

A d d e n d u m

Iowa Department of Transportation
Office of Contracts

Date of Letting: August 18, 2015
Date of Addendum: August 11, 2015

B.O.	Proposal ID	Proposal Work Type	County	Project Number	Addendum
303	78-0801-366	GRADING	POTTAWATTAMIE	IMN-029-3(127)48--0E-78 IMN-080-1(366)4--0E-78	18AUG303.A02

Make the following changes to the PROPOSAL SCHEDULE OF PRICES:

Add Proposal Line No. 1341 2102-2710070 Excavation, Class 10, Roadway and Borrow;
120.000 CY

Add Proposal Line No. 1342 2435-0130200 Manhole, Sanitary Sewer, SW-302, 3.000 EACH

Add Proposal Line No. 1351 2504-0116018 Sanitary Sewer Gravity Main, Trenched, Ductile
Iron Pipe (DIP), 18 in., 216.000 LF

Add Proposal Line No. 1352 2504-0130018 Sanitary Sewer Gravity Main with Casing Pipe,
Trenched, 18 in., 120.000 LF

Change Proposal Line No. 1370 2504-0240036 Remove Sanitary Sewer Pipe Less Than or
Equal to 36 in:
From: 222.000 LF
To: 489.000 LF

Add Proposal Line No. 1381 2510- 6750600 Removal of Intakes and Utility Accesses, 2.000
EACH

Add Proposal Line No. 1382 2549-0006320 Urethane Chimney Seal, 3.000 EACH

Change Proposal Line No. 1390 2553-0000210 Trench Foundation:
From: 50.000 TON
To: 100.000 TON

Change Proposal Line No. 1400 2552-0000220 Replacement of Unsuitable Backfill Material:
From: 450.000 CY
To: 550.000 CY

Add Proposal Line No. 1401 2599-9999005 Connect Sanitary Sewer Pipe, 4.000 EACH

Add Proposal Line No. 1430 2552-0000210 , Trenched Foundation 40.000 EACH

Add Proposal Line No. 1440 2552-0000220 , Replacement of Unsuitable Backfill Material, 80.000 CY

Add Proposal Line No. 1450 2554-0112008, Water Main, Trenched Ductile Iron Pipe (DIP), 8", 50.000 LF

Add Proposal Line No. 1460 2554-0122008, Water Main, Trenchless Ductile Iron Pipe (DIP), 8", 30.000 LF

Add Proposal Line No. 1470, 2554-0142008 Water Main, with 20" Casing Pipe, Trenched (DIP), 8", 137.000 LF

Add Proposal Line No. 1480, 2554-0202200 Fitting by Count, Mechanical Joint Tee (DIP), 8"x8"x8" , 1.000 EACH

Add Proposal Line No. 1490, 2554-0202200 , Fitting by Count, Mechanical Joint (DIP), 8" 45 Bend 4.000 EACH

Add Proposal Line No. 1500, 2554-0202200 , Fitting by Count, Mechanical Joint (DIP), 8"X6 Reducer 1.000 EACH

Add Proposal Line No. 1510, 2554-0202200 Fitting by Count, Sleeve 8" Standard Size (DIP), 7.000 EACH

Add Proposal Line No. 1520, 2554-0202200 Fitting by Count, Sleeve 6" Standard Size (DIP), 2.000 EACH

Add Proposal Line No. 1530, 2554-0202200 Fitting by Count, Plug 6" (DIP), 1.000 EACH

Add Proposal Line No. 1540, 2554-0207008 Gate Valve and Valve Box 8", 2.000 EACH

Add Proposal Line No. 1550, 2555-0000010 Deliver and Stockpile Salvaged Materials, 1.000 LS

Add Proposal Line No. 1560, 2599-9999005 Trenchless Water Main Setup, 1.000 EACH

Add Proposal Line No. 1570, 2599-9999005, Cut and Connect to Existing 8" Water Main 4.000 EACH

Add Proposal Line No. 1580, 2599-9999005, Cut and Connect to Existing 6" Water Main 1.000 EACH

Add Proposal Line No. 1590, 2599-9999005, Cut and Plug Existing 8" Water Main 1.000 EACH

Add Proposal Line No. 1600, 2599-9999005, Cut and Plug Existing 6" Water Main 1.000 EACH

If the above changes are not made, they will be made as shown here.

Make the following change to the Proposal Special Provisions Text:

Add this note to the work restrictions of 656.0199

Access to Haul Route #4 from South Omaha Bridge Road will not be available until April 1, 2016.

Replace SP 120319 with the attached SP 120319a

Revised language for - EMERGENCY ACTION PLAN that clarifies submittal requirements.

Make the following changes to the plans:

Replace plan sheet A.1 with the attached:

Revised A.1 sheet with updated Index of Sheets table and Index of Seals table.

Replace plan sheet M.6, M.7, & M.8 with the attached:

Add plan sheets M.9 thru M.15 to the plans:

Additional plan sheets M.6 – M.10 and M.11 – M15 for sanitary sewer relocation at 20th Avenue and water main relocation in the area of 8th Street and 12th Avenue.



Iowa Department of Transportation

SPECIAL PROVISION FOR EMERGENCY ACTION PLAN

Pottawattamie County
IMN-080-1(366)4--0E-78

Effective Date
August 18, 2015

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

120319a.01 DESCRIPTION.

A. Levee Unit Name: Ag Levee L-624, Section 3 (Mosquito Creek Levee)
Missouri River - Council Bluffs Flood Protection

Local Sponsor: City of Council Bluffs, Iowa

River Miles: M0.00 to about M1.69

Levee Stations: 998+45 to 1100+00

Project Name: Council Bluffs Interstate System – Segment 3
Railroad Consolidation
Pottawattamie County, Iowa

B. The Iowa DOT is proceeding with the railroad consolidation as a part of the Council Bluffs Interstate System (CBIS) improvement program. The work for railroad consolidation involves the construction of new railroad embankments. The levee affected by this construction is the Agricultural Levee L-624, which is a part of the Council Bluffs Flood Protection System that was originally designed and constructed by the Omaha District of the U.S. Army Corps of Engineers (USACE) in the early 1950s. A large portion of the railroad consolidation will take place within the “critical area” of the levee, which is defined by the USACE as the area within 300 feet riverward and 500 feet landward of the levee.

The specific work covered by this Emergency Action Plan (EAP) addresses the earthen embankments for the new railroad tracks, excavated shallow ditches along the toes of the railroad embankments, a box culvert for a bike path underpass through the rail embankment near levee Station 1079+00R, and railroad embankment construction at the Mosquito Creek right bank levee tie-in located at the north end of the levee. The majority of this construction will take place within the levee critical area of the subject levee. The levee critical area is considered by the USACE to be the area from 300 feet riverward to 500 feet landward of the flood control project.

- C. The purpose of this Special Provision is to identify the submittals required by the Contractor for compliance with the Section 408 submittal to the USACE, state the Section 408 submittal limitations on work in the levee critical area, establish the minimum monitoring requirements, establish the emergency response in case of a flood event, and establish the restoration requirements for damage to the levee critical area. A copy of the Section 408 submittal is available from the Engineer.

120319a.02 CONSTRUCTION.

A. Preparation of Emergency Action Plan.

Prior to construction, the Contractor shall prepare and follow an EAP, which will address the requirements presented in this document and the procedures for high water conditions on either the Missouri River or the Mosquito Creek during construction. The EAP shall include emergency contact information, including cell phone and pager numbers of the project manager, project superintendent and foreman. The numbers provided shall be monitored 24 hours a day, 7 days a week.

B. Submittals.

Any changes proposed by the Contractor for construction activities located in the levee critical area, such as: changes to staging, excavation depths, shoring, haul routes, or levee access; groundwater dewatering; or pumping water from the Mosquito Creek must be submitted to the Engineer for approval. Submittals will be reviewed by the Engineer, the City of Council Bluffs, and the USACE. Allow 9 weeks for review of these submittals. This time frame does not include review of resubmittals.

If any of these changes are anticipated, a description and location of the proposed changes, approximate time frame that the work will occur, any emergency action necessary, and a description of the proposed removal and restoration shall be included in the EAP submittal.

C. Construction Staging.

1. The Iowa DOT, City of Council Bluffs representatives, and the Engineer shall be notified 1 week prior to construction of the track embankment that ties into the levee section at the north end of the right bank of Mosquito Creek at the Iowa Interstate System railroad embankment (levee Station 985+45), and at the completion of construction operations.
2. Determination that the proposed work is considered substantially complete work will include review of:
 - a. The earthwork grading and
 - b. Satisfactory compaction test results.

D. Limitations.

1. The Contractor must ensure that the proposed construction will not involve any additional landward or riverward excavations in the critical area that may negatively impact the levee at any time during construction except as shown in the approved plans and specifications.
2. The Contractor must ensure that access to the levee crest and area within 15 feet of the levee toe is available to the City of Council Bluffs and USACE at all times. Any required restrictions will require prior approval of the Engineer and the City of Council Bluffs.

120319a.03 EMERGENCY ACTION PLAN.

A. Contents of Emergency Action Plan.

1. The contents of the EAP shall present a detailed staging plan and all provisions in the contract documents so that the integrity of the levee system and its ability to provide flood protection will be maintained throughout the entire duration of construction. A site map shall be provided in the EAP that identifies the location of:
 - Drainage District Right-of-Way (provided by the Engineer),
 - levee centerline with stationing (provided by the Engineer),
 - 500 foot landward critical area (provided by the Engineer),
 - Proposed haul routes,
 - Proposed construction within the levee critical area,
 - Stockpiles that will be available for emergency backfill along with dates that stockpiles will be in-place and type of materials, and
 - Proposed levee access locations.

The EAP shall include the schedule for activities within the levee critical area such as planned excavations.

The EAP shall be submitted at least 9 weeks prior to construction within the critical area.

2. The proposed construction will be performed during flood and non-flood event periods. The potential does exist for the river or stream to rise to flood level during the proposed construction. The Contractor shall have the provisions described in this Special Provision in place to address this potential.

B. Procedures.

The following procedures shall be in place to address an emergency situation:

1. Daily Monitoring.

- a. The water level in the Missouri River shall be monitored on a daily basis by the Contractor and recorded in the daily construction log. The extended forecast of future river levels and precipitation in the Mosquito Creek drainage basin shall also be monitored and recorded in the daily construction log. The Contractor shall be able to react quickly to the required actions described in this Special Provision, if a heavy precipitation event occurs at any time of the day.
- b. The Engineer and the City of Council Bluffs shall be notified if flood waters in the Mosquito Creek come into contact with the levee or are near the top of the levee within the construction limits.

2. Monitoring Agencies.

- a. The river level shall be monitored through USGS and National Weather Service websites for River Gage - 06610000 Missouri River at Omaha, NE.
 - http://waterdata.usgs.gov/ne/nwis/uv/?site_no=06610000&
 - <http://www.riverwatch.noaa.gov/forecasts/OAXRDOAX.php>
- b. The Mosquito Creek basin precipitation forecast shall be monitored through the National Weather Service website.
 - <http://www.hpc.ncep.noaa.gov/qpf/qpf2.shtml>

3. Ceasing Operation.

- a. Construction operation involving excavations will cease in the event the river levels are within 5 feet of the published flood stage of 29 feet (Elevation 974.4 feet). The 100 year flood elevation at this location is 981.0 feet. The 500 year flood elevation is 983.0 feet.
- b. In the event greater than 1 inch of rainfall in a 24 hour period is forecasted for the Mosquito Creek drainage basin, coordinate the work planned on the levee or riverward of the levee with the Engineer and City of Council Bluffs and take actions to ensure that no material or equipment is located on the levee or riverward of the levee at the end of the shift.

- c. Construction operations on the levee or riverward of the levee will cease if an unforeseen precipitation event occurs and the water level in the Mosquito Creek begins to approach bank full of the minor channel. Material and equipment shall be removed from the levee and riverward of the levee within 4 hours of the unforeseen precipitation event.
 - d. Coordinate with the Engineer, City of Council Bluffs, and USACE to determine timing and sequence of activities, as appropriate for returning to working following the receding of flood waters.
- 4. **Construction Equipment.**
Provide a list of all construction equipment that will be present throughout the duration of construction within the critical area and will be available for emergency flood fighting activities.
- 5. **Emergency Backfilling.**
 - a. Emergency backfilling shall be commenced, if the river level reaches an elevation within 5 feet of the published flood stage of 29 feet (Elevation 974.4 feet). The rate of emergency backfilling shall exceed the rate of the rising river. Excavated soil shall be used as emergency backfill.
 - b. Emergency backfilling shall commence, if the water level in the Mosquito Creek begins to approach bank full of the minor channel. The rate of emergency backfilling shall exceed the rate of the rising water. Excavated soils shall be used as emergency backfill.
 - c. If excessive seepage is observed in any of the excavations, the City and Engineer shall be notified immediately to determine the appropriate course of action.

120319a.04 EMERGENCY CONTACT INFORMATION.

A. City of Council Bluffs.

Jeff Krist, P.E.
City of Council Bluffs, Public Works Dept.
290 Pearl Street
Council Bluffs, Iowa 51503
Phone: 712-328-4635 (office)
Email: jkrist@councilbluffs-ia.gov

Pat Miller, Operations Manager
Phone: 402-510-2700 (cell)

Jeremy Noel, Levee Superintendent
Phone: 402-968-7301 (cell)

B. Iowa DOT Resident Construction Engineer.

David Dorsett, P.E.
3538 S. Expressway
Council Bluffs, Iowa 51501
Phone: 712-366-0568
Email: David.Dorsett@dot.iowa.gov

C. Iowa DOT District 4 Construction Engineer.

George Feazell, P.E.
2210 East 7th Street
Atlantic, Iowa 50022
Phone: 712-243-3355
Email: George.Feazell@dot.iowa.gov

D. Section 408 Engineer.

Patrick H. Poepsel, P.E.

HDR, Inc.
8404 Indian Hills Drive
Omaha, Nebraska 68114
Phone: 402-399-1368
Email: Patrick.Poepsel@hdrinc.com

E. USACE – Omaha District.

Ryan Buckley, P.E.
USACE – Readiness Branch
1616 Capitol Avenue, Suite 9000
Omaha, Nebraska 68102-4926
Phone: 402-995-2446
Email: Ryan.M.Buckley@usace.army.mil

F. Contractor.

Provide primary and secondary contact information for project manager, project superintendent, and foreman.

120319a.05 METHOD OF MEASUREMENT AND BASIS OF PAYMENT.

All costs for complying with this special provision including the preparation of the EAP, inclusion of submittals with the EAP, project coordination, pre- and post-construction surveys, monitoring, emergency actions, and any other item associated with implementation of the EAP shall be considered incidental to the project. No separate payment will be made.

LETTING DATE
8/18/2015

RAILROAD CONSOLIDATION
IMN-080-1(366)4--OE-78

POTTAWATTAMIE CO.
IMN-080-1(366)4--OE-78

FILE NO.
3/3/2015 7/23/2015

DESIGN TEAM
Iowa DOT\HDR

ENGLISH

POTTAWATTAMIE COUNTY

PROJECT NUMBER
IMN-080-1(366)4--OE-78

SHEET NUMBER
A.1

INDEX OF SHEETS

No.	DESCRIPTION
A.1	Title Sheet
A.2 - 3	Location Map Sheet
A.4 - 9	Project Key Map
B.1 - 13	Typical Cross Sections and Details
C.1 - 13	Quantities and General Information
C.1	Project Description
C.1 - 2	Estimated Project Quantities
C.2 - 5	Estimate Reference Information
C.6	Standard Road Plans
C.7	Index of Tabulations
C.8 - 19	Pollution Prevention Plan
C.10	Tabulations
C.11	Soil Tabulations
C.12	Mainline Plan and Profile Sheets
C.13	Plan & Profile Legend & Symbol Information Sheet
C.14	BNSF South Line Segment
C.15	BNSF Nye Track East Leg
C.16	BNSF Nye Track North Leg
C.17	BNSF Connection to Existing Council Bluffs Sub
C.18	BNSF North Segment 1
C.19	BNSF North Segment 2
C.20	CBEC Main Track
C.21	CBEC Connection to Existing CBEC Junction
C.22	CBEC Existing Track Grade Raise
C.23	SINE Track for Revised CBEC Access
C.24	SINE Existing Track Grade Raise
C.25	SINE Crossover and Mid-American Crossover
C.26	Western Engineering Track 1
C.27	Western Engineering Track 2
C.28	Bartlett Connection
C.29	Bartlett Tracks 1 - 5
C.30	Bartlett Locomotive Tie Up
C.31	Slide Road Plan and Profile Sheets
C.32	8th Street
C.33	12th Avenue
C.34	Existing 7th Street
C.35	7th Street Extension
C.36	Bike Path Realignment
C.37	Entrance 200042
C.38	Entrance 402000
C.39	Bartlett Set-out Access Road
C.40	Channel 30
C.41	23rd Avenue Extension
C.42	CBEC Access Road
C.43	BNSF South Temp Line Segment
C.44	Survey Sheets
C.45	Horizontal Control Tab. & Super for all Alignments
C.46	Proposed Track Alignment Geometry
C.47	Reference Ties and Bench Marks
C.48	Right-of-Way Sheets
C.49	Traffic Control and Staging Sheets
C.50	Traffic Control Plan
C.51	Staging Notes
C.52	Coordinated Operations / Pedestrian Path Closures
C.53	Traffic Control & Staging Legend & Symbol Info. Sheet
C.54	Staging and Traffic Control Sheets Stages 1 A,B,C&D
C.55	Staging and Traffic Control Sheets Stage 2
C.56	Staging and Traffic Control Sheets Stage 3
C.57	Staging and Traffic Control Sheets Stage 4A
C.58	Staging and Traffic Control Sheets Stage 4B
C.59	Staging and Traffic Control Sheets Stage 5A
C.60	Staging and Traffic Control Sheets Stage 5B
C.61	Staging Details
C.62	Detour Maps
C.63	Signing and Pavement Markings



Highway Division
PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE ROAD SYSTEM
POTTAWATTAMIE COUNTY
RAILROAD CONSOLIDATION

BNSF RAILWAY COUNCIL BLUFFS SUBDIVISION MP 488.60 TO MP 492.80
BNSF RAILWAY BAYARD SUBDIVISION MP 481.02 TO MP 483.39
CBEC RAILWAY 16TH AVENUE TO CBEC JUNCTION
BARTLETT GRAIN ELEVATOR INDUSTRIAL TRACKAGE
SOUTHWEST IOWA RENEWABLE ENERGY (SIRE) INDUSTRIAL TRACKAGE
WESTERN ENGINEERING INDUSTRIAL TRACKAGE

SCALE: 1/4" = 1'-0"

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 110.1b of the Specifications.

NO MILEAGE SUMMARY



For Project Location Map
Refer to Sheet A.2 - A.3

INDEX OF SHEETS

No.	DESCRIPTION
L.1	Geometric, Staking and Jointing Sheets
L.2	Geometric & Staking & Edge Profiles "8th St./12th Ave."
L.3	Geometric & Staking & Edge Profiles "12th Ave. Turn"
L.4	Geometric & Staking & Edge Profiles "Ex. 7th St."
L.5	Geometric & Staking & Edge Profiles "7th St. Ext."
L.6	Geometric & Staking & Edge Profiles "Bartlett Access"
L.7	Geometric & Staking "Entrance 200042"
L.8	Geometric & Staking "Entrance 402000"
L.9	Jointing "8th St. / 12th Ave. Extension"
L.10	Jointing "12th Ave. Turnaround"
L.11	Jointing "7th St. Extension"
L.12	Jointing "23rd Ave. Extension"
L.13	Storm Sewer Tabulations
L.14	Storm Sewer Legend & Symbol Information Sheet
L.15	Storm Sewer Plan and Profile Sheets "8th St."
L.16	Storm Sewer Plan and Profile Sheets "12th Ave."
L.17	Storm Sewer Plan and Profile Sheets "7th St. Ext."

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Benjamin N. Dey	Primary Signature Block
B.7	Graig J. Hunter	Roadway
B.11	John A. Christensen	Geotechnical
C.19	William E. Davidson	Electrical
M.6	Terrence L. Smith	Sanitary Sewer
M.11	Jared L. Olson	Water Main
R.1	Robert L. Stanley	Geotechnical

PROJECT IDENTIFICATION NUMBER 04-78-029-010-03
PROJECT NUMBER IMN-080-1(366)4--OE-78
R.O.W. PROJECT NUMBER IMN-029-3(65)5A--OE-78

REVISIONS

No.	DESCRIPTION
M.5	Storm Sewer Plan and Profile Sheets "BNSF N. Seg. 2"
M.6	Sanitary Sewer Sheets
M.11	Water Main Sheets
P.1 - 4	Electrical Layout Sheets
Q.1	Soils Legend & Symbol Information Sheet
Q.2 - 49	Soils Sheets "Mainline or Side Road Name"
R.1 - 7	Borrow Sheets
R.1	Borrow Sheets
S.1	Sidewalk Sheets
S.1	Sidewalk Legend & Symbol Information Sheet
S.2 - 3	Sidewalk Plan Sheets
S.4 - 5	Sidewalk Tabulations
T.1 - 13	Earthwork Quantity Sheets
T.1	Earthwork Quantity Sheets
U.1 - 4	500 Series, Mod.Stds. and Detail Sheets
U.1	Track Removals
U.2	Pavement Removal
U.3	Entrance 200042 Grading Details
U.4	8th St. / 12th Ave. / BNSF N. Seg. 2 Grading Details
U.5	Ditch Grading Details
U.6	Pipe Bedding Detail & Typical Access Road Crossing
U.7	8th St. / BNSF N. Seg. 2 Crossing Detail
U.8	23rd Ave. / Western / Bartlett Con. Crossing Detail
U.9	Crossing Diamond Details
U.10	Typical Turnout Walkway Plan
U.11	Typical Turnout Pad
U.12	Haul Routes
U.13	Trail Removals
U.14	Track Construction Details
U.15	Levee Critical Zone
U.16	Bridge and Culvert Situation Plans
U.17	Culvert Situation Plans
U.18	Mainline Cross Sections
U.19	Cross Sections Legend & Symbol Information Sheet
U.20	Mainline Cross Sections
U.21	Side Road Cross Sections
U.22	Side Road Cross Sections
U.23	Borrow Cross Sections
U.24	Borrow Cross Sections
U.25	* Color Plan Sheets

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: Benjamin N. Dey
Date: 7/24/15

My license renewal date is December 31, 2016.

Pages or sheets covered by this seal: A.1-4, B.1-B.6, C.1-C.12, D.1-D.43, F.1-5, G.1-G.26, J.1-J.20, L.1-L.13, U.1-U.41, V.1-V.19, W.1-W.139

Number	Date	Title
SW-103	04-21-09	FLEXIBLE GRAVITY PIPE, TRENCH BEDDING
SW-104	04-21-09	PRESSURE PIPE, TRENCH BEDDING
SW-302	04-21-09	RECTANGULAR SANITARY SEWER MANHOLE
SW-302	04-21-09	CHIMNEY SEALS FOR SANITARY SEWER MANHOLES
SW-601	04-17-12	CASTINGS FOR SANITARY SEWER MANHOLES
SW-601	04-21-15	CASTINGS FOR SANITARY SEWER MANHOLES

SANITARY OR STORM SEWER ABANDONMENT OR REMOVAL						110-14
						4-16-13
DISPOSAL	MATERIAL	D.I.A. (INCHES)	LOCATION		LENGTH (Lin. Ft.)	
			Station to Station	Side		
	UNKNOWN	12	11+27.39 to 12+25.58	CL	98.0	
	UNKNOWN	12	21+89.46 to 23+15.58	CL	124.0	
	TOTAL				222.0	
OFF-SITE	UNKNOWN	18	6013+45.46, 142.26' RT. to 6012+31.60, 0.00 RT.	RT	184.0	
OFF-SITE	UNKNOWN	18	6012+31.60, 0.00 LT. to 6012+21.82, 82.40' LT.	LT	83.0	
OFF-SITE	TOTAL				267.0	

REMOVAL OF INTAKES AND UTILITY ACCESSSES			
NO.	LOCATION/DESCRIPTION	TYPE	REMARKS
1	6013+44.40, 132.31' RT.	SANITARY MANHOLE	
2	6012+31.77, 1.45' RT.	SANITARY MANHOLE	NOT FOUND

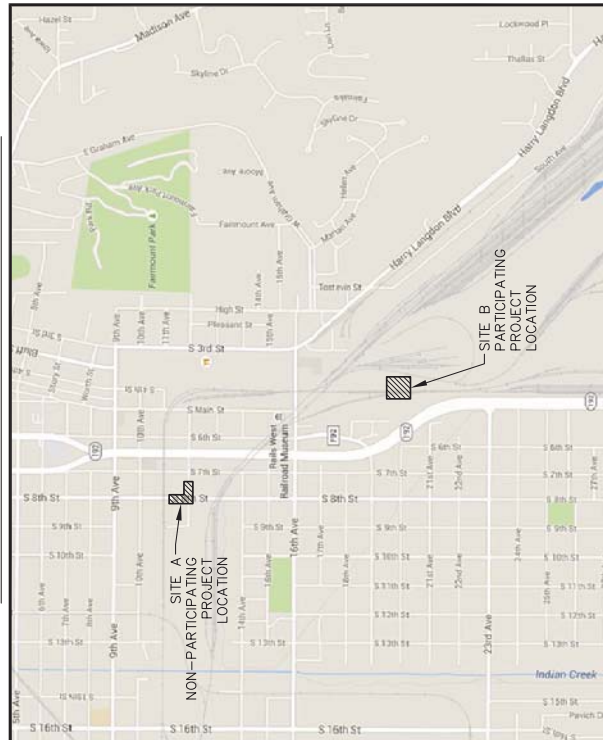
NO.	LOCATION STATION	TYPE OR STANDARD ROAD PLAN	FORM GRADE		BOTTOM WELL	EXTENSION LENGTH		NOTES
			ELEV.				FT	
1	6013+44.40, 132.37' RT.	SW-302	979.58		975.73			
2	6013+21.52, 82.94' LT.	SW-302	979.25		976.22			
3	6012+23.00, 72.47' LT.	SW-302	979.45		976.44			

Line Number	Intake/Utility Access No.	Class D	Pipe Diameter Inches	Length of Line Feet	Slope %	Flow Lines			Granular Backfill Tons	Flowable Mortar Cu. Yds.	Pipe Profile Sheet No.	Notes
						Inlet Elevation	Outlet Elevation	Other Elevation				
1	EXISTING EXISTING		12	98	0.22	975.64	975.42					60 L.F. CASED
2	EXISTING EXISTING		12	124	0.32	975.89	975.49					84 L.F. CASED
3	EXISTING MH 1		18	10	0.20	975.73	975.71					
4	MH 1		18	217	0.23	976.22	975.73					
5	MH 2		18	99	0.22	976.44	976.22					
6	MH 3		18	10	0.20	976.46	976.44					120 L.F. CASED
7	EXISTING MH 3		18	6								

SANITARY SEWER DESIGN



INDICATES
— PROJECT
LOCATION



SITE A: 8TH STREET/12TH AVENUE SEWER RELOCATIONS
NON-PARTICIPATING

SITE B: 20TH AVENUE SEWER RELOCATION
PARTICIPATING

ESTIMATED PROJECT QUANTITIES							100-1A 07-15-97
Item No.	Item Code	Item	Unit	Estimated Participating	As Built Participating	Estimated Non-Participating	As Built Non-Participating
0010	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	120.0			
0020	2435-0130200	MANHOLE, SANITARY SEWER, SW-302	EA	3.0			
0030	2504-0114012	SANITARY SEWER GRAVITY MAIN, TRENCHED, DUCTILE IRON PIPE (DIP), 18 IN.	LF			78.0	
0040	2504-0116018	SANITARY SEWER GRAVITY MAIN, TRENCHED, DUCTILE IRON PIPE (DIP), 18 IN.	LF	216.0			
0050	2504-0134018	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, 18 IN.	LF	120.0			
0060	2504-0134012	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, 12 IN.	LF			144.0	
0070	2504-0240036	REMOVE SANITARY SEWER PIPE LESS THAN OR EQUAL TO .36 IN.	LF	267.0			
0080	2507-3250005	ENGINEERING FABRIC	SY	80.0			
0090	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSSES	EA	2.0			
0100	2549-0006320	URETHANE CHIMNEY SEAL	EA	3.0			
0110	2549-0006320	TRENCH FOUNDATION	TON	50.0			
0120	2552-0000220	REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL	CY	100.0		450.0	
0130	2599-9999005	CONNECT SANITARY SEWER PIPE	EA	4.0			
0140	2599-9999005	CONNECT TO EXISTING SANITARY SEWER PIPE	EA			4.0	
0150	2599-9999010	BYPASS PUMPING	LS	1.0			1.0

ESTIMATE REFERENCE INFORMATION		100-1A 10-29-02
Item No.	Description	
0020	2435-0130200	MANHOLE, SANITARY SEWER, SW-302
ALL SANITARY STRUCTURES SHALL CONTAIN AN EPA REGISTERED ANTIMICROBIAL ADDITIVE THAT SHALL RENDER THE CONCRETE UNINHABITABLE FOR BACTERIAL GROWTH. THE ANTIMICROBIAL ADDITIVE SHALL HAVE SUCCESSFULLY DEMONSTRATED PREVENTION OF MICROBIOLOGICALLY INDUCED CORROSION IN SANITARY SEWERS FOR TEN OR MORE YEARS. THE GRADE RINGS USED IN CONNECTION WITH ANTIMICROBIAL ADDITIVE PREFORMED STRUCTURES SHALL ALSO CONTAIN THE ANTIMICROBIAL ADDITIVE. GROUT FOR FIELD REPAIRS SHALL BE AS RECOMMENDED AND/OR PRODUCED BY THE SAME MANUFACTURER AS THE ANTIMICROBIAL ADDITIVE USED IN THE STRUCTURES.		
THE ADDITIVE SHALL BE ADDED INTO THE CONCRETE MIX WATER TO INSURE EVEN DISTRIBUTION OF THE ADDITIVE THROUGHOUT THE CONCRETE MIXTURE. THE AMOUNT TO BE USED SHALL BE AS RECOMMENDED BY THE MANUFACTURER OF THE ANTIMICROBIAL ADDITIVE. THIS AMOUNT SHALL BE INCLUDED IN THE TOTAL WATER CONTENT OF THE CONCRETE MIX DESIGN. ALL CONCRETE CONTAINING AN ANTIMICROBIAL ADDITIVE SHALL HAVE A COLORANT ADDITIVE ADDED PER MANUFACTURER RECOMMENDATIONS FOR VISUAL VERIFICATION.		
ANTIMICROBIAL ADDITIVE WILL NOT BE MEASURED FOR PAYMENT. PAYMENT FOR ANTIMICROBIAL ADDITIVE SHALL BE INCLUDED IN THE UNIT PRICE FOR EACH MANHOLE.		
0030	2504-0114012	SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 12 IN.
REFER TO TABULATION ON SHEET M.06. TO MATCH UNITS OF EXISTING PIPE. BEDDING CLASS P-3 OF THE STANDARD ROAD PLAN SW-103 SHALL BE USED.		
BEDDING MATERIAL SHALL MEET THE FOLLOWING GRADATION:		
OR 3/4" CLASS A DOT GRADATION #11.		

SIEVE	PASSING PERCENT
1-1/2"	100
3/4"	65-95
3/8"	36-70
#4	5-45
#10	10-30
#200	< 8

SIEVE	PASSING PERCENT
1-1/2"	100
3/4"	65-95
3/8"	36-70
#4	5-45
#10	10-30
#200	< 8

SIEVE	PASSING PERCENT
1-1/2"	100
3/4"	65-95
3/8"	36-70
#4	5-45
#10	10-30
#200	< 8

ESTIMATE REFERENCE INFORMATION			100-1A 10-29-02														
Item No.	Item Code	Description															
0060	2504-0134012	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, PVC, 12 IN. REFER TO TABULATION ON SHEET M.06. SHALL BE SOLID WALL PVC PIPE SDR 35 TO MATCH JOINTS OF EXISTING PIPE. BEDDING CLASS F-3 OF THE STANDARD ROAD PLAN SW-103 SHALL BE USED. BEDDING MATERIAL SHALL MEET THE FOLLOWING GRADATION:	<table><tr><th>SIEVE</th><th>PASSING PERCENT</th></tr><tr><td>1 1/2"</td><td>100</td></tr><tr><td>3/4"</td><td>65-75</td></tr><tr><td>3/8"</td><td>36-70</td></tr><tr><td>#4</td><td>5-45</td></tr><tr><td>#10</td><td>10-30</td></tr><tr><td>#200</td><td>< 8</td></tr></table>	SIEVE	PASSING PERCENT	1 1/2"	100	3/4"	65-75	3/8"	36-70	#4	5-45	#10	10-30	#200	< 8
SIEVE	PASSING PERCENT																
1 1/2"	100																
3/4"	65-75																
3/8"	36-70																
#4	5-45																
#10	10-30																
#200	< 8																
OR 3/4" CLASS A DOT GRADATION #11.																	
STEEL CASING MEETING THE REQUIREMENTS OF ARTICLE 2553.02, WITH A MINIMUM 20" CASING DIAMETER AND 0.344" THICKNESS, SHALL BE USED.																	
0080	2507-3250005	ENGINEERING FABRIC															
ENGINEERING FABRIC SHALL BE USED AT THE DIRECTION OF THE ENGINEER AT THE TRENCH BOTTOM BELOW THE TRENCH FOUNDATION (ITEM 0050) AND MEET STANDARD SPECIFICATIONS ARTICLE 4196.01B2 FOR SUBSURFACE DRAINAGE AND IM 496.01 AND APPENDIX B.																	
MEASUREMENT AND PAYMENT SHALL BE PER SQUARE YARD. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, TOOLS AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.																	
0110	2552-0000210	TRENCH FOUNDATION															
BID ITEM INCLUDED TO BE USED TO ACHIEVE A STABLE TRENCH BOTTOM WHERE DIRECTED BY THE ENGINEER, DOT GRADATION NO. 13 MAY BE USED IN LIEU OF THE SPECIFIED MATERIAL.																	
0120	2552-0000220	REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL															
BID ITEM INCLUDED TO BE USED IN LOCATIONS WHERE EXCAVATED PIPE TRENCH MATERIAL IS FOUND UNSUITABLE BY THE ENGINEER.																	
0130	2599-9999005	CONNECT SANITARY SEWER PIPE															
ALL CONNECTIONS SHALL BE MADE WITH A FLEXIBLE COUPLING WITH STAINLESS STEEL SHEAR BANDS. THE FLEXIBLE COUPLING SHALL CONFORM TO ASTM D5926, C1173 AND CSA B602. THE CONNECTION AT STA. 6012+21.82, 82.40' LT. IS TO EXISTING UNKNOWN MATERIAL.																	
MEASUREMENT AND PAYMENT SHALL BE FOR EACH CONNECTION MADE. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, TOOLS AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.																	
0140	2599-9999005	CONNECT TO EXISTING SANITARY SEWER PIPE															
PVC TO PVC CONNECTIONS SHALL BE MADE AT EXISTING JOINT LOCATIONS AS SHOWN ON THE PLANS. THE CONNECTION AT STA. 12+25.58 IS TO EXISTING VCP. CONNECTION TO EXISTING VCP SHALL BE MADE WITH A FLEXIBLE COUPLING WITH STAINLESS STEEL SHEAR BANDS. THE FLEXIBLE COUPLING SHALL CONFORM TO ASTM D5926, C1173 AND CSA B602.																	
MEASUREMENT AND PAYMENT SHALL BE FOR EACH CONNECTION MADE. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, TOOLS AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.																	
0150	2599-9999010	BYPASS PUMPING															
ITEM INCLUDED FOR ALL BYPASS PUMPING REQUIRED FOR INSTALLING THE NEW SANITARY SEWER MAIN.																	
BYPASS PUMPING OPERATIONS SHALL BE CONDUCTED FROM EXISTING MANHOLE LOCATIONS. NO PERMANENT PIPE SHALL BE CUT FOR USE IN BYPASS FLOW PICKUP OR DISCHARGE.																	
ANY TEMPORARY MODIFICATIONS AND REPLACEMENT OF EXISTING MANHOLE TOPS AND CASTINGS SHALL BE INCIDENTAL TO THIS ITEM.																	
MEASUREMENT AND PAYMENT SHALL BE AT THE CONTRACT LUMP SUM PRICE. BASIS FOR PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, TOOLS AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.																	

ESTIMATED PROJECT QUANTITIES								100-1A 07-15-97
Item No.	Item Code	Item	Unit	Estimated Participating	As Built Participating	Estimated Non-Participating	As Built Non-Participating	
0010	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	120.0	_____	_____	_____	
0020	2435-0130200	MANHOLE, SANITARY SEWER, SW-302	EA	3.0	_____	_____	_____	
0030	2504-0114012	SANITARY SEWER GRAVITY MAIN, TRENCHED, DUCTILE IRON PIPE (DIP), 18 IN.	LF	78.0	_____	_____	_____	
0040	2504-0116018	SANITARY SEWER GRAVITY MAIN, TRENCHED, DUCTILE IRON PIPE (DIP), 18 IN.	LF	216.0	_____	_____	_____	
0050	2504-0130018	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, 18 IN.	LF	120.0	_____	_____	_____	
0060	2504-0134012	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, 18 IN.	LF	144.0	_____	_____	_____	
0070	2504-0240036	REMOVE SANITARY SEWER PIPE LESS THAN OR EQUAL TO .36 IN.	LF	267.0	_____	_____	_____	
0080	2507-3250005	ENGINEERING FABRIC	SY	80.0	_____	_____	_____	
0090	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSSES	EA	2.0	_____	_____	_____	
0100	2549-0006320	URETHANE CHIMNEY SEAL	EA	3.0	_____	_____	_____	
0110	2552-0000220	TRENCH FOUNDATION	TON	50.0	_____	_____	_____	
0120	2552-0000220	REPLACEMENT OF UNSUITABLE BACKFILL MATERIAL	TON	50.0	_____	_____	_____	
0130	2599-9999005	CONNECT SANITARY SEWER PIPE	CY	100.0	_____	_____	_____	
0140	2599-9999005	CONNECT TO EXISTING SANITARY SEWER PIPE	EA	4.0	_____	_____	_____	
0150	2599-9999010	BYPASS PUMPING	EA	4.0	_____	_____	_____	
			LS	1.0	_____	_____	_____	

ESTIMATE REFERENCE INFORMATION		100-1A 10-29-02
Item No.	Description	
0020	2435-0130200	MANHOLE, SANITARY SEWER, SW-302
ALL SANITARY STRUCTURES SHALL CONTAIN AN EPA REGISTERED ANTIMICROBIAL ADDITIVE THAT SHALL RENDER THE CONCRETE UNINHABITABLE FOR BACTERIAL GROWTH. THE ANTIMICROBIAL ADDITIVE SHALL HAVE SUCCESSFULLY DEMONSTRATED PREVENTION OF MICROBIOLOGICALLY INDUCED CORROSION IN SANITARY SEWERS FOR TEN OR MORE YEARS. THE MIX DESIGN USED SHALL BE APPROVED BY THE MANUFACTURER OF THE ANTIMICROBIAL ADDITIVE TO ASSURE THE COMPATIBILITY WITH ALL OTHER ADMIXTURES, CHEMICALS, AND MINERALS. GRADE RINGS USED IN CONNECTION WITH ANTIMICROBIAL ADDITIVE FORTIFIED STRUCTURES SHALL ALSO CONTAIN THE ANTIMICROBIAL ADDITIVE. GROUT FOR FIELD REPAIRS SHALL BE AS RECOMMENDED AND/OR PRODUCED BY THE SAME MANUFACTURER AS THE ANTIMICROBIAL ADDITIVE USED IN THE STRUCTURES.		
THE ADDITIVE SHALL BE ADDED INTO THE CONCRETE MIX WATER TO INSURE EVEN DISTRIBUTION OF THE ADDITIVE THROUGHOUT THE CONCRETE MIXTURE. THE AMOUNT TO BE USED SHALL BE AS RECOMMENDED BY THE MANUFACTURER OF THE ANTIMICROBIAL ADDITIVE. THIS AMOUNT SHALL BE INCLUDED IN THE TOTAL WATER CONTENT OF THE CONCRETE MIX DESIGN. ALL CONCRETE CONTAINING AN ANTIMICROBIAL ADDITIVE SHALL HAVE A COLORANT ADDITIVE ADDED PER MANUFACTURER RECOMMENDATIONS FOR VISUAL VERIFICATION.		
ANTIMICROBIAL ADDITIVE WILL NOT BE MEASURED FOR PAYMENT. PAYMENT FOR ANTIMICROBIAL ADDITIVE SHALL BE INCLUDED IN THE UNIT PRICE FOR EACH MANHOLE.		
0030	2504-0114012	SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 12 IN.
REFER TO TABULATION ON SHEET M.06. TO MATCH JOINTS OF EXISTING PIPE. SHALL BE SOLID WALL P.W. PIPE SDR 35 TO MATCH JOINTS OF EXISTING PIPE. BEDDING CLASS P-3 OF THE STANDARD ROAD PLAN SW-103 SHALL BE USED.		
BEDDING MATERIAL SHALL MEET THE FOLLOWING GRADATION:		
OR 3/4" CLASS A DOT GRADATION #11.		

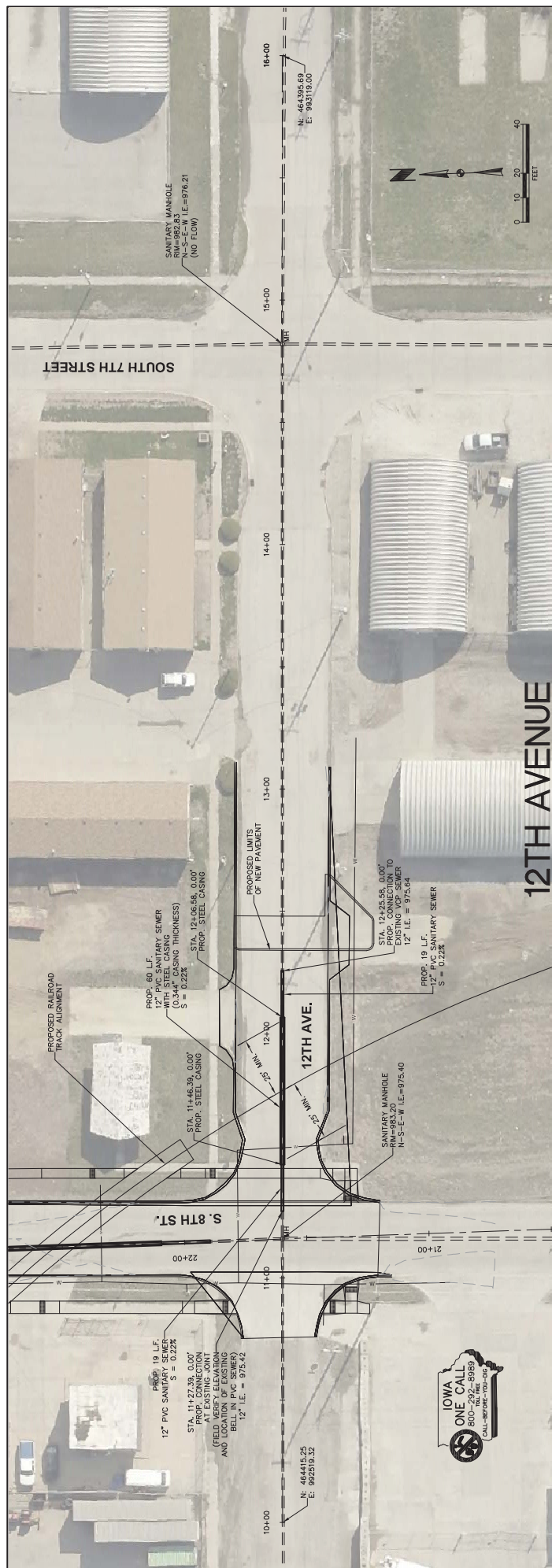
0040	2504-0116018	SANITARY SEWER GRAVITY MAIN, TRENCHED, DUCTILE IRON PIPE (DIP), 18 IN.
REFER TO TABULATION ON SHEET M.06. TO MATCH JOINTS OF EXISTING PIPE. SHALL BE SOLID WALL P.W. PIPE SDR 35 TO MATCH JOINTS OF EXISTING PIPE. BEDDING CLASS P-3 OF THE STANDARD ROAD PLAN SW-104 SHALL BE USED.		
BEDDING MATERIAL SHALL MEET THE FOLLOWING GRADATION:		
OR 3/4" CLASS A DOT GRADATION #11.		

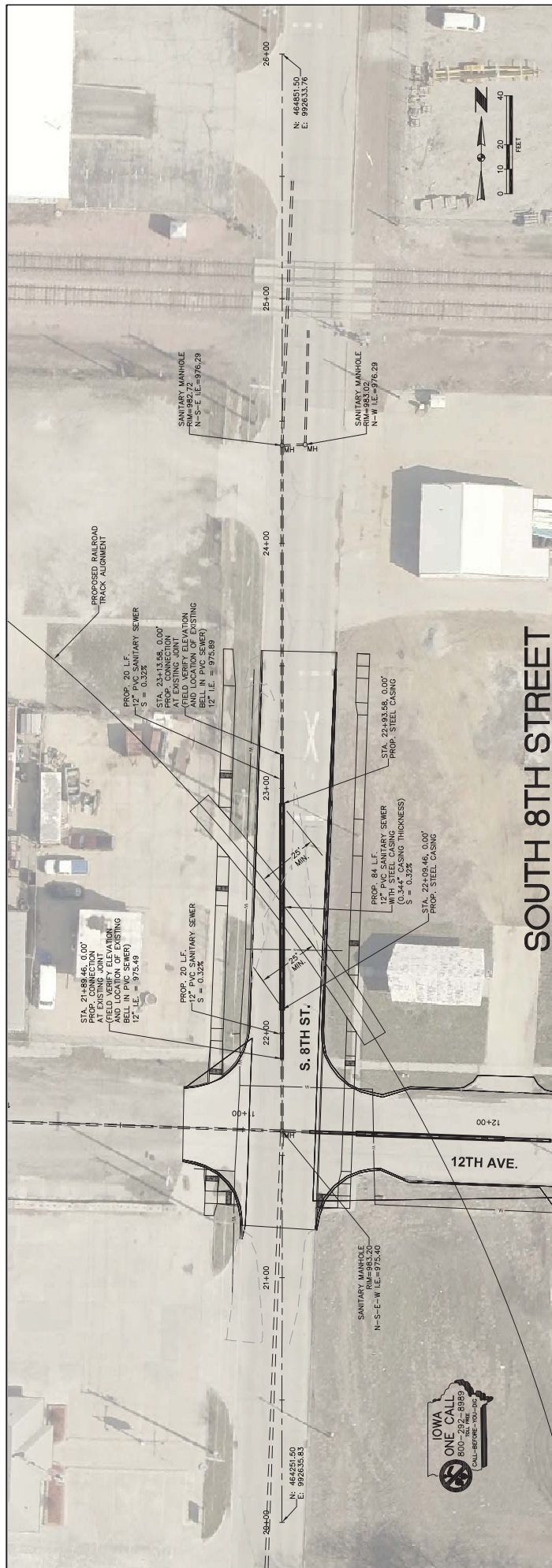
0050	2504-0130018	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, 18 IN.
REFER TO TABULATION ON SHEET M.06. TO MATCH JOINTS OF EXISTING PIPE. SHALL BE SOLID WALL P.W. PIPE SDR 35 TO MATCH JOINTS OF EXISTING PIPE. BEDDING CLASS P-3 OF THE STANDARD ROAD PLAN SW-104 SHALL BE USED.		
BEDDING MATERIAL SHALL MEET THE FOLLOWING GRADATION:		
OR 3/4" CLASS A DOT GRADATION #11.		

0060	2504-0134012	SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHED, 18 IN.
REFER TO TABULATION ON SHEET M.06. TO MATCH JOINTS OF EXISTING PIPE. SHALL BE SOLID WALL P.W. PIPE SDR 35 TO MATCH JOINTS OF EXISTING PIPE. BEDDING CLASS P-3 OF THE STANDARD ROAD PLAN SW-104 SHALL BE USED.		
BEDDING MATERIAL SHALL MEET THE FOLLOWING GRADATION:		
OR 3/4" CLASS A DOT GRADATION #11.		

0070	2504-0240036	REMOVE SANITARY SEWER PIPE LESS THAN OR EQUAL TO .36 IN.
REFER TO TABULATION ON SHEET M.06. TO MATCH JOINTS OF EXISTING PIPE. SHALL BE SOLID WALL P.W. PIPE SDR 35 TO MATCH JOINTS OF EXISTING PIPE. BEDDING CLASS P-3 OF THE STANDARD ROAD PLAN SW-104 SHALL BE USED.		
BEDDING MATERIAL SHALL MEET THE FOLLOWING GRADATION:		
OR 3/4" CLASS A DOT GRADATION #11.		

0080	2507-3250005	ENGINEERING FABRIC
STEEL CASING MEETING THE REQUIREMENTS OF ARTICLE 2553.02, WITH A 24" CASING DIAMETER AND 0.688" THICKNESS, SHALL BE USED.		

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ESTIMATED PROJECT QUANTITIES					100-1A 07-15-97
Item No.	Item Code	Item	Unit	Estimated	As Built
DIVISION 5: WATER MAIN					
0010	2552-000210	TRENCHED FOUNDATION	TON	48.0	
0020	2552-000220	REPLACEMENT OF EXISTING DUCTILE IRON PIPE (D.I.P.), 8"	CF	40.0	
0030	2554-012308	WATER MAIN, TRENCHLESS DUCTILE IRON PIPE (D.I.P.), 8"	LF	50.0	
0040	2554-012308	WATER MAIN, WITH 20' CASING PIPE, TRENCHED (D.I.P.), 8"	LF	30.0	
0050	2554-014308	FITTING BY COUNT, MECHANICAL JOINT TEE (D.I.P.), 8"x8"x8"	EA	137.0	
0060	2554-020220	FITTING BY COUNT, MECHANICAL JOINT TEE (D.I.P.), 8"x8"x8"	EA	1.0	
0070	2554-020220	FITTING BY COUNT, MECHANICAL JOINT (D.I.P.), 8"x8"x8" REDUCER	EA	4.0	
0080	2554-020220	FITTING BY COUNT, SLEEVE 8" STANDARD SIZE (D.I.P.)	EA	1.0	
0090	2554-020220	FITTING BY COUNT, SLEEVE 8" STANDARD SIZE (D.I.P.)	EA	7.0	
0100	2554-020220	FITTING BY COUNT, PLUG 8" (D.I.P.)	EA	2.0	
0110	2554-020708	GATE VALVE AND VALVE BOX 8"	EA	1.0	
0120	2559-99999005	DELIVER AND STOCKPILE SALVAGED MATERIALS	LS	2.0	
0130	2559-99999005	TRENCHLESS WATER MAIN SETUP	EA	1.0	
0140	2559-99999005	CUT AND CONNECT TO EXISTING 8" WATER MAIN	EA	4.0	
0150	2559-99999005	CUT AND CONNECT TO EXISTING 6" WATER MAIN	EA	1.0	
0160	2559-99999005	CUT AND PLUG EXISTING 6" WATER MAIN	EA	1.0	
0170	2559-99999005	CUT AND PLUG EXISTING 8" WATER MAIN	EA	1.0	
0180	2559-99999005	CUT AND PLUG EXISTING 6" WATER MAIN	EA	1.0	

LIST OF WATER MAIN DUCTILE IRON PIPE, (D.I.P.)					HQM 1 5-7-15
Line Number	Water Main Station to Station	Pipe Diameter (Inches)	Length of Line (Feet)	Notes	
1	STA. 12+22.29' RT. STA. 12+30.29' RT.	8	8		
2	STA. 11+41.29' RT. STA. 11+62.29' LT.	8	21		
3	STA. 10+98.29' LT. STA. 11+11.29' RT.	8	13		
4	STA. 22+28.15' LT. STA. 22+31.15' LT.	8	3		
5	STA. 23+08.13' LT. STA. 23+13.13' LT.	8	5		

WATER MAIN, TRENCHLESS (D.I.P.)					HQM 6 5-7-15
Location Station to Station	Dia. (Inches)	Material	Length (Lin. Ft.)	Notes	
STA. 11+11.29' RT. TO STA. 11+41.29' RT.	8	DUCTILE IRON	30		
		TOTAL	30		

LIST OF FITTINGS					HQM 2 5-7-15
Line Number	M.J. Fitting Sta. Location	M.J. Fitting Diameter (Inches)	Fitting Diameter (Inches)	Notes	
1	STA. 10+98.18' LT.	PLUG	6		
2	STA. 10+98.18' LT.	SLEEVE	6		
3	STA. 10+98.29' RT.	SLEEVE	8		
4	STA. 10+98.29' RT.	SLEEVE	8		
5	STA. 10+98.29' RT.	TEE	8X8X8		
6	STA. 11+03.29' RT.	45° BEND	8		
7	STA. 11+08.29' RT.	45° BEND	8		
8	STA. 11+46.29' RT.	45° BEND	8		
9	STA. 11+51.29' RT.	45° BEND	8		
10	STA. 12+30.29' RT.	SLEEVE	8		
11	STA. 12+30.29' RT.	REDUCER	8X6		
12	STA. 22+04.17' LT.	SLEEVE	8		
13	STA. 22+04.17' LT.	SLEEVE	8		
14	STA. 22+28.15' LT.	SLEEVE	8		
15	STA. 22+28.15' LT.	SLEEVE	8		
16	STA. 23+13.13' LT.	SLEEVE	8		

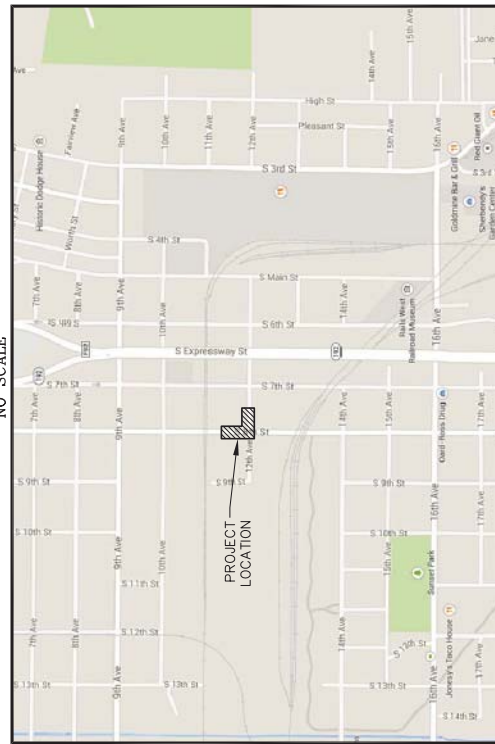
CUT AND PLUG EXISTING WATER MAIN					HQM 7 5-7-15
Line Number	Cut / Connect Sta. Location	Pipe Diameter (Inches)	Notes		
1	STA. 10+98.18' LT.	6	CBWW PRESENT DURING OPERATION		
2	STA. 10+98.41' LT.	8	CBWW PRESENT DURING OPERATION		

WATER MAIN W/ 20 IN. CASING PIPE TRENCHED (D.I.P.), 8 IN. 0.34375 IN. MIN. THICKNESS					HQM 7 5-7-15
Line Number	Station to Station	Pipe Diameter (Inches)	Length (Lin. Ft.)	Notes	
1	STA. 11+62.29' RT. TO STA. 12+22.29' RT.	8	60.0		
2	STA. 22+31.15' LT. TO STA. 23+08.13' LT.	8	77.0		

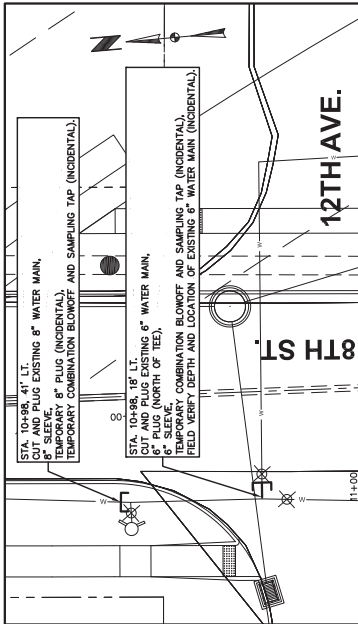
LOCATION OF GATE VALVE					HQM 4 5-7-15
Line Number	M.J. Gate Valve Sta. Location	Gate Valve Size (Inches)	Notes		
1	STA. 12+30.29' RT.	8			
2	STA. 23+13.13' LT.	8			

INDICATES PROJECT LOCATION

LOCATION MAP - COUNCIL BLUFFS, IOWA

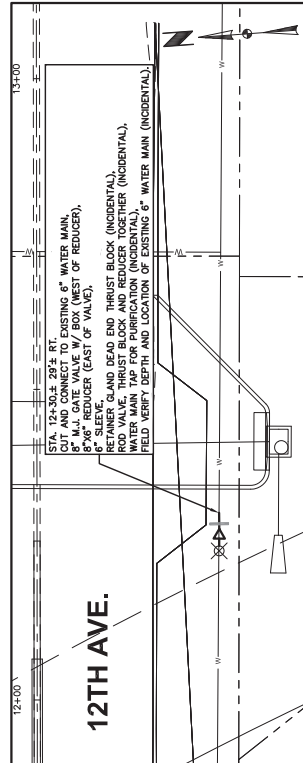


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STEP 1

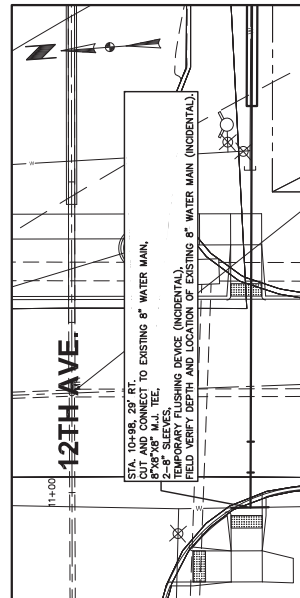
STA. 10+98.41' LT. AND STA. 10+98.441' LT.
—HAND CHLORINATE ALL PIPE AND FITTINGS.



STEP 1

STA. 12+30.2 29' RT.

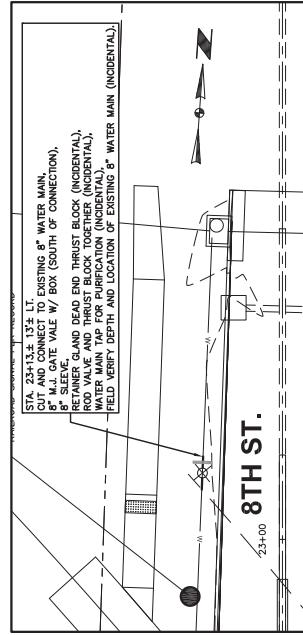
—HAND CHLORINATE ALL PIPE AND FITTINGS
—THE CUT AND CONNECT AT STA. 12+30.2 29' RT. SHALL BE DONE ON THE SAME SHUTDOWN AS THE CUT AND PLUG AT STA. 10+98.41' LT. AND 10+98.441' LT. AND THE CUT AND CONNECT AT STA. 23+13.13' LT.
—VALVE SHALL REMAIN CLOSED FOR CONTINUATION OF WATER MAIN CONSTRUCTION.



STEP 2

STA. 10+98.2 29' RT.

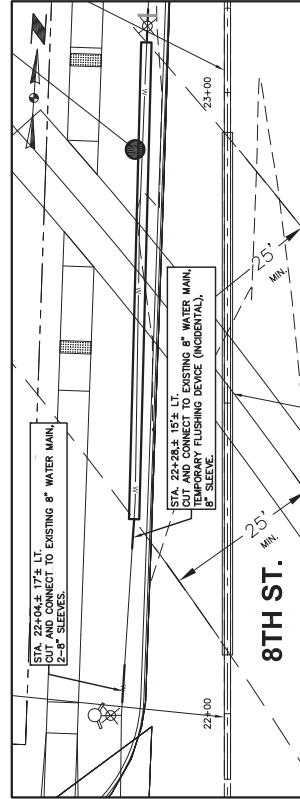
—THE WATER MAIN SHALL BE PURIFIED THROUGH THE TEMPORARY FLUSHING DEVICE AT STA. 10+98.2 29' RT. PRIOR TO MAKING THE FINAL CONNECTION.
—HAND CHLORINATE ALL PIPE AND FITTINGS.



STEP 1

STA. 23+13.2 13' LT.

—HAND CHLORINATE ALL PIPE AND FITTINGS
—LEAVE VALVE CLOSED FOR CONTINUATION OF WATER MAIN CONSTRUCTION.



STEP 2

STA. 22+04.2 17' LT. AND STA. 22+28.4 15' LT

—THE WATER MAIN SHALL BE PURIFIED THROUGH THE TEMPORARY FLUSHING DEVICE AT STA. 22+28.4 15' RT. PRIOR TO MAKING THE FINAL CONNECTION AT STA. 22+04.17' LT. AND STA. 22+28.15' LT.
—HAND CHLORINATE ALL PIPE AND FITTINGS USED TO MAKE FINAL CONNECTIONS.