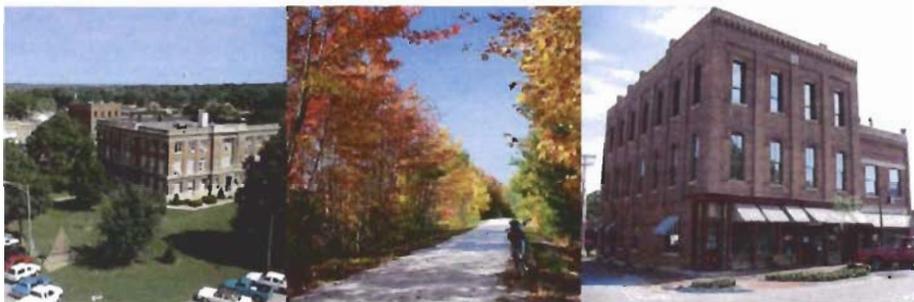


MASTER TRANSPORTATION PLAN



June 2010
(Revised 7-23-10)
Prepared for

City of Ozark
P.O. Box 295
Ozark, MO 65721

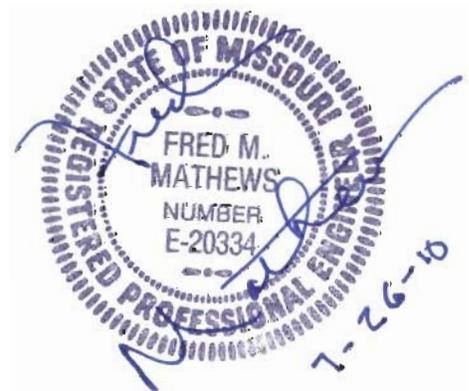


Submitted by
mathews & associates, inc.
mai consulting engineers
land surveyors

MASTER TRANSPORTATION PLAN CITY OF OZARK, MISSOURI

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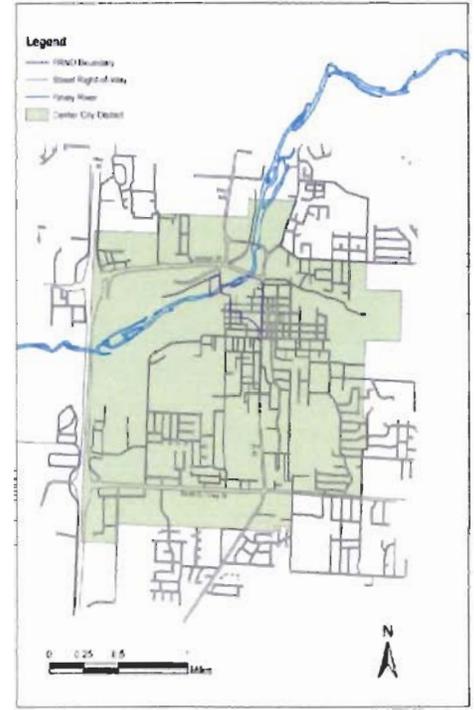
MASTER TRANSPORTATION PLAN CITY OF OZARK, MISSOURI

PURPOSE:

The purpose of this transportation planning study is to do preliminary scoping of transportation projects.

In August 2008, a consultant completed the report “*Transportation Prioritization*” for the City of Ozark. The report was intended to assist the City in determining project prioritization. Projects were selected based on a point system adapted from a MoDOT process that awarded points based on: congestion relief, economic competitiveness, safety and the current roadway condition.

Of the 24 roadway segment and intersection locations included in *Transportation Prioritization* report, 12 are on City right-of-way. The remainder is on MoDOT routes.



PRIORITIZATION:

The *Transportation Prioritization* report recommended the following:

Rank	Street	Description	Total Point Value
1	Highway CC	Improvements from US Highway 65 to Cheyenne Road	301.9
2	3 rd Street	Intersection improvements at 3 rd & Jackson	279.8
3	Highway 65	Interchange improvements at US Hwy 65 & CC	273.7
4	Highway 14	Improvements from Selmore intersection to proposed ball fields	261.8
5	South Street	Improvements from US Highway 65 to Selmore Intersection	246.8
6	Highway CC	Intersection improvements at Hwy CC & 22 nd St	231.4
7	3 rd Street	Improvements from Jackson to Selmore Intersection	224.8
8	Highway 14	Intersection improvements at Hwy 14 & Cheyenne Rd.	219.7
9	Highway 14	Intersection improvements at Hwy 14 & Hwy NN	216.2
10	Highway CC	Intersection improvements at Hwy CC & Cheyenne Rd.	215.8
11	Highway J	Intersection improvements at Hwy J and 17 th St.	206.8
12	Highway 14	Intersection improvements at Hwy 14 & Fremont	204.0
13	3 rd Street	Intersection improvements at 3 rd & Church	203.9
14	Highway CC	Intersection improvements at Hwy CC & 25 th St.	198.8
15	3 rd Street	Intersection improvements at 3 rd & McCracken (include park ent.)	195.9
16	McCracken	Intersection improvements at McCracken Rd. & N. Riverside	188.2
17	3 rd Street	Intersection improvements at 3 rd St. & Oak	184.8
18	Longview Road	Improvements from N. 20 th Street to Fremont Rd.	181.6
19	Fremont Road	Improvements from Highway 14 to Highway CC	178.1
20	Highway NN	Intersection improvements at Hwy NN & McCracken Rd.	165.9
21	Frontage Road (P)	New Roadway from Highway 14 to Highway J	162.0
22	Fremont Road	Intersection improvements at Fremont & Longview/North Rd.	152.1
23	McCracken	Improvements from Riverside Rd to Hawkins Rd.	126.0
24	Elk Valley Road	Intersection improvements at Elk Valley Rd. & Warren Ave.	91.1

To better **evaluate immediate needs**, specific constructability issues, and determine preliminary construction costs for these priority projects, **MAI** was tasked with further narrowing the list and determine top priorities (8-10 projects) that are the most urgent and will have the greatest impact on the City’s transportation system.



Rather than focus on the overwhelming 30 to 40-year improvement plan that costs hundreds of millions of dollars, the City is attempting to address their most urgent needs over a 5-7 year period and a \$10± million construction cost – the extent of their funding capabilities.

After a consensus from City leaders is reached, a funding mechanism will be identified (e.g. sales tax for transportation). Specific priority projects would then be funded and completed over a 5-7 year period.

In order to identify these immediate needs, north-south and east-west corridors were examined and priorities were selected from each corridor to determine the most important projects.

The corridors are:

NORTH – SOUTH ROUTES	FROM - TO
1. 3 rd Street	Jackson St to Oak
2. Farmers Branch / Rte NN	North City Limits to Jackson St
3. Fremont Road	North City Limits to Jackson St
4. Route W	Hartley to South City Limits
5. S. Elk Valley Road	E. Route 14 to South City Limits
6. S. 17 th Street	W. Oak to E. Route 14

EAST - WEST ROUTES	FROM - TO
7. Riverbluff Drive	Route NN to Smallin Road
8. Longview Road	Fremont to Route NN (including US 65 crossing)
9. E. McCracken Road	Route NN to East City Limits
10. Route 14 / W. South St. (Business 65)	U.S. 65 to Route 'W'
11. Hartley	3 rd Street to Route W
12. E. Warren Road	Selmore to Route 'W'

Final selection of the priority projects was based on:

• Total Traffic Volume	• Route Continuity
• Economic Development Potential	• Safety Issues
• Immediate Short Term Need	• City Input & Priorities

Information acquired and reviewed for this project includes:

- Updated Traffic Counts
- City's Aerial Mapping & GIS Data
- Base Maps with Photo Backgrounds of Each Project
- MoDOT Plans Showing Existing Conditions & Right-of-Way Locations
- City Plans Showing Existing Conditions & Right-of-Way Locations
- Utility Maps

Public meetings and an Aldermen Workshop were conducted to discuss these projects. Input from the Christian County Commission was also considered. Ultimately, a consensus for the priorities was reached and the following projects were selected:

LOCATION	FROM - TO
1. 3 rd Street & Jackson Street Intersection	
2. Route NN & Jackson Intersection	
3. 3 rd Street	Jackson St. to Church St.
4. Rte NN & McCracken Road Intersection	
5. 3 rd Street & Church Street Intersection	
6. South Street & State Route W Intersection	
7. South Street & S. 14 th Avenue Intersection	
8. 17 th Street	South Street to Church Street

PROJECT DESCRIPTIONS:

Each project is discussed in detail below:

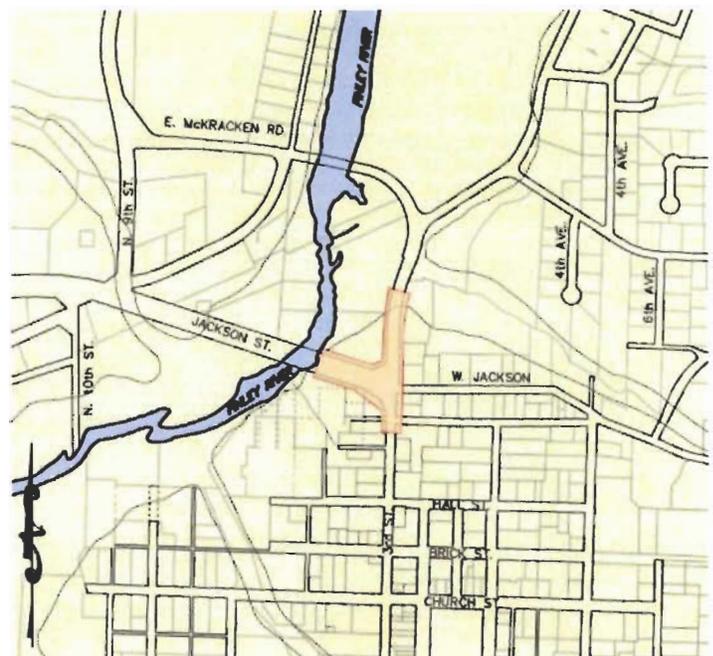
(1) 3rd Street & Jackson Street Intersection

3rd Street is a 2-lane primary arterial, providing vital north-south linkage between Business 65 (South Street) and State Highway 14 (Jackson Street) in Ozark.

3rd Street is the City's **only north-south principal arterial serving the area**. The street provides access to the downtown square and has the highest traffic volumes of any north-south route other than State Highway 65.

The intersection has an unconventional two-way stop control configuration and failing level of service on the southbound approach.

The corridor is also essential for providing future primary access to center City and the City's Finley River Neighborhood Development (**FRND**) as outlined in the



2006 Ozark Revitalization Plan.

Traffic generated from the redevelopment area, combined with current traffic and regional growth could result in the intersections of Jackson and Church Streets functioning at an unacceptable level of service.

2009 traffic counts on Jackson show 13,897 vpd with 1,106 vpd in the P.M. peak hour. Previous counts from 2008 show 18,228 vpd on Jackson. East of the Finley River Bridge, Jackson Street is curb & gutter, 45' b-b with 36' pavement and 4' shoulders.

The City has entered into a cost share agreement with MoDOT to fund improvements at this intersection and on 3rd Street. The City is in the process of modifying the agreement to construct a conventional signalized intersection rather than a roundabout suggested by a previous developer.

PROPOSED IMPROVEMENTS:

- Widen 3rd St & Jackson St for 2-thru lanes in each direction with continuous center turn lane
- Add center turn lane for SB approach of Riverside St
- New signal
- Curb & gutter
- Enclosed storm water system
- Sidewalks on both sides

ESTIMATED PROJECT COST: \$1,014,199

(2) Jackson St & Route NN Intersection

Improving this intersection is important because it will: provide route continuity on Highway 14 to US 65, prevent excessive intersection delays that now occur and provide connectivity with 3rd Street.

Improvement of this route will provide continuity on Jackson Street (Highway 14) westerly to State Highway 65. The segment also connects the Finley River Bridge to the 3rd & Jackson intersection.

Further north, Route NN provides access to two schools, and has high volumes of bus traffic. Route NN creates a T-intersection with Jackson. Two driveways to a gas station straddle the south side of the intersection. 4th Street, 10th Street and other driveways intersect near the intersection.

Southbound Route NN approaches the intersection with a single lane that is used for left and right turns causing extensive delays and a LOS E.

Eastbound Rte 14 approaches the intersection with a dedicated lane for left turns and single lane for through movements. Westbound Rte 14 approaches the intersection with a single lane used for through and right movements.



West of the Finley River Bridge, Jackson is 36’ wide with 4’ shoulders and a ditch on both sides. The road is currently posted with a 35 MPH speed limit from US-65 to Route NN and then drops to 25 MPH.

PROPOSED IMPROVEMENTS:

- Widen Jackson St for 2-W.B. thru lanes (east of Rte NN)
- Widen Rte NN for S.B. left turn lane
- New signal
- Asphalt pavement with 6’ wide shoulders
- Open channel storm water conveyance
- Multi-use sidewalk on E. side of Rte NN to McCracken

ESTIMATED PROJECT COST: \$1,201,557

(3) 3rd Street – (Jackson to Church)

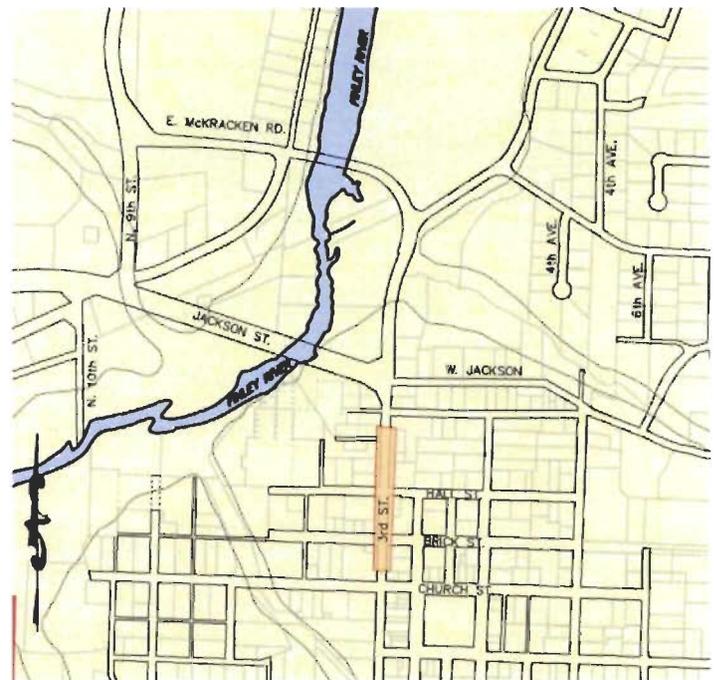
This corridor is important in that it provides route continuity between the intersections with Jackson Street and Church Street. 3rd Street provides access to the Ozark Downtown and the City’s Finley River Neighborhood Development.

3rd Street is a three-lane north – south primary arterial roadway providing access to both residential and commercial properties. From Jackson to Oak Street, the roadway has two 12’ wide lanes, a 14’ two-way left turn lane and curb & gutter.

2009 Traffic counts on 3rd street show 13,897 vehicles per day. The road is currently posted with a 25 MPH speed limit from Jackson to Oak. Volumes on 3rd street, south of Oak drop to 10,185 vpd.

Adding capacity to 3rd Street will be important for the Center City area to promote economic development and provide connectivity to the Jackson intersection.

Constructing this segment with the Jackson & 3rd Street intersection (Project #1) is recommend and would result in a cost savings achieved by avoiding duplicate costs for mobilization, lane tapers and other common construction elements.



PROPOSED IMPROVEMENTS:

- Widen 3rd St for 2-S.B. & N.B. lanes
- Continuous center turn lane
- Curb & gutter
- Enclosed storm water system
- Sidewalks on both sides

ESTIMATED PROJECT COST: \$762,173

(4) 3rd Street & Church Street Intersection

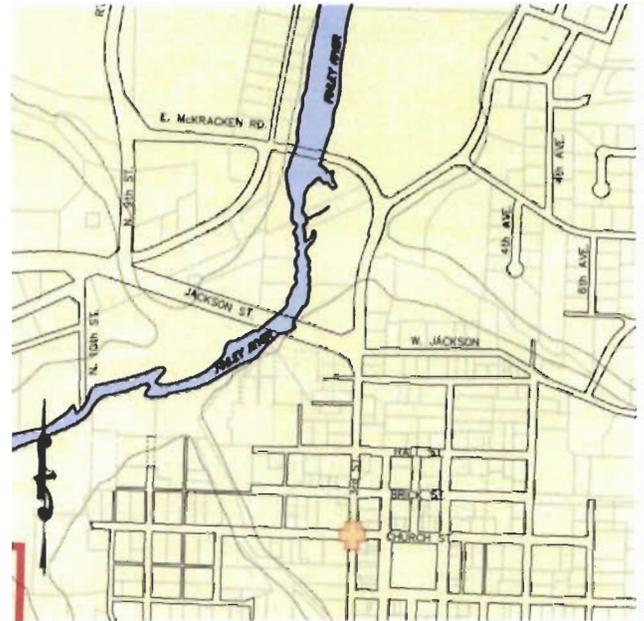
Improving this intersection completes the link along 3rd Street between the Church & Jackson Intersections. This improvement could be funded by a Developer and provides a vital access point into the **FRND**. Access from Church Street is important to the center City redevelopment area. East-west pedestrian accessibility will most likely occur here to connect existing neighborhood areas to the Ozark Downtown.

Northbound and Southbound 3rd Street approaches the intersection with a single lane used for through and right movements and a continuous two-way left turn lane. Eastbound and Westbound Church Street approaches the intersection with a single lane used for left, through and right movements.

Traffic volumes in 2032 may warrant separate left turn lanes and two north-south through lanes on 3rd Street.

PROPOSED IMPROVEMENTS:

- Widen 3rd St for 2-thru lanes in each direction with continuous center turn lane
- Add center turn lane for EB & WB approach of Church St
- New signal
- Curb & gutter
- Enclosed storm water system
- Sidewalks on both sides



ESTIMATED PROJECT COST: \$1,433,171

(5) Route NN & McCracken Road Intersection

McCracken Road creates a T-intersection with State Route NN. The northbound Route NN approaches the intersection with a single lane that is used for through and right movements. Southbound Rte NN approaches the intersection with a single lane used for left and through movements.

Route NN is a two-lane roadway under the jurisdiction of the Missouri Department of Transportation. At the intersection of Route 14, Route NN is a 36-foot wide asphalt roadway with six feet of shoulders and ditches on both sides in approximately 80 feet of right-of-way.

Previous traffic count information shows Route NN has an average daily volume of 4,390 vehicles per day. The posted speed limit is 35 MPH south of the intersection and 55 MPH to the north.

Turning movements from Rte NN onto McCracken warrant a separate left turn lane. High speed, combined with greater volumes of student and school bus traffic create a safety concern.



The benefits of improving this intersection are: separate left and through traffic movements, increase intersection capacity, prevent excessive delays, increase safety in an area with high vehicle speeds, safer for school bus and student traffic.

Constructing this segment with the Route NN & Jackson intersection (Project #2) is recommend and would result in a cost savings achieved by avoiding duplicate costs for mobilization, lane tapers and other common construction elements.

PROPOSED IMPROVEMENTS:

- Widen Rte NN for S.B. left turn lane
- Asphalt pavement with 6’ wide shoulders
- Open channel storm water conveyance

ESTIMATED PROJECT COST: \$394,063

(6) State Hwy 14 & State Route W Intersection

South Street (E. Highway 14) is an east-west primary arterial providing access to both residential and commercial properties in southern Ozark. The linkage is vital for providing access to existing and future development.

At Route W, Highway 14 is a two-lane roadway under the jurisdiction of the Missouri Department of Transportation. Eastbound and west bound South Street approaches Route W with a single lane in each direction that is used for through, left and right turns. Highway 14 is 24-feet wide with 8-foot wide shoulders and ditches on both sides in approximately 100-foot right-of-way. The posted speed limit is 55-MPH.

Route W is a two-lane roadway, 24-foot wide, no shoulders and ditches on both sides in approximately 60-feet of right-of-way. North and south bound Route W approaches the intersection with a single lane used for left, through and right movements. The posted speed limit on Route W is 45-MPH.



Turning traffic that enters from adjacent residential subdivisions onto the high speed Highway 14 pose a safety concern. Current traffic volumes warrant an eastbound to southbound right turn lane onto Route W. Future development south of the intersection will require additional capacity at the intersection. Separate left turn lanes should be constructed at all approaches, with a separate right turn lane for the EB to SB movement.

The benefits of improving this intersection are: separate left/right and through traffic movements, increase intersection capacity, prevent excessive delays, increase safety in an area with high vehicle speeds.

PROPOSED IMPROVEMENTS:

- Signalize intersection
- Widen for left turn lane at all approaches
- Minimum 200’ left turn storage
- Open channel storm water conveyance

ESTIMATED PROJECT COST: \$999,426

(7) State Hwy 14 & S. 14th Avenue Intersection

Similar to the intersection at Route W, 14th Avenue serves residential subdivisions on both sides of Highway 14. Traffic entering from or exiting to the subdivisions onto the high volume high speed Highway 14 pose a safety concern. The intersection has had a fatal accident.

14th Street is a 22-foot wide with ditches on both sides, residential collector in 40-feet of right-of-way under the jurisdiction of the City of Ozark. The street provides north-south continuity across South Street to residential neighborhoods and ultimately the center city area.

Traffic turning from Highway 14 onto 14th Street needs a separate left turn lane to shelter the vehicles from high speed through traffic.

Separate left turn lanes should be constructed at all approaches.

The benefits of improving this intersection are: separate left/right and through traffic movements, increase intersection capacity, prevent excessive delays, increase safety in an area with high vehicle speeds.



PROPOSED IMPROVEMENTS:

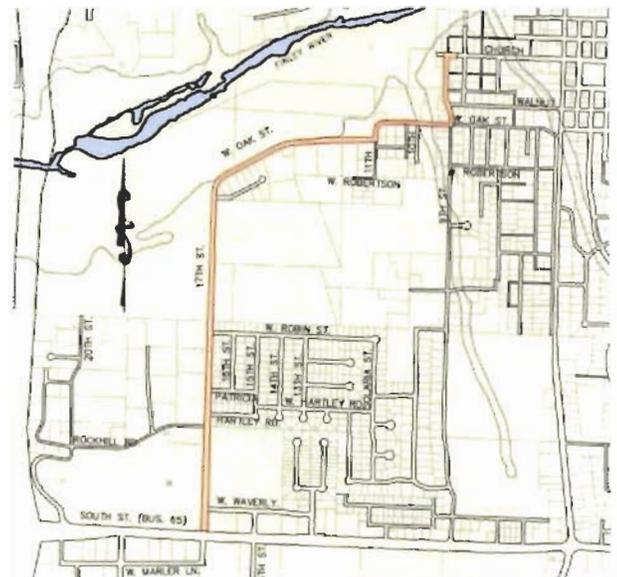
- Signalize intersection
- Widen for center left turn lane at all approaches
- Minimum 200' left turn storage
- Open channel storm water conveyance

ESTIMATED PROJECT COST: \$1,086,474

(8) 17th Street – (South Street to Church Street)

17th Street is 2-lanes and provides access from South Street northerly into the Center City area. 17th Street is classified as a primary arterial. The roadway is capable of providing an additional alternate access to and from the Center City area. Improvement of the roadway would provide access for commercial and retail developments that continue to occur near the intersection of South Street. The City has invested in utility infrastructure (water and sewer) to serve the area and can recapture the capital expenditure as development occurs. The roadway is approximately 20' wide with no shoulders, ditches on both sides in 50-feet of right-of-way.

South Street (Business Route 65), a primary arterial, is a multi-lane east-west roadway providing access to residential and commercial properties at the 17th Street Intersection and



City of Ozark, Missouri

adjacent areas. The intersection is signalized and has separate left turn lanes at each approach.

17th Street should ultimately be improved to a primary arterial with limited driveway access, appropriate turn lanes at intersections and proper horizontal and vertical alignments. However, a phased approach is recommended where initially, a 3-lane section would be constructed. The 3-lane section will accommodate projected traffic volumes during the near term. If development occurs on the southern end adjacent to South Street, future improvements could be made and additional lanes added where needed.

PROPOSED IMPROVEMENTS:

(Church St southerly to 10TH Street)

- Widen for continuous center turn lane
- Widen for left turn lane at all intersection approaches
- Curb & gutter (41' b-b)
- Enclosed storm water system
- Sidewalks on both sides

(10TH Street to South Street)

- Widen for continuous center turn lane
- Asphalt pavement with 6' wide shoulders
- Open channel storm water conveyance
- Sidewalks on both sides

ESTIMATED PROJECT COST: \$4,351,207

The conceptual design and detailed cost estimates are attached. The analysis was based on the criteria described below:

DESIGN CRITERIA & DETAILED ANALYSIS:

The criterion for concept design for each project is based on the:

- ✓ Functional Classification of the Roadway (arterials, collector, local, etc)
- ✓ Capacity Requirements Based on Existing & Projected Traffic Volumes
- ✓ City, MoDOT & OTO Design Requirements

Each project was further developed by analyzing, designing and/or examining:

- Geometric Configurations (turn lanes, through lanes, entrances, etc)
- Capacity Improvements
- Turn Lane Additions
- Access Modifications
- Identify Necessary Right-of-Way & Easements
- Identify Utility Conflicts
- Identify Design Constraints (geographic, topographic, environmental)
- Analyze Safety Issues

GEOMETRIC DESIGN & CONCEPT PLAN DEVELOPMENT:

Utilizing the results from the traffic and safety analysis, concept designs and layout of the necessary geometric configuration of each project were prepared on an AutoCAD drawing (with aerial background) or exhibit showing:

- | | |
|------------------------------------|------------------------------------|
| ✓ Number of Through Lanes | ✓ Lane Lines |
| ✓ Separate Left & Right Turn Lanes | ✓ Existing & Proposed Right-of-Way |
| ✓ Typical Pavement Section | ✓ Required Easements |
| ✓ Typical Cross Section | ✓ Utility Locations |
| ✓ Maximum & Minimum Slopes | ✓ Traffic Control (signals) |
| ✓ Intersection Configurations | ✓ Storm Water Drainage Facilities |

COST ESTIMATING:

After the concept plans were complete, comments received from the City, MoDOT and County, cost estimating was completed. This work consisted of:

- Calculating Quantities of all Items Necessary for Construction
- Preparing Spreadsheets Tabulating the Quantities
- Determine a Reasonable Unit Cost for Each Item
- Determine Utility Relocation Costs
- Estimating Contingency Costs
- Estimating Right-of-Way Costs
- Easement Costs
- Total Cost & Summary of All Projects

The estimates are attached.

FINAL RECOMMENDATIONS AND PHASING:

After input from the City, County, MoDOT and the public, the top two priorities are:

PRIORITY #1

Improve the **3rd Street & Jackson intersection (Project #1)**. In conjunction with this project, we recommend constructing the capacity (widening) improvements on **3rd Street between Jackson and Church (Project #3)**. Having the cost share agreement with MoDOT in place would allow both projects to be completed at one time and save construction costs.

The cost for these two projects is: **\$1.81 million**

PRIORITY #2

Route NN & Jackson Intersection (Project #2) is the City's second highest priority and the County's highest priority. We recommend constructing this project along with the **Route NN and McCracken Intersection (Project #5)**. Combining the projects will save construction costs.

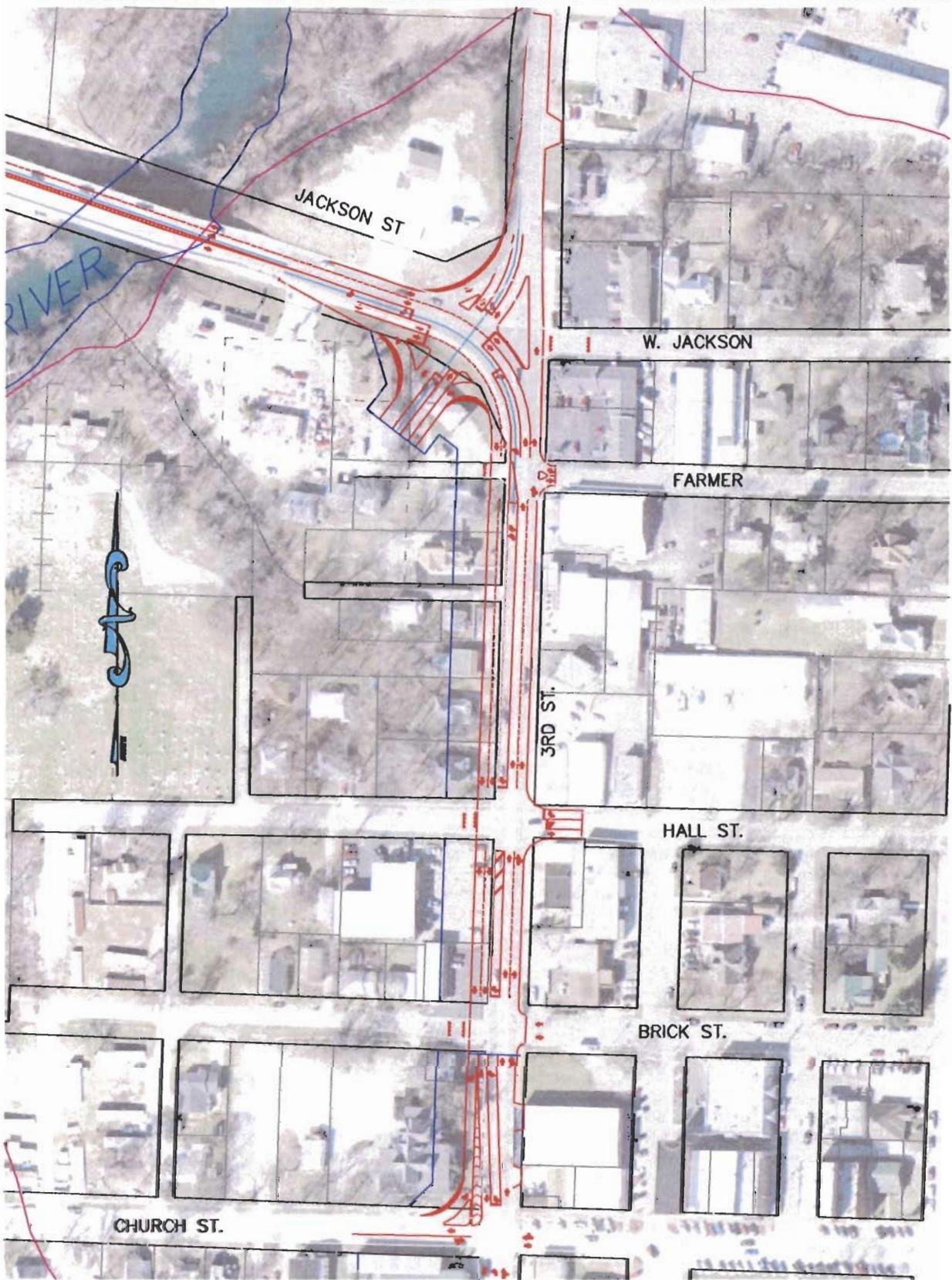
The combined cost for these two projects is: **\$1.60 million**

Constructing these two priorities would complete the 3rd Street, Jackson and Route NN corridor.

The necessity for constructing the 3rd Street & Church intersection (**Project #4**) will be dictated by development within the **FRND** area. Acquiring the necessary right-of-way is a costly (3 businesses need to be purchased) and time consuming process and could occur as properties become available or are redeveloped. The time required to assemble the right-of-way is unpredictable. As the area develops, and traffic volumes increase, the improvements will be needed to provide the critical southern access. The City should consider requiring the developer to participate in the construction cost.

Determining the order of construction for the other projects is subjective. Logically, the intersection improvements on **South Street (Projects #6 & #7)** should be done in consecutive construction seasons.

17th Street (Project #8) could be completed in phases as development occurs. The necessity of completing this segment depends largely on the pace of development adjacent to South Street and within the **FRND**.



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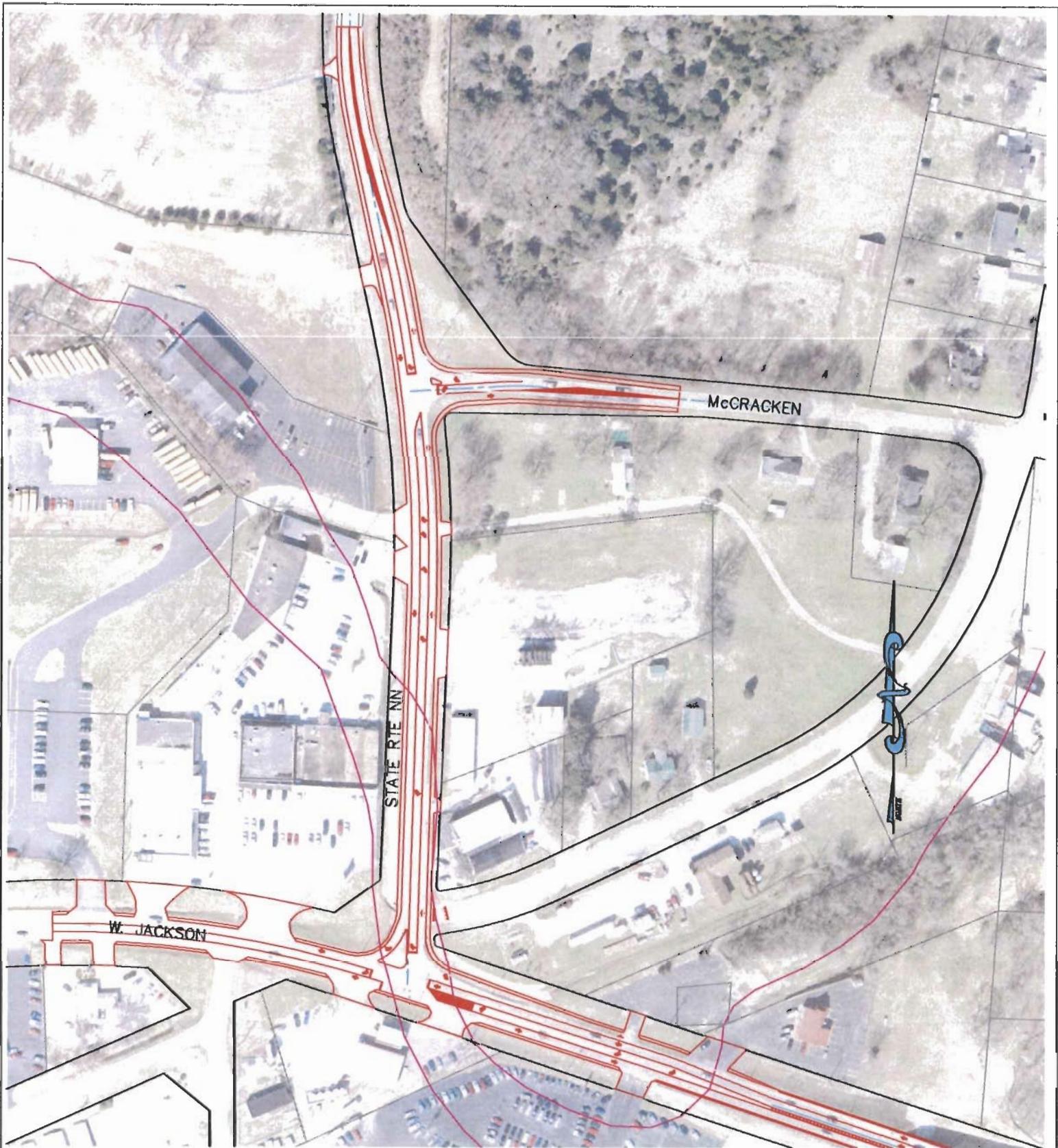
1631 w. elfindale,
springfield, missouri 65807

tel 417. 869. 6009
fax 417. 869. 8129

**PRIORITY #1
PROJECTS
1 & 3**

DWG. NAME:
922-PHASE 1 SKETCH.dwg

DATE 6/22/10
PROJ. NO. 0922
SCALE: N.T.S.



prepared by:
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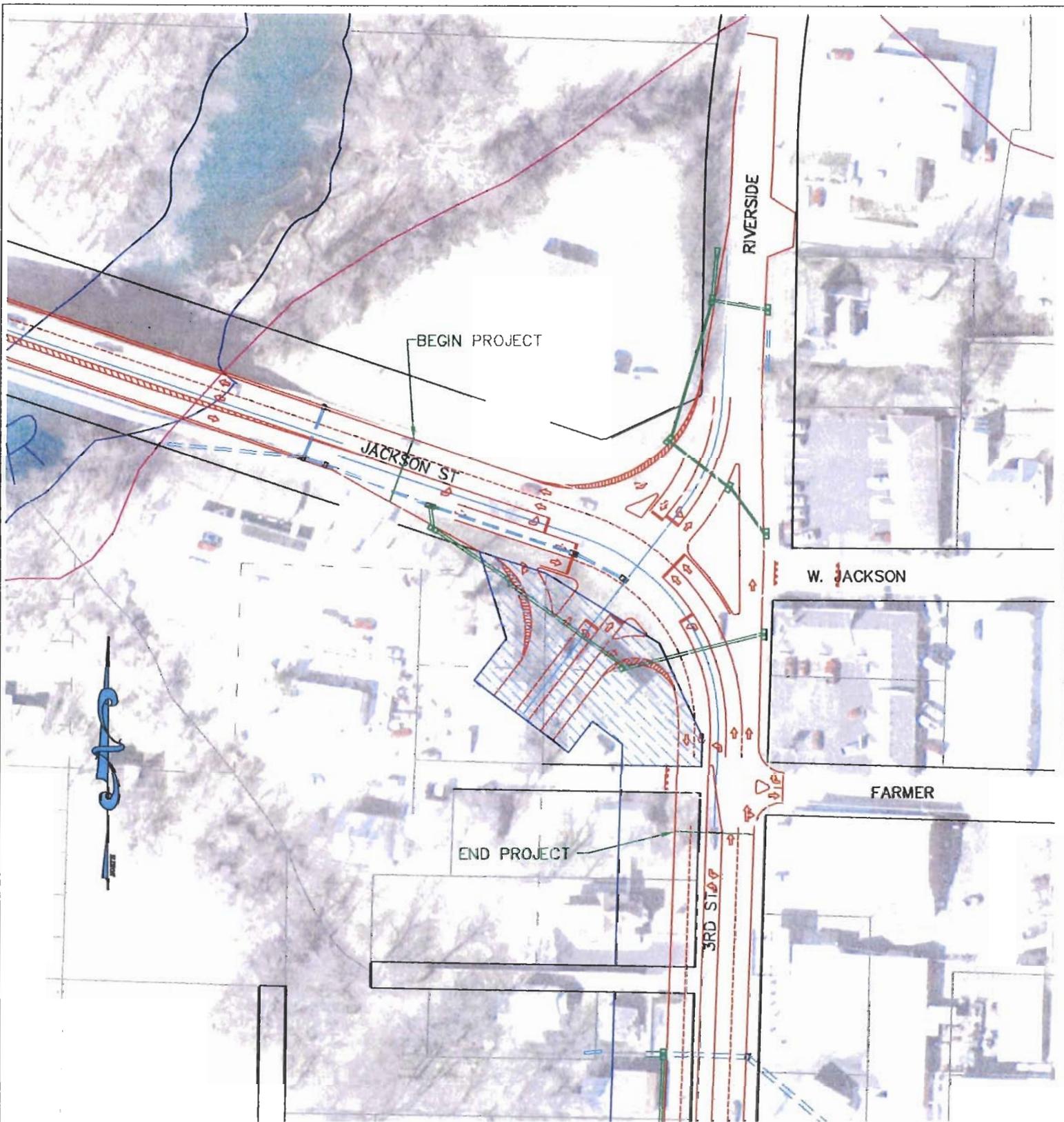
1631 w. elfindale,
springfield, missouri 65807

tel 417. 869. 6009
fax 417. 869. 8129

**PRIORITY #2
PROJECTS
2 & 5**

DWG. NAME:
922-CORRIDOR SKETCHES.dwg

DATE 6/22/10
PROJ. NO. 0922
SCALE: NTS



3RD STREET: PRIMARY ARTERIAL 110' R/W

PROJECT #1

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land surveyors

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springfield, missouri 65807

tel 417. 869. 6009
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PROPOSED IMPROVEMENTS:

- Widen 3rd St & Jackson St for 2-thru lanes in each direction with continuous center turn lane
- Add center turn lane for SB approach of Riverside St
- New signal
- Curb & gutter
- Enclosed storm water system
- Sidewalks on both sides

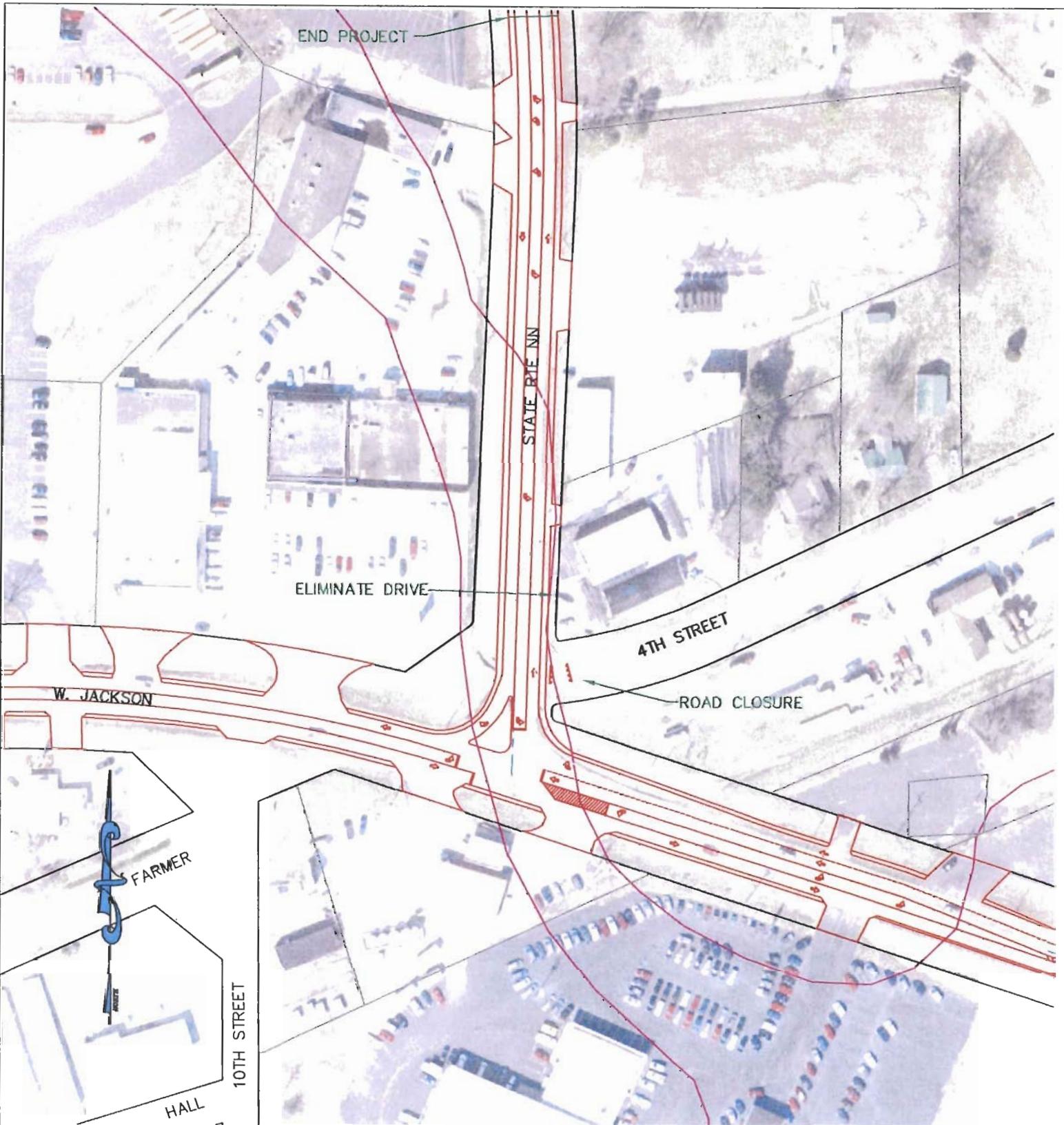
 = R/W TO BE ACQUIRED

**ROADWAY
CORRIDOR ROUTES
3RD ST. & JACKSON**

DWG. NAME:
922-CORRIDOR SKETCHES.dwg

DATE 6/16/10
PROJ. NO. 0922
SCALE: 1"=100'

3rd ST & JACKSON: (Roadway Improvements)				PROJECT #1
DESCRIPTION	QTY	UNIT	UNIT PRICE	SUBTOTAL
CONCEPT PLAN - CONSTRUCTION COST ESTIMATE				
1 Mobilization & Project Bonding (3% of const cost)	-	lump	\$ 10,000.00	\$ 10,000
2 Miscellaneous Removals	-	lump	\$ 20,000.00	\$ 20,000
3 Clearing & Grubbing	-	lump		
4 Remove Curb & Gutter	-	lf	\$ 3.00	\$ -
5 Remove Concrete Sidewalk	1,520	sf	\$ 1.50	\$ 2,280
6 Remove Existing Pavement	550	sy	\$ 5.00	\$ 2,750
7 Roadway Excavation	1,467	cy	\$ 6.00	\$ 8,802
8 Roadway Embankment	856	cy	\$ 10.00	\$ 8,560
9 New Curb Inlets & Junction Boxes	9	ea	\$ 2,500.00	\$ 22,500
10 Storm Water Piping (<24" dia.)	245	lf	\$ 50.00	\$ 12,250
11 Storm Water Piping (>24" dia.)	315	lf	\$ 75.00	\$ 23,625
12 Reinforced Concrete Box Culvert	-	cy	\$ 400.00	\$ -
13 Drainage Channel (flat bottom ditch)	400	lf	\$ 35.00	\$ 14,000
14 Concrete Curb & Gutter	1,665	lf	\$ 15.00	\$ 24,975
15 Concrete Sidewalks (various width)	6,748	sf	\$ 3.50	\$ 23,618
16 Asphalt Pavement (2" asp surface on 9" asp base on 4" aggregate base)	2,935	sy	\$ 40.00	\$ 117,400
17 Asphalt Shoulder (MoDOT Type 3)	150	sy	\$ 30.00	\$ 4,500
18 Roto-Milling	3,051	sy	\$ 5.00	\$ 15,255
19 Asphalt Overlay (2" asphalt surface on ex pvmt)	3,051	sy	\$ 5.00	\$ 15,255
20 Traffic Signal		lump	\$ 225,000.00	\$ 225,000
21 Concrete Islands & Median	365	sy	\$ 40.00	\$ 14,600
22 ADA Sidewalk Ramps	9	ea	\$ 500.00	\$ 4,500
23 New Driveways	554	sy	\$ 30.00	\$ 16,620
24 Pavement Markings		lump	\$ 3,000.00	\$ 3,000
25 Erosion Control		lump	\$ 10,000.00	\$ 10,000
26 Seed, Fertilize & Mulch	1	ac	\$ 3,500.00	\$ 1,855
27 Guardrailing	630	lf	\$ 30.00	\$ 18,900
28				
CONSTRUCTION:				\$ 620,245
10% contingency:				\$ 62,025
ESTIMATED CONSTRUCTION TOTAL:				\$ 682,270
OTHER:				
New Right-of-Way (<i>Insurance Company</i>)	1	ea	\$ 250,000.00	\$ 250,000
Temp Const Esmts (<i>E side & NW corner</i>)	1.5	ac	\$ 5,000.00	\$ 7,500
Utilities				
Survey, Engineering, Const Staking (12%)				\$ 74,429
ESTIMATED PROJECT COST:				\$ 1,014,199



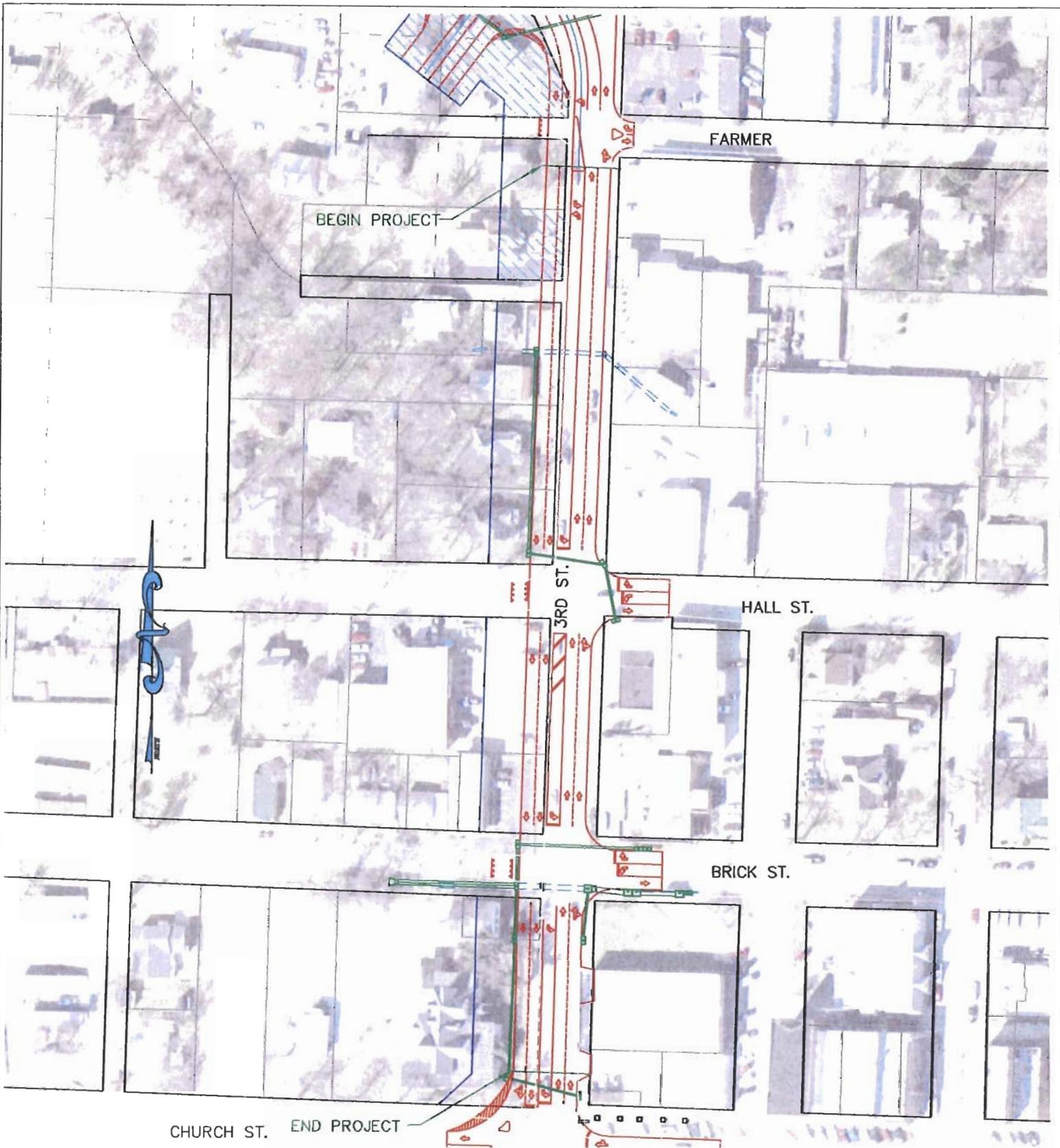
STATE ROUTE NN: PRIMARY ARTERIAL 110' R/W

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 fax 417. 869. 8129

PROPOSED IMPROVEMENTS:
<ul style="list-style-type: none"> • Widen Jackson St for 2-W.B. thru lanes (east of Rte NN) • Widen Rte NN for S.B. left turn lane • New signal • Asphalt pavement with 6' wide shoulders • Open channel storm water conveyance • Multi-use sidewalk on E. side of Rte NN to McCracken

PROJECT #2
ROADWAY CORRIDOR ROUTES JACKSON & STATE RTE NN
DWG. NAME: 922-CORRIDOR SKETCHES.dwg
DATE: 6/16/10 PROJ. NO.: 0922 SCALE: NTS

JACKSON ST & ROUTE NN: (Roadway Improvements)				PROJECT #2	
Jackson - Finley Bridge to west of 10th St) & Rte NN - Jackson to south of McCracken					
DESCRIPTION	QTY	UNIT	UNIT PRICE	SUBTOTAL	
CONCEPT PLAN - CONSTRUCTION COST ESTIMATE					
1	Mobilization & Project Bonding (3% of const cost)	-	lump	\$ 30,000.00	\$ 30,000
2	Miscellaneous Removals	-	lump	\$ 40,000.00	\$ 40,000
3	Clearing & Grubbing	-	lump	\$ 25,000.00	\$ 25,000
4	Remove Concrete Sidewalk	100	sf	\$ 1.50	\$ 150
5	Remove Existing Pavement	1,115	sy	\$ 5.00	\$ 5,575
6	Roadway Excavation	2,135	cy	\$ 6.00	\$ 12,810
7	Roadway Embankment	3,990	cy	\$ 10.00	\$ 39,900
8	New Curb Inlets & Junction Boxes	3	ea	\$ 2,500.00	\$ 7,500
9	Storm Water Piping (<24" dia.)	760	lf	\$ 50.00	\$ 38,000
10	Storm Water Piping (>24" dia.)	160	lf	\$ 75.00	\$ 12,000
11	Reinforced Concrete Box Culvert	315	cy	\$ 400.00	\$ 126,000
12	Drainage Channel (flat bottom ditch)	1,840	lf	\$ 35.00	\$ 64,400
13	Concrete Curb & Gutter (to blend at driveways)	1,600	lf	\$ 15.00	\$ 24,000
14	Concrete Sidewalks (6' wide-Rte NN to McCracken on E side)	5,864	sf	\$ 3.50	\$ 20,524
15	Asphalt Pavement (2" asp surface on 9" asp base on 4" aggregate base)	2,140	sy	\$ 40.00	\$ 85,600
16	Asphalt Shoulder (MoDOT Type 3)	850	sy	\$ 30.00	\$ 25,500
17	Roto-Milling	2,135	sy	\$ 5.00	\$ 10,675
18	Asphalt Overlay (2" asphalt surface on ex pvmt)	10,270	sy	\$ 5.00	\$ 51,350
19	Traffic Signal	-	lump	\$ 225,000.00	\$ 225,000
20	Concrete Islands & Median	50	sy	\$ 75.00	\$ 3,750
21	ADA Sidewalk Ramps	4	ea	\$ 500.00	\$ 2,000
22	New Driveways	1,004	sy	\$ 30.00	\$ 30,120
23	Pavement Markings	15,000	lump	\$ 3,000.00	\$ 3,000
24	Erosion Control	15,000	lump	\$ 10,000.00	\$ 10,000
25	Seed, Fertilize & Mulch	3	ac	\$ 3,500.00	\$ 8,750
26	Guardrailing	400	lf	\$ 75.00	\$ 30,000
CONSTRUCTION:					\$ 931,604
10% contingency:					\$ 93,160
ESTIMATED CONSTRUCTION TOTAL:					\$ 1,024,764
OTHER:					
	New Right-of-Way	1.0	ac	\$ 50,000.00	\$ 50,000
	Temporary Construction Easement	1.5	ac	\$ 10,000.00	\$ 15,000
	Utilities	(all utilities are within road right-of-way)			
	Survey, Engineering, Const Staking (12%)				\$ 111,792
ESTIMATED PROJECT COST:					\$ 1,201,557



3RD STREET: PRIMARY ARTERIAL 110' R/W

PROJECT #3

prepared by:
mathews & associates, inc.

PROPOSED IMPROVEMENTS:

- Widen 3rd St for 2--S.B. & N.B. lanes
- Continuous center turn lane
- Curb & gutter
- Enclosed storm water system
- Sidewalks on both sides

mai consulting engineers
land surveyors

1631 w. elfindale,
springfield, missouri 65807

tel 417. 869. 6009
fax 417. 869. 8129



= R/W TO BE ACQUIRED

**ROADWAY
CORRIDOR ROUTES
3RD STREET
JACKSON TO CHURCH**

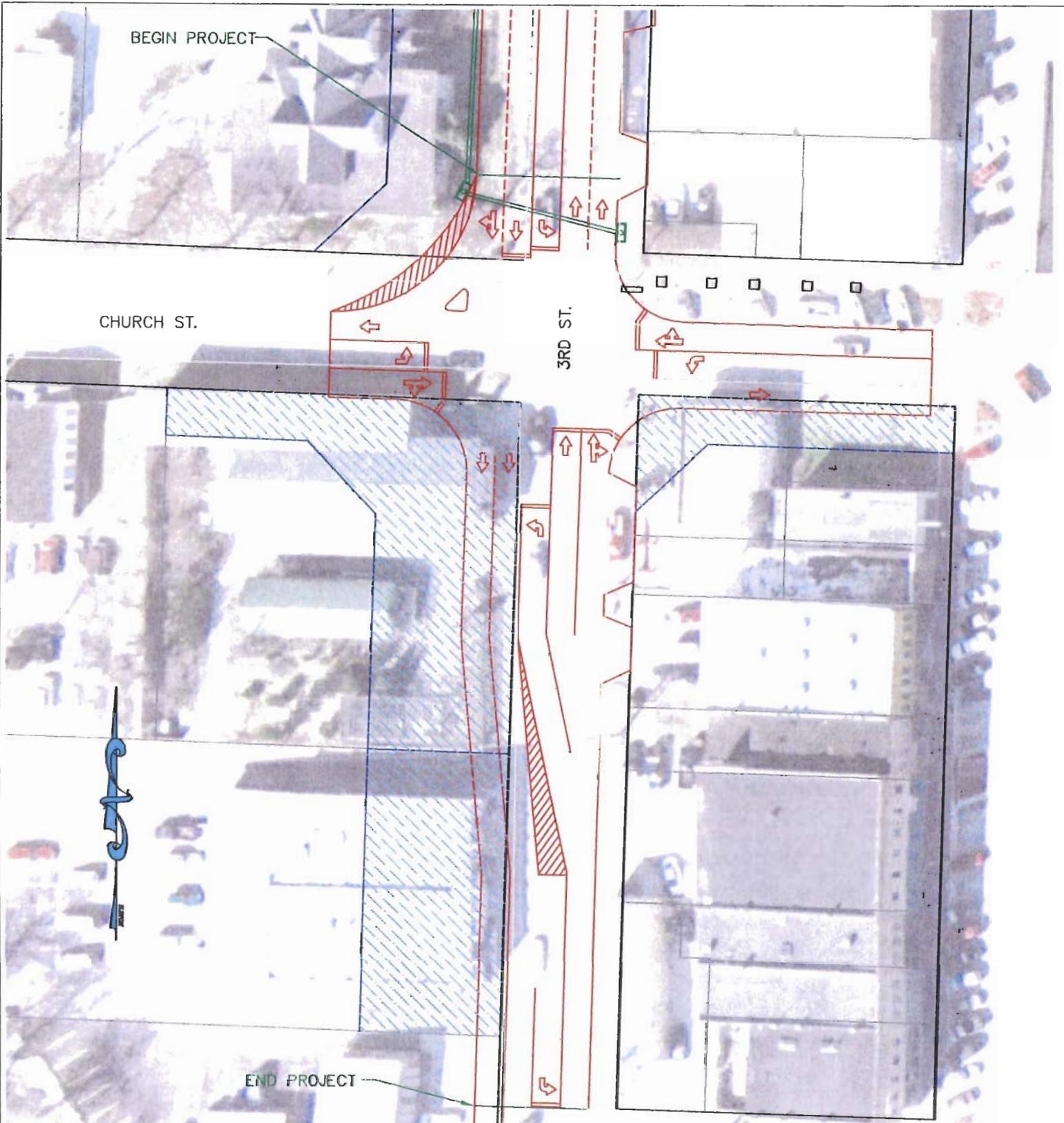
DWG. NAME:
922-CORRIDOR SKETCHES.dwg

DATE 6/16/10

PROJ. NO. 0922

SCALE: NTS

3rd STREET: (Roadway Improvements)					PROJECT #3
(Jackson to Church St)					
DESCRIPTION	QTY	UNIT	UNIT PRICE	SUBTOTAL	
CONCEPT PLAN - CONSTRUCTION COST ESTIMATE					
1 Mobilization & Project Bonding (3% of const cost)	-	lump	\$ 10,000.00	\$ 10,000	
2 Miscellaneous Removals	-	lump	\$ 20,000.00	\$ 20,000	
3 Clearing & Grubbing	-	lump	\$ 50,000.00	\$ 50,000	
4 Remove Curb & Gutter	705	lf	\$ 3.00	\$ 2,115	
5 Remove Concrete Sidewalk	3,380	sf	\$ 1.50	\$ 5,070	
6 Remove Existing Pavement	771	sy	\$ 5.00	\$ 3,855	
7 Roadway Excavation	1,357	cy	\$ 6.00	\$ 8,142	
8 Roadway Embankment	4,794	cy	\$ 10.00	\$ 47,940	
9 New Curb Inlets & Junction Boxes	15	ea	\$ 2,500.00	\$ 37,500	
10 Storm Water Piping (<24" dia.)	326	lf	\$ 50.00	\$ 16,300	
11 Storm Water Piping (>24" dia.)	507	lf	\$ 75.00	\$ 38,025	
12 Reinforced Concrete Box Culvert	100	cy	\$ 400.00	\$ 40,000	
13 Drainage Channel (flat bottom ditch)	500	lf	\$ 35.00	\$ 17,500	
14 Concrete Curb & Gutter	1,856	lf	\$ 15.00	\$ 27,840	
15 Concrete Sidewalks (various width)	6,480	sf	\$ 3.50	\$ 22,680	
16 Asphalt Pavement (2" asp surface on 9" asp base on 4" aggregate base)	2,714	sy	\$ 40.00	\$ 108,560	
17 Asphalt Shoulder (MoDOT Type 3)	400	sy	\$ 30.00	\$ 12,000	
18 Roto-Milling	3,536	sy	\$ 5.00	\$ 17,680	
19 Asphalt Overlay (2" asphalt surface on ex pvmt)	3,536	sy	\$ 5.00	\$ 17,680	
20 ADA Sidewalk Ramps	4	ea	\$ 500.00	\$ 2,000	
21 New Driveways	667	sy	\$ 30.00	\$ 20,010	
22 Pavement Markings		lump	\$ 3,000.00	\$ 3,000	
23 Erosion Control		lump	\$ 10,000.00	\$ 10,000	
24 Seed, Fertilize & Mulch	0	ac	\$ 3,500.00	\$ 1,015	
CONSTRUCTION:				\$ 538,912	
10% contingency:				\$ 53,891	
ESTIMATED CONSTRUCTION TOTAL:				\$ 592,803	
OTHER:					
New Right-of-Way (<i>Vanvig tract</i>)		lump	\$ 100,000.00	\$ 100,000	
Temporary Construction Easement (<i>E. side</i>)	0.47	ac	\$ 10,000.00	\$ 4,700	
Utilities					
Survey, Engineering, Const Staking (12%)				\$ 64,669	
ESTIMATED PROJECT COST:				\$ 762,173	



3RD STREET: PRIMARY ARTERIAL 110' R/W

prepared by:
 mathews & associates, inc.
mai consulting engineers
 land surveyors
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 springfield, missouri 65807
 tel 417. 869. 6009
 fax 417. 869. 8129

- PROPOSED IMPROVEMENTS:**
- Widen 3rd St for 2-thru lanes in each direction with continuous center turn lane
 - Add center turn lane for EB & WB approach of Church St
 - New signal
 - Curb & gutter
 - Enclosed storm water system
 - Sidewalks on both sides
-  = R/W TO BE ACQUIRED

PROJECT #4

ROADWAY CORRIDOR ROUTES
3RD STREET AT CHURCH ST.

DWG. NAME:
 922-CORRIDOR SKETCHES.dwg

DATE 6/16/10

PROJ. NO. 0922

SCALE: NTS

3rd ST & CHURCH: (Intersection & Roadway Improvements)				PROJECT #4	
DESCRIPTION	QTY	UNIT	UNIT PRICE	SUBTOTAL	
CONCEPT PLAN - CONSTRUCTION COST ESTIMATE					
1 Mobilization & Project Bonding (3% of const cost)	-	lump	\$ 10,000.00	\$ 10,000	
2 Miscellaneous Removals	-	lump	\$ 50,000.00	\$ 50,000	
3 Clearing & Grubbing	-	lump	\$ 25,000.00	\$ 25,000	
4 Remove Curb & Gutter	750	lf	\$ 3.00	\$ 2,250	
5 Remove Concrete Sidewalk	3,588	sf	\$ 1.50	\$ 5,382	
6 Remove Existing Pavement	310	sy	\$ 5.00	\$ 1,550	
7 Roadway Excavation	1,849	cy	\$ 6.00	\$ 11,094	
8 Roadway Embankment	2,850	cy	\$ 10.00	\$ 28,500	
9 New Curb Inlets & Junction Boxes	2	ea	\$ 2,500.00	\$ 5,000	
10 Storm Water Piping (<24" dia.)	275	lf	\$ 50.00	\$ 13,750	
11 Storm Water Piping (>24" dia.)	125	lf	\$ 75.00	\$ 9,375	
12 Reinforced Concrete Box Culvert	50	cy	\$ 400.00	\$ 20,000	
13 Drainage Channel (flat bottom ditch)	100	lf	\$ 35.00	\$ 3,500	
14 Concrete Curb & Gutter	840	lf	\$ 15.00	\$ 12,600	
15 Concrete Sidewalks (various width)	3,361	sf	\$ 3.50	\$ 11,764	
16 Asphalt Pavement (2" asp surface on 9" asp base on 4" aggregate base)	1,233	sy	\$ 40.00	\$ 49,320	
17 Asphalt Shoulder (MoDOT Type 3)	-	sy	\$ 30.00	\$ -	
18 Roto-Milling	1,535	sy	\$ 5.00	\$ 7,675	
19 Asphalt Overlay (2" asphalt surface on ex pvmt)	1,535	sy	\$ 5.00	\$ 7,675	
20 Traffic Signal	1	lump	\$ 225,000.00	\$ 225,000	
21 Concrete Islands & Median	50	sy	\$ 40.00	\$ 2,000	
22 ADA Sidewalk Ramps	8	ea	\$ 500.00	\$ 4,000	
23 New Driveways	85	sy	\$ 30.00	\$ 2,550	
24 Pavement Markings	1	lump	\$ 15,000.00	\$ 15,000	
25 Erosion Control	1	lump	\$ 10,000.00	\$ 10,000	
26 Seed, Fertilize & Mulch	1	ac	\$ 3,500.00	\$ 3,500	
27 Guardrailing	100	lf	\$ 30.00	\$ 3,000	
CONSTRUCTION:				\$ 539,485	
10% contingency:				\$ 53,948	
ESTIMATED CONSTRUCTION TOTAL:				\$ 593,433	
OTHER:					
New Right-of-Way (3 businesses & 1 parcel)	3	ea	\$ 250,000.00	\$ 750,000	
Temp Const Easement (E. side)	0.50	ac	\$ 50,000.00	\$ 25,000	
Utilities					
Survey, Engineering, Const Staking (12%)				\$ 64,738	
ESTIMATED PROJECT COST:				\$ 1,433,171	



STATE ROUTE NN: PRIMARY ARTERIAL 110' R/W

PROPOSED IMPROVEMENTS:

- Widen Rte NN for S.B. left turn lane
- Asphalt pavement with 6' wide shoulders
- Open channel storm water conveyance

PROJECT #5

**ROADWAY
CORRIDOR ROUTES
ST. RTE. NN & McCRACKEN**

DWG. NAME:

922-CORRIDOR SKETCHES.dwg

DATE 8/16/10

PROJ. NO. 0922

SCALE: NTS

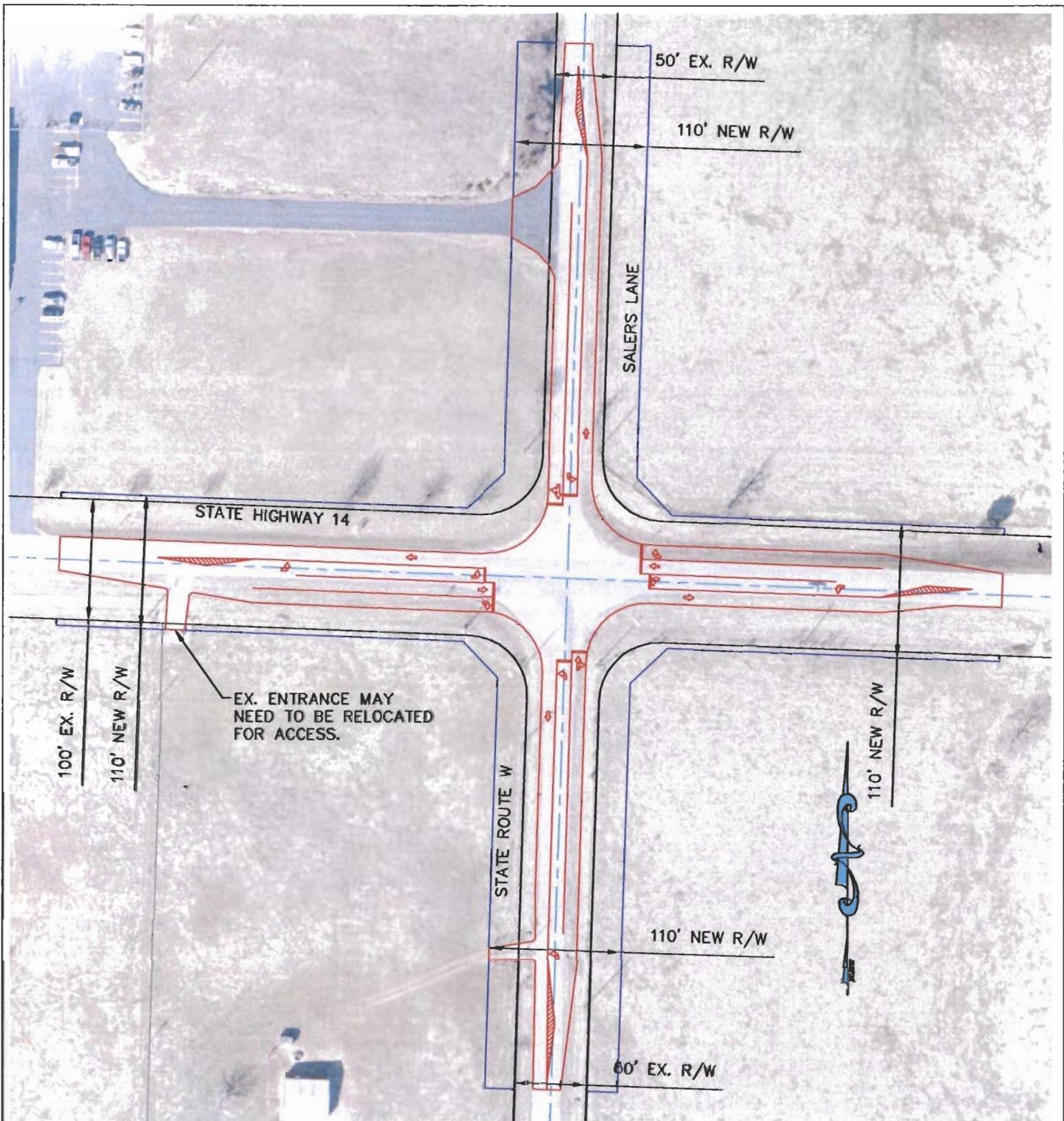
prepared by:
mathews & associates, inc.

mai consulting engineers
land surveyors

1631 w. elfindale,
springfield, missouri 65807

tel 417. 869. 6009
fax 417. 869. 8129

ROUTE NN & McCracken.: (Roadway Improvements)				PROJECT #5	
	DESCRIPTION	QTY	UNIT	UNIT PRICE	SUBTOTAL
CONCEPT PLAN - CONSTRUCTION COST ESTIMATE					
1	Mobilization & Project Bonding (3% of const cost)	-	lump	\$ 10,000.00	\$ 10,000
2	Miscellaneous Removals	-	lump	\$ 20,000.00	\$ 20,000
3	Clearing & Grubbing	-	lump		
4	Remove Curb & Gutter	50	lf	\$ 3.00	\$ 150
5	Remove Existing Pavement	568	sy	\$ 5.00	\$ 2,840
6	Roadway Excavation	608	cy	\$ 6.00	\$ 3,648
7	Roadway Embankment	6,674	cy	\$ 10.00	\$ 66,740
8	New Curb Inlets & Junction Boxes	2	ea	\$ 5,000.00	\$ 10,000
9	Storm Water Piping (<24" dia.)	30	lf	\$ 50.00	\$ 1,500
10	Storm Water Piping (>24" dia.)	90	lf	\$ 75.00	\$ 6,750
11	Drainage Channel (flat bottom ditch)	800	lf	\$ 35.00	\$ 28,000
12	Concrete Sidewalks (various width)	360	sf	\$ 3.50	\$ 1,260
13	Asphalt Pavement (2" asp surface on 9" asp base on 4" aggregate base)	1,314	sy	\$ 40.00	\$ 52,560
14	Asphalt Shoulder (MoDOT Type 3)	1,204	sy	\$ 30.00	\$ 36,120
15	Roto-Milling	200	sy	\$ 5.00	\$ 1,000
16	Asphalt Overlay (2" asphalt surface on ex pvmt)	2,904	sy	\$ 5.00	\$ 14,520
17	ADA Sidewalk Ramps	2	ea	\$ 500.00	\$ 1,000
18	New Driveways	66	sy	\$ 30.00	\$ 1,980
19	Pavement Markings	-	lump	\$ 7,500.00	\$ 7,500
20	Erosion Control	-	lump	\$ 15,000.00	\$ 15,000
21	Seed, Fertilize & Mulch	1	ac	\$ 3,500.00	\$ 3,500
	CONSTRUCTION:				\$ 284,068
	10% contingency:				\$ 28,407
	ESTIMATED CONSTRUCTION TOTAL:				\$ 312,475
	OTHER:				
	New Right-of-Way	\$ 0.50	ac	\$ 50,000	\$ 25,000
	Temporary Construction Easement	\$ 1.50	ac	\$ 15,000	\$ 22,500
	Utilities	(all utilities are within exist road right-of-way)			
	Survey, Engineering, Const Staking (12%)				\$ 34,088
	ESTIMATED PROJECT COST:				\$ 394,063



ROUTE W: PRIMARY ARTERIAL 110' R/W
 STATE ROUTE 14: PRIMARY ARTERIAL 110' R/W

PROPOSED IMPROVEMENTS:

- Widen for left turn lane at all approaches
- Minimum 200' left turn storage
- Open channel storm water conveyance
- Signalize Intersection

PROJECT #6

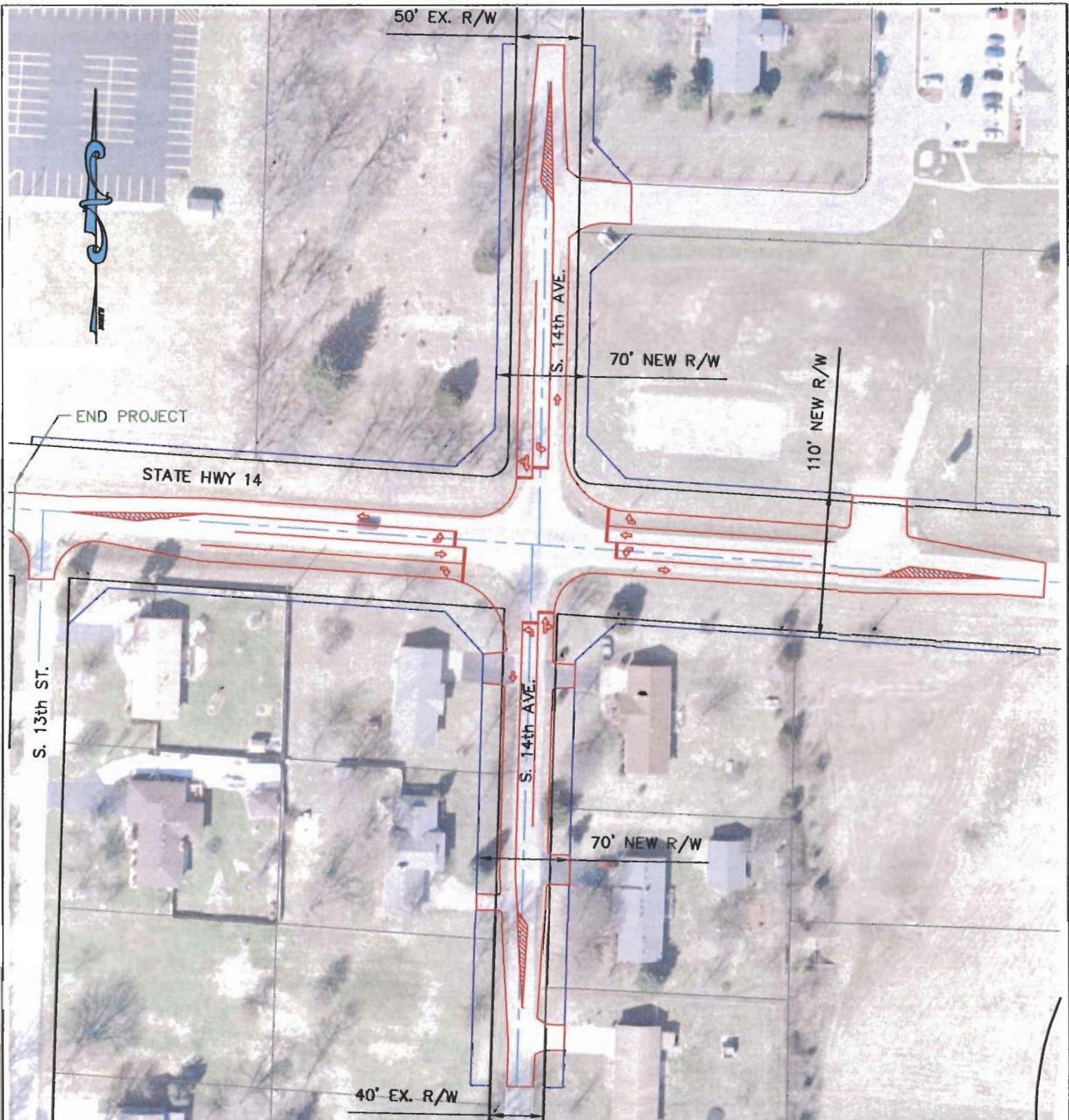
**ROADWAY
 CORRIDOR ROUTES
 STATE HWY. 14 & W**

DWG. NAME:
 922-CORRIDOR SKETCHES.dwg

DATE 6/16/10
 PROJ. NO. 0922
 SCALE: N.T.S.

prepared by:
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STATE RTE 14 & STATE RTE W: (Roadway Improvements)					PROJECT #6
DESCRIPTION		QTY	UNIT	UNIT PRICE	SUBTOTAL
CONCEPT PLAN - CONSTRUCTION COST ESTIMATE					
1	Mobilization & Project Bonding (3% of const cost)	-	lump	\$ 25,000.00	\$ 25,000
2	Miscellaneous Removals	-	lump	\$ 20,000.00	\$ 20,000
3	Clearing & Grubbing	-	lump	\$ 15,000.00	\$ 15,000
4	Remove Existing Pavement	1,011	sy	\$ 5.00	\$ 5,055
5	Roadway Excavation	1,175	cy	\$ 6.00	\$ 7,050
6	Roadway Embankment	9,500	cy	\$ 10.00	\$ 95,000
7	Storm Water Piping (<24" dia.)	100	lf	\$ 50.00	\$ 5,000
8	Storm Water Piping (>24" dia.)	40	lf	\$ 75.00	\$ 3,000
9	Drainage Channel (flat bottom ditch)	2,400	lf	\$ 30.00	\$ 72,000
10	Concrete Sidewalks (5' wide, both sides, between 12th & 14th)	-	sf	\$ 3.50	\$ -
11	Asphalt Pavement (2" asp surface on 12" asp base on 4" aggregate base)	3,069	sy	\$ 50.00	\$ 153,450
12	Asphalt Shoulder (MoDOT Type 3)	1,352	sy	\$ 30.00	\$ 40,560
13	Roto-Milling (200' each end)	500	sy	\$ 10.00	\$ 5,000
14	Asphalt Overlay (2" asphalt surface on ex pvmt)	4,068	sy	\$ 5.00	\$ 20,340
15	Traffic Signal	1	lump	\$ 225,000.00	\$ 225,000
16	ADA Sidewalk Ramps	4	ea	\$ 500.00	\$ 2,000
17	New Driveways	370	sy	\$ 30.00	\$ 11,100
18	Pavement Markings	1	lump	\$ 12,000.00	\$ 12,000
19	Erosion Control	1	lump	\$ 10,000.00	\$ 10,000
20	Seed, Fertilize & Mulch	1	ac	\$ 3,500.00	\$ 3,220
21	Traffic Control During Construction	-	lump	\$ 30,000.00	\$ 30,000
CONSTRUCTION:					\$ 759,775
10% contingency:					\$ 75,978
ESTIMATED CONSTRUCTION TOTAL:					\$ 835,753
OTHER:					
	New Right-of-Way	1.0	ac	\$ 50,000.00	\$ 50,000
	Temporary Construction Easement	1.5	ac	\$ 15,000.00	\$ 22,500
	Utilities (all utilities are in right-of-way)				
	Survey, Engineering, Const Staking (12%)				\$ 91,173
ESTIMATED PROJECT COST:					\$ 999,426



S. 14th AVE.: PRIMARY COLLECTOR 70' R/W
 STATE HWY 14: PRIMARY COLLECTOR 110' R/W

PROPOSED IMPROVEMENTS:

- Widen for center left turn lane at all approaches
- Minimum 200' left turn storage
- Open channel storm water conveyance
- Signalize Intersection

PROJECT #7

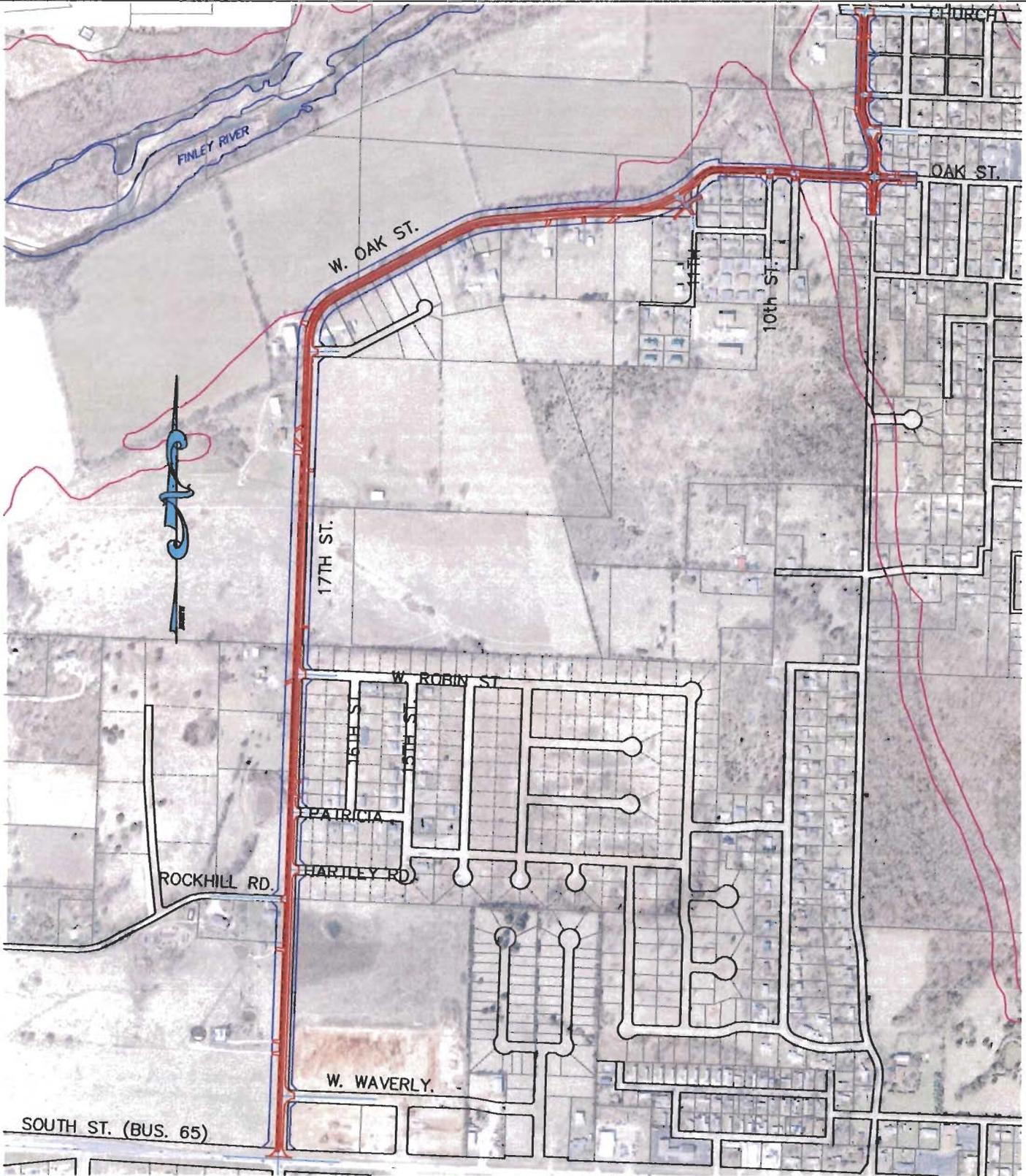
**ROADWAY
 CORRIDOR ROUTES
 STATE HWY 14 & 14th AVE.**

DWG. NAME:
 922-CORRIDOR SKETCHES.dwg

DATE 6/22/10
 PROJ. NO. 0922
 SCALE: 1"=100'

prepared by:
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State Hwy 14 & 14th Ave.: (Roadway Improvements)					PROJECT #7
	DESCRIPTION	QTY	UNIT	UNIT PRICE	SUBTOTAL
CONCEPT PLAN - CONSTRUCTION COST ESTIMATE					
1	Mobilization & Project Bonding (3% of const cost)	-	lump	\$ 25,000.00	\$ 25,000
2	Miscellaneous Removals	-	lump	\$ 20,000.00	\$ 20,000
3	Clearing & Grubbing		lump	\$ 15,000.00	\$ 15,000
4	Remove Existing Pavement	1,140	sy	\$ 5.00	\$ 5,700
5	Roadway Excavation	1,850	cy	\$ 6.00	\$ 11,100
6	Roadway Embankment	12,500	cy	\$ 10.00	\$ 125,000
7	Storm Water Piping (<24" dia.)	170	lf	\$ 50.00	\$ 8,500
8	Storm Water Piping (>24" dia.)	180	lf	\$ 75.00	\$ 13,500
9	Drainage Channel (flat bottom ditch)	2,400	lf	\$ 30.00	\$ 72,000
10	Concrete Sidewalks (between 13th & 14th St on Rte 14)	3,500	sf	\$ 3.50	\$ 12,250
11	Asphalt Pavement (2" asp surface on 12" asp base on 4" aggregate base)	3,363	sy	\$ 50.00	\$ 168,150
12	Asphalt Shoulder (MoDOT Type 3)	1,318	sy	\$ 30.00	\$ 39,540
13	Roto-Milling (200' each end)	500	sy	\$ 10.00	\$ 5,000
14	Asphalt Overlay (2" asphalt surface on ex pvmt)	3,422	sy	\$ 5.00	\$ 17,110
15	Traffic Signal	-	lump	\$ 225,000.00	\$ 225,000
16	ADA Sidewalk Ramps	4	ea	\$ 500.00	\$ 2,000
17	Traffic Control During Construction	-	lump	\$ 30,000.00	\$ 30,000
18	New Driveways	512	sy	\$ 35.00	\$ 17,920
19	Pavement Markings	-	lump	\$ 12,000.00	\$ 12,000
20	Erosion Control	-	lump	\$ 15,000.00	\$ 15,000
21	Seed, Fertilize & Mulch	1	ac	\$ 3,500.00	\$ 3,815
	CONSTRUCTION:				\$ 843,585
	10% contingency:				\$ 84,359
	ESTIMATED CONSTRUCTION TOTAL:				\$ 927,944
	OTHER:				
	New Right-of-Way	0.7	ac	\$ 50,000.00	\$ 33,000
	Temporary Construction Easement	1.6	ac	\$ 15,000.00	\$ 24,300
	Utilities				
	Survey, Engineering, Const Staking (12%)				\$ 101,230
	ESTIMATED PROJECT COST:				\$ 1,086,474



17TH STREET: PRIMARY ARTERIAL 110' R/W

PROPOSED IMPROVEMENTS:

- (Church St south to Oak St. & west to 10th St.)
- Widen for continuous center turn lane
- Widen for left turn lane at all intersection approaches
- Curb & gutter (41' b-b)
- Enclosed storm water system
- Sidewalks on both sides
- (10th Street to South Street)
- Widen for continuous center turn lane
- Asphalt pavement with 6' wide shoulders
- Open channel storm water conveyance
- Sidewalks on both sides

PROJECT #8

**ROADWAY
CORRIDOR ROUTES
17th STREET**

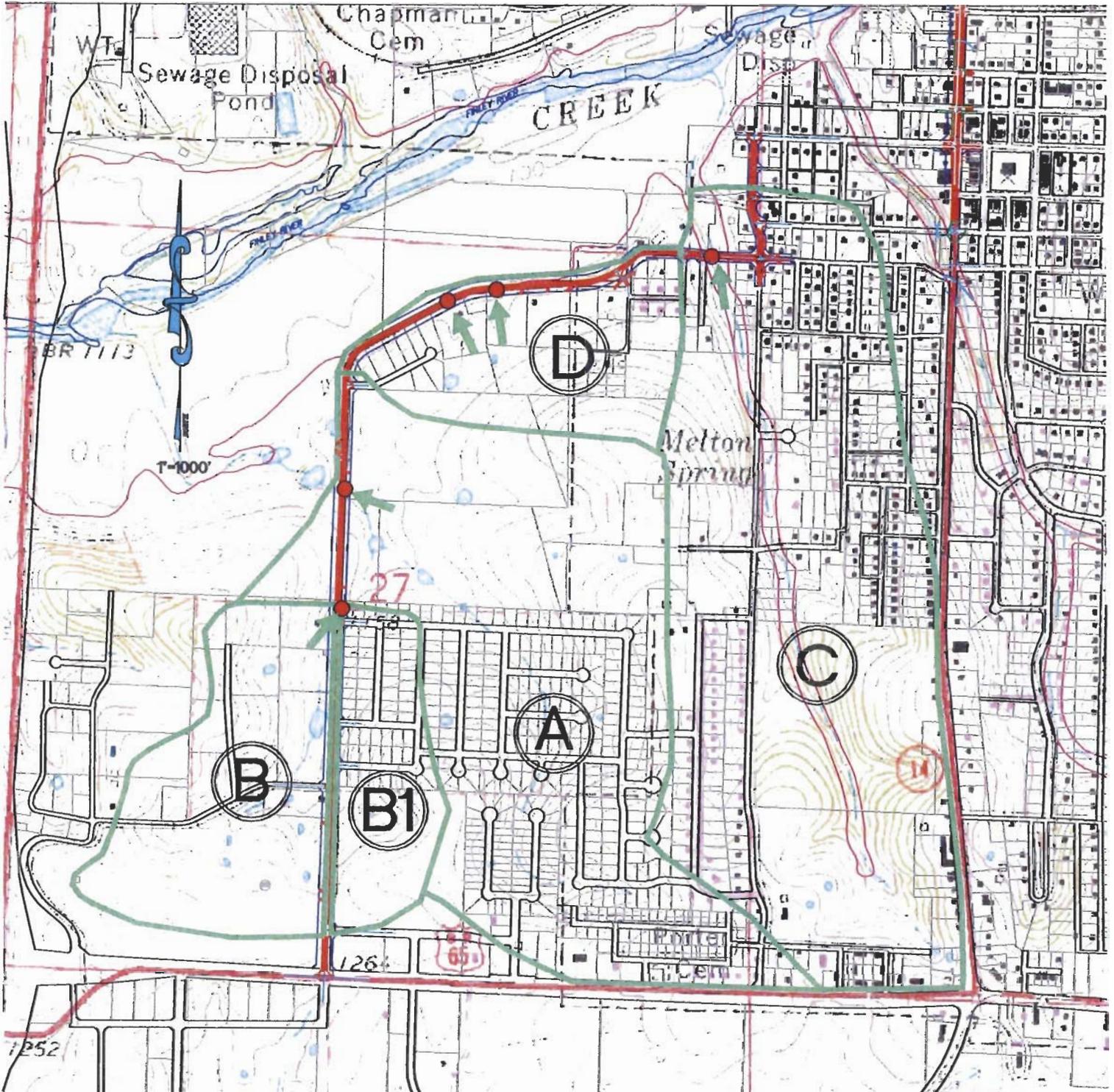
DWG. NAME:
CORRIDOR MAPS_2rev2.dwg

DATE 6/22/10
PROJ. NO. 0922
SCALE: N.T.S.

prepared by:
mathews & associates, inc.
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land surveyors
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springfield, missouri 65807
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17th STREET: (Roadway Improvements) (South St to Church St)				PROJECT #8
DESCRIPTION	QTY	UNIT	UNIT PRICE	SUBTOTAL
CONCEPT PLAN - CONSTRUCTION COST ESTIMATE				
1 Mobilization & Project Bonding (3% of const cost)	-	lump	\$ 100,000.00	\$ 100,000
2 Miscellaneous Removals	-	lump	\$ 75,000.00	\$ 75,000
3 Clearing & Grubbing	-	lump	\$ 40,000.00	\$ 40,000
4 Remove Curb & Gutter	500	lf	\$ 3.00	\$ 1,500
5 Remove Concrete Sidewalk	500	sf	\$ 1.50	\$ 750
6 Remove Existing Pavement	20,500	sy	\$ 5.00	\$ 102,500
7 Roadway Excavation	22,000	cy	\$ 6.00	\$ 132,000
8 Roadway Embankment	8,400	cy	\$ 10.00	\$ 84,000
9 New Curb Inlets & Junction Boxes	24	ea	\$ 2,500.00	\$ 60,000
10 Storm Water Piping (<24" dia.)	2,100	lf	\$ 50.00	\$ 105,000
11 Storm Water Piping (>24" dia.)	450	lf	\$ 75.00	\$ 33,750
12 Reinforced Concrete Box Culvert	200	cy	\$ 400.00	\$ 80,000
13 Drainage Channel (flat bottom ditch)	4,100	lf	\$ 35.00	\$ 143,500
14 Concrete Curb & Gutter	5,120	lf	\$ 15.00	\$ 76,800
15 Concrete Sidewalks (various width)	83,600	sf	\$ 3.50	\$ 292,600
16 Asphalt Pavement (2" asp surface on 9" asp base on 4" aggregate base)	41,590	sy	\$ 40.00	\$ 1,663,600
17 Roto-Milling	100	sy	\$ 5.00	\$ 500
18 ADA Sidewalk Ramps	30	ea	\$ 500.00	\$ 15,000
19 Relocate Fire Hydrants	12	ea	\$ 1,500.00	\$ 18,000
20 Adjust Manholes	15	ea	\$ 500.00	\$ 7,500
21 Guardrailing	1,500	lf	\$ 50.00	\$ 75,000
22 Pavement Markings	-	lump	\$ 30,000.00	\$ 30,000
23 Erosion Control	-	lump	\$ 50,000.00	\$ 50,000
24 New Driveways	2,151	sy	\$ 30.00	\$ 64,530
25 Seed, Fertilize & Mulch	12	ac	\$ 3,500.00	\$ 42,000
CONSTRUCTION:				\$ 3,293,530
10% contingency:				\$ 329,353
ESTIMATED CONSTRUCTION TOTAL:				\$ 3,622,883
OTHER:				
New Right-of-Way (Commercial)	0.8	ac	\$ 50,000.00	\$ 41,000
New Right-of-Way (Residential)	11.4	ac	\$ 25,000.00	\$ 284,250
Temporary Construction Easement	9.8	ac	\$ 5,000.00	\$ 48,850
Survey, Engineering, Const Staking (12%)				\$ 395,224
ESTIMATED PROJECT COST:				\$ 4,351,207

PROJECT #8 DRAINAGE



DRAINAGE AREA	ACREAGE	ASSUMED DEVELOPMENT			Q ₅₀ (CFS)	APPROXIMATE STRUCTURE SIZE
		"C"	T _c (MIN)	I ₅₀		
A:	186 ACRES	0.4	60	3.46	257	72"φ OR 28"SF
B:	68 ACRES	0.5	30	5.43	185	54"φ
B1:	33 ACRES	0.5	20	5.43	90	
C:	222 ACRES	0.4	60	3.46	307	72"φ OR 28"SF
D:	54 ACRES	0.4	30	5.43	117	36"φ