# **Rip Rap Program**

## **At Standard Pipe Outlet**

At Standard Pipe Outlet Tabs
At Standard Pipe Outlet Definition
With or Without Ditch Definition

#### With Ditch

Class B Rip Rap with Ditch Class I Rip Rap with Ditch

#### Without Ditch

Class B Rip Rap without Ditch Class I Rip Rap without Ditch

## **Custom Rip Rap Labels**

The Custom Rip Rap Label Tab
Custom Rip Rap Label with Ditch Option

# Placing the Rip Rap Labels

Enabling the Place Label Button and Placing Labels

#### **Tools**

## Place and Edit Rip Rap Label Tools

Place and Edit Label Tool Icons
Place Line Leader Only Tool
Place Rip Rap Text Only
Move and Rotate Existing Labels

# Reports

The Report Icons
Creating the Rip Rap Summary Sheet

Ver	Description
6214.08.05 2007.07.02	Created CHM Help
6214.08.05 2007.03.25	<ul> <li>Added PSRM</li> <li>New Hydraulic levels</li> <li>More GPK error handling events.</li> <li>Use only one Gpk file for reports</li> </ul>
6214.08.04 2006.08.03	<ul> <li>Complete set of adhocs</li> <li>Read input from external source</li> <li>Build excel summary sheet</li> <li>Tighten controls and build extensive error handling events</li> </ul>
6214.08.03 2006.07.17	<ul> <li>Ditch tab on Roadway recommendation</li> <li>Option for Lateral Ditches COGO info</li> <li>Option to display/not display other standard pipe outlet tabs</li> </ul>

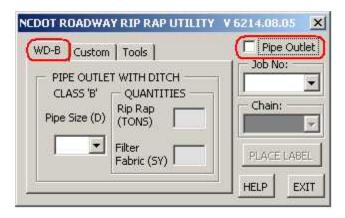
	<ul> <li>DDE quantity</li> <li>Check for Hydraulic and NCDOT Design DGNLIBS</li> <li>Check for all hydraulic rip rap related levels in design file and DGNLIBS</li> </ul>
6214.08.02 2006.07.07	<ul> <li>Tools tab on Hydro recommendation</li> <li>Tool to move and rotate existing rip rap label</li> <li>Tool to place rip rap text only</li> <li>Tool to place rip rap leader lines and terminator only</li> </ul>
6214.08.01 2006.06.17	First release.

## **Pipe Outlet Tabs**

Display - Check the Pipe Outlet check box.



Hide - Uncheck the Pipe Outlet check box.

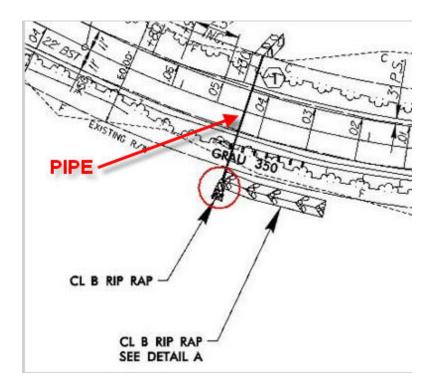


#### NCDOT ROADWAY RIP RAP UTILITY

#### At Standard Pipe Outlets

Rip rap quantities and filter fabric quantities are computed at standard pipe outlets. Rip rap and filter fabric quantities at standard pipe outlet location is commonly found at the end of of proposed pipe, most of time perpendicular to road center line.

Typical Rip Rap Location at Standard Pipe Outlet



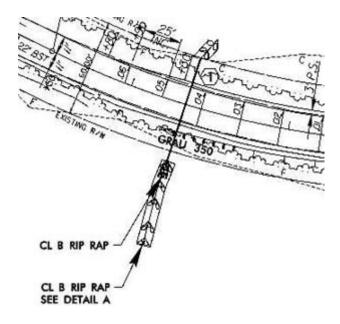
Rip rap and filter fabric quantites at standard pipe outlets are derived from STD 876.02. The same values are in the NCDOT Rip Rap Table (xls). Both of these quantities are dependent on the pipe size and rip rap type.

## **NCDOT ROADWAY RIP RAP UTILITY**

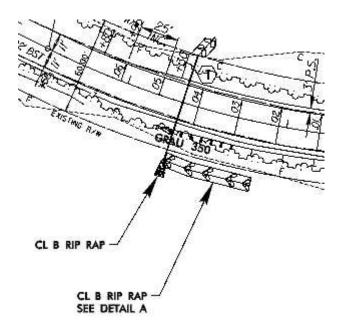
## Rip Rap with Ditch

WD - Use this tab to place labels for rip raps located in or adjacent to a proposed ditch.

# Outlet Ditch

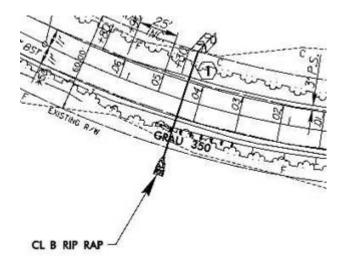


Lateral Ditch



## Rip Rap without Ditch

WOD - Use this tab to place labels for rip raps not in the same vicinity of proposed ditches.



## **NCDOT ROADWAY RIP RAP UTILITY**

## Class B Rip Rap with Ditch Tab

WD-B - Use this tab to place labels for Class B rip raps located in or adjacent to a proposed ditch.



NCDOT Rip Rap Table (xls)

	А	В	C	D	E	F
1	PIPE SIZE		CLASS	B WITH	DITCH	
2			RR (TONS)		FF (SY)	
3			00000		3 220	Ĭ.
4	12"		2		5	
5	15"		2		7	Ţ.
6	18"		3		10	1
7	24"		5		14	
8	30"	П	8		21	
9	36"		11		28	
10	42"		15		37	Ī
11	48"					Ĭ.
12	54"					
13	60"					Ţ.
14	66"					
15	72"					
40						

## Class I Rip Rap with Ditch Tab

WD-I - Use this tab to place labels for Class I rip raps located in or adjacent to a proposed ditch.



# NCDOT Rip Rap Table (xls)

	A	В	G	H	- F	J
1	PIPE SIZE		CLASS	WITH	DITCH	
2			RR (TONS)		FF (SY)	Г
3	1					
4	12"		2		- 5	
5	15"		3		7	Г
6	18"		4		10	
7	24"		7		15	
8	30"		11		22	
9	36"		15		30	Γ
10	42"		20		39	Г
11	48"		26		50	
12	54"		33		62	Г
13	60"		40		75	
14	66"		48		89	
15	72"		57		104	
10	1000					

#### Class B Rip Rap without Ditch Tab

WOD-B - Use this tab to place labels for Class B rip raps not located in the vicinity of proposed ditches.



NCDOT Rip Rap Table (xls)



## NCDOT ROADWAY RIP RAP UTILITY

# Class I Rip Rap without Ditch Tab

WOD-I - Use this tab to place labels for Class I rip raps not located in the vicinity of proposed ditch.

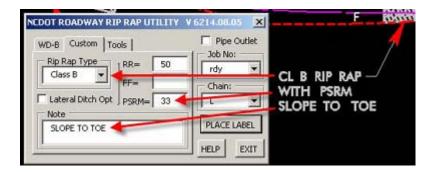


NCDOT Rip Rap Table (xls)

	A	В	0	Р	Q
1	PIPE SIZE		CLASSIV	VITHO	UT DITCH
2			RR (TONS)		FF (SY)
3			020 381		
4	12"		1		4
5	15"		2		6
6	18"		2		8
7	24"		4		12
8	30"		7		17
9	36"		10		23
10	42"		13		30
11	48"		17		38
12	54"		21		47
13	60"		26		56
14	66"		32		67
15	Mark Company		38		78
16					

#### Custom

The Custom tab is used to place custom (not at standard pipe outlets) rip rap and filter fabric quantities, as well as permanent soil reinforcement mat (PSRM) quantity.



# Rip Rap Type

- Class A
- Class B
- Class I
- Class II

RR Custom Rip Rap Quantity
FF Custom Filter Fabric Quantity
PSRM Custom Permanent Soil Reinforcement Mat Quantity

## **Lateral Ditch Opt**

Option to label special lateral ditches. When checked, the **Ditch** tab will appear.



#### **Ditch Tab**

Note that the Job Number and Chain will have to be selected before some of the fields in the Ditch tab are enabled.



## Beg Sta

Click on the top DP button and data point to the beginning station of the ditch on the screen. This will populate the Beg Sta text field with the cooresponding station.

#### **End Sta**

Click on the top DP button and data point to the ending station of the ditch on the screen. This will populate the End Sta text field with the cooresponding station.

# Loc

The location of is automatically set by the last data point. Location can be LT (left), RT (right), or MD (middle) of the centerline. Users can override the automatic selection of the location of the ditch by clicking on the drop down option list button.

#### DDE

If the ditch DDE quantity is known, the option to adhoc this quantity keyed-in here.

## Detail

If the ditch is assigned a detail letter, this drop down can be used to label the ditch detail letter and adhoc the the ditch detail letter to place on the summary sheet. The ditch detail letters list is user modifiable and is contain in the NCDOT Rip Rap Table.xls spreadsheet. See the Data section for further details.

#### **Auto Comment**

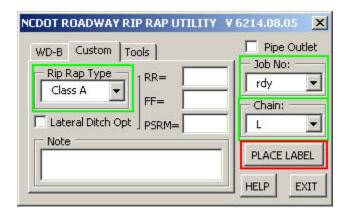
This drop down can be used to automatically adhoc comments to be place on the summary sheet. The comment is a user modifiable and is contain in the NCDOT Rip Rap Table.xls spreadsheet. See the Data section for further details.

#### **Placing Labels**

For rip rap labels at standard pipe outlet locations, the Job Number, Chain, and Pipe Size must be selected before the Place Label button is enabled.



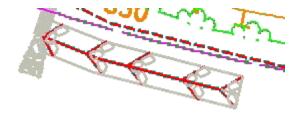
For custom rip rap labels, the Job Number, Chain, and Rip Rap Type must be selected before the Place Label button is enabled.



After clicking on the Place Label button;

- 1. Data point in the vicinity of the rip rap cell or ditch line to draw the beginning of the leader line and place the the beginning of the terminator cell.
- 2. Data point to the desired location of the rip rap label. Note that the rip rap label orientation will automatically flip depending whether the final location of the label is on the left or right part of the screen.

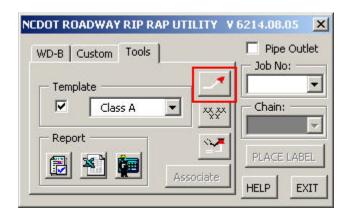
Video - Place Rip Rap Label



#### **Place and Edit Tools**

These are special tool used to place and edit rip rap labels. When creating new labels with the **Place Leader Line Only** and the **Place Rip Rap Text Only** tools, no adhoc attributes are created or attached to these labels. When repositioning an existing adhoc rip rap label with the **Move and Rotate Label** tool, the original adhoc attributes and terminator cell are not modified. Just the leader lines and label texts are deleted and then redrawn.

# **Place Leader Line Only**



Place Rip Rap Text Only

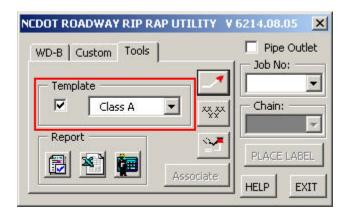


#### **Move and Rotate Label**



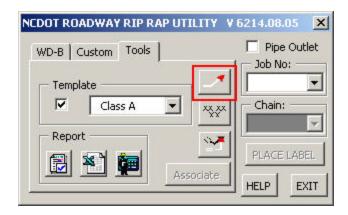
#### **Template**

Option check box used to determine what level the newly created labels are drawn in. If not checked, then the active level is used. If checked, then the selected rip rap type level is used.



NCDOT ROADWAY RIP RAP UTILITY

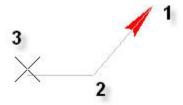
**Place Leader Line Only** 



After clicking on the Place Leader Line Only tool;

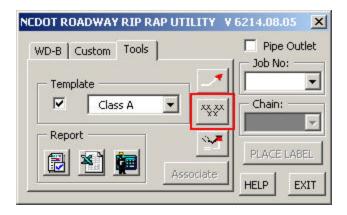
- 1. Data point to the starting point of the leader line.
- 2. Data point to the end of the leader line.
- 3. Rotate the end of the extenstion line to the desired angle and data point to that location. The axis lock is automatically set in increments of  $45^{\circ}$  at this step.

Note that the terminator cell size is dependent on the active scale setting.



Video - Place Custom Line Leader

**Place Rip Rap Text Only** 



After clicking on the Place Rip Rap Text Only tool, select the rip rap type from the drop down list box under the Template frame. If no rip rap type has been selected, then "Class A" rip rap type is automatically selected by default. The following is a list of text to placed with respect to what rip rap type has been selected.

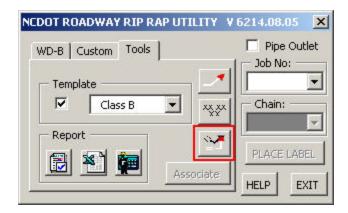
- CL A RIP RAP
- CL B RIP RAP
- CL I RIP RAP
- CL II RIP RAP
- 1. Data point to anywhere on the screen to bring up the text to be placed.
- 2. Data point to the final desired location of text.

Note that the text size is dependent on the active text style settings.



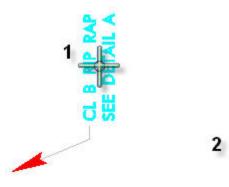
Video - Place Custon Rip Rap Label

**Move and Rotate Label** 

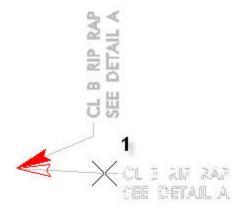


After clicking on the Move and Rotate Label tool;

1. Select (1) any existing rip rap labels that have been placed with adhoc attributes. The label leader lines, texts, or the terminator cell can be selected. Data point (2) to anywhere on the screen to accept the select element.



2. Data point (1) to anwhere on the screen to bring up label to be placed. Note that text is automatically rotated zero degree to the view.



3. Data point (1) to the desired new location of the rip rap label. The existing text label and the leader lines are deleted and redraw. The original terminator cell with adhoc attributes is copied and placed at the new orientation. The original terminator cell is then deleted. This does not effect the adhoc attributes since the original cell was copied before it is deleted.



# Video- Move and Rotate Label



## **NCDOT ROADWAY RIP RAP UTILITY**

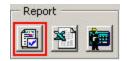
# Report

Note before creating reports, the job number must be selected first.



# **Text Report**

Create a Quick Text Report Icon (currently disabled)



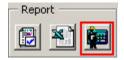
## **Excel Summary Sheet Report**

Create a NCDOT Excel Summary Sheet Icon



#### **Quantity Manager Report**

Create a Quantity Manager Report t Icon (currently disabled)



#### **NCDOT ROADWAY RIP RAP UTILITY**

## **Summary Sheet**

#### **Adhoc Attributes Extraction**

The following adhoc attributes are extracted after clicking on the create summary sheet icon. Note that the adhoc attributes are attached on the red terminator cells.

- GPK
- Chain
- RRType
- RRQuan
- FFQuan
- PSRMQuan
- BegSta
- EndSta
- Location
- DDE
- Detail
- Auto Comment

If any of these adhoc attributes are missing, then a value of "???" will be substituted in its place and reported back to the summary sheet as such.

# "OnTheFly" Adhoc Attributes

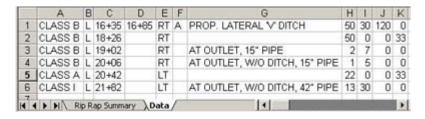
During the extraction of adhoc attributes, adhocs with the value "OnTheFly" will be assigned a value at the time of extraction. For example, if the BegSta adhoc attribute has a value of "OnTheFly", then the beginning station of where the red terminator cell we be assigned in its place.

#### Data (Excel Sheet)

Once extracted, an Excel spreadsheet is automatically created. The values of the adhoc attributes are exported to the Data Excel worksheet. The Data worksheet rows are sorted in the following order.

- 1. Chain (Column B)
- 2. Beginnin Station (Column C)

## 3. Ending Station (Column D)

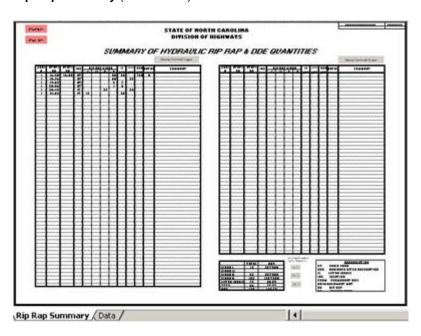


Below is a table describing the relationship between the Data worksheet column letter and adhoc attribute values.

Column	Adhoc Attribute
Α	RRType (Class A, B, I, or II)
В	Chain
С	BegSta (Beginning Station)
D	EndSta (Ending Station)
Е	Location (LT, RT, or MD)
F	Detail (Assigned Ditch Detail Letter)
G	Auto Comment
Н	RRQuan (Rip Rap Quantity)
I	FFQuan (Filter Fabric Quantity)
J	DDE (Drainage Ditch Excavation Earthwork Quantity)
K	PSRMQuan (Permanent Soil Reinforcement Mat Quantity)

The entire Data worksheet is user editable.

## Rip Rap Summary (Excel Sheet)



The Rip Rap Summary worksheet references the Data worksheet in the background. There are few areas in the Rip Rap Summary worksheet that are user editable.

Below is a typical Rip Rap Summary layout. Under each column users are not permitted to edit the referenced text. Any modifications can be done in

the Data worksheet.

CHAIN	STATION	STATION	100	F	IP RAF	CLAS	S	FF	PSRM	DDE	DETAIL
CHANG	CHAIN STATION	SIMILOR	LUC	- 1	11	A	В	(SY)	(SY)	(CY)	DETAIL
L	16+35	16+85	RT	filelow(	0.000		50	30		120	Α
L	18-26		BT				50		33		
L	19+02		BT				2	7			
L	20+06		BT				1	5		15.000	
L	20+42		LT			22			33		
L	21+82		LT	13				30			

Display or hide the automatic comment adhocs under the Comment column by clicking on the Display Comment Toggle button.

**Video - Display Comment Toggle** 

	Display Comment Toggle
AIL	COMMENT

The quantities of each item is totaled up in the lower right section of the worksheet. Any cell under the "SAY" column, highlighted in blue below, is editable.

	TOTAL	SAY
CLASS I	13	20 TONS
CLASS II		
CLASS A	22	30 TONS
CLASS B	103	120 TONS
FILTER FABRIC	72	80 SY
PSRM	66	80 SY
DDE	120	140 CY

Say Value Rounded Up To Nearest 10.



The default say value for each item is 10% of the total rounded up to the nearest 10. If the say value has not been manually modified, click on the 10%, 20%, or 30% to automatically adjust the cooresponding total value.

**Video - Changing Say Values** 

TOTAL SAY CLASSI 13 20 TONS CLASS II 22 30 TONS CLASS A 61 70 TONS CLASS B FILTER FABRIC 63 70 SY PSRM 66 80 SY DDE

Say Value Rounded Up To Nearest 10.

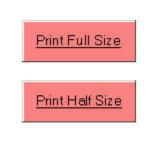
1	0	9
2	0	
3	0	•

The summary sheet TIP number and sheet number can be edited in the upper right corner of the worksheet.

PROJ. REFERENCE NO.	SHEET NO.
	3

#### **Roadway EZ Print Buttons**

For internal Roadway use only, two "Roadway easy print buttons" has been created to summit the summary sheet for prints. The Print Full Size and Print Half Size buttons are located in the upper left corner of the worksheet.



## **Saving Excel File**

Close the Excel file and a prompt message box will display the option to save or discard the worksheet. Click "Yes" and key-in the name of the Excel file and select the appropriate folder.

