



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



SPECIFICATIONS and DRAWINGS

File #FP802-160147

TOWER REPLACEMENTS

SIX (6) LOCATIONS

LAKE ERIE

MARITIME AND CIVIL INFRASTRUCTURE

Prepared by: DJ

Approved by: BY

Revision: 2

File: EWTM 8010-0591500,0595000, 0604000, 0609700, 0609800, 0621500

Rev Date: 21 NOV 16



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



TABLE OF CONTENTS

SECTION:	011100 GENERAL INSTRUCTIONS	1
SECTION:	013300 SUBMITTAL PROCEDURES	7
SECTION:	013530 HEALTH AND SAFETY REQUIREMENTS	8
SECTION:	013543 ENVIRONMENTAL PROCEDURES	9
SECTION:	014500 QUALITY CONTROL.....	12
SECTION:	016100 COMMON PRODUCT REQUIREMENTS	13
SECTION:	024116 DEMOLITION OF STRUCTURES.....	15
SECTION:	033000 CONCRETE WORK	18
SECTION:	031500 CONCRETE ACCESSORIES	22
SECTION:	133613 METAL TOWERS.....	24

APPENDICES

APPENDIX B1 – SITE LOCATION AND PHOTOGRAPHS

APPENDIX B2 – SUMMARY OF SUBMITTALS

APPENDIX B3 - CONTRACT DRAWINGS

APPENDIX B4 – MARINE ACCESS REQUIREMENTS



SECTION: 011100 GENERAL INSTRUCTIONS

PART 1 - GENERAL

1.1 Minimum Standards

- .1 Perform work in accordance with National Building Code of Canada (NBC) and any other code of provincial or local application. In the case of any conflict or discrepancy, the more stringent requirements shall apply.
- .1 Meet or exceed requirements of:
 - .1 Contract documents,
 - .2 Specified standards, codes and referenced documents.

1.2 Description of Work

- .1 Work under this Contract includes but is not limited to the provision of all labour, materials, and equipment required to:
 - .1 Fabricate and galvanize six (6), 4.9m steel aid to navigation ("ATON") towers ("towers");
 - .2 Fabricate six (6) aluminum cladding assemblies;
 - .1 Rolled and pre-coated (white) aluminum sheeting will be supplied by CCG
 - .3 Transport the towers and cladding assemblies to the project sites (six (6) sites total, reference Appendix B1 for locations)
 - .1 All sites are inaccessible by road. Transportation is expected to be completed by vessel and barge, possessing a mandatory certification and the work capacities to complete works contemplated herein.
 - .4 Salvage of existing ATON equipment (lanterns and batteries)
 - .5 Removal and disposal of the existing ATON towers;
 - .6 Installation of new anchorage assembly in existing foundations and/or installation of foundation improvements as specified; and,
 - .7 Installation of new towers; including cladding and all other necessary appurtenances.

1.3 Submittals

- .1 Mandatory submittals and schedule for submission are detailed below and in Appendix B2. The following identifies general requirements only. The relevant sections must be consulted for a complete listing of mandatory content.
- .2 Detailed Schedule:



- .1 Deadline: no later than ten (10) working days following award
- .2 Deliverables, Project construction schedule
 - .1 The project construction schedule must detail as a minimum: commencement, duration, and completion of the following tasks:
 - .1 Fabrication of the tower assemblies (towers and cladding);
 - .2 Removals and disposals,
 - .3 Foundation improvements;
 - .4 Tower erection.
 - .3 Project schedule is to be updated upon reasonable request of Coast Guard, Project Authority.
- .3 Construction Plan
 - .1 Deadline: no less than 10 working days prior to mobilization for field work phase.
 - .2 The Construction Plan shall be of sufficient detail to demonstrate that the Contractor has considered all the challenges of the project and is prepared to undertake the works in a competent and professional manner in accordance with all legislation.
 - .3 Document must include:
 - .1 Complete listing of Contractor's personnel, include:
 - .1 Core project members (project manager /site foreman) and all site crew, indicate each persons role and responsibilities while on-site.
 - .2 Complete listing of all Subcontractors including firms responsible for:
 - .1 Tower fabrication
 - .2 Cladding fabrication
 - .3 Coating
 - .3 Project specific safety program (Section 013530);
 - .4 Project environmental protection program (Section 013543);
 - .5 Detailed demolition plan (Section 024116);
 - .6 Concrete construction plan (Section 033000); and,
 - .7 Detailed erection plan (Section 133613).
- .4 Maintenance Package



- .1 Deadline: within 45 calendar days following final acceptance of the works by Coast Guard.
- .2 Document to include as-built drawings and site photographs.

1.4 Contractor Qualifications

- .1 The work shall be carried out under the supervision and responsibility of a sole specialized Contractor.
- .2 The Contractor is expected to possess prior experience in the installation of aid to navigation structures or other similar facilities.
- .3 The Contractor must designate the following key project members upon award. The project members shall have completed projects of similar scope and complexity to the work described herein.

- .1 Project Manager: The project manager shall have overall responsibility for the project completion and shall be the primary contact throughout the duration of the contract.
- .2 Tower Manufacturer: The Tower Manufacturer shall be responsible for the fabrication of the tower.

.1 Certification: provide CWB Certification.

.3 Cladding Manufacturer: The cladding manufacturer shall be responsible for the fabrication of the cladding assembly.

.4 Marine access provider: responsible for providing access to the site

.1 Certification: provide proof of vessel registration and photographs of proposed vessel (and barge).

.5 Requests to amend the project team, following contract award, must be forwarded in writing. Coast Guard reserves the right to reject any proposal to amend the project team.

1.5 Site Location

.1 The location of the sites is as follows:

.1	591.5	Rondeau Inner Harbour	42°15'40.44"N	81°54'25.77"W
.2	595.0	Wheatley Harbour Light	42° 3'39.89"N	82°27'46.97"W
.3	604.0	Scudder Wharf Light	41°48'51.09"N	82°39'35.16"W
.4	609.7	Sturgeon Creek Entrance	42° 0'32.71"N	82°34'28.77"W
.5	609.8	Sturgeon Creek	42° 0'33.00"N	82°34'30.52"W
.6	621.5	Colchester East	41°58'55.98"N	82°55'54.44"W



- .2 The sites are located roughly between the mouth of the Detroit River at the western limit and Rondeau Provincial Park to the east. The closest major settlement is the City of Leamington, Ontario.

1.6 Existing Conditions

- .1 Bidders must make their own estimate of the difficulties associated with all phases of the works.
- .2 The contractor must include in their costs all expenses related to the difficulties of working at the sites.
- .3 Photographs of the existing site are included in Appendix B1.

1.7 Contractor's Access to Site

- .1 Contractor is responsible for transportation of all labour, materials, and equipment to and from the sites, including any and all material furnished or itemized for salvage by Coast Guard.
- .2 Wheatley Harbour Light (LL 595) and Scudder Wharf locations (LL 604, via ferry) are accessible by public private roadways. The remainder of the sites are accessible by water only. The sites are located in Lake Ontario within approximately 50 km of the City of Leamington, Ontario.
- .3 The Contractor is responsible for sourcing appropriate marine access to support all construction work. Contractors are also responsible for ensuring that all the requirements of Appendix B4 – Marine Access Requirements are met.

- .1 Contractor shall provide proof of vessel registration in the 'proof of qualifications' submittal.
 - .1 Pictures shall be provided. Coast Guard reserves the right to require the contractor to provide a stability assessment of the vessel and/or barge by an accredited marine architect.

1.8 Coast Guard Access To Site

- .1 The Contractor must allow in their price for proper transportation to and from the site for use by Coast Guard Representative(s).
 - .1 Transportation shall be from nearest public access point to the site(s), excluding Scudder Wharf (pelee island) and Wheatley Harbour.
 - .2 Requirement is to be anticipated:
 - .1 At least once to all sites prior to commencement of field work to verify site conditions; and,
 - .2 At least once during to each site during field work phase.
 - .3 Transportation shall be arranged with 48 hours of receiving verbal notification from Coast Guard of its requirement to attend the site.



1.9 Completion, Scheduling and Planning of the Works

- .1 Work may commence as early as practical following Coast Guard's acceptance and approval of mandatory submissions.
- .2 Fabrication of the aids is to be completed no later than 31 MAR 2017.
- .3 Field work may commence at contractors convenience, following Coast Guard's acceptance of the fabricated works
- .4 Field work is to be completed during the navigation shoulder season unless otherwise approved. For clarity, it is desired that installation work not be undertaken during the period between 20 MAY 2017 to 04 SEP 2017 (peak recreational season).
- .5 Work is to be schedule during Monday – Friday unless otherwise approved in writing.
- .6 Work must be completed no later than Friday, 24 NOV 2017 unless otherwise negotiated and approved in writing.
- .7 Outages are to be minimized. Existing tower is to be demolished immediately prior to the installation of the new tower. Any other service outage must be approved by Coast Guard Representative who will coordinate notice to impacted mariners.

1.10 Coast Guard Staging Location

- .1 Items itemized as supplied by, or salvaged to Coast Guard shall be collected or delivered by the Contractor to the following staging location. The Contractor shall be responsible for all transportation costs between the project site and the identified staging area.
 - .1 Staging location: CCG Base – Amherstburg, 370 Dalhousie St, Amherstburg, ON N9V1X3.
 - .2 Contact information for local CCG representative will provided upon award to the successful contractor.
 - .3 Contractor must provide at least three (3) working days notice to arrange for pick-up/delivery
 - .1 Shipping/Receiving hours: Monday through Friday, 9:00AM to 3:00PM.
 - .2 Contractor must supply all necessary cribbing, blocking, and strapping.

1.11 Temporary Facilities

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Arrange, pay for, and maintain temporary electrical power supply as required for construction, and water supply as required, in accordance with governing regulations and ordinances.
- .3 Maintain emergency spills kit on-site at all times.



1.12 Fees, Permits, Certificates and Information

- .1 Contractor shall provide authorities having jurisdiction with all information requested.
- .1 Contractor shall provide copies to Coast Guard of any documentation submitted to other authorities related to the work described in this document.
- .2 Contractor shall pay fees and obtain certificates and permits required.
- .3 Contractor shall furnish certificates and permits when requested.

1.13 Reference Documents

- .1 The most recent publication or edition of any document referenced in this specification should be used unless the referencing clause states that this clause does not apply.

1.14 Required Submissions

- .1 A summary of the minimum mandatory submissions required can be found in Appendix B2. This summary is not an exhaustive list of all submissions required for the duration of the project. Additional submissions may be required after award.

PART 2 - PRODUCTS

- 2.1 Not Used

PART 3 - EXECUTION

- 3.1 Not Used



SECTION: 013300 SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 General

- .1 This section specifies general requirements and procedures for the Contractor's submissions of documents to Coast Guard for review.
- .2 Do not proceed with the work until submitted documents or samples have been reviewed by Coast Guard.
- .3 Where items or information is not produced in SI Metric units, converted values are acceptable.
- .4 Contractor's responsibility for errors and omissions in submission is not relieved by Coast Guard's review of the submitted documents.
- .5 Notify Coast Guard, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .6 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Coast Guard's review of submission, unless Coast Guard gives written acceptance of specific deviations.
- .7 Make any changes to submissions that Coast Guard may require consistent with Contract Documents and resubmit as directed by Coast Guard.
- .8 Provide Coast Guard with a written notice, when resubmitting any revisions other than those requested Coast Guard.

1.2 Submission Requirements

- .1 Coordinate each submission with requirements of work and Contract Documents. Individual submissions will not be reviewed until all related information is available.
- .2 Allow five (5) working days, or as stipulated in the specifications, for Coast Guard to review the submission.
- .3 The Contractor's Engineer shall stamp and sign any submissions requiring a Professional Engineer's seal certifying his approval of samples, verification of field measurements, and compliance with Contract Documents.



SECTION: 013530 HEALTH AND SAFETY REQUIREMENTS

PART 1 - GENERAL

1.1 Scope

- .1 The Contractor shall be responsible to develop, implement and enforce a safety program which addresses all elements of the work.

1.2 References

- .1 Work under this section shall be undertaken in strict conformance with all listed references, In the case of any conflict or discrepancy the more stringent requirements shall apply.
 - .1 Canada Labour Code Part II - January 2008
 - .2 NRC-CNRC National Building Code of Canada
 - .3 Ontario Occupational Health and Safety Act and Regulations, 2009.
 - .4 Any and all other Provincial/Territorial Regulations and Policies; Worker's Compensation Board Policies; Local municipal regulations; pertaining to safety of the Contractor's workers

1.3 Submittals

- .1 Project Specific Safety Program
 - .1 Deadline: with Construction Plan
 - .2 Deliverables: Safety Program Document, include:
 - .1 A listing of all activities specific to this phase of the project and their Health & Safety risks or hazards.
 - .2 Detailed descriptions of how the activities are to be carried out as well as methods for mitigating hazards and risks.
 - .3 A listing of personnel responsible for health and safety measures, and emergency procedures.
 - .4 Material Safety Data Sheets for hazardous products to be utilized in the execution of the works.



SECTION: 013543 ENVIRONMENTAL PROCEDURES

PART 1 - GENERAL

1.1 Scope of Work

- .1 The Contractor must implement and enforce the following procedures throughout the duration of the work to mitigate potential negative impacts on the surrounding environment.

1.2 References

- .1 Work under this section shall be undertaken in strict conformance with all listed references, In the case of any conflict or discrepancy the more stringent requirements shall apply.

- .1 Canadian Environmental Protection Act

1.3 Related Sections

- .1 Not used.

1.4 Submittals

- .1 Contractor shall submit an environmental protection plan

- .1 Deadline: With Construction Plan

- .2 Deliverables:

- .1 A written plan detailing procedures to be implemented to mitigate any negative impact on the environment. The plan must include as a minimum:

- .1 Equipment features (age, spill containment);
- .2 Staging, refueling, and cleaning areas;
- .3 Clean-up and/or containment procedures (including concrete/grout); and,
- .4 Waste disposal methods and sites.

PART 2 - PRODUCTS

2.1 General

- .1 Avoid use of hazardous products. Use environmentally friendly products where practical.



PART 3 - EXECUTION

3.1 Construction Area

- .1 Confine construction activities to as small an area as practical.
- .2 Establish material storage, cleaning, and refueling areas where impacts to the surrounding environment will be negligible or readily mitigated.

3.2 Stockpiling of materials

- .1 Materials must be stockpiled as far from the shoreline as practical. Tarps must be used to control dust and run-off.

3.3 Disposal of Wastes

- .1 Clean-up the site at the end of each working day.
- .2 All waste material to be disposed of in a legal manner at a site approved by local authorities. Transporter/hauler must be appropriately licensed.
 - .1 Recycle or reuse materials where possible.
- .3 Fires and burning of rubbish on site not permitted.
- .4 Do not bury rubbish and waste materials on site.

3.4 Clearing and Grubbing

- .1 Only clear vegetation that interferes with construction.

3.5 Drainage

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
 - .1 Suspend works during periods of heavy rainfall and add temporary covers to encourage run-off.
- .2 Control disposal or runoff of water containing suspended materials or other harmful substances by constructing appropriate control measures (sand bags/silt fence).
 - .1 Sediment control measures shall be inspected and improved/cleaned/replaced as necessary.

3.6 Pollution Control

- .1 Provide methods, means, and facilities to prevent the contamination of soil, water, and atmosphere from the discharge of pollutants produced by construction operations.



- .2 Vehicles, machinery, and equipment shall be in good repair, equipped with emission controls as applicable and operated within regulatory requirements.
- .3 Abide by local noise by-laws.
- .4 Avoid unnecessary idling of vehicles or heavy machinery.
- .5 Limit use of equipment around the shoreline where possible.
- .6 Implement and maintain dust and particulate control measures in accordance with provincial requirements.
- .1 All bulk material haul equipment shall be appropriately tarped. Watertight vehicles shall be used to haul wet materials.
- .7 Designate a cleaning area for tools to limit water use and runoff. Do not allow deleterious materials to enter waterways. Ensure emptied containers are sealed and stored safely for disposal.
- .8 The contractor shall take all necessary precautions to guard against the release of any noxious substance or pollutant to the environment. In the event of any spill the Contractor shall take immediate action to contain the release and mitigate any impact.
- .1 Materials and equipment to intercept, contain, and clean-up any spill or other release shall be maintained on site through out the construction period and must be readily accessible at all times.
- .9 Any uncontrolled release of a known contaminant (spills, fire/smoke) shall be reported to appropriate Provincial Authority and Coast Guard. Spills of deleterious substances to be immediately contained and cleaned up in accordance with provincial regulatory requirements.
- .1 Provincial Authority: Ontario Spills Action Centre 1-800-268-6060

3.7 Traffic

- .1 Minimize soil compaction by driving, parking vehicles, and walking, etc. on existing paved roadways/laneways. If soil is impacted by compaction, compensate by restoring areas with new soil, as required.
- .1 Avoid the use of heavy machinery in areas of sensitive slopes. Avoid using machinery on land during wet weather.



SECTION: 014500 QUALITY CONTROL

PART 1 - GENERAL

1.1 Inspection

- .1 Canadian Coast Guard or its representative shall have access to the work at all times. If parts of the work are prepared off-site or in a shop, access shall be given to such work throughout the duration of the project.
- .2 In the event constructions must be submitted to special testing, inspection or approvals prescribed by Canadian Coast Guard in these specifications or provided for in work-site regulations, the request for inspection must be made without unreasonable delay.

1.2 Procedures

- .1 Provide Canadian Coast Guard with advance notice whenever testing is required in accordance with these specifications, so that all parties involved can be present.
- .2 Submit samples and material required for testing as per specifications without unreasonable delay and in a predetermined order so as not to delay work in progress.
- .3 Provide necessary manpower and installations for obtaining and handling samples and material on site.

1.3 Rejected Work

- .1 Remove defective work, whether incorporated into the work or not, which has been rejected by Canadian Coast Guard as failing to comply with the contract documents. Replace or re-execute in accordance with the Contract Documents.

1.4 Tests and Mixture Formulas

- .1 Supply test reports and required mixture formulas.

1.5 Factory Tests

- .1 Submit test certificates as prescribed in the relevant section of the specifications.

1.6 Acceptance of Work

- .1 Canadian Coast Guard will make acceptance visits of work executed by the Contractor at critical milestones identified in the following sections.
- .2 The Contractor shall inform Canadian Coast Guard at least three (3) working days before these inspection visits.
- .3 All work shall be completed in compliance with the specifications before requesting the visit for inspection. If the work is not completed or deemed non-compliant, the Contractor shall be responsible for all costs incurred for subsequent inspections.



SECTION: 016100 COMMON PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 General

- .1 Secure Coast Guard approval of all products to be incorporated into the works. Work shall not commence until product data and/or samples have received Coast Guard approval.
- .2 Supply and/or fabricate material and equipment of prescribed quality, with performance conforming to established standards.
- .3 Use new material and equipment unless otherwise specified.
- .4 Ensure replacement parts may be readily procured.
- .5 Use products from one manufacturer for material and equipment of same type or classification, unless otherwise specified.

1.2 Manufacturer's Instructions

- .1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.
- .2 Notify Canadian Coast Guard in writing of any conflict between these specifications and manufacturer's instructions; Canadian Coast Guard will designate which document is to be followed.

1.3 Compliance

- .1 When material or equipment is specified by standard or performance specifications, upon request of Canadian Coast Guard, obtain an independent testing laboratory report from the manufacturer, stating that material or equipment meets or exceeds specified requirements.

1.4 Substitution

- .1 Where specific products have been specified, proposals for substitution may only be submitted after award of contract. Such requests must include statements of respective costs of items originally specified and the proposed substitution.
- .2 No substitutions will be permitted without prior written approval of Canadian Coast Guard. Substitutions will be considered by Canadian Coast Guard only when:
 - .1 Materials specified in Contract Documents, are not available; or,
 - .2 Delivery date of materials selected from those materials specified would unduly delay completion of contract; or,
 - .3 Alternative materials to those specified which are brought to the attention of and considered by Canadian Coast Guard as equivalent to the material specified will result in a credit to the Contract amount.



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



- .3 Should the proposed substitution be accepted either in whole or in part, the Contractor must assume full responsibility and costs when such substitution affects other work on the project including any and all design or drawing changes required as a result of substitution.

1.5 Submittals

- .1 Provide product specifications and/or samples upon request from Coast Guard.



SECTION: 024116 DEMOLITION OF STRUCTURES

PART 1 - GENERAL

1.1 Scope of Work

- .1 Work under this section consists of the provision of all labour, materials, and equipment necessary to complete the following activities:
 - .1 Salvage of the existing lantern system including all appurtenances (batteries and solar panels);
 - .2 Removal of the existing towers (six (6) total), complete with all appurtenances, including:
 - .1 Removal of concrete to exterior concrete pad elevation; and,
 - .2 Cutting all exposed anchor rods flush to concrete pad elevation.
 - .3 Disposal of all waste at a licensed waste disposal facility.
- .2 The following work is addressed separately
 - .1 Partial depth removal of surrounding concrete (Section 033000, Concrete Work)

1.2 References

- .1 Work under this section shall be undertaken in strict conformance with all listed references, In the case of any conflict or discrepancy the more stringent requirements shall apply.
 - .1 Canada Labour Code Part II - January 2008
 - .2 NRC-CNRC National Building Code of Canada 2005
 - .3 Ontario Occupational Health and Safety Act and Regulations, 2009.
 - .4 CSA S350-[M1980(R1998)], Code of Practice for Safety in Demolition of Structures.

1.3 Submittals

- .1 Demolition Plan:
 - .1 Deadline: with Construction Plan
 - .2 Deliverables:
 - .1 Written plans detailing:
 - .1 Method of demolition including all associated tasks and schedule;
 - .2 Procedures to be implemented to protect adjacent property, pedestrians, motorists, and surrounding environment;



- .3 The ultimate disposal location of all waste materials and debris.
 - .1 Include documentation detailing regulatory approval for waste disposal facility and transporter.
- .3 Work under this section shall not proceed until written approval of the demolition plan has been received from the Coast Guard.
- .2 Submit copies of certified receipts from the disposal sites for all material removed from the work site upon request.
- 1.4 Existing Conditions
 - .1 The existing towers have reached the end of their life expectancy. Contractor must insure the tower is dismantled and demolished in a safe manner.
 - .1 Photos of the existing towers are included in Appendix B1.

PART 2 - PRODUCTS

- 2.1 Not used.

PART 3 - EXECUTION

3.1 General

- .1 Outages are to be minimized. Overnight outages are prohibited. Demolition must be followed by installation. Each site shall be completed on a single day, during daylight hours, unless previously approved by Coast Guard in writing.
- .1 Demolition shall not be commenced unless time and conditions allow for the installation of the new tower on the same day.
- .2 Work under this section shall be continuous and proceed without interruption unless otherwise approved by Coast Guard.
- .3 It is preferred that existing towers are lifted onto the barge in one piece to minimize potential environmental impacts.

3.2 Protection

- .1 Prevent movement, settlement or damage of adjacent structures/vegetation.
- .2 Implement effective controls to prevent injury to workers, mariners, motorists, and pedestrians.

3.3 Preparation

- .1 Erect warning signs and barricades.
- .2 Ensure all environmental protection/mitigation measures are in place.



- .3 Ensure facilities have been de-energized.
- .4 Ensure all items identified for salvage have been removed and stored.

3.4 Demolition

- .1 Demolish existing steel structures (six, 6 total) in their entirety.
- .2 Cut existing anchors flush to top of existing concrete foundation.
- .3 Interior concrete inside of any existing aid must be removed to a level equal to the external concrete grade.
- .4 Ensure that demolition does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.
- .5 Ensure demolition is undertaken safely. If at any period during demolition the safety of the Contractor's staff cannot be maintained, take preventative measures, stop work and immediately notify Coast Guard.

3.5 Disposal

- .1 All material is to be disposed of off-site at a licensed disposal/recycling facility.



SECTION: 033000 CONCRETE WORK

PART 1 - GENERAL

1.1 Scope of Work

- .1 Work of this section includes the supply of all labour, material, and equipment, necessary to complete the installation of tower foundation improvements at the following locations:
 - .1 LL 595 Wheatley Harbour Light
- .2 Work includes any and all provisions necessary to ensure that the anticipated performance of the placed concrete will be obtained if work is undertaken in cold weather.
- .3 Work under this section excludes:
 - .1 Concrete accessories (adhesive anchors, see Section 031500, Concrete Accessories)
 - .2 Grouting (see, Section 133613, Metal Towers)

1.2 References

- .1 Work under this section shall be undertaken in strict conformance with all listed references, In the case of any conflict or discrepancy the more stringent requirements shall apply.
 - .1 Canada Labour Code Part II - January 2008
 - .2 NRC-CNRC National Building Code of Canada 2010
 - .3 Ontario Occupational Health and Safety Act and Regulations
 - .4 CAN/CSA-A23.1-04 Concrete Materials and Methods of Concrete Construction
 - .5 CAN/CSA A23.2-04 Methods of Test and Standard Practices for Concrete
 - .6 CAN/CSA-G30.18 Billet Steel Bars for Concrete Reinforcement
 - .7 CAN/CSA S269.3 Concrete Formwork
 - .8 ACI Specification 306 Cold Weather Concreting

1.3 Submittals

- .1 Submittals shall be forwarded to Coast Guard in accordance with the provisions of section 013530.
- .2 Concrete Mix Parameters:
 - .1 Deadline: with Construction Plan
 - .2 Deliverables:



- .1 Provide high level summary of mix properties and admixtures to demonstrate compliance with Coast Guard Criteria and completed foundation design.
- .2 Provide MSDS, (pre-mixed products only).
- .3 Concrete placement methods and curing procedures.
 - .1 Deadline: with Construction Plan (Section 011100)
 - .2 Deliverables:
 - .1 Detailed written description of concrete placement, including:
 - .1 Anticipated haul routes and distances;
 - .2 Shop drawings for formwork and falsework;
 - .3 Placement methods and procedures to control consolidation/segregation;
 - .4 Location of necessary cold joints;
 - .5 Finishing procedures;
 - .6 Curing methods and schedule;
 - .7 Strength requirements for structural stability (removal of forms);
 - .8 Clean-up procedures; and,
 - .9 Mitigation measures to account for hot or cold temperatures where reasonably anticipated during the construction period.
- .4 Quality Control Certification
 - .1 Deadline: no more than 45 days following completion of the works.
 - .2 Deliverables:
 - .1 In accordance with CAN CSA A23.1, provide documentation demonstrating that Coast Guard requirements as detailed in Contract Drawings have been met.

1.4 Quality Assurance

- .1 Coast Guards minimum inspection requirements are detailed below. The Contractor shall be responsible to notify Coast Guard of the date and time that the works may be inspected. Notice must be provided no less than three (3) working days in advance to permit scheduling of quality assurance testing. All deficiencies in the works identified at the time of inspection shall be remedied to the satisfaction of Coast Guard, by the Contractor at their expense. Work shall not progress until inspections have been completed and the Contractor has been provided with written notice to proceed with the works.
 - .1 Upon completion of formwork and placement of reinforcement.



- .2 During execution of concrete placement.

PART 2 - PRODUCTS

2.1 Formwork

- .1 Shall be in accordance with CAN CSA S269.3.

2.2 Concrete

- .1 Concrete shall possess the minimum characteristic detailed in the Contract Drawings.

2.3 Water

- .1 Water utilized for the production of concrete must be potable, unless otherwise approved in writing by Coast Guard.

2.4 Reinforcement

- .1 Reinforcing steel must be as mandated in CAN CSA A23.1.

PART 3 - EXECUTION

3.1 General

- .1 Concrete must be placed, finished, and cured in accordance with the Contractor's submitted construction plan.

3.2 Removals

- .1 Limits and depths of partial removal of existing concrete are as specified on contract drawings.
- .2 Edges of partial depth removal shall be saw cut. All cuts shall be straight and parallel.
- .3 Removal may be accomplished by scarifying, scabbing, chipping hammer, or bush hammering provide method employed results in a uniform surface profile texture of greater than 7 measured in accordance with the International Concrete Repair Institute 3102R13.
- .4 Removals are to be confined to the area delineated in the contract documents. Removal extending beyond the limits identified will be repaired

3.3 Preparation

- .1 Preparation shall not commence until bearing surfaces have been inspected by Coast Guard.
- .2 Remove all loose and deleterious material.
- .3 Construct forms as detailed in the submitted construction plan.
- .4 Place reinforcement in accordance with Contract Drawings.



- .5 Surfaces must be heated as necessary to account for climatic conditions at the time of the pour.

3.4 Placement

- .1 Concrete placement shall not commence until formwork and reinforcement have been inspected by Coast Guard.
- .2 Contractor shall place, finish and cure concrete as per CAN CSA A23.1 making all adjustment necessary to account for climatic conditions anticipated during the curing period.
- .3 Concrete shall be placed in one continuous pour.
 - .1 The development of cold joints must be previously approved in writing.
- .4 Finish exposed concrete surfaces to provide a lightly brushed non-skid surface.
- .5 Cut control joints where specified.
- .6 Contractor shall provide samples as required during placement operation for the performance of quality assurance testing.

3.5 Curing

- .1 Concrete curing must be undertaken in accordance with CAN CSA A23.1 and the Contractor's approved Construction Plan.
 - .1 Curing regiment employed must take into account local climatic conditions reasonably anticipated to occur during the curing period.
 - .1 Heating and hoarding of the work must be anticipated.



SECTION: 031500 CONCRETE ACCESSORIES

PART 1 - GENERAL

1.1 Scope of Work

- .1 Work under this section consists of the provision of all labour, material, and equipment necessary to complete the following activities:

- .1 Installation of adhesive anchor rods in existing concrete foundations.

1.2 References

- .1 Work under this section shall be undertaken in strict conformance with all listed references, In the case of any conflict or discrepancy the more stringent requirements shall apply.

- .1 Canada Labour Code Part II - January 2008.
- .2 NRC-CNRC National Building Code of Canada 2005.

1.3 Submittals

- .1 Contractor to provide installation plan.

- .1 Deadline: With Construction Plan

- .2 Deliverables:

- .1 Product specifications with recommended design values and physical characteristics for epoxy dowels.
- .2 Manufacturer's published installation instructions.

PART 2 - PRODUCTS

2.1 Materials

- .1 Anchors and Fasteners

- .1 Cartridge Injection Adhesive Anchors

- .1 As indicated on contract drawings.

- .2 Rods: stainless steel (SS) type 316, Hilti HAS or equal, provided with stainless steel nuts and washers of matching alloy group and minimum proof stress equal to or greater than the specified minimum full-size tensile strength of the externally threaded rod. Nuts shall conform to ASTM F594.

- .3 Adhesive: Hilti-HY 200 Safe Set or equal.



PART 3 - EXECUTION

3.1 Installation

- .1 Drill holes with rotary impact hammer drill. Drill bits must be of diameter specified by the anchor manufacturer. All holes must be drilled perpendicular to the concrete surface.
- .1 Identify the position of reinforcing steel and other embedded items prior to drilling holes for anchors. Notify Coast Guard if reinforcing steel is encountered during drilling.
- .2 Ensure minimum anchor embedment is as shown in the contract drawings.
- .2 Perform installation in accordance with manufacturer's instructions.
 - .1 Clean all holes per manufacturer instructions to remove all loose material and drill dust prior to installation.
 - .2 Inject adhesive into the holes proceeding from the bottom of the hole and progressing toward the surface in a manner as to avoid the introduction of air pockets.
 - .3 Inject sufficient adhesive to ensure that the annular gap is filled to the surface. Remove all excess adhesive.
 - .4 Do not disturb or load anchors before the manufacturer specified cure time has elapsed.
 - .5 Observe manufacturer recommendation with respect to installation temperatures for cartridge injection adhesive.



SECTION: 133613 METAL TOWERS

PART 1 - GENERAL

1.1 Scope of Work

- .1 Work under this section includes the supply of all labour, material, and equipment required to complete:
 - .1 The fabrication of the following in accordance with the appended drawings:
 - .1 Six (6) 4.9m (16 ft) aid to navigation towers
 - .2 Six (6) aluminum cladding assemblies
 - .2 The installation of a single tower and cladding assembly at each location (estimated weight 390 kg (850 lbs)) , including:
 - .1 The installation of the self-contained lantern at each location; and,
 - .2 The installation of grout between the tower base plates and the existing foundations.

1.2 References

- .1 Work under this section shall be undertaken in strict conformance with all listed references. In the case of any conflict or discrepancy the more stringent requirements shall apply.
 - .1 Canada Labour Code Part II
 - .2 NRC-CNRC National Building Code of Canada
 - .3 CSA S37-01 - Antenna Towers and Antenna Supporting Structures
 - .4 CAN/CSA S16.1 - Limit States Design of Steel Structures
 - .5 CAN/CSA W47.1 – Certification of Companies for Fusion Welding of Steel Structures

1.3 Submittals

- .1 Make submittals in accordance with Section 013300 - Submittal Procedures.
- .2 Contract Submittals
 - .1 Fabrication package
 - .1 Deadline: at least 10 days prior to galvanizing.
 - .2 Deliverables:
 - .1 Material mill sheets



.2 Erection package

.1 Deadline: with Construction Plan.

.2 Deliverables:

.1 Written plan: detail proposed labour, equipment, and timings.

.1 Plan must clearly demonstrate procedures and methods to be employed to:

.1 Erect the tower;

.2 Measures taken to protect surrounding property and pedestrians; and,

.3 Field remedies to address any damage to the coating system incurred during transportation and erection.

.2 Coast Guard reserves the right to request additional documentation verifying the suitability of the proposed labour and equipment anticipated to be employed in the erection of the tower. Certification required may include; but is not limited to:

.1 Crane/helicopter lift capacity; and/or,

.2 Vessel stability.

.3 Maintenance package

.1 Deadline: within 45 calendar days following final acceptance of the works by Coast Guard.

.2 Deliverables: A complete maintenance manual for the complete tower. The manual shall include as a minimum:

.1 As-built drawings detailing any and all amendments or revisions to the previously submitted design drawings or documentation indicating final works are as detailed in design drawings.

.2 Site photographs

.3 Provide (1) electronic copy (.pdf) format.

1.4 Quality Assurance

.1 Coast Guards minimum inspection requirements are detailed below. The Contractor shall be responsible to notify Coast Guard of the date and time that the works may be inspected. Notice must be provided no less than three (3) working days in advance to permit scheduling of quality assurance testing. All deficiencies in the works identified at the time of inspection shall be remedied to the satisfaction of Coast Guard, by the Contractor at their expense. Work shall not progress until inspections have been completed and the Contractor has been provided with written notice to proceed with the works.



- .1 Fabrication:
 - .1 Towers, upon completion and prior to galvanizing; and,
 - .2 Cladding, upon completion.
- .2 Installation:
 - .1 Upon completion of the work at each site.

PART 2 - PRODUCTS

2.1 Materials

- .1 Steel
 - .1 As specified in the contract drawings.
- .2 Aluminum
 - .1 As specified in the contract drawings.
- .3 Sheathing
 - .1 Aluminum, 16 gauge (1.6mm) thickness, rolled to diameter specified in drawings, coated white)
 - .1 Rolled sheathing will be supplied by CCG. Contractor will be required to apply coating system.
 - .2 Colour Coating (top band sheathing assembly)
 - .1 As specified according to site.
 - .1 Red, VALSPAR, Red Australia Post Box, base coat #S0745
 - .2 Green, VALSPAR Bold Green, base coat #S2525
 - .1 Alternate vendor approved
 - .2 Finish/Clear coat (top band).
 - .1 Valspar legacy clear 2.1 Voc polyurethane part# IC210
- .4 Bolts, Nuts, Washers
 - .1 As specified in contract drawings.
- .5 Miscellaneous Materials
 - .1 Fall Restraint System.



- .1 DBI SALA LAD-SAF flexible cable system.
- .2 Tower Nameplate
 - .1 Supply and install an identification plate for the new tower displaying the following information:
 - .2 Fabricator's name, their project name (and number);
 - .3 Wind and ice loads; and,
 - .4 Year of fabrication/installation.
 - .3 Base grout:
 - .1 Non shrink, gassing, cementitious grout.
 - .1 Sika M-Bed Standard, or equal.

PART 3 - EXECUTION

3.1 Fabrication

- .1 All members shall be fabricated in accordance with the Contract Drawings and as per the specified references.
- .2 Each tower component shall be designated with a number that is easily read after the final coating has been applied. Markings shall be permanent and applied in such a manner, or in such a place, as will not injure or reduce the strength of the piece.
 - .1 The marks on like pieces shall be in the same relative position on each piece.
 - .2 The markings indicated on each piece shall correspond with that shown on the Contract Drawings.
 - .3 Like parts must be interchangeable and must bear the same identification number.
- .3 In any bending or reworking of any material, methods employed shall ensure that the physical properties of the material are not impaired.

3.2 Coatings

- .1 The coating system is to be applied by SSPC certified facility in climate controlled facilities using a spray method of application.
 - .1 Sand and spot prime as necessary.
 - .2 Colour: 2 coats minimum. 2-3 mils/coat.
 - .3 Clear Coat : 2 coats minimum 2-3 mils/coat.



3.3 Handling of Material and Transportation

- .1 The Contractor shall take all necessary precautions to avoid damage to the tower members or to tower coating during transport, unloading and erection. All components or damaged members shall be replaced to the satisfaction of Coast Guard at the expense of the Contractor.
- .2 It is the responsibility of the Contractor to ensure that the towers are protected from bending and alignment damage.

3.4 Site preparation

- .1 Complete installation of all foundation elements prior to tower erection.
- .2 Adjust supporting/leveling nuts to uniform elevation.

3.5 Erection

- .1 Ensure that each tower is plumb and level
- .2 Tighten the first nut using turn of nut method associated to the length of bolt provided. The second nuts shall be snug tight.
- .3 Install grout as indicated in the attached drawings.
- .4 Affix tower name plate.



Fisheries and Oceans
Canada

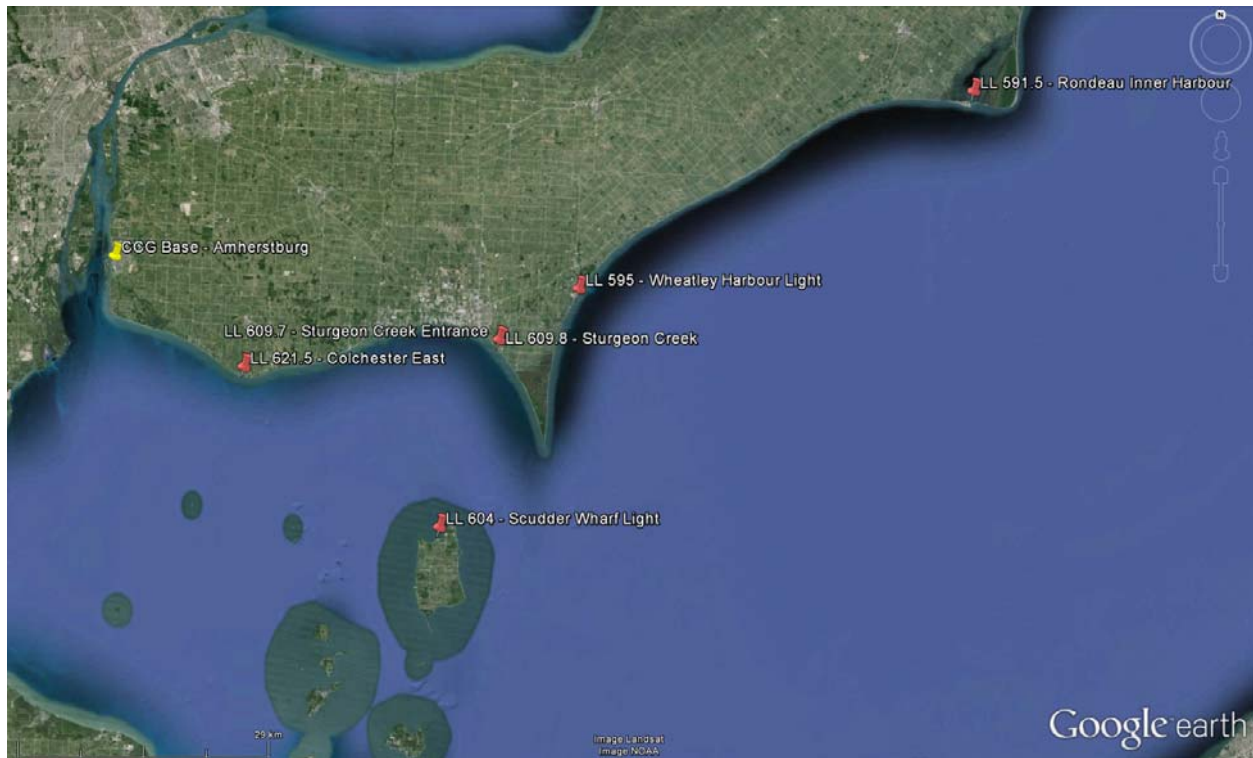
Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



APPENDIX B1: SITE LOCATION AND PHOTOGRAPHS



Project Sites	Latitude	Longitude
1. LL 591.5 - Rondeau Inner Harbour	42°15'40.44"N	81°54'25.77"W
2. LL 595 - Wheatley Harbour Light	42° 3'39.89"N	82°27'46.97"W
3. LL 604 - Scudder Wharf Light	41°48'51.09"N	82°39'35.16"W
4. LL 609.7 - Sturgeon Creek Entrance	42° 0'32.71"N	82°34'28.77"W
5. LL 609.8 - Sturgeon Creek	42° 0'33.00"N	82°34'30.52"W
6. LL 621.5 - Colchester East	41°58'55.98"N	82°55'54.44"W
Designated Staging Location	Contract	Contact details
CCG Base – Amherstburg, 370 Dalhousie St Amherstburg, ON N9V 1X3	Wendy Bonvie (Foreman)	Wendy.Bonvie@dfo-mpo.gc.ca (519) 736-5449 x201

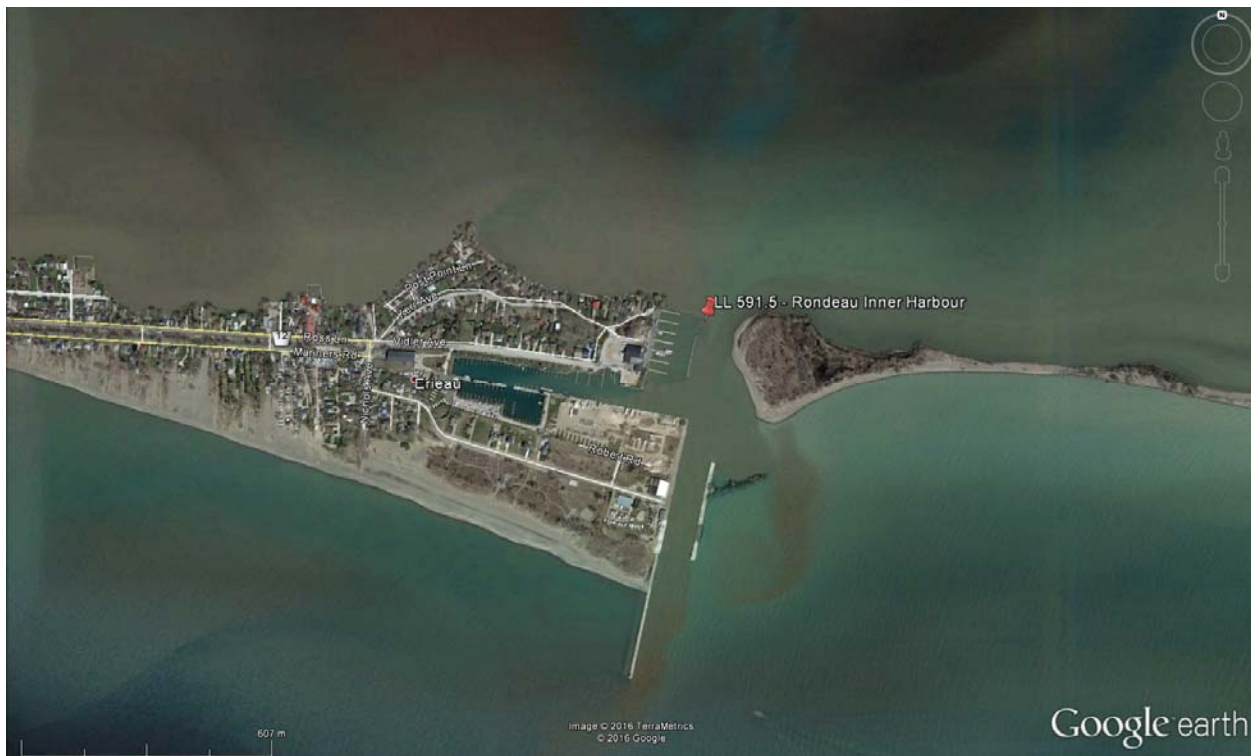
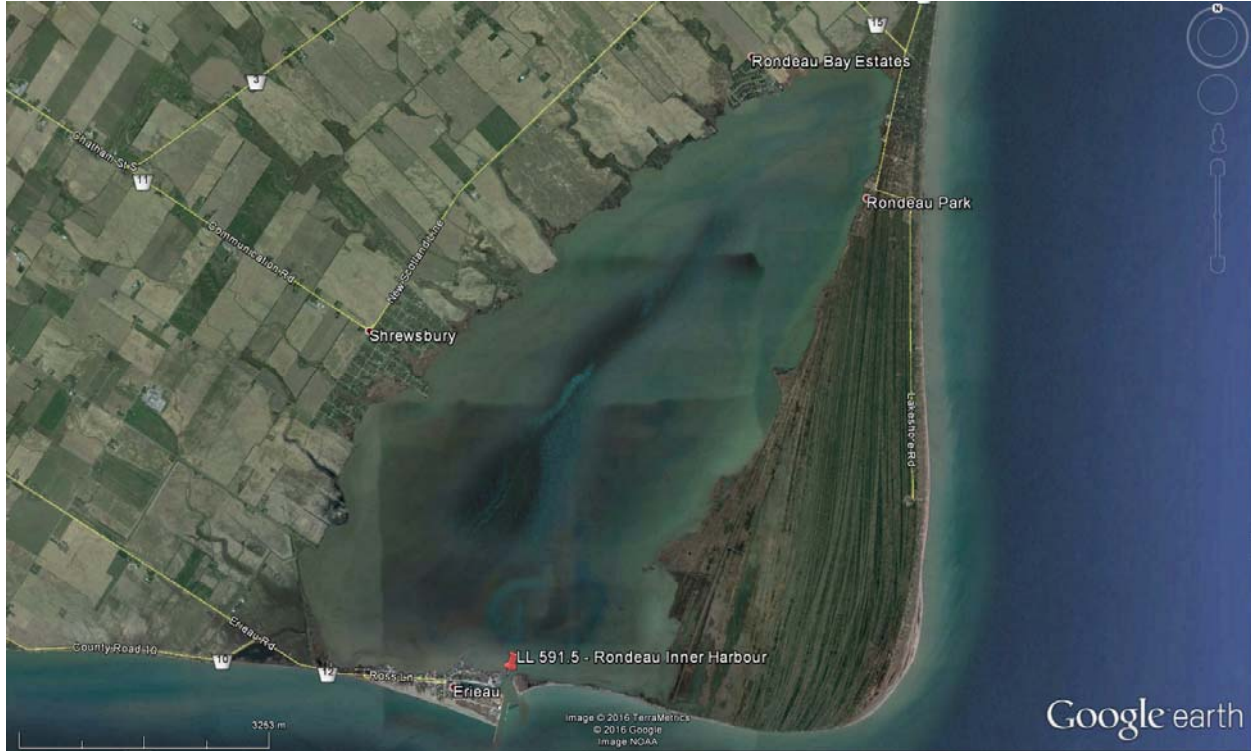


Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



LL 591.5 Rondeau Inner Harbour



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



LL 591.5 Rondeau Inner
Harbour

Site is inaccessible
Breakwall connecting the
site is approximately
600mm wide

Site location
Breakwall to right



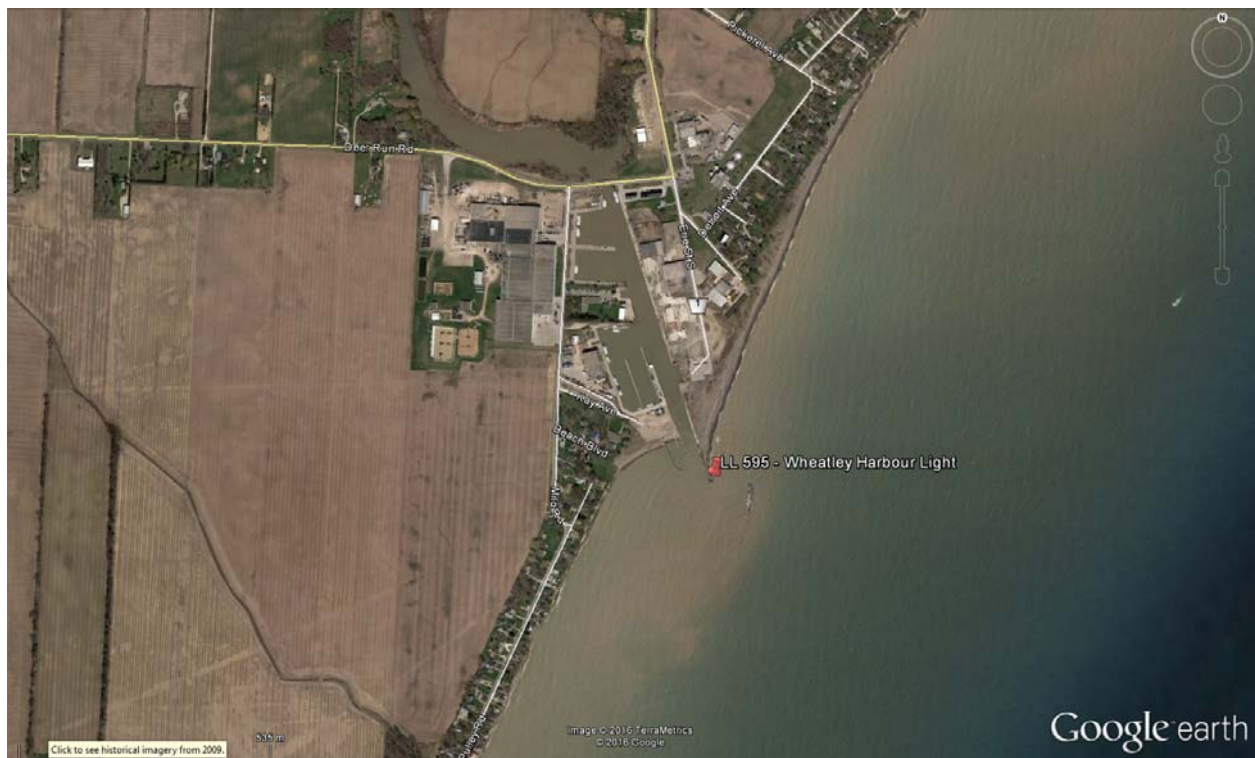
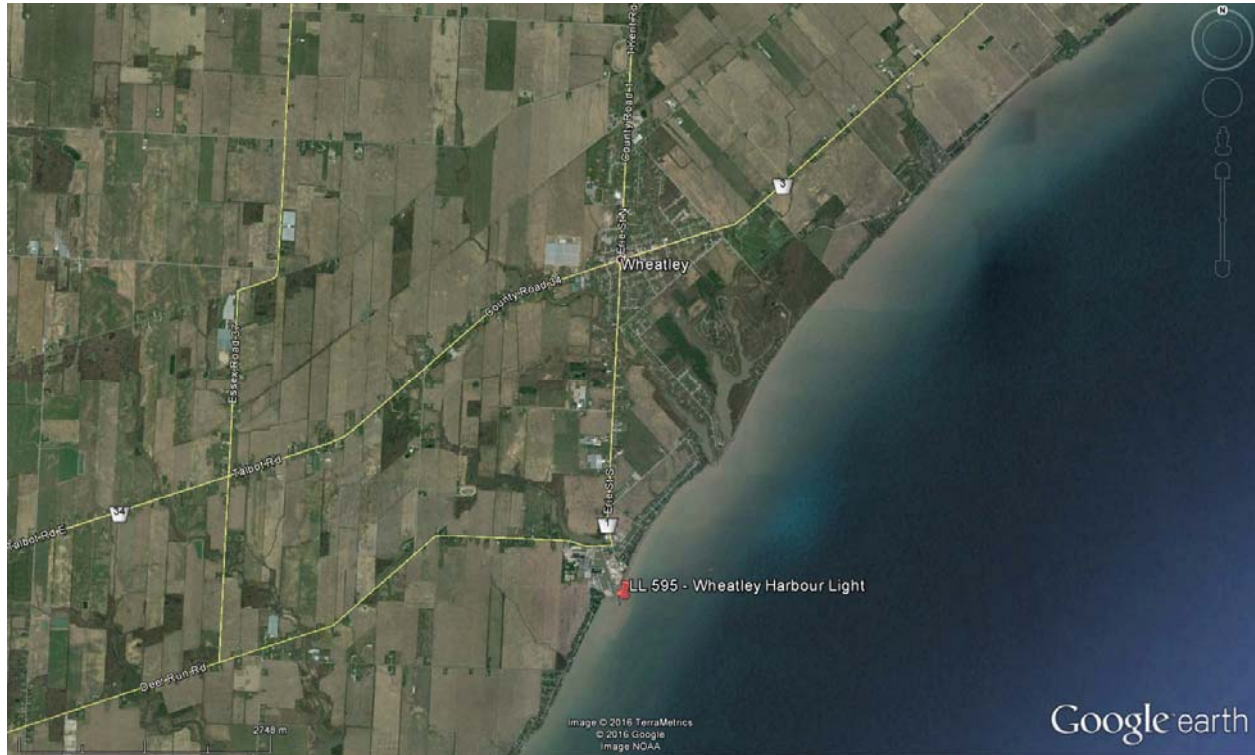


Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



LL 595 Wheatley Harbour Light



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



LL 595 Wheatley Harbour Light

Left, existing tower. Vehicle access is restricted by armour stone at the north end of the wharf.

Below, interior of the mast is filled with concrete to elevation of access hatch.



Below: existing hydro disconnected



Left: Existing concrete foundation is to be removed and replaced.

Partial depth removal of concrete will be required on the pier deck at the interface of the existing tower foundation, see Contract Drawings.

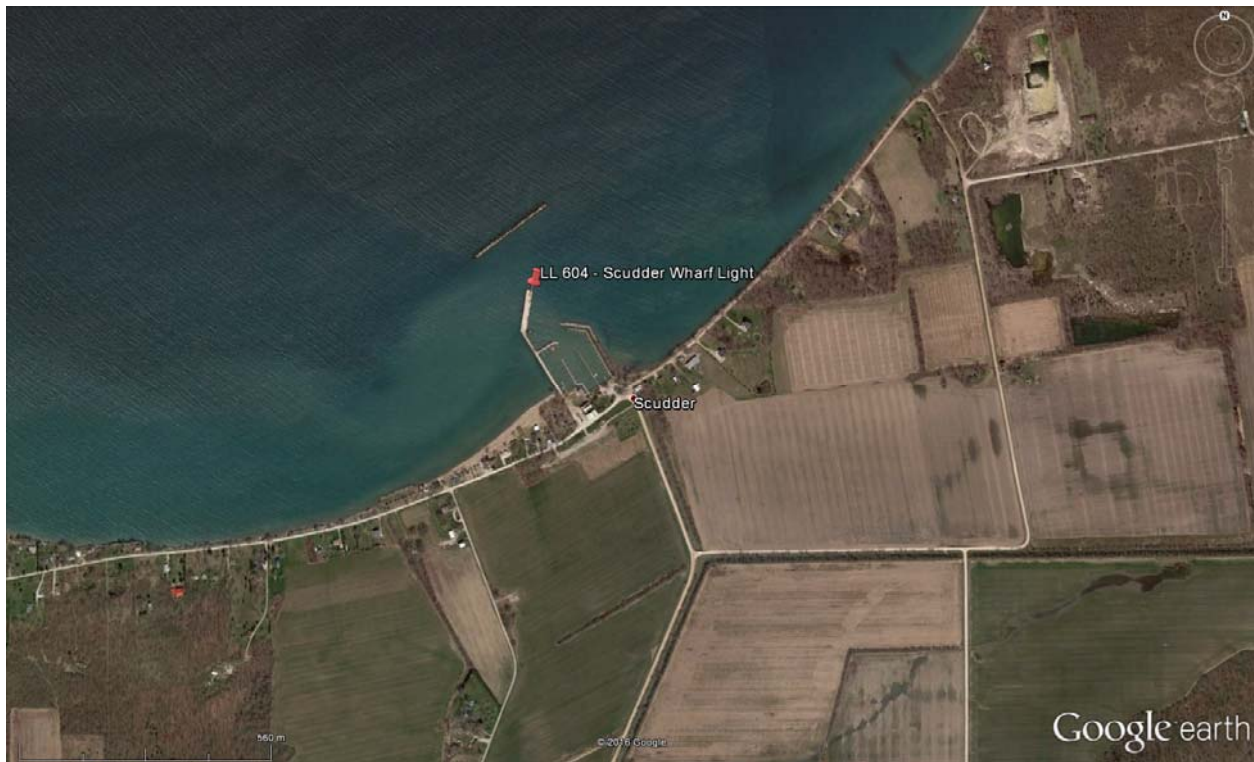
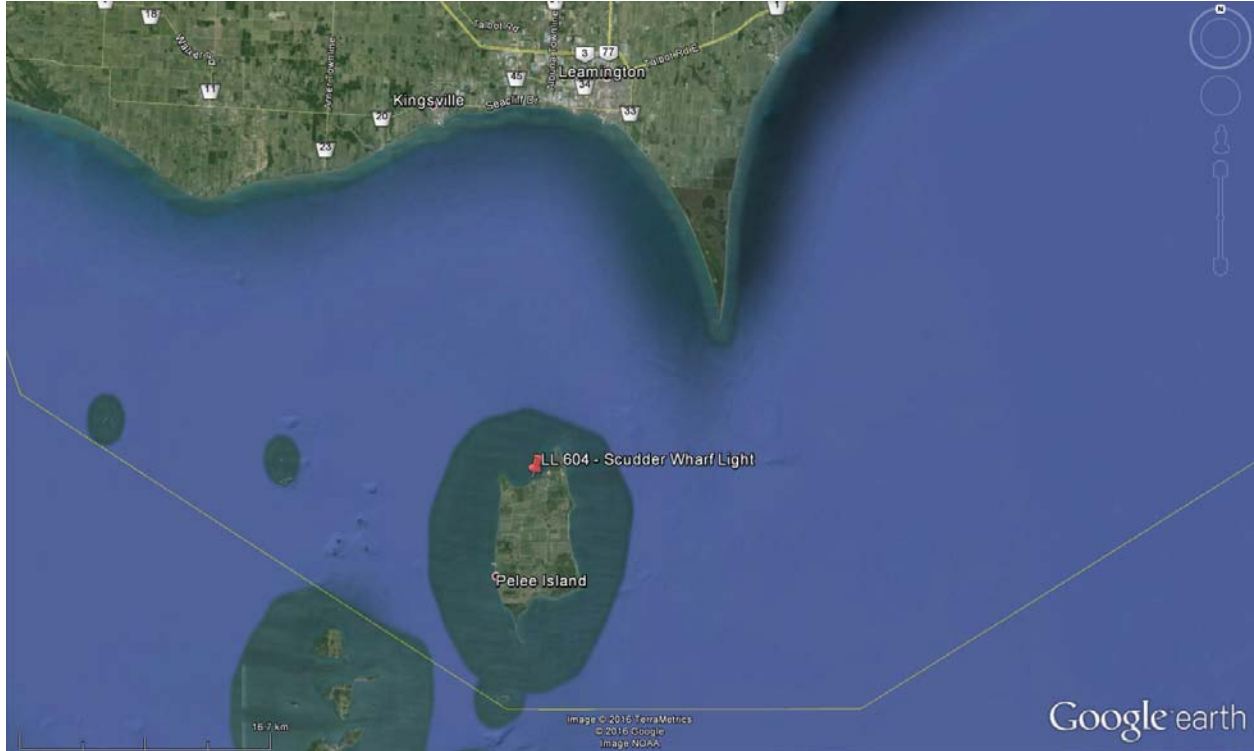


Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



LL 604 Scudder Wharf Light

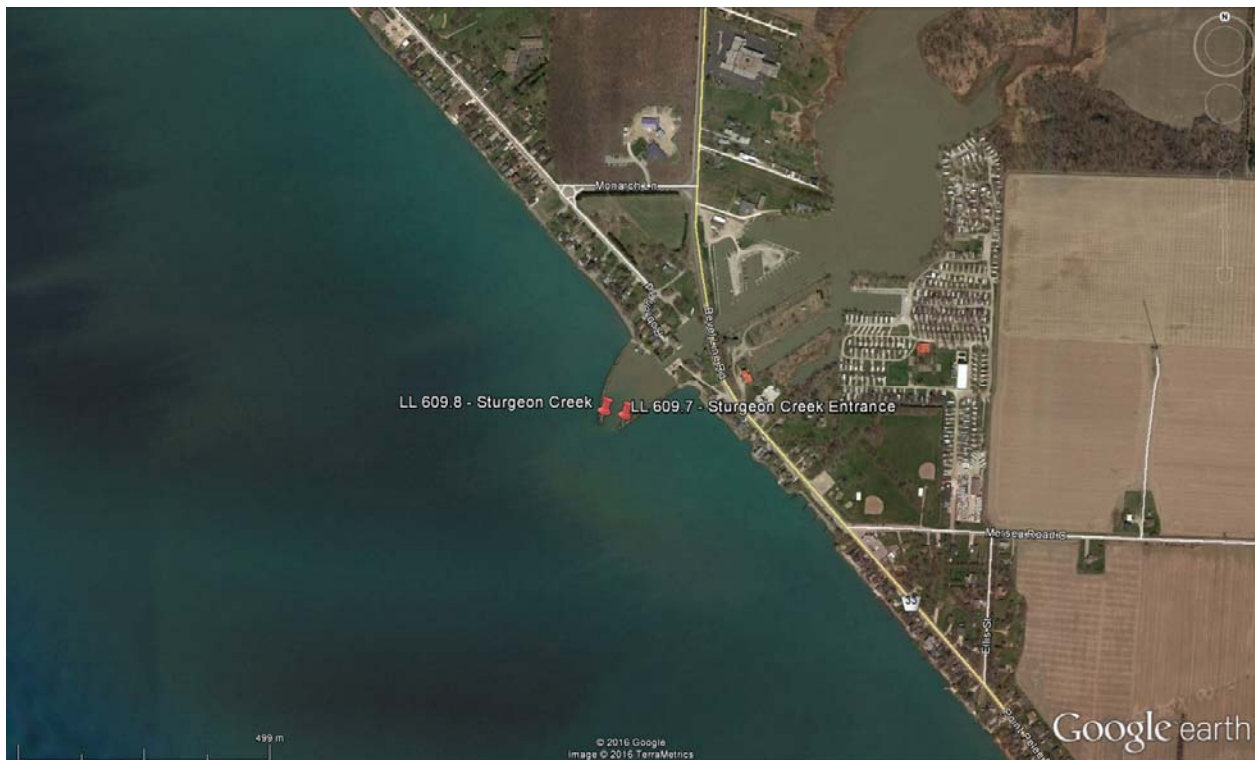
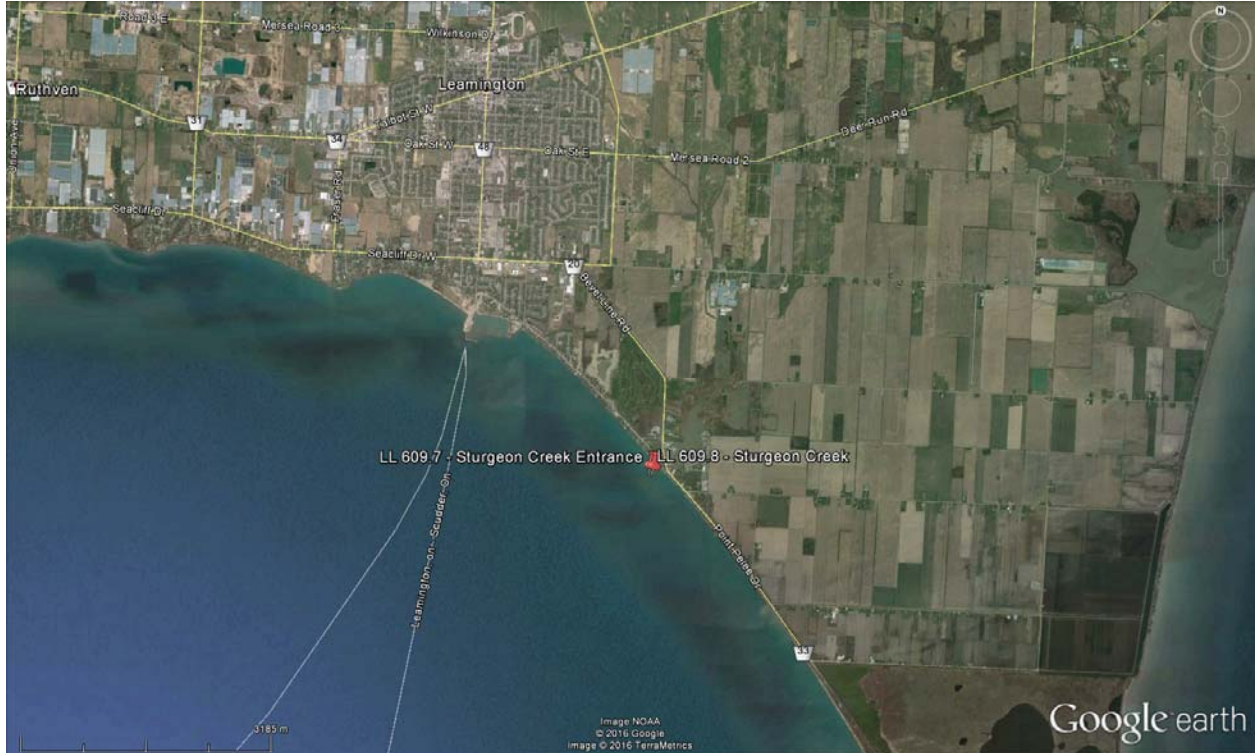


Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



LL 609.7 & 609.8 Sturgeon Creek (Entrance)



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne

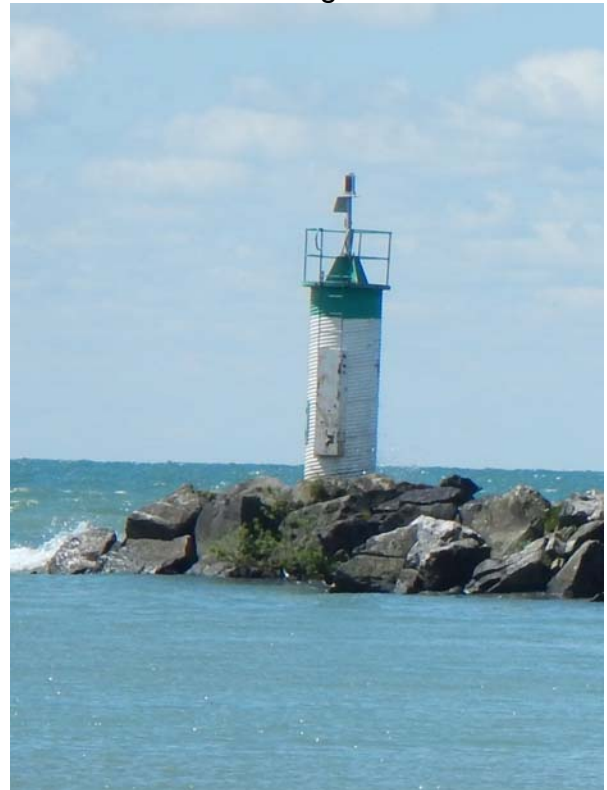


Sturgeon Creek

LL 609.7 Sturgeon Creek Entrance



LL 609.8 Sturgeon Creek



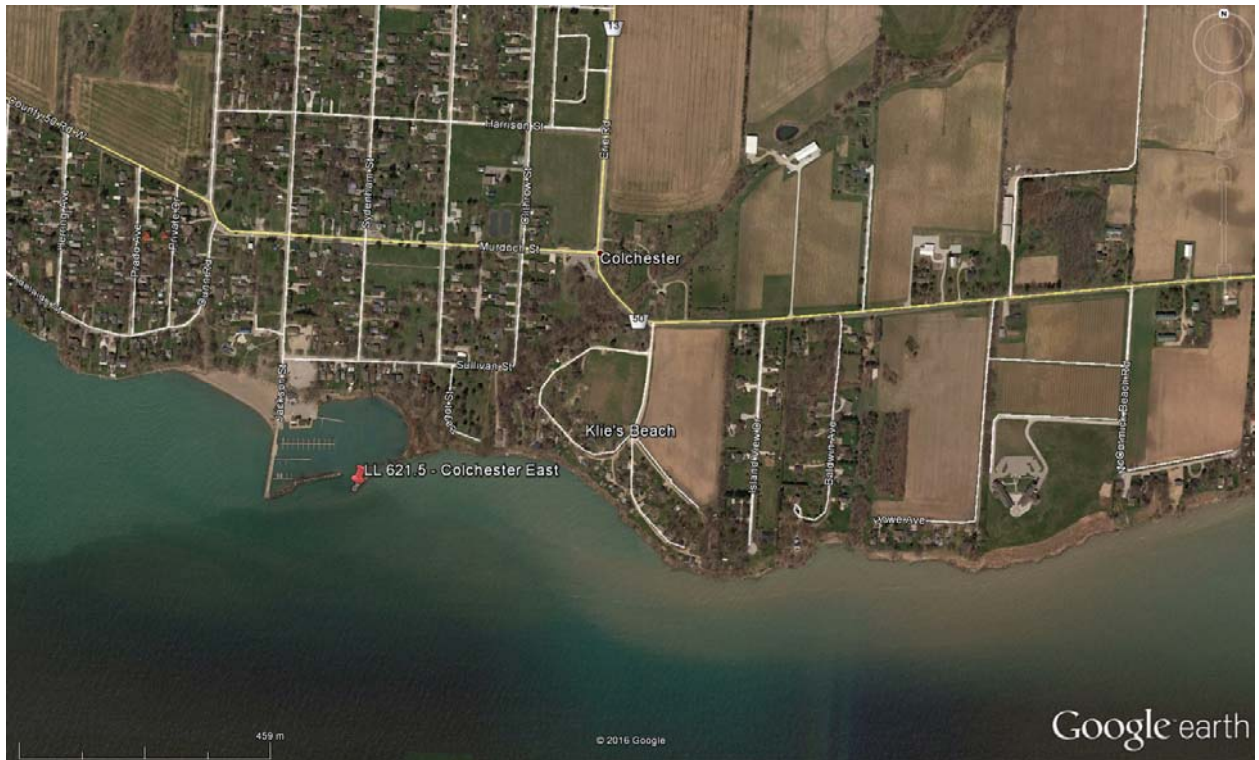
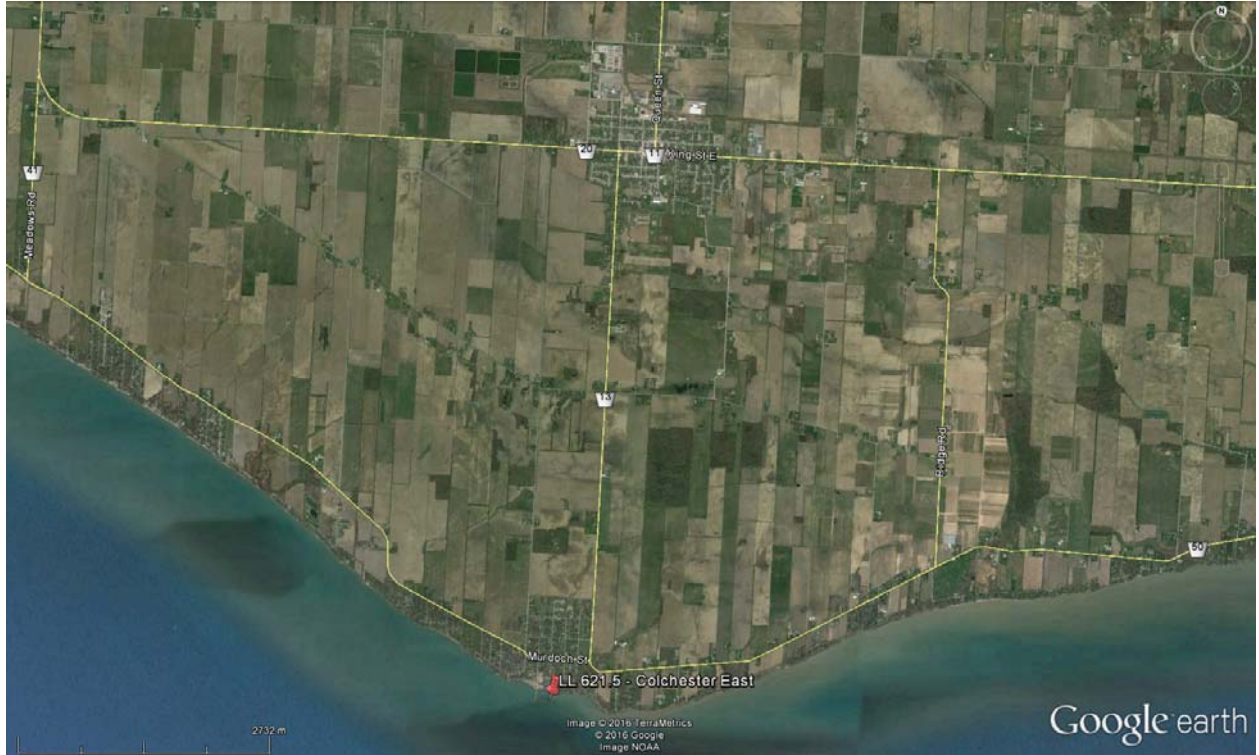


Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



LL 621.5 Colchester East



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



LL 621.5 Colchester East

Left existing tower



Right: access





APPENDIX B2 – SUMMARY OF SUBMITTALS

Following Contract Award	
Submission Description	Section(s)
Deadline: 10 working days following award	
Detailed schedule:	011100 – 1.3
Deadline: 10 working days prior to mobilization	
Proof of registration with Ontario WSIB	
Construction Plan – Final Submission	
a) Complete listing of personnel	011100
b) Complete listing of subcontractors	011100
c) Final project specific safety plan	013530
d) Project environmental protection program	013543
e) Detailed demolition plan	024116
f) Concrete construction plan (include Concrete Mix Parameters)	033000
g) Tower erection plan	133613
Deadline: 45 calendar days following acceptance of the works	
Waste disposal receipts (if requested)	024116
Concrete quality control documentation (if requested)	033000
Tower maintenance package	133613



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



APPENDIX B3 – DRAWINGS



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

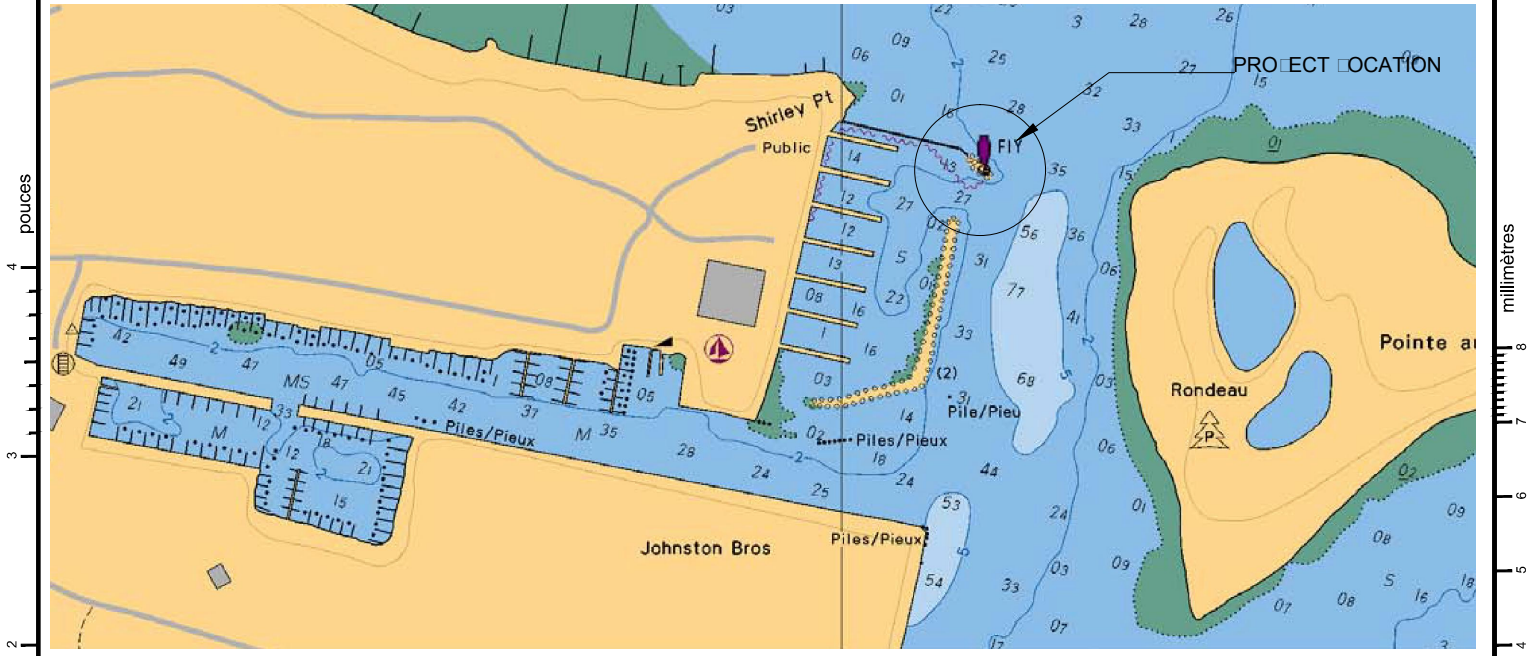
Garde côtière
canadienne



APPENDIX B3 – DRAWINGS

PROPOSED WORKS

CART 2181 ERIE ENTRANCE TO RONDEAU BAY



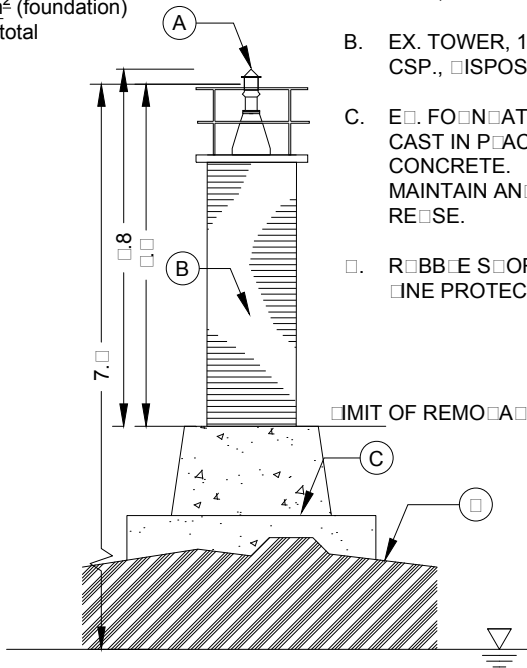
4
3
2
1
0
inches

8
7
6
5
4
3
2
1
0
millimètres

EXISTING AIS

- EXISTING AIS
- ANCHOR
- 2.0 m²
- 2.0 m² (foundation)
- 7.7 m² total

- A. EX. NAVIGATION
- EX. P., SAILBOAT
- B. EX. TOWER, 1.2Ø
- CSP., DISPOSE
- C. EX. FOUNDATION
- CAST IN PLACE
- CONCRETE.
- MAINTAIN AND
- REUSE.
- D. RUBBER SHORE
- LINE PROTECTION

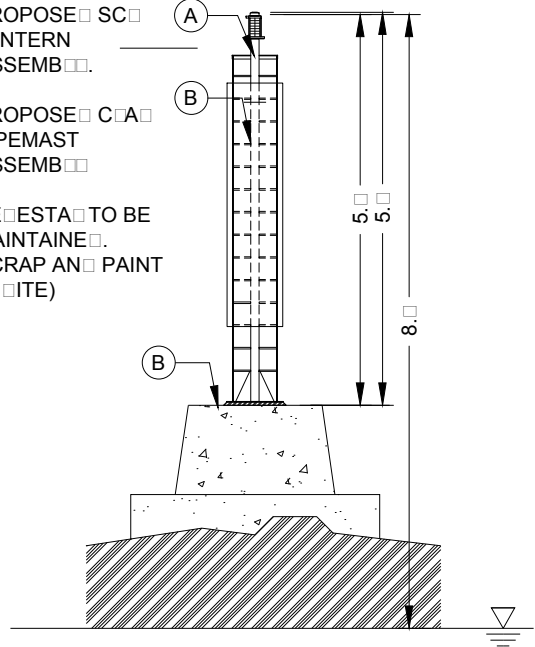


CART ATOM

PROPOSED AIS

- ANCHOR 2.5 m²
- Painted foundation to remain.
- 2.0 m² total

- A. PROPOSED SCANTERN
- ANTERN
- ASSEMBLY.
- B. PROPOSED CHAIR
- PIPEMAST
- ASSEMBLY
- C. PIPESTACK TO BE
- MAINTAINED.
- SCRAP AND PAINT
- (WHITE)



3
2
1
0
millimeters

NOTES

1. TOWER SELECTION IN ACCORDANCE WITH CENTRAL AND ARCTIC FIELD AIS REPLACEMENT DECISION TREE.
2. CHANGE IN CONFIGURATION PRIOR TO REINSTALLATION OF IT LOCAL OFFICER.

<p>Fisheries and Oceans Canada Pêches et Océans Canada Canadian Coast Guard Garde côtière Canadienne</p>	<p>Asset / Actif</p> <p>51.5 RONDEAU INNER HARBOUR SHORE LOT</p> <p>Drawing / Dessin</p>	<p>drawn - dessiné</p> <p>J. JBB</p>	<p>date</p> <p>1 MAY 2011</p>		
		<p>approved - approuvé</p> <p>APPROVED</p>	<p>date</p> <p>APPROVED DATE</p>		
<p>CCG ref. no. - no. réf. GCC</p> <p>ETM 8010.05/15000</p>	<p>scale - échelle</p> <p>NTS</p>	<p>PROPOSED REPLACEMENT</p>	<p>drawing no. / no. dessin</p> <p>TB</p>	<p>sheet / feuille</p> <p>01:01</p>	<p>rev</p> <p>A</p>

8 1/2" X 11" ABIR PIPEMAST SITES 1:17.000 1 MAY 11 11:18:17 PM

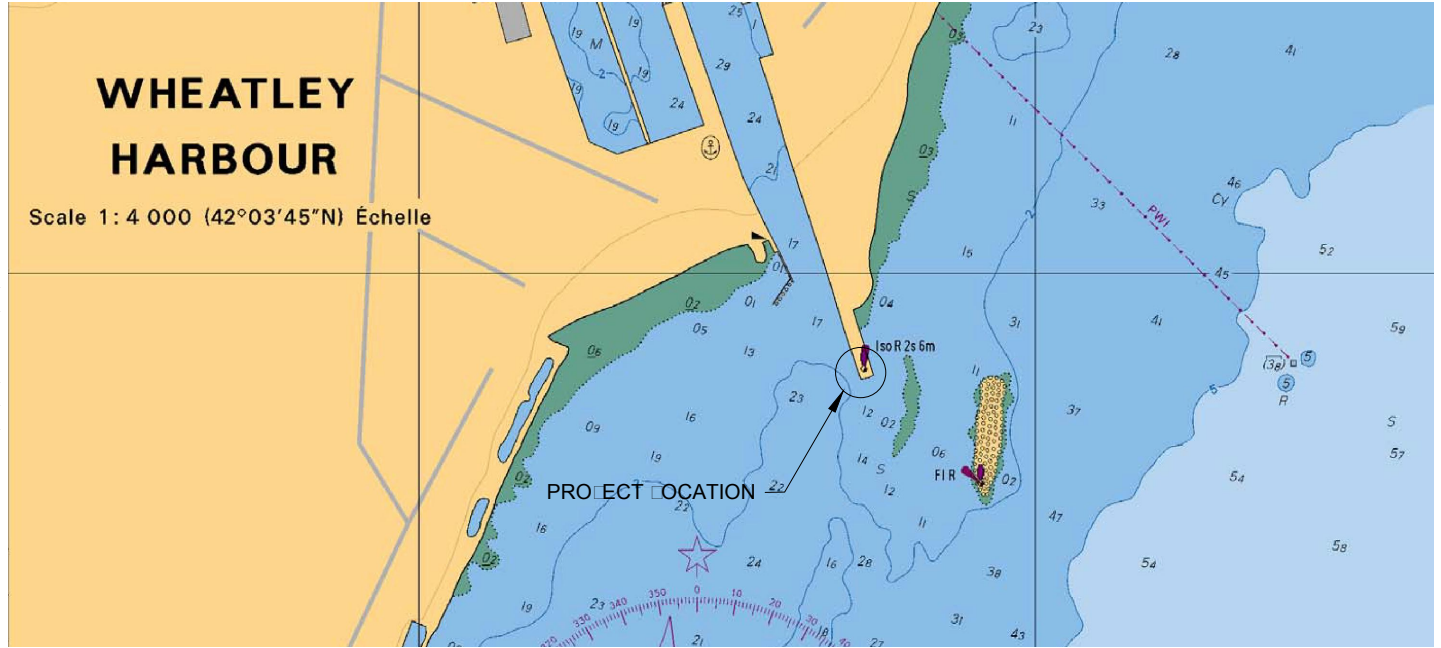
CART 2181 EAT E ARBOR

WHEATLEY HARBOUR

Scale 1:4 000 (42°03'45"N) Échelle

pouces
4
3
2

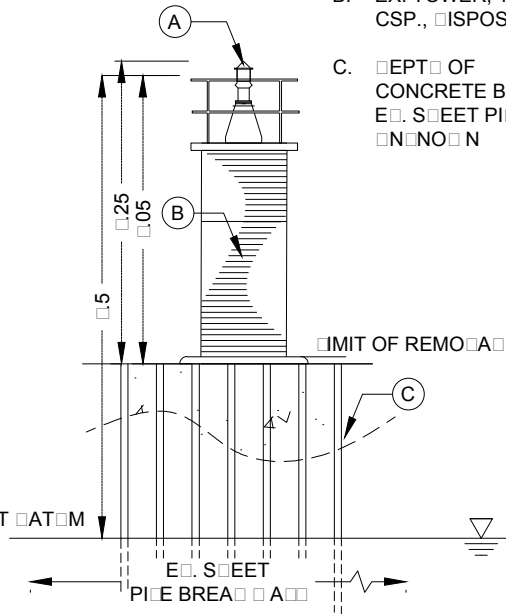
millimètres
8
7
6
5
4



EXISTING AI

- E. ISLAND
- A. MAR 15 m²

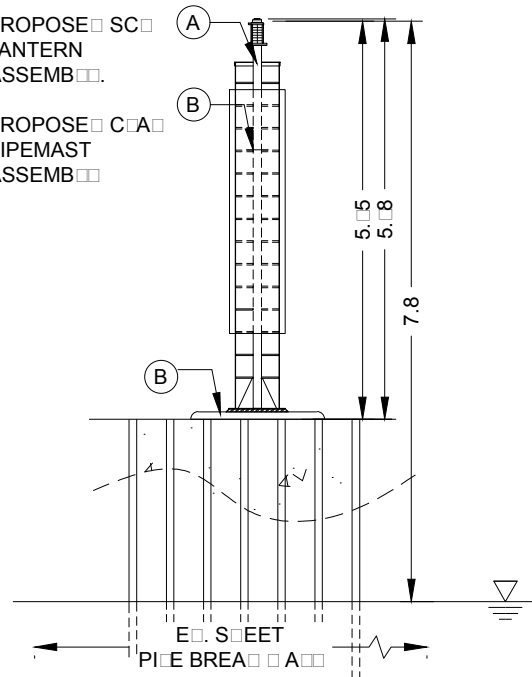
- A. EX. NAVIGATION E.P., SA
- B. EX. TOWER, 1.2Ø CSP., DISPOSE
- C. DEPT OF CONCRETE BEAM E. SHEET PILE



PROPOSED AI

- A. MAR 2.5 m²

- A. PROPOSED SCANTERN ASSEMBLY
- B. PROPOSED CHIMNEY PIPEMAST ASSEMBLY



inches
1
0

millimeters
3
2
1
0

NOTES

1. TOWER SELECTION IN ACCORDANCE WITH CENTRAL ARCTIC FIRE AI REPLACEMENT DECISION TREE.
2. CHANGE IN CONFIGURATION PRIOR TO RE-IEE WITH COAST GUARD OFFICER.

<p>Fisheries and Oceans Canada Pêches et Océans Canada Canadian Coast Guard Garde côtière Canadienne</p>	Asset / Actif	drawn - dessiné	date
	<p>5.5 EAT E ARBOR SHORE</p>	J. JBB	1 MA 201
CGG ref. no. - no. réf. GCC	scale - échelle	approved - approuvé	date
ETM 8010.05:5000	NTS	APPROVED	APPROVED DATE
	PROPOSED REPLACEMENT	drawing no. / no. dessin	sheet / feuille
		TB	01:01
			rev A

8 1/2" X 11" ABIR PIPEMAST SITES 1:17.000 une 01:11:20:57 AM

PROJECT LOCATION, REFERENCE CHART 212



inches 0 1 2 3 4

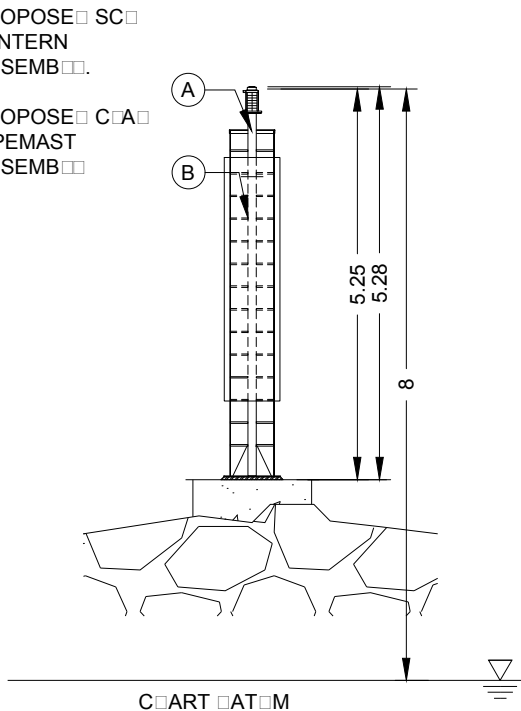
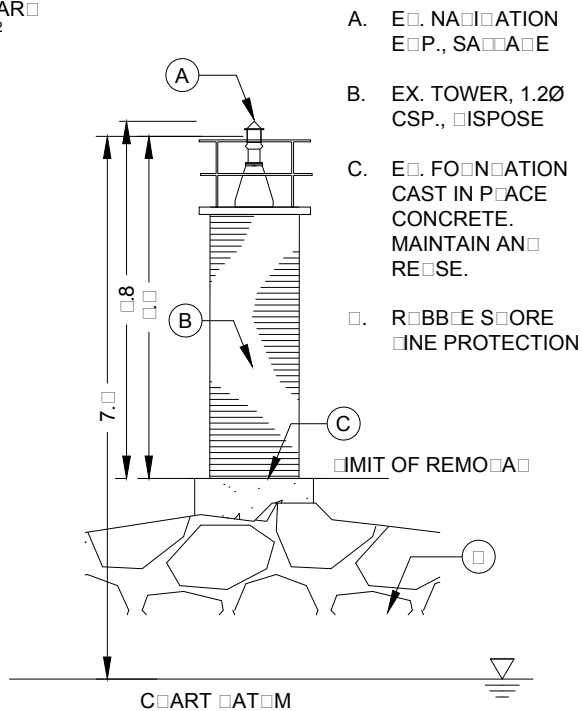
millimètres 0 1 2 3 4 5 6 7 8

EXISTING AIS

PROPOSED AIS

EXISTING AIS
 AREA 2.5 m²

PROPOSED AIS 2.5 m²



- A. EX. NAVALIGATION
EX.P., SA
- B. EX. TOWER, 1.20
CSP., DISPOSE
- C. EX. FOUNDATION
CAST IN PLACE
CONCRETE.
MAINTAIN AND
REUSE.
- REBBE SHORE
LINE PROTECTION

- A. PROPOSED SC
ANTENNA
ASSEMBLY
- B. PROPOSED CONCRETE
PIPEMAST
ASSEMBLY

NOTES

1. TOWER SELECTION IN ACCORDANCE WITH CENTRAL AND ARCTIC FIRE AIS REPLACEMENT DECISION TREE.
2. CHANGE IN CONFIGURATION PREVIOUS REVISIONS WITH COAST GUARD OFFICER.

<p>Fisheries and Oceans Canada Pêches et Océans Canada Canadian Coast Guard Garde côtière Canadienne</p>	<p>Asset / Actif 007 STROBILON CREEK ENTRANCE SHORE LIGHT</p>	<p>drawn - dessiné JBB</p>	<p>date 01/01/11</p>	
		<p>approved - approuvé APPROVED</p>	<p>date APPROVED DATE</p>	
<p>CGG ref. no. - no. réf. GCC ETM 8010.00:700</p>	<p>scale - échelle NTS</p>	<p>drawing no. / no. dessin TB</p>	<p>sheet / feuille 01/01</p>	<p>rev A</p>

8 1/2" X 11" ABIR PIPEMAST SITES 1:17.00 01/01/11 2:02:07 PM

PROJECT LOCATION, REFERENCE CHART 212



0 1 2 3 4
pouces

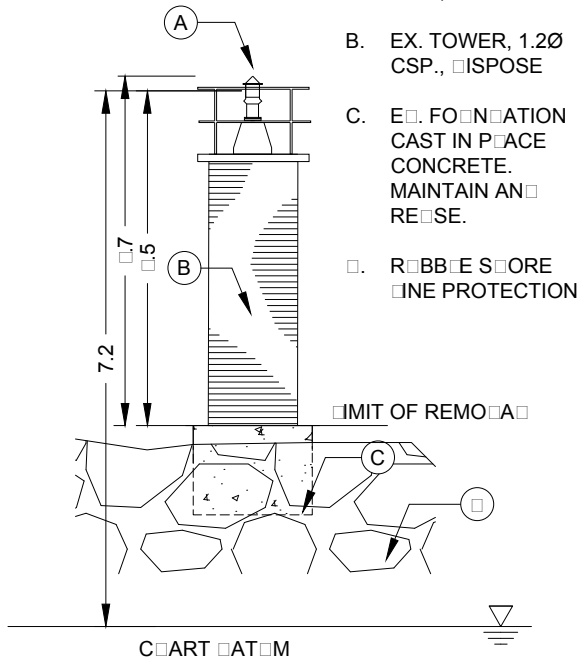
0 1 2 3 4 5 6 7 8
millimètres

0 1
inches

0 1
millimeters

EXISTING AIS

EXISTING AIS
AREA 2.5 m²

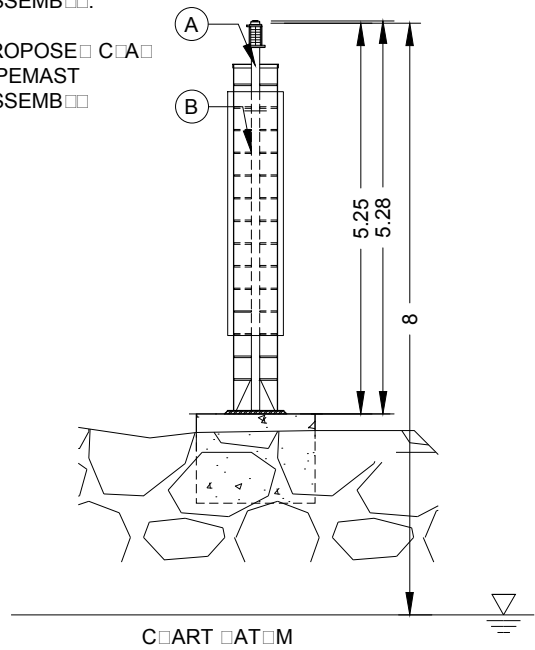


- A. EX. NAVIGATION LIGHT, SA 2.5 m²
- B. EX. TOWER, 1.20 CSP., DISPOSE
- C. EX. FOUNDATION CAST IN PLACE CONCRETE. MAINTAIN AND REUSE.
- D. REMOVE SHORELINE PROTECTION

PROPOSED AIS

AREA 2.5 m²

- A. PROPOSED SCANTERN ASSEMBLY
- B. PROPOSED CAIPERMAST ASSEMBLY



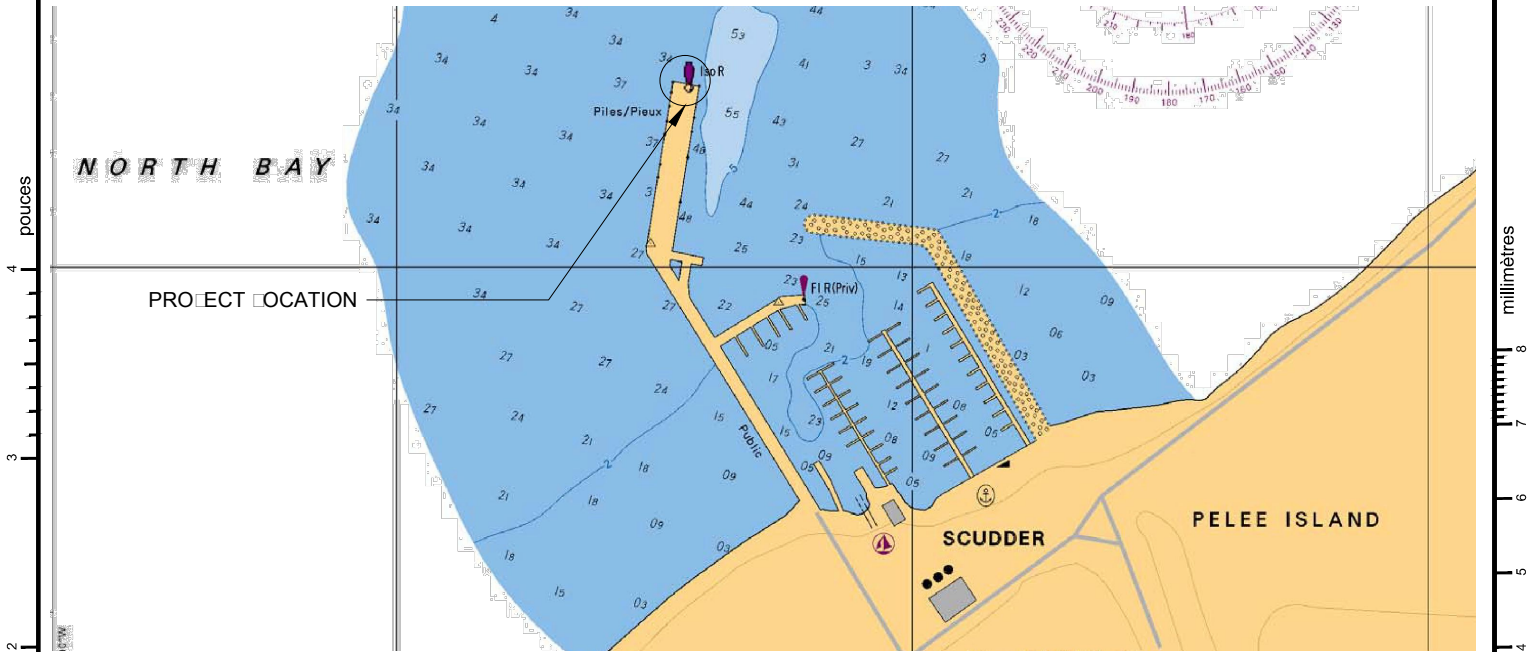
NOTES

1. TOWER SELECTION IN ACCORDANCE WITH CENTRAL ARCTIC FIRE AIS REPLACEMENT DECISION TREE.
2. CHANGE IN CONFIGURATION PRIOR TO REISSUE OF IT LOCALS OFFICER.

<p>Fisheries and Oceans Canada Pêches et Océans Canada Canadian Coast Guard Garde côtière Canadienne</p>	<p>Asset / Actif</p> <p>08 STOREN CREEK SHORE LIGHT</p> <p>Drawing / Dessin</p> <p>PROPOSED REPLACEMENT</p>	<p>drawn - dessiné</p> <p>J. JBB</p>	<p>date</p> <p>01 JUN 11</p>
		<p>approved - approuvé</p> <p>APPROVED</p>	<p>date</p> <p>APPROVED DATE</p>
<p>CCG ref. no. - no. réf. GCC</p> <p>ETM 8010.00:800</p>	<p>scale - échelle</p> <p>NTS</p>	<p>drawing no. / no. dessin</p> <p>TB</p>	<p>sheet / feuille</p> <p>01:01</p>
		<p>rev</p> <p>A</p>	<p>8 1/2" X 11"</p>

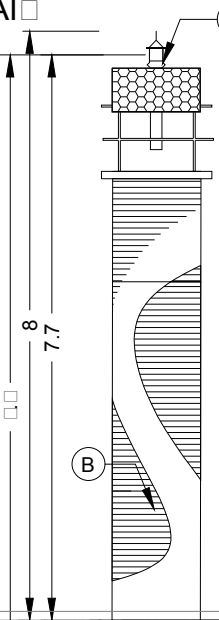
ABR: PIPEMAST SITES 1:17.00 01 June 01:11:25:01 PM

CART 2181 SCUDDER



EXISTING AIR

EXISTING AREA
 AREA 7.2 m²

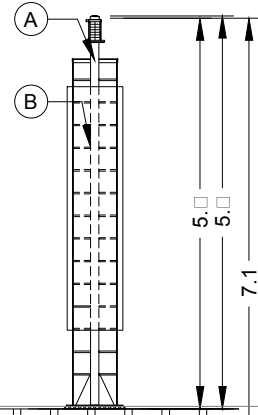


- A. EXISTING NAVIGATION LIGHT, SAE
- B. EX. TOWER, 1.20 CSP., PROPOSE
- C. HEIGHT OF CONCRETE BEAM IN EX. SHEET PILE FOUNDATION

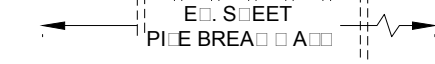
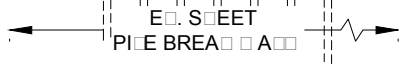
PROPOSED AIR

AREA 2.5 m²

- A. PROPOSED SCANTERN ASSEMBLY
- B. PROPOSED CHAIR PIPEMAST ASSEMBLY



CART DATUM



NOTES

1. TOWER SELECTION IN ACCORDANCE WITH CENTRAL AN ARCTIC FIELD AIR REPLACEMENT DECISION TREE.
 2. CHANGE IN CONFIGURATION PRIOR TO RE-INSTALLATION OF IT LOCAL OFFICER.
- SIMILAR CONFIGURATION PROPOSED ADJACENT SITES (□□□□□, □□5, □□5.□)

<p>Fisheries and Oceans Canada Pêches et Océans Canada Canadian Coast Guard Garde côtière Canadienne</p>	Asset / Actif SCUDDER AIR AIR LIGHT Drawing / Dessin PROPOSED REPLACEMENT	drawn - dessiné J. JBB 01 JUN 11	date 01 JUN 11
		approved - approuvé APPROVED drawing no. / no. dessin TB	date APPROVED DATE sheet / feuille 01:01 rev A
CCG ref. no. / no. réf. GCC E-8101-00-00	scale - échelle NTS	8 1/2" X 11" AB:R: PIPEMAST SITES 1:17.000 01:11:11:15:21 AM	

EAST, REFERENCE CHART 212



pouces
1
2
3
4

inches
0
1
2
3
4

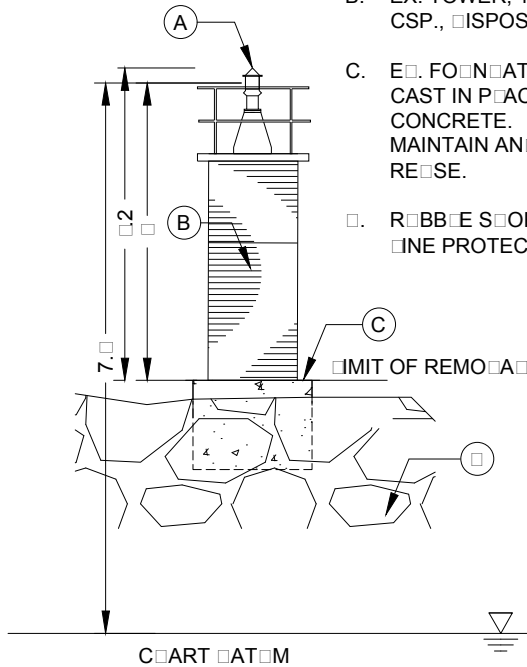
millimètres
0
1
2
3
4
5
6
7
8

millimeters

EXISTING AIS

- EXISTING AIS
- AREA 5 m²

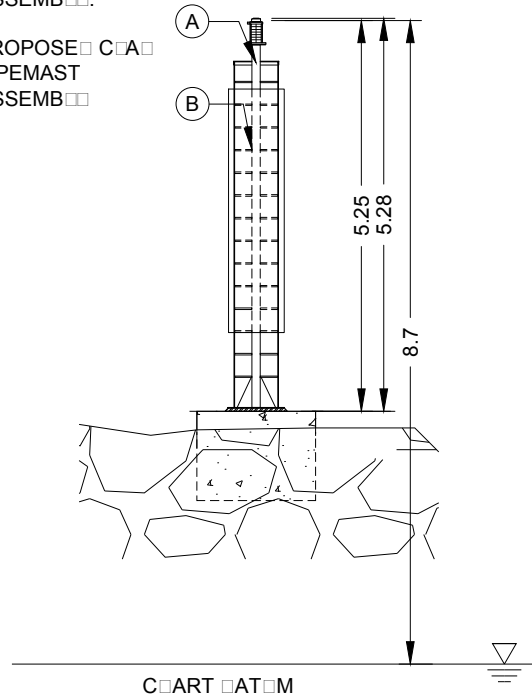
- A. EX. NAVIGATION LIGHT, SQUARE
- B. EX. TOWER, 1.20 CSP., PROPOSE
- C. EX. FOUNDATION CAST IN PLACE CONCRETE. MAINTAIN AND REUSE.
- D. RUBBER SHORE LINE PROTECTION



PROPOSED AIS

AREA 2.5 m²

- A. PROPOSED SCANTERN ASSEMBLY
- B. PROPOSED CANTERNA PIPEMAST ASSEMBLY



NOTES

1. TOWER SELECTION IN ACCORDANCE WITH CENTRAL AND ARCTIC FIELD AIS REPLACEMENT DECISION TREE.
2. CANOE IN CONFIGURATION PREVIOUS REVISIONS WITH LOCALS OFFICER.

<p>Fisheries and Oceans Canada Pêches et Océans Canada Canadian Coast Guard Garde côtière Canadienne</p>	<p>Asset / Actif</p> <p>21.5 COCKER EAST SHORE LIGHT</p> <p>Drawing / Dessin</p> <p>PROPOSED REPLACEMENT</p>	<p>drawn - dessiné</p> <p>JBB</p>	<p>date</p> <p>01/01/11</p>
		<p>approved - approuvé</p> <p>APPROVED</p>	<p>date</p> <p>APPROVED DATE</p>
<p>CCG ref. no. - no. réf. GCC</p> <p>ETM 8010.0/21500</p>	<p>scale - échelle</p> <p>NTS</p>	<p>drawing no. / no. dessin</p> <p>TB</p>	<p>sheet / feuille</p> <p>01/01</p>
		<p>rev</p> <p>A</p>	<p>8 1/2" X 11"</p> <p>ABR: PIPEMAST SITES 1:17.00 01/11/11 05:05 PM</p>



Fisheries and Oceans
Canada

Pêches et Océans
Canada

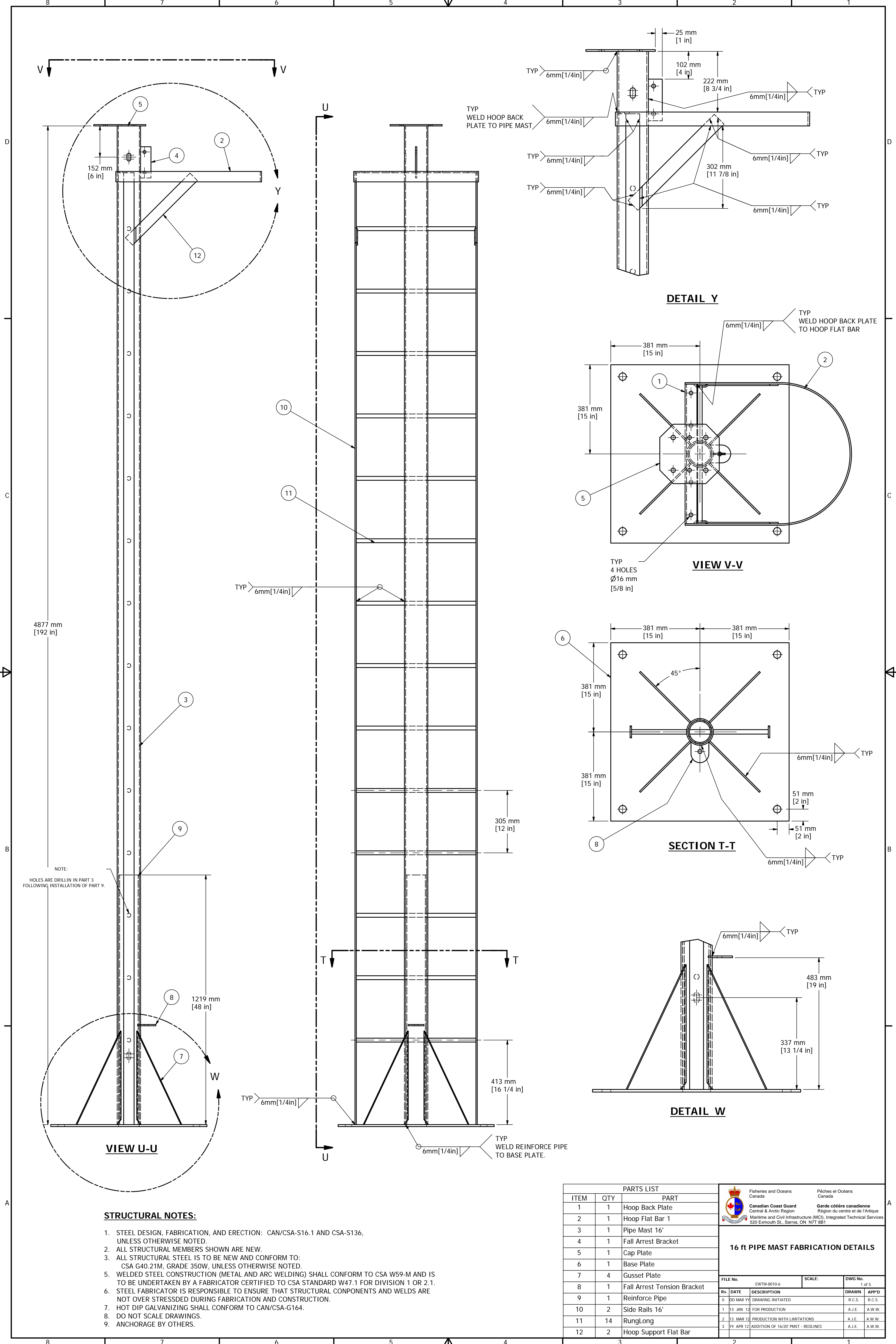
Canadian
Coast Guard

Garde côtière
canadienne



APPENDIX B3 – DRAWINGS

PIPEMAST ASSEMBLY FABRICATION



NOTE:
HOLES ARE DRILLIN IN PART 3
FOLLOWING INSTALLATION OF PART 9.

STRUCTURAL NOTES:

1. STEEL DESIGN, FABRICATION, AND ERECTION: CAN/CSA-S16.1 AND CSA-S136, UNLESS OTHERWISE NOTED.
2. ALL STRUCTURAL MEMBERS SHOWN ARE NEW.
3. ALL STRUCTURAL STEEL IS TO BE NEW AND CONFORM TO: CSA G40.21M, GRADE 350W, UNLESS OTHERWISE NOTED.
5. WELDED STEEL CONSTRUCTION (METAL AND ARC WELDING) SHALL CONFORM TO CSA W59-M AND IS TO BE UNDERTAKEN BY A FABRICATOR CERTIFIED TO CSA STANDARD W47.1 FOR DIVISION 1 OR 2.1.
6. STEEL FABRICATOR IS RESPONSIBLE TO ENSURE THAT STRUCTURAL COMPONENTS AND WELDS ARE NOT OVER STRESSED DURING FABRICATION AND CONSTRUCTION.
7. HOT DIP GALVANIZING SHALL CONFORM TO CAN/CSA-G164.
8. DO NOT SCALE DRAWINGS.
9. ANCHORAGE BY OTHERS.

PARTS LIST		
ITEM	QTY	PART
1	1	Hoop Back Plate
2	1	Hoop Flat Bar 1
3	1	Pipe Mast 16'
4	1	Fall Arrest Bracket
5	1	Cap Plate
6	1	Base Plate
7	4	Gusset Plate
8	1	Fall Arrest Tension Bracket
9	1	Reinforce Pipe
10	2	Side Rails 16'
11	14	RungLong
12	2	Hoop Support Flat Bar

Fisheries and Oceans
Canada

Canadian Coast Guard
Central & Arctic Region

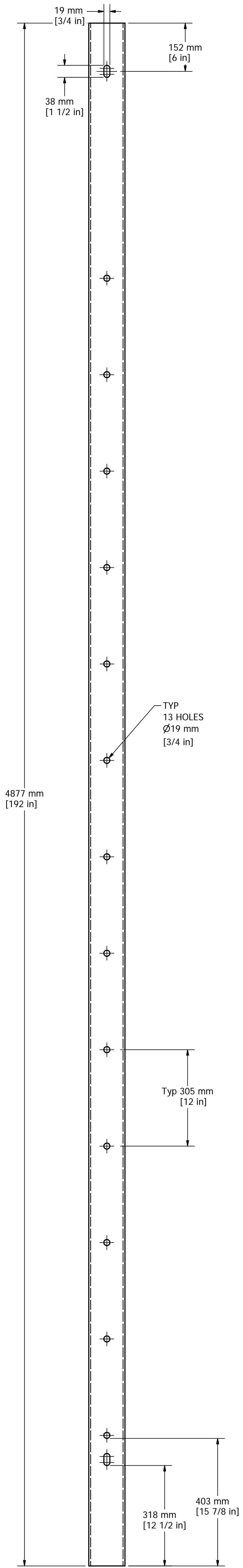
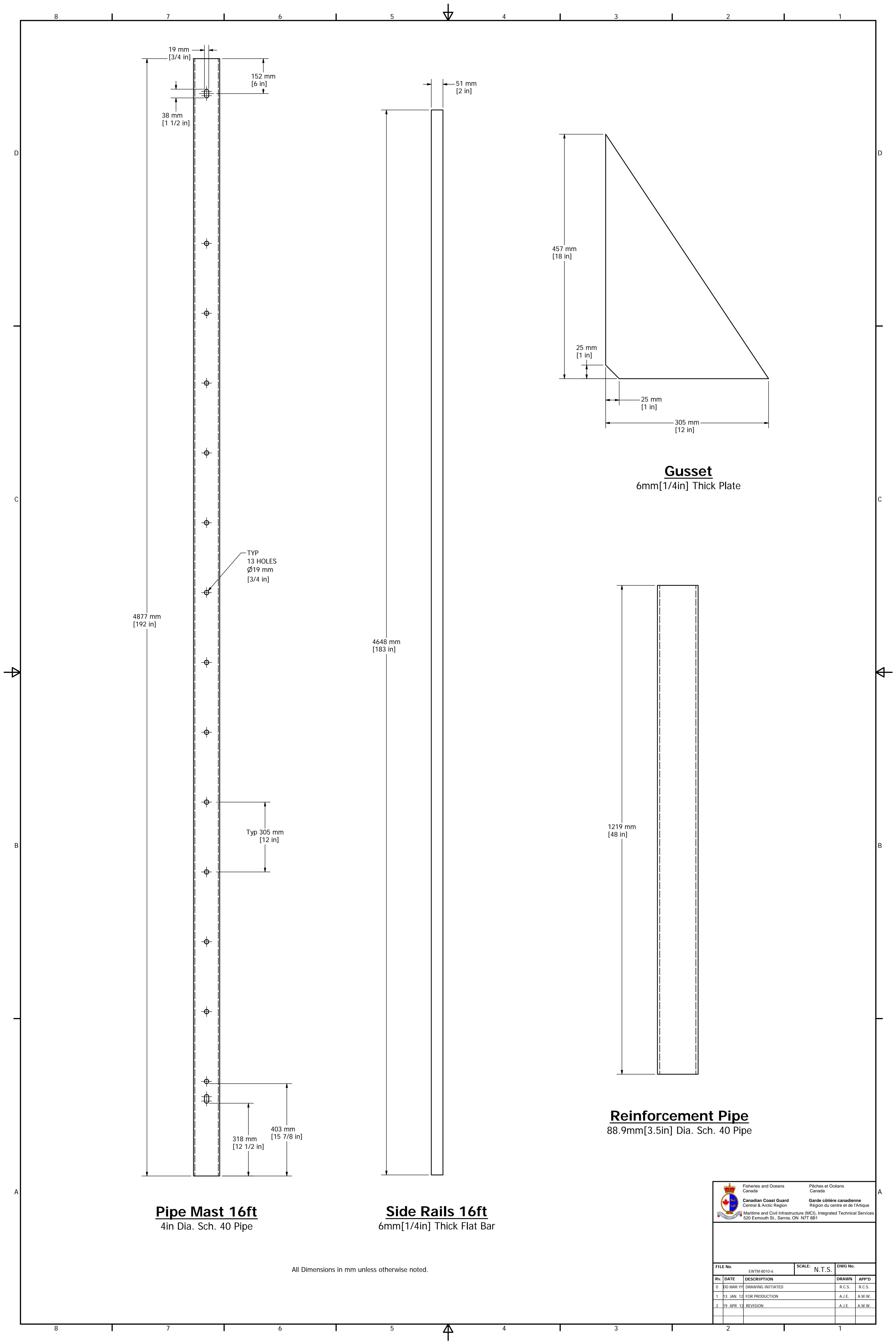
Maritime and Civil Infrastructure (MCI), Integrated Technical Services
520 Exmouth St., Sarnia, ON, N7T 8B1

Pêches et Océans
Canada

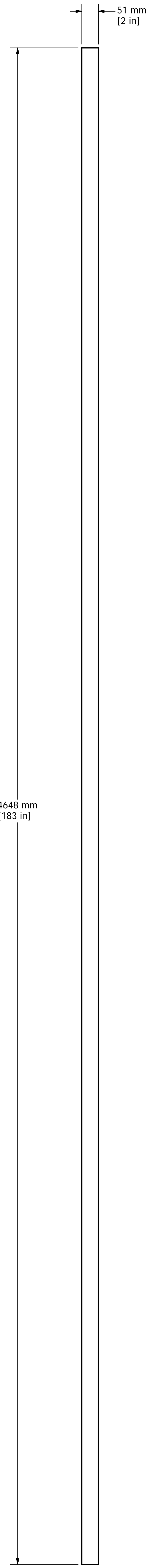
Garde côtière canadienne
Région du centre et de l'Arctique

16 ft PIPE MAST FABRICATION DETAILS

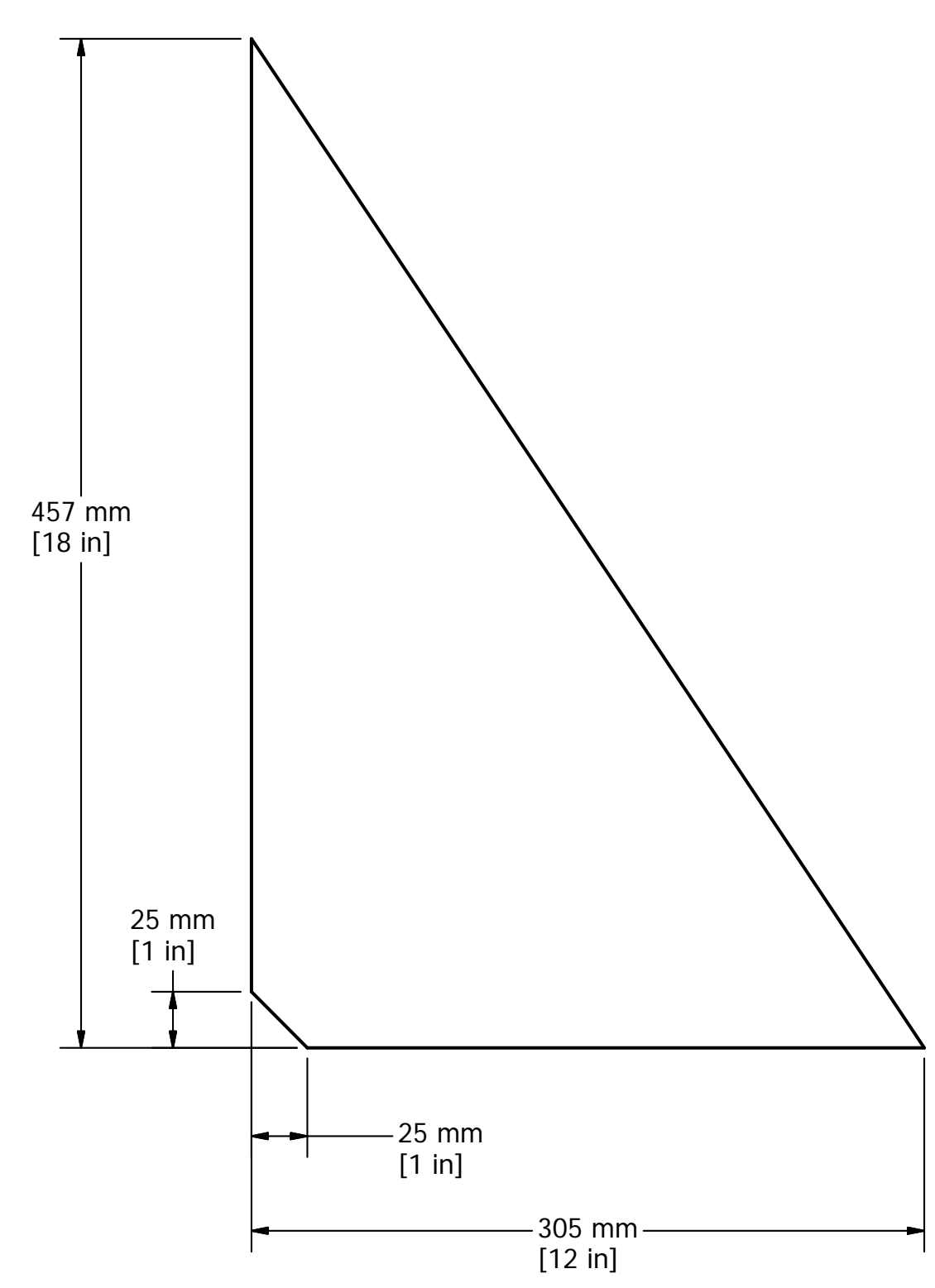
FILE No.	EWTM-8010-6	SCALE:	DWG No.	
			1 of 5	
Rv.	DATE	DESCRIPTION	DRAWN	APP'D
0	03 MAR 12	DRAWING INITIATED	R.C.S.	R.C.S.
1	13 JAN 12	FOR PRODUCTION	A.J.E.	A.W.W.
2	13 MAR 12	PRODUCTION WITH LIMITATIONS	A.J.E.	A.W.W.
3	19 APR 12	ADDITION OF 16/20 PMST - REDLINES	A.J.E.	A.W.W.



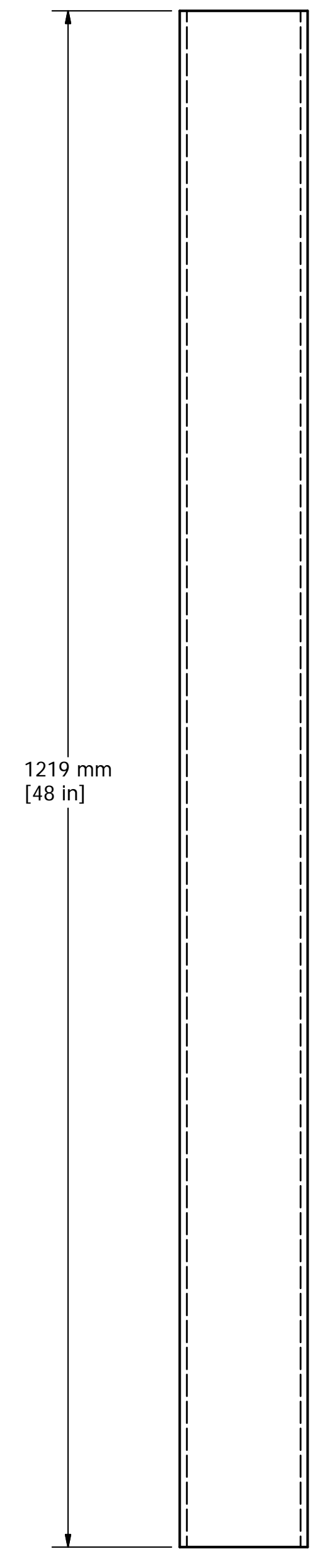
Pipe Mast 16ft
4in Dia. Sch. 40 Pipe



Side Rails 16ft
6mm[1/4in] Thick Flat Bar



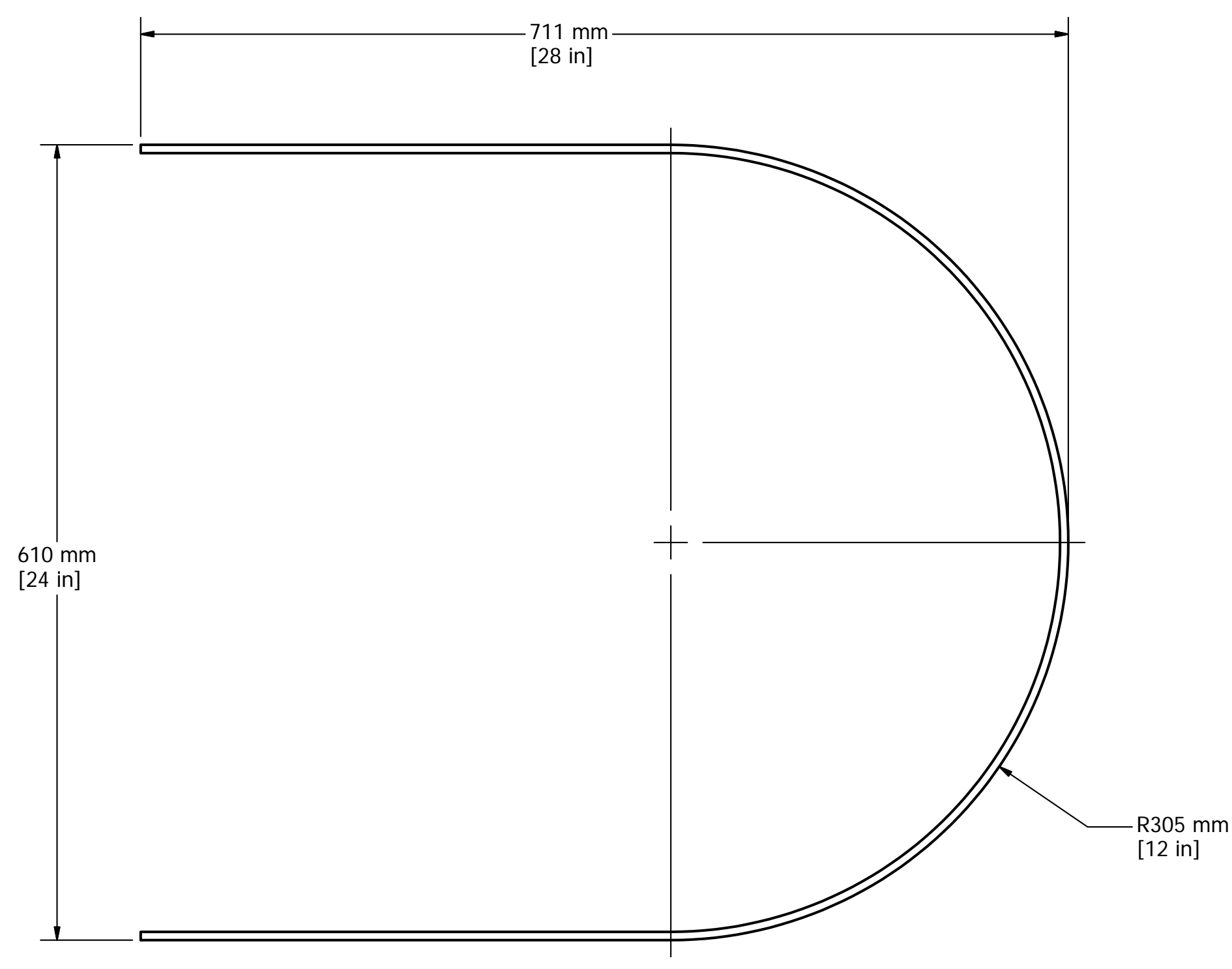
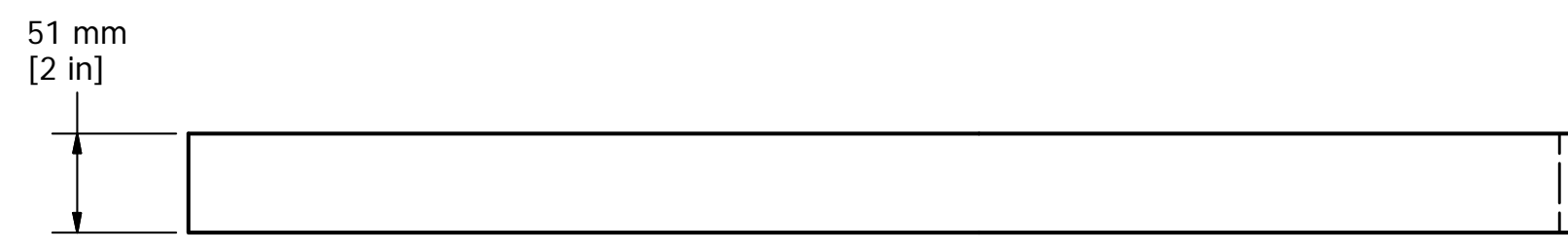
Gusset
6mm[1/4in] Thick Plate



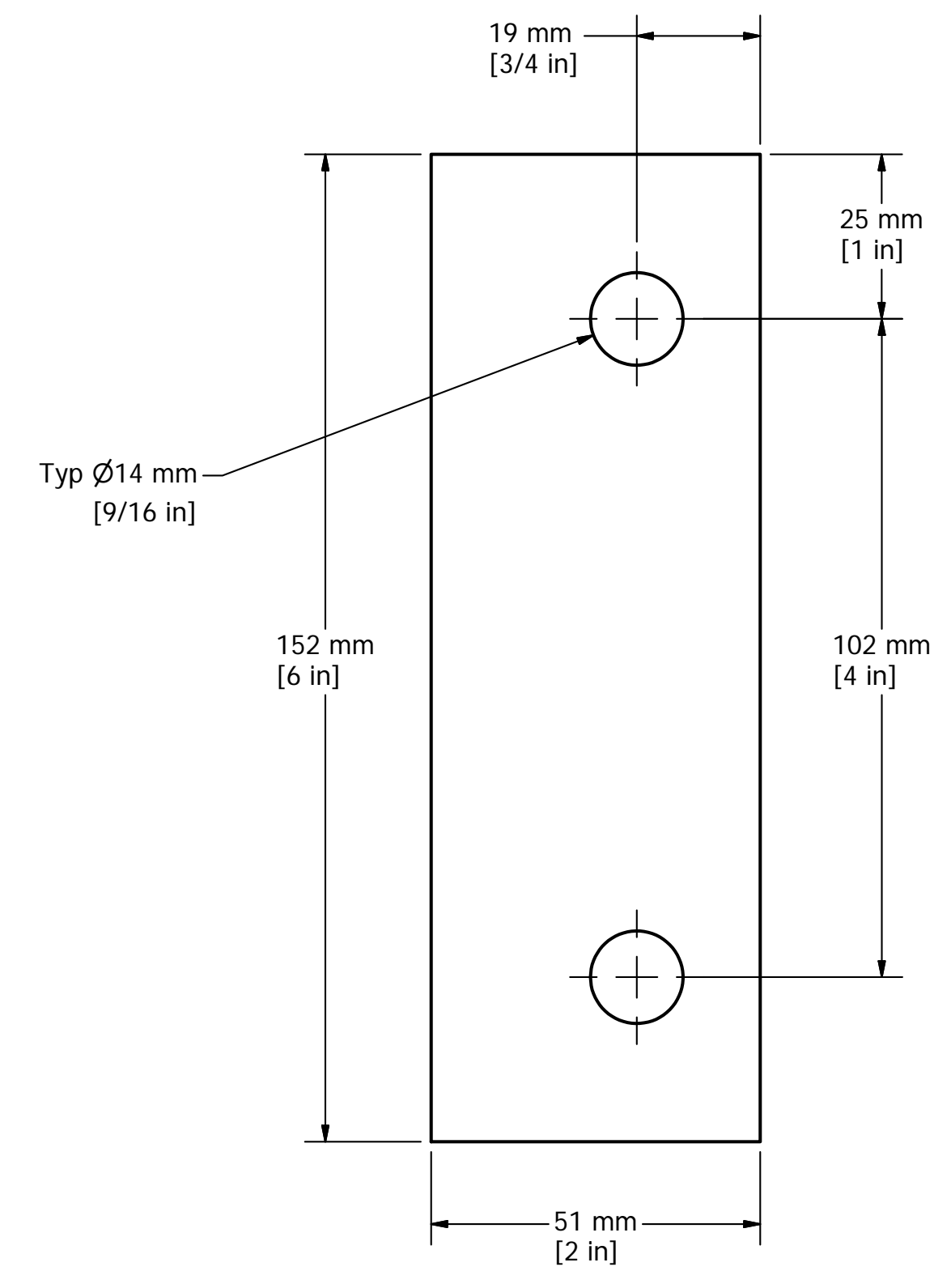
Reinforcement Pipe
88.9mm[3.5in] Dia. Sch. 40 Pipe

All Dimensions in mm unless otherwise noted.

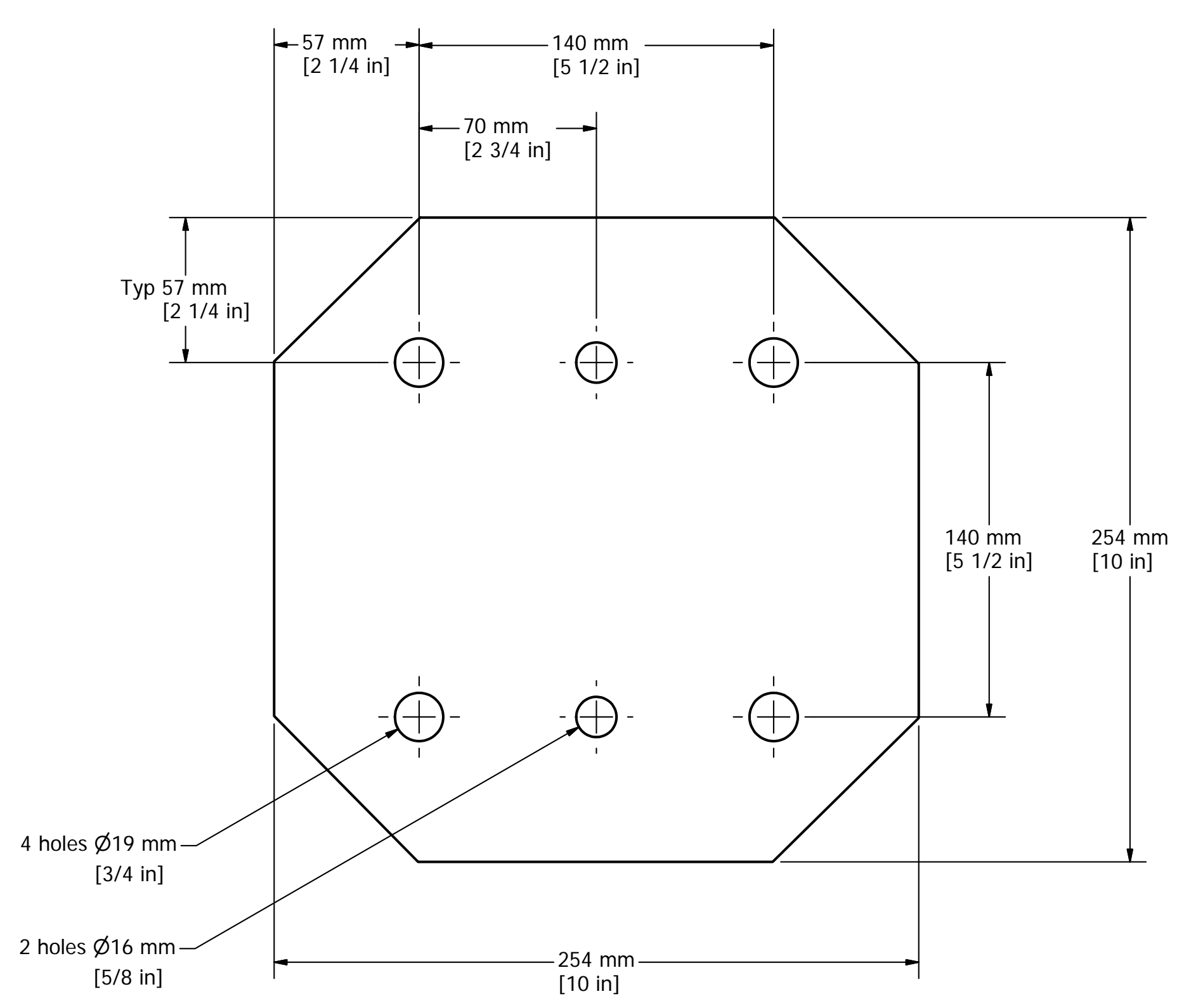
Canadian Coast Guard Central & Arctic Region		Garde côtière canadienne Région du centre et de l'Arctique	
<small>Maritime and Civil Infrastructure (MCI), Integrated Technical Services 520 Exmouth St., Sarnia, ON, N7T 8B1</small>			
FILE No.	EWTM-8010-6	SCALE:	N.T.S.
DWG No.			
Rv.	DATE	DESCRIPTION	DRAWN
0	03 MAR 12	DRAWING INITIATED	R.C.S.
1	13 JAN 12	FOR PRODUCTION	A.J.E.
2	19 APR 12	REVISION	A.J.E.



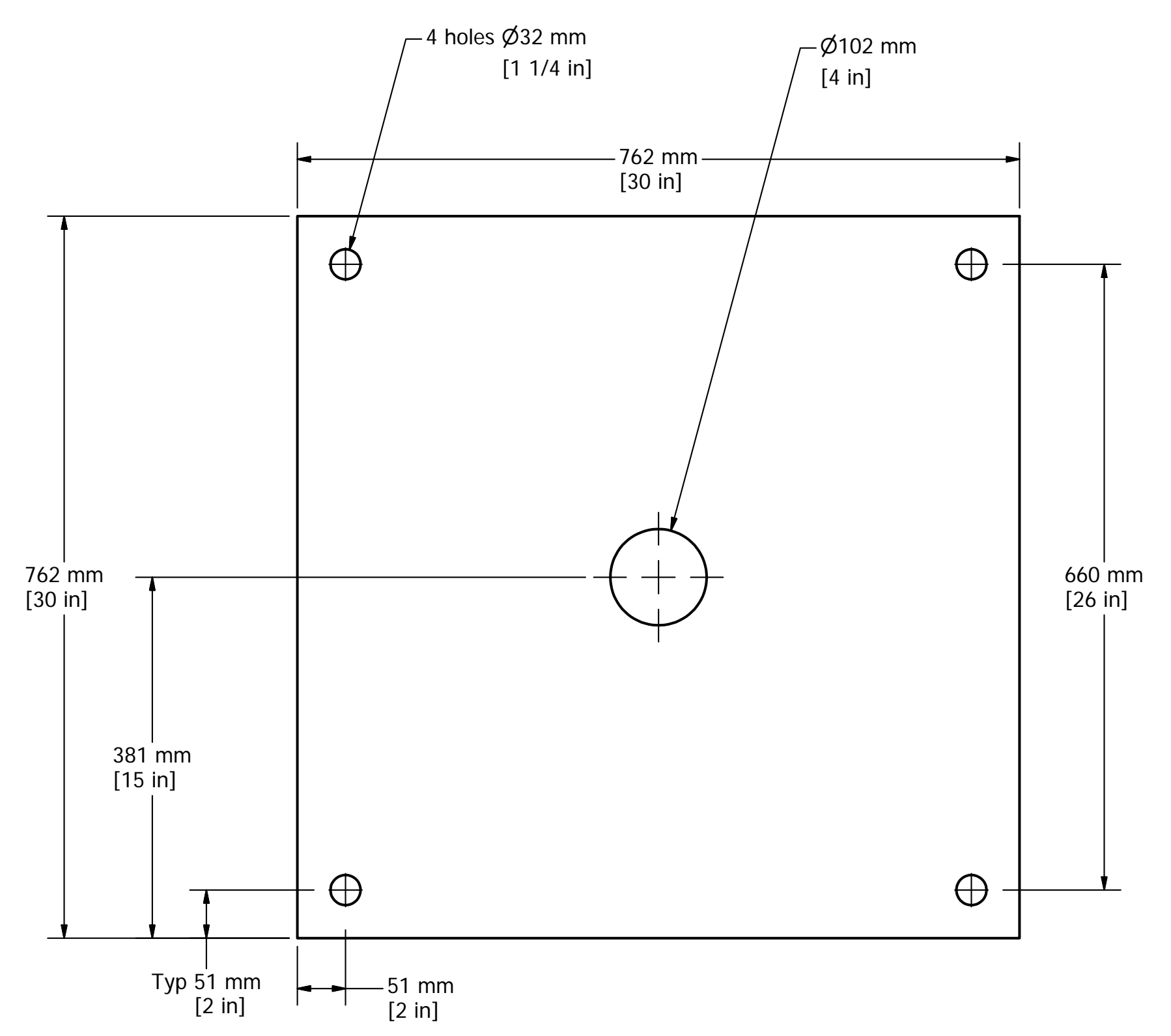
Hoop Ring
6mm[1/4in] Thick Flat Bar



Fall Arrest Bracket
6mm[1/4in] Thick Plate



Cap Plate
6mm[1/4in] Thick Plate



Base Plate
9.5mm[3/8in] Thick Plate

All Dimensions in mm unless otherwise noted.

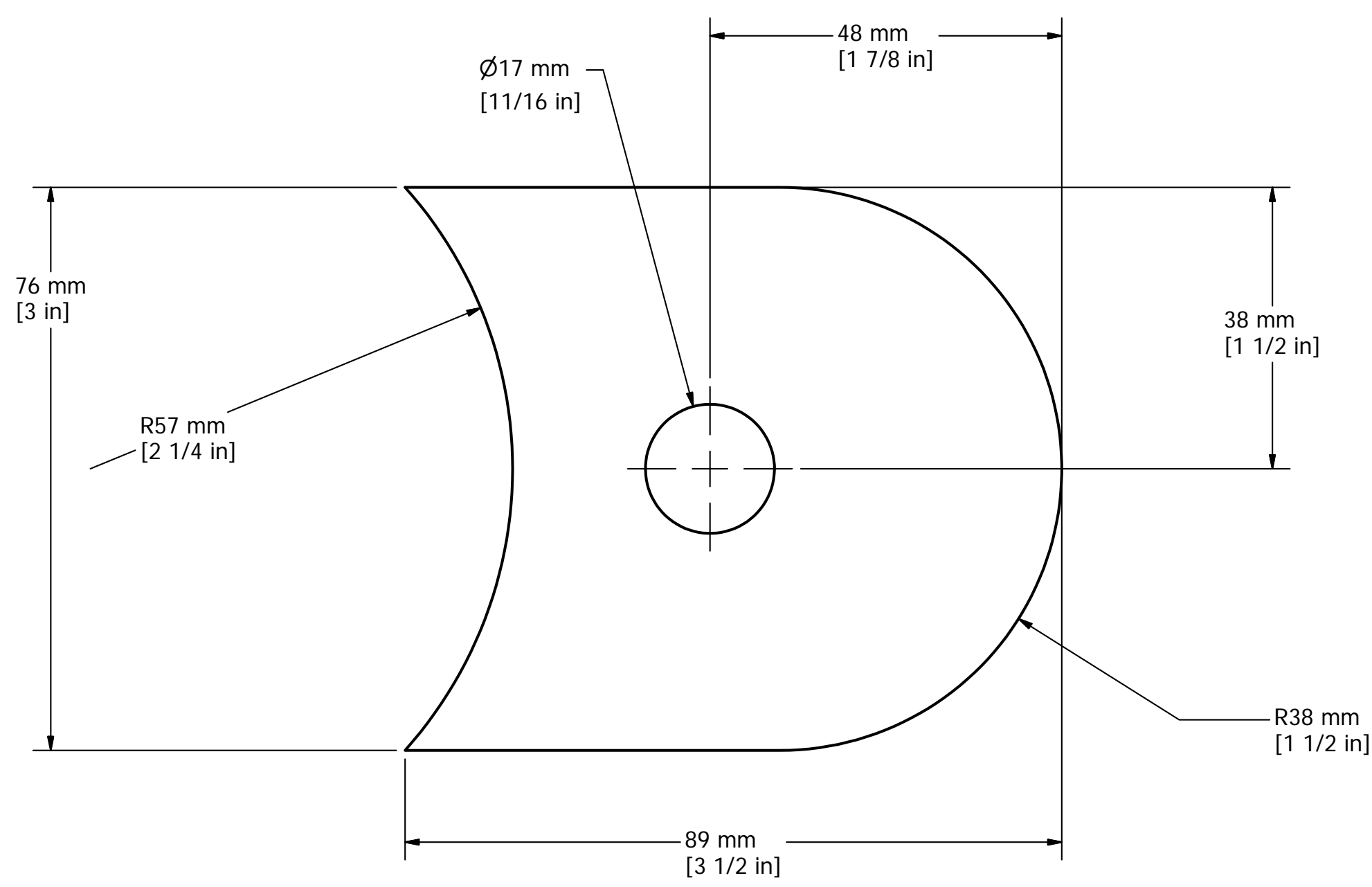
STRUCTURAL NOTES:

1. ALL STRUCTURAL MEMBERS SHOWN ARE NEW.
2. ALL STRUCTURAL STEEL IS TO BE NEW AND CONFORM TO: CSA G40.21M, GRADE 350W, UNLESS OTHERWISE NOTED.
3. DO NOT SCALE DRAWINGS.

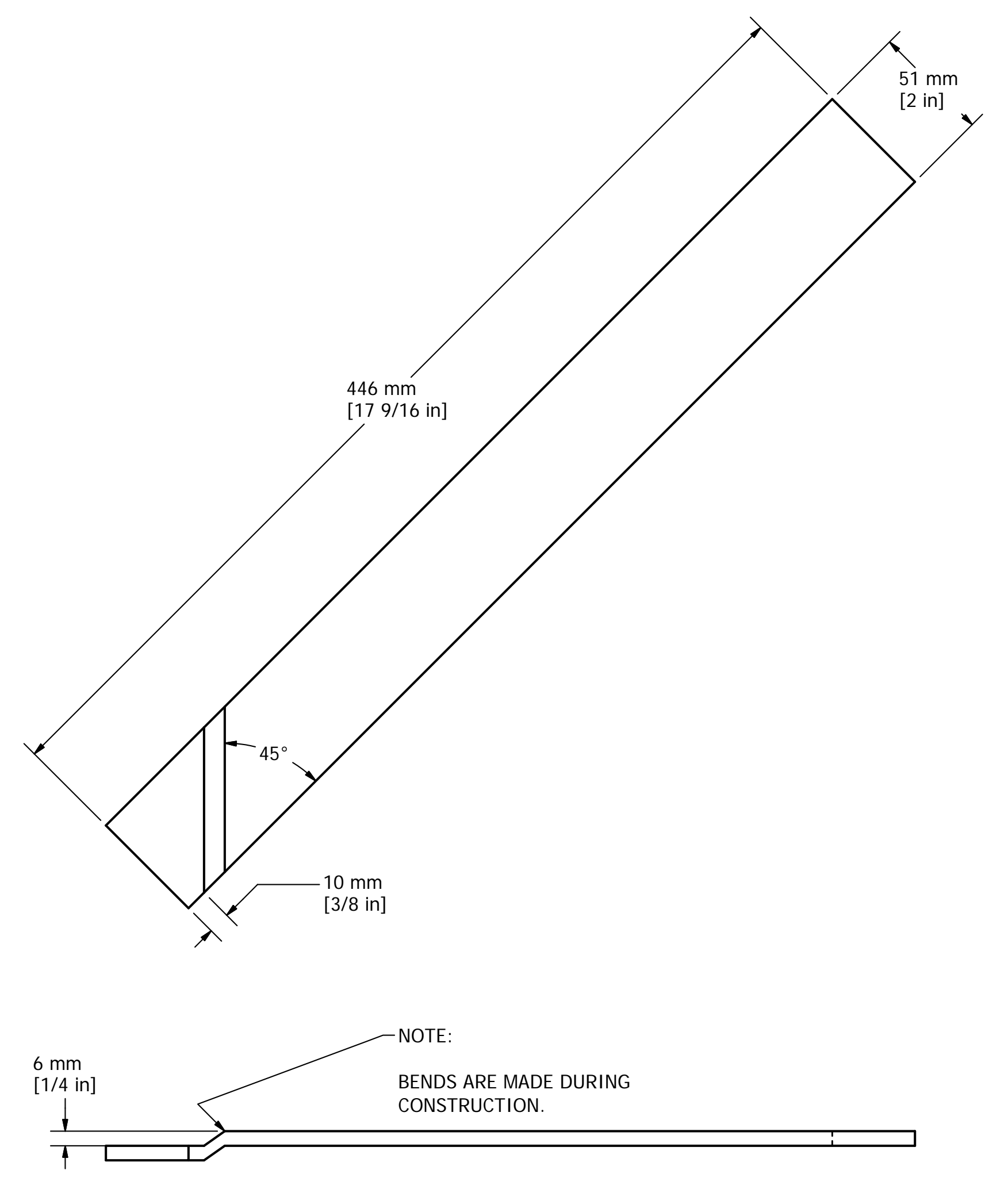
Fisheries and Oceans Canada / Pêches et Océans Canada
 Canadian Coast Guard Central & Arctic Region / Garde côtière canadienne Région du centre et de l'Arctique
 Maritime and Civil Infrastructure (MCI), Integrated Technical Services
 520 Esplanade St., Sarnia, ON, N7T 8B1

Pipe Mast Parts

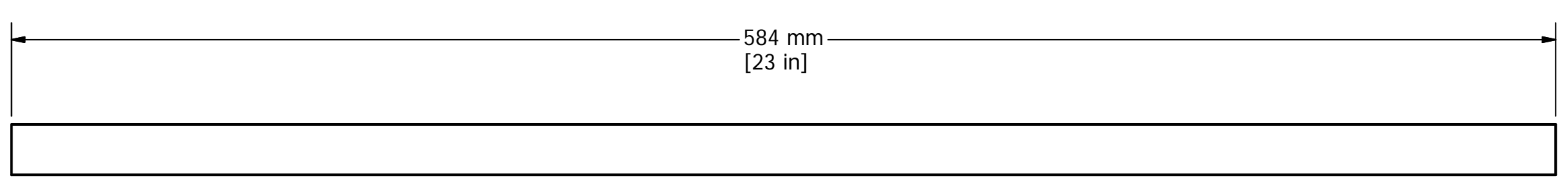
FILE No.	EWTM-8010-6	SCALE:	N.T.S.	DWG No.	2 of 4
Rv.	DATE	DESCRIPTION	DRAWN	APP'D	
0	03 MAR 12	DRAWING INITIATED	R.C.S.	R.C.S.	
1	13 JAN 12	FOR PRODUCTION	A.J.E.	A.W.W.	
2	19 APR 12	REVISION	A.J.E.	A.W.W.	



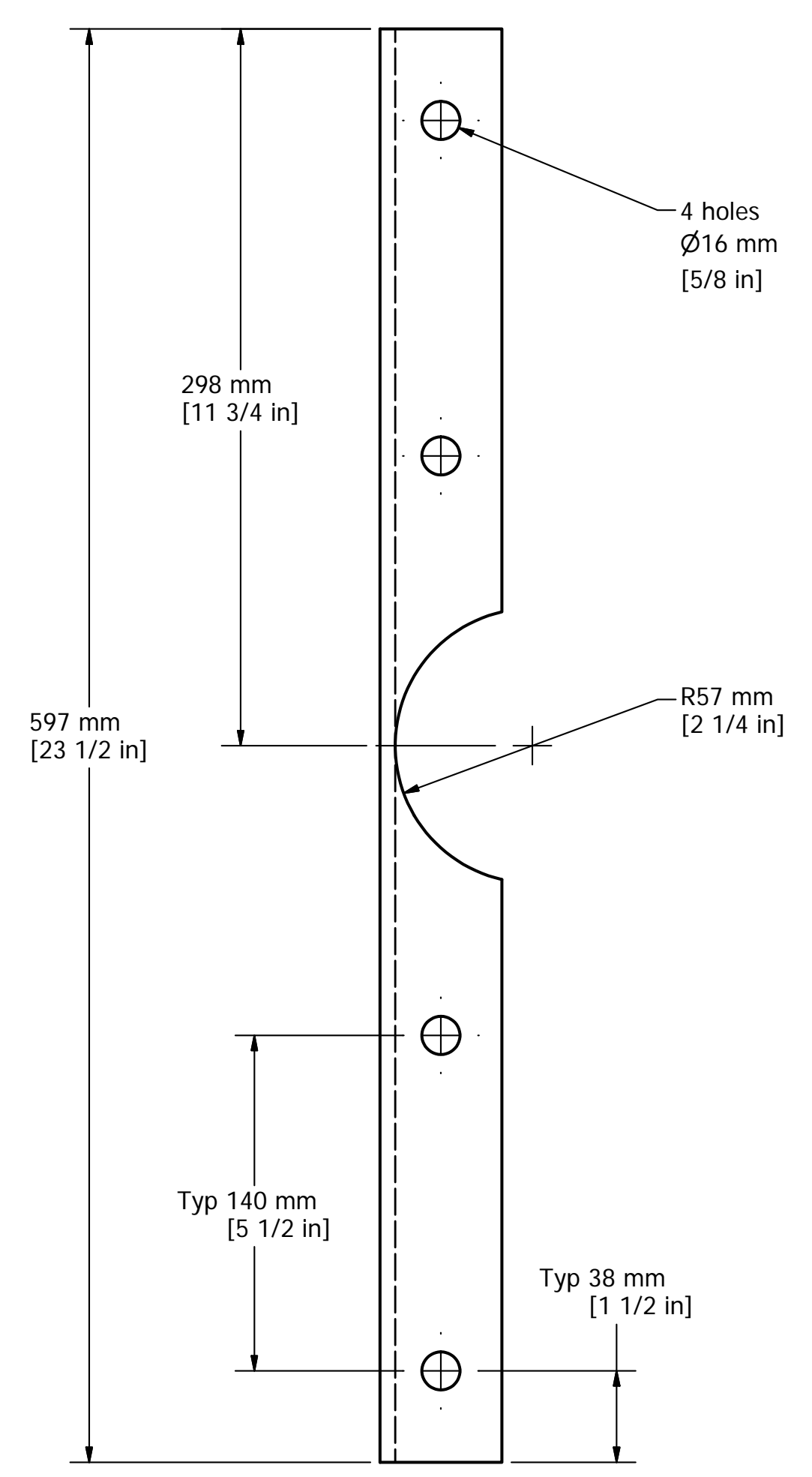
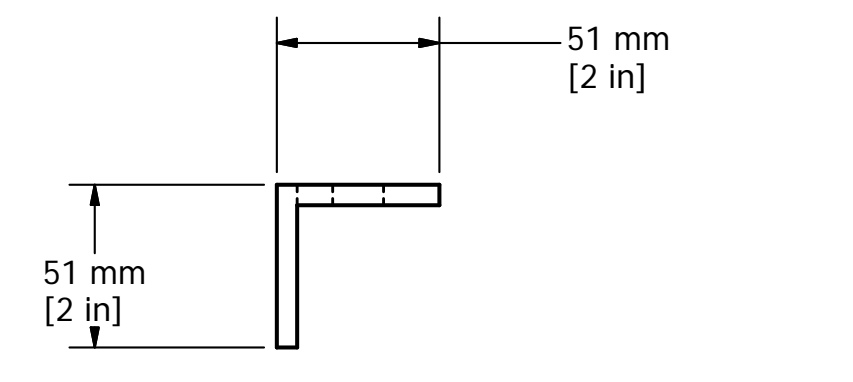
Fall Arrest Tension Bracket
6mm[1/4in] Thick Plate



Hoop Support Flat Bar
6mm[1/4in] Flat Bar



Rung
19mm[3/4in] Dia. Rod



Hoop Back Plate
L50x50x6mm[2x2] Angle Bar

- STRUCTURAL NOTES:**
1. ALL STRUCTURAL MEMBERS SHOWN ARE NEW.
 2. ALL STRUCTURAL STEEL IS TO BE NEW AND CONFORM TO:
CSA G40.21M, GRADE 350W, UNLESS OTHERWISE NOTED.
 3. DO NOT SCALE DRAWINGS.

All Dimensions in mm unless otherwise noted.

Pipe Mast Parts

FILE No. EWTM-8010-6 SCALE: N.T.S. DWG No. 3 of 4

Rv.	DATE	DESCRIPTION	DRAWN	APP'D
0	03 MAR 12	DRAWING INITIATED	R.C.S.	R.C.S.
1	13 JAN 12	FOR PRODUCTION	A.J.E.	A.W.W.
2	19 APR 12	REVISION	A.J.E.	A.W.W.

Fisheries and Oceans Canada / Pêches et Océans Canada
Canadian Coast Guard / Garde côtière canadienne
Central & Arctic Region / Région du centre et de l'Arctique
Maritime and Civil Infrastructure (MCI), Integrated Technical Services
520 Eymouth St., Sarnia, ON, N7T 8B1



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne

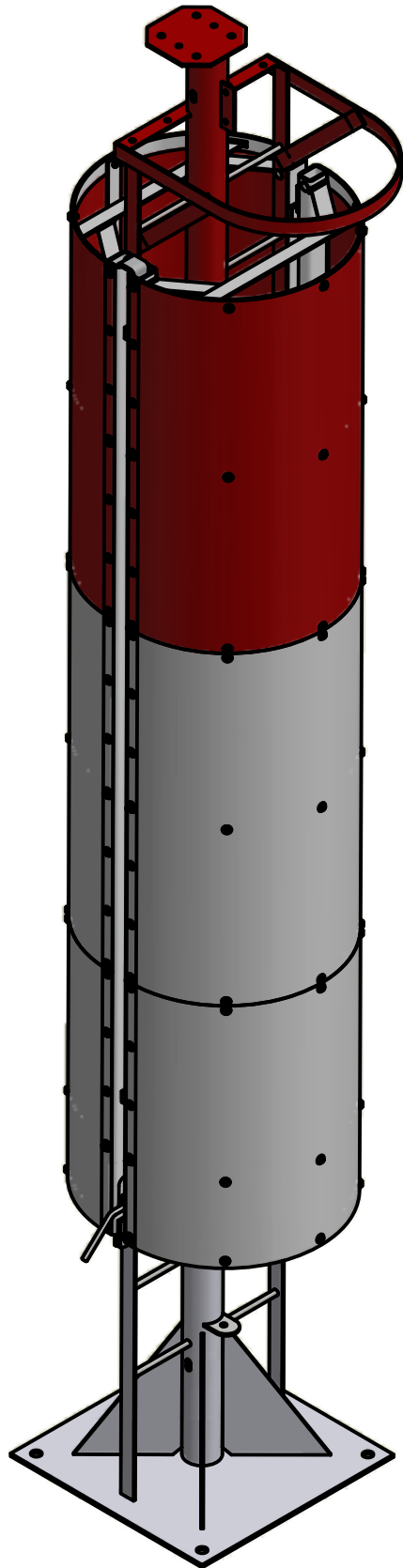



APPENDIX B3 – DRAWINGS

CLADDING ASSEMBLY FABRICATION

inches
0
1
2
3
4
pouces

millimeters
0
1
2
3
4
5
6
7
8
millimètres



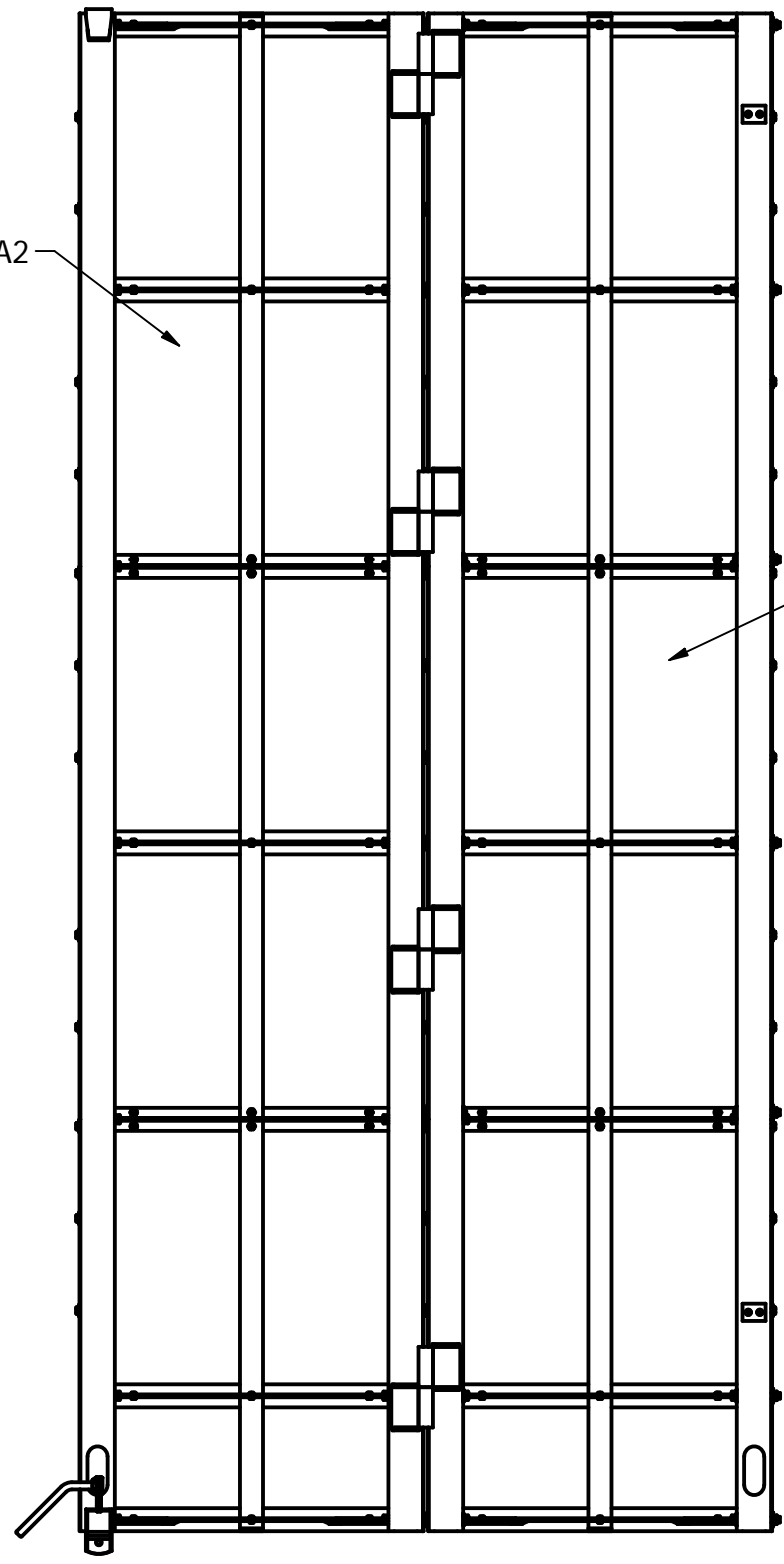
 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne

Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST
Drawing - Dessin

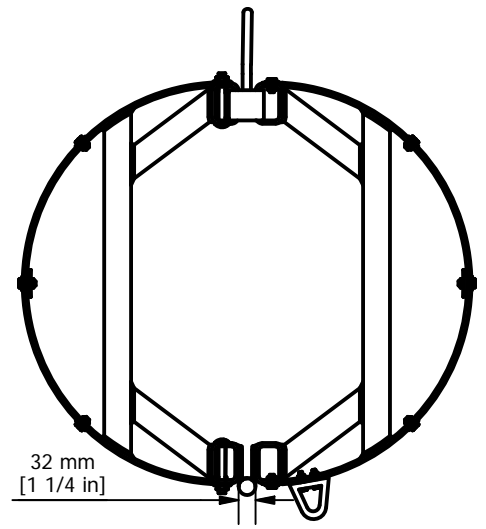
designed - conception BH	date 2016-06-24
approved - approuvé	date
drawing no. - no. dessin	sheet-feuille 1/25
rev 0	A

inches 0 1 2 3 4

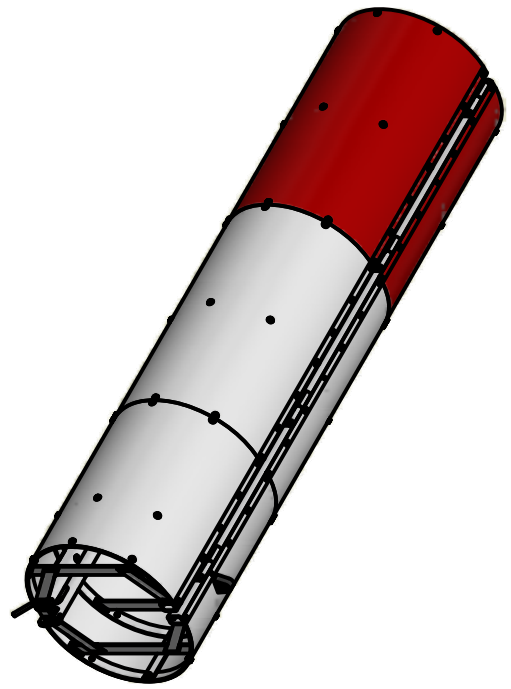
millimètres 0 1 2 3 4 5 6 7 8




PROFILE VIEW



PLAN VIEW



 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif	designed - conception	date
		3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST		BH
CCG ref. no. - no. réf. GCC EWTM 8010-6-1		Drawing - Dessin	approved - approuvé	date
scale - échelle AS SHOWN		TOTAL ANTI-CLIMB ASSEMBLY	drawing no. - no. dessin	sheet-feuille
			1	3/25
				rev 0


pouces
4
3
2
1
0
inches

millimètres
8
7
6
5
4
3
2
1
0
millimeters

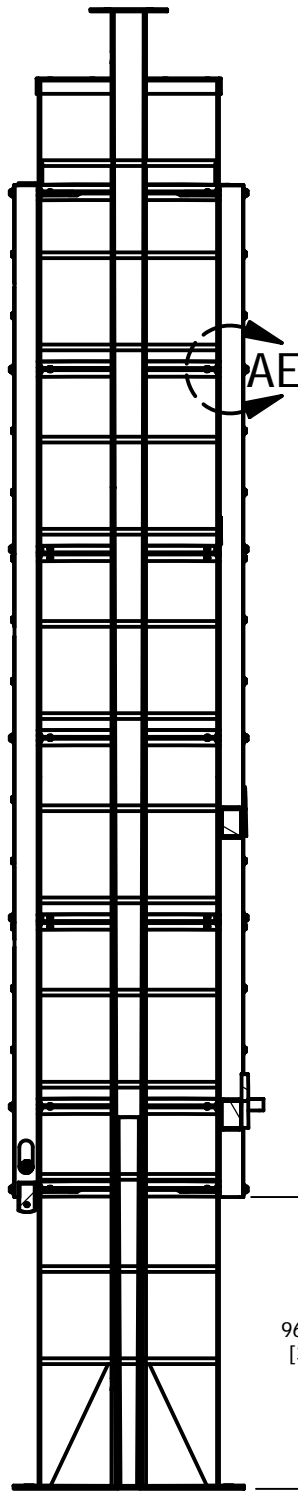
PARTS LIST		
QTY	PART NUMBER	DESCRIPTION
4	P1 - Male Hinge	
4	P2 - Female Hinge	
14	P3 - Standard Rib Bracing	
8	P4 - Diagonal Rib Bracing	
14	P6 - Ribbing	
1	P7 - Latch Hook	
1	P8 - Handle	
2	P9-11 - Sheeting	
1	P12 - Door Rest	
258.000 in	P13 - HSS VERT 3x2x1_4	Tube
258.000 in	P14 - HSS VERT 3x2x1_4 With Hole	Tube
1	P15 - Rubber Stopper	
2	P16 - Square Rubber Stopper	
2	P17 - Tall Rib Reinforcement	
1	P18 - Bottom Latch Bar	
1	P19 - Top Latch Bar	
2	ANSI B18.2.1 - 1/4-20 UNC - 1.25	Hex Cap Screw (For P15)
84	ANSI B18.2.1 - 3/8-16 UNC - 0.75	Hex Cap Screw (For A1/A2)
18	ANSI B18.2.1 - 3/8-16 UNC - 1	Hex Cap Screw (For A1/A2)
28	ANSI B18.2.2 - 1/2 - 13	Hex Jam Nut - Inch Series (For A1/A2)
1	ANSI B18.2.2 - 5/8 - 11	Hex Jam Nut - Inch Series (For P8)
6	ANSI B18.2.2 - 1/4 - 20	Hex Jam Nut - Inch Series (For P15/P16)
102	ANSI B18.2.2 - 3/8 - 16	Hex Jam Nut - Inch Series (For A1/A2)
28	ANSI B18.22.1 - 1/2 - Regular - Type B	Plain Washer (Inch)Type A and B (For A1/A2)
102	ANSI B18.22.1 - 3/8 - Regular - Type B	Plain Washer (Inch)Type A and B (For A1/A2)
14	ANSI B18.5 - 1/2-13 UNC - 4	Round Head Bolt (For A2)
14	ANSI B18.5 - 1/2-13 UNC - 3.75	Round Head Bolt (For A1)
4	ANSI B18.6.2 - 1/4-20 UNC x 1	Slotted Flat Countersunk Head Cap Screw (For P16)

STRUCTURAL NOTES:

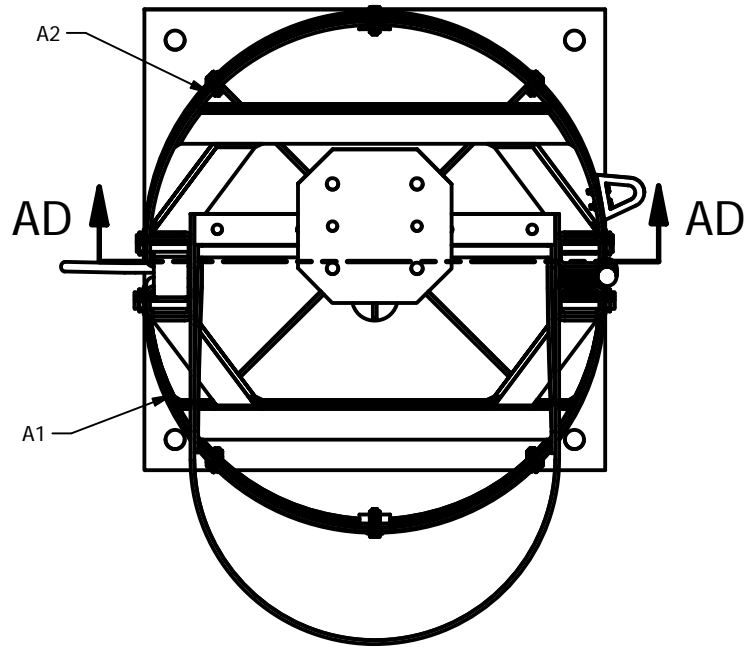
1. ALUMINUM ALLOYS SHALL BE GRADE 6061-T6.
2. ALL STRUCTURAL MEMBERS SHOWN ARE NEW.
3. METAL AND ARC WELDING SHALL CONFORM TO CSA W59.2 AND IS TO BE UNDERTAKEN TO CSA W47.2 DIVISION 1, 2.1, OR 2.2.
4. ENSURE THAT STRUCTURAL MEMBERS AND WELDS ARE NOT OVER STRESSED DURING CONSTRUCTION.
5. FASTENERS SHALL BE 18-8 STAINLESS STEEL WITH NYLON INSERT LOCK NUTS.
6. DRAWINGS NOT TO SCALE.
7. ESTIMATED FULLY ASSEMBLED SHIPPING WEIGHT (PIPEMAST NOT INCLUDED) IS APPROXIMATELY 125.5 KILOGRAMS.

 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif	designed - conception	date
		3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST		BH
		Drawing - Dessin	approved - approuvé	date
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN	PARTS LIST	drawing no. - no. dessin 0	sheet-feuille 2/25
			rev 0	

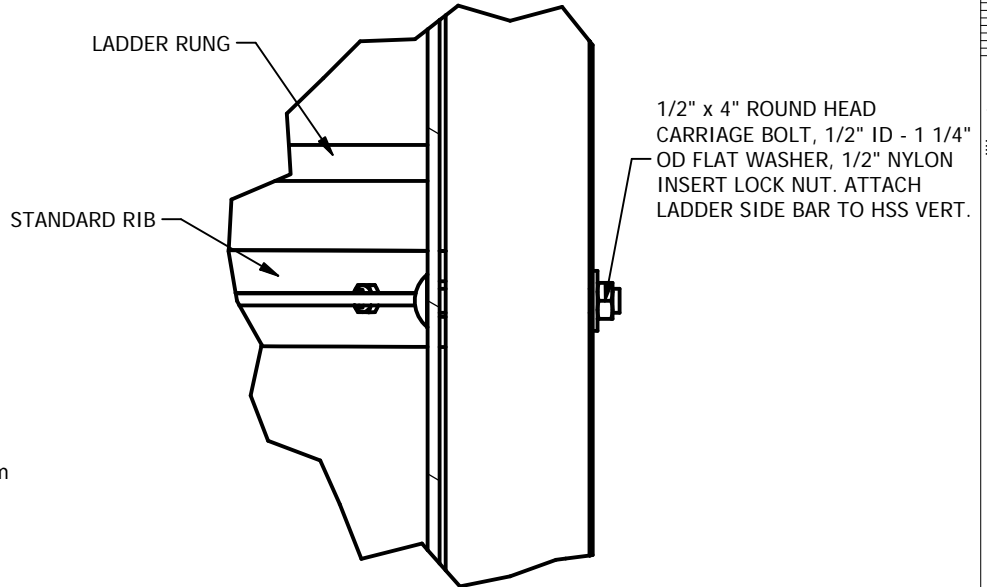
File / Fichier: 16FT Pipe Mast Model 2016.dwg



SECTION AD-AD



TOP VIEW



DETAIL AE
TYP MOUNTING OF
ANTI-CLIMB CAGE

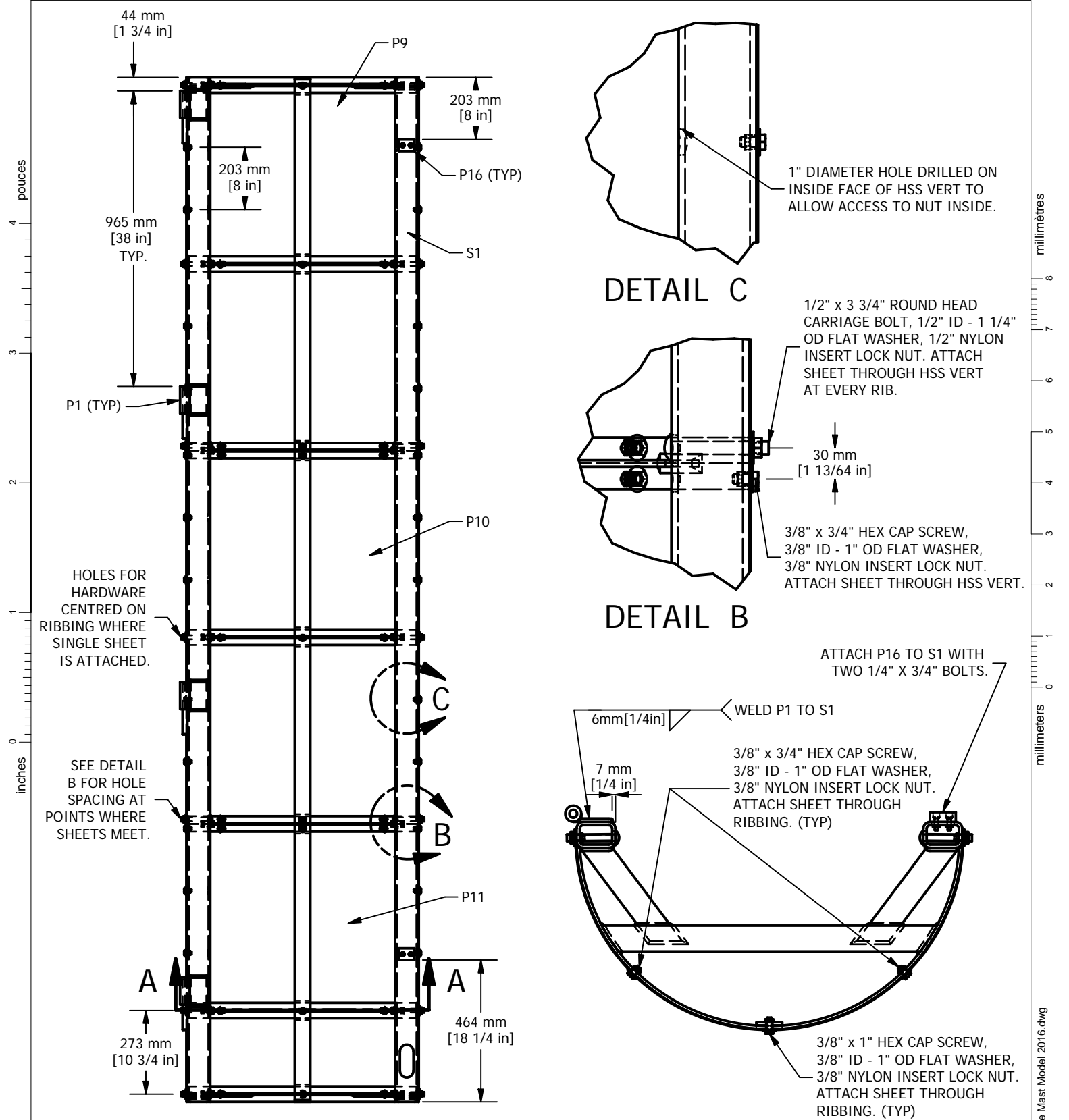
inches
0
1
2
3
4

millimètres
0
1
2
3
4
5
6
7
8

Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif
		3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN	Drawing - Dessin MOUNTING INSTRUCTIONS

designed - conception BH	date 2016-06-24
approved - approuvé	date
drawing no. - no. dessin 2	sheet-feuille 4/25
	rev 0

File / Fichier: 16FT Pipe Mast Model 2016.dwg



PROFILE VIEW

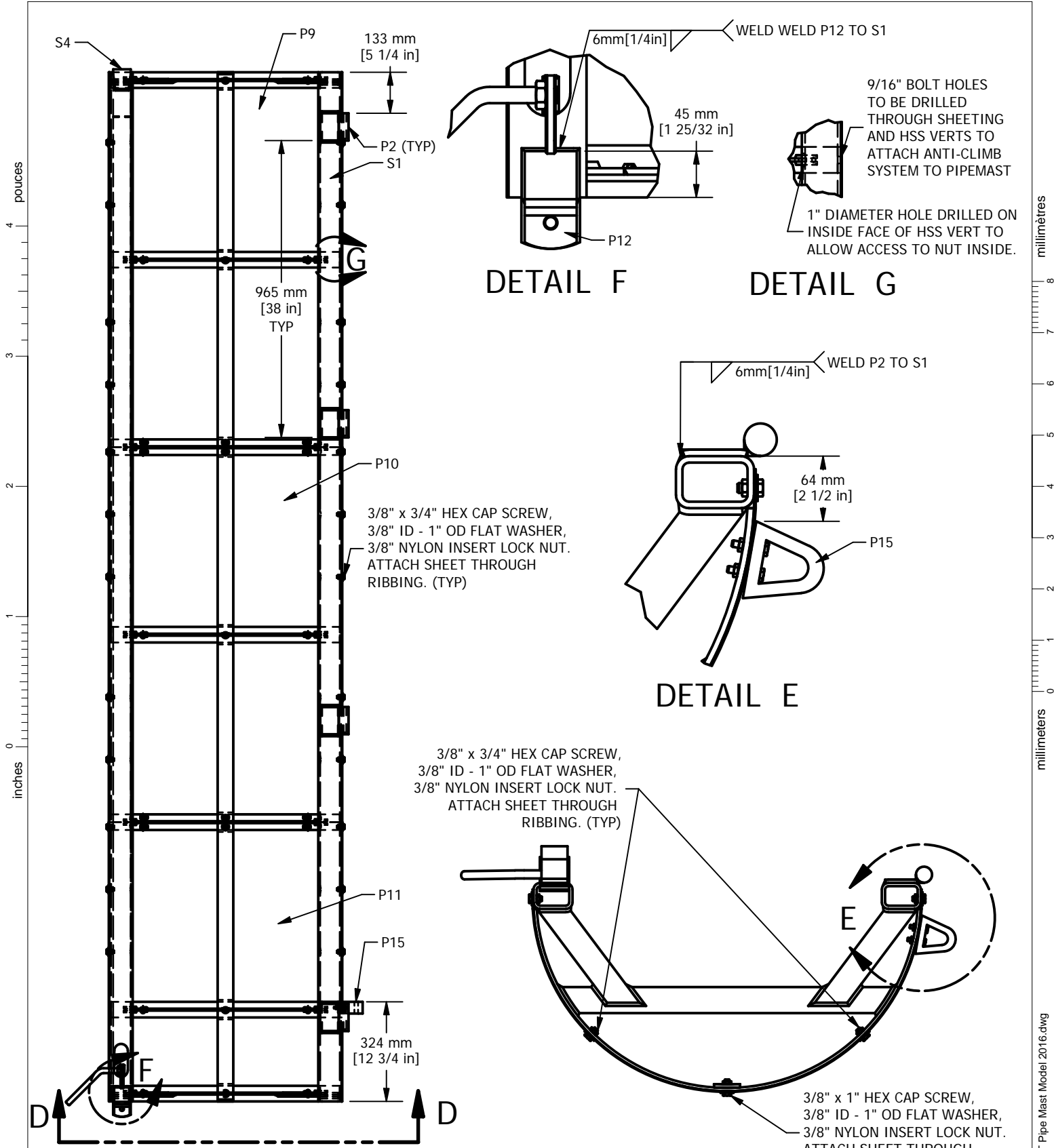
SECTION A-A

NOTE: HARDWARE SPACING VARIES. 8" SPACING WHERE POSSIBLE, MODIFY TO ACCOMMODATE RIBBING CONNECTIONS.

Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif	designed - conception	date	
		3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST		BH	2016-06-24
Drawing - Dessin		approved - approuvé		date	
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN	A1 - DOOR OF ANTI-CLIMB	drawing no. - no. dessin 3	sheet-feuille 5/25	rev 0

File / Fichier: 16FT Pipe Mast Model 2016.dwg

A



inches
0
1
2
3
4

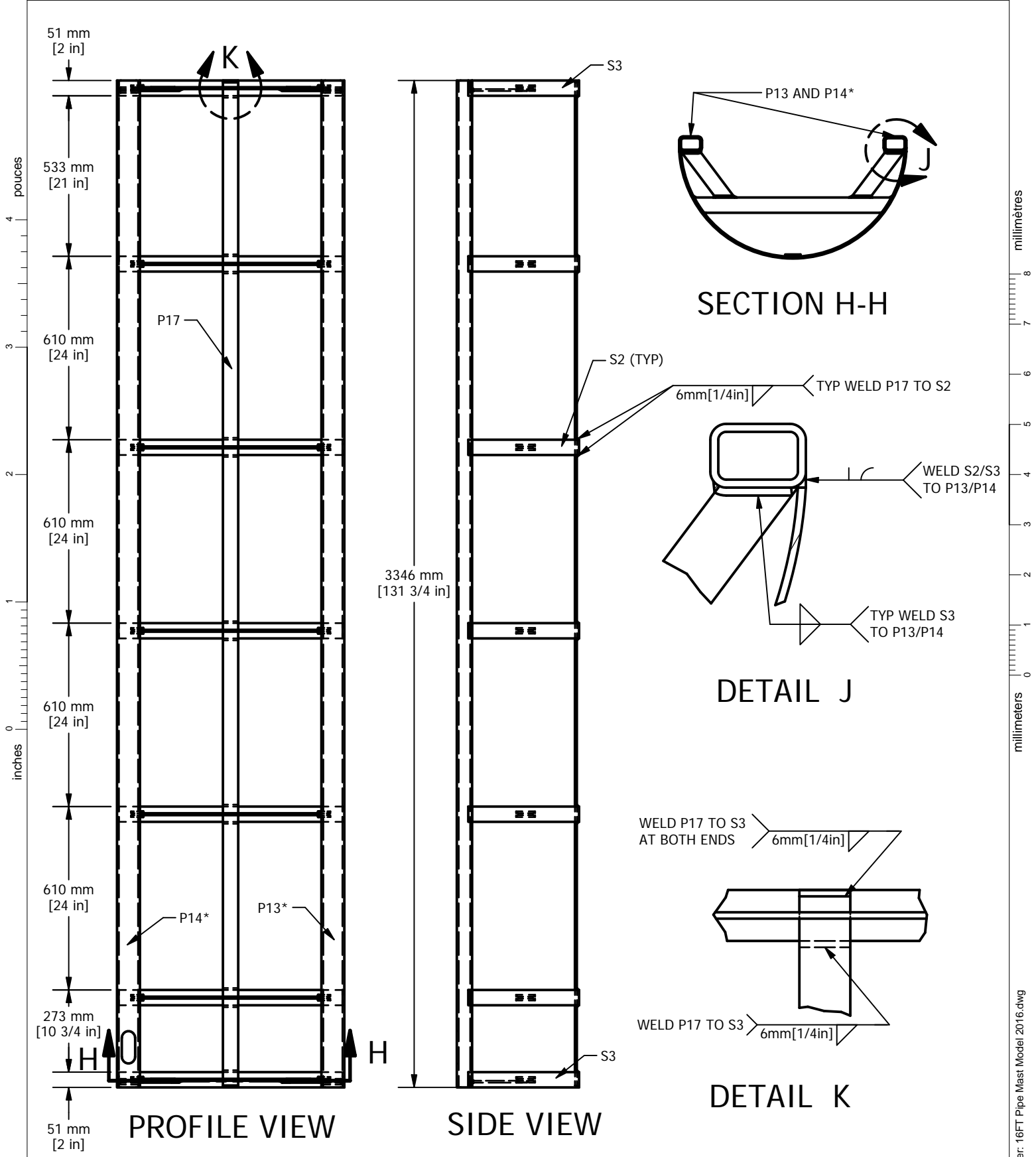
millimètres
0
1
2
3
4
5
6
7
8

	Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne
	CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN

Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST
Drawing - Dessin A2 - BACK OF ANTI-CLIMB

designed - conception BH	date 2016-06-24
approved - approuvé	date
drawing no. - no. dessin 4	sheet-feuille 6/25
	rev 0

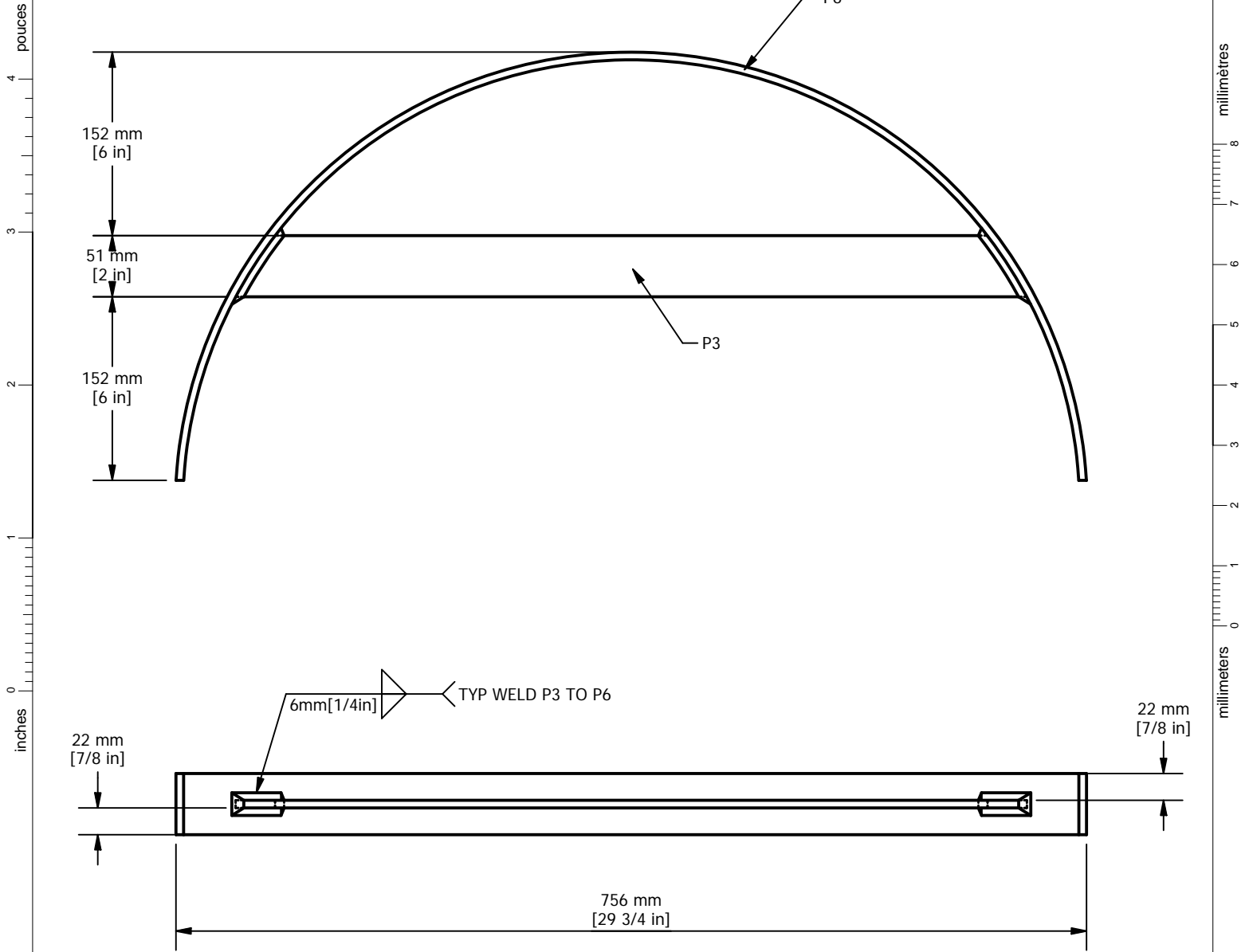
File / Fichier: 16FT Pipe Mast Model 2016.dwg

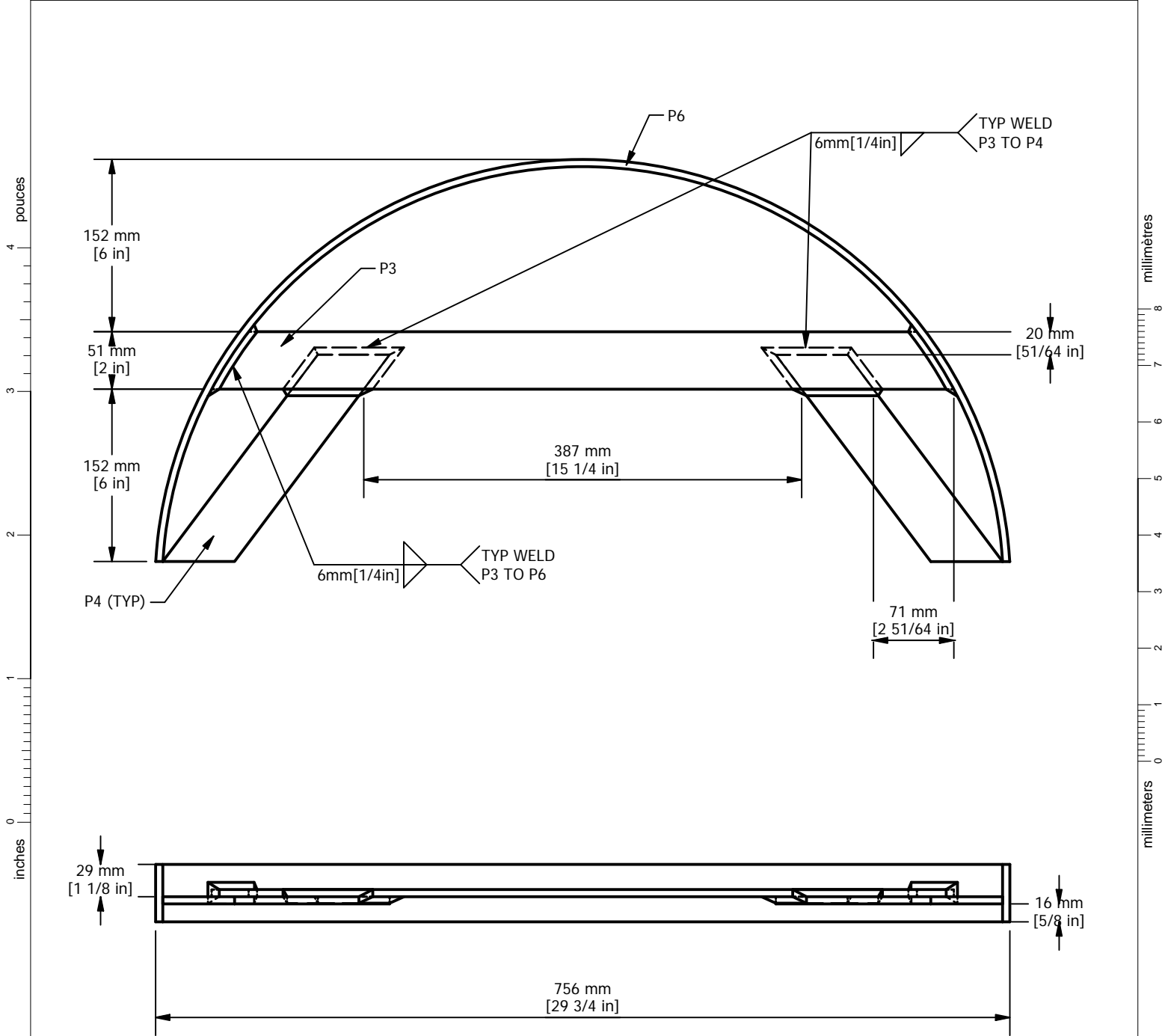


*CONFIGURATION SHOWN IS FOR BACK OF ANTI-CLIMB. P13 AND P14 ARE SWITCHED FOR DOOR OF ANTI-CLIMB.

<p>Fisheries and Oceans Canada Canadian Coast Guard</p>	<p>Pêches et Océans Canada Garde côtière Canadienne</p>	<p>Asset - Actif</p> <p>3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST</p>		<p>designed - conception</p> <p>BH</p>	<p>date</p> <p>2016-06-24</p>
		<p>Drawing - Dessin</p> <p>S1 - RIBBING SKELETON SUB-ASSEMBLY</p>		<p>approved - approuvé</p>	<p>date</p>
<p>CCG ref. no. - no. réf. GCC</p> <p>EWTM 8010-6-1</p>	<p>scale - échelle</p> <p>AS SHOWN</p>	<p>drawing no. - no. dessin</p> <p>5</p>		<p>sheet-feuille</p> <p>7/25</p>	<p>rev</p> <p>0</p>

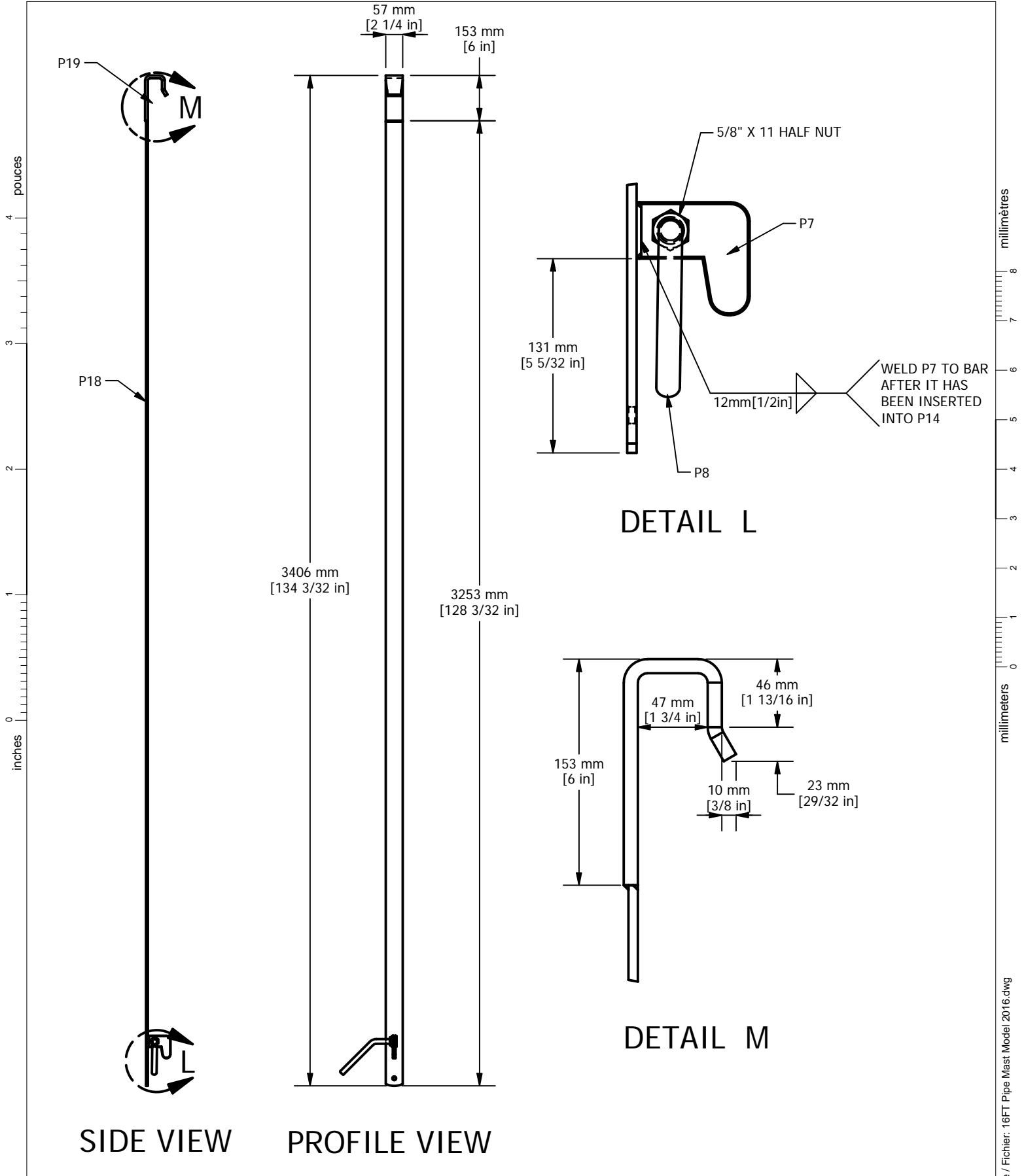
File / Fichier: 16FT Pipe Mast Model 2016.dwg





Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif
		Drawing - Dessin
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN	3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST

designed - conception BH	date 2016-06-24
approved - approuvé	date
drawing no. - no. dessin 7	sheet-feuille 9/25
rev 0	A



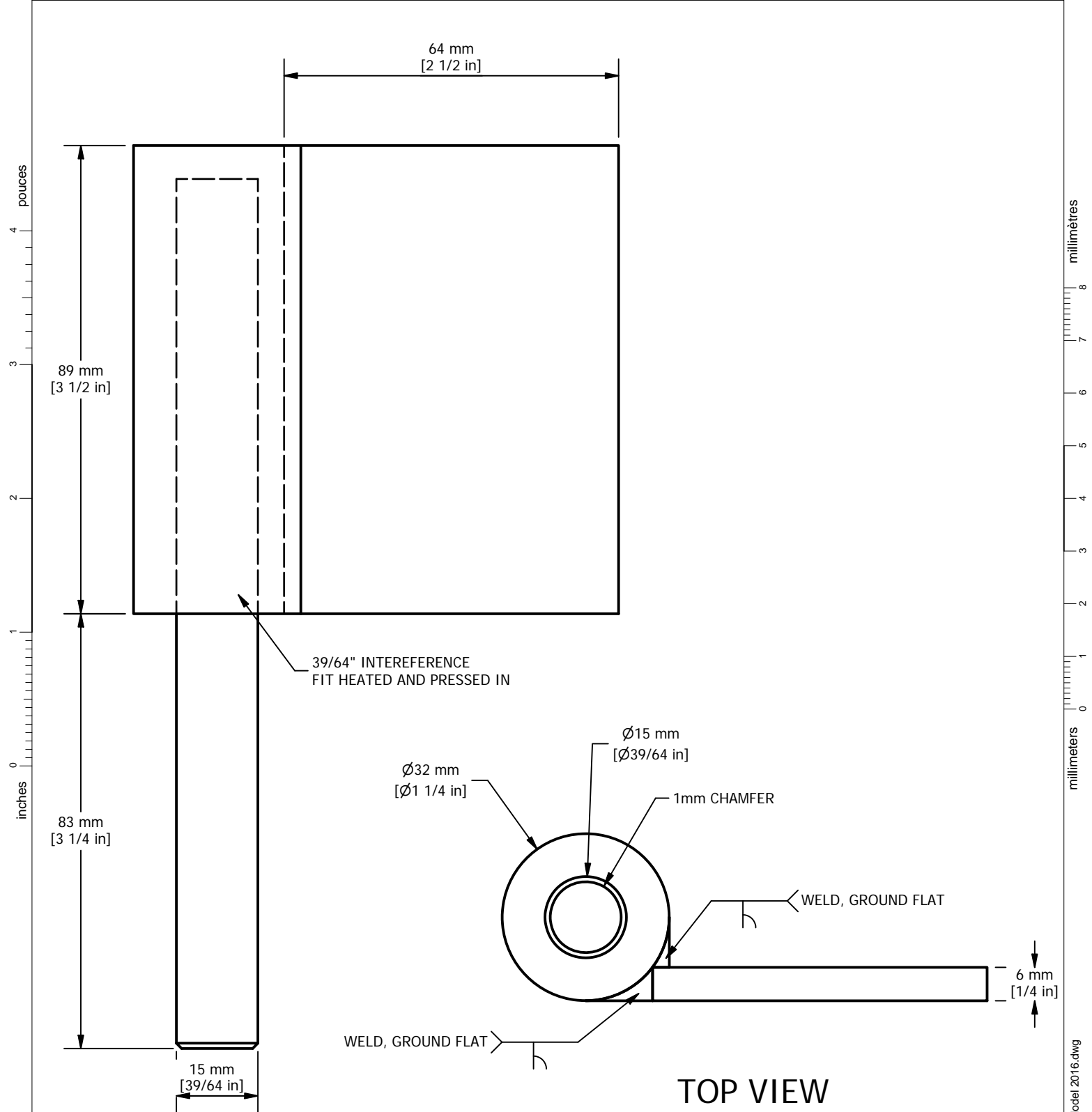
SIDE VIEW

PROFILE VIEW

DETAIL L


DETAIL M

<p>Fisheries and Oceans Canada Canadian Coast Guard</p>	<p>Pêches et Océans Canada Garde côtière Canadienne</p>	<p>Asset - Actif</p> <p>3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST</p>		<p>designed - conception</p> <p>BH</p>	<p>date</p> <p>2016-06-24</p>
		<p>Drawing - Dessin</p> <p>S4 - LATCH SUB-ASSEMBLY</p>		<p>approved - approuvé</p>	<p>date</p>
<p>CCG ref. no. - no. réf. GCC</p> <p>EWTM 8010-6-1</p>	<p>scale - échelle</p> <p>AS SHOWN</p>	<p>drawing no. - no. dessin</p> <p>8</p>		<p>sheet-feuille</p> <p>10/25</p>	<p>rev</p> <p>0</p>



SIDE VIEW

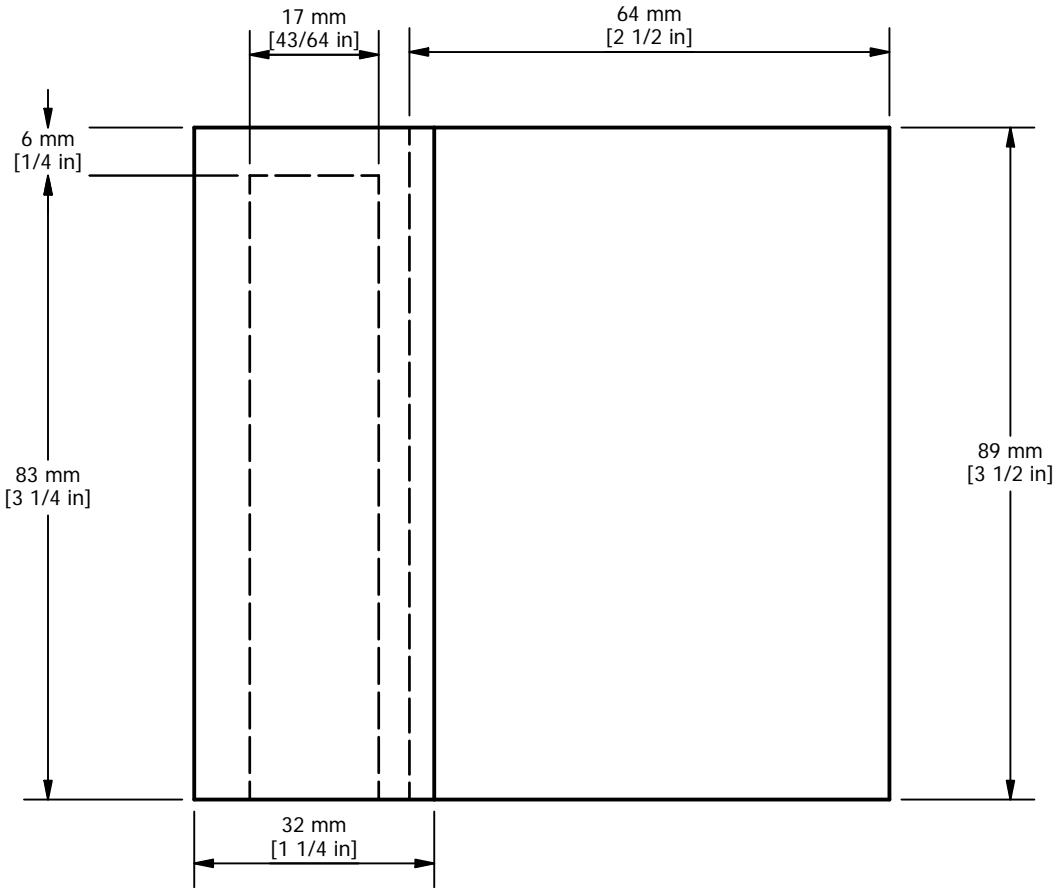
TOP VIEW

 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST	designed - conception BH	date 2016-06-24
		Drawing - Dessin P1 - MALE HINGE	approved - approuvé	date
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN		drawing no. - no. dessin 9	sheet-feuille 11/25
				rev 0

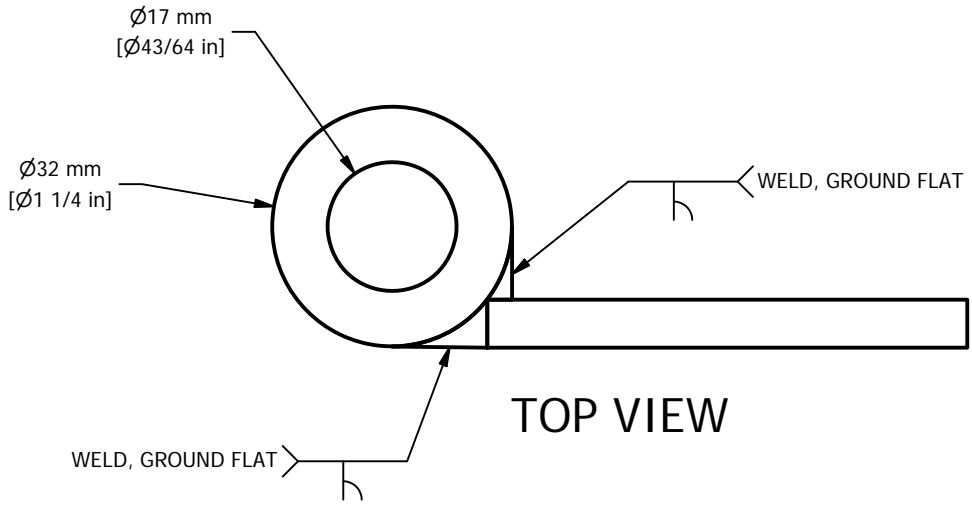
File / Fichier: 16FT Pipe Mast Model 2016.dwg

inches


millimètres

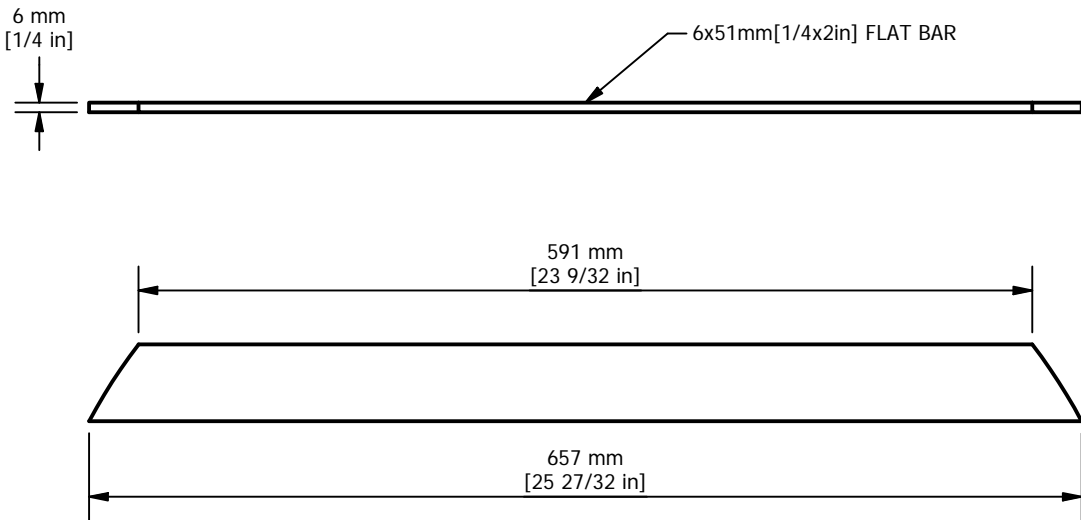


SIDE VIEW

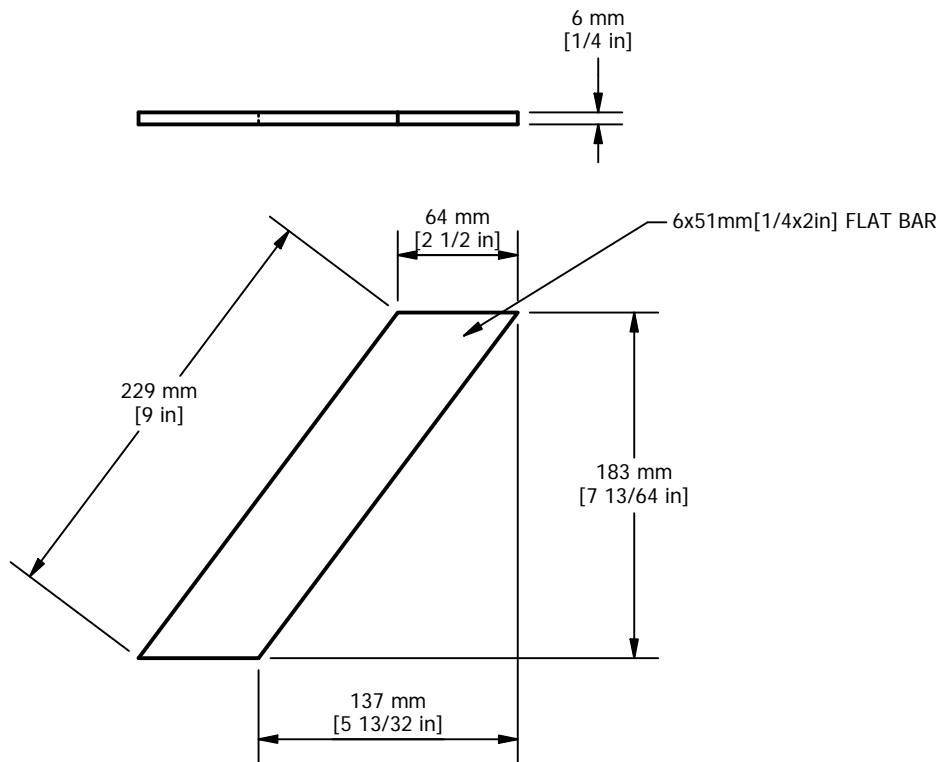


TOP VIEW


 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST	designed - conception BH	date 2016-06-24
		Drawing - Dessin P2 - FEMALE HINGE	approved - approuvé	date
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN	drawing no. - no. dessin 10	sheet-feuille 12/25	rev 0



P3 - STANDARD RIB BRACING



P4 - DIAGONAL RIB BRACING

 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST	designed - conception BH	date 2016-06-24
		Drawing - Dessin P3/P4 - RIB BRACINGS	approved - approuvé	date
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN	drawing no. - no. dessin 11	sheet-feuille 13/25	rev 0

inches
0
1
2
3
4

millimètres
0
1
2
3
4
5
6
7
8

R379 mm
[R14 29/32 in]


6 mm
[1/4 in]

756 mm
[29 3/4 in]

356 mm
[14 in]

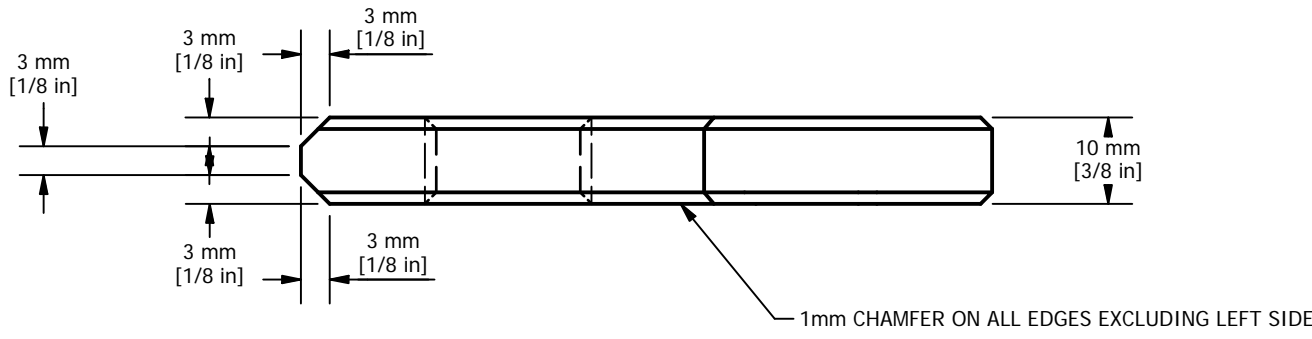
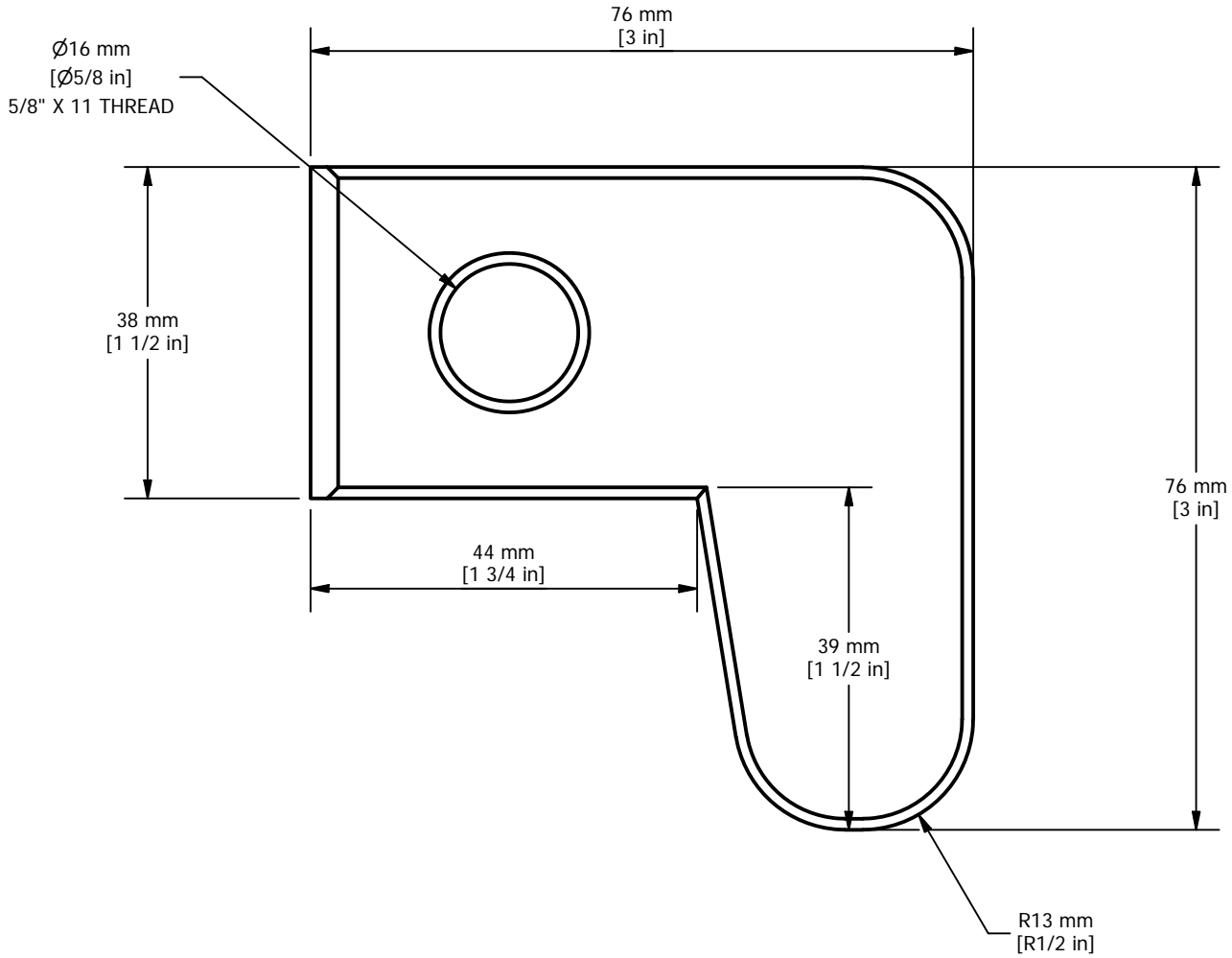
51 mm
[2 in]


6x51mm [1/4x2in] FLAT BAR

 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST		designed - conception BH	date 2016-06-24
		Drawing - Dessin P6 - RIBBING		approved - approuvé	date
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN	drawing no. - no. dessin 12		sheet-feuille 14/25	rev 0

inches
0
1
2
3
4
pouces

millimeters
0
1
2
3
4
5
6
7
8
millimètres

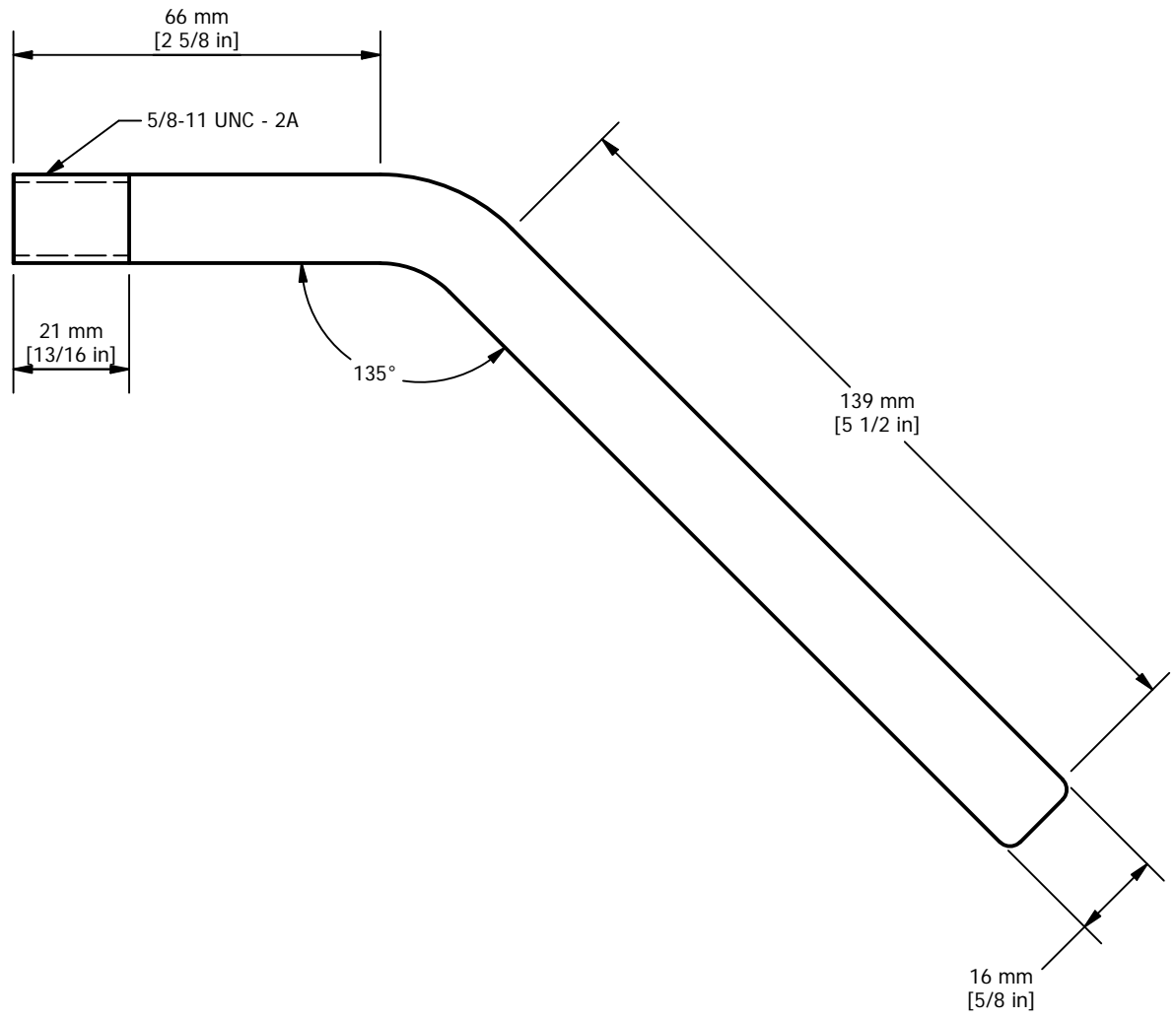



 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST	designed - conception BH	date 2016-06-24
		Drawing - Dessin P7 - LATCH HOOK	approved - approuvé	date
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN	drawing no. - no. dessin 13	sheet-feuille 15/25	rev 0

File / Fichier: 16FT Pipe Mast Model 2016.dwg

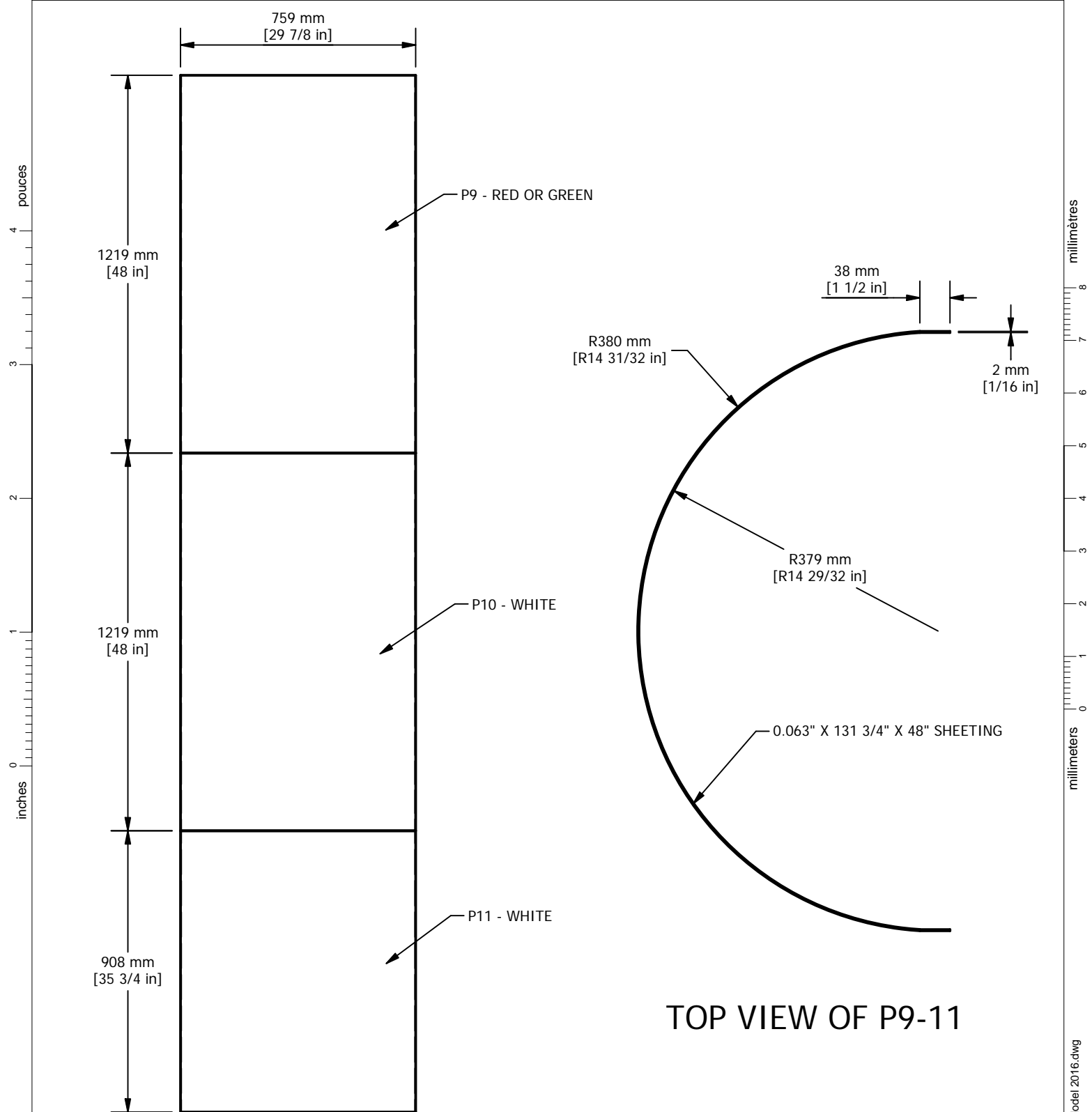
inches
0
1
2
3
4
pouces

millimètres
0
1
2
3
4
5
6
7
8
millimètres



 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST	designed - conception BH	date 2016-06-24
		Drawing - Dessin P8 - HANDLE	approved - approuvé	date
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN	drawing no. - no. dessin 14	sheet-feuille 16/25	rev 0

File / Fichier: 16FT Pipe Mast Model 2016.dwg



SIDE VIEW OF P9-11

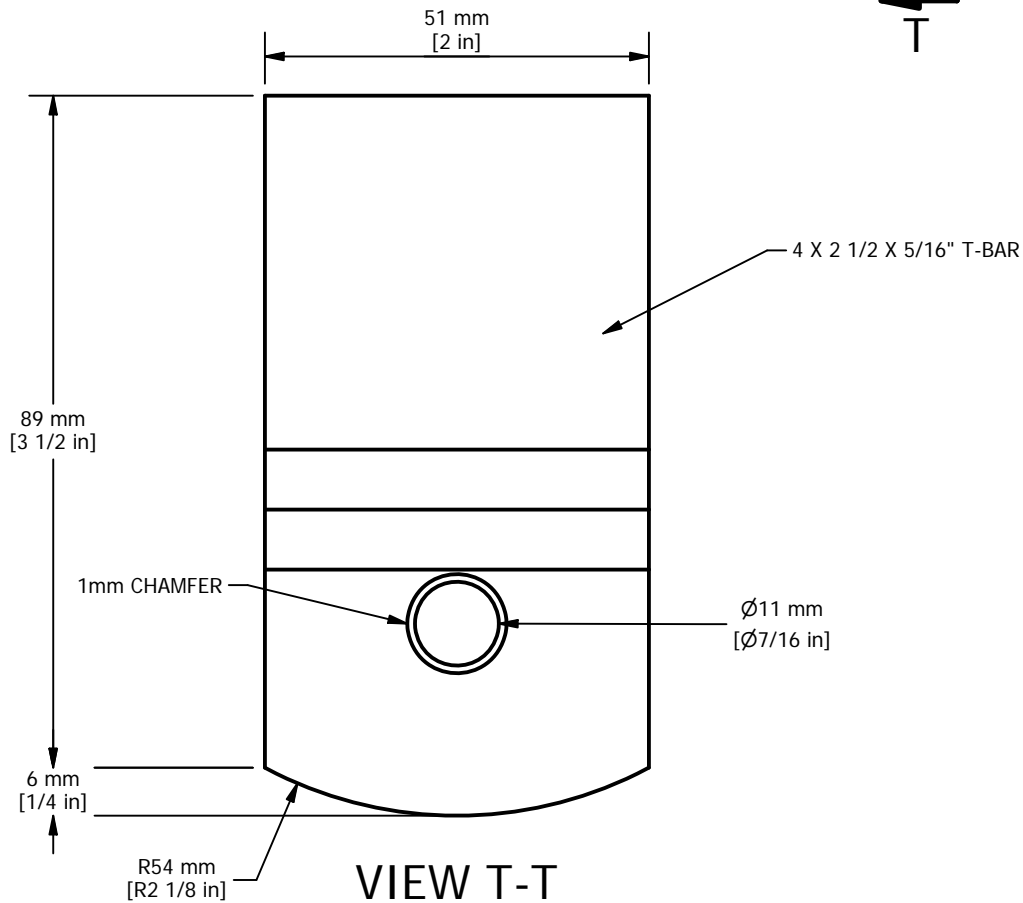
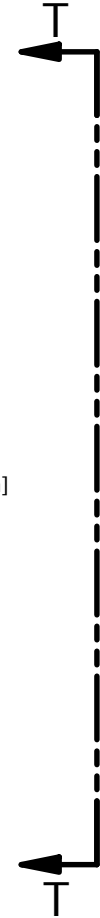
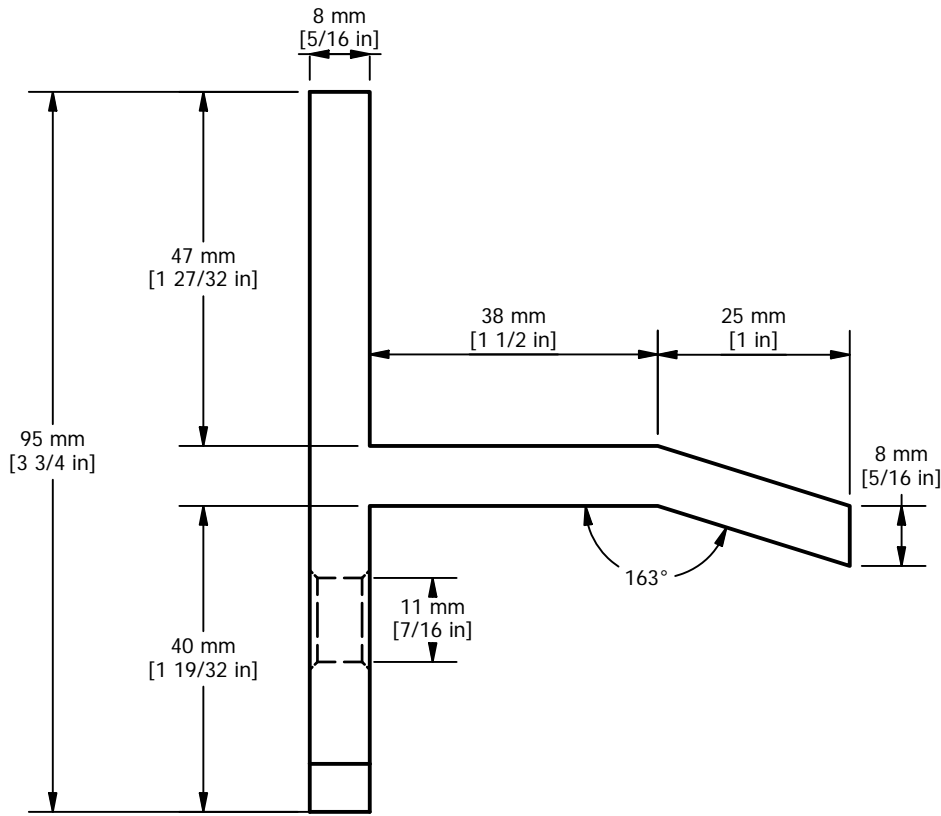
TOP VIEW OF P9-11

Fisheries and Oceans Canada Pêches et Océans Canada Canadian Coast Guard Garde côtière Canadienne	Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST	designed - conception BH	date 2016-06-24
		approved - approuvé	date
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	Drawing - Dessin P9-11 - SHEETING	drawing no. - no. dessin 15	sheet-feuille 17/25
scale - échelle AS SHOWN		rev 0	

File / Fichier: 16FT Pipe Mast Model 2016.dwg

pouces
4
3
2
1
0
inches

millimètres
8
7
6
5
4
3
2
1
0
millimeters



VIEW T-T

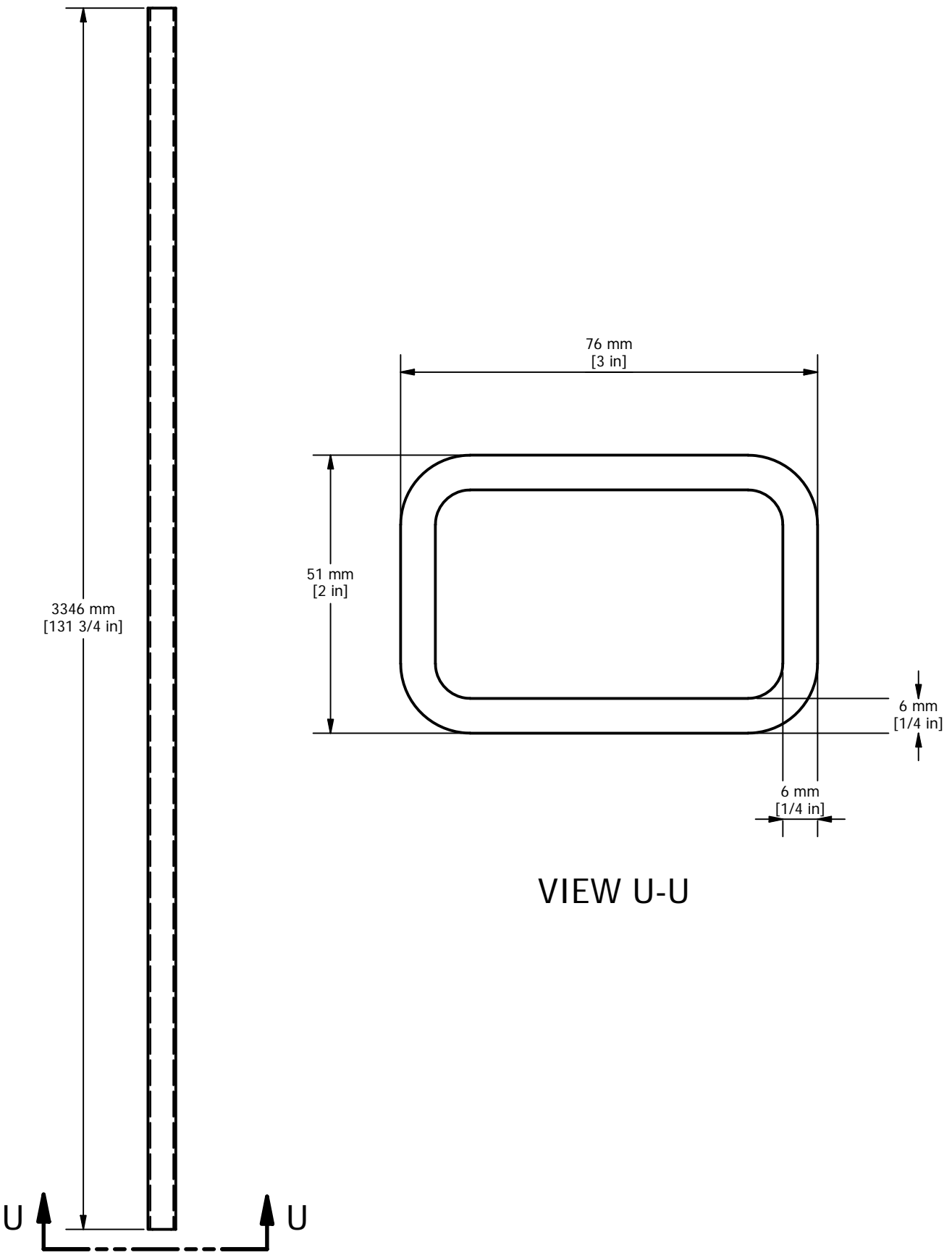
	Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne
	CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN

Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST
Drawing - Dessin P12 - DOOR REST


designed - conception BH	date 2016-06-24
approved - approuvé	date
drawing no. - no. dessin 16	sheet-feuille 18/25
rev 0	A

inches
0
1
2
3
4
pouces

millimeters
0
1
2
3
4
5
6
7
8
millimètres



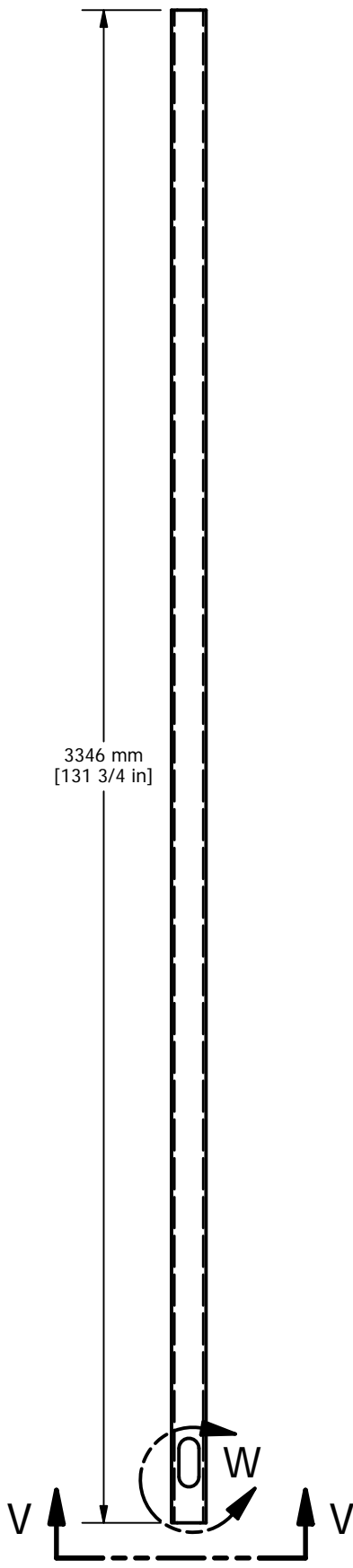
VIEW U-U

 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST	designed - conception BH	date 2016-06-24
		Drawing - Dessin P13 - HSS VERT 3x2x1/4	approved - approuvé	date
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN	drawing no. - no. dessin 17	sheet-feuille 19/25	rev 0

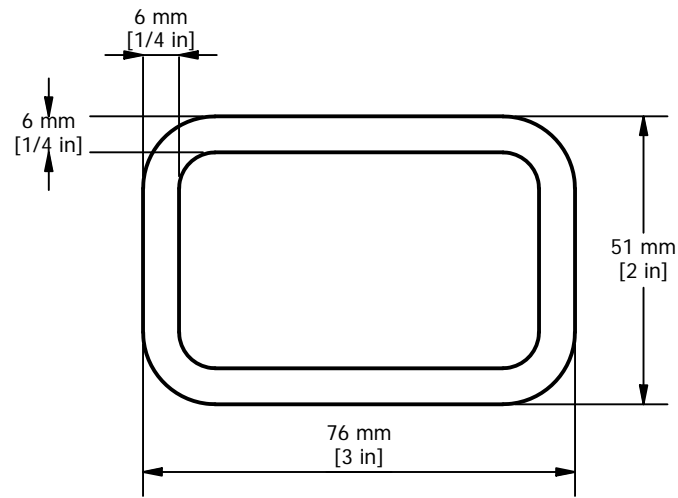
File / Fichier: 16FT Pipe Mast Model 2016.dwg

inches
0
1
2
3
4
pouces

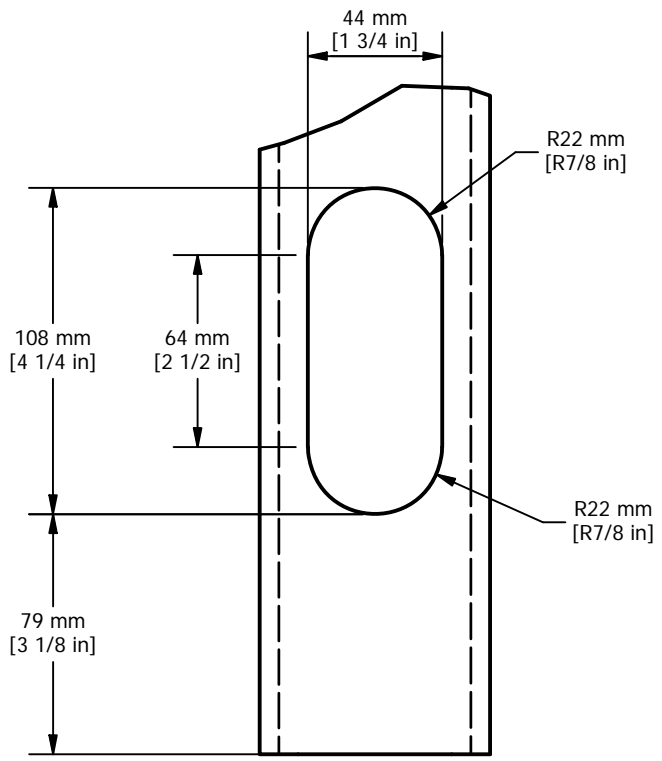
millimeters
0
1
2
3
4
5
6
7
8
millimètres




3346 mm
[131 3/4 in]



VIEW V-V

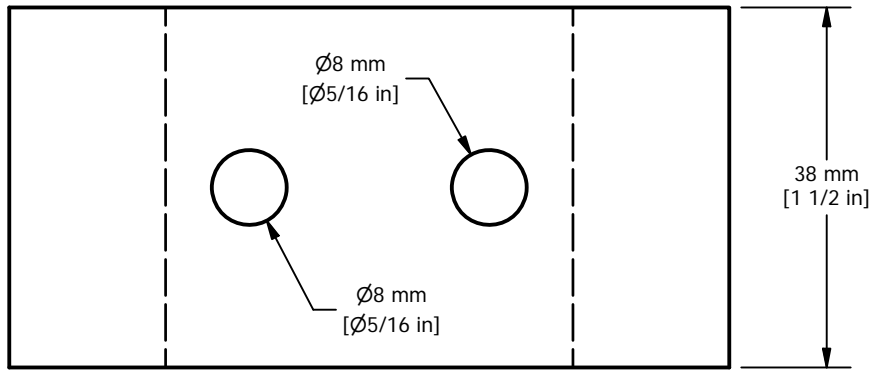
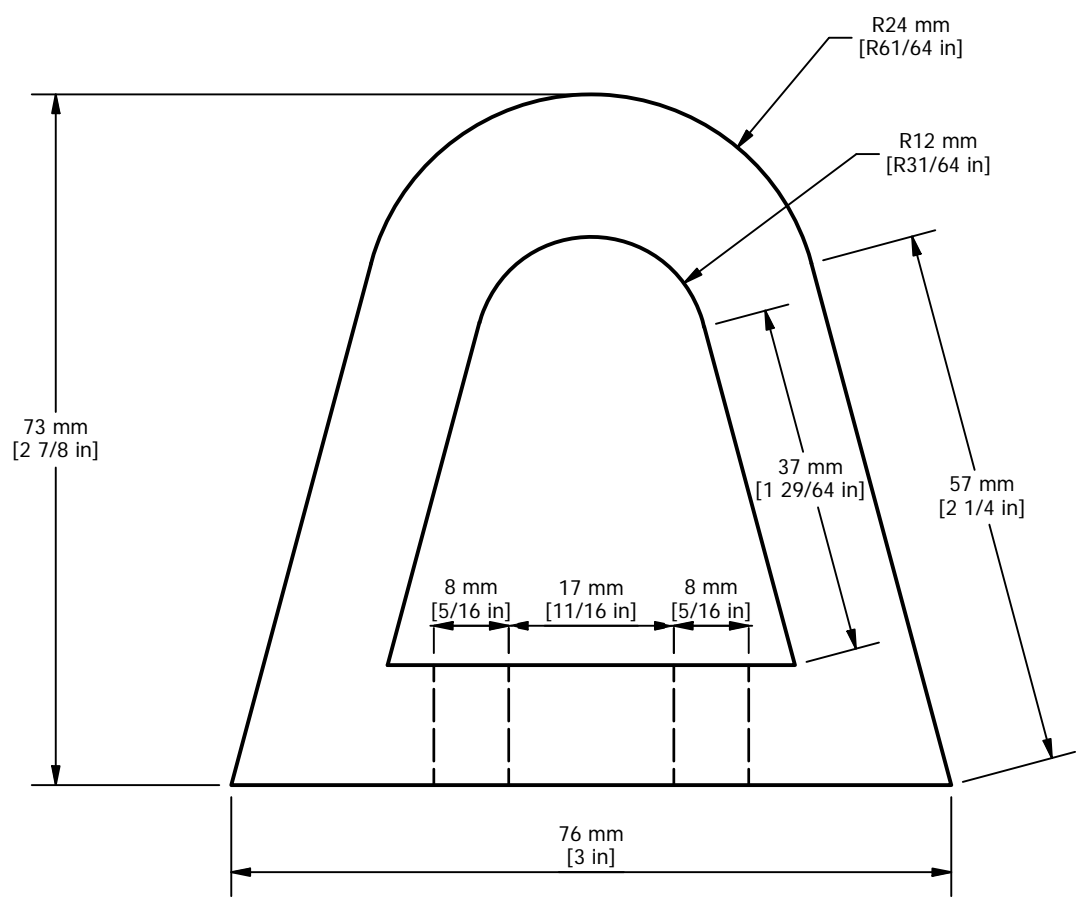



DETAIL W

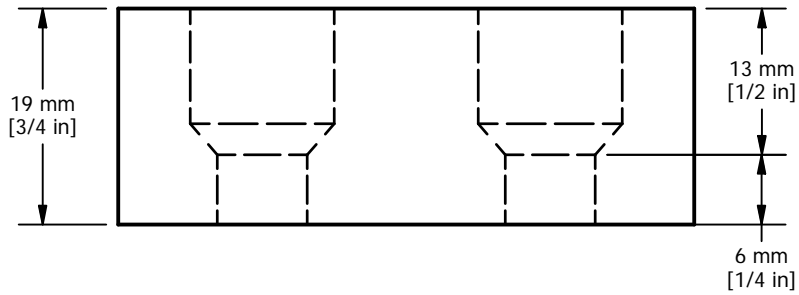
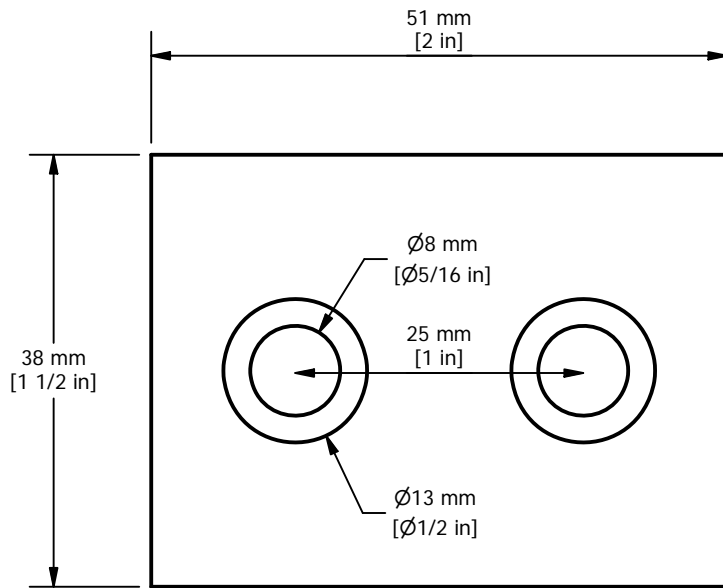
 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST		designed - conception BH	date 2016-06-24
		Drawing - Dessin P14 - HSS VERT 3x2x1/4 WITH HOLE		approved - approuvé	date
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN	drawing no. - no. dessin 18		sheet-feuille 20/25	rev 0

inches
0
1
2
3
4
pouces

millimeters
0
1
2
3
4
5
6
7
8
millimètres




 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST	designed - conception BH	date 2016-06-24
		Drawing - Dessin P15 - RUBBER STOPPER	approved - approuvé	date
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN	drawing no. - no. dessin 19	sheet-feuille 21/25	rev 0



pouces
4
3
2
1
0
inches

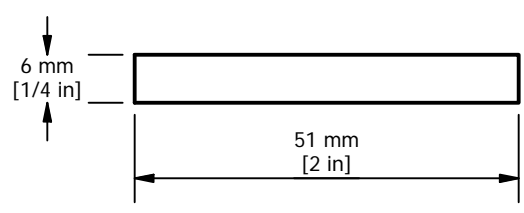
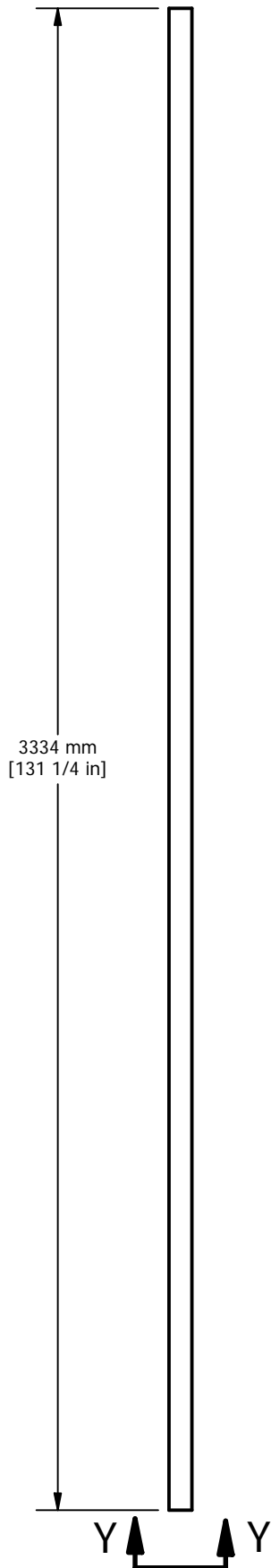
millimètres
8
7
6
5
4
3
2
1
0
millimeters

File / Fichier: 16FT Pipe Mast Model 2016.dwg

 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST	designed - conception BH	date 2016-06-24
		Drawing - Dessin P16 - SQUARE RUBBER STOPPER	approved - approuvé	date
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN	drawing no. - no. dessin 20	sheet-feuille 22/25	rev 0


inches
0
1
2
3
4
pouces

millimètres
0
1
2
3
4
5
6
7
8
millimètres



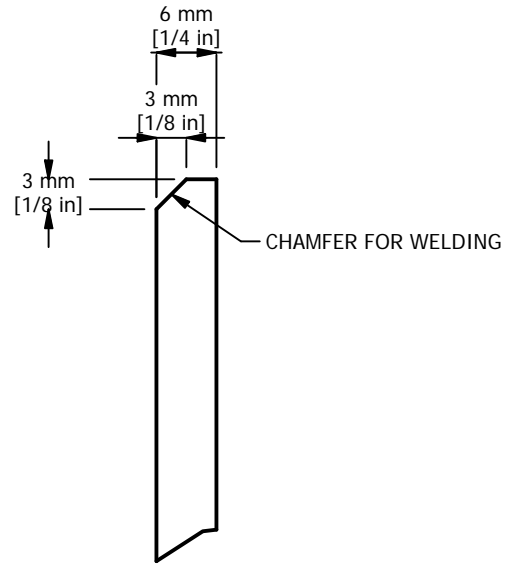
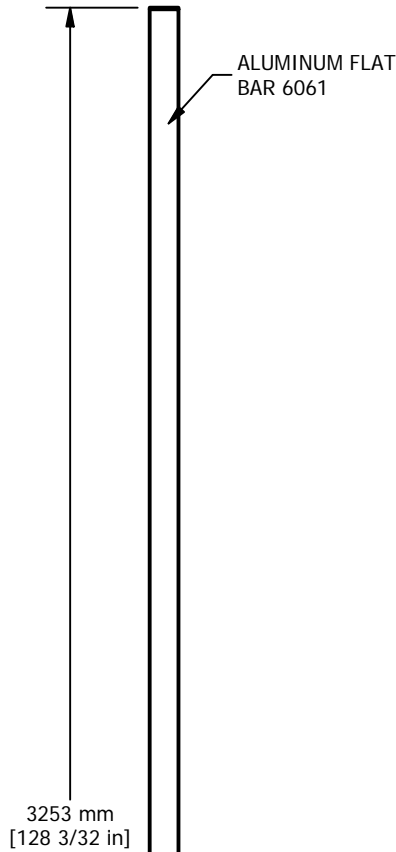
VIEW Y-Y



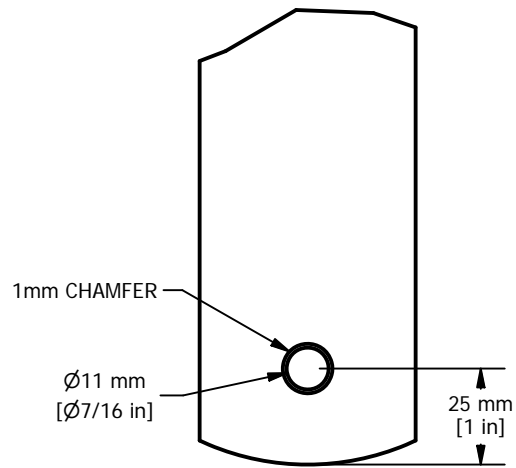
 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST		designed - conception BH	date 2016-06-24
		Drawing - Dessin P17 - TALL RIB REINFORCEMENT		approved - approuvé	date
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN			drawing no. - no. dessin 21	sheet-feuille 23/25
				rev 0	A

inches
0
1
2
3
4
pouces

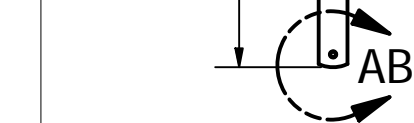
millimètres
0
1
2
3
4
5
6
7
8
millimètres




DETAIL AA



DETAIL AB



 Fisheries and Oceans Canada
Pêches et Océans Canada
Canadian Coast Guard
Garde côtière Canadienne

Asset - Actif
3.35 X 0.75M, 360° DAYMARK ASSEMBLY
FOR 16FT PIPEMAST

designed - conception	date
BH	2016-06-24
approved - approuvé	date

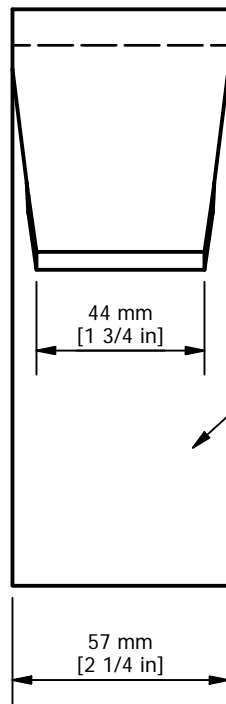
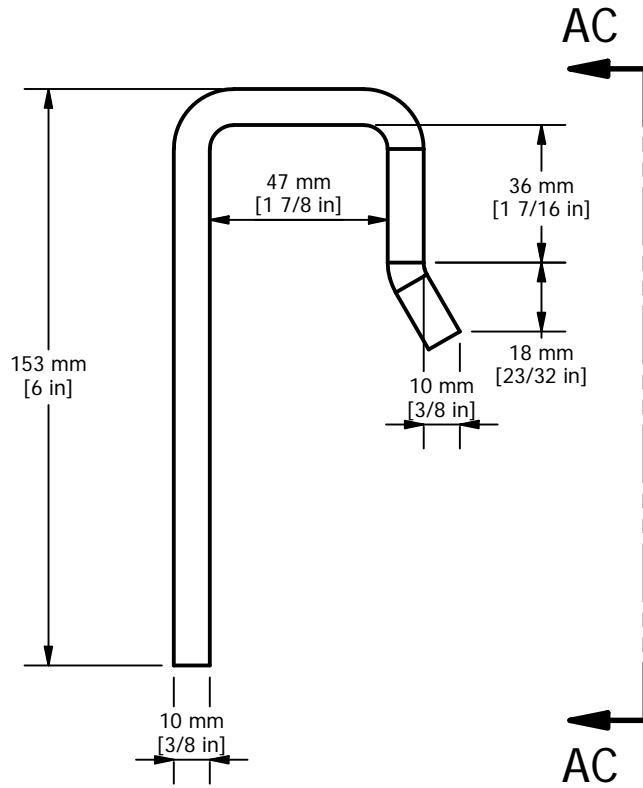
CCG ref. no. - no. réf. GCC	scale - échelle
EWTM 8010-6-1	AS SHOWN

Drawing - Dessin	P18 - BOTTOM LATCH BAR
------------------	------------------------

drawing no. - no. dessin	sheet-feuille	rev
22	24/25	0


inches

millimètres



ALUMINUM FLAT BAR 5052

VIEW AC-AC

 Fisheries and Oceans Canada Canadian Coast Guard	Pêches et Océans Canada Garde côtière Canadienne	Asset - Actif 3.35 X 0.75M, 360° DAYMARK ASSEMBLY FOR 16FT PIPEMAST	designed - conception BH	date 2016-06-24
		Drawing - Dessin P19 - TOP LATCH BAR	approved - approuvé	date
CCG ref. no. - no. réf. GCC EWTM 8010-6-1	scale - échelle AS SHOWN	drawing no. - no. dessin 23	sheet-feuille 25/25	rev 0



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



APPENDIX B3 – DRAWINGS

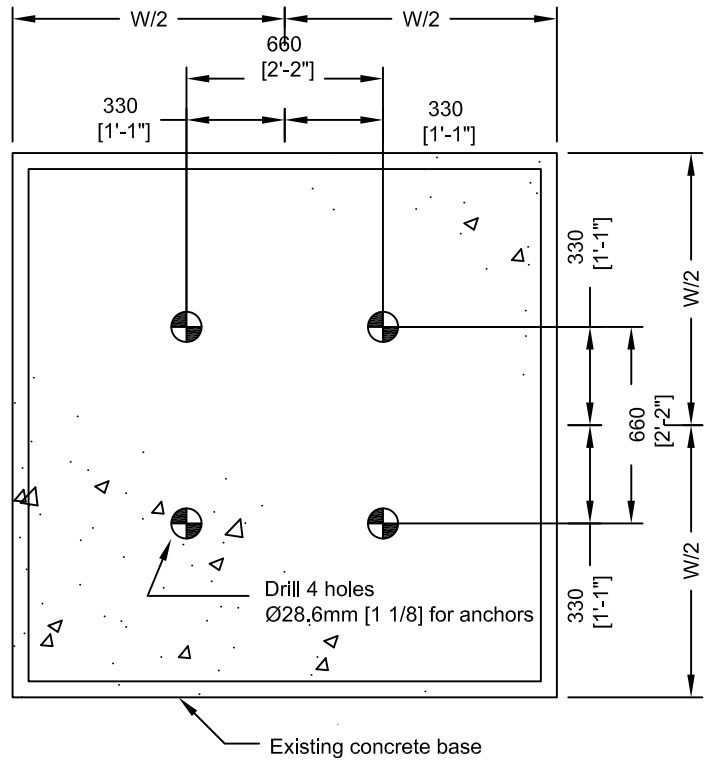
FOUNDATION IMPROVEMENTS

PRODUCTS:

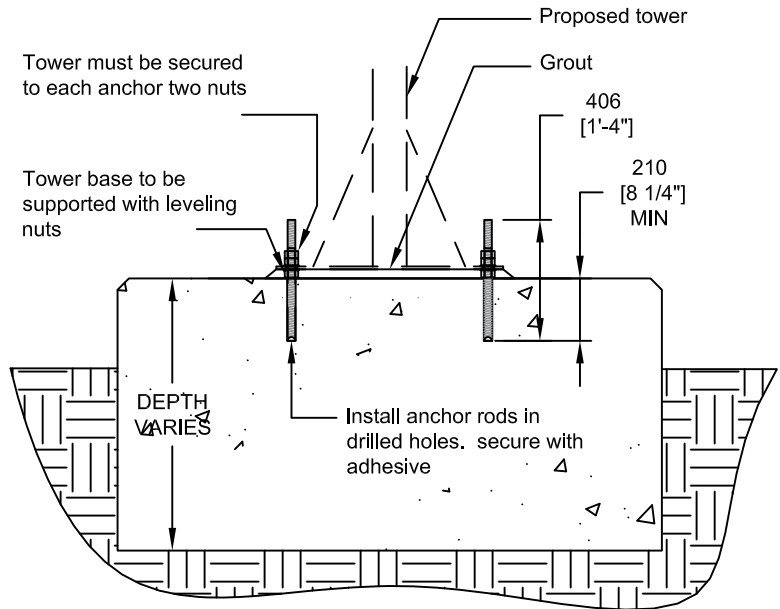
1. **ANCHOR RODS:**
HILTI HAS-R 316 SS 1"x16" or material of equal strength suitable for exterior application. Rods are to be furnished complete with 3 nuts, 2 washers of equal material.
2. **ADHESIVE:**
HILTI HY-200 injectable mortar or material of equal strength characteristics.
3. **GROUT:**
SIKA M-BED STANDARD or equivalent material.

EXECUTION:

1. Placement shall not be completed outside of the temperature range indicated by the manufacturer.
2. Holes are to be drilled at the spacing specified to the size and depth indicated, or as required by manufacturer's instructions.
3. Shallow, weak or heavily deteriorated concrete is to be reported to CCG Project Authority immediately.
4. Adhesive and anchors are to be installed in accordance with manufacturer's instructions with particular attention to all cleaning requirements, gel and curing times
5. Tower shall not be installed until adhesive has achieved a hardened state. Curing will be delayed in colder weather. Any action taken to limit curing time is to be reported to CCG project authority.
6. Tower shall be placed on leveling nuts and adjusted to plumb in two perpendicular axis.
7. Grout shall be installed between tower base and existing pier. Grout may be installed by dry pack or flowable method provided full contact with the underside of the pier is obtained. Grout shall be finished with a feathered edge.



PLAN VIEW



ELEVATION VIEW

inches

millimètres

Fisheries and Oceans Canada Pêches et Océans Canada Canadian Coast Guard Garde côtière Canadienne	Asset - Actif Drawing - Dessin	VARIOUS		drawn - dessiné D. JIBB	date 13 JUL 16
		ADHESIVE ANCHOR INSTALLATION PIPEMAST TOWER (2.4 - 4.8m)		approved - approuvé B. YOUNG	date 13 JUL 16
CCG ref. no. - no. réf. GCC UNASSIGNED	scale - échelle VARIES			drawing no. - no. dessin UNASSIGNED	sheet-feuille 01/01
				rev 0	8 1/2" X 11"

CONCRETE:

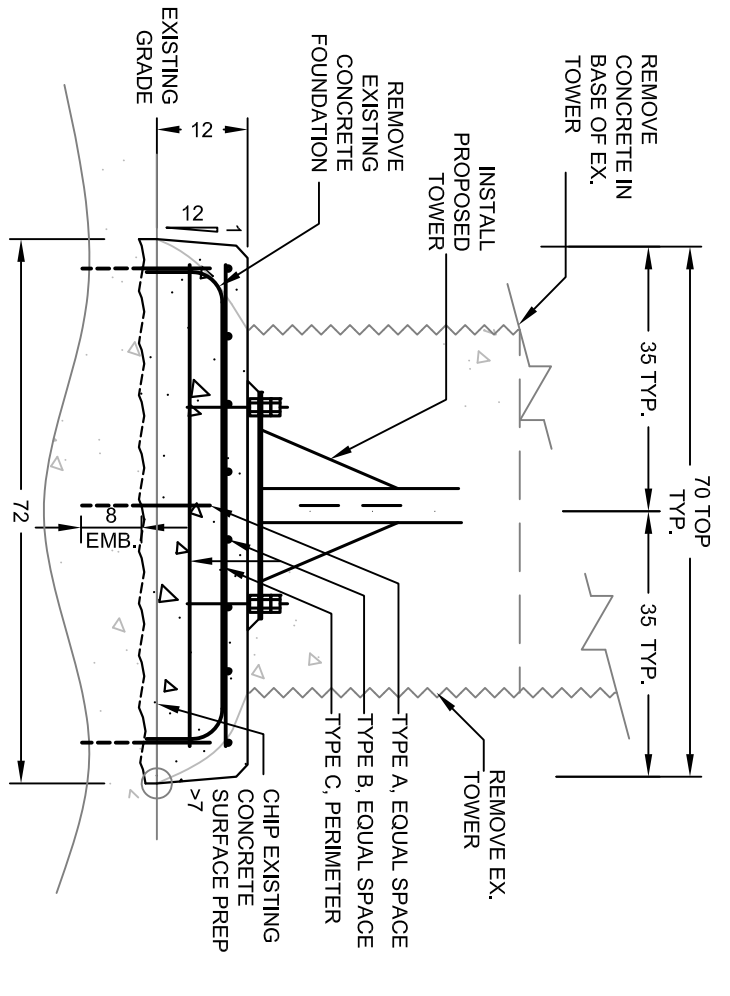
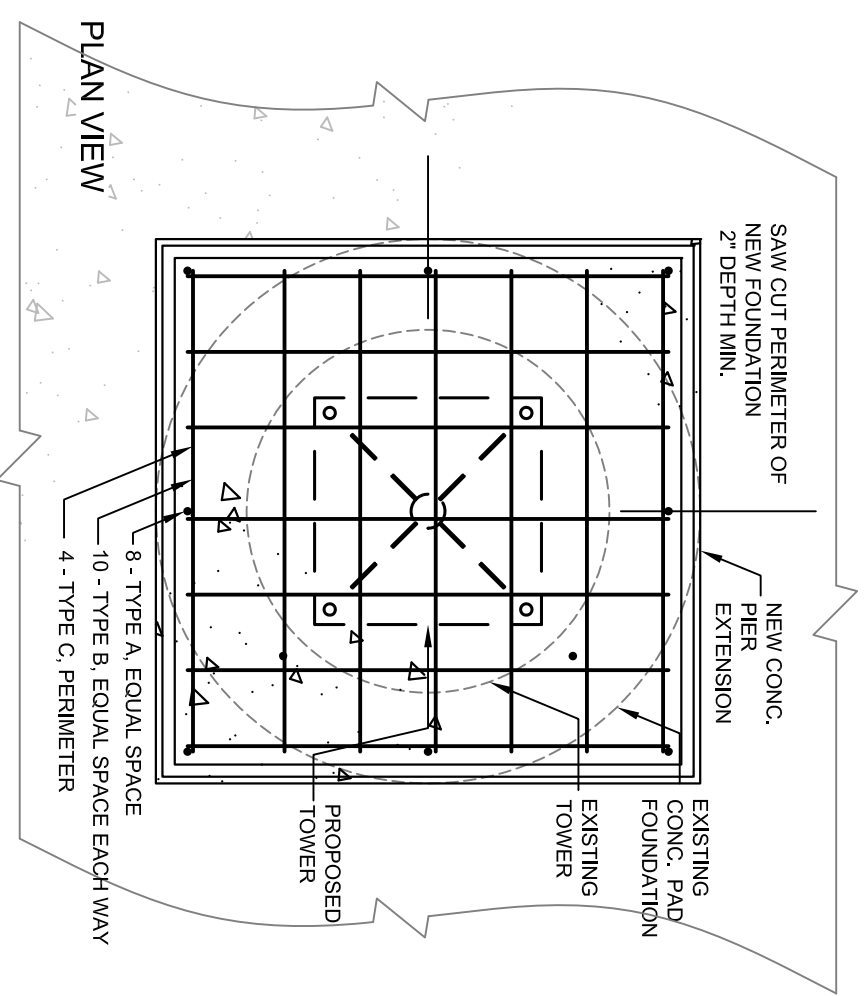
1. CONTRACTOR SHALL SUBMIT SUMMARY OF CONCRETE PROPERTIES WITH CONSTRUCTION PLAN.
 - 1.1. CONCRETE SUPPLIER MUST ASSUME RESPONSIBILITY FOR CONCRETE PERFORMANCE. MANDATORY CONCRETE PROPERTIES ARE DETAILED IN TABLE 1. CONCRETE, THIS PAGE.
 - 1.2. CONCRETE MUST BE AIR ENTRAINED IN ACCORDANCE WITH CSA A23.1. (5-8% TYP).
 - 1.3. SUPPLEMENTAL ADMIXTURES IMPACTING PLASTIC AND HARDENED PERFORMANCE SHALL BE SUBJECT TO APPROVAL OF COAST GUARD.
2. FORMWORK AND FALSEWORK SHALL BE AS DETAILED IN APPROVED CONSTRUCTION PLAN.
3. PLACEMENT MUST BE WITNESSED BY COAST GUARD.
 - 3.1. CONCRETE MUST NOT BE PLACED ON FROZEN SUBGRADE.
 - 3.2. CONTRACTOR TO ASSIST WITH COLLECTION OF SAMPLES FOR CONFIRMATION OF CONCRETE QUALITY.
 - 3.3. FINISH CONCRETE WITH A 1-2% SLOPE, SLOPING AWAY FROM THE CENTER. NO WATER SHALL POND ON THE SLAB.
5. CURING SHALL BE COMPLETED IN ACCORDANCE WITH APPROVED CONSTRUCTION PLAN AND SHALL ACCOUNT FOR EITHER HOT OR COLD WEATHER AS APPROPRIATE.
6. TOWER SHALL NOT BE ERECTED UNTIL CONCRETE TESTING INDICATES ADEQUATE STRENGTH DEVELOPMENT.

REINFORCEMENT:

1. REINFORCEMENT SHALL CONFORM TO TABLE 1. "REINFORCING SCHEDULE, THIS PAGE. SHAPES REFERENCE "TYPICAL BAR BENDS" REINFORCING STEEL INSTITUTE CANADA (RSIC).
 2. ALL REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA G30.18, FY 400R.
 3. MAINTAIN 75mm (3") COVER WHERE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH. MAINTAIN 50mm (2") COVER ALL REMAINING AREAS.
 4. ENSURE PLACEMENT IS CLEAR OF ANCHOR LOCATIONS
 5. BAR SUPPORTS: CLASS "A".
 6. DOWELS SHALL BE INSTALLED TO DEPTH SHOWN AND AFFIXED WITH ADHESIVE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 7. PLACEMENT OF REINFORCEMENT TO BE CONFIRMED BY COAST GUARD PRIOR TO CONCRETE PLACEMENT.
- ANCHORS
 1. SEE PIPEMAST INSTALL REFERENCE SHEET.
 2. ALLOW 7 DAYS CURING PRIOR TO INSTALLATION.

TABLE 1 - CONCRETE PROPERTIES	
STRENGTH	EXPOSURE
32 Mpa (28 days)	F-1 CONCRETE EXPOSED TO FREEZING AND THAWING IN A SATURATED CONDITION NO CHLORIDES

TABLE 2 - REINFORCEMENT (length in mm)										
TYPE	DIAM	RSIC SHAPE	LENGTH	QTY	A	B	C	D	E	G
A	20M	STRAIGHT	450	8	-	-	-	-	-	-
B	15M	STRAIGHT	1675	18	-	-	-	-	-	-
C	15M	17	4220	4	-	225	1675	225	-	-



ELEVATION VIEW

NOTE:
DIMENSIONS ARE IN INCHES
UNLESS OTHERWISE NOTED

Fisheries and Oceans
Canada
Coast Guard

Pêches et Océans
Canada
Garde côtière
Canadienne

0	FOR TENDER	DU	12 JUL 16
rev	description	By	date
Asset - Actif		par	

LL 595 WHEATLEY HARBOUR

Drawing - Dessin

drawn - dessiné	date
D. JIBB	2016-02-11
designed - conception	date
B. YOUNG	2016-02-10
checked - vérifié	date
B. YOUNG	2016-02-11
approved - approuvé	date
B. YOUNG	2016-02-11
CCG ref. no. - no. réf. GCC	scale - échelle
EWTM	VARIES
drawing no. - no. dessin	sheet-feuille
1	01/01



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Canadian
Coast Guard

Garde côtière
canadienne



APPENDIX B4

MARINE ACCESS REQUIREMENTS

.1 Marine Access

- .1 Vessel(s) employed in the performance of the contract shall be certified as required by the Canada Shipping Act 2001 and its applicable regulations including Marine Personnel Regulation.
 - .1 The bidder shall ensure that the vessel(s) proposed for the work meets all requirements of the Canada Shipping Act 2001 and the applicable Regulations under the Canada Shipping Act.
 - .2 Bidders shall provide copies of the following documentation to facilitate evaluation and award:
 - .1 Proof of vessel registration as a commercial vessel in accordance with the Canada Shipping Act 2001. Either one of two registrations will be accepted:
 - .1 Proof of commercial vessel registration in the Small Vessel Register (SVR) if less than 15 Gross Tons or;
 - .2 Proof of commercial vessel registration in the Canadian Register of Vessels (CRV) if more than 15 Gross Tons.
 - .3 NOTE: Pleasure Craft and Fishing Vessels are not acceptable for the performance of this work – it must be a commercially registered vessel.
 - .2 Where the vessel is registered in the SVR the bidder shall also provide the following:
 - .1 Copy of vessel certification and any limitations the vessel is operating under. Where the vessel is restricted, the operator shall ensure that the vessel can be used to safely perform the work in this specification;
 - .2 Copy of inspection according to the Small Vessel Compliance Program; Bidder shall submit proof of enrolment in the compliance program and;
 - .3 Either a copy of the initial inspection report or the most recent copy of an annual inspection report and;
 - .4 Copy of the crew certification that will be operating the vessel. Crewing and certification of crew shall be in accordance with the Marine Personnel Regulations, latest edition.
 - .3 Where the vessel is registered in the CRV the bidder shall also provide the following:
 - .1 Copy of the latest Annual Inspection Certificate endorsement and;

- .2 Copy of any restrictions that the vessel is operating under and the general sailing limitations of the vessel. Where the vessel is restricted, the operator shall ensure that the vessel can be used to safely perform the work in this specification;
 - .3 Copies of the crew certification that will be operating the vessel. Crewing and certification of crew shall be in accordance with the Marine Personnel Regulations, latest edition.
- .2 Vessels and crew found to be in contravention of the act will not be permitted to be engaged in any elements of the works identified herein. In the event that a vessel or crew is found non compliant a suitable replacement vessel and/or crew will be retained by the Contractor at their sole expense.