



City of Northfield

FEASIBILITY Study

May 16, 2014

NMIP Alternative Trail Alignment Study

Alternative 1 &
Alternative 2B

*City of Northfield
Rice County, Minnesota
S.P. 149-090-003
WSB Project No. 2099-00*



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May 16, 2014

Honorable Mayor and City Council
City of Northfield
801 Washington Street
Northfield, MN 5507-2598

Re: Northfield Modal Integration Project (NMIP)
Alternative Trail Alignment Feasibility Study
Alternative 1 and 2B
S.P. 149-090-003
City of Northfield, MN
WSB Project No. 2099-00

Dear Joe:

WSB & Associates, Inc. (WSB) is submitting the enclosed Alternative Trail Alignment Feasibility Study as requested by the City of Northfield, to evaluate alternative underpass alignments of TH 3 from St. Olaf Avenue to Water Street.

The enclosed feasibility study evaluates the engineering and cost feasibility of constructing a trail underpass of TH 3 in front of the existing south bridge abutment (Alternative 2B) as an alternative to the original proposed underpass location in front of the north bridge abutment (Alternative 1). It is important to note that Alternative 2B impacts to the stability of the south bridge abutment are significantly greater than Alternative 1 impacts to the north abutment. Alternative 2B will require a full MnDOT Bridge Office review, new permits with the all three railroads, additional temporary easements and a revised Limited Use permit with MnDOT. By contrast, Alternative 1 will entail an abbreviated MnDOT review process, has all of the necessary permits, agreements and easements for construction and is the recommended alternative.

Once you have had an opportunity to review this study, if you have any questions or comments, please contact me at 763-287-7189.

Sincerely,

WSB & Associates, Inc.

A handwritten signature in black ink, appearing to read "Donald W. Sterna".

Donald W. Sterna, PE
Project Manager

Enclosure

cc: Joseph Stapf, PE, Public Works Director

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Appendix D

Alternative 1 Construction Plans

Appendix E

Alternative 2B Construction Plans

CERTIFICATION

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.



Donald W. Sterna, PE

Date: May 16, 2014

Reg. No. 19103

1. EXECUTIVE SUMMARY

The City of Northfield was successful in securing \$1,060,000 in Federal TIGER III to construct a 10 foot wide multi-use pedestrian/bike trail from the intersection of Spring Street and Greenvale Avenue to 2nd Street at the Cannon River. In addition, MnDOT has committed additional supplemental funding up to a maximum 80% of the excess construction costs above the federal funding limit not to exceed \$615,194 to help reduce the City's investment into the project. The City has currently entered into agreements with all three railroads and has secured the necessary right-of-way and easements to construct Alternative 1 alignment as shown in *Appendix A, Figure 1*.

The project was previously designed and bid in 2013 that came in with higher costs than secured funding would support and the City decided to look into ways to reduce the project costs.

The City Council at its February 18, 2014 Council meeting requested a feasibility study of an alternative alignment identified as Alternative 2B. This alternative alignment was to be studied to investigate potential project cost reductions by eliminating Segment 1 from the original proposed alignment between Spring Street and Water Street (see *Appendix A, Figure 1* for the location of Segment 1). Alternative 2B alignment (see *Appendix A, Figure 2*) would start at St. Olaf Avenue and extend northeasterly under TH 3 to Water Street then following the original planned alignment (Segment 4) to 2nd Street at the Cannon River.

The purpose of the this study is to identify and compare the construction costs, project impacts to the existing TH 3 Highway bridge and required construction between Alternative 1 alignment and Alternative 2B alignment. Alternative 1 alignment differs from the originally bid project by eliminating the necessity of a new bridge over the railroad tracks. Alternative 2B route differs from the Alternate 1 alignment while still achieving a grade separated underpass of TH 3.

2. INTRODUCTION

2.1 Authorization

The City Council on February 18, 2014 approved the preparation of a feasibility study to evaluate an alternative Alignment 2B that would provide a grade separated pedestrian crossing of under TH 3. The purpose of the study is to determine an alignment that would remain outside of the three different railroad's right-of-way and provide a grade separated crossing of TH 3. The study will evaluate:

1. If there is sufficient width between the railroad right-of-way and the south abutment of the TH 3 highway bridge.
2. If the trail can physically be constructed through this area.
3. Identify the probable construction costs.
4. Identify engineering issues that will need to be designed around to construct the trail.

2.2 Alternative No. 1

This alternative plans to eliminate the proposed bridge from the original project that was proposed over the railroad tracks. Alternative 1 instead, routes the proposed trail on to the existing vehicular bridge that crosses over the railroad. This Alternative 1 would require some reconfiguration of the existing 6 foot wide sidewalk section on the south side of the existing bridge, widening the sidewalk to 12 feet and reducing the width to vehicle driving lanes from 22 feet (existing) to 19 feet (proposed).

2.3 Alternative No. 2B

This alternative proposes a substantially different alignment for the project than originally proposed. As shown in *Appendix A, Figure 1* Segment 1 would be eliminated, and Segment 4 would remain the same. Alternative 2B alignment (see *Appendix A, Figure 2*) would start at St. Olaf Avenue and extend northeasterly under TH 3 to Water Street then following the original planned alignment (Segment 4) to 2nd Street at the Cannon River.

3. PROJECT BACKGROUND

Currently TH 3 carries over 16,000 vehicles a day cars a day with speeds between 30 to 50 mph, which is a significant impediment for safe crossing for pedestrian and bicycle traffic across TH 3. An existing highway bridge over the railroad line just south of Greenvale Avenue provides an opportunity for a grade separated underpass for the pedestrian and bicycle trail to cross under TH 3 from Water Street to either Greenvale Avenue or St. Olaf Avenue to the west. The existing vehicle bridge is a three span girder bridge with steep embankment fill between the piers and bridge abutments. The significant challenge of either Alternate 1, which crosses underneath TH 3 in front of the north abutment or Alternate 2B, which crosses underneath TH 3 in front of the south abutment requires significant retaining walls to support the bridge abutment to allow for excavation of material to construct a trail between the abutment and the adjacent pier. Complicating the constructability is the different right-of-way widths on either side of the center line of track at the bridge. The existing right-of-way width on the north side of the track is 25 feet and on the south side of the track is 50 feet. The railroad companies will not permit any permanent use such as trails to be constructed within their legal right-of-way limits and therefore, all permanent construction will need to be constructed outside of the railroad right-of-way.

Both alignment corridors have significant construction challenges, not only regarding the topography that the trail needs to follow, but also the permitting and agency approvals that are necessary in order to construct either of these trail segments. Alternative 1 has secured the necessary right-of-way, railroad agreements, MnDOT and Federal Highway Administration (FHWA) approvals to construct this trail. Alternative 2B alignment will need to be re-permitted with the railroad due to new impacts that will be generated by the construction as well as MnDOT and FHWA prior to constructing this alternative alignment. The anticipated timeframe necessary for review, preparation and execution of new railroad agreements along with MnDOT and FHWA approvals for Alternative 2B is anticipated to take 4 to 5 months.

4. PROPOSED TRAIL OPTIONS

4.1 Alternative 1 Alignment

The original federally funded application for the trail was to begin at the intersection of Spring Street and Greenvale Avenue then extending east to south easterly to Water Street adjacent to the Cannon River. See *Appendix A, Figure 1* for the originally proposed alignment. Alternative 1 follows the originally proposed alignment which was slightly modified to utilize the existing highway bridge over the Union Pacific railroad and eliminate the original planned pedestrian bridge. By eliminating this additional pedestrian bridge there is a significant cost savings to the overall project. The potential cost reduction identified by an analysis of the November 7, 2013 low bid could be as much as \$650,000. The proposed modification of the existing bridge is to widen the existing bridge sidewalk. The remaining Segment 2 and Segment 4 will be constructed as originally proposed.

This proposed Alternative 1 follows along the original proposed alignment in the federal TIGER III grant solicitation which commences at Spring Street and Greenvale Avenue and heads east and south easterly and terminates Cannon River at Water Street on the east side of TH 3. The new proposed project will involve constructing a great separated trail along the southerly side of Greenvale Avenue heading easterly towards TH 3 and utilizing the existing highway bridge over the Union Pacific Railroad prior to the TH 3 intersection. The existing sidewalk and railing will be removed on the existing bridge and widened to 12 feet to meet the bicycle guidelines for a 10 foot trail and reducing the width to vehicle driving lanes from 22 feet to 19 feet. Once the trail crosses the railroad tracks it will turn ninety degrees and head south for approximately 500 feet and then bends easterly under the TH 3 Bridge to Water Street. Retaining walls are proposed to be constructed along the north abutment of the TH 3 bridge to retain the existing embankment for the highway as well as constructing a block wall behind the highway bridge pier to support the trail to avoid any construction within the existing railroad right-of-way. From the intersection of Water Street the trail turns ninety degrees and heads south utilizing the shared bike trail with Water Street toward the intersection with St. Olaf Avenue where the trail then bends again ninety degrees to the east and curves around alongside Cannon River towards termination point with Water Street. This last segment will require an additional retaining wall to support the trail grades along with constructing of a small pond/rain garden to provide the water treatment necessary for the water quality permitting for the project.

By utilizing the existing Greenvale Avenue Bridge over the Union Pacific Railroad which has a 22 foot vertical clearance over the railroad tracks will effectively lower the trail's profile over the railroad tracks thereby improving (flattening) the grades for both trail approaches. This will reduce the amount of grading (fill) required to establish the trail profile in this area resulting in lower costs than the originally bid project.

See *Appendix D* for the proposed Alternative 1 construction plans.

4.2 Alternative 2B Alignment

Alternative 2B proposes to commence at the intersection of TH 3 and St. Olaf Avenue then heading northeast and in front of the southerly abutment of the TH 3 Bridge to Water Street. At that junction point, the trail will continue on to the originally planned and approved trail Segments 2 and 4 to the intersection of Water Street with the Cannon River. See *Appendix A, Figure 2* for this Alternative 2B proposed alignment. The Alternative 2B alignment is not in conformance with the original federal fund solicitation, however provides for a grade separated underpass of TH 3.

This alternative proposes to commence the trail at the intersection of TH 3 and St. Olaf Avenue and running northeast paralleling TH 3 roadway and railroad right-of-way and pass underneath the highway bridge in front of the southerly abutment until it connects to Water Street. A proposed soil anchored concrete retaining wall will need to be constructed along the TH 3 embankment and under the bridge to support the bridge abutment prior to the trail connection to Water Street. The trail will then turn ninety degrees to the south and will be an on road shared trail system with Water Street traffic until it meets its intersection with St. Olaf Avenue. The trail will then bends ninety degrees and will be separated from the roadway traffic which will head easterly and parallel the Cannon River towards intersection termination with Water Street. This Segment 4 is identical to the Segment 4 construction as proposed in Alternative 1 alignment.

The proposed storm water pond/rain garden will be identical to the one proposed with Alternative 1, which is required for the water quality and rain control for the project permitting.

It's important to note that Alternative 2B will require the initiation of new railroad agreements and reviews by the railroad which could take up to 3 to 4 months to complete and most likely will involve additional permitting fees and conditions by the Union Pacific Railroad as well as the Canadian Pacific Railroad. Additional permitting will also need to be obtained from the Progressive Rail railroad who also leases the track from the Union Pacific along Alternative 2B alignment.

A complication with this proposed alignment is the need for a full MnDOT bridge review, which could take up to 2 months. Initial discussions with MnDOT Bridge Section have indicated that an extensive stability analysis will need to be performed and MnDOT will not approve a design that could destabilize the existing bridge abutment foundation. The concern is the top of bedrock is approximately 8 feet below the finished trail grade and the amount of proposed excavation to construct the trail wall would remove approximately 2/3 of the soil that provides lateral stability of the pile abutment foundation.

This alignment will require a new Limited Use Permit with MnDOT, which will also add time to the overall plan review and approval schedule.

See *Appendix E* for the proposed Alternative 2B construction plans.

5. PROJECT COSTS AND FINANCING

5.1 Project Costs

A detail project cost breakdown can be found in the Opinion of Probable Costs in *Appendix B*.

5.2 Alternative 1

Currently the City of Northfield has received a federal TIGER III Federal Grant of \$1,060,000. In addition, MnDOT has committed additional supplemental funding up to a maximum 80% of the excess construction costs above the federal funding limit not to exceed \$615,194 to help reduce the City's investment into the project. This brings the Federal and MnDOT Funding to total of \$1,675,194. The remaining unfunded balance will be the responsibility of the City of Northfield. The proposed probable construction cost for revised Alternative 1 is \$1,755,726 which does not include landscaping and lighting additive alternatives or Segment 4 construction costs. These costs also do not include the already purchased right-of-way and agreement costs with the railroads and does not include the legal, engineering, administrative and financing costs.

5.3 Alternative 2B

The probable construction costs for Alternative 2B is approximately \$1,709,760 which does not include landscaping and lighting additive alternatives nor Segment 4 construction costs. These costs also do not include the legal, engineering, administrative and financial costs, or the additional costs for railroad easements above the easement costs already secured for Alternative 1. These costs are estimated to be approximately an additional \$25,000 to \$35,000 dollars.

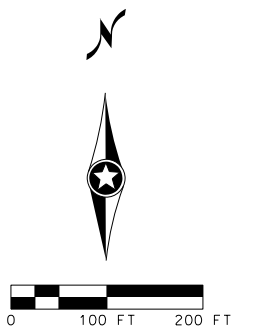
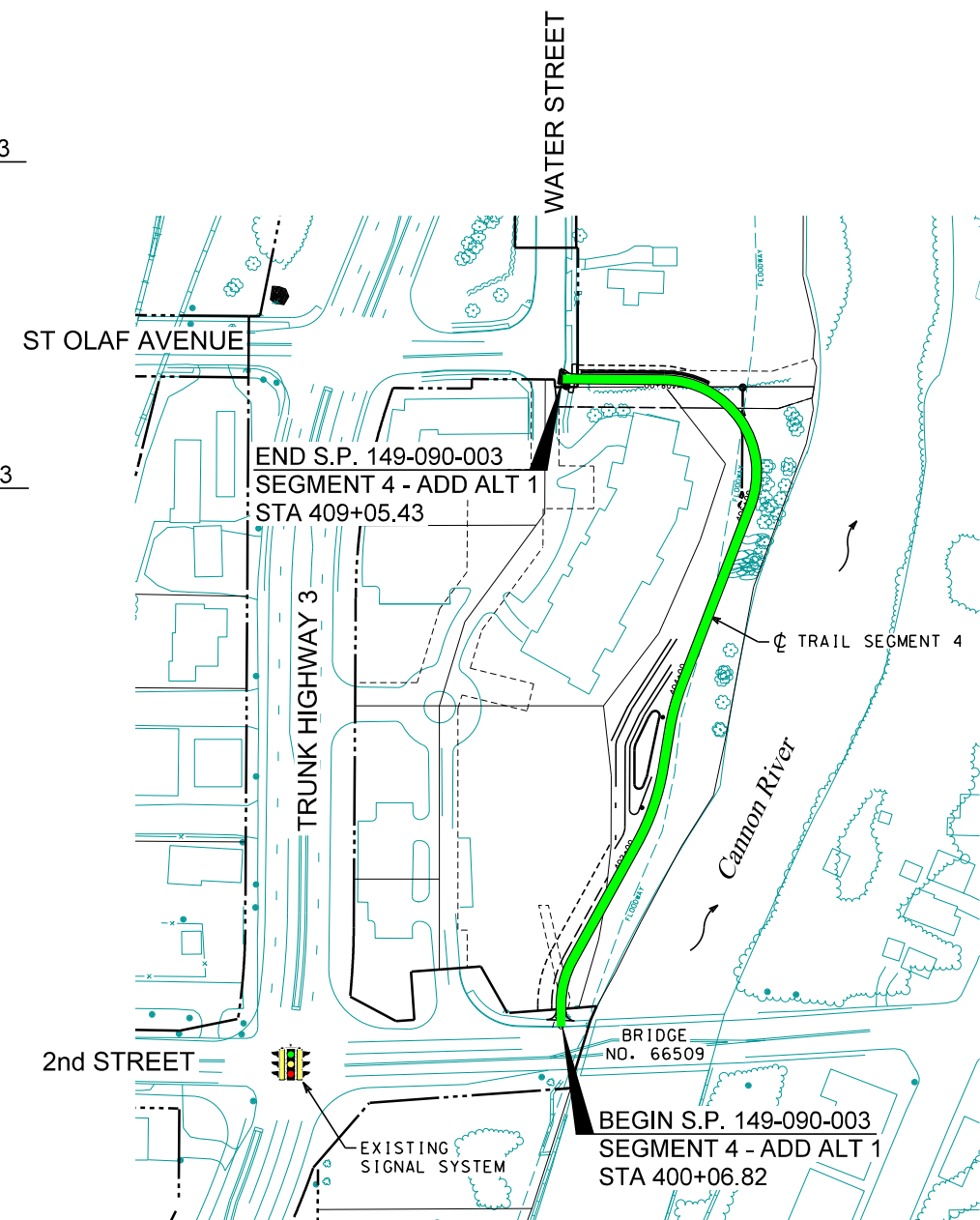
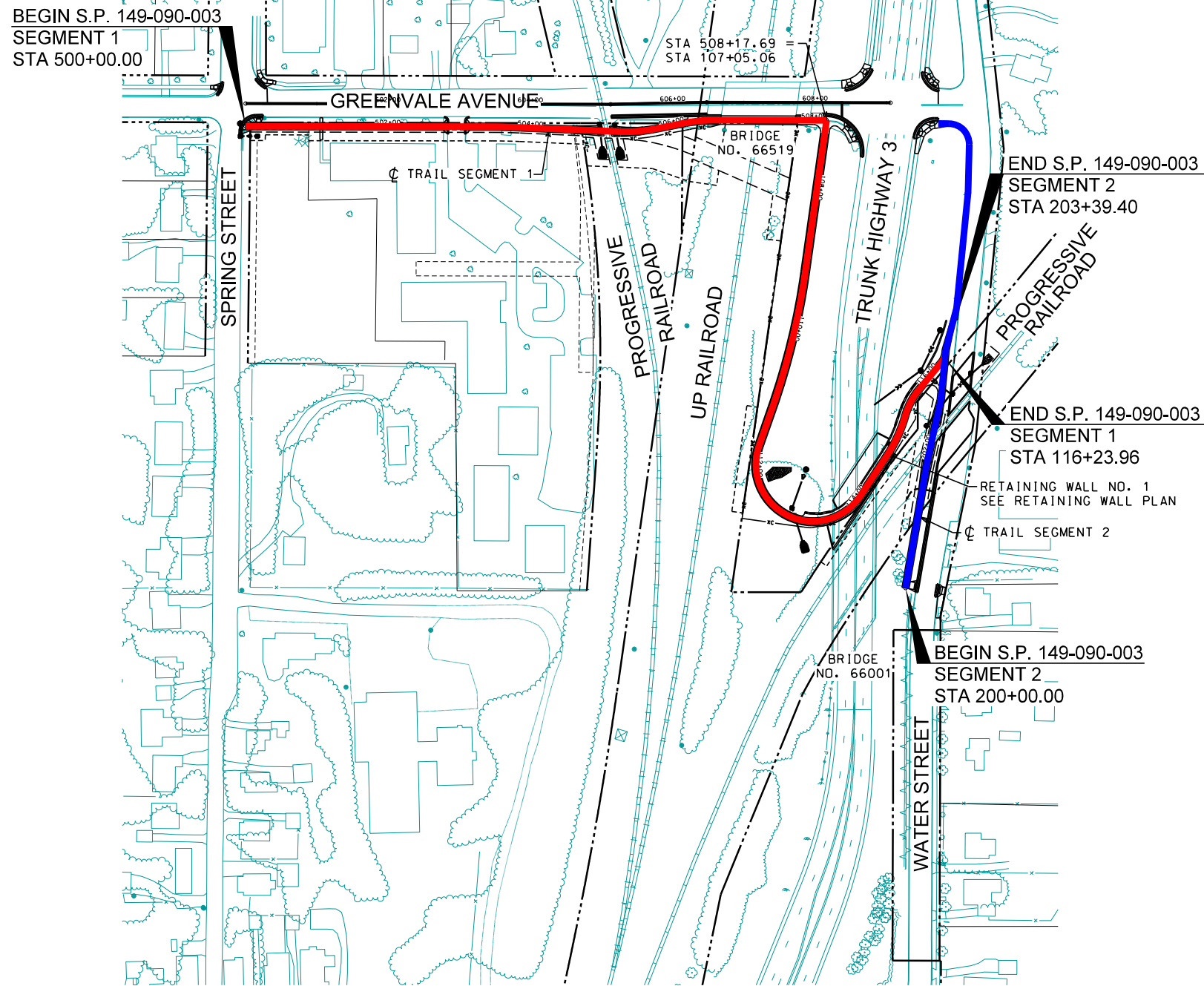
6. FEASIBILITY AND RECOMMENDATION

The proposed project has been studied in extensive detail analyzing multiple alternative alignments, retaining walls and bridge configurations as well as several negotiations with the three different railroads along with MnDOT and the Federal Highway Administration. Both revised Alternative 1 and 2B would provide a safe underpass for pedestrians and bicyclists to utilize to avoid physically crossing TH 3, however Alternative 2B review and approval would add approximately 4 to 5 months of additional plan approvals and agreement approvals to construct. By contrast, Alternative 1 alignment has already been permitted by the railroads and approved by MnDOT and the FHWA (see attached FHWA approval email in **Appendix C**). The Alternative 2B is a similar cost alternative, however is not in conformance with the approved federal solicitation for the funding, nor does it make the connection as originally planned at the intersection of Greenvale Avenue and Spring Street. Therefore, based on this Feasibility Study, delivery schedule, and funding eligibility, we are recommending the City Council approve the revised Alternative 1 alignment. Alternative 1 also has the existing agreements in place with not only the three railroads, but also with MnDOT and has secured all of the necessary right-of-way and easements required to construct the project.

APPENDIX A
PROJECT FIGURES

Segments 1 & 2

Segment 4 - Add Alternate 1



LEGEND

—	SEGMENT 1
—	SEGMENT 2
—	SEGMENT 4

Date Printed: 5/19/2014
WSB Filename: K:\02039-000\Cad\Exhibits\Alternative 1\Fig-01- Alternative 1.dgn

NO.	DATE	BY	CHK	REVISIONS

Design By: TV/DWS
 Plan By: BJR/CWK
 Checked By: DWS
 Approved By: DWS

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CERTIFIED BY: DONALD W. STERNA, PE
 LICENSED PROFESSIONAL ENGINEER - DONALD W. STERNA, PE
 DATE: 5/19/2014 LIC. NO: 19103

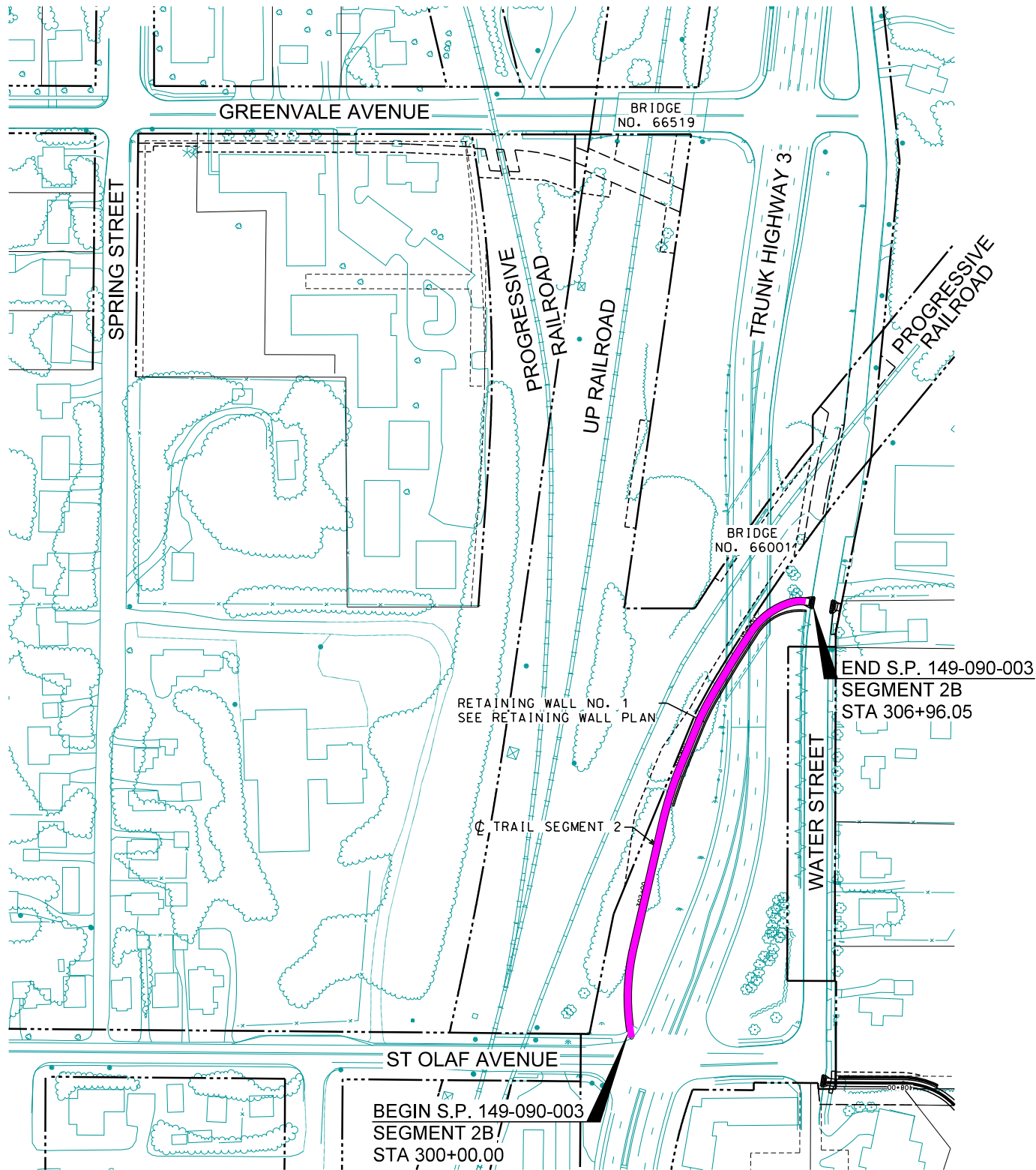
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City of Northfield
Modal Integration Project
 City of Northfield, Minnesota

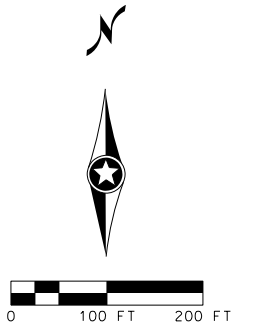
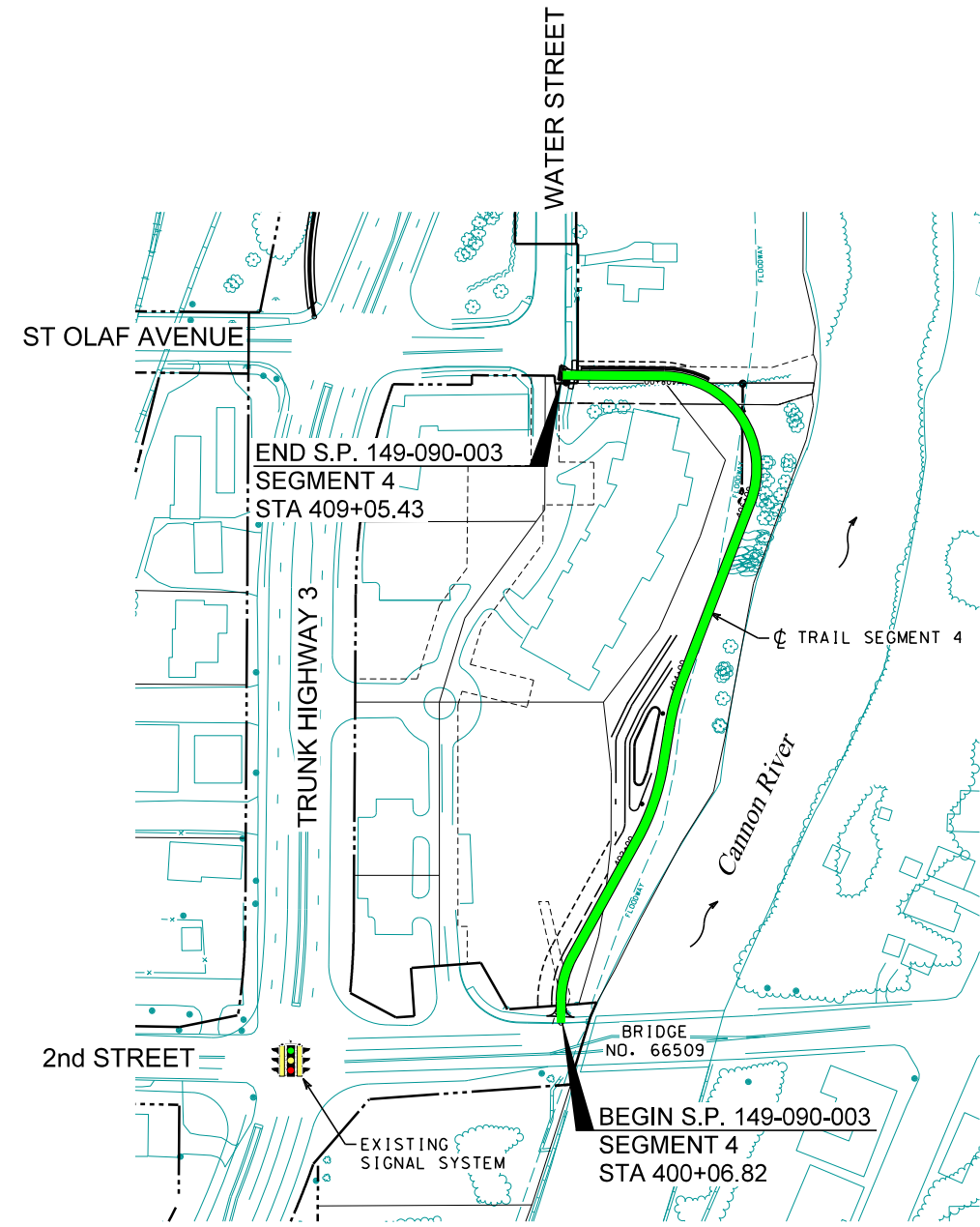
CITY OF NORTHFIELD, MINNESOTA
ALTERNATIVE 1
FIGURE 1

SHEET
1
 OF
1
 SHEETS

Segments 2B



Segment 4



- LEGEND**
- SEGMENT 2B
 - SEGMENT 4

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NO.	DATE	BY	CHK	REVISIONS

Design By: TV/DWS
 Plan By: BJR/CWK
 Checked By: DWS
 Approved By: DWS

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CERTIFIED BY: DONALD W. STERNA, PE
 LICENSED PROFESSIONAL ENGINEER - DONALD W. STERNA, PE
 DATE: 5/19/2014 LIC. NO: 19103

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City of Northfield
Modal Integration Project
 City of Northfield, Minnesota

CITY OF NORTHFIELD, MINNESOTA
ALTERNATIVE 2B
FIGURE 2

SHEET
1
 OF
1
 SHEETS

APPENDIX B
OPINION OF PROBABLE COSTS

Opinion of Probable Cost

WSB Project: Northfield Modal Integration Project
 Project Location: City of Northfield, Minnesota
 WSB Project No: 02099-00
 Date: 4/12/2014

Opinion of Probable Cost

TAB	SHEET No.	Item Number	Description	Notes	Unit	Unit Price	OPTION 1 Trail S.P. 149-090-003		OPTION 2B Trail S.P. 149-090-003		Segment 4		100% Local Landscape/ Lighting	
							Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost
		2021.501	MOBILIZATION		LUMP SUM	\$120,000.00	0.88	105,600.00	0.88	105,600.00			0.08	9,600.00
A	6	2101.502	CLEARING		TREE	\$106.75	140	14,945.00	260	27,755.00	40	4,270.00		
A	6	2101.507	GRUBBING		TREE	\$21.32	140	2,984.80	260	5,543.20	40	852.80		
		2101.610	TREE TRIMMING	4	HOUR	\$312.50	4	1,250.00	4	1,250.00	2	625.00		
A, M	6, 7	2104.501	REMOVE CURB AND GUTTER		LIN FT	\$3.25	885	2,876.25	655	2,128.75	30	97.50		
A	6	2104.501	REMOVE CHAIN LINK FENCE		LIN FT	\$21.00	12	252.00						
A	6	2104.501	REMOVE SEWER PIPE (STORM)		LIN FT	\$7.50	199	1,492.50	219	1,642.50	9	67.50		
A, M	6, 7	2104.503	REMOVE CONCRETE WALK		SQ FT	\$0.60	2415	1,449.00	4390	2,634.00	250	150.00		
A	6	2104.505	REMOVE BITUMINOUS PAVEMENT		SQ YD	\$4.00	2991	11,964.00	1057	4,228.00	60	240.00		
A	6	2104.505	REMOVE SLOPE PAVING	1	SQ YD	\$11.25	610	6,862.50						
		2104.507	REMOVE RIPRAP		CU YD	\$27.00	40	1,080.00						
		2104.509	REMOVE SIGN		EACH	\$26.70	8	213.60	4	106.80	2	53.40		
		2104.509	REMOVE LIGHT BASE		EACH	\$96.00	1	96.00						
A	6	2104.509	REMOVE DRAINAGE STRUCTURE		EACH	\$345.00	4	1,380.00	2	690.00				
A	6	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	\$6.50	76	494.00	48	312.00	16	104.00		
A	6	2104.513	SAWING BIT PAVEMENT (FULL DEPTH)		LIN FT	\$4.80	581	2,788.80	549	2,635.20	34	163.20		
		2104.523	SALVAGE LIGHTING UNIT		EACH	\$640.00	1	640.00						
		2104.602	SALVAGE SIGN SPECIAL		EACH	\$26.65	2	53.30	1	26.65	1	26.65		
M	7	2104.603	REMOVE AND REPLACE BITUMINOUS PAVEMENT		LIN FT	\$15.75	420	6,615.00	810	12,757.50	20	315.00		
J	10	2105.501	COMMON EXCAVATION	5	CU YD	\$5.10	7576	38,637.60	6178	31,507.80	1801	9,185.10		
		2105.503	UNCLASSIFIED EXCAVATION	16	CU YD	\$25.50	250	6,375.00	250	6,375.00	250	6,375.00		
		2105.509	AGGREGATE BEDDING		CU YD	\$58.00	40	2,320.00	40	2,320.00	40	2,320.00		
		2105.522	SELECT GRANULAR BORROW MOD 10% (CV)	20	CU YD	\$17.00	1552	26,384.00	1552	26,384.00				
		2105.602	BOULDER	21	EACH	\$210.00							7	1,470.00
		2105.607	AGGREGATE BACKFILL (CV)		CU YD	\$25.00	179	4,475.00						

Opinion of Probable Cost

WSB Project: Northfield Modal Integration Project
 Project Location: City of Northfield, Minnesota
 WSB Project No: 02099-00
 Date: 4/12/2014

Opinion of Probable Cost

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							Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost
									2112.501	SUBGRADE PREPARATION	11	ROAD STA	\$105.00	26
		2123.610	STREET SWEEPER (WITH PICKUP BROOM)	4	HOUR	\$134.00	32	4,288.00	26	3,484.00	8	1,072.00		
B	6	2211.501	AGGREGATE BASE CLASS 5		TON	\$31.50	38	1,197.00	34	1,071.00	2	63.00		
B	6	2211.503	AGGREGATE BASE (CV) CLASS 5		CU YD	\$29.50	827	24,396.50	635	18,732.50	224	6,608.00		
		2232.603	MILLED RUMBLE STRIPS	22	LIN FT	\$10.75	90	967.50	90	967.50				
B	6	2360.501	TYPE SP 9.5 WEARING COURSE MIXTURE (2.B)		TON	\$80.10	600	48,060.00	413	33,081.30	188	15,058.80		
B	6	2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (2.B)		TON	\$90.75	145	13,158.75	119	10,799.25	2	181.50		
			BRIDGE SIDEWALK MODIFICATIONS		LUMP SUM	\$41,879.65	1	41,879.65						
		2401.501	STRUCTURAL CONCRETE (1A43)		CU YD	\$650.00	156	101,400.00	156	101,400.00				
		2401.501	STRUCTURAL CONCRETE (3Y43)		CU YD	\$750.00	221	165,750.00	221	165,750.00				
		2401.541	REINFORCEMENT BARS		POUND	\$1.32	14157	18,687.24	14157	18,687.24				
		2401.541	REINFORCEMENT BARS (EPOXY COATED)		POUND	\$1.42	30434	43,216.28	30434	43,216.28				
N, O	56, 57	2402.601	DRAINAGE SYSTEM	17	LUMP SUM	\$1,125.00	3	3,375.00	3	3,375.00				
		2411.511	STRUCTURE EXCAVATION CLASS U		CU YD	\$25.00	2516	62,900.00	2516	62,900.00				
		2411.604	MODULAR BLOCK RETAINING WALL-SPECIAL		SQ YD	\$350.00	145	50,750.00						
		2411.604	MODULAR BLOCK RETAINING WALL		SQ FT	\$38.50	860	33,110.00	860	33,110.00	860	33,110.00		
N	56	2411.604	CONCRETE RETAINING WALL (SPECIAL)	19	SQ FT	\$105.00	2765	290,325.00	3900	409,500.00				
N, O	56, 57	2411.618	ARCH SURFACE TEXTURE (RANDOM BATTEN)		SQ FT	\$8.50	6342	53,907.00	6342	53,907.00				
N, O	56, 57	2411.618	ANTI-GRAFFITI COATING		SQ FT	\$1.40	6657	9,319.80	6657	9,319.80				
N, O	56, 57	2411.618	SPECIAL SURFACE FINISH	14	SQ FT	\$2.50	6657	16,642.50	6657	16,642.50				

Opinion of Probable Cost

WSB Project: Northfield Modal Integration Project
Project Location: City of Northfield, Minnesota
WSB Project No: 02099-00
Date: 4/12/2014

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TAB	SHEET No.	Item Number	Description	Notes	Unit	Unit Price	OPTION 1 Trail S.P. 149-090-003		OPTION 2B Trail S.P. 149-090-003		Segment 4		100% Local Landscape/ Lighting	
							Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost
									2412.602	PRECAST CONCRETE HEADWALL		EACH	\$190.25	8
		2451.507	GRANULAR BEDDING (LV)		CU YD	\$21.00	150	3,150.00	150	3,150.00	50	1,050.00		
		2452.601	STEEL SHEET PILING (TEMPORARY)		LUMP SUM	\$150,000.00	1	150,000.00	1	150,000.00				
G	8	2501.515	15" RC PIPE APRON		EACH	\$545.00								
G	8	2501.515	18" RC PIPE APRON		EACH	\$579.00								
		2501.507	A-S DIAPHRAGM FOR 18" METAL PIPE		EACH	\$235.00								
G	8	2501.602	TRASH GUARD FOR 15" PIPE APRON		EACH	\$400.00								
G	8	2501.602	TRASH GUARD FOR 18" PIPE APRON		EACH	\$430.00								
G	8	2502.521	8" PE PIPE DRAIN		LIN FT	\$18.30	457	8,363.10	244	4,465.20	244	4,465.20		
G	8	2502.541	8" PERF PE PIPE DRAIN		LIN FT	\$18.30	100	1,830.00	100	1,830.00	100	1,830.00		
G	8	2503.511	18" CP PIPE SEWER (SMOOTH)		LIN FT	\$31.00								
G	8	2503.511	18" CS PIPE SEWER		LIN FT	\$39.00								
G	8	2503.541	15" RC PIPE SEWER DESIGN 3006 CL V		LIN FT	\$35.75								
G	8	2503.541	18" RC PIPE SEWER DESIGN 3006 CL III		LIN FT	\$41.00								
G	8	2503.541	18" RC PIPE SEWER DESIGN 3006 CL V		LIN FT	\$50.00								
G	8	2503.602	CONNECT TO EXISTING STORM SEWER		EACH	\$650.00								
G	8	2506.501	CONST DRAINAGE STRUCTURE DESIGN G		LIN FT	\$257.00								
G	8	2506.501	CONST DRAINAGE STRUCTURE DESIGN H		LIN FT	\$208.00								
G	8	2506.501	CONST DRAINAGE STRUCTURE DES 48-4020		LIN FT	\$270.50								
G	8	2506.501	CONST DRAINAGE STRUCTURE DES 60-4020		LIN FT	\$393.00								
G	8	2506.501	CONST DRAINAGE STRUCTURE DES 72-4020		LIN FT	\$614.50								
G	8	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 1		EACH	\$1,295.00								
G	8	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 2		EACH	\$1,071.00								

Opinion of Probable Cost

WSB Project: Northfield Modal Integration Project
Project Location: City of Northfield, Minnesota
WSB Project No: 02099-00
Date: 4/12/2014

Opinion of Probable Cost

TAB	SHEET No.	Item Number	Description	Notes	Unit	Unit Price	OPTION 1 Trail S.P. 149-090-003		OPTION 2B Trail S.P. 149-090-003		Segment 4		100% Local Landscape/ Lighting	
							Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost
							F	7	2506.516	CASTING ASSEMBLY		EACH	\$716.00	
G	8	2511.501	RANDOM RIPRAP TYPE SPECIAL (FIELD STONE) CLASS III	8	CU YD	\$125.00								
G	8	2511.515	GEOTEXTILE FILTER TYPE IV		SQ YD	\$6.00								
		2514.501	CONCRETE SLOPE PAVING		SQ YD	\$114.00	321	36,594.00	350	39,900.00				
D	7	2521.501	4" CONCRETE WALK		SQ FT	\$3.95	3434	13,564.30	2793	11,032.35	150	592.50	72	284.40
D	7	2521.501	6" CONCRETE WALK		SQ FT	\$4.45	627	2,790.15						
M	7	2521.618	CONCRETE WALK		SQ FT	\$3.95	3275	12,936.25	4910	19,394.50	270	1,066.50		
D	7	2531.501	CONCRETE CURB & GUTTER DESIGN B618		LIN FT	\$13.00	430	5,590.00	350	4,550.00				
D	7	2531.501	CONCRETE CURB AND GUTTER TYPE SPECIAL	3	LIN FT	\$22.00	251	5,522.00	251	5,522.00	151	3,322.00		
M	7	2531.603	CONCRETE CURB & GUTTER		LIN FT	\$13.75	430	5,912.50	565	7,768.75	30	412.50		
M	7	2531.603	CONCRETE CURB DESIGN V		LIN FT	\$14.00	50	700.00	25	350.00				
D, M	7	2531.618	TRUNCATED DOMES		SQ FT	\$42.00	214	8,988.00	252	10,584.00	20	840.00		
		2540.602	ENTRANCE MONUMENT		EACH	\$13,500.00							2	27,000.00
		2540.601	BENCH		EACH	\$2,350.00							3	7,050.00
		2545.509	CONDUIT SYSTEM (LIGHTING)		LUMP SUM	\$4,271.00							1	4,271.00
L	98	2545.511	LIGHTING UNIT TYPE GS		EACH	\$3,353.00							6	20,118.00
L	98	2545.515	LIGHT BASE DESIGN P MOD.		EACH	\$641.00							6	3,846.00
L	98	2545.523	2" NON-METALLIC CONDUIT		LIN FT	\$8.80							1000	8,800.00
L	98	2545.523	2" NON-METALLIC COND (DIRECTIONAL BORE)		LIN FT	\$24.60							80	1,968.00
L	98	2545.531	UNDERGROUND WIRE 1 COND NO 8		LIN FT	\$0.80							4200	3,360.00
L	98	2545.531	UNDERGROUND WIRE 1 COND NO 6		LIN FT	\$1.08							1400	1,512.00
L	98	2545.531	UNDERGROUND WIRE 1 COND NO 2		LIN FT	\$2.05							180	369.00
L	98	2545.541	SERVICE CABINET SECONDARY TYPE B		EACH	\$2,557.00							1	2,557.00

Opinion of Probable Cost

WSB Project: Northfield Modal Integration Project
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Opinion of Probable Cost

TAB	SHEET No.	Item Number	Description	Notes	Unit	Unit Price	OPTION 1 Trail S.P. 149-090-003		OPTION 2B Trail S.P. 149-090-003		Segment 4		100% Local Landscape/ Lighting	
							Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost
							L	98	2545.601	UNDERPASS LIGHTING FIXTURE TYPE L		LS	\$2,611.00	
		2545.602	INSTALL LIGHTING UNIT		EACH	\$1,361.00							1	1,361.00
L	98	2545.602	HANDHOLE		EACH	\$854.50							6	5,127.00
L	98	2545.602	SERVICE EQUIPMENT		EACH	\$694.00							1	694.00
L	98	2545.602	ELECTRICAL SERVICE		EACH	\$1.08							1	1.08
		2554.509	GUIDE POST TYPE B		EACH	\$53.30								
E	7	2557.501	WIRE FENCE DESIGN 42V-9322	9	LIN FT	\$32.00	385	12,320.00	250	8,000.00				
E	7	2557.501	WIRE FENCE DESIGN 96V-9322	12	LIN FT	\$41.65	1030	42,899.50	700	29,155.00				
E	7	2557.501	WIRE FENCE DESIGN 60V-9322	12	LIN FT	\$21.35	140	2,989.00	140	2,989.00	140	2,989.00		
E	7	2557.501	WIRE FENCE DESIGN 60-9322	12	LIN FT	\$18.15	25	453.75						
		2563.601	TRAFFIC CONTROL		LUMP SUM	\$4,800.00	0.88	4,224.00	0.88	4,224.00			0.08	384.00
		2563.610	FLAG PERSON		hour	\$80.00	84	6,720.00	34	2,720.00				
H	9	2564.531	SIGN PANELS TYPE C		SQ FT	\$46.90	145.4	6,819.26	145.4	6,819.26	24.5	1,149.05		
		2564.537	INSTALL SIGN TYPE SPECIAL		EACH	\$159.85	3	479.55	3	479.55	1	159.85		
	77	2571.501	CONIFEROUS TREE 8' HT B&B		TREE	\$515.75							3	1,547.25
	77	2571.502	DECIDUOUS TREE 6'-8' HT CONT		TREE	\$405.75							14	5,680.50
	77	2571.502	DECIDUOUS TREE 8' HT B&B		TREE	\$437.80							3	1,313.40
	77	2571.502	DECIDUOUS TREE 1.5" CAL B&B		TREE	\$437.80							5	2,189.00
	77	2571.502	DECIDUOUS TREE 2.5" CAL B&B		TREE	\$470.00							46	21,620.00
	77	2571.507	PERENNIAL PLUGS		PLANT	\$12.80							470	6,016.00
	77	2571.507	PERENNIAL 5 GAL CONT		PLANT	\$67.25							43	2,891.75
C	6	2572.501	TEMPORARY FENCE	4	LIN FT	\$3.00	350	1,050.00	900	2,700.00				
C	6	2573.502	SILT FENCE, TYPE MACHINE SLICED	4	LIN FT	\$2.00	3396	6,792.00	2913	5,826.00	770	1,540.00		

Opinion of Probable Cost

WSB Project: Northfield Modal Integration Project
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 Date: 4/12/2014

Opinion of Probable Cost

TAB	SHEET No.	Item Number	Description	Notes	Unit	Unit Price	OPTION 1 Trail S.P. 149-090-003		OPTION 2B Trail S.P. 149-090-003		Segment 4		100% Local Landscape/ Lighting	
							Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost	Estimated Quantity	Estimated Cost
							C	6	2573.502	SILT FENCE, TYPE HEAVY DUTY	4,15	LIN FT	\$2.15	1000
C, M	6, 7	2573.530	STORM DRAIN INLET PROTECTION	4	EACH	\$91.20	35	3,192.00	19	1,732.80	9	820.80		
C	6	2573.540	FILTER LOG TYPE COMPOST LOG	4	LIN FT	\$3.00	140	420.00	280	840.00				
		2573.602	TEMPORARY ROCK CONSTRUCTION ENTRANCE	4	EACH	\$1,250.00	5	6,250.00	5	6,250.00	2	2,500.00		
C	6	2575.501	SEEDING		ACRE	\$390.00	5	1,950.00	4	1,365.00	1.0	390.00		
C	6	2575.502	SEED MIXTURE 250		POUND	\$2.85	305	869.25	252	718.20	53	151.05		
C	6	2575.502	SEED MIXTURE TYPE SPECIAL		POUND	\$0.50	305	152.50	252	126.00	53	26.50		
C	6	2575.505	SODDING TYPE LAWN		SQ YD	\$4.10	6470	26,527.00	3970	16,277.00	1800	7,380.00		
C	6	2575.523	EROSION CONTROL BLANKET CATEGORY 3		SQ YD	\$1.35	6045	8,160.75	5395	7,283.25	3045	4,110.75		
C	6	2575.532	FERTILIZER TYPE 3		POUND	\$0.60	263	157.80	203	121.80	45	27.00		
		2575.571	RAPID STABILIZATION METHOD 3	4	MGAL	\$323.00	13	4,199.00	10	3,230.00	4	1,292.00		
M	7	2575.602	SITE RESTORATION		EACH	\$226.00	10	2,260.00	7	1,582.00	1	226.00		
		2582.501	PAVT MSSG (RR XING) - EPOXY	18	EACH	\$799.00	4	3,196.00	2	1,598.00				
I	9	2582.502	4" SOLID LINE WHITE - EPOXY		LIN FT	\$0.85	3860	3,281.00	3834	3,258.90	1800	1,530.00		
I	9	2582.502	4" SOLID LINE YELLOW - EPOXY		LIN FT	\$0.85	1820	1,547.00	1015	862.75	475	403.75		
I	9	2582.502	4" BROKEN LINE YELLOW - EPOXY		LIN FT	\$0.85	240	204.00	235	199.75	115	97.75		
I	9	2582.502	12" SOLID LINE WHITE- EPOXY	13	LIN FT	\$7.45	99	737.55	85	633.25	20	149.00		
I	9	2582.502	24" SOLID LINE WHITE- EPOXY	13	LIN FT	\$8.50	60	510.00						
I	9	2582.503	CROSSWALK MARKING- EPOXY	13	SQ FT	\$4.25	270	1,147.50	510	2,167.50				
			CONTINGENCY					119,317.30		115,138.00		12,262.00		14,364.00
TRAIL CONSTRUCTION COSTS								\$1,755,726.58		\$1,709,760.08		134,882.15		158,005.38

APPENDIX C

FHWA ALTERNATIVE 1 APPROVAL EMAIL

Joe Stapf

From: david.scott@dot.gov
Sent: Wednesday, May 14, 2014 2:26 PM
To: Joe Stapf; fausto.cabral@state.mn.us
Cc: merry.daher@state.mn.us; Timothy.Anderson@dot.gov; Tim Madigan; Derrell.Turner@dot.gov
Subject: FW: Northfield Multimodal TIGER III Project - Revised scope Approved

Joe,

We have the OK for Alternate 1. Please let us know if it passes muster with the council and when we may be able to get this project advertised.

Thanks for your efforts,

Dave

Dave Scott
ADA
FHWA - MN
651-291-6103

From: Fox, Amy (FHWA)
Sent: Wednesday, May 14, 2014 2:18 PM
To: Scott, David (FHWA)
Cc: Donovan, Daniel (FHWA); Shaw, Alla (FHWA)
Subject: Northfield Multimodal TIGER III Project - Revised scope Approved

Hi Dave,

OST has provided approval for the grantee to proceed with Alternative No. 1 on the Northfield, MN TIGER III Project. This approval is based on the previously submitted supporting materials, which demonstrate that the revised scope is consistent with the TIGER grant application and the Secretary's decision memo. Please inform the grantee about this approval.

Once the project is awarded, we will need to receive a white paper and redlined grant agreement explaining all changes to the scope, schedule and budget since approval of the grant agreement.

Please let me know if you have any questions.

Thanks for your patience,
Amy