KCC

TERMINAL STREET RECONSTRUCTION & PARKING LOT

DRAWN BY: DAVID RYZYI

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09/23/2023

SESC PLAN SHEET

18
1. EXISTING LIGHT POLE TO REMAIN.

2. INSTALL NEW LIGHT BASE AND RELOCATE EXISTING POLE. ADD NEW HEAD TO POLE COVERING NEW PARKING AREA. EXTEND EXISTING LIGHTING CIRCUIT TO NEW BASE AND MAINTAIN EXISTING HEAD ON POLE TO SERVE EXISTING PARKING AREA.

3. MOUNT GFCI PROTECTED, WP ENCLOSED RECEPTACLE FLUSH ON NEW POST FOR TRUCK BLOCK WARMER - 120V, 1.5 KW.

4. NEW GATE OPERATOR 3/4HP, 120V, 1.6KW ASSUMED.

FILE: 2022 Projects\22249 Terminal Street Parking Lot\ES1.2.dwg
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DEVELOPER
engineering & design
33851 Curtis Blvd., 216
Eastlake, OH 44095
www.tecinceng.com
f 440.953.1289
t 440.953.8760

NOTE
PROVIDE 6" CONCRETE COVER WHEN ROUTED BELOW DRIVES AND PARKING AREAS.

NOTE
POSITION EDGE OF BASE AT 12" MINIMUM FROM ADJACENT SIDEWALK.

NOTE
INTERNAL GROUND WIRING IN CONDUIT AT 36" BELOW GRADE (MINIMUM)

NOTE
REINFORCED CONCRETE (4000 PSI) WITH 4 #6 VERT. REBAR AND #8 TIE BARS 12" ON CENTER

NOTE
LEVEL CONCRETE 5/8" DIA. x 8'-0" COPPER CLAD GROUND ROD

NOTE
BOLLARD BASE DETAIL
YELLOW PLASTIC SLEEVE OVER BOLLARD
6" GALVANIZED CONDUIT FILLED WITH CONCRETE
12" BOLLARD BASE DETAIL

NOTE
4000 PSI CONCRETE
12" BOLLARD BASE DETAIL

NOTE
INTERNAL GROUND WIRING IN CONDUIT AT 36" BELOW GRADE (MINIMUM)

ELECTRICAL SITE PLAN

COMMUNICATIONS SITE PLAN

SCALE: 1" = 30'-0"

NEW 3-2 AWG (480V) PLUS 1-6 AWG GND IN NEW UNDERGROUND 1 1/4" PVC CONDUIT
NEW GRADE BOX.
EXISTING 480V PANEL DP-4. INSTALL NEW 100A, 3-POLE CIRCUIT BREAKER - SEE PANEL SCHEDULES
EXISTING 40A, 4-POLE LIGHTING CONTACTOR WITH (2) 208V CIRCUITS
EXISTING (2) 208V, 2-POLE, 1 PHASE LIGHTING CIRCUITS
EXISTING 1 1/4" UNDERGROUND PVC CONDUIT FOR COMMUNICATIONS TO GUARD SHACK
SAW CUT EXISTING CONCRETE TO GUARD SHACK AND USE EXISTING COMMUNICATIONS CONDUIT TO BUILDING
NEW PANEL 'HP-P', NEMA 3R
NEW PANEL 'LP-P' NEMA 3R
NEW TRANSFORMER 'TR-P', NEMA 3R

TYPICAL UNDERGROUND CONDUIT DETAIL - NON ENCASED
SCHEDULE 40 PVC CONDUIT (TYPICAL)
24" MINIMUM

BOLLARD BASE DETAIL
YELLOW PLASTIC SLEEVE OVER BOLLARD
6" GALVANIZED CONDUIT FILLED WITH CONCRETE
12" BOLLARD BASE DETAIL

NEW LIGHTING POLE BASE DETAIL
NEW PROTECTIVE BOLLARD TYP. 3
EXHIBIT B

UNIT PRICE SCHEDULE
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**TOTAL BASED BID PRICE, ITEMS 1-71**

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EXHIBIT C

SPECIAL PROVISIONS

(MDOT SEC. III REQUIREMENTS)

MISC./ SPECIAL DETAILS
SECTION III

Terminal Street Reconstruction and Parking Lot in the City of Detroit

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CITY OF DETROIT

PROGRESS CLAUSE

1 OF 2

PROGRESS CLAUSE: After receiving notice of award of contract, start work on the date designated as the starting date herein or the date agreed upon with the Engineer. In no case, shall any work be commenced prior to receipt of formal notice of award by the department.

The starting date for this project shall be as of the date of the Start Work notice issued after the contract has been approved. The entire project shall be completed **within 100 calendar days inclusive of any rain days** from the starting date.

The low bidder(s) for the work covered by this proposal will be required to meet with department representatives to work out a detailed progress schedule. The schedule for this meeting will be set within one week after the low bidder is determined.

The named subcontractor(s) for Specialty and/or Designated Items (if such items are designated in the proposal) which materially affect the work schedule, shall also be present at the scheduled meeting and they will be required to sign the Progress Schedule to indicate their approval of the scheduled dates of work set forth in the Progress Schedule.

The City of Detroit Brownfield Redevelopment Authority (DBRA) will arrange the time and place for the meeting. A Start Work notice will not be granted without an agreed upon Progress Schedule.

The Progress Schedule shall include, as a minimum, the controlling work items for the completion of the project and the planned dates (or work day for a work day project) that these work items will be controlling operations. When specified in the bidding proposal, the date the project is to be opened to traffic, as well as the final project completion date, and any other controlling dates shall also be included in the Progress Schedule. The intended sequencing of work areas shall be included in the Progress Schedule.

If the Bidding Proposal specifies other controlling dates, these shall also be included in the Progress Schedule.
Failure on the part of the Contractor to carry out the provisions of the Progress Schedule, as established, may be considered sufficient cause to prevent bidding future projects until a satisfactory rate of progress is again established.

Liquidated damages will be applied based on Section 108 of the 2020 Michigan Department of Transportation Standard Specifications for Construction.

**PROGRESS OF WORK**

The contractor is to schedule the work for this contract such that:

1. All work is to be completed within 100 calendar days.

2. Schedule – Contractor shall provide a detailed schedule at the Pre-Construction meeting showing work for specific streets for all construction operations. This schedule shall be updated and sent 24 hours in advance by e-mail for each progress meeting (typically every two weeks).

3. Work on streets with utility structure adjustments and removals of facilities shall be coordinated with the appropriate utility and as directed by the Engineer.
CITY OF DETROIT

SPECIAL PROVISIONS

DETO: PAL 1 of 3 02-04-20

Work Approvals: Acceptance by the City of Detroit of any or all utility work under this contract will be conditioned upon approval by the appropriate Department of the City of Detroit.

Utility Access: The Contractor shall contact the utility owners, including the Detroit Fire and Police Departments, regarding their facilities prior to starting the work. All utility outlets and control fixtures shall be maintained in an accessible condition at all times.

Adjacent Utilities: When proposed utilities cross or lay parallel to an existing or proposed utility, a vertical clearance of twelve (12) inches and a horizontal clearance of forty-two (42) inches shall be provided between the outside limits of their construction and the outside limits of the Public Lighting Department (PLD), Public Lighting Authority (PLA), or Department of Water and Sewerage (DWSD) facility. PLD facilities include electrical conduits, communication conduits, and related structures. PLA facilities include electrical conduit and related structures. DWSD facilities include sewers, water mains, and related structures. If for any reason this clearance cannot be provided, the Contractor shall notify the project engineer and proceed under his direction in an approved manner.

Reclaiming Salvageable Material: All salvageable material within the limits of this project and belonging to either privately or municipally owned utilities, which are to be reclaimed by its owner, will be indicated on the plans or in the proposal. The removal of such material shall be done by the owner and at their own expense and at such time as will cause no delay to the Contractor. If after due notice the owner does not remove the material, the Engineer shall advise the Contractor to remove the material and this material shall become the property of the Contractor. The work of removing the material is included in the construction of the project and will not be paid for separately.

Hydrants and Water: The Contractor shall pump out at the end of each day throughout the year, regardless of the season, any fire hydrant used to obtain water.

The Contractor shall secure the required permit from the Detroit Water and Sewerage Department and shall bear all the expense for such permits and for the water used. If connections are made to hydrants, Fire Department's standard hydrant wrench shall be used for the operation of the hydrant.

As of July 1, 2021, the DWSD current fees include a permit fee of $650.00 per day and an unmetered commercial usage fee of $2,388.68. These fees are subject to change. For more information, contact DWSD at (313) 267-8000.

Removal of Miscellaneous Structures: The use of impact- or vibratory-type equipment for the removal of miscellaneous structures and removal of the other items called for in these Specifications and Plans referred to in Section 204 of the 2020 MDOT Standard Specifications for Construction will NOT be permitted at any time for work under this Contract, except when specifically authorized by the Engineer.
**Pumping and Drainage:** The Contractor will be required to furnish all equipment and supplies and perform all labor necessary to keep all excavated areas dewatered during the period of this Contract.

The work will include the disposal of all drainage water flowing into the excavation. The drainage of the entire project shall be disposed of in a manner that will not interfere with or delay the work of others. This work shall be performed as directed by the Engineer.

The City will permit, subject to its approval, drainage water from the excavations for the project to enter existing operating sewers without reimbursement. No claims for damages, however, will be allowed the Contractor because of the inadequacy of the city sewers to accommodate the water from the excavations.

All sewers and drainage structures shall be kept thoroughly cleaned of silt, debris and foreign matter, and shall be free from such accumulation at the time of final inspection.

The work of pumping and draining excavations, and cleaning the structures used for disposal of same will be considered included in the construction of the project and no additional payment will be made.

**Property and Survey Monuments:** Before any monuments or stakes marking the boundaries of property along or near the work are removed or disturbed, the Contractor shall notify the Engineer in sufficient time so that they can be properly located and reset.

All precautions shall be taken to avoid disturbance of permanent survey monuments of any City, County or State authority, and when any of these are disturbed or destroyed, the Contractor shall restore them to the satisfaction of such authority and shall pay all costs incurred by such authority in connection therewith.

City of Detroit vertical survey monuments shall be adjusted and preserved in accordance with the Special Provision/Specification titled Vertical Survey Monuments.

**Notification:** The Contractor shall provide notification to residents and businesses along the length of the project of pending surface milling, curb replacement, pavement repair and resurfacing activities, and sidewalk and ADA ramp construction a minimum of 48 hours in advance of such work. The notice, at a minimum, shall advise residents of the date work activity will start, the anticipated length of time the area will be worked on, notification of temporary loss of curbside or driveway access to property, and request that street be cleared of parked vehicles.

Should construction activities cease, either due to weather or scheduling, for an anticipated time of five (5) days or more, any and all posted signage shall be removed. Once work will begin again, the Contractor shall re-notify as previously set forth.

For sidewalk repair work, the Contractor shall provide notification to residents and businesses along the length of the pending sidewalk work a minimum of 72 hours (3 day) in advance of such work. This notification shall be placed in accordance with the Specification for Sidewalk Repair Notification.

**Cleanliness of the Work:** The Contractor shall at all times keep the street pavement and right-of-way and any public or private premises temporarily occupied by him for purposes of work
under this contract free from accumulations of waste material or rubbish caused by the Contractors employees or the work. This requirement shall apply to any streets in vicinity of the work which are affected by the Contractor's construction or hauling operations, as well as to streets in which the work is located. If the Contractor shall fail to keep any street cleaned of debris resulting from their operations, and therefore creating a public nuisance, they shall be notified in writing by the Engineer to clean the street and remove the nuisance immediately. If, within 24 hours after the receipt of such notice, the Contractor shall have failed to clean such street satisfactorily, the Engineer shall order the street cleaned by the Department of Public Works or such other agency as he shall designate, and all costs of such cleaning shall be paid by the Contractor.

Materials and equipment not in current use shall not be stored on any city streets. Storage of materials on private property shall require a written agreement with the owner. The Contractor shall provide the Engineer a copy of the agreement.
CITY OF DETROIT

SPECIAL PROVISION
FOR
MAINTAINING TRAFFIC

DET: PAL 1 of 4 02-06-22

**General Requirements:** Traffic shall be maintained throughout the project in accordance with 2020 MDOT Standard Specifications for Construction, including any supplemental specifications, and as herein specified. All traffic control devices shall conform to the current edition of the 2011 (revised Sep 2013) Michigan Manual of Uniform Traffic Control Devices.

City of Detroit Street Maintenance Department and/or Contract Maintenance Agencies may perform maintenance work within or adjacent to the Construction Influence Area (CIA). The Maintenance Division of City of Detroit and or Contract Maintenance Agency will coordinate their operations with the Supervising Engineer to minimize the interference to the Contractor. No additional payment will be made to the Contractor for the joint use of the traffic control items.

The Contractor must submit a Work Zone Traffic Control Plan to the Engineer in accordance with Section 104 of the 2020 Standard Specifications for Construction. At a minimum, the plan shall include the proposed ingress/egress locations for construction equipment and vehicles, traffic control devices that will be utilized to warn the motoring public of ingress/egress locations, and measures that will be taken to ensure compliance with the plan. No work shall begin prior to the acceptance of the Work Zone Traffic Control Plan. Additional time required to obtain an accepted Work Zone Traffic Control Plan shall not be cause for delay or impact claims. All costs associated with obtaining an acceptable plan, providing and executing all parts of the accepted plan including required traffic control devices, or resolving an incomplete or unacceptable plan shall be borne by the Contractor.

Failure to comply with all stipulations of the following traffic specifications will be cause for complete shutdown of the project.

In the event of an emergency, the following specifications and restrictions are subject to change if traffic conditions indicate such a necessity.

Traffic specifications are to be with the work crews at all times.

**Maintenance of Traffic:**

- Walks, driveways, alleys, and entrances to buildings shall not be blocked.
- The required number of lanes shall be maintained by plating of pavement.
- The paved surface shall be free of stored equipment, excavated material, etc. during specified hours.
- Protection and temporary crossings shall be provided for pedestrians at all crossings.
- Protection and temporary driveway access to residents and businesses shall be provided and maintained as directed by the Engineer.
- The Contractor shall notify local businesses a minimum of 48 hours prior to the implementation of any lane closures, weekend closures and major traffic shifts.
- The Contractor shall notify the Engineer, the Michigan Department of Transportation and the Detroit Police and Fire Departments patrolling the area three (3) business days prior to making any lane closures or traffic switches.
• The Contractor must coordinate his operations with contractors performing work on other projects within or adjacent to the construction influence area.

• The Contractor shall be required to coordinate the work with the curb-side garbage pick-up within the construction influence area.

• Steel plates, 3/4 inch thick, of sufficient size, shall be furnished and installed by the Contractor to cover paving cuts and to provide crossings over trenches. No separate compensation will be made to furnish, install, maintain and remove these steel plates when no longer needed. The cost for this material and work shall be included with the project.

• Plates shall be bedded in Cold Patch so as to avoid rocking and the noise resulting there from and shall be firmly anchored by spiking into the existing pavement.

• Approved HMA material, shall be used at the ends of the plates to eliminate bumps in traffic lanes. The cost of the HMA and placement of same shall be considered included with the work.

• The spikes shall have a minimum length of three (3) inches and shall be driven not closer than twelve (12) inches from the edge of a trench up to three (3) feet deep or two (2) feet from the edge of a trench greater than three (3) feet deep.

• For trenches wider than four (4) feet, the Contractor shall submit a method of bridging to the Engineer for approval. All bridging shall be of a design that will satisfactorily carry an HS-20 truck loading across the opening smoothly, safely, and without undue noise.

**Signing and Traffic Control:** The Contractor shall furnish and install all signing necessary for the maintenance of traffic. Traffic control devices shall conform to the current edition of the 2011 Michigan Manual of Uniform Traffic Control Devices, Part VI, Construction and Maintenance; the Michigan Department of Transportation Maintaining Traffic Safety Typical Standards: 110-TR-NFW-2L, 122-NFW-SHL-(R) AND 123-NFW-1LC-(R); and/or the City of Detroit, Department of Public Works Standards on Maintenance and Utility Signing as applicable.

Pedestrian traffic shall be maintained using Michigan Manual of Uniform Traffic Control Devices details as shown in Figures 6H-28 and 6H-29.

Distances between sign locations will vary depending on the lengths of the city blocks in advance of the job site. Other traffic signing and barricading requirements for this project are contained in the proposal.

Temporary "No Parking" signs (Included with Minor Traf Devices, Pay Item) shall be placed in all parking areas when necessary to prohibit parking during construction activities. The "No Parking" signs shall be placed in all parking areas at least 24 hours and not more than 48 hours prior to construction activities.

The Contractor may relocate signs and other portable barricades only after coordinating with representatives of the Traffic Engineering Division of the Department of Public Works.

**CONSTRUCTION INFLUENCE AREA (CIA)**

**Construction Influence Area (CIA):** The CIA shall include the area within the right-of-way of the street or streets listed in the contract and/or the cross streets within the limits of the construction staging.

The Contractor shall coordinate his operations with Contractors performing work on other projects within or adjacent to the Construction Influence Area (CIA).
Time Restrictions: Maintaining traffic requirements and hourly restrictions are subject to change by the Engineer.

Maintain the full pavement width of all project streets between 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. Monday through Friday, and one lane of thru traffic in each direction for all other hours.

No work shall be performed, or lane closures allowed during the Memorial Day, July 4th, or Labor Day holiday periods, as defined by the Engineer. The Contractor shall coordinate their work schedule around special events that take place in local communities in accordance with the Engineer. The Contractor shall be responsible to contact the Supervising Engineer to acquire specific dates and locations for these events.

Other special events that may affect lane closures, as defined by the Engineer, are as follows:

- Downtown Hoe Down
- Freedom Festival
- Annual Detroit Electronic Music Festival
- Chrysler Jeep Detroit APBA Cup
- African World Festival
- Ford Detroit International Jazz Festival
- Ford Field Special Events and Home Games
- Comerica Park Special Events and Homes Games
- Little Caesar’s Arena Special Events and Home Games
- North American International Auto Show
- Detroit Free Press Marathon
- Tour de Troit

Work shall be suspended by the Engineer at any time traffic is being unduly hampered or delayed. In general, traffic is expected to be unduly hampered from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m. weekdays. These hours may be adjusted by the Engineer.

Truck Haul Routes: Truck haul routes selected by the Contractor must be submitted to the City of Detroit Department of Public Works for approval prior to the start of construction and are subject to regulations of the Department.

Barricades: Plastic Drums, High Intensity, and Barricade, Type III, High Intensity, Double Sided, Lighted necessary for traffic control and public safety shall be furnished and erected by the Contractor. All traffic control devices and their usage shall be in accordance with Part 6 of the Michigan Manual on Uniform Traffic Control Devices (MMUTCD) and MDOT Maintaining Traffic Typical’s 110-TR-NFW-2L, 122-NFW-SHL-(R) AND 123-NFW-1LC-(R) and any other applicable.

Warning Lights: Battery operated warning flashers shall be used on all barricades in accordance with the current edition of the 2011 (revised Sep 2013) Michigan Manual of Uniform Traffic Control Devices and any recent changes to special provision regarding battery operated warning lights.

Temporary Signs: The Federal Highway Administration (FHWA) requires that all signs be NCHRP 350 crashworthy. The Contractor shall use temporary signs that comply with the NCHRP 350 requirements.

Stage Construction: The traffic control required by this Special Provision for work on various streets in the contract and adjacent roadways is based on the current edition of the 2011 (revised Sep 2013) Michigan Manual of Uniform Traffic Control Devices. At the discretion of the Engineer,
the Contractor may be requested to conduct construction activities in certain segments of the project at such times that coordinates with adjacent property owner uses and activities. The Contractor shall submit for review and approval by the Engineer a sequence of operation/staging plans to complete the work by the specified completion date. The adjustments or changes in the staging of construction to accommodate property owners shall not be paid for separately and shall be included in the overall project cost.

**Cleaning Adjacent Streets and Sidewalks:** Dirt, mud, construction materials or other debris deposited on public sidewalks or streets as the result of spilling, tracking by the wheels of trucks or construction equipment or by other actions of the Contractor, his employees or subcontractors shall be immediately removed by the Contractor. Failure to do so is a violation of City Ordinances punishable by fines and/or imprisonment.

**Special Considerations at Railroad Crossing.**
1. The Contractor will not obstruct the right-hand display of the railroad signal to traffic approaching the crossing.
2. No lane closure taper(s) may extend through the crossing. Traffic lane shifts cannot transition over the crossing.
3. No construction traffic control devices may be placed in the railroad crossing or closer than 25 ft. from the outside rail on either crossing approach.
4. Provide traffic regulator at railroad crossing if movement of traffic is restricted to alternating one-way traffic through construction area at crossing. The traffic regulator will serve to stop traffic for vehicles traveling in the direction opposed to normal flow and prevent them from entering the crossing upon a train approaching the crossing. When the railroad crossing is in the influence zone of active construction work, but not in a lane closure, the roadway traffic regulator will give immediate preference to clearing any traffic which backup over the crossing as a result of the traffic regulator control away from the crossing.
5. The Contractor will place a temporary stop line and sign R15-1 (crossbuck) to indicate the stopping point in advance of the crossing for vehicles traveling in a direction opposed to normal flow.
6. Payment for intermediate traffic regulator(s) stationed at the crossing is included in the pay item Traffic Regulator Control.

**Measurement and Payment:** Maintaining Traffic will be measured and paid for at the contract unit price for the contract pay items.

Payment for providing and maintaining driveway access and pedestrians crossing, temporary No Parking Signs, ¾ inch steel plates, plates bedding, spikes will not be paid separately, but shall be considered incidental and included in other pay items.

Any equipment required for nighttime operations shall be included in the cost of the work items being placed. All costs of additional signing or maintaining traffic devices required to expedite the construction will be borne by the Contractor.

The contractor is required to remove all equipment and traffic control devices no later than November 30, 2022, for any work performed in 2022. No additional compensation will be paid for remobilization of equipment and reinstallation of traffic control devices in 2023.
The Contractor shall cooperate and coordinate construction activities with the owners of utilities as stated in Section 104.08 of the 2020 Michigan Department of Transportation (MDOT) Standard Specifications for Construction. In addition, for the protection of underground utilities, the Contractor shall follow the requirements in Section 107.12 of the 2020 MDOT Standard Specifications for Construction. Contractor delay claims, resulting from a utility, will be determined based upon Section 108.08 of the 2020 MDOT Standard Specifications for Construction.

The existing utilities listed below and shown on the plans represent the best information available.

This information does not relieve the Contractor of the responsibility to satisfy themselves as to its accuracy, or of their responsibility in case utilities have been constructed or removed since the most recent surveys.

<table>
<thead>
<tr>
<th>NAME AND ADDRESS OF OWNER</th>
<th>KIND OF UTILITY</th>
</tr>
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<tbody>
<tr>
<td>Miss Dig</td>
<td>All Underground Utilities</td>
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<tr>
<td>Call three (3) working days before you dig</td>
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<tr>
<td>811</td>
<td></td>
</tr>
<tr>
<td>(248) 370-6400</td>
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<tr>
<td>(800)-482-7171</td>
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<tr>
<td>City of Detroit</td>
<td>Street Lighting and Traffic Signals</td>
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<tr>
<td>Public Lighting Authority</td>
<td></td>
</tr>
<tr>
<td>400 Monroe Street, Suite 485</td>
<td></td>
</tr>
<tr>
<td>Detroit, MI 48226</td>
<td></td>
</tr>
<tr>
<td>Direct: (313) 324-8058</td>
<td></td>
</tr>
<tr>
<td>Office: (313) 324-8291</td>
<td></td>
</tr>
<tr>
<td>A. Benjamin Barker</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:abarker@pladetroit.org">abarker@pladetroit.org</a></td>
<td></td>
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<tr>
<td>City of Detroit</td>
<td>Water Mains &amp; Sewers</td>
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<tr>
<td>Detroit Water &amp; Sewerage Department</td>
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<tr>
<td>Contract Services Facility</td>
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<tr>
<td>6425 Huber</td>
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<tr>
<td>Detroit, MI 48211</td>
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<tr>
<td>General: (313) 267-4863</td>
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<tr>
<td>Fax: (313) 842-6480</td>
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<tr>
<td>NAME AND ADDRESS OF OWNER</td>
<td>KIND OF UTILITY</td>
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<td>---------------------------------------------------------------</td>
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<tr>
<td>City of Detroit</td>
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<tr>
<td>Traffic Engineering, D.P.W.</td>
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<tr>
<td>2633 Michigan Avenue</td>
<td></td>
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<tr>
<td>Detroit, MI 48207</td>
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<tr>
<td>General: (313) 224-1610</td>
<td>Pavement Markings and Signs</td>
</tr>
<tr>
<td>Fax: (313) 224-1304</td>
<td></td>
</tr>
<tr>
<td>Ahmad Fawaz (313) 224-1267</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:fawaza@detroitmi.gov">fawaza@detroitmi.gov</a></td>
<td></td>
</tr>
<tr>
<td>Kirit Patel (313) 628-5641</td>
<td>Traffic Signals</td>
</tr>
<tr>
<td><a href="mailto:patelki@detroitmi.gov">patelki@detroitmi.gov</a></td>
<td></td>
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<tr>
<td>Sign Shop</td>
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<tr>
<td>2425 Fenkell</td>
<td></td>
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<tr>
<td>Detroit, MI 48238</td>
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<tr>
<td>Monique Walthall (313) 628-2923</td>
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<tr>
<td>Fax (313) 628-4966</td>
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<tr>
<td>City of Detroit</td>
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<tr>
<td>Detroit Fire Department</td>
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<tr>
<td>1301 3rd Street</td>
<td></td>
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<tr>
<td>Detroit, MI 48226</td>
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</tr>
<tr>
<td>General: (313) 596-2900</td>
<td></td>
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<tr>
<td>Fax: (313) 224-4128</td>
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<tr>
<td><a href="mailto:communityrelations@detroitmi.gov">communityrelations@detroitmi.gov</a></td>
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<tr>
<td>City of Detroit</td>
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<tr>
<td>Detroit Police Department</td>
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<tr>
<td>1301 3rd Street</td>
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<td>Detroit, MI 48226</td>
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<tr>
<td>General: (313) 596-2200</td>
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<tr>
<td>Fax: (313) 596-1450</td>
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<tr>
<td><a href="mailto:publicinfo@detroitmi.gov">publicinfo@detroitmi.gov</a></td>
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<tr>
<td>DTE</td>
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<tr>
<td>One Energy Plaza</td>
<td></td>
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<tr>
<td>Detroit, MI 48226</td>
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<tr>
<td>Gas Leak 1-800-947-5000</td>
<td></td>
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<tr>
<td>Electrical 1-800-477-4747</td>
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</tbody>
</table>
| Contact DTE ten working days prior to the construction start date to coordinate adjustments for DTE electric and gas manhole frames and covers.
<table>
<thead>
<tr>
<th>NAME AND ADDRESS OF OWNER</th>
<th>KIND OF UTILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;T</td>
<td>Telephone</td>
</tr>
<tr>
<td>17651 Michigan Ave,</td>
<td>For adjusting Frames and Covers</td>
</tr>
<tr>
<td>Dearborn, MI 48126</td>
<td></td>
</tr>
<tr>
<td>Joe Raczak</td>
<td></td>
</tr>
<tr>
<td>Legal Mandate Engineer</td>
<td></td>
</tr>
<tr>
<td>Office: (313) 240-5314</td>
<td></td>
</tr>
<tr>
<td>Cell: (313)682-8916</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:JR1983@att.com">JR1983@att.com</a></td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>Mark Branam</td>
<td></td>
</tr>
<tr>
<td>OSP Engineer - Metro South</td>
<td></td>
</tr>
<tr>
<td>Office: (313) 240-5390</td>
<td></td>
</tr>
<tr>
<td>Cell: (734)218-1507</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:MB6352@att.com">MB6352@att.com</a></td>
<td></td>
</tr>
</tbody>
</table>

| Detroit Thermal LLC       | Steam Lines    |
| 3575 E Palmer St          |                |
| Detroit, MI 48201         |                |
| Paul Razo                 |                |
| Steam Distribution Supervisor & Planner |                |
| Office: (313) 962-1430    |                |
| Cell: (313) 999-1721      |                |

| Douglas Jablonski         | Communications |
| Steam Distribution Manager |                |
| Office: (313) 921-1969    |                |
| Cell: (313) 300-7358      |                |

| Crown Castle              | Communications |
| 1500 Corporate Dr         |                |
| Canonsburg, PA 15317     |                |
| Phone: 1-800-654-3110    |                |
| Email: Fiber.dig@CrownCastle.com |          |

| Comcast                   | Communications |
| Attention: Jeff Dobies    |                |
| 25626 Telegraph Road      |                |
| Southfield, MI 48034     |                |
| Phone: (734) 359-1669    |                |

| GLWA | Water |
| GLWA |      |
| Attention: Daniel Miller | 6425 Huber Street |
| Detroit, MI 48211        | Phone: (313) 378-4908 |
| Email: Daniel.Miller@glwater.org | |

| Verizon                   | Communications |
| Attention: Joel Crane or Ronald Kocienski | |
| Email: joel.crane@verizonwireless.com | Ronald.kocienski@verizonwireless.com |
| Asg.investigationsteam@asginc.us | |
The workdays used to develop the progress schedule shall be Monday through Saturday and shall not include Sundays or any approved City holidays. The Contractor may normally execute work during the daylight hours of any workday provided they conduct their operations not to create a public nuisance nor disturb the peace. Overtime shall be limited to the workdays submitted on the progress schedule for the project. Overtime work on Sundays and City Holidays shall be limited to emergency work necessary to safeguard the health and safety of the public.

When the Contractor elects to conduct work operations in excess of eight hours per day, or on Saturdays, Sundays, or a City Holiday, they shall bear overtime costs incurred by the City of Detroit for City personnel assigned to the project for those situations.

The following are the current City Holidays: New Year’s Day, Martin Luther King Jr. Birthday, Good Friday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Day after Thanksgiving, Christmas Eve, Christmas Day, New Year’s Eve. The Contractor shall be responsible for confirming with the City Engineering Division any amendments to this list of calendar dates designated as holidays for City of Detroit employees.

The Engineer may require the Contractor to cease construction operations during times determined to be in the interest of the public at no additional compensation or cost to the City.

The contractor shall suspend or limit their operations if work interferes with a City Sponsored Public events within project CIA (Construction Influence Area) at no additional compensation or cost to the City.
All the work under this Contract shall be in City streets, alleys, easements, or right-of-ways, and the space allowed for the Contractor’s operations shall be in City streets and alleys adjacent to the work. Construction equipment, storage of materials, and the construction operations shall normally be restricted to such areas. Should additional working or storage space be desired, the Contractor may be permitted to utilize adjacent private property provided the Contractor makes all arrangements with the Owners of the property, bears all expense in connection with its use, and in no way involves or obligates the City, County or State by such use.

Materials delivered on the street shall be neatly and compactly stored in such a manner as to cause the least inconvenience to adjacent property owners and the general public.

Working and storage areas shall be promptly restored to their original conditions as soon as the required construction work has been completed at the particular location, and shall not be used as a storage area for unneeded material or construction equipment.

The work, and all property used in connection with the work, shall be kept in a neat and orderly condition at all times. Waste material and refuse from the Contractor’s operations may be temporarily stored behind the curb in a manner not to interfere with pedestrians. Waste materials, rubbish, and debris shall not be allowed to accumulate and shall be removed daily, or as directed by the Engineer. Construction equipment and excess materials shall be promptly removed from the site as they become no longer needed for the progress of the work.

All cost relating to maintaining a neat working area and providing the required cleanup will not be paid for separately, but shall be included in the total project cost.
Once work on a street is begun, the Contractor shall maintain continuous operations.

The Contractor shall schedule the cold-milling operation so that the entire lane width of the roadway is cold-milled between the road terminus limit before switching over to the other lane/side. This is required to avoid having vehicles travel over the milled surface on one side and normal pavement surface on the other side.

The Contractor shall place a wedge at the base of driveway approaches, a minimum of six (6) inches wide for the full width of the driveway approach, where milling is greater than 2 inches in depth to provide a smooth transition between the milled surface and driveway approach. The cost of the wedge shall be included in the cost of the “Cold Milling HMA Surface, modified” pay item.

At the end of the day, the Contractor shall place a wedge, a minimum of 6 feet wide, the full length of all transverse and longitudinal joints at intersections where milling is greater than 2 inches in depth, to provide a smooth transition onto and off of the milled surface. The cost of the wedge shall be included in the cost of the “Cold Milling HMA Surface, modified” pay item.

All milled surfaces shall be completely resurfaced with HMA leveling course as soon as possible, but not to exceed 48 hours from the milling period unless otherwise approved by the Engineer. Immediately after placement of the leveling course, Type NR temporary pavement markings must be applied in accordance with Section 922 of the 2020 MDOT Standard Specifications for Construction, to maintain safe traffic operations, as directed by the Engineer. Type NR temporary pavement markings are considered included with the leveling course.

Top Course HMA shall be placed only after all base repairs, concrete curb repairs, and structure adjustments and repairs are completed.

Immediately after placement of the top course, Type R temporary pavement markings must be applied in accordance with Section 922 of the 2020 MDOT Standard Specifications for Construction, to maintain safe traffic operations, as directed by the Engineer. Removal of Type R temporary pavement markings is considered included with the permanent pavement markings.

All milled surfaces must be completely resurfaced with leveling, top course, and permanent pavement markings before the winter seasonal shutdown; otherwise, liquidated damages will be assessed per Section 108.10.C of the 2020 MDOT Standard Specifications for Construction.

It is the Contractor’s responsibility to establish the finish (final) grade on all streets and to ensure proper (positive) drainage at all locations.
Description: This specification covers the preparatory work and operations, and movement of equipment, materials and personnel to the construction sites in the City of Detroit. The work covered shall be as specified in the Michigan Department of Transportation 2020 Standard Specifications for Construction, Section 110.0

The word “Department” in the body of the MDOT Specification shall mean “The City of Detroit”.

Measurement and Payment: In accordance with Section 110.04.

Pay Item                      Pay Unit
Mobilization, Max ___         Lump Sum
a. **Description.** Work consists of removing pavement, sidewalks and base courses to existing subgrade.

b. **Materials.** Provide necessary materials per MDOT Standard Specifications for Construction.

c. **Construction.** The work shall be done in accordance with the applicable provisions of Section 204 of the MDOT Standard Specifications for Construction except as modified herein.

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

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
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</thead>
<tbody>
<tr>
<td><em>Pavt, Rem, Modified</em></td>
<td>Square Yard</td>
</tr>
<tr>
<td><em>Sidewalk, Rem, Modified</em></td>
<td>Square Yard</td>
</tr>
</tbody>
</table>

_**Pavt, Rem, Modified**_ shall be performed in accordance with the Michigan Department of Transportation Standard Specification for Construction for **Pavt, Rem** except shall include the full depth removal of the pavement including subbase materials. The pavement removal includes all types of pavement materials including but not limited to concrete, HMA, brick, aggregate, and others. The pavement removal shall extend to existing subgrade. Different types of pavement materials, multiple pavement and/or base layers, concrete overlays, aggregate base and other pavements encountered that are different than the surface pavement will NOT be paid for separately, but will be included in the pay item _**Pavt, Rem, Modified**_. Subgrade and subbase materials removed when removing existing pavement shall be replaced with a suitable material and will be considered incidental to the cost of construction. Contractor shall remove and dispose of by legal means off-site of all items associated with the pavement removal.

_**Sidewalk, Rem, Modified**_ shall be performed in accordance with the Michigan Department of Transportation Standard Specification for Construction for **Sidewalk, Rem** except shall include the full depth removal of the pavement including subbase materials. The sidewalk removal includes the concrete sidewalk and the subbase aggregate materials. Different types of pavement materials, multiple pavement and/or base layers, concrete overlays, aggregate base and other pavements encountered that are different than the surface pavement will NOT be paid for separately, but will be included in the pay item _**Sidewalk, Rem, Modified**_. Subgrade and subbase materials removed when removing existing pavement shall be replaced with a suitable material and will be considered incidental to the cost of construction. Contractor shall remove and dispose of by legal means off-site of all items associated with the sidewalk removal.
Description: This work consists of excavating materials not otherwise addressed in the contract as a separate work item. This work will be done in accordance with section 205 of the 2020 Michigan Department of Transportation (MDOT) Standard Specifications for Construction, except debris and non-hazardous material when encountered, shall not be paid for separately. Experience has shown that most or all of earth excavation may be debris and may require hauling to special disposal sites which will accept this type of material.

Any tree roots encountered while excavating shall be sawcut at least 6 inches from proposed edge of pavement.

Measurement and Payment: "Excavation, Earth, Modified" will be measured per cubic yards. The contract unit price will be payment in full for furnishing all labor, equipment, and materials necessary to excavate and dispose of the material. Where masonry and concrete structures and heavy foundations are encountered, their removal will be paid for as specified for these items.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
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<tbody>
<tr>
<td>Excavation, Earth, Modified</td>
<td>Cubic Yard</td>
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a. **Description.** This work consists of handling, transporting, disposing of non-hazardous contaminated material, including all laboratory testing required for the proper disposal of the material and site restoration of temporary storage locations. Ensure this special provision is not employed without authorization by the Engineer. The laboratory testing will be used to solicit landfill approval and is not intended to determine whether or not the material is contaminated. Soil delineated on the plans and classified as non-hazardous contaminated cannot be used elsewhere on the project regardless of the laboratory test results unless otherwise directed by the Engineer.

b. **Materials.** None specified.

c. **Construction.** Complete this work in accordance with sections 204 and 205 of the Standard Specifications for Construction, except as modified herein or as directed by the Engineer.

1. **Excavation of Non-hazardous Contaminated Material.** Excavate non-hazardous contaminated material as shown on the plans or as directed by the Engineer.

2. **Temporary Storage of Non-hazardous Contaminated Material.** Place excavated non-hazardous contaminated material which is to be temporarily stockpiled on plastic sheeting or tarps having a minimum thickness of 6 mils or in trucks, roll off boxes, or other containers, such that no liquid may escape from the containment. Cover the non-hazardous contaminated material securely with plastic sheeting of 6 mils thickness or greater at the end of each work day.

   Dispose of excavated non-hazardous contaminated material as soon as approval is received from the disposal site. This material cannot be stockpiled for longer than 30 days prior to disposal.

   Restore temporary storage locations to the condition prior to conducting the work.

3. **Sampling and Analysis of Non-hazardous Contaminated Material.** Sample and analyze non-hazardous contaminated material prior to disposal. The analysis required is dictated by the Type II disposal facility to be utilized for disposal. Should the results of the analysis show the material to be hazardous waste, as defined by the 1994 PA 451, Part 111, of the Natural Resources and Environmental Protection Act, notify the Engineer immediately. The material must then be disposed of as directed by the Engineer.

4. **Disposal of Non-hazardous Contaminated Material.** Dispose of non-hazardous contaminated material at a licensed Type II sanitary landfill. Submit at the preconstruction
meeting the name of the Type II landfill to be used for disposal, the sampling and analysis requirements of that landfill, and verification that use of the proposed landfill will meet the requirements of the county solid waste plan.

Ensure the proposed landfill is acceptable to the Department and approval is obtained from the Engineer prior to commencing disposal operations. Provide a copy of the laboratory analysis to the Engineer as a requirement of approval for disposal. Following disposal and prior to approval for payment provide to the Engineer landfill receipts for all non-hazardous contaminated material disposed of.

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:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non Haz Contaminated Material Handling and Disposal, LM</td>
<td>Cubic Yard</td>
</tr>
</tbody>
</table>

**Non Haz Contaminated Material Handling and Disposal, LM** will be measured by volume in cubic yards, LM. Provide to the Engineer receipts from the disposal facility for the number of cubic yards disposed of at that facility prior to payment. Payment will include all costs for materials, labor and equipment needed for storage, loading, transportation, testing, restoration of temporary storage locations and disposal of the non-hazardous contaminated material. Disposal costs will include all documentation required by the landfill.

Payment for excavation of non-hazardous contaminated material will be included with the related items of work.

Delays in testing and disposal of non-hazardous contaminated material that are not the fault of the Contractor may be considered valid reasons for extension of time. However, these delays and the resultant extensions of time will not be considered valid reasons for additional payment.

Should the analysis of the material document that it is hazardous waste, then payment for disposal of hazardous waste will be measured and paid for as extra work. Disposal includes hauling by a licensed hazardous waste hauler and disposal at an appropriate licensed disposal facility. Prequalification is waived.
CITY OF DETROIT

SPECIFICATIONS
FOR
DRAINAGE STRUCTURE COVERS

Description: The work shall consist of furnishing and placing metal frames and covers for new structures or removal and replacement of damaged frames and covers as determined by the Engineer.

Materials:
Gray Iron Castings shall be as specified in Section 908.05. Iron Castings of the 2020 MDOT Standard Specifications for Construction, City of Detroit DPW/CED DWSD Manhole and Catch Basin Drawings No’s. 101 thru 113, PLD Manhole and Handhole Drawings, and as specified herein.

The manhole and catch basin frame and its cover or grate shall constitute one unit. Each unit shall conform to the detailed requirement of the respective DPW/CED DWSD/PLD drawing. Each unit shall have a weight, with a tolerance of plus or minus 3 percent, of that specified in the respective DPW/CED DWSD/PLD drawing.

Construction:
The metal frames, covers, and grates on existing manholes and catch basins that are to be reused shall be carefully removed to prevent damage. Any reusable casting damaged by the Contractor shall be replaced with a new casting without additional cost to the City. All salvaged castings that are not to be used on the work shall become the property of the Contractor and shall be promptly removed from the job site.

Measurement and Payment: “Drainage Structure Cover, Type ___, Modified” unit prices shall include removing and disposing of existing damaged cover and frame, and furnishing and installing structure cover and frame of the appropriate type.

Pavement removal and replacement, when required will be paid for separately.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Structure Cover, Type ___, Modified</td>
<td>Each</td>
</tr>
</tbody>
</table>
CITY OF DETROIT

SPECIAL PROVISION
FOR
STRUCTURE COVER ADJUSTMENT,
RECONSTRUCTING STRUCTURE, AND
WATER SHUTOFF ADJUSTMENT

Description: The work consists of adjusting utility structure covers in accordance with the applicable provisions of Section 403 and Section 823 of the 2020 Michigan Department of Transportation (MDOT) Standard Specifications for Construction, except as modified herein.

Utility structure cover adjustments will include all Public Lighting Department (PLD) manholes, and all Detroit Water and Sewerage Department (DWSD) gate wells, sewer manholes and catch basins whose covers are required to be raised or lowered to meet the required new pavement elevations. Water shutoff adjustments will include DWSD water shutoff boxes or stop boxes, and PLD hand holes which are required to be raised or lowered to meet the required new pavement elevations.

Before starting this work, the Contractor and the Engineer shall jointly inspect each structure to evaluate its interior conditions. Access to the structure will be provided by the Contractor. The Engineer shall determine whether the structure is to be adjusted or reconstructed. The Engineer shall also determine if any structure cleaning is necessary to remove existing debris. The Contractor shall remove all debris from the structure resulting from the Contractor’s operations.

Materials: Materials used in the adjustment and reconstruction of drainage structures shall be as specified in Section 403, Drainage Structures, of the 2020 MDOT Standard Specifications for Construction.

Construction: Where called for on the plans or authorized by the Engineer, existing structure covers shall be adjusted to the proper elevation in accordance with Section 403 of the 2020 MDOT Standard Specifications for Construction, except as modified herein.

For Case 1 structures, saw cut full depth and remove the adjacent concrete and/or HMA pavement, curb, curb and gutter, or sidewalk as necessary to adjust the structure and cover. Remove an area of pavement and curb at least five (5) feet by five (5) feet around the structure. The existing frame and cover shall be carefully removed and the upper portion of the existing utility structure repaired as necessary and raised or lowered as required. The frame and cover shall then be reset on the adjusted structure and constructed to hold them firmly in place and reset on a full mortar bed to fit the required new pavement grade and cross-section. Replace adjacent concrete and/or HMA pavement, curb, curb and gutter, or sidewalk to match existing grades or to the required new pavement grade and cross-section.

Case 2 structures shall be those that are located outside of existing pavement, curb, and curb and gutter.
The metal frames, covers, and graters on existing manholes and catch basins that are to be reused shall be carefully removed and reset. Any reusable casting damaged by the Contractor shall be replaced with a new casting without additional cost to the City. All salvaged castings that are not to be used shall become the property of the Contractor and shall be promptly removed from the job site and properly disposed of. Structure covers shall only be replaced as directed by the Engineer, and in accordance with the Special Provision for Structure Covers.

Where the structure requires repair, as determined by the Engineer, in excess of the adjustment limits set forth herein, the existing structure shall be broken down and rebuilt with new materials as specified in the City of Detroit Specifications for Manholes and Catch Basins, to the required new pavement elevations. Structure damage due to the Contractor’s operations shall be repaired at the Contractor’s expense.

A finished concrete collar shall be placed around any structure adjusted that is within five (5) feet of the Detroit Thermal (formerly Detroit Edison) steam lines, as directed by the Engineer. The cost of this shall be paid for separately as Pavt Repr, Nonreinf Conc, 10 inch, Modified - Syd, and measured by the surface area of the concrete collar.

Non-ferrous handholes and covers used by PLD and other City Utilities are made of fiberglass, copolymer propylene, or similar material. These structures and covers shall be adjusted by a qualified electrical contractor. The removal of concrete around the perimeter of non-ferrous handholes shall be performed with light chipping hammers to ensure that no damage is done to the handhole, cover, or any conduit or other utility that may feed the structure. Any damage to structures, conduits, cable, and wiring shall be repaired by the Contractor at no cost to the City or utility.

For HMA pavement sections, immediately before placing the HMA top course or overlay, make final adjustments to drainage structure covers. Equipment will not be permitted to operate over adjusted structures for twenty-four (24) hours after their completion unless otherwise approved by the Engineer.

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

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Structure Cover, Adj, Case 1, Modified</td>
<td>Each</td>
</tr>
<tr>
<td>Dr Structure Cover, Adj, Case 2, Modified</td>
<td>Each</td>
</tr>
<tr>
<td>Reconstructing Dr Structure, Case 1, Modified</td>
<td>Each</td>
</tr>
<tr>
<td>Reconstructing Dr Structure, Case 2, Modified</td>
<td>Each</td>
</tr>
<tr>
<td>Water Shutoff, Adj, Case 1, Modified</td>
<td>Each</td>
</tr>
<tr>
<td>Water Shutoff, Adj, Case 2, Modified</td>
<td>Each</td>
</tr>
</tbody>
</table>

Dr Structure Cover, Adj. Case ____, Modified shall include all materials, equipment, and labor required to complete the work as specified to raise or lower the existing catch basin, manhole, or gate well rim elevation involving adjustment, repair, or replacement of less than or equal to three (3) courses of brick, including mortar, regardless of whether or not it is necessary to remove a cone section to accommodate the rim elevation adjustment.
**Reconstructing Dr Structure, Case __, Modified** shall include all materials, equipment, and labor required to complete the work as specified to raise or lower the existing catch basin, manhole or gate well structure and cover involving adjustment, repair or replacement of more than three (3) courses of brick, including mortar, and shall include the removal of a cone section if required to accommodate the rim elevation adjustment.

**Water Shutoff, Adj, Case __, Modified** shall include the above-described work necessary to raise or lower the existing structure and cover of water DWSD water shutoff boxes or stop boxes, and PLD hand holes.

Each pay item listed above shall also include all material, equipment, and labor required for the removal and replacement of concrete and/ or HMA pavements, curb, curb and gutter, sidewalk; and excavation required to perform the required work. Backfilling, disposal of surplus material, removal of all debris and foreign material from the structure (including the sump), and providing access to all structures for inspection as directed by the Engineer shall be considered as part of the pay items.
a. **Description.** This work consists of the furnishment and placement of topsoil and prepared soil mixes.

_*Topsoil Surface, Furn, 4 inch, Modified* shall be in accordance with section 815 and 917 of the MDOT Standard Specifications for Construction except as herein modified. The depth of topsoil placed shall be to the depth identified on the plans and details and per notes on sheet LP001. The preparations of the subgrade shall be as specified in the MDOT Standard Specifications for Construction. Irrigation systems, if encountered, shall be protected by the Contractor at no additional cost.

This Special Provision specifies all soil materials designated as "Topsoil" on the drawings or in the specifications. Supply topsoil for landscape work (seeding and planting) from off-site sources.

Prepared soil mixes shall be furnished and placed for the project areas as shown on the plans. The work shall be in accordance with the MDOT Standard Specifications for Construction, section 205, 815 and 917, and as noted in this Special Provision.

b. **Materials.**

1. **Topsoil.** Topsoil for landscape work shall be a fertile, friable, sandy loam or loam surface soil without admixture of subsoil and screened to be free of stones, stumps, roots, trash, debris, and other materials deleterious to plant growth (Table 1). Topsoil shall be as defined in ASTM D5268.

   **Table 1: Particle Size Distribution of Topsoil**

<table>
<thead>
<tr>
<th>Sieve Designation</th>
<th>Total Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Inch</td>
<td>100</td>
</tr>
<tr>
<td>¼ Inch</td>
<td>97 – 100</td>
</tr>
<tr>
<td>No. 10 U.S.S. mesh sieve</td>
<td>95 - 100</td>
</tr>
<tr>
<td>No. 140 U.S.S.</td>
<td>15 - 35</td>
</tr>
</tbody>
</table>

   The pH range shall be 6.5 to 8.0. Topsoil that does not meet this pH range shall not be approved. Soil pH shall be tested in accordance with ASTM D4972.

   Organic content shall not be less than 4 percent and not greater than 20%. Test for organic material by using ASTM D2974.

   Clay content determined by Bouyoucous Hydrometer Test: between 5 percent and 15 percent. Base percentages on dry weight of the sample.

   Conduct and submit topsoil testing for imported topsoil from off-site sources.
Laboratory Test Reports. Conduct topsoil testing for a minimum of 3 samples for each off-site source. Provide a 1 quart sample in a ziplock bag to the Engineer for review and approval. Conduct topsoil sampling and testing and submit for approval prior to proceeding with acquisition and/or delivery of topsoil. For topsoil stockpiles, discard upper 6 inches of soil before sampling. For large stockpiles, partial excavation will be required for collection of representative samples.

The testing laboratory shall be an independent laboratory or university, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in the types of tests to be performed.

Submit all test reports for approval. Topsoil units that do not meet the soil requirements specified under this section will not be permitted for use as Topsoil.

A. Fertility. For each unamended soil type, test topsoil for organic materials, pH, phosphate, potash content, calcium, magnesium, zinc, iron, and manganese.

B. Physical Properties. Determine percent sand, silt and clay and textural classification (USDA) by hydrometer method. Identify all foreign materials such as rock, roots, and vegetation.

C. Supplemental Testing. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action. If any heavy metal exceeds state listed background levels for human contact, soils will not be approved for use on site.

D. Recommendations. Based on the test results, the independent testing laboratory shall state recommendations for soil treatments and soil amendments to be incorporated prior to seeding and planting. List recommendations in weight per 1000 square feet for lawn area and cubic yard of plant mixture for landscape plants such as trees, shrubs, and perennials. Recommendations shall include; nitrogen, phosphorus, and potash nutrients and all soil amendments required for the long-term growth of the specified plants and turf. Testing methods and written recommendations when not referenced elsewhere, shall comply with USDA's Handbook No. 60. Nutrient data to be given in parts per million (ppm) dry soils.

2. Soil Amendments.

A. Peat shall be a product having at least 95% organic content consisting of sphagnum peat moss with a pH range of 3.0 – 4.0 and Von Post decomposition value of H1 – H3, or low-lime reed-sedge peat with a pH range of 4.0 to 5.0 and Von Post decomposition value of H4 – H6. Product shall be free of sticks, wood or other debris.

B. Compost shall be a mature/stabilized, humus-like material derived from the aerobic decomposition of yard clippings or other compostable materials. The compost shall have a dark brown or black color, be capable of supporting plant growth without ongoing addition of fertilizers or other soil amendments and shall not have an objectionable odor. The compost shall be free of plastic, glass, metal and other physical contaminants, as well as viable weed seeds and other plant parts capable of reproducing (except airborne weed species). The compost shall be visually inspected and approved by the Engineer for physical contaminants. The compost moisture content shall be such that no visible free water or dust is produced when handling it.
C. Sand shall be fine clean, hard, durable, uncoated material resulting from the natural disintegration of rock meeting the requirements of ASTM C33 for fine aggregates.

3. pH Adjusters.
   A. Lime shall be finely ground agricultural grade dolomitic limestone containing not less than 85% calcium and magnesium carbonates.
   B. Elemental sulfur shall be granular, biodegradable, horticultural grade material containing at least 90% sulfur, with a minimum of 99% passing through No. 6 sieve and a maximum of 10% passing through No. 40 sieve.

4. Fertilizer.
   A. The fertilizer to be used to amend the soil before planting shall be granular fertilizer that conforms to applicable state and federal regulations, and contain nitrogen (of which 50% shall be organic), available phosphoric acid, and potash. Use formulation recommended by soil tests to amend site soil.
   B. Fertilizer to be used during the maintenance period shall be a complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, not less than 30% of the nitrogen from a slow release source. Fifty percent of the nitrogen shall be derived from natural organic sources.

5. Planting Mixture, 24 inch Depth.
   A. Standard planting mixture for all plant beds shall be 2 parts pre-approved off site topsoil, thoroughly blended with 1 part pre-approved compost.
   B. Standard planting mixture for all individual street trees planted in tree grates shall be 2 part blended with 1 part pre-approved topsoil and 1 part pre-approved compost.

c. Construction.

1. General.
   A. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
      (1) Suspend spoil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
      (2) Uniformly moisten excessively dry soil that is not workable and which is too dusty.
      (3) Blending of soil mixes, fine grading for planting beds and bioretention areas, and other work to provide the materials as shown on plans and details shall be incidental to the topsoil, general site fill and soil mixture pay items.

2. Place and spread topsoil per section 816 of the MDOT Standard Specifications for Construction.
3. Grade and place Planting Mixture, 24 inch Depth plan areas to a smooth, uniform surface plane with loose, uniformly fine texture as shown on plans and details. Roll and rake, remove ridges, and fill depressions to meet design grades.
d. **Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price per pay unit identified compacted in place. The unit price shall be payment in full for furnishing all labor, equipment, testing and material to furnish, place and compact the topsoil, general site fill and prepared soil mixes as shown on the plans at the contract unit price using the following pay items. The pay quantity will be determined by field measurement of the area as installed.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topsoil Surface, 4 inch Depth, Modified</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Planting Mixture, 24 inch Depth</td>
<td>Square Yard</td>
</tr>
</tbody>
</table>
a. **Description.** This work consists of furnishing and placing seed mixes as shown on plans. Ensure seeding is in accordance with section 816 of the MDOT Standard Specifications for Construction and as directed by the Engineer with the following exceptions and additions.

b. **Materials.** Provide materials meeting the requirements specified in section 917 of the MDOT Standard Specifications for Construction with the following exceptions and additions.

1. **Submittals.**
   A. Product Data Sheets for Seed Mixes and Fertilizer, including nursery source(s) for seed mixes and their location, plus list of each seed by weight and proportion and their harvest date.
   B. Maintenance Plans and Reporting. Comply with same Maintenance and reporting procedures required under the Special Provision for Exterior Plants.
   C. Tackifier. Manufacturer’s specifications and recommended rates of application.
   D. Require the Work of this Special Provision to be performed by an organization that specializes in seeding and landscape installations.

2. **Topsoil.** Refer to the Special Provision for Topsoil.

3. **Seeding, Mixture TUF, Modified**

   A. MDOT TUF Seed Mixture.

<table>
<thead>
<tr>
<th>Species</th>
<th>Min. Purity (%)</th>
<th>Germination (%)</th>
<th>Seed Mixture Proportions (%) by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kentucky Blue Grass</td>
<td>98</td>
<td>85</td>
<td>10</td>
</tr>
<tr>
<td>Perennial ryegrass</td>
<td>96</td>
<td>85</td>
<td>20</td>
</tr>
<tr>
<td>Hard Fescue</td>
<td>97</td>
<td>85</td>
<td>20</td>
</tr>
<tr>
<td>Creeping Red Fescue</td>
<td>97</td>
<td>85</td>
<td>40</td>
</tr>
<tr>
<td>Fults Salt Grass</td>
<td>98</td>
<td>85</td>
<td>10</td>
</tr>
</tbody>
</table>

   B. Seed shall be fresh, clean, dry, new-crop seed complying with the AOSA’s “Rules for Testing Seed”, tested for purity and germination tolerances.

   C. Sow MDOT TUF Seed Mix at a rate of **220 lbs/acre**.

4. **Mulch.**

   A. Straw. Provide stalks from oats, wheat, rye, barley or rice that are free of weeds, mold or other objectionable material.

   B. Hydromulch will not be permitted.
5. Tackifier.
   A. Binding agent used to hold straw mulch material in place shall be a clear non-staining latex-based tackifier or water-soluble polymer.
   B. Asphalt emulsion adhesive is not permitted.

6. Fertilizer
   A. For Type 1 Seed Mix Areas Only.
      (1) A complete fertilizer, part of the elements of which are derived from organic sources. Percentages by weight: 10-10-10 or as determined by soil tests.
   B. Deliver fertilizer in manufacturer's original unopened containers bearing the manufacturer's guaranteed analysis. Store in a dry location.

7. Water.
   A. The Contractor shall provide at no additional cost the necessary equipment, water, and labor to hand water the seeded areas.

8. Contractor is responsible for maintenance, watering and establishment as defined herein for _Seeding, Mixture TUF, Modified_

9. Pesticides and Herbicides for Weed Removal. Pesticides and herbicides shall be registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for project conditions and application.
   A. Do not use restricted-use pesticides and herbicides unless authorized in writing by authorities having jurisdiction.
   B. Pesticides and Herbicides shall only be used with written approval by the Engineer.

10. Seeding Equipment.
    A. A drop spreader with cultipacker, as manufactured by Brillion or John Deere or equivalent shall be used on large areas to be seeded. Soil shall be cultivated or worked up prior to use of this equipment.
    B. A spinning-disc type broadcaster with a calibration gauge shall be used to broadcast seed over smaller areas.
    C. Hydroseeding is not permitted.

c. Construction.

1. Examination
   A. Prior to seeding, the Contractor shall examine and verify the acceptability of the job site with the Engineer. If conditions do NOT meet plans and special provision requirements or are detrimental to plant growth are encountered such as rubble fill, adverse drainage conditions, or obstructions, the contractor shall remedy the site conditions prior to proceeding with seeding operations. Do not proceed with the work until unsatisfactory conditions have been corrected and approved in writing by the Engineer.
B. All seeding zone boundaries shall be surveyed and staked on the project site by the Contractor. No seed mix shall be installed until the grade preparation and layout have been approved by the Engineer. The Engineer reserves the right to adjust seed limits without adjusting total seeded areas to meet field conditions at no additional cost to the owner.

C. Coordination is required to ensure rainfall/groundwater seepage does not result in soil moisture conditions that will cause excessive rutting during seeding and mulching operations. Failure to meet this requirement will not be an acceptable reason for not installing the seed as specified.

D. Where seeding occurs in close proximity to other site improvements or areas to remain undisturbed such as steep slopes, care shall be taken to not disturb the existing conditions. Any areas damaged during seeding operations shall be promptly restored to their original condition at no additional cost.

E. Utilities: Have all underground utilities located by servicing agencies. In the vicinity of utilities, hand-excavate to minimize possibility of damage.

F. Pesticides and Other Chemicals: Mixing or disposal of pesticides, herbicides, and other chemicals will not be permitted on site. Notify the Engineer at least 24 hours prior to any application. Post all pesticide and herbicide applications.

G. Coordination with Other Work.
(1) The Contractor shall coordinate his/her work with other contractors or trades to determine the appropriate sequence of landscape installation with respect to other work on the site.
(2) Work installed out of construction sequence which is disturbed by the completion of work by other trades shall be repaired at no additional cost.
(3) Maintain grade stakes set by others until removal is mutually agreed upon by all parties concerned.

2. Finish Grading

A. General. At the time of seeding, all seed beds shall be 100% free of all vegetation including but not limited to all woody plants, weeds, grasses.

B. Subgrade Preparation. Maintain rough grades in the areas to be topsoiled in a uniform condition so as to prevent future depressions. Prior to placing topsoil and general site fill, repair disturbances to previously graded areas and remove surplus subgrade material associated with landscape construction.

C. Placing Soil Materials.
(1) Uniformly distribute general site fill and topsoil over seed areas to provide the specified depth of soil after compaction and finish grading indicated on the plans and details.
   (a) Spread and compact general site fill per plans and special provisions.
   (b) Spread, cultivate and lightly compact topsoil to prevent future settlement. Drag and grade topsoil to finished grade.
   (c) Place soil materials when it is dry enough so as not to puddle or bond. Do not place soil materials when the subgrade is frozen, excessively wet, extremely dry or in a condition otherwise detrimental to proper grading or lawn operation.
(2) Where topsoil is not required, proceed with finish grading operations.
D. Finished Grades.
   (1) Provide finished grades which slope to drain, are free of depressions or other irregularities after thorough settlement and compaction of soil and are uniform in slope between grading controls and the elevations indicated.
   (2) Provide finished grade for seeded areas which meet existing grades at Contract limits and are 1 inch below top of curbs and adjacent pavement.

E. Grade Preparation.
   (1) Immediately before seeding, scarify, loosen, float and drag topsoil as necessary to bring it to the proper condition. Remove foreign matter larger than one inch in diameter.
   (2) If the prepared grade is eroded or compacted by rainfall prior to fertilizing, rework the surface as specified.

F. For MDOT TUF Seed Mix Areas.
   (1) Fertilizing. Uniformly distribute fertilizer by mechanical means at the rate determined by soil tests. Work fertilizer into the top 3 inches of soil. Set cultivating equipment so that the fertilizer will not penetrate into the soil more than 3 inches. Do not apply fertilizer when there is a possibility of rain before areas can be seeded.

3. Seeding and Mulching

A. For **Seeding, Mixture TUF, Modified**
   (1) Sow seed between April 1 and May 31 or September 1 and October 31 unless approved otherwise by the Engineer in writing.
   (2) Sow the seed uniformly to an average depth of 1/4 inch and at the rates indicated above. All areas shall be seeded in at least two directions. The seeding device shall lightly roll the seed bed to provide good moisture contact between the seed and soil.
   (3) Water thoroughly and immediately with a fine mist until soil is soaked to a depth of 3 inches. Maintain soil in a moist condition until seeds have sprouted and reached a height of 1 inch. Water thereafter at least once every 3 days unless natural rainfall has provided equivalent watering.

B. Water thoroughly and immediately with a fine mist until soil is soaked to a depth of 3 inches. Maintain soil in a moist condition until seeds have sprouted and reached a height of 1 inch. Water thereafter at least once every 3 days unless natural rainfall has provided equivalent watering.

C. Spread straw mulch evenly at the rate of 2 tons per acre.

D. Immediately following mulching, crimp/anchor all mulch into the topsoil using a serrated disk (preferred method) or tackifier. If a spray tackifier is used, it may be applied either simultaneously with mulch or in a separate application. Apply tackifier over all mulched areas at a rate recommended by the manufacturer.
   (1) Tackifier shall be submitted to Engineer for review and approval prior to application.
   (2) Tackifier shall be organic natural product and shall **NOT** be an asphaltic based product.


A. Keep paved areas over which hauling and seeding operations have been conducted clean. Promptly remove materials spilled on pavement.
B. Upon completion of seed installation, remove from the site and legally dispose of the following:
   (1) Surplus subgrade material.
   (2) Stone and foreign matter.
   (3) Other excess materials

C. Repair existing lawns damaged by operations under the Contract, including finish grading, sodding as required to match existing grade and lawn, and maintenance of repaired areas.

D. Reseed areas which do not meet the Contract requirements. Repair rejected areas of seed within acceptable planting dates as directed by the Engineer.

5. Maintenance

A. Maintenance shall commence as soon as the seeding is completed and shall continue for two full growing seasons until Final Acceptance.

B. The approved Maintenance Plan shall serve as the basis for all maintenance activities. Detailed maintenance work reports shall be submitted to the Engineer on a monthly basis for verification of completed work and documentation for payments to be made.

C. Maintenance to include grade repair, watering, fertilization, reseeding, mowing, insect and weed control, trimming and edging. Roll, regrade, and reseed bare or eroded areas and re-mulch to provide a uniformly smooth turf. Provide same materials and installation as those used in the original installation.

D. Repair all depressions, settlement or erosion per installation requirements that occurs within maintenance period. Reseed bare spots greater than 1 square foot which occur during the maintenance period.

E. Repair and restore depressions and compacted areas as required to meet the specified depths, elevations and requirements specified and as indicated on plans and details.

F. For **Seeding, Mixture TUF, Modified**
   (1) The first mowing shall occur when grass blades reach 3-inch height and mow to 2 inch height. Thereafter, each mowing shall occur when the grass has reached a height of 4 inches. Mow to a height of 3 inches. Never remove more than 1/3 of the total height of the grass blades at any single mowing.

G. Water seeded lawns as required to supplement natural rainfall so that all lawn areas receive sufficient water for normal plant growth, for a total minimum equivalent to 1 inch water per week. Infrequent but deep watering shall be used to promote deep root growth. An automatic irrigation system is NOT available. Contractor to provide all equipment needed for watering and be responsible for securing adequate supply of water. Quick couplers provided as part of the irrigation system may be used if they are operational. The Contractor shall provide at no additional cost the necessary equipment, water, and labor to hand water the seeded areas by other means if the quick coupler system is not operational.
   (1) Apply initial starter fertilization 4 weeks after installation of lawn. Use the same analysis commercial fertilizer as recommended by soil test reports, or use 0.75 pounds of actual nitrogen and 1 lb. P2O5 per 1000 square feet. The timing of this application may coincide with fertilizer applications given below and should replace the required formulation.
(2) During the lawn establishment period, fertilize lawns a minimum of three times during the growing season, once during each of the following dates:
   (a) Late May, water-soluble slow-release fertilizer providing 1 lb. actual nitrogen per 1,000 square feet.
   (b) Mid-September, complete quick-release fertilizer providing 1 lb. actual nitrogen per 1000 square feet.
   (c) Late October, complete quick-release fertilizer providing 1.5 lb. actual nitrogen per 1000 square feet.

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

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeding, Mixture TUF, Modified</td>
<td>Square Foot</td>
</tr>
</tbody>
</table>

_Seeding, Mixture TUF, Modified_ shall be paid for at the contract unit price on a square foot unit basis. The contact unit price shall include; submittals, fine grading, supplying and installing fertilizer, straw mulch, seed, watering, and maintenance on all areas shown on the plans. The pay quantity will be determined by a field measurement of the areas seeded as shown by the limits of seeding on the plans. The contract unit price shall include all labor, material and equipment necessary to furnish, place and finish the seeding as shown on the plans and/or as directed by the Engineer. Seeding associated with temporary work areas or disturbed areas outside the limits of seeding shown on the plans shall be provided at no additional cost.

_Topsoil Surface, Furn, 4 inch, Modified_ and _Mowing, Modified_ will be paid for separately.
CITY OF DETROIT

SPECIAL PROVISION
FOR
CONCRETE PAVEMENT

SG: BPC

a. Description. The work consists of excavating, backfilling, compacting, grading of the disturbed area, and constructing concrete sidewalk, concrete pavement and integral color concrete pavement in accordance with Sections 601, 602, 603, 701, 801 and 803 of the Michigan Department of Transportation Standard Specifications for Construction, Standard Plan R-29 series (latest edition), City of Detroit DPW Street and Alley Standard Plans, and this special provision.

Complete this work in conformance with the American with Disability Act (ADA provisions as applicable).

b. Materials. Concrete Pavement materials shall meet the requirements of Section 601, 602, 603, 701, 801 and 803 of the Michigan Department of Transportation Standard Specifications for Construction.

1. Concrete Grade shall be S1 with min. 4,000 psi at 28 days. All concrete finish types shall be the same concrete mix, contain the same coarse and fine aggregates and shall NOT have any changes in concrete admixtures.

2. Curing Compound. Curing compound shall be Type 1, CLEAR, conforming to ASTM C-309.

3. Joint Sealant. Joint sealant to be a 2-component, premium grade, polyurethane based elastomeric sealant in a non-sag consistency. Color to be submitted for Engineer review and approval. Joint sealant to be Sikaflex 2cNS, Sonneborn NP2 or equal as approved by the Engineer.

4. Sandblast Finish Concrete Aggregates
   A. Normal-Weight Aggregates: ASTM C 33, Class 4S, uniformly graded. Provide aggregates from a single source.
   B. Coarse Aggregate:
      (1) 3/8 Pea Stone
      (2) Selected, hard, and durable; washed; free of materials with deleterious reactivity to cement or that cause staining; from a single source, with gap-graded coarse aggregate.
      (3) Aggregate Sizes: 3/8 to 5/8 inch nominal.
      (4) Aggregate Source, Shape, and Color: As selected and approved by the Owner and Engineer.
   C. Fine Aggregate: 2NS Sand, Free of materials with deleterious reactivity to alkali in cement.

5. Sandblast Finish (if applicable) RELEASING AGENT
   A. Releasing agent used shall be “Grace Top-Cast Concrete Surface Retarders or as approved by the Engineer.
   B. Chemical retarder grade shall be selected as part of the mock-up process defined below. Contractor shall change grade as requested by the Owner and
Engineer during the mock-up process at no additional cost until mock-up sample approved.

6. **Integral Color Admixture.** Colors to be “P2940 Rattan” and “P5740 Derby”, as shown on Plans / Details and as manufactured Prism Corporation [www.prismpigments.com](http://www.prismpigments.com) or as approved by the Engineer.

7. Sandblast Finish and Integral Color Concrete **SEALANT**
   A. Sealer shall be BASF “Kure-N-Seal 25 LV” or as approved by the Engineer.
   B. Semi-gloss / matte finish sealant

8. Submit the following documents to the Engineer for review and approval prior to proceeding with construction of sidewalks:
   A. Concrete Mix Design
   B. Sandblast Finish Coarse Aggregate: 5 lb. Ziplock bag of representative sample
   C. Manufacturer’s data sheets and installation instructions for integral color and chemical retarder (if applicable)
   D. Curing method and materials
   E. Joint Filler, Sealant and color samples

c. **Construction.**

1. Installer Qualifications. The installer shall have a minimum of 5 years experience in concrete pavement with the finishes and joint types indicated and successfully completed not less than 6 projects comparable in scale and complexity. Documented proof that the proposed installer has a 10 year proven record of performance, confirmed by at least 3 local projects that the Engineer can examine.

2. Project Conditions. Concrete placement shall be installed within the following environmental requirements:
   A. Maintain an ambient temperature of between 50 degrees F and 90 degrees F during application and at least 48 hours after application for releasing agent and/or chemically stained concrete. Do not place concrete when the temperature of the surrounding air is expected to be below 40 degrees F during placing or within 24 hours thereafter. Do not allow the temperature of plastic concrete to drop below 55 degrees F.
   B. When the mean daily temperature of the atmosphere is 80 degrees F and above, or during hot and dry weather, do not place concrete with a placing temperature which causes difficulty from loss of slump, flash set or cold joints 75 degrees F where possible and not more than 90 degrees F in any event. Where climatic conditions cause too rapid drying, make arrangements prior to placing concrete for installation of wind breaks, shading, fog spraying, water sprinkling, ponding or wet covering of a light color. Take such protective measures as quickly as concrete hardening and finishing operation allow, and maintain throughout the entire curing period.

3. The contractor shall stamp all concrete with a legible stamp bearing the name of the company and the year of construction. No sidewalk or ramp construction shall commence without a contractor’s stamp on site.
4. Construct all sidewalks with a maximum cross slope of 2.00 % (1/4 inch per foot) sloping inclusive of all tolerances but not less than 1.00 % minimum. Slope sidewalks as shown on plans.

5. Construct concrete sidewalk to the thickness at locations indicated on the plans, with the following exceptions:
   A. Construct 8-inch thick concrete pavement for driveway and alley approaches and include at a minimum the first flags of sidewalk adjacent to the driveway and alley approaches.
   B. Construct 6-inch thick concrete pavement for ADA Sidewalk ramps and include at a minimum the first flags of sidewalk adjacent to the ADA Sidewalk ramps.
   C. Verify the pavement thickness locations with the Engineer. Coordinate pavement thickness changes with the location of pavement joints. Joints between pavement thickness changes to be a cold pavement joint, cold tied pavement joint or sealed expansion joint. Notify Engineer of any areas that do not align with pavement joints for further direction.

6. Restore area disturbed beyond actual concrete pavement limits to its original conditions. No separate payment will be made for such restoration but is considered part of this work item.

7. Construct the driveway approach according to the City of Detroit Standard Plan C-4384, except as modified by the details on the plans and this special provision.

8. **Pavement finish** will be as indicated on plans. Verify and coordinate concrete finishes with Engineer prior to proceeding with work.
   A. Do not add water to concrete surfaces during finishing operations.
   B. All concrete finishes shall be as approved by Engineer as part of the project Mock-up samples noted below. Make adjustments to the finishes as directed by the Engineer as part of the Mock-up sample review and approval process at no additional cost.
   C. Apply appropriate finish type to the concrete surface as shown on the plans. Finish types shall terminate at the arc sawcut joint line and shall not overlap adjacent finish types. Concrete finishes that overlap or extend beyond the arc joints onto the adjacent finish and/or do not match the standard of workmanship approved as part of the mock-up shall be removed and replaced at no additional cost.
   D. Trowel Smooth Finish (Float Finish)
      (1) Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
      (2) Begin the second floating operation when bleed-water sheen has disappeared, and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
E. Medium Broom Finish

(1) Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch (1.6 to 3 mm) deep with a stiff-bristled broom, perpendicular to direction of travel and as shown on the plans. Confirm direction of broom finish with Engineer prior to proceeding with construction.

F. Medium Sandblast Finish

(1) Expose fine aggregate with occasional exposure of coarse aggregate; approximately 3/16 to 1/4 inch reveal.

(2) Sandblast (Exposed-Aggregate) Finish: Expose aggregate in paving surface by either method as follows:

   (a) Chemical Retarder

      (i) Chemical retarder if used shall be “Grace Top-Cast Concrete Surface Retarders”. Chemical retarder grade shall be selected as part of the mock-up process defined below. Contractor shall change grade as requested by the Owner and Engineer during the mock-up process at no additional cost until mock-up sample approved.

      (ii) Immediately after float finishing, spray-apply chemical surface retarder to paving according to manufacturer's written instructions.

      (iii) Cover paving surface with plastic sheeting, sealing laps with tape, and remove when ready to continue finishing operations.

      (iv) Without dislodging aggregate, remove mortar concealing the aggregate by lightly brushing surface with a stiff, nylon-bristle broom. Do not expose more than one-third of the average diameter of the aggregate and not more than one-half of the diameter of the smallest aggregate.

      (v) Fine-spray surface with water and brush. Repeat cycle of water flushing and brushing until cement film is removed from aggregate surfaces to depth required.

   (b) Sandblasting

      (i) Perform sand blasting at least 72 hours after placement of concrete. Coordinate with formwork construction, concrete placement schedule, and formwork removal to ensure that surfaces to be blast finished are blasted at the same age for uniform results.

      (ii) Employ templates to prevent etching surfaces not required to be sandblasted and to prevent damage to adjacent work from sandblasting and windblown material.

      (iii) Determine type of nozzle, nozzle pressure, and blasting techniques required to match the mock-up control samples.

      (iv) Perform sand blasting finishing in as continuous an operation as possible, utilizing the same work crew to maintain continuity of finish on each surface or area of work.

      (v) Abrasive blast corners and edge of patterns carefully, using backboards, to maintain uniform corner or edge line. Corners shall be free of defects caused by sandblasting.
(vi) Provide protection to prevent damage to adjacent public or private property and to prevent injury to other personnel.

(vii) Repair or replace other work damaged by finishing operations at no additional cost.

(viii) Maintain control of concrete chips, dust, and debris in each area of work. Clean up and remove such material at the completion of each day of operation. Prevent migration of airborne materials by use of tarpaulins, wind breaks, and similar containing devices.

(c) Seeding of aggregate is not permitted.

9. **Project Mock-Up.** Construct mock-up samples of the concrete pavement. A 5 ft. x 5 ft. square minimum sample of each concrete pavement type shall be constructed to indicate the jointing, texture and finish, integral color, curing compound and sealant in actual construction. Make mock-up samples as required until acceptance by the Engineer. The location of the mockup shall be approved by the Engineer prior to proceeding with the mockup. The cost for construction of the mock-up samples shall be included in the unit prices for the respective concrete pavement pay items and no additional compensation shall be provided for additional samples. Consider the approved mock-ups as a standard of workmanship to be matched throughout the Project. **The sample may NOT be constructed as part of the Project.** Remove samples which fail to meet the Engineer's approval. The approved samples shall remain in place during the complete duration of construction and shall be removed and disposed of by the contractor at the completion of the project. **Note: Contractor to schedule and construct mock-up within appropriate time-frame to accommodate the review and approval process as well as the potential need for subsequent mock-up samples to obtain approval prior to the scheduled time to commence construction of the concrete pavement per the approved project schedule.**

10. Concrete pavement joints shall be constructed and located as shown on plans and as defined below.

A. Notify Engineer of any jointing layout discrepancies shown on the plans for supplemental directions prior to proceeding with construction.

B. All dimensions are back of curb, edge of pavement, center of arc or center of fixture unless otherwise noted.

C. There shall be ½" sealed expansion joint at all curb/sidewalk, seat wall/sidewalk, footing/sidewalk, building/sidewalk, light/utility pole, utility structure/manhole or any other fixed objects (i.e. existing pavement, walls, poles, foundations and structures, etc.). Plans may not show every required sealed expansion joint.

D. Control joints and sealed expansion joints in curbs and walls to align with control joints and sealed expansion joints in the adjacent concrete pavement, curbs, walls and sidewalk unless noted otherwise on the plans.

E. Control joints and sealed expansion joints at driveway and alley approaches shall align with adjacent curb returns.

F. Control joints and sealed expansion joints at ADA ramps to align with the detectable warning tiles, landings, flares, adjacent rolled curbs and other adjacent joints.
G. Align joints perpendicular to pavement edge and align as shown on plans and details.

H. Contractor shall cut uniform joints in the locations and alignments shown on the plan. Joints are to be sawcut to a true even continuous smooth line without irregularities.

I. Sawcut joints cut with irregularities as identified by the Engineer shall require the removal and replacement of the concrete pavement and joints at no additional cost.

11. Finished concrete pavement shall meet or exceed the quality, finish, and workmanship exhibited in the approved mock-up or be subject to rejection and replacement at the contractor’s expense.

12. Protect existing irrigation systems, if encountered, during removal and construction of concrete pavement. All costs associated with the protection, restoration, and repair, if damaged, of existing irrigation systems shall be borne by the Contractor and no separate payment shall be made.

Provide the necessary materials and take the steps required to protect subsequent pours of concrete, saw cutting joints, finish treatment and other related work from damage, damage from finish applications, staining, discoloring, contaminating and/or causing any type of blemishes. Finished concrete pavement shall meet or exceed the quality, color, finishes (all types) and workmanship exhibited in the approved mock-up or be subject to rejection and replacement at the contractor’s expense.

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:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sidewalk, Conc, 4 inch, Modified</td>
<td>Square Foot</td>
</tr>
<tr>
<td>Sidewalk, Conc, 6 inch, Modified</td>
<td>Square Foot</td>
</tr>
<tr>
<td>Sidewalk, Conc, 8 inch, Modified</td>
<td>Square Foot</td>
</tr>
<tr>
<td>Integral Conc Island</td>
<td>Square Foot</td>
</tr>
<tr>
<td>Sidewalk, Conc, 6 inch, Modified</td>
<td>Square Foot</td>
</tr>
<tr>
<td>Conc Pavt, Misc, Nonreinf, 6 inch, Modified</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Conc Pavt, Misc, Nonreinf, 8 inch, Modified</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Driveway, Nonreinf, Conc, 8 inch, Modified</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Nonreinf Conc, 8 inch, Modified, Integral Color, Broom Finish (Color: P2940 Rattan)</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Nonreinf Conc, 8 inch, Modified, Integral Color, Broom Finish (Color: P5740 Derby)</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Nonreinf Conc, 8 inch, Modified, Integral Color, Sandblast Finish (Color: P5740 Derby)</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Conc Base Cse, Nonreinf, 8 inch, Modified</td>
<td>Square Yard</td>
</tr>
<tr>
<td>Conc Base Cse, Nonreinf, 10 inch, Modified</td>
<td>Square Yard</td>
</tr>
</tbody>
</table>

The completed work for _Sidewalk, Conc, ____ inch, Modified; Integral Conc Island;_ will be measured by area in square feet. The contract unit price will be payment in full for furnishing all materials, labor and equipment necessary to construct the concrete sidewalk. Sawcutting, control joints, expansion joints, sealant, dowels, anchors, reinforcement, tie bars, finishing, curing and other items which may be required shall be considered included in the construction...
and will not be paid for separately. Removal of the existing curb, pavement, and sidewalk will be paid separately. Aggregate base material will be paid separately.

The completed work for **Integral Conc Island** will be measured by area in square feet. The contract unit price will be payment in full for furnishing all materials, labor and equipment necessary to construct the concrete pavement and integral curbs. Integral concrete curbs, sawcutting, control joints, expansion joints, sealant, dowels, anchors, reinforcement, tie bars, finishing, curing and other items which may be required shall be considered included in the construction and will not be paid for separately. Removal of the existing curb, pavement, and sidewalk will be paid separately. Aggregate base material will be paid separately.

The completed work for **Conc Pavt, Misc, Nonreinf, _ inch, Modified; Driveway, Nonreinf, Conc, _ inch, Modified; Nonreinf Conc, _ inch, Modified; Nonreinf Conc, _ inch, Modified, Integral color ____ Finish (Color: ____); Conc Base Cse, Nonreinf, _ inch, Modified** will be measured by area in square yards. The contract unit price will be payment in full for furnishing all materials, labor and equipment necessary to construct the concrete pavement. Integral color, Sawcutting, control joints, expansion joints, sealant, dowels, anchors, reinforcement, tie bars, finishing, curing, and other items which may be required shall be considered included in the construction and will not be paid for separately. Removal of the existing curb, pavement, and sidewalk will be paid separately. Aggregate base material will be paid separately.

Any extra costs including but not limited to additional labor, materials, and equipment incurred by the contractor due to cold weather protection requirements will not be paid for separately and are considered incidental to related items of work. The contractor shall include all costs required to complete the construction activities per the construction milestone dates identified and in the bidding proposal.
Description: This special provision covers construction of sidewalk ramp with detectable warning surface.

The work consists of excavating, backfilling, compacting, and grading of the disturbed area, and constructing sidewalk ramp and/or retrofitting ramp with detectable warning surface in accordance with the applicable provisions of Section 803 of the 2020 MDOT Standard Specifications for Construction and the current Department of Public Works, City Engineering Division Sidewalk Ramp and Detectable Warning Details R-28 with City of Detroit Thickness Amendment.

Complete this work in conformance with the American with Disability Act (ADA) provisions as applicable.

Material: Provide materials as specified in Section 803.02 of the 2020 MDOT Standard Specifications for Construction. The Detectable Warning Surface color shall be will be brick red, Federal Color Number 22144, unless otherwise approved by the Engineer. The color shall be homogeneous throughout the tile.

Construction: Construct sidewalk ramp(s), landings flares and detectable warning surface according to MDOT Standard Plan R-28-Series. The concrete sidewalk and ramp thickness shall be as determined by the City of Detroit and as shown on the Department of Public Works, City Engineering Division Sidewalk Ramp and Detectable Warning Details R-28 with City of Detroit Thickness Amendment, included in these Specifications. The Detectable Warning Surface installation shall also comply with the manufacturer’s instructions.

Construct curb ramp openings in accordance with subsection 802.03, the MDOT Standard Plan R-28 series, and as required to conform with the curb ramp geometry including, but not limited to, slopes, counter slopes, running slopes, cross slopes, flares, and widths. The curb ramp opening shall be a full depth curb with a minimum depth of 12 inches and shall be 18 inches from the back of curb to abutting pavement.

It is also the Contractor’s responsibility to incorporate any changes made to the ADA accessibility requirements that may take effect prior to the start date of actual construction. If the Contractor determines that any changes significantly alter the original bid cost, the Contractor may submit a written request to the Engineer or his representative for approval and compensation. Include a cost comparison between the original bid cost and the cost of the ADA required changes in the request.

The contractor shall stamp all concrete with a legible stamp bearing the name of the company and the year of construction. No sidewalk or ramp construction shall commence without a Contractor’s stamp on site.
Subgrade and subbase materials removed when removing existing concrete shall be replaced with a suitable material and will be considered incidental to the cost of construction.

Restore berm areas disturbed during sidewalk ramp construction to their original condition as specified in the City of Detroit Specification for Berm Restoration. No separate payment will be made for such restoration, but is considered part of the work item.

Protect lawn sprinkler systems, if encountered, during removal and construction of sidewalk ramps. All costs associated with the lawn sprinkler protection, restoration, and repair, if damaged, shall be borne by the Contractor and no separate payment shall be made.

Any constructed ramps that do not meet the current MDOT Standard Plan R-28-Series and latest ADA accessibility requirements will be removed and replaced by the Contractor, as directed by the Engineer or his representative, at the Contractor’s expense.

**Measurement and Payment:** The completed work as described herein for Sidewalk Ramp, ADA and Detectable Warning Surface, will be measured as square feet and feet respectively. The contract unit price will be payment in full for furnishing all materials, labor and equipment necessary to construct the ADA ramp and curb and warning surface.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sidewalk Ramp, ADA, Modified</td>
<td>Square Foot</td>
</tr>
<tr>
<td>Detectable Warning Surface Tile, Modified</td>
<td>Foot</td>
</tr>
<tr>
<td>Curb Ramp Opening, Conc, Modified</td>
<td>Foot</td>
</tr>
</tbody>
</table>

**Sidewalk Ramp, ADA, Modified** includes the cost of landings, monolithic rolled curbs or side flares along the longitudinal edges of the ramp or landing and curb and gutter opening. The Department will pay for rolled curb adjacent to the non-traffic edge of parallel or combination ramps separately, only if the required height exceeds 18 inches along a continuous run.

**Detectable Warning Surface Tile, Modified** shall be measured in place by length along the center of the 24-inch wide detectable warning surface material at required locations. The unit price for Detectable Warning Surface includes the cost of surface preparation and application.

**Curb Ramp Opening, Conc.** shall be measured in place along the joint between the curbing with the pavement including transitions to and from adjacent standard full-height curb and gutter cross section.
CITY OF DETROIT

SPECIAL PROVISION
FOR
SLOTTED DRAIN, GALVANIZED

MSG: KCC  1 of 2  05-24-23

a. Description. This work consists of furnishing and installing galvanized steel slotted drain, including all necessary hardware at the locations shown on the plans. This item includes all work required to excavate, install the galvanized slotted drain and place backfill. Complete this work in accordance with section 402 of the Standard Specifications for Construction, the details shown on the plans and this special provision.

b. Materials. Furnish slotted drain fabricated from galvanized corrugated steel pipe. The materials must meet the applicable requirements specified in the following subsection and sections of the Standard Specifications for Construction:

- Steel Reinforcement...........................................................................................................905
- Metal Pipe Products...........................................................................................................909.05
- Portland Cement Concrete Mixtures..................................................................................1004

The slotted drain used on this project will be 12 inches in diameter.

The corrugated steel pipe must have a minimum 16 gauge wall thickness and manufactured in accordance with AASHTO M36.

Furnish all associated items, such as steel grates, spacer plates, bolts, nuts, and washers as recommended by the manufacturer of the slotted drain and as approved by the Engineer. Ensure associated items are galvanized in accordance with AASHTO M232.

Ensure the slotted opening is 1¾ inches wide and a minimum 6 inches deep with a trapezoidal grate. The trapezoidal grate must have reinforcing spacer plates a minimum of 3/16 inch thick spaced 6 inches on center. Ensure the spacer plates are slanted to direct flow toward the drainage structure.

All slotted drain is subject to visual inspection prior to acceptance and must conform to the requirements in the contract.

Use concrete, Grade 3500 in accordance with section 1004 of the Standard Specifications for Construction for backfill.

Use reinforcing steel of the sizes shown on the plans in accordance with section 905 of the Standard Specifications for Construction.

c. Construction. Install the slotted drain to the line and grade shown on the plans or as directed by the Engineer. Completely encase the slotted drain in concrete poured monolithically as shown on the plans.

Prior to placing concrete encasement, install reinforcing steel and ensure the upgrade end of
the slotted drain is plugged with a metal cap. Ensure the slots (grate assembly) are covered during encasement operations to prevent infiltration of concrete and other foreign material into the pipe.

Secure the slotted drainpipe in the proposed line and grade to prevent shifting or floating during the encasement stage of construction.

If positive flow or the final grade of the slotted drain is not maintained during the encasement stage of construction, ensure the drain is removed and replaced at no additional cost to the contract.

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:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slotted Drain, Galv, 12 inch</td>
<td>Foot</td>
</tr>
</tbody>
</table>

Slotted Drain, Galv, 12 inch will be measured in place by length in feet for the limits of the concrete encasement. Payment includes excavation, drainage structure taps, and all necessary hardware, including metal caps, elbows, couplings, and the length of galvanized pipe required for the connection to drainage structures. Payment for the reinforcing steel, Grade 3500 concrete used for the encasement of the slotted drain and for the connection to the proposed adjacent sewer will be included in this pay item and will not be paid for separately.
PROJECT GENERAL REQUIREMENTS

1. It is the intent of the project to construct a new surface parking lot on the Northwest corner of the property for Grosse Point Moving and Storage. The Site Plan shall include a remote-control electric gate at the entrance/egress of the Parking Yard, and available electric receptacle outlets on the light poles. The estimated initial equipment which will be placed on this new lot will include:

   Proposed Powered Equipment
   New LED Light Poles with 120-volt receptacle - 2 @ 150 watts – 120-volt
   Motor Operated Gate with Remote Control – 2 @ 3/4 HP – 120-volt
   Truck Block Warmers – 2 @ 1800 W – 120-volt
   Total – 4565 watts (5.5 amps @ 480 volts)

2. It is the owner’s intent to install as much 480-volt, 3 phase, power to the lot as possible using power from the existing panel DH-4 in the facility. It is also the owner’s intent to reuse the existing 1 ¼” PVC underground conduit and feed from the existing light pole base.

EXISTING CONDITIONS

1. Existing panel DP-4 is 800 amps, 480 volts, 3 phase, 3 wire fed with 2 sets of 500 MCM (800 amp) wire. DP-4 is fed from MSB by an 800-amp breaker. DP-4 is Square D HCJ I-Line style and is good condition. Breakers for this panel are readily available.

2. The measured load on panel DP-4 is:

   Phase A: Cable 1 - 5.91 amps, Cable 2 - 5.55 amps
   Phase B: Cable 1 - 6.9 amps, Cable 2 - 4.16 amps
   Phase C: Cable 1 - 3.31 amps, Cable 2 – 3.31 amps

3. The existing branch breakers and loads listed on panel DP-4 schedule are:

   #1: (100/3) T-4e             #2: (20/3) Dock Levelers 84-93
   #3: (20/3) Dock Levelers 104-114 #4: (20/3) Dock Levelers 94-103
   #5: (100/3) XFMR4-2            #6: (20/3) HV-6
   #7: (50/3) Spare               #8: (30/3) Paddle Fans #3 and #4
   #9: Space                       #10: (20/3) Spare
4. Existing panel RP-4 is 200 amps, 120/208 volts, 3 phase, 4 wire fed from transformer XFMR4-2. Panel RP-4 has two (2) 30/2 branch circuit breakers which supply 208-volt, 1 phase power through a 40-amp contactor in a junction box to the S.W. Site Lighting Poles and N.W. Site Lighting Poles. The existing branch circuit wiring is 2#6 and 1#10 GND in the existing 1 ¼” PVC underground conduit. A third existing 1 ¼” underground conduit from the junction box has 3#2 AWG and 1#8 GND to the guard shack from a 100/2 CB in panel RP-4.

5. An existing analog timer is located above the junction box and controls the 40-amp contactor feeding both the S.W. Site Lighting Poles and N.W. Site Lighting Poles.

6. There is one additional 1 ¼” conduit outside of the junction box with communications wires run to the guard shack.

**RECOMMENDATIONS:**

1. Based on the measured load, the existing 480-volt panel DP-4 has sufficient capacity for the initial parking lot loads.

2. According to code, the area calculations of THWN insulated wire in a 1 ¼” PVC conduit are as follow:

<table>
<thead>
<tr>
<th>THHW Wire Fill</th>
<th>Total Wire Area</th>
<th>1 ¼” PVC Conduit Area</th>
<th>Code Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>3#1/0 AWG and 1#6 AWG GND</td>
<td>0.6072</td>
<td>0.581</td>
<td>Does not Comply</td>
</tr>
<tr>
<td>3#1 AWG and 1#6 AWG GND</td>
<td>0.5193</td>
<td>0.581</td>
<td>Complies</td>
</tr>
<tr>
<td>3#2 AWG and 1#6 AWG GND</td>
<td>0.3981</td>
<td>0.581</td>
<td>Complies</td>
</tr>
<tr>
<td>2#6 AWG and 3#3 AWG plus 1#6 AWG GND</td>
<td>0.4440</td>
<td>0.581</td>
<td>Complies</td>
</tr>
<tr>
<td>2#6 AWG and 3#2 AWG plus 1#6 AWG GND</td>
<td>0.4995</td>
<td>0.581</td>
<td>Complies</td>
</tr>
<tr>
<td>2#6 AWG and 3#1 AWG plus 1#6 AWG GND</td>
<td>0.6207</td>
<td>0.581</td>
<td>Does not Comply</td>
</tr>
</tbody>
</table>

3. In the proposed solution by the owner, the square steel pole of the light fixture is considered a metal wireway which would be used as a pull box per NEC Article 376.23. This requires the wire bending radius requirements of article 312.6(A) under the base to transition into a conduit. A # 1/0 AWG wire requires a 3 ½” bending radius and a #1 AWG wire requires a 3” bending radius. The distance between the metal wireway and the pole base anchor plate is less than 3” and therefore the pole base cannot be used as a pull box.
4. Based on the existing conditions, my code analysis, and the measured load, I am proposing the following recommendation to achieve the required 480-volt electrical service to the parking lot:

**Engineering Recommendation**

Excavate down to intercept the existing 1 ¼” underground conduit beside the light pole base. Cut and re-direct the existing underground PVC conduit into a new grade pull box beside the light pole. Maintain the existing contactor and timer in the junction box to serve the N.W. light poles and install 2#6 AWG and 3#2 AWG plus 1#6 AWG GND in the existing 1 ¼” conduit from the building to the new grade box. Resupply the existing 208-volt lighting circuit from the 2#6 AWG and continue 3#2 and 1#6 AWG ground through a new 2” underground conduit to the new surface parking lot from the new grade box. Install a new fused switch, transformer and panel at the surface parking lot and supply the loads from a new 120/208-volt panel. Under this option, no additional back feed, transformer, contactor, or timer will be needed for the pole lights and the 480-volt circuit to the parking lot will only be one size smaller.

Scope of Work includes the feeder from the building, new light poles, panel, block warmer circuits, gate operator and underground power and security conduits.

**Communications Recommendation**

Install a new 2” conduit for communications wiring from the new surface parking lot back to the guard shack conduit. This will need to be saw cut through the existing concrete drive back to the guard shack communications conduit.

Scope of Work includes conduit and pull string only.

An alternate is to contract a security design consultant to design and provide a wireless camera and security gate operator.

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:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Improvements</td>
<td>LS</td>
</tr>
</tbody>
</table>

**Slotted Drain, Galv, 12 inch** will be measured in place by length in feet for the limits of the concrete encasement. Payment includes excavation, drainage structure taps, and all necessary hardware, including metal caps, elbows, couplings, and the length of galvanized pipe required for the connection to drainage structures. Payment for the reinforcing steel, Grade 3500 concrete used for the encasement of the slotted drain and for the connection to the proposed adjacent sewer will be included in this pay item and will not be paid for separately.
CITY OF DETROIT

SPECIAL PROVISION
FOR
NON-STRUCTURAL FLOWABLE FILL

MSG:KCC 1 of 1 05-24-23

a. Description. This work consists of furnishing and placing non-structural flowable fill for abandoning pipes and miscellaneous structures; constructing miscellaneous bulkheads or forms; and backfilling. This specification is not intended to address flowable fill used as structural backfill.

b. Materials. Supply non-structural flowable fill consisting of a mixture of Portland cement, fly ash, sand (2NS) and water. Use materials in accordance with the standard specifications except as modified by this special provision. All non-structural flowable fill once cured is intended to be removable using conventional mechanical excavation methods.

Use either Type I or IA Portland cement in accordance with section 901 of the Standard Specifications for Construction and Class F or C fly ash as specified by ASTM C618 except that there is no limit on loss on ignition.

Produce a mix of cement, fly ash, sand, and water in the following proportions.

<table>
<thead>
<tr>
<th>Material</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portland Cement</td>
<td>50 pounds per cubic yard (lb/cyd)</td>
</tr>
<tr>
<td>Fly Ash</td>
<td>500 lb/cyd</td>
</tr>
<tr>
<td>Sand</td>
<td>2850 lb/cyd</td>
</tr>
<tr>
<td>Water</td>
<td>376 lb/cyd, approximately (sufficient to produce desired flowability)</td>
</tr>
</tbody>
</table>

c. Construction. Produce and deliver the non-structural flowable fill at a minimum temperature of 50 degrees Fahrenheit (F). Transport mixture to the point of placement in a revolving drum mixer or agitator.

Secure all pipes and conduits within the backfill area to counteract the buoyant effect of non-structural flowable fill. Place the material evenly around manholes and in utility trenches to avoid dislocating pipes and conduits.

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:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flowable Fill, Non-Structural</td>
<td>Cubic Yard</td>
</tr>
</tbody>
</table>

Flowable Fill, Non-Structural includes supplying and placing flowable fill for the purpose of abandoning pipes and miscellaneous structures and includes any necessary miscellaneous bulkheads for forms.
TYPICAL PAVEMENT SECTION

<table>
<thead>
<tr>
<th>CITY DESIGNATION</th>
<th>M.D.O.T. DESIGNATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>FILL 21A OR 22A</td>
<td>Aggregate Base</td>
</tr>
<tr>
<td>FILL (GRADE A)</td>
<td>Granular Material, C11</td>
</tr>
<tr>
<td>&quot;TOPSOIL PLUS SOD OR SEEDING&quot;</td>
<td>Topsoil Surface, Furn.LM Plus Sodding, Dr Seeding, Mixture Tuf</td>
</tr>
<tr>
<td>FILL - SELECTED EXCAVATED MATERIAL</td>
<td>Embankment, CIP</td>
</tr>
<tr>
<td>PROPOSED CONCRETE *</td>
<td>Proposed Concrete *</td>
</tr>
</tbody>
</table>

* 2% MAX. OR AS DIRECTED BY THE ENGINEER

TYPICAL PAVEMENT SECTION LEGEND

B 1. SIDEWALK CROSS SECTION

JOINT LEGEND

3  LONGITUDINAL BULKHEAD JOINT, ACCORDING TO DETAIL STANDARD NO. C-4943 (M.D.O.T. STANDARD DRAWING R-41-E)

O  LONGITUDINAL LANE TIE JOINT WITH TIE BAR, ACCORDING TO DETAIL STANDARD NO. C-4943 (M.D.O.T. STANDARD DRAWING R-41-E)

B 0  OPTIONAL, B OR D JOINT

---

EXISTING BASEMENT
DETAIL OF THICKENED EDGE

CONTRACTION JOINT

BASEMENT WALL REMOVAL

<table>
<thead>
<tr>
<th>CITY CRITERIA</th>
<th>M.D.O.T. CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. REMOVE WALLS 1'-0&quot; BELOW BOTTOM OF PROPOSED PAVEMENT AND 2'-0&quot; BEHIND FACE OF CURB.</td>
<td>REMOVE WALLS 3'-0&quot; BELOW LOWEST POINT OF PROPOSED PAVEMENT SURFACE AND 2'-0&quot; BEYOND FACE OF CURB.</td>
</tr>
<tr>
<td>2. REMOVE WALLS 1'-0&quot; MINIMUM BELOW BOTTOM OF PROPOSED SIDEWALK.</td>
<td>REMOVE WALLS TO BOTTOM OF PROPOSED PAVEMENT SLAB IN BERM AREA.</td>
</tr>
<tr>
<td>3. SAME AS 2. (OR 1'-0&quot; BELOW GROUND SURFACE WHICHERVER IS DEEPER).</td>
<td>REMOVE WALLS TO 1'-0&quot; BELOW PROPOSED SURFACE ELEVATIONS.</td>
</tr>
</tbody>
</table>

NOTES:

1. VARIABLE WIDTHS:
   - \( W_1 \) = PROPOSED RIGHT-OFT-WAY
   - \( W_2 \) = PROPOSED ROADWAY
   - \( X_1 \) = PROPOSED MARGIN
   - \( X_2 \) = PARKING LANE
   - \( X_3 \) = MOVING LANE

2. NOMENCLATURE ON THE TYPICAL SECTION IS FOR CITY OF DETROIT (CITY) FUNDED PROJECTS. FOR MICHIGAN DEPARTMENT OF TRANSPORTATION (M.D.O.T.) FUNDED PROJECTS, USE M.D.O.T. NOMENCLATURE (SEE LEGENDS).

3. THE PAVEMENT CROWN IS TO BE PARABOLIC IN SHAPE CONSTRUCTED ACCORDING TO AN ELEMENTS TABLE SHOWN ON THE PLANS OR TO CITY ENGINEERING DIVISION CROWN TABLES.

4. THIS TYPICAL SECTION IS INTENDED AS A GUIDELINE ONLY. CERTAIN PARAMETERS SUCH AS PAVEMENT THICKNESS AND SIDEWALK LOCATION MAY VARY.

5. FOR LOCAL STREETS THE CONCRETE PAVEMENT MAY BE NON-REINFORCED, EXCEPT THE TYPE D LANE TIE JOINTS MUST STILL BE USED.

6. THE MINIMUM PAVEMENT THICKNESS IS 9".

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
STANDARD PLAN FOR
TYPICAL PAVEMENT CROSS SECTION
FOR STREET CONSTRUCTION

METRIC TO ENGLISH UNIT SYSTEM 1990

03/07/98 DRAWING NO: 07 STANDARD NO: A 0701 SHEET
STANDARD RADIi ARE 15' FOR STREETS AND 10' FOR ALLEYS UNLESS OTHERWISE SHOWN ON PLANS.

PLACE EXPANSION JOINTS AT THE ENDS OF CIRCLES AT STREET INTERSECTION ONLY WHERE BLOCK LENGTH IS 600 FT. OR LESS AND A MINIMUM NUMBER OF INTERMEDIATE EXPANSION JOINTS AT EQUAL INTERVALS NOT TO EXCEED 600 FT. APART WHERE BLOCK LENGTH IS OVER 600 FT.

PROPERTY LINE
15' FOR SLAG AGG.
20' FOR NATURAL AGG.

PROPERTY LINE

1'' EXPANSION JOINTS AT ENDS OF CIRCLES

PROPERTY LINE

Alley

CONTRACTION JOINTS
20' C. C.
15' FOR SLAG AGG.

CONTRACTION JOINTS

MATCH LINE

Curb

CATCH BASIN

MANHOLE

15' R.

CATCH BASIN

TO PERMIT JOINTS ON C OF MANHOLES OR JOINTS ON SIDES OF CATCH BASINS, ADJUST ONE OR MORE PANELS ON EITHER SIDE OF OPENING

PROPERTY LINE

TRANSVERSE CONTRACTION JOINTS

PROPERTY LINE
MANHOLE AND CATCH BASIN JOINT DETAILS

REVISED DATE (METRIC TO ENGLISH UNIT SYSTEM): DEC. 2002
THE FIRST HALF OF THE HOOK BOLT MAY BE HELD IN POSITION BY OTHER METHODS, IF APPROVED BY THE ENGINEER.

LONGITUDINAL BULKHEAD JOINT
WITH JOINT DOWEL HOOK BOLT

EXPANSION JOINT

TRANSVERSE CONTRACTION JOINT

LONGITUDINAL CONTRACTION JOINT

NOTE:
ALL DIMENSIONS ARE IN INCHES ("") UNLESS OTHERWISE NOTED.

REVISED DATE (METRIC TO ENGLISH UNIT SYSTEM): DEC. 2002

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
STANDARD PLAN FOR
DETAIL AND STANDARD JOINTS

03/07/98 DRAWING NO. DETAIL STANDARD NO. SHEET
2 C-4397 2 OF 2
INTEGRAL ROLL CURB

TYPE IV

NOTES:
1. DEPTH OF CURB SHALL BE 20" UNLESS OTHERWISE
  DIRECTED BY THE ENGINEER.
2. USE WHEN REPLACING CURBS ON EXISTING BITUMINOUS
  PAVEMENTS TO BE RESURFACED.

CONCRETE CURB, DETAIL CD

PROPOSED GRADING

PROPOSED CONCRETE CURB, DETAIL CD

1'-0" MIN.

REMOVE BITUMINOUS
SURFACE AND RESURFACE

SAW CUT

EXISTING PAVEMENT

THIS DETAIL SHALL BE USED AT LOCATIONS WHERE PROPOSED CURB IS CONSTRUCTED
ADJACENT TO EXISTING BITUMINOUS PAVEMENT NOT TO BE RESURFACED.

BITUMINOUS PATCHING AT
PROPOSED CURB EDGE

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
STANDARD PLAN FOR

STANDARD CURB DETAILS

REVISED DATE (METRIC TO ENGLISH UNIT SYSTEM): DEC. 2002
NOTE:
PAYMENT WILL BE MADE FOR SQUARE FEET (ft²) OF PAVEMENT.

PLAN

SECTION A-A

DETAIL SHOWING TREATMENT AT CURB RETURNS
TRANSITION DETAILS

SIDE VIEW

END VIEW

CONCRETE BUMPER CURB

NOTE:
ALL DIMENSIONS ARE IN INCHES(*)
UNLESS OTHERWISE NOTED.

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
STANDARD PLAN FOR

--- STANDARD CURB DETAILS ---
SIDEWALK RAMP TYPE R
(Rolled Sides)

Sidewalk Ramp Type F
(Flaked Sides, Two Ramps Shown)

DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION
CITY OF DETROIT

SIDEWALK RAMP AND
DETECTABLE WARNING DETAILS
R-28 WITH CITY OF DETROIT
THICKNESS AMENDMENT

4/19/2017
MAXIMUM TURNING SPACE SLOPE IS 2.0%. IN EACH DIRECTION OF TRAVEL. MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

MAXIMUM RAMP CROSS SLOPE IS 2.0%. RAMPING SLOPE 5% - 7%
(0.3% MAXIMUM) SEE NOTES.

SIDWALK RAMP TYPE RP
ROLLED / FLISHED RISES.

SECTION A-A

SECTION THROUGH CURB CUT
(TYPICAL ALL RAMP TYPES)

DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION
SIDWALK RAMP AND
DETECTABLE WARNING DETAILS
R-28 WITH CITY OF DETROIT
THICKNESS AMENDMENT
CITY OF DETROIT
4/19/2017 SHEET 2 OF 7
SIDEWALK RAMP TYPE P
(PARALLEL RAMP)
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR

SIDEWALK RAMP TYPE C
(COMBINATION RAMP)

USE 24" DEEP DETECTABLE WARNINGS IF MEDIAN WIDTH IS AT LEAST 6'-6". OTHERWISE NO DETECTABLE WARNING IS REQUIRED.

SIDEWALK RAMP TYPE M

DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION
SIDEWALK RAMP AND DETECTABLE WARNING DETAILS
R-28 WITH CITY OF DETROIT THICKNESS AMENDMENT

CITY OF DETROIT
4/19/2017 SHEET 3 OF 7
SIDEWALK RAMP TYPE D

DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION

DETECTABLE WARNING DETAILS
R-28 WITH CITY OF DETROIT
THICKNESS AMENDMENT

4/19/2017 SHEET 4 OF 7
THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE, NEAREST THE RAIL CROSSING IS 6' MINIMUM AND 13' MAXIMUM FROM THE CENTERLINE OF THE NEAREST RAIL. DO NOT PLACE DETECTABLE WARNING ON RAILROAD CROSSING MATERIAL.

DETECTABLE WARNING AT RAILROAD CROSSING

DETECTABLE WARNING AT FLUSH SHOULDER OR ROADWAY

DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION
SIDEWALK RAMP AND DETECTABLE WARNING DETAILS
R-28 WITH CITY OF DETROIT THICKNESS AMENDMENT

CITY OF DETROIT

4/19/2017 SHEET 5 OF 7
**SECTION B-B**

**SIDEWALK RAMP ORIENTATION**

- **DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION**
- **CITY OF DETROIT**
- **DETECTABLE WARNING DETAILS**
- **SIDEWALK RAMP AND DETECTABLE WARNING DETAILS**
- **R-28 WITH CITY OF DETROIT THICKNESS AMENDMENT**
- **4/19/2017**

---
NOTES:

DETAILS SPECIFIED ON THIS PLAN APPLY TO ALL CONSTRUCTION, RECONSTRUCTION, OR ALTERATION OF STREETS, CURBS, OR SIDEWALKS ON THE PUBLIC RIGHT OF WAY.

SIDEWALK Ramps ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

RAMPS SHALL BE PROVIDED AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALKS AND CURBS. RAMPS SHALL ALSO BE PROVIDED AT MAJORS AND/OR SIGNALIZED MID-GOOGLE CROSSINGS.

SURFACE TEXTURE OF THE RAMPS SHALL BE THAT OBTAINED BY A COARSE BRICKING TRANSVERSE TO THE RUNNING SLOPE.

SIDEWALKS SHALL BE RAMPS WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE BULK.

CROSSWALKS SHALL BE TREATED TO ASSURE UNIFORM QUALITY ON THE RAMP. WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMPS BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.

RAMPS HAVING A SLOPE GREATER THAN 5% MAY BE INCREASED TO NOT LESS THAN 4% AND TURNING SPACES TO NOT LESS THAN 4'-0".


FOR NEW ROADWAY CONSTRUCTION, THE RAMPS MAY HAVE A MAXIMUM SLOPE OF 2.5%. FOR ALTERATIONS TO EXISTING ROADWAYS, THE CROSS SLOPE MAY BE TRANSITIONED TO AN EXISTING ROADWAYGRADE. THE CROSS SLOPE TRANSITION SHALL BE APPLIED UNIFORMLY OVER THE FULL LENGTH OF THE RAMPS.

THE MAXIMUM RAMPS SLOPE OF 6.25% IS RELATIVE TO A FLAT REFERENCE. HOWEVER, IT SHALL NOT REQUIRE ANY RAMPS OR SERIES OF RAMPS TO EXCEED 15 FEET IN LENGTH.

DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMPS. THE LOCATION OF THE RAMPS SHOULD BE DETERMINED AFTER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRADE. OPENINGS SHALL NOT BE GREATER THAN 2". ELOGATED OPENINGS SHALL BE PLACED SO THAT THE LINE OF SIGHT CAN BE OBSERVED TO THE HORIZONTAL 

TRANSITION THE OUTER PAN CROSS SECTION SUCH THAT THE RAMPS SLOPE IN THE DIRECTION OF RAMP TRAVEL IS NOT GREATER THAN 1:5. MAINTAIN THE NORMAL OUTER PAN CROSS SECTION ACROSS DRAINAGE STRUCUTURES. OR THE TOP OF THE JOINT FILLER FOR ALL RAMPS TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

CROSSWALKS AND STOP LINE MARKINGS, IF USED, SHALL BE LOCATED AS TO 10 TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".

FLARED SIDES WITH A SLOPE OF 12.5% MAXIMUM, MEASURED ALONG THE ADJACENT CURB LINE, SHALL BE PROVIDED WHERE AN UNBROKEN CIRCULATION PATH LATERALLY CROSSES THE SIDEWALK RAMPS. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BROKEN BY LANDSCAPING, UNEVEN SURFACE OR PERMANENT FIXED OBJECTS. WHERE THEY ARE NOT REQUIRED, FLARED SIDES CAN BE CONSIDERED IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.

DETECTABLE WARNING PLATES MUST BE INSTALLED USING FABRICATED OR FIELD CURB UNITS CAST OR BAKED ON OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEATING.

DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION
SIDEWALK RAMPS AND DETECTABLE WARNING DETAILS
R-28 WITH CITY OF DETROIT
THICKNESS AMENDMENT
4/19/2017 SHEET 7 OF 7

CITY OF DETROIT
EXPANSION JOINTS

ALL EXPANSION JOINT PAPER SHALL EXTEND 1" BELOW THE BOTTOM OF THE THINNER OF ADJOINING PAVEMENT SECTIONS.

1. PLACE 1⁄2" PAPER EXPANSION JOINTS AT LOT LINES WHEN LOT LINES ARE BETWEEN 25' AND 50' APART.

2. PLACE ADDITIONAL 1⁄2" PAPER EXPANSION JOINTS SO THAT THE DISTANCE BETWEEN JOINTS DOES NOT EXCEED 15.2 m WHEN LOT LINES ARE OVER 15.240 m APART.

3. PLACE 1⁄2" PAPER EXPANSION JOINTS AT EVERY SECOND LOT LINE AND CONTRACTION JOINT AT INTERVENING LOT LINE WHEN LOT LINES ARE LESS THAN 25' APART.

4. PLACE 1" PAPER EXPANSION JOINTS AT CURB AND BUILDING OR PROPERTY LINE OR AT ALTERNATE POSITION (4A) AS SHOWN FOR DRIVEWAY.

5. PLACE 1" PAPER EXPANSION JOINTS AT CURB AND BUILDING OR PROPERTY LINE FOR FULL WIDTH SIDEWALK EXCEEDING 7' IN WIDTH.

6. PLACE 1" PAPER EXPANSION JOINTS AT CURB CIRCLES OR AT ALTERNATE POSITION (6A) AS SHOWN.

7. PLACE 1" PAPER EXPANSION JOINTS AT INTERSECTIONS OF SERVICE WALKS AND SIDEWALKS AND SERVICE WALKS AND CURBS.

8. PLACE 1" PAPER EXPANSION JOINTS AT MARGIN FLAGS AT CROSSWALKS.

9. PLACE 1" PAPER EXPANSION JOINTS AT ALLEY APRONS.

10. PLACE 1⁄2" PAPER EXPANSION JOINT BOTH SIDES OF SIDEWALK FLAG ABUTTING TREE AND ON CENTERLINE JOINT.

CONTRACTION JOINTS

10C. PLACE CONTRACTION JOINTS AT INTERVALS OF NOT LESS THAN 5' NOR MORE THAN 7' ON WALKS 5' WIDE OR WIDER, INCLUDING FULL WIDTH WALKS.

2C. PLACE CONTRACTION JOINTS AT INTERVALS OF NOT LESS THAN 4' NOR MORE THAN 7' ON WALKS 4' WIDE.

3C. PLACE CONTRACTION JOINTS AT THE MARGIN LINE ON FULL WIDTH WALKS (OPTIONAL).

DRIVEWAYS

1D. PLACE CONTRACTION JOINTS IN DRIVEWAYS SO THAT NO SLAB WILL EXCEED THE DIMENSIONS OF 15' BY 15'.

2D. PLACE 1" PAPER EXPANSION JOINTS ON ALL SIDES OF COMMERCIAL DRIVES.

3D. PLACE CONSTRUCTION OR CONTRACTION JOINT ON CENTERLINE WHEN WIDTH OF DRIVEWAY EXCEEDS 15'.

4D. PLACE 1⁄2" PAPER EXPANSION JOINTS ON BOTH SIDES OF RESIDENTIAL DRIVEWAYS. IF DRIVEWAY EDGE IS WITHIN 2' OF LOT LINE, PLACE THIS EXPANSION PAPER AT PROPERTY LINE.

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
STANDARD PLAN FOR
SIDewALK JOINTING
STANDARD

REvised DATE (METRIC TO ENGLISH UNIT SYSTEM): DEC. 2002

PLAN DATE 03/07/98
DRAWING NO. 9
DETAIL STANDARD NO. C-4462
SHEET 2 OF 2
**Lightweight Warning Light** attached with vandal resistant hardware through upright and rail.

**Barricade Rail** may be:
- 9/16" A316 stainless steel or
- 9/16" high density polyethylene or
- 9/16" hollow extruded rigid polyethylene.

**1 1/2" Perforated Square Steel Tube** (12 gauge)

**1/8" Hollow Extruded Rigid Polyethylene**

**2" x 2" x 1/4" Angle or**

**2" x 2" x 1/8" Angle**

**Hold to Center of Base**

**Perforated Square Steel Tube Option**

**Angle Iron Option**

**Lightweight Warning Light** attached with vandal resistant hardware through upright and rail.

**Barricade Rail** may be:
- 9/16" A316 stainless steel or
- 9/16" high density polyethylene or
- 9/16" hollow extruded rigid polyethylene.

**1 1/2" Perforated Square Steel Tube** (12 gauge)

**1/8" Hollow Extruded Rigid Polyethylene**

**2" x 2" x 1/4" Angle or**

**2" x 2" x 1/8" Angle**

**Hold to Center of Base**

**Barricade Rail Sheeting Options**

**Type III Barricades**

*Other Type III Barricades meeting current NCHRP crash worthy criteria can be found on the FHWA Safety website at [http://safety.fhwa.dot.gov/roadway_dept/road_hardware/wzd.htm](http://safety.fhwa.dot.gov/roadway_dept/road_hardware/wzd.htm)*

**Michigan Department of Transportation**

**Temporary Traffic Control Devices**

**MICHIGAN DEPARTMENT OF TRANSPORTATION**

**BUREAU OF DEVELOPMENT**

**STANDARD PLAN FOR**

**DEPARTMENT DIRECTOR**

Kirk T. Steudle

**APPROVED BY:**

**DIRECTOR, BUREAU OF FIELD SERVICES**

**ENGINEER OF DEVELOPMENT**

**(SPECIAL DETAIL)**

**APPROVED BY:**

**DIRECTOR, BUREAU OF DEVELOPMENT**

**PREPARED BY:**

**DESIGN DIVISION**

**DRAWN BY:**

**CHECKED BY:**

**MDOT**

**DATE:**

1/18/11

**WZD-125-E**

**SHEET 1 OF 3**
TEMPORARY SIGN SUPPORT

WARNING LIGHT PLACED ON SIDE CLOSEST TO TRAFFIC

* SIGN STAND IS BALLASTED WITH FOUR OR MORE 35 LB SANDBAGS. A MINIMUM OF ONE ON EACH END.

UPRIGHTS SHALL NOT EXTEND ABOVE THE SIGN PANEL.

Other temporary sign supports meeting current NCHRP crash worthy criteria can be found on the FHWA Safety website at http://safety.fhwa.dot.gov/roadway_dept/road_hardware/wzd.htm
SYMBOLS TO BE USED ON PLANS

- PLASTIC DRUM
- PROPOSED TYPE III BARRICADE
- EXISTING TYPE III BARRICADE

NOTES:

PLASTIC DRUM

THREE " MIN.

REMAINDER OF DRUM

2" MAX.

(SEE NOTE)

18" MIN.

0 TO 4"

SYMBOLS TO BE USED ON PLANS

EXISTING TYPE III BARRICADE

PROPOSED TYPE III BARRICADE

PLASTIC DRUM

TRAFFIC CONTROL DEVICE.

SO THEY WILL NOT COVER OR OBSTRUCT ANY REFLECTIVE PORTION OF THE ACHIEVE STABILITY OF THE BARRICADE. THE SANDBAGS SHALL BE PLACED SANDBAGS SHALL BE USED WHEN SUPPLEMENTAL WEIGHTS ARE REQUIRED TO SPECIFICATIONS FOR CONSTRUCTION.

SENSITIVE REFLECTIVE SHEETING ACCORDING TO THE CURRENT STANDARD SIGNS, BARRICADES, AND PLASTIC DRUMS SHALL BE FACED WITH PRESSURE-SHALL BE ORANGE IN COLOR AND EQUAL IN WIDTH.

THE HORIZONTAL REFLECTORIZED ORANGE AND WHITE STRIPES STRIPES (2 ORANGE AND 2 WHITE) OF 6" UNIFORM WIDTH, ALTERNATING IN COLOR WITH THE TOPMOST REFLECTORIZED STRIPE BEING ORANGE; NON REFLECTORIZED SPACES BETWEEN THE HORIZONTAL REFLECTORIZED ORANGE AND WHITE STRIPES SHALL BE ORANGE IN COLOR AND EQUAL IN WIDTH.

PLASTIC DRUM

2" PERFORATED SQUARE STEEL TUBES MAY BE USED TO FABRICATE THE HORIZONTAL BASE OF THE TYPE III BARRICADE.

WARNING LIGHTS SHALL BE PLACED ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND ALL OTHER PROVISIONS IN THE CONTRACT ON TYPE III BARRICADES.

SEE ROAD STANDARD PLANS R-113-SERIES FOR TEMPORARY CROSSOVERS FOR DIVIDED HIGHWAY, AND R-126-SERIES FOR TYPICAL LOCATION AND SPACING OF PLASTIC DRUMS FOR PLACEMENT OF TEMPORARY CONCRETE BARRIERS.

SIGNS, BARRICADES, AND PLASTIC DRUMS SHALL BE FACED WITH PRESSURE-SENSITIVE REFLECTIVE SHEETING ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

SANDBAGS SHALL BE USED WHEN SUPPLEMENTAL WEIGHTS ARE REQUIRED TO ACHIEVE STABILITY OF THE BARRICADE. THE SANDBAGS SHALL BE PLACED SO THEY WILL NOT COVER OR OBSTRUCT ANY REFLECTIVE PORTION OF THE TRAFFIC CONTROL DEVICE.

NOT TO SCALE
ALLEY RETURN OR COMMERCIAL DRIVE APPROACH

SECTION A-A
SECTION B-B

IF ALLEY IS PAVED, CONSTRUCT RETURN WITH 1" EXPANSION JOINT ON PROPERTY LINE.

RADIUS TO BE 10' UNLESS OTHERWISE SHOWN ON PAYING PLAN.

SIDEWALK FLAGS ABUTTING ALLEY SHALL BE 6" THICK, SIDEWALK SHALL BE REPLACED FOR A SMOOTH TRANSITION AND TO ATTAIN A CROSS SLOPE OF 2% MAX. OR AS DIRECTED BY THE ENGINEER.

KEY JOINT OR "B" JOINT IF REINFORCED PAVEMENT.

ALL DIMENSIONS ARE IN INCHES ("") UNLESS OTHERWISE NOTED.

* SIDEWALK CROSS SLOPE SHALL BE 2% MAX. OR AS DIRECTED BY THE ENGINEER.

** THE SLOPE OF THE DRIVEWAY IN THE 1 FT. SPACE ADJACENT TO THE PROPERTY LINE MAY BE ALTERED UP TO 10% TO MEET EXISTING CONDITIONS.

REVISED DATE (METRIC TO ENGLISH UNIT SYSTEM): DEC. 2002
NOTE:
CATCH BASIN "A" WILL BE USED ONLY WHEN OUTLETTING TO A CATCH BASIN "B".

PLAN VIEW

SECTION A-A

CATCH BASIN "A"

REVISED DATE (METRIC TO ENGLISH UNIT SYSTEM): DEC. 2002

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.

STANDARD PLAN FOR
CATCH BASINS "A" AND "B"
AND FLAT GRATE AND FRAME

APPROVED

rev. K.S.M.  Dodiu Haider
ENGINEER OF STREETS

INN.

CHECKED BY:
M.F.S.  City Engineer

PREPARED BY
BUREAU OF STREETS AND HIGHWAYS

03/07/98
DRAWING NO. 35
PLAN DATE

DETAIL STANDARD NO. C-5028
SHEET 1 OF 7
PLAN VIEW

SECTION C-C

MAX. 3 COURSES VERTICAL BRICK STOCK (MAY BE DECREASED TO 1 COURSE IN SPECIAL CASES TO REDUCE DEPTH.)

8" BRICK, 8" CONCRETE BLOCK OR 5" PRECAST CONCRETE C-478 (TO 15" DEPTH ONLY)

STANDARD MANHOLE STEPS @ 16" O.C. (SEE DETAIL ON SHEET 4 OF 7)

PLASTER COAT ENTIRE STRUCTURE (BRICK OR BLOCK) WITH 1/2" CEM. MORTAR

INVERT ELEVATION AS CALLED FOR ON THE PLANS

12" DIA. UNLESS OTHERWISE SPECIFIED.

SECTION B-B

CATCH BASIN "B"

NOTE "A":

WALL THICKNESS SHALL BE 8" FROM THE TOP OF STRUCTURE TO A DEPTH OF 15'. BELOW 15' THE THICKNESS OF THE WALL SHALL BE 12"
NOTES:

SEWER TRAP TO BE OF THE SAME MAT'L. & STRNGTH AS THE OUTLET SEWER PIPE.

TRAP SHALL BE SUPPORTED BY BLOCKING OR ANY OTHER MEANS UNTIL CATCH BASIN IS COMPLETED AND CONCRETE OR MORTAR AROUND BRICK IS SET. ANY VOIDS BETWEEN THE TRAP AND GROUND UNDERNEATH SHALL BE FILLED WITH GRADE "A" CONCRETE.

DETAIL OF TRAP FOR CATCH BASIN "B"

DETAIL OF SUMP FOR CATCH BASIN "B"
ALUMINUM MANHOLE STEP STANDARD DETAILS

NOTES:

1. MANHOLE STEPS SHALL CONFORM TO THE REQUIREMENTS FOR "ALUMINUM ALLOY EXTRUDED BARS, RODS, SHAPES AND TUBES", A.S.T.M. B221 (CURRENT), ALLOY 6061, TEMPER T-6 OR APPROVED EQUAL.

2. EITHER THE FLARED LEG OR PARALLEL LEG STEP MAY BE USED FOR POURED IN PLACE CONCRETE CONSTRUCTION OR IN WET CAST MANHOLE UNITS.

3. THE PARALLEL LEG STEP SHALL BE USED IN EXISTING STRUCTURES BY PLACING IN DRILLED HOLES AND GROUTING WITH NON-SHRINK GROUT.

*NOTE:

IN LIEU OF GROOVES, ALTERNATE FOOT HOLD CONFIGURATIONS WILL BE CONSIDERED FOR APPROVAL.

REVISED DATE (METRIC TO ENGLISH UNIT SYSTEM): DEC. 2002

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
STANDARD PLAN FOR CATCH BASINS "A" AND "B" AND FLAT GRATE AND FRAME

03/07/98 DRAWING NO. DETAIL STANDARD NO. SHEET 35 C-5028 4 OF 7
PLAN VIEW OF GRATE

SECTION F-F

SECTION G-G

3/4" DIA. HOLE THRU COVER, C'BORE.
1 7/16" x 11/16" DEEP CORED IN GRATE.
FRAME DRILLED & TAPPED FOR 1/2"
DIA. - 1/16" THREAD PITCH BOLT (TYP.)

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
STANDARD PLAN FOR
CATCH BASINS "A" AND "B"
AND FLAT GRATE AND FRAME

REVISED DATE (METRIC TO ENGLISH UNIT SYSTEM): DEC. 2002

PLAN DATE 05/07/98
DRAWING NO. 35
DETAIL STANDARD NO. C-5028
SHEET 6 OF 7
1. CENTER OF CATCH BASIN SHALL BE 20 INCHES FROM BACK OF CURB.

2. ALL SIZES AND FLOW LINES OF PIPES, AND ELEVATIONS FOR TOP AND BOTTOM OF STRUCTURES SHALL BE DETERMINED FROM THE PLANS OR CONSTRUCTION REQUIREMENTS.

3. A TRAP, AS DETAINED ON SHEET 3 OF 7, SHALL BE PLACED WHERE CALLED FOR IN THE OUTLET SEWER LINE OF CATCH BASINS "B". THIS TRAP SHALL BE SET INTO THE MASONRY WALL AS SHOWN ON THE DETAIL. THE SPACE BETWEEN THE FACES OF THE WALL AND THE TRAP SHALL BE COMPLETELY FILLED WITH CEMENT, MORTAR OR CONCRETE, SO AS TO HOLD TRAP SECURELY IN PLACE.

4. THE MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS FOR PAVING AND RELATED CONSTRUCTION EXCEPT AS NOTED ON THIS SHEET AND ON THE PLANS.

5. A PLASTER COAT OF MORTAR 1/2" IN THICKNESS SHALL BE APPLIED TO THE OUTER SURFACE OF THE STRUCTURE AS SHOWN. A 1/2" CEMENT PLASTER COAT SHALL BE PLACED ON THE INSIDE OF ALL SUMPS.

6. CONTRACTOR SHALL VERIFY ELEVATIONS OF EXISTING UTILITIES TO ENABLE CONSTRUCTION TO INDICATED ELEVATIONS SHOWN ON DRAWINGS. IF NECESSARY, INVERT ELEVATIONS SHOWN ON THE DRAWINGS MAY BE ALTERED IN THE FIELD TO CLEAR EXISTING UTILITIES. SUCH ALTERATIONS, UPWARD OR DOWNWARD, SHALL BE AT NO CHANGE IN CONTRACT PRICE.

7. WHEN PRECAST CONCRETE PIPE SECTIONS ARE USED FOR CATCH BASINS, EITHER A SECTION OF THE INLET AND OUTLET PIPES OR AN OPENING OR EYE FOR THE INLET AND OUTLET PIPES SHALL BE CAST INTO THE WALL OF THE CATCH BASIN PIPE WHEN IT IS BEING MANUFACTURED. EYES IN PRECAST PIPE SECTIONS SHALL BE FURNISHED TO ACCOMMODATE A FLEXIBLE JOINT CONNECTION SUCH AS PRESS-WEDEG BY PRESS SEAL GASKET CORP. OR RES-SEAL BY SCALES MFG. CORP.

8. PAY LIMIT FOR SEWERS SHALL BE INSIDE FACES OF STRUCTURES UNLESS OTHERWISE NOTED.

9. ALL DIMENSIONS ARE IN INCHES ("") UNLESS OTHERWISE NOTED.
5000M4 Grate

SECTION A-A

SECTION B-B

SECTION C-C

DESIGN FEATURES
- MATERIALS
  COVER: DUCTILE IRON (80-55-08)
- DESIGN LOAD: HEAVY DUTY
- OPEN AREA: 160 SQ IN
- COATING: UNDIPPED
  DESIGNATES MACHINED SURFACE

CERTIFICATION
- ASTM A536
- COUNTRY OF ORIGIN: USA

DWSD APPROVAL: 04/16/14
DATE: 04/16/14

CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

CATCH BASIN
5000 M4 GRATE

APPROVED: 04/16/14
ENGINEER OF RECORD
CITY ENGINEER

DRAWN BY: N.Y. SANTOS
DATE: 04/16/14

EJ Part Number: 00500063, 85 lbs.
EJ Part Number: 00500017, 156 lbs.

5000 Frame

(4) 1" DIA. HANDLING HOLES ON A 29" DIA. B.C.

- MATERIALS
  FRAME: DUCTILE IRON (70-50-05)
  - DESIGN LOAD: HEAVY DUTY
  - COATING: UNDIPPED
  - Designates machined surface

CERTIFICATION
- ASTM A536
- COUNTRY OF ORIGIN: USA
PLAN VIEW OF COVER

SECTION A-A

SAFETY LOCK @ 90°

FULLY OPENED & REMOVAL POSITION @ 120°

NOTE:

EAST JORDAN 00104050L01 ERGO COVER AND FRAME OR APPROVED EQUAL.

MANHOLE FRAME AND COVER WITH LOGO - SEWER

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

REV DESCRIPTION DATE
1 UPDATED 06/2020

REVISIONS

SCALE NONE SHEET 1 OF 1
DATE 9/2018 DWG. No. 330561-03
Assembly Weight 241 lbs.

5000 Assembly

3/8" SHARP FACE
GOTHIC

1/2"-13 STAINLESS STEEL
PENT BOLT V/ WASHER SEAT

100° FULLY OPENED
RESTING POSITION

FULLY OPEN POSITION

DESIGN FEATURES
-MATERIALS
COVER: DUCTILE IRON (80-55-06)
FRAME: DUCTILE IRON (70-50-05)

-DESIGN LOAD: HEAVY DUTY
-OPEN AREA: 160 SQ IN
-COATING: UNDIPPED
-DESIGNATES MACHINED SURFACE

CERTIFICATION
-ASTM A936
-COUNTRY OF ORIGIN: USA

CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

CATCH BASIN
5000 ASSEMBLY

DWSD APPROVAL: 
DATE: 04/16/14

APPROVED:

DATE: 04/16/14

DRAWN BY: N.Y. SANTOS
DATE: 04/16/2014
EJ Part Number: LC00104051, Assembly Weight: 108 lbs.

ERGO Cover

CITY OF DETROIT WATER & SEWERAGE DEPARTMENT

STAINLESS STEEL CAM LOCK

1 1/2" SHARP FACE GOTHIC

1" SHARP FACE GOTHIC

CUSTOM LOGO

3/4" SHARP FACE GOTHIC

SECTION B-B

SECTION A-A

MPIC?MULTI-TOOL PICKBAR

DESCRIPT FEATURES
-MATERIALS
- COVER: DUCTILE IRON (80-55-06)
- DESIGN LOAD: HEAVY DUTY
- OPEN AREA: N/A
- COATING: UNDIIPPED
- √ DESIGNATES MACHINED SURFACE

CERTIFICATION
- ASTM A536
- COUNTRY OF ORIGIN: USA

DWSD APPROVAL: [Signature] DATE: 04/16/14

CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

DWSD MANHOLE ERGO COVER

APPROVED:

ENGINEER OF RECORD: [Signature] DATE: 04/16/14

DRAWN BY: N.Y. SANTOS
DATE: 04/15/2014
EJ Part Number: 00500019, 134 lbs.

5000 Frame

(3) 1" DIA. HANDLING HOLES ON A 25" DIA. B.C.

SECTION B-B

DESIGN FEATURES
- MATERIALS
  - FRAME: DUCTILE IRON (70-50-05)
- DESIGN LOAD: HEAVY DUTY
- COATING: UNDIPPED
- DESIGNATES MACHINED SURFACE

CERTIFICATION
- ASTM A536
- COUNTRY OF ORIGIN: USA

SECTION A-A

DWSD APPROVAL: [Signature] DATE: 04/16/14

CITY OF DETROIT
CITY ENGINEERING DIVISION
DPW

DWSD MANHOLE
5000 FRAME
NOTE:
TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL PAVED CATCH BASINS OR STORM INLETS. SEDIMENT FILTERS TO BE SIMILAR TO:

1. "SILTSACK" TYPE B, REGULAR FLOW, BY ACF ENVIRONMENTAL, INC.
2. "INLET PRO SEDIMENT BAG", STANDARD FLOW, WITH OPTIONAL FOAM DEFLECTOR BY HANES GEO COMPONENTS.
3. "DANDY CURB SACK" BY DANDY PRODUCTS, INC.
4. "BASIN BAG", REGULAR FLOW BY CSI GEOTURF, CLEAN FILTER AS NEEDED.

GENERAL NOTES

1. CONTRACTOR SHALL OBTAIN PERMISSION OF THE ENFORCING ROAD AGENCY BEFORE THIS TYPE OF CONTROL IS CONSTRUCTED IN THE ROAD RIGHT-OF-WAY.
2. CONTRACTOR SHALL KEEP CURBS & GUTTER INLET FILTERS (AFTER PAVING) IN PLACE UNTIL ALL AREAS CONTRIBUTING TO THEM ARE STABILIZED WITH VEGETATION.
3. CONTRACTOR SHALL PERFORM WEEKLY INSPECTION AND MAINTENANCE TO ENSURE THAT THE CURB & GUTTER INLET FILTER (AFTER PAVING) OPERATES EFFICIENTLY.
SOIL EROSION AND SEDIMENTATION CONTROL

TEMPORARY FACILITIES


ALL DISTURBED SURFACE AREA (INCLUDING UTILITY TRENCHES) SHALL BE TEMPORARILY GRADED AND/OR DITCHED TO DIRECT ALL WATER RUNOFF FROM SUCH AREAS TO SEDIMENTATION CONTROL DEVICES WHICH WILL PREVENT WATER CARRYING ERODED SOIL FROM ENTERING A WATERCOURSE, SEWER, OR ADJACENT LANDS. SUCH SEDIMENTATION CONTROL DEVICES SHALL INCLUDE BUT NOT BE LIMITED TO PROTECTIVE DITCHES, SEDIMENT TRAPS, SEDIMENT FILTERS, DITCH TRAPS, PIPE BARRIERS, AND FILTERS AS DETAILED AND REQUIRED AND WHERE INDICATED ON THE DRAWINGS. AFTER THE PROJECT WORK HAS BEEN COMPLETED, INSPECTED, AND APPROVED, THE CONTRACTOR SHALL REMOVE ALL SEDIMENTATION CONTROL DEVICES, MATERIAL, AND THEIR COLLECTED SILT AND DEBRIS AND RESTORE THE AREA IN ACCORDANCE WITH THE DRAWINGS.

IN ROADWAY AREAS TEMPORARY AGGREGATE SURFACING SHALL BE PLACED IMMEDIATELY AFTER THE BACKFILLING OPERATION HAS BEEN COMPLETED. POSITIVE DUST CONTROL MEASURES SHALL BE TAKEN AT ALL TIMES.

PERMANENT STABILIZATION SHALL BE COMPLETED WITHIN 5 DAYS OF FINAL EARTH CHANGE. FINAL CLEANUP AND RESTORATION WILL CONSIST OF FINAL GRADING, TOPSOILING, SEEDING AND MULCHING AND/OR SODDING OF ALL DISTURBED AREAS OF THE PROJECT.

IF SEASONAL CONDITIONS PREVENT FINAL CLEANING AND RESTORATION, THE CONTRACTOR SHALL PROCEED WITH TEMPORARY STABILIZATION OF THE DISTURBED AREA. TEMPORARY STABILIZATION SHALL CONSIST OF ROUGH GRADING THE DISTURBED AREA IN ACCORDANCE WITH THESE SPECIFICATIONS. TEMPORARY STABILIZATION MATERIALS SHALL BE REMOVED AND DISPOSED OF AND FINAL CLEANUP AND RESTORATION SHALL BE COMPLETED NOT LATER THAN 5 DAYS AFTER SEASONAL CONDITIONS ALLOW PERFORMANCE OF THE REQUIRED WORK.
SOIL EROSION AND SEDIMENTATION CONTROL

MAINTENANCE NOTES

THE CONTRACTOR SHALL INSPECT SOIL EROSION AND SEDIMENTATION CONTROL DEVICES WEEKLY AND WITHIN 24 HOURS OF A SIGNIFICANT RAIN EVENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SOIL EROSION AND SEDIMENTATION CONTROL DEVICES.

MAINTENANCE INCLUDES ALL WORK NECESSARY FOR PROPER OPERATION OF THE DEVICES. DEVICES WHICH CAN NOT BE REPAIRED MAY NEED TO BE REPLACED. MAINTENANCE OF THE DEVICES SHALL BE PERFORMED WITHIN 24 HOURS OF INSPECTION.

SEDIMENT SHALL BE REMOVED AS NECESSARY TO MAINTAIN THE EFFECTIVENESS OF SOIL EROSION AND SEDIMENTATION CONTROL DEVICES.

SEDIMENT DEPOSITED ALONG SILT FENCE SHALL BE REMOVED WHEN IT REACHES 1/3 TO 1/2 THE HEIGHT OF THE FENCE.

TURF ESTABLISHMENT MEASURES SHALL BE MAINTAINED AS WOULD ANY OTHER DEVICES PRIOR TO ESTABLISHMENT OF PERMANENT TURF.

ALL MUD, DIRT AND DEBRIS TRacked onto existing roads FROM THIS SITE SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.

CONTRACTOR SHALL ENSURE THAT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES PROTECT AGAINST LOSS OF SOIL BY THE ACTION OF WATER, ICE, GRAVITY OR WIND.
SUMMARY OF BASIC PRINCIPLES:
1. KEEP DISTURBED AREA AS SMALL AS POSSIBLE.
2. STABILIZE AND/OR PROTECT DISTURBED AREAS AS SOON AS POSSIBLE.
3. KEEP STORM WATER RUNOFF VELOCITIES LOW.
4. RETAIN SEDIMENT WITHIN IMMEDIATE CONSTRUCTION AREA.

THE PURPOSE OF THIS PLAN IS TO SPECIFY METHODS FOR TEMPORARY EROSION CONTROL DURING CONSTRUCTION. IT IS INTENDED THAT MEASURES CALLED FOR IN THE SPECIFICATIONS AND SHOWN ON THESE STANDARD DETAILS PLANS BE STRICTLY ADHERED TO. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THAT CONSTRUCTION PROCEDURES UNDERTAKEN BE IN CONFORMANCE WITH THE STATE OF MICHIGAN ACT 451 OF 1994 PART 91, SOIL EROSION AND SEDIMENTATION CONTROL.

ALL SOIL EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE REGULARLY MAINTAINED BY THE CONTRACTOR THROUGHOUT THE DURATION OF THE PROJECT. COLLECTED SILT AND SEDIMENTATION SHALL BE REMOVED PERIODICALLY TO MAINTAIN THE EFFECTIVENESS OF THE SILT TRAPS OR SEDIMENTATION CONTROL DEVICES. WHERE REQUIRED, THE CONTRACTOR SHALL REPLACE FILTER MATERIALS WHICH HAVE BECOME INEFFECTIVE DUE TO CONTAMINATION OR PHYSICAL DETERIORATION.

IF POSSIBLE, NO GRUBBING SHOULD BE DONE WITHIN 30' OF AN ACTIVE WATERCOURSE.

AGGREGATES PLACED IN STREAMS SHOULD CONTAIN A MINIMUM OF FINES. AS A GENERAL RULE FOR DAMS IN SMALL STREAMS, AT LEAST 50 STONE SHOULD BE 6" DIAMETER OR LARGER. 3" OR LARGER STONE SHALL BE USED FOR LINING STREAM BOTTOMS WHERE LINING IS REQUIRED.

ALL TEMPORARY EROSION CONTROL FACILITIES SHOULD BE REMOVED BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION UNLESS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE. CARE SHALL BE TAKEN DURING REMOVAL TO MINIMIZE SILTATION IN NEARBY DRAINAGE COURSES.

SURFACE DISRUPTION IN ADVANCE OF CONSTRUCTION INCLUDING CLEARING, GRADING OR SIGNIFICANT SOD REMOVAL SHALL BE LIMITED AS FOLLOWS, UNLESS PERMISSION IS OTHERWISE OBTAINED FROM THE GOVERNING AGENCY:

A. WET WEATHER SEASON (MARCH, APRIL, MAY) - 5 DAYS PRIOR TO BEGINNING ANY EARTH CHANGE ACTIVITY.

B. DRY WEATHER SEASON (JUNE, JULY, AUGUST, SEPTEMBER, OCTOBER, NOVEMBER) - 10 DAYS PRIOR TO BEGINNING ANY EARTH CHANGE ACTIVITY.

C. COLD WEATHER SEASON (DECEMBER, JANUARY, FEBRUARY) - 15 DAYS PRIOR TO BEGINNING ANY EARTH CHANGE ACTIVITY.
SOIL EROSION AND SEDIMENTATION CONTROL MEASURES (FROM 1-5)

**KEY**

1. **Striping & Stockpiling Topsoil**
   - Saves cost of grubbing, provides new sprouts.
   - Avoids extensive and unnecessary clearing of topsoil.
   - Permits runoff to infiltrate soil, reducing runoff.
   - High velocity mulch blankets.

2. **Grubbing OMITTED**
   - Termites and fire risk.
   - Temporary.
   - Inexpensive and very effective.
   - Retains existing root systems.
   - Discourages equipment entrance.

3. **Surface Drainageways**
   - Encloses drainages (inlet & outfall).
   - Encloses areas.
   - Permits runoff to infiltrate soil, reducing runoff.
   - Volatile organic compounds (VOCs).
   - Hydro-seeding.
   - Mulch blankets.

4. **Surficial Waterways**
   - Adjacent properties.
   - Borrows and large flat.
   - Grubs and topsoil.
   - Grubbing.
   - Grubbing and stockpiling.

5. **Adjacent Properties**
   - Overall slope.
   - Soil erosion and sedimentation control.
   - Closure of borrow and surficial waterways.
   - Indicative applicability of specific control measures.
   - Inexpensive and very effective.

**DETAILS**

- **Topsoil MAY be stockpiled above borrow areas to act as a diversion shield.**
- **Avoid extensive and unnecessary clearing of topsoil.**
- **Permits runoff to infiltrate soil, reducing runoff.**
- **High velocity mulch blankets.**

**CHARACTERISTICS**

- **Temporary / Permanent**
- **Permits runoff to infiltrate soil, reducing runoff.**
- **High velocity mulch blankets.**
- **Works well for stabilizing the bottom of ditches in waterways.**
- **Effects contaminate areal.**
- **Grass is rooted.**
- **Prepared topsoil bed.**
- **Fertilizing and watering required.**
- **Inexpensive and very effective.**
- **Stabilizes soil, thus minimizing erosion.**
- **Permits runoff to infiltrate soil, reducing runoff.**
- **High velocity mulch blankets.**
- **Works well for stabilizing the bottom of ditches in waterways.**

**INDICATES APPLICABILITY OF A SPECIFIC CONTROL MEASURE TO ONE OR MORE OF THE SEVEN PROBLEM AREAS.**
INDICATES APPLICABILITY OF A SPECIFIC CONTROL MEASURE TO ONE OR MORE OF THE SEVEN PROBLEM AREAS.

**SOIL EROSION AND SEDIMENTATION CONTROL MEASURES (FROM 6-10)**

**KEY**

**DETAILS**

**CHARACTERISTICS**

<table>
<thead>
<tr>
<th>KEY</th>
<th>DETAILS</th>
<th>SLOPES</th>
<th>STREAMS AND WATERWAYS</th>
<th>SURFACE DRAINAGEWAYS (ENCLOSED DRAINAGE INLET &amp; OUTFALL CONTROL)</th>
<th>LARGE FLAT SURFACE AREAS</th>
<th>BORROW AND STOCKPILE AREAS</th>
<th>ADJACENT PROPERTIES</th>
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<tr>
<td>6</td>
<td>SODDING</td>
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<td>Provides immediate protection. Can be used on steep slopes where seed may be difficult to establish. EASY TO PLACE. May be repaired if damaged. Should include prepared TOPSOIL BED.</td>
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<td>7</td>
<td>VEGETATIVE BUFFER STRIP</td>
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<td>SLOWS RUNOFF VELOCITY. FILTERS SEDIMENT FROM RUNOFF. REDUCES VOLUME OF RUNOFF ON SLOPES. ASSISTS IN ESTABLISHING PERMANENT VEGETATIVE COVER.</td>
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<td>8</td>
<td>MULCHING AND MULCH ANCHORING</td>
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<td>Used alone to protect exposed areas for short periods. Protects soil from impact of falling rain. Preserves soil moisture and protects germinating seed from temperature extremes. Should be inspected after every rainstorm and repaired as necessary until vegetation is well established.</td>
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<td>SLOPE ROUGHENING AND SCARIFICATION</td>
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<td>Can be accomplished by harrowing with a disk, back blading, or tracking with a dozer perpendicular to the slope. Reduces velocity and increases infiltration rates. Collects sediment. Holds water, seed, and mulch better than smooth surfaces.</td>
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<td>RIP RAP</td>
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<td>Used where vegetation is not easily established. Effective for high velocities or high concentrations. Permits runoff to infiltrate soil. Dissipates energy flow at system outlets. Should be placed on a geotextile liner.</td>
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SOIL EROSION AND SEDIMENTATION CONTROL MEASURES (FROM 16-20)

- **Dust Control**: Watering and/or applying calcium chloride can be used to control dust. The disturbed areas should be kept to a minimum.
- **Brush Filter**: Used to filter flow prior to entry into a lake, stream, or wetland. Not to be used as a check dam.
- **Bare Channel**: Least expensive form of drainageway. May be used only where the gradient is very low and with soils of minimum erosion potential.
- **Grassed Waterway**: Grass tends to slow runoff and filter out sediment. Used where a bare channel would be eroded.
- **Gravel Filter Berm**: Used where inlet or outlet enclose drainageways.
- **Surface Basins**: Used to capture runoff and filter out sediment.
- **Surface Drainage Ways**: Used to convey water from one or more of the seven problem areas.
- **Soil Erosion and Sedimentation Control**: Indicates applicability of a specific control measure to one or more of the seven problem areas.

**Characteristics**
- Dust control can be accomplished by watering and/or applying calcium chloride.
- Filter flow prior to entry into a lake, stream, or wetland.
- Uses slash and logs from clearing operations.
- Can be covered and seeded rather than removed.
- Eliminates need for burning or removal of material from site.
- Least expensive form of drainageway.
- May be used only where gradient is very low and with soils of minimum erosion potential.
- Grass tends to slow runoff and filter out sediment.

**Details**
- Dust control can be accomplished by watering and/or applying calcium chloride.
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**Key**
- 16 - Dust control
- 17 - Gravel filter berm
- 18 - Brush filter
- 19 - Bare channel
- 20 - Grassed waterway

**Table**

<table>
<thead>
<tr>
<th>REV</th>
<th>DESCRIPTION</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
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**Sheet**

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</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>015713-16</td>
</tr>
</tbody>
</table>

**City of Detroit**

WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION
## Soil Erosion and Sedimentation Control Measures (From 21-25)

### Characteristics

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Slope Drain (Subsurface &amp; Surface)</td>
<td>Prevents erosion on slopes when runoff cannot be diverted to edge of slope area. Requires design of gravity flow, can be constructed or extended as grading progresses.</td>
</tr>
<tr>
<td>22</td>
<td>Pipe Drop</td>
<td>Reduces runoff velocity.</td>
</tr>
<tr>
<td>23</td>
<td>Straw Bale Filter</td>
<td>Removes sediment and turbidity.</td>
</tr>
<tr>
<td>24</td>
<td>Sod Filter</td>
<td>Can be designed to handle large volumes of flow.</td>
</tr>
<tr>
<td>25</td>
<td>Check Dam</td>
<td>Allows water to drop rapidly in elevation without causing excessive erosion.</td>
</tr>
</tbody>
</table>

### Key

- **21**: Slope drain (subsurface & surface)
- **22**: Pipe drop
- **23**: Straw bale filter
- **24**: Sod filter
- **25**: Check dam

### Details

- **21**: Slope drain (subsurface & surface)
  - Prevents erosion on slopes when runoff cannot be diverted to edge of slope area.
  - Requires design of gravity flow, can be constructed or extended as grading progresses.

- **22**: Pipe drop
  - Reduces runoff velocity.

- **23**: Straw bale filter
  - Removes sediment and turbidity.
  - Can be designed to handle large volumes of flow.

- **24**: Sod filter
  - Allows water to drop rapidly in elevation without causing excessive erosion.

- **25**: Check dam
  - Allows water to drop rapidly in elevation without causing excessive erosion.
  - Inexpensive and easy to construct.
  - Provides immediate protection.
  - Protects areas around inlets from erosion.
  - Inexpensive and easy to construct. Can be located as necessary to collect sediment.
  - Protects vegetation in early stages of growth.
  - Check dam is not a filtering device.
<table>
<thead>
<tr>
<th>Sheet</th>
<th>Description</th>
<th>Details</th>
<th>Characteristics</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Slopes</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Surface Drainageways</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Surface Waterways</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Borrow and Large Flat Areas</td>
<td>*</td>
<td>*</td>
<td></td>
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<tr>
<td>E</td>
<td>Control (Inlet &amp; Outlet Enclosed Drainage)</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Soil Erosion and Sedimentation Control Measures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Adjacent Properties and Stockpile Areas</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

**SOIL EROSION AND SEDIMENTATION CONTROL MEASURES (FROM 26-30)**

<table>
<thead>
<tr>
<th>REV</th>
<th>DESCRIPTION</th>
<th>DATE</th>
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<tbody>
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</tbody>
</table>

**CITY OF DETROIT**

**WATER AND SEWERAGE DEPARTMENT**

**ENGINEERING DIVISION**

**SCALE**

**Sheet**

**6 OF 7**

**DATE**

09/2018

**DWG. No.**

015713-18
SOIL EROSION AND SEDIMENTATION CONTROL MEASURES (FROM 31-33)

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>DETAILS</th>
<th>KEY</th>
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<tbody>
<tr>
<td>PERMEABLE BARRIER ERECTED AROUND AN INLET TO CAPTURE SEDIMENTS.</td>
<td>DRAIN GUARD</td>
<td>31</td>
</tr>
<tr>
<td>MINIMIZES WIND EROSION, MAY BE SNOW FENCE</td>
<td>WIND BREAK</td>
<td>32</td>
</tr>
<tr>
<td>PROVIDES A STABLE ACCESS TO CONCERNED SURFACE AND MINIMIZES PLANNING AXES AND TRACKING OF MATERIALS ONTO PUBLIC STREETS AND HIGHWAYS.</td>
<td>GRAVEL ACCESS APPROACH</td>
<td>33</td>
</tr>
</tbody>
</table>

INDEEDS APPLICABILITY OF A SPECIFIC CONTROL MEASURE TO ONE OR MORE OF THE SEVEN PROBLEM AREAS.

A - ADJACENT PROPERTIES
B - LARGE FLAT SURFACE AREAS
C - LARGE FLAT SURFACE AREAS
D - CONTROLLED NULLS AND OUTFALL ENCLOSED DRAINAGE
E - DRAIN GUARD
F - WIND BREAK
G - GRAVEL ACCESS APPROACH
H - ADJACENT PROPERTIES
I - LARGE FLAT SURFACE AREAS
J - WIND BREAK
K - GRAVEL ACCESS APPROACH

DATE: 09/2018
DWG. No.: 015713-19

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SCALE: NONE
SHEET: 7 OF 7
**Plan View**

- Place cover on manhole as specified on plans.
- Top of masonry structure or bottom of casting.
- Top step to be 1'-6" below top of casting.
- Integral base option.
- Steel reinforcement shall be as specified in current ASTM C-478 (typ).

**Section A - A**

**Typical Manhole**

- Precast reinforced concrete shown.
- Other options include concrete block, brick, or cast-in-place wall sections.
- See typical wall sections for wall thickness.

**Detail for 1'-4" & 2'-0" Top Sections**

- Shape may vary from detail shown but must comply with ASTM C-478 and joints shall be compatible with the riser.

**Typical Precast Reinforced Bottom Section for Drop Manhole**

- Tongue and groove joint shall be modified to fit riser section.
- Opening size as required.

---

**MDOT**

**Department of Transportation**

**Bureau of Development Standard Plan for**

**Drainage Structures**
HALF SECTION A - A

TOP OF MASONRY STRUCTURE OR BOTTOM OF CASTING
PLACE CASTING ON INLET AS SPECIFIED ON PLANS
FOR PLACEMENT OF STEPS SEE MANHOLE DETAILS

SECTION A - A
SEE MANHOLE DETAILS FOR SIZE AND BASE OPTIONS
INLET

TOP OF MASONRY STRUCTURE OR BOTTOM OF CASTING
PLACE CASTING ON CATCH BASIN AS SPECIFIED ON PLANS
FOR PLACEMENT OF STEPS SEE MANHOLE DETAILS

SECTION A - A
SEE MANHOLE DETAILS FOR SIZE AND BASE OPTIONS
CATCH BASIN

TOP OF MASONRY STRUCTURE OR BOTTOM OF CASTING
PLACE CASTING ON LEACHING BASIN AS SPECIFIED ON PLANS
1/4 CEMENT PLASTER COAT ON TOP 5'-0"
OF BRICK OR CONCRETE BLOCK CONSTRUCTION

SECTION A - A
SEE MANHOLE DETAILS FOR BASE OPTIONS
LEACHING BASIN

CONCRETE FOOTING

HALF SECTION A - A

CONCRETE FOOTING

HALF SECTION A - A

GRANULAR MATERIAL
CLASS II
LODGE

SECTION B - B
CONCRETE FOOTING
SEE MANHOLE DETAILS FOR SIZE AND BASE OPTIONS
INLET

SECTION B - B
CONCRETE FOOTING
SEE MANHOLE DETAILS FOR SIZE AND BASE OPTIONS
CATCH BASIN

SECTION B - B
CONCRETE FOOTING
SEE MANHOLE DETAILS FOR SIZE AND BASE OPTIONS
LEACHING BASIN

SECTION A - A
SEE MANHOLE DETAILS FOR SIZE AND BASE OPTIONS
PRECAST SUMP FOR PRECAST RISERS

SECTION A - A
SEE MANHOLE DETAILS FOR SIZE AND BASE OPTIONS
PRECAST SUMP FOR BRICK OR BLOCK CONSTRUCTION

SECTION A - A
SEE TYPICAL BRICK AND BLOCK SECTION FOR SIZE AND BASE OPTIONS
PRECAST SUMP FOR 2'-0" DIA. STRUCTURES

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
DRAINAGE STRUCTURES

STEEL REINFORCEMENT SHALL BE AS SPECIFIED IN CURRENT ASTM C-478

*D BARS MAY BE BENT AT A SMALLER RADIUS RATHER THAN PARALLELING THE RADIUS IN THE DRAIN OPENING

*D BARS MAY BE BENT AT 90° (TYP.)

*D BARS MAY BE BENT AT 90° IN? AT 90° (TYP.)

#5 BARS PLACE ON TOP OF BOTTOM BARS

#5 BARS PLACE ON TOP OF BOTTOM BARS

TWO ADDITIONAL BARS IN THE BOTTOM CENTERED BETWEEN THE BOTTOM BARS (SEE TABLE FOR BAR SIZE)

ONE ADDITIONAL BAR IN THE BOTTOM CENTER BETWEEN THE FIRST AND SECOND BAR NEXT TO HOLE (SEE TABLE FOR BAR SIZE)

THREE HANDLING HOLES AT 120° SPACING

TABLE OF DIMENSIONS

<table>
<thead>
<tr>
<th>STRUCTURE DIAMETER</th>
<th>COVER DIAMETER</th>
<th>T</th>
<th>K</th>
<th>L</th>
<th>BAR MAXIMUM SPACING (BOTTOM EACH WAY)</th>
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</thead>
<tbody>
<tr>
<td>4'-0&quot;</td>
<td>58&quot;</td>
<td>6&quot;</td>
<td>6&quot;</td>
<td>8&quot;</td>
<td>#5 AT 6&quot;</td>
</tr>
<tr>
<td>5'-0&quot;</td>
<td>72&quot;</td>
<td>8&quot;</td>
<td>7&quot;</td>
<td>9&quot;</td>
<td>#5 AT 7&quot;</td>
</tr>
<tr>
<td>6'-0&quot;</td>
<td>86&quot;</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>10&quot;</td>
<td>#5 AT 6&quot;</td>
</tr>
<tr>
<td>7'-0&quot;</td>
<td>1014&quot;</td>
<td>12&quot;</td>
<td>9&quot;</td>
<td>11&quot;</td>
<td>#5 AT 5&quot;</td>
</tr>
<tr>
<td>8'-0&quot;</td>
<td>114&quot;</td>
<td>12&quot;</td>
<td>9&quot;</td>
<td>11&quot;</td>
<td>#6 AT 6&quot;</td>
</tr>
<tr>
<td>9'-0&quot;</td>
<td>128&quot;</td>
<td>12&quot;</td>
<td>10&quot;</td>
<td>12&quot;</td>
<td>#5 AT 6&quot;</td>
</tr>
<tr>
<td>10'-0&quot;</td>
<td>140&quot;</td>
<td>12&quot;</td>
<td>10&quot;</td>
<td>13&quot;</td>
<td>#5 AT 6&quot;</td>
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</tbody>
</table>

* ONLY BOTTOM LAYERS OF STEEL NECESSARY
### Precast Reducer Cap Dimensions

<table>
<thead>
<tr>
<th>Structure Diameter</th>
<th>Cap Diameter &quot;A&quot;</th>
<th>B</th>
<th>Cap Depth &quot;D1&quot;</th>
<th>Cap Depth &quot;D2&quot;</th>
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</thead>
<tbody>
<tr>
<td>7'-0&quot;</td>
<td>101 1/2&quot;</td>
<td>8 3/4&quot;</td>
<td>1'-5&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>8'-0&quot;</td>
<td>114&quot;</td>
<td>9&quot;</td>
<td>1'-5&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>9'-0&quot;</td>
<td>128&quot;</td>
<td>10&quot;</td>
<td>1'-5&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>10'-0&quot;</td>
<td>140&quot;</td>
<td>10&quot;</td>
<td>1'-6&quot;</td>
<td>12&quot;</td>
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</table>

### Flat Slab Top Dimensions

<table>
<thead>
<tr>
<th>Structure Diameter</th>
<th>Cover Diameter &quot;A&quot;</th>
<th>B</th>
<th>Cover Depth &quot;D1&quot;</th>
<th>Cover Depth &quot;D2&quot;</th>
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<tbody>
<tr>
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<td>101 1/2&quot;</td>
<td>8 3/4&quot;</td>
<td>1'-5&quot;</td>
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<td>8'-0&quot;</td>
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<td>1'-5&quot;</td>
<td>12&quot;</td>
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<tr>
<td>9'-0&quot;</td>
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<td>10&quot;</td>
<td>1'-5&quot;</td>
<td>12&quot;</td>
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<td>10'-0&quot;</td>
<td>140&quot;</td>
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<td>1'-6&quot;</td>
<td>12&quot;</td>
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### Base and Riser Dimensions

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<tr>
<th>Structure Diameter</th>
<th>Base Diameter &quot;A1&quot;</th>
<th>Base Diameter &quot;A2&quot;</th>
<th>Min. Wall Thickness &quot;T&quot;</th>
<th>Base Depth &quot;D1&quot;</th>
<th>Base Depth &quot;D2&quot;</th>
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<tbody>
<tr>
<td>7'-0&quot;</td>
<td>101 1/2&quot;</td>
<td>108&quot;</td>
<td>7&quot;</td>
<td>8&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>8'-0&quot;</td>
<td>114&quot;</td>
<td>128&quot;</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>9'-0&quot;</td>
<td>128&quot;</td>
<td>140&quot;</td>
<td>9&quot;</td>
<td>8&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>10'-0&quot;</td>
<td>140&quot;</td>
<td>154&quot;</td>
<td>10&quot;</td>
<td>8&quot;</td>
<td>12&quot;</td>
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</tbody>
</table>
HALF SECTION A - A

TOP OF MASONRY STRUCTURE OR BOTTOM OF CASTING

DEPTH AS SPECIFIED ON PLANS

SECTION B - B
SHOWING REDUCER CAP

SECTION B - B
SHOWING FLAT SLAB TOP

PRECAST MANHOLE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAINAGE STRUCTURES

5-18-2020  9-19-2019  R-1-G  SHEET
F.H.W.A. APPROVAL  PLAN DATE  6 OF 9
HALF SECTION A - A

TOP OF MASONRY STRUCTURE OR BOTTOM OF CASTING

SECTION B - B
SHOWING REDUCER CAP

SECTION B - B
SHOWING FLAT SLAB TOP

PRECAST INLET
HALF SECTION A - A

TOP OF MASONRY STRUCTURE
OR BOTTOM OF CASTING

4'-0" DIA.

SECTION B - B
SHOWING REDUCER CAP

SECTION B - B
SHOWING FLAT SLAB TOP

PRECAST CATCH BASIN

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
DRAINAGE STRUCTURES
**NOTES:**

- The drainage structure covers allowed for use on these drainage structures are specified in subsequent standard plans and are interchangeable on any structure.
- The tops of masonry structures shall be sufficiently low to permit proper adjustment of cover to grade using mortar or brick as directed by the engineer.
- Premium joints are required on all sanitary manholes. See ASTM designation C-923.
- Granular material class III shall be used in backfilling around all structures that fall within the 1:1 influence lines from the edge of pavement or back of curb.
- Steps for drainage structures shall be of an approved design and made from cast iron, aluminum, or plastic coated steel. Rungs shall be a minimum of 10" in clear length, designed to prevent the foot from slipping off the end. The minimum horizontal pull out load shall be 400 lbs. The minimum vertical load shall be 800 lbs.
- The bell shall be removed for the first length of outlet pipe projecting through the wall of the manhole.
- Precast concrete sections, sumps, base sections, and flat top slabs shall be built according to current ASTM C-478 and according to details specified on this plan. Precast reinforced concrete flat top slab shall be marked to show location of reinforcement. The walls of the precast units may have a slight taper to allow for form removal. Precast concrete 2'-0" diameter drainage structures shall have a minimum 3" wall thickness with a 6" minimum bearing surface on top. See precast riser ring for 2'-0" diameter structure.
- The maximum inside diameter of pipes entering or leaving precast drainage structures shall be 2'-0" less than the inside diameter of the drainage structure. A pipe leaving a 2'-0" diameter drainage structure is allowed to have 1'-0" inside diameter or less.

**WHEN RISER TONGUE LENGTH IS GREATER THAN 3" USE 2 TIMES THE TONGUE LENGTH.**

**NOTE:** PRECAST RISER SHALL FULLY ENGAGE THE TONGUE OF THE RISER PIPE.

**PRECAST RISER RING**

(for 2'-0" diameter structure)

**NOTES:**

- The number of pipe openings in a riser shall be determined by the designer. Spacing between openings shall be 1'-0" minimum. Openings may be constructed by casting or scribing in precast structures during fabrication or by coring the cured concrete.
- Precast concrete footings or bases shall be reinforced with #4 bars spaced at 1'-0" both ways or with two layers of welded wire fabric of equivalent cross sectional area laid at right angles and wired together. Reinforcement shall be placed in top of footing and shall be marked.
- Precast concrete footings shall be supported by a compacted 6" granular subbase.
- The minimum wall thickness for all 2'-0", 4'-0", 5'-0", and 6'-0" drainage structures using concrete block, brick, or cast-in-place concrete shall be as specified in typical wall sections.
- The conical section of manholes or catch basins constructed of block or brick shall be shrouded with geotextile fabric to a minimum depth of 5'-0" or through the frost zone. Enough geotextile material shall be left on the top (8" or more) to roll over the top of the cone.
- Prefabricated high density polystyrene filler pieces may be used to channel flow in the bottom of manholes provided they have at least 2" of concrete cover. The use of this material for channel flow is restricted to manholes where the bottom section is not subject to freezing. The use of this material must be approved by the engineer.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAINAGE STRUCTURES

STANDARD TRENCH DETAIL FOR WATER MAIN
UNDER ROAD BED, PARKING LOTS, SIDEWALKS,
DRIVEWAYS, CURBS, GRAVEL ROADS AND ALLEYS

<table>
<thead>
<tr>
<th>NOMINAL PIPE DIAMETER</th>
<th>MAXIMUM TRENCH WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>LESS THAN 18&quot;</td>
<td>30&quot;</td>
</tr>
<tr>
<td>18&quot; TO 24&quot;</td>
<td>PIPE DIAMETER PLUS 18&quot;</td>
</tr>
<tr>
<td>GREATER THAN 24&quot;</td>
<td>PIPE DIAMETER PLUS 24&quot;</td>
</tr>
</tbody>
</table>

NOTES:
1. NO EXTRA PAYMENT WILL BE MADE FOR BASE AND PAVEMENT RESTORATION ITEMS DUE TO ADDITIONAL EXCAVATION BEYOND THE MAXIMUM TRENCH WIDTH LISTED ABOVE.
2. REFER TO PAVEMENT RESTORATION DETAILS FOR BASE AND PAVEMENT WIDTH.
3. TRENCHING SHALL BE PER OSHA 29 CFR, SUBPART P AND SHALL BE PERFORMED TO MINIMIZE THE SURFACE DISRUPTION.
5'-0" MIN.
UNLESS NOTED OTHERWISE ON DRAWINGS

TRENCH WIDTH
STANDARD TRENCH DETAIL FOR WATER MAIN
WITHIN INFLUENCE OF ROAD BED
BACK OF CURB OR EDGE OF SHOULDER
EXISTING GROUND

SELECTED EXCAVATED MATERIAL COMPACTED TO 90% OF MAXIMUM UNIT WEIGHT

MDOT CLASS II GRANULAR MATERIAL, PLACE AND COMPACT (IN MAX. 12" LIFTS) BY "CONTROLLED DENSITY METHOD" TO 96% PER SPECIFICATION 31 23 33, 3.10 B OF MAXIMUM UNIT WEIGHT

NOMINAL PIPE DIAMETER
AS SPECIFIED ON PLANS

4" MIN. - 6" MAX. MDOT CLASS II BEDDING

4" MIN. - 6" MAX. MDOT CLASS II BEDDING

NOMINAL PIPE DIAMETER

MAXIMUM TRENCH WIDTH

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NOTES:

1. NO EXTRA PAYMENT WILL BE MADE FOR BASE AND PAVEMENT RESTORATION ITEMS DUE TO ADDITIONAL EXCAVATION BEYOND THE MAXIMUM TRENCH WIDTH LISTED ABOVE.
2. TRENCHING SHALL BE PER OSHA 29 CFR, SUBPART P AND SHALL BE PERFORMED TO MINIMIZE THE SURFACE DISRUPTION.

STANDARD TRENCH DETAIL FOR WATER MAIN
WITHIN INFLUENCE OF ROAD BED
EXISTING GROUND

SELECTED EXCAVATED MATERIAL COMPACTED TO 90% OF MAXIMUM UNIT WEIGHT

MDOT CLASS II GRANULAR MATERIAL, PLACE AND COMPACT (IN MAX. 12" LIFTS) BY THE "CONTROLLED DENSITY METHOD" TO 96% PER SPECIFICATION 31 23 33, 3.10 B OF MAXIMUM UNIT WEIGHT

NOMINAL PIPE DIAMETER AS SPECIFIED ON PLANS

4" MIN.

4" MIN. - 6" MAX. MDOT CLASS II BEDDING

TRENCH WIDTH

TRENCH WIDTH

EXISTING GROUND

NOMINAL PIPE DIAMETER

LESS THAN 18"

18" TO 24"

GREATER THAN 24"

MAXIMUM TRENCH WIDTH

30"

PIPE DIAMETER PLUS 18"

PIPE DIAMETER PLUS 24"

NOTES:

1. NO EXTRA PAYMENT WILL BE MADE FOR BASE AND PAVEMENT RESTORATION ITEMS DUE TO ADDITIONAL EXCAVATION BEYOND THE MAXIMUM TRENCH WIDTH LISTED ABOVE.

2. TRENCHING SHALL BE PER OSHA 29 CFR, SUBPART P AND SHALL BE PERFORMED TO MINIMIZE THE SURFACE DISRUPTION.

STANDARD TRENCH DETAIL FOR WATER MAIN UNDER BERMS, LAWNs, GRASSY AREAS, (OUTSIDE PAVEMENT INFLUENCE)
NOTES:

1. BACKFILL ACCORDING TO SPECIFICATIONS AND TYPICAL TRENCH SECTION.

2. EXISTING CATCH BASIN DRAIN. SEWER OR OTHER UNDERGROUND UTILITY CROSSING NEW OPEN CUT CONSTRUCTION.

3. BACKFILL WITH A DRY MIX OF ONE BAG CEMENT PER ONE BAG OF GRANULAR MATERIAL CLASS II.

TYPICAL DETAIL AT CROSSING UNDER EXISTING UTILITIES
NOTES:
1. ALL INSTALLATION OR REPLACEMENT WORK FROM PROPOSED WATER MAIN AND TO HYDRANT SHALL BE CONSIDERED A COMPLETE ASSEMBLY.
2. HYDRANT TO BE A MINIMUM OF 3 FEET BEHIND CURB.
3. THRUST BLOCKS TO BE SIZED ACCORDING TO THRUST BLOCK STANDARD DETAIL DRAWING.
4. SEE TRENCH DETAIL FOR BACKFILL AND COMPACTION.
5. SEE DETAIL 331419-06 FOR TRACER WIRE INSTALLATION.
6. PUMPER NOZZLE SHALL FACE STREET.
7. TAPPING SLEEVE & VALVE SHALL NOT BE USED TO ESTABLISH A HYDRANT CONNECTION TO THE WATER MAIN.
8. UNDER NO CIRCUMSTANCES SHALL A WATER SERVICE BE TAPPED OFF OF THE 6-INCH DI HYDRANT SERVICE PIPE.

6-INCH FIRE HYDRANT,
EAST JORDAN 5-BR250 OR APPROVED EQUAL, WITH CARROLL DRAIN ASSEMBLY MANUFACTURED TO DETROIT FIRE DEPARTMENT STANDARDS
S.S. PLUGGED HYDRANT DRAIN
CONCRETE THRUST BLOCK
6-INCH GATE VALVE AND BOX MANUFACTURED TO DETROIT FIRE DEPARTMENT STANDARDS
6" - 22.5° D.I. BEND
D.I. TEE
6" D.I. PIPE
CONCRETE VALVE BOX COLLAR
(SEE DETAIL NO. 331419-09)
SURFACE ELEVATION
18"
C/L
SAFETY FLANGE AT MIN 2" AND MAX 6" FROM FINISHED GRADE
MIN. 5'-0" COVER TO TOP OF PIPE
6'-6" MIN.
3'-6" MIN.

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

REV DESCRIPTION DATE
1 UPDATED 5/2020
REVISIONS

HYDRANT, 6 INCH INSTALLATION STRAIGHT AWAY

SCALE NONE
DATE 9/2018
DWG. No. 331419-03
1 OF 1 SHEET
MANHOLE, OVER EXISTING SEWER

NOTE:
1. DOG HOUSE MAY BE USED OVER EXISTING SEWER PIPE. NEW PIPE OPENINGS SHALL BE MANUFACTURED WITH KOR-N-SEAL BOOT AND STAINLESS STEEL KORBAND FLEXIBLE RUBBER JOINTS OR APPROVED EQUAL.
TRENCH DETAIL, SANITARY SEWER (1 OF 3)

W (TRENCH WIDTH)  =  5 FEET, WHEN PIPE I.D. IS 18" OR LESS
W (TRENCH WIDTH)  =  I.D. + 4 FEET, WHEN PIPE I.D. IS GREATER THAN 18"

<table>
<thead>
<tr>
<th>I.D. PIPE SIZE</th>
<th>18 OR LESS</th>
<th>21</th>
<th>24</th>
<th>30</th>
<th>36</th>
<th>42</th>
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<th>54</th>
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NOTES:

1. NO EXTRA PAYMENT WILL BE MADE FOR BASE AND PAVEMENT RESTORATION ITEMS DUE TO ADDITIONAL EXCAVATION BEYOND THE MAXIMUM TRENCH WIDTH LISTED ABOVE.
2. REFER TO PAVEMENT RESTORATION DETAILS FOR BASE AND PAVEMENT WIDTH.
3. TRENCHING SHALL BE PER OSHA 29 CFR, SUBPART P AND SHALL BE PERFORMED TO MINIMIZE THE SURFACE DISRUPTION.

STANDARD TRENCH DETAIL FOR SEWER
UNDER ROAD BED, PARKING LOTS, SIDEWALKS, DRIVEWAYS, CURBS, GRAVEL ROADS AND ALLEYS
VARIES - SEE DRAWINGS

4" MIN.

NOMINAL PIPE DIAMETER AS SPECIFIED ON PLANS

MDOT CLASS II GRANULAR MATERIAL, PLACE AND COMPACT (IN MAX. 12" LIFTS) BY THE "CONTROLLED DENSITY METHOD" TO 96% PER SPECIFICATION 31 23 33, 3.10 B OF MAXIMUM UNIT WEIGHT

SELECTED EXCAVATED MATERIAL COMPACTED TO 90% OF MAXIMUM UNIT WEIGHT

EXISTING GROUND

I.D. OF SEWER

4" MIN. - 6" MAX MDOT CLASS II BEDDING

W (TRENCH WIDTH) = 5 FEET, WHEN PIPE I.D. IS 18" OR LESS
W (TRENCH WIDTH) = I.D. + 4 FEET, WHEN PIPE I.D. IS GREATER THAN 18"

<table>
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NOTES:
1. NO EXTRA PAYMENT WILL BE MADE FOR BASE AND PAVEMENT RESTORATION ITEMS DUE TO ADDITIONAL EXCAVATION BEYOND THE MAXIMUM TRENCH WIDTH LISTED ABOVE.
2. TRENCHING SHALL BE PER OSHA 29 CFR, SUBPART P AND SHALL BE PERFORMED TO MINIMIZE THE SURFACE DISRUPTION.

STANDARD TRENCH DETAIL FOR SEWER UNDER BERMS, LAWNS, GRASSY AREAS, (OUTSIDE PAVEMENT INFLUENCE)
I.D. OF SEWER VARIERS - SEE DRAWINGS

NOMINAL PIPE DIAMETER AS SPECIFIED ON PLANS

TRENCH WIDTH

STANDARD TRENCH DETAIL FOR SEWER WITHIN INFLUENCE OF ROAD BED

SELECTED EXCAVATED MATERIAL COMPACTED TO 90% OF MAXIMUM UNIT WEIGHT

MDOT CLASS II GRANULAR MATERIAL, PLACE AND COMPACT (IN MAX. 12" LIFTS) BY "CONTROLLED DENSITY METHOD" TO 96% PER SPECIFICATION 312333.3.10 B OF MAXIMUM UNIT WEIGHT

NOMINAL PIPE DIAMETER AS SPECIFIED ON PLANS

I.D. PIPE SIZE (INCHES) 18 OR LESS 21 24 30 36 42 48 54 60 66 7

MAXIMUM TRENCH WIDTH (FEET) 5.00 5.75 6.00 6.50 7.00 7.50 8.00 8.50 9.00 9.50 10

W (TRENCH WIDTH) = 5 FEET, WHEN PIPE I.D. IS 18" OR LESS
W (TRENCH WIDTH) = I.D. + 4 FEET, WHEN PIPE I.D. IS GREATER THAN 18"

NOTES:

1. NO EXTRA PAYMENT WILL BE MADE FOR BASE AND PAVEMENT RESTORATION ITEMS DUE TO ADDITIONAL EXCAVATION BEYOND THE MAXIMUM TRENCH WIDTH LISTED ABOVE.
2. TRENCHING SHALL BE PER OSHA 29 CFR, SUBPART P AND SHALL BE PERFORMED TO MINIMIZE THE SURFACE DISRUPTION.

STANDARD TRENCH DETAIL FOR SEWER WITHIN INFLUENCE OF ROAD BED
WHEN AVAILABLE, ELECTRICITY SHALL BE USED FOR LIGHTING BARRICADES, WITH OCCASIONAL FLARES.

LOCATION TO BE DETERMINED BY PROJECT ENGINEER

VIEW OF BARRICADE WHEN TRAFFIC IS DIRECTED TO THE RIGHT

VIEW OF BARRICADE WHEN TRAFFIC IS DIRECTED TO THE LEFT

VIEW OF BARRICADE WHEN TRAFFIC IS DIRECTED TO THE LEFT AND RIGHT

TYPICAL BARRICADE UNITS

NOTES:
1. SUPPORT SHALL BE LOADED WITH SANDBAGS FOR TEMPORARY BARRICADE TYPE NO. 1 ONLY SANDBAGS ARE INCIDENTAL TO THE COST OF ITEM.
2. ALL FACE BOARDS TO BE DOUGLAS FIR. ALL OTHER BOARDS AND POSTS TO BE FIR.
3. ALL LUMBER DIMENSIONS ARE NOMINAL.
4. ALL DIMENSIONS ARE IN INCHES ("") UNLESS OTHERWISE NOTED.

REVISED DATE (METRIC TO ENGLISH UNIT SYSTEM): DEC. 2002
DETAIL SHOWING SPLICE AND ATTACHMENT TO WOOD POSTS

ELEVATION SHOWING POST SPACING

REVISED DATE (METRIC TO ENGLISH UNIT SYSTEM): DEC. 2002

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
STANDARD PLAN FOR
STEEL BEAM GUARD RAIL

REV. K. S. M.
ENGINEER OF STREETS

M. F. S.
HEAD ENGINEER

APPROVED

CITY ENGINEER

02/07/98 DRAWING NO. DETAIL STANDARD NO. SHEET
F-45A5 20 1/2
TERMINAL END SHOE

SECTION SHOWING I-BEAM BOLT HOLE LOCATION

SECTION THROUGH BEAM ELEMENT
ON INDUSTRIAL AND COMMERCIAL STREETS
USE 6" SIDEWALK TO KEY FLAG. ON
RESIDENTIAL STREETS USE 4" SIDEWALK
TO KEY FLAG.

LEGEND

- PLACE 1" EXPANSION JOINT
- CONTRACTION JOINT

EXPANSION JOINTS NO. 6 - 8 - 10

REVISED DATE (METRIC TO ENGLISH UNIT SYSTEM): DEC. 2002

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
STANDARD PLAN FOR
INTEGRAL CURB AND WALK
MODIFIED SEPARATE TYPE CURB

PREPARED BY
BUREAU OF STREETS
AND HIGHWAYS

REVIEWED BY

DANIEL D. HAYDEN
CITY ENGINEER

APPROVED

M.F.S.
CHECKED BY:

CITY OF DETROIT
ENGINEER OF STREETS

ENGINEER

D.P.W.

03/07/98
PLAN DATE

DRAWING NO. 33
DETAIL STANDARD NO. C-4550
SHEET 1 OF 2
SECTION A-A
INTEGRAL CURB AND SIDEWALK

SECTION B-B
MODIFIED SEPARATE TYPE CURB

NOTES:

1. WHEN MARGIN DIMENSIONS ARE 20' OR LESS, CONSTRUCT SIDEWALK INTERSECTION AS SHOWN.

2. WHEN MARGIN DIMENSIONS EXCEED 20', CONSTRUCT INTERSECTION OF SEPARATE TYPE CURB AND SIDEWALK AS DIRECTED BY ENGINEER.

3. CONSTRUCT SIDEWALK RAMPS AS SHOWN ON THE PLAN OR AS DIRECTED BY ENGINEER.

4. GRADE "A" CONCRETE TO BE USED FOR CURBS AND INTEGRAL CURB AND SIDEWALK.

5. ALL EXPANSION JOINT PAPER SHALL EXTEND 1" BELOW THE BOTTOM OF THINNEST ADJOINING SECTION.

6. ALL DIMENSIONS ARE IN INCHES (''), UNLESS OTHERWISE NOTED.
INTERSECTIONS

GAP SPACE
STOP BAR IS 18" WIDE (RECESSED)

10' 4'

START LANING AT FRONT OF STOP BAR
DOUBLE YELLOW CENTER LINE

6"

ALL CROSSWALK LINES TO BE RECESSED

2' PAINT
6' SPACE
6" BORDER IS OPTIONAL
FOR A JACOBS LADDER STYLE,
END STOP BAR HERE UNLESS
THE CENTER LANE IS USED
FOR REVERSIBLE FLOW

CROSS WALKS TO BE LOCATED AS SHOWN ON
INTERSECTION DRAWING AND STOP BARS LOCATED
FROM THE CROSS WALK UNLESS INDICATED
OTHERWISE ON THE DRAWING

NOTES:
1) DO NOT VARY UNLESS APPROVED BY THE
ENGINEER OF SIGNS AND MARKINGS
2) ALL CROSSWALKS AND STOP BARS SHALL BE
RECESSED

NOTE:
1. ALL LANING ShOWN IS 4" WIDE
and 0.015" THICK
2. ALL PAINT IS WHITE
UNLESS SPECIFIED OTHERWISE
3. ALL Ï ARE YELLOW

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
TRAFFIC ENGINEERING DIVISION

MISCELLANEOUS
DETAILS

DRAWN: A.D. BOLTON
SCALE: 1" = 30'
DATE: 08-04-2020
NO.: STD-01
CENTER LEFT TURN LANE CROSSOVER DETAILS

BETWEEN TWO SIGNALIZED INTERSECTIONS

BETWEEN SIGNALIZED AND NON-SIGNALIZED INTERSECTIONS

BETWEEN TWO NON-SIGNALIZED INTERSECTIONS

NOTE:
POINT "A" IS LOCATED MID - BLOCK UNLESS OTHERWISE NOTED.
ALL LANE LINES AND CENTERLINES BEGIN OR END AT FRONT OF INTERSECTIONAL STOP BARS UNLESS OTHERWISE NOTED.
MISCELLANEOUS DETAILS

PAVT MARKG AT STOP CONTROLLED INTERSECTIONS

TWO - WAY LEFT-TURN LANE MARKING

SOLID YELLOW, 4"

Zebra Notes:
12" Wide Bar x 10'-0" Long
2'-0" Spacing

SKIP YELLOW, 4"

4' GAP

SOLID YELLOW, 4"

SOLID YELLOW, 4"

TWO - WAY LEFT-TURN LANE MARKING

WITH ZEBRA CROSSWALK

4" DYCL

DOUBLE YELLOW LINES
Note:
TAPER*: For Taper length, refer to standard engineering tables.
VAR*: The length of storage for left turn lane shall be determined by traffic analysis.
## Taper Chart

### Length=

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<th>20</th>
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</table>

\[ S \leq 40 \text{ mph} \quad L = \frac{W \times S^2}{60} \]

\[ S \geq 45 \text{ mph} \quad L = s \times w \]

Where \( L \) = Taper Length in feet

\( W \) = width of offset in feet

\( S \) = posted speed limit, or off-peak 85th-percentile speed prior to

work starting, or the anticipated operating speed in mph
MISCELLANEOUS DETAILS

- **BUS STOP**: 30' distance from the curb with 8' separation between busses.
- **Parking**: 30' minimum, 12" red line.
- **100' Min ONLY (Traffic Control Present)**
- **22' Min - 26' Max (No Traffic Control)**
- **Marked Crosswalk (No Traffic Control)**: 20' from the crosswalk.
- **Traffic Control Present (Signal or Stop Sign)**: 20' from the marked crosswalk.
- **ZEBRA CROSSWALK**: 30' length with 8' width.

**DATE**: 08 - 13 - 2020

**DRAWN**: A.D. BOLTON

**SCALE**: 1" = 30'