



Agenda

Work Session

Oelwein City Hall, 20 Second Avenue SW, Oelwein, Iowa

6:30 PM

May 23, 2022

Oelwein, Iowa

Mayor: Brett DeVore

Mayor Pro Tem: Lynda Payne

Council Members: Karen Seeders, Tom Stewart, Matt Weber, Dave Garrigus, Dave Lenz

Pledge of Allegiance

Discussions

1. Discussion on Waste Water Reed Beds and Equalization Basin.
2. Discussion on 2022-2023 road improvement project.

Adjournment

In compliance with the Americans with Disabilities Act, those requiring accommodation for Council meetings should notify the City Clerk's Office at least 24 hours prior to the meeting at 319-283-5440



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CITY OF OELWEIN, IOWA
REED BED AND EQUALIZATION BASIN IMPROVEMENTS

MAY 23, 2022



ISSUES TO ADDRESS

- Improve Reed Bed Performance/Expand Biosolids Storage Capacity
- Comply with Nutrient Reduction Requirements
 - Phosphorus Reduction
 - August 2024 Deadline
- Aging EQ Basin Liner

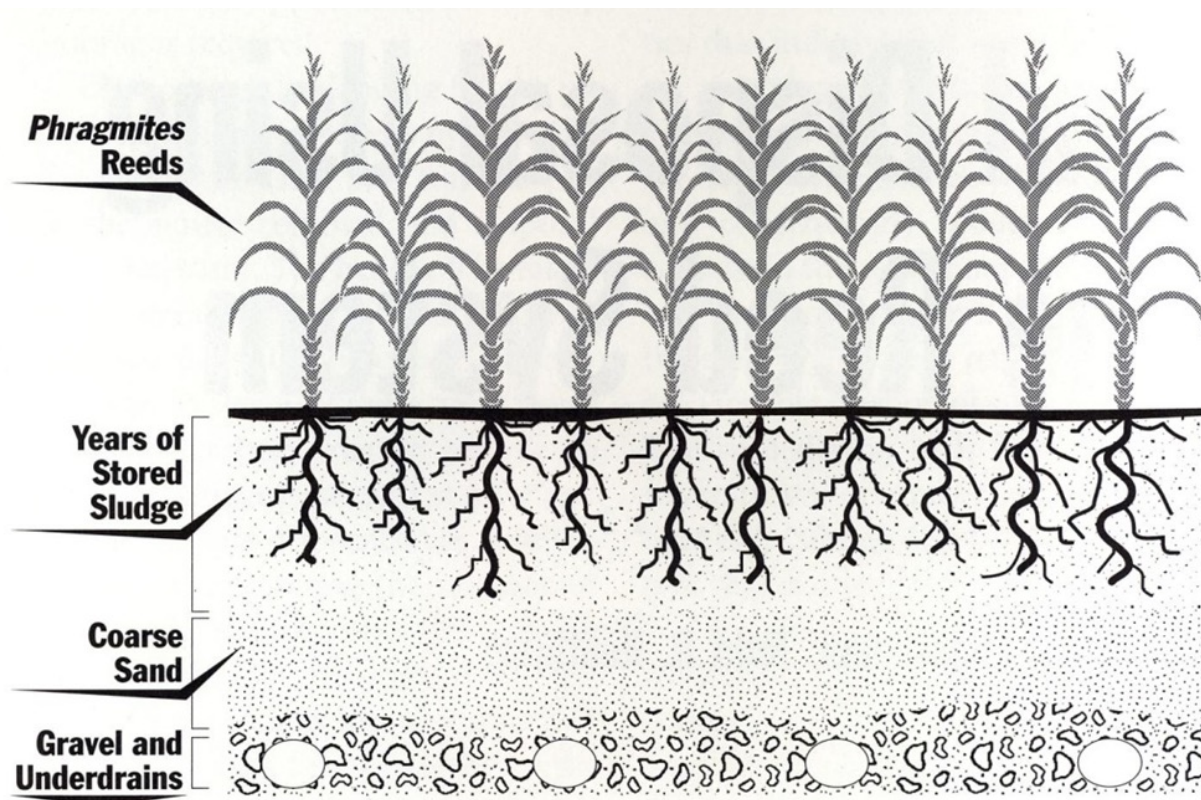


2020 SLUDGE STORAGE EVALUATION

- Three options evaluated:

	<u>Option 1</u> Construct Additional Reed Beds	<u>Option 2</u> New Liquid Storage & Existing Reed Beds	<u>Option 3</u> Do Nothing
Initial Construction Cost	\$1,034,000	\$2,047,000	\$89,000
Present Worth O&M Costs	\$600,000	\$1,647,000	\$1,503,000
Annual O&M Costs	\$40,300	\$110,700	\$101,000
Salvage Value	\$103,000	\$389,000	\$0
20 Yr. Net-Present Worth	\$1,531,000	\$3,305,000	\$1,592,000

REED BED CONSTRUCTION

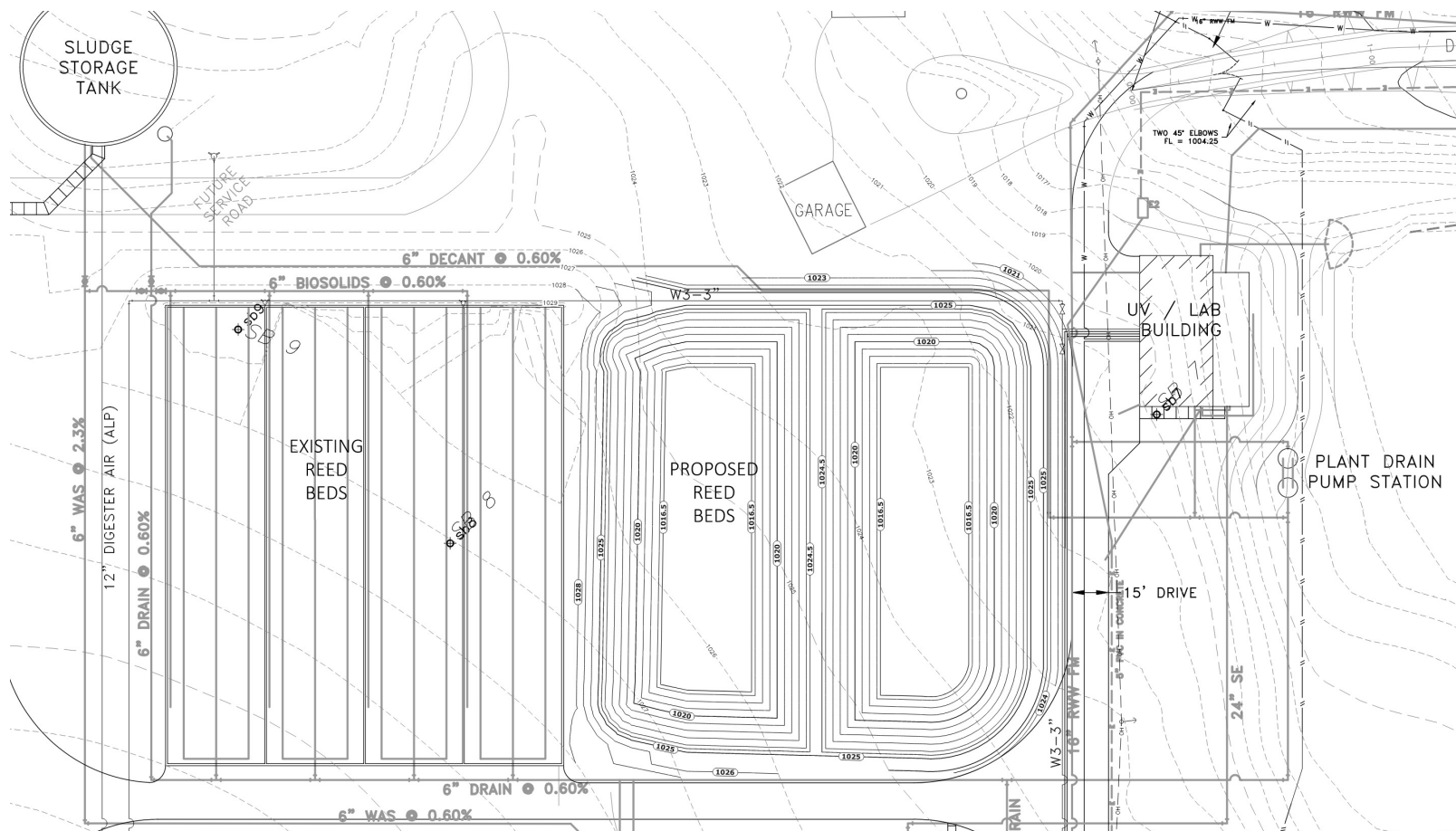


A cross-section of a reed bed showing the root system.

REED BED PERFORMANCE – BAD vs. GOOD



REED BED EXPANSION



POTENTIAL SLUDGE VOLUME REDUCTION

- 500,000 gallons of sludge @ 2.0% solids (2,083 wet tons, 41.7 dry tons)
- Dewater to 20% solids, 70% volatile organics and 30% non-volatile (208 wet tons, still 41.7 dry tons)
 - 12.5 tons non-volatile solids
 - 29.2 tons volatile solids
- At this stage, similar to filter press

POTENTIAL SLUDGE VOLUME REDUCTION

- Over 7-10 year treatment cycle, volatile organics reduced from 70% to 25% of total solids, still at 20% total solids
 - 12.5 tons of non-volatile solids
 - Now only 4.2 tons volatile solids
 - 16.7 dry tons, and 83.5 wet tons
- Rest for 90 days in summer – 48% solids (30-40% most likely)

POTENTIAL SLUDGE VOLUME REDUCTION

- With 90 day resting:
- Now only 34.8 wet tons remaining from original 2,083 wet tons @ 2% solids from aerobic digester
- Must be able to load other reed bed cells, temporary storage, or liquid land application

EQUALIZATION BASIN LINER REPLACEMENT



PROJECT SCHEDULE

- August 2022 – Begin Design of Improvements
- February 2023 – Final Design Complete/Submit to IDNR
- March 2023 – Receive Bids
- April 2023 – Begin Construction
- July 2024 – Construction Complete

QUESTIONS?





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2022 Street Updates

Potholes

Cold Patched as we waited for emulsion
 Will now be patching as emulsion is here

Chip Seal

Currently working on quotes for Chip Seal

Crack Sealing

Working on identifying key areas and completing a week of work in 2022

Large Projects

<p>6th St NE- \$112,000 (water main not included) 12th Ave SE- \$81,000 (sanitary sewer needs inspected) 2nd St SE- (upper explorerland funding) 3rd Ave NE- \$62,500 (water main not included) Oak St.- \$44,500 (sanitary sewer needs inspected) Total \$300,000 (staff estimate)</p>	<p>8th Ave SE- \$1,470,000</p>
<p>Funding: \$500,000 2022 Bond, Water Infrastructure as needed, Sewer Reserve as needed</p>	<p>Water Main Cost: \$550,00 Funding: \$350,000 Water Infrastructure, \$150,000 TIF Repayment to water fund, \$50,000 Water Street Cost: \$818,000 (minus school cost of \$102,000) Funding: \$500,000 2022 Bond, \$150,000 Franchise Fee, and \$160,000 Economic Development Other Funding Possibilities- Road User Tax Reserve (potentially \$75,000) Street Assessments- \$88,000 2020 leftover bond proceeds \$100,000</p>
<p>Assessments for property owners</p>	<p>No assessment on school properties, could do business and some homes</p>
<p>Design in 2022, construction in 2023</p>	<p>Design in 2022, construction in 2023</p>

Council will need to determine a direction for staff.

6th St NE – (2nd Ave to 8th Ave)

*650 linear ft of concrete and 1350 linear ft of Asphalt overlay

*possibly crack and seat and overlay concrete portion

*would need 650 ft of water main replaced and 1280 ft of sewer inspected and possibly rehabbed

\$112,000 -



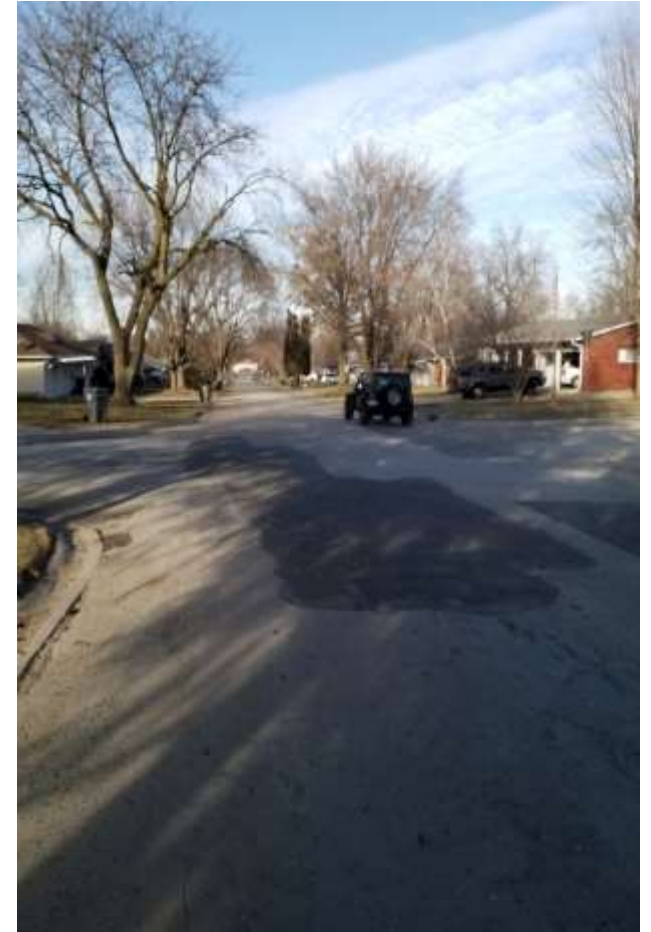
12th Ave SE – (E. Charles to 2nd St)

*1350 Linear feet at 34-ft width Asphalt overlay

*Would need 1500 ft of sanitary sewer inspected for condition

*Asphalt overlay estimate including a 1" leveling course followed by a 2" overlay

\$81,000 -



2nd St SE — (2nd Ave to 8th Ave)

*2150 linear ft at 30-ft width Asphalt overlay and complete curb replacement

*would need to inspect sewer crossings

*water main is back of curb

*Asphalt overlay estimate not including the necessary curb work including a 1" leveling course followed by a 2" overlay

\$166,425 -



3rd Ave NE – (6th St to 8th St)

*950 linear ft at 32-foot

*would need 950 ft of water main replaced and 950 ft of sanitary sewer inspected and possibly rehabbed

\$62,500 -



Item 2.

Oak St. (East Line Rd. to Elm St.)

\$44,500 -

Item 2.

- *636 Linear ft concrete at 34-ft width
- *Would need 562 ft of sanitary sewers that is questionable inspected
- *has 632 ft of 6" water main that has only had one leak in 20+ years and it was a blown-out corporation stop
- *Crack and seat estimate including a 1" leveling course followed by a 2" overlay

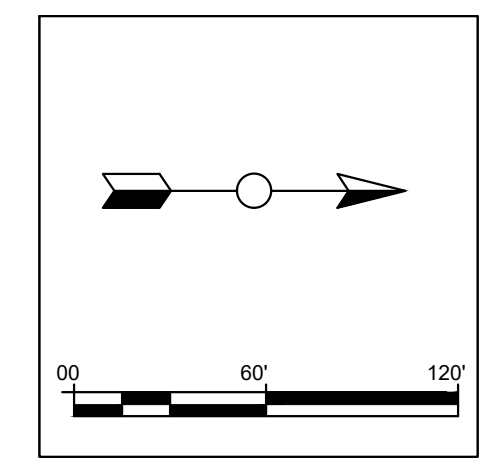
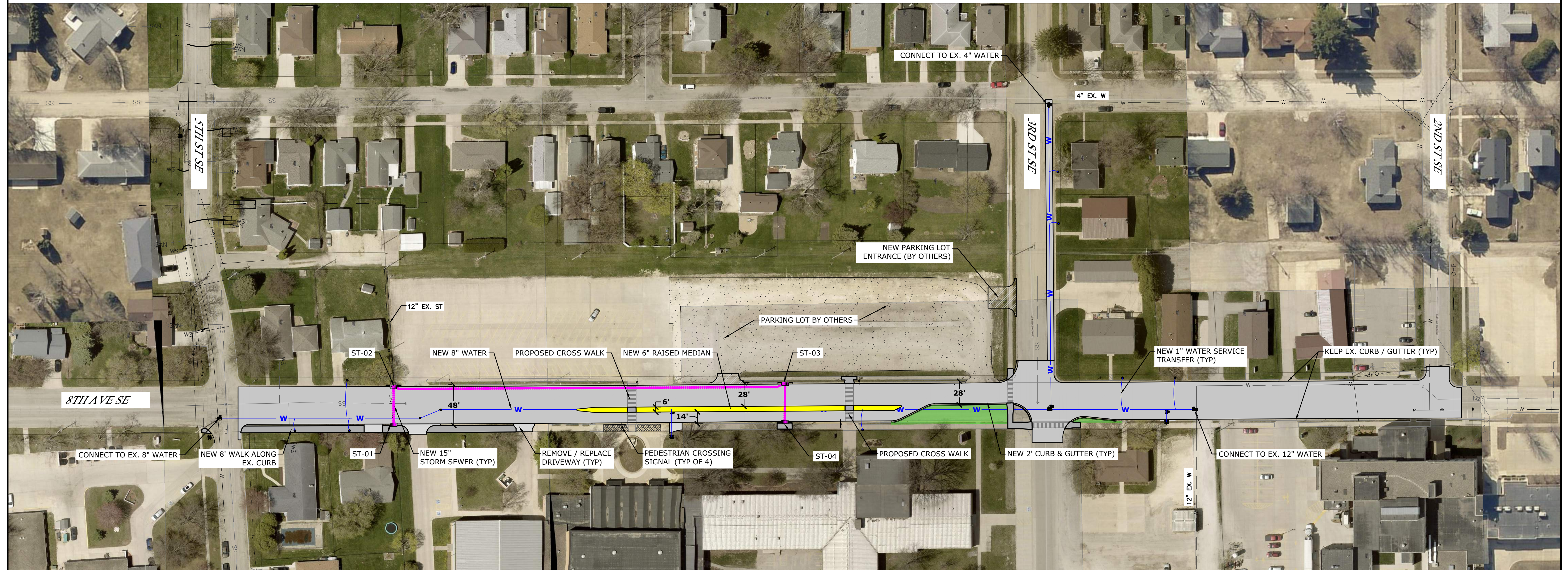


OPTION 2: HMA REMOVAL & REPLACEMENT
TOTAL PROJECT COST = \$1,450,000

ESTIMATED SCHOOL SHARE = \$102,000

NOTES:

- 1) NEW 8" WATER MAIN ON 8TH AVE SE TO 12" EX. CONNECTION. ABANDON EX. 6" WATER IN PLACE.
- 2) NEW 8" WATER MAIN ON 3RD ST SE FROM 8TH AVE SE TO 7TH AVE SE. ABANDON EX. 4" WATER IN PLACE.
- 3) NEW 1" WATER SERVICE TO CURB STOP.
- 4) REMOVE EX. STORM INTAKES. NEW INTAKES AND 15" STORM SEWER.
- 5) KEEP EXISTING 2-FT PCC CURB & GUTTER.
- 6) REMOVE / REPLACE EX. HMA WITH 7" HMA BETWEEN CURB / GUTTER (44' WIDE).
- 7) NEW PCC DROP-OFF MEDIAN AND SIGNALIZED CROSS WALKS WITH ADA RAMP.
- 8) NEW 8-FT SIDEWALK EXTENSION TO 5TH STREET SE.



DRAWING FILENAME: K:\PROPOS\Oelwein\2023 - 8th Ave SE Improvements\Civil\3D\22 05 12 8TH AVE SE IMPROVEMENTS.dwg
 PLOT STYLE TABLE: FoxGrayScale.ctb
 LAYER MNGR NAME: OPT # 2
 LAYOUT NAME: OPT # 2

REVISION	DATE	BY	DATE

FOX Strand
 414 South 17th Street, Suite 107
 Ames, Iowa 50010
 Phone: (515) 233-0000
 FAX: (515) 233-0103



OPTION 2: HMA REMOVAL & REPLACEMENT
 OELWEIN 8TH AVE SE IMPROVEMENTS
 OELWEIN, IOWA
 2022

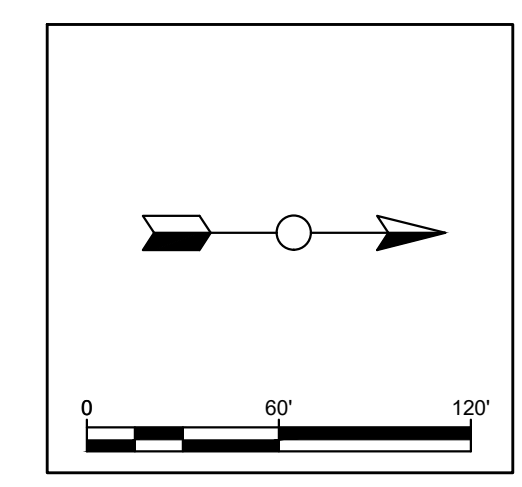
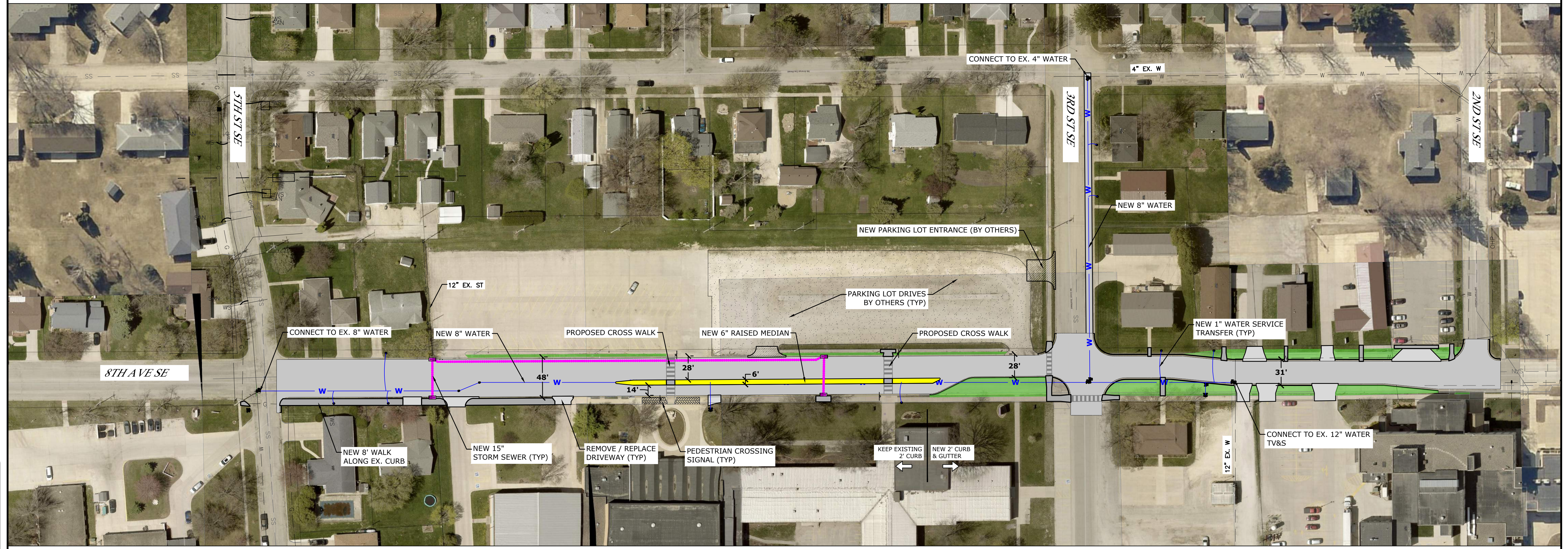
PROJECT NO. P220.414
 SHEET OPT #2

OPTION 3: ROAD RECHANNELIZATION
TOTAL PROJECT COST = \$1,470,000

ESTIMATED SCHOOL SHARE = \$102,000

NOTES:

- 1) NEW 8" WATER MAIN ON 8TH AVE SE TO 12" EX. CONNECTION. ABANDON EX. 6" WATER IN PLACE.
- 2) NEW 8" WATER MAIN ON 3RD ST SE FROM 8TH AVE SE TO 7TH AVE SE. ABANDON EX. 4" WATER IN PLACE.
- 3) NEW 1" WATER SERVICE TO CURB STOP.
- 4) REMOVE EX. STORM INTAKES. NEW INTAKES AND 15" STORM SEWER.
- 5) NEW PCC DROP-OFF MEDIAN AND SIGNALIZED CROSS WALKS WITH ADA RAMP.
- 6) REMOVE / REPLACE EX. HMA WITH 7" HMA BETWEEN CURB / GUTTER (44' WIDE).
- 7) 48-FT TO 31-FT LANE REDUCTION ON 8TH AVE SE FROM 3RD ST SE TO 2ND ST SE.
- 8) NEW DRIVEWAY APPROACHES AND 2.5-FT CURB & GUTTER FROM 3RD ST SE TO 2ND ST SE.
- 9) NEW 8-FT SIDEWALK EXTENSION TO 5TH STREET SE.



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 PLOT STYLE TABLE: FoxGrayScale.ctb
 LAYER MGR NAME: OPT #3

REVISION	DATE	BY	DATE
		JMG	09/22
		NWJ	05/22

FOX Strand
 414 South 17th Street, Suite 107
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 FAX: (515) 233-0103



OPTION 3: ROAD RECHANNELIZATION
 OELWEIN 8TH AVE SE IMPROVEMENTS
 OELWEIN, IOWA
 2022

PROJECT NO.
 P220.414
 SHEET
OPT #3