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June 8, 2010

Mr. Brian Larson
Project Manager
Minnesota Department of Transportation

Re: "Highway 53 Realignment Study" by SEH

Dear Mr. Larson,

Please find attached a copy of the "Highway 53 Realignment Study" prepared by SEH consultants for United Taconite. SEH consulting services was hired by United Taconite to provide United Taconite a high level scoping review of potential alternative corridors for Highway 53. United Taconite requested this information while it began to consider its plans regarding the reserves beneath the highway.

In its report, SEH lists what they consider potential alternative corridors for Highway 53, along with a short list of comments. It should be stated that the SEH report is not comprehensive. There are undoubtedly many significant issues and concerns that have not been addressed, and obviously there may be potential alternatives that have not been identified or considered.

United Taconite would like the opportunity to discuss the report in person to further explain the logic that went into this scoping study. Please let me know if you have any further questions.

Sincerely,

A handwritten signature in black ink that reads "Julie M. Elkington". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Julie M. Elkington
Section Manager- Mine Engineering
218.744.7891
Julie.elkington@cliffsnr.com

Attachments: Hwy 53 Report 060210.pdf

Highway 53 Realignment Study

United Taconite

Short Elliott Hendrickson Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110-5196
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June 1, 2010



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Figure 5 – Northeast Corridor - Alternative 5

Figure 6 – Northeast Corridor - Alternative 6

Figure 7 – Typical Section

Highway 53 Realignment Study

Prepared for United Taconite

1.0 Project Overview

United Taconite (UTAC) has long range mining plans to develop an iron ore deposit within an area that includes approximately one mile of existing Highway 53 alignment in the City of Virginia. Given a May 27, 1960 highway easement, the Minnesota Department of Transportation (Mn/DOT) is required to relocate the highway outside of the planned mining area so that UTAC can mine under the existing roadway.

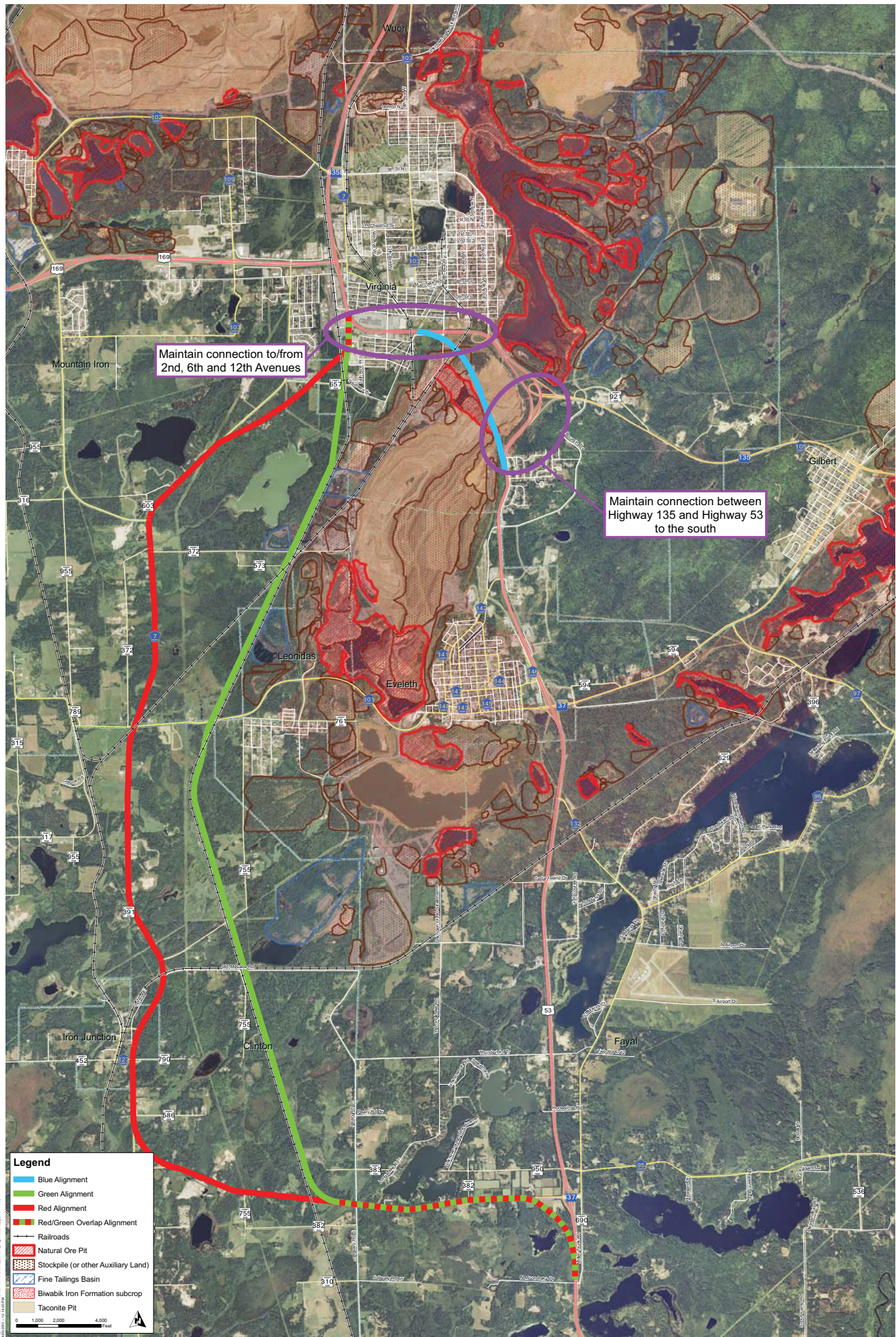


The main objective of this study is to develop and assess concepts for realigning Highway 53 and then sharing the results with Mn/DOT in an effort to assist the process for defining the preferred realignment alternative.

Highway 53 is currently a four-lane, rural expressway within the study area, shown in Map 1 found on the following

page. The land use characteristics within the project area consist of mining operations, forested land, wetlands, open space, residential areas, and commercial developments.

To assist in the evaluation process mapping and resource data was assembled for the project area including mineral resource information from the Minnesota Department of Natural Resources (MnDNR) Office of Lands and Minerals, National Wetlands Inventory (NWI) mapping, aerial photography, and mining information from UTAC.



Legend

- Blue Alignment
- Green Alignment
- Red Alignment
- Red/Green Overlap Alignment
- Railroads
- Natural Ore Pit
- Stockpile (or other Auxiliary Land)
- Fine Tailings Basin
- Biwabik Iron Formation subcrop
- Taconite Pit

0 1,000 2,000 4,000 Feet

Project: UNTAC 110476
Print Date: 12/03/2009

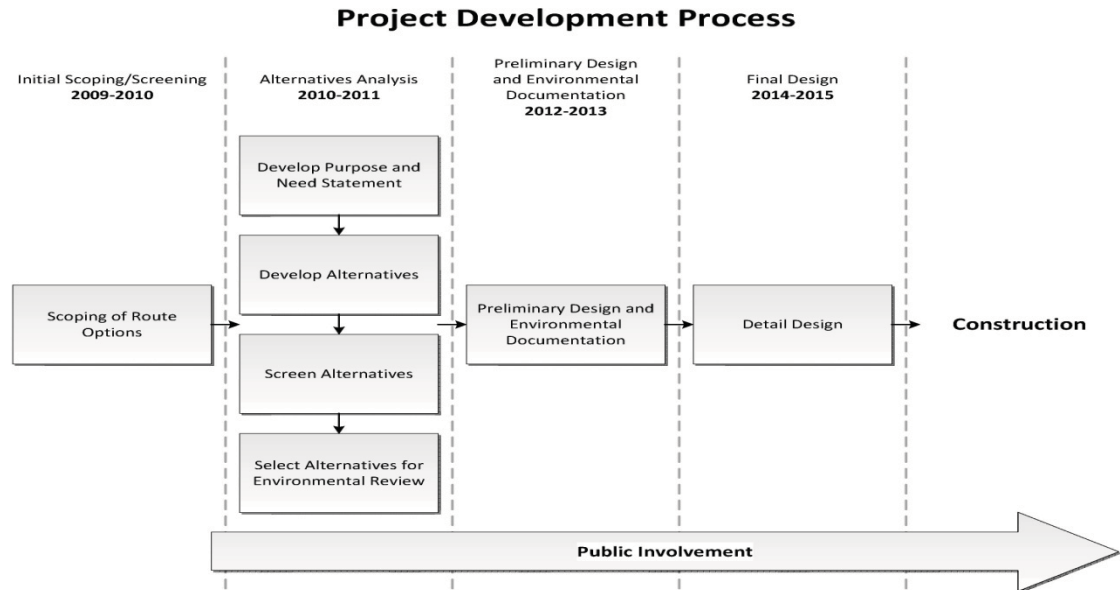
Map by: nsa/SRI
Projection: NAD 83 UTM zone 15
Source: MNCN, MNDOT, NADP 2008, SEH

SEH

MAP 1
Preliminary Route
Options

2.0 Project Implementation Process and Schedule

It is understood that Mn/DOT will lead the overall project development and approval process. A process flow chart depicting the generalized process that would likely follow for the Highway 53 realignment project is shown below.



The flow chart incorporates the necessary steps to reach a fully approved realignment corridor. The schedule, as shown on the flow chart, identifies an estimate of the time required to complete each of the elements. The overall process and schedule is based on the assumption that a federal Environmental Assessment (EA) would be completed. Given the EA assumption, and putting funding considerations aside, it is reasonable to assume that all the project development steps can be completed and the new alignment could be constructed within a five to seven year timeframe. If the selected alternative includes two or more miles of new alignment, then an Environmental Impact Statement (EIS) will be required.

In addition to the Environmental Documentation, some of the permits/approvals that will likely be required prior to construction include the following:

- Section 404 Permit from the United States Army Corps of Engineers (USACE)
- Section 401 Water Quality Certification from Minnesota Pollution Control Agency (MPCA)
- National Pollutant Discharge Elimination System (NPDES) Construction Storm Water Permit including completion of a Storm Water Pollution Prevention Plan (SWPPP) from the MPCA
- Minnesota Wetland Conservation Act (WCA) from Mn/DOT
- Municipal Consent from the City of Virginia. Municipal approval is required for any trunk highway project that results in any of the following within a municipality: alteration of access; increase or reduction in traffic capacity; or requires acquisition of permanent right-of-way.
- Public Waters Permit from the Minnesota Department of Natural Resources (MNDNR)
- Section 106 Consultation with SHPO, Mn/DOT, and FHWA

3.0 Alternatives Development and Evaluation

The alternatives development and evaluation process represents the focus of the technical efforts associated with this study. The process was structured to first consider options at a very conceptual level, then apply some evaluation criteria to narrow and refine the options to a smaller set of potential alignments. After concluding the evaluation and refinement process, the technical findings will be shared with Mn/DOT for consideration as part of the formal alternatives analysis and environmental review process that will need to be undertaken before proceeding with realigning Highway 53.

Given the challenges of the project and unique aspects of the study area, it was realized that it would be unlikely that the process would conclude with a clearly preferred alignment. Recognizing these challenges, the focus of the technical efforts was to identify up to three potentially feasible options and provide information regarding the relative trade-offs of each.

3.1 Phase 1 - Initial Concepts

Initially, three alternative concepts were developed (see Map 1). The alternatives assumed a 300-foot right-of-way footprint to accommodate a rural four-lane expressway design. A brief description of the conceptual alternatives is provided below.

- Red Alignment – This option includes 12.9 miles of new alignment. From the south, it extends west along Highway 37 then turns north following the County Road 7 corridor. The alignment departs the County Road 7 corridor prior to entering Virginia proper and reconnects with existing Highway 53 where it transitions from an east-west to a north-south alignment.
- Green Alignment – This option includes 11.1 miles of new alignment. From the south, it extends west along Highway 37 then turns north primarily paralleling the Canadian National railroad corridor then reconnects with existing Highway 53 where it transitions from an east-west to a north-south alignment.
- Blue Alignment – This option includes 1.6 miles of new alignment crossing the existing United Taconite iron ore pit approximately ½ mile southwest of the current Highway 53 alignment.

Some key features and issues associated with the three concepts were compiled to enable a high-level feasibility comparison. The table below presents comparative information with respect to:

- Route length
- Railroad crossings
- Right-of-way acquisition
- Wetland impacts

Approximate Impact Assessment	Highway 53 Phase 1 Conceptual Realignment Options		
	Red Alignment	Green Alignment	Blue Alignment
Route Length (miles)	12.9 miles	11.1 miles	1.6 miles
Number of Railroad Crossing(s)	4	3	0
Potential Wetland Impacts (acres)	93.4 acres	126.7 acres	0.4 acres
Right-of-Way Acquisition	350 acres	381 acres	55 acres

The right-of-way estimates include new right-of-way needs based on an assumed 300' wide corridor for each alternative, but credit is given for existing highway right-of-way where the corridors utilize existing highway alignments.

As shown in the table, given the substantially greater amount of new alignment associated with the Red and Green options, the impacts are also much greater when compared to the Blue option.

3.2 Phase 2 – Refinement of Route Options

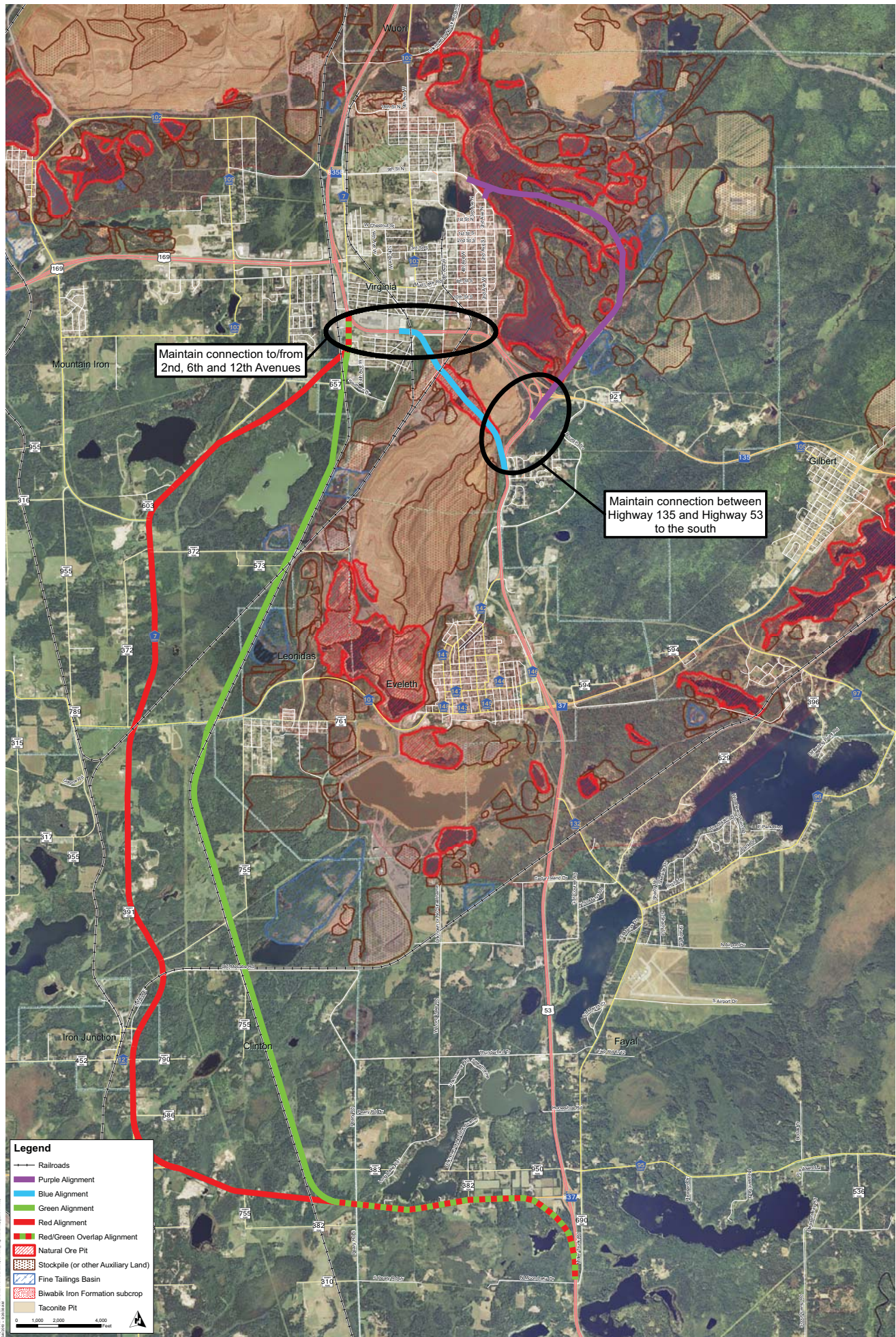
After reviewing the Phase 1 concepts with UTAC staff at a meeting in December 2009, it was determined to further refine the Blue Alignment, create a combination of the Red and Green Alignment, and investigate the feasibility of shifting Highway 53 north of its current location traversing the Rouchleau Pit. As a result, a Purple Alignment was added to the initial study area map, as shown on Map 2. In addition, the re-establishment of existing connections in Virginia, as well as TH 135 out of Gilbert needed to be incorporated into the concepts.

Taking the feedback from the December 2009 meeting and moving into Phase 2, a general framework was established that included first defining the base corridors being considered and then developing options within each corridor. Applying this framework, the following corridors were defined:

- West – This corridor encompasses concepts located west of the defined ore resources, generally west of Eveleth. The Red and Green concepts described above are within the West corridor.
- Central – This corridor includes options immediately southwest of the existing Highway 53 alignment, through the existing ore pit. The Blue concept discussed in the Phase 1 section is within the Central corridor.
- Northeast – This corridor encompasses potential alignments (including the Purple concept shown on Map 2) that would traverse the Rouchleau Pit northeast of the existing Highway 53 alignment.

Through the process of refining the original concepts, additional ideas were generated which ultimately led to multiple options for the Central and Northeast corridors. In total, six alternatives were developed as described below:

- West Corridor - Alternative 1 (see Figure 1) – This option is a combination of the earlier Red and Green concepts. It includes 11.4 miles of new alignment. From the south, it extends west along Highway 37 then turns north primarily paralleling the Canadian National railroad. The alignment connects with the County Road 7 alignment north of County Road 101, and then departs the County Road 7 corridor prior to entering Virginia proper where it reconnects with existing Highway 53 at the point it transitions from an east-west to a north-south alignment. As shown on Figure 1, assumptions were made regarding overpasses and interchanges that would likely be required with this alternative.
- Central Corridor - Alternative 2 (see Figure 2) – This option includes 1.6 miles of new alignment crossing the existing UTAC iron ore pit approximately ½ mile southwest of the current Highway 53 alignment, reconnecting to existing Highway 53 just before the 6th Avenue West overcrossing. A new at grade intersection is created with an extension of 2nd Avenue West to maintain access to the east side of Virginia. A 60 mph design speed is used, although radii for 55 mph and 65 mph are shown to demonstrate the impact a different design speed would have on the alignment.



Legend

- Railroads
- Purple Alignment
- Blue Alignment
- Green Alignment
- Red Alignment
- Red/Green Overlap Alignment
- Natural Ore Pit
- Stockpile (or other Auxiliary Land)
- Fine Tailings Basin
- Biwabik Iron Formation subcrop
- Taconite Pit

0 1,000 2,000 4,000 Feet

-
- Central Corridor - Alternative 3 (see Figure 3) – This option includes 1.6 miles of new alignment crossing the existing UTAC iron ore pit approximately ½ mile southwest of the current Highway 53 alignment, reconnecting to existing Highway 53 east of the 12th Avenue West intersection. A new at grade intersection is created at Southern Drive/16th Street South with a new ‘frontage’ road from 6th Avenue West to 2nd Avenue West to maintain access to the east side of Virginia. This alternative uses a 65 mph design speed.
 - Northeast Corridor - Alternative 4 (see Figure 4) – This option includes 3.0 miles of new alignment. It extends Highway 53 to the north, along the east side of the Rouchleau Pit before turning west and crossing the pit on structure to reconnect with existing Highway 53 just before the 6th Avenue West overcrossing. The local street connections are made with an exit to 10th Street South and an entrance from 2nd Avenue West.
 - Northeast Corridor - Alternative 5 (see Figure 5) – This option includes 3.2 miles of new alignment. It extends Highway 53 to the north, along the east side of the Rouchleau Pit similar to the Alternative 2, but it continues further north before turning west and crossing the pit on structure. The alignment terminates at 9th Street North where it feeds directly into the local arterial.
 - Northeast Corridor - Alternative 6 (see Figure 6) – This option includes 3.0 miles of new alignment. It extends Highway 53 to the north, along the east side of the Rouchleau Pit before turning west and crossing the pit on structure to reconnect with existing Highway 53 just before the 6th Avenue West overcrossing. The option also includes a new local street connection that would connect to 2nd Avenue West and/or 9th Street North.

The purpose of the Phase 2 assessment was to identify a preferred concept within each of the three base corridors. The preferred concepts for each corridor would then be carried forward and presented to Mn/DOT for potential consideration in future project stages. Similar to the assessment process conducted in Phase 1, a matrix was assembled that compared the relative merits of each option against a series of criteria. The matrix is presented as Table 1 located at the back of this report.

The information in the table was used to assist in accomplishing the objective of identifying a preferred option for each of the three corridors. In general, the table illustrates some substantial differences between the alternatives. One important factor to consider is the existence of utilities in the existing Highway 53 corridor. Any realignment would require the relocation of utilities to remove them from the future mining area. To help facilitate this discussion, a ‘typical’ section (Figure 7) was created showing how the utilities might relate to the relocated roadway. Further discussions with Mn/DOT and eventually the utility owners will be needed to fully understand the implications that the Highway 53 realignment will have on utilities.

Another important factor to be considered is impacts to the air quality permit currently held for mining operations. The significance of this issue cannot be quantified until new air quality modeling is conducted.

3.3 Phase 2 Screening Results

Given the information presented in Table 1, United Taconite staff met in March 2010 to discuss the relative trade-offs associated with each of the six alternatives. As noted above, the goal of the Phase 2 assessment was to identify a preferred alignment concept within each of the three corridors. Much of the discussion at the meeting centered on the following:

- There was a clear understanding that the options are very conceptual and ultimately Mn/DOT will lead the process of identifying a preferred alternative;
- That public involvement and agency coordination will be an essential part of the decision making process;
- There are significant challenges associated with all the options.

Within this context, the following decisions were made with respect to identifying the preferred concepts for each corridor:

- West Corridor – Alternative 1 as conceptually defined was advanced as the preferred option as it completely removes TH 53 from the ore body.
- Central Corridor – Both options are similar, however, Alternative 3 was identified as preferred given it stays further from future/mining operations, fits better with the existing and planned grading, and avoids the 1406 Stockpile area.
- Northeast Corridor – Alternative 5 was identified as preferred because it provides the greatest separation between the roadway and the current and future mining operations, although it does pose access challenges to the southern part of Virginia. Alternatives 4 and 6 better maintain the connection to existing Highway 53 around the south and east portions of Virginia, but also remain in the southern portion of the Rouchleau Pit, creating potential conflicts between the highway and future mining operations.

Enough analysis has been conducted to verify that there is no easy solution for realigning Highway 53. It is recognized that each alternative has positive attributes and each has negative attributes. As the project advances into the project development process described earlier, the analysis will need to be refined and public and agency input will need to be gathered in order to better understand the trade-offs associated with the various options and ultimately make a decision on a preferred alternative.

3.4 Next Steps

With the preferred concepts identified in each of the three study corridors, the next step in the process will be to meet with Mn/DOT staff to present the results of the study and formally discuss the timeline within which the realignment of Highway 53 will need to be accomplished.

List of Tables

Table 1 – Assessment of Conceptual Realignment Options

TABLE 1
Assessment of Conceptual TH 53 Realignment Options

	West Alternative 1 11.4 miles	Central			Northeast Alternative 5 3.2 miles		Alternative 6 3.2 miles
	Alternative 2 1.6 miles	Alternative 3 1.6 miles	Alternative 4 3.0 miles	Alternative 5 3.2 miles	Alternative 6 3.2 miles	Alternative 7 3.2 miles	
Route Length							
Utility Impacts (See note below regarding intersections/interchanges)	<ul style="list-style-type: none">Provides no new corridor for utility relocationProvides most 'standard' approach to storm water detention/treatment	<ul style="list-style-type: none">Utilities would likely need to relocate along realigned TH 53 corridorPresents potential challenges with storm water retention/treatment (ponding to be kept out of the mine)	<ul style="list-style-type: none">Utilities would likely need to relocate along realigned TH 53 corridorPresents reasonable opportunity for storm water retention/treatment	<ul style="list-style-type: none">Utilities would likely need to relocate along realigned TH 53 corridorPresents reasonable opportunity for storm water retention/treatment	<ul style="list-style-type: none">Utilities would likely need to relocate along realigned TH 53 corridorPresents reasonable opportunity for storm water retention/treatment	<ul style="list-style-type: none">Utilities would likely need to relocate along realigned TH 53 corridorPresents reasonable opportunity for storm water retention/treatment	
Number of RR Crossing(s)	5	0 (Abandoned)	0 (Abandoned)	0 (Abandoned)	0	0 (Abandoned)	
Local Route Connectivity (See note below regarding intersections/interchanges)	<ul style="list-style-type: none">Alignment uses existing CR 7 corridor for approximately 1 mileCreates numerous at-grade intersections with local roadsCosts include 2 new interchanges (likely at TH 37 and CR 101)	<ul style="list-style-type: none">New at-grade intersection with 2nd Ave WestIntersection with TH 135 moved south	<ul style="list-style-type: none">Access to 2nd Ave West achieved via frontage road system/use of old TH 53 corridorIntersection with TH 135 moved south	<ul style="list-style-type: none">Access to 2nd Ave West split Intersection with TH 135 in roughly same location	<ul style="list-style-type: none">Realigned TH 53 feeds directly into 9th Street North (incompatible functional role and design)Access to 2nd Ave West would occur at north end at-grade.Intersection with TH 135 in roughly same location	<ul style="list-style-type: none">9th Street North connection provided via at-grade intersectionAccess to 2nd Ave West maintained in roughly same location (at-grade)Intersection with TH 135 in roughly same location	
Other	<ul style="list-style-type: none">Creates alignment that would not require relocation in the futureProvides no clear viable utility corridor	<ul style="list-style-type: none">Splits site causing mining operational issuesCreates Air Boundary IssuesCrosses on ore deposit and does not guarantee that relocation would not be required in the futureCould provide utility corridor for relocated utilities	<ul style="list-style-type: none">Splits site causing operational issuesCreates Air Boundary IssuesCrosses on Auburn Pillar and does not guarantee that relocation would not be required in the futureCould provide utility corridor for relocated utilities	<ul style="list-style-type: none">Crosses on ore deposit and does not guarantee that relocation would not be required in the futureCould provide utility corridor for relocated utilities	<ul style="list-style-type: none">Crosses on ore deposit and does not guarantee that relocation would not be required in the futureCould provide utility corridor for relocated utilities	<ul style="list-style-type: none">Crosses on ore deposit and does not guarantee that relocation would not be required in the futureCould provide utility corridor for relocated utilities	

Assumptions/Notes:

- Using 60 mph design speed (min) for TH 53
- Intersection and/or interchange types and locations to be determined in future planning and design phases.

List of Figures

Figure 1 – West Corridor - Alternative 1

Figure 2 – Central Corridor - Alternative 2

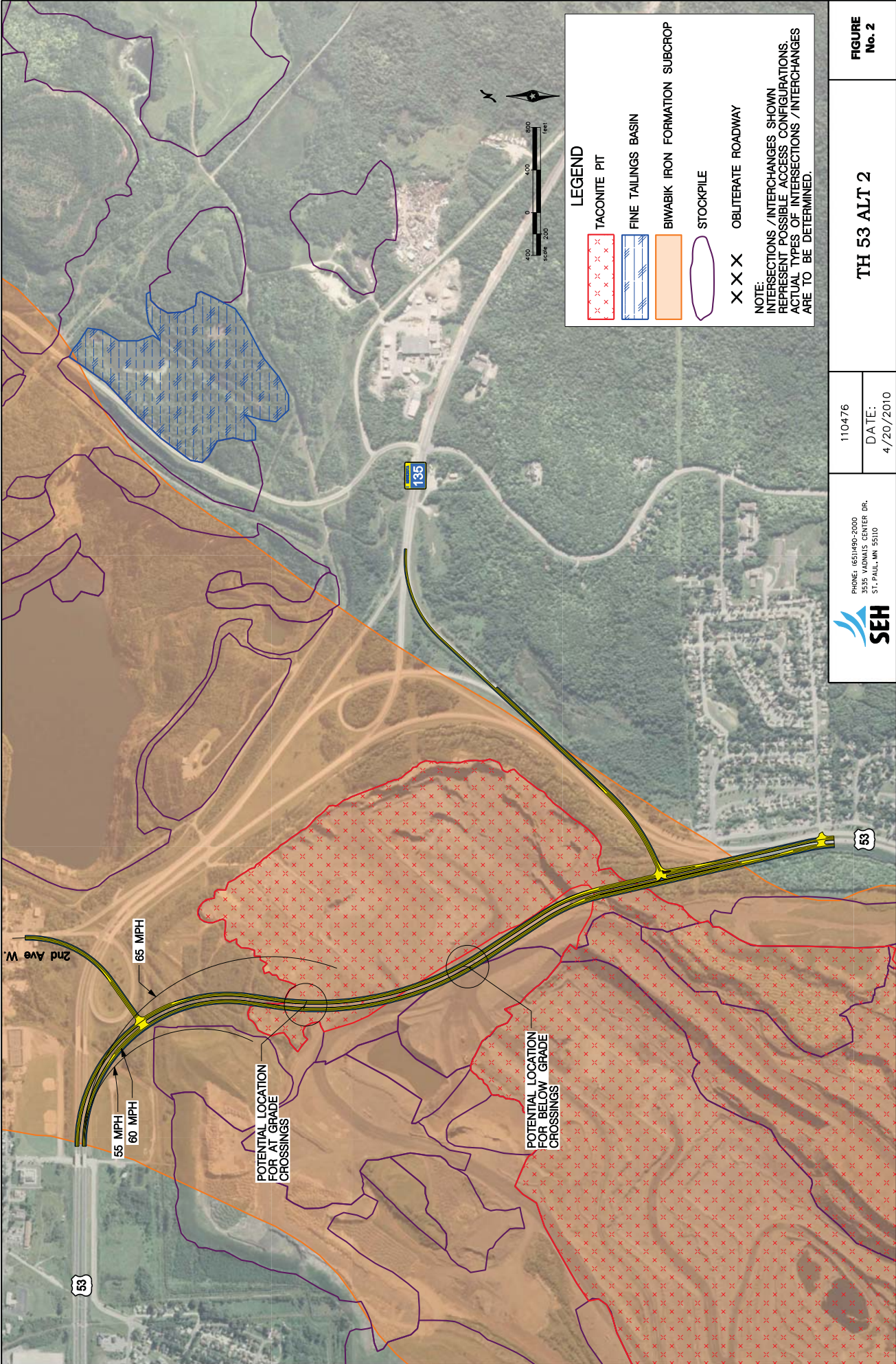
Figure 3 – Central Corridor - Alternative 3

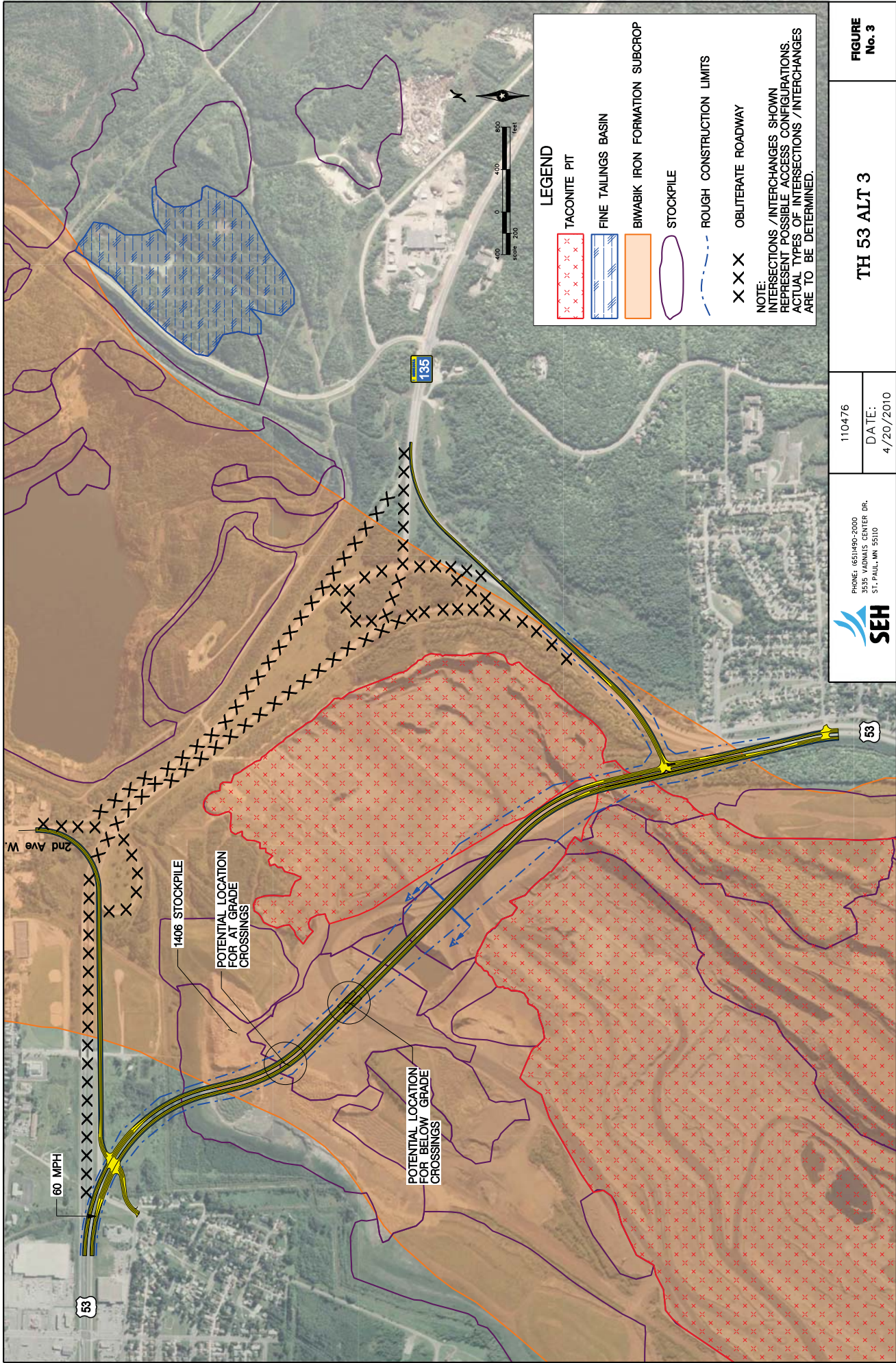
Figure 4 – Northeast Corridor - Alternative 4

Figure 5 – Northeast Corridor - Alternative 5

Figure 6 – Northeast Corridor - Alternative 6

Figure 7 – Typical Section





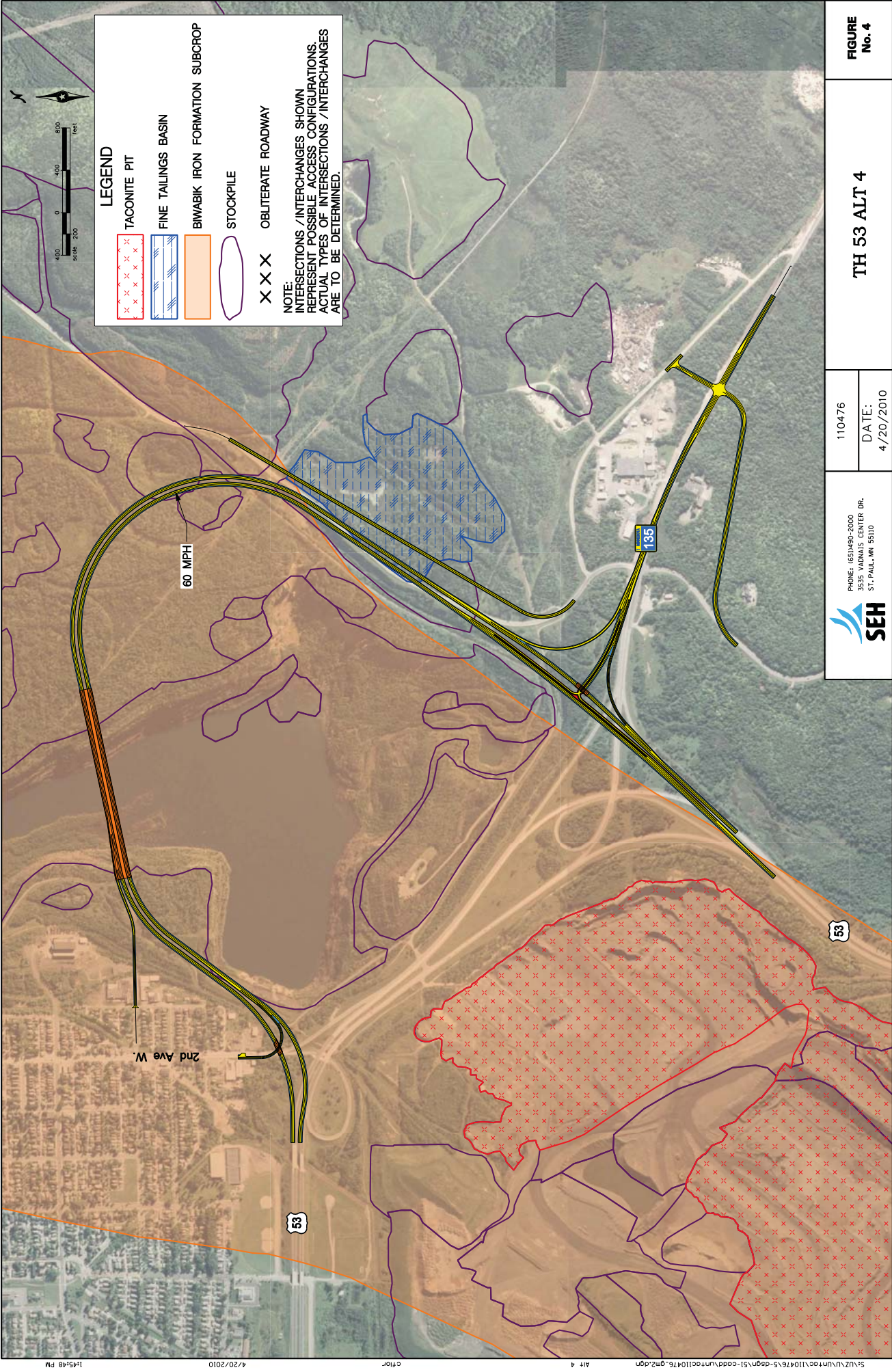
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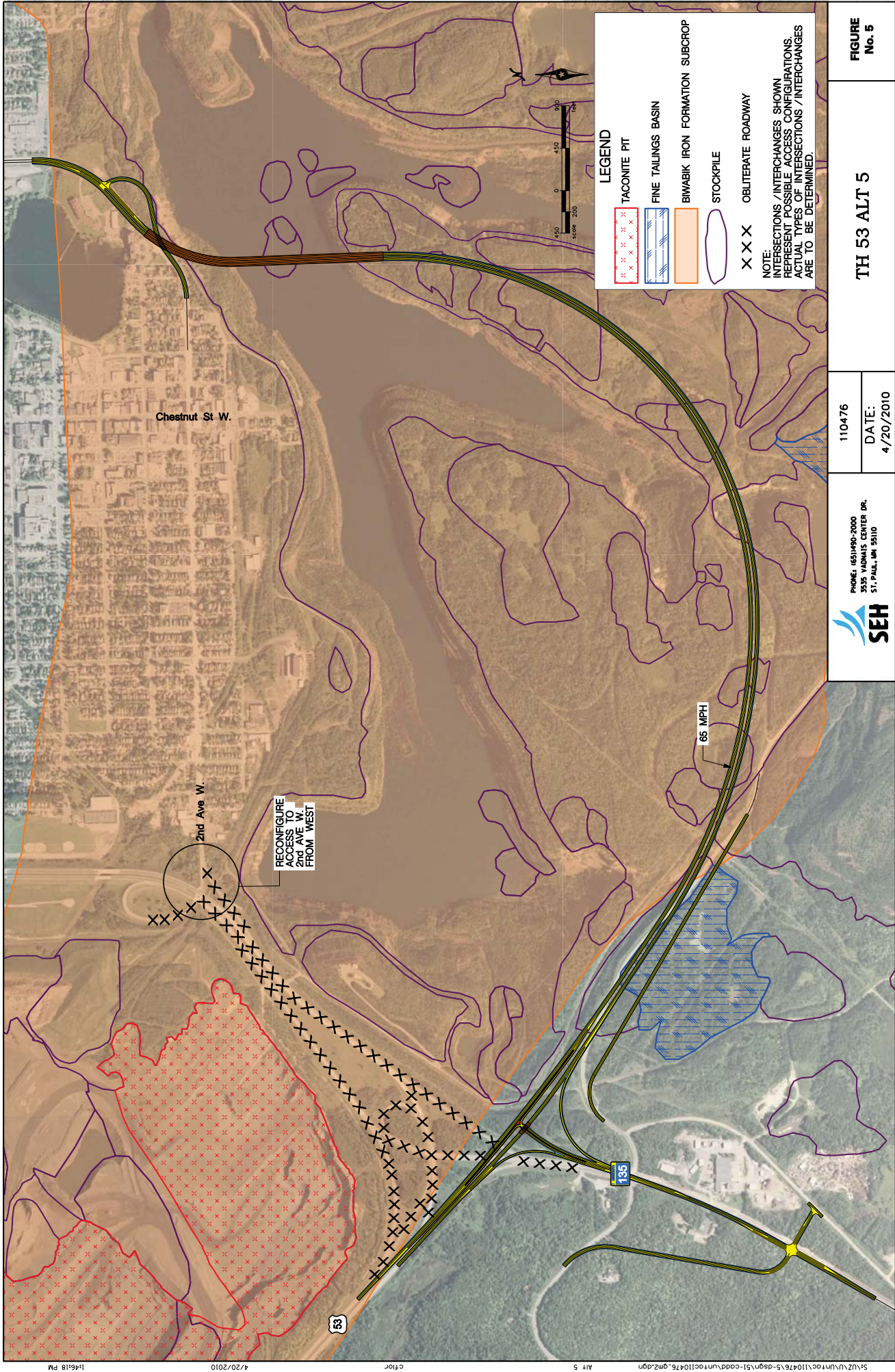
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Alt 3

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110476

DATE:
4/20/2010

PHONE: (651)490-2000
3535 ADAMS CENTER DR.
ST. PAUL, MN 55110



**FIGURE
No. 5**

TH 53 ALT 5

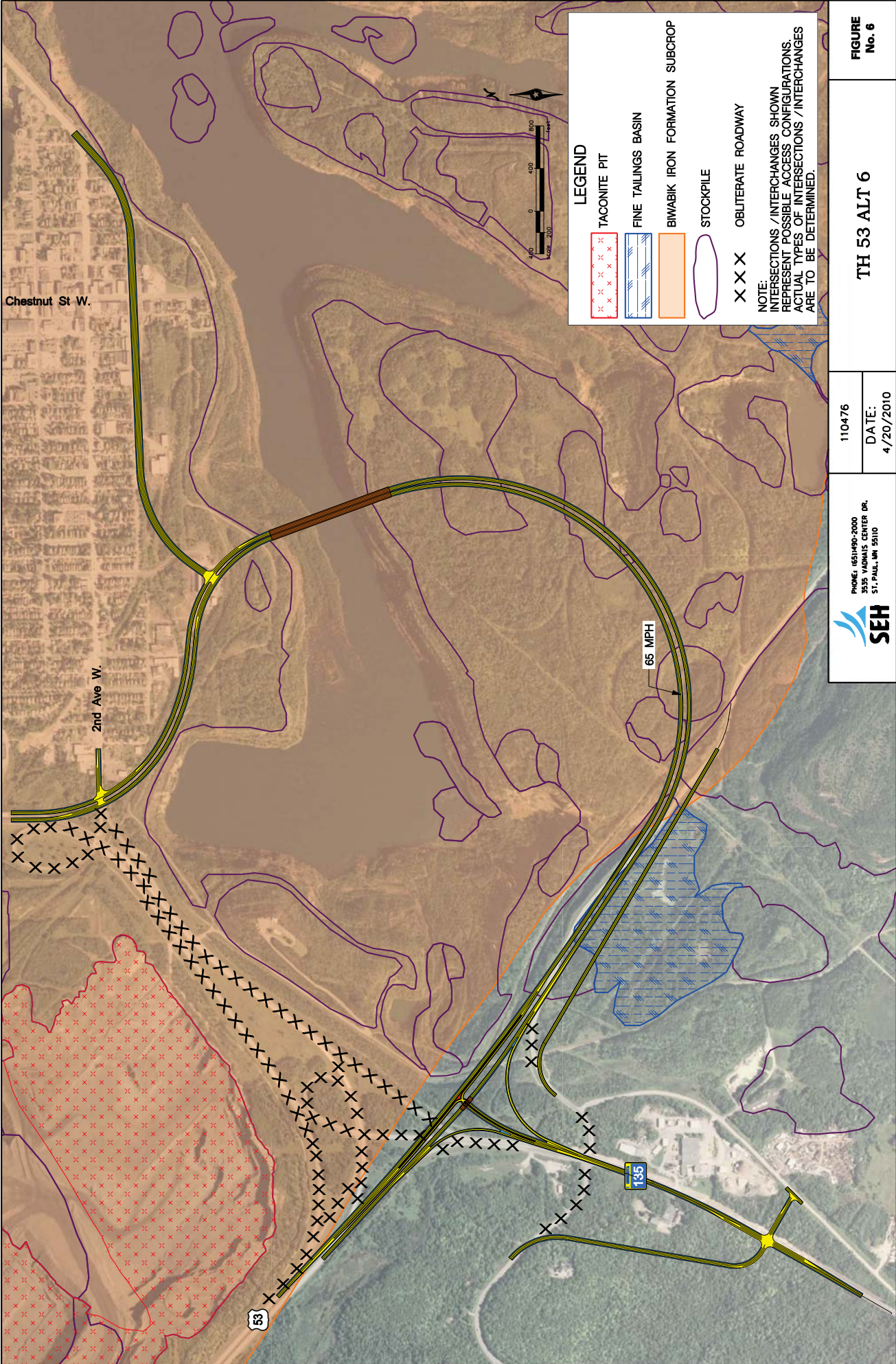


FIGURE
No. 6

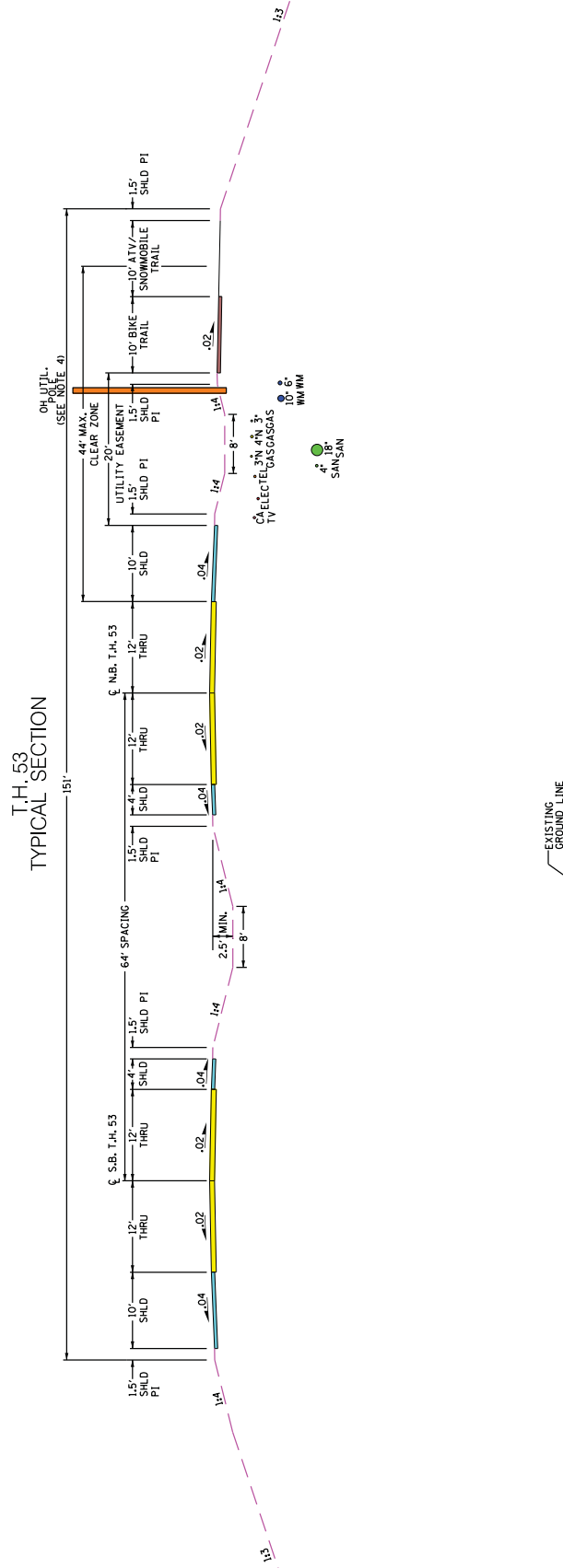
TH 53 ALT 6

110476

DATE:
4/20/2010

PHONE: (651)490-2000
3535 MADAMS CENTER DR.
ST. PAUL, MN 55110





Assumptions:

1. Design assumptions based on 60 MPH design speed, rural design.
2. Utilities shown are based on utilities known to exist in the current TH 53 corridor.
3. NB TH 53 clear zone requirements are based on 60 MPH design, 1:10 section, and 4° curvature. The 44' clear zone shown represents a maximum on the outside of a 4° horizontal curve.
4. Utility easement width assumed, based on need to accommodate utilities when other viable routes do not exist. Overhead utility poles within the easement (and clear zone) may require special consideration.