Workflow 1: Subgrade Template Report

1. *While in the cross section file, open the Project Manager Workflow Dialog Box. Select Plan View Design.*

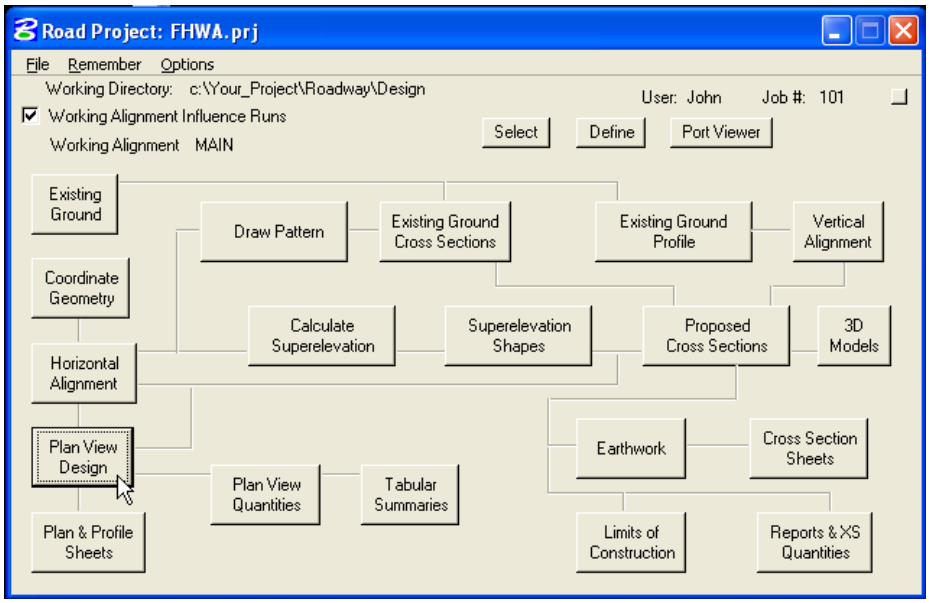

Figure 11-1: Accessing D& C Manager from Project Manager Workflow Dialog

2. *The following dialog box will appear. Select the Design and Computation Manager Icon.*

Figure 11-2: Accessing D& C Manager Icon

D & C Manager can also be accessed through **Applications > GEOPAK ROAD>Design & Computation Manager** or from the Main Geopak Road Tools dialog box. Any method can be used to activate the D& C Manager, but make sure the project manager dialog is activated prior to accessing the Subgrade Template Report MVBA; this will allow the MVBA to access project related settings.

3. *Highlight and Select the CFL Subgrade Template Report from the MVBA Applications category in the V8_English.ddb or V8_Metric.ddb file. Double click to invoke the Subgrade Template Report MVBA.*

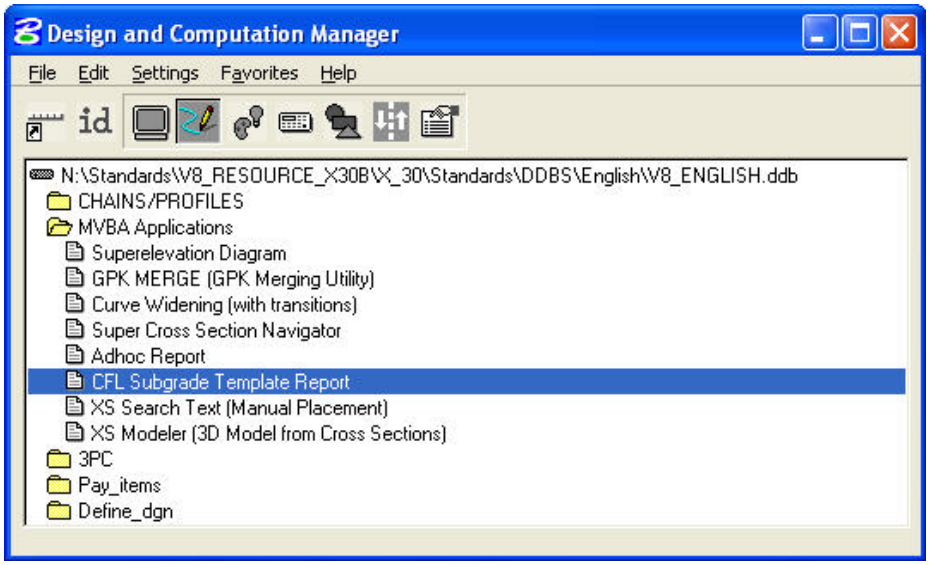

Figure 11-3: Accessing CFL Subgrade Template Report

The following Subgrade Template Report dialog box will appear.

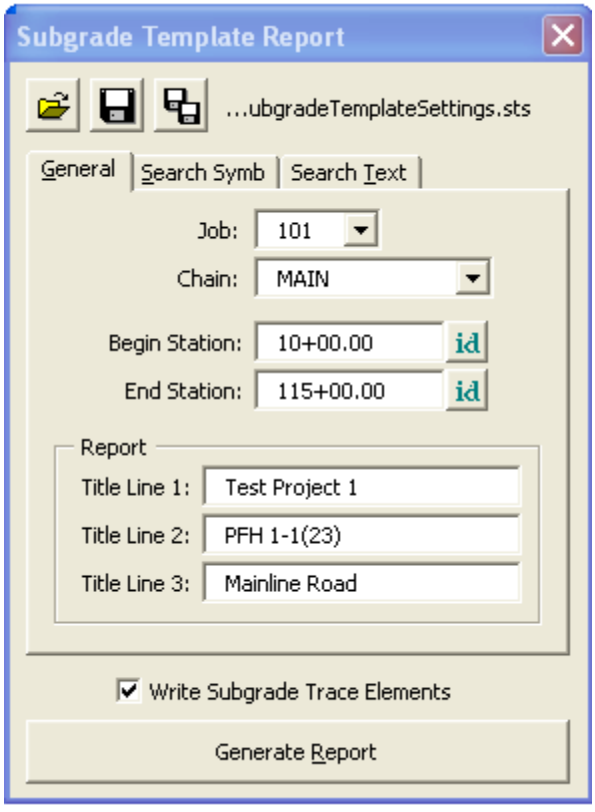

Figure 11-4: General Tab

The Subgrade Template Report MVBA has three tabs that must be filled in prior to generating the Subgrade Template Report. The first tab entitled “General” contains general information including, Job #, Chain, Begin and End Station and the headers for the report.

4. *Enter in project information as shown above. Toggle on Write Subgrade Trace Elements, while the report is generated, a trace line is drawn to spot check the text points selected for the report. The trace line is drawn to a level named X_P_Subgrade_Trace. The trace line can be visually reviewed to ensure the correct path was used.*

When the Subgrade Template Report MVBA is invoked, the VBA will also load a default Subgrade Template Settings (.sts) file and automatically places into the working directory. User can modify the settings as appropriate for their project and save this file or rename the file and save it to the Working Directory.

5. *Select "Search Symb" tab. Under this tab, symbologies for Text, Existing Ground, and Proposed Grade needs to be defined. Symbology can be defined by matching or by selecting levels, colors, weights and styles.*

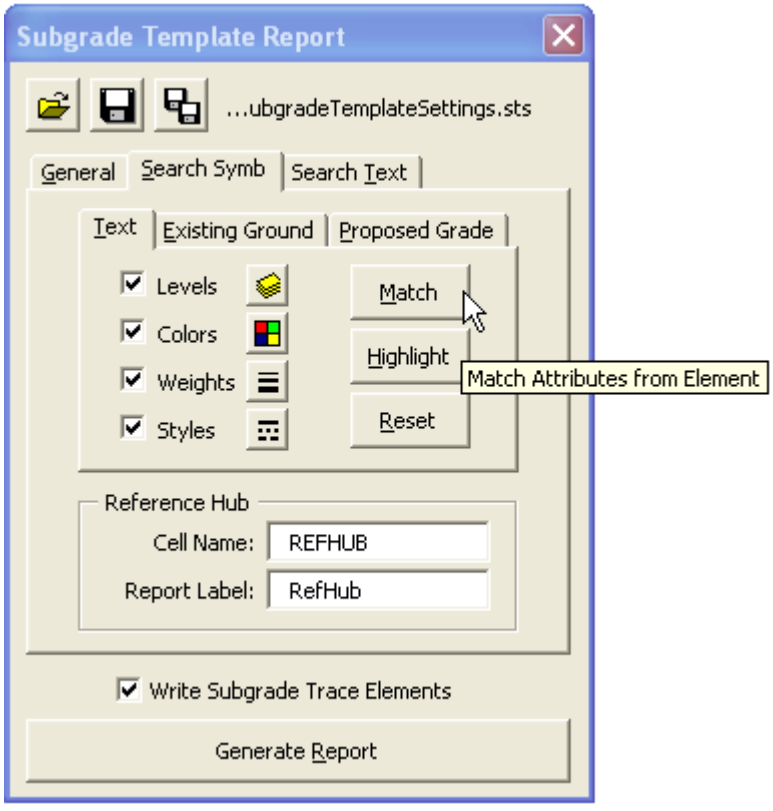

Figure 11-5: Search Symbology Tab

The Match button on each of the Search Symbology tabs allows the user to identify existing elements in the design file to match those symbology attributes that is turned on (checked). The Highlight button allows the user to display elements in the design file with the standard MicroStation highlight color. This provides a means to check that the symbology has been set correctly for the element type designated by

the active tab by visually evaluating the highlighted elements. The Reset button allows the user to clear all the currently selected symbology attributes for the element type designated by the active tab.

6. *Select the "Text" tab. Select the level X_Text_Search, X_Text_Wall_Points and X_Text_Subgrade, associated colors, weights and styles. Use the Match button to select the symbology.*
7. *Select the "Existing Ground" tab. Select the level X_E_Ground_XS, associated color, weight and style. Use the Match button to select the symbology.*
8. *Select the "Proposed Grade" tab. Select the proposed grade symbology from Reference Hub to Reference Hub; define the path to search for the text to generate the report. Use match button to select the symbology and use highlight button to view selection. Use the Subgrade Template Point Identification Sheets as a guide to select the path for the report .*

Subgrade Template Point Identification Sheets are created with project specific information and included with the project specific Subgrade Template Report. Template points on the Subgrade Template report correlates with the points on the Subgrade Template Point Identification Sheets.

Any cell with the name " REFHUB" found in the cross section and lying on the existing ground will be listed in the report. When the Reference hub cells have been found the report will use "Refhub" to label the point in the report.

9. *Select the "Search Text" tab. Identify all the text to search for in the cross sections that define the path along the subgrade to generate the report. Default Subgrade Template Settings (.sts) file contains the text to generate report for a standard project. Modify, delete or add text values based the typical section of your project. Use the Subgrade Template Point Identification Sheets as a guide in identifying text points.*

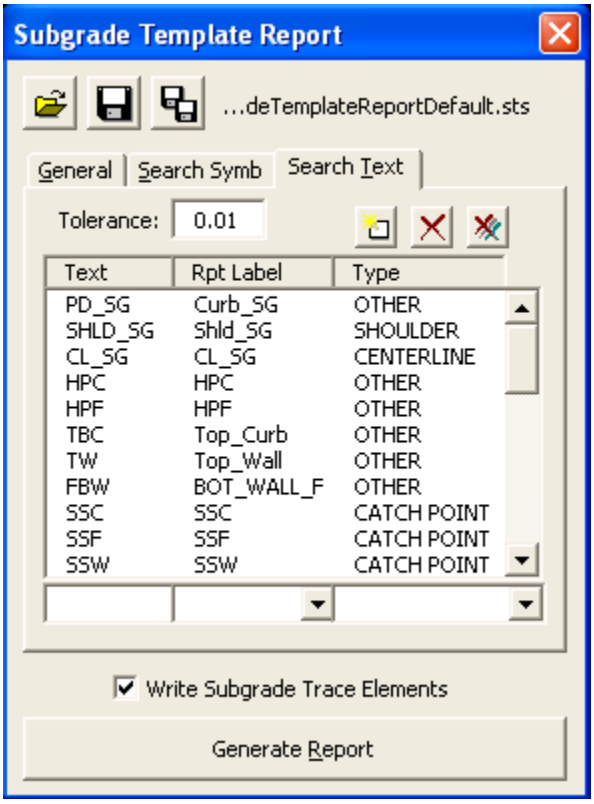

Figure 11-6: Search Text Tab

Text must be entered as it appears in the cross sections. This MVBA is case sensitive. The tolerance value defines the distance the application will search for text in relationship to a proposed subgrade element vertex. The tolerance value should be around the value as shown for both metric and English projects.

The “Text” is the text string to search for in the cross section. The “Rpt Label” is the label to use in the report to represent the text string found. The “Type” is the type of point this text string represents which must be either centerline, shoulder, catch point or other. Use the following icons to manipulate the search text list.

Add To List

Delete From List

Delete All

10. *Select Save Settings Icon to save the project settings once all the settings have been defined. The project’s modified Subgrade*

Template Report settings are saved to your working directory as Subgrade Template Settings.sts file. Select the "Save As" icon to save your project settings to a different file name.

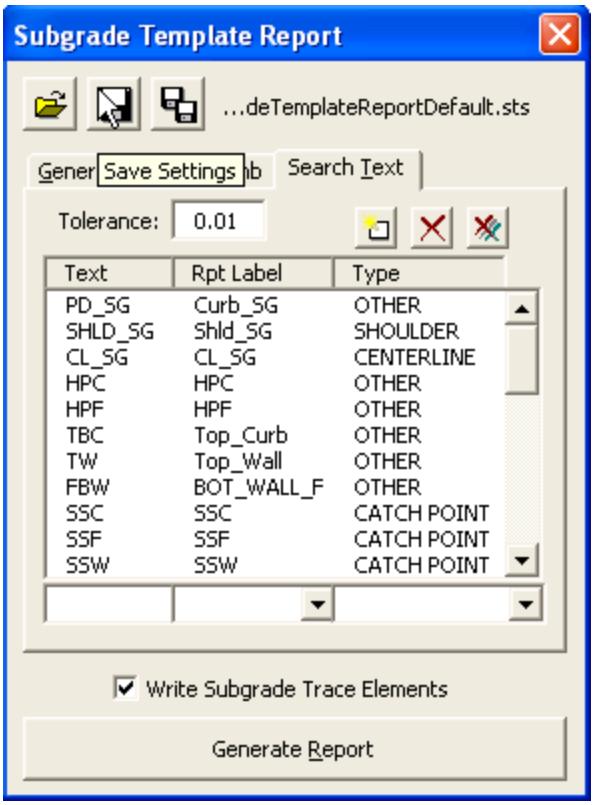

Figure 11-7: Save Settings

11. *Select Generate Report to create the report with the defined parameters.*

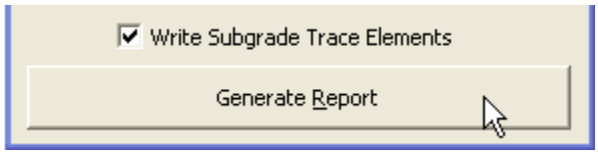

Figure 11-8: Generate Report

12. *The following dialog will appear asking to provide the name of the subgrade report file to be created. Provide a name and Select Save.*

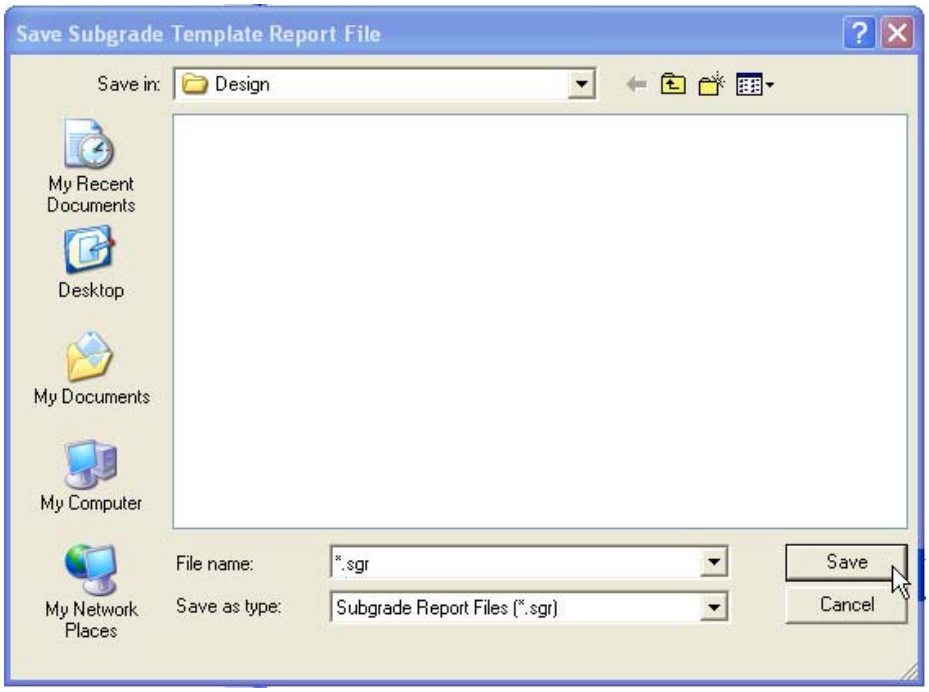

Figure 11-9: Save Subgrade Template Report File

Occasionally errors are found in the cross sections. These may be caused by incorrect symbology (either in the cross sections or that specified in the dialog) or by search text not specified correctly. When an error occurs on any given cross section the user will be presented with a dialog similar to the following:

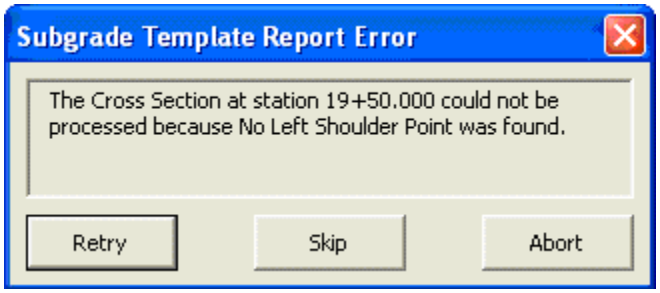

Figure 11-10: Subgrade Template Report Error

The description of the error in the dialog will indicate the location and type of error that was found. The user is given the following options:

- Retry – The user has the opportunity to fix the problem and try processing the cross section again. The error message dialog will continue to be displayed as long as an error is found or the user selects one of the other two options.

- Skip – The user can skip processing the cross section in which case the application will write to the report that the cross section has been skipped and will proceed with the next cross section.

- Abort – The user can abort processing altogether which closes the report file and processes no further cross sections.

13. *When the application has finished processing the final cross section in the specified range a message will be displayed indicating it is done. Select OK.*

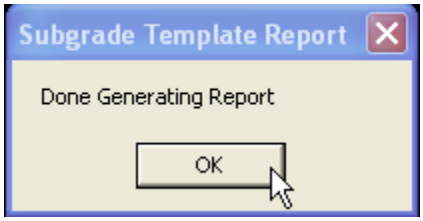

Figure 11-11: Notification Icon

Use Cross Section Navigator to view your cross sections with the subgrade traced elements.

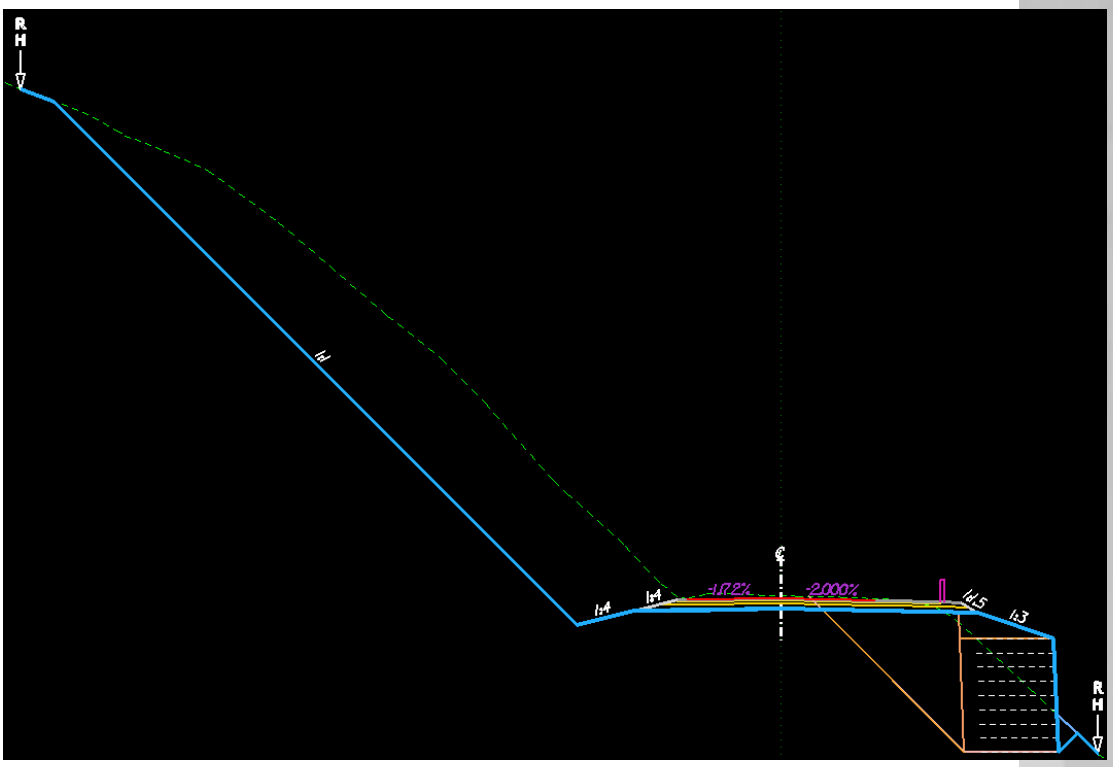

Figure 11-12: Subgrade Traced Element

The CFL Subgrade Template Report MVBA will produce the following report. The report will be saved in the location specified and can be viewed and printed using any text editor application. UltraEdit is preferred for viewing and printing the CFL Subgrade Template Report.

11/27/2006 Test Project 1 Page# 1
PFH 1-1(23)
Mainline Road
SUBGRADE TEMPLATE REPORT (ft)

	Left Side					Right Side				
Station	Cut/Fill	Slope	Distance	Elevation	Super	Super	Elevation	Distance	Slope	Cut/Fill
20+00.00	C 18.39	1:1.00	25.57	794.53						
	F 0.50	-1:4.00	7.17	776.13						
			5.17	776.63	-1.172%	-2.000%	776.55	6.94		
							775.66	9.60	-1:3.00	F 0.88
							771.66	9.77	24.00:-1	F 4.00
							772.32	10.42	1:1.00	C 0.65

Station	Easting	Northing	Elevation	Offset	Id	Slope	Horiz. Diff.	Vertical Diff.
20+00.00	1888456.31	644253.59	794.96	-26.73	RefHub			
							-1.16	0.428
	1888455.42	644254.33	794.53	-25.57	SSC			
						1:1.00	-18.39	18.39
	1888441.30	644266.13	776.13	-7.17	HPC			
						-1:4.00	-2.00	-0.50
	1888439.76	644267.41	776.63	-5.17	Shld_SG			
						-0.012	-1.87	-0.02
	1888438.32	644268.61	776.65	-3.30	Travelway			
						-0.012	-3.30	-0.03
	1888435.79	644270.73	776.69	0.00	CL_SG		0.00	0.00
						-0.020	3.30	-0.06
	1888433.26	644272.84	776.62	3.30	Travelway			
						-0.020	3.64	-0.07
	1888430.46	644275.17	776.55	6.94	Shld_SG			
						-1:3.00	2.66	-0.88
	1888428.41	644276.88	775.66	9.60	Top_Wall			
						24.00:-1	0.16	-4.00
	1888428.29	644276.99	771.66	9.77	BOT_WALL_F			
						1:1.00	0.65	0.65
	1888427.79	644277.41	772.32	10.42	SSW			
							0.74	-0.70
	1888427.22	644277.88	771.61	11.16	RefHub			

Figure 11-13: Subgrade Template Report

The Subgrade Template Reports generated for construction should be accompanied with typical Subgrade Template Point Identification Sheets for the project. Subgrade Template Point Identification Sheet shown below identifies the template points in the Subgrade Template Report along a typical cross section.

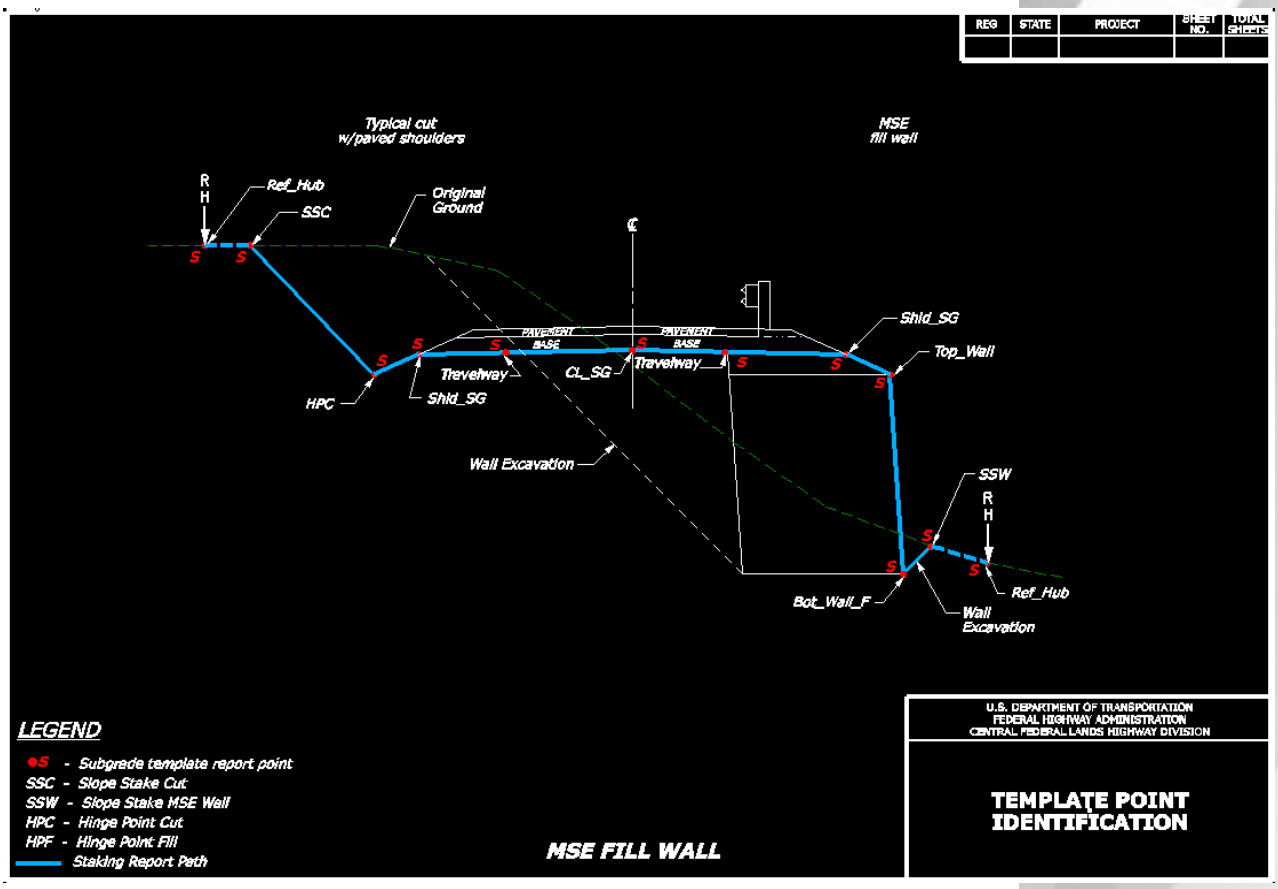

Figure 11-14: Subgrade Template Point Identification Sheet