

City of Davenport, Iowa Supplemental Specifications to 2024 Iowa SUDAS



City of Davenport, IA | Supplemental Specifications to Iowa SUDAS

As adopted by City Council resolution 2024-103, the City of Davenport has adopted the most recently published editions of SUDAS and City Supplemental Specifications as the standards for design and construction of public improvements within the City’s Public Right-of-Way as defined in Chapter 12.20 of Davenport City Code. Public improvements include any work within current or proposed City right-of-way, City-owned property, and any infrastructure owned and/or maintained by the City of Davenport.

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DIVISION 1 – GENERAL CONDITIONS AND COVENANTS

Section 1020 – Proposal Requirements and Conditions

1.02 Contents of the Proposal Forms

A. DELETE and REPLACE with the following:

Each prospective bidder will be furnished with a link to the Jurisdiction’s bidding website containing the contract documents including the location and description of the proposed work, the approximate quantities of work to be performed for which bid prices are requested and the completion provisions. The contract documents will contain any special provisions that shall apply to the work to be performed.

1.05 Interpretation of the Contract Documents

DELETE and REPLACE with the following:

If any prospective bidder is in doubt as to the true meaning of any parts of the contract documents, the bidder may request an interpretation from the Engineer, through the Purchasing Division. Any interpretation of the contract documents will be made only by an addendum delivered through the Jurisdiction’s bidding website to each prospective bidder who received, or in the future requests, contract documents from the Jurisdiction.

1.06 Addendum

DELETE and REPLACE with the following:

Each bidder will receive a notice of addendum for any changes in the contract documents made prior to the time established for the receipt of bids. The notice will be delivered in the manner chosen by the Jurisdiction to the email address provided by the bidder with an acknowledgement of receipt required. Acknowledgement of the receipt of the addendum will be as provided on the Jurisdiction’s bidding website.

1.09 Preparation of the Proposal

A. DELETE and REPLACE with the following:

Proposal: Follow Davenport Purchasing Policy and Procedure as provided.

- B. DELETE.
- C. DELETE.
- D. DELETE.

1.11 Irregular and Nonresponsive Proposals

A. DELETE and REPLACE with the following:

Proposals will be considered irregular and may be rejected for any of the following reasons:

1. If submitted in any way other than through the Jurisdiction’s bidding website;
2. If the bidder submits an obviously unbalanced bid. An unbalanced bid shall be defined as a bid containing lump sum prices or unit bid prices that do not reflect reasonable actual costs plus a reasonable proportionate share of the bidder’s

anticipated profit, overhead costs, and other indirect costs to complete that item;

3. If the proposal does not contain a unit price for each pay item listed, except in the case of authorized alternate pay items; or
 4. If the bidder submits more than one proposal for the same work under the same of different names.
- B. Proposals will be considered nonresponsive and shall be rejected for any of the following reasons:
4. DELETE.

1.12 Submission of the Proposal, Identity of Bidder and Bid Security

- A. DELETE and REPLACE with the following:

Follow Davenport Purchasing Policy and Procedure as provided and the instructions on the Jurisdiction's bidding website for submittal of the proposal.

1.13 Withdrawal or Revision of the Proposal Prior to Opening of Proposals

DELETE and REPLACE with the following:

Follow Davenport Purchasing Policy and Procedure as provided for withdrawal or revision of the proposal prior to opening of the proposals.

1.14 Opening of Proposals

DELETE and REPLACE with the following:

Follow Davenport Purchasing Policy and Procedure as provided for opening of proposals.

Section 1040 – Scope of Work

1.06 Increase or Decrease of Work

- D. Contractor is responsible for notifying the Engineer of increased work that will accumulate additional cost. If cost is not agreed upon in advance of the work being completed, no additional payment will be made. Extra work that is to be paid for on a force account basis shall comply with Iowa DOT Specifications Section 1109.03, B.

1.07 Change Orders

ADD the following:

- C. The Contractor shall not proceed with additional work until the Contractor and the Jurisdiction have executed a change order. All documentation needed for finalizing the change order, including final quantities, will be given to the Jurisdiction no later than 30 days after the change order work has been completed. Failure to do so will result in the Contractor's forfeiture of payment.

1.09 Changed Site Conditions

B. Compensation:

ADD the following:

- 3. No work that will require additional compensation will be completed prior to executing a change order covering that work.

Section 1050 – Control of Work

1.07 Examination of Materials and Work

ADD the following:

- C. If any portion of the work is covered prior to the Engineer or its agents having an opportunity to inspect it, the Contractor, if required, shall remove or uncover portions of the work for observation. The cost of uncovering and restoring the Work in this case will be at the Contractor's expense.

Section 1070 – Legal Relations and Responsibility to the Public

PART 2 – RESPONSIBILITIES TO THE PUBLIC

2.06 Traffic Control

A. ADD the following:

3. The Contractor shall be responsible to notify affected jurisdiction(s), property owners, businesses, and residents of any road closure or lane reduction as detailed in the contract documents.
4. If Jurisdiction deems that more traffic control devices are necessary, the Contractor shall provide at no additional cost.
5. Remove barricades and signage that is no longer needed within 24 hours.

ADD the following:

C. Restricting Parking:

1. The Contractor is responsible for furnishing, installing, maintaining and removing any necessary temporary “No Parking” signage. The following are minimum requirements for the signage and the Engineer may add additional:
 - a. Minimum 12 X 18 sign, red on white, with specific start/stop dates/times.
 - b. Signs to have the tow symbol visible.
 - c. Signs attached to either a 48" grabber with reflective stripes or bolted to the top panel of a type 1 barricade (weighted for wind) so that the sign sticks up above the top panel.
 - d. Grabber cone, or similar, are to be placed approximately 20 feet apart along the curb line from end to end.
 - e. Place signs no less than 24 hours ahead of the no parking start time.
 - f. After complete setup, take time/date stamped video or pictures of the entire setup for verification/documentation.
 - g. Check the setup at least once every 24 hours.
2. If towing is needed, the Contractor will contact the Jurisdiction.

2.07 Protection of Aboveground and Underground Facilities

ADD the following:

- E. In an attempt to locate underground facilities through potholing, it is the Contractor’s responsibility to properly backfill the area.
1. If potholing within pavement, backfill the core hole with gradation No. 11 aggregate to the bottom of the existing pavement and fill the remaining void to the top of pavement with a concrete mix or HMA mix, matching surrounding pavement and approved by the Engineer. Size of replacement patch by approval of the Engineer.
 2. If potholing outside pavement, backfill with native soil and compact according to Section 3010 – Trench Excavation and Backfill. Seed and maintain until permanent growth is fully established.

3. If potholing within sidewalks or pedestrian ramps, remove the affected panels and replace with class C concrete or class M, if approved by the Engineer.

PART 3 – BONDS AND INSURANCE

3.02 Insurance Requirements

- C. Except for workers compensation insurance, the Contractor shall purchase and maintain such insurance as will protect the Contractor and the Jurisdiction as set forth below, which may arise out of or result from the Contractor's operations under the contract, whether such operations be by the Contractor, its subcontractors or consultants, suppliers, third parties, or the agents, officers, or employees of any of them. In addition, the Contractor shall purchase and maintain workers compensation insurance to cover its employees.
 1. DELETE and REPLACE with the following:
Refer to contract documents for insurance requirements.
 2. DELETE and REPLACE with the following:
Refer to contract documents for insurance requirements.
 3. DELETE and REPLACE with the following:
Refer to contract documents for insurance requirements.
 5. DELETE and REPLACE with the following:
Refer to contract documents for insurance requirements.

Section 1080 – Prosecution and Progress

1.01 Subletting or Assignment of Contract

C. Subcontracts:

ADD the following:

3. If the Contractor removes a subcontractor for any reason, the Jurisdiction is not responsible for additional costs or schedule changes resulting from replacing the subcontractor.

Section 1090 – Measurement and Payment

1.08 Acceptance and Final Payment

ADD the following:

- E. Submit a set of As-built plans, which will include any changes from the construction plans.
- F. Acceptance of subdivisions or applicable private development shall be per Davenport City Code.

DIVISION 2 – EARTHWORK

Section 2010 – Earthwork, Subgrade and Subbase

PART 1 – GENERAL

1.08 Measurement and Payment

D. Topsoil:

1. On-site Topsoil

a. Measurement:

DELETE and REPLACE with the following:

Measurement will be in cubic yards of topsoil stripped, salvaged and spread, and will be computed on the basis of a uniform finished thickness of 4" within the Right of Way. , Thickness outside of the Right of Way shall be as required by the Davenport Stormwater Manual, or as specified in the plan drawings.

E. Class 10, Class 12 or Class 13 Excavation:

3. Includes, but not limited to:

e. DELETE and REPLACE with the following:

The Jurisdiction is responsible for compaction testing, unless otherwise specified in the contract documents. The Contractor will be responsible for payments associated with all retesting from failure of initial tests.

J. Subbase:

3. Includes:

ADD the following statement:

When Excavation is needed for the placement of subbase, the cost of excavation shall be incidental to the bid price for subbase.

PART 2 – PRODUCTS

2.01 Topsoil

DELETE and REPLACE with the following:

Comply with the Davenport Stormwater Manual for on-site, compost-amended and off-site top soil product specifications. Visual approval by the Engineer is required.

If testing is necessary, the Contractor will be responsible for payment. Follow Davenport Stormwater Manual.

2.03 Suitable Embankment Materials

Add the following:

F. Or approved by the Engineer.

2.04 Foundation Materials

B. Granular Stabilization Materials:

ADD the following:

1. ADD the following: Scott County Macadam is also allowable. Other gradations allowable with approval of the Engineer.
3. REMOVE the following: Any use of crushed concrete must be approved by the Engineer.
3. ADD the following: Use of recycled PCC for subgrade stabilization is acceptable. Recycled PCC shall not be allowed in place of subbase material.

D. Subbase:

ADD the following statement:

Any use of crushed concrete, recycled pavement or RAP must be approved by the Engineer.

1. Special Backfill
 - a. DELETE and REPLACE with the following:
Comply with Iowa DOT Specifications Section 4132. The quality requirements of Iowa DOT Materials I.M. 210 for recycled pavements are enforced.

PART 3 – EXECUTION

3.02 Topsoil

A. Onsite Topsoil:

1. Stripping and Salvaging
 - b. DELETE and REPLACE with the following:
Remove an adequate amount of topsoil from existing on-site topsoil to allow finish grading with a finished grade of salvaged or amended topsoil, with a uniform finished thickness of 4" within the Right of Way. Thickness outside of the Right of Way shall be as required by the Davenport Stormwater Manual, or as specified in the construction documents. The topsoil may be moved directly to an area where it is to be used, or may be stockpiled for future use.
2. Spreading and Finish Grading:
 - a. DELETE and REPLACE with the following:
Place topsoil at least 4" deep within the Right of Way (as specified or by Davenport Storm Water Manual outside of the ROW); smooth and finish grade according to the contract documents.

3.04 Embankment Construction

ADD the following:

Embankments not to be built on frozen earth.

3.06 Subgrade Preparation

B. Subgrade Stability:

1. DELETE and REPLACE with the following:
Perform proof rolling with a truck loaded to the maximum single legal axle gross weight of 20,000 pounds or the maximum tandem axle gross weight of 34,000 pounds. Verify axle and truck weights by tickets from a certified scale.

2. DELETE and REPLACE with the following:
Operate trucks at less than 10 mph. Make multiple passes for every lane. The subgrade will be considered to be unstable if, under the operation of the loaded truck, the surface shows yielding (soil wave in front of the loaded tires) or rutting of more than 1 inch, measured from the top to the bottom of the rut at the outside edges.

3.09 Field Quality Control

B. Moisture Content and Density

2. DELETE and REPLACE with the following:
Compact cohesive soils to no less than 95% of maximum Standard Proctor Density: and cohesionless soils in accordance with Iowa DOT Specification 2115.03 B.4.

END OF DIVISION

DIVISION 3 – TRENCH AND TRENCHLESS CONSTRUCTION

Section 3010 – Trench Excavation and Backfill

PART 2 – PRODUCTS

ADD the following:

Sand and manufactured sand may only be used if approved by the Engineer.

2.01 Materials Excavated from a Trench

A. Standard Trench Excavation.

1. ADD the following: Suitable backfill material under, and within, five (5) feet of pavement shall be Class II material only, with < 50% passing the Number 4 screen and < 12% passing the Number 200 screen. If no bid item for replacement of unsuitable backfill materials has been included in the plan documents, this shall be considered incidental to the installation of the bid item for the pipe being installed.

PART 3 – EXCAVATION

3.01 Trench Excavation

B. DELETE and REPLACE with the following:
Remove topsoil and stockpile.

3.05 Pipe Bedding and Backfill

E. Final Trench Backfill

5. DELETE and REPLACE with the following:
In areas to remain unpaved, terminate backfill material and place topsoil to final grade at a depth in accordance with the Davenport Stormwater Manual.

END OF DIVISION

DIVISION 4 – SEWERS and DRAINS

Section 4010 – Sanitary Sewers

PART 1 – GENERAL

1.07 Special Requirements

DELETE and REPLACE with the following:

Sawcut, stamp or otherwise permanently mark, a 4 inch x 4 inch upside down “T” into the adjacent curb to mark the lateral location, and spray paint the sawcut area green.

PART 2 – PRODUCTS

2.01 Sanitary Sewer Service Stubs

I. Double Walled Polypropylene Pipe 12 inch to 30 inch:

ADD the following:

4. By approval of the Engineer only.

J. Double Walled Polypropylene Pipe 30 inch to 36 inch:

ADD the following:

4. By approval of the Engineer only.

2.03 Sanitary Sewer Force Mains

F. Tracer Wire Station:

2. ADD the following:

Color specified is green.

PART 3 – EXECUTION

3.06 Sanitary Sewer Service Stubs:

C. ADD the following:

5. DELETE AND REPLACE with the following:

For undeveloped properties, place watertight stopper, cap or plug in end of sanitary sewer service. Mark the end of the service stub with a 2x4 painted green, extending 2 feet above the surface. Location of sanitary sewer service stubs will be verified using GPS and provided to Jurisdiction.

3.08 Sanitary Sewer Abandonment

ADD the following:

All sanitary services abandoned at the sewer main.

A. Plug:

ADD the following:

3. In addition, insert a twist plug when abandoning services. If a wye is unavailable, install a saddle wye, and then insert the plug into the saddle wye.

3.10 Sanitary Sewer Cleanout

ADD the following:

Unless approved by the Engineer, cleanouts are not allowed on sanitary sewer mains. Figure 4010.203 only applicable to sanitary sewer services.

SECTION 4020 – Storm Sewers

PART 2 – PRODUCTS

2.01 Storm Sewers

- A. Reinforced Concrete Pipe (RCP):
 - 3. DELETE and REPLACE with the following:
Use joints complying with ASTM C 443.
- B. Reinforced Concrete Arch Pipe (RCAP):
 - 3. DELETE and REPLACE with the following:
Use joints complying with ASTM C 443.
- C. Reinforced Concrete Elliptical Pipe (RCEP):
 - 3. DELETE and REPLACE with the following:
Use joints complying with ASTM C 443.
- D. Reinforced Concrete Low Head Pressure Pipe:
 - 3. DELETE and REPLACE with the following:
Use joints complying with ASTM C 361.

PART 3 – EXECUTION

3.02 Pipe Installation

- A. General
 - 3. DELETE and REPLACE with the following:
Place pipe with lifting holes at the top of the pipe and fill lift hole with non-shrink grout and manufactured plugs.

SECTION 4040 – SUBDRAINS AND FOOTING DRAIN COLLECTORS

PART 1 – GENERAL

1.07 Special Requirements

DELETE and REPLACE with the following:

- A. Sump pump/footing drain collection system shall be installed with all new subdivision and as required by the City Engineer. If requested, design calculations shall be submitted for review.
- B. Install a post and provide GPS information to the Jurisdiction of the location of sump pump drains and footing drain service stubs. Sawcut, stamp or otherwise permanently mark, a 4 inch x 4 inch triangle “Δ” into the adjacent curb to mark the footing drain location, and spray paint the sawcut area green.

3.01 Subdrains

- A. Subdrains shall be Type 1, Case C with the center of tile located at either 0'-6" or 3'-6" from back of curb. Type 1 cases A or B, or Type 2 cases D or E are acceptable with the approval of the Engineer.

SECTION 4050 – PIPE REHABILITATION

PART 1 – GENERAL

1.07 Special Requirements

B. DELETE and REPLACE with the following:

Unless otherwise specified, the Contractor will coordinate the use of fire hydrants with Iowa American Water Company (IAWC). Portable water meters with proper backflow prevention devices are required for use of water from all fire hydrants. IAWC will supply the RPZ backflow preventer and the meter to the Contractor. The Contractor must also notify both the City of Davenport's Fire Department and IAWC as to the location of meters. The use of fire hydrants is restricted to authorized personnel only. IAWC must be present and given twenty-four (24) hours' notice when meters are to be moved. Per IAWC, the Contractor may be responsible to install a protective locked box over the fire hydrant, RPZ valve and meter being used at all times during the course of the program. The Contractor shall be responsible for all coordination, deposits, permits and associated fees, rental charges and charges for the volume of water used.

SECTION 4060 – CLEANING, INSPECTION AND TESTING OF SEWERS

PART 1 – GENERAL

1.07 Special Requirements

DELETE and REPLACE with the following:

Comply with National Association of Sewer Service Companies (NASSCO) requirements for all televising of storm and sanitary sewers and services.

END OF DIVISION

DIVISION 5 – WATER MAINS AND APPURTENANCES

Section 5010 – Pipe and Fittings

PART 1 – GENERAL

1.07 Special Requirements

DELETE and REPLACE with the following:

The *Iowa American Water Standard Specifications for Water Main Construction, Current Edition*, supersedes SUDAS Section 5010.

Sawcut, stamp or otherwise permanently mark, a 4-inch x 4-inch arrow mark, “↑”, into the adjacent curb to mark service stub locations and spray paint the sawcut area blue.

PART 2 – PRODUCTS

2.07 Water Service Pipe and Appurtenances

B. Materials

3. DELETE this item. PVC service pipe is unacceptable to the City of Davenport.
5. DELETE this item. Polyethylene service pipe is unacceptable to the City of Davenport.

Section 5020 – Valves, Fire Hydrants and Appurtenances

PART 1 – GENERAL

1.07 Special Requirements

DELETE and REPLACE with the following:

The *Iowa American Water Standard Specifications for Water Main Construction, Current Edition*, supersedes SUDAS Section 5020.

Sawcut, stamp or otherwise permanently mark, a 4 inch x 4 inch “X” into the adjacent curb to mark valve locations and spray paint the sawcut area blue.

1.08 Measurement and Payment

F. Valve Box Adjustment, Minor:

ADD the following: Required boxouts of valve boxes or similar pavement penetrations in HMA paving are included with this item.

Section 5030 – Testing and Disinfection

PART 1 – GENERAL

1.07 Special Requirements

DELETE and REPLACE with the following:

The Iowa American Water Standard Specifications for Water Main Construction, Current Edition, supersedes SUDAS Section 5030.

END OF DIVISION

DIVISION 6 – STRUCTURES FOR SANITARY AND STORM SEWERS

Section 6010 – Structures for Sanitary and Storm Sewers

PART 1 – GENERAL

1.07 Special Requirements

ADD the following:

- C. Place a permanent saw cut in concrete curbs adjacent to all manholes located beyond the back of curb. Sawcut, stamp or otherwise permanently mark, a 4 inch x 4 inch square into the curb to mark the manhole location, and spray paint it green.

1.08 Measurement and Payment

A. Manhole

- 3. DELETE and REPLACE with the following:

Unit price includes, but is not limited to, excavation, furnishing bedding material, placing bedding and backfill material, compaction, base, structural concrete, reinforcing steel, precast units (if used), inverts, pipe connections, infiltration barriers (sanitary and storm manholes), castings, and adjusting rings.

E. Manhole or Intake Adjustment, Minor:

- 1. Manhole Adjustment, Minor

- c. DELETE and REPLACE with the following:

Includes: Unit price includes, but is not limited to, removing existing casting and existing adjustment rings, furnishing and installing adjustment rings, furnishing and installing new castings and furnishing and installing new infiltration barrier (sanitary and storm manholes).

- 2. Intake Adjustment, Minor

- c. DELETE and REPLACE with the following:

Includes: Unit price includes, but is not limited to, removing existing casting and existing adjustment rings, furnishing and installing adjustment rings, furnishing and reinstalling existing castings.

F. Manhole or Intake Adjustment, Minor:

- 1. Manhole Adjustment, Major

- c. DELETE and REPLACE with the following:

Includes: Unit price includes, but is not limited to, removal of existing casting, adjustment rings, top sections and risers; excavation; concrete and reinforcing steel or precast sections; furnishing and installing new casting; furnishing and installing new infiltration barrier (sanitary and storm manholes); placing backfill material; and compaction.

- 2. Intake Adjustment, Major:

- c. DELETE and REPLACE with the following:

Includes: Unit price includes, but is not limited to, removal of existing casting, adjustment rings, top sections and risers; excavation; concrete and reinforcing steel or precast sections; reinstalling existing casting; placing backfill material; and compaction.

PART 2 – PRODUCTS

2.05 Precast Riser Joints

B. Joint Sealant:

2. Storm Sewers: DELETE and REPLACE with the following:

All joint sealants used on sanitary sewer manholes must be used on storm sewer manholes.

2.09 Manhole or Intake Adjustment Rings (Grade Rings)

A. ADD the following:

1. ADD the following:

- a. Sealant: Butyl material meeting ASTM C 990.

- i. Proper butyl sealant for metal to concrete surfaces used on final ring.

2.10 Castings (Ring, Cover, Grate, and Extensions)

C. Casting Types:

1. Manholes:

ADD the following:

Use of Figure 6010.601 Type B and Type D by approval of the Engineer.

Use of Figure 6010.602 Type F by approval of the Engineer.

2. Intakes:

- b. DELETE and REPLACE with the following:

Storm sewer casting to include environmental symbols and/or messages such as “DUMP NO WASTE, DRAINS TO RIVER.” If not on casting, stamp into boxout if allowed by the Engineer.

2.13 Steps

A. DELETE and REPLACE with the following:

Install steps in all manholes and intakes unless otherwise specified.

PART 3 – EXECUTION

3.01 General Requirements for Installation of Manholes and Intakes

E. Pipes:

4. Sanitary Sewer Manholes on Existing Pipe:

ADD the following:

- a. Provide pipe joint, non-shearing coupling or other approved flexible coupling within 2 feet of structure wall to allow for differential

settlement between the existing sewer and the new structure.

F. Joint Sealant:

1. Sanitary Sewer Manholes:

c. ADD: Both a & b MUST be used when constructing Sanitary Sewer Manholes

2. DELETE and REPLACE with the following:

Storm Sewer Manholes: All joint sealants used on sanitary manholes must be used for storm sewer manholes

3. ADD the following:

Storm Sewer Intakes:

a. Apply bituminous jointing material or install rubber rope gasket.

b. If indicated in the contract documents, apply engineering fabric wrap to joints.

I. Adjustment Rings:

1. DELETE and REPLACE with the following

Bed each concrete ring in butyl sealant material.

3. DELETE and REPLACE with the following:

b. Maximum: 8 inches for new intakes; 12 inches for new manholes; 16 inches for existing manholes.

J. Casting:

ADD the following:

4. Seal the back of the intake by placing ready mix concrete over the rear flange of the casting frame to prevent infiltration of water between the frame and the intake box. Care shall be taken not to restrict the movement of the curb box (if applicable) in doing so.

K. Infiltration Barrier:

DELETE

Install on sanitary sewer manholes.

ADD the following.

Install on sanitary and storm sewer manholes. Use only external chimney seal unless approved by the Engineer.

3.02 Additional Requirements for Cast-in-Place Concrete Structures

B. Reinforcing Steel:

1. ADD the following:

Use epoxy coated reinforcement.

3.04 Adjustment of Existing Manhole or Intake

B. Minor Adjustment (Adding or Removing Adjustment Rings):

2. Modify adjustment ring stack height by one of the following methods:

a. DELETE and REPLACE with the following:

Add adjustment rings as necessary to adjust existing manhole or intake to finished pavement grade or finished topsoil grade, to a maximum ring stack as stated in 6010. Bed each concrete ring with

butyl sealant material. Bed each polyethylene ring with manufacturer's approved product.

3. ADD the following:

Any existing casting not specified to be reused will become property of the Jurisdiction.

5. ADD the following:

If existing manhole does not have an infiltration barrier, install a new external infiltration barrier to the structure.

C. Major Adjustment (Adding, Removing or Modifying Riser or Cone Section):

4. ADD the following:

Any existing casting not specified to be reused will become property of the Jurisdiction.

6. ADD the following:

If existing manhole does not have an infiltration barrier, install a new external infiltration barrier to the structure.

FIGURES:

Use of Figures 6010.304-6010.305 allowed only by approval of the Engineer.

[REPLACE Figure 6010.307 with Figure DAV6010.307.022323](#)

Use of Figures 6010.404-6010.405 allowed only by approval of the Engineer.

[REPLACE Figure 6010.514 with Figure DAV6010.514.022323](#)

Notes:

Manholes less than 60" inside diameter not allowed unless approved by City Engineer

Manhole base thickness shall be 1" for every 24" of manhole height with a minimum thickness of 6".

With approval by the Engineer, 28.5" adjusting rings may be used with sanitary and storm structures.

If replacing open throat inlets (6010.507, 6010.508, 6010.509, 6010.510, 6010.541, 6010.542, 6010.545) and boxout does not match existing pavement joints, expansion (Type E Joint) is required along street edge of boxout. This Type E joint is included with the installation of the inlet.

Section 6030 – Cleaning, Inspection and Testing of Structures

PART 1 – GENERAL

1.07 Special Requirements

ADD the following:

- A. Vacuum and or Exfiltration Testing (3.04 A-C) required only at the direction of the Engineer.

END OF DIVISION

DIVISION 7 – STREETS AND RELATED WORK

Section 7010 – Portland Cement Concrete Pavement

PART 1 – GENERAL

1.08 Measurement and Payment

M. Fixture Adjustment:

Comply with corresponding utility requirements for adjusting other appurtenances.

PART 2 – PRODUCTS

2.02 Concrete Mixes

A. Mix Design:

ADD the Following:

3. For all new roads, higher durability mixes (C-SUD or CV-SUD) shall be used when placed with a slipform paver, unless otherwise specified. When not placed with a slipform paver, C-W3R shall be used unless otherwise specified. C-SUD or CV-SUD mixes shall have a minimum fly ash addition rate of 15%.

PART 3 – EXECUTION

3.02 Pavement Construction

C. Surface Fixture Adjustment:

1. ADD the following:

Comply with corresponding utility requirements for adjusting other appurtenances.

G. Integral Curbs:

6. ADD the following:

- d. Back plaster any areas without proper consolidation.

K. Construction of Joints:

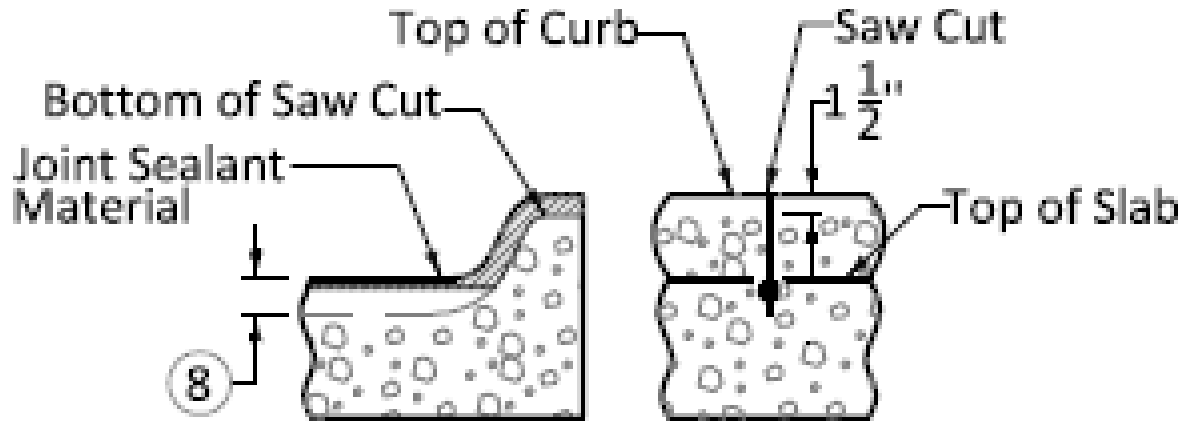
2. General:

ADD the following:

- k. Saw cut through the curb.

FIGURES

Note on Figure 7010.101-sheet 2 of 8 on 'C' Joint, continue joint sealant material to top of curb as shown.



'C' JOINT IN CURB
(Match 'CT', 'CD', or 'C' joint in pavement.)

[REPLACE Figure 7010.102 with Figure DAV7010.102.](#)

Section 7011 – Portland Cement Concrete Overlays

PART 1 – GENERAL

1.08 Measurement and Payment

G. Fixture Adjustment:

Comply with corresponding utility requirements for adjusting other appurtenances.

PART 2 – PRODUCTS

2.01 Materials

D. Coarse Aggregate for Concrete:

1. DELETE and REPLACE with the following:

Crushed stone particles with Class 3 durability complying with Iowa DOT Section 4115 and Materials I.M. 409, Source Approvals for Aggregates.

Section 7020 – Hot Mix Asphalt Pavement

PART 1 - GENERAL

1.07 Special Requirements

1. Any joint formed between newly placed HMA against PCC shall be sealed. This includes, but is not limited to, joints at the face of curb, face of curb flag, boxouts or patches. Joint sealing shall be in accordance with 7040, 1.08, D (Crack and Joint Sealing, Hot Pour) although sawing and/or routing are not required. This sealing is incidental to the final HMA course placed.

1.08 Measurement and Payment

- J. Fixture Adjustment:
ADD the following:
Comply with corresponding utility requirements for adjusting other appurtenances.

PART 2 – PRODUCTS

2.02 Recycled Asphalt Materials

- B. DELETE this item. The use of recycled asphalt shingles is NOT approved by the Jurisdiction.

PART 3 – EXECUTION

3.01 HMA Pavement

- A. Preparation of Pavement Foundation:
ADD the following:
Saw cut PCC curb, flag and all other headers to provide a clean vertical face.
Apply a tack coat before each HMA lift and on the vertical face of all headers.
- F. Fixtures in the Pavement Surface:
 3. ADD the following:
For smaller fixtures, boxout with a 2 foot by 2 foot concrete panel, similar to Figure 7010.103, with 20 inch, epoxy-coated #4 bars.

FIGURES

[REPLACE Figure 7020.201 with Figure DAV7020.201.022323](#)

Section 7021 – Hot Mix Asphalt Overlays

PART 1 - GENERAL

1.07 Special Requirements

1. Any joint formed between newly placed HMA against PCC shall be sealed. This includes, but is not limited to, joints at the face of curb, face of curb flag, boxouts or patches. Joint sealing shall be in accordance with 7040, 1.08, D (Crack and Joint Sealing, Hot Pour) although sawing and/or routing are not required. This sealing is incidental to the final HMA course placed.

Section 7030 – Sidewalks, Shared Use Paths and Driveways

PART 1 – GENERAL

1.07 Special Requirements

ADD the following:

Comply with Davenport streetscape requirements in applicable areas.

PART 2 – PRODUCTS

2.01 Portland Cement Concrete

A. DELETE and REPLACE with the following:

Use only Class C concrete with materials complying with Section 7010. Use coarse aggregate of Class 2 durability or better.

2.07 Detectable Warnings

DELETE and REPLACE with the following:

Use manufactured, wet-set, detectable warning panels with a non-slip surface and raised truncated domes. Surface Mount or Retro-Fit panels will not be allowed unless specified. Comply with the Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (also known as PROWAG) for contrast and dimension requirements. Acceptable color is Safety Red – Federal Standard #31350, or approved equal.

PART 3 – EXECUTION

3.02 SUBGRADE PREPARATION

ADD the following:

- C. Subbase: For all Sidewalks, Shared Use Paths and Driveways, place and compact a minimum 3" of subbase material which complies with Iowa DOT Gradation 11 unless otherwise specified in the contract documents or approved by City Engineer.

3.04 PCC Sidewalks, Shared Use Paths and Driveways

F. Jointing

- 2. Transverse Contraction Joints:

- b. Sidewalks and Driveways
 - 3) REMOVE and REPLACE with:
Form all transverse contraction joints to a depth of 1 ¼ inches with a pointed trowel or jointing tool unless approved by City Engineer.
- 4. Isolation Joints:
 - a. ADD the following:
Install an 'E' joint every 50' along length of sidewalk and/or at property lines.

3.07 Slope and Smoothness Testing

- A. Slope for Sidewalks, Curb Ramps, Turning Spaces, and Shared Use Paths:
 - 1. Change the following in IM363– “The Pedestrian Facility Slopes from the plan sheets shall then be submitted to the Contracting Authority prior to payment for the work.” to “The Pedestrian Facility Slopes form and plan sheets shall then be submitted to the Contracting Authority prior to payment for the work performed on ramps, turning spaces and landings.”

3.10 Cleaning

ADD the following:

- D. Clean concrete and curing compound from detectable warning surfaces.

FIGURES

[REPLACE Figure 7030.101 and Figure DAV7030.101.022323 with Figure](#)

[DAV7030.101.031324](#)

[ADD Figure 7030.101R.031324](#)

DELETE Figure 7030.102 – Concrete Driveway, Type B – Not allowed unless approved by City Engineer.

ADD MI-220 Iowa DOT Standard Road Plan

[REPLACE Figure 7030.201 with Figure DAV7030.201](#)

DELETE Figure 7030.202 – Curb Details for Class A Sidewalk

[REPLACE Figure 7030.205 with Figure DAV7030.205.031324](#)

Add Section

Section 7035.A – Streetscape Improvements: Concrete Unit Pavers

Note: Work under this section shall comply with Division 7, Section 7030 in addition to the following:

PART 1 – GENERAL

1.01 Summary

- A. Section includes the following:
 - 1. PCC Pavement Base
 - 2. Concrete Pavers
 - 3. Joint Sand
 - 4. Setting Bed Sand

1.02 Description of Work

- A. The work in this section shall consist of constructing a Portland cement concrete base, a sand setting bed, and installation of concrete unit pavers to create a system that shall accommodate pedestrian and vehicular traffic.
- B. If repairs become necessary for pavements constructed under the specifications that follow, those repairs shall be in accordance with these same specifications.

1.03 References

- A. ASTM International, latest edition:
 - 1. C 33, Standard Specification for Concrete Aggregates.
 - 2. C 67, Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile, Section 8, Freezing and Thawing.
 - 3. C 136, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - 4. C 140, Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units.
 - 5. C 144 Standard Specifications for Aggregate for Masonry Mortar.
 - 6. D 448, Standard Classification for Sizes of Aggregate for Road and Bridge Construction.
 - 7. C 936, Standard Specification for Solid Concrete Interlocking Paving Units.
 - 8. C 979, Standard Specification for Pigments for Integrally Colored Concrete.
 - 9. D 698 Test Methods for Moisture Density Relations of Soil and Soil Aggregate Mixtures Using a 5.5 lb (24.4 N) Rammer and 12 in. (305 mm) drop.

10. D 1557 Test Methods for Moisture Density Relations of Soil and Soil Aggregate Mixtures Using a 10 lb (44.5 N) Rammer and 18 in. (457 mm) drop.
11. C1645 Standard Test Method for Freeze-thaw and De-icing Salt Durability of Solid Concrete Interlocking Paving Units
12. D 1883, Test Method for California Bearing Ratio of Laboratory-Compacted Soils.
13. D 2940 Graded Aggregate Material for Bases or Subbases for Highways or Airports.
14. D 4254, Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.

1.04 Submittals

Comply with Division 1 - General Provisions and Covenants, as well as the following:

A. Concrete Pavers

1. Samples for verification: Three representative full-size samples of each paver type, thickness, color and finish that indicate the range of color variation and texture expected upon project completion.
2. Accepted samples become the standard of acceptance for the product produced.
3. Test results from an independent testing laboratory for compliance of concrete pavers with ASTM C 936.
4. Manufacturer's catalog product data, installation instructions, and material safety data sheets for the safe handling of the specified materials and products.

B. Joint and Setting Bed Sand

1. Provide three representative one pound samples in containers of Joint Sand materials for City Engineer's approval.
2. Provide three representative one pound samples in containers of Setting Bed Sand materials for City Engineer's approval.
3. Test results from an independent testing laboratory for sieve analysis per ASTM C 136 conforming to the grading requirements of ASTM C 144.

C. Polymeric Joint Sand

1. Test results from an independent testing laboratory for sieve analysis per ASTM C 136 conforming to the grading requirements of ASTM C 144.
2. Samples for Initial Selection: Provide three representative samples in containers of Setting Bed Sand material, cured and dried, for color selection.
3. Samples for Verification: Provide three one pound samples in containers of Polymeric Joint Sand.

1.05 Quality Assurance

A. Paving Installation Contractor:

1. The Contractor performing the installation work shall have documented experience in the installation of exterior brick pavers.
 2. Utilize an installer having successfully completed concrete paver installation similar in design, material, and extent indicated on this project.
 3. A minimum of 10,000 square feet of completed work is required.
 4. Job references from a minimum of three projects similar in size and complexity. Provide Owner/Client/General Contractor names, postal address, phone, fax, and email address.
- B. Utilize a Manufacturer having at least ten years of experience manufacturing concrete pavers on projects of similar nature or project size.
- C. Source Limitations:
1. Obtain Concrete Pavers from one source location with the resources to provide products of consistent quality in appearance and physical properties.
 2. Obtain Joint and Setting Bed Sands from one source with the resources to provide materials and products of consistent quality in appearance and physical properties.
 3. Obtain Polymeric Joint Sand from one source with the resources to provide materials and products of consistent quality in appearance and physical properties.
- D. Mockups:
1. Install a 4 ft x 4 ft paver area per each paving pattern.
 2. Use this area to determine surcharge of the Setting Bed Sand layer, joint sizes, lines, laying pattern(s) and levelness. This area will serve as the standard by which the workmanship will be judged.
 3. Subject to acceptance by owner, mock-up may be retained as part of finished work.
 4. If mock-up is not retained, remove and dispose legally.

1.06 Delivery, Storage and Handling

- A. In accordance with Conditions of the Contract and Division 1 Product Requirement Section.
- B. Deliver Concrete Pavers in manufacturer's original, unopened and undamaged container packaging with identification labels intact.
1. Coordinate delivery and paving schedule to minimize interference with normal use of streets and sidewalks adjacent to paver installation.
 2. Deliver Concrete Pavers to the site in steel banded, plastic banded or plastic wrapped packaging capable of transfer by forklift or clamp lift.
 3. Deliver Concrete Pavers to the site in steel banded, plastic banded or plastic wrapped packaging capable of transfer by forklift or clamp lift.
- C. Store and protect materials free from mud, dirt and other foreign materials.
- D. Prevent Joint and Setting Bed Sand from exposure to rainfall or removal by wind with secure, waterproof covering.
- E. Store Polymeric Joint Sand on elevated platforms, under a cover and/or in a dry location.

1.07 Project/Site Conditions

A. Environmental Requirements

1. Install Concrete Pavers only on unfrozen and dry Setting Bed Sand.
2. Install Concrete Pavers only on unfrozen and dry Base or Subbase Aggregate materials.
3. Install Base or Subbase Aggregates only over unfrozen subgrade.
4. Install Setting Bed Sand or Concrete Pavers only when there is no heavy rain or snowfall.

B. Weather Limitations for Polymeric Jointing Sand:

1. Install Polymeric Joint Sand only when ambient temperature is above 40°F (5°C), under dry conditions with no rain forecast for 24 hours and when surface of pavement is completely dry.

1.08 Special Requirements

This Section is applicable to redevelopment inside the Downtown Self-Supported Municipal Improvement District (SSMID) that is one-half block or greater, or as may be required by the applicable Urban Revitalization Tax Exemption (URTE) agreement, or as otherwise determined by the City Engineer. The downtown SSMID is roughly bounded by Brown St and Federal St from east to west, and the Mississippi River and 6th St from north to south. The specifications herein are meant to be applied in conjunction with The Downtown Davenport Streetscape Improvement Plan (“Plan”) (<https://www.davenportiowa.com/common/pages/DisplayFile.aspx?itemId=16863749>), which has been adopted by the City of Davenport. See the Plan for further details and requirements for sidewalks constructed within the downtown area. Work outside the downtown SSMID may also refer to portions of this Section for guidance or as directed by the City Engineer.

1.09 Measurement and Payment

A. Brick Paver Sidewalk with Pavement Base:

1. Measurement: Measurement will be in square yards for the area of brick/paver sidewalk placed on a pavement base. The area of pavement base will not be measured separately.
2. Payment: Payment will be at the unit price per square yard for the area of brick/paver sidewalk unless specified otherwise in the Contract Documents.
3. Includes: Unit price includes, but is not limited to, subgrade preparation, pavement base, setting bed, setting the bricks/pavers, installing weep holes and associated materials, and sand/cement joint filler.

B. Granular Surfacing under Pavement Base

1. Measurement: Measurement will be in square yards, as specified in the contract documents, for the quantity thickness of granular surfacing placed.
2. Payment: Payment will be at the unit price per square yard, as specified.

3. Includes: Unit price includes, but is not limited to, excavation and preparation of subgrade.

PART 2 – PRODUCTS

2.01 PCC Base

- A. Thickness: 4"
- B. Compressive Strength: 4,000 PSI
- C. The base shall be constructed as a monolith with the adjacent sidewalk.

2.02 Concrete Unit Pavers

- A. Basis-of-Design Product:
 1. Manufacturer: Unilock, 301 E. Sullivan Rd., Aurora, IL 60505, T 630-892-9191
 - a. Model: Holland Premier
 - b. Colors (variegated pattern per detail): Charleston and Heritage Brown
 - c. Material: Concrete
 - d. Finish: Smooth (Premier) – this is a face mix finish
 - e. Edge: Chamfer
 - f. Size: Manufacture the sizes indicated with a maximum tolerance of plus or minus 1/16 inch, all directions
 - i.4" x 8" x 2-1/4" Note: Imperial dimensions are nominal equivalents to the metric dimensions.
 2. Or approved equal.
- B. Provide pavers meeting the minimum material and physical properties set forth in ASTM C 936, Standard Specification for Interlocking Concrete Paving Units. Efflorescence is not a cause for rejection.
 1. Average compressive strength 8000 psi (55MPa) with no individual unit under 7,200 psi (50 MPa).
 2. Average adsorption of 5% with no unit greater than 7% when tested according to ASTM C 140.
 3. Resistance to 50 freeze-thaw cycles, when tested according to ASTM C1645, with no breakage greater than 1.0% loss in dry weight of any individual unit. Conduct this test method not more than 12 months prior to delivery of units.
- C. Accept only pigments in concrete pavers conforming to ASTM C 979.
Note: ACI Report No. 212.3R provides guidance on the use of pigments.
- D. Maximum allowable breakage of product is 5%.

2.03 Natural Joint Sand

- B. Provide natural Joint Sand as follows:
 1. Washed, clean, non-plastic, free from deleterious or foreign matter, symmetrically shaped, natural or manufactured from crushed rock.
 2. Do not use limestone screenings, stone dust, or sand for the Joint Sand material that does not conform to the grading requirements of ASTM C 33.

3. Utilize sands that are as hard as practically available where concrete pavers are subject to vehicular traffic.
4. Gradation as shown in Table 1 below:

TABLE 1 – JOINT SAND GRADIATION REQUIREMENTS

ASTM C 144		
Sieve Size	Natural Sand Percent Passing	Manufactured Sand Percent Passing
No. 4 (4.75 mm)	100	100
No. 8 (2.36 mm)	95 to 100	95 to 100
No. 16 (1.18 mm)	70 to 100	70 to 100
No. 30 (0.600 mm)	40 to 75	40 to 75
No. 50 (0.150 mm)	10 to 30	20 to 40
No. 100 (0.150 mm)	2 to 15	10 to 25
No. 200 (0.075 mm)	0 to 1	0 to 10

2.04 Polymeric Joint Sand

- A. Provide Polymeric Joint Sand as manufactured by:
 1. Alliance – Gator Maxx 2, www.alliancegator.com
 - a. Product Type: Dry mix, contains polymeric binding agent, activated with water.
 - b. Color: As directed by the City Engineer.
 2. Techniseal RG+
 - a. Product Type: Dry mix, contains polymeric binding agent, activated with water.
 - b. Color: As directed by the City Engineer.
 - c. Polysweep, www.sek.us.com
 - d. Product Type: Dry mix, contains polymeric binding agent, activated with water.
 - e. Color: As directed by the City Engineer.
 3. Or approved equal.
- B. Provide Polymeric Joint Sand meeting the minimum material and physical properties as follows:
 1. Compression Strength: proven resistance to compression of 550 PSI after drying for 7 days under controlled conditions (73°F (23°) at 50% humidity).
 - a. Test sand sample shape: cylinder (2" (5cm) dia. X 4" (10 cm) high).
 2. Gradation as shown in Table 1 above

2.05 Sand Setting Bed

- A. Provide Setting Bed Sand as follows:
 1. Washed, clean, non-plastic, free from deleterious or foreign matter, symmetrically shaped, natural or manufactured from crushed rock.

2. Do not use limestone screenings, stone dust, or sand material that does not conform to the grading requirements of ASTM C 33.
3. Do not use mason sand or sand conforming to ASTM C 144.
2. Utilize sands that are as hard as practically available where concrete pavers are subject to vehicular traffic.
3. Conform to the grading requirements of ASTM C 33 with modifications as shown in Table 2 below:

TABLE 2 – GRADIATION REQUIREMENTS FOR SETTING BED SAND

ASTM C 33	
Sieve Size	Percent Passing
3/8 in (9.5 mm)	100
No. 4 (4.75 mm)	95 to 100
No. 8 (2.36 mm)	85 to 100
No. 16 (1.18 mm)	50 to 85
No. 30 (0.600 mm)	25 to 60
No. 50 (0.300 mm)	10 to 30
No. 100 (0.150 mm)	2 to 10
No. 200 (0.075)	0 to 1

Note: Coarser sand than that specified in Table 1 above may be used for joint sand including C 33 material as shown in Table 2. Use material where the largest sieve size easily enters the smallest joints. For example, if the smallest paver joints are 2 mm wide, use sand 2 mm and smaller in particle size. If C 33 sand is used for joint sand, extra effort may be required in sweeping material and compacting the pavers in order to completely fill the joints.

2.06 Geotextile

- A. Provide Geotextile material conforming to the following performance characteristics, measured per the test methods referenced:
1. 4 oz., nonwoven needle punched geotextile composed of 100% polypropylene staple fibers that are inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids.
 2. Grab Tensile Strength: ASTM D 4632: 115 lbs.
 3. Grab Tensile Elongation: ASTM D 4632: 50%
 4. Trapezoidal Tear: ASTM D4533: 50 lbs.
 5. Puncture: ASTM D4833: 65 lbs.
 6. Apparent Opening Size: ASTM D 4751: 0.212 mm, 70 U.S. Sieve
 7. Permittivity: ASTM D 4491: 2.0 sec -1
 8. Flow Rate: ASTM D 4491: 140 gal/min/s.f.

- B. As supplied by:
 - 1. Carthage Mills – FX-40HS
 - 2. U.S. Fabrics – US 115NW
 - 3. Mirafi – 140N
 - 4. Or approved equal.

2.07 EDGE RESTRAINTS

- A. Concrete Edge Restraint as indicated.
- B. Plastic and Metal Edge Restraints:
 - 1. Pave Tech
 - a. Material Type: Plastic
 - b. Model No.: Pave Edge Rigid, Pave Edge Flexible, Pave Edge Industrial.
 - 2. Snap Edge
 - a. Material Type: Plastic
 - b. Model No.: One Piece Edging, 96 inches
 - 3. Permaloc
 - a. Material Type: Aluminum
 - 4. Or approved equal

PART 3 – EXECUTION

3.01 Examination

- A. Examine areas indicated to receive paving for compliance with requirements for installation tolerances and other conditions affecting performance for the following before placing the Concrete Pavers.
 - 1. Verify that Geotextiles, if applicable, have been placed according to drawings and specifications.
 - 2. Verify the Concrete Underlayment has cured.
 - 3. Verify the Concrete Underlayment thickness, strengths, surface tolerances and elevations conform to specified requirements.
 - 4. Provide written density test results for soil subgrade, Concrete Underlayment P.S.I. testing to the Owner, General Contractor and paver installation subcontractor.
 - 5. Verify location, type, and elevations of edge restraints, concrete curbing, concrete collars around utility structures, and drainage inlets.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
 - 1. Beginning of Bedding Sand and Concrete Paver installation signifies acceptance of Base and edge restraints.

3.02 Preparation

- A. Verify the Concrete Underlayment is clean and dry, certified by General Contractor as meeting material, installation and grade specifications.

- B. Stockpile Setting Bed Sand and Joint Sand such that they are free from standing water, uniformly graded, free of any organic material or sediment, debris, and ready for placement.
- C. Verify that base and Geotextile is ready to support sand, edge restraints, and, pavers and imposed loads.
- D. Keep area where pavement is to be constructed free from sediment during entire job. Remove and replace all Geotextile, Joint Sand and Setting Bed Sand materials contaminated with sediment with clean materials.
- E. Edge Restraint Preparation: (if not using a concrete edge restraint)
 - 1. Install edge restraints per the drawings.
 - 2. Mount directly to finished base. Do not install on bedding sand.
 - 3. Extend the minimum distance from the outside edge of the Concrete Underlayment to the spikes equal to the thickness of the slab.

3.03 Installation

- A. PCC Base
 - 1. Construct the concrete base to comply with PCC sidewalk construction specifications to comply with Section 7030.
- B. Setting Bed Sand
 - 1. Provide and spread Setting Bed Sand evenly over the Concrete Underlayment and screed to a nominal thickness of 3/4 in. (25 mm).
 - a. Protect screeded Setting Bed Sand from being disturbed by either pedestrian or vehicular traffic.
 - b. Screed only the area which can be covered by pavers in one day.
 - c. Do not use Setting Bed Sand material to fill depressions greater in the base surface.
 - 2. Keep moisture content constant and density loose and constant until Concrete Pavers are set and compacted.
 - 3. Screed the Setting Bed Sand using either an approved mechanical spreader (e.g.: an asphalt paver) or by the use of screed rails and boards.
 - 4. Carefully maintain spread Setting Bed Sand in a loose condition, and protected against incidental compaction, both prior to and following screeding. Loosen any incidentally compacted sand or screeded sand left overnight before further paving units are placed.
 - 5. Fully protect screed Setting Bed Sand against incidental compaction, including compaction by rain. Remove any screeded Setting Bed Sand that is incidentally compacted prior to laying of the paving units. Do not permit either pedestrian or vehicular traffic on the screeded Setting Bed Sand.
 - 6. Inspect the Setting Bed Sand course prior to commencing the placement of the Concrete Pavers. Acceptance of the Setting Bed Sand occurs with the initiation of Concrete Paver placement.
- C. Concrete Pavers

1. Replace Concrete Pavers with chips, cracks, voids, discolorations, and other defects that might be visible in finished work.
2. Mix Concrete Pavers from a minimum of three (3) bundles simultaneously drawing the paver vertically rather than horizontally, as they are placed, to produce uniform blend of colors and textures. (Color variation occurs with all concrete products. This phenomenon is influenced by a variety of factors, e.g. moisture content, curing conditions, different aggregates and, most commonly, from different production runs. By installing from a minimum of three (3) bundles simultaneously, variation in color is dispersed and blended throughout the project).
3. Exercise care in handling face mix concrete pavers to prevent surfaces from contacting backs or edges of other units.
4. Provide Concrete Pavers using laying pattern as indicated. Adjust laying pattern at pavement edges such that cutting of edge pavers is minimized. Cut all pavers exposed to vehicular tires no smaller than one-third of a whole paver.
5. Use string lines or chalk lines on Setting Bed Sand to hold all pattern lines true.
6. Set surface elevation of pavers 1/8 in. (3 mm) above adjacent drainage inlets, concrete collars or channels.
7. Place units hand tight against spacer bars. Adjust horizontal placement of laid pavers to align straight.
 - a. When installation is performed with mechanical equipment, use only unit pavers with spacer bars on sides of each unit.
8. Provide space between paver units of 1/16 in. (1 mm) wide to achieve straight bond lines.
9. Prevent joint (bond) lines from shifting more than $\pm 1/2$ in. (± 13 mm) over 50 ft. (15 m) from string lines.
10. Fill gaps between units or at edges of the paved area that exceed 3/8 inch (10 mm) with pieces cut to fit from full-size unit pavers.
11. Prevent all traffic on installed Concrete Pavers until Joint Sand has been vibrated into joints. Keep skid steer and forklift equipment off newly laid Concrete Pavers.
12. Vibrate Concrete Pavers into leveling course with a low-amplitude plate vibrator capable of a to 5000-lbf (22-kN) compaction force at 80 to 90 Hz. Perform at least three passes across paving with vibrator. Vibrate under the following conditions:
 - a. After edge pavers are installed and there is a completed surface or before surface is exposed to rain.
 - b. Compact installed Concrete Pavers to within 6 feet (2 meters) of the laying face before ending each day's work. Cover Concrete Pavers that have not been compacted and leveling course on which pavers

have not been placed, with non-staining plastic sheets to prevent Setting Bed Sand from becoming disturbed.

13. Protect face mix Concrete Paver surface from scuffing during compaction by utilizing a urethane pad.
14. Remove any cracked or structurally damaged Concrete Pavers and replace with new units prior to installing Joint Sand material.

D. Joint Sand

1. Provide, spread and sweep dry Joint Sand into joints immediately after vibrating pavers into Setting Bed Sand course until full. Vibrate pavers and add Joint Sand material until joints are completely filled, then remove excess material. This will require at least 4 passes with a plate compactor.
2. Leave all work to within 3 ft. (1 m) of the laying face fully compacted with sand filled joints at the completion of each day.
3. Remove excess Joint Sand broom clean from surface when installation is complete.
4. Polymeric Joint Sand
 - a. Install Polymeric Joint Sand per manufacturers recommended instructions.

E. Weep Holes

1. Install 2 inch diameter, 12 inch long, PVC pipe even with the top of the setting bed at the locations of one per 100 SF of paver surface area.
2. Fill pipe with 3/4 inch clean rock and cover weep hole with engineering fabric.
3. Install minimum of 12 inch deep and 12 inch wide reservoir of clean 3/4 inch rock around the pipe below the PCC sidewalk base or extend the rock reservoir to the pavement subdrain.

3.04 Field Quality Control

- A. Verify final elevations for conformance to the drawings after sweeping the surface clean.
 1. Prevent final Concrete Paver finished grade elevations from deviating more than $\pm 3/8$ in. (± 10 mm) under a 10 ft (3 m) straightedge or indicated slope, for finished surface of paving.
- B. Lippage: No greater than 1/32 in. (0.8 mm) difference in height between Concrete Pavers and adjacent paved surfaces.

3.05 Repairing, Cleaning, and Sealing

- A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.
- B. Cleaning: Remove excess dirt, debris, stains, grit, etc. from exposed paver surfaces; wash and scrub clean.
 1. Clean Concrete Pavers in accordance with the manufacturer's written recommendations.

C. Seal as indicated.

1. Apply Sealer for Permeable Concrete Pavers in accordance with the sealer and paver manufacturer's written recommendations.

3.06 Protection

- A. Protect completed work from damage due to subsequent construction activity on the site.
- B. Protect newly laid bricks/pavers at all times using panels of plywood. Panels can be advanced as work progresses; however, keep the plywood protection in areas that will be subjected to movement of materials, workers, and equipment. Take precautions in order to avoid depressions and protect brick/paver alignment until cured and ready for pedestrian or vehicle traffic.

FIGURES

[Refer to drawings.](#)

Add Section

Section 7035.B – Streetscape Improvements: Site Furnishings

Part 1 – General

1.01 Related Documents

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 Summary

- A. Section Includes:
 - 1. Benches
 - 2. Litter Receptacles
 - 3. Bicycle Racks
 - 4. Decorative Planters

1.03 Submittals

- A. Product Data: Include physical characteristics such as shape, dimensions and finish for each product.
- B. Shop Drawings: Provide installation details for each product.
- C. Samples for Verification: For the following products, show the color of the powder coat finish.
 - 1. Benches
 - 2. Litter Receptacles
 - 3. Bicycle Racks
 - 4. Decorative Planters
- D. Maintenance Data: For each product.
 - 1. Provide recommended methods for repairing damage and abrasions to the powder coat finish.

1.04 Deliver, Storage and Handling

- A. Store products in original undamaged packaging in a dry location until ready for installation.
- B. Handle powder coated products with care to prevent any damage to the finish.

1.05 Warranty

- A. All manufactured products, are warranted against defect in materials and/or workmanship and in accordance with our published specifications.
 - 1. Limited twenty-year warranty against structural failure of all steel bench frames or complete steel bench assemblies, table frames, litter receptacle frames, steel planters and all cast iron and aluminum bench supports.
 - 2. Limited three-year warranty on structural failure of all bike racks.
 - 3. Limited one-year warranty on any item not specifically discussed above.

1.06 Special Requirements

This Section is optional to redevelopment inside the Downtown Self-Supported Municipal Improvement District (SSMID) that is one-half block or greater, or as may be required by the applicable Urban Revitalization Tax Exemption (URTE) agreement, or as otherwise determined by the City Engineer. The downtown SSMID is roughly bounded by Brown St and Federal St from east to west, and the Mississippi River and 6th St from north to south. The specifications herein are meant to be applied in conjunction with The Downtown Davenport Streetscape Improvement Plan (“Plan”) (<https://www.davenportiowa.com/common/pages/DisplayFile.aspx?itemId=16863749>), which has been adopted by the City of Davenport. See the Plan for further details and requirements for site furnishings. Benches installed throughout the City of Davenport, or other site furnishings outside the downtown SSMID may also refer to portions of this Section for guidance or as directed by the City Engineer.

PART 2 – PRODUCTS

2.01 Benches

- A. Provide benches as manufactured by:
 - 1. DuMor, Inc., 138 Industrial Circle, Mifflintown, PA 17059, Phone: 1-800-598-4018, Email: sales@dumor.com, Website: www.dumor.com
 - a. Model:
 - i. 58 Series or
 - ii. 92 Series (as Backless option)
 - b. Size:
 - i. 8 foot (Overall: 98 1/4” long x 27 9/16” deep x 31 11/16” high)
 - ii. 6 foot (Overall: 98 1/4” long x 27 9/16” deep x 31 11/16” high)
 - c. Materials:
 - i. Supports: ASTM A48 Class 30 cast iron
 - 2. Substitutions: No substitutions permitted.
- B. Materials:
 - 1. Supports:

- a. End Supports shall be ASTM A48 Class 30 cast iron.
2. Seat Assembly:
 - a. Seat straps shall be manufactured from 1/4" x 1 1/2" ASTM A36 carbon steel flat bar.
 - b. Support pipes shall be manufactured from 2" (2 3/8" OD) ASTM A513 schedule 40 steel tubing.
 - c. Pipe brace shall be manufactured from 3/4" (1 1/16" OD) ASTM A500 schedule 40 steel tubing.
3. Intermediate Armrests:
 - a. Intermediate armrests shall be manufactured from ASTM A48 Class 30 cast iron.
4. Anchoring:
 - a. Stainless steel expansion anchors (1/2" x 3 3/4") provided.
- C. Dimensions:
 1. 6 foot bench
 - a. Overall: 74 1/4" long x 27 9/16" deep x 31 11/16" high.
 2. 8 foot bench:
- D. Finish:
 1. Powder Coating
 - a. All parts are processed through an 8-stage iron phosphorous wash system.
 - b. Parts are coated with a zinc-rich epoxy primer to an AVERAGE of 4-5 mils.
 - c. Parts are then finished with a top coat of TGIC-polyester powder to an AVERAGE of 4-5 mils.
 - d. Powder is cured at the powder manufacturer's specifications using combination of infrared and convection heat for approximately 20 minutes.
 - e. Finished parts shall comply with the following American Standard Test Method (ASTM) for coating and coating method: ASTM-D-523, ASTM-D-3363, ASTM-D-1737, ASTM-D-3359, ASTM-D-2794, ASTM-B-117 and ASTM-D-3451.
- E. Color: Matte black or as directed by the City Engineer.
- F. Mounting:
 1. Surface Mount

2.02 Litter Receptacles

- A. Provide trash receptacles as manufactured by:
 1. Landscape Forms, Inc., 7800 E. Michigan Ave. Kalamazoo, MI 49048, Contact: Stacy Ernst, Phone: 800-521-2546
 2. Outdoor Recreation Products, 12323 S. 230th Circle, Gretna, NE 68028, Phone: 800-747-5437, E-mail: terrim@outdoorrec.net, Website: www.outdoorrecreationproducts.com
 3. Global Industrial, Harbor Park Dr., Port Washington, NY 11050, Phone: 800-607-8520, Website: www.globalindustrial.com
 4. Or approved equal.

B. Basis-of-Design Product

1. DuMor, Inc., 138 Industrial Circle, Mifflintown, PA 17059, Phone: 800-598-4018, Email: sales@dumor.com, Website: www.dumor.com
2. Model: 87 Series
3. Size: Receptacle Body 22 Gallon
4. Cover:
 - a. Hinged cover.
 - b. Bonnet Top.
2. Liner:
 - a. Liner shall be HDPE with 22 gallon capacity.
3. Anchoring:
 - a. Stainless steel expansion anchors (1/2" x 3 3/4") provided.
 - b. Dimensions: Overall: 28" diameter x 32 7/8" high
4. Finish: Powder Coating
 - a. All parts are processed through an 8-stage iron phosphorous wash system.
 - b. Parts are coated with a zinc-rich epoxy primer to an AVERAGE of 4-5 mils.
 - c. Parts are then finished with a top coat of TGIC-polyester powder to an AVERAGE of 4-5 mils.
 - d. Powder is cured at the powder manufacturer's specifications using combination of infrared and convection heat for approximately 20 minutes.
 - e. Finished parts shall comply with the following American Standard Test Method (ASTM) for coating and coating method: ASTM-D-523, ASTM-D-3363, ASTM-D-1737, ASTM-D-3359, ASTM-D-2794, ASTM-B-117 and ASTM-D-3451.
5. Color: Black

2.03 Bicycle Racks

1. Landscape Forms, Inc., 7800 E. Michigan Ave., Kalamazoo, MI 49048, Contact: Stacy Ernst, Phone: 1-800-521-2546, Email: stacy@landscapeforms.com , Website: www.landscapeforms.com					
Model	"Ring" Bicycle Rack				
Size	Depth: 1 1/2"	Height: 27 1/4"	Width: 24 3/4"	Mounting: Embedded	Capacity: Two Bikes
Materials	<ol style="list-style-type: none"> a. Stainless steel, Type 304 ASTM A554: Outside diameter: 1.5", wall thickness: 0.120"-0.112" b. Carbon steel, ASTM A513: Outside diameter: 1.5", wall thickness: 0.120" 				
Finish - Primer	Rust inhibitor				
Finish - Topcoat	Thermosetting TGIC polyester powder coat. UV, chip, and flake resistant.				
Color	Black				

2. Madrax, 1080 Uniek Drive, Waunakee, WI 53597, Phone: 1-800-448-7931, Email: sales@madrax.com , Website: www.madrax.com					
Model	Opal Bicycle Rack				
Size	Depth: 1 5/8"	Height: 27 ¼"	Width: 24 7/8"	Mounting: Embedded	Capacity: Two Bikes
Materials	Carbon steel, ASTM A513 Electric Resistance-Welded Carbon and Alloy Steel Mechanical tubing.				
Finish - Primer	Hot Dipped Galvanized				
Finish - Topcoat	TGIC powder coat applied to 3.5 to 4.5 mils.				
Color	Black				
3. Huntco Site Furnishings, P.O. Box 10385, Portland, OR 97296-0385, Phone: 1-800-547-5909, Email: sales@huntco.com , Website: www.huntco.com					
Model	Luna				
Size	Depth: 1 5/8"	Height: 30"	Width: 28"	Mounting: Embedded	Capacity: Two Bikes
Materials	Carbon steel, ASTM A513 Electric Resistance-Welded Carbon and Alloy Steel Mechanical tubing.				
Finish - Primer	Hot Dipped Galvanized				
Finish - Topcoat	TGIC powder coating				
Color	Black				

2.04 Decorate Planters

A. Provide decorative planters as manufactured by:

1. Archpot, 508 W. Bateman Circle, Corona, CA 92880, Contact: Steph Hall Phone: 714-895-3359, Email: steph@archpot.com , Website: www.archpot.com					
Model	Fresco Round Planter				
Size	Outside Diameter: 36"	Height: 30"	Base Diameter: 33.5"		
Materials	Glass Fiber Reinforced Concrete				
Finish	Standard				
Color	Storm Grey. Alternative Finish Perma Spec Option (to match City of Davenport Branding Palette): Cobalt Blue, Deep Amber.				
2. PMC Petersen Manufacturing Co. Inc., 2471 Highway 30, Denison, IA 51442, Phone: 1-800-832-7383, Website: www.petersenmfg.com					
Model	Aurora Series Round				
Size	Outside Diameter: 36"	Height: 30"	Base Diameter: N/A		
Materials	Glass Fiber Reinforced Concrete				
Finish	Light Sandblast				
Color	Dove Gray				

3. Kay Park Recreation, 1301 Pine St., Janesville, IA 50647, Phone: 1-866-407-5971, Email: sales@kaypark.com, Website: kaypark.com		rk Recreation, 1301 Pine St., Janesville, IA 50647 Phone: 1-	
Model	Aspen Round		
Size	Outside	Height: 30"	Base Diameter:
Materials	Glass Fiber Reinforced Concrete		
Finish	Light Sandblast		
Color	Dove Gray		

- B. Substitutions: The specified products establish minimum requirements that substitutions must meet to be considered acceptable. To obtain acceptance of unspecified products, submit written requests at least 7 days before the Bid Date.

PART 3 – EXECUTION

3.01 Examination

- A. Examine areas to receive furnishings.
- B. Notify Engineer of conditions that would adversely affect installation or subsequent use.
- C. Do not begin installation until unacceptable conditions are corrected.

3.02 Installation

- A. Handle and install site furnishings according to manufacturer’s recommendations and installation instructions at locations as indicated on the Drawings.
- B. Install level
- C. Anchor securely in place.

3.03 Adjusting

- A. Finish Damage: Repair minor damages to finish in accordance with manufacturer’s instructions and as approved by Engineer
- B. Component Damage: Remove and replace damaged components that cannot be successfully repaired as determined by Engineer.

3.04 Cleaning

- A. Clean furnishing promptly after installation in accordance with manufacturer’s instructions.
- B. Do not use harsh cleaning materials or methods that could damage finish.

3.05 Protection

- A. Protect installed furnishings to ensure that, except for normal weathering, furnishings will be without damage or deterioration at time of Substantial Completion.

FIGURES

[Refer to drawings.](#)

Add Section

Section 7035.C – Streetscape Improvements: Plants, Planting & Transplanting

Part 1 – General

1.01 Related Documents

- A. Work under this section shall comply with Division 9, Section 9030 in addition to the following:
- B. In the event of a discrepancy between the plant schedule and plan drawing in the Contract Documents, the plan drawing shall govern.

1.02 Summary

- A. Section Includes:
 - 1. Street Trees
 - 2. Ground Vegetation
 - 3. Backfill Material
 - 4. Planting Soil
 - 5. Peat and Compost
 - 6. Mulch
 - 7. Staking Material

1.03 Certificates of Occupancy

- A. Landscaping shall be fully installed prior to the issuance of a Certificate of Occupancy.
- B. If seasonal conditions preclude the complete installation, a temporary Certificate of Occupancy may be issued as follows:
 - 1. For temporary Certificates of Occupancy issued between October 1 and April 30, all remaining landscape required shall be installed by the following June 1.
 - 2. For temporary certificates of occupancy issued between May 1 and September 30, all remaining landscape shall be installed by the following October 30 of the same calendar year.

PART 2 – PRODUCTS

2.01 Street Trees

- A. General

1. Plant material shall be legibly labeled as to name and size and shall be true to name as specified. During establishment period, if a plant exhibits characteristics indicating they are not true to name, the plant material will be replaced at no cost to the City.
- B. Quality
 1. Free of visible signs of disease, infestation, or physical defect at the time of planting.
 2. Appropriate for site conditions, including:
 - a. Sun and wind exposure
 - b. Air quality
 - c. Salt exposure
 - d. Expected soil moisture content
 - e. Slope
- C. Species
 1. A list of permitted tree types is available from the Department of Public Works Forestry Division.
 2. Exceptions subject to the approval of the City Engineer or Arborist.
 3. Planted trees shall be a diverse combination of permitted species, where possible.
- D. Size: Meeting the following minimum criteria at installation.
 1. Caliper: 2.0" Minimum
 - a. Measurement: Diameter at Breast Height (DBH) unless specified otherwise.
 2. Height: 8' Minimum
 - a. Measurement: Root flare to the tip of foliage unless specified otherwise.

2.02 Ground Vegetation

- A. General
 1. Plant material shall be legibly labeled as to name and size and shall be true to name as specified.
 2. During establishment period, if a plant exhibits characteristics indicating they are not true to name, the plant material will be replaced at no cost to the City.
 3. All unpaved areas of Streetscape frontage including planter areas and tree pits shall be covered by one of the following:
 - a. Shrubs
 - b. Ornamental Grasses
 - c. Ground Cover
 - d. Annuals
 - e. Perennials
- B. Quality
 1. Free of visible signs of disease, infestation, or physical defect at the time of planting.

2. Appropriate for site conditions including:
 - a. Sun and wind exposure
 - b. Air quality
 - c. Salt exposure
 - d. Expected soil moisture content.
 - e. Slope
3. Native or naturalized to the appropriate USDA plant region.
- C. Species
 1. Subject to approval by the City Engineer.
- D. Size: Meeting the following minimum criteria at installation.
 1. Deciduous Shrubs:
 - a. 3 gallon container, or
 - b. 15-18 inch ball and burlap.
 2. Evergreen Shrubs
 - a. 3 gallon container, or
 - b. 15-18 inch ball and burlap.
 3. Ornamental Grasses:
 - a. gallon container.
 4. Groundcover:
 - a. 1 gallon container and
 - b. 3 inches high by 12 inches wide.
- E. Coverage:
 1. 60% of planting bed at maturity.
 2. Annual plantings to be maintained seasonally, replanting as necessary.

2.03 Backfill Material

- A. Planting Soil.
 1. Suitability
 - a. Soil excavated from the planting pits shall generally be deemed as acceptable backfill unless designated by the City Engineer as unsuitable.
 2. Backfill material shall be mixed with one (1) part peat to five (5) parts soil.
 3. Compost may be substituted for peat requirement.
 4. Quantity and Quality
 - a. If soil quantity and/or quality is inadequate, the Contractor shall supply planting soil which shall be clean, fertile, friable with 4% to 25% organic matter.
 - b. Imported topsoil shall require prior approval by the City Engineer.
 - c. Mechanically ground or pulverized soil is not acceptable.
- B. Peat

1. Consist of a clean, black, partially decomposed vegetable matter of natural occurrence
 2. Shredded or granulated.
- C. Compost:
1. “Earth Cycle Compost” as processed by the City of Davenport Compost Facility, 2707 Railroad Street, Davenport, IA 52802, (563) 328-7225.

2.04 Mulch

A. Type

1. Ground or shredded
 - a. Cypress
 - b. Cedar
 - c. Hardwood
2. Approved by the City Engineer

B. Installation

1. Installed by the end of each work day for all plant material installed during that day.

2.05 Weed Preventer

A. Pre-Emergent Weed Control

1. Dacthal (or approved equal)
2. Apply prior to mulch installation

2.06 Soil Separator

A. Type

1. Synthetic, non-woven, water permeable geotextile.

PART 3 – EXECUTION

3.01 Tree Pit Excavation

- A. Layout plant material locations as shown on the plan(s).
 1. Relocate incorrectly placed plants at no expense to the Owner.
- B. Excavate tree pit to provide at least six (6) inches of planting soil backfill around and beneath the root system,
- C. Where conditions prevent digging a tree pit as required, obtain approval from the City Engineer to modify location and/or dimensions.
- D. Planting soil for backfilling shall be kept separate from excavated subsoil material.

3.02 Groundcover Installation

- A. Immediately prior to installation, cultivate groundcover areas to a depth of six (6) inches and grade, smooth, and uniform.

- B. Plant groundcover to within one (1) foot of tree trunks or shrubs planted in the area.
 - 1. Root crown at or slightly above the bed finish grade.
- C. After groundcover planting and prior to mulching, spread weed preventer over planting bed soil surface per manufacturer's instructions.
- D. Install mulch to a depth of three (3) inches over the entire groundcover bed.

FIGURES

[Refer to drawings.](#)

Add Section

Section 7035.D – Streetscape Improvements: Electrical System and Ornamental Lighting

Note: Work under this section shall comply with Division 7, Section 7030 in addition to the following:

Part 1 – General

1.01 Summary

- A. Section includes the following:
 - 1. Conduit
 - 2. Hand Hole
 - 3. Electrical Wiring
 - 4. Control Station
 - 5. Lamps and LEDs
 - 6. Ornamental Light Fixtures
 - 7. Poles
 - 8. Foundations

1.02 Description of Work

- A. Provide labor, materials and equipment necessary and incidental to the installation of electrical system and ornamental lighting.
- B. Workmanship and materials shall meet or exceed the applicable national, state and local codes and standards including the National Electrical Code (NEC), the National Electrical Safety Code and applicable City of Davenport supplemental specifications.
- C. Materials shall be new, complete with manufacturer's warranty. Electrical materials shall be Underwriter's Laboratory listed if a standard has been established for the type of material.

1.03 Permits

- A. Permits for the work under this section and arrangements for required inspections shall be the sole responsibility of the Contractor. This may include an electrical permit, excavation permit, and any necessary concrete permit (bond).

1.04 Submittals

- A. Product Data: Include physical characteristics such as shape, dimensions and finish for each product.
- B. Shop Drawings: Provide installation details for each product specified.

1.05 Substitutions

- A. If intended for roadway lighting, no substitutions are permitted.

1.06 Delivery, Storage and Handling

- A. Comply with Division 1 - General Provisions and Covenants.

1.07 Scheduling Conflicts

- A. Comply with Division 1 - General Provisions and Covenants.

1.08 SPECIAL REQUIREMENTS

This Section is applicable to redevelopment inside the Downtown Self-Supported Municipal Improvement District (SSMID) that is one-half block or greater, or as may be required by the applicable Urban Revitalization Tax Exemption (URTE) agreement, or as otherwise determined by the City Engineer. The downtown SSMID is roughly bounded by Brown St and Federal St from east to west, and the Mississippi River and 6th St from north to south. The specifications herein are meant to be applied in conjunction with The Downtown Davenport Streetscape Improvement Plan (“Plan”) (<https://www.davenportiowa.com/common/pages/DisplayFile.aspx?itemId=16863749>), which has been adopted by the City of Davenport. See the Plan for further details and requirements for right-of-way ornamental lighting constructed within the downtown area. Ornamental roadway lighting and electrical handholes throughout the City of Davenport shall also refer to this Section.

1.09 Measurement and Payment

- A. Measurement: Each complete functioning fixture will be counted.
- B. Payment: Payment will be at the unit price for each installed complete fixture.
- C. Includes: Unit price includes, but is not limited to, removal of existing electrical services and associated items as required, furnishing and installation of conduit, hand holes, electrical wiring, control stations, light fixtures, poles, photocell control systems, and foundations required to provide a fully operational lighting system.

PART 2 – PRODUCTS

2.01 Conduit

- A. Conduit less than 2” diameter shall not be used for this work.
- B. All conduit shall be Schedule 40 PVC behind the curb. Any conduit under the roadway or under paving bearing vehicle traffic shall be Schedule 80 PVC. High Density Polyethylene (HDPE) may be substituted in some applications (Directional Boring). The duct shall be black in color with red stripe for power use. Orange duct shall be used for low voltage, communications, or fiber installation. SDR 13.5 minimum for all installations.
- C. Conduit for the underground raceway system shall be 2” diameter, schedule 40, polyvinyl chloride (PVC) or HDPE polyethylene cable duct.
- D. Schedule 80 shall be required when conduit runs are under drives, drive approaches or areas subject to vehicle loads.
- E. A #8-THWN trace wire with an orange jacket shall be used in underground conduit runs. Connect to form a continuous run.

F. Threaded type connections and couplings shall be used with ridged and intermediate conduit. Whenever “ridged metallic conduit” is required, intermediate metal conduit shall be understood to be equivalent. Where connections are made to vibrating equipment, flexible steel conduit with appropriate fittings shall be used.

2.03 Hand Hole

A. Provide handholes as manufactured by:

1. Manufacturer: Oldcastle Infrastructure Phone: 888-950-8826, Fax: 844-204-9700, Website: www.oldcastleinfrastructure.com	Model	Duralite
	Material	Polyolefin Blend
	Wall	Straight Wall
	Collar	Some locations in turf may require an 8” concrete collar around the box to meet traffic ratings. These boxes are not to be used in roadways. They are not Heavy Duty rated for vehicle traffic.
	Performance	Tier 15
	Cover	Duralite Flush Solid to match
	Fasteners	Bolt down Hex Head Coil Thread Bolt
	Lid	“Electric” Lid Logo
	Lid Size	1212-12 - Length: 12”, Width: 12”, Height: 12” 1324-12 - Length: 12”, Width: 24”, Height: 12” 1730-18 - Length: 17”, Width: 30”, Height: 18”
2. Manufacturer: Hubbell Power Systems, Phone: 573-682-5521, Website: www.hubbell.com	Model	Quazite
	Material	Polymer Concrete
	Wall	Straight Wall
	Collar	Some locations in turf may require an 8” concrete collar around the box to meet traffic ratings. These boxes are not to be used in roadways. They are not Heavy Duty rated for vehicle traffic.
	Performance	Tier 15
	Cover	Quazite Flush Solid to match
	Fasteners	2-Bolt down Hex Head Thread Bolt with Washer
	Lid	“Electric” Lid Logo
	Lid Size	B14101512A - Length: 15”, Width: 10”, Height: 12” B14111812A - Length: 24”, Width: 13”, Height: 12” B14173018A - Length: 30”, Width: 17”, Height: 18”

3. Or approved equal.

2.04 Electrical Wiring

- A. Wiring insulation shall be type THWN or XHHW thermoplastic. Conductors shall be insulated for 600 volts unless otherwise shown.
- B. Conductors throughout the work shall be copper wire sized per the NEC for electrical current loads as designed. Conductors #8-AWG and larger shall be standard with no conductor smaller than #12-AWG to be used unless specifically noted.
- C. Feeders within the light poles to the individual luminaries shall be #10 standard THHN wire.

2.05 Control Station

- A. Lighting shall be gang operated by a Square D, Class 8903, Night-Master Lighting Contactor control station sized and fused have circuit breakers for the quantity of lighting circuits to be installed.
- B. A separate breaker powering a dedicated photo-electric control circuit with a Hand-Off-Auto test switch is required.
- C. Voltage for the Lighting controller shall be provided at 240/120 volts. Lights shall be powered at 240 volts.
- D. This circuit is required to be fed with 2 hot conductors (black, red), 1 neutral conductor (white), and one ground wire (green).
- E. Additional circuits may be required at Owner's discretion (for locations that support events. Receptacle circuit shall have a dedicated neutral wire.

2.06 Lamps and LEDS

- A. All new fixtures shall be LED basis of design .4000K light engines, drivers, etc. are to have a 5-year warranty minimum.
- B. Fixtures shall have DLC rating to meet Mid America Energy rebate requirements.
- C. LED assemblies shall meet IES LM-80 and IES LM- 79 testing requirements.

2.07 Ornamental Light Fixtures

- A. Basis of Design Product:
 - 1. Manufacturer: Holophane, 3825 Columbus Rd., Granville, OH 43023, Contact: Ronald Feigl, LC,IESNA, Phone: 515-964-4879, Email: Ronald.Feigl@holophane.com, Website: holophane.acuitybrands.com
 - 2. Model: Granville GVD3 LED
 - 3. Substitutions: No substitutions permitted when ornamental fixture is serving as roadway lighting. Non-roadway lighting ornamental lighting fixtures may differ per approved plan or submittal.
- B. Product Requirements:
 - 1. Lumiere: Holophane Granville Classic Utility LED Series GVD3
 - 2. LED Performance Package: P30 8,400 nominal lumens
 - 3. LED Color Temperature: 40K 4000K CCT
 - 4. Voltage: MVOLT Auto Sensing 120-277V 50/60HZ
 - 5. Housing Style: MS Modern Style Swing Open Design

6. Housing Color: BK Black

7. Optics: GL5 Glass, Type V
8. Trim: None
9. Finial: None
10. Trim & Finial Color: None

C. Mechanical Specifications:

1. Luminaire Housing Shall:

- a. Be heavy grade A360 cast aluminum (aluminum with <1% copper).
- b. IP55 rated housing, provides enclosure for the electrical module.
- c. Mount to slip-fitter that will accept 3" high by 2-7/8" to 3-1/8" O.D. pole tenon.
- d. Provide four uniquely designed stainless steel spring clips, enclosed in a clear polyvinyl chloride sleeve and adjusted by 1/4-20 hex-head bolts that securely cradle the prismatic acrylic refractor. The same 1/4-20 bolts also support the decorative rib and banding assembly.

2. The Finish Shall:

- a. Utilize a polyester power coat paint to ensure maximum durability
- b. Meet 5,000-hour salt spray
- c. Offer Tiger Drylac finishes that are applied by a Tiger Drylac certified facility.

D. Electrical Specifications:

1. The driver shall meet the following requirements:

- a. UL 1598, 40C, Wet Location Safety Rated
- b. A factory programmable electronic driver with 0-10V dimming control leads.
- c. LEDs shall have a minimum of 70 CRI and available in 4000K, CCT
- d. The electrical system shall be designed to meet ANSI/IEEE C62.41.2 and shall offer a 10kV/5kA surge protection, fail off, as standard with an upgradable 20kV/10kA surge protection, fail off with indicator light, option.
- e. Lumen output can be customized prior to manufacturing by way of FPDxx Options.
- f. The electrical components are mounted on an aluminum plate that is removable with minimum use of tools.

E. Optical Specifications:

1. The optical system shall meet the following requirements:

- a. IP66 rated and consist of a precisely molded thermal resistant borosilicate glass refractor and top reflector mounted within the decorative glass optic.
- b. The upper portion of this system shall incorporate a series of reflecting prisms that redirects over 50% of the upward light into the controlling refractor while allowing a soft upright component to define the traditional acorn shape.

- c. The top reflector shall redirect over 50% of the upward light into the controlling refractor while allowing a soft up-light component to define the traditional acorn shape of the luminaire.
 - d. The lower refractor shall use precisely molded prisms to maximize the pole spacing while maintaining uniform illuminance.
 - e. The lower portion uses precisely molded refracting prisms to control the distribution of light to maximize utilization, uniformity and luminaire spacing
 - f. Optical assembly shall be IES Type 3 distribution and will minimize backlight, while illuminating sidewalks.
 - g. Lunar Optics shielding available for asymmetric and symmetric distributions.
- F. Control Options:
 1. The control options shall include, but not limited to, the following:
 - a. Button-style photo control kits specified to match voltage requirements and colored to match housing finish.
- G. Certification and Standards:
 1. Luminaire shall be UL or CSA listed.
 2. Suitable for operation in an ambient temperature up to 40°C / 105°F per UL or CSA certification.
 3. Fixture shall be DLC Listed. Minimum Power Factor of 90% at full load. LED Driver THD shall be less than 20% at full load per ANSI C82.77.2002.
- H. Warranty: Minimum 5-year limited.
- I. Optical Assembly: Shall meet the minimum material and physical properties as follows:
 1. Held in place by four uniquely designed stainless steel spring clips enclosed in a clear polyvinyl chloride sleeve.
 2. Three optical shields shall be field installable
 3. Acrylic and Polycarbonate is not acceptable.
- J. Luminaire Housing: shall meet the minimum material and physical properties as follows:
 1. A decorative cast aluminum luminaire housing shall cradle the optical assembly and provide an enclosure for the plug-in electrical module. A three station terminal block will accept #14 through #2 wires and is prewired to one half of the plug assembly that connects to the removable electric module. A slipfitter will accept a 3-inch high by 2-7/8 Inch to 3-1/8 Inch O.D. pipe tenon.
 2. A decorative cast aluminum housing door shall contain the electronic components and is held in place by a hinge and latch. The housing door has a hinge and latch mounted to it to allow for tool-less luminaire entry.
- K. Total Watts Consumed shall be 61 watts or less, producing a minimum of 138 lumens/watt.
- L. Color Rendering Index (CRI): 70 minimum.
- M. Correlated Color Temperature (CCT):4000K Nominal
 1. Chromacity Requirements:
 - a. Luminaire Standard Color: White

2. Colors shall conform to the following color regions based on the 1931 CIE chromacity diagram:

NOMINAL CORRELATED COLOR TEMPERATURE

Manufacturer-Rated Nominal	Allowable LM-79 Chromacity Values	
	Measured CCT (K)	Measured Duv
4000	3710 to 4260	-0.005 to 0.007

- N. BUG Rating: shall be B=3, U=5, G=2 or better
- O. Lumen maintenance @ 100,000 Hrs. of operation shall be 0.89 or greater.
- P. Driver and LEDs: 100,000 Hrs. life expectancy minimum.
- Q. Lighting Performance:
 - 1. Lighting design shall provide 1FC, Ave., Maintained. 1.8 FC Max, 0.5 FC Min., Max to Min ration shall not exceed 3.6:1, Ave. to Min. ration shall not exceed 2.0:1.
 - 2. Performance based on 68' wide roadway and sidewalk. 50' on center, staggered spacing on 12' pole. LLF=.90. LM80/TM21 shall be defined as L75 at 100,000 hours of operation @25C.

2.08 Poles

- A. Basis of Design Product:
 - 1. Manufacturer: Holophane, 3825 Columbus Rd., Granville, OH 43023, Contact: Ronald Feigl, LC,IESNA, Phone: 515-964-4879, Email: Ronald.Feigl@holophane.com, Website: holophane.acuitybrands.com
 - 2. Model: Burlington
 - 3. Substitutions: No substitutions permitted when ornamental pole is serving as roadway lighting. Non-roadway ornamental lighting poles may differ per approved plan or submittal.
- B. Product Requirements:
 - 1. Post: Holophane Burlington (BL)
 - 2. Material: Aluminum (A)
 - 3. Height: 12' (12)
 - 4. Shaft Style: 4" Diameter, Smooth, .25 Wall (S4J)
 - 5. Base: 11" Octagonal (TMP-86)
 - 6. Tenon: 3" O.D. x 3" LG.(PO7)
 - 7. Mounting: Anchor bolts, Galvanized Steel (ABG)
 - 8. Finish: Black (BK)
 - 9. Options: Epoxy Primer Coat with Durable polyester powder black finish coat.
- C. Description: The lighting post shall be all aluminum, one-piece construction, with a classic tapered and fluted base design.
- D. Materials:
 - 1. The base and fluted tapered cast shaft shall be heavy wall, cast aluminum produced from certified ASTM 356.1 ingot per ASTM B-179-95a or ASTM B26-95.

2. The straight shafts shall be extruded from aluminum, ASTM 6061 alloy, heat treated to a T6 temper. The tapered shaft shall be extruded from aluminum, ASTM 6063 alloy, spun to a tapered shape, then heat treated to a T6 temper.
 3. All hardware shall be tamper resistant stainless steel. Anchor bolts to be completely hot dip galvanized.
- E. Construction:
1. The shaft shall be double welded to the base casting and shipped as one piece for maximum structural integrity.
 2. The shaft shall be welded inside the base casting at the top of the access door, and externally where the shaft exits the base.
 3. All welding shall be per ANSI/AWS
- F. Dimensions:
1. The post shall be 12'- 0" in height with a 11" octagonal base.
 2. The shaft diameter shall be 4".
 3. At the top of the post, an integral tenon with a transitional donut shall be provided for luminaire mounting.
- G. Installation:
1. The post shall be provided with four, hot dip galvanized L-type anchor bolts.
 2. A door shall be provided in the base for anchorage and wiring access.
 3. A grounding screw shall be provided inside the base opposite the door.

2.09 Foundations

- A. Light foundations shall be 3500 PSI Portland cement concrete
1. Diameter or Width: 24" or as indicated on the plan set.
 2. Depth: 48" below finished grade minimum.
 3. Rebar Cage
- B. A 5/8 inch diameter by 10-foot long, copper ground rod shall be installed through the centerline of the foundation with a 3 inches of projection required at the top.
- C. Use manufacturer provided template furnished with the poles to set anchor bolts.
- D. Foundation shall be centered on the midpoint of the brick banding or as indicated in the plan set. Off centered foundations are not acceptable.
- E. Pole shall be centered on concrete base.

PART 3 - EXECUTION

3.01 Removals

- A. Remove electrical services and associated items as required and as shown on the plan (s). Protect adjacent areas before, during and following removal operations. Leave area clean and ready for further construction activities.
- B. Abandoned conduit shall be removed to and capped behind or below the finished surface or structure. Existing equipment not reused or retained by the Owner shall be removed from the site by the Contractor. If encountered abandoned vaults or voids shall be brought to the attention to the City of Davenport.

3.02 Foundations

- E. The 24-inch diameter by 48' deep concrete foundations for the lights shall be located as indicated on the plan (s) shall be poured in place. Precast foundations are not allowed.
- F. A 5/8-inch diameter by 10-foot long, copper ground rod shall be installed through the centerline of the foundation with three (3) inches of projection required at the top.
- G. Reinforcing, anchor bolts and conduit shall be secured in place.

3.03 Underground Raceway

- A. All foundations shall be connected via a continuous underground raceway system.
- B. Trenching for the conduit runs shall be made in a direct line between adjacent foundations and service boxes. The back of curb setback shall be maintained as established by the foundation placement.
 - 1. Conduit shall be buried to a minimum depth of eighteen (18) inches.
 - 2. The trench shall be free of rock or other material which could be damage conduit.
 - 3. Backfill material shall consist of clean native material placed and mechanically compacted in a minimum of two lifts.
 - 4. Pushing or boring shall be used beneath improved areas – drives, walks and streets.
- C. If sidewalk is removed for construction, or at the discretion of City staff, a raceway system for power to lighting and a separate 2" raceway for technology shall be installed.
 - 1. Raceways shall be adjacent to the back of curb (no closer than 5" and no farther than 12").
 - 2. Each system shall have a separate 13 x 24 Duralite box located at each end of the block and one located near the middle of the block.
 - 3. A pull string shall be left in all empty raceways.

3.04 Service Boxes

- A. Hand hole service/pull boxes are required at any 90 degree direction change in the conduit run, midway on any run exceeding 200 feet between foundations and on each side of any street, alley or approach crossing.
- B. Service boxes shall be install flush with surrounding grades and shall be provided with a minimum three (3) foot deep coarse aggregate French drain. All lids of the service boxes shall be marked with either "Electric" or "Low Voltage."
- C. A 12" x 12" service box shall be placed at the base of each light pole. Connections shall be made inside this box in lieu of inside of the pole base.

3.05 Operation

- A. LED fixtures shall be provided for operation at 120 to 277 volt
- B. Each feed wire within the pole shall be fused with a BUSS IDEAL 65-U type fuse holder and a KTK type fuse.

3.06 Grounding

- A. A grounding conductor shall be run with the current carrying conductors.
 - 1. Conduit shall not be used as the sole grounding means.
 - 2. The pole shall be bonded to this conductor as well as the ground rod.
- B. A 5/8 inch diameter by 10-foot long, copper ground rod shall be installed through the centerline of the foundation with three (3) inches of projection required at the top

FIGURES

[Refer to drawings.](#)

7040 – Pavement Rehabilitation

PART 1 – GENERAL

1.07 Special Requirements

1. Any joint formed between newly placed HMA against PCC shall be sealed. This includes, but is not limited to, joints at the face of curb, face of curb flag, boxouts or patches. Joint sealing shall be in accordance with 7040, 1.08, D (Crack and Joint Sealing, Hot Pour) although sawing and/or routing are not required. The cost of this sealing is incidental to the bid item used for placing the final lift of HMA.

1.08 Measurement and Payment

G. Milling

3. Includes:

ADD the following:

Include edge sections that cannot be reached by the milling machine.

PART 3 – EXECUTION

3.01 General

B. DELETE.

C. ADD the following:

Partial width full depth patches by approval of the Engineer.

D. ADD the following:

Unless otherwise directed by the Engineer.

ADD the following:

- F. After milling has taken place, the Engineer or his representative shall determine if full depth patching or other repairs to the existing pavement are required. If patching or repairs are not required, surface course shall be placed on a street within five (5) working days of milling. If a street does require full depth patching or repairs, procedures to correct the problem(s) shall commence within three (3) working days after milling. Once repairs have started, the Contractor shall continuously work on repairs until completion. If work ceases on repairs for any reason other than the weather, the Contractor shall be charged double working days on the program until the repairs are complete. If patching or repairs are the controlling item, the surface course shall be placed within five (5) working days of the completion of any repairs. The construction of sidewalks/ handicap ramps, boxouts shall begin within five (5) working days after street resurfacing and completed in a timely manner. No traffic shall be allowed on milled surface unless specifically allowed in the Traffic Control Plan. If the above noted procedures are not followed, liquidated damages of \$500/ day shall be charged to the Contractor for each working day a street is not in compliance.”
- H. Pavement type for all Full Depth Patches must be approved by City Engineer.
- I. Temporary PCC partial depth patching may be allowed between November 1 and April

30th with approval by the City Engineer. Temporary patches shall be a minimum thickness of 4" Standard Patch. Contractor to maintain and correct deficiencies in the patch(es) within 24-hours of being notified, or the work will be performed and the costs incurred by the Contractor. Partial Depth patches shall be removed and replaced within 30-days of notification by the City Engineer, or the work will be performed and the costs incurred by the Contractor.

3.02 Full Depth Patching

A. Pavement Removal:

ADD the following:

3. If patching is due to trench work, remove at least 1 foot from edge of trench to edge of pavement.

C. Placing PCC Patches:

4. Placing, Consolidating and Finishing the Concrete:

- h. ADD the following:

Broom or drag finish if adjacent pavement texture is non-existent.

3.05 Milling

ADD the following:

- I. Thoroughly clean milled surface to allow the Engineer to properly mark out patching areas.
- J. Saw cut milled edges to provide a clean vertical face along curb line and headers.

Figures

REPLACE Figure 7040.103 with [Figure DAV7040.103.031324](#)

REPLACE [Figure 22-12-16 DAV7040-106](#) with Figure [DAV7040.106.031324](#)

ADD the following:

Section 7100 – Brick Streets

PART 1 – GENERAL

1.01 Section Includes

- A. Subgrade Preparation
- B. Placement of Aggregate
- C. Placement of Bedding Course
- D. Placement of Bricks
- E. Quality Control
- F. Protection of the Pavement

1.02 Description of Work

Rehabilitate and patch existing brick pavement. All brick streets identified as historic by the list maintained by the City Engineer shall be paved or patched only with historic bricks.

1.03 Submittals

Comply with Division 1 – General provisions and Covenants.

1.04 Substitutions

Comply with Division 1 – General provisions and Covenants.

1.05 Delivery, Storage and Handling

Comply with Division 1 – General provisions and Covenants.

1.06 Scheduling and Conflicts

Comply with Division 1 – General provisions and Covenants.

1.07 Special Requirements

Comply with Section 7040, PCC Full Depth Patching, as applicable.

1.08 Measurement and Payment

- A. Class 10, Class 12 or Class 13 Excavation: Comply with Section 2010, 1.08, E.
- B. Below Grade Excavation (Core Out): Comply with Section 2010, 1.08, F.
- C. Subbase: Comply with Section 2010, 1.08, I.
- D. Brick Paving, Removal:
 - 1. Measurement: Measurement will be in square yards for the area of brick pavement removed. The area of manholes, intakes or other fixtures in the pavement will not be deducted from the measured area.

2. Payment: Payment will be made at the unit price per square yard of removed bricks.
 3. Includes: Unit price includes, but is not limited to, removing, hauling and disposal of unneeded materials, such as HMA or PCC patches, cleaning salvaged bricks from both project site and Jurisdiction’s stockpile, transporting bricks to the Jurisdiction’s stockpile and protecting bricks from theft or damage.
- E. Brick Paving, Placement:
1. Measurement: Measurement will be in square yards for the area of brick pavement replaced. The area of manholes, intakes or other fixtures in the pavement will not be deducted from the measured area.
 2. Payment: Payment will be made at the unit price per square yard of placed salvaged brick.
 3. Includes: Unit price includes, but is not limited to, cleaning bricks from stockpile, transporting cleaned bricks from stockpile, placing cleaned bricks from either the Jurisdiction’s stockpile or on-site stockpile, compaction, furnishing and installation of the sand surface and furnishing and installing sand-cement fill work.

PART 2 – PRODUCTS

2.01 Brick

- A. Clay or concrete brick
- B. Salvaged
- C. Historical

2.02 Sand

- A. Natural, clean, free draining and well-graded, with the following gradation:

Sieve	Percent Passing
No. 4	100
No. 100	5

2.03 Aggregate

- A. Unless otherwise specified in the contract documents, use a mixture of coarse and fine aggregate complying with Iowa DOT Section 4120, Gradation No. 11 in the Aggregate Gradation Table.

PART 3 – EXECUTION

3.01 General

- A. Conduct all operations to minimize inconvenience to traffic. Confine operations to

- one traffic lane, unless the road is to be closed to traffic. Minor encroachment into the adjacent lane, will be acceptable with the use of a flagger according to MUTCD.
- B. Construct brick patches to the dimensions specified in the contract documents or as marked by the Engineer in the field.
 - C. Remove and dispose of materials not designated for salvage.
 - D. Restore the area outside the pavement by placing and compacting backfill material, placing topsoil, and sodding or seeding as specified in the contract documents.
 - E. If patch area is located on a Historic Brick Street, use only historic/salvaged bricks.

3.02 Pavement Removal

- A. Remove all layers of existing pavement materials within the patch area.
- B. Carefully remove and store the existing brick pavers. Bricks broken by the contractor due to carelessness or lost due to theft will be replaced at the contractor's expense.
- C. If a sound PCC subbase is encountered, remove according to Section 7040. Unless otherwise specified in the contract documents, this item will be paid for as extra work.
- D. Protect pavement from heavy construction traffic, including trucks, skid steers, loaders, and all tracked vehicles. Replace any additional areas damaged by the contractor at no expense to the Jurisdiction.

3.03 Restoring Subgrade or Subbase

- A. Where fill materials are required, compact materials to 95% of maximum Modified Proctor Density.
- B. Excavate 8 inches below the bottom of the sand layer. Place and compact new subbase material as required to bring the subbase to the bottom of the sand layer of the surrounding pavement. Correct unauthorized over-excavation at no additional cost to the Jurisdiction.
- C. Compact the exposed subgrade or subbase with a plate-type compactor to 95% Standard Proctor Density.
- D. When unstable material or excessive moisture is encountered, the Engineer may order removal and replacement of the unstable material.
 - 1. Remove existing unstable subgrade or subbase, or both, to the depth directed by the Engineer.
 - 2. Place and compact new subbase material as required to bring the subbase to the bottom of the sand layer of the surrounding pavement.
 - 3. If surrounding subbase is PCC, replace as directed by the Engineer.

3.04 Placing Brick Patches

- A. Fill and lightly re-grade any areas damaged by erosion, ponding or traffic compaction prior to placing the bricks.
- B. Place a 1 inch layer of sand evenly over the subbase material and screed to the proper grade. Do not compact, walk on, or otherwise disturb the sand after it has been screeded, and before the bricks are placed.
- C. Install the bricks $\frac{1}{4}$ - $\frac{1}{2}$ inch above finish grade. Place them closely together, without

- any tilt.
- D. Match the existing pattern and cut brick as required for edge fitting.
- E. Where gaps are less than 1-5/8 inch, fill with 3 parts sand, 1 part cement (dry) mixture.
- F. Vibrate with a minimum of three passes with a small plate vibrator with a minimum of 3,500 pounds centrifugal compaction force.
- G. Broom a 3-to-1 sand/cement mixture over the surface and vibrate the area with two additional passes.
- H. Remove excess mixture.

3.05 Quality Control

- A. Ensure no greater than 1/8-inch difference in height between adjacent pavers. Remove and relay any brick out of compliance.
- B. Maintain surface elevation within ¼ - ½ inch above adjacent drainage inlets, gutters and other appurtenances.

3.06 Curb and Gutter Removal

Follow Section 7040 for curb and gutter removal.

END OF DIVISION

DIVISION 8 – TRAFFIC CONTROL

Section 8010 – Traffic Signals

PART 1 – GENERAL

1.08 MEASUREMENT AND PAYMENT

A. Traffic Signal:

DELETE and ADD the following:

3. Includes: Lump sum price includes, but is not limited to, furnishing and installing all pole foundations, poles, wiring, conduit, heads, signs, video detection equipment, traffic signal control equipment (including pedestrian equipment), traffic signal controller and cabinet, electric service, uninterruptible power supply battery backup system, emergency vehicle preemption, and associated appurtenances for a complete, fully operational installation.

ADD the following:

D. Traffic Signal Pole and Foundation:

1. Measurement: Each type, height, and length of mast arm for a traffic signal pole will be counted.
2. Payment: Payment will be the bid unit price for each type, height, and length of mast arm for a traffic signal pole and foundation.
3. Includes: Unit price includes, but is not limited to, furnishing and installation of foundation, traffic signal pole, mast arm, anchor bolts, hardware, wiring within the pole and mast arm, excavation and backfill.

ADD the following:

E. Combination Street Lighting/Signal Pole and Foundation:

1. Measurement: Each type, height, and length of mast arm for a combination street lighting/signal pole and foundation will be counted.
2. Payment: Payment will be the bid unit price for each type, height, and length of mast arm for a combination street lighting/signal pole and foundation.
3. Includes: Unit price includes, but is not limited to, furnishing and installation of foundation, traffic signal pole, mast arm, luminaire, luminaire arm, anchor bolts, hardware, wiring within the pole and mast arm, excavation and backfill.

ADD the following:

F. Traffic Signal Pedestal Pole and Foundation:

1. Measurement: Each type, and height of traffic signal pedestal pole and foundation will be counted.
2. Payment: Payment will be the bid unit price for each type and height of traffic signal pedestal pole and foundation.
3. Includes: Unit price includes, but is not limited to, furnishing and installation of foundation, pedestal pole, anchor bolts, hardware, wiring within the pole, excavation and backfill.

ADD the following:

G. Pedestrian Pushbutton Pole and Footing:

1. Measurement: Each pedestrian pushbutton pole and footing will be counted.
2. Payment: Payment will be the bid unit price for each pedestrian pushbutton pole and footing installed.
3. Includes: Unit price includes, but is not limited to, furnishing and installation of the pole, footing, anchor bolts, hardware, wiring within the pole, excavation and backfill.

ADD the following:

H. Controller, Cabinet, and Foundation:

1. Measurement: Each cabinet with controller and foundation will be counted.
2. Payment: Payment will be the bid unit price for each cabinet with controller and foundation installed.
3. Includes: Unit price includes, but is not limited to, furnishing and installation of the cabinet on a concrete foundation, controller, uninterruptible power supply battery backup system, emergency vehicle preemption interface and software, components, wiring, grounding, connections and terminations for internal components, removal of existing controller and cabinet and if required, salvaging and delivery of identified items to City Public Works building on 46th Street, for a fully functional traffic signal controller.

ADD the following:

I. Video Camera:

1. Measurement: Each video camera installed will be counted.
2. Payment: Payment will be the bid unit price for each video camera installed.
3. Includes: Unit price includes, but is not limited to, furnishing and installation of video camera, wiring to controller cabinet, and hardware.

ADD the following:

J. Emergency Vehicle Preemption Detector:

1. Measurement: Each emergency vehicle preemption detector installed will be counted.

2. Payment: Payment will be the bid unit price for each emergency vehicle preemption detector installed.
3. Includes: Unit price includes, but is not limited to, furnishing and installation of emergency vehicle preemption detector, cable, and hardware.

ADD the following:

K. Conduit and Wiring, Trenched:

1. Measurement: Each type and size and conduit will be measured in linear feet, from face of structure to face of structure. Conduit, wiring, or cabling within structures will not be measured.
2. Payment: Payment will be the bid unit price per linear foot of conduit installed.
3. Includes: Unit price includes, but is not limited to, furnishing and installation of conduit, connections, fittings, all wiring and cable contained within the conduit, trenching, bedding and backfill.

ADD the following:

L. Conduit and Wiring, Trenchless:

1. Measurement: Each type and size and conduit installed by trenchless methods will be measured in linear feet. Conduit, wiring, or cabling within structures will not be measured.
2. Payment: Payment will be the bid unit price per linear foot of conduit installed.
3. Includes: Unit price includes, but is not limited to, furnishing and installation of conduit, trenchless installation materials and equipment, pit excavation, connections, fittings, all wiring and cable contained within the conduit, bedding and backfill.

ADD the following:

M. Handhole:

1. Measurement: Each type and size of handhole will be counted.
2. Payment: Payment will be the bid unit price for each type and size of handhole installed.
3. Includes: Unit price includes, but is not limited to, furnishing each type of handhole, excavation, installation, placing bedding and backfill, backfill compaction, casting, core drilled and sealed conduit, connections and grounding and bonding.

ADD the following:

N. Vehicle Traffic Signal Heads:

1. Measurement: Each 3-section, 4-section, and 5-section traffic signal head will be counted.
2. Payment: Payment will be the bid unit price for each 3-section, 4-section, and 5-

section traffic signal head installed.

3. Includes: Unit price includes, but is not limited to, traffic signal lenses, housing, visors, terminal block, backplates, mounting hardware, LED Module, and wiring within the mast arm and pole.

ADD the following:

O. Pedestrian Traffic Signal Head Assembly:

1. Measurement: Each pedestrian traffic signal head assembly will be counted.
2. Payment: Payment will be the bid unit price for each pedestrian traffic signal head assembly installed.
3. Includes: Unit price includes, but is not limited to, housing, visors, LED Module, mounting hardware, and wiring within the mast arm and pole.

ADD the following:

P. Pedestrian Push Button Detector:

1. Measurement: Each pedestrian push button detector assembly will be counted.
2. Payment: Payment will be the bid unit price for each push button detector assembly installed.
3. Includes: Unit price includes, but is not limited to, furnishing and installation of the accessible pedestrian signal push button station, housing, audible and vibrotactile features, voice message, speaker, push button, switch, sign, hardware, and wiring within the pole.

PART 2 – PRODUCTS

2.04 Cabinet and Controller

DELETE and ADD the following:

- A. Controller, Cabinet, and Auxiliary Equipment: Controllers and Cabinets shall be Econolite TS2 compatible with existing City of Davenport equipment and comply with the latest edition of NEMA TS2 standards.

DELETE and ADD the following:

- C. Emergency Vehicle Preemption System: Preemption shall be GTT or Opticom 721 or 722 EVP detectors compatible with existing City of Davenport equipment.

2.05 Poles, Heads, and Signs

A. Vehicle Traffic Signal Head Assembly:

6. Backplate:

DELETE and ADD the following:

- c. Provide high visibility backplates with 1 to 3-inch yellow reflective border. This can be done by either adding retroreflective tape to the backplate or providing a backplate with a retroreflective border incorporated in the material.

C. Traffic Signal Poles and Mast Arms:

1. General:

DELETE and ADD the following:

- d. Unless a transformer base is specified, poles shall have a 6 inch by 16 inch handhole in the pole shaft for cable access. Provide a cover for the handhole. Secure the cover to the base with simple tools. Use corrosion resistant hardware.

DELETE and ADD the following:

- f. Where a combination street lighting/signal pole is specified in the contract documents, luminaire mounting height shall be 35 feet unless otherwise specified. Ensure the luminaire arm is mounted in the same vertical plane as the signal arm unless otherwise specified. Use a luminaire arm of the single member tapered type. Fabricate the pole with a minimum 4 inch by 6 inch handhole and cover located opposite the signal mast arm.

ADD the following:

- j. For street lighting on signal poles:
 - 1) LED luminaires shall be cobra head style, 250 W equivalent LEDs with heavy duty aluminum housing.
 - 2) Lamps shall be Type II, urban distribution, unless otherwise specified in contract documents.
 - 3) Luminaire housing shall consist of single piece aluminum casting with integral slipfitter for two-inch bracket mounting.
 - 4) Slipfitter shall be arranged to accommodate a two-inch standard pipe bracket
 - i. shall consist of bracket clamps
 - ii. shall provide for vertical adjustment and horizontal leveling of the luminaire
 - iii. A weatherproof, hinged access door shall be provided for quick access to the terminal block and mounting arrangement
 - iv. All exposed metal parts shall be made from non-ferrous metal or stainless steel

END OF DIVISION

Section 8020 – Pavement Markings

PART 1 – GENERAL

1.01 Section Includes

ADD the following:

- G. Thermoplastic Reflectorized Pavement Markings, Symbols and Legends

1.03 Submittals

ADD the following:

- C. Furnish a certificate from the thermoplastic manufacturer, certifying that such a contractor has functional, appropriate equipment to install thermoplastic pavement marking materials
- D. Provide proof of successful installation at least two years old, covering a minimum of 50,000 lineal feet with the thermoplastic material to be used on this project
- E. Submit manufacturer's certification with typical results of tests for all special requirements.

1.08 Measurement and Payment

A. General:

ADD the following:

- 1. Poured, extruded or sprayed lines will also be measured in stations based upon a single 4-inch width.

ADD the following:

O. Thermoplastic Pavement Markings:

- 1. Measurement: Each type of thermoplastic pavement marking will be measured in stations.
- 2. Payment: Payment will be made at the unit price for each type of thermoplastic pavement markings.
- 3. Includes: Unit price includes, but is not limited to, layout, surface preparation and furnishing and placing thermoplastic pavement markings with drop-on glass beads and primer, if necessary. Removal of existing markings is included as a separate bid item in the plans and paid for at the contract unit price.

P. Thermoplastic Pavement Markings, Symbols and Legends:

- 1. Measurement: Each type of thermoplastic pavement marking will be counted.
- 2. Payment: Payment will be made at the unit price for each type of thermoplastic pavement symbol and legend.
- 3. Includes: Unit price includes, but is not limited to, layout, surface preparation and furnishing and placing thermoplastic pavement markings with drop-on

glass beads and primer, if necessary. Removal of existing markings is included as a separate bid item in the plans and paid for at the contract unit price.

Q. Durable Pavement Markings, Symbols and Legends:

1. Measurement: Each type of durable pavement marking symbol or legend will be counted.
2. Payment: Payment will be made at the unit price for each type of durable pavement marking symbol or legend.
3. Includes: Unit price includes, but is not limited to, layout, surface preparation and furnishing and placing durable pavement markings with drop-on glass beads and primer, if necessary. Removal of existing markings is included as a separate bid item in the plans and paid for at the contract unit price.

PART 2 – PRODUCTS

2.01 Materials

B. Pavement marking materials include:

ADD the following:

11. White and Yellow ReflectORIZED Thermoplastic:

- a. Ensure the material is free from all skins, dirt and foreign objects
- b. Use binder with either hydrocarbon-based resin or alkyd-based resin, as shown in the contract documents.
- c. Uniformly disperse the pigment, beads and filler in the binder resin.
- d. Composition Requirements:

% by Weight

<u>Component</u>	<u>White</u>	<u>Yellow</u>
Binder	17.0 Min.	17.0 Min.
Titanium Dioxide	10.0 Min.	-
Glass Beads	20.0 Min.	20.0 Min.
Calcium Carbonate & Inert Fillers	49.0 Min.	**
Yellow Pigments	---	**

** Amount and type of yellow pigment, calcium carbonate and inert fillers shall be at the option of the manufacturer, providing the other composition requirements of this specification are met.

Note: Components specifically formulated for application at temperatures greater than 400 degrees F true*; and show no significant breakdown, or deterioration at a true temperature of 475 degrees Fahrenheit.

(*True temperature as referenced above is measured with high precision laboratory grade equipment.)

- e. Physical Properties:
 - 1) Colors to follow MUTCD and contract documents.
 - 2) Drying Time: When installed on pavement at air temperature of 70 degrees F, and in thickness between 1/8 inch and 3/16 inch, the thermoplastic material shall be completely solid and shall show no damaging effect from traffic after 10 minutes.
 - 3) Color Retention: The thermoplastic material shall not change color during the warranty period.
 - 4) Yellowness Index: White thermoplastic material shall not exceed a yellowness index of 0.12 when tested in accordance with AASHTO Designation T 250.
 - 5) Softening Point: The thermoplastic material shall have a softening point of not less than 194 degrees Fahrenheit true when tested in accordance with ASTM E 28.
 - 6) Specific Gravity: The specific gravity of the thermoplastic material as determined by a water displacement method at 25 degrees Celsius shall be between 1.8 and 2.2 (referred to water at 25 degrees Celsius true).
 - 7) Fumes: The thermoplastic material shall not exude fumes, which are toxic or obnoxious or injurious to persons or property when it is heated during applications.
 - f. Label each package with the color of the material, name of the manufacturer, date of manufacture, batch number, type of material (alkyd or hydrocarbon), net weight of contents, and the temperature to which the material will be heated for application.
- 12. Glass beads (Pre-mix and Drop-on)
 - a. Provide glass beads that comply with Iowa DOT Section 4184.
 - 13. Primer, if required.
 - a. Recommended by the manufacturer.

PART 3 – EXECUTION

3.01 Equipment

B. Pavement Marking Equipment:

ADD the following:

- 7. Melting kettle capable of heating the thermoplastic material to its

- recommended application temperature without scorching and capable of maintaining that temperature.
- a. A heat transfer medium with a flame that does not come in direct contact with the material container surface.
 - b. A temperature gauge visible on the outside of the kettle to indicate the temperature of the thermoplastic material.
 - c. A continuous mixer or agitator capable of thoroughly mixing the material at such a rate as to maintain homogeneity of material and uniformity of temperature throughout
8. Thermoplastic Dispensing Devices capable of applying molten thermoplastic material at the temperature recommended by the thermoplastic manufacturer in lines from 4 inches to 12 inches wide at a 125 mils minimum thickness.
 - a. Extrusion type dispensing devices which deposit a mass of molten thermoplastic on the pavement surface where it is immediately shaped to the specified width and thickness.
 - b. A visible temperature gauge to allow monitoring of the thermoplastic material near the point of deposition.
 9. Glass Beads Dispenser equipped with a drop-on glass bead dispenser capable of dispensing beads immediately after the molten material is applied.

3.02 Construction

A. General:

ADD the following:

3. a-e: apply to thermoplastic pavement markings as well.
6. For all new pavement surfaces:
 - a. Verify with the engineer whether to use waterborne or durable paint on new PCC pavement for center lines, edge lines, and solid or dashed lane lines.
 - b. Verify with the engineer whether to use waterborne paint or thermoplastic on new HMA pavement for center lines, edge lines, and solid or dashed lane lines.
 - c. Apply durable paint on new PCC pavement for crosswalks, stop bars, channelizing lines, dotted lines, yield lines, sloped curbs, median noses, and all symbols or legends.
 - d. Apply thermoplastic to new HMA pavement for crosswalks, stop bars, channelizing lines, dotted lines, yield lines, sloped curbs, median noses, and all symbols or legends.

B. Surface Preparation:

ADD the following:

5. For thermoplastic markings,
 - a. Even if the pavement is visibly dry, subsurface moisture may be present in amounts sufficient to affect bonding. To test for dryness, lay a 3 to 6 foot section of tar paper on the pavement and apply molten

thermoplastic on top. After 30 seconds, lift the paper and check for moisture on the bottom of the paper. If the paper is dripping wet, wait until the pavement has dried before applying the thermoplastic. If the paper shows only a damp spot, proceed with the thermoplastic application.

- b. Remove existing pavement markings, whether permanent or temporary, that would prevent a mechanical bond between the thermoplastic and the pavement.
 - 1) Sand blast or use another method that is approved by the Engineer.

I. Markings Obliterated During Construction

ADD the following:

4. Maintain permanent pavement markings in good condition prior to the completion of the project, and for 90 calendar days after placement, and reconstruct, if necessary. The condition of the marking will be evaluated by the Engineer at that time.
5. If more than 10 percent of any 2,000-foot section of marking fails during this 90-day period for any reason except abrasion at private entrances or within intersections, repair or replace those sections, at the Contractor's expense, prior to final acceptance. Transverse lines and symbols will be evaluated individually.
 - a. Failure of the marking will be rated on the basis of the percentage of material remaining on the pavement at the end of the 90-day period. This will be the percentage of the area in which the substrate is not exposed.

ADD the Following:

L. Thermoplastic Markings:

1. Extrude or hot-spray the thermoplastic marking material onto the pavement surface.
 - a. Ensure that the pavement marking have well defined edges and are free of waviness,
 - b. Check that they have a minimum thickness of 90 mils if extruded or 60 mils if hot-sprayed
 - 1) The thickness will be measured as a wet film, except the Engineer may measure cured film by placing a tape or other bond breaker prior to placing the thermoplastic material then removing a section of cured line and measuring thickness.
2. Temperature Limitations.
 - a. Place the thermoplastic markings when the pavement surface is at least 55°F and the ambient temperature is 49°F and rising. Determine the pavement surface temperature and air temperature before the start of each day of marking operation and at any other time deemed necessary by the Engineer.

- b. Apply the thermoplastic at a temperature of 400-425°F, depending on the manufacturer's recommendation.
 - c. Check the temperature of the thermoplastic material at the point of deposition with a calibrated thermometer at:
 - 1) the beginning of each day's marking,
 - 2) after material is added to the dispensing device,
 - 3) after delays in the marking operation, and
 - 4) any time deemed necessary by the Engineer.
 - d. Do not heat alkyd thermoplastic material above 435°F.
 - e. Do not heat hydrocarbon thermoplastic material above 450°F.
 - f. Only heat the quantity of thermoplastic that can be used within 4 hours.
 - g. Do not heat any thermoplastic material for more than 4 hours at the maximum application temperature, including initial heating.
 - h. Do not reheat more than two times.
 - i. Materials subjected to the above conditions will be rejected.
 3. Check adhesion to the pavement surface with a stiff putty knife or similar instrument. The marking should not be removed from a concrete surface. The marking may be removed from a bituminous surface; however, the bituminous substrate will be stuck to the thermoplastic material.
 4. If the thermoplastic line does not provide initial nighttime reflectivity, or if the marking does not have the required minimum thickness,
 - a. Grind away the surface of the deficient portion of the marking to reduce the average thickness to 50 mils or less.
 - b. Apply additional thermoplastic material to a thickness of at least 125 mils and provide a uniformly reflective surface.
 - c. If the markings do not comply with the specifications for any other reason, the Engineer may require complete removal or correction at the Contractor's expense. Corrective work will be at Contractor's expense.
 5. Primer Application.
 - a. Apply a primer to bituminous surfaces over 2 months old and all concrete surfaces. Primer is not required on bituminous surfaces less than 2 months old unless recommended by the manufacturer of the thermoplastic material.
 - b. Apply and cure in accordance with the recommendations of the manufacturer of the thermoplastic material.
 6. Glass Bead Application.
 - a. Mechanically deposit the drop on glass beads on the molten thermoplastic line immediately after placement of the thermoplastic at a rate of 8 to 10 pounds per 100 square feet of line.
 - b. Embed the beads into the strip surface to a depth of 50% - 60% of the bead diameter.

- c. Ensure the beads are applied uniformly across the entire line.
- d. Ensure that the beads adhere to the cured thermoplastic or all marking operations shall cease until corrections are made.

ADD the following:

3.03 Sampling and Testing

- C. General: The Engineer shall have free access to the material and be extended every facility for the purpose of inspection. The Engineer reserves the right to sample at the point of manufacture, at intermediate points of storage, or at destination.
- D. Thickness: Perform periodic spot checks of thermoplastic material to verify that the required thickness has been attained. Random spot checks of the thermoplastic thickness will be made by the Engineer to ensure conformance with the required criteria. Suggested spot check procedures include the following:
 - 1. Wet: Thickness can be field tested immediately after the thermoplastic marking is applied by inserting a thin, graduated machinist rule or similar instrument into the molten thermoplastic to the depth of the pavement surface. The thickness is then determined visually by noting on the scale the depth of the penetration or coating of the instrument.
 - 2. Dried: Thickness can be field tested by placing a small flat of metal with a known thickness immediately ahead of the striping apparatus. After striping, remove the sample and use a suitable measuring device, such as a caliper or micrometer, to determine the thickness of the dried marking
- E. Thermoplastic Material: The Engineer reserves the right to test materials in accordance with ASTM D4960 Test Method for Evaluation of Color for Thermoplastic Traffic Marking Materials, AASHTO T250 Standard Method of Test for Thermoplastic Traffic Line Material, and AASHTO M 249-98 White and Yellow Reflective Thermoplastic Striping Material (Solid Form). Cost for these tests will be paid for by the Jurisdiction; however, if any of them fail, the Contractor is liable for the cost.
- F. Glass beads: Test glass beads in accordance with the procedures listed in standard specification 4184.03. The Engineer will determine the location and frequency of sampling.

Section 8030 – Temporary Traffic Control

PART 1 – GENERAL

1.07 Special Requirements

ADD the following:

- C. At least seventy-two (72) hours in advance of proposed street closure and/or lane reduction, visit www.cityofdavenportiowa.com/roadwork and submit the application for the street closure, lane reduction and any associated detours. Please keep in mind the seventy-two hour timeframe is a minimum, when possible requests can and should be submitted seven (7) to ten (10) days in advance.

PART 3 – EXECUTION

3.01 Maintenance

ADD the following:

A. General

The Contractor must notify the Engineer a minimum of 72 hours prior to staging or installing any temporary traffic control measures, City street closure and lane reduction application required. See traffic control notes in plan documents. If traffic control devices fail in any way and are not repaired or replaced within 24-hours of being notified, the City will do this work and the Contractor shall be charged for costs incurred.

Section 8040 – Traffic Signs and Posts

PART 2 – PRODUCTS

2.02 Signs

DELETE and ADD the following:

B. Blank Material:

1. Sheet Aluminum complying with [Iowa DOT Article 4186.02](#).
2. Street Name Plaques:
 - a. Street name plaque thickness shall be 0.1”.
 - b. Text Height is 3” for N., S., E., W. and St./Ave./Blvd./Rd. and the hundred block. These abbreviations must be included on the signs, as appropriate.
 - c. Text height is 6-inch uppercase and 4.5-inch lowercase lettering for the street name.
 - d. Font is MUTCD Standard Alphabet Series B2000 for street names with more than 6 characters and MUTCD Standard Alphabet Series C2000 for street names with 6 or fewer characters.

C. Size and Type:

5. Street name plaque typical dimensions are 9-inches tall by 30, 36, or 42-inch length. Alternative fonts may be used at the discretion of the Engineer to shorten 42-inch long signs to 36-inch length.

2.04 Fastening Accessories

DELETE and ADD the following:

1. Comply with [Iowa DOT Article 4186.09](#) for bolts, nuts, self-locking nuts and washers.
2. Other Accessories:
 - a. Double Sign Mounting Bracket
 - i. Blade Holder Length – 12-inch minimum
 - ii. Single Piece Cast Aluminum
 - iii. Flat Blade 90-degree cross piece
 - iv. 5/16”-18 x 3/4” Vandal proof, Type I Cadmium plated heat-treated steel or cast aluminum with 5/15” pinned hex access fastener.
 - b. Single Sign Mounting Bracket
 - i. Blade Holder Length – 12” minimum
 - ii. Single piece cast aluminum.
 - iii. Aligns blade parallel/perpendicular with square tube post.
 - iv. Two set bolts with holes aligning with square tube mounting holes.
 - c. Sign to Utility Pole Mounting Bracket
 - i. Blade Holder Length – 24” Minimum
 - ii. Single piece cast aluminum
 - iii. Strapping and Lag bolts or concrete anchors per manufacturers requirements.

- d. Surface Mount Anchor Base
 - i. Round base, meet or exceed AASHTO breakaway requirements
 - ii. Minimum 11 ½" diameter bolt circle.
 - iii. Minimum three surface mounting holes.
 - iv. Single piece cast aluminum or galvanized steel.
 - v. Minimum two (2) 5/16"-18 x ½" set screws.
 - vi. Female post mount receptacle.

Figures

[ADD Figure DAV8040.101.022323](#)

[ADD Figure DAV8040.102.031324](#)

END OF DIVISION

DIVISION 9 – SITE WORK AND LANDSCAPING

Section 9010 – Seeding

PART 1 – GENERAL

1.07 Special Requirement

ADD Payment for seeding shall be made at the end of the care period. The care period ends upon acceptance of the seeding. See 3.10 ACCEPTANCE AND WARRANTY for addition details about Acceptance.

1.08 Measurement and Payment

ADD the following bid items:

F. Prairie Seeding Establishment & Maintenance Period

1. Measurement: Lump sum item; no measurement will be made.
2. Payment: Payment will be at the lump sum price for the warranty.
3. Includes: Lump sum price includes, but is not limited to, all work required to correct any defects in the original placement of the seeding for the period of time designated. Acceptance and Warranty per 9010, 3.10, C.

G. Wetland Seeding Establishment & Maintenance Period

1. Measurement: Lump sum item; no measurement will be made.
2. Payment: Payment will be at the lump sum price for the warranty.
3. Includes: Lump sum price includes, but is not limited to, all work required to correct any defects in the original placement of the seeding for the period of time designated. Acceptance and Warranty per 9010, 3.10, C.

H. Native Warranty & Maintenance Period

1. Measurement: Lump sum item; no measurement will be made.
2. Payment: Payment will be at the lump sum price for the warranty.
3. Includes: Lump sum price includes, but is not limited to, all work required to correct any defects in the original placement of the seeding for the period of time designated. Acceptance and Warranty per 9010, 3.10 D.

PART 3 – EXECUTION

3.02 Conventional Seeding

C. Seedbed Preparation, Permanent

2. DELETE and REPLACE with the following:

Work areas accessible to field equipment to a depth governed by the Davenport Stormwater Manual. Use mechanical rotary tillage equipment for the preparation of seedbed on earth shoulders, urban or raised medians and

rest areas. Prepare by hand, areas inaccessible to field machinery, to a depth governed by the Davenport Stormwater Manual. Use care that the entire width of the shoulder and areas around headwalls, wingwalls, flumes and other structures are prepared in the manner specified. Where weed growth has developed extensively, they may be disked into the ground. If weed growth develops sufficiently to interfere with proper seedbed preparation, mow the weeds and remove them from the project at no additional cost to the Contracting Authority.

If either bid item 9010, 1.08, F Prairie Seeding Establishment & Maintenance Period or bid item 9010, 1.08, G Wetland Seeding Establishment and Maintenance period has been included with the project then one of the following methods shall be used for seed bed preparation in areas to which the Establishment & Maintenance period applies:

Seedbed Preparation	Schedule
Method 1 - Existing vegetation must be dead before seeding. Remove existing vegetation and all pieces of roots with sod cutter. Seed as soon as possible after preparing the bed. Seed with a native grass drill. Broadcast seeding is sufficient if seed can be worked into the soil with a harrow or similar tool that ultimately establishes good seed-to-soil contact. It is very important that seed is placed at the proper depth to encourage quick germination/emergence (1/4" or less).	April-June or Dormant seeding per SUDAS
Method 2 - Existing vegetation must be dead before seeding. Smother vegetation with cardboard or other material for a growing season. The earliest time to seed is a dormant seeding in the fall or wait until following spring or next fall. Seed with a native grass drill. Broadcast seeding is sufficient if seed can be worked into the soil with a harrow or similar tool that ultimately establishes good seed-to-soil contact. It is very important that seed is placed at the proper depth to encourage quick germination/emergence (1/4" or less).	April-Oct for smothering Dormant seeding per SUDAS or Seed following spring April-June
Method 3 - Existing vegetation must be dead before seeding. Chemical applications may be used to kill sod or other vegetation. Apply in the fall for the next growing season and in the spring prior to planting. Follow all label directions. Seed with a no-till drill. It is very important that seed is placed at the proper depth to encourage quick germination/emergence (1/4" or less).	Sept-Oct 15 AND following May for chemical spraying May-June seeding
Method 4 - Existing vegetation must be dead before seeding. Remove existing vegetation with multiple tillage passes. (new weed seed will germinate with tillage) Prepare a good firm seedbed. When you walk on the surface, you don't want to sink. You barely want to see your foot print. Seed with a native grass drill. Broadcast seeding is sufficient if seed can be worked into the soil with a harrow or similar tool that ultimately establishes good seed-to-soil contact. It is very important that seed is placed at the proper depth to encourage quick germination/emergence (1/4" or less).	April-June or Dormant seeding per SUDAS

3.10 ACCEPTANCE AND WARRANTY

ADD C. Seeding Establishment & Maintenance Period:

1. When included as a separate bid item, the Seeding Establishment & Maintenance

Period for Prairie and/or Wetland seeding shall include the provisions identified in 9010, 3.10, A. and B, with a minimum 3-year warranty period. In addition, the following:

- a. A more intense maintenance program is required for a period of at least 3 years, to support full establishment of desired vegetation and prevent growth of invasive species (especially cattails and volunteer woody growth). It is recommended that these activities should be completed by personnel with experience (3 years or more preferred) in performing maintenance of native vegetation.
- b. For wetland areas, managing water levels through the water control structure provides a moist soil environment for the existing seed bank to germinate without the presence of standing water. Once the plants germinate and are actively growing, water levels can be slowly returned to normal. Most emergent plants will reproduce through the roots when submerged. If the plants begin to die out another drawdown may be needed in the future. Mowing areas will also depend on water levels and soil saturation.
- c. Maintenance associated with the establishment period shall be as follows:

Establishment-First Year	Schedule
If there are erosion concerns, install erosion control blanket or place straw over seeding.	Immediately after seeding
If it doesn't rain, water seed. Water enough to moisten surrounding soil, but water lightly so seedlings are not dislodged. As seedlings emerge and develop, irrigate less frequently but enough to prevent drought stress.	Spring until established
Persistent attention to weed control is required. Keep weeds cut back to a height of 6 inches when they reach a height of 12 inches (if accessible). The first mowing if done early enough (early May) can be to a height of 4 inches. Otherwise, do not cut back less than 8 inches. Flat type mowers work best because they chop weeds and prevent clippings from smothering small seedlings. Weed-trimmers are excellent for smaller areas. Rotary or bar-sickle mowers may be used but can smother seedlings because they do not chop weeds. Hand weeding may also be necessary. Do not mow the first year's growth after August 1. This will protect young plants over winter.	One to two times per month depending on rainfall, not after Aug 1
If a cover crop was used, it should also be cut during the first season. Mow cover crop when weeds reach 6 inches tall.	1 time per month depending on rainfall
Use systemic herbicide treatment of areas larger than 20 square feet where weeds are the dominant plant material. Reseeding will need to occur in these areas. Follow manufacturer's instructions on any herbicide application.	Only if needed
Do not spray any broadleaf chemicals in the first year where native wetland seedlings are growing. Broadleaf chemicals will kill forbs and damage or kill grasses.	First year
Hand-treat with herbicide using a cotton glove placed on the outside of a protective rubber glove. Soak the cotton glove in herbicide (such as "Roundup") and apply to the leaves and stems of the weed or woody species without	Only if needed

touching adjacent desirable plants. This is best done on a calm, cool day, so that the herbicide does not volatilize and drift onto nearby plants. Remove the above-ground portion of previously treated dead or dying weeds and woody species from planting areas. Follow manufacturer's instructions on any herbicide application.	
Re-seed and mulch areas where poor germination, erosion or weed removal have left areas in excess of 20 square feet bare or sparsely vegetated.	As needed
Assess bank stability, erosion damage, flow channelization, and sediment accumulations.	After >2" of rainfall (for design life of practice)

Second Year Activities	Schedule
Persistent attention to weed control is required. Keep weeds cut back. Mow seedlings at a height of 6 inches when vegetation has a height of 12 inches (if accessible). Flat type mowers work best because they chop weeds and prevent clippings from smothering small seedlings. Weed-trimmers are excellent for smaller areas. Rotary or bar-sickle mowers may be used but can smother seedlings because they do not chop weeds. Hand weeding may also be necessary.	One time per month depending on rainfall. If nesting birds are present do not mow May 15-August 1
Systemic herbicide treatment of areas larger than 20 square feet where weeds are the dominant plant material and only where absolutely necessary. Hand-treat with herbicide where native plants are the dominant plant material, taking care not to damage nearby native plants. Use a cotton glove placed on the outside of a protective rubber glove. Soak the cotton glove in herbicide (such as "Roundup") and apply to the leaves and stems of the weed or woody species without touching adjacent desirable plants. This is best done on a calm, cool day, so that the herbicide does not volatilize and drift onto nearby plants. Remove above-ground portion of previously treated dead or dying weeds and woody species from planting area	As needed
Overseed bare patches. Keep overseeded areas moist for first few weeks.	April-July 1 st
Replace wetland vegetation to maintain at least 50% surface area coverage in wetland plants after the second growing season.	One-time activity
Inspect to ensure that no erosion is occurring. Install needed erosion control measures and/or re-seed as needed.	Annually
Inspect native seedlings to ensure establishment is progressing as planned, recognizing that establishment may take 2 to 3 years.	Semi-Annually for first three years or until establishment
Monitor wetland vegetation and perform replacement planting as necessary. Check and adjust water levels until they become stabilized at optimum levels.	Semi-annually (First 3 years)
Inspect and remove rubbish, debris, litter, branches, leaves, overgrown vegetation and any other material from around inlets, trash racks, and outlet structures. Mow side slopes.	Frequently (3 to 4 times/year) for contracted period

Year 3 and After Activities	Schedule
Examine stability of the original depth zones and micro-topographical features for wetland plantings.	Annually for life of practice

Inspect for invasive vegetation and remove where possible.	
Monitor for sediment accumulation in the facility and forebay. Harvest wetland plants that have been “choked out” by sediment accumulation.	Annually for life of practice
Evaluate the stand. Continue controlling weeds with spot treating or mowing. Cut and stump treat woody species. Utilize prescribed burning to stimulate native growth and control woody species, but check with local jurisdiction on burning regulations.	April – Nov If nesting birds are present do not mow May 15-August 1

d. Additional Considerations – Native Stands:

1. Follow USDA-NRCS and local fire department guidance development for prescribed burn permitting, scheduling, and implementation.
2. Mowing should not be completed during nesting seasons of ground nesting birds, if present. If mowing begins and ground nesting birds are discovered, cease mowing.
3. Marestalk will often show up in the second year. It looks worse than it is, but its growth pattern still allows light through the canopy. Marestalk will naturally decline as the prairie establishes.
4. Mow Canada thistle patches at bud stage (late June to early July). The prairie will often out-compete thistles with timely mowing.
5. Do not mow after weeds are 4-6 feet high. At that point you are better off **not** to mow. Doing so will put a mat of material on the new emerging seedlings.
6. Spot mowing may be needed in areas where weed pressure is still prevalent in year two. Giant Ragweed can be very persistent. Musk thistles may still be prevalent, but will be out-competed by the prairie long-term.

ADD D. Native Warranty & Maintenance Period:

1. In addition to the requirements identified in 9010, 3.10, A. and B. include also monthly mowing/string trimming to a height of 6-8” during the warranty period.

Section 9020 – Sodding

PART 1 – GENERAL

1.08 Measurement and Payment

ADD Payment for sodding shall be made at the end of the maintenance period. The maintenance period ends upon acceptance of the seeding. See 3.08 ACCEPTANCE for addition details about Acceptance.

PART 3 – EXECUTION

3.03 Sod Installation

A. DELETE and REPLACE with: Installation between June 15 and August 15 will be allowed. After 30-day acceptance period has expired, Contractor responsible for informing property owner of transfer of responsibility of care for sod and recommended care plan after transfer of responsibility has occurred.

Section 9070 – Landscaping Retaining Wall

PART 2 – PRODUCTS

2.01 Materials

A. Modular Block Walls:

1. Dry-cast Concrete Wall Units:
 - d. DELETE and REPLACE with the following:
In lieu of furnishing blocks from an approved supplier, provide blocks from an approved system or submit for approval by the Engineer.
2. Wet-cast Concrete Wall Units:
 - b. DELETE and REPLACE with the following:
In lieu of furnishing blocks from an approved supplier, provide blocks from an approved system or submit for approval by the Engineer.

FIGURES

Clarifications to Figure 9072.221 - No change to detail. This detail has caused some confusion. Although technically correct, two items are clarified, here:

1. The note in the upper left-hand corner requires 3" minimum cover over the end of each bar. Cover required over the rest of the bar is 1 ½". This caused some confusion concerning the length of the vertical bars running through the vertical wall, into the sidewalk.
2. The top horizontal bar is to be placed 5" below the top of the wall. If the top of wall tapers to a lower height, the top bar is discontinued after overlapping with the 2nd bar down a minimum of 6". The 15" spacing of the horizontal bar is referenced from the top bar.

Section 9080 – Concrete Steps, Handrail and Safety Rail

PART 1 – GENERAL

1.07 Special Requirements

ADD the following:

- C. Follow Davenport City Code.
- D. Railing post poured below frost line – 42 inches.

END OF DIVISION

DIVISION 10 – Demolition

Section 10,010 – Demolition of Building Structures

DELETE entire section and REPLACE with the following: Refer to Davenport City Code.
Abandon all services at the main. Remove driveway and re-pour curb & gutter.

END OF DIVISION

DIVISION 11 – Miscellaneous

Section 11,010 – Construction Survey

PART 1 – GENERAL

1.08 Measurement and Payment

3. Includes:

DELETE and ADD the following:

Lump sum price includes, but is not limited to, the costs resetting project control points, re-staking, and any additional staking requested beyond the requirements of this section.

Additional staking requests may include, but is not limited to, staking existing and proposed project features such as easement limits, ROW, back of curb, sidewalks, utilities, etc. for the purpose of assisting utilities in determining new location of utility to be relocated.

Add Section

Section 11,020 – Mobilization

PART 1 – GENERAL

1.07 Special Requirements

ADD the following:

The maximum amount of mobilization included in a bid may not exceed 10% of the total price bid, after excluding the prices bid for mobilization and/or construction contingency.

Add Section

Section 11,030 – Temporary Services During Construction

PART 1 – GENERAL

1.08 Measurement and Payment

DELETE 1.08 A. 3. And ADD the following:

3. Includes: Lump sum price includes, but is not limited to, coordinating with USPS, erecting and maintaining temporary mailboxes and removal and replacement of any permanent mailboxes as required by Contractor or utility operations.

END OF DIVISION