NORTH DAKOTA ENHANCED AUTOMATED ROUTING FOR E-PERMITS

ND State User Guide

This user guide describes the operational procedures for the ND EAR system and the screens encountered by users during those procedures. Motor Carriers, Permit Specialist, the Department of Transportation and Highway Patrol use the EAR system to route permits and to provide legal, safe routes for oversize/overweight vehicles and loads on North Dakota roadways.

WHAT'S NEW?

This document was updated 11/24/14 to include:

- the new mobile friendly interactive mapping called Leaflet
- the removal of the functions to specifically travel on state maintained roads and/or to allow local travel
- the removal of Table Maintenance
- the addition of Restriction Reports in the Administrative Interface section

Table of Contents

Table of Tables

Tables of Figures

CHAPTER 1 WELCOME TO ENHANCED AUTOMATED ROUTING

PURPOSE & USERS

The North Dakota Enhanced Automated Routing (EAR) Interface is used by users to route and assist with permit applications for OS/OW travel within the State of North Dakota. This interface provides access to safe and legal routes based on the vehicle and load dimensions and weight for such travel.

ONLINE ROUTING AND THE ENHANCED AUTOMATED ROUTING SYSTEM

Using the routing engine and the mapping engine, this application provides route generation and route display for permits ordered through the E-PERMITS System.

NAVIGATING EAR

There are several useful tools to help you navigate the Enhanced Automated Routing system. These tools are located throughout the application so that you can access them from all applicable pages.

EXPAND/COLLAPSE

On the ***Routing*** screen you can expand and collapse the Enter Trip box and ***Route Points*** panel to show or hide your routing points. To edit your route expand to change any of your routing points.

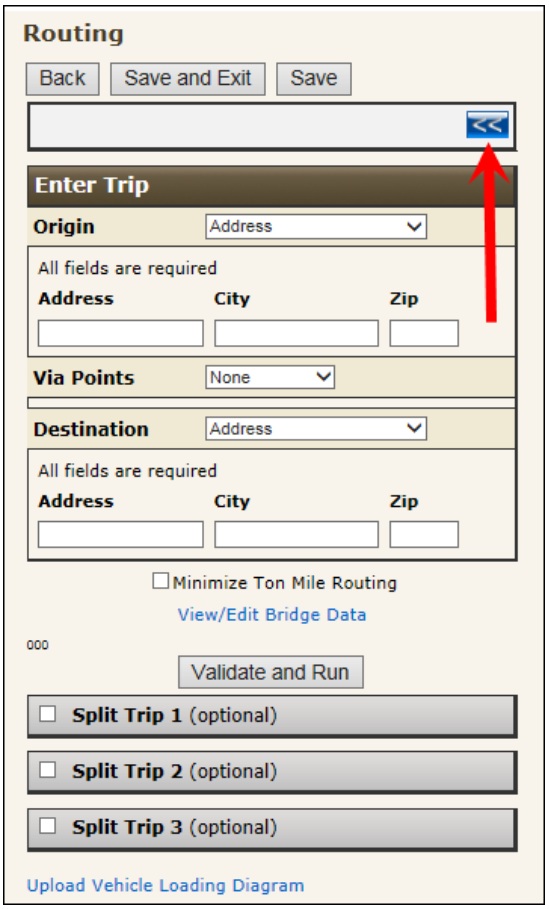


FIGURE 1: COLLAPSE TO HIDE

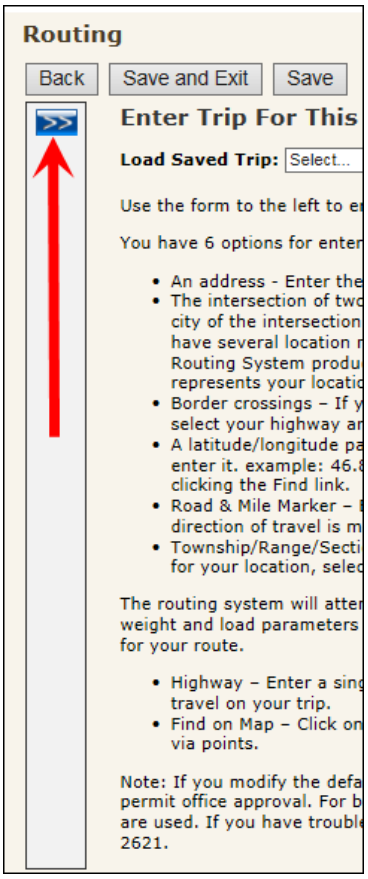
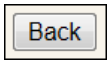


FIGURE 2: EXPAND TO EDIT ROUTE

VALIDATE AND RUN

Click **Validate and Run** to generate a route based on your origin and destination choices. This option is also used when you change your route points, origin, or destination.

BACK

Throughout the application when the **Back** button is an option, click **Back**  to go back one page rather than using the back arrow  in your browser.

TRAVEL ON STATE MAINTAINED ROADS

Roads approved for OS/OW travel that are managed by the State of North Dakota are called state maintained roads. In this routing system, all state maintained roads are highlighted green to aid in your selection. You must be zoomed in to select a point on the map.

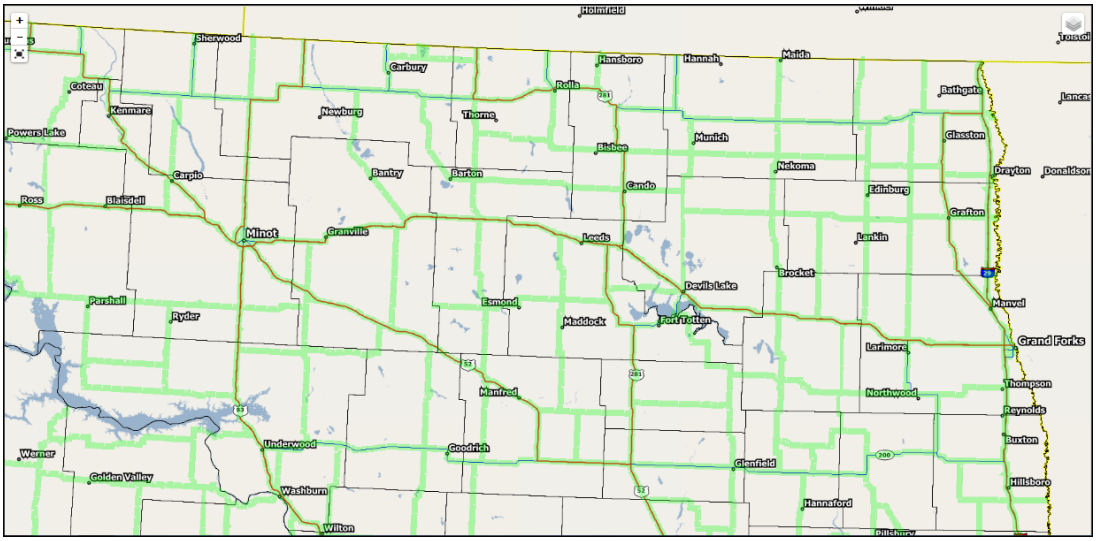


FIGURE 3: STATE MAINTAINED ROADS DISPLAY

TYPES OF ROUTES

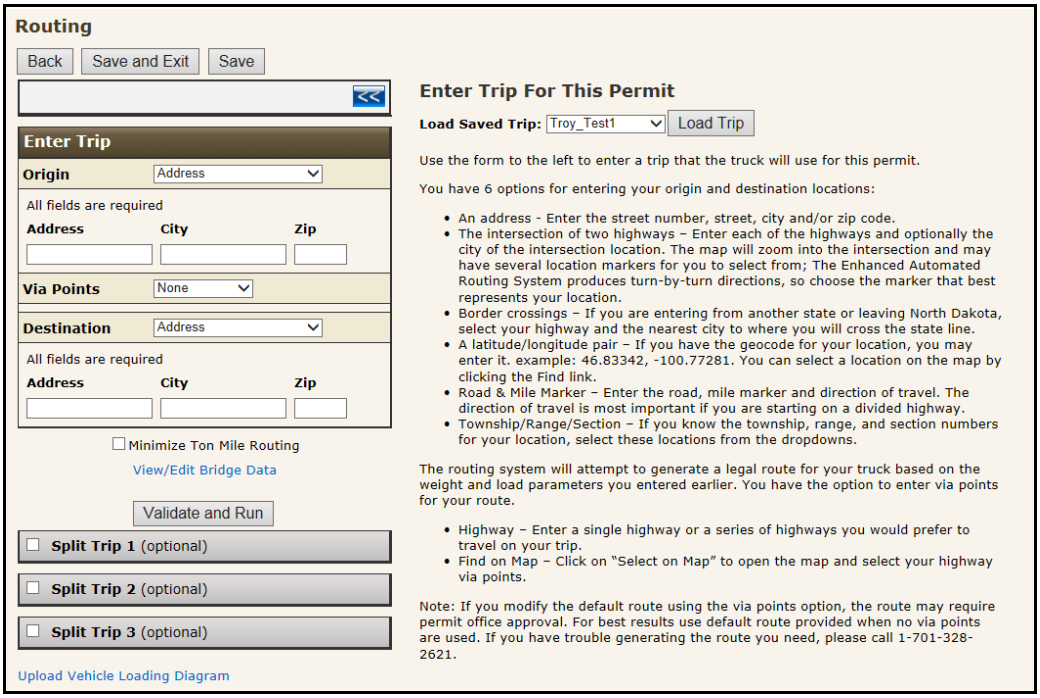


FIGURE 4: ROUTING SCREEN

The following types of routes can be generated:

- From one location to another location
- From one location to another location through specified Via Points selected on the map
- From one location to another location along specified Via highways

You can use the above options to do any or all of the following:

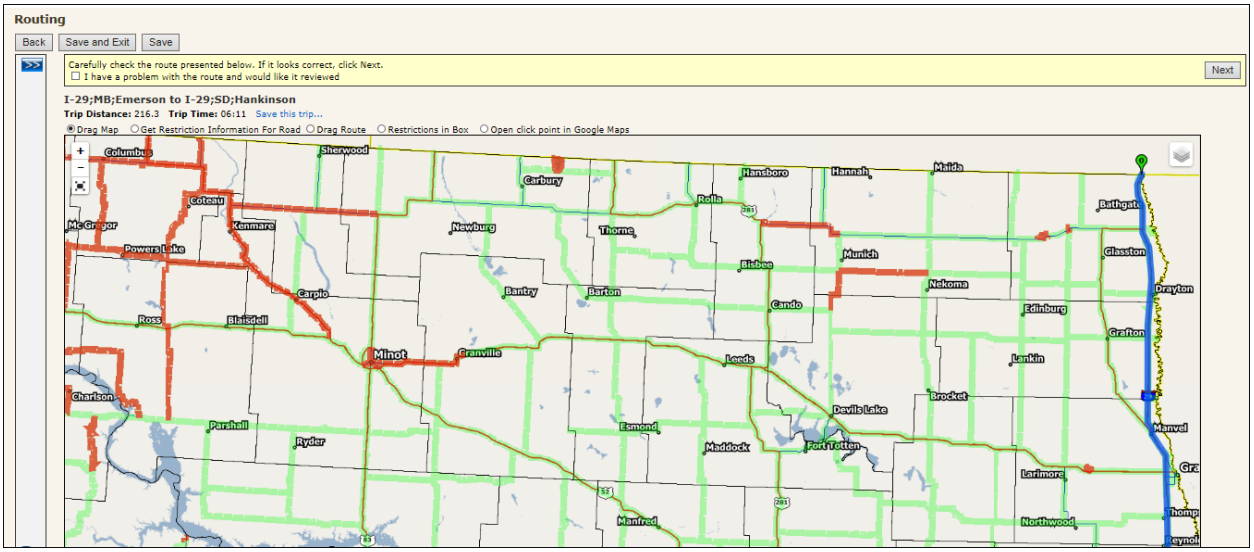
- You can reduce ton mile travel by selecting the **Minimize Ton Mile Routing** checkbox.
- You can view results of bridge analysis and modify bridge load weights for vehicles with non standard trailer types by clicking the **View/Edit Bridge Data** link.
- You can generate multiple route segments each with a separate origin and destination when you use the **Split Trip** feature.

Note: Each of these multiple routes can be simple point-to-point or routed over specified roadways. For example, you can generate one leg of a split trip as simple point-to-point, and select the origin by an intersection and the destination by its address. Another leg could stipulate that it will travel over specified roadways, and the origin could be a border crossing and the destination could be selected by clicking on the map.

Choose your origins and destinations to be any combination of specific addresses, intersections, border crossing, latitude/longitude/select on a map, road and mile marker, and Township/Range/Section.

When you have made all your routing selections, click **Validate and Run**.

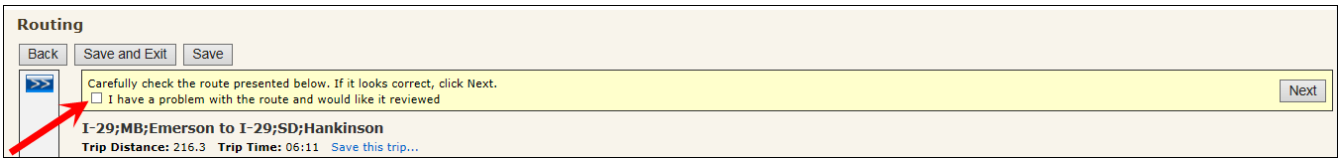
The route results are displayed on the right hand side of the page.



*If the system requires additional information to generate the route or if it cannot generate a route based on the information provided, the Validate Locations area gives you the opportunity to provide more information or to expand the **Route Points** panel to modify your route details. When the system has collected sufficient information to generate a route, the **Route Results** panel displays the route and additional information about the route.*

SUBMIT A ROUTE FOR MANUAL REVIEW

You can submit a route to the queue for manual review if you are not able to get the route needed for travel or do not have permissions to adjust the route as needed to obtain a route. If you are not able to get the necessary route due to restrictions, a ND user with permissions may be able to obtain temporary override permission if the load is needed in the restricted area. You must enter your origin and destination and click **Validate and Run** before you can submit the route for manual review.

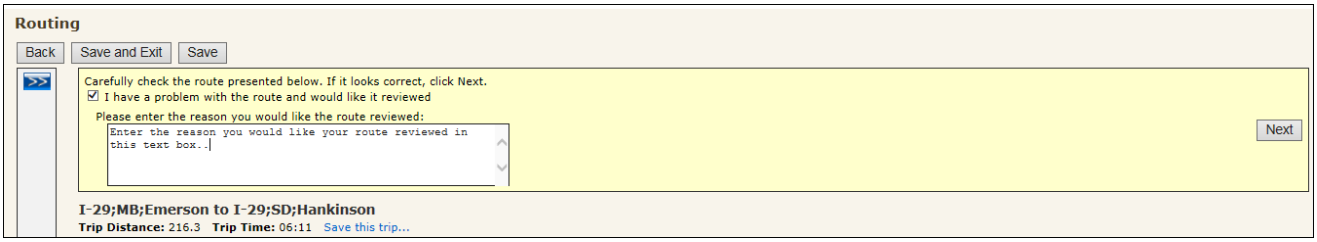


To submit a route for manual review:

1. Generate a route as part of a permit application as explained on page 5.

   *The **Route Results** panel displays the details of the generated route.*

2. Check the box next to, *I have a problem with the route and would like it reviewed* field. In the text box below enter the reason you would like the route reviewed.



3. Click **Next** to have your route reviewed.

Note: Industry users have access to this function in order to obtain routing assistance from the permit office.

ROUTE POINTS PANEL

This panel is used to enter the following details about routes to be generated:

- The origin/destination of the route
- Path conditions of the route such as the Via Points it should pass through or the roadways it should attempt to use
- The ability to minimize ton mile routing
- The ability to view results of bridge analysis and modify bridge load weights for vehicles with non standard trailer types
- You can generate multiple route segments each with a separate origin and destination when you use the **Split Trip** feature.
- Upload a vehicle loading diagram for loads that require it

The fields and options vary based on your selections.

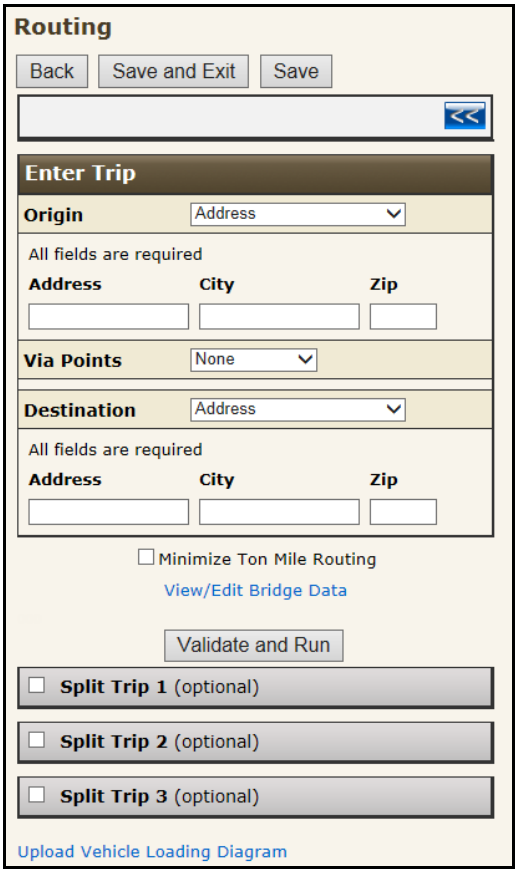


FIGURE 5: ROUTE POINTS PANEL

TABLE 1: ROUTE POINTS PANEL ELEMENTS

Element	Function	
Route Area		
Origin/Destination Dropdowns	The beginning and ending locations of a route. The available fields for each vary based on the way you select the origin or destination. See *Selecting an Origin and Destination* on page 9 for more information.	
Via Points Dropdown **None** Option	Select to generate a basic point to point route with no specified Via Points or highways. See page 23 for more information.	**Note:** You can also use any of these methods for the routes of a Split Trip.
Via Points Dropdown **Highway** Option	Select to display fields to specify road names to use in the route. See page 24 for more information.	
Via Points Dropdown **Find on Map** Option	Select to display **Select on Map** to pick a location from the map. See page 25 for more information.	
Additional Routes Area		
Minimize Ton Mile Routing	Select to generate the route avoiding roads with ton mile roads when possible.	
View/Edit Bridge Data	This link allows users to view the bridge analysis and to modify bridge load weights for vehicles with non standard trailer types.	
Split Trip	Select to display extra Route fields for two or more separate route legs under the same permit. This feature is used primarily when entering and exiting the state maintained road network.	
Additional Route Details		
Upload Vehicle Loading Diagram	This link allows users to upload vehicle loading diagrams when required. This feature is used primarily for any vehicle that is greater than 250,000lbs, for any trailer with trunions or side by side dollies, and any dual lane trailers or double trailer configurations. This feature is also used for special mobile equipment (self propelled) (excluding earthmoving) when the track width is less than 8’6” in width.	
Validate and Run	Click to generate a route based on your selections. This action will collapse the ***Route Points*** panel. You can expand the panel to change the route choices.	

Selecting an Origin and Destination

When generating a route, you can enter the details of the origin or destination using a variety of methods. Different fields are available depending on the method you choose. The methods are:

- Specific address
- Intersection
- Border crossing
- Location select on a map – Lat/Lon/Map
- Road and Mile Marker
- Township/Range/Section

By Specific Address

To enter a specific address of an origin or destination:

1. Generate a route as described on page 5.
2. On the ***Route Points*** panel, in an Origin or Destination field, select **Address**.

The fields change to allow you to enter the details regarding the address.

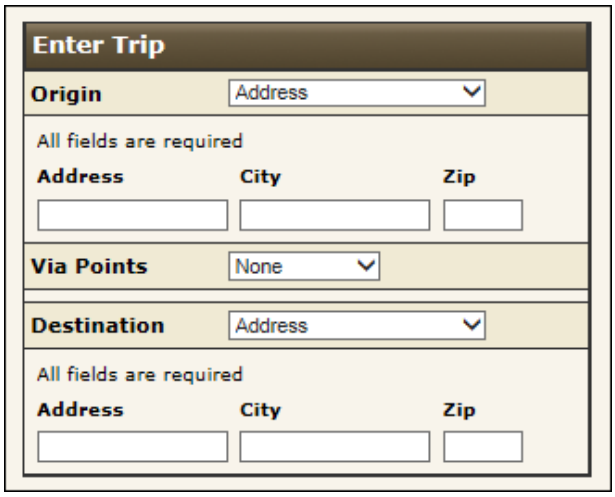
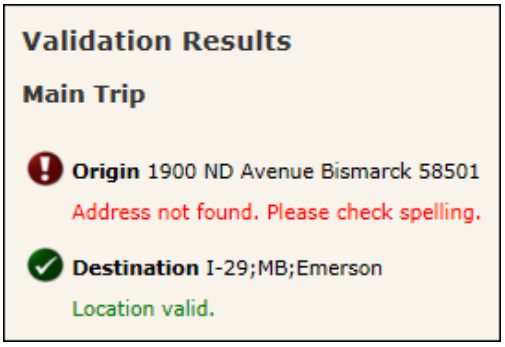


FIGURE 6: ENTER ROUTE POINTS: ORIGIN OR DESTINATION ADDRESS

3. Enter a street address in the **Address** field.
4. Enter the city and/or Zip code of the address in the **City** and **Zip** fields.
5. Enter the rest of your origin and destination and click **Validate and Run**.

If you have entered an address that the system cannot find, the system displays the following message:



6. Re-enter the trip trying a different address.
7. Click **Validate and Run**.

   *When the system no longer has any problems with the address information or any other location entered, the **Route Results** panel displays your route. Review your route and driving directions. Expand the **Route Points** panel if you want to make any changes. Changes will require you to click **Validate and Run** to update your route.*

8. Click **Next** to continue the permit application process.

Helpful Hints:

If the system cannot locate the entered address:

- Verify the address. If you feel the address is correct, verify the spelling.
- Some addresses, especially industrial location addresses may not be in the system.
- If the address includes prefix direction such as N, NE, etc., try the address without the prefix.
- If the address includes indicators such as road, street, drive, etc., try the address without those indicators.
- If the address entered is not on a state maintained road, the system will suggest you enter another address or use the **Find on Map** feature as described on page 17.

TABLE 2: VALIDATION RESULTS SCREEN OPTIONS

Element	Function	
Location	Submitted routing point	
Type	Routing point type selected from the ***Route Points*** panel	
	Address	Route point is a street address, city, and zip code.
	Intersection	Route point is the intersection of two roadways. The user has the option of specifying a city.
	Border Crossing	Route point is a border crossing.
	Lat/Lon/Map	Route point is a location on the map manually selected by the user.
	Road and Mile Marker	Route point is a location listing the roadway, mile marker, and direction of travel.
	Township/Range/Section	Route point is a location comprised of all three numbers that represents the township, range and section.
Alternatives	Potential routing points based on the information entered in the ***Route Points*** panel	
	Route points that the system has successfully resolved are labeled with a check.	
	Route points that have multiple potential resolutions are labeled with a question mark.	
	Route points that cannot be resolved by the system are labeled with an exclamation mark.	
Edit Route Expand Chevron	Click to return to the ***Route Points*** panel to re-enter your route point information.	
Validating Button	Displayed while the system calculates a route and as long as any route point is labeled with: 	

BY INTERSECTION

To select an origin or destination using an intersection:

1. Generate a route as described on page 5.
2. On the ***Route Points*** panel, in an Origin or Destination field, select **Intersection**.

The fields change to allow you to enter the details regarding the intersection.

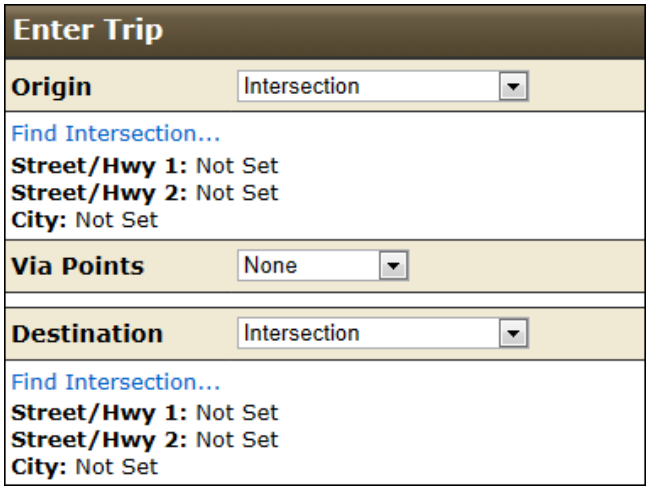
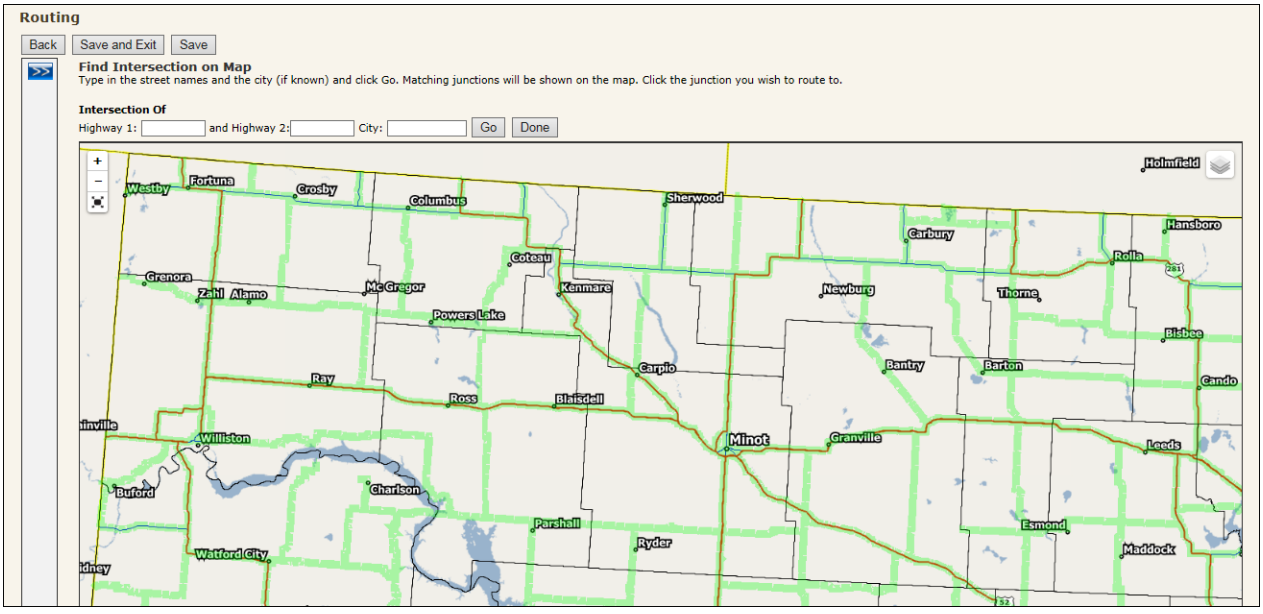


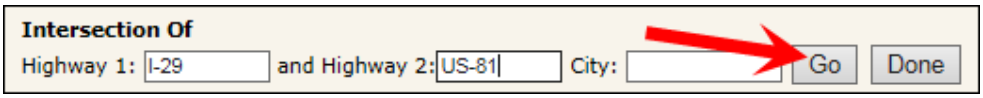
FIGURE 7: ENTER ROUTE POINTS: ORIGIN OR DESTINATION INTERSECTION

3. Click the **Find Intersection** link beneath Origin or Destination.

A map window will open to the right.



4. Enter the two street locations in the **Highway 1** and **Highway 2** boxes. You can also enter a city, but it is not required. If you are not certain of the city boundaries, you may get better results without the city name. For suggested street name entry see *Table 5: Official ND DOT Highway Names* on page 25.
5. Click **Go**.



*If you click **Done** instead of **Go** it will take you back to the Enter Trip box to make a different routing selection.*

All of the possible intersection matches will be found on the map, each marked with a numbered pushpin.

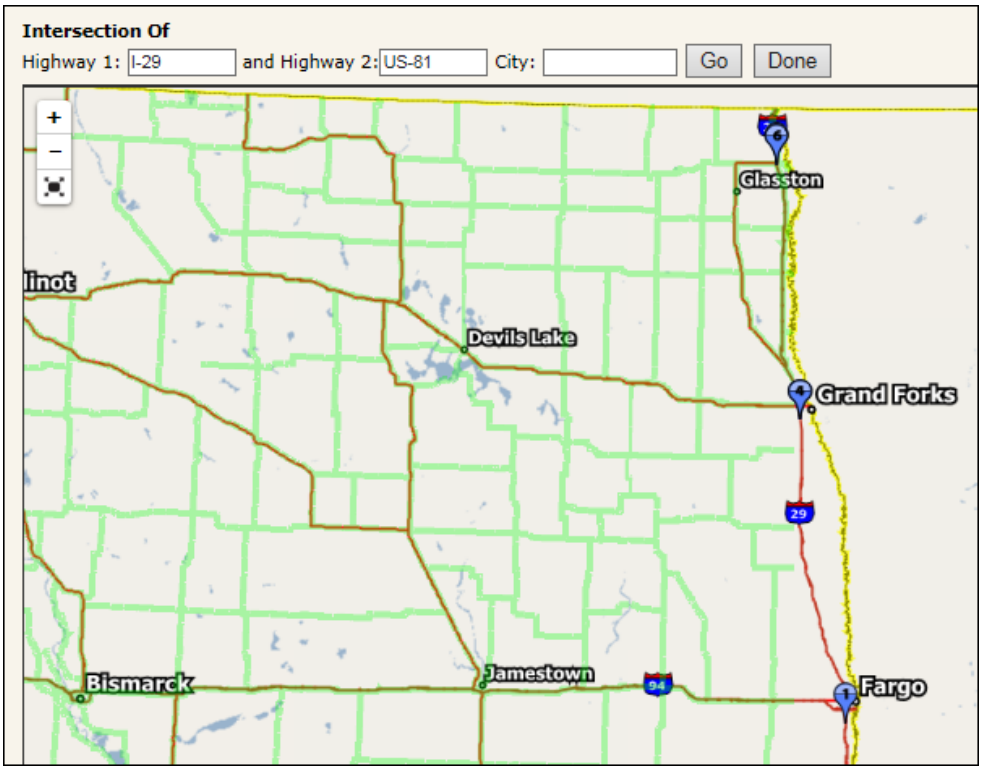


FIGURE 8: INTERSECTION LOCATION FOUND

6. Zoom in and click the pushpin that marks the location that you wish to use. That location will be added to the Origin or Destination box to the left.

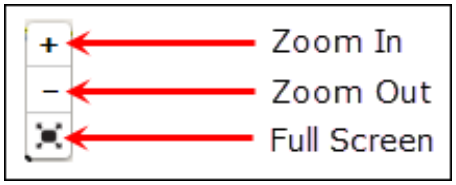


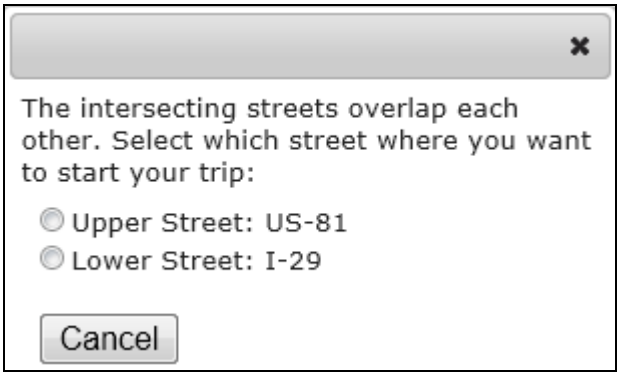
FIGURE 9: MAP ZOOM TOOL

TABLE 3: MAP ZOOM TOOL

Element	Description
Zoom Level	Click the Zoom Level buttons (+/-) to zoom in and out of the center of the map
Full Screen	Click to expand the map area to full screen view

See page 20 for additional map zoom operations.

If an intersection has multiple possible matches at the same location the pushpin  will be split. This denotes a possible upper and lower location found. These split locations are typically found at overpasses, etc. When you click on one of these split locations a pop up box will appear listing the upper and lower locations for that intersection. Choose the proper location to continue.



7. Enter the rest of your origin and destination and click **Validate and Run**.

   *The **Route Results** panel displays your route. Review your route and driving directions. Expand the **Route Points** panel if you want to make any changes. Changes will require you to click **Validate and Run** to update your route.*

8. Click **Next** to continue the permit application process.

Helpful Hints:

If the system cannot locate the entered intersection:

- Enter your Highway 1 or 2 names using the format for Highway Names as described in Table 5 on page 25.
- Remove the city name to see all possible matches.
- When there are multiple possible matches, select the intersection that best represents your origin or destination.
- If the Highway 1 or 2 names include prefix direction such as N, NE, etc., try it without the prefix.
- If the Highway 1 or 2 names include indicators such as road, street, drive, etc., try without those indicators.
- If the Highway 1 or 2 names are not on a state maintained road, enter another location or use the **Find on Map** feature as described on page 17.

By Border Crossing

To select an origin or destination at a border crossing:

1. Generate a route as described on page 5.
2. On the ***Route Points*** panel, in an Origin or Destination field, select **Border Crossing**.

   The fields change to allow you to select a border crossing into the State.

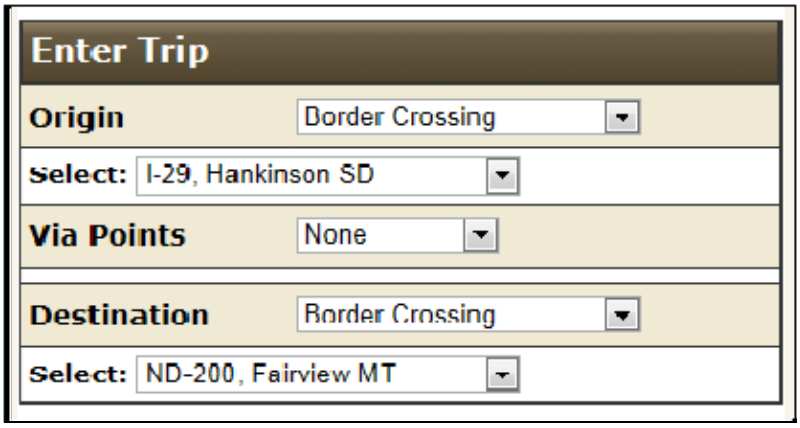


FIGURE 10: ENTER ROUTE POINTS: ORIGIN OR DESTINATION BORDER CROSSING

3. From the dropdown box beneath the Origin or Destination box, select the proper border crossing. The border crossing list displays the North Dakota highway name, the name of the city within North Dakota closest to the border crossing, and the state that the border crossing is with.
4. Enter the rest of your origin and destination, and click **Validate and Run**.

   *The **Route Results** panel displays your route. Review your route and driving directions. Expand the **Route Points** panel if you want to make any changes. Changes will require you to click **Validate and Run** to update your route.*

5. Click **Next** to continue the permit application process.

By Selecting a Location on a Map

To select an origin or destination of a route by clicking on a location on the map:

1. Generate a route as described on page 5.
2. On the ***Route Points*** panel, in an Origin or Destination field, select **Lat/Lon /Map**.

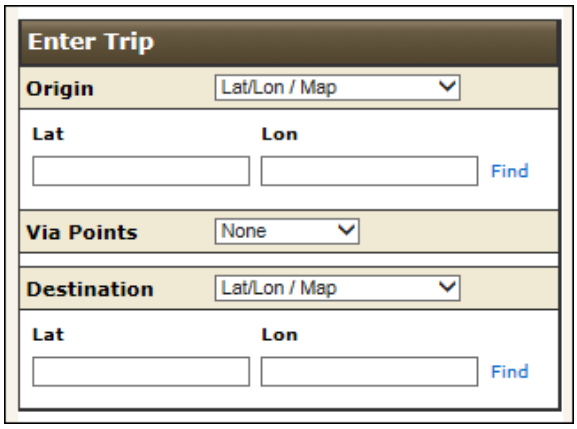


FIGURE 11: ENTER ROUTE POINTS: ORIGIN OR DESTINATION LAT/LON/MAP

3. If you know the actual latitude and longitude of the location to be used, enter that information into the **Lat** and **Lon** boxes. If you do not know the latitude and longitude locations, click the **Find** link to the right of the **Lat** and **Lon** boxes.

*The **Find Lat Lon on Map** screen is displayed to the right.*

4. Use the ***Find Lat Lon on Map*** screen to select a routing origin or destination by clicking on the map. See *Set Location Options* on page 20 for more information on using and navigating this screen.

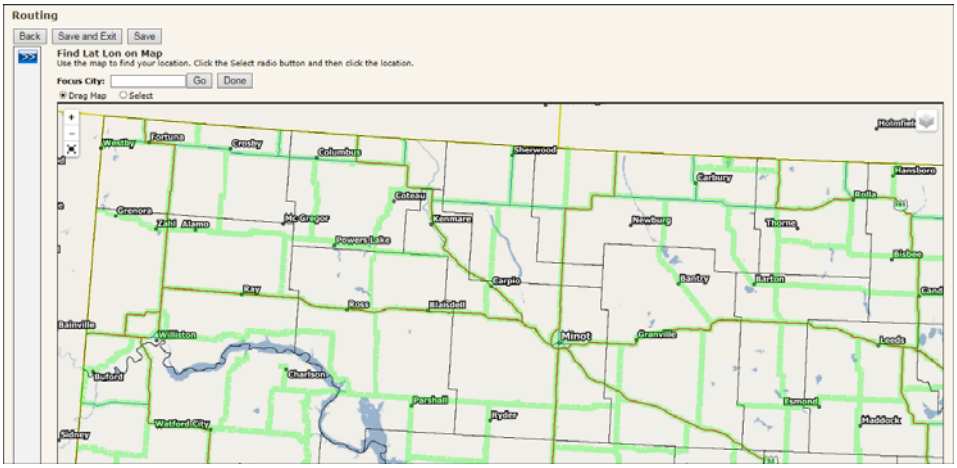
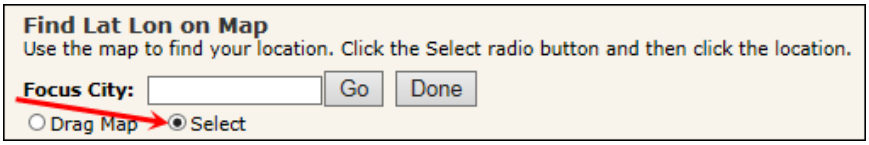


FIGURE 12: FIND LAT LON ON MAP SCREEN

TABLE 4: SELECT LOCATION SCREEN ELEMENTS

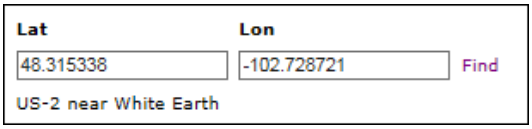
Element	Function
Map Area	Displays roads in the state
Zoom Toolbar	Use to zoom in and out of the map area. See Table 3 on page 14.
Drag Map Option	Select to drag the map to the area you would like to view.
Select	Select to set an origin or destination location to route.
Focus City Tool	Enter the name of a city or town and click **Focus City** to center the map on that city and zoom to a level where the city fills the screen.
Go Button	Click to go to the city or town you want to zoom in to after clicking **Focus City** and entering the city name.
Done Button	Click to have the lat/lon of the area selected on the map entered into the origin or destination location.

5. Use the *Zoom* tool (see Table 3 on page 14) and the *Focus City* tool to locate the origin or destination location.
6. Choose the **Select** option.



7. Click a location on the map.

*The **Select Location** screen is closed and the new location is entered in the Lat and Lon fields on the **Route Points** panel.*



8. Enter the rest of your origin and destination, and click **Validate and Run**.

*The Route Results are displayed to the right. Review your route and driving directions. Expand the **Route Points** panel if you want to make any changes. Changes will require you to click **Validate and Run** to update your route.*

9. Click **Next** to continue the permit application process.

Helpful Hints:

- When selecting a location on the map, you must select a location that is on a state maintained road. To do this make sure you are zoomed in sufficiently to click on the correct road and that the road is highlighted green.
- If you click too close to an intersection, the system will assume the intersection as your location selection.

Set Location Options

To select an origin or destination location to be routed after choosing the Lat/Lon/Map option and clicking Find:

1. Use the *Zoom* tool (see Table 3 on page 14) and the *Focus City* tool to locate origin or destination location.
2. Select the **Select** radio button.
3. Click a state maintained location (green highlight) on the map.

*The **Find Lat Lon on Map** screen is closed and the new location is entered in the Lat/Lon fields on the **Route Points** panel.*

To use the Focus City tool:

1. Enter the name of a city or town within the State.
2. Click **Go**.

The map centers to the city or town that you entered and zooms to a set level.

Map Zoom Operations

There are several methods to zoom in and out of the map area.

To center in to a location on the map:

1. Double-click a location on the map.

The map centers to that location.

To drag the map to a select location:

1. Select the **Drag Map** radio button.
2. Place the cursor in the map area, left-click with your mouse, and hold the button down.
3. Move the cursor around.

The map area moves with the cursor.

To zoom into a location on the map:

1. Double click a map location to center it on the map.
2. Use the Zoom tool (see Table 3 on page 14) or place your cursor on a map location and dial the scroll button on your mouse.

The map view zooms into the location where your cursor is located.

By Selecting Road and Mile Marker

To enter a road, mile marker and direction of travel as the origin or destination:

1. Generate a route as described on page 5.
2. On the ***Route Points*** panel, in an Origin or Destination field, select **Road and Mile Marker**.

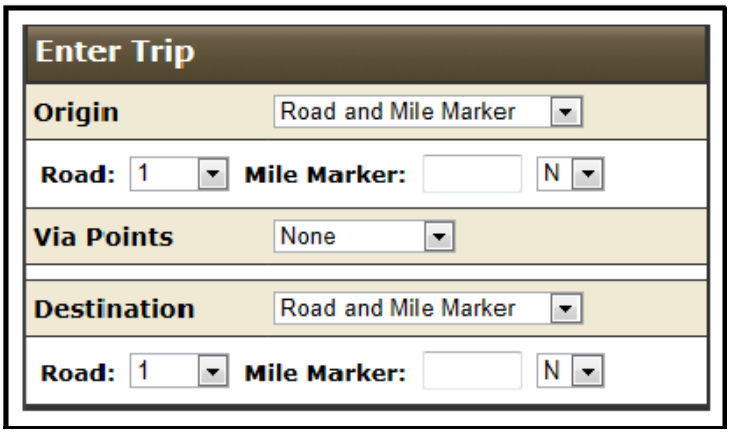
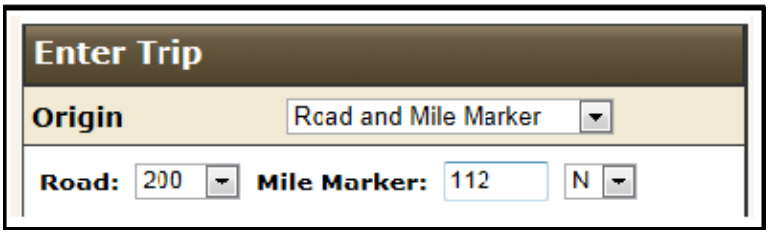


FIGURE 13: ENTER ROUTE POINTS: ORIGIN OR DESTINATION ROAD AND MILE MARKER

3. From the drop down boxes select your road and direction of travel. Enter the mile marker number.



4. Enter the rest of your origin and destination, and click **Validate and Run**.

*The **Route Results** panel displays your route. Review your route and driving directions. Expand the **Route Points** panel if you want to make any changes. Changes will require you to click **Validate and Run** to update your route.*

5. *Click **Next** to continue the permit application process.*

Helpful Hints:

- If your selection is on a divided highway, the direction of travel (N,S,E,W) must be correct to obtain expected results.

BY SELECTING TOWNSHIP/RANGE/SECTION

To select a township/range/section location as the origin or destination:

1. Generate a route as described on page 5.
2. On the ***Route Points*** panel, in an Origin or Destination field, select **Township/Range/Section**.

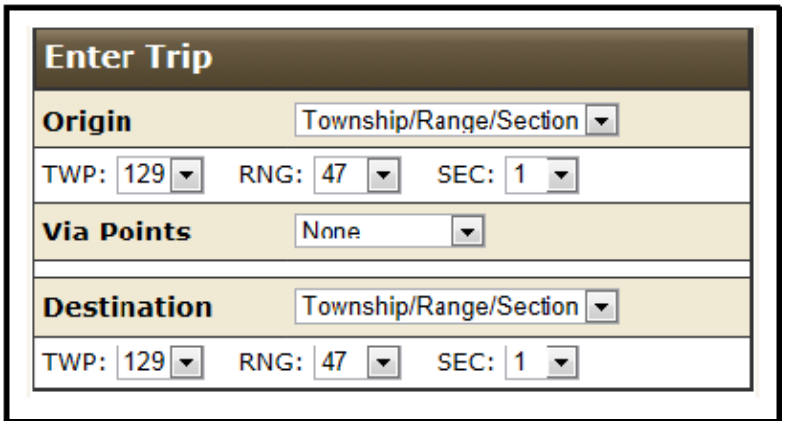


FIGURE 14: ENTER ROUTE POINTS: ORIGIN OR DESTINATION TOWNSHIP/RANGE/SECTION

3. Select the location using the three drop down selections.
4. Enter the rest of your origin and destination, and click **Validate and Run**.

   *The **Route Results** panel displays your route. Review your route and driving directions. Expand the **Route Points** panel if you want to make any changes. Changes will require you to click **Validate and Run** to update your route.*

5. Click **Next** to continue the permit application process.

Helpful Hints:

- If the location entered is not on a state maintained road, the system will suggest you enter another location or use the **Find on Map** feature as described on page 17.

Routing Methods

You can generate a basic point to point route, or you can stipulate that a route be generated:

- Through specified Via Points (see page 25)
- Along specified roadways (see page 24)

Point-To-Point

To generate a point-to-point route without designated Via Points or roadways:

1. Begin generating a route as described on page 5.

   *The **Route Points** panel is displayed.*

2. Select the **None** option in the **Via Points** section.

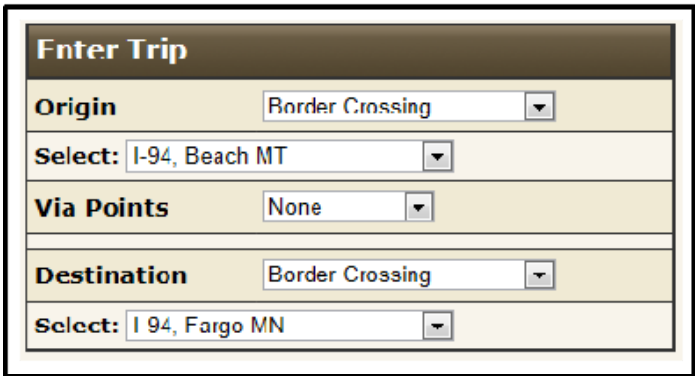


FIGURE 15: ENTER ROUTE POINTS: VIA POINTS NONE

3. Choose your origins and destinations to be any combination of the following:
   - Specific address
   - Intersection
   - Border crossing
   - Lat/Lon / Map
   - Road and Mile Marker
   - Township/Range/Section

4. Click **Validate and Run**.

   *The **Route Results** panel is displayed to the right. Review your route and driving directions. Expand the **Route Points** panel if you want to make any changes. Changes will require you to click **Validate and Run** to update your route.*

5. Click **Next** to continue the permit application process.

HIGHWAY NAMES

This routing method lets you:

- Stipulate a path between an origin and destination
- Identify one or more highways to use as a "Via Point" within the generated route.

To use this feature, list the roadways that you want your route to take.

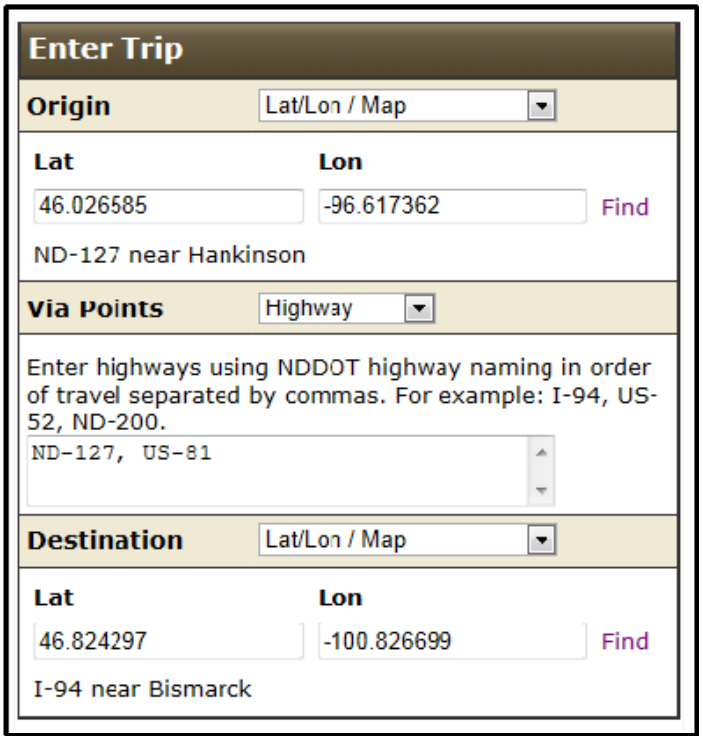


FIGURE 16: ENTER ROUTE POINTS: VIA POINTS HIGHWAY

To generate a route Via specified roadways:

1. Select an origin and destination as described on page 9.
2. In the **Via Points** section, select the option **Highway**. The Highway Names fields are displayed.
3. In the **Highway Names** field enter the names of roadways that the system should use to generate the route in the order of travel separated by commas.
4. Click **Validate and Run.**

*The **Route Results** panel is displayed showing your route from origin to destination Via the highway(s) you entered. Review your route and driving directions. Expand the **Route Points** panel if you want to make any changes. Changes will require you to click **Validate and Run** to update your route.*

5. Click **Next** to continue the permit application process.

Understanding Highway Names

The entered Via Highways are recommendations, not requirements. If the route requested is blocked by restrictions or is perceived to be otherwise unroutable or excessive in distance compared to the origin and destination only route, the system will ignore the request and route an approved route.

For best results, use the official ND DOT highway names:

TABLE 5: OFFICIAL ND DOT HIGHWAY NAMES

Road Type	Naming Convention	Examples
Interstate Highways	I-XX Where XX is the route number	I-29, I-94
US Highways	US-XX Where XX is the route number	US-52, US-281
State Highways	ND-XX Where XX is the route number	ND-43, ND-200

Find On Map

To generate a route through designated map points:

1. Select an origin and destination as described on page 9.
2. In the **Via Points** section, select the option **Find on Map**.

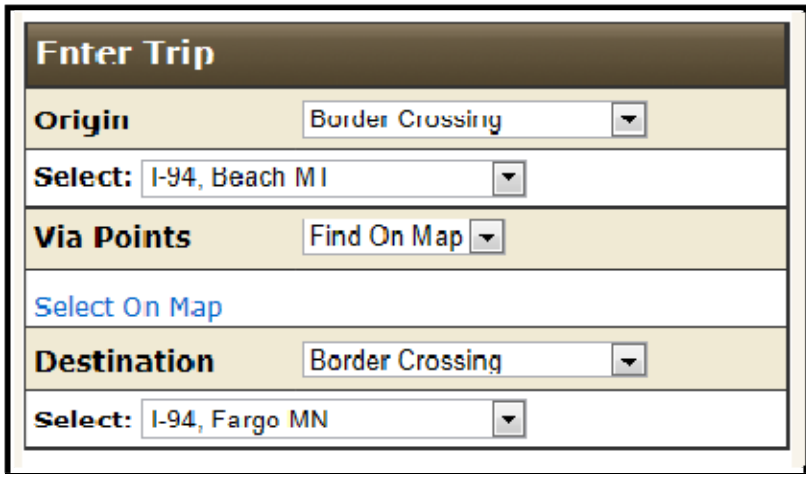
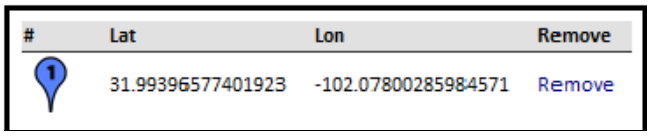


FIGURE 17: ENTER ROUTE POINTS: VIA POINTS FIND ON MAP

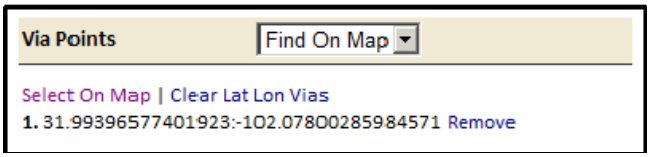
3. Click the **Select on Map** link, and the ***Select Lat/Lon Vias on Map*** window is opened.

4. Zoom in and move around the map as described on page 20. You must be zoomed in to street level to click a location on the map as a Via Point.
5. To select a Via Point select the **Select** radio button and left click on the map in the location you wish to add.

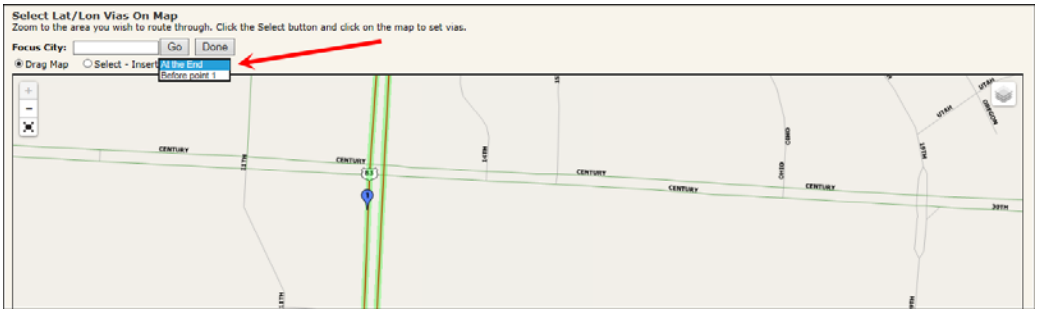
The Via Point selected will be added to the list beneath the map and a numbered marker will be added to the map.



The same Via Point location will be placed in the **Via Points** section of the Enter Trip box.



6. Add additional Via Points to the list by repeating the above two steps. Via Points do not have to be entered in consecutively traveled order. When selecting each Via Point, decide if you want to add this point to the end of the list or before a specific Via Point.



*Via Points can be individually removed from the list by clicking the **Remove** link on that line. The entire list can be removed by clicking the **Clear Lat Lon Vias** link in the Via Points box on the left.*

*Once finished click the **Done** button. The Vias will be entered into the trip between the origin and the destination.*

7. Click **Validate and Run.**

*The **Route Results** panel is displayed showing your route from origin to destination with the Find on Map Via(s) you entered. Review your route and driving directions. Expand the **Route Points** panel if you want to make any changes. Changes will require you to click **Validate and Run** to update your route.*

8. Click **Next** to continue the permit application process.

Generate Split Trip

Split trips are two or more separate routes under the same permit. Split trip permits are used when:

- A vehicle/load will leave the State and re-enter on same or different highway
- The vehicle/load *must* travel on off-system roadways in the middle of a route

To generate a split trip:

1. Generate a route as described on page 5.
   On the ***Route Points*** panel, additional split trips can be entered by selecting one of the **Split Trip** boxes beneath the Enter Trip box.
2. Click in the checkbox to the left of **Split Trip** to provide an additional Enter Trip box.

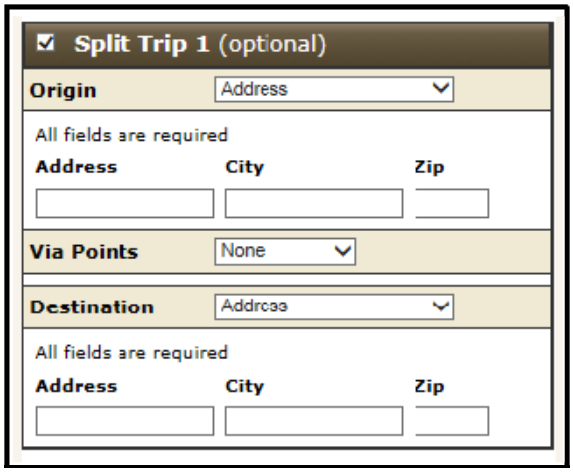


FIGURE 18: ENTER ROUTE POINTS: SPLIT TRIP, POINT-TO-POINT

You can route split trips through specified locations as described on page 25.
You can route split trips over specified roadways as described on page 24.

3. Choose your origins and destinations to be any combination of the following:
   - Specific address
   - Intersection
   - Border crossing
   - Lat/Lon / Map
   - Road and Mile Marker
   - Township/Range/Section

4. Enter any additional Via Points.
5. Click **Validate and Run**.

   *The Trip Results are displayed to the right. Review your route and driving directions. Expand the **Route Points** panel if you want to make any changes. Changes will require you to click **Validate and Run** to update your route.*

6. Click **Next** to continue the permit application process.

Upload Vehicle Loading Diagram

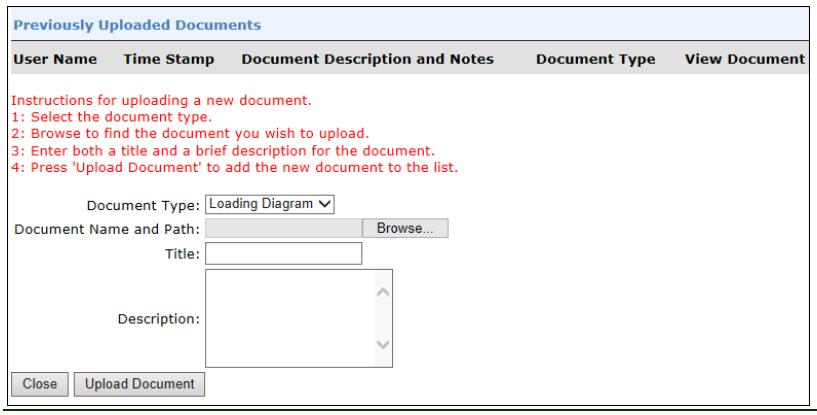
This feature allows users to upload vehicle loading diagrams when required. It is used primarily for any vehicle that is greater than 250,000lbs, for any trailer with trunions or side by side dollies, and any dual lane trailers or double trailer configurations. This feature is also used for special mobile equipment (self propelled) (excluding earthmoving) when the track width is less than 8'6" in width.

Note: For permits that require a loading diagram, the user cannot proceed from the routing screen until the diagram has been uploaded.

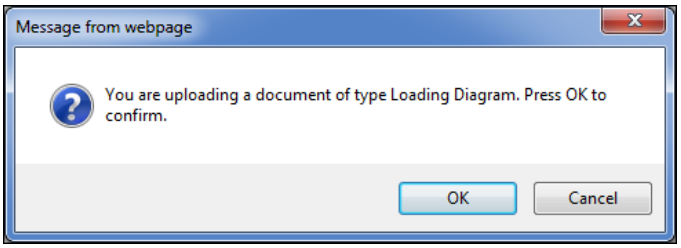
To upload a vehicle loading diagram:

1. Click the **Upload Vehicle Loading Diagram** link.

   *The **Upload Documents** screen is displayed. The document you will upload must already be saved to your computer. Word or PDF documents are recommended to ensure that other users can view the uploaded document.*



2. Select the **Document Type** from the pull down list. Loading Diagram is the default.
3. Click **Browse** to locate the file on your computer that you wish to upload.
4. Enter a **Title** and **Description** for the document you are uploading.
5. Click **Upload Document** to upload the selected document to this permit application.
6. Click **OK** on the confirmation page to continue. Click **Cancel** to cancel.



7. Click **Close** to return to the permit application.

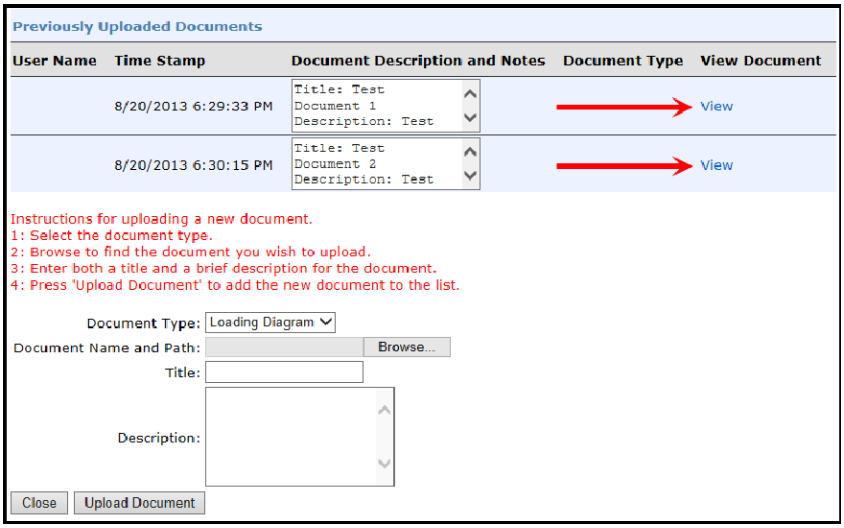
The uploaded document feature is available to industry and state users.

To view a previously uploaded vehicle loading diagram:

1. Click the **Upload Vehicle Loading Diagram** link.

*The **Upload Documents** screen is displayed and includes a list of previously uploaded documents.*

2. Click the **View** link for the document you wish to view.



The document will open for viewing, printing or saving to your computer.

3. Close the document and click **Close** to return to the permit application.

ROUTE RESULTS PANEL

Once you have clicked **Validate and Run**, the ***Route Results*** panel will display as shown below. The Route Results Panel Elements table defines the information found on the ***Route Results*** panel.

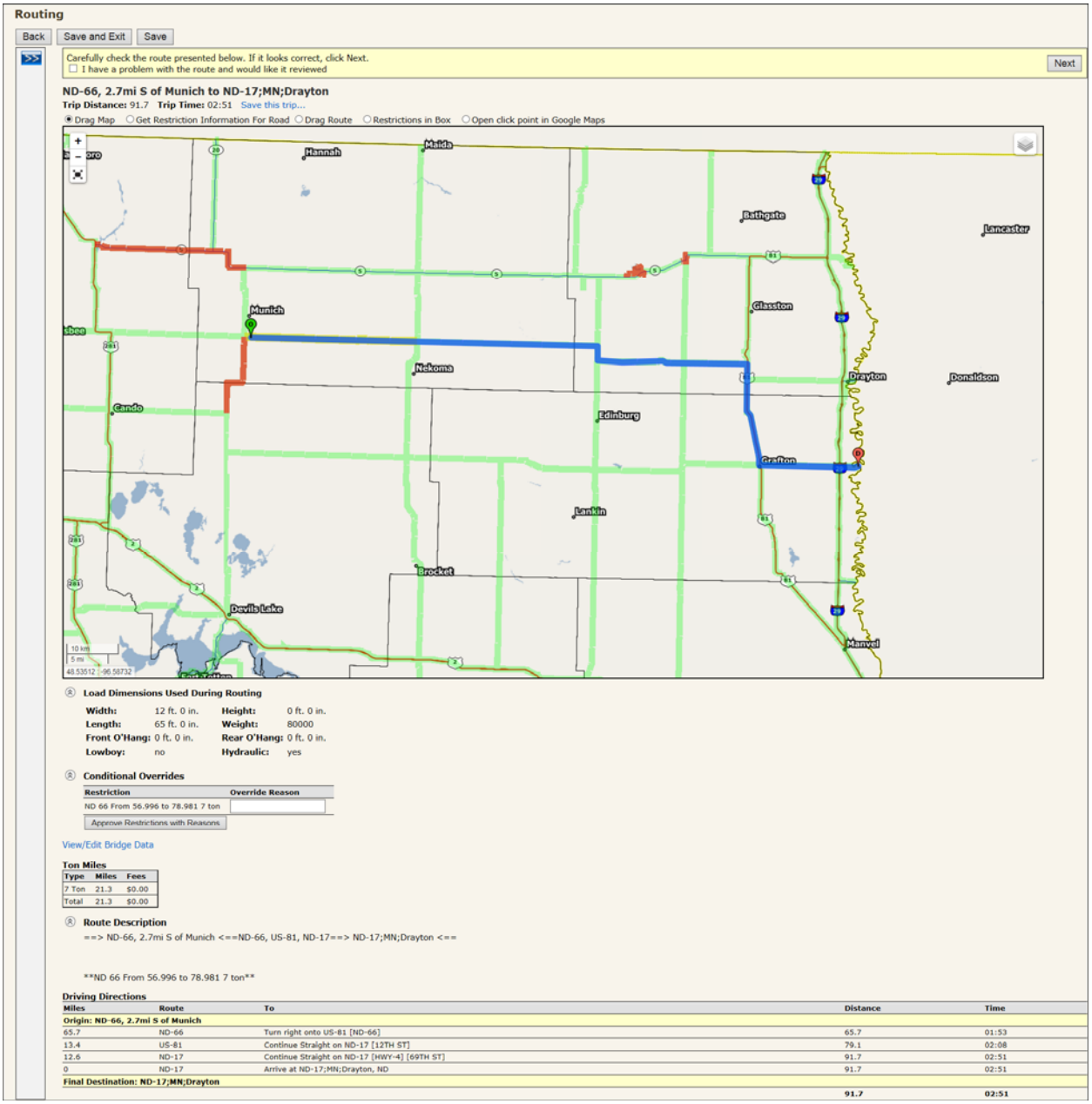


TABLE 6: ROUTE RESULTS PANEL ELEMENTS

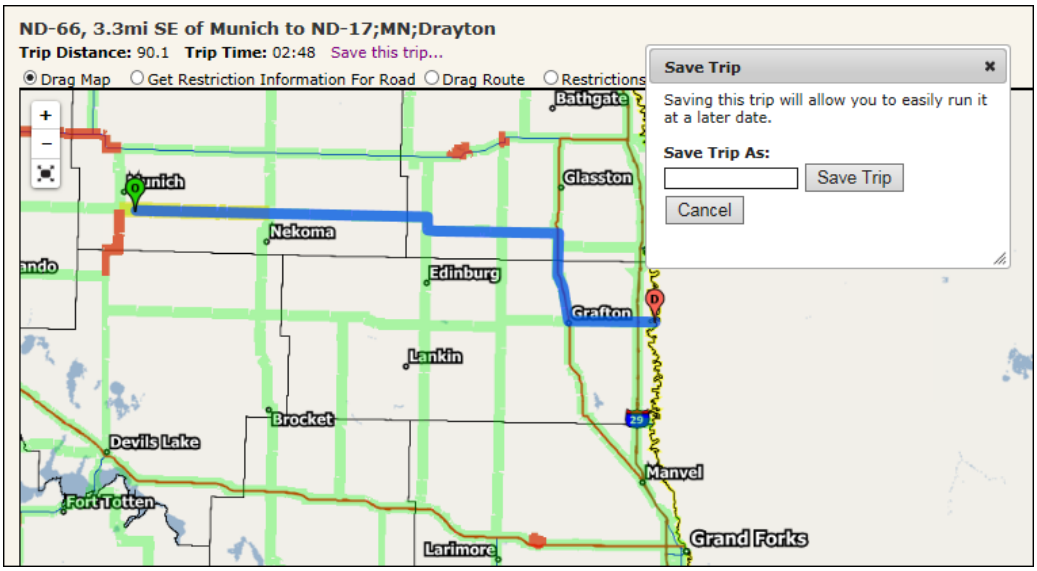
Element	Function
Back Button	Click to go back one page in the permit application process.
Save and Exit Button	Click to save your progress and exit the permit application.
Save Button	Click to save your progress.
Next Button	Click to proceed to the next page in the permit application process once routing is complete.
Expand Chevron	Click to expand the ***Routing Points*** panel to view/edit your route.
Route Review Checkbox	Check this box to have your route reviewed. A text box will display to add notes describing what you would like for the route to do.
Save This Trip Link	Click this link to name this trip and have it recalled for future permit applications.
Drag Map	Default radio button. This will allow you to click on the map and drag it to view different areas of the map.
Get Restriction Information for Road	Select this radio button to view restriction information for a red highlighted road segment on the map. After you click this option, click on the road segment in question. You must be zoomed into street level.
Drag Route	Select this radio button to perform the Drag Route feature as described on page 41.
Restrictions in Box	Select this radio button and then click and drag to form a box on the map. The restrictions found within the box will be listed. If there are a large amount of restrictions displayed on the map, reduce the size of the box for best results.
Open Click Point in Google Maps	Select this radio button then click a point on the map to open the location in Google Maps. Close to continue with your permit application.
Load Dimensions Used During Routing	Expand this section to review the load dimensions used in the permit application.
Conditional Overrides	If there are any conditional overrides, this section will expand. Conditional overrides must be approved before the permit can be issued.

TABLE 6: ROUTE RESULTS PANEL ELEMENTS

Element	Function
View/Edit Bridge Data Link	This link allows users to view the bridge analysis and to modify bridge load weights for vehicles with non standard trailer types as described on page 44.
Ton Miles	This section will display if there is any travel on ton mile roads and will calculate the ton miles and fees. If the user wishes to reduce the ton miles, they can check the box for **Minimize Ton Mile Routing** on the ***Route Points*** panel.
Route Description	Expand this section to view the abbreviated route without the turn by turn, distance, and time calculations.
Driving Directions	This section displays the detailed turn by turn driving directions along with the calculated distance and time for travel.

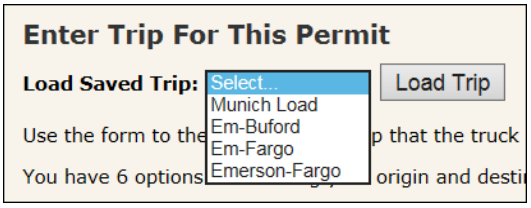
Save This Trip

From the ***Route Results*** panel, you can save a trip to recall for use at a later time. Click **Save this trip…** to open the *Save Trip* box. Enter a name for this trip and click **Save Trip.** The origin, destination and other routing points are saved to recall for a later permit.



Load Saved Trip

If you would like to use the origin, destination and other routing points from a previously saved trip, select a trip from the **Load Saved Trip:** dropdown and click **Load Trip**. The routing information will be populated. This information can be edited or kept the same. To obtain a route using this routing information, click **Validate and Run**. The system will always validate the route and provide a route based on current restrictions.



MINIMIZE TON MILE ROUTING

At times, the ton mile fees for a route can largely increase the cost of the permit. To avoid ton mile roads as much as possible for a route:

1. Generate a route as described on page 5.
2. Select Via Points if desired.
3. Check the box for **Minimize Ton Mile Routing.**
4. Click **Validate and Run.**

Be aware that this adjusted route may be longer than the default system route. To change your route to the system generated route and include ton mile fees:

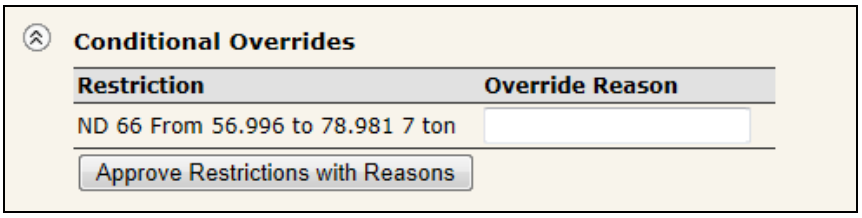
1. Expand the routing options panel to the left of the map.
2. Uncheck the box for **Minimize Ton Mile Routing**.
3. Click **Validate and Run**.

OVERRIDE RESTRICTIONS

There are two methods for overriding restrictions in the E-PERMITS routing system. Conditional overrides are done from the ***Route Results*** panel and are only for restrictions that were returned with the route results. Restricted roadway overrides are done from the map by clicking on the road segment.

CONDITIONAL OVERRIDES

If a State user enters a trip with an origin or destination on a road segment with restrictions that are not structures, the system will place conditional overrides on these restrictions and route the trip. The user is able to view the trip, route, and is able to save the route. However, the user will not be able to issue the permit until the conditional overrides have been approved. Any conditional overrides will be listed on the ***Route Results*** panel in the **Conditional Overrides** section. This section will expand by default if there are any conditional overrides used in the route.



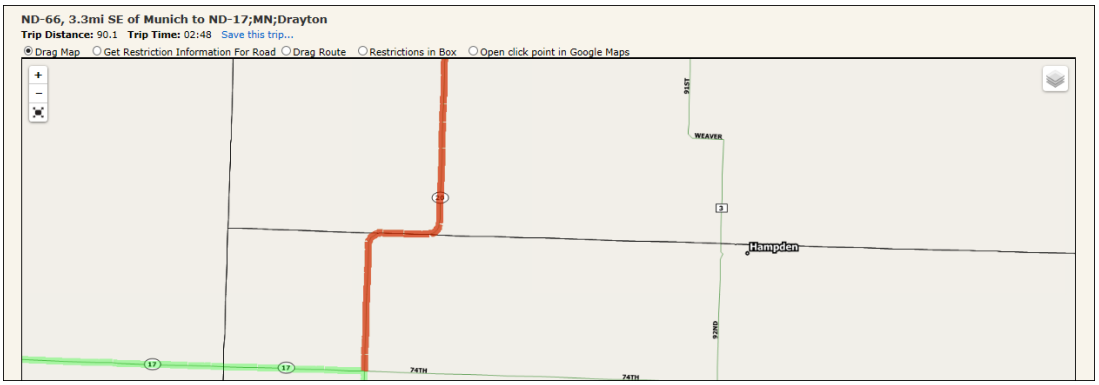
To approve the conditional overrides so the permit can be issued, enter the Override Reason in the boxes provided and click the **Approve Restrictions with Reasons** button. The overridden restrictions and their reasons will be printed on the permit and are saved in the audit trail.

Override Restricted Roadways

Sometimes routed permits must be issued through restrictions where possible. To do this, the restrictions must be overridden and a reason or approval provided.

To view the restrictions assigned to a roadway in the Route Results map and to create overrides to those restrictions:

The Route Results Map Area displays the roadways with the roadways restricted to the current vehicle/load.



1. Calculate a route for a permit application.
2. Select the **Get Restriction Info** option above the map area.

3. Zoom to a level where the restricted roadway you want to examine can be clearly seen.
4. Click the restricted roadway. The ***Restrictions Information*** screen is displayed for the roadway.

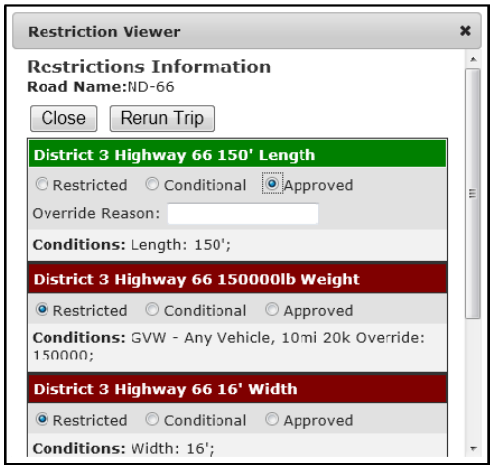


FIGURE 19: RESTRICTION VIEWER AND INFORMATION SCREEN

5. Select the **Approved** radio button to override the Restriction and enter an Override Reason. Select the **Restricted** radio button if it is determined to not override the Restriction. Select **Conditional** to conditionally override the restriction and view route results.

Note: The permit will not issue with conditional restrictions in place. To issue the permit you must select **Restricted** or **Approved** and enter an approval reason.

6. Click **Rerun Trip** to have the system recalculate the trip.
7. Click **Close** button or **X** to close the ***Restrictions Information*** screen.
8. Click **Next** to continue the permit application.

TABLE 7: RESTRICTIONS INFORMATION SCREEN ELEMENTS

Element	Function	
Road Name	The E-PERMITS routing system name of the current road segment	
Close Button	Click to close the ***Restrictions Information*** screen.	
Rerun Trip Button	Click to re-generate the current route with the current overrides assigned.	
Restriction Description	The details of each restriction assigned to the current road segment	
Restricted Option	Select to have the current restriction enforced	
Conditional Option	Select to ignore this restriction for the current road segment to view alternate route possibilities if an approval can be obtained.	
Approved Option	Select after approval is obtained. **Note:** State users are responsible for noting approvals received for routing.	
Restriction Condition	Height	Roadway restriction prohibits loads that are greater than the stated height
	Weight	Roadway restriction prohibits loads that are greater than the stated weight

TABLE 7: RESTRICTIONS INFORMATION SCREEN ELEMENTS

Element	Function	
	Weight with Tolerance	Restriction based on the GVW provided by the DOT with a tolerance of 20,000lbs for no more than 10 miles at the origin and or destination only.
	Length	Roadway restriction prohibits loads that are greater than the stated length
	Width	Roadway restriction prohibits loads that are greater than the stated width
	Turn	Roadway restriction prohibits loads to make turns here
	No Permit	Roadway restriction prohibits any oversize/overweight traffic

The following provides sample restrictions that can be found in the EAR restriction database and provides a description of the purpose of the restrictions.

Note: This list cannot be all inclusive as restrictions may vary from the sample shown.

TABLE 8: RESTRICTION TYPES

Type of Restriction	Purpose
Height Restriction	Identify roads where trucks in excess of the limit are unable to travel due to overhead obstructions such as bridges, signs, or wires.
Example: **I94 EB: Bridge - 16'3** ◉ Restricted ○ Conditional ○ Approved **Conditions:** Height: 16'3;	
No Permit	Identify roads where permit loads are not permitted or require special permission to travel.
Example: **Bismarck: No Permits (City Approval Needed)** ◉ Restricted ○ Conditional ○ Approved **Conditions:** No Permits: true;	

TABLE 8: RESTRICTION TYPES

Type of Restriction	Purpose
Construction Width Limit	Identify roads with a width limit due to construction.
Example: **ND 13 E: Width limit 12'** ◉ Restricted ○ Conditional ○ Approved **Conditions:** Width: 12';	
Ton Mile Restriction	Identify roads with permanent or seasonal ton mile restrictions. The restriction lists the weight for each type of axle group that can be used on the road without DOT District Engineer approval.
Example: **8 ton ND 1804 N From 247.145 to 267.1 8 ton** ◉ Restricted ○ Conditional ○ Approved **Conditions:** 5 Axle Group Weight: 78000; 6 Axle Group Weight: 78000; GVW - Any Vehicle: 105500; GVW - Single: 24000; Quad Weight: 64000; Tandem Weight: 40000; Tridem Weight: 50000;	
DOT Length Limit	Identify roads on which a load in excess of the limit is not allowed to travel on except with the approval of the DOT District Engineer.
Example: **District 7 Highway 1804 150' Length** ◉ Restricted ○ Conditional ○ Approved **Conditions:** Length: 150';	
DOT Width Limit	Identify roads on which a load in excess of the limit is not allowed to travel on except with the approval of the DOT District Engineer.
Example: **District 7 Highway 1804 16' Width** ◉ Restricted ○ Conditional ○ Approved **Conditions:** Width: 16';	

TABLE 8: RESTRICTION TYPES

Type of Restriction	Purpose
DOT Weight Limit	Identify roads on which a load in excess of the limit is not allowed to travel on except with the approval of the DOT District Engineer. **Note**: Approval is not required for loads in excess of the limit by no more than 20,000lbs for travel to or from the origin or destination of up to 10 miles each.
Example: **District 7 Highway 1804 150000lb Weight** ◉ Restricted ○ Conditional ○ Approved **Conditions:** GVW - Any Vehicle, 10mi 20k Override: 150000;	
Earthmoving Equipment Axle Weight	Identify axle weight limits for self propelled earthmoving equipment loads.
Example: **Earthmoving Equipment 52000 Lbs** ◉ Restricted ○ Conditional ○ Approved **Conditions:** Earth-Moving Eqmnt Axle Wght: 52000;	
Interstate Permit Travel Not Allowed	Identify roads in which the interstate permit cannot be used.
Example: **Interstate Permit type (ACS except I-29; I-94; I-194)** ◉ Restricted ○ Conditional ○ Approved **Conditions:** Permit Type Restricted: 7;	
LCV Permit Restriction	Identify roads in which the LCV permit type may not be used.
Example: **LCV Permit type (I-29; I-94; I-194; RDS < 80000)** ◉ Restricted ○ Conditional ○ Approved **Conditions:** Permit Type Restricted: 8;	

TABLE 8: RESTRICTION TYPES

Type of Restriction	Purpose
Piggyback Scraper Speed Limit	Identify the speed restriction imposed on a road for a load consisting of a piggyback scraper. This restriction does not affect routing.
Example: **ND-810 SPEED RESTRICTED TO 40 MPH WHEN PIGGYBACKING SCRAPERS** ◉ Restricted ○ Conditional ○ Approved **Conditions:** Permit Type Restricted: 9;	
Earthmoving Equipment No Movement Permitted	Identify roads upon which earth moving equipment cannot be driven.
Example: **Earthmoving Equipment No Movement Permitted** ◉ Restricted ○ Conditional ○ Approved **Conditions:** Permit Type Restricted: 10;	

DRAG ROUTE

The E-PERMITS routing system allows for a route to be altered with the Drag Route functionality.

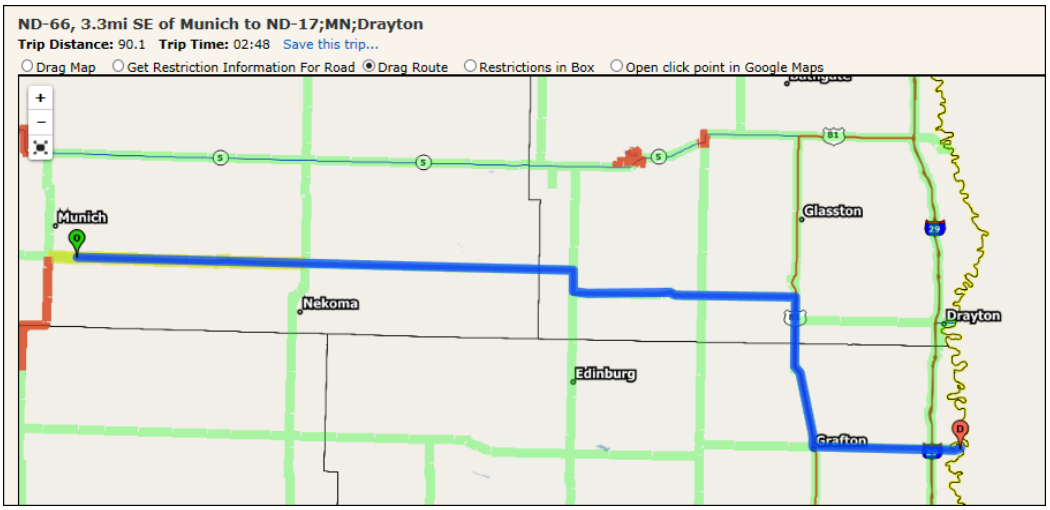
To use Drag Route:

1. Generate and calculate your trip as described beginning on page 5.
2. On the ***Route Results*** panel zoom into the area of the trip that you wish to alter.

Ensure that you can still see the blue route line and the area you wish to alter the route to on the map.

3. Select **Drag Route** from the radio buttons above the map.
4. Hover the mouse over the blue route line on the road at which you want to start to alter the route.

A small white square should appear when you hover over the blue route line.



5. *Click and hold* the left mouse button on the blue route line.
6. Drag the mouse to the point that you wish for the route to take. The system will generate the alternate route line in purple. Do not let go of the mouse button.

Avoid choosing a location that is contained within a restriction. If such a location is hovered over, the orange route line will disappear. Likewise, the orange route line will disappear if you move to a location that cannot be routed to due to a lack of roads.

The orange line will be displayed showing you the new proposed route line.

Moving the mouse while still holding down the left mouse button will preview other possible options for the route to take.

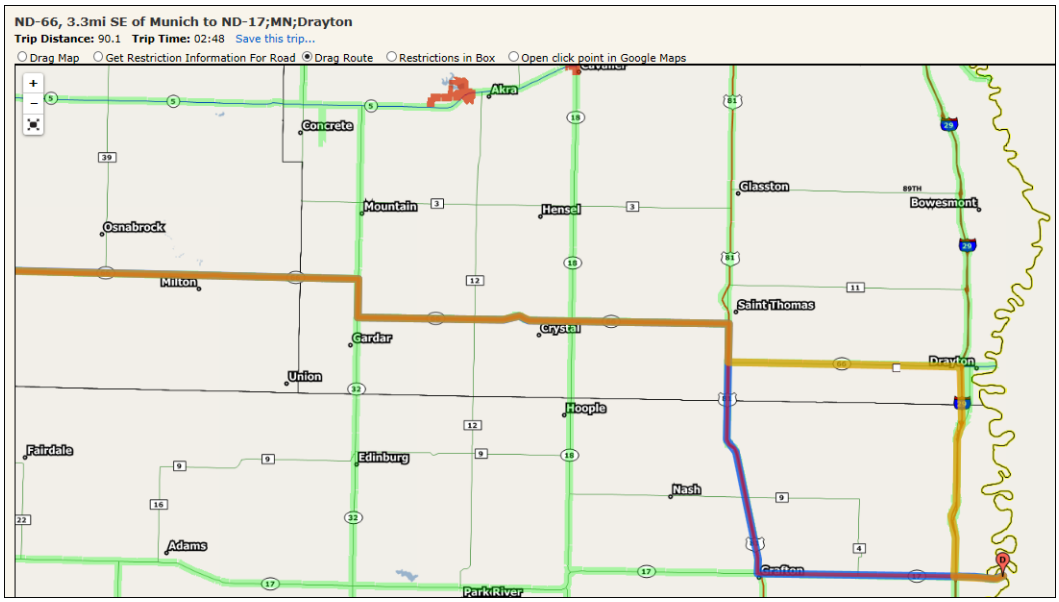


FIGURE 20: DRAG ROUTE

7. When the purple route line is displaying the desired route to be calculated, let go of the left mouse button. The trip will automatically be calculated.

*The new trip will appear with the altered route on the **Route Results** panel.*

8. To return to the original route, expand the ***Route Results*** panel and click **Validate and Run**.

AMEND ROUTE

Routes can be amended before the permit has been issued by accessing the pending application and adjusting the route. If there is a restriction change that affects the route once the permit has been issued, the industry user and the permit office will receive notification that there has been a restriction change that affects the route. In this scenario, the route can be amended after the permit has been issued.

To amend a Route:

The origin, destination or entire route should be changed only if travel has not begun. The following types of route changes can be made:

- **Change origin and or destination**
- **Change the entire route**

1. Identify the permit to amend and submit to routing.
2. To change the origin, destination, or entire route, modify the route on the ***Route Points*** panel to the left of the Route Results. You may use all origin, destination, and Via options as when doing an original route. For routing options see information beginning on page 9. This feature should only be used if travel has not begun.
3. Click **Validate and Run**.
4. Click **Next** to continue the amended permit application.

VIEW/EDIT BRIDGE DATA

If axle spacings and weight have been added to the permit application the system will perform live load analysis to determine the impact the vehicle and load will have on bridges. This analysis will be performed automatically, and the user is able to see the results of the analysis by using these steps:

1. Generate a route as described on page 5.
2. Click the **View/Edit Bridge Data** link.

Note: The routing process may take longer with heavy loads as the system attempts to identify those bridges that cannot carry the vehicle and load.

Once you have clicked the **View/Edit Bridge Data** link the **Bridge Analysis Summary** page will be displayed.

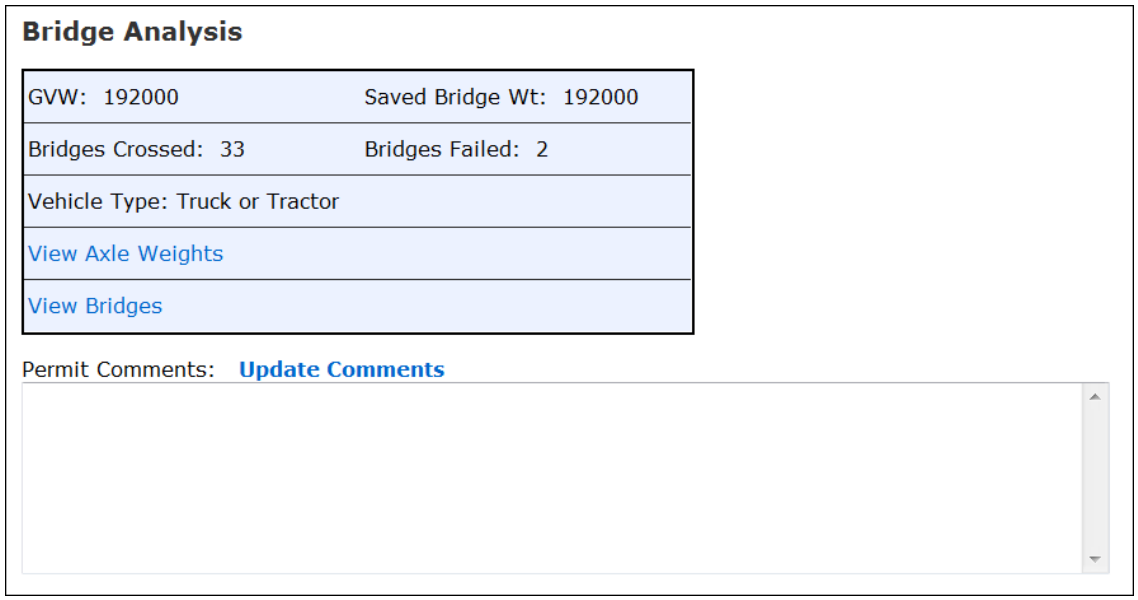


TABLE 9: BRIDGE ANALYSIS SUMMARY ELEMENTS

Element	Function
GVW	Lists the GVW of the vehicle and load
Saved Bridge Wt	Lists the total of the entered bridge weight values
Bridges Crossed	Lists the total number of bridges that passed the live load analysis and that the route crosses
Bridges Failed	Lists the bridges that failed that live load analysis and that failure resulted in a longer route for the permit

TABLE 9: BRIDGE ANALYSIS SUMMARY ELEMENTS

Element	Function
Vehicle Type	Lists the bridge vehicle type. Options are: • Truck or Tractor • Self propelled equipment • Double trailer • Trunion Vehicle type is selected by the permit applicant and is used by the DOT Bridge Division to calculate reduced bridge weights for non-standard gauge equipment.
View Axle Weights Link	Click this link to display the axle weights and allow bridge users to enter reduced bridge weights to calculate the live load analysis for non-standard gauge equipment.
View Bridges Link	Click this link to display the list of brides that passed the live load analysis and are on the route or failed the live load analysis and required the route to change.
Permit Comments	This textbox allows bridge division users to add comments to this bridge analysis. These comments are private, are not available to the industry user, and are not included on the permit.
Update Comments link	Click this link to save changes made in the Permit Comments text box. This link is not visible unless the user has Bridge Division permission.

Click the **View Axle Weights** link to display the axle weights and to enter reduced bridge weights to calculate the live load analysis for non-standard gauge equipment.

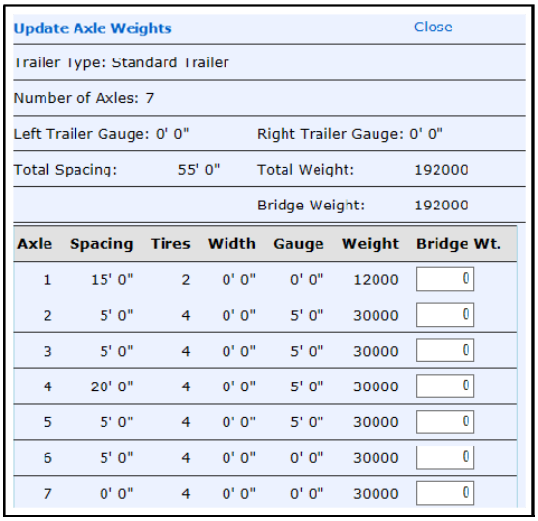


TABLE 10: AXLE WEIGHT ELEMENTS

Element	Function
Update Axle Weights Link	If the user has modified the Bridge Wt for any axle they must click the **Update Axle Weights** link to save the change. This link is not visible unless the user has Bridge Division permission.
Close Link	Closes the Axle Weight panel
Trailer Type	Lists the bridge trailer type. Options are: • Standard Trailer • Self propelled equipment • Double trailer • Trunion This vehicle type is used by the DOT Bridge Division to calculate reduced bridge weights for non-standard gauge equipment.
Number of Axles	Lists the number of axles on this vehicle
Left Trailer Gauge	If the trailer type is Double trailer then the gauge of the left trailer when viewed from the front of the vehicle is listed here. If the trailer type is any other type, this will be 0.
Right Trailer Gauge	If the trailer type is Double trailer then the gauge of the right trailer when viewed from the front of the vehicle is listed here. If the trailer type is any other type, this will be 0.
Total Spacing	Lists the bridge distance: distance from the center of the first axle to the center of the last axle on the vehicle.
Total Weight	Lists the GVW of the vehicle and load
Bridge Weight	Lists the total of the entered bridge weight values

TABLE 10: AXLE WEIGHT ELEMENTS

Element	Function
Axle/Spacing/ Tires/Weight/ Bridge Wt Box	List the following for each axle:

Axle	Lists the axle number starting with 1 for the first axle on the vehicle
Spacing	Distance in feet and inches from the current axle to the succeeding axle. This distance is always 0'0" for the last axle.
Tires	Lists the number of tires on the axle
Width	List the width of the axle for the outside edges of the outside tires.
Gauge	Lists the gauge for the axle. If none of the axles have non-standard gauge, this column will not be listed.
Weight	Lists the actual weight for the axle
Bridge Wt	If a Bridge Division user wishes to change the weight passed to the live load analysis application for non-standard gauge vehicle the user can do so here. Any weight entered in this field should be the full axle weight reduced using ND DOT Bridge Division formulas based on the trailer type, actual weight, and gauge. If no Bridge weight is used, the system will use the value in the Weight field. **Note**: If a weight is entered in the Bridge Wt field, that number will be divided in half when submitting to the live load analysis application.

Click the **View Bridges** link to see the list of failed and crossed bridges.

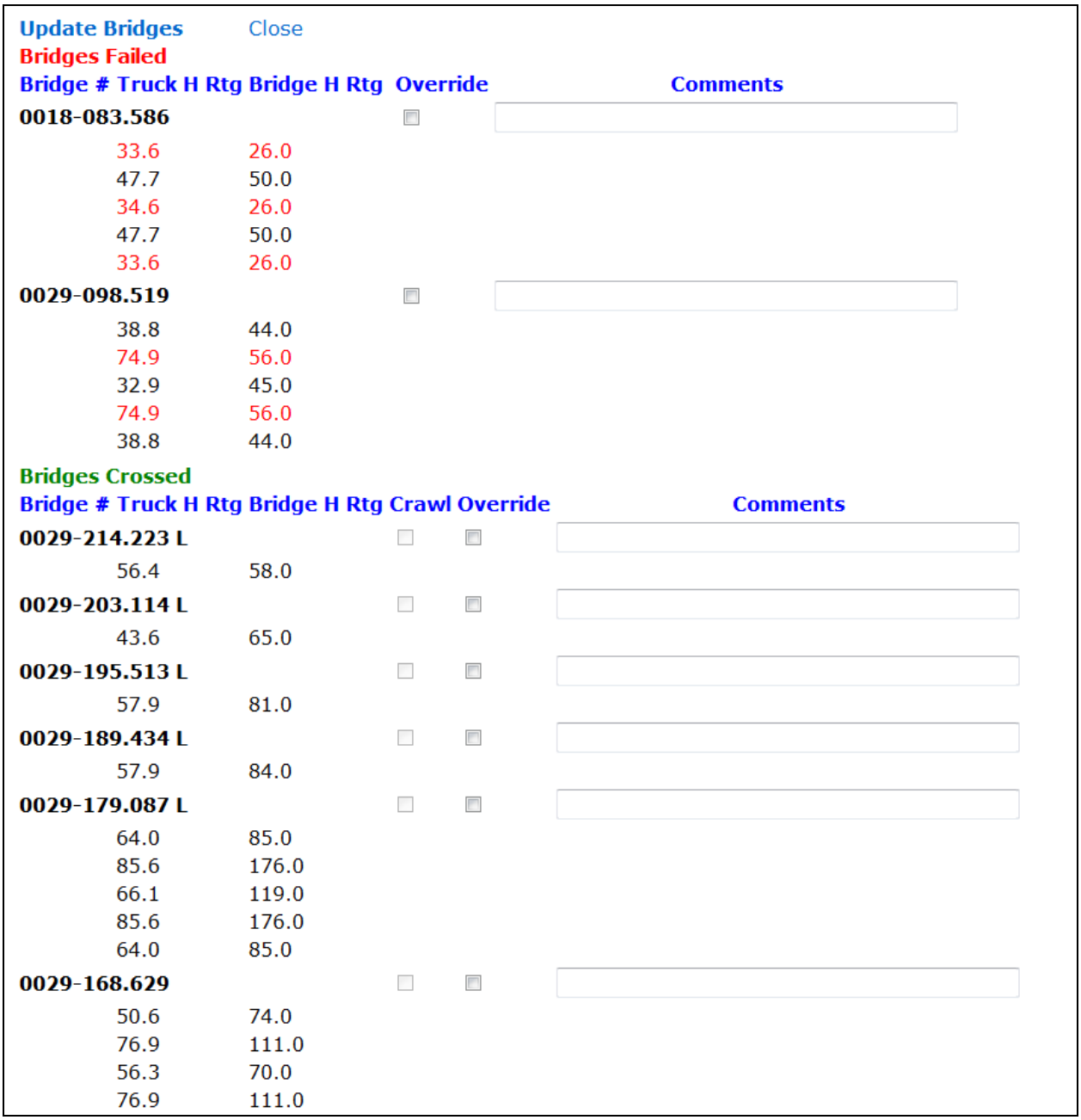


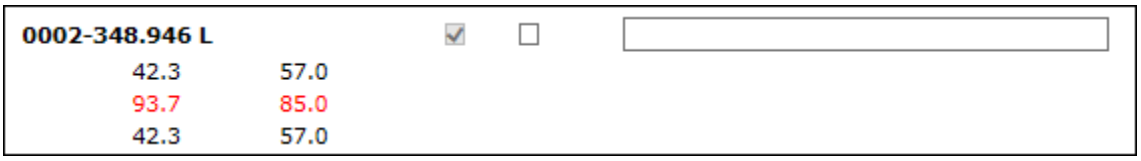
TABLE 11: BRIDGE LIST ELEMENTS

Element	Function
Update Bridges Link	If the user has modified the comments or the override checkbox for any bridge they must click the **Update Bridge** link to save the change. This link is not visible unless the user has Bridge Division permission.
Close Link	Closes the **Bridge List** panel
Bridges Failed List	Lists the bridges that failed the live load analysis and that failure resulted in a longer route for the permit
Bridge #	Lists the ND DOT bridge number for each bridge in the failed and crossed lists. A bridge is failed if the calculated truck HS 15 rating exceeds the bridge HS 15 rating by an amount that exceeds the impact value for any span or pier in the bridge.
Truck H Rtg	Lists the truck HS 15 rating calculated by the ND DOT Bridge Division live load analysis application for each span and pier for each bridge in the failed and crossed lists. **Note**: If the Truck HS 15 Rating exceeds the bridge HS 15 rating for any span or pier by more the 5% the Truck H Rtg and Bridge H Rtg numbers will be in red font.
Bridge H Rtg	Lists the bridge HS 15 rating as calculated by the ND DOT Bridge Division for each span and pier for each bridge in the failed and crossed lists. **Note**: If the Truck HS 15 Rating exceeds the bridge HS 15 rating for any span or pier by more the 5% the Truck H Rtg and Bridge H Rtg numbers will be in red font.
Override Checkbox	The bridge division user can check this box to override the results of the live load analysis. This can only be used to allow the system to take a load over a bridge that the live load analysis failed. The use must click the **Update Bridge link** to save an override selection.
Comments Textbox	The bridge division user can add comments to be included on the permit. The use must click the **Update Bridge** link to save a comment.
Bridges Crossed List	Lists the bridges that passed the live load analysis and that the route crossed

TABLE 11: BRIDGE LIST ELEMENTS

Element	Function
Crawl Checkbox	If the Truck HS 15 rating exceeds the Bridge HS 15 rating by more than 5%, and less than or equal to the impact rating for any span or pier, the crawl checkbox will be checked for that bridge. For piers the system will use the smaller impact rating for the adjacent spans for this calculation. The checkbox will be automatically checked, and the user is unable to check or uncheck this option. If this checkbox is checked for a bridge, the system will automatically include the crawl instruction within the driving directions for that bridge.
Bridge Analysis Results	The system lists the Truck HS 15 rating and the Bridge HS 15 rating for each component of the bridge. These components are the spans and the piers of the bridge. The results are listed in order for the bridge as entered into the live load analysis application. Generally these components will be span, pier, span, etc. However, some bridges do not have piers between the spans. In these instances multiple spans may be listed consecutively.

Bridge with the crawl flag checked.



If a Bridge Division user wishes to override a bridge, add a comment, or change the Bridge Wt for a bridge, they must do so on the screen, save the changes, close the screen, and then rerun the trip using the **Validate and Run** button on the ***Routing*** screen.

ADMINISTRATIVE INTERFACE FUNCTIONS

The Administrative Interface provides access to reports and allows users to modify system parameters. The options a user sees on this interface are controlled by the user's ITD Active Directory groups they belong to.

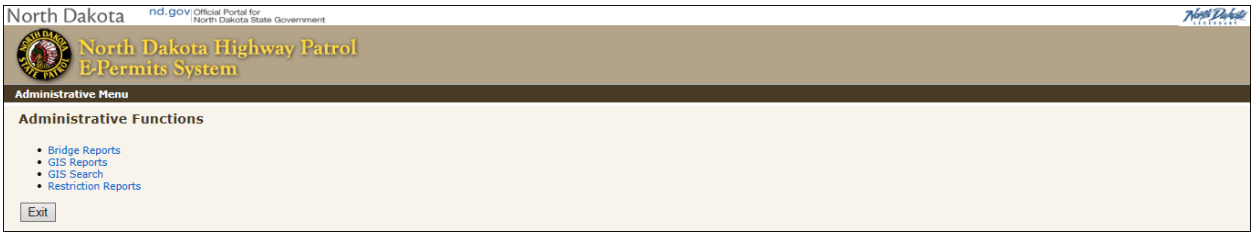


TABLE 12: ADMINISTRATIVE SCREEN ELEMENTS

Element	Function
Bridge Reports Link	Provides access to bridge reports
GIS Reports Link	Provides access to GIS reports
GIS Search Link	Provides access to GIS search functions
Restriction Reports Link	Provides access to Restriction reports
Exit	Provides an exit from the administrative interface

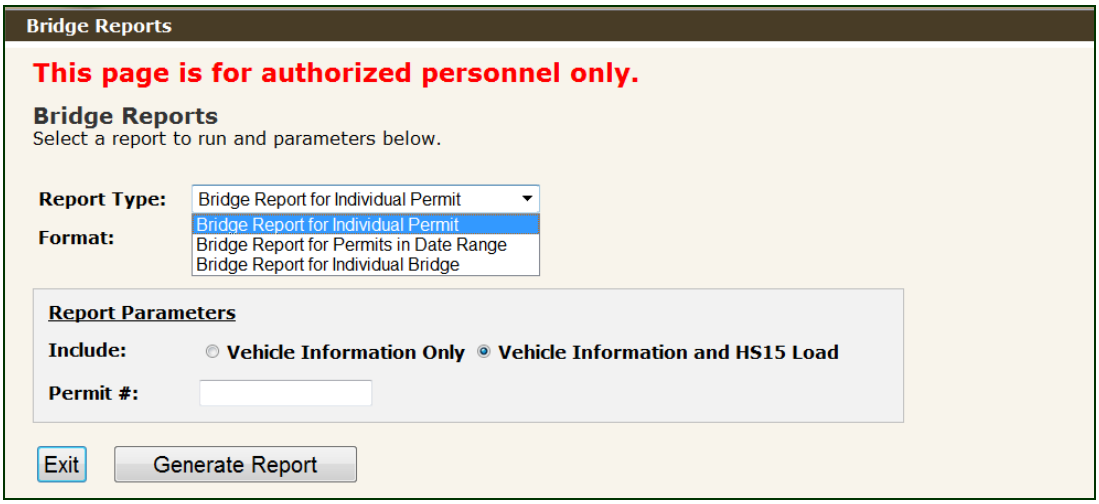
BRIDGE REPORTS SCREEN

The ***Bridge Reports*** screen provides access to the bridge reports. The following reports are available using this interface:

- Bridge report for a selected permit
- Bridge report for all permits in a date range (limited to three day span)
- Bridge reports for permits crossing a bridge
- Bridge report for permits that failed the live load analysis for a bridge

To generate a report:

1. Click the **Bridge Reports** link on the Administrative Interface.
2. Select the report type you would like by choosing an option for the **Report Type** dropdown.



3. Select the **report format**. All reports can be generated as either Excel documents or PDF documents.

Each report has additional parameters that can be selected in the Report Parameters box.

4. Select **Report Parameters** and click **Generate Report**.

TABLE 13: BRIDGE REPORT OPTIONS

Element	Function
Report Type	Select whether the bridge report is to be generated based on individual permits, based on permits in a date range or based on an individual bridge.
Format	Select whether the report is to be generated in XLS format or PDF format.
Report Parameters	See *Table 14: Report Parameters Options*
Exit Button	Click the **Exit** button to leave the screen.
Generate Report Button	Click the **Generate Report** button to start the report generation process.

TABLE 14: REPORT PARAMETERS OPTIONS

Element	Function
Include Options	Select whether the report will only include vehicle information or if the report will include vehicle information and HS 15 loads for each span and pier of the bridge.
Permit #	Enter the selected permit number for the report. This option is only available for the *Bridge Report for Individual Permit* report.
Start Date	Beginning date range for the permit to include in the report. The system uses the start date for the permit to determine if it should be included in the report. For example if the permit was valid from March 1 through March 3, the permit would be included in a report run from March 1 through March 31 but would not be included in a report run from March 3 through April 3. This option is only available for the *Bridge Report for Permits in Date Range* report. This report is limited to a three day date span.
End Date	Ending date range for the permit to include in the report. The system uses the end date for the permit to determine if it should be include in the report. This option is only available for the *Bridge Report for Permits in Date Range* report. This report is limited to a three day date span.
Bridge ID	Enter the bridge ID for the bridge for the report. Bridge IDs should be entered using the following format: XXXX-XXX.XXXB R. The B represents bridges on loops and is optional. The R can either be an L or an R and must be included if the bridge is represented as two separate bridges in the live load analysis program. This option is only available for the *Bridge Report for Individual Bridge* report.
Result	This option allows for the selection of the type of bridge to include in the report. If the report is to include permits that could not be carried by the bridge due to a failed live load analysis and the permit's route was changed because of the failure select the ***Failed*** option. If the report is to include permits that were carried by the bridge select the ***Passed*** option. This option is only available for the *Bridge Report for Individual Bridge* report.

BRIDGE REPORT OUTPUT

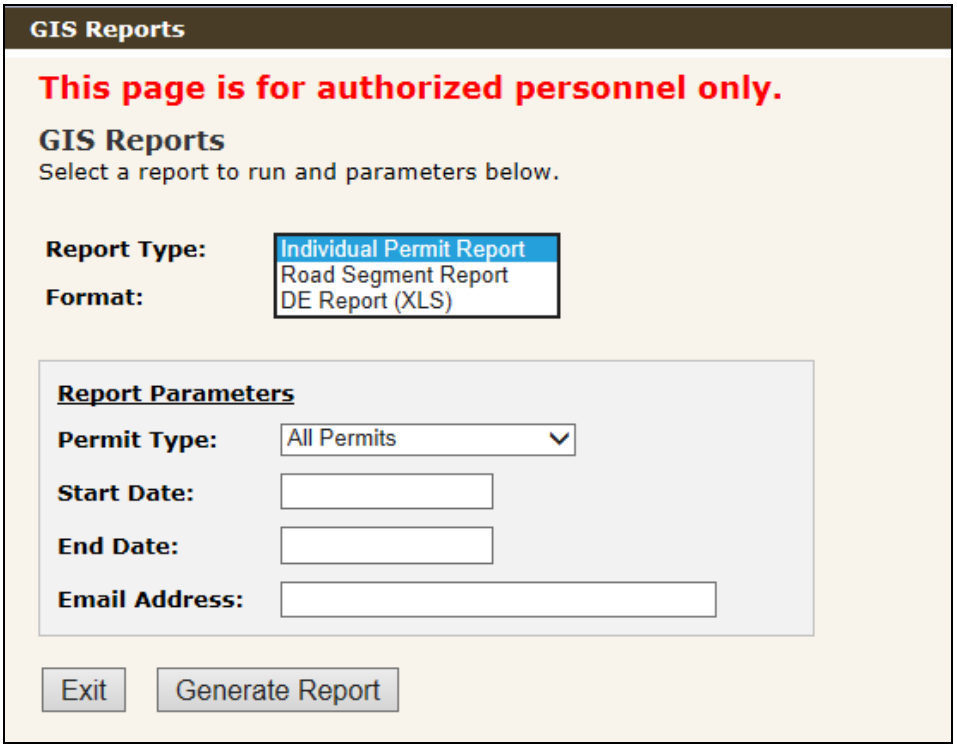
The system will produce a list of bridges that match the criteria described in the report parameters. The report will include:

- Permit Number
- Company Name
- Load Description
- Permit Dimensions (height, length, width and GVW)
- Start Date
- End Date
- Axle Information
- Failed Bridges
- Passed Bridges

Click the **Print Report** link to print.

GIS Report Screen

The GIS report option allows user to create tabular and shape file reports for permit travel in North Dakota. The reports can be generated based on permit or based on road segment. If the report is generated based on permit, then each record in the report will represent the travel for each routed permit that meets the report criteria. If the report is generated based on road segment then each record will represent a road segment and will contain a summary of all permits traveling over the road segment that meet the report criteria.



All GIS reports can be generated as either a Shape File or CSV.

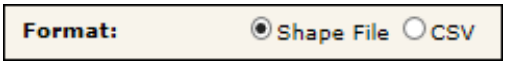


TABLE 15: GIS REPORT OPTIONS

Element	Function
Report Type	Select whether the report is to be generated based on permits, based on road segments or is the DE report.
Format	Select whether the report is to be generated in CSV format or shape file format.
Permit Type	Select the permit types to include in the report. The user must select at least one permit type.
Start Date	Select the start date for the permits to include in the report. This option utilizes a calendar selection option. The dates are an optional parameter.
End Date	Select the end date for the permits to include in the report. This option utilizes a calendar selection option. The dates are an optional parameter.
Email Address	Enter the email address the system should send the email to notifying the user that the report is complete and ready to be picked up.
Exit Button	Click the **Exit** button to leave the screen.
Generate Report Button	Click the **Generate Report** button to start the report generation process.

GIS Report Output

The system will produce a list of permits that match the criteria described in the report parameters. The report will include:

- Permit number
- Start Date
- End Date
- Permit Type
- Dimensions (width, height, length and GVW)
- Company Name
- Load Description
- Origin
- Destination
- Route
- Conditional Overrides
- Axle information (axle counts, axle group weights, axle group spans and axle spacings)

The DE report can be generated as an Excel spreadsheet on demand.

GIS reports can be very large and can take many hours to generate. Because of this, the system will post these reports to a folder that is available to North Dakota State users and will send an email notifying the user that the report is complete and available. The email will include the location the report can be retrieved.

GIS Search Screen

The GIS search option allows the user to find permits that traveled over one or more road segments using a variety of parameters.

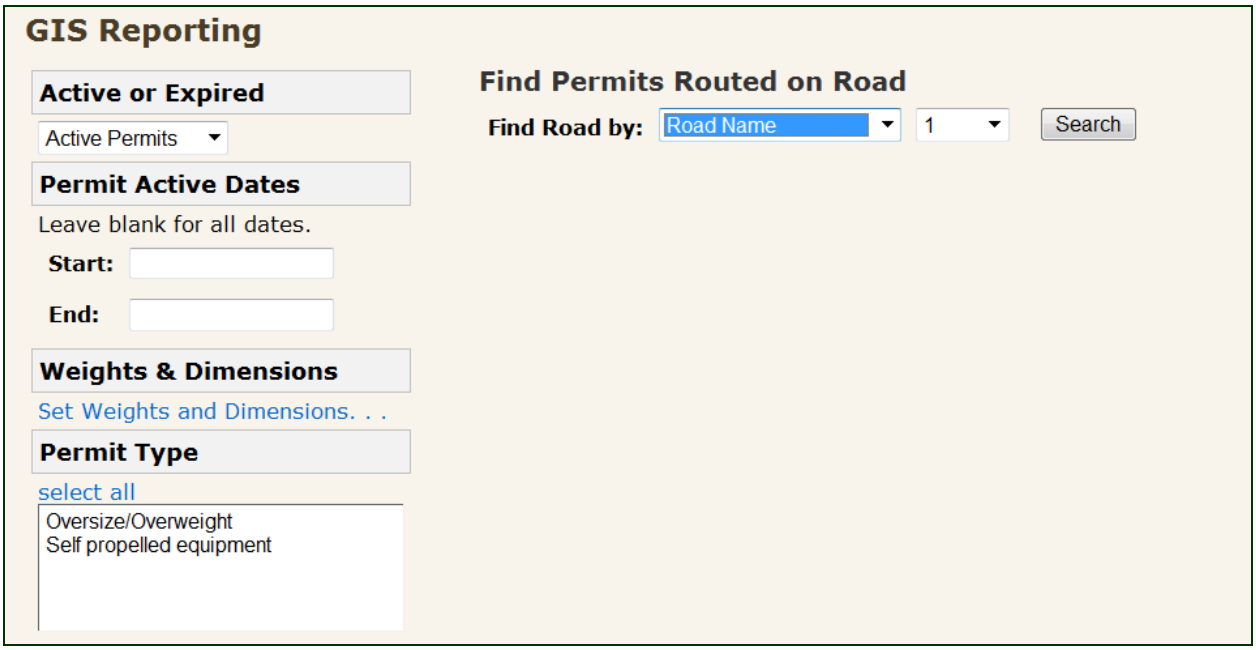


TABLE 16: GIS SEARCH OPTIONS

Element	Function
Active or Expired	Select whether the report is to include only active permits or only expired permits. This is based on the start and end date for the permit as passed in by the Electronic Permits Application.
Find Roads By	Select the method to identify the roads. See Table 17 below.
Search Button	Click this button after selecting the parameters to display the list of permits that meet the selected criteria.
Permit Active Dates	Select the start and end dates for the permits to include in the report. These options utilize a calendar selection option. The dates are an optional parameter.
Weights & Dimensions	Click this link to select weight and dimension parameters for the report. See Table 18 below. The weights and dimensions are an optional parameter.
Permit Type	Select the permit types to include in the report. The user must select at least one permit type.

The system provides a number of methods to identify the roads that will be used to select the permits. The report will include all permits that traveled over one or more of the selected road segments based on the road selection options.

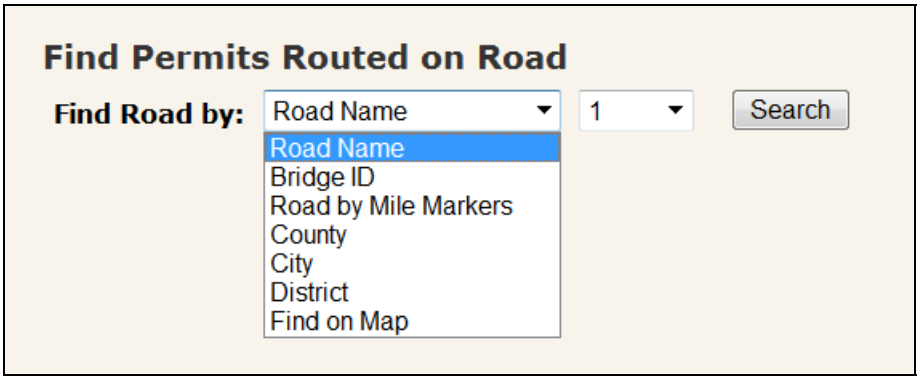


TABLE 17: ROAD SELECTION OPTIONS

Element	Function
Road Name	Select this option to list all permits that travel over any section of the selected road. Select the road using the road number dropdown.
Bridge ID	Select this option to list all permits that travel over any selected bridge. Select the bridge from the bridge selection dropdown.
Roads by Mile Markers	Select this option to list all permits that travel over the selected road anywhere between the selected mile markers. Select the road using the road number dropdown. Select the beginning and ending mile markers.
County	Select this option to list all permits that travel over any section of any road within the selected county. Select the county using the county name dropdown.
City	Select this option to list all permits that travel over any section of any road within the selected city. Select the city using the city name dropdown.
District	Select this option to list all permits that travel over any section of any road within the selected district. Select the district using the district name dropdown.
Find on Map	Select this option to identify a road segment by clicking on the map.

Click the **Set Weights and Dimensions** link to add weight and dimension search parameters to the query.

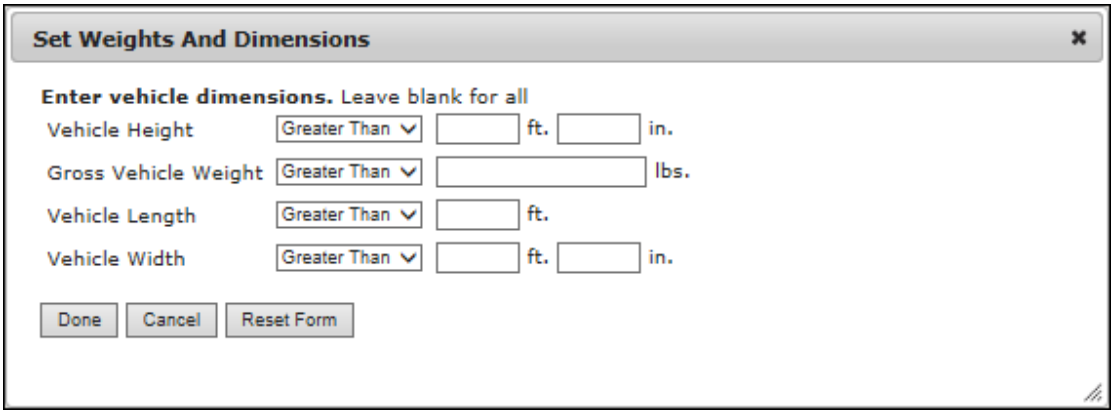


TABLE 18: WEIGHT AND DIMENSION SELECTION OPTIONS

Element	Function
Vehicle Height	Use this option to limit the search to permits based on height. Select either, *Greater Than*, *Less Than*, or *Between* from the drop down and enter the heights for the permits you wish to include in the search. If no heights are entered, height will not be used as search criteria, and the results will include all permits that match the other criteria regardless of the height of the permit.
Gross Vehicle Weight	Use this option to limit the search to permits based on the gross vehicle weight. Select either, *Greater Than*, *Less Than*, or *Between* from the drop down and enter the gross vehicle weights for the permits you wish to include in the search. If no weights are entered, weight will not be used as search criteria, and the results will include all permits that match the other criteria regardless of the gross vehicle weight of the permit.
Vehicle Length	Use this option to limit the search to permits based on the complete vehicle length. Select either, *Greater Than*, *Less Than*, or *Between* from the drop down and enter the lengths for the permits you wish to include in the search. If no lengths are entered, length will not be used as search criteria, and the results will include all permits that match the other criteria regardless of the length of the permit.
Vehicle Width	Use this option to limit the search to permits based on width. Select either, *Greater Than*, *Less Than*, or *Between* from the drop down and enter the width for the permits you wish to include in the search. If no widths are entered, width will not be used as search criteria, and the results will include all permits that match the other criteria regardless of the width of the permit.

TABLE 18: WEIGHT AND DIMENSION SELECTION OPTIONS

Element	Function
Done Button	Click the **Done** button after all weight and dimension selections have been made and these selections are to be used in the report query.
Cancel Button	Click the **Cancel** button to discard all changes made to this screen.
Reset Form Button	Click the **Reset Form** button to reset all settings on the screen.

Select the **Find on Map** option in the **Road Selection** dropdown to identify a road segment that the user wishes to find permits whose route includes that road segment. See page 17 for information on the ***Find on Map*** feature.

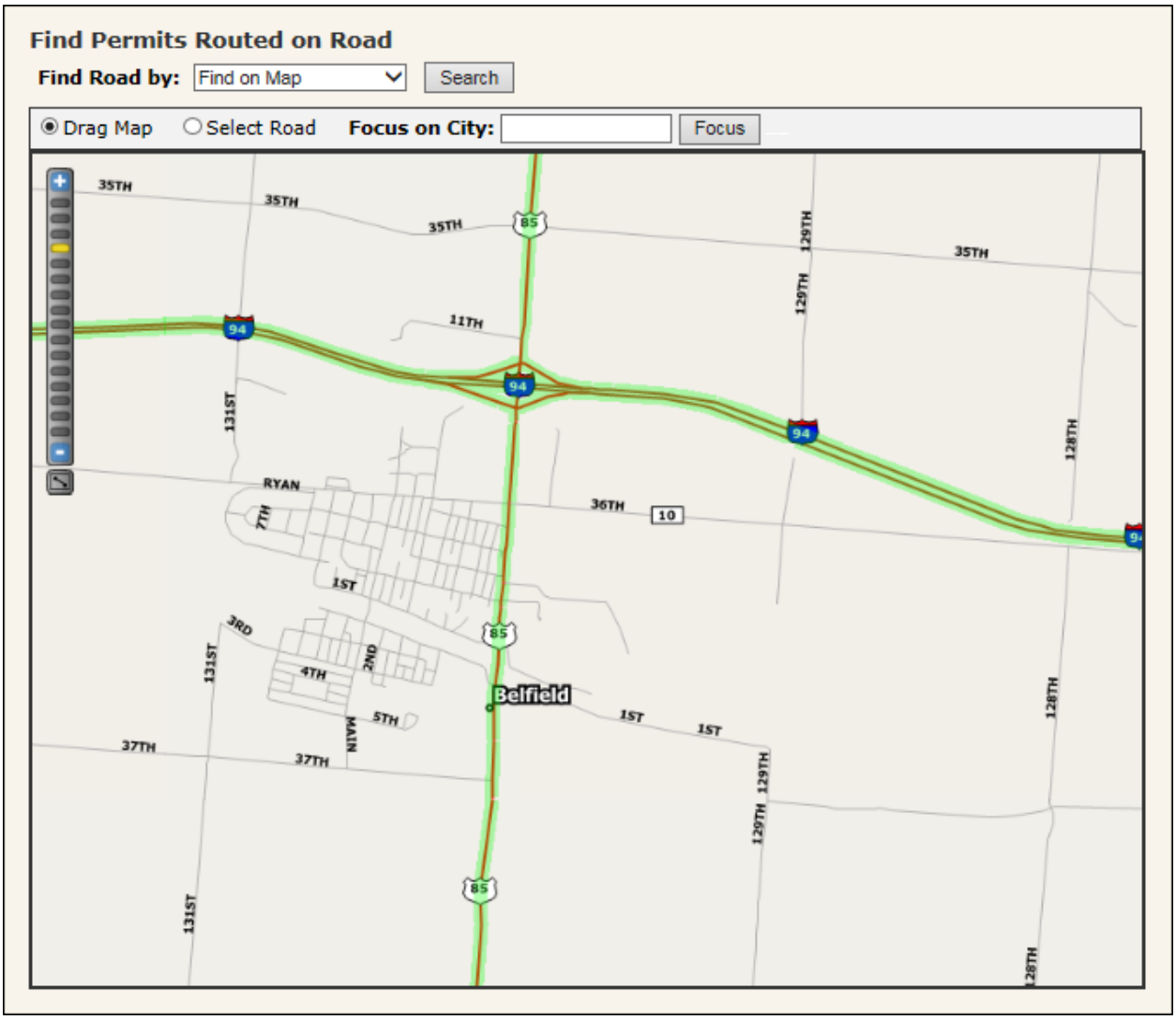
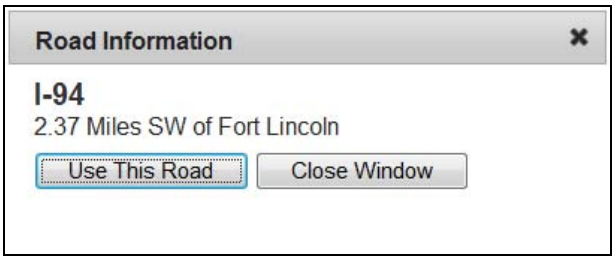


TABLE 19: FIND ON MAP SELECTION OPTIONS

Element	Function
Drag Map Selection Option	Select to drag the map to the area you would like to view.
Select Road Selection Option	Select this option to use the mouse to select the desired road segment.
Focus on City Textbox	To zoom the map to a city, enter the name of the city in the **Focus on City** textbox and click the **Focus** button.
Focus Button	Click the **Focus** button to zoom the map to the city in North Dakota entered into the **Focus on City** textbox.
Map Panel	Use the map panel to navigate to the desired road segment. Use the same map navigation options as described on page 17.

Navigate to the desired road segment, select the ***Select Road*** selection, and click on the desired road segment. The system will identify the road segment and display a confirmation screen.



Click the **Use this Road** button to use the identified road segment.

GIS Search Output

The system will produce a list of permits that match the criteria described in the report parameters. The report will include:

- Permit number
- Company Name
- Load Description
- Start Date
- End Date
- Length
- Height
- Width
- GVW

Click the **Print Report** link to create an Excel file of the report that can be opened and printed.

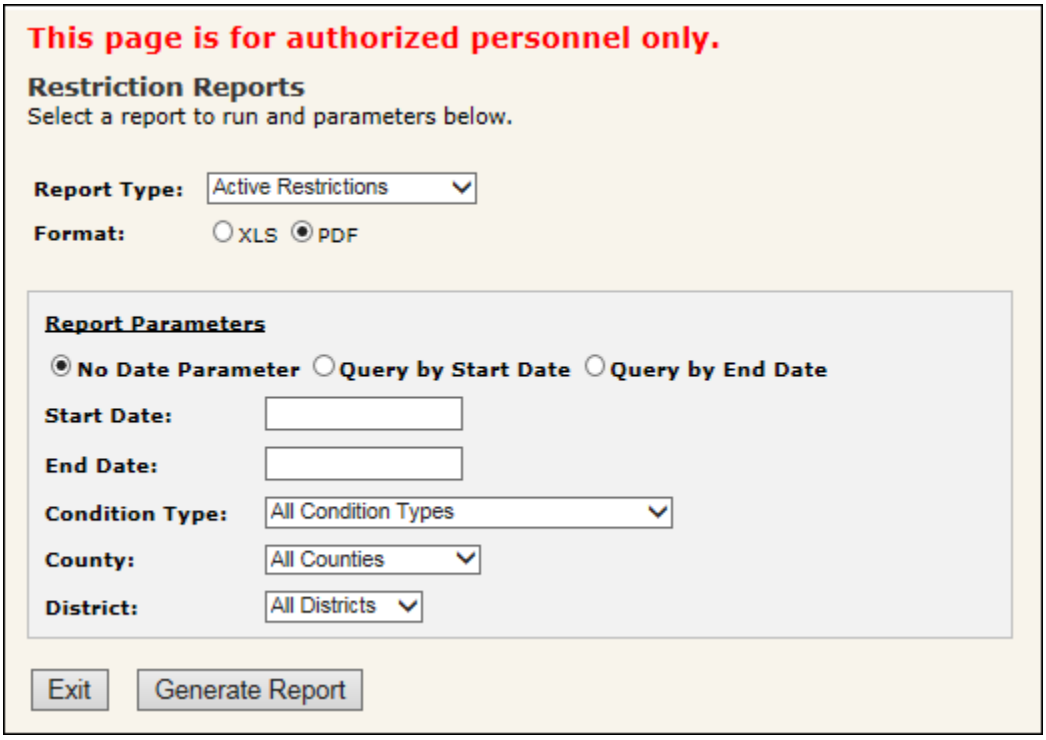
Restriction Reports Screen

The ***Restriction Reports*** screen provides access to restriction reports. The following reports are available using this interface:

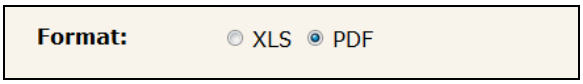
- Restriction report for all active restrictions.
- Restriction report for all deactivated restrictions.

To generate a report:

1. Click the **Restrictions Reports** link on the Administrative Interface.
2. Select the report type you would like by choosing an option for the **Report Type** dropdown.



3. Select the **report format**. All reports can be generated as either Excel documents or PDF documents.



Each report has additional parameters that can be selected in the Report Parameters box.

4. Select **Report Parameters** and click **Generate Report**.

TABLE 20: RESTRICTION REPORTS OPTIONS

Element	Function
Report Type	Select whether the report is to be generated based active or deactivated restrictions.
Format	Select whether the report is to be generated in XLS format or PDF format.
Report Parameters	Select the restriction report based on dates. This option allows you to choose a restriction report by no date parameters, query by start date or query by end date.
Start Date	Select the start date for active or deactivated restrictions to include in the report. This option utilizes a calendar selection option. The dates are an optional parameter.
End Date	Select the end date for active or deactivated restrictions to include in the report. This option utilizes a calendar selection option. The dates are an optional parameter.
Condition Type	Enter the condition type to base the report on.
County	Select the county from the dropdown to base the report on. County is an optional parameter.
District	Select the district from the dropdown to base the report on. District is an optional parameter.
Exit Button	Click the **Exit** button to leave the screen.
Generate Report Button	Click the **Generate Report** button to start the report generation process.

RESTRICTION REPORTS OUTPUT

The system will produce a list of restrictions that match the criteria described in the report parameters. The report will include:

- Restriction Object ID
- Restriction Object Name
- Start Date
- End Date
- ResWeight
- County
- District
- Conditions

Click the **Print Report** link to print.

Terms	Definitions
Condition	A single detail of a restriction such as *Length* (that is, the maximum allowable vehicle length on the restricted roadways) or No Permit (no oversize/overweight vehicles can use the roadway)
Off-system	Roads not maintained by ND DOT which need approval from another authority (for example: district, county, or city) in order to route oversize/overweight vehicles
Restriction	A Restriction is an object in the system that affects OS/OW routing. This object can be a physical Restriction such as a bridge with limits on clearance or it can be a legal Restriction such as no travel during an area at set times.
State Maintained	Roads maintained by ND DOT on which they have the authority to route oversize/overweight vehicles