

SECTION III

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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 substantially completed **within 90 calendar days, inclusive of rain days**. No concrete work will be allowed between November 1, 2022 and April 15, 2023, except as approved by the Project Engineer.

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 Department of Public Works - City Engineering Division 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 workday for a workday 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 shall also be included in the Progress Schedule. Refer to Specification for Sequence of Operations for the sequencing of streets for milling and resurfacing. This information shall be included in the Progress Schedule.

Contractor shall provide daily notification of planned work activities by noon the day before work is to be performed. The notification should include date, project number, work locations and the planned activities for each location.

If the Bidding Proposal specifies other controlling dates, these shall also be included in the Progress Schedule.

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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.

CITY OF DETROIT
SPECIAL PROVISIONS

DET: 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 Contractor's 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.

As-Built Drawings: During the construction period, the Contractor shall maintain a set of project record drawings. The Contractor shall legibly mark the following information onto as-built drawings to record actual construction:

- Depths of various elements of the pavement.
- All underground piping with elevations and dimensions. Changes to piping location.
- Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements. Actual installed pipe material, class etc.
- Field changes.
- Changes made by Field Order or by Change Order.
- Details not on original contract drawings.

Transfer all marks to a CAD drawing file and submit a final magnetic media record to the Engineer. No separate payment will be made for preparation and submission of as-built drawings, but is considered part of the project.

CITY OF DETROIT
NOTICE TO BIDDER
FOR
UTILITY COORDINATION

DET: PAL

1 of 3

02-06-2022

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.

NAME AND ADDRESS OF OWNER

KIND OF UTILITY

Miss Dig
Call three (3) working days before you dig
811
(248) 370-6400
(800)-482-7171

All Underground Utilities

City of Detroit
Public Lighting Authority
400 Monroe Street, Suite 485
Detroit, MI 48226
Direct: (313) 324-8058
Office: (313) 324-8291
A. Benjamin Barker
abarker@pladetroit.org

Street Lighting and Traffic Signals

City of Detroit
Detroit Water & Sewerage Department
Contract Services Facility
6425 Huber
Detroit, MI 48211
General: (313) 267-4863
Fax: (313) 842-6480

Water Mains & Sewers

<u>NAME AND ADDRESS OF OWNER</u>	<u>KIND OF UTILITY</u>
City of Detroit Traffic Engineering, D.P.W. 2633 Michigan Avenue Detroit, MI 48207 General: (313) 224-1610 Fax: (313)224-1304 Ahmad Fawaz (313) 224-1267 fawaza@detroitmi.gov	Pavement Markings and Signs
Kirit Patel (313) 628-5641 patelki@detroitmi.gov	Traffic Signals
Sign Shop 2425 Fenkell Detroit, MI 48238 Monique Walthall (313) 628-2923 Fax (313) 628-4966	Sign Removals & Installations
City of Detroit Detroit Fire Department 1301 3 rd Street Detroit, MI 48226 General: (313) 596-2900 Fax: (313) 224-4128 communityrelations@detroitmi.gov	KNOX Boxes and Fire Hydrants
City of Detroit Detroit Police Department 1301 3 rd Street Detroit, MI 48226 General: (313) 596-2200 Fax: (313)596-1450 publicinfo@detroitmi.gov	Police Call Boxes
DTE One Energy Plaza Detroit, MI 48226 Gas Leak 1-800-947-5000 Electrical 1-800-477-4747	Electric and Gas

Contact DTE ten working days prior to the construction start date to coordinate adjustments for DTE electric and gas manhole frames and covers.

NAME AND ADDRESS OF OWNER

KIND OF UTILITY

AT&T
17651 Michigan Ave,
Dearborn, MI 48126
Joe Raczak
Legal Mandate Engineer
Office: (313) 240-5314
Cell: (313)682-8916
JR1983@att.com
or
Mark Branam
OSP Engineer - Metro South
Office: (313) 240-5390
Cell: (734)218-1507
MB6352@att.com

Telephone
For adjusting Frames and Covers

AT&T requires 30 days advance notice to
procure an adjustment Contractor and Materials.
Our Contractors require 5 business days
advance notice prior to adjusting frames and
covers.

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

Steam Lines

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

CITY OF DETROIT
SPECIFICATIONS
FOR
LIMITATIONS OF OPERATIONS

DET: GJM

1 of 1

1-04-16

The work days used to develop the progress schedule shall be Monday through Saturday and shall not include Sundays or City Holidays. The Contractor may normally prosecute the work during the daylight hours of any work day provided that they so conduct their operations as not to create a public nuisance nor disturb the peace. Overtime shall be limited to the work days 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 as may be determined to be in the interest of the public at no additional compensation or cost to the City.

Contractor shall suspend or limit their operations if work interferes with the City Sponsored Public events within project CIA (Construction Influence Area) at no additional compensation or cost to the City.

CITY OF DETROIT

**SPECIFICATION
FOR
MOBILIZATION**

DET-PAL

1 of 1

02-06-2022

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

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 Home 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 Typica'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.

CITY OF DETROIT
SPECIFICATIONS
FOR
WORKING AREA AND PROJECT CLEANUP

DET: GJM

1 of 1

12-07-15

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.

CITY OF DETROIT
SPECIAL PROVISION FOR
CLEARING

DET:PAL

1 of 2

04-25-2022

a. Description. Work consists of clearing within the proposed rights-of-way for Fourth Street between Tuscola and Brainard as shown on the plans and in accordance with the 2020 MDOT Standard Specification for Construction, Section 201 and 204, except as noted in this Special Provision. All vegetation and organic material (including all trees less than 6 inch in caliper, roots, logs, brush, shrubs and vines) shall be completely removed. Work also includes the removal of miscellaneous litter and debris throughout the limits of work.

b. Materials. Provide necessary materials per Section 201 of the 2020 MDOT Standard Specification for Construction.

c. Construction. Trees (as noted below), brush/shrubs, vines, roots, stumps, weedy materials, and other vegetative and organic materials have grown into, throughout, and around fences, posts, walls, and other structures. Materials existing in this condition shall be fully removed (including roots/stumps) and any fence materials, posts, walls, or other structures damaged by removal activities shall be repaired and/or replaced to pre-removal conditions. Repairs shall be made at no additional cost to the Contract.

Trees 6 inches in caliper and less shall be included in clearing. Trees over 6 inches and larger in caliper shall be removed as **Tree, Rem, 6 inch to 18 inch** and **Tree, Rem, 19 inch to 36 inch**.

Cutting off trees and woody materials above or at the ground level is NOT acceptable. All materials shall be completely removed including the subsurface components of plant materials including stumps and root systems.

All removed materials shall be legally disposed of off-site. Burning of woody materials and/or other materials will NOT be permitted.

Trees can be removed prior to May 1, 2022 and/or between October 1, 2022 to March 31, 2023 to comply with the Indiana Bat and Northern Long Ear Bat federally protected species requirements.

Clearing, Modified includes the complete removal and disposal of organic materials such as but not limited to turf/sod, grass, vegetation, trees less than 6 inches in caliper, brush/shrubs, tree stumps, weedy materials, vines, root structures, and miscellaneous debris and litter. The miscellaneous debris and litter materials that is located underneath, intertwined with, or within the same location as areas identified for Clearing, Modified shall be included as part of the Clearing, Modified pay item. Miscellaneous litter and debris includes but is not limited to such items as concrete rubble, loose segments of pavement and aggregate material, rubber, abandoned trash, construction debris, tires, steel, all paper, plastic, wood, metals, cans, appliances, furniture, and other objects encountered in the project area and as identified by the Engineer. All items identified by the Engineer shall be removed and disposed of as incidental to this pay item to

ensure a clean project site. The limits of Clearing, Modified shall be verified with the Engineer prior to proceeding with the work.

- d. **Measurement and Payment.** The completed work, as described, will be measured at the contract unit price for all labor, materials, equipment, loading, unloading, disposal fees and trucking.

Pay Item

Pay Unit

_Clearing, Modified

Acre

Clearing, Modified shall be paid for in accordance with Section 201 and shall also include incidental litter and debris removals and any damages to existing features to remain shall be repaired and/or replaced to pre-construction conditions at no cost to the Project. Earth excavation required to remove the materials identified shall be included at no additional cost.

CITY OF DETROIT
SPECIFICATION
FOR
SOIL EROSION AND SEDIMENTATION CONTROL

DET: PAL

1 of 1

04-25-2022

Description: This specification covers the protection of drainage structures, storm sewers and sanitary systems, from the effects of construction activities, erosion and sedimentation entering into drainage structures during the course of the work. Soil erosion and sediment control (SESC) measures shall be in accordance with Part 91, SESC, of the Natural Resources and Environmental Protection Act, 1994 PA 451 as amended (Part 91). Failure to perform in accordance with Part 91, the Park 91 rules and these procedures will result in the contractor not being allowed to bid on future CED/DPW projects for a period of two years and/or doubling of the size of the surety that would otherwise be normally required.

Material: Materials shall be as specified in Section 208.02 Materials of the 2020 MDOT Standard Specifications for Construction.

Construction: Erosion and sedimentation control shall be in accordance with Section 208.03.C of the 2020 MDOT Standard Specifications for Construction, and as follows.

Prior to starting work, all SESC measures shall be in place and functioning properly. SESC measures shall be maintained in accordance with MDOT SESC Manual. Upon completion of work, all temporary SESC measures shall be properly removed and disposed.

During final clean-up of the area, the fabric shall be carefully removed, preventing any captured debris from falling into the drainage structure. The fabric shall be inspected daily and repaired immediately to insure the complete and consistent effectiveness of the erosion and sedimentation control.

Measurement and Payment: Erosion Control, Inlet Protection, Geotextile and Stone shall be paid for at the Contract Unit Rate in accordance with Section 208.04.G.2 of the 2020 MDOT Standard Specifications for Construction.

Erosion control maintenance and sediment removal will not be measured and paid for separately, but shall be included in the contract unit price for the erosion and sediment control pay items.

Pay Item

Pay Unit

Erosion Control, Silt Fence

Linear Foot

Erosion Control, Inlet Protection, Fabric Drop

Each

Erosion Control, Gravel Access Approach

Each

CITY OF DETROIT
SPECIAL PROVISION
FOR
EXCAVATION, EARTH, MODIFIED

DET: PAL

1 of 1

02-06-22

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.

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.

Pay Item

Pay Unit

Excavation, Earth, Modified

Cubic Yard

CITY OF DETROIT
SPECIAL PROVISION
FOR
GRANULAR MATERIAL, CL II, MODIFIED

DET: PAL

1 of 1

04-25-2022

Description. This work shall include the furnishing, placing and compacting of Granular Material Class II under the concrete roadway and sidewalk where shown on the plans. Granular Material Class II shall meet the requirements of Subsection 902.07 of the 2020 Michigan Department of Transportation (MDOT) Standard Specifications for Construction. Compaction shall meet the requirements of Section 205.03 of the 2020 MDOT Standard Specifications for Construction.

Measurement and Payment. "Granular Material, CI II, Modified" will be measured and paid for at the contract unit price per cubic yard compacted in place. The unit price shall be payment in full for furnishing all labor, equipment and material to furnish, place and compact the fill as shown on the plans or as directed by the Engineer.

Pay Item

Pay Unit

Granular Material, CI II, Modified

Cubic Yard

**CITY OF DETROIT
SPECIAL PROVISION
FOR
STORM DRAINAGE**

PART 1 - GENERAL

SCOPE. Section includes storm drainage pipe, pipe culverts, fittings and accessories, catch basins, manholes, bedding and backfill and all connections to catch basins and manholes. It provides foundation drainage system work for pre- stressed concrete reservoir.

GENERAL.

Coordination. Coordinate the Work with trenching, paving, and other construction activities in the site.

Governing Standards.

ASTM C76 – Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.

ASTM C443 – Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.

MDOT Standard Specifications for Construction.

ASTM C478-97 Standard Specification for Precast Reinforced Concrete Manhole Sections.

Divisions 1 and 2 of the Standard Specifications for Paving and Related Construction of the City of Detroit Department of Public Works – City Engineering Division

ASTM D1557 – Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.

ASTM D 2729 – Specification for Polyvinyl Chloride (PVC) Sewer Pipe and Fittings.

ASTM D 3776 – Test Methods for Mass Per Unit Area of Woven Fabric.

ASTM D 4491 – Test Methods for Water Permeability of Geotextiles by Permittivity.

ASTM D 4533 – Test Method for Trapezoid Tearing Strength of Geotextiles.

ASTM D 4632 – Test Method for Breaking Load and Elongation of Geotextiles.

ASTM D 4751 – Test Method for Determining the Apparent Opening Size of a Geotextile.

SUBMITTALS.

Drawings and Data. Submit product data for pipe, pipe joints, and accessories. Submit Manufacturer's Installation instructions and special procedures required to install products. Submit Shop Drawings for all precast pipes, manholes and catch basins.

Certifications. Submit Manufacturer's certificate to certify that products meet or exceed specified requirements. Submit 2 copies of the certificates to the Engineer.

Submit Certification, signed by the Contractor and foundation drainage system Installer that installed materials, indicating conformance to the specified requirements and that the system was successfully checked and tested prior to covering with filtering and drainage fill.

Record Drawings. Accurately record actual locations of pipe runs, connections, catch basins, inlets, and invert elevations. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

DELIVERY, STORAGE AND HANDLING. Comply with precast concrete manufacturer's instructions for unloading, storing and moving precast manholes and drainage structures. Store precast concrete manholes and drainage structures to prevent damage to the Owner's property or other public or private property. Any property so damaged shall be repaired at the Contractor's expense. Clearly mark each precast structure by indentation or waterproof paint to indicate the date of manufacture, manufacturer and identifying symbols and/or numbers shown on the Contract Drawings to indicate its intended use.

Cold Weather Requirements shall comply with ACI 530.

PART 2 - PRODUCTS

MATERIALS.

Sewer Pipe Materials. Reinforced concrete pipe shall be ASTM C76, with Wall Type C, bell, and spigot end joints. The joint shall be ASTM C443, rubber compression gasket joint.

Pipe Culvert Materials. Reinforced concrete pipe shall be ASTM C76, with wall type C, bell and spigot end joints. The joint shall be ASTM C443, rubber compression gasket joint.

Manholes. Manhole sections shall be reinforced precast in accordance with ASTM C478 with rubber gaskets in accordance with ASTM C443. Cones shall be eccentric. Frame and Cover shall be cast iron construction, EJIW 1000C cover and 1010Z frame bolted down cover as per standard detail.

Drainage Pipe and Fittings. Furnish drainage pipe complete with bends, reducers, adapters, couplings, collars, cleanouts and joint materials. Use polyvinyl chloride pipe for run-off pipe to the storm drainage system, conforming to ASTM D2729, and perforated polyvinyl chloride pipe, conforming to ASTM D2729.

Subsurface Drainage Materials. Provide prefabricated in-place wall drainage matting

conforming to ASTM D3776, ASTM D4636, ASTM D4533, ASTM D4833, ASTM D4751 and ASTM D4491, as part of the overall foundation drainage system.

For drainage core, provide the manufacturer's standard open three-dimensional, nonbiodegradable, plastic Geomatrix material designed to effectively conduct water to the foundation drainage system under maximum soil pressures.

Provide a minimum vertical flow rate of 5 gpm per foot width at 3,600 psf and provide the manufacturers standard nonwoven geotextile fabric of polypropylene or polyester fibers, or a combination thereof.

Soil Materials.

Impervious Fill: Use clayey gravel and sand mixture compacted to percent of proctor meeting the requirements of ASTM D1557.

Gravel Fill: Use evenly graded mixture of natural or crushed gravel or crushed stone, and natural sand with 100 percent passing a ½ inch (1.3 cm) sieve and 0 to 5 percent passing a No. 50 sieve.

Filtering Material: Use an evenly graded mixture of natural or crushed gravel or crushed stone, and natural sand, with 100 percent passing a 1 ½ inch sieve and 0 to 5 percent passing a No. 50 sieve.

PART 3 - EXECUTION

INSPECTION. Verify that trench cut and excavation base are ready to receive work and excavations, dimensions, and elevations are as indicated on layout drawings.

PREPARATION. Hand trim excavations to required elevations. Correct over excavation with sand. Remove large stones or other hard matter which could damage piping or impede consistent backfilling or compaction.

INSTALLATION.

Pipe Installation. Installation shall be in accordance with Master Specification Section 02211, Excavation, Filling and Grading. Lay pipe true to the lines and grade given, bells or grooves, upgrade, ends fully and closely joined, and each section shall have a full, firm bearing throughout its length. Sewer sections showing signs of settlement or poor alignment shall, as directed by the Engineers, taken up and re-laid at the Contractor's expense.

Existing live sewers and service leads shall be maintained and carefully protected during the construction of the sewers. Damaged sewer or services leads shall be immediately replaced or replaced as directed by the Engineer. When tapping an existing pipe or structure a minimum opening of the entering pipe outside diameter plus 6 inches (15.2 cm) shall be cut into the receiving structure. A minimum of 3 inches (7.6 cm) mortar layer shall be packed completely around the entering pipe. The entering pipe shall be cut with flush to conform to inner wall of pipe or structure. The entering pipe shall be incased on the outside portion of the connection to provide efficient clearing under the pipe. Damages to existing pipe or structure caused by the contractor during the topping operations shall

be required or replaced at the contractor's expense.

Precast Concrete Manhole Installation. Do not displace or damage pipe when compacting. To ensure safety, lift precast structures at the lifting points designated by the manufacturer. Set precast structures so that they firmly and fully bear on crushed stone bedding, compacted as specified accordance on other support system shown on the Contract Drawings. Assemble multi-section structures by lowering each section into the excavation. Lower, set level, and firmly position the base section before placing additional sections.

When lowering manholes and drainage structures into the excavations and joining pipe to the units, take precautions to ensure that the interior of the pipeline and

structure remains clean. Ensure joint integrity by removing all foreign materials from joint surfaces and verifying that sealing materials are placed properly. Avoid misalignment by using guide devices affixed to the lower section. Joint sealing materials may be installed at the site or at the manufacturer's plant.

Verify that manholes and drainage structures installed satisfy required alignment and grade. Cut pipe to finish flush with interior of structure. Remove knockouts or cut structure to receive piping so as not to create openings more than that required to receive pipe. Fill annular space with mortar. Shape inverts through manhole as shown on the Contract Drawings.

Foundation Drainage Installation. Install all foundation drainage equipment in accordance with the manufacturer's recommendations and approved shop drawings and as specified in Master Specifications Division 1. Foundation drainage system must be checked and tested prior to covering with filtering and drainage fill

Impervious Fill at Footings: After concrete footings have been cured and forms removed, place impervious fill material on the subgrade adjacent to the bottom of footings. Place and compact impervious fill to the dimensions indicated or, if not indicated, not less than 6 inches (15.2 cm) deep and 12 inches (30.5 cm) wide.

Filtering Material: Place a supporting layer of filtering material over the compacted subgrade where drainage pipe is to be laid, to the depth indicated or, if not indicated, to a compacted depth of not less than 4 inches (10.2 cm).

Laying Drainpipe: Lay the drainpipe solidly bedded in the filtering material. Provide full bearing for each pipe section throughout its length, to true grades and alignment, and with a continuous slope in direction of flow. Provide collars and couplings as required. Provide recesses in excavation bottoms to receive bells for drainpipe having bell and spigot ends. Lay the pipe with bells facing up slope with spigot and entered fully into the adjacent bell. Seal joints.

Gravel Fill: Place gravel fill over drain lines, after satisfactory testing and covering of drain lines with filtering material. Completely cover drain lines to a width of at least 24 inches (61 cm) on each side and above the top of the pipe. Place fill material in lifts not exceeding 3 inches (7.6 cm) in loose depth and compact each lift as it is placed. Wrap gravel fill material with one layer of synthetic nonwoven drainage fabric (equivalent opening size 70-100), overlapping the edges by at least 4 inches (10.2 cm).

Connect continuous foundation drainage systems to the storm drainage system.

Test or check lines before backfilling to confirm free flow. Remove obstructions, replace damaged components, and retest the system until satisfactory. After testing drain lines, place additional filtering material to a 4-inch (10.2 cm) depth.

around the sides and top of drains. Coordinate the placement of drainage mats with other foundation drainage materials. Do not use drainage mat as protection board for waterproof membrane unless otherwise approved by the membrane manufacturer. Use adhesives and mechanical fasteners as recommended by the matting manufacturer. Lap edges of fabric and extend the fabric around the foundation drainage pipe in accordance with the mat manufacturer's recommendations. Protect in-place matting during backfill operations in accordance with the matting manufacturer's instruction

Backfill to Grade: Place backfill material over the compacted gravel fill at footing drains, placing material in lifts not exceeding 6 inches (15.2 cm) in loose depth and thoroughly compacting each lift. Carry backfilling to the indicated finish elevations sloping it away from the building perimeter.

FIELD QUALITY CONTROL. Request inspection prior to placing aggregate cover over pipe. Where required, adjust the top elevation of existing manholes and drainage structures to suit finished grades shown on the Contract Drawing.

Reset existing frames, grates and covers, carefully removed, cleaned of all mortar fragments, to the required elevation in accordance with the requirements specified for installation of castings. Remove the concrete so as not to damage the existing vertical reinforcing bars when removal of an existing concrete wall is required. The vertical bars shall be cleaned of all concrete and bent into the new concrete top slab or spliced to required vertical reinforcement, as shown on the Contract Drawings.

MAINTENANCE.

Protection. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress. Take care not to damage or displace installed pipe and joints during construction of pipe supports, backfilling, testing, and other operations. Where pipe is damaged or displaced, take remedial measures as directed by the Engineer, including but not limited to, retesting of joints, relaying pipe or replacing pipe. Provide remedial measures at no additional cost to the Owner.

MEASUREMENT AND PAYMENT.

Pay Item

Dr Structure, Tap, ___-inch
Dr Structure, ___-inch dia.
Dr Structure, Cleaning

Pay Unit

Each
Each
Each

The unit price for **Dr Structure**, of the diameter required includes the cost of concrete footing and drainage structure depth as shown on the drawings. The unit price for **Dr Structure** includes the cost of temporary or final grade adjustments of the structure. The unit price for new structures includes the cost of cleaning new drainage structures.

The unit price for **Dr Structure, Cleaning** includes the cost of testing for disposal, hauling and disposing of generated waste.

CITY OF DETROIT
SPECIFICATIONS
FOR
DRAINAGE STRUCTURE COVERS

DET: PAL

1 of 1

02-06-22

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.

Pay Item

Pay Unit

Dr Structure Cover, Type ____, Modified

Each

CITY OF DETROIT
SPECIFICATIONS
FOR
STRUCTURE COVER ADJUSTMENT,
RECONSTRUCTING STRUCTURE, AND
WATER SHUTOFF ADJUSTMENT

DET: PAL

1 of 3

02-06-22

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, or his representative, shall jointly inspect each structure to evaluate its interior conditions. Access to the structure will be provided by the Contractor. The Engineer, or his representative, 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 three (3) feet, six (6) inches or five (5) feet by five (5) feet around the structure, as approved by the Engineer. 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 so constructed as to hold them firmly in place and reset on a full mortar bed so as 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.

When the existing frames and covers are unacceptable for reuse as determined by the Engineer, new frames and covers shall be furnished and installed. Drainage structure frames and covers shall be as specified in the City of Detroit Specifications for Structure Covers, and as specified in the Plans for DWSD Watergate and PLD Manhole covers. Any reusable frame and cover damaged by the Contractor shall be replaced by the Contractor at no cost to the City. The frames and covers that are not to be used on the work shall become property of the Contractor and shall be promptly removed from the jobsite and properly disposed of.

Where the structure is in need of 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 Drainage Structures, to the required new pavement elevations.

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 Pvmt Repr, Nonreinf Conc, 10 inch, Modified, 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 structure and covers shall be adjusted by a qualified electrical contractor. The removal of concrete around the perimeter of a non-ferrous handholes shall be performed with light chipping hammers to insure 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 due to the Contractors operations 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 a period of 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:

<u>Pay Item</u>	<u>Pay Unit</u>
Dr Structure Cover, Adj, Case __, Modified, 5 ft x 3.5 ft	Each
Dr Structure Cover, Adj, Case __, Modified, 5 ft x 5 ft	Each
Dr Structure Cover, Adj, Case __, Modified	Each
Reconstructing Dr Structure, Case __, Modified	Each
Water Shutoff, Adj, Case __, Modified	Each

“Dr Structure Cover, Adj. Case __, Modified” shall include all materials, equipment, and labor required necessary 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) layers of bricks, 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 necessary 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) layers of

bricks, including mortar, and may include the removal of a cone section to accommodate the rim elevation adjustment.

“Water Shutoff, Adj, Case __, Modified” shall include all materials, equipment, and labor required 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 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.

CITY OF DETROIT
SPECIFICATIONS
FOR
DRAINAGE STRUCTURE CLEANING AND SEWER LEAD CLEANING

DET: PAL

1 of 1

02-06-2022

Description: The work of drainage structure cleaning consists of cleaning existing catch basins and manholes in the area of the project where directed by the Engineer. The work of sewer cleanout consists of cleaning sewer lines between catch basins and between catch basins and manholes.

Construction: When necessary and as directed by the Engineer, the work shall be performed in accordance with Section 403.3.G of the 2020 MDOT Standard Specifications for Construction and as modified herein.

Cleaning shall be by high velocity hydro-cleaning (jetting). Mechanical cleaning shall only be used when authorized by the Engineer. Contractor shall take precautions to protect the sewer lines from damage.

No debris shall be accumulated on site except in totally enclosed containers approved by the Engineer. All material deposits shall be removed from site and disposed of at an approved location.

Some of the catch basins, manholes and sewers may be completely filled. The Engineer shall determine actual condition and necessity for cleaning prior to clean out. Cleaning shall restore 90% of the pipe's carrying capacity.

Measurement and Payment: "Dr Structure Cleaning, Modified" will consist of cleaning catch basins and manholes, and shall be paid for at the contract unit price each, and will include all equipment and labor necessary to clean each catch basin or manhole, including installation of bulkheads as necessary and hauling away and disposing of any waste and debris generated.

"Dr Structure Lead, Cleaning, Modified" consists of cleaning sewers between catch basins or between catch basins and manholes, and shall be paid for at the contract unit price per foot which will include payment for furnishing all equipment and labor to clean sewers lines regardless of size, temporary bulkheads, and hauling away and disposing of any waste and debris generated.

Pay Item

Pay Unit

Dr Structure Cleaning, Modified
Dr Structure Lead, Cleaning, Modified

Each
Foot

CITY OF DETROIT
SPECIAL PROVISION FOR
PAVT REPR, REM, MODIFIED
PAVT REPR NONREINF CONC, MODIFIED
CONCRETE PAVEMENT, MODIFIED
AND
CONCRETE BASE PAVEMENT, MODIFIED

DET: PAL

1 of 1

04-25-2022

Description This work shall consist of constructing and or restoring a concrete pavement or a concrete base pavement, with or without reinforcement and with or without an integral curb in accordance with section 602 or 603 of the 2020 Michigan Department of Transportation (MDOT) Standard Specifications for Construction as applicable and as specified/modified herein.

ALL JOINTS: Expansion Joints; Contraction Joints; Tied Joints; Longitudinal Pavement Joints and Transverse Pavement Joints including any Lane Ties, Dowels, or any other Reinforcement, Load Transfer Assemblies, sawing, sealing Joints with Hot-Poured Rubber to finish the Pavement Construction and or restoration shall be included in the item of work. No separate payments will be made for these works.

Pavement Repair, Removal-Modified Shall be the removal of pavement sections without disturbing the base, as shown on the plans. The unit price for Pavt Repr, Rem- Modified includes the cost of the following:

1. Moving from repair to repair;
2. Saw cutting;
3. Removing adjacent concrete shoulders, curb, curb and gutter, and valley gutter
4. Removing part-depth or full-depth HMA patches;
5. Lifting the repair section without disturbing the base;
6. Loading, hauling, and disposing of the removed material; and
7. Placing HMA mixture, as necessary, to restore the shoulders to the existing line and grade.

Measurement and Payment All Pavt Repr, Conc. Base Pavt, Conc Pavt and Conc Pavt Misc, of the thickness specified, with or without reinforcement and with or without Integral Curb, will be measured by area in square yards, including the area occupied by the curbs.

Pay Item

Conc Pavt, with Integral Curb, Reinf, 9 inch, Modified
Pavt Repr, Nonreinf Conc, 10 inch, Modified

Pay Unit

Square Yard
Square Yard

CITY OF DETROIT

SPECIFICATION FOR SIDEWALKS

DET: PAL

1 of 1

02-06-2022

Description: This special provision covers the construction of sidewalk and driveways.

Construction: This item of work includes excavating, backfilling, compacting, and grading of the disturbed area, and construction of concrete sidewalk and driveway.

The concrete sidewalk and driveway shall be removed in accordance with the 2020 MDOT Standard Specifications for Construction, Section 204, Removing Miscellaneous Structures and Materials.

Concrete sidewalk and driveway, of the thickness specified, shall be constructed in accordance with Section 803 of the 2020 Michigan Department of Transportation Standard Specifications for Construction. Sidewalk cross slopes shall be between 1% and 2%, sloping towards the street.

Subgrade and subbase materials removed when removing existing concrete shall be replaced with a suitable material and will be considered included with the cost of construction.

Restore berm areas disturbed during sidewalk and driveway construction to their original conditions 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 sidewalks and driveways. 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.

Measurement and Payment: Concrete sidewalks and driveways of the thickness specified shall be measured in square feet. Payment shall be for the entire flag or flags of sidewalk, or driveway, as marked by the Engineer. The contract unit price shall be payment in full for furnishing all labor, equipment and material necessary to complete the installation of new concrete sidewalk and driveway.

Pay Item

Sidewalk, Conc, ___ inch, Modified
Driveway, Nonreinf Conc, ___ inch, Modified

Pay Unit

Square Feet
Square Yard

CITY OF DETROIT
SPECIFICATIONS
FOR
SIDEWALK RAMP, ADA, AND
DETECTABLE WARNING SURFACE

DET:PAL

1 of 2

02-03-22

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 included with the cost of construction.

Restore berm areas disturbed during sidewalk ramp construction to their original condition as specified 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.

<u>Pay Item</u>	<u>Pay Unit</u>
Sidewalk Ramp, ADA, Modified	Square Foot
Detectable Warning Surface Tile, Modified	Foot
Curb Ramp Opening, Conc, Modified	Foot

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
ELECTRICAL WORK

SGJJR: SC

1 of 12

04-22-22

a. Description: This specification includes additional electrical equipment to be installed on the project.

The following specifications shall constitute the specifications for electrical construction and/or relocation of lighting facilities with DTE and Public Lighting Authority Standards of Construction in the City of Detroit.

1. General

The following abbreviations will apply to these specifications and to the plans:

	<u>SPECS</u>	<u>PLANS</u>
Institute of Transportation Engineers	I.T.E.	ITE
National Electric Manufacturers Association	N.E.M.A.	NEMA
Public Lighting Authority	PLA	PLA
Public Lighting Department	PLD	PLD
Detroit Edison Company	D.E. CO.	E
DTE Energy	DTE	DTE
Michigan Consolidated Gas Company	M.C.G.	G
Detroit Water and Sewerage Department	D.W.S.	W
Ameritech	T.	T
ASTM International	A.S.T.M.	ASTM
American National Standards Institute	A.N.S.I.	ANSI
Institute of Electrical and Electronic Engineers	I.E.E.E.	IEEE
Illuminating Engineering Society	I.E.S.	IES
Industrial Fasteners Institute	I.F.I.	IFI
International Municipal Signal Association	I.M.S.A.	IMSA

The Contractor shall be held to have inspected project site and all streets and alleys where work is to be done before submitting a proposal. Contractor shall be held to have inspected all conditions which may affect work, including traffic, and no extras will be allowed for such conditions or for interference with work by other Contractors or Utilities.

The Contractor shall furnish and maintain the lighting in areas specified for the maintenance of traffic.

All work on any DTE and PLA\PLD facility is subject to respective DTE and PLA\PLD standards, requirements and inspections.

Construction must be performed by qualified and experienced personnel. All work must meet standards and practices of the DTE, PLA\PLD, the National Electrical Code, and the Electric

Code of the City of Detroit, the National Electrical Safety Code and the Michigan Public Service Commission.

The Contractor shall secure all necessary permits covering his operations, including permits from the Public Authorities having jurisdiction over the streets or other Public Properties in which the work is located and the improvements therein. The bidder shall ascertain the amount of any charges required by such authorities and shall include the cost thereof in his bid price.

The Contractor shall ascertain the requirements of said authorities and shall include in his bid price all costs of restoring existing improvements, including sidewalks, pavements and landscaping to the satisfaction of the authority having jurisdiction in each case.

The Contractor shall assume all risks and responsibility because of existing soil conditions and shall complete the work in whatever material and under whatever ground conditions he may encounter or create, without additional cost to the Owner.

All material and equipment furnished by the Contractor must be new, unless specified otherwise, and must comply with the specifications for that material and equipment. The Owner shall have the right to reject any equipment which does not meet with specifications.

Manufacturer's test certificates in accordance with the specifications will be required for all wire and cable. These certificates shall be submitted to the Engineer and City of Detroit immediately upon receipt by the Contractor. No Contractor shall install any wire or cable before it has been approved by the Engineer and City of Detroit.

Contractors should include on their material order, especially on wire and cable, the statement that "Material must be in strict accord with the Specifications".

The Contractor shall not install any salvaged material or equipment unless it has been inspected and approved for reuse by the Owner.

Where the contract calls for the reuse of existing material and equipment, the Contractor shall reuse only the best of the existing material and equipment. The City of Detroit, PLA\PLD and DTE shall have the right to furnish the Contractor a new part for any that is found defective prior to dismantling. Any part or parts damaged subsequent to starting the removal are a liability of the Contractor.

Within five days after completion of each section of the underground conduit or cable work or the overhead line work, the Contractor shall furnish to the "Owner" an exact record of all underground or overhead work installed. This shall include length of conduit\duct lines; location of handholes and manholes; location and size of poles, and all security improvements. All removed street lighting, traffic signal, communication and all DTE, PLA\PLD and City of Detroit material shall be salvaged and delivered in usable condition to the respective owner.

The locations of existing underground obstructions or facilities of other utilities are not necessarily indicated on the plans. Where facilities of other utilities are shown their locations are only approximate and their exact location is not guaranteed for correctness. The

Contractor must exercise caution in avoiding damage to other utilities and must notify the other utilities that he is in fact proposing to break pavement or excavate so that they may provide him with the very latest information or drawings of their existing facilities.

The Contractor shall be responsible for maintenance, vandalism and accident damage to the lighting, traffic signal, conduit, wood pole, overhead wires, cable, etc. and all other material installed, or to be installed, related to, or necessary for the electrical and security installation of the project until the installation is complete, tested and accepted by the Engineer and City of Detroit.

Materials furnished by the DTE, PLA\PLD and City of Detroit to the Contractor shall be picked up by the Contractor at such warehouse\location as designated by the respective owner and\or the Engineer.

During installation of cable and conduit and all related work, the Contractor shall at all times maintain traffic in the manner and requirements of the City of Detroit, Traffic Engineering Division and as required in the Maintaining Traffic special provision. The City of Detroit, Traffic Engineering Division may impose restrictions regarding particular times of certain days of the week wherein the Contractor cannot perform his work and may in fact be required to clear the area of work obstacles or construction equipment. The Contractor shall take note of this and there will be no extra payment to perform the work with possible restrictions imposed. There will be no extra payment if the Contractor chooses to do his work outside of normally designated work hours.

Submit manufacturer's product data and color samples for all electrical and security equipment included in the plans and as identified in this special provision. Submit shop drawings and additional documentation/certification as noted herein and per the plans. All submittal documentation shall be approved prior to ordering and the fabrication of products.

b. Materials.

1. Conduit.

Conduits, fittings and bends shall be plastic (acronitrile butadiene or polyvinylchloride) in accordance with N.E.M.A. Standards Publication TC6-1974, "Plastic Utilities Duct for Underground Installation", Type EB for concrete encased installation or Type DB for non-encased direct burial.

The galvanized pipe conduit for direct burial or jacking and boring riser or cable raceway shall meet the requirements of the Federal Specification WW-C 581d and must be so identified. If required on the plans, direct buried or Schedule 80 polyvinylchloride conduit shall meet the dimensional and compounding requirements of NEMA TC-2, latest revision.

Rigid Steel Conduit - Rigid, heavy wall, hot-dipped galvanized steel threaded type, per UL 6 and ANSI C80.1. Manufacturers: Allied Tube & Conduit Corp., LTV Steel Tubular Products Co., Wheatland Tube Co., or approved equal.

2. Handholes (DTE, PLA\PLD & City of Detroit):

Electrical handholes provided for DTE, PLA\PLD and City of Detroit electrical improvements shall meet the requirements and standards of the respective agency\organization.

3. Handholes (HH, Elec)

Polymer concrete, reinforced with a heavy weave fiberglass. Heavy duty enclosures and covers designed and tested to -50 degrees F, with a compressive strength of at least 11,000 psi. Provide covers with a friction coefficient of at least 0.5. Heavy duty size as indicated rated 5,000 pounds over a 10 inch by 10 inch area. Provide cover with service load of at least 15,000 pounds over a 10 inch by 10 inch area. Provide cover with wording "LIGHTING" as applicable. Refer to detail on Drawings.

4. Concrete

Concrete for foundations, utility pads and encased conduit shall be grade S2/S1 as specified in Division 7 of the Michigan Department of Transportation (2012) Standard Specifications for Construction. The coarse aggregate used for concrete to encase conduits shall be 17A.

Concrete shall be placed in the forms in a layer of such thickness that when compacted and finished, the pad will be of the thickness shown on the Drawings. The pad shall be continuous between expansion joints. After the concrete has been placed between side forms, a strike-off guided by the side forms shall be used to bring the surface to the proper section to be compacted. All utility pads to have a light broom finish.

Concrete, during and immediately after depositing, shall be compacted by means of rods, forks and other suitable tools. The concrete shall be worked thoroughly around enforcements, around embedded fixtures and into corners. Every precaution shall be taken to produce a dense water-proof concrete free of voids and honeycombs.

Temporary enclosures and other protection for concrete shall remain intact for less than twenty-four hours (24 hours after the heating source is removed).

Salt, or other chemicals for the prevention of freezing, shall not be used.

Granular Material - Granular materials for use as fill, backfill, sub-base, and filter aggregates shall be as indicated on the plans.

5. Luminaires.

- A. GE Evolve LED Roadway Lighting.
- B. Catalog Number: ERLH-0-14-C3-40-A-GRAY-I-L.

(1) Luminaire: GE Evolve ERLH Type III LED.

- (2) LED Package: 14 C3, 122 input watts.
 - (3) Light Source: Light Emitting Diode (LED).
 - (4) Line Voltage: Auto-sensing voltage 120 thru 277 volts.
 - (5) Finish: Gray.
 - (6) Accessories: In-line fusing.
 - (7) Mounting: Pole with arm.
 - a. Pole Catalog Number: RH-A-16-S5J-18-XXX-ABG-BK
 - b. Arm Catalog Number: EAL5/1-ANBK.
 - (8) Foundation: As indicated on Drawings.
6. **Conduit, Encased, 3 inch** – Concrete encased conduit utilizing PVC schedule 40 type conduit, 3 inch. Refer to detail.
7. **Hh, Elec** – Polymer concrete, reinforced with a heavy weave fiberglass. Heavy duty enclosures and covers designed and tested to -50 degree F, with a compressive strength of at least 11,000 psi. Provide covers with a friction coefficient of at least 0.5. Heavy duty size as indicated rated 5,000 pounds over a 10 inch by 10 inch area. Provide cover with service load of at least 15,000 pounds over a 10 inch by 10 inch area. Provide cover with wording "LIGHTING" Refer to detail on Drawings.
8. **DB Cable, in Conduit, 600V, 1/C#10** – 600 volt copper conductors with XHHW insulation.
9. **DB Cable, in Conduit, 600V, 1/C#6** – 600 volt copper conductors with XHHW insulation.
10. **DB Cable, in Conduit, 600V, 1/C#4** – 600 volt copper conductors with XHHW insulation.

c. Construction: Except as described below, work shall be performed in accordance with Section 819 of the MDOT Standard Specifications for Construction.

1. Cable Section:

Cable shall be pulled into ducts using the proper cable grip for the purpose. The cable shall be handled so that it is not subject to excessive strain or is not kinked when pulled thru the conduit. Damaged or kinked cable shall not be used. Where more than one cable is to be installed in the same duct, cables shall be pulled thru simultaneously.

Splices in ducts will not be permitted.

When cable is installed but not immediately spliced, all cable ends shall be thoroughly sealed and racked out of the way of possible damage.

The ends of the cables which are to be abandoned and left in place shall be sealed with a water tight cap.

Cables shall be neatly racked on cable racks in all handholes after being formed to their final position. Cables shall be racked slightly higher than the duct entrances so that they will not

rest on the edges of the duct. Each new cable shall be tagged, and any existing cable which has its circuit number changed shall be retagged in all handholes in which it is exposed.

The sheaths of all lead sheathed cables shall be bonded to one another in each handhole with flexible copper braid approximately equal to #9 AWG.

All new cable installed between lighting standards shall be a continuous pull. Splices between standards will not be permitted.

The use of wire nuts in splices and taps will not be permitted.

2. Steel Standards:

The pole shall be oriented on the foundation so that the handhole is on the side of the pole opposite oncoming traffic.

The upper third of the shaft shall be given one field coat of weather-resistant enamel, color as specified.

3. Conduit:

Conduit runs shall be built in as straight a line as possible. When conduit sweeps are necessary, only one sweep, in one direction will be permitted between handholes or between handhole and cable pole. The radius of the sweep shall not be less than 24 feet.

Factory conduit bends shall only be used when entering foundations or at the base of cable poles.

All excavation for a main conduit run shall be to a depth to leave at least 36 inches from the top of the conduit encasement or top of direct buried rigid conduit to top of finished grade. For lateral conduit runs, the corresponding dimensions shall be 30 inches. Typical depth and widths of excavations will be shown on the plans. The trench shall be graded to handhole location, so that the finished conduit runs will have no low spots where water might accumulate into a handhole.

The contractor shall sheet and brace the trenches as required and shall adequately support all pipes or other structures exposed in the trenches. The support shall be incidental to the conduit construction and will not be paid for as separate items.

Conduit runs shall be encased in concrete or direct burial as specified. Adjacent conduits shall be spaced a minimum of 1-inch from each other and the concrete on the top, bottom, and side of the conduit encasement. Where steel reinforcement is required the reinforcing bars shall be separated from the conduits by 2 inches of concrete, and there shall be a minimum of 3 inches of concrete from the reinforcing bars to the outside of the encasement. Conduit joints shall be staggered vertically. Separators, spacers, blocks, or supports to be left in the finished concrete structure shall be composed of concrete or plastic.

Spacers shall be not more than every 7 feet when 20 foot lengths of conduit are installed and not more than every 5 feet when 10 foot lengths of conduit are installed.

The concrete mix, used to encase the conduit, shall be designed with enough workability (slump greater than 8 inches) to ensure encasement underneath the conduit. The bottom of the trench shelf shall be lined with a polyethylene sheet to ensure integrity of the concrete.

Concrete, during and immediately after depositing, shall be consolidated by means of mechanical vibrators. The concrete shall be worked thoroughly around enforcements, embedded fixtures, and into corners. Every precaution shall be taken to provide a dense, waterproof encasement, free of voids and honeycomb. The conduit bank shall be prevented from floating up when the concrete is poured, by anchoring to stakes at intervals not to exceed 10 feet in firm soil and not to exceed 5 feet in loose soil.

A bank of encased conduits may be constructed in either of two ways as described herein.

A. Tier-By-Tier Method. A foundation of concrete at least 3 inches thick is first placed on the bottom of the trench after it has been graded. When steel reinforcement is required the thickness of the concrete shall be at least 5 inches with the reinforcing bars in place. On this concrete base the bottom tier of conduits are laid, separated from each other by suitable spacers. The space between conduits of this first tier shall then be filled with concrete and the conduits covered to the height of the next succeeding conduit tier. Succeeding tiers shall be constructed in a similar manner. Work shall proceed as continuous operation with no interruptions in excess of 45 minutes between the placing of successive layers of concrete.

B. Built-Up or Monolithic Method. Masonry supports at intervals of 3 to 5 feet, or a foundation of concrete at least 3 inches thick, shall be first placed in the bottom of the trench after it has been graded. Where steel reinforcement is required, the thickness of the concrete foundations shall be at least 5 inches with reinforcing bars in place. All conduits shall then be placed, using plastic or concrete separators, to erect a rigid, selfsupporting structure of conduits in position before the concrete to completely fill the spaces between the conduits without damaging or displacing the conduits.

No conduit shall be encased until it has been inspected and approved by the Engineer and City of Detroit.

Typical sections and various typical arrangements of conduit will be shown on the plans.

Backfill for trenches shall be as indicated on the plans.

After the conduit runs are built, the Contractor shall pull a mandrel 12 inches long (shorter in conduit runs with bends) and 1/2-inch smaller in diameter than the conduit and a suitable swab or cleaning device designated to clear the conduit of debris. The Contractor shall notify the inspector prior to performing this phase of the work so that he may be present during this work. The contractor shall certify that this work has been done before payment will be made.

A coupling shall be placed on the ends of all conduits terminations and plugged with a suitable removable plug.

Backfill for trenches outside the roadbed may be the material excavated therefrom unless it is unsuitable for backfill material. Backfill for trenches within the limits of the roadbed shall be a Grade A fill material.

Where iron pipe conduit is installed, plastic conduit shall be installed within the iron pipe. Cable then shall be installed in the plastic conduit. Cable shall never be installed in iron pipe without the plastic conduit installed within.

Within five days after completion of the conduit work or of any portion where a working cable is installed, the Contractor shall furnish to the Engineer and City of Detroit, a record of the length of the duct lines as constructed, clearly showing any departures from the original plans. The lengths shall be measured from the inside walls of handholes and the center of post foundations, cable poles, and handholes. Final payment shall be withheld until work is completed.

No concrete encasement shall be in contact with any obstruction. A vertical clearance of 9 inches shall be provided, except that conduits parallel to water and gas mains shall be separated by not less than 12 inches.

Engineer shall be notified 48 hours prior to the pouring of any concrete encasement.

Conduit grades shall be staked at 8 foot intervals or less. Excavation below the bottom line of the trench shall be filled with Grade A backfill, well compacted. Grade shall have a fall to the lowest handhole, or from the middle of the run toward both holes, of not less than 4 inches per 100 feet.

All surfaces which have been dug up or disturbed for any reason by the Contractor shall be restored in kind to its original condition including but not limited to top soil and grass, sidewalk ramp, curb and gutter, and roadway bed including sub base and pavement materials.

4. Foundations:

No construction rubble, broken sidewalk or other foreign material will be permitted in place of concrete. Cracked or otherwise defective foundations will not be accepted.

Standards shall not be installed on foundations until the concrete has cured for a minimum of seven days.

Foundations shall at all times be properly protected and guarded to prevent injury to persons until the standards are installed.

No foundation shall be poured until the curb is in place. Foundations shall be located as shown on the plans unless otherwise authorized by the Engineer.

Ground rods and ground wires shall be installed as shown on the detail Drawings. The ground wire shall be embedded in the foundation and shall be connected to the ground rod with a copper clad steel solderless type clamp. The connection must be electrically solid and mechanically secure.

The lower portion of the foundation shall be poured without forms unless the soil is subject to cave-in and the use of forms is authorized by the Engineer. Forms shall be used to shape the upper part of the foundation, as shown on the plans. The top surface of the foundation shall be horizontal and at the elevation shown on the plans or established by the Engineer.

Concrete shall fill the entire hole excavated for the foundation. Forms shall not be used, except to form the foundation top, without the prior approval of the Engineer.

Foundations shall be installed in undisturbed earth. Foundation excavation shall be augured or hand dug only.

Foundation bolts shall be wired in place near the bottom of the excavation in order to prevent movement of the bolts during the pour.

Conduit bends shall be wired in place to the anchor bolts in order to prevent movement of conduit bends during the pour.

Openings of conduit bends shall be sealed prior to pour in order to prevent entry of concrete into conduit.

Anchor bolt projections above grade shall be coated with oil prior to pouring to prevent concrete from adhering to anchor bolts.

Conduit shall extend vertically outside foundation envelope a minimum of 4 inches. A coupling and a straight extension may be used in order to obtain the necessary vertical projection.

The entire foundation, exclusive of the cap, shall be placed with a single pour of concrete.

5. Handholes:

Precast or cast-in-place handholes shall be installed or constructed as shown on the plans.

Unused conduit entrances and conduit openings to be extended by others shall be blanked off, to prevent entrance of earth, with suitable removable plugs of plastic or other material as approved by the Engineer.

Bell ends are required on all conduits entering handholes.

When a new handhole is built into an existing conduit run, the concrete encasement shall be carefully chipped away and the conduits removed between the inside walls of the new handhole. All existing cables thus exposed shall have additional lengths spliced into them so that they may be properly racked on the walls of the handhole.

Where holes are built in the future roadways, top of handhole frames shall be set for future roadway grade. Where handhole frames built to future roadway grades may interfere with existing roadways, the frames should be set to allow for future adjustments.

Sewer drains shall have a drainage grade of not less than 6 inches per 100 feet. Bell and spigots shall be tight fit, cemented. Saddles shall be installed where required. In some cases, the City Sewer Division will make the main sewer tap and the cost for this work shall be

incidental and will not be paid for separately. Open joint sewers for handhole drains will not be permitted.

Backfilling shall conform to the requirements as herein before mentioned.

Upon completion of all handhole, conduit and sewer drains, the holes shall be free of all rubbish, construction debris and water. All sewer drains shall be free-running and the traps clean.

Adjusting handhole shall apply where the elevation of the cover is not changed more than 6 inches and no other alterations are necessary. Existing covers shall be adjusted to the proper elevation by removing or chipping enough adjacent pavement, curb, or curb and gutter to remove the frame or castings and raising or lowering them to the required elevation by supporting them on a concrete roof slab, masonry or steel reinforced rod, so constructed as to hold them firmly in place. The adjacent pavement, curb, or curb and gutter shall be replaced to the original elevation condition and kind of construction.

Reconstructing handhole shall apply where elevation of the cover is changed more than 6 inches and no other alterations are necessary. The scope of work for reconstructing the handhole otherwise shall be the same as for adjusting the handhole.

Abandoning handholes shall be broken down to 24 inches below the required grade of the bottom of the concrete slab and backfilled with granular material. When so noted on the plans the existing conduit shall be spliced through and encased with concrete. The spliced conduit shall be clear of all obstruction.

Removing handholes shall have the frame and cover removed and the structure shall be broken down below grade as required. The handhole shall be required to be removed only where a new handhole is to be built in the same location. Therefore, the wall structure of the existing hole to be removed shall be broken down as required to accommodate the new handhole in the same location.

6. Cable Tags for Installation in Handholes:

A. Material. Tags are to consist of UV inhibited polypropylene, with .040 inch thick black polypropylene character embedded in a colored polypropylene substrate. Material to be non-conductive, non-corrosive, abrasion resistant, chemically inert, and tolerate a temperature range of -50 to +300 degrees F.

B. Size and Color. Legend to consist of 1-inch high block style letters, except tags with special legends as given below. Text to be black on yellow substrate.

C. Mounting. Characters comprising tag shall be mounted in a polyethylene holder which shall be fastened to the cable with nylon tie straps.

D. Legends. Contact City of Detroit and DTE for cable and circuit designations.

E. Method of Construction. Each tag is to be mounted with two nylon tie straps. Tags are to be installed near the duct pocket, and, when conditions allow, in a location on the cable where they may be read without having to enter handholes.

7. Cable Tags for Use in Lighting Load Centers and Controllers:

A. Material. Individual tags are to be made of polypropylene, with raised high relief letters. Material to be non-corrosive, non-conductive, weatherproof, stabilized for ultraviolet, resistant to salt water, organic solvents, mild acid or alkali solutions, and high humidity.

B. Size and Color. Legend to consist of 3/8-inch high block style black letters on a yellow background.

C. Mounting. Characters comprising tag shall be mounted in a polyethylene holder which is fastened to the cable with nylon tie straps.

Install **GE ERLH TYPE III LUMINAIRE, POLE, AND FOUNDATION** – Provide all labor and material to install fixture including pole foundation, grounding, cable termination and splicing. Refer to detail on Drawings

Install **Conduit, Encased, 3 inch** – Furnishing all labor, materials and equipment for installing the conduit, reinforcement where called for and encasement complete. Pumping and cleaning handholes, and swabbing conduits after installation shall be incidental to this item and will not be paid for separately.

Install **Conduit, Schedule 40, 1 ½ inch** – Furnishing all labor, materials and equipment for installing the conduit complete. Pumping and cleaning handholes, and swabbing conduits after installation shall be incidental to this item and will not be paid for separately.

Install **Conduit, Schedule 40, 3 inch** – Furnishing all labor, materials and equipment for installing the conduit complete. Pumping and cleaning handholes, and swabbing conduits after installation shall be incidental to this item and will not be paid for separately.

Elec, Serv, Tap – Provide all labor and material to provide electrical service tap, coordinate with DTE and PLA/PLD.

Install **Hh, Elec** – provide all labor and materials required to build the complete structure as shown on the Drawings. Where handholes are built on existing runs, the breaking away of existing encasement and conduit and splicing additional lengths into existing cable to permit proper racking on handhole walls shall be incidental to this item and will not be paid for separately.

Install **DB Cable, in Conduit, 600V, 1/C#10** – Provide all labor and material to install cable in conduit and provide terminations.

Install **DB Cable, in Conduit, 600V, 1/C#6** – Provide all labor and material to install cable in conduit and provide terminations.

Install **DB Cable, in Conduit, 600V, 1/C#4** – Provide all labor and material to install cable in conduit and provide terminations.

Connect to Existing Lighting Controller – Provide all labor and material to connect new street lighting circuits to existing street lighting circuits located in handholes, splice boxes, enclosures or other underground structures. Include termination of conduits into existing structures and termination of conductors.

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

Pay Item	Pay Unit
Fixture Type GE Evolve ERLH.....	Each
Conduit, Encased, EB 20, 3 inch	Foot
Conduit, Schedule 40 PVC, 1 ½ inch	Foot
Conduit, Schedule 40 PVC, 3 inch	Foot
Elec, Serv, Tap.....	Each
Hh, Elec.....	Each
DB Cable, in Conduit, 600V, 1/C#10	Foot
DB Cable, in Conduit, 600V, 1/C#6	Foot
DB Cable, in Conduit, 600V, 1/C#4	Foot
Connect to Existing Lighting Controller	Each

**The following materials will be furnished by PLA. The cost of these materials shall not be included in the pay items listed above:

1. Hh, Polymer Conc.
2. Light Std Fdn
3. Light Std, Hapco, 32 Foot with 6 Foot High Rise Arm
4. Luminaire, GE, 122W

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
NON-HAZARDOUS CONTAMINATED MATERIAL HANDLING AND DISPOSAL

ENV:JCW

1 of 2

APPR:DMG:DBP:02-26-20
FHWA:APPR:03-02-20

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:

Pay Item	Pay Unit
Non Haz Contaminated Material Handling and Disposal, LM.....	Cubic Yard

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.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
**QUALITY INDEX FOR PORTLAND CEMENT CONCRETE (FOR LOCAL AGENCY
PROJECTS ONLY)**

CFS:CPM

1 of 4

APPR:TES:JFS:05-28-20

FHWA:APPR:06-04-20

a. Description. This special provision establishes pay factor and price adjustments for Portland cement concrete (PCC) based on Quality Assurance (QA) testing of 28-day compressive strength and fresh concrete air content of PCC. Perform all work in accordance with the standard specifications and this special provision.

b. Materials. Mixture requirements will be in accordance with section 1004 of the Standard Specifications for Construction, unless otherwise specified in the contract.

c. Sampling. Sampling will be in accordance with subsections 1003.03.H and 1003.03.L of the Standard Specifications for Construction, except as modified herein. A sample is defined as a representative quantity of concrete taken during production which is used to measure the quality characteristics for the concrete. Compressive strength specimens for each sample consist of two cylinders, either 4-inch by 8-inch or 6-inch by 12-inch. A random number will be generated for each respective subplot. The sampling frequency for a production lot is one QA sample per subplot.

See subsection 1003.03.J in the Standard Specifications for Construction for reduced sampling and testing for small incidental quantities.

d. Quality Index Analysis. The Engineer's QA test results will be used to determine the pay factor (PF) and price adjustment (ADJ). The Contractor QC test results will be not used for PF and ADJ analysis. The Engineer will complete PF and ADJ analysis within 7 working days after completion of all 28-day compressive strength testing for the represented production lot or quantity of concrete. All values of PF and OLPF in these formulas are decimal, not percent. All values of PF and OLPF are rounded to two decimal places.

Table 1: Quality Index Parameter Specification Limits

Quality Characteristic	Specification Limits
Air Content of Fresh Concrete (percent)	5.5 – 8.5
Rejection Limit (percent)	<5.0 or >9.0
Conc. Temp. (deg. F)	45 - 90 at time of placement
Slump (max.) (inch)	See footnotes a through l in Table 1004-1 of the Standard Specifications for Construction
28-day Compressive Strength (psi)	For LSL see Table 2
Rejection Limit - 28-day Compressive Strength	See Table 2

Table 2: Quality Index Parameter Specification Limits for 28-Day Compressive Strength

Parameter	Grade of Concrete						
	3000	3500	3500HP	4000	4000HP	4500	4500HP
Lower Specification Limit (psi)	3000	3500	3500	4000	4000	4500	4500
Rejection Limit for an Individual Strength Sample Test Result (psi)	2500	3000	3000	3500	3500	4000	4000

1. Pay Factor for 28-Day Compressive Strength (PF_s). (not to exceed 1.00)

$$PF_s = (\text{QA Test Strength}) / \text{LSL}$$

Where:

QA Test Strength = QA 28-day compressive strength sample test result.

LSL = Lower specification limit (see Table 2).

If the tested strength does not meet the rejection limit specified in Table 2, the Engineer will require additional evaluation as described in section e of this special provision.

2. Pay Factor for Air Content of Fresh Concrete (PF_{ac}). The pay factor for air content of fresh concrete (PF_{ac}) will be in accordance with Table 3.

Table 3: Air Content of Fresh Concrete Pay Factor (PF_{ac})

Air Content of Fresh Concrete (percent)	Pay Factor (PF_{ac})
5.5 – 8.5	1.00
5.0 – 5.4	0.50
Below 5.0	Rejection
8.6 – 9.0	0.75
Above 9.0	Rejection

If the air content of fresh concrete is below 5.0 or above 9.0 percent, the Engineer will elect to do one of the following:

A. Require removal and replacement of the entire quantity of concrete represented by the test with new testing conducted on the replacement concrete and repeat the evaluation procedure.

B. Allow submittal of a corrective action plan for the Engineer's approval. If the Engineer does not approve the plan for corrective action, subsection d.2.A. will be applied. All costs associated with plan submittal and corrective action under this subsection will be borne by the Contractor.

3. Overall Lot Pay Factor (OLPF). Use the following formula to determine the OLPF and ADJ. The OLPF will not exceed 1.00:

$$\text{OLPF} = (0.60 \times \text{PF}_s) + (0.40 \times \text{PF}_{ac})$$

Where:

PF_{ac} = Pay factor for Air Content (see Table 3)

4. Price Adjustment (ADJ). Use the following formula to determine the ADJ.

$$\text{ADJ} = (\text{OLPF} - 1)(\text{Price})$$

5. Price Adjustment for Small Incidental Quantities. Price adjustment for 28-day compressive strength deficiencies will be based on test results for the corresponding weekly QA test specimens and the pay factor (PF_s) calculated in accordance with the formula defined in subsection d.1. The price adjustment is calculated by the following equation:

$$(\text{ADJ}) = (\text{PF}_s - 1)(\text{Price})$$

Where:

ADJ = Price adjustment per pay unit to be applied to the quantity represented by the QA test.

PF_s = Pay Factor for 28-day compressive strength (not to exceed 1.00).

Price = Base price when established for the pay item or the Contractors unit price bid when concrete is included in another pay item without a base price.

e. Evaluation of Rejectable Concrete. The Engineer will require additional evaluation to decide what further action may be warranted. Acceptance for air content of fresh concrete will be based on QA test results reported at the time of concrete placement.

If the Engineer determines that non-destructive testing (NDT) is appropriate, this work will be done by the Contractor in the presence of the Engineer within 45 calendar days of concrete placement. All costs associated with this work will be borne by the Contractor. Ensure complete set of non-destructive tests is conducted (in accordance with the respective standard test method) at a minimum three randomly selected locations. If NDT is used to estimate the in-situ strength, a calibrated relationship between the project job mix formula (JMF) under evaluation and the NDT apparatus must have been established prior to NDT testing in accordance with its respective standard test method.

If the 28-day compressive strength QA test results show that the rejection limit (as specified in Table 2) has not been achieved, the quantity of concrete under evaluation will be rejected and the Engineer will require additional evaluation to decide what further action may be warranted.

Propose an evaluation plan and submit it to the Engineer for approval before proceeding. The results from NDT will be used only to decide what further action is required. This determination will be made by the Engineer, as follows:

1. For Non-structural Concrete. If no test result from non-destructive testing falls below the lower specification limit (LSL) 28-day compressive strength, the represented quantity of

concrete under evaluation will remain in place and a pay factor for 28-day compressive strength (PF_s) of 1.00 will be applied for overall lot pay factor (OLPF) and price adjustment (ADJ) determinations in accordance with section d of this special provision.

2. For Structural Concrete (including overhead sign foundations). If no test result from non-destructive testing falls below the lower specification limit (LSL), the represented quantity of concrete under evaluation will remain in place and a pay factor for 28-day compressive strength (PF_s) of 0.85 will be applied for overall lot pay factor (OLPF) and price adjustment (ADJ) determinations will be in accordance with section d of this special provision.

3. If one or more of the non-destructive test results fall below the lower specification limit (LSL) 28-day compressive strength, the Engineer may elect to do one of the following:

A. Require removal and replacement of the entire rejected quantity of concrete, including new initial tests for quality index analysis conducted in accordance with section d of this special provision.

B. Allow the Contractor to submit a plan for corrective action, for the Engineer's approval, to address the disposition of the rejected concrete. If the Engineer does not approve the plan for corrective action, subsection e.3.A of this special provision will be applied. All costs associated with plan submittal and corrective action under this subsection will be borne by the Contractor.

C. Allow the in-situ quantity of concrete under evaluation to remain in place and a pay factor (PF_s) of 0.50 will be applied for overall lot pay factor (OLPF) and price adjustment (ADJ) determinations will be in accordance with section d of this special provision.

f. Measurement and Payment. If a price adjustment is made for reasons included in this special provision, that adjustment will be made using the base price established for the specific item. If a contract unit price requires adjustment for other reasons not described in this special provision, the adjustments will be made using the original unit price and the adjustments will be cumulative.