RCMP
ROYAL CANADIAN MOUNTED POLICE

National Radio Services

Tower Replacement

RCMP Ptarmigan Site, NWT

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Tower Replacement
Background

Tower Project Scope:

“Build and commission a CSA – S37 compliant tower to replace the existing non-compliant tower”

Tower Replacement
Background

Requirements:

- Remove and Dispose of 340’ SS KD CN Bridge Tower
- Install a Replacement Guyed Tower:
  - Solution A - Install 300’ guyed tower currently on site

    or;
  - Solution B - Supply and install a new 300’ guyed tower
- Compliancy Standards:
  - CSA S37 (construction standard)
  - CSA Z259 (working at height standard)

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Tower Replacement
The Location

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Tower Replacement
The Challenges

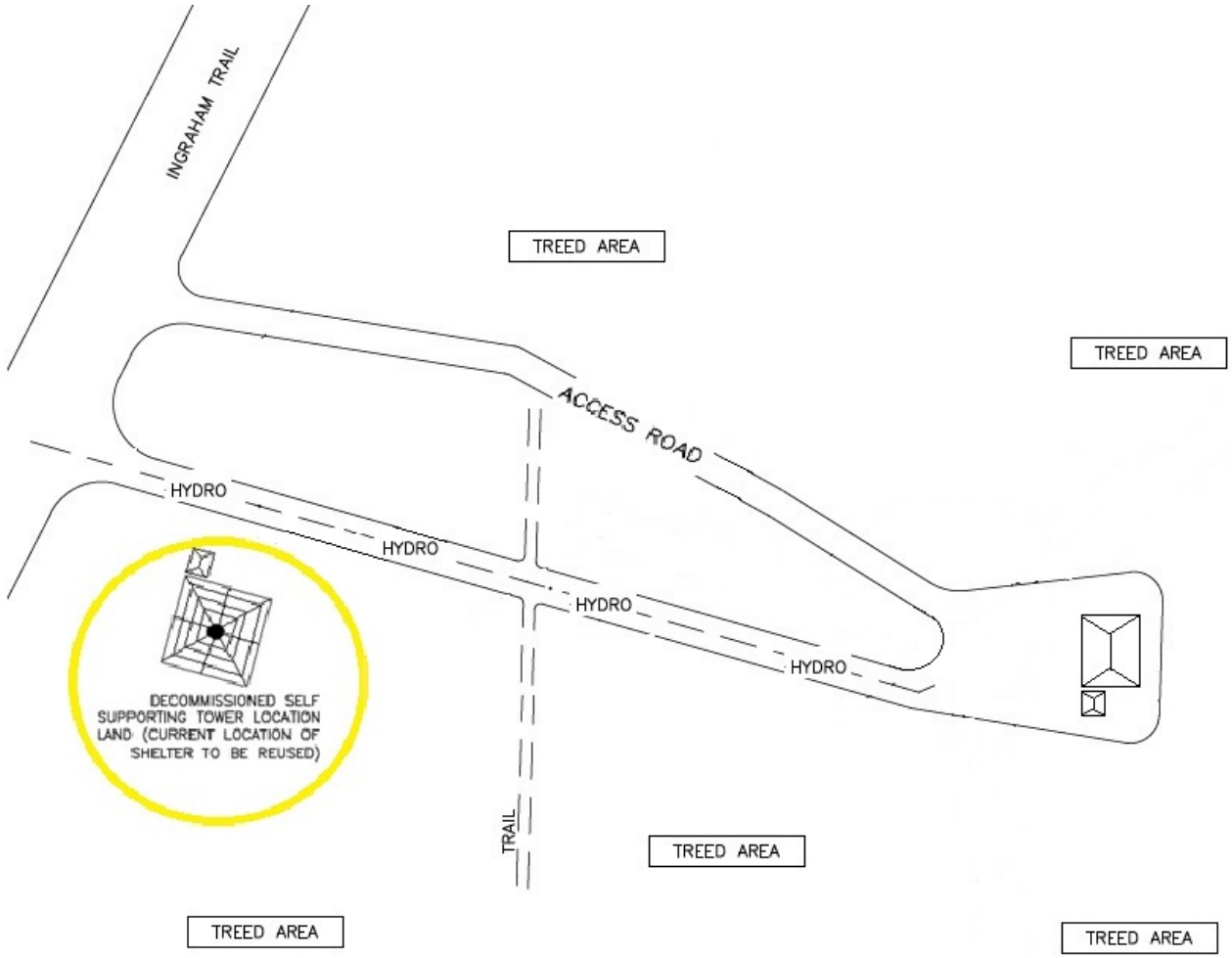
- Yellowknife - Canadian Arctic
- Approx. 1500 Km north of Edmonton
- Short construction season
- Remove/Dispose of a large 340’ SS KD
- Installation of replacement guyed Tower
- Downtime limited to 30 days

Tower Replacement

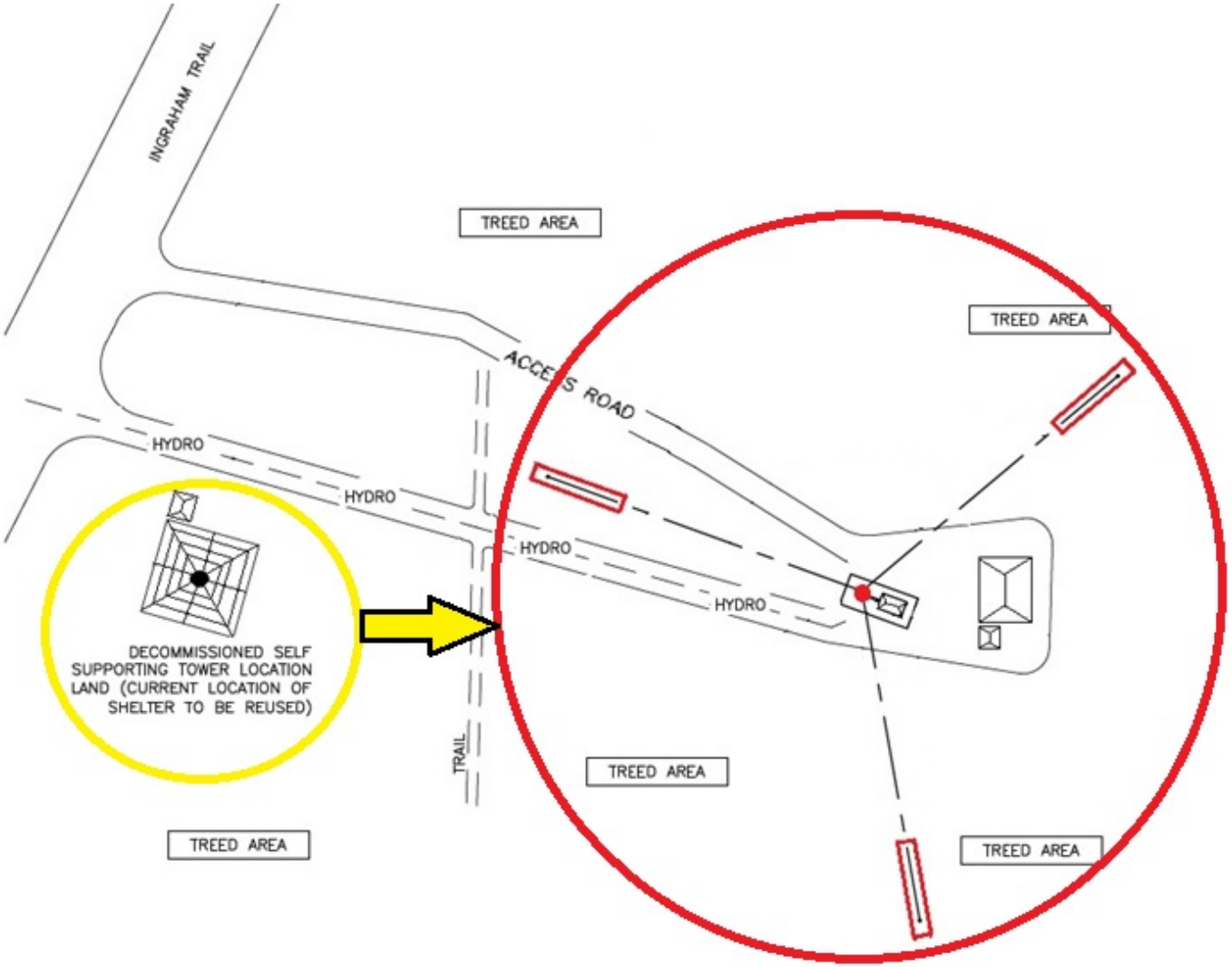
The Old Tower

Tower Replacement
The Site

Tower Replacement
The Site

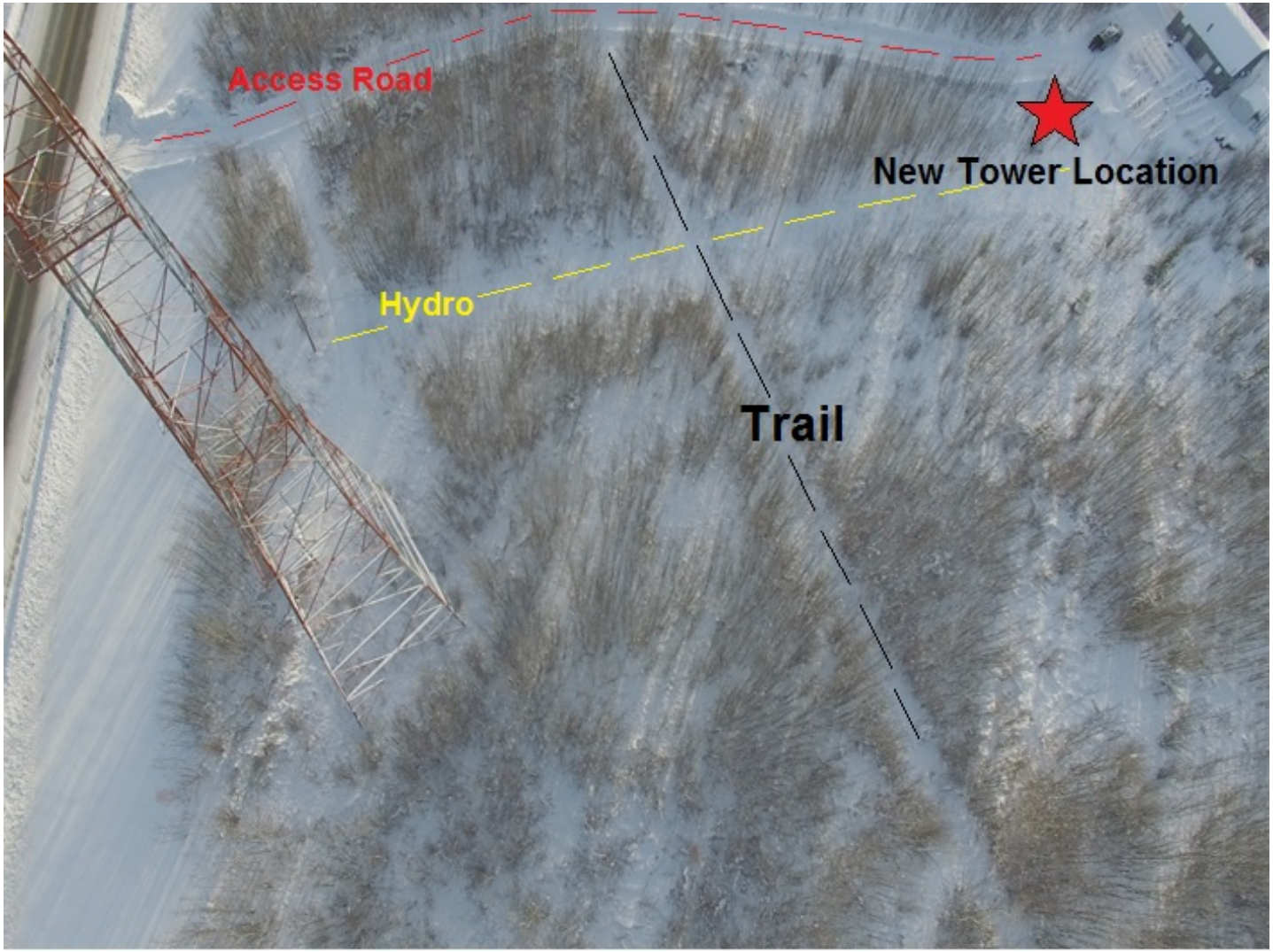


Tower Replacement
The Site



Tower Replacement

The Site



Tower Replacement

The Site

Tower Replacement
The Site

Site Comments:

- Prep work required (tree clearing, shelter base)
- Existing shelter will be re-used
- Note the Hydro Corridor and Road Access
- New tower located to the back of the property

Tower Replacement
The Two Options

RCMP will consider Two Options:

- Option A - Erect a tower that is already on Site
- Option B - Erect a new, contractor supplied tower
- Bidders to quote on both options
- RCMP will decide which option is suitable

Tower Replacement
The Two Options

Option A:

- Used Tower “A” was delivered to Site in 2006
- Engineering Documents were created
- Requires new guys and hardware
- Possible repairs identified

Tower Replacement
The Two Options

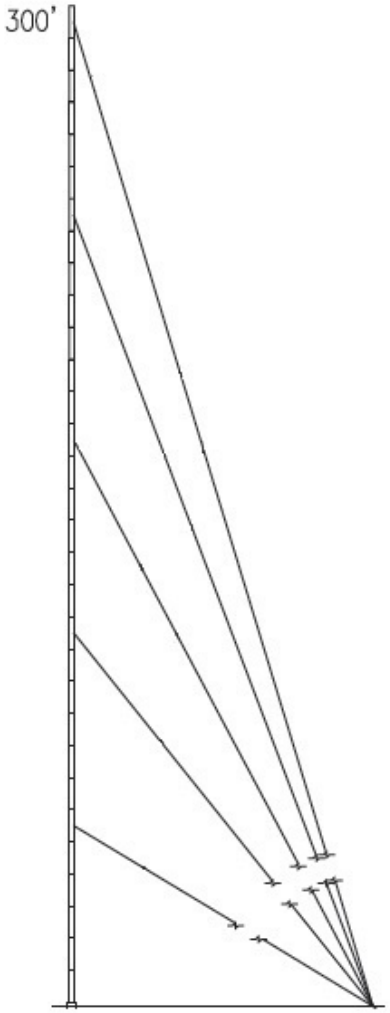
Tower Replacement
The Two Options

Tower Replacement

The Two Options

Option B:

- Contractor to Supply and Install an “all new” 300’ Guyed Tower
- Would require disposal of Option A Tower



Tower Replacement
The Two Options

Tower B:

- Design, supply and transport a new Tower to Site
- Would need to consider:
  - Time for Supplier to design and supply
  - Transport to site
  - Short construction season

Tower Replacement
The Build Challenges

Phase One - Pre-Installation:

- Old Tower remains Operational
- Complete enough work such that communication down time limited to 30 days
- Would include Site prep, Foundations, etc.
- Possible Hydro re-routing, pole installation

Tower Replacement
The Build Challenges

Phase Two – Removal and Erection:

- Remove old Tower
- 30 day countdown begins
- Relocate/Install Shelter
- Erect and Commission Replacement Tower

Tower Replacement

The Removal Challenges

Tower Replacement
The Removal Challenges

The Removal:

- Large 340’ Self-Support CN Bridge Tower
- Old shelter to be moved to new location
- Concerns - near Roadways and Hydro Lines
- Must identify removal method – Demolition/Crane?
- To include removal and disposal
- Levelled and restored to a suitable condition

Tower Replacement

The Shelter Move

Tower Replacement

The Shelter Move

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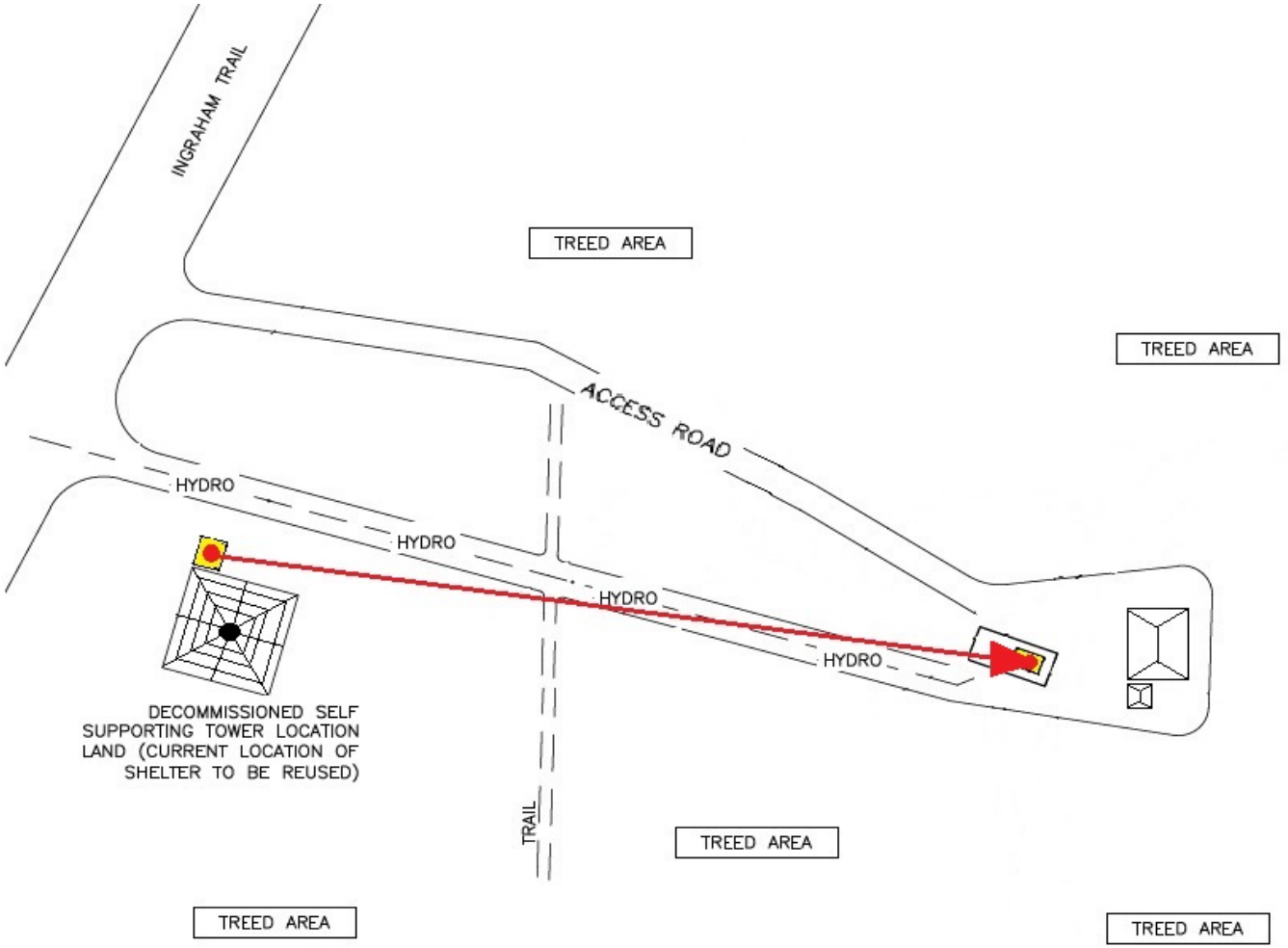
Tower Replacement

The Shelter Move

Tower Replacement
The Shelter Move



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Tower Replacement
The Shelter Move

Contractor's Shelter Tasks:

- Must remain in service until Phase Two
- Contractor then moves Shelter to the new location
- Create a Foundation:
  - Level, Crushed Stone
  - Supported on Pressure Treated Wood Base
- Hydro Disconnect/Reconnect
- New Hydro Pole needed?

Tower Replacement
Miscellaneous

Other Points to Note:

- Steel Fencing around Shelter and Guys Anchors
- Ground System
- Lightning Protection System
- Galvanic Protection System
- Obstruction Lighting c/w Monitoring Capability
- Waveguide Bridge
- Fall Prevention
- Coordination for Acceptance Inspections

Tower Replacement
Miscellaneous

More Points to Note:

- Project Schedule must be supplied asap
- Logistical Coordination with local RCMP
- Contract Coordination is with Ottawa RCMP
- TC and Nav Canada submissions are done
- Permits Required (Build, Demo, Hydro)?