# PLANS FOR CONSTRUCTION OF

# WATER MAIN LOOPING 3rd STREET WEST COURT

CITY OF WORTHINGTON, IOWA **APRIL 2020** 

# MUNICIPAL OFFICIALS

**MAYOR GARY LANGEL** 

COUNCIL **STEVE ENGLER RON LEUCHS** TONY LUECK MARTY MARUGG **CHRIS SMOCK** 

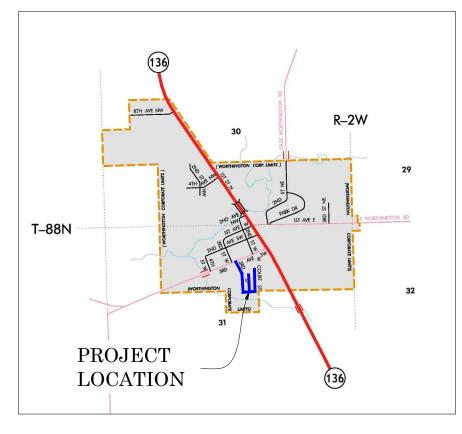
**CITY CLERK LAUREN MANTERNACH** 

**PUBLIC WORKS** TODD HOSCH

WATER/WASTEWATER OPERATOR MIKE LANSING

THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE IOWA STATEWIDE URBAN STANDARD SPECIFICATION, 2020 EDITION AND THE PROJECT SPECIAL PROVISIONS. SUDAS SPECIFICATIONS CAN BE FOUND AT WWW IOWASUDAS ORG

CONTRACTOR WILL BE PROVIDED A SALES TAX EXEMPTION CERTIFICATION TO PURCHASE, OR WITHDRAW FROM INVENTORY, MATERIALS FURNISHED UNDER THIS



**LOCATION MAP** 

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My License Renewal Date is December 31, 2020

SHEET NAME

Jason A. Wenger, P.E. IOWA REG. NO. 20436 PAGES OR SHEETS COVERED BY THIS SEAL:



| DRAWN BY: JAW   | APPROVED BY: JAW   | PROJECT |
|-----------------|--------------------|---------|
| DATE: 3/15/2020 | PROJECT NO: 19-053 |         |
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WATER MAIN LOOPING **3RD STREET WEST COURT** WORTHINGTON, IOWA

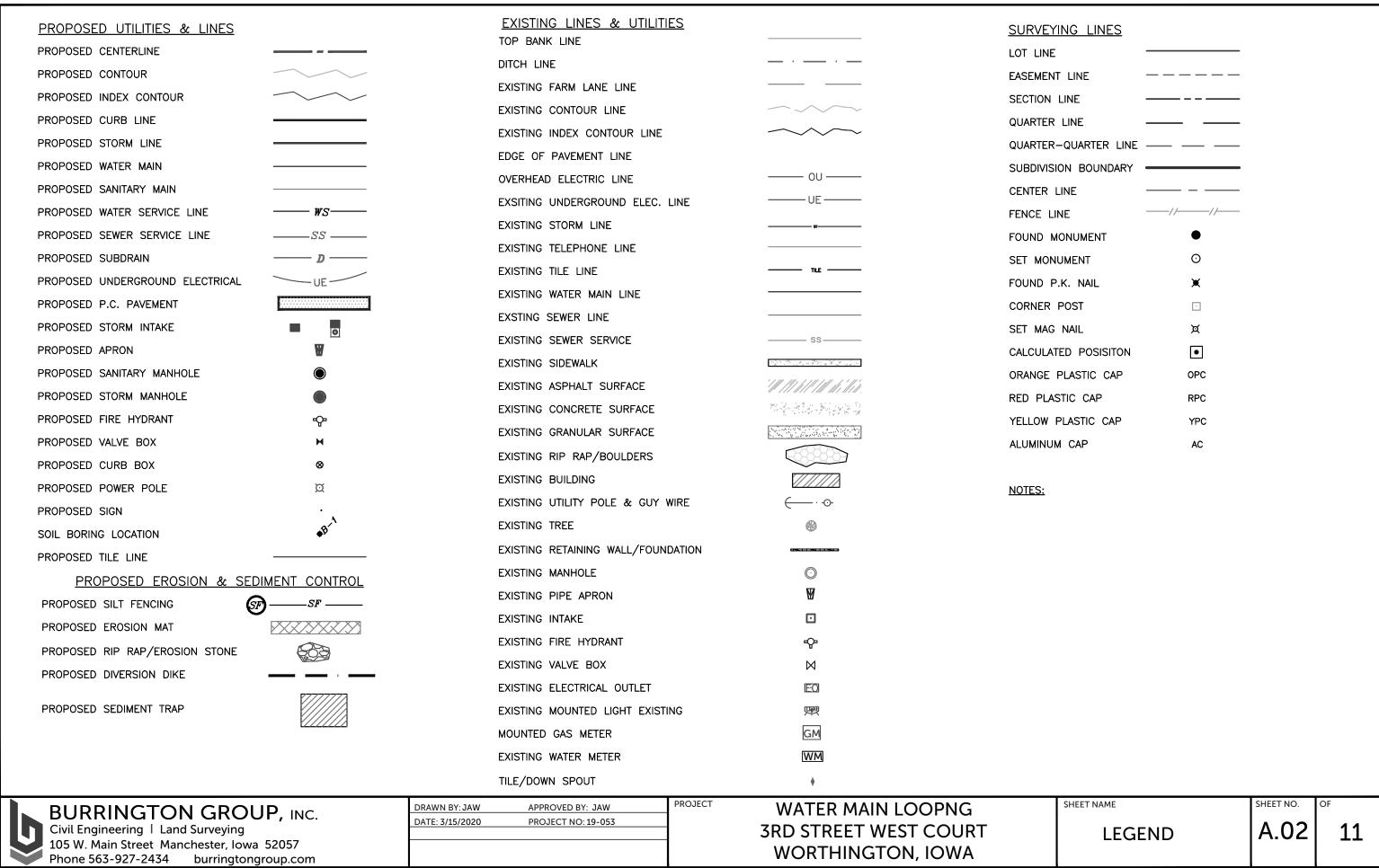
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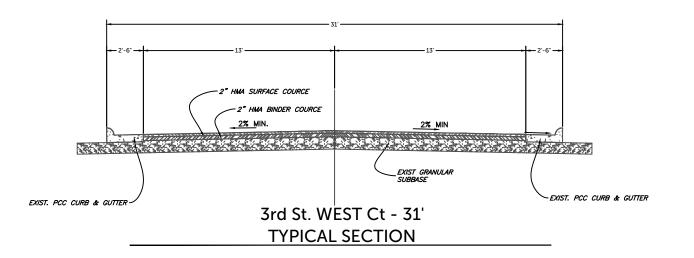
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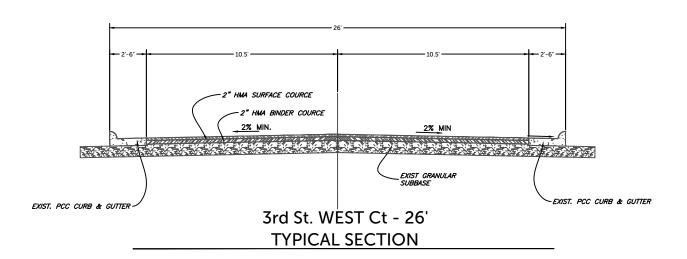
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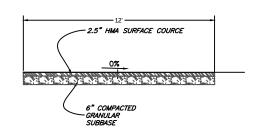
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**PUBLIC ALLEY TYPICAL SECTION** 

|    | BURRINGTON GROUP, INC.                    |
|----|---|
| In | Civil Engineering   Land Surveying        |
|    | 105 W. Main Street Manchester, Iowa 52057 |
|    | Phone 563-927-2434 burringtongroup.com    |

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| WATER MAIN LOOPING    |
|-----------------------|
| 3RD STREET WEST COURT |
| WORTHINGTON, IOWA     |

| <b>TYPICAL</b> | <b>SECT</b> | IONS |
|----------------|-------------|------|

SHEET NAME

| SHEET NO. | OF |
|-----------|----|
| B.01      | 1  |

| TABLE 1 - ESTIMATED PROJECT QUANTITIES |                                       |            |            |          |       |
|--|---------------------------------------|------------|------------|----------|-------|
| ITEM                                   |                                       |            |            | TOTAL    |       |
| NO.                                    | DESCRIPTION                           | DIVISION 1 | DIVISION 2 | QUANTITY | UNITS |
| 1                                      | Bituminous Pavement Removal           | 1200       | 3780       | 4980     | S.Y.  |
| 2                                      | PCC Curb & Gutter Removal             | 350        | 0          | 350      | L.F.  |
| 3                                      | PCC Driveway Removal                  | 48.5       | 0          | 48.5     | S.Y.  |
| 4                                      | PCC Sidewalk Removal                  | 2.2        | 0          | 2.2      | S.Y.  |
| 5                                      | Granular Subbase (Special Backfill)   | 550        | 50         | 600      | Ton   |
| 6                                      | PCC Curb Replacement                  | 350        | 0          | 350      | L.F.  |
| 7                                      | PCC Driveway, 6"                      | 48.5       | 0          | 48.5     | S.Y.  |
| 8                                      | PCC Apron, 8"                         | 0          | 29.0       | 29.0     | S.Y.  |
| 9                                      | Bituminous Surface Course (2.0")      | 140        | 450        | 590      | Ton   |
| 10                                     | Bituminous Intermediate Course (2.0") | 140        | 450        | 590      | Ton   |
| 11                                     | HMA Alley Paving (2.5")               | 100        | 0          | 100      | Ton   |
| 12                                     | 4" PCC Sidewalk                       | 2.2        | 0          | 2.2      | S.Y.  |
| 13                                     | Granular Backfill                     | 300        | 0          | 300      | Ton   |
| 14                                     | 6" PVC DR-18 (C900) Water Main        | 895        | 0          | 895      | L.F.  |
| 15                                     | Connect to Existing Main              | 2          | 0          | 2        | Each  |
| 16                                     | Fire Hydrant Assemby                  | 1          | 0          | 1        | Each  |
| 17                                     | 6" Valve & Box                        | 3          | 0          | 3        | Each  |
| 18                                     | 6"x6" Tee                             | 2          | 0          | 2        | Each  |
| 19                                     | 6"-45 deg bend                        | 2          | 0          | 2        | Each  |
| 20                                     | 6" Plug                               | 1          | 0          | 1        | Each  |
| 21                                     | Corporation Stop                      | 16         | 0          | 16       | Each  |
| 22                                     | Curb Stop & Box                       | 16         | 0          | 16       | Each  |
| 23                                     | 3/4" Type 'K' Copper Water Service    | 260        | 0          | 260      | L.F.  |
| 24                                     | Topsoil Import                        | 30         | 0          | 30       | C.Y.  |
| 25                                     | Seeding & Mulching                    | 1          | 0          | 1        | L.S.  |
| 26                                     | Traffic Control                       | 1          | 0          | 1        | L.S.  |
| 27                                     | Mobilization                          | 1          | 0          | 1        | L.S.  |

DIVISION 1 - SRF ELIGIBLE DIVISION 2 - CITY ROAD USE

| TABLE 2 - ITEM DESCRIPTIONS |                                       |   |  |
|-----------------------------|---------------------------------------|---|--|
| ITEM NO.                    | ITEM                                  | DESCRIPTION   |  |
|                             |                                       | Includes removal and disposal or recycle by Contractor at site approved for such. Removal   |  |
| 1                           | Bituminous Pavement Removal           | methods are up to the Contractor discretion (milling or chunking)   |  |
| 2                           | PCC Curb & Gutter Removal             | Includes sawcut, removal and disposal by Contractor at site approved for such.  |  |
|                             |                                       | Includes sawcut, removal and disposal by Contractor at site approved for such. Limits of  |  |
| 3                           | PCC Driveway Removal                  | removal to be marked by City.   |  |
|                             |                                       | Includes sawcut, removal and disposal by Contractor at site approved for such. Limits of  |  |
| 4                           | PCC Sidewalk Removal                  | removal to be marked by City.   |  |
|                             |                                       | Includes granular subbase under pavement, driveway and sidewalk areas. Also includes  |  |
|                             |                                       | temporary surfacing necessary to provide access to residents during construction. Minimum   |  |
|                             |                                       | thickness 6" under driveways, 4" under sidewalks, 6" under disturbed curbs, pavement and alley  |  |
| 5                           | Granular Subbase (Special Backfill)   | subgrade as a result of water main installation   |  |
| 6                           | PCC Curb Replacement                  | Naminal 2 E wide curb & gutter to match existing IDOT C 2 or C 4 concrete mix required  |  |
| 0                           | PCC Curb Repracement                  | Nominal 2.5 wide curb & gutter to match existing. IDOT C-3 or C-4 concrete mix required.  IDOT C-3 or C-4 mix required. Install expansion at back of curb. Tie bars required at connection    |  |
| 7                           | DCC Driveyou 6"                       |   |  |
| 8                           | PCC Driveway, 6" PCC Apron, 8"        | to existing driveway.  IDOT C-3 or C-4 mix required. Install expansion at back of curb.   |  |
|                             | PCC Apron, 8                          |   |  |
| 10                          | Bituminous Intermediate Course (2.0") | Subgrade preparation incidental. Stone required to establish cross slopes to be paid uner item 5,   |  |
| 10                          |                                       | granular subbase.   |  |
| 11                          | HMA Alley Paving (2.5")               | Subgrade preparation incidental. Single lift permitted.   |  |
| 12                          | 4" PCC Sidewalk                       | IDOT C-3 or C-4 mix required.   |  |
|                             |                                       | Natural Sand or fill lime used for backfill where unsuitable excavated material is identified in  |  |
| 42                          | Consider Books!!                      | areas, if any, as determined by Jurisdictional Engineer. Granular backfill to only be utilized to   |  |
| 13                          | Granular Backfill                     | the proposed subgrade elevation for new pavement section.   |  |
| 4.5                         |                                       | Includes shutting down main and connecting to existing tees. Contractor to coordinate main  |  |
| 15                          | Connect to Existing Main              | shutdown with City of Worthington a minimum of 48 hours in advance.   |  |
| 17                          | 6" Valve & Box                        | USA Ma de Required  |  |
| 18                          | 6"x6" Tee                             | USA Ma de Required  |  |
|                             |                                       |   |  |
| 19                          | 6"-45 deg bend                        | USA Made Required   |  |
| 20                          | 6" Plug                               | USA Ma de Required  |  |
| 21                          | Corporation Stop                      | Stainless steel saddle required. Corp and saddle to be USA Made.  |  |
|                             |                                       | USA Made required. All curb stops to be placed minimum of 2' outside of proposed alley or curb.   |  |
| 22                          | Curb Stop & Box                       | Fittings required to connect existing service lines to the proposed curb stop are incidental.   |  |
| 22                          | Carb Stop & Box                       |   |  |
|                             |                                       | Install new service from proposed 6" main to each curb box. If existing service lines are copper they can be reused if they are shortened to tie-in to new main. Under no circumstances shall |  |
|                             |                                       |   |  |
| 22                          | 2/4" Type IV! Copper Water Service    | existing services be extended by splicing. All non-copper services to be replaced from main to  |  |
| 23<br>25                    | 3/4" Type 'K' Copper Water Service    | curb stop.  Reseed all areas disturbed by construction activities according to SUDAS requirements.  |  |
| 25                          | Seeding & Mulching                    |   |  |
| 26                          | Traffic Control                       | Includes temporary traffic control signage and fencing as required by contractor to protect   |  |
| 26                          | Traffic Control                       | project site and workers during construction.   |  |

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WATER MAIN LOOPING 3RD STREET WEST COURT WORTHINGTON, IOWA

SHEET NAME STIMATED QUANTITIES & ITEM **DESCRIPTIONS** 

SHEET NO.

C.01

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| TABLE OF FIGURES   |            |  |            |  |
|--|------------|--|------------|--|
| THE FOLLOWING STANDARD PLANS SHALL BE CONSIDERED APPLICABLE TO THE CONSTRUCTION WORK ON THIS PROJECT |            |  |            |  |
|  | IOWA SUDAS |  |            |  |
|  | 1          |  |            |  |
| FIGURE   |            | TITLE  | DATE       |  |
| 2010.101   |            | DETAILS OF EMBANKMENT AND REBUILDING EMBANKMENTS               | 10/21/2014 |  |
| 2010.102   |            | DESIGNATION OF ROADWAY EARTHWORK ITEMS                         | 10/21/2014 |  |
| 3010.101   | SW-101     | TRENCH BEDDING AND BACKFILL ZONES                              | 4/17/2018  |  |
| 3010.102   | SW-102     | RIGID GRAVITY PIPE TRENCH BEDDING                              | 4/16/2019  |  |
| 3010.103   | SW-103     | FLEXIBLE GRAVITY PIPE TRENCH BEDDING                           | 4/16/2019  |  |
| 3010.104   | SW-104     | PRESSURE PIPE TRENCH BEDDING                                   | 4/17/2018  |  |
| 3010.105   | SW-105     | MISCELLANEOUS PIPE BEDDING                                     | 4/17/2018  |  |
| 4010.201   | SW-201     | SANITARY SERVICE STUB  | 4/17/2018  |  |
| 5010.101   | WM-101     | THRUST BLOCKS  | 10/18/2016 |  |
| 5010.102   | WM-102     | TRACER SYSTEM  | 10/18/2016 |  |
| 5010.901   |            | MINIMUM CLEARANCE BETWEEN WATER SERVICE AND STRUCTURE          | 10/21/2014 |  |
| 5010.201   | WM-201     | FIRE HYDRANT ASSEMBLY  | 4/18/2017  |  |
| 7010.101   | PV-101     | JOINTS   | 4/16/2019  |  |
| 7010.102   | PV-102     | PCC CURB DETAILS   | 10/18/2016 |  |
| 7010.103   | PV-103     | MANHOLE BOXOUTS IN PCC PAVEMENTS                               | 4/19/2011  |  |
| 7010.901   |            | PCC PAVEMENT JOINTING  | 10/16/2012 |  |
| 7010.904   |            | TYPICAL JOINTING LAYOUT  | 10/19/2010 |  |
| 7020.201   | PV-201     | MANHOLE BOXOUTS IN HMA PAVEMENT AND HMA OVERLAYS               | 4/19/2011  |  |
| 7020.901   |            | HMA PAVEMENT   | 10/19/2010 |  |
| 7030.101   |            | CONCRETE DRIVEWAY, TYPE A                                      | 10/20/2015 |  |
| 7030.103   |            | DRIVEWAY GRADING   | 10/20/2015 |  |
| 8030.101   |            | TEMPORARY TRAFFIC CONTROL GENERAL INFORMATION                  | 10/17/2017 |  |
| 8020.102   |            | WORK OFF OF PAVEMENT WITH MINOR ENCROACHMENT ONTO TRAVELED WAY | 10/17/2017 |  |
| 8030.104   |            | LANE CLOSURE ON LOW VOLUME STREET (SELF-REGULATING)            | 10/17/2017 |  |
| 8030.116   |            | STREET OR ROAD CLOSURE   | 10/17/2017 |  |

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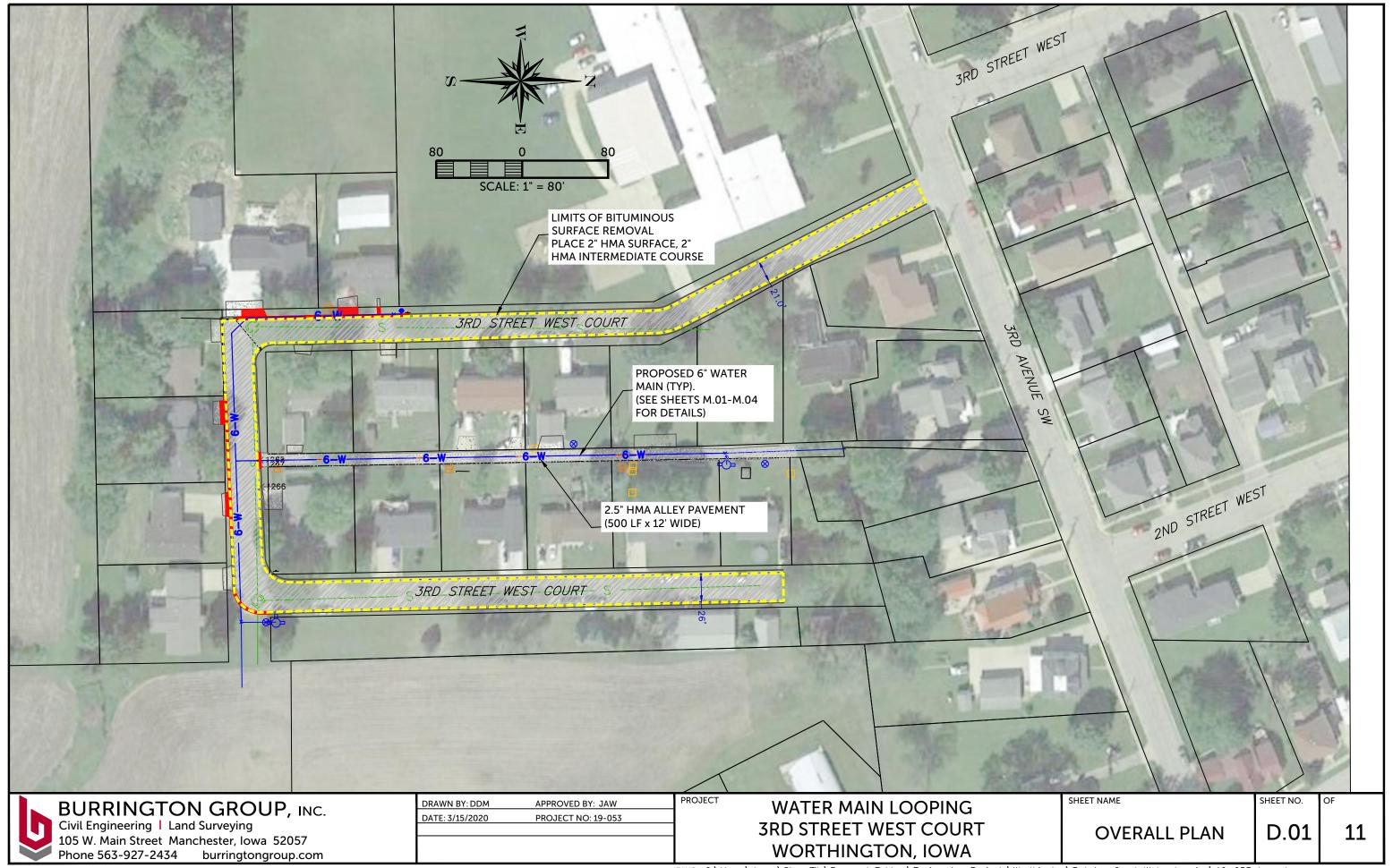
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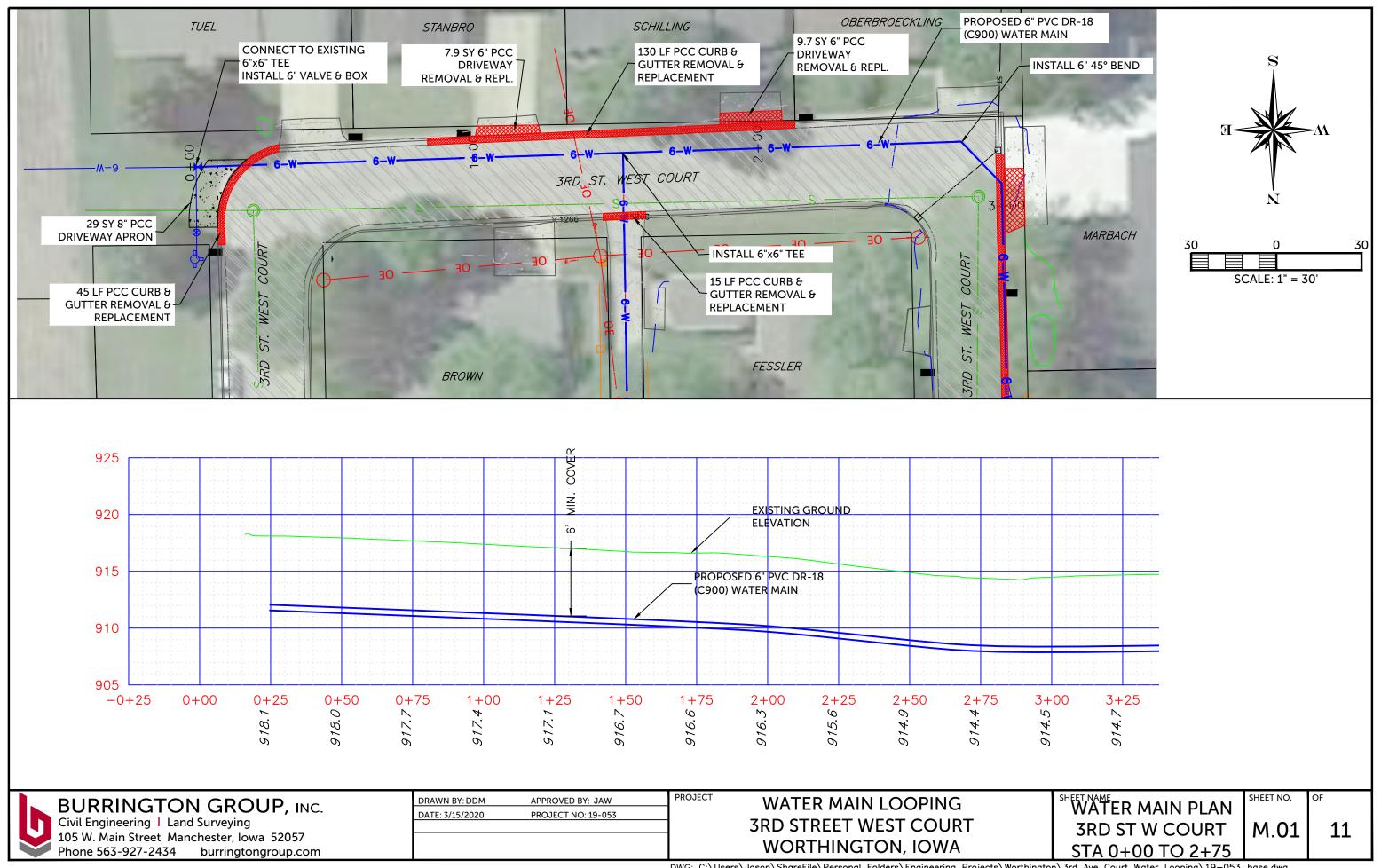
WATER MAIN LOOPING 3RD STREET WEST COURT WORTHINGTON, IOWA

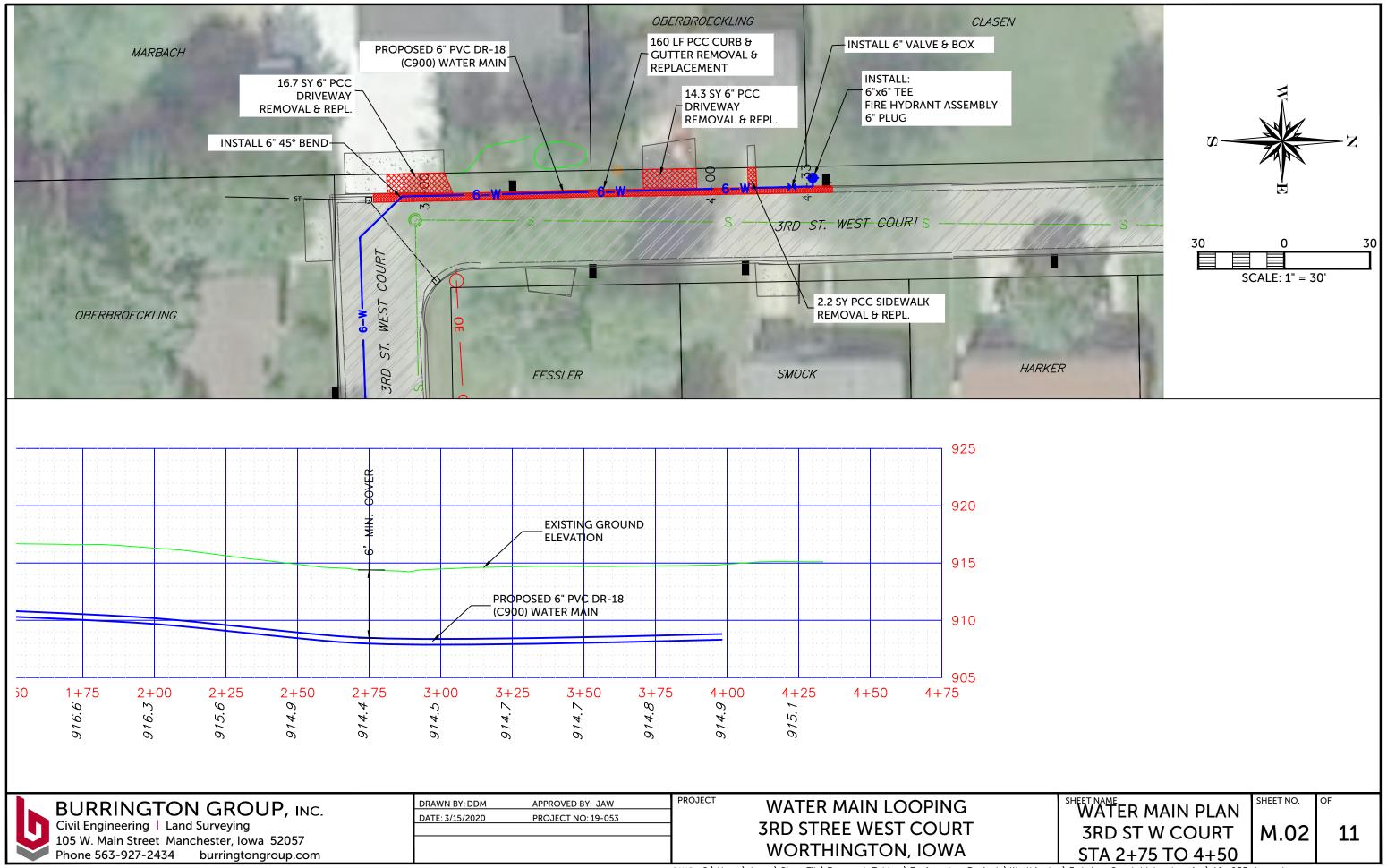
SHEET NAME STANDARD DETAILS SHEET NO.

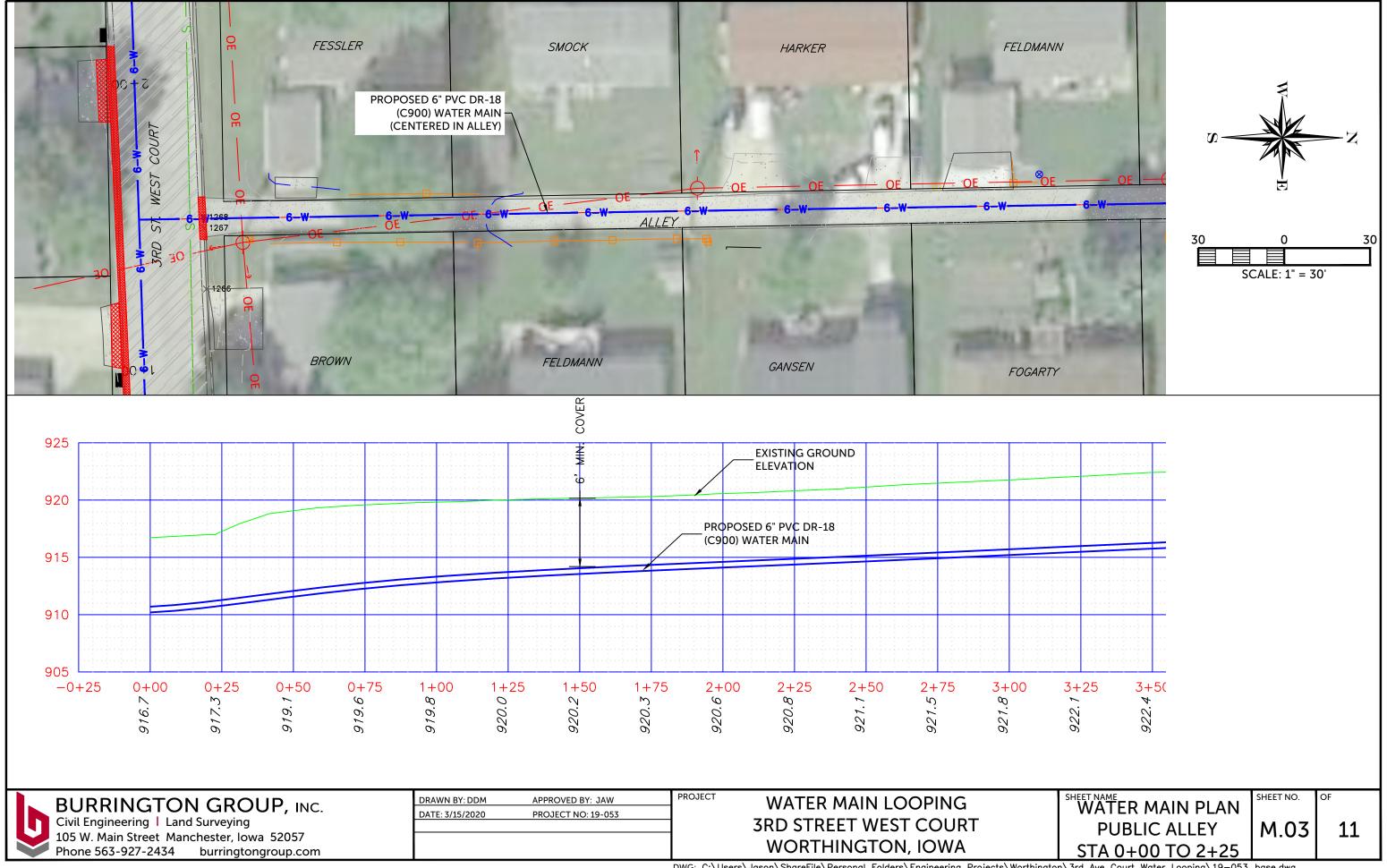
C.02

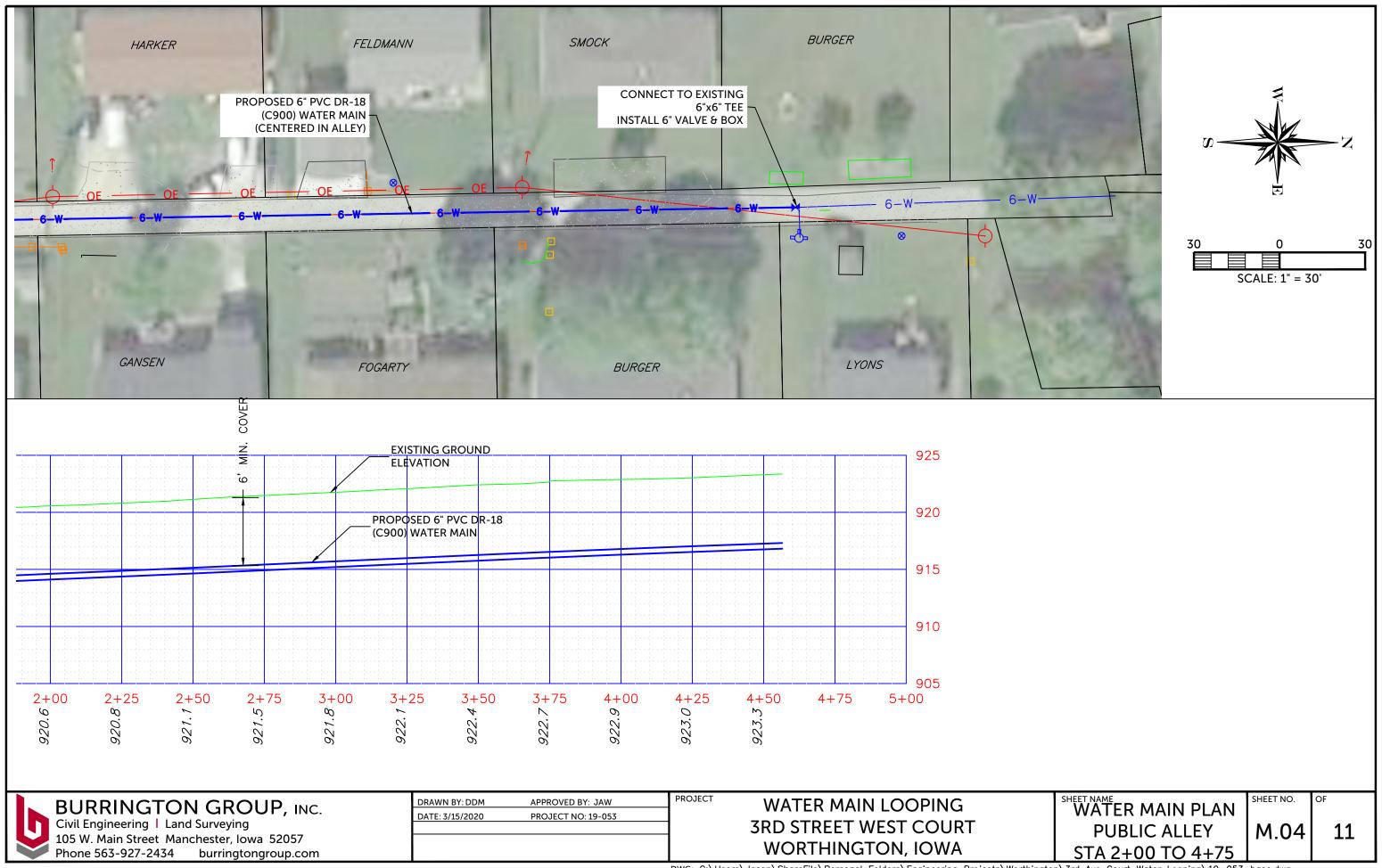
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The "Iowa Statewide Urban Standard Specifications for Public Improvements, 2020 Edition", shall be modified by the following Special Conditions.

#### DIVISION 1-GENERAL PROVISIONS AND COVENANTS SECTION 1010

# 1.03 - DEFINITIONS AND TERMS

35. The Jurisdiction is the City of Worthington. Any reference to either shall be considered one in the same. SECTION 1020

#### 1.08 - TAXES

C. Alternate Sales and Use Tax exemption certificate will be used by the Jurisdiction for this project. All Contractors and approved Subcontractors will be provided a Sales Tax Exemption Certification to purchase, or withdraw from inventory, materials furnished under this contract. No allowance will be made over the contract sum for any tax claims

#### SECTION 1040

#### 1.06 - INCREASE OR DECREASE OF WORK

B. Quantity change, regardless of the percentage increase or decrease of the total bid shall not affect the unit bid price of that item.

#### SECTION 1050

#### 1.10 - PROTECTION OF LINES AND GRADES

The Jurisdiction will provide staking locating new manholes, pipe ends, tees, intakes, and changes in grade, rough grade stakes at 50 to 100 feet for roadway and site grading, along with cut stakes along 25 feet intervals for finish grading and paving. All other construction staking shall be provided for by the Contractor as incidental to bid items.

#### SECTION 1070

- 1.01 MUNICIPAL REGULATIONS, STATE, AND FEDERAL LAWS AND REGULATIONS
- C. The successful contractor shall comply with the substance abuse requirements of the Jurisdiction. 2.06 - TRAFFIC CONTROL
- A. 3. Traffic Control shall be paid for by lump sum and shall include any and all traffic control used on the Project, including flaggers, pilot cars, signs, barricades, safety closures, etc., if necessary. The Contractor shall take full responsibility for Traffic Control and hold both the Jurisdiction and the Jurisdictional Engineer harmless. 2.13 - BORROW AND WASTE SITES
- A. Contractor shall secure and operate, at its own expense, sites for disposal of concrete, asphalt, excess excavation, pipe removed, structures, rubbish and Debris.

# 3.02 INSURANCE REQUIREMENTS

#### C.2. Commercial General Liability

k. Additional Insured Endorsements Include the Jurisdictions Consulting Engineer as an additionally insured.

#### SECTION 1080

#### 1.02 - CONTRACT TIME

A. Contractor shall fully complete the project in 45 calendar days with substantial completion no later than November 30,

#### **DIVISION 2 - EARTHWORK**

#### SECTION 2010

#### 1.03 - SUBMITTALS

D. The Jurisdictional Engineer hereby requests that all materials to be incorporated into the work have certifications furnished which show that the materials comply with Specifications prior to any construction. 1.08 - MEASUREMENT FOR PAYMENT

#### A. Clearing and Grubbing shall be lump sum.

- D. & E. Class 10 excavation and topsoil shall be paid for based on the Plan quantities without final field measurement. I. Granular Subbase: Subbase shall include furnishing and
- placement measured by the tons of material placed according to the plans.
- M. No additional payment will be made for hauling and disposal of removed pavement, as it shall be incidental to the
- N. Contractor to complete proof rolling as required in Part 3.06. No additional payment will be made for proof rolling, as it shall be incidental to the Earth Work bid item. Initial compaction testing shall be provided for by the Jurisdiction. Contractor shall pay the cost of any retesting.
- 2.04 EMBANKMENT MATERIALS D. Granular Subbase to meet requirements of Granular Subbase (IDOT 4132 Special Backfill, Gradation No. 30.) 3.01 CLEARING AND GRUBBING

Areas to be cleared and grubbed are between catch lines on all earthwork/street areas and as identified in the Plans. 3.03 - EXCAVATION

E. 5. Surface removal shall include hauling and disposal of

3.12 TEMPORARY EROSION CONTROL DURING CONSTRUCTION

# **DIVISION 3 - TRENCH AND BACKFILL**

## SECTION 3010

See plans for details.

#### 1.03 - SUBMITTALS

A. Contractor shall submit a 10-pound sample of each/any type of granular bedding material(s).

- D. Contractor shall submit a 10-pound sample of each/any type of granular backfill material(s).
- E. Contractor shall submit a gradation report to the Engineer for granular materials.

F. Results of Standard Proctor and In-Place Density tests to be provided by Jurisdiction

G. Initial compaction testing will be provided by the Jurisdiction. Retesting shall be paid for by the Contractor. 2.02 CLASS I-GRANULAR BEDDING AND BACKFILL MATERIAL, as specified shall be used in wet trench conditions and Granular Surfacing, Class B crushed stone, shall be used in dry trench conditions as determined by the Jurisdiction Representative.

#### 3.05 - PIPE INSTALLATION

Pipe bedding shall be R-2, F-2, or P-2 associated with each pipe application. Class R-5 for RCP Arch or Arch Equivalent. Reference Figure 3010.101 through 3010.104.

Final trench backfill shall be in accordance with Section 3010, 3.05D. Material shall be minimum Class IVA compacted to 95% of maximum Standard Proctor within street right of ways. The backfill shall have moisture content suitable to attain compaction. Contractor shall be responsible for moisture adjustment to obtain required

# **DIVISION 5 - WATER MAINS AND APPURTENANCES**

#### SECTION 5010

The Jurisdictional Engineer hereby requests that all materials to be incorporated into the work have certifications furnished which show that the materials comply with Specifications prior to any construction. 2.01 - WATER MAIN PIPE

B. Water main shall be AWWA C-900 Polyvinyl Chloride (PVC) pipe unless noted otherwise on the Plans. 2.03 FITTINGS

Shall be compact ductile iron, mechanical joint with "Mega Lug" restrained fitting. All fittings shall be 'Made in USA'. 2.04 - CONCRETE THRUST BLOCKS

- D. Concrete thrust blocks shall be installed on all water main bends 22 1/2º and greater, tees, and plugged crosses. 2.05 - PIPELINE ACCESSORIES
- B. Tracer System is not required except on PVC pressure pipe for water mains or force main. Tracer system accessories shall be supplied by the Contractor when
- 2.07 WATER SERVICE PIPE AND APPURTENANCES

For  $\frac{3}{4}$ " to  $1\frac{1}{2}$ " shall be copper, ASTM B88, Type K. All couplers for service lines shall be brass.

#### SECTION 5020

#### 2.01 VALVES

Gate valves shall be USA Made, resilient seat wedge valves, Kennedy or approved equal, with mechanical joints. 2.02 FIRE HYDRANTS

Hydrants shall be USA Made Kennedy conforming to City Standards for 6' depth of bury, 6.5' trench depth. Hydrants shall conform to AWWA C502 and C600.

#### 2.03 VALVE BOXES

#### Valve boxes shall be Tyler or Jordan.

Curb boxes shall be Minneapolis pattern with center rod extending to top of box and comply with City standard. Boxes shall have 52" rod. Curb stop per City standard for compression fittings.

# SECTION 5030

#### 3.03 - DISINFECTION

- A. AWWA C651 requires two consecutive sets of acceptable samples, taken at least 24 hours apart from new main. Contractor to schedule to obtain samples with Jurisdictional Engineer or Jurisdiction.
- 3.05 Pressure and Leak Test Testing shall be the responsibility of the Contractor. No additional payment will be made for this testing, as it shall be incidental to the water main in place.

# **DIVISION 7 - STREETS & RELATED WORK**

#### SECTION 7010

#### 1.02 - DESCRIPTION OF WORK

5th Avenue SW is a Collector Street. Amanda Drive is a Local

Certified plant inspection by the Contractor is required on this project. Standard lowa DOT report forms to be completed and submitted to the Jurisdictional Engineer.

#### 1.06 SCHEDULING AND CONFLICTS

Contractor shall maintain access to residences during construction as much as reasonably possible. Temporary drive surfaces shall be provided by end of work day. 2.02 - MIXES, IOWA DOT IM 529

Minimum compressive strength shall be 4,500 psi at 28 days. Contractor may use Class M mix, but no additional payment will be made for this mix.

#### 3.06 - RESTRICTIONS ON OPERATIONS

Maturity Method for determination of opening time will be required for this project. Payment included in unit price for pavement

## 3.08 QUALITY CONTROL

A. Contractor will not be required to perform Plastic Concrete testing. Air, Slump, Cylinders, and/or Beams to be completed by the Jurisdictional Engineer. Contractor shall provide materials for these tests by Jurisdiction.

D. Jurisdictional Engineer reserves the right to require thickness cores if paving operations or edge thickness indicate a thickness deficiency. Pay factor to be used only when Jurisdictional Engineer requires cores. Contractor shall incur any cost required for thickness cores

to be taken upon the discretion of the Jurisdictional Fngineer.

## SECTION 7020

#### 2.01 - MATERIALS

Mix designation HMA 300K S shall be used.

Aggregate: Surface Course, 1/2 in. mix, Type A aggregate, 60% crushed.

# **DIVISION 9 - SITE WORK & LANDSCAPING**

#### SECTION 9010

#### 1.02 - DESCRIPTION OF WORK

- C. Completed installation shall include preparation of the seedbed, furnishing and installing seed, fertilizer and mulch, maintenance, and guarantee for completed seeded areas.
- D. Areas to be seeded with stabilization crop are all areas disturbed by construction. All disturbed areas are to be seeded with permanent or temporary seeding as described in the Plans.

# 1.07 - WARRANTY

A. Warranty period is two full years for permanent seeding

#### 1.08 - MEASUREMENT FOR PAYMENT

A. Seeding for a completed installation of permanent seed shall not be measured, payment will be lump sum. For temporary seed, areas seeded shall be measured by the Jurisdictional Engineer and payed for on the basis of acres. 2.02 - SEED MIXTURES

Seed Mixtures are to be as specified in Plans. 3.06 - WATERING

Watering will not be required as part of this project. 3.07 - RESEEDING

A. When all work related to seeding on an area has been completed but is washed out or damaged prior to final acceptance of the seeding area and that area involves seeding in combination with mulching or fertilizing or both, the area shall be reseeded, refertilized, and remulched without additional compensation.

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WATER MAIN LOOPING 3RD STREET WEST COURT WORTHINGTON, IOWA

**SPECIAL PROVISIONS** 

SHEET NAME

SHEET NO.

U.01

11

OF

PROJECT