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NOTE:

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# GENERAL

## Summary

### This Section specifies the requirements for physical tagging of the Region’s assets.

### PCS Tagging to be in accordance with the Region’s PCS requirements Manual.

### Supply and install physical tags (Process Equipment Location Tags (PELTs), Supplemental Tags, chamber tags) and equipment nameplates for all systems and equipment under the provisions of this specification and in accordance with the Region’s latest SCADA requirements and as presented herein. Systems and equipment include:

#### All items furnished under this Contract; and

#### Existing items defined in this Contract that requires new identification.

*[Consultant Note: Any physical tagging requirements contained in the individual equipment specification Sections are to be replaced with a reference to this specification Section. The requirements in this specification Section supersede the requirements in the individual equipment specifications for physical tagging, if applicable.]*

## Related Sections

[Under "Related Sections", identify other Sections that are related to, and/or dependent on, the work results or information specified elsewhere. The list should be limited to Sections with specific information that the reader might expect to find in this Section, but is specified elsewhere. For example, if hardware for aluminum entrances is specified in the aluminum entrance Section, a cross-reference would be appropriate in the finish hardware Section. The purpose of this cross-referencing is for information only, to aid in finding those other requirements—not to define the scope of the Section.

Cross-referencing here may also be used to coordinate assemblies or systems whose components may span multiple Sections and which must meet certain performance requirements as an assembly or system.

Contractor is responsible for coordination of the Work. Contractor is responsible for being familiar with and incorporating all required elements of cross-referenced Specifications cited.

This Section is to be completed/updated during the design development by the Consultant. If it is not applicable to the section for the specific project it may be deleted.]

[List Sections specifying related requirements.]

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: [Optional short phrase indicating relationship].

### Section 01000 – General Requirements

### Section 01040 – Coordination

### Section 01060 – Regulatory Requirements

### Section 01300 – Submittals

## Submittals

### The following documents and drawings shall be submitted by the Contractor for approval by the Consultant prior to fabrication:

#### Labeling schedule for all PELTs and Supplemental Tags.

#### Shop drawings (proofs) of the PELTs and Supplemental Tags.

## Measurement and Payment

### All costs associated with the fabrication, supply and installation of PELTs and Supplemental Tags to the satisfaction of the Consultant shall be included in the lump sum price for Item No. [XX] in the Bid Form. The Region may withhold a portion of payment until these tags have been reviewed, approved and installed.

### The lump sum price tendered shall include all labour, equipment, and materials necessary to complete the work. *[Consultant Note: A value of no less than $10,000 shall be assigned to the complete and accurate submission of PELTs for the purposes of quantifying payment certificates, calculating Substantial Performance of the Work, and assessing the value of deficiencies.]*

## General

### The purpose of this Section is to define the requirements for creating and applying PELTs and Supplemental Tags at the Region’s water and wastewater facilities to facilitate the planning and scheduling of preventive maintenance activities and the tracking of maintenance history.

### Labeling Assets enables the identification of equipment for operational and maintenance activities. All Assets are assigned unique Asset ID numbers and are issued PELTs for identification and inventory purposes.

### This Section must be applied when Assets are added, relocated or retired from a water or wastewater facility or linear works project.

### This Section should be used by Region staff and Contractors to create, order and apply PELTs and by suppliers for the production of the PELTs.

## Tags

### Assets must have a physical tag attached with a unique number in accordance with this section. There are four types of tags in use at York Region water and wastewater facilities:

#### Asset ID Tags

##### All assets at a facility will have an Asset ID sticker for identification and for use with bar code scanners for asset management purposes. The Asset ID tags are supplied and affixed by the Region.

#### Process Equipment Location Tag (PELTs)

##### The PELT is a material label that defines the location of an Asset within a process hierarchy. The tag is comprised of the Asset’s truncated Assed Location ID and the Asset Location Function (if applicable). PELTs are to be supplied and affixed by the Contractor.

#### Supplemental Tags

##### An asset can have multiple tags associated with it to identify supplemental items such as a disconnect switch, device control panel, VFD, source of power tag, Motor Control Center (MCC) starter/disconnect tag etc. These supplemental tags shall be in addition to the PELT on the primary asset.

##### Some equipment/devices will require a larger tag that matches the physical characteristics of the equipment. These identifications are required on larger pieces of equipment installations to be completed based on the following: all Tanks, Cranes, Centrifuges, Pumps, Generators, Engines, HVAC Units, Blowers, Large Motors, Large Compressors, Feeders, Evaporators, Furnaces, Scrubbers, Large Valves/Gates, Large Filters and all other similar large equipment. These larger major pieces of equipment require the larger tag identification for ease of identification from a distance for both operational and safety related requirements. Larger tags are also required for the equipment physically located on places where the tag cannot be easily read (i.e. valve mounted high on the overhead pipe). In some cases multiple large tags are required.

##### Supplemental Tags are to be supplied and affixed by the Contractor.

#### Chamber Tags

##### Chamber tags are used to identify the chamber Asset ID and the GIS EID number of the chamber. The assets within the chamber do not require PELTs.

##### Chamber tags are to be supplied and affixed by the Contractor.

## Existing Equipment Identification Numbering

### If a project involves re-programming or re-calibrating existing equipment, it shall be re-tagged as required according to the following guidelines:

#### Remove all former or conflicting references to equipment/device numbers to ensure no ambiguity as to the correct and only Asset Tag number.

#### For any existing electrical equipment numbers that cannot be removed and replaced with tags that follow this specification (to be determined by the Region based on both health and safety and operational impact to the facility) – new tags are to be produced to follow this specification and all old references to equipment are to be removed. The existing numbering conventions for these pieces of equipment are to be added as an attribute in Maximo.

#### Tagging installations on electrical equipment (including Circuit Breakers (CBs) and MCCs) are to be as per the above to ensure that all electrical isolation (lock-out) locations are clearly identified with the same equipment number as the device for which it supplies power isolation. All lock-out devices need to be documented to show that they contain the tags identical to the tags on the field devices (equipment).

## Definitions

### **Asset** – A material good, thing or entity that has potential or actual value/usefulness to the Region in the achievement of collecting, treating, storing and distributing drinking water and collecting, conveying and treating wastewater.

### **Asset ID** – A unique 8-digit ID number assigned by Maximo to the Asset itself and not the location of the Asset. If the Asset is rotated (e.g., moved to another location or to storage), the Asset ID moves with the Asset. The Asset ID is retired when the physical Asset is decommissioned and disposed.

### **Maximo (EAM)** – Enterprise Asset Management System (EAM) software produced by IBM.

### **PELT (Process Equipment Location Tag)** – A material label that defines the location of an Asset within a process hierarchy. The tag is comprised of the Asset’s truncated Asset Location ID and the Asset Location Function (if applicable). PELTs are to be supplied and affixed by the Contractor.

### **Location ID** – A unique ID code that defines the process location in the facility. The Process Location ID does not change or move when Assets are moved, rotated or disposed.

### **Supplemental Tag** – A material label in addition to PELTs to identify supplementary items.

# PRODUCTS

## PELTs – General Requirements

### The PELT is a physical tag that uniquely identifies the Location ID and Location Function of the equipment.

### The PELT has the following standard properties:

|  |  |
| --- | --- |
| **Line Number** | **Description** |
| Line 1 - Truncated Asset Location ID. Single Line Only. | An underscore is provided between each Location Level code. No space is provided between a Location Level Code and the Instance number. |
| Line 2 – Asset Location Function (if required) | The line may break into two lines. Applicable to the following Asset Classifications:  Instrumentation  SCADA  Valve |

The following typical examples are provided for reference.

### Standard Equipment PELT

Type A

|  |
| --- |
| **RSP\_PMP1\_VFD1** |

Line 1: Truncated Asset Location ID

### Standard Equipment PELT with Asset Location Function

Type A

|  |
| --- |
| **WWEL\_LIT1**  **"RSP\_PMP1\_VFD1** |
| **WET WELL LEVEL** |

Line 1: Truncated Asset Location ID

Line 2: Asset Location Function

### Typical PELT for MCC/Switchgear/Power Distribution Panel (PDP)

Type A

|  |
| --- |
| **ELEC\_MCC1** |

Line 1: Truncated Asset Location ID

This is equipment tag is to identify a MCC, Switchgear or Power Distribution Panel. Tag to be mounted on the left upper corner of MCC, Switchgear or PDP. In main-tie-main configuration associated tags to be mounted on left and right upper corner of MCC, Switchgear or PDP. PELT for Control Panels (CPs)

Type A

|  |
| --- |
| **PCS\_CP1** |

Line 1: Truncated Asset Location ID

### PELT for Network Access Closets (NACs)

Type A

|  |
| --- |
| **PCS\_NAC1** |

Line 1: Truncated Asset Location ID

### PELT for Remote Operator Interface Terminals (OITs)

Type A

|  |
| --- |
| **PCS\_OIT1** |

Line 1: Truncated Asset Location ID

## Supplemental Tags

### Source of Power Tag

This is a supplemental tag to identify the source of power for equipment.

Type B

|  |
| --- |
| **RSP\_PMP1** |
| **ELECTRICAL SUPPLY FROM** |
| **ELEC\_MCC1** |

Line 1: Truncated Asset Location ID

Line 2: “ELECTRICAL SUPPLY FROM”

Line 3: MCC or electrical supply truncated Asset Location ID

### Circuit Breaker or Disconnect Tag

This is a supplemental tag to identify equipment that will be de-energized when the associated circuit breaker/disconnecting device is opened.

Type A

|  |
| --- |
| **ELEC\_TX1** |

Line 1: Truncated Asset Location ID

### Tag for Control Stations

This is a supplemental tag to identify equipment to which this control station is related.

Type A

|  |
| --- |
| **RSP\_MV1** |

Line 1: Truncated Asset Location ID

## Chamber Tags

This tag shall be used for all chambers.

Type C

|  |
| --- |
| **REGION OF YORK** |
| **T0709-MC** |
| **651801430** |

Line 1: “REGION OF YORK”

Line 2: Chamber Asset ID

Line 3: Chamber GIS EID

## Lamacoid Tag Specifications

|  |  |
| --- | --- |
| Lettering | Uppercase |
| Font | Arial |
| Style | Bold |
| Text Size | Maximum size to fit label width |
| Character spacing | Normal |
| Justification | Center lettering on each line |
| Thickness | 1.5mm thick with beveled edges |
| Material | Laser Engraved Lamacoid |
| Fastener hole size | 3mm |
| Font and background colour | Black lettering on a white background |

## Tag Size

### The table below contains the characteristics of common tags in use at Region facilities.

|  |  |  |
| --- | --- | --- |
| **Type** | **Size (W x H)** | **Text Size** |
| A | 100mm x 25mm (4” x 1”) | Maximum size to fit label width |
| B | 100mm x 50mm (4” x 2”) | Maximum size to fit label width |
| C (for chambers only) | 125mm x 90mm (5” x 3.5”) | Maximum size to fit label width |

### The tag size will vary depending on the number of letters and the space available to install the label. Tag sizes will be identified on the labelling schedule and will be reviewed by the Consultant prior to physical tags being fabricated. The text size should be set based on the maximum size that fits the label width.

## Material Selection

### The tag material shall be selected as per the table below.

|  |  |
| --- | --- |
| **Material** | **Use** |
| Lamacoid | * Suitable for indoor and outdoor locations. * Suitable for chemicals, ultraviolet, oil or corrosive environment. * Required on all equipment in corrosive environments, including all areas that may be exposed to chlorine fumes (filter buildings, flocculation areas, chlorine storage and feeder rooms, etc.). * Acceptable products – Gravoply™ Ultra or Equivalent. |
| Stenciling | * 75mm stenciling (or an appropriate size proportional to the size of the equipment) shall be selected for the large tags. * The colour of the paint/tag is to be complementary to the colour of the equipment to ensure that it is visible from a distance. |

## Fastening

### Fastening Method: stick-on, rivets/screws or hang-on (stainless steel ball chain with connector or stainless steel wire). Stainless steel ball chain shall be supplied with a connector to allow removal without any tools. Soldered split key ring to be used for applications where the ring and tag are not to be removed (e.g. slide gates).

### Fastener Hole Size: 3mm. The size of the holes can vary if necessary to ensure the tag is securely fixed. For example, it may be necessary to use the larger diameter of the stainless steel ball chain for PELTs. In this case, the diameter of the holes will need to be larger as well.

### Rivet Specifications: 3mm stainless steel round head or blind stainless-steel pop rivets.

### Stainless steel ball chain shall be at least 115 mm length with stainless steel locking link. Corrosion resistant. 45 lb. tensile strength.

### Screws shall be 3mm self-tapping type made of stainless steel.

# EXECUTION

## Labeling Schedule

### Refer to the supplement at the end of this Section for the labeling schedule (01080A).

### The labeling schedule containing all PELTs/Supplemental Tags/Chamber Tags will be completed by the Consultant. Wording on the tags are to be approved by the Region prior to fabrication. It is expected that this schedule will be used to procure labels from a suitable supplier.

*[Consultant Note: The Consultant is required to complete the labelling schedule and include the completed schedule as a supplement to this specification.]*

### The labelling schedule will be prepared in the latest version of Microsoft Excel.

### All tags shall be uniquely identified on the labeling schedule.

### The Consultant is to produce a "Large tag" list if required in accordance with section 1.6. When stenciling is used as a method for large tags identify letter size, paint and background colour.

## Placement and Installation

### PELTs shall be fixed by rivets or screws, stainless steel ball chain with connector or self-adhesive. PELTs which are fixed to the outside surfaces of outdoor switchboards, control panels, and other equipment shall be fixed with stainless steel screws. Adhesives shall only be used for fixing indoor PELTs. In all situations PELTs shall be fixed so they are secure and not likely to come loose and possibly cause damage to equipment.

### At all facilities, PELTs shall be securely fixed to the Asset location, on the wall or permanent structural support (i.e., curb) adjacent to the Asset. PELTs shall be mounted such that they can be easily read at eye level where possible, are not subject to damage and are clearly associated with the Asset location and Asset the tag refers to.

### Where an Asset is likely to be removed for maintenance, the PELT shall be securely fixed adjacent to the Asset on the wall or permanent structural support (i.e., curb). Where the Asset is unlikely to be removed, the PELT may be fixed directly to the Asset (i.e., Motor Control Centre).

### Where the device (such as a transmitter, display unit) is wall-mounted, the PELT shall be fixed above the device on the wall.

### PELTs with stainless steel ball chain shall not be used on outdoor assets. These PELTs shall be fixed using rivets.

### Tags for chambers shall be installed using stainless steel eye-bolts doweled into the concrete chamber wall. The tag shall be located on the internal chamber wall 100mm from the surface under the access cover/lid. Refer to section 2.3 for chamber tag requirements.

### Where equipment is installed at heights (such as fans, hoist, etc.), its associated PELT is to be installed on both the equipment and it’s local disconnect switch.

### For instruments, the PELT is to be installed to the conduit (by the stainless steel ball chain with connector) feeding the device preferably at the bottom of the device. For some instruments, if mounting to the conduit is not possible it can be mounted to the concrete wall close to the device location.

### Tags to be installed prior to commissioning but not before all finishing works including painting have been completed.

### In circumstances where equipment is not in direct view of staff, the PELT should be mounted on a wall under the equipment or similar location such that the PELT is in plain view of a person walking by as close as possible to the equipment. In situations that are unique or unclear for the mounting of PELTs, consult with the Region.

## Mounting Examples

### Valves

#### For valves, the PELT is to be mounted on the process flange, if the flange is wide enough. If the flange is not wide enough it is to be on the process side at both sides of the tag with stainless steel ball chain.

### Pumps

#### For pumps under a 100 hp the PELT is to be mounted on the base plate for the assembly. For pumps over a 100 hp the PELT is to be mounted on the base plate of the motor. If base plate mounting is not acceptable, attach PELT on the process piping, wall or adjacent structure.

#### For very large pumps, the bottom flange of the pump is to be used for mounting of the PELT. This part of the pump is very seldom ever changed.

### Instruments

#### For instruments the PELT is to be mounted to the conduit feeding the device preferably at the bottom of the device. For some instruments if mounting to conduit is not possible the PELT can be mounted to the concrete wall close to the device location.

#### The elements for transmitters are to be tagged with the same tag as the transmitter.

### Panels

#### Device disconnects, switchgear, MCC’s and Network Access Closets are not to be drilled (unless new) such that unnecessary shutdowns of equipment are required. Attach PELTs to this type of equipment with double sided tape or adhesive.

#### All sources of power tags, for 600v devices, are to have the PELT attached to the conduit entering device with stainless steel ball chain or on the wall or structure clearly visible.

#### If a 600v device has a local disconnect, the source of power tag is to be attached to the wall beside the disconnect operating handle with stainless steel screws and plastic anchors.

#### For some 600v devices with a local disconnect the source of power tag may have to be attached to the front face of the disconnect with double sided tape or adhesive.

#### All MCC or switchgear tags are to be attached to equipment with double sided tape or adhesive (unless new).

## Process Tagging Examples

### The following diagrams illustrate some typical process equipment configurations and the appropriate tagging arrangement.

#### Example 1



#### Example 2



## Supplement

### The supplement listed below, attached following “END OF SECTION” forms a part of this Section

#### Section 01080A – PELT Labelling Schedule

**END OF SECTION**