

Project Quantity Spreadsheet (PQS) Guidance Document

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<u>General</u>

To download the Project Quantity Sheet (PQS) download go to the <u>Support Services Website</u> and go to the "Project Quantity Spreadsheet (PQS)" folder under General/Help and Supporting Documents, as shown below.

Select a Help and Support	category from the drop down menu:
Core - Quantities	
Detour Signing Quantity Calculation Project Quantity Spreadsheet (PQS) Project Quantity Sheet (PQS) Guidance Document.pdf Project Quantity Sheet V1.2.8.xlsm Workflow - Project Quantity Sheet Sorting.pdf	Select " <u>Project Quantity</u> <u>Spreadsheet</u> " and click save as when

Opening the PQS

Each time the spreadsheet is opened it will verify that the pay items are current.





PQS Custom Ribbon Overview

A custom ribbon has been developed for the PQS with a description of each icon as follows. This ribbon will appear when the user has selected the functionality option as noted in the following section.

AutoSave (8 5					F	roject Quant	tity Sheet V	1.3.3.xlsm - Excel				
File H	ome	Insert	Page Layo	out f	Formulas	Data	Review	View	Developer	r Add-ins Help	BLUEBEAM	MDOT	Design	${\cal P}$ Tell me what you want to do
Create New *	Add Row *	Delete Row	Combine Sheet	PQS Link	Report Output	Validate PQS	Import Cr XML X	reate Price ML Items	RID Output	Item Refresh Calculator Formulas	Options Help Email	Pay Item Sheet S	Lump Pre Sum Calc	econstruction

1. Create New

- a. Create Project Qnty Links items created in the Calculation Sheet if created by following the format presented in the Create Calculation Sheet button
- b. Add Cad Qnty Sheet Makes a sheet to build the Misc quantity boxes to be linked with Microstation
- c. Create Calculation Sheet Gives a generic format to follow
 - i. Pay items in Column B
 - ii. Only use the word TOTAL next to the final quantity calculation
 - iii. Put the units next to the final quantity calculation
 - iv. To add a blank quantity to select the Add Blank Quantity button
- 2. Add Row Will add rows to the Project Qnty Tab (10 or 50 rows) or Plan Sheets Tab (1 or 10 rows) depending on which tab is active
- 3. Delete Row Will delete selected rows
- 4. **Combine Sheet** Compiles the information from another selected PQS sheet (used to migrate to a new version)
- 5. **PQS Link** Only available in Excel 2016 and newer. Creates a soft link to all PQS files in a given folder to in order to create an XML or total project view.
- Report Output Generates reports based on the data in the Project Qnty Tab. Reports include Quantity Takeoff which lists items in each breakdown ID. Estimate Output which prints the Estimate Summary tab and FUSP Report which lists most of the FUSP's needed based on the pay items selected.
- Validate PQS- Verifies the PQS data for items missing Breakdown Id's, missing funding codes, like items in difference sections, or undefined funding codes.

×	0	•	
Create New ▼	Add Row ▼	Delete Row	Combin Sheet
Ci	eate Proj	ect Qnty	
A	dd Cad Q	nty Shee	t j
A	dd Cad Q	nty Table	e i
Ci	eate Calo	ulation 9	Sheet -

Add Blank Item



 Quantity Takeoff	
Estimate Output	
FUSP Report	



- 8. Import Price Imports the price from an exported Preconstruction XML
- 9. Import XML Imports all the items and categories from an exported Preconstruction XML
- 10. Create XML Creates an XML that can be imported into Preconstruction
- 11. **RID Output** Creates the final RID requirement Document (not required at this time)
- 12. Item Calculator Calculator to develop costs of common project wide lump sums
- 13. Refresh Formulas Corrects any of the predefined formulas
- 14. **Options** sheet options
- 15. Help Email Creates email to send if the user needs assistance
- 16. Pay Item Sheet Opens the current Pay Item Sheet from the MDOT Design website
- 17. Lump Sum Calc Opens the Lump Sum spreadsheet on the MDOT Design website
- 18. Preconstruction Opens the website to the Preconstruction Import page

PQS Functionality Selection

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F	ile Hom	e Insert	Page Layout	Formulas	Data	Review	/ Vie	w C)evelope	r M	DOT	Q	Tell me what y
Ger	neral Road	Bridge	Fund	tionality Se	election								
C2	20 *	: ×	√ f _x										
1						+	+ +	+ +	+ +	+ +			
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1 2 3 4	1		ID	TC		• ch List [1] •	esList [2] • Table [3] •	Table [4] • Table [5] •	le List [6] • le List [7] •	ltems [8] • te Log [9] •			
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8	Date Up	date:		06/1	9/2017		Iato	ulat Calc	S				
9							is al	calc	pu				
11	Plan	Quant	ity Spread	sheet			n Ca	em (Der a				
12	2						ork	alci H	T I				
13	Addin Ve	ersion:					3	l le	Z				



The spreadsheet has three options: General, Road and Bridge. Each has the same base features with discipline specific customizations in the Road and Bridge options. The base features common to each of the options are as follows:

- 1. Quantity Calculation Sheet (Basic Format)
- 2. XML Creation Creates XML file that can be imported into Preconstruction
- 3. RID Output Creates Final Deliverable for future RID Requirements
- 4. XML Import Allows for existing Preconstruction file to be imported into the sheet
- 5. Pricing Import Allows for existing Preconstruction file pricing to be imported into the sheet

The "Road" and "Bridge" options allow for the following additional features

- 1. CADD Quantity Linking Creates tables that can be linked with Microstation
- 2. CADD Table Linking (Road Only) Creates tables that can be linked with Microstation
- 3. Automatic Rehab Quantity Generation (Bridge Only)

To begin utilizing the spreadsheet, select the desired option from the ribbon under the "MDOT" tab.

	ნ- ⊴	~ -								Р
File	Home	e Inseri	t Page Layout	Formulas	Data	Review	View	Developer	MDOT	♀ Tell me wha
General	X ∄ Road	Bridge	Selec	t an optior	ı					

For a project, there should be one sheet per job number and one sheet per discipline. For example, if a project has one job number, but there are multiple units (road, bridge,...) working on the project, each unit should have a separate sheet. When an XML is ready to be created, the sheets can be compiled to create one all-encompassing XML file using a button in the ribbon, to be shown later in the document.

General Option

The General option should be selected if a user does not want the additional road and bridge discipline specific features. The functionality of this option allows users to enter each project item and quantity into the spreadsheet in a user-friendly format and create an XML file for import into Preconstruction. It has a similar functionality to both Preconstruction and the Stand Alone Project Estimator's Worksheet (SAPW) software.

In addition, this option should be selected to import an existing Preconstruction project into the spreadsheet. Users can import a Preconstruction file into the worksheet and make any necessary edits to the project items, quantities and categories. Once any updates have been made, a new XML can be created for import back into Preconstruction.



After a user selects the General option, the spreadsheet will create the following tabs. Instructions on entering data into the spreadsheet are noted in the following sections.

					10		- · ·
In	nfo	Category	Project Qnty	Pricing	Summary Qnty	Summary Est	+
L							

Defining Categories

Project categories are entered into the Category tab of the spreadsheet. User inputs are required in green cells if applicable. If a cell is grey the user DOES NOT need to fill in the cell. The cell is either automatic or is not needed.

					Info	Category	Project Qnty	(
Γ	2	Number of	Categories							
	Funding Code	Job No.	Category No.	Category Alt.	Category Description (Road Only)	Structure Number (Bridge Only)	Section Group	Fund Description	Cat Desc	Bridge Number
1	123456 - 0001	123456	0001		Road		1RD	Fed / State	Road Fed / State	
2	123456 - 0002	123456	0002			132	1ST	Fed / State	00132_S07-03035_Fed / State	S07-03035

- 1. Funding Code Unique identifier combining the Job No. and the Category No.
- 2. Job No.- The number used to identify the Project
- Category No. The number used to differentiate between funding options (even numbers are Bridge only)
- 4. Category Alt. Used for Alternative Bid Projects
- 5. Category Description (Road Only) Describes the type of work the category is used for
- 6. NBI Number (Bridge Only) The NBI number for the bridge the category is associated with
- 7. Section Group The group identifier for similar items for Preconstruction
- 8. Fund Description Describing the types of funds associated with the category
 - a. (XX% Fed / XX% State / XX% City)
- 9. Cat Desc The compiled category description to be imported into Preconstruction
- 10. Bridge Number The bridge number linked with the NBI Number to be used as a reporting tool

Once the categories are defined, items and their respective quantities can be associated with them.





Adding Items

Items are added into the Project Qnty tab in the spreadsheet. At a minimum the Pay Item, Funding Code, Breakdown ID and Quantity columns need to be filled out.



Supplementary Description 🥃	Quantity 🚽	Units 🗸	Unit Price 🗸	Total Price 🚽	SP Required	BreakdownID 👻
	45.00 Syd	i			SP602A, 604B	Bridge

- 1. Funding Code (required) Drop down list from the categories defined in the Category tab
- 2. Pay Item (required) Searchable drop down.
 - a. Use the search bar to abbreviate the **Pay Item** drop down list to only items that include the search keywords. The user can either select from the list of frequently used items or enter a unique search name.
- 3. **Supplementary Description** Only required if cell is not grey
- 4. Quantity (required)
- 5. Unit Price If the user puts a value there it will be imported into Preconstruction
- 6. Breakdown ID (required)



Import an XML into the PQS

Select **Import XML** in the ribbon. A window will appear, select the file to be imported. The file will be imported at the end of the current data set.

Please note that due to the Preconstruction update that occurred on 9/11/17 to version 3.01, importing quantities to the PQS from an XML created from Preconstruction is no longer available due to the deletion of Breakdown ID's in the program. A user can, however, import the unit costs from an XML into the PQS utilizing the **Import Pricing** feature

See the Preconstruction Manual on how to export an existing project XML from Preconstruction.

Create an Output Quantity XML

Select the **Create XML** button in the ribbon. A pop-up will appear that will prompt the user to select the Job Number. The job number that has been selected will be highlighted in blue.



Once the job number has been selected and the user selects submit, another input box will appear. Select the folder destination where the XML will be saved and select "OK".

→ ★	✓ ひ Search De	sktop 🔎
Irganize 👻 New folder		8:: - 🕜
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Conception ()		
diago film film		
and a second sec		
The statement		
Course of Course		
Contraction of Contraction		
A PROPERTY AND A PROPERTY AND A		
 Interface Interface 		
a state of the sta		
a reason to the second second		
Const. Const. Sources		
A construction		
*		
Folder name: Desktop		

Once the XML destination has been selected the final popup box will appear. The job number will be the one the user selected, but can be modified. The job number that appears in the popup box should be adjusted to match the job number in Preconstruction. Once the job number has been filled in the Project Description must be filled and then select submit. The remaining tabs in the popup can be filled



in or left blank. They are only needed when creating a Preconstruction file. Each subsequant XML import will ignore this data.

	×
Witchigan Department of Transportation Job Information Work Information	
Job Number Control Section	
Project Description	
Submit	
	×
Tichigan Department of Transportation	×
Job Information Work Information	×
Job Information Work Information Location Information Project Type Number	×
Job Information Work Information Work Type Project Type	×
Job Information Work Information Location Information Work Type Project Type Work Type Project Type	×
Job Information Work Information Job Information Work Information Work Type Project Type Number Work Type Project Type Urban/Rural Type Urban/Rural Type	×
Job Information Work Information Location Information Vork Type Project Type Number Work Type Project Type Urban/Rural Type Urban/Rural Type	×



	×
Michigan Department of Transportation	
Job Information Work Information Location Information	
County Number District Number	
County Name Disctrict Name	
· · ·	
Latitude Longitude	
Submit	

The XML that is created will be saved in the location where the user selected. See the Preconstruction Manual on how to import this XML file into the Preconstruction software.

Bridge Option

Select the Bridge option to add the bridge discipline specific functionality into the PQS. When the Bridge option is selected, the following tabs will be created in the spreadsheet. These tabs are the same as the tabs generated when the General option is select, please refer to the **Defining Categories** Defining Categories and Adding Items sections.



Automated Quantity Generation

An additional functionality included in the Bridge option includes automated quantity generation for rehabilitation projects. Utilizing this function will generate a calculation spreadsheet with common items related to a specific rehabilitation project type.

Under the **Create New** button in the ribbon select **Create Calculation Sheet**.

Select the type of project, Overlays and Hand Patching have automated quantity generation. They will calculate 8 to 15 standard quantities for the rehabilitation.

Select Project Type	×
Vichigan Department of Transportation	
Shallow Overlay Deep Overlay Epoxy Overlay Hand Patching Blank	
Submit Cancel	

Input Bridge specific information (this can be updated after it is created). The Sheet Tab Name should be the Bridge Number (ex. S09_81075). If no data is entered in a field, other than the Sheet Tab Name, the value will default to zero.

Structure Number		
S09 of 81075		
Skew	0	Deg
Clearroad Way	45	Ft
Out to Out	48	Ft
Length	250	Ft
Number of Joints	9	EA

Deck Joint, Rem - \$Ft

10 11 12



48 Ft 0 deg

Based on the rehabilitation option that is selected, predetermined quantities will be generated. Items needing additional information will be highlighted in yellow.

Width (Outside to Outside)

Committee and Co			
13		Number of Joints	9
14			
15		Total	432 Ft
16			
17	Conc, Grade D - \$Cyd		
18		Width (Outside to Outside Existing)	48 Ft
19		Skew	0 deg
20		Width of Joint	Ft
21		Number of Joints	9
22		Thickness of Joint	in
23			
24		Total	0 Cyd
25			
26	Expansion Joint Device - \$Ft		
27		Width (Clear Roadway)	45 Ft
28		Skew	0 deg
29		Barrier Upturn	in
30		Number of Joints	9
31			
32		Total	405 Ft
33			
34	Minimum Overall Travel Along Centerline of Bridge		
35		α	0.000006 in./
26			
	Info Category Project Qnty S09_81075	•	

To add an item, select the **Add Item** button at the top of the Calculation Sheet. This allows the designer to select from 40 quantities and the ability to place a blank quantity. The added quantity will be placed at the bottom of the sheet. It will reference the length, width, and skew if applicable. Anything highlighted in yellow requires additional inputs from the user.

When the quantities are complete and ready to be referenced into the **Project Qnty** tab, select **Create New** in the ribbon and select **Create Project Qnty**. This will find the applicable items and the quantities



Add Item



and reference them so they are constantly up to date. If another quantity is added to the Calculation sheet select the **Create Project Qnty** button to added it to the **Project Qnty** tab.



Once the items have been referenced into the **Project Qnty** tab, assign the funding code.

Road Option

Select the Road option to add the road discipline specific functionality into the PQS. When the Road option is selected, the following tabs will be created in the spreadsheet. The Category and Project Qnty tabs are the same tabs generated when the General option is selected, please refer to the **Defining Categories** Defining Categories and **Adding Items** sections.



Road Custom Ribbon



- 1. Add Qnty Table (Qnty, Drain, & DrWay Sheets Only) Adds new Quantity Table
- 2. Up / Down (Qnty, Drain, & DrWay Sheets Only) Navigates up / down to the next table
- 3. Refresh Tables (Qnty, Drain, & DrWay Sheets Only) Manually refreshes the tables
- 4. **Table Layout** (DrWay Sheets Only) Used to customize the table



- 1. Add Row (Table | Drain & Table | Driveway Sheets Only)
- 2. Delete Row (Table | Drain & Table | Driveway Sheets Only)



Plan Sheet (Location)

Info	Category	Plan Sheets	Table Drain	Table Driveway	Project Qnty	Pricing	Summary Qnty	Summary Est

Sheet No	Sheet Scale	Quantities	Description	DGN1	DGN2	DGN3	DGN Name
	Could						
001	No Scale	No	Title Sheet	M-999	TITLE	001	M-999_TITLE_001
002	No Scale	No	Project Information Sheet	M-999	PROJ	001	M-999_PROJ_001
003	No Scale	No	Legend Sheet	M-999	LEGEND	001	M-999_LEGEND_001
004	400	No	ROW Vicinity / Drainage Map 1	M-999	VIC	001	M-999_VIC_001
005	No Scale	No	Note Sheet	M-999	NOTE	001	M-999_NOTE_001
006	No Scale	Yes	Miscellaneous Qnty Sheet	M-999	MSCQNT	001	M-999_MSCQNT_001
007	16	No	Typical Section Sheet 1	M-999	TYP	001	M-999_TYP_001
008	16	No	Typical Section Sheet 2	M-999	TYP	002	M-999_TYP_002
009	No Scale	No	Survey Information Sheet	M-999	SURVEY	001	M-999_SURVEY_001
010	200	No	Alignment Sheet 1	M-999	ALI	001	M-999_ALI_001
011	200	No	Alignment Sheet 2	M-999	ALI	002	M-999_ALI_002
012	80	Yes	Removal Sheet 1	M-999	REM	001	M-999_REM_001
013	80	Yes	Construction Sheet 1	M-999	CON	001	M-999_CON_001
014	80	No	Profile Sheet 1	M-999	PROF	001	M-999_PROF_001
015	80	Yes	Removal Sheet 2	M-999	REM	002	M-999_REM_002
016	80	Yes	Construction Sheet 2	M-999	CON	002	M-999_CON_002
017	80	No	Profile Sheet 2	M-999	PROF	002	M-999_PROF_002

1. **Sheet No** (required) – will be the Breakdown ID in Preconstruction

- 2. Sheet Scale (not required)
- 3. **Quantities** (required) Yes/No option, only sheets marked <u>Yes</u> will appear in the DGN name drop down list on the **Project Qnty** tab
- 4. **Description** (not required) This will be the Breakdown Description in Preconstruction
- 5. DGN Name (required) using MDOT guidelines
 - a. Example: *M-xx / CON / 001*



Table | Drain

Info Cat	tegory Pla	an Sheets Tab	ole Drain Tal	ble Driveway	Project	t Qnty Pricing	Summary Qnty	Summary Est
Drainage Name	Structure No.	Alignment	Station	Offset	Lt/Rt	Cover-N		
DRAIN-101	101	M-999	132+50.00	24.00	LT			
DRAIN-102	102	M-999	150+00.00	24.00	LT			
DRAIN-103	103	M-999	150+00.00	24.00	RT			
DRAIN-104	104	M-999	175+00.00	24.00	LT			
DRAIN-105	105	M-999	175+00.00	24.00	RT			
DRAIN-106	106	Blue St	1500+00.00	15.00	LT			
DRAIN-107	107	Blue St	1500+00.00	15.00	RT			

Lt/Rt	Cover-N	Cover-E	Structure-N	Structure-E	Rim Elev.	Offset+Lt/Rt	Station Format
LT					652.50	24.00 LT	132+50.00
LT					660.60	24.00 LT	150+00.00
RT					660.60	24.00 RT	150+00.00
LT					665.95	24.00 LT	175+00.00
RT					665.95	24.00 RT	175+00.00
LT					1250.99	15.00 LT	1500+00.00
RT					1250.99	15.00 RT	1500+00.00

 Enter Structure No. (required) – The Structure No. must be a unique value to create the Drainage Name. Any duplicate Drainage Name will cause an error when creating the drainage qnty tables

The drainage tables will display the **Structure No., Alignment, Station, Offset, Lt/Ft, and Rim elevation**. The **Cover** and **Structure** N&E are for future use.

All empty rows will be removed when the sheet is closed.



	<u>.</u>							
Info Category	Plan Sheets	Table Drain	Tabl	e Driveway		Project Qnty	Project Qnty Pricing	Project Qnty Pricing Summary Qnty
					Ì			<u> </u>
					Į			
Driveway Name	Alignment	Station	Lt/Rt	Back Offset				
				from CL				
Blue St 1495+18 T	Blue St	1495+18	IT					
Blue St 1506+10 PT	Blue St	1506+10	RT.					
M 000 L 0106+05 LLT	M 000	106+05	1.T	24.0				
M-999 0100+25 ET	W-999	100+20	LI	34.0				
M-999 0106+55 RT	M-999	106+55	RI	40.0				
M-999 0110+15 LT	M-999	110+15	LT	34.5				
M-999 0112+45 RT	M-999	112+45	RT	30.0				
M-999 0156+15 LT	M-999	156+15	LT	34.0				
M-999 0165+85 LT	M-999	165+85	LT	42.0				
M-999 0188+05 RT	M-999	188+05	RT	28.5				
M-999 0190+36 RT	M-999	190+36	RT	48.0				

Table | Driveway

- 1. Enter **Alignment** (not required)
- 2. Enter Station (not require)
- 3. Select Lt/Rt (not required)

The **Driveway Name** must be unique. Any duplicated **Driveway Name** will cause an error when creating the driveway qnty tables.

Lt/Rt	Back Offset	Prop Drivev	lius - Exiting	Custom 1	Custom 2	Custom 7	Custom 8	Station+Lt/Rt
	from CL	Slope						
LT		4.2%	10.0					1495+18 LT
RT		2.0%	25.0					1506+10 RT
LT	34.0	2.0%						106+25 LT
RT	40.0	8.0%						106+55 RT
LT	34.5	6.5%						110+15 LT
RT	30.0	2.4%						112+45 RT
LT	34.0	7.0%						156+15 LT
LT	42.0	-3.5%						165+85 LT
RT	28.5	0.4%		26.0				188+05 RT
RT	48.0	10.0%		28.0				190+36 RT

All empty rows will be removed when the sheet is closed.

All other fields {not required} are to be used at the user's discretion. The table headers can be edited to customize the driveway qnty table for the project specifics.



Project Qnty

Info Category Plan Sheets Table Drain Table Driveway Project Qnty Pricing Summary Qnty Summar
Funding Code DGN Name Work Item Table - Type Table - Name
123456 - 0001 M-999 MSCONT 001
lame Pay Item
Mahilanian May CLOUM
Mobilization, Max SLSOM
Supplementary Description Quanity

- 1. Select Funding Code (required)
- 2. Select **DGN Name** (required)
- 3. Select **Work Item** (not required)
- 4. Select **Table Type** (not required)
- 5. Select **Table Name** (required if **Table Type** = "DRAIN" or "DRIVEWAY")
- 6. Select **Pay Item** (required)
- 7. Enter Supplementary Description (required if unique item and if not greyed out)
- 8. Enter **Quantity** (required)
- 9. Enter **Unit Price** (not required)



Pricing

This tab is used to apply user defined unit prices to all items.

Info	Category	Plan Sheets	Table Drain	Table Driveway	Project Qnty	Pricing	Summary Qnty	Summary Est

I	Item Number 💌 Item Description		Supplemental Description	•	Unit Pr	ice 💌	
	8070107 Guardrail, Reconst, Type C -	Ft			\$	2.00	

- 6. Add Unit Prices to Items (required)
- 7. Select **Price Items** in the Ribbon





Linking the PQS to Microstation

File	Home	Insert	CoSign	Page Layout	Form	ulas	Data	Review	View	Developer	MDOT	Add-ins
Create New •	Add Row *	Delete Row	Item Calculator	Refresh Options Formulas	Help Email	RID Output	Import Price	Create XML	Import XML	Preconstruction	Pay Item Sheet	
Qui A	dd Cad Quai	ntity Shee	et N	Help				XML				
BC)rainage Tabl)riveway Tabl	e Sheet e Sheet	fx fx									

From the MDOT Ribbon, select the Create New button to add a new qnty table sheet. This will create a new sheet named Qnty#, Drain#, or Driveway# and include the first qnty table. This sheet name can be changed, but only prior to linking to Microstation. If the sheet name is changed after the links are established, they will not update properly.

Standard Qnty Table

	Α	В	C	D	E	F	G
1		Item	Unit	#1	#2	#3	#4
2	DGN Name	M-999_CON_002	·				
3	Work Item	(All)					
4	Funding Code	(All)					
5	Table - Type	(blank)	·				
6	Table - Name	(All)					
7		Construction Sheet 2 80 Qnty1					
8	Itema						
· ·	nema						
9	102113			JN 999999	JN 12	23456	
9 10	literino			JN 999999 CAT 0001	JN 12 CAT 0003	23456 CAT 0001	
9 10 11	2050010	Embankment, CIP	Cyd	JN 9999999 CAT 0001	JN 12 CAT 0003	23456 CAT 0001 2950	
9 10 11 12	2050010 2050023	Embankment, CIP Granular Material, CI II	Cyd Cyd	JN 999999 CAT 0001 	JN 12 CAT 0003 -	23456 CAT 0001 2950 4700	
9 10 11 12 13	2050010 2050023 2057021	Embankment, CIP Granular Material, CI II Embankment, CIP, Special	Cyd Cyd Cyd	JN 999999 CAT 0001	JN 12 CAT 0003 	23456 CAT 0001 2950 4700 8100	
9 10 11 12 13 14	2050010 2050023 2057021 2080012	Embankment, CIP Granular Material, CI II Embankment, CIP, Special Erosion Control, Check Dam, Stone	Cyd Cyd Cyd Ft	JN 999999 CAT 0001 	JN 12 CAT 0003 	23456 CAT 0001 2950 4700 8100 110	
9 10 11 12 13 14 15	2050010 2050023 2057021 2080012 2080020	Embankment, CIP Granular Material, CI II Embankment, CIP, Special Erosion Control, Check Dam, Stone Erosion Control, Inlet Protection, Fabric Drop	Cyd Cyd Cyd Ft Ea	JN 999999 CAT 0001 	JN 12 CAT 0003 	23456 CAT 0001 2950 4700 8100 110 6	

- 1. Select **DGN Name** (required)
- 2. Select Table Type (required)
- 3. Match names to Qnty Guide placement points (see Linking)
- 4. From the MDOT ribbon, select **Add Qnty Table** under **Create New** to add a new table. A single Qnty Sheet can contain as many Qnty Tables as desired, but the plan sheets must all be the same scale. Create a new Qnty Sheet for each set of plan sheet scales required.

The **Table - Type** should be set to "(blank)" for general sheet quantities (those not assigned to a table). This will filter out any quantities that are intended to be placed in a table.



Drainage Qnty Table

	А	В	С	D	E
1		Struct	Alignment	Station	Offset
2	DGN Name	M-999_CON_002			
3	Work Item	All			
4	Funding Code	All	Cell:	Sh_Sheet_Qnty	/_Drain
5	Table - Type	DRAIN T			
6	Table - Name	All			
7		Construction Sheet 2 80 Drain1			
8	Items				
9					
10					
11					
12					
13					
14					
15					
16					
17	DRAIN-101	101	M-999	132+50.00	24.00 LT
18	DRAIN-102	102	M-999	150+00.00	24.00 LT

- 1. The Drainage Qnty Table is very similar to the Standard Qnty Table, except that the **Table Type** should be set to "DRAIN".
- 2. Qnty guide cell name



Driveway Qnty Table

	А	В	С	D	E
1		Alignment	Station	#1	#2
2	DGN Name	M-999_CON_001	r		
3	Work Item	All			
4	Funding Code	All	Cell: Sh_Shee	t_Qnty_DrWay3	
5	Table - Type	DRIVEWAY 7	ſ		
6	Table - Name	All			
7		Construction Sheet 1 80 DrWay1			
8	Items				
9					
10					
11					
12					
13					
14					
15					
16	M-999 0106+25 LT	M-999	106+25 LT	34.0	2.0%
17	M-999 0106+55 RT	M-999	106+55 RT	40.0	8.0%
18	M-999 0110+15 LT	M-999	110+15 LT	34.5	6.5%

- 1. The Driveway Qnty Table is very similar to the Standard Qnty Table, except that the **Table Type** should be set to "DRIVEWAY".
- Qnty guide cell name describes the cell required for linking to Microstation, in this case: Sh_Sheet_Qnty_DrWay3
- 3. From the MDOT QUANTITIES ribbon, select **Table Layout** to customize the Driveway Table. The fields names are from the Driveway Table headers (see <u>Table | Driveway</u>).



Microstation Linking

MDOT Cell Selector Tool - v01.00.17		×
Cell Library Group ○ True Scale Design Cells (≤ 40 Scale) ○ Annotation Scale Design Cells (≥ 50 Scale) ④ Sheet, Labeling, & Patterning Cells (All Scal	iles)	0
 All Cell Libraries Roadside Roadway Sheets Sheet_Labels Sheet_Labels_SectionCorners Sheet_Tables_PlanQuantSpreadsheet A Bridge_Note Quant_Table_Drain_Culv_Single Quant_Table_Drain_Total Quant_Table_Drain_Total Quant_Table_DrWay_0 Quant_Table_DrWay_0 Quant_Table_DrWay_1 Quant_Table_DrWay_1 Quant_Table_DrWay_2 Quant_Table_DrWay_2 Quant_Table_DrWay_3 Quant_Table_DrWay_3 Quant_Table_DrWay_4 Quant_Table_DrWay_4 Quant_Table_DrWay_5 Quant_Table_DrWay_6 Quant_Table_DrWay_6 Quant_Table_DrWay_6 Quant_Table_DrWay_6 Quant_Table_DrWay_6 Quant_Table_General Quant_Table_MiscItem_Single 	Bridge - Note Qnty Guide - Drainage Table Qnty Guide - Single Culvert Qnty Guide - Single Drainage Structure Qnty Guide - Drainage Table Total Qnty Guide - Driveway Table 0 Qnty Guide - Driveway Table 0 Qnty Guide - Driveway Table 1 Qnty Guide - Driveway Table 1 Qnty Guide - Driveway Table 2 Qnty Guide - Driveway Table 2 Qnty Guide - Driveway Table 3 Qnty Guide - Driveway Table 3 Qnty Guide - Driveway Table 4 Qnty Guide - Driveway Table 4 Qnty Guide - Driveway Table 5 Qnty Guide - Driveway Table 5 Qnty Guide - Driveway Table 6 Qnty Guide - Driveway Table 6 Qnty Guide - Single Guardrail Run Qnty Guide - Single Misc Item	
Active Cells Placement NONE Pattern: Area NONE Pattern: Linear NONE Terminator NONE Point NONE		

(In Microstation)

1. Create new Microstation file: "######_Qnty.dgn"

This will be used as a base file for linking all quantities and referenced to the sheet files. It is recommended that a separate model be created for each required plan sheet scale.



Place the Qnty Guide cell in the Microstation file at the desired scale. It contains important
information and "guides" for proper creation of the quantity tables and clip boundaries (or
saved views). The Qnty Guides are on non-plot levels and will not print if using Print Organizer.
They do not need to be turned off in the sheets.

Standard Quantity Sheet – Quant_Table_General

Drainage Quantity Sheet – Sh_Sheet_Qnty_Drain

Driveway Quantity Sheet – Sh_Sheet_Qnty_DrWay#

	А	В	С	D	E	F	G		М
1		Item	Unit	#1	#2	#3		9	#10
2	DGN Name	M-999_CON_002							
3	Work Item	(All)							
4	Funding Code	(All)							
5	Table - Type	(blank)							
6	Table - Name	(All)							
7		Construction Sheet 2 80 Qnty1							
8	Items								
9				JN 999999	JN 12	3456			
10				CAT 0001	CAT 0003	CAT 0001			
11	2050010	Embankment, CIP	Cyd	-	-	2950			
12	2050023	Granular Material, CI II	Cyd	-	-	4700			
13	2057021	Embankment, CIP, Special	Cyd	-		8100			
14	2080012	Erosion Control, Check Dam, Stone	Ft	-	-	110			
15	2080020	Erosion Control, Inlet Protection, Fabric Drop	Ea			6			
16	2080026	Erosion Control, Maintenance, Sediment Removal	Cyd			6			
17	2080034	Erosion Control, Sediment Trap	Ea			4			
18	2080036	Erosion Control, Silt Fence	Ft			600			
19	3010002	Subbase, CIP	Cyd			4515			
	3020002	Aggregate Base, LM	Cyd			420			

(In PQS)



- Edit Element Settings Tools Utilities Workspace GEOPAK Window MDOT Tools File ⊮ <u>Undo</u> Ctrl+Z Undo Other Þ ⊲ <u>R</u>edo Ctrl+R Set <u>M</u>ark & Cut Ctrl+X Copy Ctrl+C <u>P</u>aste Ctrl+V Paste Special.. Group Ctrl+G Ctrl+U Ungroup Paste Special 23 Ctrl+L Lock Ctrl+M Unlock Data Type Bring to Front Picture of Microsoft Excel Worksheet ... ٠ Find/Replace Text Embedded Microsoft Excel Worksheet ... Linked Microsoft Excel Worksheet (c... Ξ Select All Ctrl+A Text To Design File Select None Rich Text to Design File Linked Text To Design File Ŧ Select By Attributes DDE Links... Paste Cancel Insert Object... Update Links Links... Object
- 3. Select desired column and hit **ctrl + C** (or right-click \rightarrow Copy)

(In Microstation)

- 4. Edit \rightarrow Paste Special
- 5. Select Linked Text to Design File
- 6. Select Paste



[in Microstation]

7. Paste linked text at proper location according to the Qnty guide cell. This will be placed using active level and text settings. Modify as required. The Qnty Guide placement points provide guidance on the appropriate text justification and wt. It is recommended that the Pr_NoMask text style be used.

These steps are repeated for each required column





[in Microstation]

8. Use the clip points to create a clip boundary and saved view. The Qnty Guide cells provide several sets of clip points for the user to customize what is shown in the sheets.

These steps are repeated for each required column



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	3			xx123306_Quantities.dgn	100 Scale	Master Model	Con	Coincident - World	Wireframe	MI83-SIF	0 () 🗸	\checkmark	\checkmark	
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[in Microstation]

9. Attach the Qnty .dgn file to the plan sheet using either a saved view or clip boundary.



Updating Links

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[in Microstation]

When Microstation is closed and reopened, the links will not automatically update until they are reestablished.

- 1. Edit \rightarrow DDE Links
- 2. Select **Open All Links** (PQS must also be open)



Copying / Paste Data

If copying / pasting funding codes, plan sheets, and/or quantities from previous versions, always use the Paste Values to avoid complications. The PQS has a large number of named ranges and lists that may inadvertently be copied over if the standard Paste command is used.

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