

Streetlight Design-Build: Best Practices Guide January 2022

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Revision Log

Date	Update	Description

Part 1: Design

4-party URD Workflow Information and Reminders:

The Developer's Consultant for the URD project will provide the Streetlight Design Consultant contact information along with all other project initiation requirements as per the USW.

Ensure that you receive access to the 4partyURD SharePoint site to your project and set alerts on the following Steps (Step 1, Step 3, Step 5, Step 6, Step 7, Step 9, Step 10 and Step 13)

Step 4 - Once you receive alert that Step 3 is complete you will have 20 workdays to prepare your Preliminary Design and upload it to Step 4. Contact City quadrant design technician for as-builts as needed. The Streetlighting Design Consultant will be responsible for filing for and obtaining any other utility crossing agreements in coordination with the Developer's Consultant for the URD project.

Important Note: Please specify Power requirements to the ENMAX URD Designer. If an offsite transformer is required, the developer/consultant needs to initiate a new project for that transformer install

Note: Naming convention for drawings – make sure it says SL or Streetlighting

Step 5 - The consultant will upload comments/approval in Step 5. Please review any required adjustments and re-upload to Step 4 or await the Step 7 meeting to confirm changes and proceed with final design.

Step 7 - Meeting – you will receive an invite to the Step 7 meeting with all utility designs and developer representative. Any remaining changes, concerns or questions will be discussed so that all utilities can proceed to final design stage

Step 8 - You have 10-20 workdays to prepare your final IFR design and upload to Step 8. Ensure your DGN/CAD file are uploaded at the same time (*please see following pages regarding DGN/CAD requirements*) Include meters of HDPE or DB2 in joint trench on the final design drawing. Example below:

4 PARTY TRENCHING	
LENGTH OF UTILIZED 4 PARTY TRENCH	482.1m
32mm HDPE IN 4 PARTY TRENCH	480.5m
100mm DUCT IN 4-PARTY TRENCH	71.9m

Specify with and without crossings

Note: At Step 8, ENMAX develops the estimated cost and quotation document for the developer. This will include the cost to procure and install the joint trench HDPE for the Streetlight Design

Important note: Please confirm any power requirements

Step 9 - PM review. Please make any required changes as per PM Step 9 review and upload the updated design to Step 8 as soon as possible

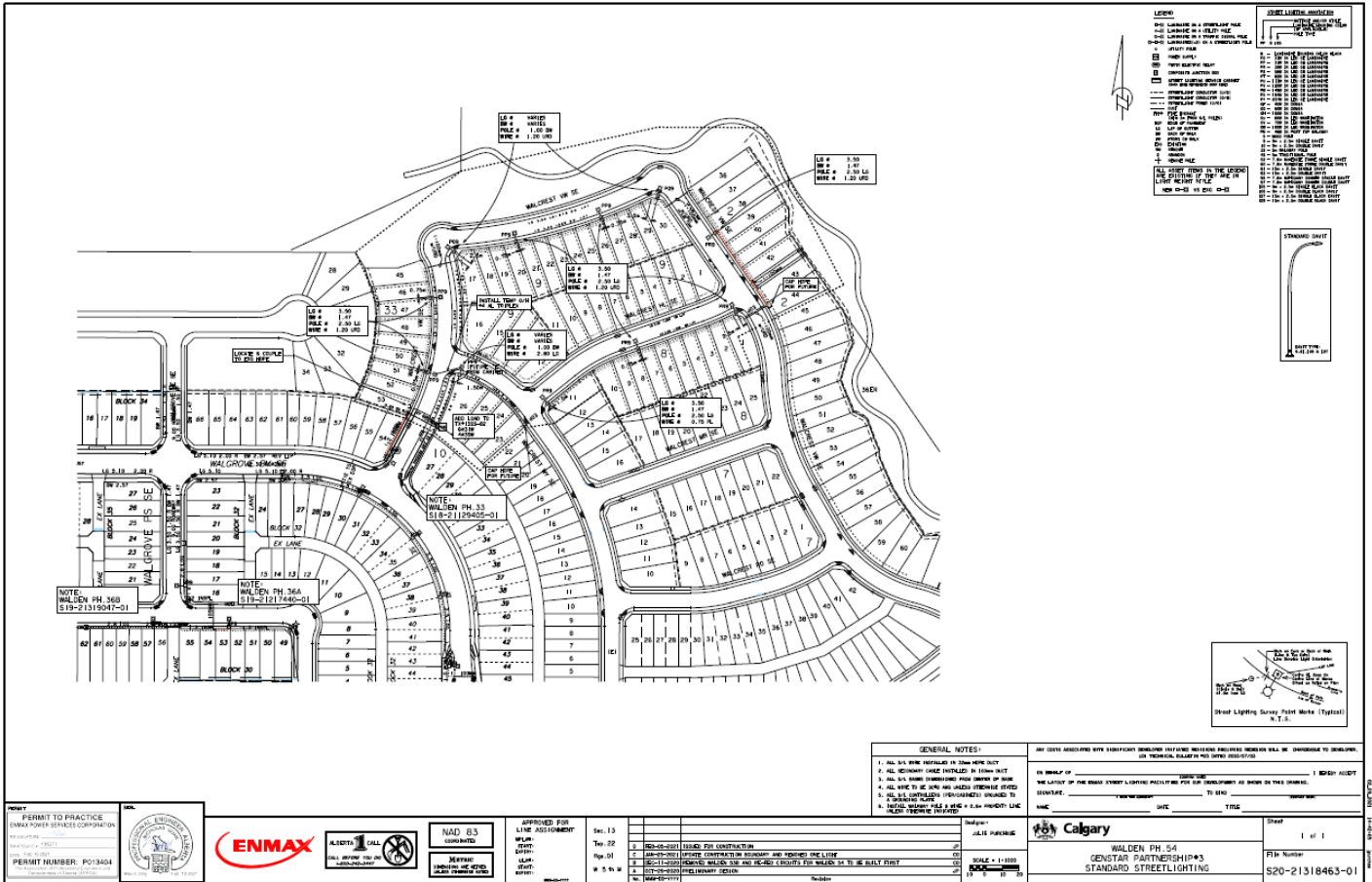
Step 10 - 12 - Consultant final review, Developer acceptance & City of Calgary Approvals:

- Please make any required changes as per consultant comments as soon as possible.
- Confirm the developer has signed and approved the final IFR design
- Submit to City of Calgary for AGI approval and Single Party ULA Approval.
- Prepare your IFC package (Include a note on the IFC “for joint trench only” if required, single party ULA approval is not required for the 4party project scope)

Step 14 – Upload IFC to Step 14 and send your IFC work package to the following address:

ENMAX, 141 – 50 Ave SE, Calgary, AB, T2G 4S7, Attn: Anne Goreham

IFC Drawing example:



URD Construction Work Package details:

- 8 copies of the IFC Drawing, Size ANSI D, FOLDED
- Civil Plan Drawing similar to the above is all that is required for the 4-party URD Scope (bases, alignment)
- Do not provide AGI, Voltage Drop, Panel Schedules or details to ENMAX. These documents are for the City of Calgary only.
- ENMAX to provide PO# for Joint Use Materials to be included with the IFC package

Note: Even if there is no SL joint trench with URD, please always provide SL IFC package for coordination and power supply purposes

Part 2: City of Calgary Utility Line Assignment

The City of Calgary requires 2 Line Assignment submissions and approvals for URD Streetlight design:

- A Multi-Party submission (MPULA by ENMAX) on behalf of ENMAX, TELUS, SHAW, ATCO and any 4-party joint trench Streetlight infrastructure (no stub outs). – *ENMAX Submission Responsibility*
- A Single Party submission for all Streetlight bases, and any single party trench/infrastructure (including stub outs) in a URD subdivision – *SL Design Consultant Responsibility* (Please reference the URD project name with your CROWM application)

MPULA file requirements (Step 8 – CAD/DGN file):

(Please also refer to <https://www.calgary.ca/cs/iis/crowm-faq.html> - Drawing Files)

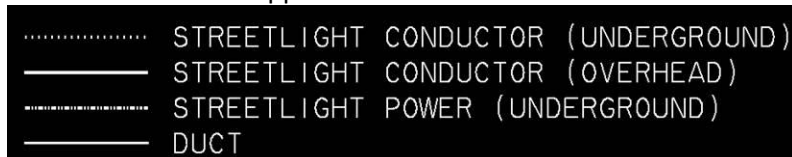
For SL submissions, please submit the seed (template) DWG file attached with the correct layers, but *saved as "COCSL (your filename).dwg"*.

Below are some other important pointers to note for Drafting purposes and future COCSL submission:

The following items required, must be in [Model space](#) instead of Paper Space, drawn items need to be copied over to the COCSL file, then placed in specified, *City-assigned* line assignment Layers (in bold letters below):

1. All details to be in Layer **G-ANNO-DTLS-N-COCSL**
2. New SL conductors in their true location only AND in the same trench with URD (including road crossings), to be in Layer **C-UTIL-LINE-N-COCSL**

The lines representing the conductors should appear as:



3. SL materials (i.e. text/arrows for leader lines for #2AL secondary, ducts on road crossings) to be in Layer **C-UTIL-MATL-N-COCSL**
4. All offsets showing dimensions from the PL to the SL wire, and PL to the road crossings, to be in Layer **C-UTIL-OFFS-N-COCSL**
5. a) Existing SL structures (existing poles, cabinets, ENMAX P/S (transformers), etc.) to be in Layer **C-UTIL-STRC-E-COCSL**
b) New SL structures (new poles, cabinets, etc.) to be in Layer **C-UTIL-STRC-N-COCSL** (excludes circuitry items such as PER)
6. The completed titleblock contents (including the SL Legend, north arrow, contact names, etc.) are all in Layer **G-ANNO-TBLK-N-COCSL**
7. All landbase info (PL, lot lines & #s, block lines & #s, deeps, surface improvement, etc.) to be in Layer **TBD**
8. All SL conduit in its true locations and false locations that are NOT within the ENMAX alignment can be on an extra Layer **TBD-COCSL** (i.e. conduits offset along medians, curbs or lip of gutters)

Name	Used
C-UTIL-DTLS-N-COCSL	*
C-UTIL-LINE-N-COCSL	*
C-UTIL-MATL-N-COCSL	*
C-UTIL-OFFS-N-COCSL	*
C-UTIL-STRC-E-COCSL	*
C-UTIL-STRC-N-COCSL	*
G-ANNO-TBLK-N-COCSL	*
TBD	*
TBD - COCSL	*
Default	
C-UTIL-DIMS-N-COCSL	
C-UTIL-LINE-E-COCSL	
G-ANNO-N-COCSL	

The Layer **C-UTIL-DIMS-N-COCSL** is to be used for dimensioning New structures only (i.e. SL bases and SL cabinets) from PL to SL base or edge of SL cabinet.

The Layer **C-UTIL-LINE-E-COCSL** is to be used for Existing SL wire.

The **G-ANNO-N-COCSL** is to be used for any other SL construction notes and annotations.

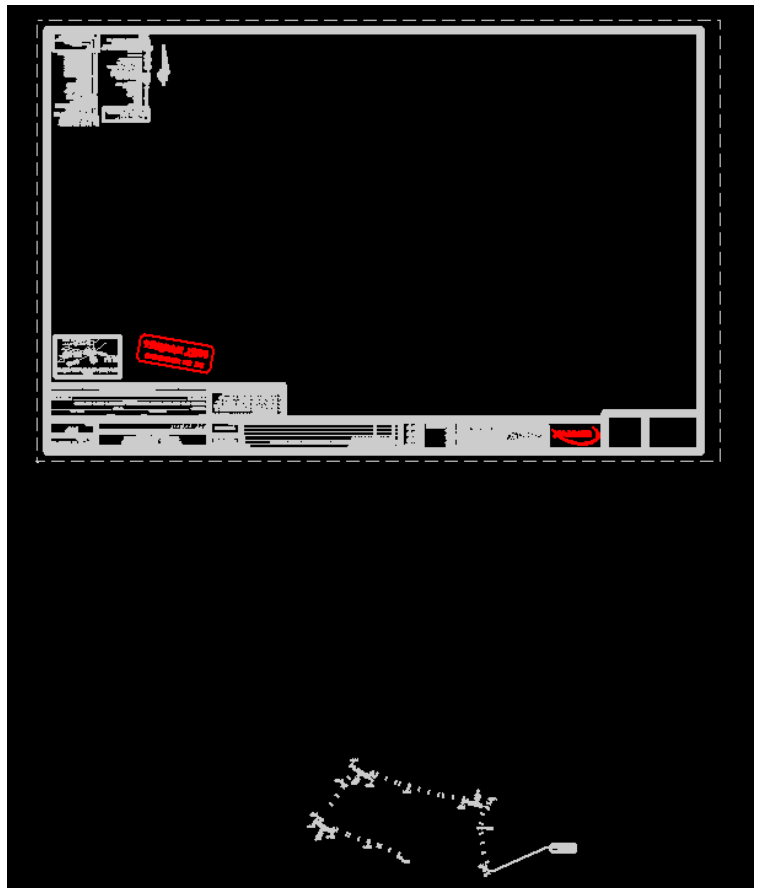
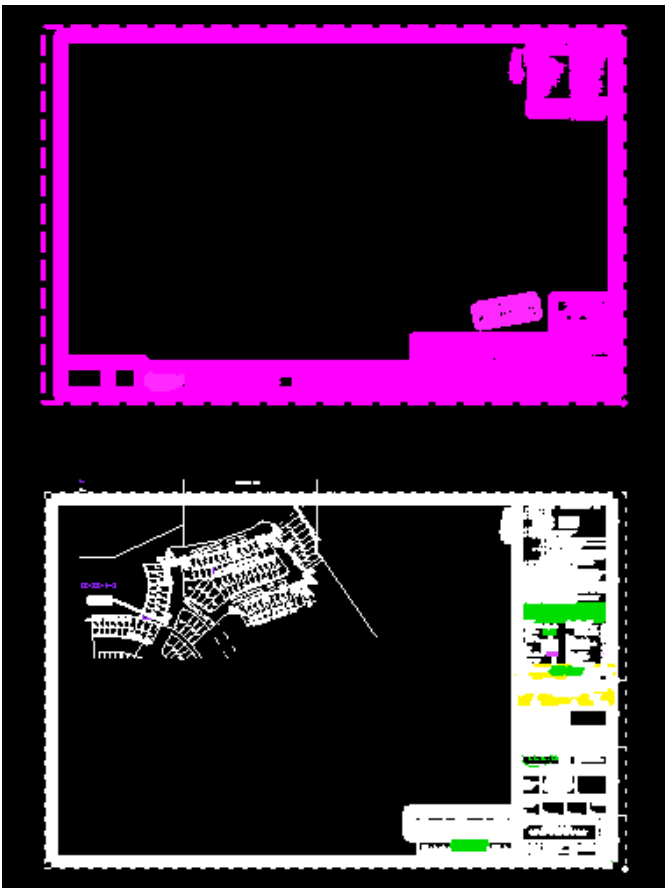
Note: Layers highlighted in yellow above are the crucial layers (excluding pole details) needed for the MPULA, and what ENMAX submits to the City. Consulting Designers will need to submit their own, separate SL ULA to the City, only for all structures, and, the other lines and layers that are not in the same URD trench.

The recommended **scale is 1:1000**

Examples for CAD/DGN files:

- Enmax will include all joint trench in the MPULA file

Layout: Border always North outside of main drawing:



Part 3: Construction (Step 15 onwards in USW Guide)

4-party Contractor Assignment

- ENMAX assigns an approved 4-party contractor to complete the 4-party scope on behalf of ENMAX, TELUS, SHAW, ATCO, City Streetlights (joint trench only)
- The contractor is only assigned once all utility IFC packages are received (hard copy) and the developer site has been deemed “ready” by our surveyor. *around two weeks’ notice*
- Only one shallows contractor will be working on the site at a time to avoid conflicts. At this time, we are not specifying the order in which the Streetlight infrastructure is installed (i.e. before or after 4 party shallows).

Pre-construction meeting:

- Streetlight Design-Build Contact will be invited to the 4-party Pre-construction meeting. We recommend attending for coordination purposes.

Material:

- HDPE/DB2 for joint trench will be procured by ENMAX and invoiced to the Developer.
- All other streetlight materials will be procured by the SL design consultant

4-party Project Boundary:

- 4-party contractor will stub out HDPE/SL Duct 1-2m o/s of the 4-party alignment (**Recommend 1m away from base/single party SL trench to reduce future excavation hazard**). See Photo Example below:



As-builts:

- As-builts of the joint HDPE/DB2 installed will be completed by the 4-party contractor. The contractor will represent any changes and the full scope of what was installed as part of the 4-party project
- As-builts will be scanned and saved by ENMAX and emailed to the Streetlight Design Consultant once the project is complete. No hard copy will be provided.

Part 4: Streetlight Energization (after Step 20 in USW Guide)

Streetlight design consultant is responsible for the energization of all streetlights. These activities include:

- City Electrical Inspector Process (contractor to test lights, then Green Sticker can be obtained)
- City of Calgary and ENMAX Power Approved non-metered Request Forms:
 - Consultant to email non-metered request forms to the City of Calgary at streetlighting@calgary.ca for approval (For a blank form please contact ENMAX Power at siteid@enmax.com)
 - City of Calgary will approve form and forward to siteid@enmax.com
 - Site ID will schedule energization and add/remove load for City billing
- Once energized, contractor will have to go out and flip breaker in cabinet as Site ID does not have access to the Streetlight cabinet

Part 5: Warranty, Construction Completion and Final Acceptance Certificate

For the Warranty period, please refer to the City of Calgary 2021 Development Agreement, Maintenance Period 23.07 (14) page 78. Below is a link to that agreement:

<https://www.calgary.ca/content/dam/www/pda/pd/documents/urban-development/2021-development-agreement-terms-and-conditions.pdf>

For CCC/FAC please follow these steps:

- Complete a stamped Record Drawing and forward this with your CCC approval request to Sunny.Sidhu@calgary.ca; Martin.Seggewiss@calgary.ca; Mesfin.Kassahun@calgary.ca; hansel.decastro@calgary.ca (depending on quadrant) and cc Michael.Green@calgary.ca
- The City will then issue a CCC no deficiencies or CCC with deficiencies
- Address any deficiencies and include pictures of the correction when applying for FAC
- Email same as above to request FAC approval
- The City will then issue FAC no deficiencies or FAC with deficiencies
- Address any deficiencies and reapply for FAC including pictures of the corrections made
- Once FAC approval (no deficiencies) has been received, the project is closed and transferred to the City