

2020 Bridge Safety Inspections

Brad Stangohr PE



2020 Bridge Safety Inspections

- » All bridges South of 190th St. (64 bridges total)
- » This year's findings – General
- » This year's findings – Key Findings
- » Key repair and replacement recommendations
- » Options for the way forward
- » GIS



2020 Bridge Safety Inspections

- » Legal Load Carrying Capacity reduced on 3 bridges
- » Major repairs needed on 6 bridges
- » Program for replacement recommended on 6 bridges

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» Legal Load Carrying Capacity changed on 3 bridges

- Bridge Number 30-030-345 (Steel Stringer/Timber Deck) reduced from 25-42 to 23-39
- Bridge Number 30-250-208 (Concrete Slab Bridge) Increased from 26-43 to 30-Legal
- Bridge Number 30-280-198 (Double Tee/Timber Abut) reduced from Legal to 10-10 until repairs are made.

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» Major Repairs Recommended on 6 bridges

- Bridge Number 30-154-258 (Concrete Arch) - Historical Bridge - BIG Rehab Grant – Repair Concrete Substructure
- Bridge Number 30-170-197 (Double Tee/Timber Abut) – Undermining of timber backwall has caused the roadway to collapse, riprap abutment and backfill roadway.
- Bridge Number 30-280-198 (Double Tee/Timber Abut) – Ice damage to piles, place concrete collars around piles.

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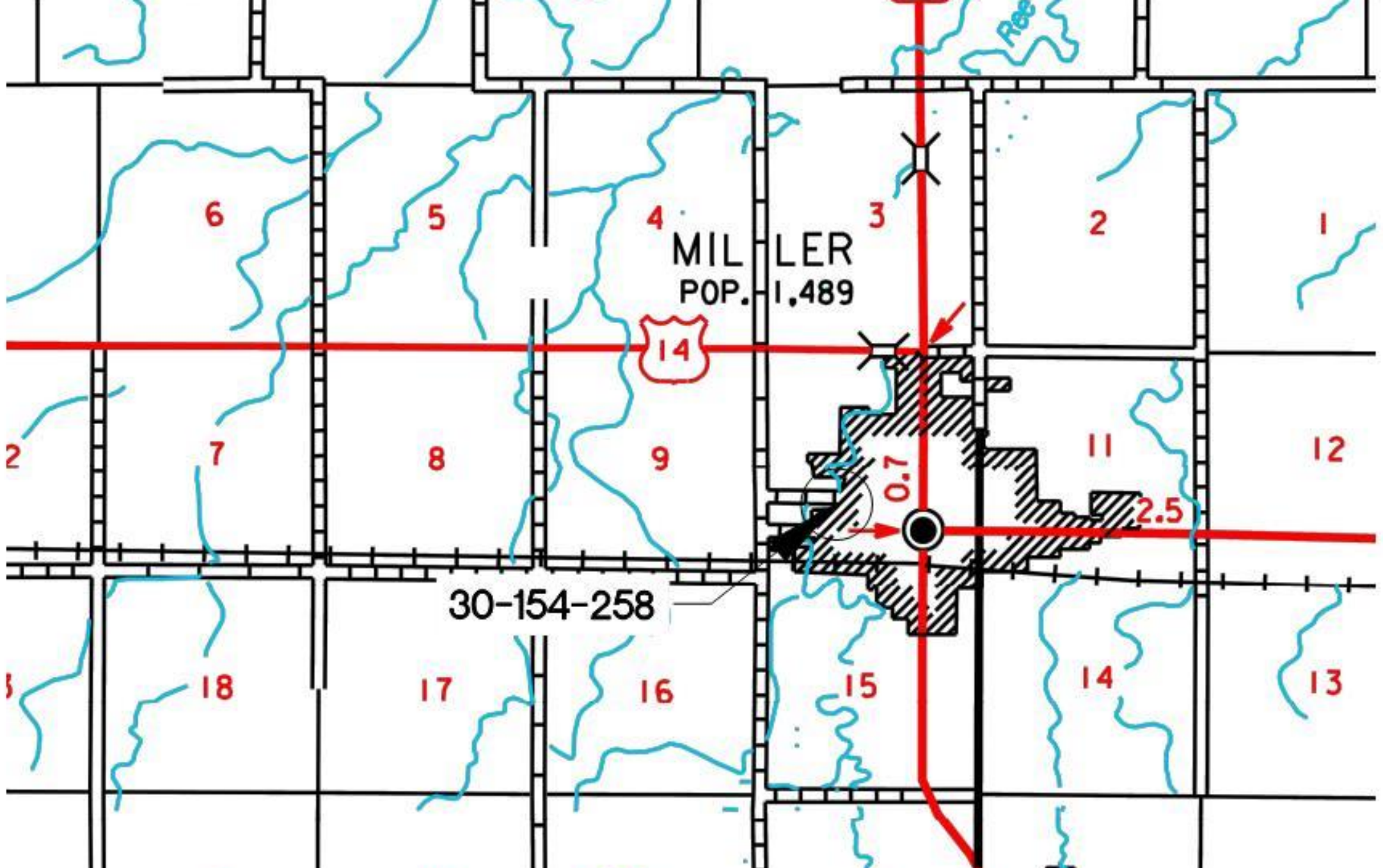
» Major Repairs Recommended on 6 bridges (Cont.)

- Bridge Number 30-250-189 (Concrete Slab) – Undermined Abutments- Place flowable fill under abutments and place fabric/riprap on berm slopes.
- Bridge Number 30-250-194 (Concrete Slab) – Undermined Abutments- Place fabric/riprap on berm slopes.
- Bridge Number 30-250-208 (Concrete Slab) – Undermined Abutments- Place flowable fill under abutments and place fabric/riprap on berm slopes.

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» Major Repairs Recommended on 6 bridges (Cont.)

- Bridge Number 30-154-258 (Concrete Arch) - Historical Bridge - BIG Rehab Grant – Repair Concrete Substructure





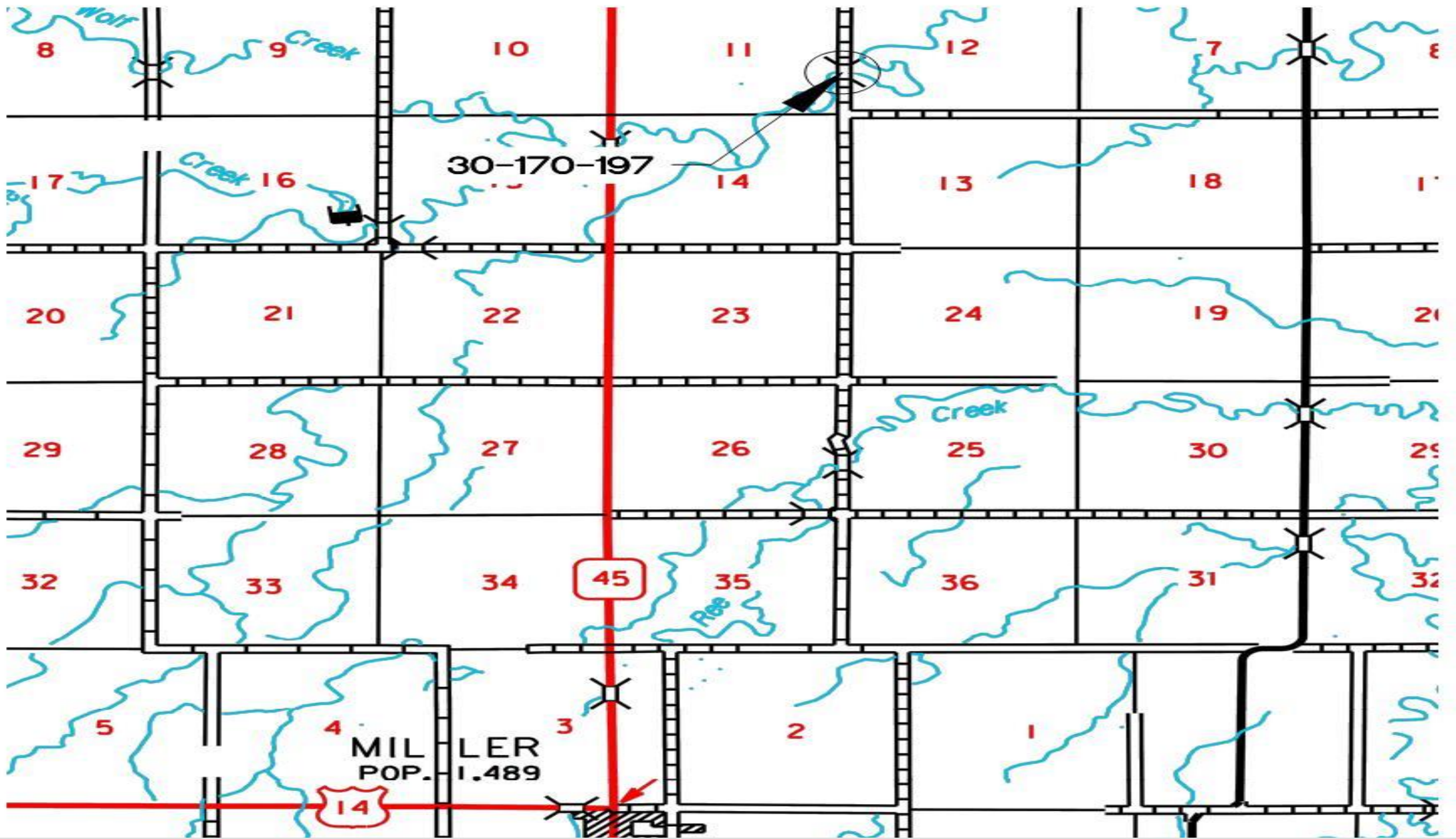




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» Major Repairs Recommended on 6 bridges (Cont.)

- Bridge Number 30-170-197 (Double Tee/Timber Abut) – Undermining of timber backwall has caused the roadway to collapse, riprap abutment and backfill roadway.





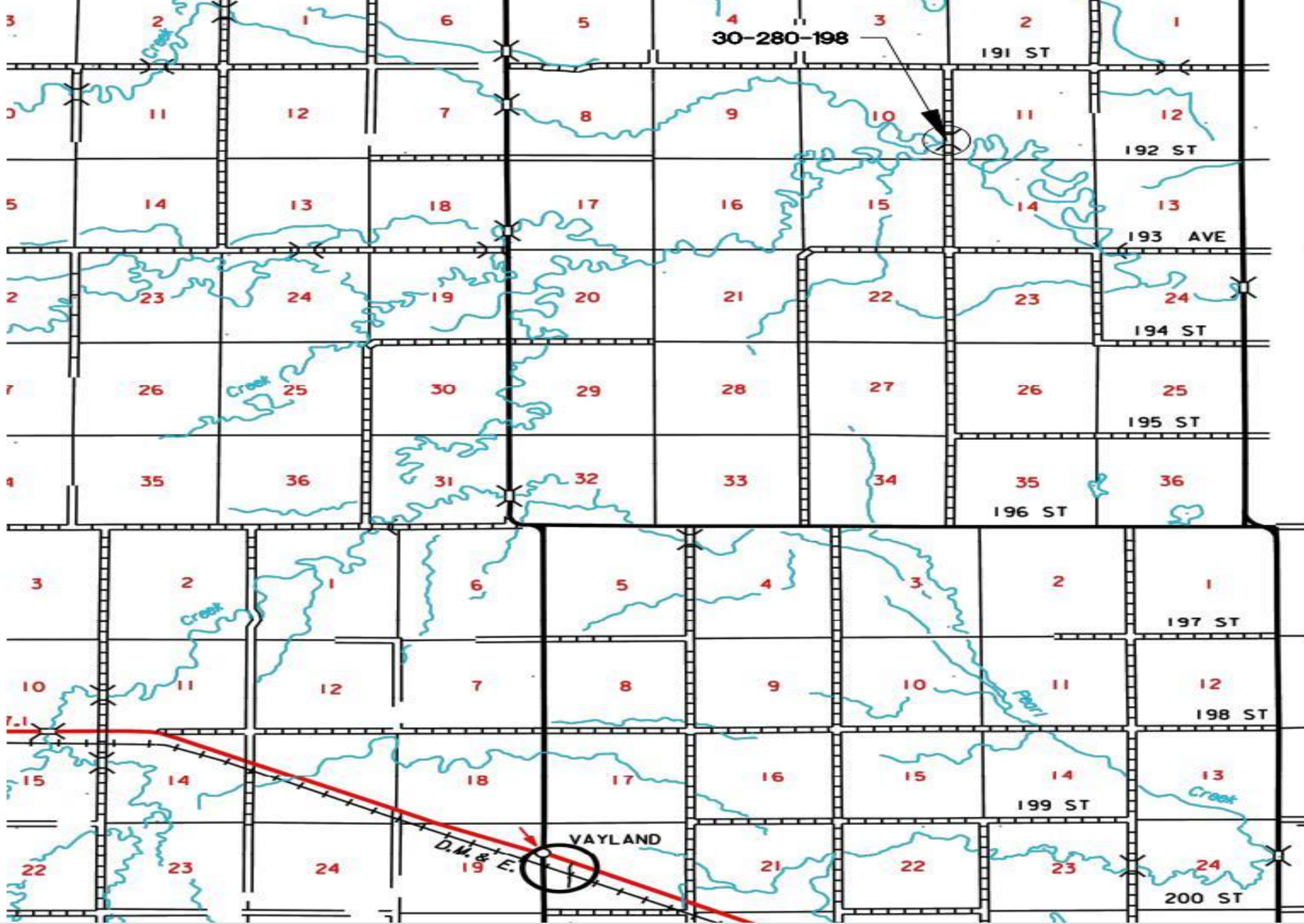




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» Major Repairs Recommended on 6 bridges

- Bridge Number 30-280-198 (Double Tee/Timber Abut) – Ice damage to piles, place concrete collars around piles.



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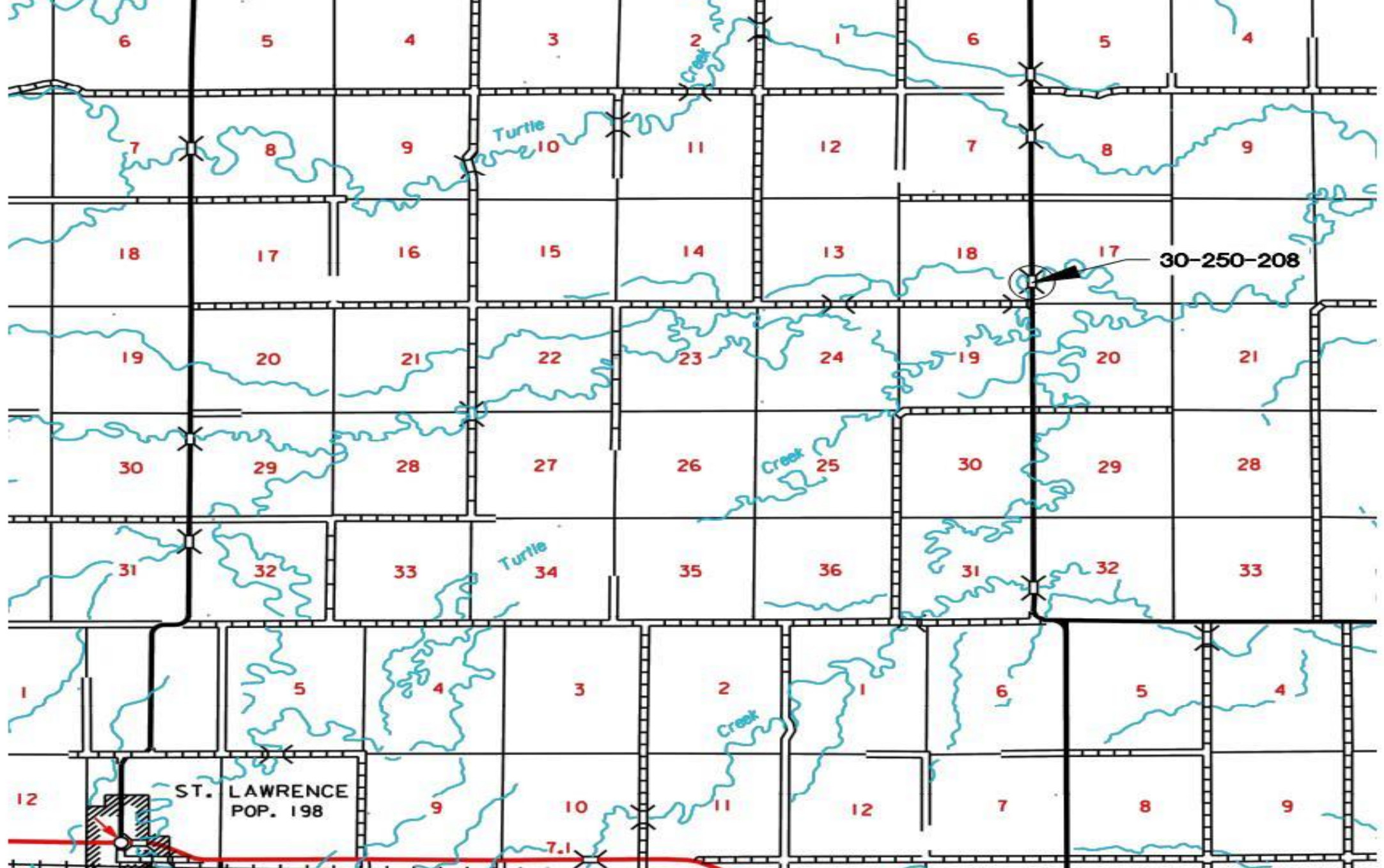




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» Major Repairs Recommended on 6 bridges (Cont.)

- Bridge Number 30-250-189 (Concrete Slab) – Undermined Abutments- Place flowable fill under abutments and place fabric/riprap on berm slopes.
- Bridge Number 30-250-194 (Concrete Slab) – Undermined Abutments- Place fabric/riprap on berm slopes.
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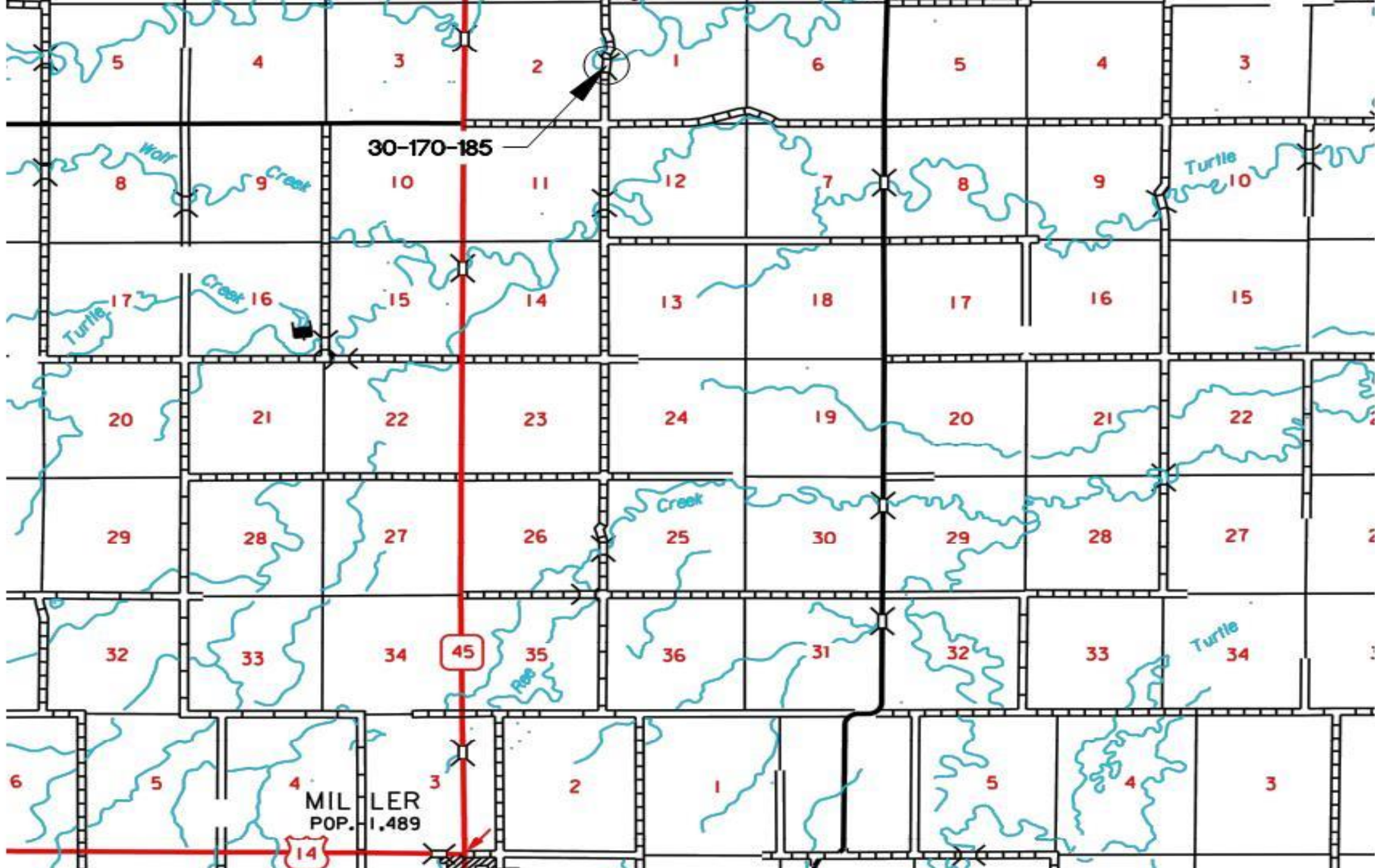
» Replacement Recommended on 5 bridges

- Bridge Number 30-170-185 (Pony Truss) – Ice damage to gusset plates and pack rust, #2 priority.
- Bridge Number 30-194-250 (Pony Truss) – Damaged truss members from traffic impacts. # 5 priority.
- Bridge Number 30-220-256 (Steel Stringer) – Corner of abutment is settling, #1 priority.

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» Replacement Recommended on 5 bridges (Cont.)

- Bridge Number 30-240-188 (Steel Stringer) – South Abutment has large cracks and the SW wingwall is tipping and heavily cracked. #4 priority
- Bridge Number 30-250-412 (Steel Stringer) – SW Wingwall with, deck unit on top, is cracked and tilting and settling. #3 priority

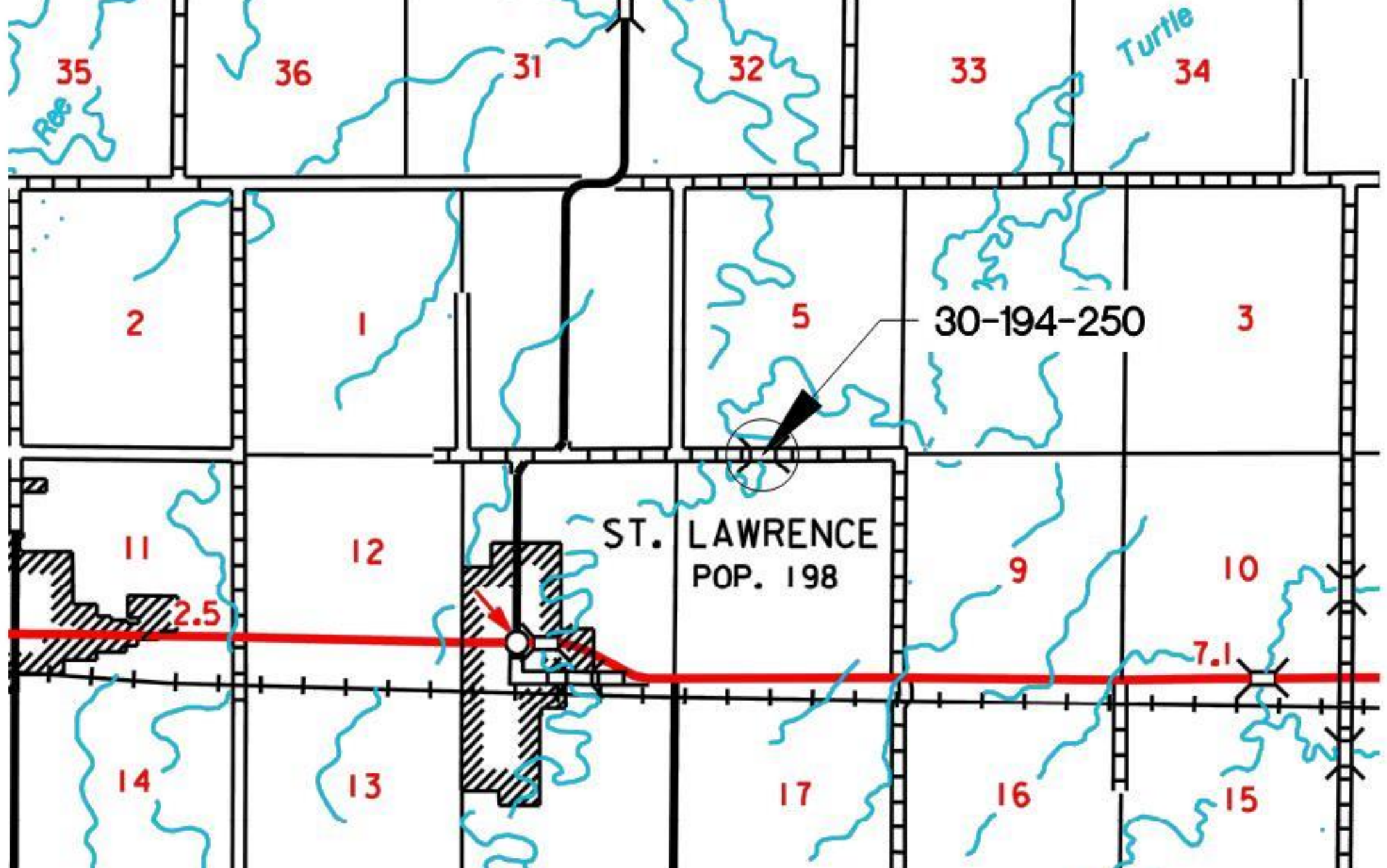








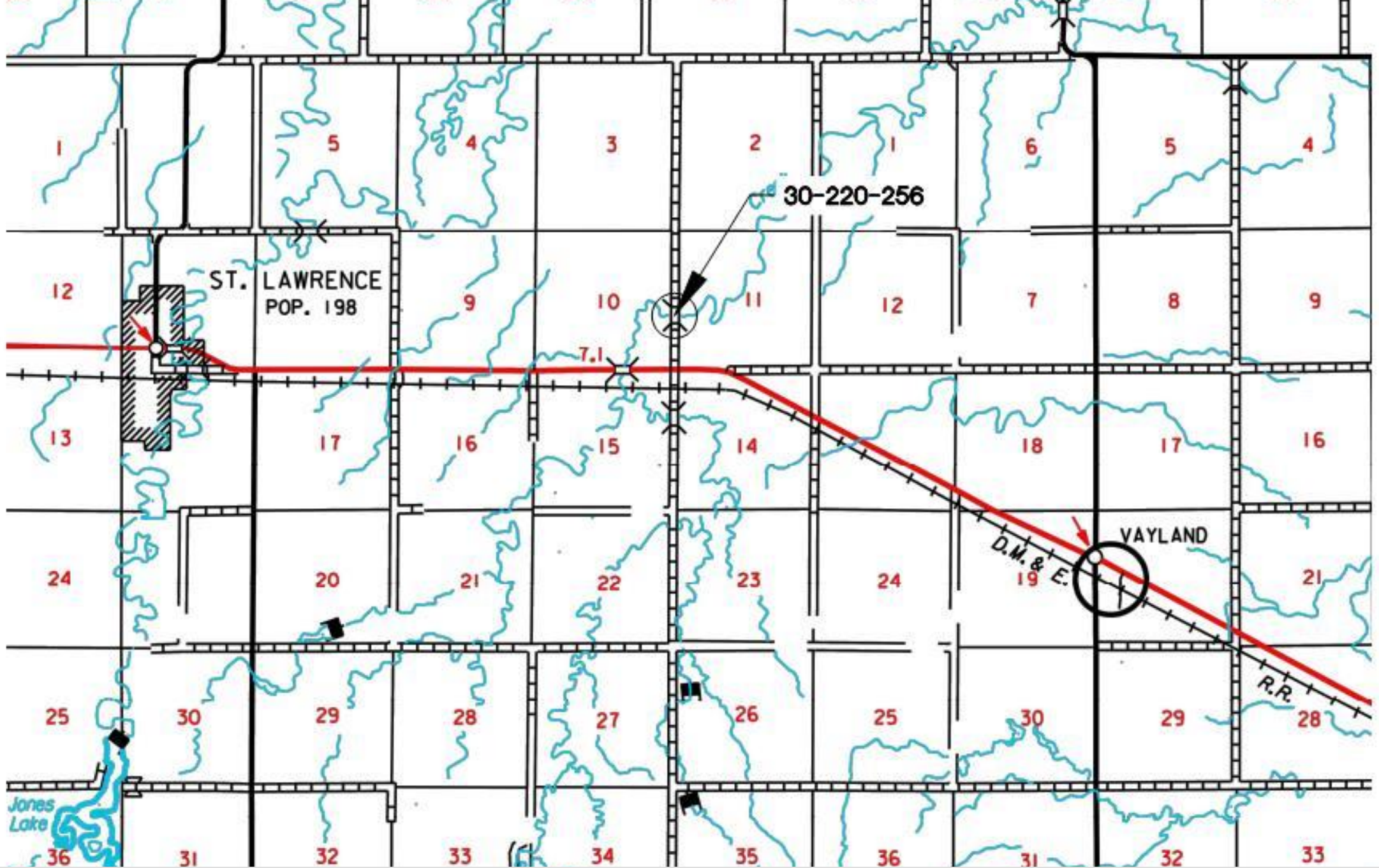






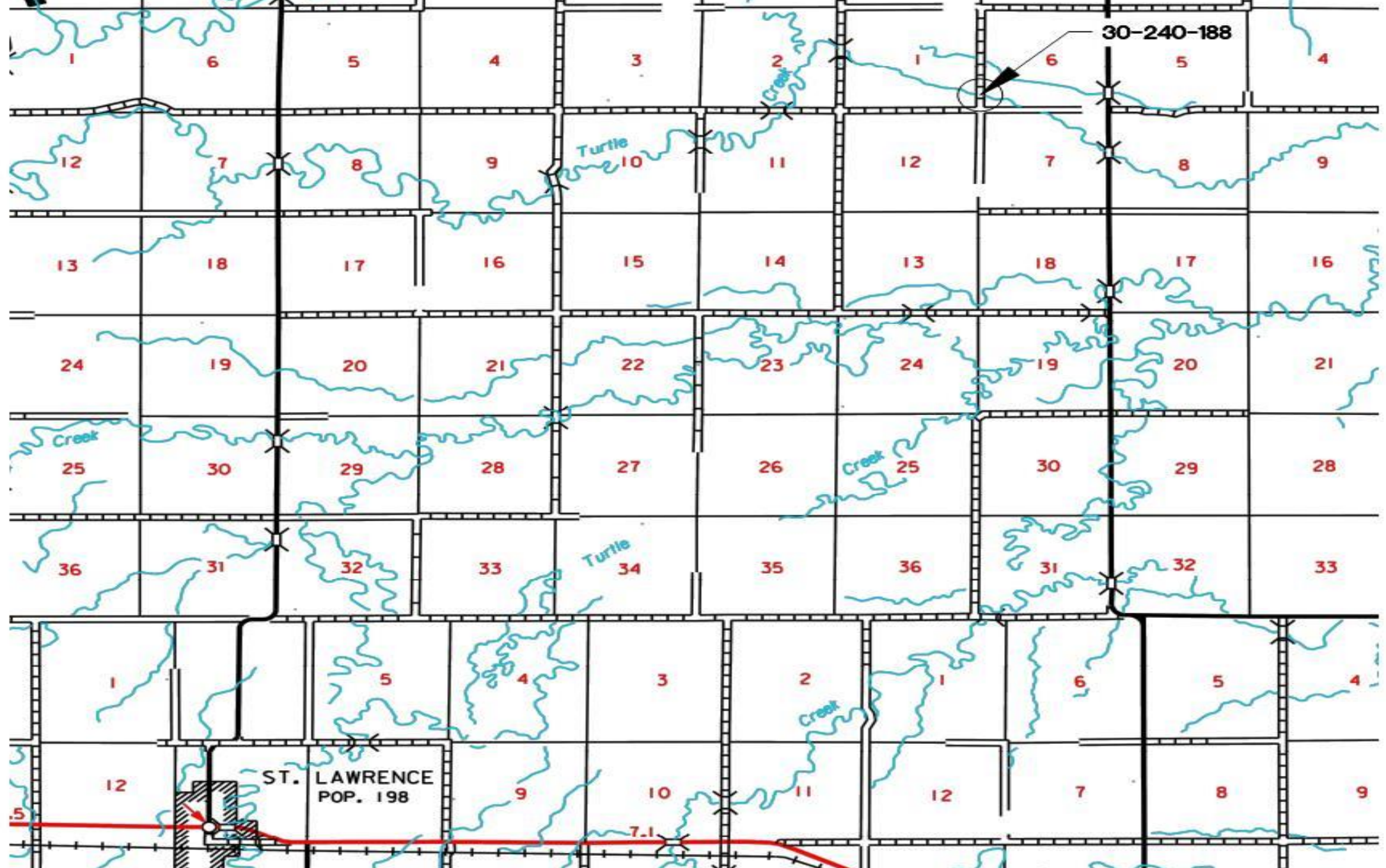








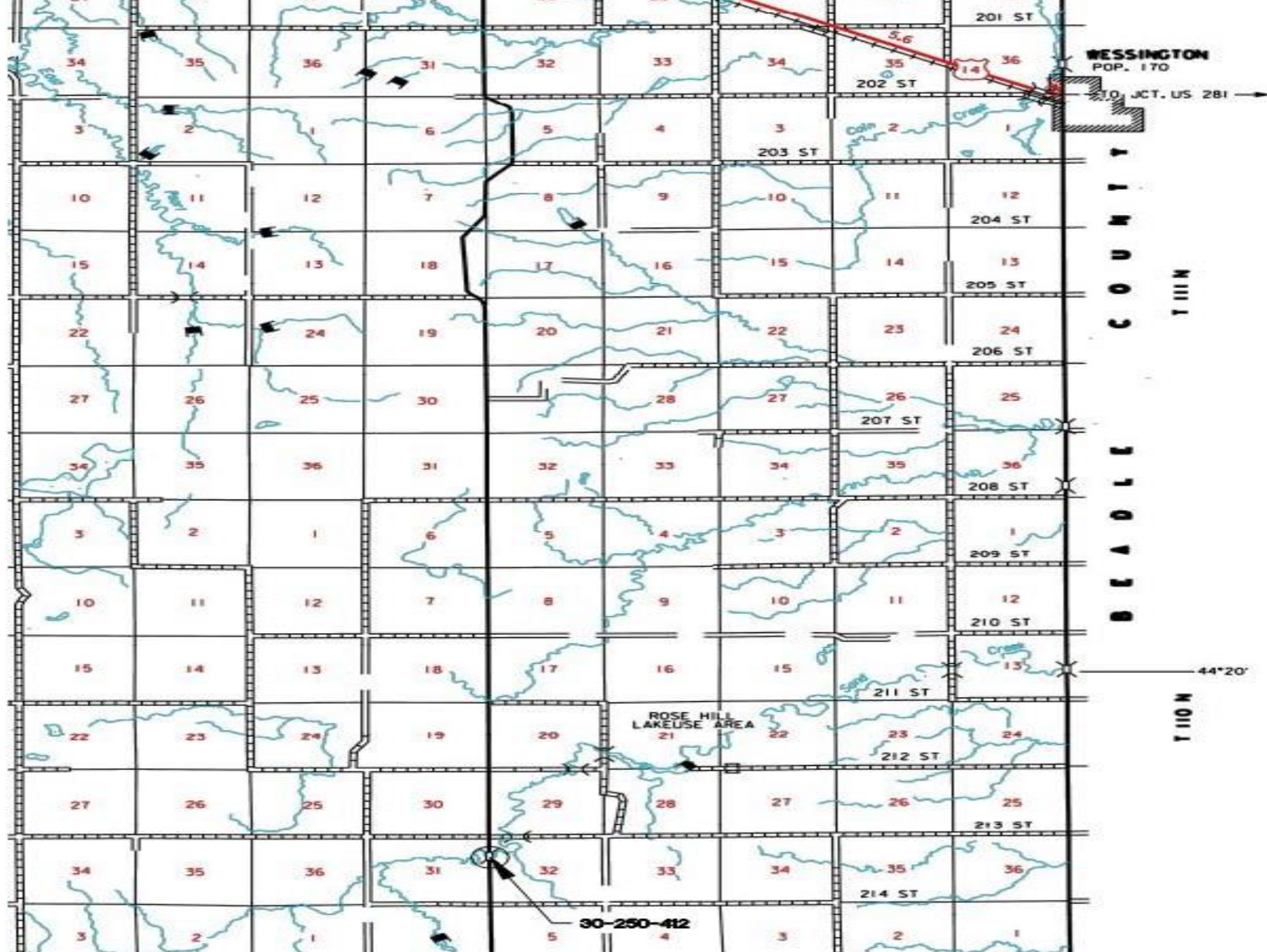










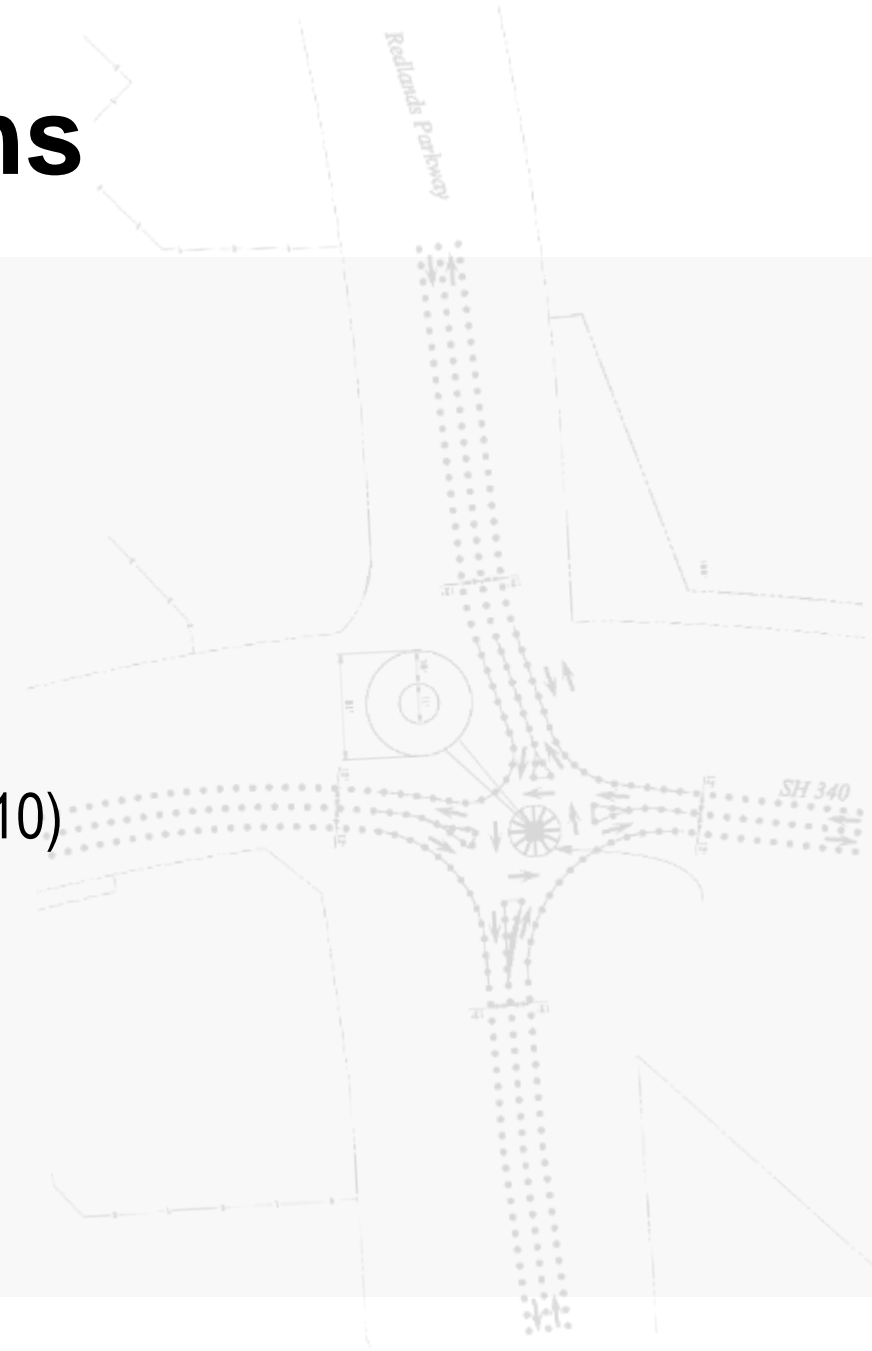






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- » Options for the way forward
- » 2-Replacements/Year
- » **SDDOT BIG Program – 80%-20% Match**
 - Bridge must serve multiple residences.
 - Must have a DOT approved 5-year plan.
 - Must have a wheel tax. (Points = actual amount x 2, max 10)
 - BIG PE – Covers preliminary engineering costs
 - BIG Replacement/Rehab – Covers construction costs





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» Questions????????





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» GIS Demonstration

