Revisions to T.D.O.T. Design Division Standard CADD Files

November 2008 Update

This update contains several fixes and corrections as well as some new enhancements. Some highlights include the following items.

The T.D.O.T. Design Division Roadway Design Guidelines have been updated and this CADD standard update includes many changes to templates, programs, etc. which reflect changes in that document.

Our programs for plotting type 12 and type 38 guardrail terminals and their special slopes in the plan view and on cross sections have been updated extensively to reflect changes to standard roadway drawings S-GR-19A, S-GR-21 & S-GR-38.

We have added 2 new tools for use on profiles. The new **Data Point Profile Station Elevation** tool was primarily designed to issue a data point based on a station and elevation on the profile but can also be used for dynamic tracking or to label a station and elevation if desired. The new **Vertical Curve Design Tool** has been set up to design or check the design of vertical curves and can be used to draw the vertical curve as well.

We are in the process of replacing some of our older tools, making them more user friendly as we go. This update includes replacement programs for **Set Text Parameters by Active Scale** and **Draw Drainage Flow Direction by 2 Points**.

Retaining walls are being used on many roadway projects at this time and working with various designers, we have added several enhancements to our criteria files as well as some new criteria programs to work with retaining walls. Users can expect further enhancements to these in future updates.

Review the specific file revision descriptions below for further details on these changes and others.

MicroStation

- **EngCell.exe & MetCell.exe**

  In **STDS.cel** & **METRIC.cel:**

  Added the following new "pre-scaled" cells for area patterning:

BSTONE0.5X	Small Base Stone (0.5X)
DDOT2X	Dot for Easements, Wetland Mitigation Areas or Shading (2X)
DDOT6X	Extra Large Dots (6X)
DMPRK0.5X	Small Dumped Rock (0.5X)

  Revised language for the coordinate datum adjustment note in the following cells to reflect wording specified in the T.D.O.T. Design Division Roadway Design Guidelines:

BDRSHT	Standard Plan Sheet (with coordinate note)
NTCORD	Border Coordinate Note
NTCO7D	Border Coordinate Note with 7 decimal coordinate datum adjustment

  Revised manager title at lower left of title sheet cell, TITLE, to reflect specifications from the T.D.O.T. Design Division Roadway Design Guidelines.

- **Dgnlib.exe**

  Made the following level filter changes in **TDOTmain.dgnlib** to reflect specifications from the Roadway Design Checklist of the T.D.O.T. Design Division Roadway Design Guidelines**:**

  In level filters **Sheets - Drainage Map** and **Sheets - Drainage Maps – References**, added existing contour levels (34 & 5) and channel change level (260).

  In level filters **Sheets - Erosion Control** and **Sheets - Erosion Control – References**, added wetland mitigation patterning level (275) and proposed utility levels (54-55, 292—300, 312-313).

  In level filters **Sheets - Present Layout** and **Sheets - Present Layout no ROW PL Text**, added natural drainage features text level (311).

  In level filter **Sheets - Sheets - Property Map**, added existing roads level (7) and utility owners level (232).

  In level filter **Sheets - Property Maps – References**, added existing roads level (7).

  In level filter **Sheets - Proposed Layout**, added natural drainage features text level (311).

In level filters **Sheets - Traffic Control** and **Sheets - Traffic Control - References**, added existing bridge level (19).

Note:
Use the Import Additional V8 Settings tool accessed from the MicroStation menu bar at **TDOT > V8 – Import Additional Settings** or from Geopak's D&C Manager at **Drafting Standards > Tools > V8 Import** to import the updated level filters. Set controls to Main, turn off all options except Levels & Level Filters, select your regular (non-cross section) DGN file(s) and click Process Files.

- **Macros.exe**

  Deleted the following macros which have been replaced by visual basic applications: **drawflowdirection.ba, SetText.ba**.

  Deleted obsolete macro **ew_labels.ba**.

- **Seed.exe**

  Imported updated level filters from level library TDOTmain.dgnlib into all non-cross section seed files.

  Updated Word documents in seed files **EnglishDropOffNotes.dgn, EnglishEPSCNotes.dgn, EnglishGeneralNotes.dgn & Ind&StdDwgsEng.dgn** to reflect data from the T.D.O.T. Design Division Roadway Design Guidelines.

  Corrected the Word document note outline layout in seed file **MetricDropoffNotes.dgn**.

- **TDOTinterface.exe**

  In **T.D.O.T.** drop down menu:

  Under **Drainage (Plan)**, replaced call for MicroStation Basic macros with call to new **Draw Flow Direction** visual basic application.

  Under **Profiles,** added calls for new **DP Profile Station Elevation w/Tracking** and **Vertical Curve Design Tool** visual basic applications.

  In main list, replaced call for MicroStation Basic macro with call to new **Text Parameters by Active Scale** visual basic application.

- **TDOTcfg.exe**

  Added configuration variable **MS_RASTER_LOADMODE** with a value of **3** to allow attachment of large digital raster image files to MicroStation DGN files.

- **vba.exe**

  Added the following new programs:

  DPprofile.mvba This program was primarily designed to issue a data point based on station and elevation on the profile. It also includes options to dynamically track station and elevation values on the profile and to place labels for them. Dynamic tracking options include dynamic graphic label, station lock and elevation lock. Locks allow dynamic tracking on just station or elevation. Geopak accuracy format controls are provided for station and elevation. These control values placed with labels and when using the dynamic tracking function. When placing labels, the current active element symbology and text settings are used to control all aspects of the labels which are placed. For this reason, a command button is provided to access the Text Styles Plus program to aide in making these settings. The length of the leader line which is placed with the labels is controlled dynamically by the user. Annotation may be placed above or below the profile point being labeled.

  DrawFlowDirection.mvba Draws drainage flow direction graphics when given 2 user defined points to set begin & end of leader for drainage maps, creeks, streams or rivers.

  SetTextParametersAS.mvba Sets the active text size, weight, and line spacing based on the given plot scale and the text size desired when plotted. The user given scale is used to set the active scale. To avoid problems when placing text the Text node lock is turned off and line length is set to 255. This tool is best used after picking a standard text style from the program, Text Styles Plus, which will set the appropriate level and color for the text.

  VerticalCurveDesign.mvba This program is set up to be used to design or check vertical curves for roadways. Entrance and exit grades for the vertical curve can be keyed in or identified graphically. After the grades are set, one of 3 Design Controls must be set, length, K value or design speed. Clicking on the Calculate Curve command button computes the unknown design values, displays them in the dialog and the curve is temporarily visualized in graphics. If desired, the curve can be drawn in permanently by clicking the Draw Curve command button. Curve graphics include the curve and circle point text symbols at the VPC, VPI & VPT. Options are provided for the use of either RD or RD01 vertical curve design standards which are read from the text file VALabel_Speed_kvl.txt.

Revised the following programs:

AreaPatterns.mvba Revised command button at lower left of dialog to reset all area pattern settings as well as restarting the area pattern command. Changed form and all area pattern modules which applied pattern scales that did not match the active scale to use new scaled pattern cells so that pattern scale will now always match the active scale.

DrainageProfileCells.mvba Added new guardrail cell list options for use on cross sections, single and median types, left and right.

GeoTechAreaPatterns.mvba Revised command button at lower left of dialog to reset all area pattern settings as well as restarting the area pattern command.

TDOTDesignDivToolbox.mvba Under Labeling, revised call for Set Text Parameters by Active Scale to use new vba program for that function. Under Cross Sections, revised calls for Delete Prop. XSs & Delete XS Grids to use new vba programs for those functions. Moved Place Arrowhead function under Cells group. Under Geopak, added access to vba program, Data Point Profile Station & Elevation with Tracking.

TextstylesPlus.mvba Revised call for Set Text Parameters by Active Scale (Alternate STD Text Size) to use the new vba program for this function.

VA_Labeler.mvba Changed K value label to not round but to simply reflect the calculated whole number. Rounding sometimes caused the value to go up by 1 which reflects a higher design than was actually achieved. Added new subroutine, GetUnroundedIntegerfromDouble, to module modStartUp to convert calculated value without rounding.

VA_LabelerEquation.mvba Changed K value label to not round but to simply reflect the calculated whole number. Rounding sometimes caused the value to go up by 1 which reflects a higher design than was actually achieved. Added new subroutine, GetUnroundedIntegerfromDouble, to module modStartUp to convert calculated value without rounding.

Geopak

- **GeopakStandards.exe**

In **D&C Manager (tdot.ddb & tdotmetric.ddb)**

Added the following new item under **Drafting Standards > Tools** for use on profiles:

DP Sta Elev data point profile station elevation with tracking & labeling

In item **Drafting Standards > Tools > Set Text**, replaced call for MicroStation Basic macro with call to new **Set Text Parameters by Active Scale** visual basic application.

Under category **Drafting Standards > Cross Sections,** deleted obsolete item **Earthwork Text**.

Added the following new item under **Drafting Standards > Roadway Vertical Alignments** for use in the design and checking of proposed vertical curves:

VC Design Tool vertical curve design tool

Added the following new item under **Drafting Standards > Private Drives** for use in the design and checking of proposed vertical curves:

VC Design Tool vertical curve design tool

Under category **Drafting Standards > Exist. Drainage > Land Use,** redefined all item's search criteria to ignore shapes on level 36 so that they now only look on level DESIGN - SCRATCH - User 1 for land use shapes.

In item **Drafting Standards > Prop. Drainage > Flow Direction**, replaced call for MicroStation Basic macro with call to new **Draw Flow Direction** visual basic application.

Under category **Drafting Standards > Guardrail,** deleted obsolete item GR Term Type 12 and renamed GR Term Type 12E as **GR Term Type 12** since it is now the only valid function for placing type 12 terminals and their guardrail runs.

In vertical curve speed\K value file **VALabel_Speed_kvl.txt,** revised listings for RD standard values to accommodate use of this file by the new Vertical Curve Design Tool visual basic application**.**

In drainage project template file **DrainageProject.gdf,** removed empty\undefined component items that were left in after the last update of this file**.**

- **Criteria.exe**

In all **VDef*.x** variable definition criteria files for roadways**,** added new variable, **Type 12 GR Slope**, to control the side slope placed on cross sections leading down to type 12 guardrail terminal runs. Also set up this new variable as re-definable variable, **_d_Type12GRSlope**, for use by slopes criteria files so that this value can be varied as needed along the roadway. It is set with the default value of 10:1.

In all **Var*.x** variable re-definition criteria files for roadways**,** added re-definable variable set up for alternating side slope placed on cross sections leading down to type 12 guardrail terminal runs.

Revised all ***.wri** Write documents for roadway typical sections to list and describe new **Type 12 GR Slope** variable.

In roadway side slope criteria files **Case1slopes.x, Case1slopesC&G.x, Case1slopesC&Gmetric.x, Case1slopesDitchBench.x, Case1slopesmetric.x, Case2slopes.x, Case2slopesC&G.x, Case2slopesC&Gmetric.x, Case2slopesDitchBench.x, Case2slopesmetric.x, RampCase1slopes.x** & **RampCase1slopesmetric.x,** revised search limits for single guardrail and type 12 terminal guardrail to handle new offset limits of type 12 terminal runs of guardrail. Also rewrote subroutines which placed guardrail on cross sections to draw guardrail with linework instead of using cells in order to more accurately represent its height and width.

In rural roadway side slope criteria files **Case1slopes.x, Case1slopesDitchBench.x, Case1slopesmetric.x, Case2slopes.x, Case2slopesDitchBench.x, Case2slopesmetric.x, Case2slopes400ADT.x, Case2slopesmetric400.x, RampCase1slopes.x** & **RampCase1slopesmetric.x,** changed all widening for guardrail to use stone symbology rather than shoulder symbology. Also revised type 38 guardrail pads to be drawn at 10:1 slope as specified on standard roadway drawing S-GR-38 and revised type 12 slope limit widening to use new Type 12 slope variable.

In depressed median criteria files **MedianDep10.x, MedianDep4.x, MedianDep6.x** & **MedianDep6-10.x**, rewrote subroutines which placed guardrail on cross sections to draw guardrail with linework instead of using cells in order to more accurately represent its height and width.

In criteria files **SidewalkAreaLeft.x, SidewalkAreaLeftMetric.x, SidewalkAreaRight.x** & **SidewalkAreaRightMetric.x,** added a distance limit for finding a second sidewalk line prior to placement of grass separator strip in order to keep criteria from picking up lines that are along other roadways.

In **RetainingWall.x, RetainingWallSwale.x** & **RetainingWallMetric.x**, added new variable for **Wall Baseline** to handle situations where a wall based on one roadway is plotted on another roadway's cross sections. This chain name is referenced with the wall profiles to ensure that the correct stations and corresponding elevations are applied to the wall.

In ramp pavement criteria files, **RampPavement.x, RampRightPavement.x,** & **RampPavementMetric.x,** replaced missing programming code which prevented placement of working cross section grid on shapeless runs.

In **Swaleslopes.x**, added a check for a stop condition that may have been passed from pavement criteria to suppress criteria processing in intersection areas. Added code to place the following graphics in those locations: match line with offset information, subgrade elevation, excavation limit line, line to tie to ground for use when calculating earthwork. Added a flag to mark intersection on left or right to stop slope lines and re-start them beyond the intersection. This slopes file was missed when this change was added to other slope criteria files in a previous update.

In **ShoulderToWall.x**, revised to look for either above ground or below ground wall symbology and to include an option to annotate the elevation at the wall tie location to aide in wall height development.

Added the following new criteria files:

ConcreteSwaleAtNormalDitch.x	Modified version of concreteswale.x which includes regular rural subgrade closure and placement of concrete swale at normal ditch location.
SideSlopeToWall.x	Side slope which extends to walls (already in place) for use with fill slope retaining walls. Criteria looks for either above ground or below ground wall symbology and includes an option to annotate the elevation at the wall tie location to aide in wall height development.
RampSideSlopeToWall.x	Ramp side slope which extends to walls (already in place) for use with fill slope retaining walls. Criteria looks for either above ground or below ground wall symbology and includes an option to annotate the elevation at the wall tie location to aide in wall height development.

- **3PC.exe**

In programs, place**_38_terminal.x** & **place_38_min_install.x**, revised length, offset and taper values for terminal pad to reflect changes specified on standard roadway drawing S-GR-38.

In program, **place_12_terminal_EQ.x**, made the following changes to reflect the new versions of standard roadway drawings S-GR-19A & S-GR-21.

Removed prompt for backslope since only 2:1 slopes are now allowed for the type 12 terminal installation.

Added prompt for taper flare rate based on speed with options for **15:1/70 mph, 14:1/60 mph, 11:1/50 mph, 8:1/40 mph** & **7:1/30 mph**.

Reset terminal control values for installation beyond ditch line to reflect tie to a 2:1 backslope with adjustment for new required mounting height of guardrail.

Added new variable control values in code for flare rate, 50 foot curve offsets and 50 foot curve tangent length since these are now based on the variable taper flare rate. Revised program code for drawing graphics to use these new variables.

Changed special slope limit pad line to draw through the 50 foot curve at the beginning of the flare.

Deleted obsolete programs, **place_12_terminal.x** & **ew_labels.x**.

Office

- **DDOCS.exe**

  Updated the following Word & Excel templates to reflect the updated T.D.O.T. Design Division Roadway Design Guidelines. Also updated Nashville addresses as needed to specify the new 4 digit zip code extensions.

  AdditionalSurveyRequestForm.xlt
  Const.PlansTransmittal.dot
  DesignExceptionRequest.dot
  EstimateRevisionRequest.xlt
  ProjectActivityStatusSheet.dot
  ProjectDevelopmentDelayForm.dot
  PublicHearingNotice.dot
  RequestForPavementDesign.dot
  RoadwayDesignChecklist.dot
  ROWFundingApproval.dot
  ROWPlansTransmittal.dot
  SoilsRequestForm.dot
  TrafficRequestForm.dot

- **2ndSheets.exe**

  Updated template file **EnglishIndex&StdDwgs.dot** to reflect standard drawing lists provided in the updated T.D.O.T. Design Division Roadway Design Guidelines.

  Updated **IB_ToBePrintedwithPlans_English.dot** & **IB_ToBePrintedwithPlans_Metric.dot** to reflect that there are currently no standard drawings to be printed with plans.

  Updated the following note template files to reflect content and layout provided in the updated T.D.O.T. Design Division Roadway Design Guidelines

  EnglishDropOffNotes.dot
  EnglishEPSCNotes.dot
  EnglishGeneralNotes.dot
  EPSCnotes_NPDESpermit.dot
  EPSCnotes_NPDESpermit.txt
  EPSCnotes _UtilityRelocation.dot,
  EPSCnotes_UtilityRelocation.txt
  W_Notes.dot
  ROW_Notes.txt

  Corrected the note outline layout in template file **MetricDropoffNotes.dot**.

  Deleted template files **EarthworkSpecialNotes.dot** & **EnvironmentalEcologySpecialNotes.dot**, since they are now included as Special Notes in **EnglishGeneralNotes.dot** where they are used.

- **EnglishTab.exe & MetricTab.exe**

  Revised Excel templates **Grading1.xlt & Grading2.xlt** to reflect the updated T.D.O.T. Design Division Roadway Design Guidelines.

Survey

- **SDOCS.exe**

  In Excel template **Survey_Contact_Acq_Create.xlt** updated contacts and all Nashville addresses as needed to specify the new 4 digit zip code extensions.

Aerial Survey

- **AScell.exe**

  Updated with latest version of **STDS.cel**. NO changes were done to cells used by Aerial Survey personnel.

- **ASseed.exe**

  Imported updated level filters from level library TDOTmain.dgnlib into **seedz.dgn**.

- **AStdotcfg.exe**

  Added configuration variable **MS_RASTER_LOADMODE** with a value of **3** to allow attachment of large digital raster image files to MicroStation DGN files.

Iplot

No changes**.**

Documentation

- **CADDV8.pdf**

  See the **Manual Revisions** at the end of document for detailed description of changes which reflect this CADD update as well as other informational changes.

- **TDOTDesignDivisionPrograms.pdf**

  Updated image captures to reflect current dialogs on pages 1 & 2.

  Added description with step by step instructions for new programs:

Data Point Profile Station Elevation	pages 11-14
Set Text Parameters by Active Scale	page 27
Vertical Curve Design Tool	pages 55-57 & 129
Draw Drainage Flow Direction by 2 Points	pages 172-173

Updated description and workflow for **Place Type 12 Guardrail Terminal** on pages 184-186 . This program has been renamed and was formerly called **P**lace Type 12 Guardrail Terminal EQ

Deleted work flow for obsolete programs **Earthwork Text** & older **Place Type 12 Guardrail Terminal** which was based on a 15 degree vehicle approach angle that is no longer valid

- **2ndSheetsV8.pdf**

  Updated document template list on page 43. Also on page 43, removed the paragraph with information concerning Word and alternate text files which are described in the next section and templates for instructional bulletins with standard drawing lists which are no longer used.

- **LandUseDGN_Creation.pdf**

  Added paragraph concerning the need for fill type to be set to None in land use shapes on page 2.

- **Xerox6050A Quick Reference Guide.pdf**

  Corrected Region 3 office IP address in list on page 8 .

  Added new section, **Making Reductions or Enlargements**, on page 16.

  Added new section, **Correcting Foreground Color of MicroStation Scan File Attachments**, on page 20.

Tennessee Map Files for MicroStation V8

- **County Map Index.pdf**

  Updated to reflect changes in map files available from web page, **Tennessee Map Files for MicroStation V8**.

- **Greene.exe**

  Replaced graphics in DGN with new data from Mapping Division. The CIT file has been replaced by graphics in the MicroStation DGN file.

- **Weakley.exe**

  Replaced graphics in DGN with new data from Mapping Division. The CIT file has been replaced by graphics in the MicroStation DGN file.

August 2008 Update

This update contains several changes from recent distributions of Design Guideline Instructional Bulletins and Standard Roadway Drawings as well as some new enhancements. Some highlights include the following items.

We are excited to announce that all special 3PC programs that placed horizontal alignment point symbols have been replaced by the new program, **Place Horizontal Alignment Points**, which uses the GPK file to access alignment information unlike the old tools which used the alignment graphics.

All cell access dialogs now have a new **Restart Cell Place** command button which allows the user to return to placing the current active cell after temporarily using other MicroStation commands. Previously it was necessary to select another cell from the list and then re-select the desired cell to resume placement of that cell from the dialog.

We now have new cross section cleaning programs, **Delete Proposed XS Graphics, Delete All XS Grids** and **Delete Earthwork Shapes** which unlike the old versions of these tools do the deletions by level name and restore the view levels as you had them set originally.

All files have been updated for use of the new **single slope median barrier walls** including all Geopak cross section criteria files which place median barriers on roadways.

As you may be aware of, many changes and additions have been done recently to all **Erosion Prevention and Sediment Control** devices in our standard roadway drawings and the T.D.O.T. Design Division Drainage Manual. This CADD update includes a complete overhaul of all cells, linestyles and programs to access and use these devices. Along with these changes, the quantity calculation of most EPSC devices has been simplified and this is reflected in Geopak's Design and Computation Manager where we have added many new EPSC pay items on which quantities can be calculated. Our new slope drain programs store the side slope at each location with the pipe so that when quantities are calculated later the length can be adjusted to account for the slope it is placed along.

We have new Excel templates for guardrail and storm drainage tabulation which include macros that automatically build tabulation blocks using data files generated by Geopak. See documentation file **2ndSheetsV8.pdf** section **Auto-Build Tabulated Quantity Blocks** for details on the use of these new templates.

Review the specific file revision descriptions below for further details on these changes and others.

MicroStation

- **EngCell.exe & MetCell.exe**

  In **STDS.cel** & **METRIC.cel:**

  Added the following new cells:

CBPTYPED	Catch Basin Protection (Type D)
CBPTYPEDL	Catch Basin Protection Type D Legend
CBTY10FA	Catch Basin Filter Assembly (Type 10)
CBTY10FAL	Catch Basin Filter Assembly (Type 10) Legend
CBTY11FA	Catch Basin Filter Assembly (Type 11)
CBTY11FAL	Catch Basin Filter Assembly (Type 11) Legend
CPTYPE2	Culvert Protection (Type 2)
CPTYPE2L	Culvert Protection (Type 2) Legend
ERCDT	Enhanced Rock Check Dam (Trapezoidal Ditch)
ERCDTL	Enhanced Rock Check Dam (Trapezoidal Ditch) Legend
FSCD	Filter Sock Check Dam
FSL	Filter Sock Legend
LEVELSPD	Level Spreader Dual Direction
LEVELSPDL	Level Spreader Dual Direction Legend
LEVELSPS	Level Spreader Single Direction
LEVELSPSL	Level Spreader Single Direction Legend
MBTYPSS	Median Barrier Single Slope (Typical Section)
PERMSDI	Permanent Slope Drain Inlet
PERMSDO	Permanent Slope Drain Outlet Pad
SFB15X10	Sediment Filter Bag 15 Ft X 10 Ft
SSBRPRPL	Single Slope Bridge Parapet, Left (Culvert Section)
SSBRPRPR	Single Slope Bridge Parapet, Right (Culvert Section)
SSMEDBAR32	Single Slope Median Barrier 32” (Culvert Section)
SSMEDBAR51	Single Slope Median Barrier 32” (Culvert Section)
THVFENCEL	Temporary High Visibility Construction Fence Legend
TURFRM	Erosion Control Turf Reinforcement Mat
TURFRMEXAMPLE	Turf Reinforcement Mat Example
TURFRML	Turf Reinforcement Mat Legend

  Renamed and/or revised the following cells:

CBPTYPEA	Catch Basin Protection (Type A)
CBPTYPEAL	Catch Basin Protection (Type A) Legend
CBPTYPEB	Catch Basin Protection (Type B)

CBPTYPEBL	Catch Basin Protection (Type B) Legend
CBPTYPEC	Catch Basin Protection (Type C)
CBPTYPECL	Catch Basin Protection (Type C) Legend
CBPTYPEE	Catch Basin Protection (Type E)
CBPTYPEEL	Catch Basin Protection (Type E) Legend
COMPOSTFBL	Compost Filter Berm Legend
CPTYPE1	Culvert Protection (Type 1)
CPTYPE1L	Culvert Protection (Type 1) Legend
DWSL	Dewatering Structure Legend
ECROUGHENL	Slope Surface Roughening Legend
ERCDCH	Enhanced Rock Check Dam (Channel)
ERCDCHL	Enhanced Rock Check Dam (Channel) Legend
ERCDV	Enhanced Rock Check Dam (V-Ditch)
ERCDVL	Enhanced Rock Check Dam (V-Ditch) Legend
EROLEG	Erosion Control Legend Header
ESFCT	Enhanced Silt Fence Check (Trapezoidal Ditch)
ESFCTL	Enhanced Silt Fence Check (Trapezoidal Ditch) Legend
ESFCV	Enhanced Silt Fence Check (V- Ditch)
ESFCVL	Enhanced Silt Fence Check (V- Ditch) Legend
FLABAL	Flashing Single Arrow Legend
FLABBL	Flashing Double Arrow Legend
FLABCL	Flashing Caution Legend
FLABL	Flashing Arrow Board Legend
MESGSL	Changeable Message Sign Legend
MULCHFBL	Mulch Filter Berm Legend
PSDRAINL	Permanent Slope Drain Legend
RCDT	Rock Check Dam (Trapezoidal Ditch)
RCDTL	Rock Check Dam (Trapezoidal Ditch) Legend
RCDV	Rock Check Dam (V- Ditch)
RCDVL	Rock Check Dam (V- Ditch) Legend
RESE	Rock And Earth Sediment Embankment
RESEL	Rock And Earth Sediment Embankment Legend
RSD	Rock Sediment Dam
RSDL	Rock Sediment Dam Legend
SANDHL	Sand Bags Legend (bags stacked end to end)
SANDVL	Sand Bags Legend (bags stacked side by side)
SB	Sediment Basin
SBL	Sediment Basin Legend
SEDTUBEL	Sediment Tube Legend

SFB15X15	Sediment Filter Bag 15 Ft X 15 Ft
SFBL	Sediment Filter Bag Legend
SILTBL	Silt Fence with Backing Legend
SILTEL	Enhanced Silt Fence Legend
SILTFL	Silt Fence Legend
SPDIV	Suspended Pipe Diversion
SPDIVL	Suspended Pipe Diversion Legend
STERCD	Sediment Trap with Enhanced Rock Check Dam
STERCDL	Sediment Trap with Enhanced Rock Check Dam Legend
STGCDL	Sediment Trap with Gabion Check Dam Legend
TBWDL	Temporary Barrier Wall Delineator Legend
TCE	Temporary Construction Exit
TCEL	Temporary Construction Exit Legend
TCF	Temporary Construction Ford
TCFL	Temporary Construction Ford Legend
TDIVCULVERTL	Temporary Diversion Culvert Legend
TFDGML	Temporary Flexible Delineator, Ground Mounted Legend
TPSDL	Temporary Slope Drain Legend

Replaced font 151 in the following cells:

NOIL	Vicinity Map Landscape
NOIP	Vicinity Map Portrait

Deleted the following obsolete cells:

BALE	Baled Hay – single with no stakes
BALE1	Baled Hay – single with 1 stake
BALE2	Baled Hay – single with 2 stakes
BALEL	Baled Hay Legend
CBBST	Temporary Bale Silt Trap
CBBSTL	Temporary Bale Silt Trap Legend
CD6	Temporary Baled Hay or Straw Slope Erosion Check
CD6L	Temporary Baled Hay or Straw Slope Erosion Check Legend
FILTBL	Temporary Filter Barrier Legend
FLEXLININGL	Temporary Flexible Channel Lining Legend
PRRSD	Permanent Rock Sediment Dam
PRRSDL	Permanent Rock Sediment Dam Legend
TPSD	Temporary Slope Drain

In **SIGN.cel:**

Added the following new signing detail cells:

CSOWWW	Cross Roads Signing One Way & Wrong Way
CSOWWWCH	Cross Road Signing One Way & Wrong Way With Channelized Turn Lanes
TLTOWWW	T Intersection Left Signing One Way And Wrong Way
TRTOWWW	T Intersection Right Signing One Way And Wrong Way

Removed fill setting from plot shapes in the following sheet cells:

SS1	Sign Schedule Sheet 1
SS2	Sign Schedule Sheet 2 (Includes " U" Post Substitution Table)
SSHEET	Sign Structure Sheet

- **PlotDrv.exe**

  Added new plot driver file **Tdotpdfful.plt**. This new file is for creating B/W full size PDF files from inside MicroStation using MicroStation Print. This file was developed from the MicroStation delivered file, pdf.plt, to apply standard T.D.O.T. Design Division weights, styles, etc.

- **Macros.exe**

  Deleted the following macros which have been replaced by visual basic applications: **clearEWshapes.ba, clearxs.ba, clearxsgrid.ba, TempSlopeDrain.b**a**, FuncBrPattern.ba, FuncPvmtPattern.ba, FuncROWPattern.ba**.

- **Symb.exe**

  In **TDOTLINE.rsc:**

  Added the following new linestyles:

  EROSION CONTROL BLANKET TYPE 1
  EROSION CONTROL BLANKET TYPE 2
  EROSION CONTROL BLANKET TYPE 3
  EROSION CONTROL BLANKET TYPE 4
  FENCE HIGH VISIBILITY
  FILTER SOCK 12"
  FILTER SOCK 18"
  FILTER SOCK 24"
  FILTER SOCK 8"
  MB SINGLE SLOPE WALL
  SLOPE DRAIN 15" PERM
  TURF REINFORCEMENT MAT CLASS 1
  TURF REINFORCEMENT MAT CLASS 2
  TURF REINFORCEMENT MAT CLASS 3

Revised display of all sediment tubes to appear as per standard roadway drawings RD-L-6 and EC-STR-37.

Revised display of all temporary diversion culverts to appear as per standard roadway drawings RD-L-6 and EC-STR-32.

- **TDOTinterface.exe**

  In **T.D.O.T.** drop down menu:

  Under **Centerlines**, added call for new **Place Horizontal Alignment Points** visual basic application.

  Under **Cross Sections**, replaced calls for MicroStation Basic macros with calls to new **Delete Proposed XS Graphics, Delete All XS Grids** and **Delete Earthwork Shapes** visual basic applications.

  Under **Drainage (Plan)**, added calls for new **Place Storm Drainage Pipe Label** and **Draw Permanent Slope Drain** visual basic applications.

  Under **Erosion Control**, replaced call for MicroStation Basic macro with calls to new **Draw Temporary Slope Drain** visual basic application.

  Under **Erosion Control**, added calls for new **Turf Reinforcement Mat Area Pattern** and **Draw Permanent Slope Drain** visual basic applications.

  Added new category **Profiles** in the main drop down list and moved main list options **Draw Profile Grid** and **Vertical Alignment Labeler** into it.

- **vba.exe**

  In all cell access visual basic applications, revised program code for displaying cell in picture window on dialog to prevent warping or shrinking which occurred in certain situations. Added new **Restart Cell Place** command button to return to placing the current active cell after temporarily using other MicroStation commands. Previously it was necessary to select another cell from the list and then re-select the desired cell to resume placement of that cell from the dialog.

  Added the following new programs:

  DeleteAllXSectionGrids.mvba Deletes all working cross section grids by level name. When the program is executed, it records all levels currently shown in view 1, turns all levels off and then turns all working cross section grid levels on using their names. It then sets up a temporary fence and does a void delete on all graphics. Finally it restores the levels originally displayed in view 1.

DeleteEarthWorkShapes.mvba Deletes all earthwork shape graphics by level name. When the program is executed, it records all levels currently shown in view 1, turns all levels off and then turns the earthwork shape level on using its name. It then sets up a temporary fence and does a void delete on all graphics. Finally it restores the levels originally displayed in view 1.

DeletePropXSectionGraphics.mvba Deletes all proposed cross section graphics by level name. When the program is executed, it records all levels currently shown in view 1, turns all levels off and then turns all proposed cross section levels on using their names. It then sets up a temporary fence and does a void delete on all graphics. Finally it restores the levels originally displayed in view 1.

DrawPermSlopeDrain.mvba Draws in a permanent slope drain with inlet symbol and rip-rap pad at the outlet end. The pipe is drawn in with the appropriate custom line style. Geopak Adhoc data for pay item number, description, unit and roadway side slope is added to the pipe line element so that quantities can be calculated later by Geopak's D&C Manager. The pipe size and side slope value is used to calculate the 45 degree bend location in the slope drain pipe. The side slope is also used during final quantity calculations to adjust the measured horizontal length of pipe since these pipes follow the roadway side slope. On the Draw Permanent Slope Drain dialog is a command button for Pay Item Info. When the user clicks on this option, the User Specified Pay Item Values dialog opens. This dialog contains fields for entering pay item number, description, unit and roadway side slope information with options to modify or read pay item information assigned to previously placed graphics.

DrawTempSlopeDrain.mvba Draws in a temporary slope drain with inlet symbol and optional rip-rap at the outlet end. The pipe is drawn in with the appropriate custom line style. Geopak Adhoc data for pay item number, description, unit and roadway side slope is added to the pipe line element so that quantities can be calculated later by Geopak's D&C Manager. The side slope value is used during final quantity calculations to adjust the measured horizontal length of pipe since these pipes follow the roadway side slope. On the Draw Temporary Slope Drain dialog is a command button for Pay Item Info. When the user clicks on this option, the User Specified Pay Item Values dialog opens. This dialog contains fields for entering pay item number, description, unit and roadway side slope information with options to modify or read pay item information assigned to previously placed graphics.

HApoints.mvba Places the required point text symbols for all key points of any horizontal alignment/chain stored in the project GPK file in the plan view. The PI symbol (triangle) with short sub tangents is placed for all spiral-curve combinations or simple curves. The point on chain symbol (circle) is placed at the begin & end and at all on chain curve points. The PI symbol (triangle) by itself is placed at any break in tangent direction

without a curve along the horizontal alignment. An ID chain button is provided to select the chain graphically. This is applicable to the following horizontal alignment types: Proposed Roadway Centerline, Preliminary Roadway Centerline, Existing Roadway Centerline, Proposed Special Ditch Centerline, Existing Stream Baseline, Functional Roadway Centerline, Proposed Private Drive Centerline.

StormDrainagePipeLabel.mvba Places proposed storm drainage pipe labels. It is intended for use on short pipes which cannot display the size portion of the storm drainage pipe custom line style. It includes an option to identify the pipe to automatically set up the desired label text. An option to place the label as a flag with terminator is provided. The current active scale is shown with a keyin field to reset as needed. Scale is used to control the size of label text and terminator.

Revised the following programs:

AreaPatterns.mvba Added new area pattern set up module for EPSC turf reinforcement mats.

DistanceBearingLabel.mvba Changed the way distance was calculated to ignore the Z coordinate elevation so that only X & Y coordinates are used to calculate distance. This was done to avoid errors in 3D files when line ends were at an elevation other than 0.

DrainageProfileCells.mvba Added new cell list options for single slope bridge parapet walls (SSBRPRPL, SSBRPRPR) and median barrier walls (SSMEDBAR32, SSMEDBAR51) for use as needed on culvert sections.

DrawProfileGrid.mvba Added a pause of 1 second after resetting original Geopak station decimal value to allow Geopak time to register new setting. Also added a new function to trap for the + character and remove it if found in station input values. With this new functionality in place, the message on the dialog specifying no + characters was removed since it does not matter anymore.

ErosionControlCells.mvba Updated all cell names and descriptions given in selection list. Added access to new cells Culvert Protection Type 2 (CPTYPE2), Enhanced Rock Check Dam Trapezoidal Ditch (ERCDT), Catch Basin Protection Type D (CBPTYED), Type 10 Catch Basin Filter Assembly (CBTY10FA), Type 11 Catch Basin Filter Assembly (CBTY11FA), Level Spreader Single Direction (LEVELSPS), Level Spreader Dual Direction (LEVELSPD), Filter Sock Check Dam (FSCD) and Sediment Filter Bag 15’X10’ (SFB15X10). Added command buttons to call the new visual basic applications for Turf Reinforcement Mat area pattern, Place Proposed Trees and Draw Permanent Slope Drains. Deleted obsolete cells BALE, BALE1, CD6, PRRSD and CBBST. Re-organized dialog layout to accommodate these changes and additions.

ErosionControlLegendCells.mvba Updated all cell names and descriptions given in selection list. Added new legend cell options for Enhanced Rock Check Dam Trapezoidal Ditch (ERCDTL), Culvert Protection Type 2 (CPTYPE2L), Catch Basin Protection Type D (CBPTYEDL), Type 10 Catch Basin Filter Assembly (CBTY10FAL), Type 11 Catch Basin Filter Assembly (CBTY11FAL), Level Spreader Single Direction (LEVELSPSL), Level Spreader Dual Direction (LEVELSPDL), Filter Socks (FSL) and Turf Reinforcement Mats (TURFRML). Deleted obsolete cells BALEL, CD6L, PRRSDL and CBBSTL.

SignDetailCells.mvba Added 4 new signing detail cells, Cross Road Signing One Way & Wrong Way (CSOWWW), Cross Road Signing One Way & Wrong Way W/Channelized Turn Lanes (CSOWWWCH), and T Intersection Right (TRTOWWW) and Left Signing One Way & Wrong Way (TLTOWWW).

TrafficControlLegendCells.mvba Added new legend cell option for High Visibility Construction Fence (THVFENCEL).

TrafficFlowDiagramCells.mvba Enlarged cell viewing window and rearranged dialog options.

TypicalSectionCells.mvba Added new single slope median barrier typical section cell (MBTYPSS). Revised description for old style multiple slope median barrier.

Geopak

- **GeopakStandards.exe**

In **D&C Manager (tdot.ddb & tdotmetric.ddb)**:

Under category **Drafting Standards > Cross Sections**, replaced calls to MicroStation Basic macros with calls to new visual basic applications for **Delete Proposed XS Graphics, Delete All XS Grids** and **Delete Earthwork Shapes**.

Replaced the call to 3PC programs with call to new visual basic application **Place Horizontal Alignment Points** for the following items.

Drafting Standards > Roadway Horizontal Alignments > HA Points

Drafting Standards > Private Drives > HA Driveway Points

Drafting Standards > Exist. Drainage > HA Stream Points

Drafting Standards > Prop. Drainage > Special Ditches > HA Ditch Points

Functional > HA Points F

Under category **Drafting Standards > Roadway Horizontal Alignments,** deleted HA Points items for preliminary & existing roadways since these are all now handled by the new **HA Points** item.

Corrected the line and curve Plan & Profile custom line style definitions for the following R.O.W. line items:

Drafting Standards > Pres. R.O.W. > R.O.W. Line

Drafting Standards > Pres. R.O.W. > R.O.W. CA Line

Drafting Standards > Prop. R.O.W. > CA ROW Line

Functional > CA ROW F

Functional > R.O.W. Line F

Functional > ROW CA Line F

Corrected the level defined for item **Drafting Standards > Exist. Drainage > Stream Align**.

Added the following new items under **Drafting Standards > Prop. Drainage**:

Structures in Plan > Perm Slope Drain	draw permanent slope drain with inlet & outlet
Label ST Pipe	place proposed storm drainage pipe label

Under category **Drafting Standards > Prop. Drainage,** deleted category **Permanent Slope Drains** and its items since these are all now handled by the new **Perm Slope Drain** item.

Added the following new item under **Drafting Standards > Prop. Walls**:

MB SS Wall	prop. single slope median barrier wall

Added the new category **Filter Socks** with the following items under **Drafting Standards > Erosion Control > EC Linear Features**:

8" Filter Sock	8" filter sock
12" Filter Sock	12" filter sock
18" Filter Sock	18" filter sock
24" Filter Sock	24" filter sock

Under category **Drafting Standards > Erosion Control > EC Linear Features,** deleted obsolete items Filter Barrier, Flexible Lining 3, Flexible Lining 4 and Hay Bales.

Added the new category **EC Blankets** with the following items under **Drafting Standards > Erosion Control**:

EC Blanket Type 1	erosion control blanket type 1
EC Blanket Type 2	erosion control blanket type 2
EC Blanket Type 3	erosion control blanket type 3
EC Blanket Type 4	erosion control blanket type 4
EC Blanket AP	pattern erosion control blanket area

Added the new category **Turf Reinforcement Mats** with the following items under **Drafting Standards > Erosion Control**:

Turf Mat Class 1	turf reinforcement mat class 1
Turf Mat Class 2	turf reinforcement mat class 2
Turf Mat Class 3	turf reinforcement mat class 3
Turf Mat AP	pattern turf reinforcement mat area

Under category **Drafting Standards > Erosion Control**, replaced call to MicroStation Basic macro with call to new visual basic application for item **Tmp Slope Drain (Draw Temporary Slope Drain)**.

Added the following new item under **Drafting Standards > Erosion Control**:

Perm Slope Drain	draw permanent slope drain with inlet & outlet

Added the following new item under **Drafting Standards > Traffic Control > TC Linear Features**:

Fence-HV Const	high visibility construction fence

Added the following new item under **Pay Items > Drainage Items**:

607-41.__	permanent slope drain (all sizes)

Under category **Pay Items > Drainage Items,** deleted category **Permanent Slope Drains** and its items since these are all now handled by the new **607-41.__** item. This item takes the length of each slope drain pipe and adjusts for slope distance using side slope adhoc information attached to them and reports the adjusted lengths back to D&C Manager.

Under category **Pay Items > Erosion Control Items,** reorganized with the following new sub-categories: **Catch Basin Protection, Curb Inlet Protection, Erosion Control Blankets, Turbidity Curtains**.

Added the following new items under **Pay Items > Erosion Control Items > Catch Basin Protection**:

209-40.30	catch basin protection (type A)
209-40.31	catch basin protection (type B)
209-40.32	catch basin protection (type C)
209-40.33	catch basin protection (type D)
209-40.34	catch basin protection (type E)
209-40.50	catch basin filter assembly (type 10)
209-40.51	catch basin filter assembly (type 11)

Under category **Pay Items > Erosion Control Items > Erosion Control Blankets,** revised all items to look for specific erosion control blanket line styles to determine type\ item number to apply the quantity to.

Added the following new item under **Pay Items > Erosion Control Items > Erosion Control Blankets**:

805-12.01	erosion control blanket (type 1)

Added the new category **Filter Socks** with the following items under **Pay Items > Erosion Control Items**:

209-03.20	filter sock (8")
209-03.21	filter sock (12")\
209-03.22	filter sock (18")\
209-03.23	filter sock (24")\

Added the new category **Turf Reinforcement Mats** with the following items under **Pay Items > Erosion Control Items**:

805-01.01	turf reinforcement mat (class 1)
805-01.02	turf reinforcement mat (class 2)
805-01.03	turf reinforcement mat (class 3)

Added the following new items under **Pay Items > Erosion Control Items**:

209-02.__	temporary slope drain (all sizes)
209-08.05	enhanced silt fence check V ditch
209-08.06	enhanced silt fence check trapezoidal ditch
209-08.07	rock check dam
209-08.08	enhanced rock check dam

209-08.09	filter sock check dam
209-09.03	sediment filter bag 15 ft X 15 ft
209-09.04	sediment filter bag 15 ft X 10 ft
209-65.03	temporary diversion channel
805-01.69	level spreaders

Under category **Pay Items > Erosion Control Items,** deleted category **Temporary Slope Drains** and its items since these are all now handled by the new **209-02.__** item. This item takes the length of each slope drain pipe and adjusts for slope distance using side slope adhoc information attached to them and reports the adjusted lengths back to D&C Manager.

Under category **Pay Items > Erosion Control Items,** deleted obsolete items 209-08.01 (Filter Barrier), 805-13.03 (Flexible Channel Lining Class 3) and 805-13.03 (Flexible Channel Lining Class 4).

Added the following new item under **Pay Items > MB Wall Items**:

711-05.70	prop. single slope median barrier wall

Added the following new item under **Pay Items > Traffic Control Items**:

707-08.11	high visibility construction fence

Added the following new drainage report format files:

TDOTnodesFULL.drf Data for drainage nodes (catch basins, manholes, junction boxes) Includes full listing of data used by auto-build Excel template for tabulation.

TDOTlinksFULL.drf Data for drainage links (storm sewer pipes & boxes) Includes full listing of data used by auto-build Excel template for tabulation.

- **Criteria.exe**

In **BarrierWall.x**, added program code for new 32 inch and 51 inch single slope median barrier walls and set 51 inch wall as default wall to use.

In **MedianBarrierShlds.x**, added program code for new 32 inch and 51 inch single slope median barrier walls.

In **MultiLaneFreewayMBShlds.x**, added program code for new 51 inch single slope median barrier wall.

In shoulder criteria files, **Shoulder.x** and **ShoulderMetric.x,** added a trap to only label subgrade slope under shoulder if the subgrade length is greater than 0. If the shoulder was on

the low side with supers greater than 4 and a shoulder width of 2 foot it would create a divide by 0 error.

In variable definition criteria files**, VDef4LaneMB.x** and **VDef6LaneMB.x,** added new variables for 32 inch and 51 inch single slope median barrier walls and set 51 inch wall as the default wall to use.

In variable definition criteria file**, VDefMultiLaneFreewayMB.x,** added new variable for 51 inch single slope median barrier wall and set that wall as the default wall to use.

In variable definition criteria file**, VDefBridgeMB.x, set** single slope parapet wall and 54 inch single slope median barrier wall as defaults.

In Write documents, **4LNMB.wri, 6LNMB.wri, BRDECKMB.wri** and **MULTILNMB.wri,** added new variables for single slope median barrier walls.

In **typical.cel,** revised typical sections that included median barrier walls to reflect new default single slope walls.

- **3PC.exe**

  Added the following new 3PC programs for EPSC device quantity calculations with D&C Manager:

  EnhancedRockCheckDams_Computation.x Reads a D&C Manager set & then counts the EPSC enhanced rock check dam cells and reports the quantity back to D&C Manager.

  EnhancedRockCheckDams_ComputationMetric.x Metric version of EnhancedRockCheckDams_Computation.x.

  LevelSpreaders_Computation.x Reads a D&C Manager set & then counts the EPSC level spreader cells and reports the quantity back to D&C Manager.

  LevelSpreaders_ComputationMetric.x Metric version of LevelSpreaders_Computation.x.

  RockCheckDams_Computation.x Reads a D&C Manager set & then counts the EPSC rock check dam cells and reports the quantity back to D&C Manager.

  RockCheckDams_ComputationMetric.x Metric version of RockCheckDams_Computation.x.

  SlopeDrain_Computation.x Reads a D&C Manager set & then takes the length of each slope drain pipe, adjusts for slope distance, using side slope adhoc information attached to them and reports the adjusted lengths back to D&C Manager with other pay item data stored as adhoc info. This program is used to tabulate either temporary or permanent slope drains for English or metric.

Deleted the following programs which have been replaced by the new VBA program **HApoints.mvba: draw_horiz_points.x, draw_func_horiz_points.x, draw_horiz_points_exist.x, draw_horiz_points_prelim.x, draw_horiz_points_Ditches.x, draw_horiz_points_PvtDr.x, draw_horiz_points_Stream.x** & **draw_profile_grid_metric.x**.

Deleted obsolete EPSC device computation programs, **FlexLiner_Computation.x** & **FlexLiner_ComputationMetric.x**.

Office

- **2ndSheets.exe**

  Updated Excel template files **BridgeQuantities.xlt, EstimatedRoadwayQuantities.xlt** and **MaintQuantities.xlt** to be compatible with either Office 2003 or Office 2007 software. This required a revision of the macro which checked the date and name of the items.dat item list file as well as some changes to several of the formatting macros. Along with this update several other minor changes were made including correction of the formatting of the footnotes area on main worksheets, changing the background of the old items.dat warning dialog which was sometimes black, re-centering of title on main worksheet and changes to Search Items macro which sometimes messed up the title on the block.

  Updated template file **BridgeIndex.dot** to reflect new standard structure drawing list from Design Guidelines Instructional bulletin 08-11.

  Updated template files **IB_ToBePrintedwithPlans_English.dot** & **IB_ToBePrintedwithPlans_Metric.dot** to reflect new standard roadway drawings from Design Guidelines Instructional bulletins 08-05, 08-06, 08-07, 08-08, 08-09 & 08-10.

- **EnglishTab.exe & MetricTab.exe**

  Added the following new Excel templates which include macros that automatically build tabulation blocks using data files generated by Geopak: **GuardrailTabBuilder.xlt, StormDrainagePipeTabBuilder.xlt and StormDrainageStructureTabBuilder.xlt**. See documentation file **2ndSheetsV8.pdf** section **Auto-Build Tabulated Quantity Blocks** for details on the use of these new templates

  Revised Excel template **ErosionControl.xlt** to have the EPSC title as shown in figure 10-9 on page 10-31 of the T.D.O.T. Design Division Drainage Manual.

Survey

- **GPS2003.exe**

  Updated to most current**.**

Aerial Survey

- **AScell.exe**

  Updated with latest version of **STDS.cel**. NO changes were done to cells used by Aerial Survey personnel.

Iplot

No changes**.**

Documentation

- **CADDV8.pdf**

  Revised with changes from this update See the **Manual Revisions** at end of document for detailed description of changes.

- **TDOTDesignDivisionPrograms.pdf**

  Added description with step by step instructions for new programs:

Place Horizontal Alignment Points (Roadway)	pages 42-43
Place Horizontal Alignment Points (Private Drive)	pages 119-120
Place Horizontal Alignment Points (Stream)	pages 124-125
Draw Permanent Slope Drain	pages 142-145 & 225-228
Place Horizontal Alignment Points (Special Ditch)	pages 156-157
Place Proposed Storm Drainage Pipe Label	pages 168-170
Draw Temporary Slope Drain	pages 210-213
Pattern Turf Reinforcement Mat Area	pages 235-237
Place Horizontal Alignment Points (Functional Roadway)	pages 325-326
Pattern Functional Pavement Area	pages 327-329
Pattern Functional Bridge Area	pages 330-332
Pattern Functional ROW Area	pages 333-335
Permanent Slope Drain Computation	page 340
Temporary Slope Drain Computation	page 342
Rock Check Dam Computation	page 342
Enhanced Rock Check Dam Computation	page 343
Level Spreaders Computation	page 344

  Revised program descriptions for cross section graphics deletion tools, **Delete ALL Prop. XS Graphics, Delete ALL XS Grids** & **Delete Earthwork Shapes**, on pages 32-34 to reflect functionality of new visual basic applications.

  Updated cell access dialog image captures to reflect current dialogs and added note concerning new **Restart Cell Place** command button on pages 44, 114, 115, 161, 162, 208, 209, 238, 248, 254-260, 262, 285, 290, 292, 297, 299, 301, 304, 305, 309, 310, 336 & 337.

Revised T.D.O.T. interface location given for program **Label Vertical Alignment** on pages 48, 121 & 158.

Updated **Draw Profile Grid** dialog images and removed note saying that +'s must not be included in station values on pages 53 & 54 since this no longer matters. Also revised T.D.O.T. interface location given for the program.

Revised program description for **Erosion Control Device Cells**, on page 208 to reflect new command buttons now available on the dialog.

Updated **Pattern Erosion Control Blanket Area** special requirements to reflect the need to place a pattern shape using the appropriate D&C Manager item to define the erosion control blanket type on page 232.

Deleted the following obsolete 3PC and MicroStation Basic program descriptions, most of which were replaced by new visual basic applications: Draw Proposed Roadway HA Points, Draw Preliminary Roadway HA Points, Draw Existing Roadway HA Points, Draw Proposed Private Drive HA Points, Draw Existing Stream HA Points, Draw Special Ditch HA Points, Draw Temporary Slope Drain, Draw Functional Roadway HA Points, Pattern Functional Pavement Area, Pattern Functional Bridge Area, Pattern Functional ROW Area, & Flexible Lining Computation.

- **TDOTGEOPAKRoadCourseGuide.pdf**

Exercise 5	Replaced Design & Computation Manager dialog images on pages 5-2 and 5-5 to reflect changes in options under Drafting Standards > Roadway Horizontal Alignments. Revised steps 8 and 9 on pages 5-5 and 5-6 with new images and instructions for the new Place Horizontal Alignment Points tool. Eliminated old steps 10-12 on page 5-6 and renumbered remaining steps.
Exercise 6	Replaced dialog images on pages 6-9 and 6-10 to reflect revised Draw Profile Grid tool. Message on dialog face concerning pluses in station values was removed from dialog since it no longer matters if stations include a "+" or not.
Exercise 20	Replaced images on pages 20-4 through 20-7 to reflect revised Traffic Control Device cell dialog which now includes the Restart Cell Place command. Added a comment on page 20-4 concerning the use of the Restart Cell Place command.

- **2ndSheetsV8.pdf**

  Updated document template lists on page 7.

  Added new section, **Auto-Build Tabulated Quantity Blocks**, on pages 25-28.

- **CreatingPDFsfromDGNs.pdf**

  Added references to full size MicroStation Print plot driver file **Tdotpdfful.plt** on page 9.

- **Xerox6050A Quick Reference Guide.pdf**

  Added this new documentation file containing a quick reference for some of the more commonly used workflows for the Xerox 6050A Printer/Scanner.

Tennessee Map Files for MicroStation

- **County Map Index.pdf**

  Updated to reflect changes in map files available from web page, **Tennessee Map Files for MicroStation V8**.

- **Tipton.exe**

  Replaced graphics in DGN with new data from Mapping Division.

April 2008 Update

This update contains several fixes and corrections as well as some new enhancements. Some highlights include the following items.

We have done a complete overhaul of the Sign cell library. This included corrections in symbology. fills, origins and most significantly, size. All sign faces have been adjusted to be proportional to other sign faces so that when placed together they will appear as they should. In conjunction with the revisions we have also added several new signs as well.

We have added 2 new tools. The new **Draw Profile Grid** tool provides a dialog for the input of control values and is much more user friendly than the program we were using. The new **Place Proposed Tree** tool provides an easy way to place and keep up with proposed trees by genus & species in channel change or wetland mitigation areas. Its companion computation program makes it simple to tabulate the tree quantities later.

The **Label Station/Offset** tool now has an ID Chain button so that the chain can be identified graphically. This enhancement has been added mainly for our users who may not be working with the chains directly and may not immediately know their names but this new functionality can be appreciated by everyone.

Urban cross section criteria files have been enhanced to look for both front & back edge of sidewalks so they can now allow for multiple widths of the grass separator strip & sidewalk as well as handling the transition areas for those.

Survey 3D DGN Files:
Survey management has asked that we remind all Design personnel that it is not only unnecessary to convert Survey 3D MicroStation DGN files to 2D for use in the plans, by our current workflow standards it **should not be done**. As per the instructions presented in the documentation file **CADDV8.pdf**, under section **Data Exchange between Survey & Design Personnel**, graphical survey data should be in 3D MicroStation DGN files and should remain so for the life of the project in order to facilitate additional survey requests. Design personnel can make changes in label locations in the survey DGN as needed to enhance plans appearance but no other changes should be made by them. When additional survey requests are made, the 3D survey DGN file is submitted back to Survey for any changes that need to be done. The graphics can then be updated with less effort and can be returned back to Design in a more timely manner.

Review the specific file revision descriptions below for further details on these changes and others.

MicroStation

- **EngCell.exe & MetCell.exe**

  In **STDS.cel** & **METRIC.cel:**

  Added the following new cell:

Proposed Tree	TREEPROPOSED

  Corrected the custom line style display in the following erosion control legend cells which appeared as plain lines at normal 50 scale placement:

Temporary Flexible Channel Lining Legend	FLEXLININGL
Temporary Floating Turbidity Curtain Legend	FTCURTAINL
Permanent Slope Drain Legend	PSDRAINL
Temporary Compost Filter Berm Legend	TCOMPOSTFBL
Temporary Diversion Culvert Legend	TDIVCULVERTL
Temporary Mulch Filter Berm Legend	TMULCHFBL
Temporary Sediment Tube Legend	TSEDTUBEL

  In **SIGN.cel:**

  Performed a complete overhaul of all sign faces in cell library. These updates included:
  Symbology adjustments (level, color & weight)
  Origin correction (center for main signs and top or bottom for supplemental signs)
  Size adjustment to be proportional to other sign faces
  Reset to match standard sign face layout (single border, snap points)
  Replaced all elements used to fill shapes with standard shape fills
  Positioned enter data fill in fields so they appear correctly when filled in
  Deletion of construction points and lines which were not part of sign face graphics
  Eliminate all nested cells

  Added the following new sign cells:

Log Mile (1 digit)(1 digit state route)	TN.17A1
Log Mile (1 digit)(2 digit state route)	TN.17A2
Log Mile (1 digit)(3 digit state route)	TN.17A3
Log Mile (2 digit)(1 digit state route)	TN.17B1
Log Mile (2 digit)(2 digit state route)	TN.17B2
Log Mile (2 digit)(3 digit state route)	TN.17B3
Scenic Route	TN.23
Offset Crossroad (Right then Left)	TN.27A
Offset Crossroad (Left then Right)	TN.27B

Shoulder Narrows Ahead	TN.35
Reduced Truck Speed Ahead	TN.38
Motorcycles Allowed	TN.46
Highway Emergency *847 Cellular State Trooper	TN.47
Move Damaged Vehicle To Shoulder If No Serious Injury	TN.49
TDOT Construction Record-A-Comment 1-877-SmartWay (Interstate)	TN.55A
TDOT Construction Record-A-Comment 1-877-SmartWay (State Route)	TN.55B
Use Of Unapproved Compression Brakes Prohibited(Freeways/Expressways)	TN.58A
Use Of Unapproved Compression Brakes Prohibited (Conventional Roads)	TN.58B
Trucks Use Right 2 Lanes Ahead (Shoulder)	TN.60A
Trucks Use Right 2 Lanes Ahead (Median Barrier)	TN.60B
Trucks Use Right 2 Lanes (Shoulder)	TN.60C
Trucks Use Right 2 Lanes (Median Barrier)	TN.60D
End Truck Lane Restriction (Shoulder)	TN.60E
End Truck Lane Restriction (Median Barrier)	TN.60F
Move Over For Stopped Emergency Vehicles $500 Maximum Fine	TN.61
Travel Info Call 511 (Interstate)	TN.62A
Travel Info Call 511 (Non-Interstate)	TN.62B

Deleted cell SPEC6 which has been replaced by cell TN.55A.

- **Data.exe**

  Added new level, SURVEY - CONTROL - Check Points, to level mapping file **TDOTV8main.csv**.

- **Dgnlib.exe**

  Added the following new level to **TDOTmain.dgnlib**. This new level is used by Survey for GPS RTK check points.

SURVEY - CONTROL - Check Points	339

  Made the following level filter changes in **TDOTmain.dgnlib:**

  Renamed filter Design – GPK Visualizations for ROW Work as **Design - ROW Work** and updated levels to include proposed centerline levels, proposed ROW and easement levels and the tract numbers level.

  Updated the definition of Survey filters: **Survey - All but Points, Survey - All with Point Elevations, Survey - All with Point Locators** & **Survey - All with Point Numbers** to exclude the new **SURVEY - CONTROL - Check Points** level.

Added new text style, **Project Limits**, to **TDOTmain.dgnlib**.

Note:
Use the Import Additional V8 Settings tool accessed from the MicroStation menu bar at **TDOT > V8 – Import Additional Settings** or from Geopak's D&C Manager at **Drafting Standards > Tools > V8 Import** to import the new level, text style and updated level filters. Set controls to Main, turn off all options except Levels & Level Filters and Text Styles, select your regular (non-cross section) DGN file(s) and click Process Files.

Added new level, SURVEY - CONTROL - Check Points, to level mapping file **TDOTV8mainOnTheFly.csv**.

- **Seed.exe**

  Imported new level, SURVEY - CONTROL - Check Points, into all non-cross section seed files.

  Revised all views in all seed files to have **Fill** turned on by default. This was done so that as shape elements are created it would be noticed immediately if a fill is set for them. Usually these were only discovered later when plotting. Requiring re-plotting and resulting in lost time.

  Updated seed files **Ind&StdDwgsEng.dgn** & **Ind&StdDwgsMet.dgn** to reflect standard drawing lists provided in Design Guidelines Instructional bulletins and as shown on the standard drawing web pages at **http://www.tdot.state.tn.us/Chief_Engineer/engr_library/stddrlib.htm.**

- **TDOTinterface.exe**

  In **T.D.O.T.** drop down menu:

  Under **Erosion Control**, added call for new **Place Proposed Trees** visual basic application.

  In the main drop down list added new item **Profile – Draw Grid** which calls new **Draw Profile Grid** visual basic application.

- **vba.exe**

  Added the following new programs:

DrawProfileGrid.mvba	Draws a working profile grid in profile area with stations and elevations. A dialog is provided for entry of scales, station limits and elevation limits. The resulting range of the profile is shown dynamically prior to placement so that adjustment can be made as needed. This program supports English or metric application.

GetCogoElement.mvba VBA program provided by Bentley to read COGO element attributes from graphic elements. This program is not used directly by the user but is called as a function by other VBA programs. GetCogoElement.mvba was written by Bentley/Geopak since it contains Geopak proprietary information and for that reason is passworded to prevent opening the program directly.

PlaceProposedTrees.mvba This program places proposed trees and adds Geopak Adhoc data for pay item number, description, unit and quantity to the cell element. This data is used later by Geopak's D&C Manager to compile final quantities. The size of the tree cell is controlled by the current active scale which is shown on the dialog for adjustment as needed. The Place Proposed Tree dialog includes all standard proposed tree pay items which can be chosen for placement. At the end of the list on the Place Proposed Tree dialog is an option for a user specified tree. When the user clicks on this option, the User Specified Pay Item Values dialog opens. This dialog contains fields for entering pay item number, description, unit and quantity. The Read Element command button on the dialog is provided in case the user wishes to duplicate the pay item values from a tree placed previously. This can also be used to just check trees already placed.

Revised the following programs:

ConstructionSignCells.mvba Revised cell name and description for Record-A-Comment. Interstate (TN-55a) sign and added Record-A-Comment, State Route (TN-55b) sign.

HighwayRouteSignCells.mvba Added the following new signs: TN-17A, TN-17B & TN -23.

LabelConduit.mvba Revised text labels to include a space between the C and the type text in labels.

PlaceandAnnotateXSsheets.mvba Changed Project Data Location choice for Line # 1 or Line # 2 from check boxes to toggle buttons on the program dialog. The program code for the old check boxes was not allowing the user to pick the option for Line #2. Since this tool is most often used to place Plot Borders on new cross section sheet sets or corner Annotation for construction cross section sheets the following new defaults were set: Plot Borders = ON, Type = CONST., Project Number = ON and Project Data Location = Line #2. Also revised the formatting of the current year which is shown by default under Annotation. Depending on what the system format for the current date was on individual PCs, sometimes the year value was being truncated.

RegulatorySignCells.mvba	Corrected sizes given for Stay In Lane To Extend Green (R10-6), 2 Persons Min 7AM to 9AM-Horiz(R3-14), 2 Persons Min 4PM to 6PM-Horiz(R3-14) and Do Not Pass In Right Lane(R4-1 MOD.). Added the following new signs: TN -46, TN -49, TN-58A, TN-58B, TN-60A, TN-60B, TN-60C, TN-60D, TN-60E, TN-60F & TN -61.
StaOffLabel.mvba	Added new chain ID button to dialog which allows graphic selection of chain to use. Added new class module clsIdentifyChain with reference to GetCogoElement.mvba to support this functionality.
TennesseeSignCells.mvba	Added the following new signs: TN-17A, TN-17B, TN -23, TN-27A, TN-27B, TN -35, TN -38, TN -46, TN -47, TN -49, TN-55A, TN-55B, TN-58A, TN-58B, TN-60A, TN-60B, TN-60C, TN-60D, TN-60E, TN-60F, TN -61, TN-62A & TN-62B.
TextstylesPlus.mvba	Added new item Project Limits to available text styles.
WarningSignCells.mvba	Added the following new signs: TN-27A, TN-27B, TN -35 & TN -38.

Geopak

- **GeopakStandards.exe**

In **D&C Manager (tdot.ddb only)**, under **Drafting Standards > Roadway Horizontal Alignments**, revised standard roadway curve data to handle spiral curves with un-equal spirals or only one spiral. In these cases the spiral data items will include the text IN or OUT to indicate which spiral they apply to. Also set up spiral data so that it could be displayed for individual spirals if turned on in the Draw Plan & Profile dialog. This revision has been done in the following roadway horizontal alignment items:

HA Roadway	proposed roadway horizontal alignment
HA Roadway_20	proposed roadway horizontal alignment - 20 Scale Offsets
HA Roadway Pre	preliminary roadway horizontal alignment
HA Roadway Ex	existing roadway horizontal alignment

In **D&C Manager (tdot.ddb & tdotmetric.ddb)**

In item **Drafting Standards > Exist. Profiles > Profile Grid**, replaced call to 3PC programs with call to new visual basic application **Draw Profile Grid**.

Added the following new item under **Drafting Standards > Erosion Control** for use in channel change or wetland mitigation areas:

Place Prop Trees	place proposed trees with pay item data

Added the following new item under **Pay Items > Erosion Control Items** for quantity computation of proposed trees:

802-01.__	proposed trees (all types)

- **TDOTSMDFeatures.exe**

  In **TNDOT.smd,** added new feature code **XCK** for GPS RTK check points and corrected the placement level for the circle in feature **XMISC** .

- **Criteria.exe**

  In criteria files **PvtDriveProfileRural.x, PvtDriveProfileRuralMetric.x, PvtDriveProfileUrban.x** & **PvtDriveProfileUrbanMetric.x,** added new traps to prevent the final connecting grade from going backward which could occur when the initial tie point fell within the area of the beginning curve.

  In criteria files **SidewalkAreaLeft.x, SidewalkAreaLeftMetric.x, SidewalkAreaRight.x, SidewalkAreaRightMetric.x, PvtDriveProfileUrban.x** & **PvtDriveProfileUrbanMetric.x,** added functionality to control width of grass separator strip and sidewalk by looking for both front & back edge of sidewalk linework. They now allow multiple widths of the grass separator strip & sidewalk as well as handling transition areas.

  Added the following new metric criteria files:

CurbTypeA6inMmetric.x	150 mm Mountable Type A Curb
MedianRaisedConcMetric.x	Raised Concrete Median w/2% slopes (Includes type A 150 mm mountable curbs)
MedianRaisedGrassMetric.x	Raised Concrete Median w/4% slopes (Includes type A 150 mm mountable curbs)
RaisedMedianPavementMetric.x	Pavement & Subgrade w/Widening for raised median divided roadways

  Updated **Metric_criteria.ctl** to utilize the new metric criteria files with typical sections**.**

- **3PC.exe**

  Added the following new 3PC program:

Tree_Computation.x	Reads a D&C Manager set & counts the proposed tree cells, reading pay item adhoc information attached to them and reporting the information back to D&C Manager.

  Deleted obsolete programs, **draw_profile_grid.x** & **draw_profile_grid_metric.x**, which have been replaced by new VBA program **DrawProfileGrid.mvba**.

- **ROWLegal.exe**

  Removed this download file since it contained old out of date versions of Region 2's legal description libraries and style files. These files are currently distributed internally at that office.

Office

- **DDOCS.exe**

  Added the following new templates for FileNet distribution of PDF plan sets:

  FileNetDistributionRequest.dot

  FileNetDistributionRequestFieldReview.dot (includes standard recipients)

  FileNetDistributionRequestHGApproval.dot (includes standard recipients)

  Updated the Transportation Management Plan Workbook template, **TMPWorkbook.dot**, to match the revised form layout as shown in the **T.D.O.T. Work Zone Safety Mobility Manual**.

  Removed out of date template **UtilityCADPlansDisclaimer.dot**. This template is officially distributed by the R.O.W. Division and can be found at **http://www.tdot.state.tn.us/Chief_Engineer/assistant_engineer_design/row/forms.htm.**

- **2ndSheets.exe**

  Updated template files **EnglishIndex&StdDwgs.dot** & **MetricIndex&StdDwgs.dot** to reflect standard drawing lists provided in Design Guidelines Instructional bulletins and as shown on the standard drawing web pages at **http://www.tdot.state.tn.us/Chief_Engineer/engr_library/stddrlib.htm.**

  In templates **BridgeQuantities.xlt, EstimatedRoadwayQuantities.xlt** & **MaintQuantities.xlt**, corrected the web address used to access and download the construction item list file **items.dat** in various macro subroutines that were accessed when validating the items.dat file.

- **English Survey & Design Manday Form version 2.21.xlt**

  Updated with most current version of this form, effective date April 9, 2008**.**

Survey

- **GPS2003.exe**

  Updated to most current**.**

Aerial Survey

- **AScell.exe**

  Updated with latest version of **STDS.cel**. NO changes were done to cells used by Aerial Survey personnel.

- **ASseed.exe**

  Imported new level, SURVEY - CONTROL - Check Points, into Aerial Survey seed file **Seedz.dgn**.

Iplot

- **DesignScripts.exe**

  Added new design script files **PDFM.FUL, PDFM.HAF & PDFMColor.FUL** for creating PDF files for metric projects.

  In design script file **PDFColor.FUL**, corrected description comments to specify that plots are set up for color.

- **Settings*.exe**

  Added new settings file **Pdf254Metric*Haf.set** for generating PDF files for metric projects using Interplot Organizer. This new file was added to settings download files for headquarters floors 10, 12 & 13 and Region 1, 2, 3 & 4 offices.

  Remember that if more than one set of settings files are downloaded, you should always download your local set last so that the default iplot.set file will point to you local queue.

Documentation

- **CADDV8.pdf**

  See the **Manual Revisions** at the end of document for detailed description of changes which reflect this CADD update as well as other informational changes.

- **TDOTDesignDivisionPrograms.pdf**

  Updated image captures and text to include new ID Chain function in **Label Station/Offset** tool on pages 7-10.

Revised description text for **Import Additional V8 Settings** tool to include its use for updating any V8 DGN file to current standards (including levels, level filters, text styles & colors) on page 29.

Updated image captures for **Place & Annotate XS Sheets** tool to reflect current dialog and dialog default values on pages 38 & 39.

Updated description text to include new ID Chain function in **Label Station/Offset** tool on page 90.

Added description with step by step instructions for new programs:

Draw Profile Grid (replaced old 3PC program description)	pages 54-55
Place Proposed Trees	pages 216-218
Proposed Tree Computation	page 314

- **TDOTGEOPAKRoadCourseGuide.pdf**

  The following revisions have been made:

  Exercise 6

  Replaced dialog image in step 5 on page 6-7 to reflect correct ending station of profile.

  Replaced images and steps on pages 6-9 through 6-11 to reflect use of the new Draw Profile Grid tool.

  Exercise 7

  Edited text in steps 4 & 5 on page 7-2 to reflect options as they appear in dialog images.

  Exercise 8

  Corrected spelling of word “windows” in first paragraph on page 8-5.

  Exercise 13

  Replaced dialog image in step 12 on page 13-4 to reflect the correct number of points generated for transition chain.

  Edited offset value text in step 6 on page 13-13 to reflect values as they appear in dialog image.

  Exercise 17

  Replaced dialog image in step 3 on page 17-2 to reflect the correct Tolerance value.

Exercise 19

Edited instruction text in step 2 on page 19-6 and step 3 on page 19-7 to clarify which items to pick from list in Layout Settings dialog.

Exercise 22

Added new instruction text with accompanying dialog image to step 2 on page 22-2 to set symbology of cross section pattern lines.

Class Files.exe … Updated all MicroStation DGN files with most current levels, level filters and text styles.

- **2ndSheetsV8.pdf**

  Added web page link to **T.D.O.T. Design Division Roadway Design Guidelines** reference on page 8.

  Added web page link to **CADDV8.pdf** reference on pages 27 & 31.

  Rewrote **In MicroStation V8, Open / Update the Excel OLE Links** section to reflect current MicroStation functionality when opening Excel links with the recommendation to not double click links to open them on page 30.

  Added note concerning differences between opening Excel & Word links in MicroStation at the bottom of page 32.

  Removed note concerning linking 11”X17” Word documents from notes at bottom of page 41 and included it in notes before dimension keyin table on p[age 40.

- **InterPlotOrganizerV8.pdf**

  Added web page link to **CreatingPDFsfromDGNs.pdf** reference on page 1.

  Added new settings file **Pdf254Metric*Haf.set** with description on page 3.

- **CreatingPDFsfromDGNs.pdf**

  Added new settings file **Pdf254Metric*Haf.set** to instructions on page 3.

- **TDOT SURVEY SMD V8 FEATURE CODES.pdf**

  Updated to most current listing.

- **GeopakLegalDescriptionLibraries.pdf**

  Added this new documentation file containing an overview of working on Geopak legal description libraries so that they can be customized for each T.D.O.T. Regional R.O.W. office's needs.

- **TINSurfaceFromDEM.pdf**

  Updated web page link to **83StatePlaneNameIndex.dgn** reference on page 1.

- **TitleSheets.pdf**

  Added web page link to **CADDV8.pdf** reference on page 1.

Tennessee Map Files for MicroStation V8

- **County Map Index.pdf**

  Updated to reflect changes in map files available from web page, **Tennessee Map Files for MicroStation V8**.

- **Blount.exe**

  Replaced graphics in DGN with new data from Mapping Division. The CIT file has been replaced by graphics in the MicroStation DGN file.

- **Carter.exe**

  Replaced graphics in DGN with new data from Mapping Division. The CIT file has been replaced by graphics in the MicroStation DGN file.

- **Fentress.exe**

  Replaced graphics in DGN with new data from Mapping Division.

- **Hamilton.exe**

  Replaced graphics in DGN with new data from Mapping Division.

- **Meigs.exe**

  Replaced graphics in DGN with new data from Mapping Division.

- **Rhea.exe**

  Replaced graphics in DGN with new data from Mapping Division. The CIT file has been replaced by graphics in the MicroStation DGN file.

- **Robertson.exe**

  Replaced graphics in DGN with new data from Mapping Division.

- **Sevier.exe**

  Replaced graphics in DGN with new data from Mapping Division.

- **Sullivan.exe**

  Replaced graphics in DGN with new data from Mapping Division.

- **Washington.exe**

  Replaced graphics in DGN with new data from Mapping Division. The CIT file has been replaced by graphics in the MicroStation DGN file.

October 2007 Update

This update contains several updates from recent distributions of Design Guideline Instructional Bulletins and Standard Roadway Drawings as well as some new enhancements. Some highlights include the following items.

Our documentation file **TDOTGEOPAKRoadCourseGuide.pdf** has been completely updated to reflect the functionality found in Geopak version 8.08.02.73 which we have just implemented. Design Division users **should not** reprint this course guide themselves. We are currently printing new copies for all Design Division personnel.

The new Transportation Management Plan Workbook ,**TMPWorkbook.dot,** is now included in our Office download for TDOT Letters used by Design Division personnel.

We have added a new tool, **Change Line Style Scale** which is accessible from Geopak's D&C Manager, the TDOT drop down menu or from the TDOT Design Division Toolbox.

New Interplot Organizer settings files have been set up for use in generating PDF documents from permit maps and sketches. These are set up for landscape or portrait, B/W or color. **Remember that if more than one set of settings files are downloaded, you should always download your local set last so that the default iplot.set file will point to you local queue**.

All templates and seed files on our web pages that contained EPSC notes have been replaced. Specifically all notes for projects that require a NPDES permit and/or include Utility relocations have been changed to reflect the notes given in Instructional Bulletins 06-13 & 07-04. These notes have been removed from files that contained the complete set of General Notes since they should not be shown there.

Review the specific file revision descriptions below for further details on these changes and others.

MicroStation

- **EngCell.exe & MetCell.exe**

  In **STDS.cel** & **METRIC.cel:**

  Updated the following permit and form cells to include a PDF plot border (CO=253) which is utilized by Interplot Client settings files:

Blank General Location Map (Portrait)	GNLOCP
Blank General Location Map (Landscape)	GNLOCL
Blank Hydraulic Permit Location Map (Portrait)	PMLOCP
Blank Hydraulic Permit Location Map (Landscape)	PMLOCL
Blank Hydraulic Permit Sketch (Portrait)	PMSK
Blank Hydraulic Permit Sketch (Landscape with Profile Grid)	PMSKGR
Blank Vicinity Location Map (Portrait)	NOIP
Blank Vicinity Location Map (Landscape)	NOIL

  In **STDS.cel:**

  Added the following new cells for use with Geopak Drainage:

Proposed Median Barrier Catch Basin 32”x80” (Wall Center Origin)	CB32X80C
Proposed Retaining Wall Catch Basin 9’x9’ (Wall Face Origin)	CB9X9R

  In **SIGN.cel:**

  Added the following new cells for use on bike or shared use paths as shown on standard roadway drawing T-M-10:

End - Supplemental for Bike Route or Trail	M4.12
Directional Arrow Left - Supplemental for Bike Route or Trail	M7.1L
Directional Arrow Right - Supplemental for Bike Route or Trail	M7.1R
Directional Arrow Left & Right - Supplemental for Bike Route or Trail	M7.5
No Motor Vehicles	R5.3
Keep Left Right Bicycles Pedestrians	R9.7

  Updated the following sign face cells to be proportional in size to other signs they are used with:

Bike Route	D11.1
Bike Trail	D11.1M

- **Seed.exe**

  In seed files, **EnglishEPSCNotes.dgn** & **MetricEPSCNotes.dgn**, replaced all notes for projects that require a NPDES permit and/or include Utility relocations to reflect the original notes given in Design Guidelines Instructional Bulletins 06-13 & 07-04. These notes have been removed from **EnglishGeneralNotes.dgn** & **MetricGeneralNotes.dgn** since they should not be shown there. In a previous CADD Standards update we changed these notes to reflect the new versions as presented with the complete set of General Notes from Instructional Bulletins 07-08 & 7-09 but since that time it has been determined that the older versions of the notes must be used.

  Updated seed files **Ind&StdDwgsEng.dgn** & **Ind&StdDwgsMet.dgn** to reflect new standard drawing lists from Design Guidelines Instructional bulletins 07-24 & 07-25. Also revised the Index in these files to specify TYPICAL SECTIONS AND PAVING SCHEDULE instead of TYPICAL SECTIONS AND PAVING QUANTITIES for sheets 2C – 2F.

- **TDOTinterface.exe**

  In **T.D.O.T.** drop down menu:

  Under **Custom Line Styles,** added call for new **Change Line Style Scale** visual basic application.

- **vba.exe**

  Added the following new program:

  ChangeLinestyleScale.mvba This program is used to change the line style scale on existing lines that have a custom line style applied on them. The current active scale is read at program start up and is shown in a keyin field. This value which can be set as needed by the user is used to build the keyin to change the line style scale. After setting the scale desired the user can immediately apply by identifying an element or accepting the fence contents if a fence is active. Active selection sets are automatically updated to the new scale. A command button is provided to restart the command with the current specified scale after using other MicroStation commands.

  Revised the following programs:

  DrawTypeUEndwall.mvba Revised code for dealing with skews to reflect new standards as shown on standard roadway drawing D-PE-3B(1) and referred to from D-PE-4B(2) & D-PE-6B(2). At skews other than 90 on 3:1, 4:1 & 6:1 side slopes, alternate pipe sizes are used to set endwall dimensions and quantities as specified in the table shown on drawing D-PE-3B(1).

IDCBandPlaceFilterAssembly.mvba Added Geopak Drainage node cells CB32X80C & CB9X9R to search list for identify function.

RegulatorySignCells.mvba Added access to new sign face cells R5-3 (No Motor Vehicles) & R9-7 (Keep LT RT Bicycles Pedestrians).

TDOTDesignDivToolbox.mvba Added new command button under Custom Line Styles, Change Scale.

WarningSignCells.mvba Added access to new sign face cells M4-12 (End - Bike Supplemental), M7-1L (Bike Directional Arrow - LT), M7-1R (Bike Directional Arrow - RT) & M7-5 (Bike Directional Arrow - LT & RT).

Geopak

- **GeopakStandards.exe**

In **D&C Manager (tdot.ddb & tdotmetric.ddb)**:

Added the following new item under **Drafting Standards > Tools** for use in the development of line work for alternate scale sheets such as property maps and drainage maps:

Scale LineStyle change line style scale

In drainage library **TDOTEnglish.dlb**:

Revised the area reduction factor of all sag catch basin drainage nodes to reflect the clogging factors shown in table 7-8 on page 7-49 of the TDOT Design Division Drainage Manual. Note that all of these grates have been pre-adjusted for the reduction of the opening due to the grate hardware and the area reduction factor reflects clogging only.

Added the following new catch basin drainage nodes:

CB#32 32”X80” type 32 catch basin with 32”X80” substructure
CB#40 9X9 type 40 catch basin with 9’X9’ substructure
CB#51 9X9 type 51 catch basin with 9’X9’ substructure
CB#52 9X9 type 52 catch basin with 9’X9’ substructure

- **Criteria.exe**

In **BridgeDeck.x,** removed code to tie vertically to ground. This was previously used during earthwork calculations so that skip areas would be honored. Geopak version 8.8 includes a new option in earthwork runs called **Ignore Areas** which takes care of this problem. Go to page 15-13, Skip Areas, in document **TDOTGEOPAKRoadCourseGuide.pdf** for a description of how to use this new feature.

Added new side slope criteria files, **Case2slopes400ADT.x** & **Case2slopesmetric400.x** for use with Geopak typical section **2LNTS1A** (2 Lane Local Roads, ADT<=400, RD01-TS-1A)**.** That roadway typical required an additional 2 feet 3.5 inches of shoulder width outside of guardrail (as per standard roadway drawing S-GR-23A) but did not require the 3 feet 5 inch widening at guardrail which is applied under certain circumstances by the regular Case II slopes criteria files.

In typical section criteria control files **criteria.ctl, English_criteria.ctl, Metric_criteria.ctl,** revised typical section **2LNTS1A** to use new criteria files **Case2slopes400ADT.x** & **Case2slopesmetric400.x.**

Office

- **DDOCS.exe**

  Updated template **DesignExceptionRequest.dot** to reflect changes from Design Guidelines Instructional Bulletin 07-18. In conjunction with this update, the template has been optimized as a form to facilitate its use online with text entry fields, check boxes and drop down list options.

  Added new template **TMPWorkbook.dot**. The Transportation Management Plan Workbook template has been set up as an online form with text entry fields & check boxes.

  Updated addresses in templates **Const.PlansTransmittal.dot** and **RequestForPavementDesign.dot** to reflect location changes of the Design Division offices they are sent to.

- **2ndSheets.exe**

  In template files **EnglishEPSCNotes.dot, EPSCnotes_NPDESpermit.dot, EPSCnotes_NPDESpermit.txt, EPSCnotes_UtilityRelocation.dot, EPSCnotes_UtilityRelocation.txt** & **MetricEPSCNotes.dot**, replaced all notes for projects that require a NPDES permit and/or include Utility relocations to reflect the original notes given in Design Guidelines Instructional Bulletins 06-13 & 07-04. These notes have been removed from **EnglishGeneralNotes.dot** & **MetricGeneralNotes.dot** since they should not be shown there. In a previous CADD Standards update we changed these notes to reflect the new versions as presented with the complete set of General Notes from Instructional Bulletins 07-08 & 7-09 but since that time it has been determined that the older versions of the notes must be used.

  Added new template file **EnvironmentalEcologySpecialNotes.dot**, which contains notes from Design Guidelines Instructional bulletin 07-20.

  Updated template file **BridgeIndex.dot** to reflect new standard structure drawing list from Design Guidelines Instructional bulletin 07-21.

Updated template files **EnglishIndex&StdDwgs.dot** & **MetricIndex&StdDwgs.dot** to reflect new standard drawing lists from Design Guidelines Instructional bulletins 07-24 & 07-25. Also revised the Index in these files to specify TYPICAL SECTIONS AND PAVING SCHEDULE instead of TYPICAL SECTIONS AND PAVING QUANTITIES for sheets 2C – 2F.

Updated template files **IB_ToBePrintedwithPlans_English.dot** & **IB_ToBePrintedwithPlans_Metric.dot** to reflect new standard roadway drawing lists from Design Guidelines Instructional bulletins 07-24 & 07-25. These files currently contain no drawings to be printed with plans since all have been incorporated at this time.

Survey

- **SDOCS.exe**

  In Excel template **Survey_Contact_Acq_Create.xlt** and Word letter templates **Opinion Survey Modified.dot, Property Owner Contact Letter - Geotechnical Staking.dot, Property Owner Contact Letter - ROW Staking.dot** & **Property Owner Contact Letter - Survey.dot** revised the date format to not include the day name and in letters changed the date to black instead of a red font color.

- **ROWAcqTable.exe**

  In English Excel template **ROWAcqTable.xlt**, corrected a rounding error in functions that totaled left & right values and the remainder area. This could result in a 0.001 acre or 1 square foot error in these final values. Also corrected row heights in sub-headings of R.O.W. Acquisition Table and centered title in table.

Aerial Survey

- **AScell.exe**

  Updated with latest version of **STDS.cel**. NO changes were done to cells used by Aerial Survey personnel.

Iplot

- **DesignScripts.exe**

  Added new Interplot Client design script file **PDFColor.ful** for creating color full size PDF files.

- **Settings*.exe**

  Added new settings files **PdfEnglish*PermitLand.set, PdfEnglish*PermitLandColor.set, PdfEnglish*PermitPort.set** & **PdfEnglish*PermitPortColor.set**. These new settings files are for generating PDF files for permit maps and sketches (landscape or Portrait, B/W or Color) using Interplot Organizer.

  All settings files previously set up for the 4th floor have been renamed with an "09" since they have moved to the 9th floor at headquarters.

  Remember that if more than one set of settings files are downloaded, you should always download your local set last so that the default iplot.set file will point to you local queue.

Documentation

Reorganized the order of documents in this group**.**

Moved the download option for TDOT Road Class Files to the description area of TDOTGEOPAKRoadCourseGuide.pdf.

- **CADDV8.pdf**

  Revised with changes from this update See the **Manual Revisions** at end of document for detailed description of changes.

- **TDOTGEOPAKRoadCourseGuide.pdf**

  Replaced all dialog captures to reflect any changes from Geopak version 08.08.02.73 and to clean up overall appearance of course guide.

  The following specific revisions have been made:

Introduction	Added sentence specifying Geopak version number that the course guide is based on.
Exercise 2	Added dialog capture to step 7 on page 2-10.
Exercise 3	Minor edits applied to step 2 on page 3-7.
Exercise 4	Removed old COGO start up dialog and associated text from step 2 on page 4-1 since this no longer comes up when using Geopak Project Manager.
	Added new step 5 on page 4-4 concerning Decimal controls now available on the COGO dialog.
	Added text and dialog of expanded COGO Navigator showing additional data columns in step 6 on page 4-5.
	Revised text in step 3 on pages 4-13 & 4-14 to reflect new functionality in COGO Navigator.

	Added new step 4 on page 4-15 concerning cell editing in COGO Navigator.
	Added description of the Equate button in step 6 on page 4-15.
	Revised steps to re-start at 1 under Horizontal Alignment Tools on pages 4-17 to 4-23.
Exercise 6	Minor edits applied to step 7 on page 6-8.
Exercise 7	Minor edits applied to steps 4 & 5 on page 7-2, step 7 on page 7-3, step 8 on page 7-4, step 10 on page 7-5 and step 2 on page 7-7.
	In step 11 on page 7-5, changed to Save Profile option and removed note concerning use of this option since it is no longer a problem.
Exercise 8	Minor edits applied to step 5 on page 8-2, steps 3, 5 & 7 on page 8-3 and step 11 on page 8-10.
Exercise 9	Replaced old steps 2, 3 & 4 on page 9-3 with new steps 2 & 3 to reflect changes in Geopak functionality.
	Minor edits applied to step 2 on page 9-12, step 3 on page 9-13, step 5 on page 9-14, step 1 on page 9-15, steps 1 & 2 on page 9-17 and step 2 on page 9-19.
Exercise 10	Minor edits applied to step 5 on page 10-3.
Exercise 11	Minor edits applied to step 4 on page 11-1, step 7 on page 11-2 and step 12 on page 11-4.
Exercise 12	Minor edits applied to step 9 on page 12-4 and step 4 on page 12-10.
	Added new step 5 on page 12-11 to set MicroStation custom linestyle Scale Factor. Also included note concerning where to set the Scale Factor when using D&C Manager with Place Influence.
Exercise 13	In step 7 on page 13-2 and step 1 on page 13-6, changed Taper Increment value to 2.0’.
	Added information concerning Taper Increment values that should be used to note in step 12 on page 13-4.
	Moved all steps from page 13-9 to page 13-8 following step 3. Manual Definition of Lanes information which is now on page 13-9 was eliminated as a step and is now set up for informational purposes only.
	Minor edits applied to step 1 on page 13-5 and Manual Definition of Lanes information on page 13-9.
Exercise 14	Minor edits applied to step 1 on page 14-2, step 4 on page 14-4 and steps 2 & 3 on page 14-9.

Exercise 15	Minor edits applied to note in introduction to exercise on page 15-1.
	In Skip Areas on page 15-13, replaced paragraph and image describing proposed bridge cross sections with tie to ground with new Ignore Areas dialog and description which eliminates the need to tie these proposed cross sections to the ground.
	On page 15-14, eliminated notes concerning the need to edit bridge areas to be 0 since it is no longer necessary.
Exercise 16	Minor edits applied to step 18 on page 16-10.
Exercise 17	Rewrote first paragraph in step 5 on page 17-2 indicating that chain name must be set.
Exercise 18	Minor edits applied to step 2 on page 18-3.
Exercise 19	Replaced step 1 on page 19-3 with step 1 from page 19-1 and removed it from page 19-1. Added instructions to access Project Manager from old step 1 on page 19-3 to step 2 on that page.
	Updated step number referred to in step 6 on page 19-2.
	Minor edits applied to step 6 on page 19-4.
Exercise 20	Added instruction to set mode to Design in step 1 on page 20-4.
	Added sentence concerning the need to turn on level **DESIGN - TRAFFIC CONTROL TEMPORARY – Devices** in last paragraph of step 3 on page 20-5.
	Added information on rates of concrete per linear foot to use in step 10 on page 20-12.
Exercise 21	Eliminated step 3 on page 21-1 concerning COGO open warning which no longer appears when Graphical COGO is started.
	Moved Graphical COGO toolbox image from step 4 on page 21-2 to step 2 on page 21-1.
	Added instructions to set Level Display in step 5 on page 21-3 .
	Removed survey level sentence in step 6 on page 21-3 since this is now covered by instructions in step 5.
	Made step at top of page 21-4 part of step 6 from previous page with minor edits to the wording.
	Split step at top of page 21-5 into new steps 8 & 9.
	Minor edits applied to step 9 on page 21-5 and step 10 on page 21-6.
	Revised descriptions of R.O.W. and easement text styles in step 1 on page 21-9.
Exercise 22	Revised instructions to find guardrail terminal pad stations dynamically in step 3 at top of page 22-3 with minor edits in following paragraph.

	Minor edits applied to step 6 on page 22-4, steps 12 & 13 on page 22-8 and step 19 on page 22-12.
	Made several minor edits and revised note at end to include mention of the use of intersection EOP lines to limit the TIN editing that is required in step 14 on page 22-9 .
Exercise 23	Eliminated step 3 on page 23-2 concerning COGO open warning which no longer appears when Graphical COGO is started.
	Moved Graphical COGO toolbox image from step 4 on page 23-2 to step 2 on page 23-2. Added image capture of COGO dialog to step 4.
	Minor edits applied to step 7 on page 23-6, step 2 on page 23-8 and step 3 on page 23-9.
	Added instruction to switch Display Settings to By Feature in step 5 on page 23-10.
	Added 2nd paragraph to step 7 on page 23-12 describing proposed TIN surface display on profile and correct location for side road profile tie.

- **TDOTDesignDivisionPrograms.pdf**

  Updated image captures to reflect current dialogs on pages 1 & 2.

  Added description with step by step instructions for new program:
  Change Line Style Scale page 26

- **2ndSheetsV8.pdf**

  Changed macro security setting shown on pages 3 & 5 to Medium.

  Updated document template list on page 39.

- **InterPlotOrganizerV8.pdf**

  Updated document template list on page 4.

  Updated Design Division Plotter Queue list on page 11.

- **CreatingPDFsfromDGNs.pdf**

  Added new section for 8 ½ " X 11" permit sketches on page 4.

  Revised steps for Plotting PDF plan sheet files on page 11.

- **TDOTGeopakDrainageNodes.pdf**

  Updated drainage nodes listed to reflect additions to drainage library **TDOTEnglish.dlb**.

- **StatePlaneCoordinates_to_LatLong.pdf**

  Revised settings for Pt. B Ellipsoid with new dialog capture to reflect changes in Geopak.

Tennessee Map Files for MicroStation

- **Lincoln.exe**

  Replaced graphics in DGN with new data from Mapping Division.
- **Macon.exe**

  Replaced graphics in DGN with new data from Mapping Division.
- **Mcnairy.exe**

  Replaced graphics in DGN with new data from Mapping Division.
- **Monroe.exe**

  Replaced graphics in DGN with new data from Mapping Division.
- **Sequatchie.exe**

  Replaced graphics in DGN with new data from Mapping Division.