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Utility Alignment Permit Guide & Application Requirements

1. Introduction

A Utility Alignment (ULA) Permit is required prior to the installation or realignment of utility infrastructure within any City of Red Deer owned Right-of-Way, Utility Right-of-Way (Easement), or Public Utility Lot (referred herein collectively as the ROW).

A ULA Permit is required to ensure the infrastructure of all stakeholders (primarily those representing entities which own infrastructure within the ROW) is considered in the utility design. This helps ensure that conflicts are avoided and ROW space is managed effectively. This enables the City and other stakeholders to meet the future requirements of existing and new utilities within the ROW.

Permits are issued to the utility owner (or applicant on behalf of the utility owner) for a forthcoming installation of above grade, at grade, or below grade utility infrastructure upon City approval of project drawings.

2. Purpose

This guideline outlines the permit process and application requirements, including base information requirements, drawing guidelines and standards, and general operational and safety considerations. It is intended to provide clarity and direction to the applicant and other interested parties.

ULA Permits support the City in monitoring, maintaining, and coordinating activities within the ROW in order to:

- Allow utility installations to take place in a safe and timely manner;
- Ensure the efficient use of available ROW space;
- Prevent conflicts between utility owners and other activities;
- Protect and minimize disturbance to public infrastructure;
- Minimize disruption to businesses, residents, and road users; and,
- Maintain safety.

The City's ROW is a limited resource and numerous interests compete for its use. The Alignment Permit process helps ensure that the ROW's intended use is protected and maintained. The City retains responsibility for managing the use of ROW's to ensure fair access for all utility providers while maintaining stringent compliance to all applicable City Guidelines and Specifications. It is vital that the City and all utility providers work together to protect existing and proposed infrastructure and plan for future installations.

3. Utility Alignment Permit Requirements

A Utility Alignment Permit is required for any of the situations listed below.

- New Equipment installed within a Right-of-Way where the purpose of the Equipment is to carry telecommunication traffic, natural gas, or power for multiple customers, buildings or real property.
- A Service Drop located within a Right-of-Way that runs a distance greater than 1m parallel to the backbone of a Company's Equipment.

In general, a project that involves the replacement of existing Equipment with new Equipment shall have the new Equipment installed in the same location as the existing Equipment (ie. a new utility alignment is not used). Exceptions to this practice may be considered when use of an existing alignment will result in extensive surface disturbance to roadways, trees, concrete, or private lands. The determination on what is considered as "extensive" is at the sole discretion of the City.

At the City's sole discretion, the requirement for a Utility Alignment Permit may be waived in the situations listed below.

- New Equipment that is installed overtop or underneath of existing Equipment in an existing alignment.
- A replacement Service Drop with a small scope of work.
- New Equipment that is installed or relocated as part of a larger capital project (major roadway improvements for example).

4. Application Process

To apply for a Utility Alignment Permit, a Utility Alignment Application Form and a Drawing Package must be submitted to ULAPermits@reddeer.ca. The drawing package must be submitted in both pdf and AutoCad format.

4.1. Utility Alignment Application Form:

The following information is required on the Utility Alignment Application Form:

- Applicant name, address, and contact information
- Utility Provider's Project/Job/Work Order number
- Project location description
- Type and length of work
- Reason for work
- Method of Installation
- Application date and Proposed Start and Proposed Completion dates
- Utility company name and contact information for which the work is being done
- Completed checklist of drawing requirements

4.2. Drawing Package:

Utility Alignment drawing submissions must be clear, concise, and legible. They are to be in colour and at a size relevant to the overall project. The minimum page size for drawings is 11 x 17". Multiple pages may be required to ensure legibility and a comprehensive understanding of the proposed project. The drawings must reflect the **actual locations** (ie. spatially accurate) of existing and proposed infrastructure.

The subsection below provides a listing of *minimum* drawing requirements for Alignment Permit submissions.

A Title Block containing the following is required:

- Utility provider name
- Project/Job file number
- Drawing Issue date and Revision date and number
- Consultant name
- Contact information
- Location of proposed project
- Plan number
- Drawing scale
- Legend containing symbology, line weights, and colours the clearly differentiate:
    - Proposed alignment & related components (vaults, pedestals etc.)
    - Existing cable/conduit, overhead cable, & related infrastructure
    - Existing infrastructure (gas, power, water, sanitary, & storm, etc.)
    - Property lines
    - Existing curbs, road edges, trails & sidewalks

A Design Plan containing the following is required:

- Legal base plan including street names, lot/block numbers or addresses, & north arrow.
- Existing edge of pavement or curb.
- Existing trees, sidewalks & trails.
- Total length of project in metres.
- Existing deep & shallow utilities (labelled & dimensioned).
- Construction notes & details (where appropriate) identifying the method of installation.
- Depth of proposed alignment.
- Proposed alignment (in black **bolder** line weight with stationing) dimensioned to property lines, trees, adjacent infrastructure, & curb/ sidewalk/edge of asphalt.
- Notes providing additional explanation of proposed works. Where applicable detailed plans may be used to clarify complex areas.
- Limits of construction boundary, including the complete area of affected right-of-way/property
- Extent of proposed excavations/ground disturbances identifying impact on asphalt, concrete, & landscaping (hatching or labels with estimated dimensions of the excavations are to be shown).
- Detailed views of proposed components (vaults, pedestals, manholes, conduit, trench/bore configuration) describing types, sizes, & materials.
- Key plan if project consists of a large or difficult to locate area.
- Alberta Survey Control Markers (ASCMs).

Colours to display are as follows:

- Stormwater in green
- Water in blue
- Sanitary in dark red
- Power in light red
- Gas in magenta
- Communications in orange

Line-types should have all utilities directly labelled on the plan view (ie. the line utilizes text such as “SAN”, “WAT”, “PWR” as part of the line-type style in AutoCad).

Symbology for trees should loosely approximate the canopy size of the tree. For example, an 80 year old tree should not be symbolized with a shape that is only a couple meters wide on the plan view. Symbology used for infrastructure such as transformers should also loosely approximate the actual size of the transformer. Having the symbology similar to actual size avoids alignment separation errors during the design and will help expedite reviews of the project.

AutoCad File:

The AutoCad file used to create the pdf drawing package is to be submitted with the application. The data in the AutoCad file must be spatially accurate and in the NAD83 3TM 114 coordinate system. In addition to the data provided on the design plan, any topographical survey points used in the design are to be included in the AutoCad file. AutoCad layer requirements are attached to the end of this document in Appendix A.

5. Available Information

5.1. Cadastral Base Data

City of Red Deer Cadastral base data can be obtained by emailing enggraphics@reddeer.ca. The applicant is to provide the location of the project and the area required for the particular project. The City will provide data in AutoCad format. The data will include property lines, curb lines, sidewalks, water lines, sanitary lines, and stormwater lines. Field verification of all infrastructure is recommended to avoid conflicts during construction.

The applicant is responsible for obtaining the location of third party infrastructure. This includes (but may not be limited to) Telus, Shaw, Bell, Rogers, and ATCO Gas/Pipelines. The City cannot provide this data to the applicant. If the data is received in a schematic format, the applicant must verify the data in the field so that it is accurately reflected on their drawings.

6. Design Considerations

6.1. Minimum Utility Depth & Separations

The minimum depth for a power, gas, or telecommunication line is 1.0m (measured to the top of the pipe/conduit).

The points below outline the minimum horizontal separation between new Equipment and existing Equipment or deep utilities.

1) A minimum 0.3m vertical separation is required when crossing existing utility lines.
2) Deep Utilities (Water, Sanitary & Stormwater):
    a. Minimum 2.5m horizontal separation while paralleling the deep utility.
    b. Minimum 2.5m horizontal separation from a valve, manhole, front of hydrant, and front of catch-basin when crossing perpendicular.
    c. Minimum 1.0m horizontal separation from the backside of a hydrant or catch-basin barrel when running perpendicular.
    d. Minimum 1.0m separation from a curb stop valve.

3) Telecommunication and Gas:
    a. Minimum 1.0m horizontal separation (measured centre to centre) when paralleling the shallow utility.
    b. Minimum 0.5m horizontal separation for the placement of vaults, pedestals, cabinets. etc. (measured from edge of equipment to centre of conduit/pipe).
    c. Minimum 0.6m clearance if placing above ground utility equipment adjacent to an existing above ground telecommunication pedestal.
4) Power:
    a. Primary
        i. Minimum 1.0 horizontal separation when drilling parallel to the primary cable.
        ii. Minimum 0.5m horizontal separation when the primary cable is fully exposed.
    b. Secondary
        i. Minimum 0.5m horizontal separation when drilling parallel to the secondary cable.
        ii. No minimum horizontal separation when the secondary cable is fully exposed.
    c. Transformers and Switching Cubicles
        i. Minimum 1.0 horizontal separation from underground infrastructure.
        ii. Minimum 3.0m horizontal separation from the opening/access side(s) for above ground infrastructure. Minimum 1.0m separation from the other sides.
    d. Pedestals
        i. Minimum 0.6m clearance if placing any above ground equipment adjacent to an above ground pedestal.
    e. Overhead power poles and street light poles
        i. Minimum 1.0m horizontal separation from underground infrastructure to a pole base.
        ii. Crossing between a pole and a guy wire is to be avoided.
5) Transportation
    a. Minimum 1.0m horizontal separation between back of curb and edge of any above ground utility equipment (pedestals, etc.).
    b. Minimum 0.3m horizontal separation between edge of sidewalk and the edge of above ground utility equipment (pedestals, etc.).
6) Parks
    a. No open excavations are to be located within 5m of the edge of a tree trunk.
    b. When directional drilling, the drill path is to maintain a minimum 1.5m horizontal separation from the edge of the tree trunk. If the horizontal separation cannot be achieved (due to other utility congestion), a closer drill path may be allowed but at a depth of at least 1.75m (ie below the root ball).

The minimum separations to the deep utilities can vary when the pipe size or depth increases. In these cases, the City's Engineering department must be contacted at ULAPermits@reddeer.ca for coordination of design work and necessary conditions.

A reduction in the minimum separations may be considered on a case-by-case basis if the applicant has appropriate justification for a relaxation. These minimum separations may not necessarily apply to joint use installations. In these instances, Equipment owners may have other agreements.

Direct bury wire is not permitted within Red Deer. All wire must be installed within conduit and be locatable.

6.2. Multi-party Installation (joint-use trench)

To make effective use of the limited space in a ROW, The City may designate certain ROWs or certain areas of the City as requiring a multi-party installation.

The coordinator of a multi-party installation is at the discretion of the parties involved in the build. The coordinator is responsible for obtaining all applicable permits for the project, adhering to any permit conditions, and submitting all as-built drawings and the handling of all associated costs. Only one drawing set submission is required and shall display all utility providers' Equipment. One Utility Alignment Permit will be issued for a multi-party installation. Any costs will be invoiced to the applicant. Sharing of the costs between parties is at the coordinator's discretion.

7. Construction

7.1. Utility Alignment Permit Inspections

The City may identify, at the time of utility alignment application, projects which they want to inspect during construction. If notice is given on the utility alignment permit that The City will be conducting an onsite inspection while the trench is open, the utility provider must give The City seven (7) calendar days notice prior to the completion of the work so as to allow The City to schedule the inspection. The inspector will make every effort to complete the inspection by 3 p.m. If The City does not carry out an inspection on or before 3 p.m. on the day that the inspection is scheduled, the utility provider may close the trench and complete the work. The City may choose to conduct an on-site inspection of the work even if it was not noted on the original permit. In this instance, The City may or may not notify the utility provider of the impending inspection. If notice is given, the utility provider will give, where practical, The City three (3) calendar days notice prior to the completion of the work to allow for scheduling an inspection.

7.2. Issues Identified During an Inspection

The utility provider is responsible to ensure that the provisions of all City guidelines, specifications, bylaws and legislative requirements are being followed. The utility provider is responsible for having all pertinent permits and associated paperwork onsite during construction. If during an inspection, an issue is identified, The City may:

- issue a Stop Work Order. If an authorized representative of The City or any other party having the proper authority requests a utility provider to stop work, they shall immediately cease work. Verbal orders shall be followed by written notification setting out the reasons for the stop work order within one business day after the verbal order was given. Stop work orders may be given for various reasons including working in an area other than the one specified in the utility Alignment Permit, failure to adhere to environmental legislation or working without the appropriate permits. Once the violations have been rectified to the satisfaction of The City, the utility provider may resume work.
- issue a bylaw infraction ticket;
- notify another City business unit (i.e. Parks, Public Works, Utilities); or
- deem Equipment non-compliant with the terms of the utility Alignment Permit.
    - If the utility provider does work without a valid permit and/or in a location other than that approved by The City (within 300 millimetres horizontally and vertically from the approved utility alignment permit):
        1. the utility provider may be required to remove the Equipment immediately, at its own expense; or,

2. the Equipment may be deemed non-compliant and The City can request it to be relocated in the future at the utility provider's sole cost. The utility provider will have sixty (60) calendar days to move above ground non-compliant Equipment and ninety (90) calendar days to move below-ground non-compliant Equipment.

7.3. Working Around Trees

All work performed within the existing landscape areas shall be executed in compliance with the City of Red Deer Design Guideline and City of Red Deer Contract Specifications. The following best practices are to be considered for all projects:

- Construction activity, including movement of vehicles, storage of material, excavation, etc. is generally not to occur within the dripline (tree protection zone) of existing trees.
- Daylighting and trenching is not to occur within the existing tree dripline.
- Cutting/removal of tree roots over 5cm in diameter is not permitted.
- Tree protection fencing is required for trees in close proximity to active construction. The fencing must generally align with the tree's dripline.
- Pruning or removal of any trees is subject to Parks approval and may have full tree valuation consideration as per Council of Tree and Landscape Appraiser (CTLA) trunk valuation.
- Pruning to accommodate construction equipment will generally not be considered.
- Damage or diminished value to trees resulting from construction will be evaluated by the Parks department and at the project cost.

To ensure future tree replacement can be completed at the existing locations (if required) with appropriate utility offsets the following requirements are in place:

- Where directional drilling is to occur near existing vegetation, a minimum lateral offset of 1.5m from the edge of tree trunk to the utility is to be maintained. If this cannot be achieved and the utility alignment must be closer to the trunk, the utility depth shall be minimum 0.75m below the rootball which generally puts the utility directional drill at +/-1.75m below grade.
- Where trenching, daylighting, or installing of pedestals/vaults/streetlights is to occur near existing vegetation, all work is to be clear of the dripline (tree protection zone) or maintain a minimum lateral offset (1.5m for utility and 5.0m for pedestals/vaults/streetlights) from the edge of tree trunk to the utility, whichever is greater.

8. As-Built Drawings

The utility provider must submit as-built drawings to ULAPermits@reddeer.ca, within ninety (90) calendar days following the completion of work. The drawings must identify any differences between the approved location and the final constructed location of the Equipment. The drawings must be in the same format as the original application (AutoCad) and follow CSA standard S250-11 to an accuracy level 3. This level of accuracy states that the x, y and z coordinates shall be accurate to ± 300 millimetres. Measurements for the x, y and z coordinates should be taken on the top centre of the Equipment. Additionally, the utility provider must conform to any other requirements outlined in the permit. When recording data for as-built drawings, the interval for measuring x, y and z coordinates should be 25 metres or less for straight sections. For sections where the utility provider's Equipment bends or changes direction, the x, y, and z data should be measured every 10 metres (or at each location of substantial change).
AutoCad layer requirements are attached to the end of this document in Appendix A.

9. Definitions

(a) "**Equipment**" includes but is not limited to, wires, cables, cabinets, ducts, conduits, poles, pedestals, vaults, manholes and other accessories, support structures and other ancillary equipment and other related telecommunications facilities as that terms is defined in the Telecom Act (excluding small cell and other similar wireless equipment and communication towers) owned by or under the direction, control or management of the Company or an Affiliate of the Company

(b) A "**Right-of-way**" ("**ROW**") means:

i. streets, road allowances, lanes, highways, or bridges which are under the jurisdiction of the Municipality; or,

ii. any public utility easement, public utility lot, or right-of-way owned and operated by the City.

(c) A "**Service Drop**" means Equipment that, by its design, capacity and relationship to other Equipment of the Company, can be reasonably considered to be for the sole purpose of connecting the Equipment to not more than one individual customer or building point of presence or real property location (as opposed to being designed to carry telecommunication traffic, gas, or power for multiple customers, buildings or real property);

Appendix A – AutoCAD Layer Requirements

ULA CAD Layer Names	Description
G-ANNO-N	All information that does not fall under a specific layer category
B-BASE-PARCELS-E	Existing Parcels
B-BASE-BUILDINGS-E	Existing Buildings
B-BASE-UROW-E	Existing Utility Right of Way
B-BASE-TEXT-E	Existing Base Text
B-BASE-DIMS-E	Existing Base Dimensions
U-COMM-TEXT-E	Existing Telecom Text
U-COMM-ALIGN-E	Existing Telecom Alignment
U-COMM-STRC-E	Existing Telecom Structures (above or below ground pedestals, vaults, pullboxes etc.)
U-COMM-DIMS-E	Existing Telecom Dimensions
U-COMM-ELEV-E	Existing Telecom Elevations (at regular intervals)
U-COMM-TEXT	Proposed Telecom Text (general text/notes)
U-COMM-ALIGN	Proposed Telecom Alignment
U-COMM-STRC	Proposed Telecom Structures
U-COMM-DIMS	Proposed Telecom Dimensions
U-COMM-ELEV	Proposed Telecom Elevation (at regular intervals)
C-SSWR-PIPE-E	Existing Sanitary Pipe (mains & services)
C-SSWR-MHOL-E	Existing Sanitary Manholes
C-SSWR-DIMS-E	Existing Sanitary Dimensions
C-SSWR-TEXT-E	Existing Sanitary Text
C-SSWR-STRC-E	Existing Sanitary Structures (Sanitary structures other than manholes)
C-POND-TOPB-E	Existing Pond Surface (if applicable)
C-STRM-CBSN-E	Existing Storm Catchbasins
C-STRM-CLVT-E	Existing Storm Culverts
C-STRM-DIMS-E	Existing Storm Dimensions
C-STRM-PIPE-E	Existing Storm Pipe (mains, services, perforated pipe)
C-STRM-MHOL-E	Existing Storm Manholes & Catchbasin Manholes
C-STRM-TEXT-E	Existing Storm Text
C-STRM-STRC-E	Existing Storm Structures (other than catchbasins & manholes)
C-WATR-FITTING-E	Existing Water Bends, Tees, Crosses, Reducers etc.
C-WATR-DIMS-E	Existing Water Dimensions
C-WATR-HYDT-E	Existing Water Hydrants
C-WATR-PIPE-E	Existing Water Pipe (mains, services)
C-WATR-STRC-E	Existing Water Structures
C-WATR-TEXT-E	Existing Water Text
C-WATR-VALV-E	Existing Water Valves (valves & hydrant valves)
C-TRAF-POST-SIGN	Existing Traffic Signage
C-LAND-TREE-E	Existing Trees & Shrubs
C-RDS-CURB-E	Existing curbs
C-RDS-CURBGUTTER-E	Existing curb gutter
C-RDS-PATHSIDEWALK-E	Existing sidewalk/pathway
C-RDS-DIMS-E	Existing curb/sidewalk etc. dimensions
C-RDS-TEXT-E	Existing roads notes & general text
C-RDS-EDGE-E	Existing Road Edge (where no curb exists)
C-RDS-STRC-E	Existing road structures (bollards, fences, barriers, berms etc.)
C-NGAS-PIPE-E	Existing gas pipe (mains, services)
C-NGAS-VALV-E	Existing gas valve
C-NGAS-STRC-E	Existing gas structures
C-NGAS-DIMS-E	Existing gas dimensions
C-NGAS-TEXT-E	Existing gas text
C-ELEC-DIMS-E	Existing electrical dimensions
C-ELEC-TEXT-E	Existing electrical text
C-ELEC-POLE-E	Existing electrical pole
C-ELEC-SUB-E	Existing electrical sub
C-ELEC-STRC-E	Existing electrical structures (manholes, pullboxes, meters, vaults, urds etc.)
C-ELEC-LINE-E	Existing electrical linework