



1ST AVENUE WIDENING
ACEC/IDOT/FHWA
TRANSPORTATION
CONFERENCE
SEPTEMBER 24, 2024

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PRESENTERS:

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KIRKHAM MICHAEL

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- Project Background & Goals
- Project Phase Overviews
- Bid Summary
- Real Estate Acquisitions
- Surprises & Unique Conditions
- Learning Opportunities
- Altoona Roundabout Experience & Discussion

OVERVIEW


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- ▶ Altona has two direct access points to I-80 and US Hwy. 65 from the center of the city
 - ▶ Access to Interstate 80 via 1st Avenue
 - ▶ Access to Highway 65 via 8th Street
 - ▶ Access via Hubbell Interchange requires several indirect paths to access

PROJECT BACKGROUND


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PROJECT BACKGROUND

- ▶ 1st Avenue Conditions:
 - ▶ Two-lane Rural Section
 - ▶ from 8th Street SE to 9th Street NE (1 Mile)
 - ▶ AADT (2016): 22,400

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PROJECT BACKGROUND

- ▶ 1st Avenue Conditions:
 - ▶ No sidewalk or trail between Olde Town and 9th Street NE
 - ▶ No storm sewer either (ditches only)
 - ▶ Significant Overhead Utilities
 - ▶ One of the oldest streets in the city


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- ▶ 2nd Street SE to 2nd Street NW (1,100 LF):
 - ▶ Two Bid Packages
 - ▶ Storm Sewer & Water Main
 - ▶ Main Roadway Paving
 - ▶ Railroad Crossing (Iowa Interstate RR)
 - ▶ New Storm sewer for Phase 1 and 2
 - ▶ Two HAWK signals
 - ▶ Vern Willey Trail
 - ▶ 6th Street SE at 1st Avenue

PHASE 1 OVERVIEW

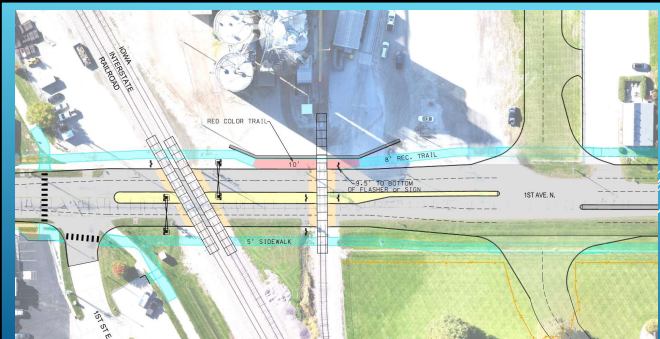
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- ▶ Railroad Owner: Iowa Interstate Railroad
- ▶ Operational Frequency: 3-4 times per day
 - ▶ Speed: 40 MPH
- ▶ Tracks to Cross (3):
 - ▶ Mainline
 - ▶ Siding
 - ▶ Spur Track to Grain Terminal
- ▶ Adjacent HAWK required Preemption
- ▶ Raised 10" Median required
- ▶ All improvements set up for future Quiet Zone

RAILROAD CROSSING

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RAILROAD CROSSING



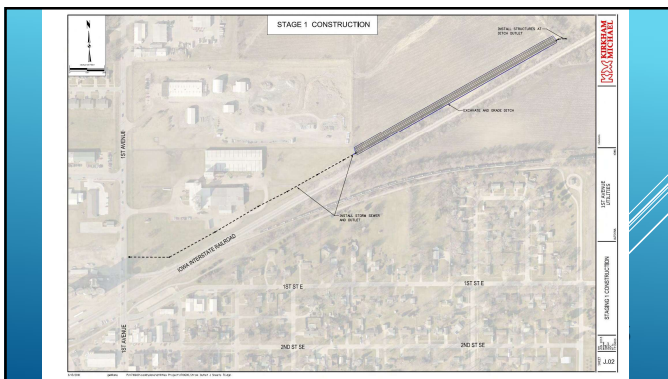
1. No existing storm network New regional outlet was designed to pass through private Kent Feed site.

2. Pipe & Ditch installed for 1/2 mile to reach outlet location

3. Channel cut was wasted on-site

PHASE 1 STORM OUTLET

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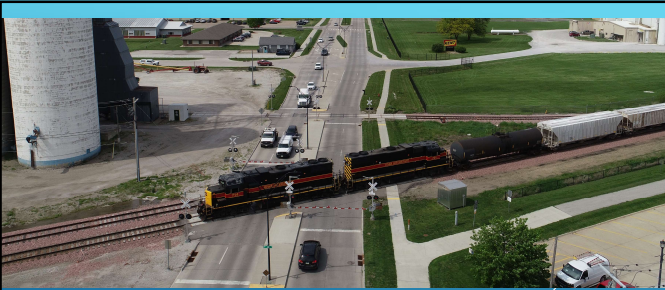
▶ School Xing at 6th Street SE



HAWK SIGNALS

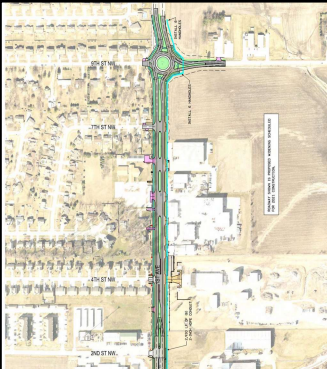
▶ Vern Willey Trail
▶ Required Railroad Preemption





FINISHED PHASE 1 ROADWAY

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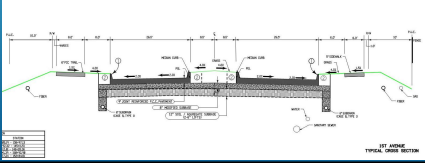
▶ 2nd Street NW to 9th Street NE (2,300 LF)
▶ Typical Section
▶ Roundabout Design
▶ Joint Utility Trench
▶ Utility Conflicts
▶ Olde Town Parking Additions
▶ Public Art

PHASE 2 OVERVIEW


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TYPICAL SECTION

- 1. Designed as four lane boulevard section
- 2. Roadway width: 26.5' B-B
- 3. Center median: 17'
- 8' Rec Trail and 6' Sidewalk



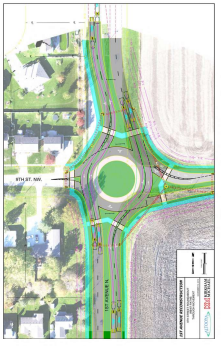
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ROUNABOUT DESIGN

- 1. Intersection at 1st Avenue and 9th Street NE
- 2. Previously designed as a traditional intersection
- 3. Required a significant offset

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ROUNABOUT DESIGN

- ▶ **Multi-Lane Roundabout:**
 - ▶ Design Followed NCHRP 672
 - ▶ Four Lanes on 1st Avenue and single lane approaches on 9th Street
 - ▶ WB to NB received Right turn bypass lane
 - ▶ Painted only due to comments by P.W.
 - ▶ Avoid major impacts to residential properties
 - ▶ Designed for WB-67 due to grain terminal
 - ▶ Altoona's 4th Roundabout and first on a major Arterial (now up to 6)

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JOINT UTILITY TRENCH

- 

1. Goal was to provide JUT from 8th Street SE to 9th Street NW

Phase 2 was only leg installed in project to date.
- 

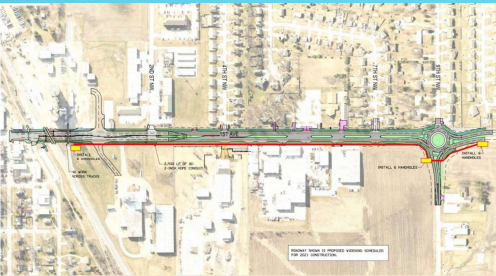
2. Multiple JUT scenarios were reviewed and discussed with local utility representatives

Microduct was evaluated
- 

3. Final JUT layout specified was six (6) 2" HDPE conduits with different color stripes

Price was only \$3.00 per LF (very low)









JOINT UTILITY TRENCH


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UTILITY CONFLICTS

- 

1. Overhead to Underground Conversion (Free)
- 

2. Six (6) Fibers to relocate
- 

3. All Gas mains and service
- 


All water services and most of the existing mains
- 

Sewer Service adjustments

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LUMEN DUCT BANK

- 1. Runs entire length of project
12" x 15" size bank with precast sections
- 2. Was potholed at critical storm locations for all phases
Dozens of potholes taken on duct bank
- 3. Duct Bank elevation found to vary greatly between potholes
Installation was erratic



DUCT BANK – FIELD ADJUSTMENTS

- 1. Storm Sewer Intakes types changed or pushed back
Several SW-505 and SW-507s were switched
- 2. Storm Sewer intake walls modified to work around duct bank
Narrow box with tapered upper wall
- 3. Southbound Road profile raised 6-inches for 1,000 LF
Bank waded up and down

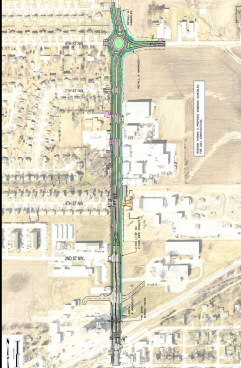


OLDE TOWN PARKING

- ▶ Added spots:
 - ▶ Altoona Auto Body (10 spots)
 - ▶ Burget Mill (25 spots) + ADA ramp
 - ▶ 3rd Street (7 spots)
 - ▶ Townsend Park (6 spots)




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- ▶ The middle of the Roundabout was targeted early for an art installation
- ▶ Artist from Maine selected in 2018
- ▶ Concept Name: Woven Lines
- ▶ Roadway Themed

PUBLIC ART

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▶ This dynamic new sculpture combines the monumental personality of a roadside attraction with the intimacy and subtlety of gracefully drawn lines. In this way, Woven Lines, poetically transforms the given public landscape to speak to the core values of this traditional American town.

PUBLIC ART

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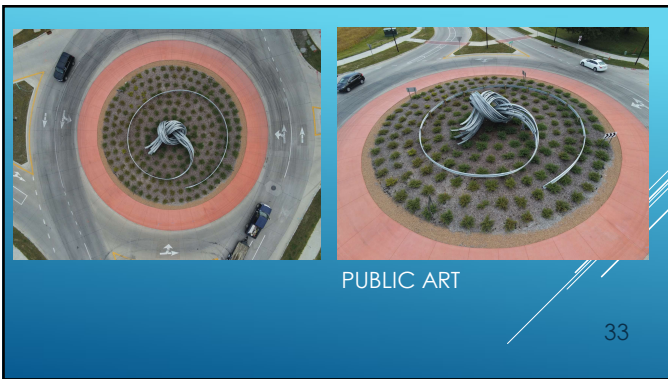
Because of the highly customized nature of this sculpture, a great deal of time went into the design and construction of the sculpture. The goal of the sculpture is to create a public space that is both functional and aesthetically pleasing.

PUBLIC ART

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PUBLIC ART

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- ▶ 8th Street SE to 2nd Street SE (2,300 LF)
- ▶ Typical Section
- ▶ Historic Lighting

PHASE 3 OVERVIEW

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- ▶ Existing two-lane width was 27.5' B-B
- ▶ Widened both sides to create 37' B-B
- ▶ Future 5-lane was drawn up but not installed
- ▶ Single Family Homes & ROW

TYPICAL SECTION


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HISTORIC LIGHTING

- 1. Originally installed in 1990's
- 2. Has unique drip-irrigation system to dual arms
Water & Electricity Mix?
- 3. All 20 lights had to be relocated due to widening.
No drawings for existing bases




FINISHED ROADWAY



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FINISHED ROADWAY



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May 2018	Exit 143 Signal - \$156,133.42 - Iowa Signal
August 2018	1 st Avenue Utilities Project - \$641,000.00 - Halbrook Excavating
April 2019	Phase 1 Paving Project - \$1,916,121.48 - Iowa Civil Contracting
April 2021	Phase 2 Project - \$4,886,703.50 - Synergy Contracting
April 2023	Phase 3 Project - \$4,960,911.45 - Absolute Group

- ▶ 1.06 Miles Reconstructed/Widened
- ▶ Over \$13M in Construction Work

BID SUMMARY 40



- ▶ **Total Property Acquisition:**
 - ▶ 23 Partial Acquisitions
 - ▶ Sidewalks on Private Property
 - ▶ 70 Permanent Easements
 - ▶ 46 Temporary Easements

REAL ESTATE ACQUISITIONS 41



SURPRISES AND UNIQUE CONDITIONS

- ▶ Jobsite Incursions

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City of Abbeville
407 8th St. SE
Abbeville, Louisiana 70509

RECEIVED
OCT 14 10:00 AM
CITY OF ABBEVILLE

ARE YOU DRIVING STUPID, OR WHAT!!
You [redacted] idiots

1st Ave

It's a thousand times worse now
It's an accident waiting to happen

► Fan Mail

SURPRISES AND
UNIQUE CONDITIONS

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► Hit only weeks after opening
► Driver charged with public intoxication, striking a fixture, interference with official acts, leaving the scene of an accident, and drug paraphernalia.

SURPRISES AND
UNIQUE CONDITIONS

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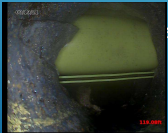
CAPITALIZING ON
OPPORTUNITIES FOR
FUTURE GROWTH
(LESSONS LEARNED)

1. The railroad raised tracks by 3" HMA Wedges Required
2. JUT has been under-utilized Only 3 of the 6 conduits are being used
3. Utility relocations were poorly done 90% of them were placed in conflict

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FUTURE PREVENTATIVE MEASURES

1. Hold final paving back by 100' until tracks are reset
2. Adopt stricter requirements for JUT use by utilities or don't install at all
3. Pothole after relocations to ensure compliance



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ALTOONA ROUNDABOUT DISCUSSION

- ▶ Six Current Installations
 - ▶ Three around Prairie Crossing
 - ▶ One on 1st Avenue – Major Arterial
 - ▶ One on 8th Street – Major Arterial
 - ▶ One on 20th Avenue
- ▶ Public Perception
- ▶ City Council Support
- ▶ Fire / Police Support
- ▶ School Support

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QUESTIONS?

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