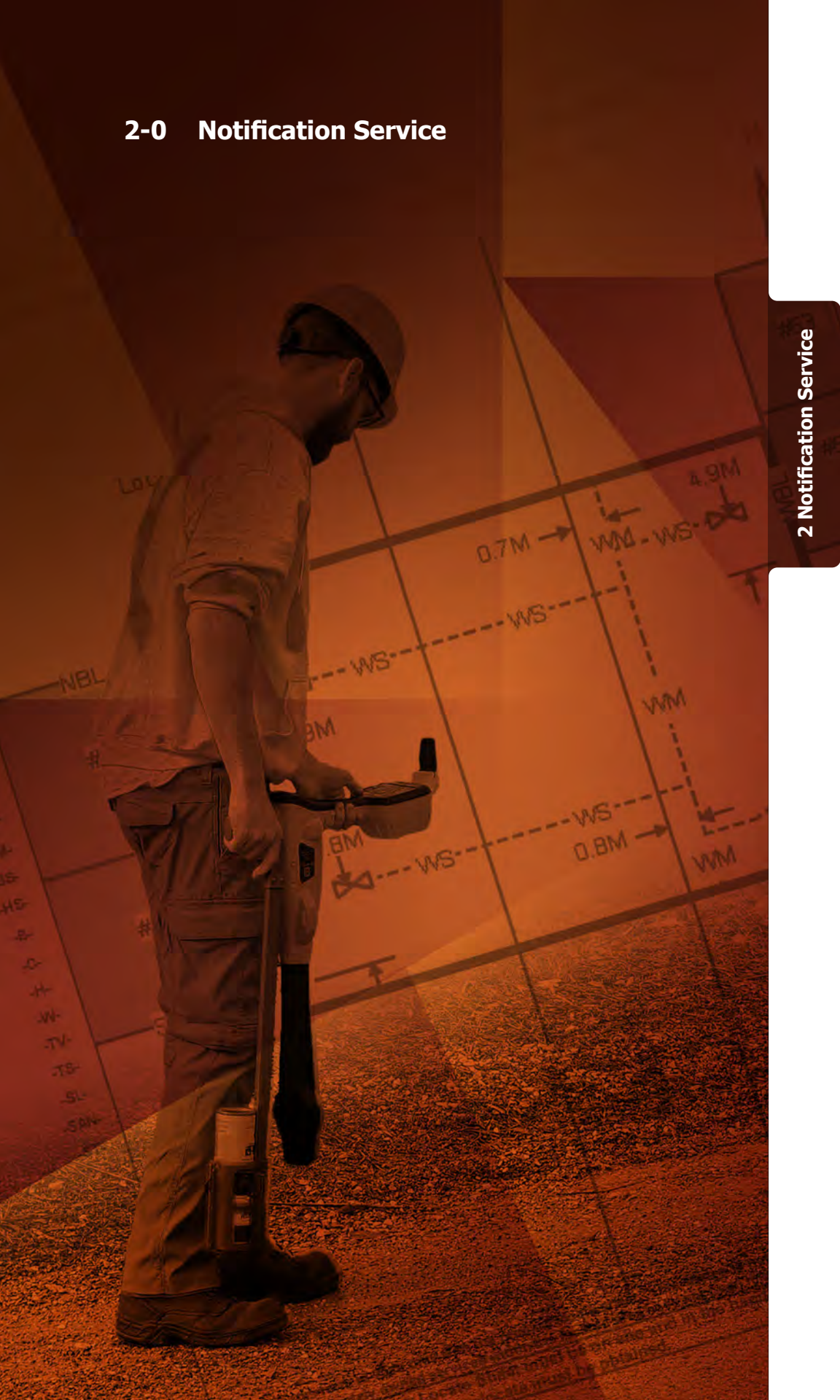


## 2-0 Notification Service



## 2-0 Notification Service Best Practices

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### 2-1: Pro-active Public Awareness, Education and Damage Prevention Activities

**Practice Statement:** The notification service has a documented, pro-active public awareness, education, and damage prevention program.

**Practice Description:** The notification service promotes the need to “Click or Call Before You Dig,” to enhance awareness of responsibilities to safeguard workers and the public and protect the integrity of the buried infrastructure, to foster a cooperative approach between the owners of buried facilities and the digging community toward the prevention of damage to buried facilities and to promote the service it provides.

Typical notification service activities include: promotional items; media advertising; participation at safety meetings; seminars and trade shows; contractor awareness programs; distribution of education material describing how the notification service system works; maintaining a database of active members of the local digging community; mediating and rationalizing the expectations of both the facility owners and the digging community; and participation in local damage prevention or facility location and coordination committees.

### 2-2: Specifically Defined Geopolitical Service Area with No Overlap

**Practice Statement:** A notification service serves each province so that an excavator need only make one call for its members and a owner need only belong to a single notification service.

**Practice Description:** Notification service programs are designed to promote ease of use for members (facility owners) and for excavators. This ease of use is enhanced when a notification service serves a specifically defined geopolitical area that does not coincide with the service area of another notification service.

There are two requirements notification service program meets in order to be considered as having implemented this best practice:

- The program permits an excavator to use a single point of contact to submit and follow up on a notice of intent to excavate and notify affected owners.
- The program permits a owner to join a single notification service and receive all appropriate notices.

### 2-3: Formal Agreements with Members

**Practice Statement:** Each member of the notification service abides by a written agreement that states the rights and the responsibilities of the notification service members and the notification service.

**Practice Description:** The terms and conditions of service provided by the notification service and the obligations of the member are established in a legally binding standard form Service Agreement document which is signed by both parties. The purpose of the document is to simply state the legal obligations and terms of service for both parties in a standard form contract that all members must sign. This standard form agreement should not be restrictive and there should be no unreasonable barriers to owners signing this agreement.

## **2-4: Notification Service Governance**

**Practice Statement:** The notification service is governed by a Board of Directors with input from stakeholders.

**Practice Description:** To ensure that a notification service functions to the best benefit of the entire community, it is governed by a Board of Directors with input from representatives of the stakeholders. Stakeholders are from a variety of industry types, such as facility owners, contractors, designers, project owners and government representatives. Each stakeholder representative is knowledgeable in their own industry and of how it interacts with the notification service and all of the represented stakeholders.

## **2-5: Single Toll Free Number with North-American Access**

**Practice Statement:** The notification service has a single toll free number with North-American access.

**Practice Description:** There will be only one toll free telephone number and one toll free fax number for the notification service to receive locate requests. These numbers have toll free North American access, meaning that a caller can telephone or fax the notification service free of charge from anywhere in North America. The notification service will also maintain an e-mail address as an alternate means to receive locate requests.

## **2-6: Hours of Operation**

**Practice Statement:** The notification service can process locate requests 24 hours a day, 7 days per week.

**Practice Description:** The notification service has in place a process where a caller, at any time of the day or night, every day of the year, who has a locate request can contact the notification service and have that request processed.

## **2-7: Documented Record of All Locate Requests**

**Practice Statement:** A record is maintained of all transactions concerning requests to locate facilities.

**Practice Description:** Voice recording of the telephone communications for locate requests are made to ensure a precise record of the activity is retained. A record of the customers' transaction is retained. These records can be legally supported in court as well as used for damage investigations

## **2-8: Retention of Voice and Electronic Records According to Applicable Statutes**

**Practice Statement:** Voice records of all calls concerning requests to locate facilities are kept in retention for seven years or according to applicable statutes. Records include but are not limited to, all original requests and changes made by voice, web, app or email.

**Practice Description:** All records shall be maintained and accessible until expiry per the applicable statute of limitations in the jurisdiction in question. Since these laws may change, no specific time period is set forth as a best practice. In the absence of notice by some party to the contrary, after the expiration of the statute of limitations the records may be destroyed. The notification service shall have a procedure for processing requests for voice and electronic records.

## **2-9: Requester Feedback**

**Practice Statement:** The notification service provides the requestor with the ticket number and the names of facility owners who will be notified for each locate request.

**Practice Description:** Providing the locate request number and the names of the facility owners who will be notified enhances the efficiency of the notification service process. When provided the names of the facility owners, the excavator knows which owners will be notified in the area of the planned excavation. This helps the excavator determine if the facility owners have responded to the locate request.

## **2-10: Printed Ticket Recall**

**Practice Statement:** The notification service can provide a printed copy of any ticket for a period of time determined by applicable statutes.

**Practice Description:** In the event of a damage investigation, litigation, or other event, it is often necessary to have a hard copy printout of a location request ticket. The notification service has the ability to produce, as necessary, a copy of a location request ticket for the appropriate statutory period.

## **2-11: Documented Operating Procedures, Policies, and Manuals**

**Practice Statement:** The notification service has documented operating procedures, human resource policies including health and safety and training manuals.

**Practice Description:** The notification service has documented operating procedures, human resource policies including health and safety, and training manuals. Training manuals, practices, procedures, and policies are on the premises in a designated area or place, dated, and available for reference.

## **2-12: Documented Owner Verification of Data Submitted by Facility**

### **Owners**

**Practice Statement:** The notification service returns the geographic description data base documentation to the owner annually and after each change for verification and approval.

**Practice Description:** The notification service can only work with the information related to the existence of buried facilities that its members provide. It is important that the notification service be able to produce evidence that a member’s data is accurate, according to that member. Regular verification of data is a part of the documented agreement or operating procedures between the owner of buried facilities and the notification service. Any deletions or additions made by the member are entered into the database and documentation of the change sent back to the member for verification, prior to activation.

## **2-13: Flexibility for Growth and Change**

**Practice Statement:** The operating plan of the notification service is sufficiently flexible to accommodate growth and change.

**Practice Description:** A successful notification service maintains flexibility to respond to changes by forming and maintaining a responsive governing organization whose Board of Directors’ and stakeholder representative composition allows adequate representation of the needs of all stakeholders.

A Board’s ability to respond to change will be enhanced by drafting bylaws and operating procedures that reflect the current environment in which the notification service serves. The most successful Boards review these documents on an ongoing basis to make sure they continue to reflect or respond to current conditions. These Boards conduct regular strategic planning sessions during which they review the current state of the notification service major systems, programs and outreach activities. Such assessments help them identify stakeholder needs for future growth and development.

Many members of Boards, stakeholder group representatives and notification service management teams keep themselves informed about and involved in the notification service industry by joining associations and attending conferences or other educational events that help them to better identify new opportunities for growth and change.

## 2-14: Meeting Between the Excavator and Facility Owner(s) Initiated by Notification Service

**Practice Statement:** The notification service has a process for receiving and transmitting requests for meetings between the excavator and the facility owner(s) for the purpose of discussing locating facilities on large or complex jobs.

**Practice Description:** The notification service relays requests for job site facility meetings for excavators who request them with facility owners. If a meeting is required to show the limits and schedule of the work, the notification service indicates that a meeting is requested. The notification service requires that the excavator provide sufficient information to fully identify the boundaries of the proposed work site. A meeting request does not necessarily eliminate the need for a locate request.

## 2-15: Notification Service Accepts Notifications from Designers

**Practice Statement:** The notification service accepts design requests and has the ability to process them as designated by the facility owners.

**Practice Description:** To facilitate damage prevention, project designers have a need for access to facility location information from facility owners. If a design request is received, the notification service provides a listing of facility owners directly to the designer. Once the list is identified, the notification service processes the request as designated by each owner.

## 2-16: Locate Request

**Practice Statement:** The notification service captures the following information, at a minimum, on a locate request: the caller's name and phone number; the excavator's/company's name, address and phone numbers; the specific location of the excavation; the start date and time of the excavation; and the description of the excavation activity.

**Practice Description:** A locate request is a communication between an excavator and notification service personnel in which a request for locating underground facilities is processed. In addition to the minimum information required in the practice statement (above), the locate request should include any information, if available, that will help to establish the specific location of the excavation site. This additional information could include, for example:

- A. More detailed information to help determine the specific location of the excavation. Such information may include:
  1. Municipality/Community
  2. County/Region/District/Township
  3. Province

4. Street address
  5. Street name
  6. Length and direction of the excavation and the nearest adjacent cross streets (needed to bound area of excavation or extended excavation)
  7. Subdivision and lot number (for new development)
  8. Latitude/Longitude: Latitude-longitude coordinate(s) or specific address of the dig site may be done automatically by the GIS subsystem, GPS coordinates or determined by computer assisted customer service representative. The dig site can be a point, an area or box, or a polygon. For a spatial rectangle (maximum/ minimum latitude/ longitude), the dig site must be wholly within the included area.
  9. Highway markers
  10. Railroad or pipeline markers
  11. General directions/instructions
  12. Postal code
  13. Distance to nearest cross-street
  14. Telephone number at dig site
  15. 911 address
  16. Lot and concession
  17. Map reference
  18. Pole numbers
  19. Any other pertinent references to help establish the location of the dig site
- B. The intended start date and time of the excavation
  - C. Excavating by hand or machine
  - D. Type of the excavation activity (e.g. boring, blasting, trenching, etc.)
  - E. Whom the excavation work is being done for
  - F. What is the purpose of the work (i.e., what will be installed and/or built)
  - G. Excavation on public property
  - H. Excavation on private property and if so, where (front, side, rear)
  - I. Is the dig site pre-marked by the excavator
  - J. The depth of the excavation
  - K. Is a site meet requested
  - L. Does the excavator want an "outline mark and fax"
  - M. The status of the involved members for that request (notice, clear, suppress, cleared by look-up)
  - N. Additional remarks

## 2-17: Practices to Reduce Over-Notifications

**Practice statement:** The notification service employs practices designed specifically to reduce the number of notices transmitted to facility owners, in which the reported excavation site is outside the owner's desired area of notification.

**Practice Description:** The notification service employs technology that allows the owner to determine its desired area of notification by polygons. To reduce over-notifications, the technology should:

- where due diligence and mapping accuracy permits, enable the notification service to define the proposed excavation site buffer to within approximately 800 feet (250 metres); and
- provide the owner the ability to identify its desired area of notification, including the member specified buffer zone, to within approximately 30 metres.

## 2-18: Disaster Recovery

**Practice statement:** The notification service develops, implements, and maintains an effective disaster recovery plan enabling the notification service function to continue in the event of a disaster.

**Practice Description:** The notification service develops and implements an effective disaster recovery plan enabling it to continue operations in the aftermath of a disaster affecting the facility, including communication with the local emergency services to provide safe access to the notification service. Excavators and owners outside of the area affected by the disaster can continue to conduct business with minimum to no delays in the services provided by the notification service. The disaster recovery plan makes provisions for the notification service to process emergency locate requests for the areas affected by the disaster.

The notification service (the primary centre) has a backup arrangement with another facility at a remote location (the secondary centre). This arrangement includes:

- Telecommunications - alternate routing schedules are in place, ready to be activated within minutes of the primary centres' failure.
- Software and Hardware - the secondary centre has compatible hardware with the primary centre. The secondary centre always has a copy of the primary's current software.
- Database - the secondary centre receives the primary centre's database including locate requests on a regular basis, preferably real-time.
- Staffing - a portion of the secondary centre's staff is cross-trained for the primary centre's operation at all times.
- Simulated Emergency Testing - At least once a year, on a random basis, the disaster recovery plan is implemented to verify that it is operational.



## 2-19: Remote User Interface

**Practice statement:** The notification service provides users a means of direct, electronic entry of locate requests of comparable ticket quality to that where an operator assists information entry.

**Practice Description:** The notification service has interactive data communications sufficient to permit remote data entry for qualified members and excavators. The remote interface validates the input information and allows the user to make corrections if necessary. This correction is accomplished by referencing the same geographic database used at the notification service when taking a voiced-in request. This process ensures that the ticket quality is maintained for all tickets.

## 2-20: Accept Multiple Reference Points for Locate Requests

**Practice statement:** The notification service is able to accept multiple types of points of reference to define the exact location of an excavation site (i.e. latitude/longitude, highway/railroad/pipeline markers, address, street and cross street, etc.).

**Practice Description:** The notification service's locate request taking processes and computer system are designed to accept and process multiple types of reference points used by callers to (1) describe the location of their work and (2) define the excavation site. Examples of different types of reference points include: highway markers, railroad or pipeline markers, valid address or street-cross street, latitude/longitude, municipality, community, county, region, township and mail address (postal code) boundaries, etc.

All stakeholders involved in the notification service process receive a corresponding benefit when the notification service is able to define the excavation site as specifically as possible. The facility owner's job of determining the existence of a potential conflict is expedited, field personnel can find and mark the affected area much easier, and the excavator receives timely markings covering the area of excavation. Standardizing on a limited set of criteria reduces the flexibility of the system to serve the excavator and owner. The notification service invests in systems and processes that permit inclusion of a variety of types of reference points in defining the excavation site. The notification service takes steps to link these reference points to the database used to register the facility owner's desired area of notification, thereby assisting in reducing over-notification.

## 2-21: Notification Service Security

**Practice Statement:** The notification service provides appropriate physical and systems security, fire protection and electrical protection to protect the notification service and its critical components.

**Practice Description:** The notification service needs protection from natural disasters and other threats. Since the notification service is a critical link in the communication chain between the excavating community and facilities, it is important that the notification service does whatever it can to provide adequate security, taking into account that it may well need to be operational in times of natural disasters or in the face of other threats. Security components could include:

- Physical security for the building and its employees through locked operations areas, lighting, employee key cards, guard patrols.
- Physical security for critical systems components. This may include locating the facilities in locked enclosures and restricting access to necessary personnel.
- General fire protection for the notification service personnel and property.
- Specialized fire protection for critical systems components.
- Specialized theft protection for critical systems components.
- Telephone demarcation points in a protected area within the notification service.
- Passwords and protections to limit access to computers and other systems.
- Offsite storage of duplicate data base and necessary system software.

## **2-22: Hardware Designed to Tolerate a Single Point of Failure**

**Practice Statement:** The notification service uses fault tolerant hardware for its critical path operations, such as ticket taking, database access, and ticket delivery.

**Practice Description:** A fault tolerant system can withstand any single hardware malfunction without any interruption or degradation of service. These systems have the ability to identify the malfunctioning hardware component and permit its replacement while remaining online and processing its normal applications. These fault tolerant systems maximize the probability that the notification service will be able to properly process an excavation request in the event of a failure or malfunction.

## **2-23: Notification Quality Standards**

**Practice Statement:** The notification service establishes performance standards for the operation of the centre for the purpose of promoting accuracy, cost effectiveness and efficiency.

**Practice Description:**

A. Customer Quality of Service Performance Measurements – It is best practice in the notification service industry to monitor the quality of service provided to the customer calling the notification service. Key measurements include:

1. Speed of Answer

Process – Most notification services route incoming calls through an ACD (automatic call distributor) either via an on-premise PBX or a Centrex at the telephone company’s central office. Both of these devices provide reports that identify, on the average, how long a caller had to wait before they were answered. This measurement is called average speed of answer (ASA) and is normally captured on a half hourly basis and accumulated for the day.

Service Level – An objective service level should be set based on customer satisfaction and economics. An ASA objective of 30 seconds or less is recommended.

2. Abandoned Calls

Process – The PBX or Centrex also provides this data. It will normally identify the number of calls abandoned and how long the callers waited before they hung up.

Service Level – An objective service level should be set based on percentage of calls. An abandonment rate of less than 5% by callers that waited more than 60 seconds is a reasonable objective.

3. Busy Signals

Process – The notification service is equipped with sufficient incoming lines to minimize busy signals.

Service Level – The performance level for busy signals received by callers into the notification service does not exceed 1% of the total incoming call volume.

4. Customer Satisfaction

Process - A fundamental principal in measuring quality is that “the customer defines quality.” Periodic customer satisfaction surveys of callers are conducted.

Service Level – An objective service level is set based on percentage of caller’s responses. An objective of 99% customer satisfaction is recommended.

B. Locate Request Content

The notification service has in place a quality of service plan that includes measurements of accuracy, productivity, and defects in locate request tickets.

C. Relational Database Quality and System Functionality

The geographic, relational database and the system that uses it confirms the hierarchical relationship between the street address, street, municipality, county or region.

#### D. Locate Request Delivery

The notification service establishes the following minimum criteria for quality of locate request delivery. Transmission audit reports are sent to receiving locations daily.

1. Average emergency ticket transmission time (< 5 minutes)
2. Average priority notice ticket transmission time (< 15 minutes)
3. Average standard ticket transmission time (< 30 minutes)
4. The ticket information should be transmitted in an electronic data format that allows the receiving equipment to parse/extract the data.

#### E. Ratio of Incoming Locate Requests to Outgoing Ticket Transmission

The notification service monitors the ratio of incoming locate requests to outgoing ticket transmissions. This data assists in evaluating the service's marketing, education, mapping, budgeting, and cost performance.

## 2-24: Notification Service Mapping

**Practice statement:** The notification service maintains a current street centreline mapping database and updates it as new/revised map data becomes available.

**Practice Description:** The notification service utilizes various official mapping sources to maintain an accurate and up to date street centreline base map for the centre. This map is continuously updated with new street names and addressed segments as well as current and past place names for various political entities. The service's online base map is refreshed at least twice a year and more frequently in areas of rapid growth.

## 2-25: Notification Service is the Interface between Excavators and Registered Facility Owners for the Purpose of Receiving Locate Requests

**Practice statement:** The notification service is the interface between the digging community (all excavators) and registered owners of buried facilities for the purpose of receiving locate requests.

**Practice Description:** The notification service makes every effort through its damage prevention promotional and educational activities to ensure that all excavators are aware of digging dangers and the necessity of requesting locates through the notification service prior to excavating. The notification service promotes the benefits of membership to all facility owners. The notification service implements the notification service best practices to ensure the locate request process established by the notification service, provides an effective interface between the excavator and registered facility owners.

## **2-26: All Buried Facility Owners are Members of the Notification Service**

**Practice Statement:** All buried facility owners are members of the notification service and register the location of their notification areas with the notification service.

**Practice Description:** The notification service uses a comprehensive marketing strategy to make all facility owners aware of the benefits of membership in the notification service. Where applicable, the notification service should reach out to provincial regulatory agencies to ensure their governed members are maintaining compliance and registering with the notification service. If legislation does not exist, the notification service should request regulatory agency(s) to circulate information to their governed owners supporting registration of their buried underground infrastructure with the local notification service. The process to join is simple and barrier free. The services offered by the notification service are cost effective and meet the needs of facility owners.

## **2-27: Excavators Contact the Notification Service Before Excavating**

**Practice Statement:** Excavators contact the notification service to request locates prior to excavating.

**Practice Description:** The notification service educates excavators of the necessity to contact the notification service before they dig. The notification service employs best practices to ensure access to the notification service at all times and by a variety of methods (e.g., phone, app, web, remote entry) to ensure that the locate request process is efficient and effective.

## **2-28: Notification Service Advises Excavators to Contact Non-Members Directly**

**Practice Statement:** The notification service will advise excavators on every request that not all facility owners are members of the notification service and that the excavator must contact non-members directly to obtain locates prior to excavating.

**Practice Description:** The notification service advises excavators on the status for members only for the dig site location. Until all facility owners are members of the notification service, the notification service will advise every excavator for their request that they must contact non-members directly before they excavate.

## **2-29: Notification Service Accepts Locate Requests in Both Official Languages**

**Practice statement:** The notification service accepts locate requests in English or French and subscribes to a translation service for other common languages.

**Practice Description:** The notification service maintains sufficient bilingual staff on duty at the centre to accept locate requests in either English or French. The notification service will subscribe to a translation service to assist with the communication of locate requests by excavators using other common languages. The ticket documentation will always be processed in English.

## **2-30: Notification Service is the Interface between Excavators and Registered Facility Owners for the Purpose of Updating the Status of Locate Completions**

**Practice statement:** The notification service is the interface between the digging community (all excavators) and registered owners of buried facilities for the purpose of updating the status of locate completions by members.

**Practice Description:** The notification service provides the means via its web site for members to post the status of their locate notifications on an individual ticket basis. The notification service will accept requests from excavators to reissue the notification to members who have not completed their locate by the work to begin date on the original request.

## **2-31: Notification Service Reminds Excavators Digging on Private Property that They Should Advise the Notification Service if They are Aware of Any Private Lines Situated on the Property**

**Practice statement:** The notification service reminds excavators digging on private property that they should advise the notification service Reminds Excavators Digging on Private Property that They Should Advise the Notification Service if They are Aware of Any Private Lines Situated on the Property if they are aware of any private lines situated on the property and that it is the responsibility of the property owner to ensure that their private lines are located prior to excavation.

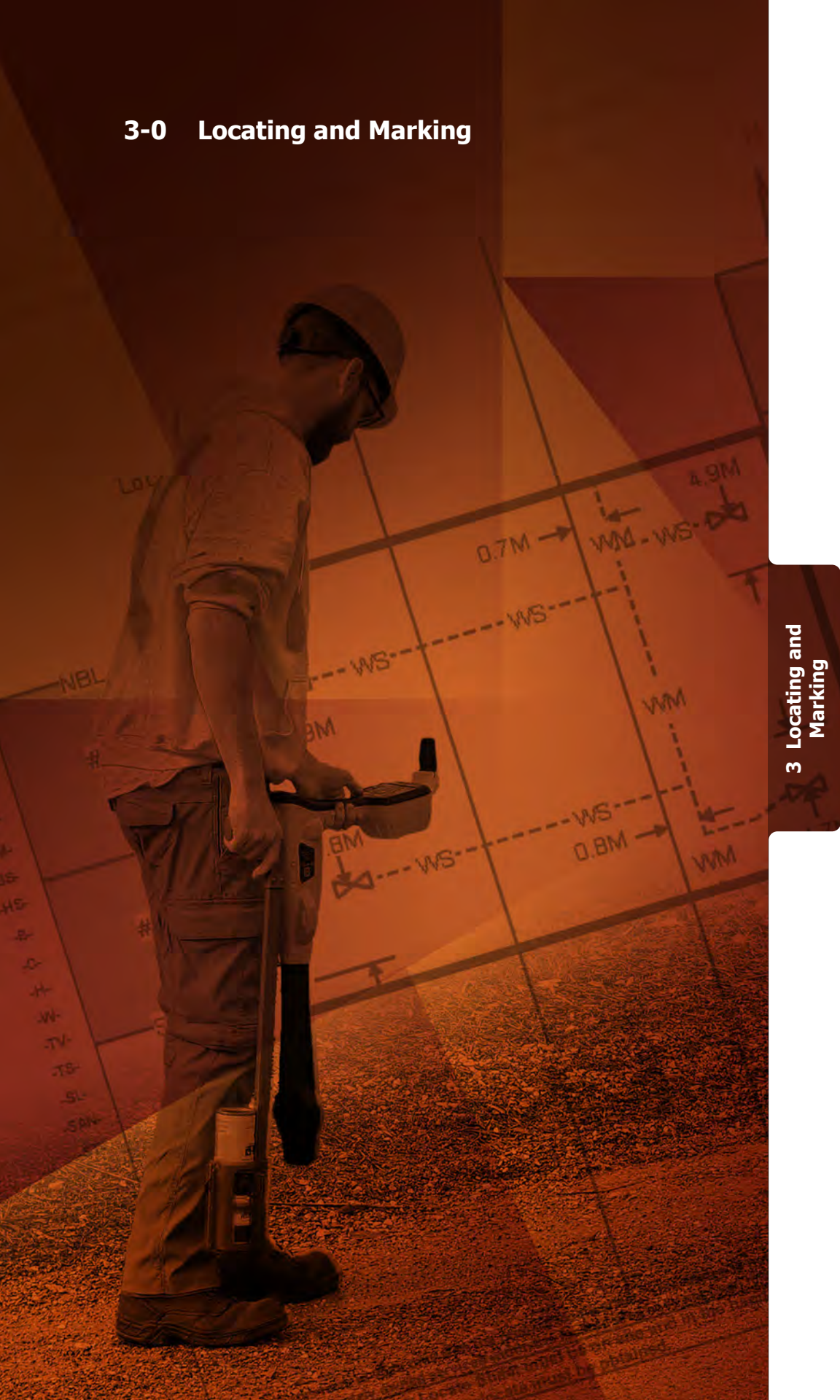
**Practice Description:** The notification service includes a reminder to excavators digging on private property that they should make the notification service aware of any private lines that exist on the property. The notification service will advise the excavator that it is responsibility of the excavator to ensure that any private lines on the property are located prior to excavation. The notification service will note this information in the remarks section of the notification to members. The members may then take whatever action they deem necessary with the excavator when private lines are known to be buried in the vicinity of the excavation site.

## **2-32: The Notification Service is the Interface between Excavators and Registered Facility Owners for the Purpose of Reporting Buried Facilities Not Originally Identified on the Locate Sheet.**

**Practice statement:** The notification service will receive calls from the excavator reporting the discovery of unidentified facilities found within the excavation area.

**Practice Description:** The notification service receives detailed verbal description of plant that has been discovered from the excavator. This information is then dispatched/forwarded to the registered facility owners. This type of request triggers an emergency notification.

# 3-0 Locating and Marking





## 3-0 Locating and Marking Best Practices

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### 3-1: Use of Records

**Practice Statement:** Locators utilize on-site facility records at all times.

**Practice Description:** Facility locators use on-site records at all times. Facility records can indicate approximate location, number of facilities and access points for buried facilities within a requested area. The use of facility owner supplied records is an effective method of identifying facilities as part of the locating process.

When as-built/as-constructed records are not available on-site but there exists an electromagnetic or alternative technique to physically locate the facility, the locate should be completed by the available technique and verified where possible with the owner.

When records are not available on-site and electromagnetic techniques cannot be used (example; no tracer wire) or when as-built/as-constructed records are available on-site but there exists no electromagnetic or alternative technique to physically locate the facility, it may be necessary to delay the completion of the locate while archives are accessed, requiring immediate notification of all parties. It can be useful for the locator to have a locate process checklist to prompt the use of records at all times when on site.

### 3-2: Record Corrections

**Practice Statement:** If a locator becomes aware of an error or omission, then the locator provides information for the updating of records that are in error or to add new facilities.

**Practice Description:** During the course of a locating activity, a locator may become aware of errors, damages to electromagnetic facilities or omissions. Methods should be in place to notify a owner of that error, damage or omission. The observations are submitted to the appropriate person or department. The method and timing of notification is determined by the owner and includes the following information:

- Name (and company if contracted),
- Contact phone number of the individual(s) submitting change,
- Location (either address or reference points),
- Size and type of facility,
- Nature of the error, damage or omission, and
- Sketch of the change in relation to the other facilities.

Errors, omissions and damages, may include, but are not limited to, missing or non-existent records, misdrawn records, damaged or nonexistent electromagnetic facilities to physically locate the facility, changes to referenced surface features, changes during construction at the job site,








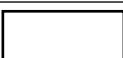
repair or abandonment of facilities and delays in posting new records. Failure to note errors or omissions when found could result in damages to the facility at a later date. Additionally, 3.1, Use of Records must be considered in conjunction with this Best Practice.

### 3-3: Colour Code

**Practice Statement:** Buried utilities should be marked using the APWA Uniform Colour Code.

**Practice Description:** The uniform colour code developed by the American Public Works Association (APWA) for marking buried utilities is used and understood by contractors, locators and utility owners throughout the North American Continent. These colours are endorsed by the Canadian Standards Association in CSA S250-11 and specified by Ontario’s Electrical Safety Authority (ESA) and should be used to mark all buried utilities.

These colours are related to specific types of underground facilities as follows:

Colour	Type of Facility/Indicator
	Red - Electric power lines, cables, conduits and lighting cables
	Yellow - Gas, oil, steam, petroleum or gaseous materials
	Orange - Communication, alarm or signal lines, cables or conduit
	Blue - Potable Water
	Green - Sewers and drain lines
	Pink - Temporary survey markings
	Purple - Reclaimed water, irrigation and slurry lines
	White - Proposed excavation

### 3-4: Locating Multiple Facilities

**Practice Statement:** A single, qualified locator used for multiple facilities.

**Practice Description:** It should be noted that this best practice does not suggest that all facilities be located by a single locator, but rather that conditions may exist in which locating multiple facilities with a single locator may reduce the likelihood of errors and resulting damage (e.g., multiple facilities with the same owner or multiple facilities that are marked with the same or similar colour codes).

This practice is currently being employed by a number of facility owners to enhance safety and is employed when determined to be advantageous by the owner. The use of a single locator to mark multiple facilities may provide several advantages to both the facility and the excavating communities. Among these advantages are:

- More responsive service to the excavation community,
- Better communication with the excavating community (fewer points of contact),
- Improved safety due to less traffic on the road,
- Improved worker safety,
- Reduced environmental impact, and
- Maps of multiple facilities.

The use of a single locator to carry out locate requests for multiple facilities may simplify communications, with fewer links needed between excavator and locator.

### **3-5: Training**

**Practice Statement:** Locators are properly trained and training is documented.

**Practice Description:** Minimum training guidelines and practices are adopted for locator training. These guidelines and practices include the following:

- Understanding System Design/Prints/Technology
- Understanding Construction Standards and Practices for all Types of Facilities
- Equipment Training and Techniques
- Plant Recognition Training
- Theory of Locating
- Daily Operations
- Facility Owner/Excavator Relationships and Image
- Applicable regulations – (see Section 6 for a list of Federal and Provincial regulations)
- Understanding of company safety procedures
- Written and Field Testing
- Field Training
- Refresher Training

Documentation of all training is maintained to ensure that facility locators have been properly trained.

### 3-6: Locator and Public Safety

**Practice Statement:** Locates are performed safely.

**Practice Description:** It is the responsibility of the owner and locator to establish when and how the underground facility will be identified. All hazards associated with performing a locate are identified. Appropriate measures conforming to federal, provincial, local and industry standards are established. Employees are made aware of these hazards and properly trained in worker safety standards.

The following items should be considered as part of assessing and mitigating hazards on the job site when performing a locate:

- Communication between locator and other personnel at the job site
- Locator should be aware of safety requirements and written emergency procedures to be followed on the project where applicable or establish his/her own.
- Traffic control considerations, including vehicular movement and pedestrian activity
- Trip and fall hazards
- Sources or energy (overhead and other)
- Environmental factors

### 3-7: Visual Inspection

**Practice Statement:** A visual inspection is completed during the locating process.

**Practice Description:** This inspection includes the following:

- All facilities within a owner's service area (to evaluate the scope of the locate request),
- Identification of access points,
- Identification of potential hazards, and
- Assurance that plant facilities shown on available records match those of the site.

The primary reason for a visual inspection is to determine if there are facilities placed that are not on record. It is very important that visual inspections be completed in areas of new construction, where records may not indicate the presence of a facility. The visual inspection is necessary because the time it takes for a facility placed in the field to be placed on permanent records varies by owner and location. Evidence of a facility not on record includes, but is not limited to, poles, dips, enclosures, pedestals (including new cables found within the pedestals), valves, meters, risers, and manholes.

### 3-8: Excavation Site Conditions

**Practice Statement:** Facilities are adequately identified for conditions.

**Practice Description:** Facility locators match markings to the existing and expected surface conditions. Markings may include one or any combination of the following: paint, chalk, flags, stakes, brushes or offsets. Paint marks will be a length of 30 cm to 90 cm and approximately 3 cm wide. Proper training for all facility locators includes properly identifying the varying surface and environmental conditions that exist in the field and what marking methods should be used.

Conditions that can affect markings are rain, snow, vegetation, high traffic, construction, etc.

Field marks should be placed at a minimum of 3 m intervals and at any directional changes. When placing marks in the field, the centreline of the facility is to be marked. Facility structures greater than 40 cm/16 inches should have the edges of the facility marked denoting the width of the plant or structure in addition to the centreline. See examples below:

Greater Than 40cm/16"	40cm/16" or less	Greater Than 40cm/16"	40cm/16" or less
GM	GM	BT	BT

### 3-9: Locate Status

**Practice Statement:** Positive response is provided to facility locate requests.

**Practice Description:** All facility locate requests result in a positive response from the owner to the excavator. A positive response, agreeable to all parties, may include one or more of the following:

- Markings or documentation left at the job site, call back, email, fax or automated response system or other electronic media transmission.

- A positive response allows the excavator to know whether all facility owners have marked the requested area prior to the beginning of the excavation.

### 3-10: Multiple Facilities in "Joint Use" Trench

**Practice Statement:** Multiple facilities in a "joint-use" trench are marked individually and with corridor markers.

**Practice Description:** In general, the number of facilities marked on the surface equal the number of facilities buried below. All facilities within the

same trench should be individually marked and identified. In situations where two facilities share the same colour code (such as telephone and CATV) both facilities should be identified and the marks placed parallel, but with enough separation so that they may be readily identified. In circumstances where the total number of lines buried in the same trench by a single owner may not be readily known, a corridor marker is used. The corridor mark indicates the width of the facility.

### **3-11: Locate Method Preference**

**Practice Statement:** When locating electro-magnetically, active/conductive locating is preferable to passive/inductive locating.

**Practice Description:** The preferred method of actively applying a signal onto a facility is to use direct connection. Direct connection is the process of connecting a direct lead from the transmitter to the target facility and connecting a ground lead from the transmitter to a ground point in order to complete a circuit. This process provides the strongest signal on the line and is less likely to spill to adjacent facilities than other methods of applying a signal. This method allows a greater range of frequency and power output options. It is good practice to use the lowest frequency possible at the lowest power output possible to complete the locate. If direct connection is not possible, use of an induction clamp (coupler) is the most effective method of applying a locate signal onto the target conductor. This method is more limiting for the choices of frequency and power outputs than direct connection. Using an induction clamp is not as effective at transmitting a signal as direct connection, can only be used within certain frequency ranges, and must use a higher power output. The least preferred method is induction or broadcast mode on a transmitter. This usually results in a weak signal that will spill to any conductor in the area.

When using any of the above three methods, the locator should trace the entire line from the point of signal application through the proposed work area.

#### **Origin/Rational**

It is very important that locators do not apply a signal application to a line, walk out to the work area and begin locating. This can lead to picking up signal on facilities other than the target line. Tracing continuously from the point of signal application to the end of the work area improves the accuracy of the locate.

Notable exceptions may include utility "Transmission" situations, where signal application opportunities may be limited (e.g. fiber optic networks, transmission pipelines and long distance power conductors). In these situations, to ensure that a reliable locate is achieved, attention should be paid to ensure a suitable signal launch is achieved. Subsequently, careful reference to distant locate signal characteristics should be made.

### 3-12: Facility Identification

**Practice Statement:** The owner of a facility is identifiable by markings on the ground in combination with the locate report, at the time the facility is located.

**Practice Description:** Identifying the owner by name or type of facility will help the ground disturber confirm the locate markings found in the field. This practice facilitates a positive response for all located facilities within the requested area.

In situations where two facilities share the same colour code (such as telephone or CATV) both facility owners should be identifiable. During completion of the locate the facility material type and size, when available, should be identified on the locate form.

### 3-13: Communications

**Practice Statement:** Communication is established amongst all parties.

**Practice Description:** Notification services, facility owners and excavators all have clearly defined processes to facilitate communication between all parties. If the complexity of a project or its duration is such that a clear and precise understanding of the excavation site is not easily conveyed in writing on a locate request, then a pre-location meeting is scheduled. This pre-location meeting is on-site to establish the scope of the excavation. If requested by either party, written documentation between the excavator and the locator should include:

- Date, Name, Company,
- Contact numbers for all parties,
- List and the limits of the dig areas to be excavated,
- Schedule for both marking and excavating the areas, and
- Follow up agreements that might be necessary.

Any changes to the areas that are to be located are in writing and include all parties responsible for the excavation and marking of the excavation sites. Locators also schedule site meetings if the complexity of the markings requires further explanation.

### 3-14: Locate Report

**Practice Statement:** A written report which may be referred to as the Locate Report or Buried Plant Locate Report or Locate Sheet should be issued by the locator in order to provide details and instructions for the locate and to confirm that the locate has been completed.

**Practice Description:** In order to complete the locate process it is necessary to provide sufficient information that parties relying on this for excavation purposes will be able to correctly interpret the marks in the field and be aware of the instructions, warnings and limitations of the locate.

This information should be provided in a Locate Report that is legible and that groups similar types of information in a logical and consistent order. While the exact appearance, formatting, inclusions, exclusions and order of elements may vary in a Locate Report these should be similar to and consistent with the following generic format, even in emergency situations where all information provided is hand written.

Primary locate sheet illustrated in Fig.1 should always be placed first and contain the following information (refer to [www.canadiancga.com](http://www.canadiancga.com) for full size version, and Appendix C – How To Read a Locate Sheet):

(LSP logo) <b>1</b> <b>Primary Locate Sheet</b> [LSP company name & address] [LSP phone / fax / email; minimum of 2]		Page <b>2</b> of _____ <b>Request No.</b> <b>3</b>
Utilities Owners Present <b>5</b>		Request Type: <b>4</b> Excavation Date (dd/mm/yyyy) <b>6</b> Category: <input type="checkbox"/> Homeowner Revised Excav. Date (dd/mm/yyyy) <b>7</b> <input type="checkbox"/> Contractor <b>8</b> <input type="checkbox"/> Project
Requested by: <b>9</b>	Company: <b>10</b>	Phone: <b>11</b> Fax/Email: <b>12</b>
Locate address <b>13</b>		City: <b>14</b> Date Requested: <b>15</b>
Type of work: <b>16</b>		Site Meet Requested <input type="checkbox"/> <b>17</b> Appointment Date: _____
Dig Area Description: <b>18</b>		Requestor Remarks: <b>19</b>
Dig area outlined using: <input type="checkbox"/> Paint <input type="checkbox"/> Stakes <input type="checkbox"/> Flags <input type="checkbox"/> Offset Flags <input type="checkbox"/> Sketch <input type="checkbox"/> Other <b>20</b>		
<b>WARNINGS AND CAUTIONS</b> (per Utility Owner's Guidelines, see examples below)		
Warning: Should Sketch and markings not coincide, excavator must obtain a new locate. Caution: Locates provided are valid for a limited time frame. See attached Disclaimer for the specific Utility Owner's Guidelines. <b>21</b> Caution: Any changes to location or nature of work require new locate. Caution: Privately owned services within the located area have not been marked - check with service/property owner.		
<b>LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE</b>		
Records Referenced: <b>22</b>	Excavator shall notify & receive a clearance from Utility Prior to Excavation for the following: <input type="checkbox"/> Third Party Notification _____	
Locator's Warnings: <input type="checkbox"/> Altered Limits <input type="checkbox"/> Unlocatable utilities <b>23</b> <input type="checkbox"/> Other _____	<b>25</b>	
Locator Remarks: <b>24</b>		
Apply Sticker Here if Required		
Method of Field Marking: <input type="checkbox"/> Paint <input type="checkbox"/> Stakes <input type="checkbox"/> Flags <input type="checkbox"/> Offset Flags <input type="checkbox"/> Other <b>26</b>		
Documents given to be used with this locate: <b>27</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Locator name/ID#: _____ Start/End time: <b>28</b> / _____ Date: _____ [insert expiry criteria]	<input type="checkbox"/> Fax <input type="checkbox"/> Left on Site <input type="checkbox"/> Emailed Accepted By: _____ Signature: <b>29</b>
<b>A copy of this Primary Locate Sheet and Auxiliary Locate Sheet(s) must be in possession of the Excavator during work operations.</b> <b>30</b>		

**Figure 1 Primary Locate Sheet**

1. Title "Primary Locate Sheet" [must be added at top left/center of sheet]. Name and address of locate service provider (LSP) providing locate. LSP contact information [minimum of 2]. LSP logo.
2. Page number and total number of pages [must be added at top right of sheet].



3. Request number or unique identifier of the locate.
4. Request type, e.g. Std., Emerg.
5. Names of Utility Owners that the LSP has been requested to locate.
6. Excavation date as originally requested.
7. Revised excavation date, if agreed to.
8. Category or classification of party requesting the locate.
9. Name of person submitting locate request.
10. Name of company or party requesting locate [acceptable entries include homeowner, tenant, self-employed and similar designations].
11. Contact phone number for party requesting the locate.
12. Fax number or email address for party requesting the locate.
13. Address where excavation is to take place [highway marker, survey plan or GPS coordinates acceptable where street address not available].
14. Name of municipality where excavation is to take place.
15. Date the original locate request was made.
16. Type of intended work or method of excavation.
17. Request for a site meeting prior to locate, with agreed date if applicable.
18. Dig area description by party requesting locate.
19. Remarks or additional description of work provided by party requesting locate.
20. Method of field marking area where excavation will take place.
21. General warnings and cautions on use and validity of locate [should be positioned on sheet to divide information provided at time of request from information provided by locator].
22. Utility and site records available to locator at time of locate.
23. Site specific warnings and cautions issued by locator.
24. Remarks about circumstances affecting locate issued by locator.
25. Site specific warnings and cautions from utility owners.
26. Method used by locator to field mark utility positions.
27. List of documents or additional information attached to locate report.
28. Name or ID# of locator. Date of issue. Start and end time of locate. Notice of expiry date or period.
29. Method used to deliver locate report to party requesting locate. Name and signature of person receiving locate report.
30. Regulatory warnings about use of locate information [should be positioned at bottom of sheet].

Auxiliary locate sheet(s) illustrated in Fig. 2 should be placed after the primary locate sheet (refer to [www.canadiancga.com](http://www.canadiancga.com) for full size version):

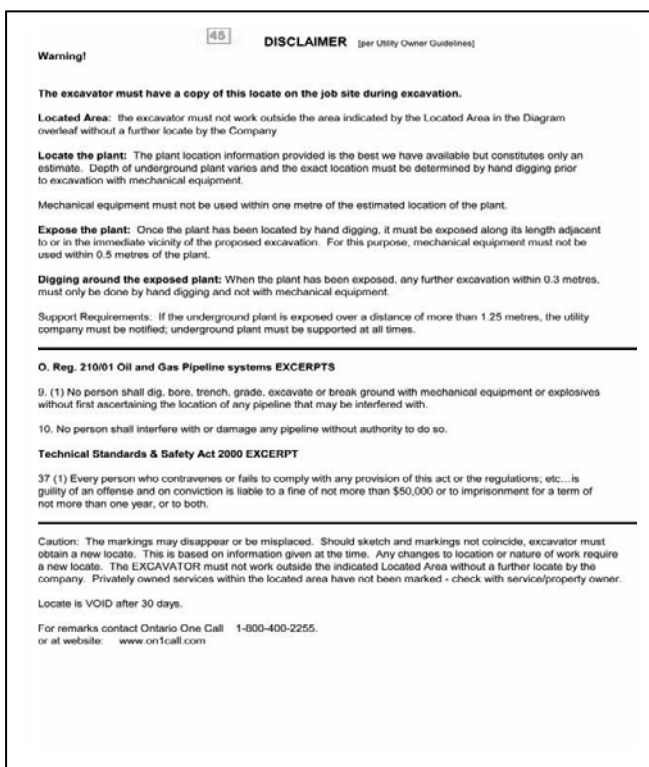
<div style="display: flex; justify-content: space-between;"> <span>[31] [LSP logo]</span> <div style="text-align: center;"> <b>Auxiliary Locate Sheet</b>  <small>[LSP company name]  [LSP phone / fax / email; minimum of 2]</small> </div> </div>		Page <span>[32]</span> of _____ <b>Request No.</b> <span>[33]</span> <hr/> Date Located: <span>[34]</span> <small>(dd/mm/yyyy) [insert expiry criteria]</small>
Utilities Marked: <input type="checkbox"/> Gas <input type="checkbox"/> Water <input type="checkbox"/> Hydro <input type="checkbox"/> Telecom <input type="checkbox"/> Street Lighting <input type="checkbox"/> Sewer <input type="checkbox"/> Other _____		[35]
FROM: _____ <span>[36]</span> TO: _____ FROM: _____ TO: _____		
<b>LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE</b> <b>LOCATED AREA HAS BEEN ALTERED AS PER:</b> <span>[37]</span>		
<div style="border-bottom: 1px solid black; padding-bottom: 5px;"> <b>[38] LEGEND</b>  <small>[example]</small> </div> <ul style="list-style-type: none"> <li>Building Line — BL —</li> <li>Fence Line — FL —</li> <li>Face of Curb — CL —</li> <li>Road Edge — RE —</li> <li>Property Line — PL —</li> <li>Locate Area — LA —</li> <li>Driveway — DW —</li> <li>Catch Basin CB</li> <li>Sidewalk SW</li> <li>Demarcation DM</li> <li>Railway ————</li> <li>Pole O</li> <li>Flush to Grade</li> <li>Pedestal FTG</li> <li>Pedestal X</li> <li>Bell Buried Cable — B —</li> <li>Bell Conduit — C —</li> <li>Bell buried Service Wire —BSW—</li> <li>Manhole MH</li> <li>Bell Fibre Optic Cable —FO—</li> <li>Gas Main —GM—</li> <li>Gas Service —GS—</li> <li>Gas Valve </li> <li>Hydrant O</li> <li>Transformer ▲</li> <li>Hydro —H—</li> <li>Hydro Pole X</li> <li>Street light Cable —SL—</li> </ul>	<div style="border-bottom: 1px solid black; padding-bottom: 5px;"> <b>[39]</b> Hand dig cautiously within 1m as measured horizontally from the field markings to avoid damaging the underground utilities. If you damage the plant, you may be held liable.  <b>If you damage underground plant, contact the utility owner immediately.</b>  <b>Depth varies and MUST be verified by hand digging or vacuum excavation.</b> </div> <div style="text-align: center; margin-top: 100px;"> <span>[40]</span> </div> <div style="text-align: right; margin-top: 20px;"> <span>[42]</span>  <small>SKETCH NOT TO SCALE</small> </div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <span>[41]</span> </div> <small>NORTH ARROW</small>
<small>[43] THIS FORM VALID ONLY WITH Primary Locate Sheet          Any privately owned services within the located area have not been marked- check with service/property owner</small>		
<small>A copy of this Auxiliary Locate Sheet(s) and the Primary Locate Sheet must be on site and in the possession of the Excavator during work operations. Should sketch and markings not coincide, excavator must obtain a new locate. <span>[44]</span></small>		

**Figure 2 Auxiliary Locate Sheet**

31. Title "Auxiliary Locate Sheet" [must be added at top left/center of sheet]. Name and address of locate service provider (LSP) providing locate. LSP contact information [minimum of 2]. LSP logo.
32. Page number and total number of pages [must be added at top right of sheet].
33. Request number or unique identifier of locate.
34. Date of issue. Notice of expiry date or period.
35. List of utilities marked by locator.
36. Written description of limits of locate, i.e. area covered by this sheet of locate report.

37. Instructions on use and validity of locate. Specific warning by locator that limits of locate have been altered since original request.
38. Legend describing symbols used on sketch.
39. Instructions on excavation methods in vicinity of locate marks.
40. Sketch of marks placed by locator.
41. Directional indicator, e.g. north arrow, to provide orientation of sketch.
42. Warning sketch is not to scale.
43. Warning auxiliary sheet is only valid in combination with primary locate sheet.
44. Regulatory warnings about use of locate information [should be positioned at bottom of sheet]

Instructions sheet, an example is illustrated in Fig. 3, should be placed after the auxiliary locate sheets (refer to [canadiancga.com](http://canadiancga.com) for full size version):



**FIGURE 3 Disclaimer**

45. Title of sheet, e.g. "Instructions" or "Disclaimer" [should be place at top of sheet with instructions from utility owners and/or regulators below].

### 3-15: Damage Investigation and Reporting

**Practice Statement:** A damaged facility is investigated and reported as soon as possible after occurrence of damage.

**Practice Description:** Any time that damage occurs, a proper investigation is performed and the result of the investigation reported. This is to determine the root cause and any additional factors that may have contributed to the damage. The information gathered from damage investigations is essential in preventing future damages.

### 3-16: Workload Planning

**Practice Statement:** Forecasting/planning for predictable workload fluctuations is an integral part of all operating practices. A responsive plan is developed for dealing with unpredictable fluctuations.

**Practice Description:** Facility owners and/or their representatives develop methods to sufficiently forecast and plan for future workloads in order that ticket requests may be completed in a timely manner. This will ensure that adequate personnel and equipment will be available to complete all locate requests. It should be noted that this practice does not involve limiting the number of locate requests from excavators.

### 3-17: The Located Area

**Practice Statement:** The Located Area is properly established and identified on the Locate Report.

**Practice Description:** The Located Area should be outlined and labelled on the sketch portion of the Locate Report and be identified by a North, South, East and West boundary. Unobstructed visible fixed objects, such as building lines, curbs, etc., or measurements from fixed objects should be used to define the Located Area. In all cases, the scope and type of work to be performed should be clearly understood by the Locator prior to establishing the Located Area. Markings and sketched underground utility infrastructure should not extend beyond the Located Area either on the Locate Report or in the field.

### 3-18: Identification of Demarcation Point

**Practice Statement** – When applicable, the locator will indicate the demarcation point of the facility owner’s plant on the locate sheet where this point is not at the point of building entry. This position will be marked on the locate sheet with a circled ‘DM’ symbol (as below).



**Practice Description** - When locating and marking the underground plant of the facility owner, the locator shall indicate the demarcation point of the facility being located on the locate sheet. This symbol (as above) shall be placed on top of, or as near as reasonable to, the actual physical demarcation point of the facility being located. The demarcation point is the limit of utility owned facilities. The excavator should be aware that customer or privately owned facilities may exist beyond this point. The symbol and definition should be clearly shown in the legend on the locate sheet.

### 3-19: Alternate Locate Agreements

**Practice Statement:** Alternate Locate Agreements (ALA's) may be used providing the Facility owner and Excavator agree on the terms and conditions.

**Practice Description:** Alternate Locate Agreements (ALA's) are contractual agreements between a Facility owner and an Excavator that allows the Excavator to proceed with their excavation work without receiving a traditional field locate. The Facility owner determines the terms and conditions of the ALA, including the depth, location, method of excavation and/or type of excavation. The intent of an ALA is to ensure underground facilities are protected from damage by limiting the scope of work to the point that a field locate is not required, thus reducing demand on existing locate providers and eliminating wait times and administration for Excavators. The details of such an agreement must be stated in writing and available on the project for review upon request of the regulator, or Facility owner's representative. Such an agreement must be communicated in writing as well to the JHSC or Health & Safety representative on the project where applicable. It is the responsibility of the Excavator to ensure that all Facility owners are requested to locate and mark their service. It is also the Excavator's responsibility to ensure that an ALA, where applicable and implemented, will not impede any safe operations regarding the other utilities not covered by that ALA and that the Health and Safety of the workers and Public Safety are safeguarded at all times. It is the Excavator's duty to ensure that the excavation work is carried out in compliance with the legislative requirements and in accordance with the ALA as stipulated between the Excavator and the Facility owner in question when and where applicable. It is the Facility owner's duty to ensure that the ALA terms and conditions will provide a level of safety equivalent to the standard locate process.

### 3-20: Marking of Newly Installed Facilities

**Practice Statement:** Markings are placed immediately after construction to identify the location of newly installed facilities.

**Practice Description:** Newly installed facilities are often at risk as Locators and Excavators may not be aware of the recent installation, especially if the installation has taken place immediately before or after the completion

of a locate. Markings such as paint and or special flags warning that new facilities have been installed should be placed as soon as the construction is completed. This practice increases the chances of the Excavator or Locator being made aware of the installation which can reduce the chances of the facilities being damaged.

### **3-21: Requirements for a Valid Locate**

**Practice Statement:** A valid locate requires that the marks on the ground are sufficient for the purpose required; there is a completed locate report by an authorized party; the conditions of the locate have not changed; and the locate has not expired.

**Practice Description:** The primary components of a locate, except in the case of a clearance or alternate locate agreement (ALA), are the marks on the ground and the corresponding locate report that together correctly identify the position of underground infrastructure. For a locate to be valid the marks must be preserved and be sufficiently observable for their intended purpose. Since it is the owner's responsibility to mark its underground infrastructure and issue appropriate instructions, warnings and limitations to the excavating party, a locate is not considered to be valid unless it has been issued by the owner or a party authorized to act on the owner's behalf. For each portion of area to be excavated, the marking process must be complete and the located area defined and documented in the form of a locate report for that portion of the locate to be considered valid. If circumstances occur that cause a change after the locate report has been issued, such as the introduction of new underground infrastructure within the located area, or if a surface feature used for offset measurements is altered, those portions of the located area affected by the change are no longer considered valid. The validity of the locate expires as stated on the locate report. A locate report must contain sufficient information and instructions so that parties relying on it will be able to correctly interpret the marks in the field and identify the limits of the located area. Locate reports are usually generated by using templates or pre-printed forms and it may not always be possible or appropriate to complete every part of these forms. However, except in the case of a clearance or ALA, the following minimum information is necessary for the locate to be considered valid:

- Name of the party who requested the locate
- Address or coordinates of the excavation site
- Request number or unique identifier of the locate
- Limits of the located area
- Underground infrastructure marked or cleared
- Method of marking
- Locate sketch
- Date that the locate report is issued

- Date or period after which the locate will expire
- Total number of pages issued
- Name or ID# of the party issuing the locate report

Validity of the locate is also affected by one or more of the following conditions:

1. Marks on the ground conflict with the locate report – if the marks on the ground do not match the sketch or other information contained in the locate report then that portion within the located area affected by this condition is no longer valid.
2. Discovery of an error – if there is an error or omission that affects the accuracy, identification or interpretation of the marks then that portion within the located area affected by this condition is no longer valid.
3. Unlocated underground infrastructure – the presence of underground infrastructure that has not been marked or cannot be marked until it is found by excavation creates a circumstance where the limits of the located area should be adjusted to exclude the portion of area affected by this condition. If this is not done then that portion within the located area affected by this condition is no longer valid.
4. Clearances – in situations where a dig area is clear of an owner’s underground infrastructure there will be no marks on the ground and a valid locate requires only a locate report in the form of a written statement to this effect.
5. Alternate Locate Agreement – in situations where an ALA has been issued there will be no marks on the ground and a valid locate requires only that the conditions for the ALA have been met and the ALA has not expired.

### 3-22: Quality Assurance

**Practice Statement:** Owners should have a Quality Assurance (QA) program in place for assessing the accuracy of locating and marking facilities.

**Practice Description:** The process of conducting QA audits on locates is a critical component to the protection of underground facilities. The recommended components listed below are meant to provide general guidelines for auditing the work of locators. The QA program is a valuable component in the damage investigation process.

- Conduct random field audits
- Check accuracy of markings against minimum tolerances
- Check accuracy and completeness of the locate report
- Measure timeliness as defined by Regulations.
- Check the legibility of the completed locate report
- Verify the most up-to-date records were used to complete the locate

- Check evidence of communication with the excavator when required (e.g. altering dig area)
- Communicate results of the audit to applicable personnel
- Analyze audit results for trends

### **3-23: Alternative Locate Method(s)**

**Practice Statement:** When electromagnetic methods of locating prove inconclusive or ineffective alternative methods accepted by the facility owner can be utilized.

**Practice Description:** In cases where underground infrastructure cannot be located using electromagnetic means, alternative methods accepted by the facility owner, such as Ground Penetrating Radar, or Acoustic locating, etc. may be used. It is important to note that these technologies are not effective in all areas or conditions, due to particular site or soil conditions. Users of these technologies should be competent to operate the associated equipment.

### **3-24: Electronic and Paper Locate Report Format**

**Practice Statement:** Electronic and/or paper Locate Reports are acceptable formats.

**Practice Description:**

Electronic Locate Report

- Device should be operable
- Recommend no less than a 7" (diagonal) screen / tablet to view electronic locate reports
- Viewing screen should be free of defect
- Each page of the Locate report should be legible and viewable in its entirety
- All pages of the Locate report should be accessible at all times

Paper Locate Reports

- Minimum size 8 ½" X 11"
- Locate report should be legible and free of defect
- All pages of the Locate report should be accessible at all times