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# Harvest Ridge Residential Subdivision

**New Sharon, IA**

May 5<sup>th</sup>, 2025

Keagen Head  
Ben Hughes  
Baylor Verbrugge



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**Site Location**

**Project Statement**

**Street Layout**

**Lot Design**

**Utilities**

**Grading**

**Cost Estimate**

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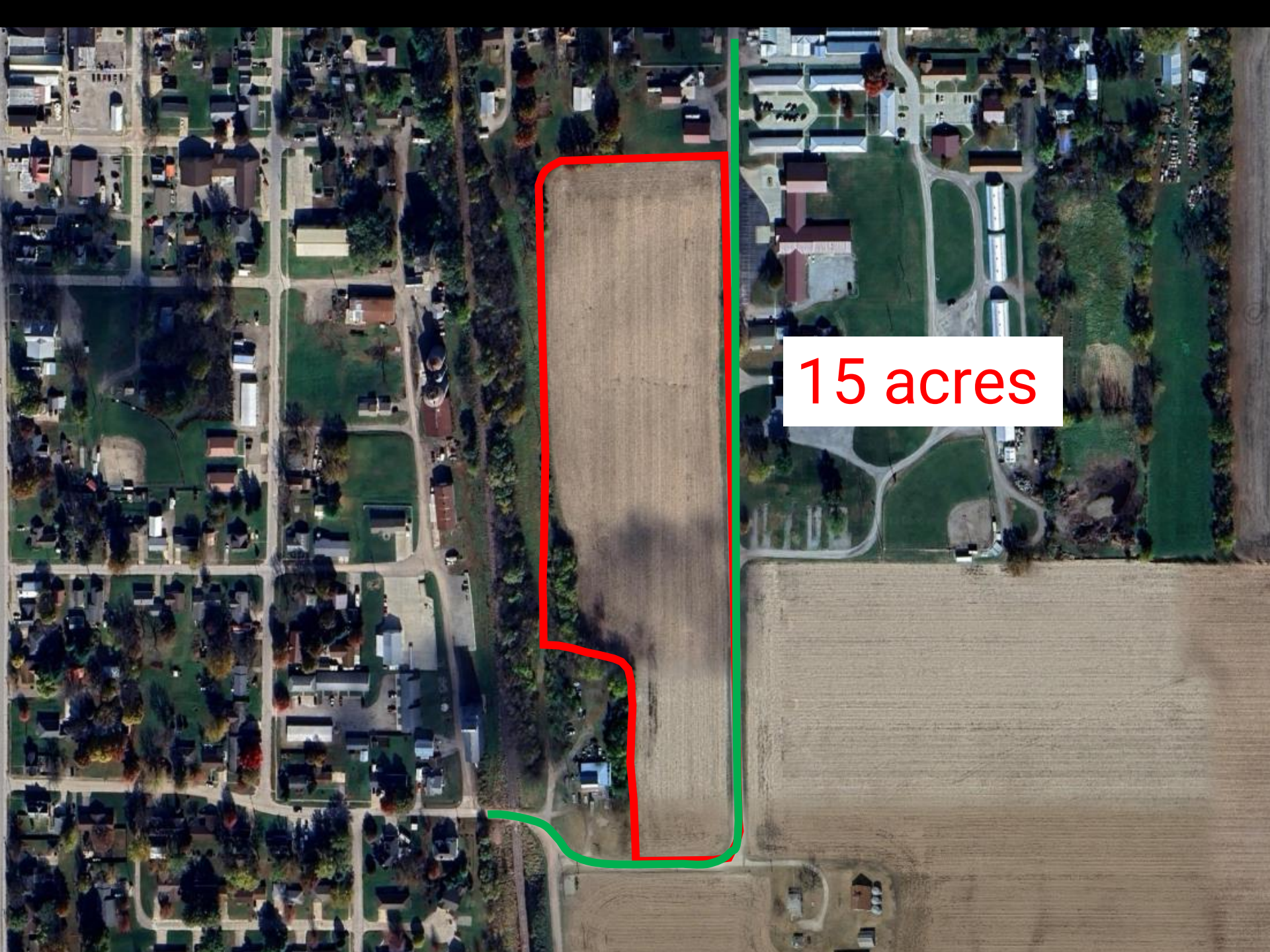
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15 acres

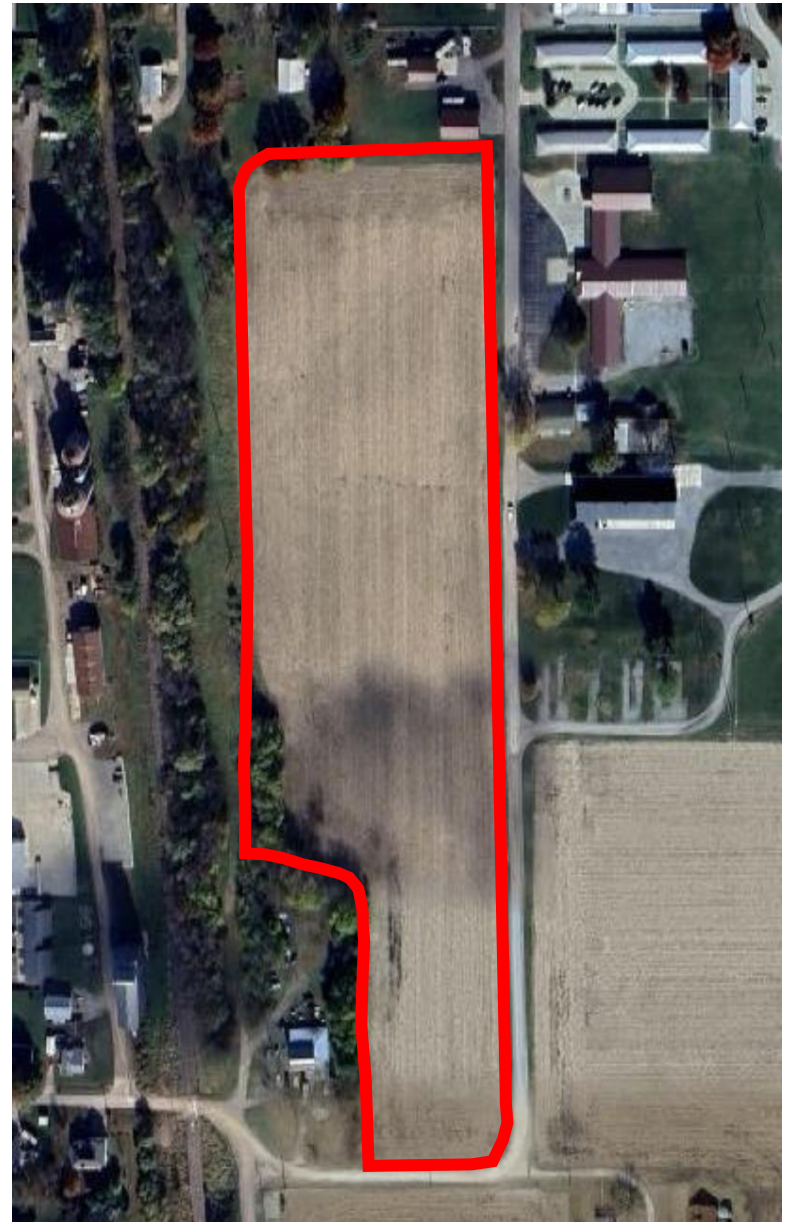


# Project Statement

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## Goals

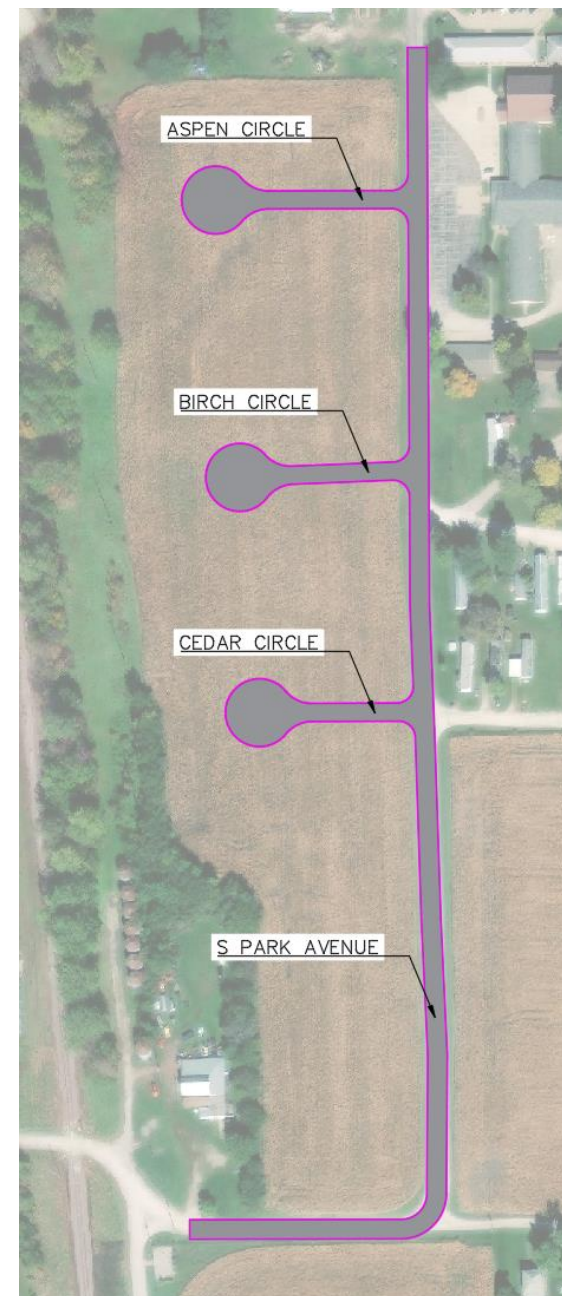
- Design infill development for long, narrow parcel
- Create new utility systems and connect to existing networks
- Subdivide in accordance with local zoning code
- Offer efficient and attractive housing options



# Street Design

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- Cul-de-sac Design
  - Three tree-named circles
  - Local street urban cross section
  - 26' total street width (50' ROW)
- S Park Avenue
  - Half chip seal, half gravel
  - Collector street urban cross section
  - 28' total street width (60' ROW)



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# Street Layout



- Street Network Considerations:
  - Sanitary Sewer Alignment
  - Unique Space for Condo Lot

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# Lot Design Considerations

- Provide Single-Family Homes
  - Lot Sizes: 1/3 to 1/2 acre
  - Suitable for ranch-style construction
- Provide Condominium Housing Options
  - Tailored to accommodate retired-age community
- Satisfy New Sharon Zoning Ordinance
- Align with existing infrastructure
  - S Park St
  - Existing Utilities



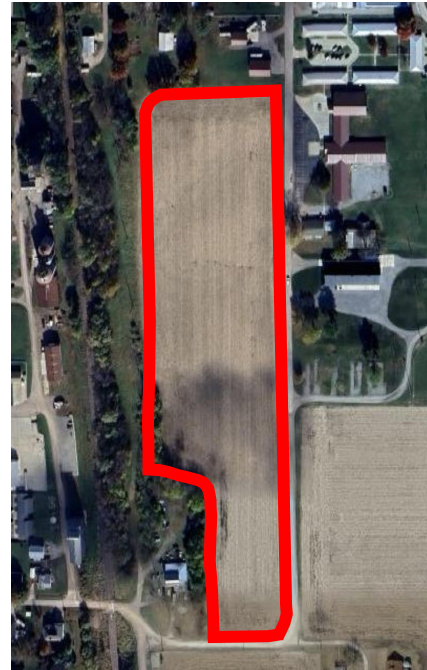
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# Parcel Layout Strategy

## Lot Optimization Criteria

- Satisfy New Sharon Zoning Ordinance
- Limit the street area required to serve each lot
  - Single vs. Double Loaded Streets
- Provide usable and attractive sized yards
  - Cul-de-sac vs. Grid Pattern
- Utilize narrow southern limits effectively



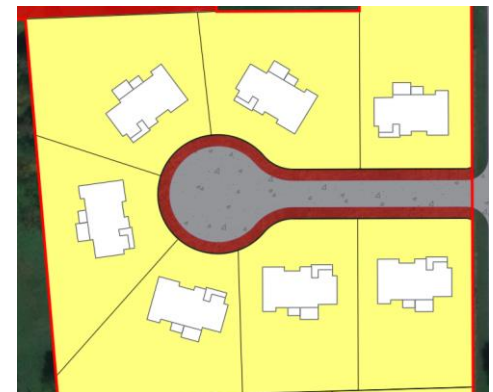
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# Single-Family Housing

- 19 Lots (19 Units)
- Lot Size: 0.35 - 0.55 acres
- Designed for Ranch-Style building footprints



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# Condominium Housing

- 1 Lot (3.01 acres)
- Potential Condominium Community
  - 16 units
  - Serviced by Private Drive
  - Amenities: HOA Benefits, Additional Parking, Covered Shelter, Privacy Trees, etc.
  - Universal Design
  - Prepared for Expansion West



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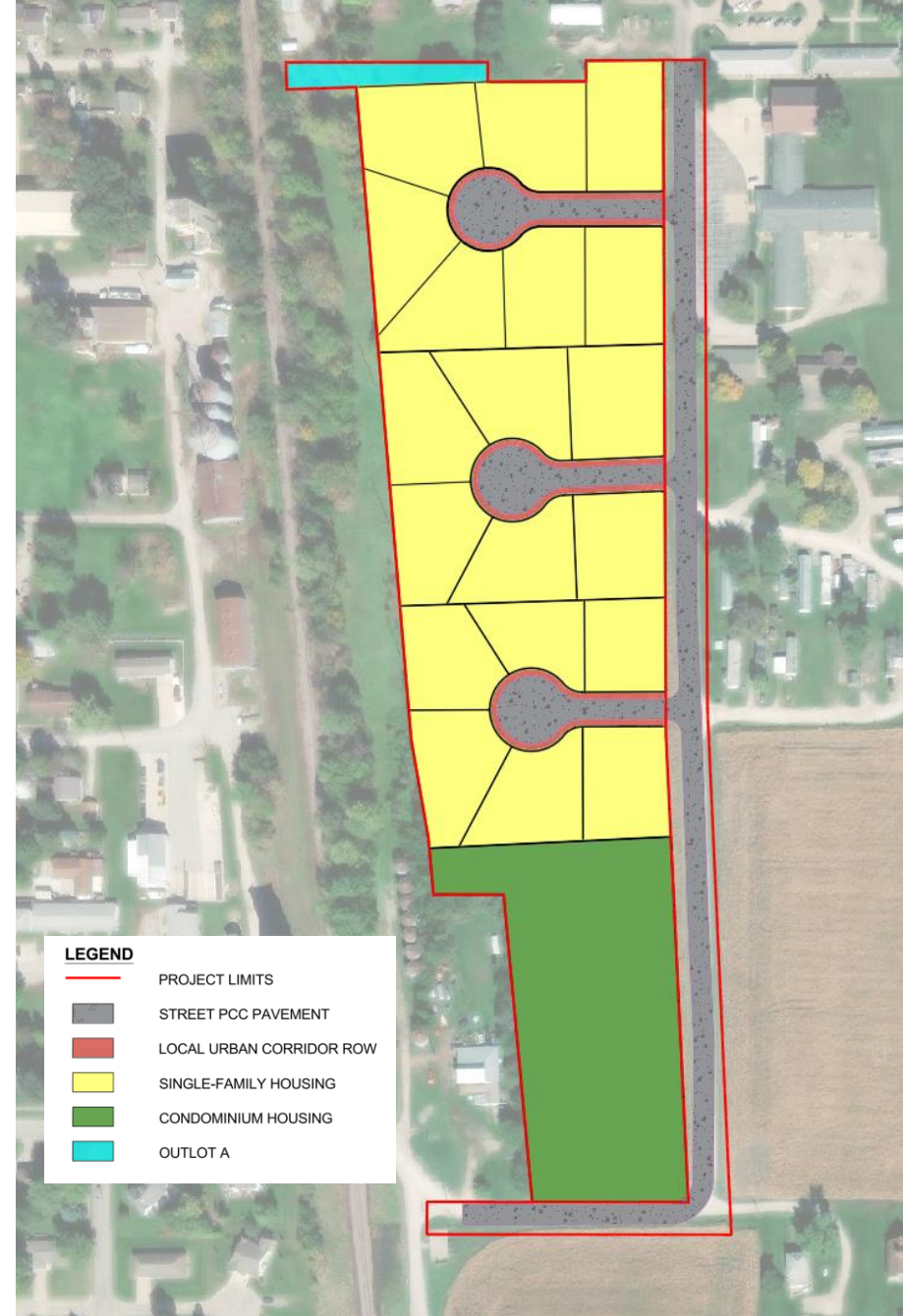


# Final Design Details

- Single-Family Lots
  - 19 Lots (19 Units)
  - 0.35 - 0.55 acres
- Condominium Lot
  - 1 Lot (~16 units)
  - 3.01 acres
- Total Housing
  - 20 Lots
  - 35 Units

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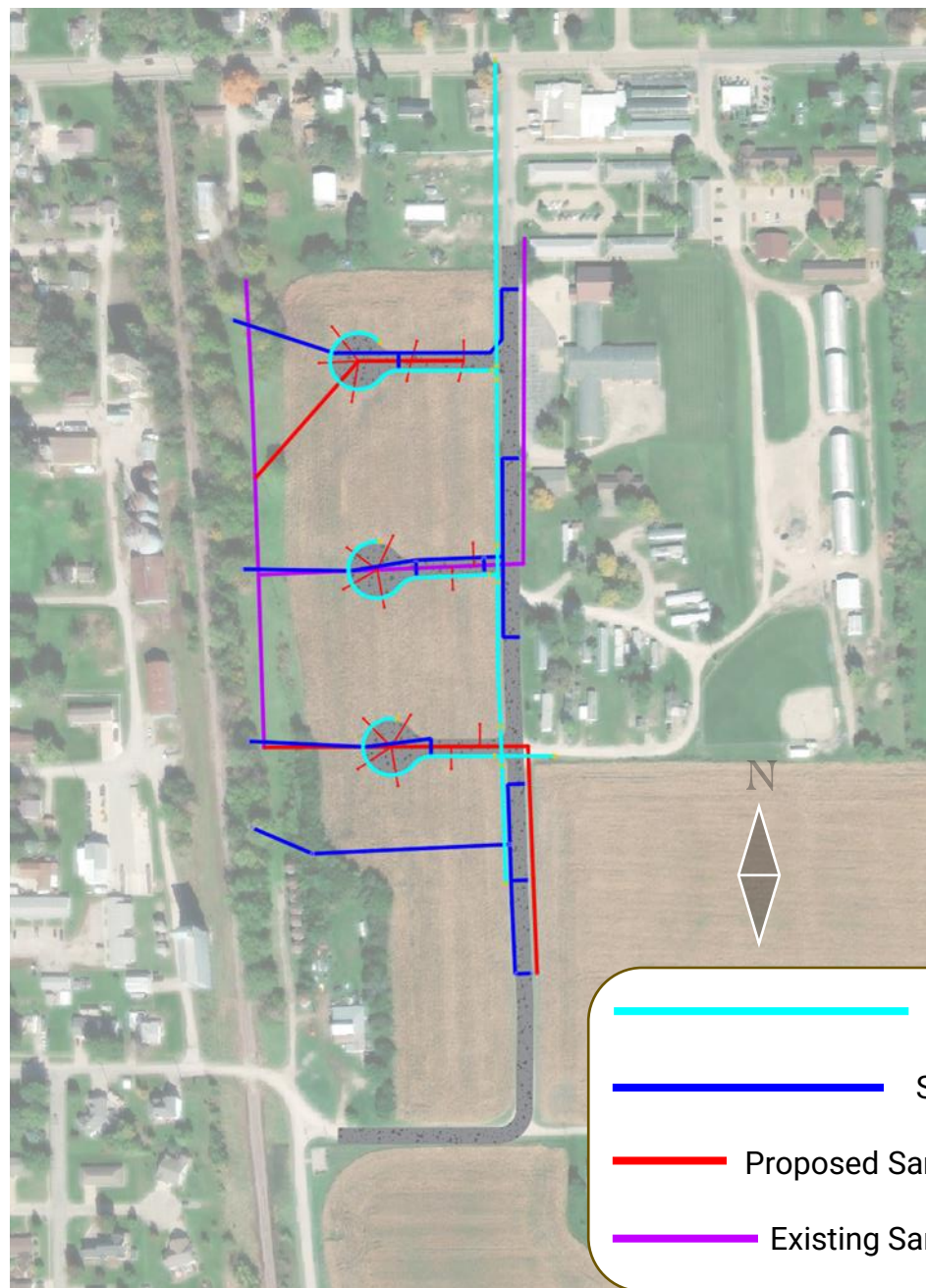


# Utilities

Water Main

Storm Sewer

Sanitary Sewer



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# Utilities

Water Main

Storm Sewer

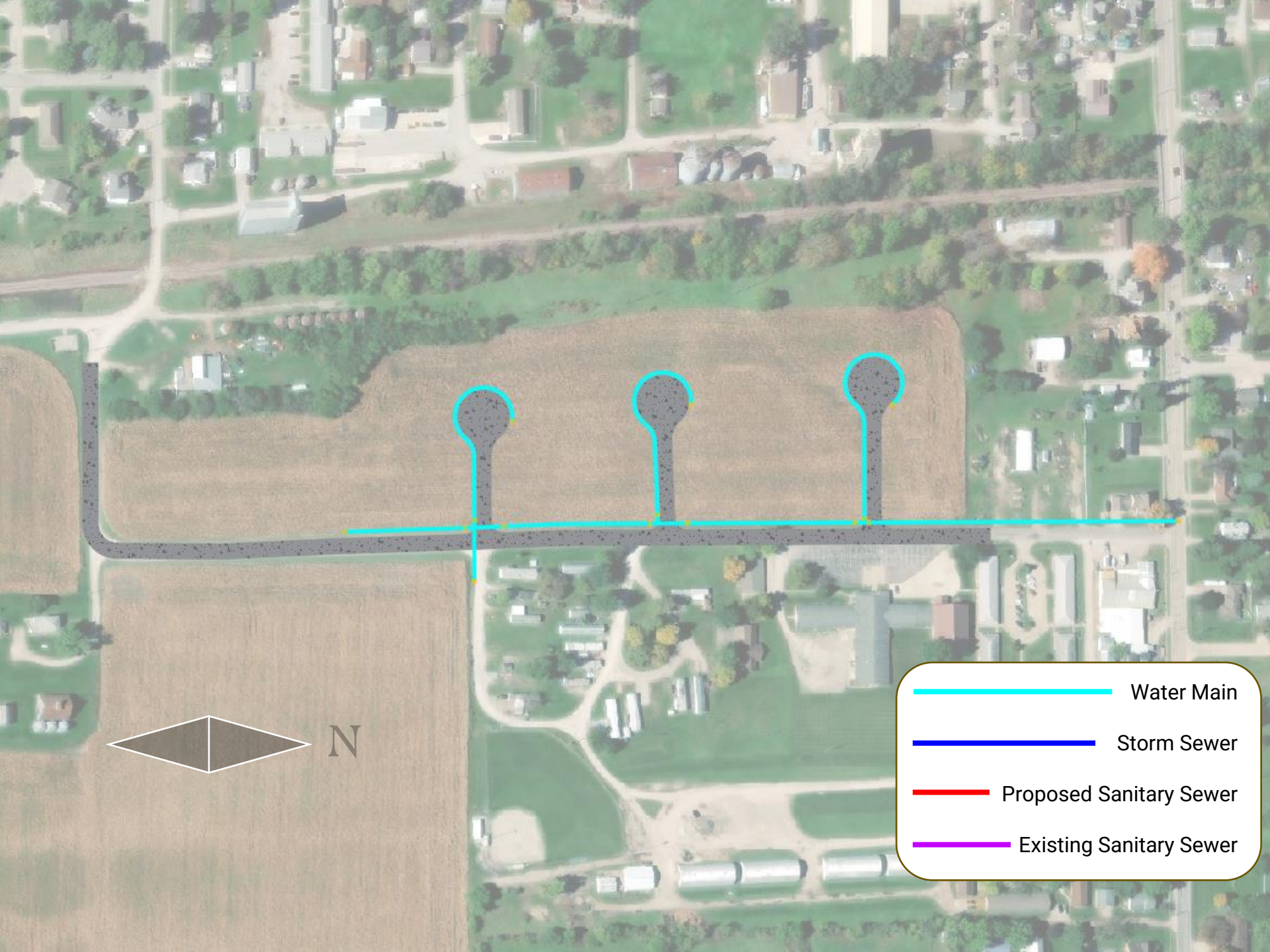
Sanitary Sewer

- 
- Water Main
- Storm Sewer
- Proposed Sanitary Sewer
- Existing Sanitary Sewer

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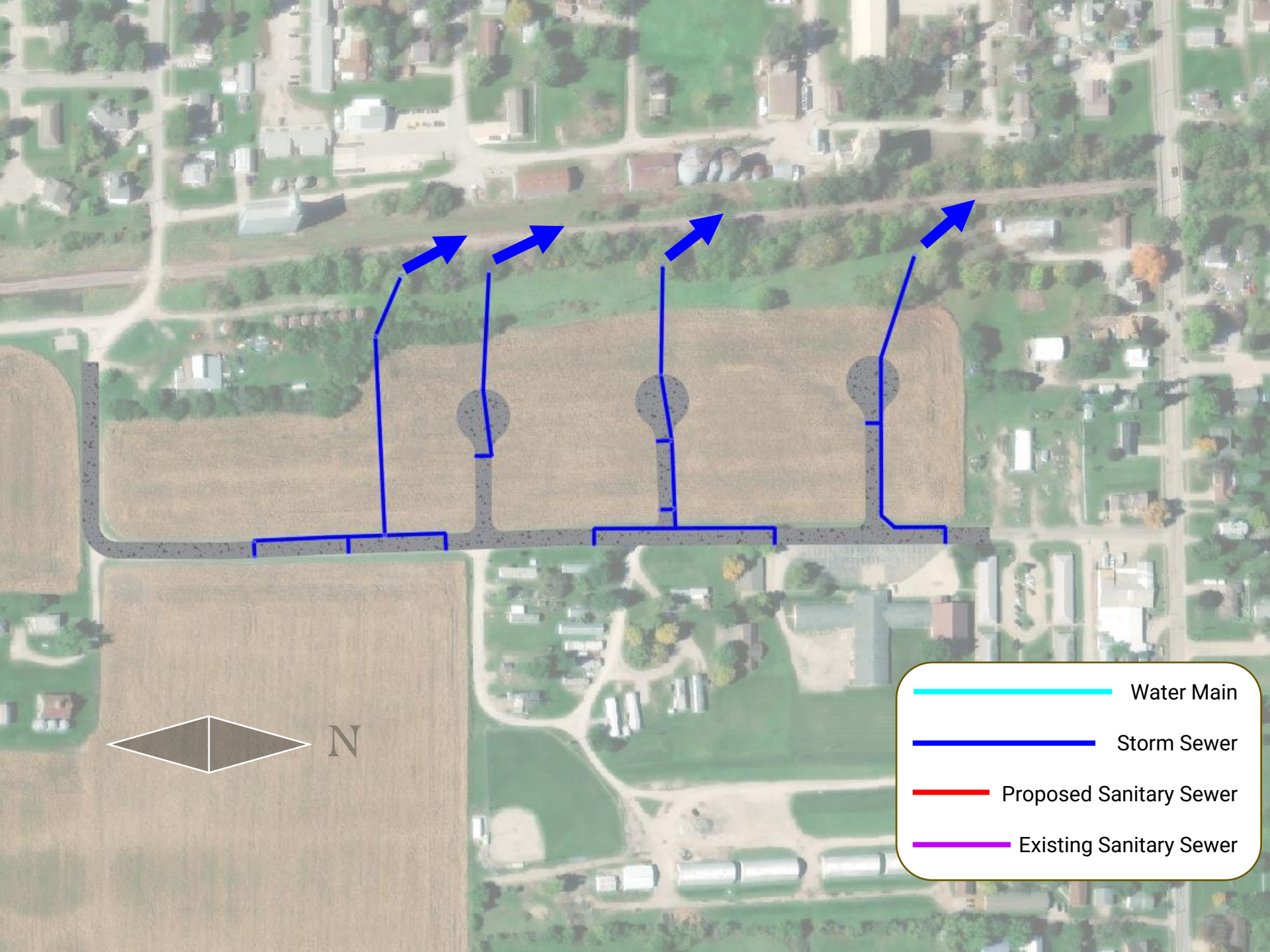
Water Main


Storm Sewer


Proposed Sanitary Sewer


Existing Sanitary Sewer






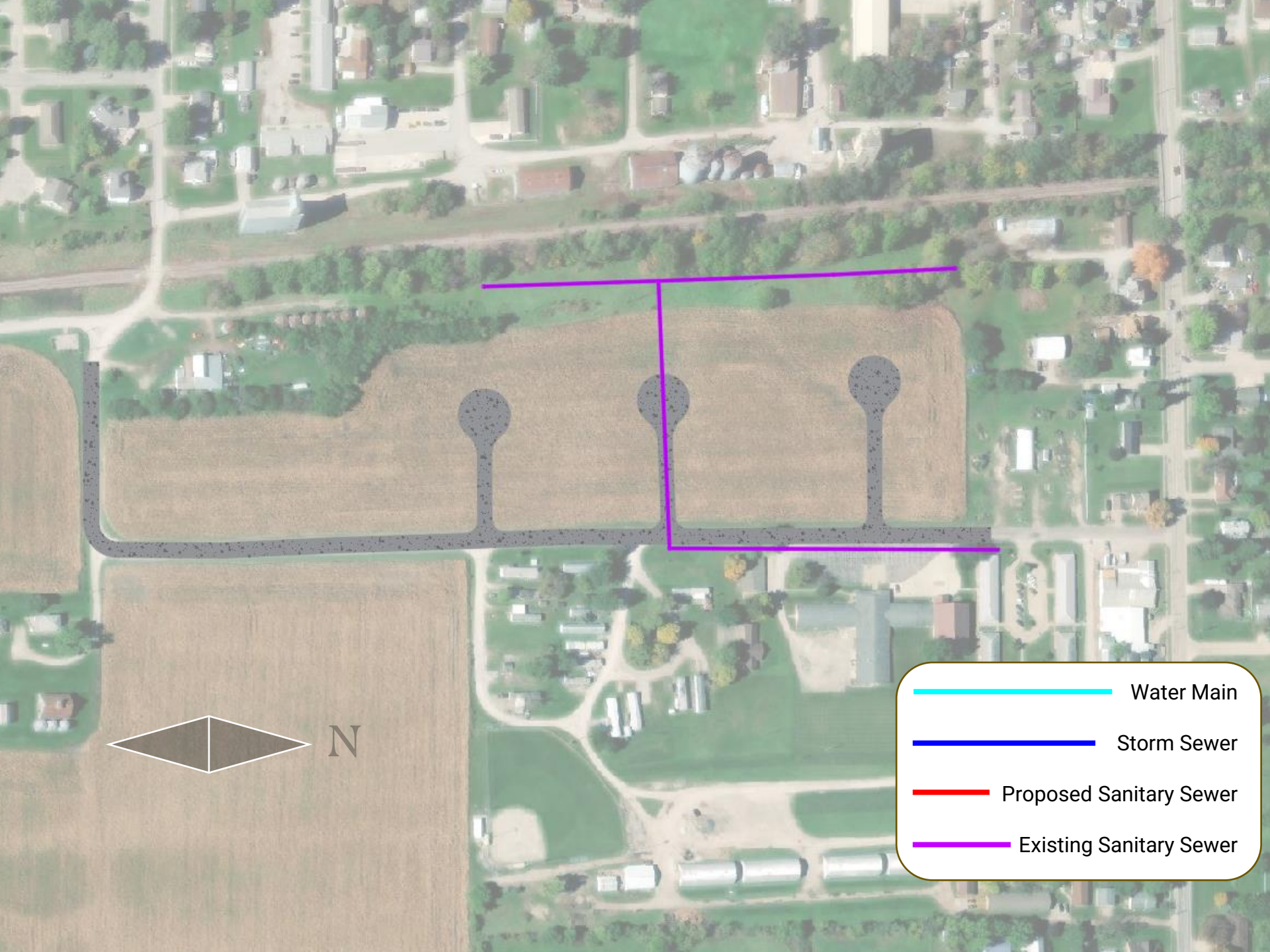
Water Main

Storm Sewer

Proposed Sanitary Sewer

Existing Sanitary Sewer





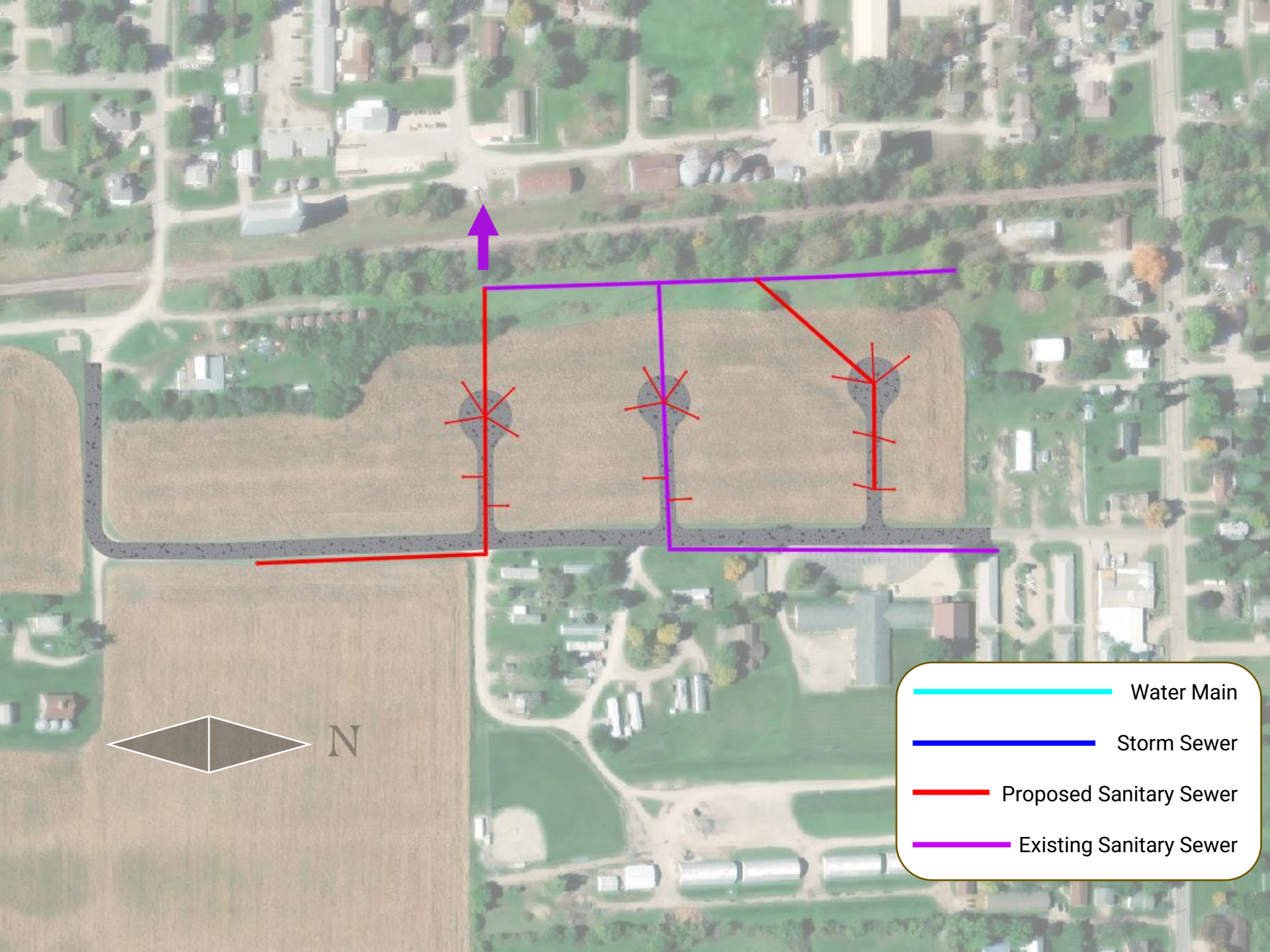
Water Main


Storm Sewer


Proposed Sanitary Sewer


Existing Sanitary Sewer






 Water Main

 Storm Sewer

 Proposed Sanitary Sewer

 Existing Sanitary Sewer



# Grading



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# Cost Analysis

Subdivision Cost	\$ Amount
Construction Cost	\$1,131,100
7% Engineering Cost	\$79,100
15% Contingency	\$181,400
<b>Total</b>	<b>\$1,391,600</b>

- Construction Costs
- Engineering Costs
- Contingency

S Park Ave Improvements Cost	\$ Amount
Construction Cost	\$1,272,700
7% Engineering Cost	\$89,100
15% Contingency	\$204,300
<b>Total</b>	<b>\$1,566,100</b>

**Total Cost = \$2,957,700**

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# Lot Cost Considerations

Option 1	Option 2	Option 3
Included Costs: <ul style="list-style-type: none"><li>- Subdivision</li><li>- 100% of Park Avenue Improvements</li></ul> Average Infrastructure Cost Per Lot:  <b>\$117,000</b>	Included Costs: <ul style="list-style-type: none"><li>- Subdivision</li><li>- 50% of Park Avenue Improvements</li></ul> Average Infrastructure Cost Per Lot:  <b>\$86,000</b>	Included Costs: <ul style="list-style-type: none"><li>- Subdivision Only</li></ul> Average Infrastructure Cost Per Lot:  <b>\$55,000</b>

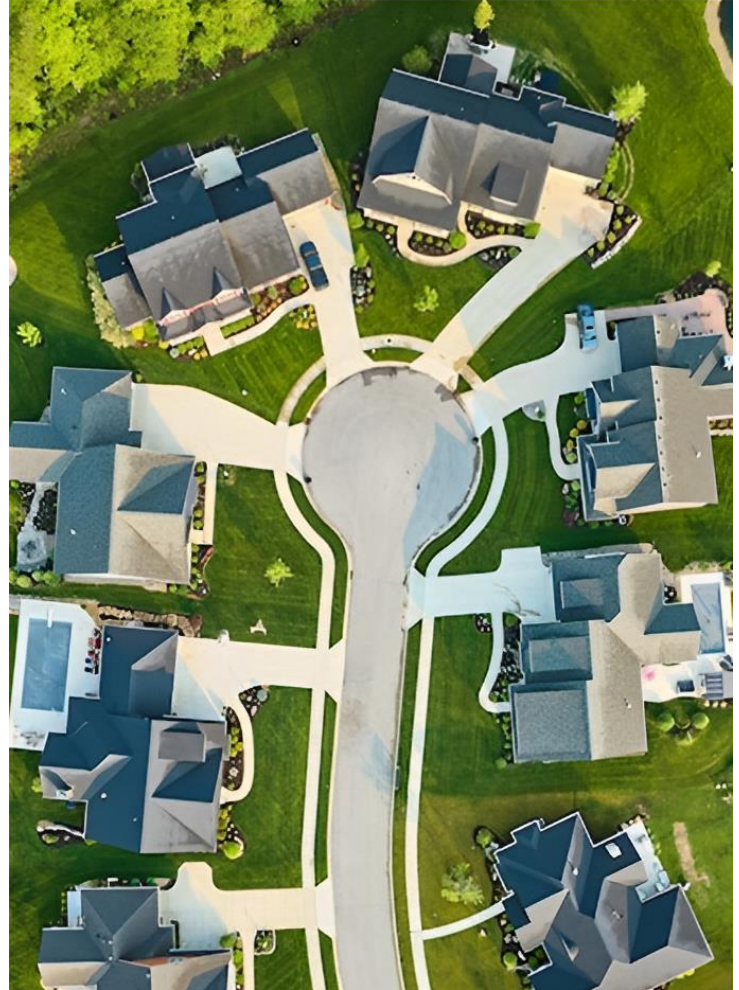


# Harvest Ridge Subdivision

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## Questions?



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# Lot Cost Considerations

Option 1	Option 2	Option 3
Project Cost:  \$2,957,700  Average Infrastructure Cost Per Lot:  \$117,000	Included Costs:  \$2,174,650  Average Infrastructure Cost Per Lot:  \$86,000	Included Costs:  \$1,391,600  Average Infrastructure Cost Per Lot:  \$55,000

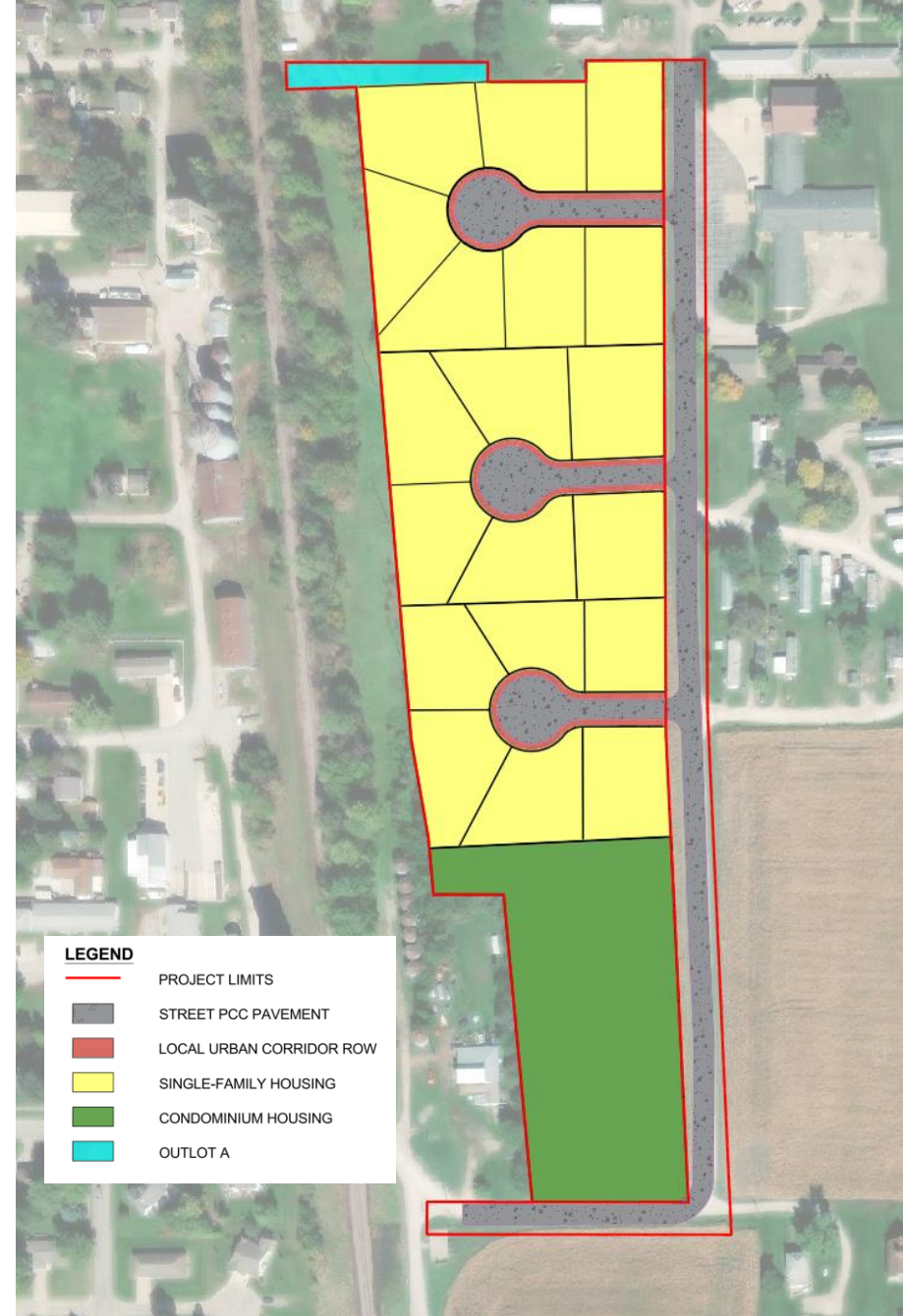


# Outlot Information

- A parcel of land within a subdivision that is not intended for development with buildings or structures.
- What happens to this land?
  - Use determined by the developer
  - Can be sold to a neighboring lot
  - Can be privately-owned by the developer and used as aesthetic/functional space

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# Universal Design

- Accessible Entryways and Pathways
  - No-step entry
  - Accessible parking
- Adaptable Spaces
  - One-story living
  - Open floorplans
- Perceptible Information
  - Clear Signage
- Simple and Intuitive Use
  - Easy-to-understand controls
  - Minimalist design



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# Park Street Improvements

Bid Item Code	Item	Unit	Unit Cost	Quantity	Cost
2101-0850001	Clearing and Grubbing	acre	\$6,480.24	0	\$0.00
2102-2710070	Excavation, Class 10, Roadway and Borrow	cy	\$5.18	10553.84	\$54,668.89
2102-0425046	Selected Backfill	cy	\$6.28	27.53	\$172.89
2113-0001000	Subgrade Stabilization Material	sy	\$4.80	6222.22	\$29,866.67
2111-8174100	Granular Subbase	sy	\$9.54	6222.22	\$59,360.00
2301-1033070	7" PCC Pavement	sy	\$63.66	5333.33	\$339,520.00
2512-1725206	Curb and Gutter	lf	\$55.48	2000	\$110,960.00
2105-8425015	Topsoil Strip, Salvage, and Spread	cy	\$4.15	4444.44	\$18,444.44
2601-2636041	Seeding & Fertilizing	acre	\$1,766.13	1.47	\$2,594.87
2554-0112004	4" Watermain Pipe (DIP)	lf	\$105.00	1542	\$161,910.00
2554-0207004	4" Watermain Valve	ea	\$3,300.00	3	\$9,900.00
2504-0110008	8" Sanitary Sewer Pipe	lf	\$128.41	1083	\$139,068.03
2435-0250100	Storm Intake SW-501	ea	\$4,465.64	21	\$93,778.44
2504-0200404	Sanitary Sewer Service Stub 4"	lf	\$72.78	0	\$0.00
2554-0210201	Fire Hydrant Assembly	ea	\$8,541.28	4	\$34,165.12
2435-0140148	Storm Manhole SW-401 48"	ea	\$4,721.66	4	\$18,886.64
2507-6800011	Class A Revetment	sy	\$35.00	4.5	\$157.50
2503-0110015	15" Storm Sewer Pipe	lf	\$78.39	1924	\$150,822.36
2435-0130148	Sanitary Manhole SW-301 48"	ea	\$7,752.09	5	\$38,760.45
2109-8225100	Special Compaction of Subgrade	STA	\$484.23	20	\$9,684.60
				Total	\$1,272,720.90

# Subdivision

Bid Item Code	Item	Unit	Unit Cost	Quantity	Cost
2101-0850001	Clearing and Grubbing	acre	\$6,480.24	0.17	\$1,101.64
2102-2710070	Excavation, Class 10, Roadway and Borrow	cy	\$5.18	1501.93	\$7,780.00
2102-0425046	Selected Backfill	cy	\$6.28	2.85	\$17.90
2113-0001000	Subgrade Stabilization Material	sy	\$4.80	4222.22	\$20,266.67
2111-8174100	Granular Subbase	sy	\$9.54	4222.22	\$40,280.00
2301-1033070	7" PCC Pavement	sy	\$63.66	4000.00	\$254,640.00
2512-1725206	Curb and Gutter	lf	\$55.48	500.00	\$27,740.00
2105-8425015	Topsoil Strip, Salvage, and Spread	cy	\$4.15	26072.15	\$108,199.41
2601-2636041	Seeding & Fertilizing	acre	\$1,766.13	12.4	\$21,900.01
2554-0112004	4" Watermain Pipe (DIP)	lf	\$105.00	1457	\$152,985.00
2554-0207004	4" Watermain Valve	ea	\$3,300.00	3	\$9,900.00
2504-0110008	8" Sanitary Sewer Pipe	lf	\$128.41	981	\$125,970.21
2435-0250100	Storm Intake SW-501	ea	\$4,465.64	19	\$84,847.16
2504-0200404	Sanitary Sewer Service Stub 4"	lf	\$72.78	1085	\$78,966.30
2554-0210201	Fire Hydrant Assembly	ea	\$8,541.28	3	\$25,623.84
2435-0140148	Storm Manhole SW-401 48"	ea	\$4,721.66	0	\$0.00
2507-6800011	Class A Revetment	sy	\$35.00	13.5	\$472.50
2503-0110015	15" Storm Sewer Pipe	lf	\$78.39	2031	\$159,210.09
2435-0130148	Sanitary Manhole SW-301 48"	ea	\$7,752.09	1	\$7,752.09
2109-8225100	Special Compaction of Subgrade	STA	\$484.23	5	\$2,421.15
				Total	\$1,130,073.97