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Ms. Shanna Schmitt and
Ms. Stacey Hendry-Van Patten
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Subject:

Response Action Implementation Report, 1A Tunnel Barrier Wall, Feature 150
Ford Twin Cities Assembly Plant, St. Paul, Minnesota
MPCA VIC Project Number VP23530
MPCA PBP Project Number PB3682

Dear Ms. Schmitt and Ms. Hendry-Van Patten:

On behalf of Ford Motor Company (Ford), ARCADIS has prepared this Response Action Implementation Report (RAIR) for the 1A Tunnel to prevent direct contact with waste materials present near the terminus of the tunnel for the Twin Cities Assembly Plant (Site) in St. Paul, Minnesota. The Site location and property layout are depicted on Figure 1.

Background Information

The area referred to as Feature 150 at the Ford Twin Cities Assembly Plant is an accumulation of materials on the far southern end of the 1A Tunnel. On October 3, 6, and 7, 2008 the 1A Tunnel leading to Feature 150 was surveyed by Sunde Land Surveying (Sunde) of Bloomington, Minnesota. The tunnel location was surveyed to Ramsey County coordinate system [North American Datum of 1983 (NAD83)] and the elevation to vertical datum National Geodetic Vertical Datum of 1929 (NGVD 29). The location and extent of the tunnel are presented on Figure 2.

The base of Feature 150 is located at an elevation of 711.0 feet above mean sea level (MSL). The ground surface above Feature 150 is at an elevation of 772.9 feet above MSL and the distance from the ground surface to the ceiling of the tunnel is approximately 56.7 feet. Feature 150 is located directly below the northeast corner of historical Disposal Area C. Historical Disposal Area C is now a concrete parking area.

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ENVIRONMENT

Date:

January 11, 2011

Contact:

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Email:

bryan.zinda@arcadis-us.com

Our ref:

DE000380.0001

Remedial Action

A Remedial Action Plan (RAP) was submitted to the MPCA on December 14, 2009 and approved by the MPCA on February 24, 2010. The remedial action consisted of the installation of a barrier wall in the 1A Tunnel (Feature 150) to isolate the impacted area. The barrier wall was installed near the terminus of the 1A Tunnel just east of the waste material. Work was conducted on December 10, 2010 and December 13 through 15, 2010.

The barrier was constructed at Feature 150, which is several thousand feet away from the entry portal of the tunnel. All materials were hand-carried into position via a permit-required confined space entry. Unistrut framing was utilized since it is a strong proven product, is relatively lightweight and has pre-engineered connectors. The Unistrut was used for the main skeletal framing with a chain-link fence fabric attached for additional security. The Unistrut framing was secured to the tunnel walls by drilling and anchoring into the concrete formed wall.

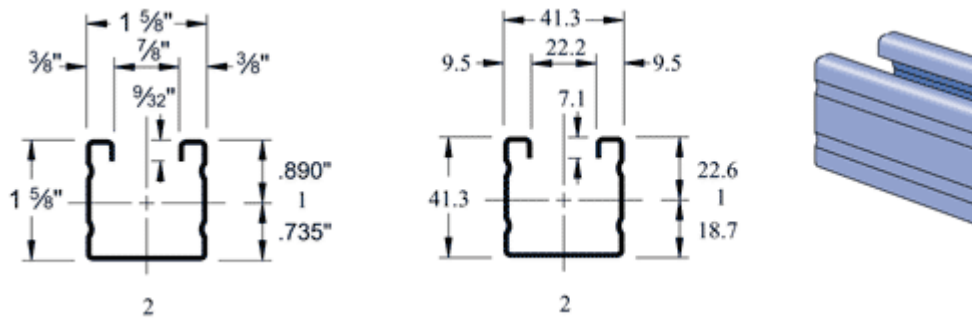
The general construction consisted of the following:

1. Install chain link fabric in place using existing rebar from the concrete formed wall.
2. Core into the concrete formed wall; install anchor bolts through the Unistrut and into the concrete.
3. Splice the upper and middle horizontal Unistrut sections together with the P9200 tubing and bolt in place.
4. Fasten the vertical Unistrut sections to the horizontal sections.
5. Tie the chain link fabric to the Unistrut framing.

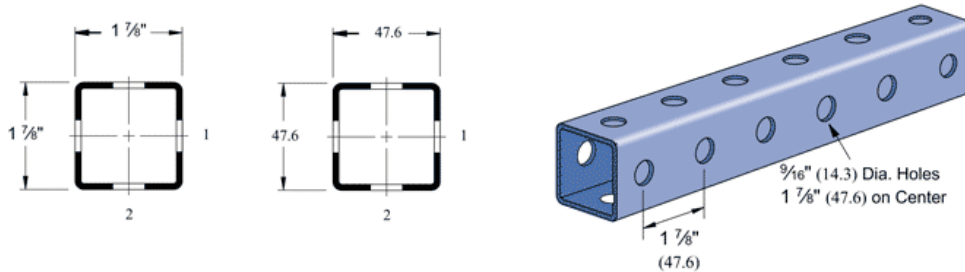
Photos of the barrier are shown on Figures 3, 4 and 5

Unistrut Components

**P2000 - 1-5/8" x 1-5/8", 16
 Gauge, Solid**



P9200 - 1 7/8" x 1 7/8" Telestrut Tubing



Summary

The installed barrier wall, in combination with the locks at the entrance of the tunnels is sufficient to prevent direct contact with the waste materials located at the terminal end of the 1A Tunnel and by installing the barrier wall, Ford has fulfilled is obligation of preventing direct contact with the waste materials present.

If you have questions or need additional information, please call Bryan Zinda of
ARCADIS at 612.373.0234 at your convenience.

Sincerely,

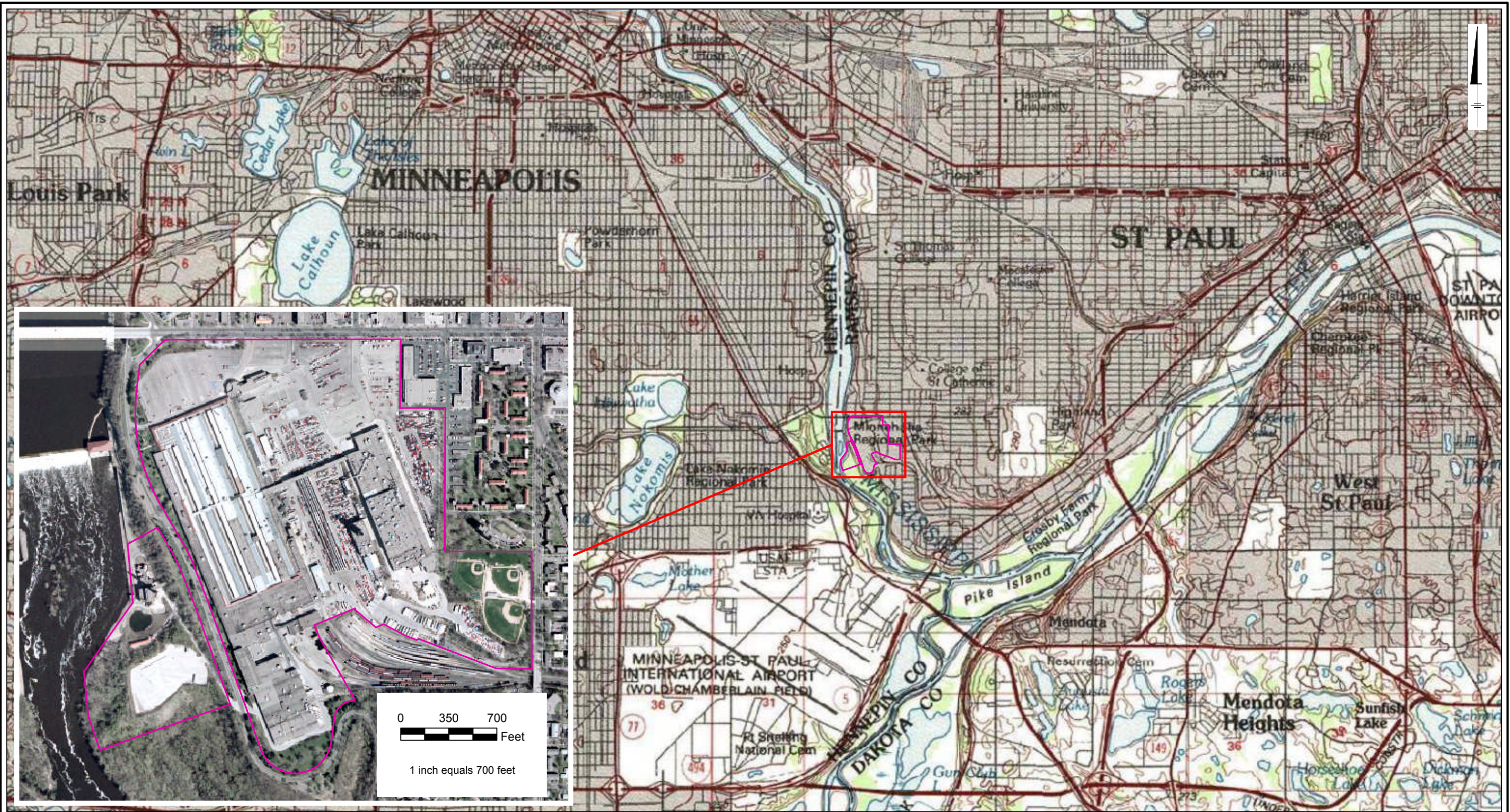
ARCADIS U.S., Inc.



Bryan Zinda, PE
Senior Engineer

Copies:

Ms. Barbara Rusinowski, Ford Motor Company, Dearborn, Michigan
Mr. John Meyers, Ford Twin Cities Assembly Plant, St. Paul, Minnesota



CITY: Minneapolis, MN DB: MGress PM: BZinda
 Project: MND0693
 GIS: Project Ranger\ArcMap\Fig1_Site_Location_Topo.mxd

LEGEND:

Ford Property Boundary

NOTES:

Imagery Source: United States Geological Survey
 High Resolution Orthoimagery for the Minneapolis-St. Paul,
 Minnesota Urban Area

 Topographic Map Source:
 © 2007 National Geographic Society



1 inch equals 1 miles

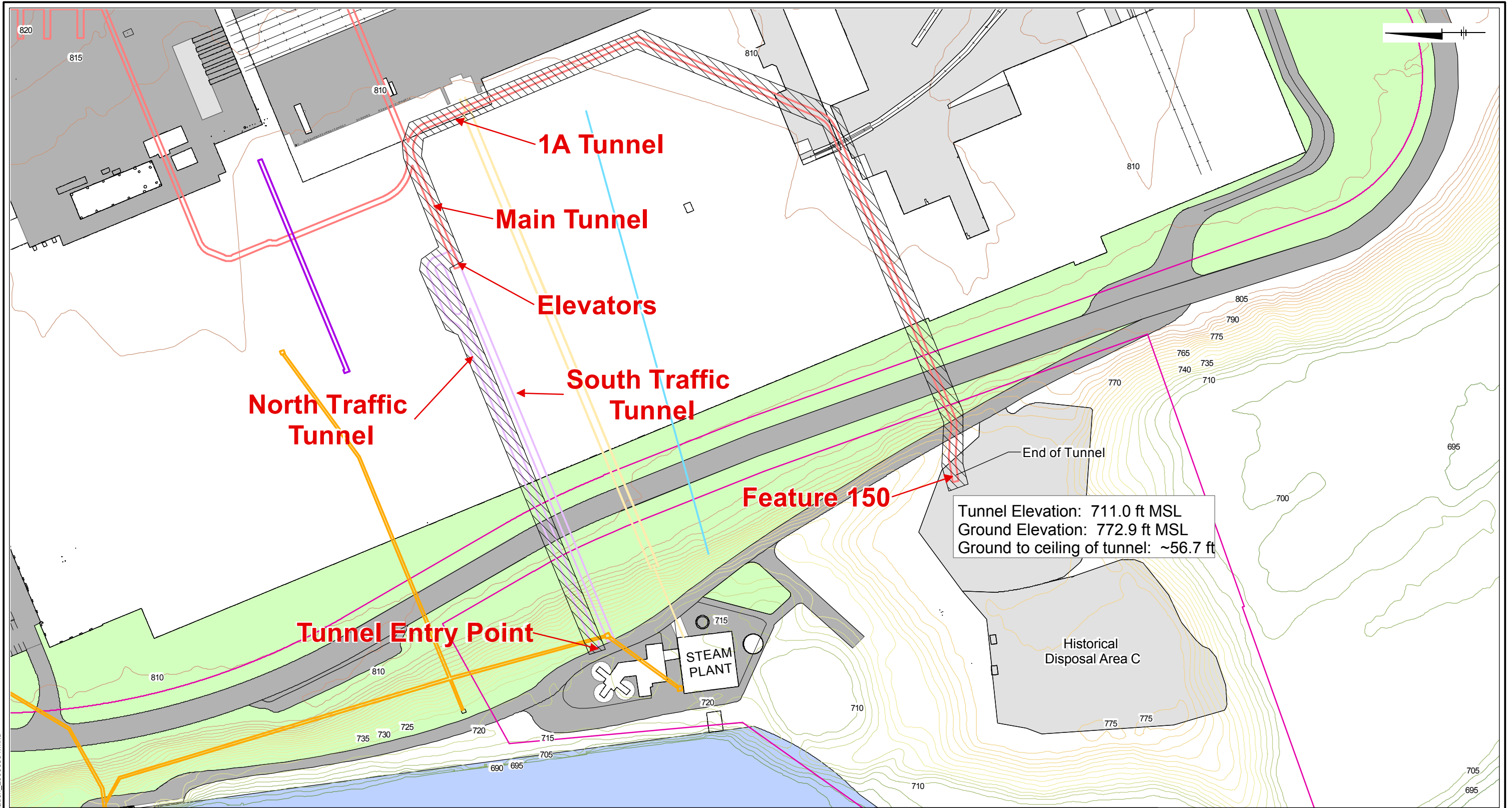


Twin Cities Assembly Plant
 Ford Motor Company
 St. Paul, Minnesota

Site Location / Property Layout

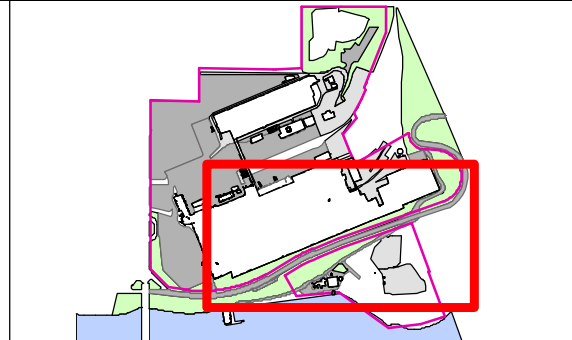
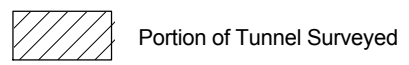


FIGURE
1



LEGEND:

- | | | | |
|------------------------|-------------------|---------------------------|-----------------|
| Ford Property Boundary | Asphalt | Cable Tunnels | Gas Tunnel |
| Roads | Concrete | Utility Tunnel | Steam Tunnel |
| Rail | Grass | Mined Sand Tunnels | Traffic Tunnels |
| Buildings | Mississippi River | Elevation Contours (Feet) | |



	Twin Cities Assembly Plant Ford Motor Company St. Paul, Minnesota
	Tunnel Location Map
	FIGURE 2

CITY: Minneapolis, MN DB: MGress PM: BZinda
 Project: MN000593
 G:\GIS\Projects\Ford Ranger\ArcMap\Tunnel_Location_20090831.mxd

Figure 3.
Tunnel 1A – Barrier Wall
Installation
Twin Cities Assembly Plant
Ford Motor Company
St. Paul, Minnesota



Pre-Construction Photo.



Chain Link Fencing Installation.

Figure 4.
Tunnel 1A – Barrier Wall
Installation
Twin Cities Assembly Plant
Ford Motor Company
St. Paul, Minnesota



Close-Up of Securing the
Chain Link Fencing to the
Concrete Wall.



Securing the Chain Link
Fencing to the Concrete Wall.

Figure 5.
Tunnel 1A – Barrier Wall
Installation
Twin Cities Assembly Plant
Ford Motor Company
St. Paul, Minnesota



Unistrut Installation.



Barrier Wall Construction
Completion.