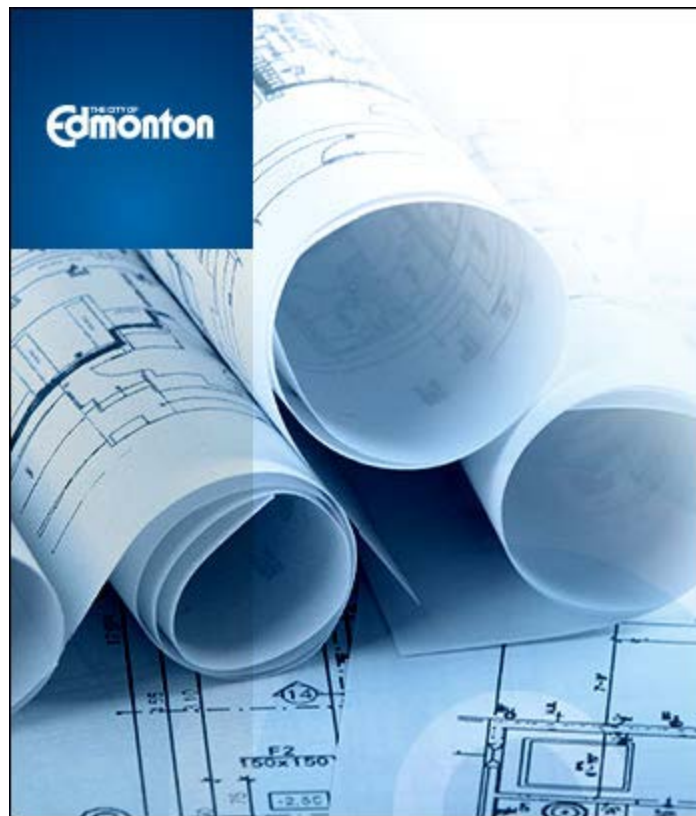


Best Practices For Consultants



**Electronic Submission of
Engineering Drawings**

Last Updated June 2015

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1.0 Overview

The City of Edmonton fully transitioned to **ePlan** in November of 2014 for the electronic submission of engineering drawings. Since implementation, ePlan users have come up with this best practices document as way to assist applicants in maximizing the use of the program as well as producing drawings that make the review process run more smoothly.

Before you begin your submission, ensure you review the technical requirements as well as the best practices included in this document.

2.0 Technical Requirements

2.1 Browser

In order to experience the full features of **ePlan**, Internet Explorer is recommended. The program will run in Google Chrome, however, functionality will be extremely limited.

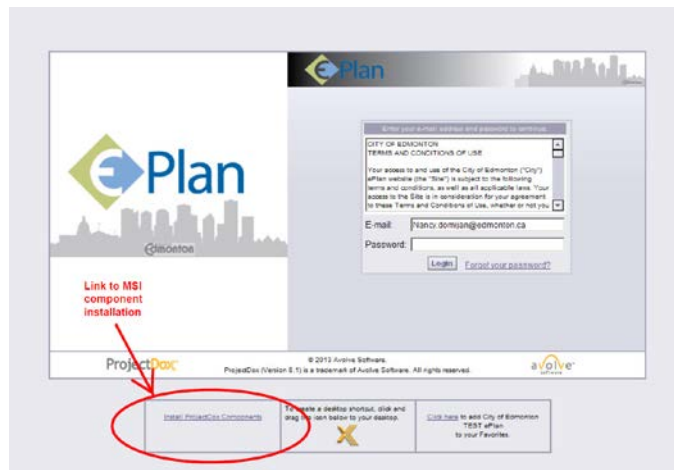
2.2 Pop-Up Blockers

If your computer has pop-up blockers installed, you will need to disable pop-up blocking for the **ePlan** web address <https://ePlan.edmonton.ca>. If this has not been done, the page will immediately disappear when you try to login. It is not uncommon to have more than one pop-up blocker installed (Internet Explorer, Google Task Bar, etc.). Once the **ePlan** site is allowed, you will be able to utilize the application.

2.3 Installation of ProjectDox Controls

The login page has a Microsoft Silent Install (MSI) component required to install the necessary ProjectDox ActiveX controls. This installation will only need to be done once per computer. The link to the component install is shown below.

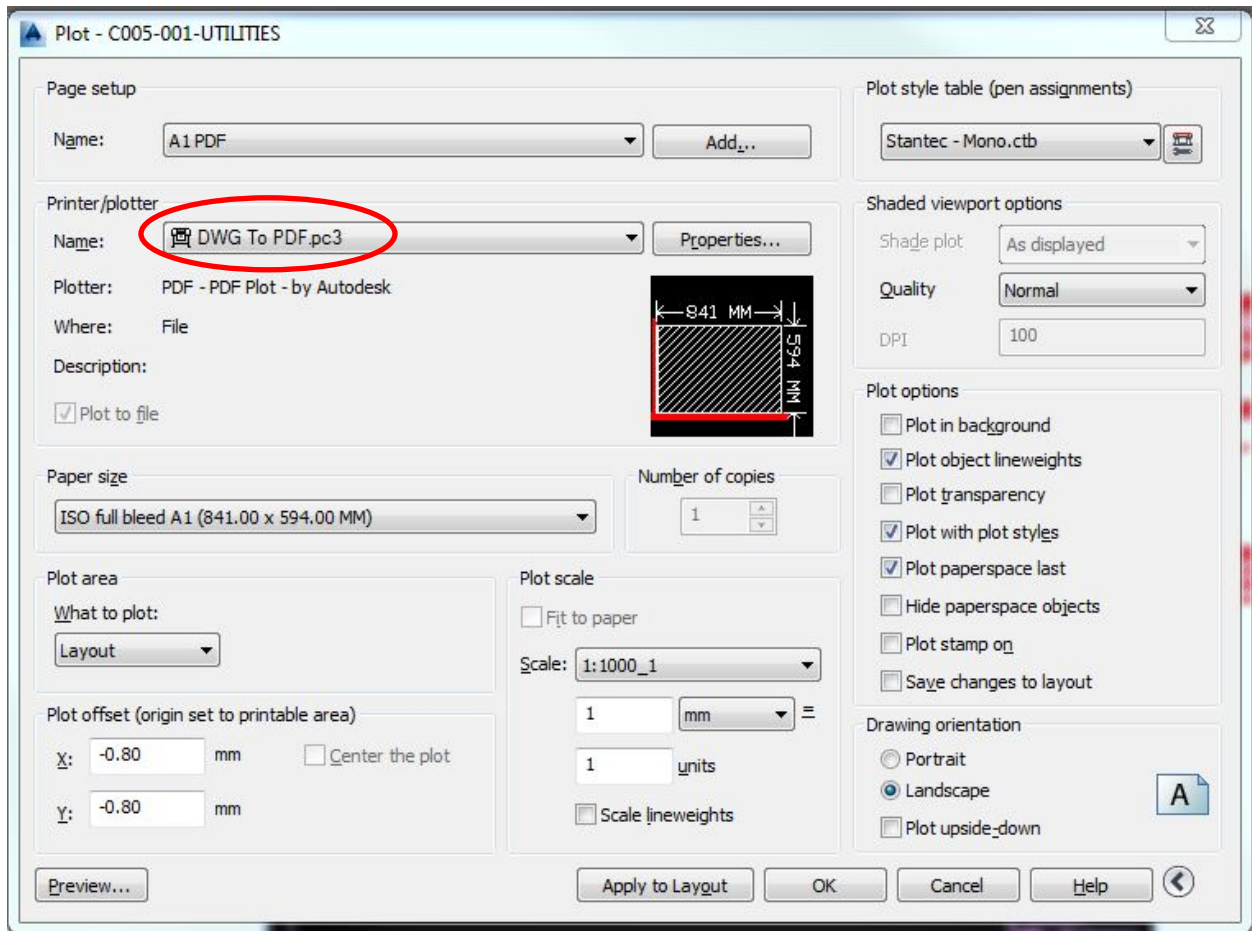
Please note that in order to install the MSI component, you must have administrator rights for your computer. If you do not have administrator rights, you will need to contact your Information Technology branch to assist with the installation of the components.



3.0 Exporting Drawings

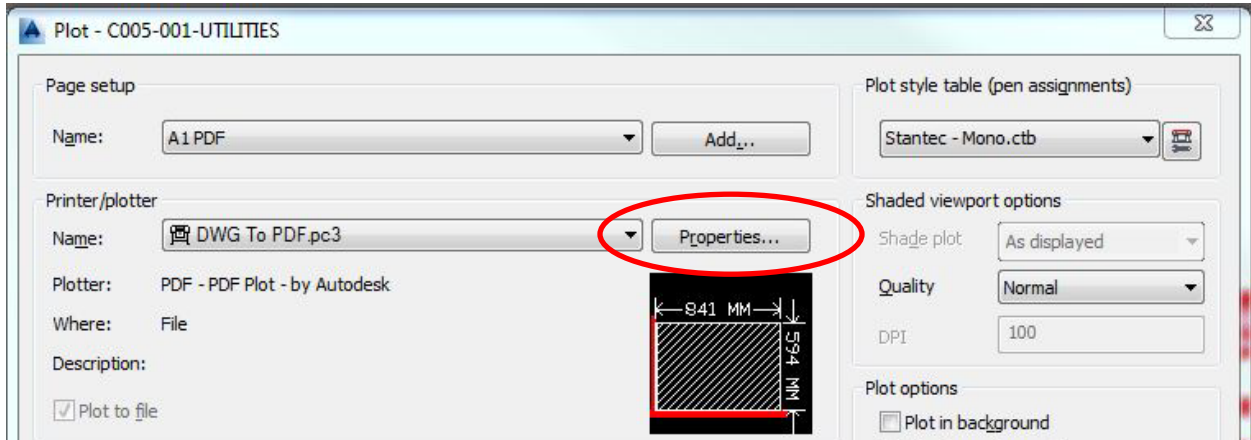
3.1 Plotting in AutoCad

The City requires all drawings to be vector based and in PDF format. When plotting drawings, in the Printer/Plotter section, use the drop-down menu by “Name” to choose the option for “DWG To PDF.pc3”.

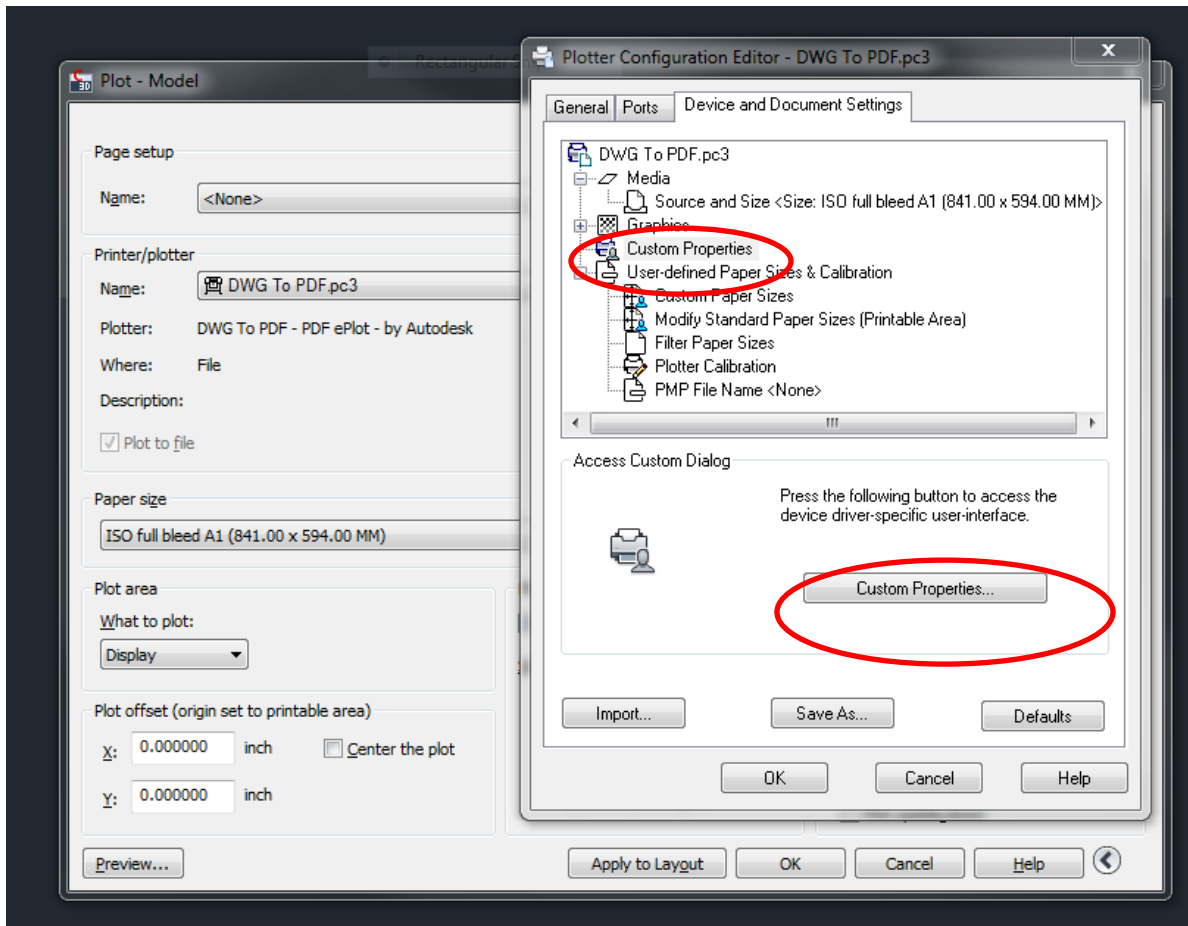


3.2 Layers

During the review of the drawings, our reviewers often find it beneficial to be able to turn layers on and off. To include the layers in the PDF version of the drawings, click on Properties to the right of the “Name” to open up the Plotter Configuration Editor.

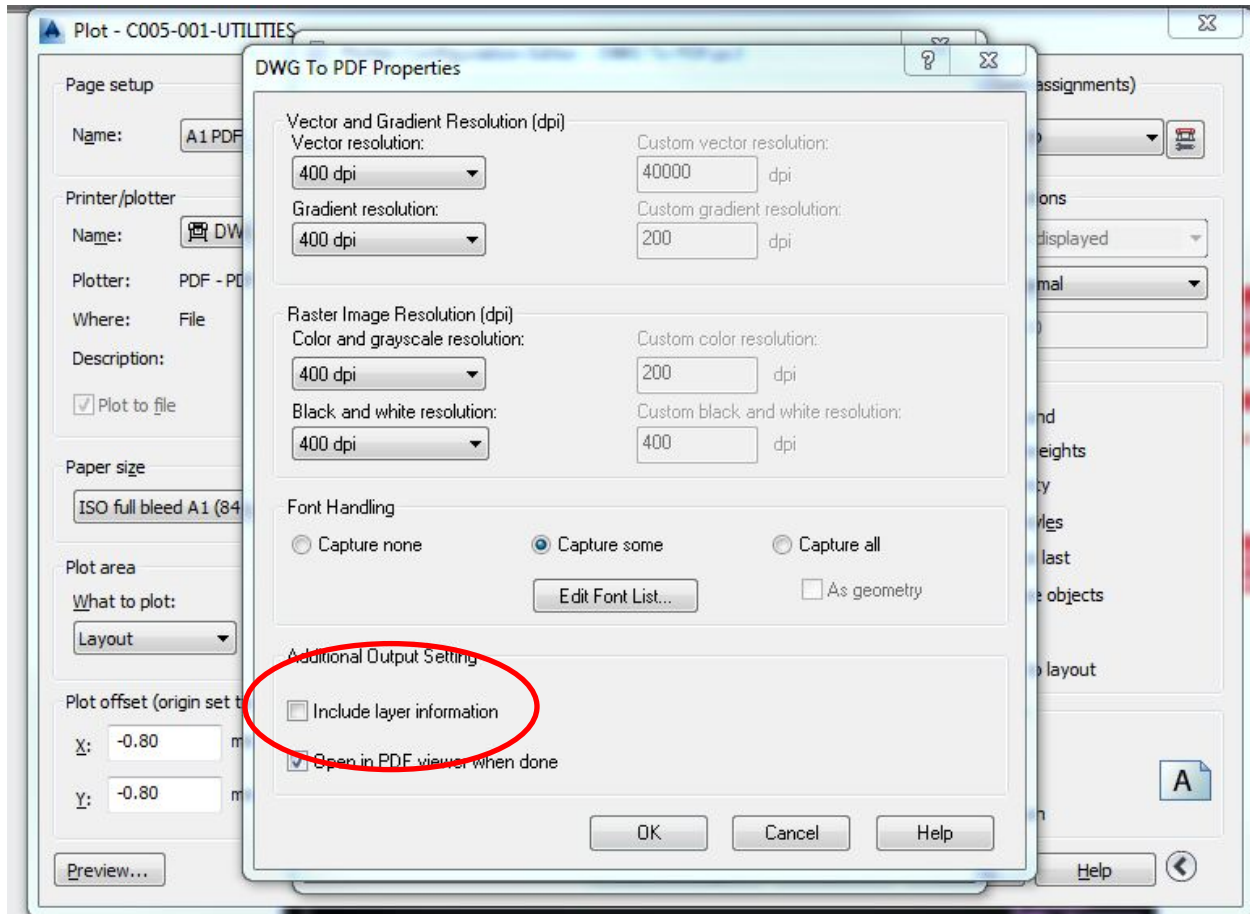


Select “Custom Properties” to bring up the DWG To PDF Properties window.



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In the section called “Additional Output Setting”, check off the box to “Include Layer Information”.



To ensure efficiency and speed of drawings, keep the number of layers to less than 100.

3.3 Drawing Scale

Each drawing should have a bar scale in the title block as a calibration reference for the reviewers.

3.4 Drawing Loading Time

Drawings must be uploaded such that when opened by a reviewer, the maximum loading time is approximately five seconds. This can be spot checked by the consultant by opening several drawings in a set to ensure the loading time is less than five seconds per drawing prior to submitting the set. Please note that if drawings take too long to open, the submission may be rejected.

4.0 Naming Standards

Naming standards allow for easy identification of drawings and documents in order to facilitate the most efficient review and ensure consistency between submissions.

4.1 Drawing Naming Standards

Filenames for drawings should include the first characters of the discipline name, followed by a 3-digit sheet number, followed by a short description of the drawing.

****The filenames used for the drawing submission must also be indicated on the drawings****

When referencing other sheets in the drawing set, please refer to the sheets using the drawing naming standards as outlined below. For example, ‘refer to Drawing C005 – 001 – UTILITIES’ rather than ‘refer to Drawing 5’.

- **Discipline** – First character represent the discipline area, example “C” for Civil, “E” for Electrical, etc. Ensure that all plans, including the associated details, are submitted under the correct discipline characters.
- **Sheet Number** – Must be a 3 digit number with leading zeros.
- **Description** – Describes the drawing in short form. Limit the number of characters in the description to less than 35.

Drawing Type	Discipline	Sheet Number	Example File Names
Civil			
Cover Sheet	C001	001 – 999	C001 – 001 – COVER
Legend	C002	001 – 999	C002 – 001 – LEGEND
Index	C003	001 – 999	C003 – 001 – INDEX
Topography	C004	001 – 999	C004 – 001 – TOPO
Overall Storm, Sanitary and Watermain	C005	001 – 999	C005 – 001 – UTILITIES
Road and Sidewalk	C006	001 – 999	C006 – 001 – ROAD C006 – 002 – INT GRADES
Lot Grading	C007	001 – 999	C007 – 001 – GRADING
Storm Drainage	C008	001 – 999	C008 – 001 – STORM
Street Furniture	C009	001 – 999	C009 – 001 – STR FURN
Sanitary Catchment	C010	001 – 999	C010 – 001 – SAN BASIN
Storm Catchment	C011	001 – 999	C011 – 001 – STM BASIN

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Drawing Type	Discipline	Sheet Number	Example File Names
Water Network	C012	001 – 999	C012 – 001 – WAT NET
Storm Water Management Facility	C013	001 – 999	C013 – 001 – SWMF
Easement	C014	001 – 999	C014 – 001 – EASEMENT
Erosion Control	C015	001 – 999	C015 – 001 – ESC
Other	C016	001 – 999	C016 – 001 – DESCRIPTION
Plans / Profiles	C100	001 – 999	C100 – 001 – WRIGHT DRIVE C100 – 002 – 62 AVENUE
Sections and Details	C200	001 – 999	C200 – 001 – CROSS SECTIONS C200 – 002 – DETAILS
Gas			
Gas	G001	001 – 999	G001 – 001 – GAS
Electrical			
Electrical	E001	001 – 999	E001 – 001 – POWER E001 – 002 – LIGHTING
Landscape			
Landscape	L001	001 – 999	L001 – 001 – LANDSCAPE L001 – 002 – DETAILS
Structural			
Structural	S001	001 – 999	S001 – 001 – ENTR FEAT
Arterial Roads			
Alignment	A001	001 – 999	A001 – 001 – ALIGNMENT
Details	D001	001 – 999	D001 – 001 – DETAILS
Grading	GR001	001 – 999	GR001 – 001 – GRADING
Pavement Markings	P001	001 – 999	P001 – 001 – PAV MARKINGS
Utilities	U001	001 – 999	U001 – 001 – UTILITIES

4.2 File Naming for Subsequent Submissions

When uploading second and subsequent drawings into ePlan, the system will automatically compare the new drawing with the previous drawing. This allows City and EPCOR reviewers to

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overlay and compare the two drawings to easily identify changes. In order for this to occur, the drawing file names must remain exactly the same throughout the life of the project

4.3 Supporting Document Naming Standards

Filenames for supporting documents should have a consistent naming convention and include a clear description of the document. To ensure readability the documents should be:

- converted from the original file to PDF where possible; or
- scanned at high resolution

Document Type	Example File Names
Overall	
Cover letter describing submission	D001 – 001 – COVER LETTER
Submission checklist	D001 – 002 – CHECK LIST
Calculations	
Catch Basin Calculations	D002 – 001 – CB CALCS
Sanitary Sewer Calculations	D002 – 002 – SAN CALCS
Storm Sewer Calculations	D002 – 003 – STM CALCS
Swale Calculations	D002 – 004 – SWALE CALCS
Thrust Block Calculations	D002 – 005 – THRUST BLOCK CALCS
Joint Restraint Calculations	D002 – 006 – JOINT RESTRAINT CALCS
Intersection Design	
Intersection Quarter Crown (Location 1)	D003 – 001 – INT QTR CROWN (LOCATION 1)
Intersection Quarter Crown (Location 2)	D003 – 002 – INT QTR CROWN (LOCATION 2)
Intersection Quarter Crown (Location 3)	D003 – 003 – INT QTR CROWN (LOCATION 3)
Reports	
Erosion & Sediment Control Report	D004 – 001 – ESC REPORT
Geotechnical Report	D004 – 002 – GEOTECH REPORT
Geotechnical Amendment	D004 – 002 – GEOTECH AMEND
Geotechnical Quantity Reports	D004 – 002 – GEOTECH QUANT
Geotechnical Thrust Block Report	D004 – 002 – GEOTECH THRUST BLOCK
Neighborhood Design Report	D004 – 003 – NDR (MO/YR)

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Document Type	Example File Names
Neighborhood Design Report Amendment	D004 – 003 – NDR AMEND (MO/YR)
Slope Stability Report	D004 – 004 – SLOPE STABILITY (MO/YR)
Lighting Design Folder	D004 – 005 – LIGHTING DESIGN FOLDER
Roundabout Requirements	D004 – 006 – ROUNDABOUT

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5.0 Submission Requirements for Engineering Drawings

5.1 First Submission

All submission requirements and supporting documents must be addressed prior to or in conjunction with an application for engineering drawing review. Please [refer to our website](#) for the most up to date Submission Requirements.

5.2 Second Submission

When submitting second submission drawings, the layout must match the first submission such that when overlaid, the two submissions are in line with each other. For example, when adding new details, please do not “shift” the drawings to fit in another detail, rather use a new page.

In addition, please provide an explanation as to how the design has changed as a result of the comments and revisions.

5.3 Aerial Photographs

The following submission requirements must be addressed when submitting engineering drawings with an aerial photograph layer:

1. Coordinates must be shown.
2. Deflection angles for manholes and turning movements must be shown.
3. All other submission requirements and supporting documentation for drawings submissions must also be addressed.

6.0 City Stamp Location

The top right corner of all drawings is where the City of Edmonton electronic stamp will be affixed. Please leave this area free of important design information.

- Dimensions: 135mm width x 25mm height, offset 15mm from the right, 25mm from the top

7.0 Design Elements

7.1 Hatching

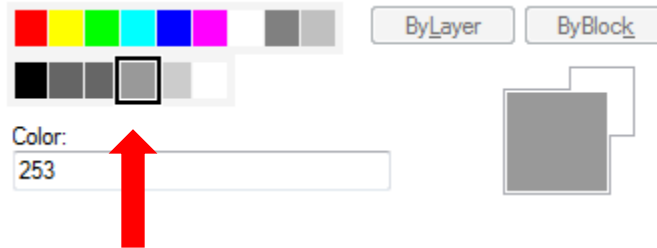
When using hatching in drawings, such as for illustrating different types of hard surfaces, where possible use only solid hatching. Dot hatching or other types causes significant delays in working with the drawings reducing efficiency in the review.

For example, for sidewalks, use colour 254:

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For asphalt, use colour 253

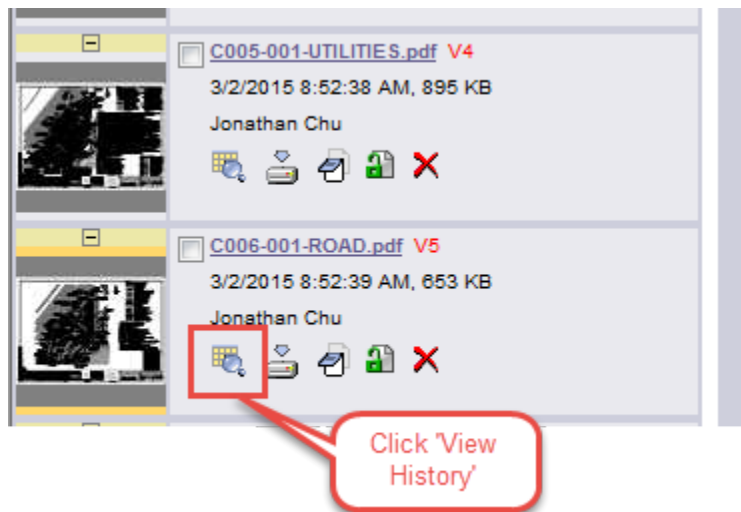


It is understood that hatching for landscape elements is needed to decipher between types of soft and hard landscapes. When using various types of hatching, please test the speed of the drawings in ePlan prior to submitting as per Section 3.4.

8.0 Comparing Drawings

8.1 Compare Mode and Drawing Overlay

Drawings from previous and subsequent circulations can be compared simultaneously on ePlan using 'Compare Mode'. To open drawings in Compare Mode, first click the 'View History' button for the drawing in question.

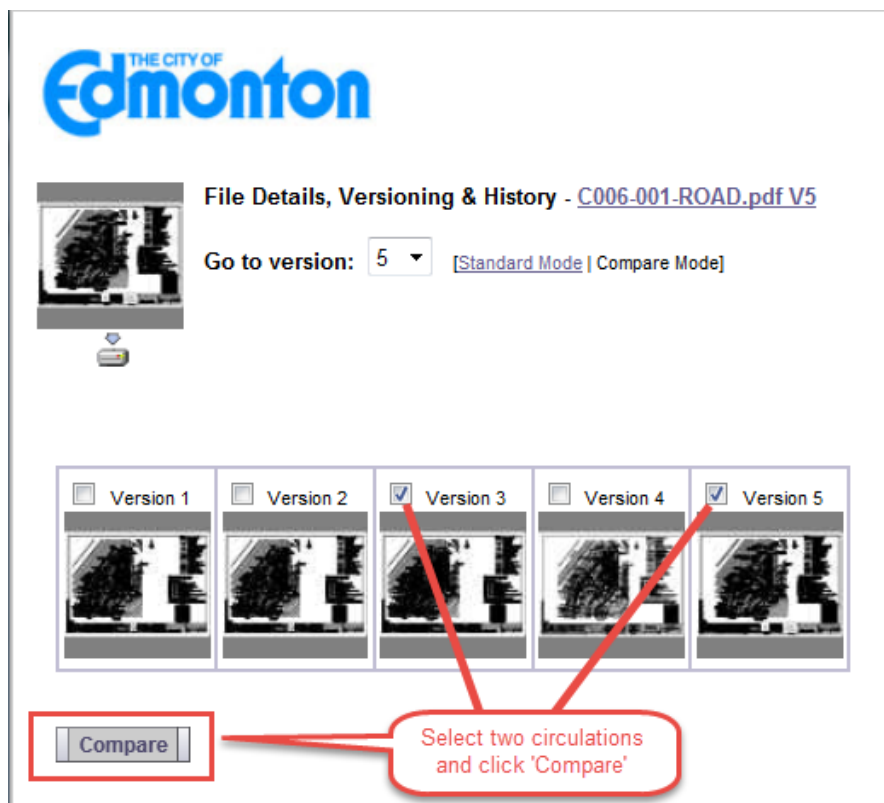


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In the new window, click the 'Compare Mode' link.

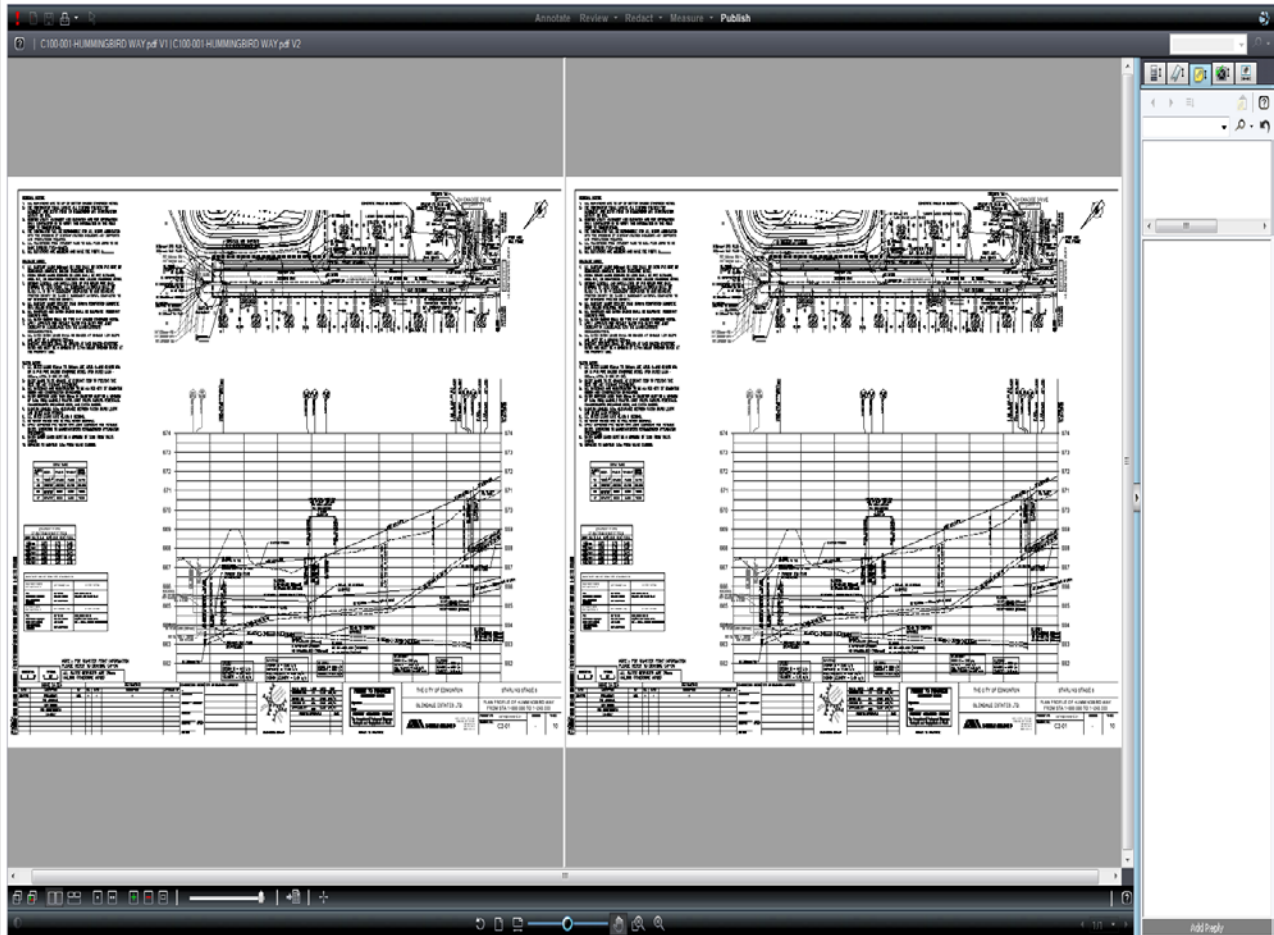


Only a maximum of two circulations to compare can be selected at once. Once two circulations are selected, click 'Compare'.

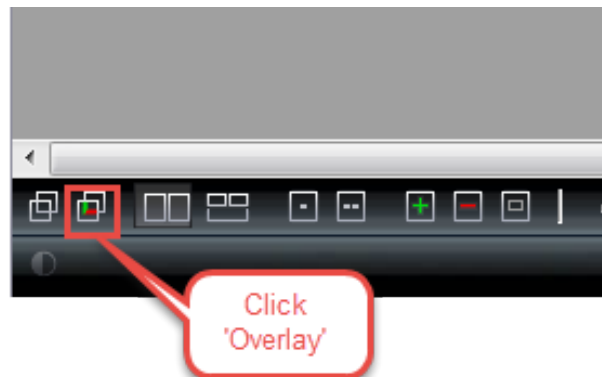


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The drawings will open in a new window side by side.



One drawing can be layered over another using the 'Overlay' button in the bottom left corner.

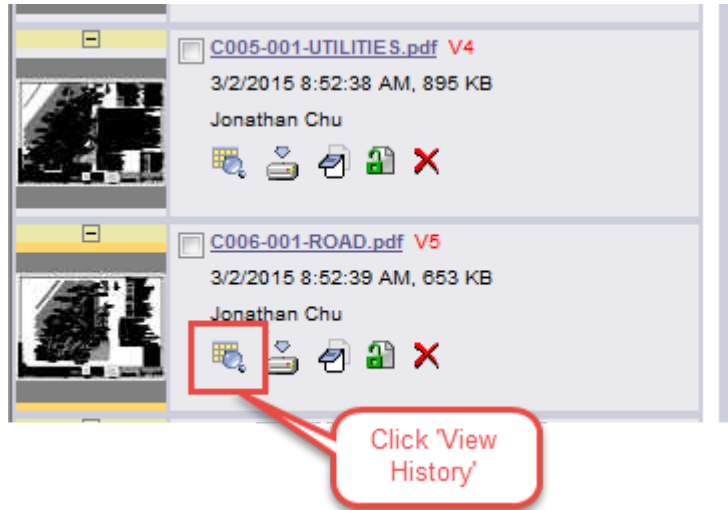


By selecting the Overlay button, the differences between the two drawings will be shown in green and red.

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8.2 Markups

Markups from different City Departments can be shown on the drawings. To view markups on a drawing, first select the 'View History' button.




Next, select which circulation to review. Drawings that have markups will have a visible 'View Markups' button. Select the 'View Markups' button to access the markups on the drawing.



File Details, Versioning & History - C200-002-CROSS SECTIONS.PDF V3

Go to version: [Standard Mode | [Compare Mode](#)]

 Click 'View Markups'

Main	History	Workflow
Uploaded: 11/21/2014 1:21:28 PM Uploaded By: Jason Wang		
Description:	<input type="text"/>	
Keywords:	<input type="text"/>	
Original Author:	<input type="text"/>	
Last Modified by:	<input type="text"/>	
Last Modified:	11/21/2014 1:21:28 PM	
File Metadata:	* Required field	
<input type="button" value="Save"/>		

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A new window will open up showing the markups on the drawing. Check the 'View' box to select specific markups or click the 'Select All for View' to view all the markups. Once the markups have been selected, click 'View/Edit'.

Markups attached to C200-002-CROSS SECTIONS.PDF_V3

Delete	View	Edit	Markup Name	Author	Date
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dev.Eng.RyanDrummond	Ryan Drummond	12/12/2014 3:22:21 PM

Check this box for
desired markups to view

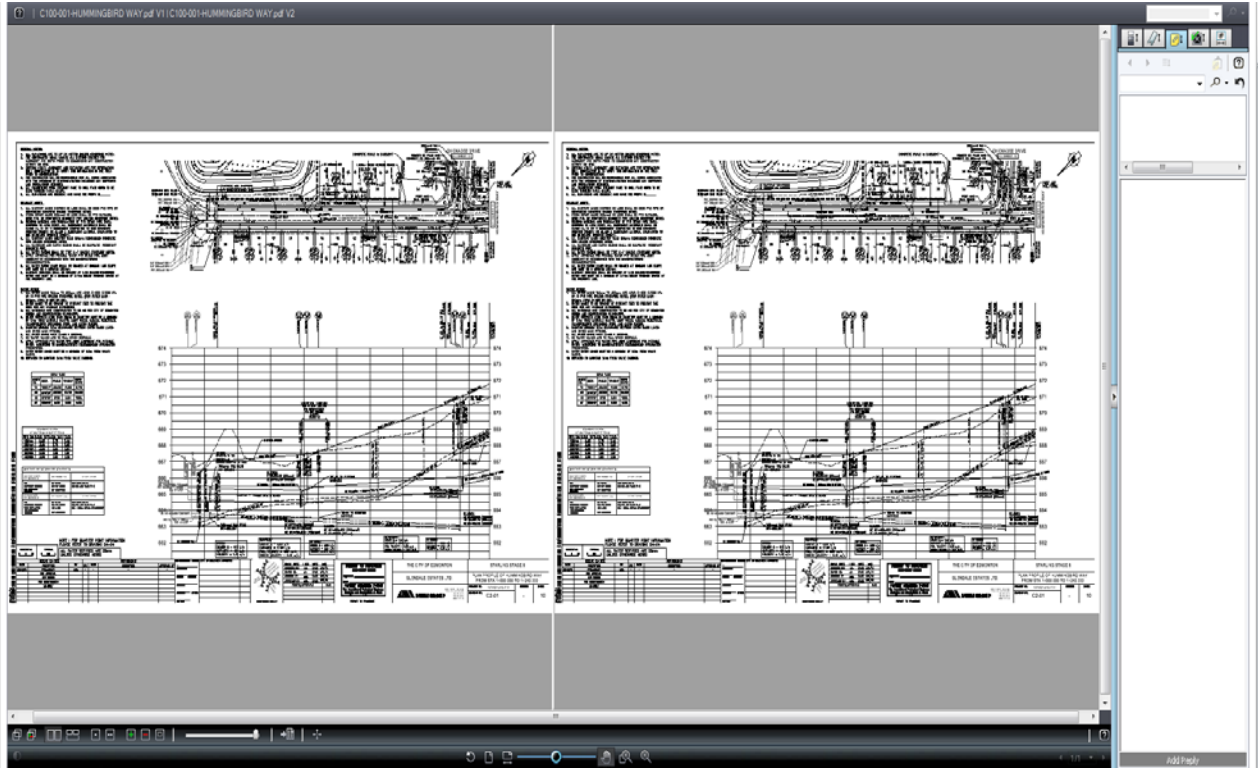
The drawing will open up with the markups visible on the drawing and summarized on the right-hand side.

The screenshot displays a software interface with a drawing area on the left and a summary panel on the right. The drawing area shows a cross-section of a road with various layers and materials. A red box highlights a specific area of the drawing. The summary panel on the right contains the following information:

- Changemarks note #01**
- Ryan Drummond 12/12/2014 03:22 PM**
- Condition #2:**
Update drawing to reflect the switch from ACF-LT to 10mm-LT as per new pavements specs.
- Condition #3:**
Add a note as follows: "As per Geotechnical Report all Trench and Backfill for top 1.5m moisture content must not exceed 5% more than the plastic limit."
- 0 replies**

8.3 Markups in Compare Mode

To view markups in Compare Mode, first open two drawing submissions in Compare Mode (see Section 8.1).



Next, select 'Open File (only)'.

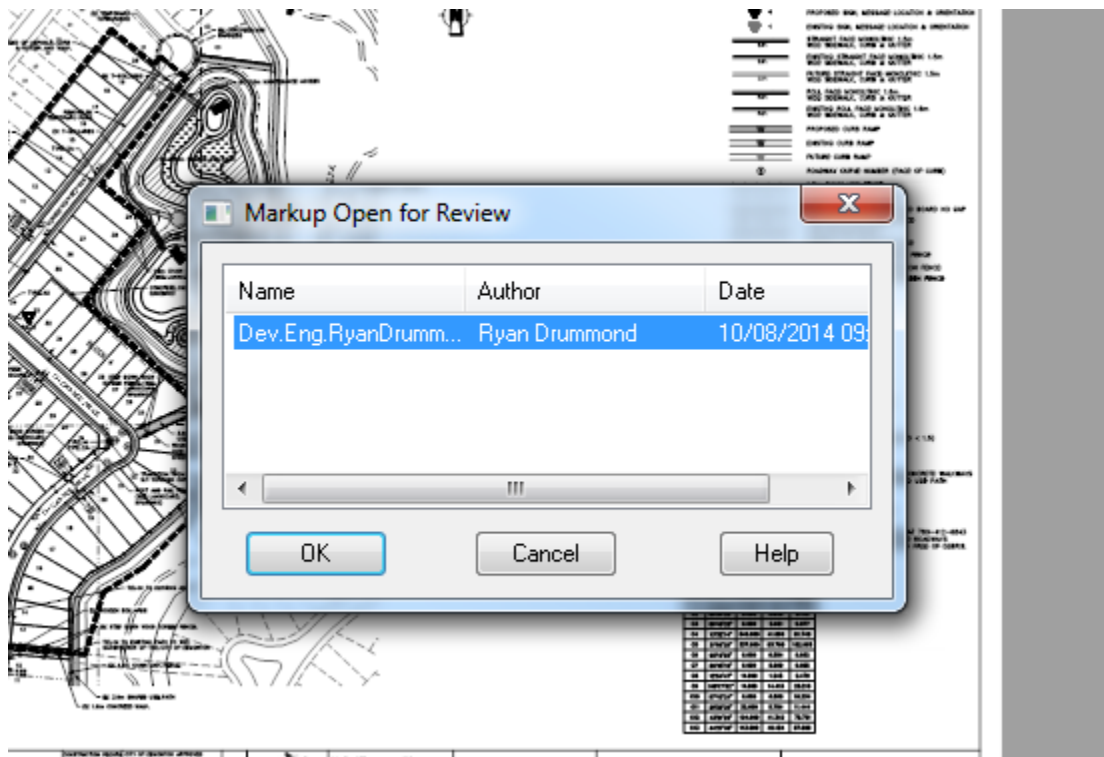


If there are markups on the drawing, the 'Review' button at the top of the window will be selectable. Select 'Review'.

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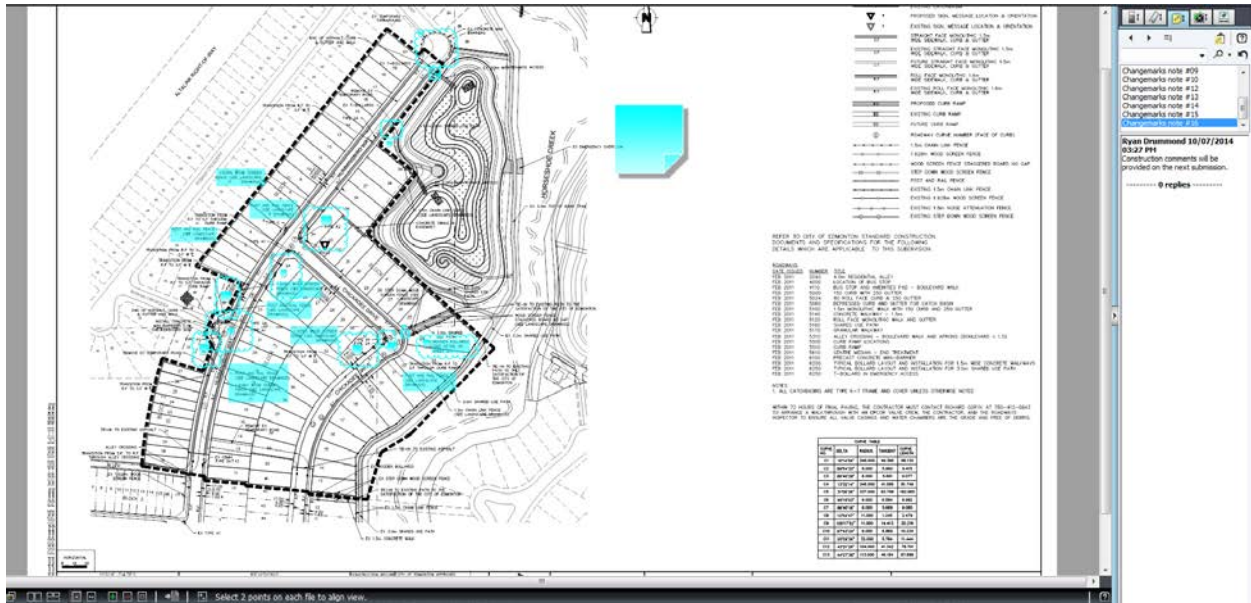


A new small window should open up which lists the department(s) and reviewer(s) who have done markups on the drawing. Select a department and reviewer and click 'OK'.



The markups of that department and reviewer should now be visible on the drawing.

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The two submissions can now be compared with the markups still on the drawing by selected the 'Side-by-Side' button.



The two drawings are now visible side-by-side, the old submission with markups the new submissions without markups.

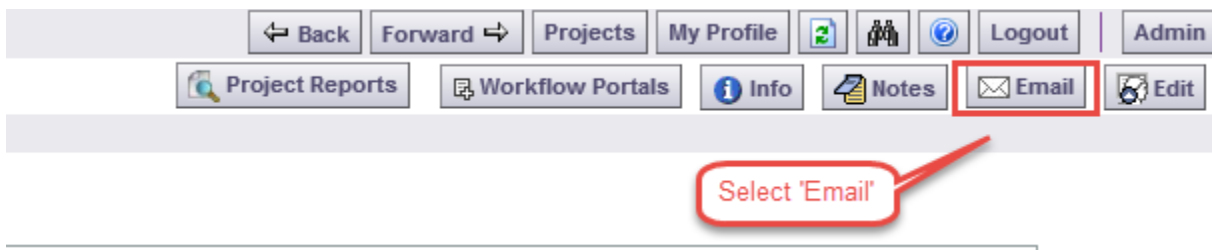
9.0 TeamMail Function in ePlan

9.1 When To Use TeamMail in ePlan

Using emailing within ePlan is a useful technique in contacting other groups or contacts in relation to a project. Emailing can be used to contact reviewers or other groups to ask questions, request clarification and/or follow up on deadlines.

9.2 How To Use Emails in ePlan

To access the email function in ePlan, first open the project in question. Next, select the 'Email' button in the top right hand corner.



A new window should open up with a 'Subject' textbox and 'Body' textbox to enter in the email subject and content. Once done, select a group or contact(s) from the list provided below the 'Body' textbox.



Team mail for Project: Starling Stage 8
Email type: Standard Mail

Subject:

Body:

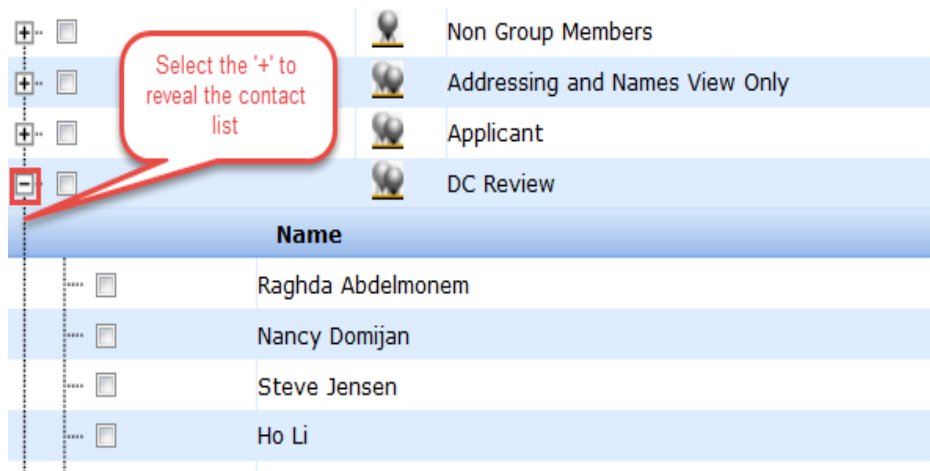
Users/Groups that will be emailed (includes groups that contain users and have permissions): *

<input type="checkbox"/>	Name
<input type="checkbox"/>	Non Group Members
<input type="checkbox"/>	Addressing and Names View Only
<input type="checkbox"/>	Applicant
<input type="checkbox"/>	DC Review
<input type="checkbox"/>	Development Coordinator
<input type="checkbox"/>	Development Engineering
<input type="checkbox"/>	Development Engineering Supervisor
<input type="checkbox"/>	Development Engineering View Only
<input type="checkbox"/>	Drainage Operations
<input type="checkbox"/>	Drainage Services
<input type="checkbox"/>	Drainage Services Supervisor

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It is important to note to try to **be as specific as possible** when selecting the contacts to send the email to. If an entire group is selected the email will be sent to the entire group, **even those contacts not involved with the project in question**.

To select a specific contact(s) in a group, press the '+' beside the group name and a list should drop below showing the members of the group.



All emails sent can be reviewed in the Reports tab for a project under 'All Emails Sent Detailed Report'. A summary is also given in the Reports tab under 'All Emails Sent Summary Report'.

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10.0 Responses to Drawing Comments

10.1 Drawing Responses

Once a review is complete, for each mark-up shown on the drawings, the consultant must provide a response outlining how the comment has been addressed. If a comment was not addressed, the consultant must provide a response explaining why the comment was not addressed. These responses are replacing the comment return letters previously required for physical circulations. Accordingly, they will assist Development Coordination in determining whether the drawings are ready for subsequent circulation.

10.2 Do's and Don't's

- DON'T simply state "Done" or "See Drawing"
- DO provide some further guidance for the reviewer as to how the comments were addressed.
- DO indicate if you've updated other drawings with the same change
- DO provide a letter or explanation outlining additional revisions that were triggered as a result of the comments
- DO refer to previous conversations or email discussions with reviewers to resolve an issue

11.0 Quick Tips

The following are some quick tips to look out for when using ePlan.

- Generally, the two most important reports for consultants are the 'Department Review Status' and 'Project Markups Listing'.
- If a specific department is behind on a deadline, the first point of contact should be the Development Coordinator for the project. [Visit our website for a contact map.](#)
- Specific questions for markups can be made using the ePlan emailing system to the reviewer for the project in question.
- The best way to have subsequent submissions reviewed quickly is to ensure drawing markups/comments from departments are adequately addressed and the consultant responses are provided.