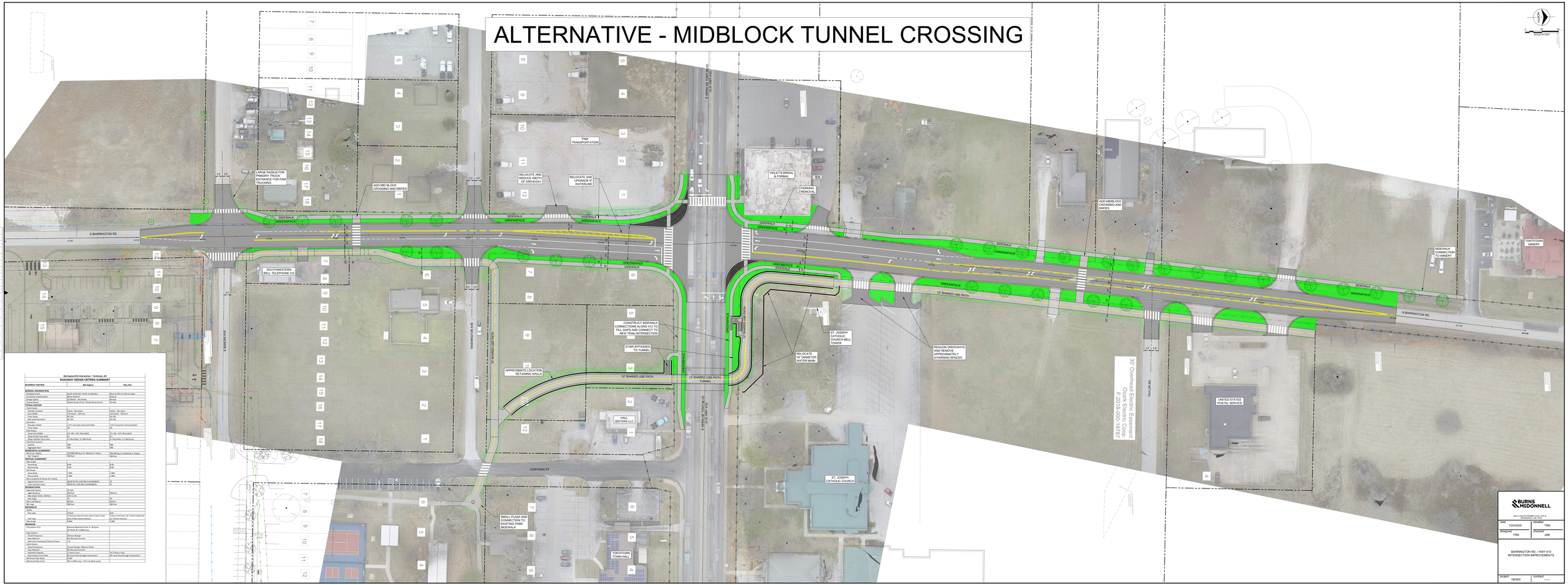
ALTERNATIVE - MIDBLOCK TUNNEL CROSSING



Barrington/412 Intersection - Tonittown, MO

ROADWAY DESIGN CRITERIA SUMMARY

ROADWAY SECTION	Barrington	Hwy 412
GENERAL INFORMATION		
Roadway Limits	South to North: North to Oakwoods	Mirror to SW Jct. East to Ozark
Roadway Classification	Minor Arterial	Minor Arterial
Design Speed	25 Mph - Variable	40 Mph
Posted Speed	25mph South of 412, 30mph North of 412	40 mph
TYPICAL SECTION		
Travel Lanes	2	4
Median Type	Mirror - See plans	Mirror - See plans
Lane Width	12ft Travel - 12ft Turn	12ft travel - 12ft turn
Cross Slope	NC=2%	NC=2%
Superelevation	NC=2%	NC=2%
Shoulders		
Type of Curb	12 ft. Concrete Curb and Gutter	12 ft. Concrete Curb and Gutter
Cross Slope		
Side Slopes		
Clear Zone Width	10 ft. with 20 ft. (Variable)	10 ft. with 20 ft. (Variable)
Clear Zone Clear Zone		
Clear Zone/In Clear Zone	30 Obstructions, 31 Minimum	36 Obstructions, 31 Minimum
Pavement Section		
Asphalt	7ttp	7ttp
Aggregate Base	7ttp	7ttp
VERTICAL ALIGNMENT		
Minimum Radius	1321400 (38 Kg 5.11, Method 2, Urban)	1786100 (Kg 5.11, Method 2, Urban)
Min Tangent	100 feet	100 feet
HORIZONTAL ALIGNMENT		
Min Grade		
Ascending	N/A	N/A
Descending	N/A	N/A
Max Grade		
Ascending	5.48%	5.48%
Descending	5.48%	5.48%
Min Curvature (K Values for Crests)		
Sag Vertical Curve	26.90 (K=Ht x 18.48) (LS NOGOVERED)	74
Crest Vertical Curve	29.70 (K=Ht x 18.48) (LS NOGOVERED)	29
INTERSECTIONS		
Approach Speed	25 mph	
Min Sight Distance	250 feet	250 feet
Max Grade within 100 feet	0.5% to 5.0%	
Min Angle	90°	90°
Min Radius	25 feet	25 feet
Min Leg	100 feet	100 feet
SHOULDERS		
Type		
Min Width	10 feet	N/A
Turn Lane	12 feet per lane (8 wide than 2 lanes, must be 14 feet raised median)	12 feet minimum (10 12 ft feet outboard lane, 14 feet raised median)
Max Grade	5.48%	5.48%
DRAINAGE		
Equivalent of Q	Rational Method for QA 5 - 50 Acres 7B-B100-B5.1,LBB-Inlets	
Pipe Culvert		
Pipe Hydraulics	Off-year Design	
Pipe Material	Reinforced Concrete	
Minimum Freeboard (Channel Flow)	1 ft	
Bridge Culvert		
Flood Frequency	50 years Design, 100 year Check	
Pipe Material	Reinforced Concrete	
Minimum Freeboard	2 ft	
Intersection Cross Pipe	No cross flow through intersection	Ok to flow on low
Minimum Pipe Slope	0.5%	No cross flow through intersection
Minimum Pipe Cover	18 in traffic area - 24 in all other areas	

BURNS & McDONNELL
ENGINEERING COMPANY, INC. OF KANSAS CITY

date 7/24/2025	drawn TRN
designed TRN	checked JME

BARRINGTON RD. / HWY 412
INTERSECTION IMPROVEMENTS

project 180304 | contract ____