Addendum – DFO Hay River Life Safety Upgrades

Project:	**DFO Hay River Life Safety Upgrades**		Addendum:	**001**
Location:	**Hay River, NT**		Date:	**December 7, 2021**
File:	**144903068**		Client File:	**EW038-221280/A**
Client:	**Public Services and Procurement Canada**		Contractor:	**All Bidders**

To All Bidders:

1. General:

1.1 This addendum shall be read in conjunction with the Drawings and Specifications prepared for the above.

1.2 Where inconsistent with the above, this addendum shall govern. This addendum forms an integral part of the Contract Documents and shall be included therein.

1.3 No consideration shall be allowed for increases (extras) to the CONTRACT PRICE due to failure of the Contractor or Subcontractor not being familiar with this addendum.

1.4 The Tenderer will insert in the Tender Form the numbers of the addenda received by him/her during the tendering period and taken into account by him/her in preparing his tender.

2. Clarifications:

Item No.	Description
2.01	Q1) *As per Mechanical drawing, we have to replace 3 Unit Heaters, 1 Exhaust Fan, 2 Control dampers, some diffusers and piping to Unit heater1 in Flammable Stores Building. Specification calls for Duct cleaning, Balancing, Glycol and water treatment. Please clarify do we have to do Duct cleaning and Balancing for the entire Flammable Stores Building? Also, do we have to drain and replace Glycol for all the entire building?* A1) Duct cleaning and balancing are only required for the new duct sections serving the Flammable Liquids room exhaust system. The building's entire glycol heating system is to be drained down, cleaned, and flushed. Upon completion, the system is to be filled with new glycol, existing glycol is not to be reused.
2.02	Q2) *What buildings are FHBRO?* A1) None of the buildings have currently received FHBRO heritage designations. However, several of the buildings are candidates for heritage review and as such shall be treated as recognized heritage buildings. Refer to General Note 8 on drawing E010 and Specifications Section 01 11 00, 1.2.
2.03	Q3) *Can conduit be reused?* A3) Existing conduit may be re-used if in good condition. Existing conduit penetrations to be re-used as much as possible to minimize new penetrations, especially for recognized heritage buildings. Refer to revised drawing notes attached.

2.04	Q4) *Is Vi testing required all buildings together or one by one?* A4) The formal ULC fire alarm verification for the complete system shall be performed as a single verification for all buildings. However, to ensure some level of protection is provided and to reduce the downtime of the systems for each building, buildings shall be completed one by one. Upon completion of each building, the local functionality of the system for that building shall be confirmed by functional testing to allow the fire alarm to function stand alone temporarily until the full verification can be completed for all buildings. Refer to revised drawing notes in attached sketches.
2.05	Q5) *Is fire watch required?* A5) Fire watch is not required. Refer to revised drawing notes in attached sketches.
2.06	Q6) *Is the existing system the same for all buildings?* A6) No. There are currently 3 separate existing fire alarm systems. The Administration Building and Fish Management Complex each have stand-alone conventional fire alarm systems. The third system is an addressable system based in the Maintenance Shop. The system for the maintenance shop also has a loop that monitors devices in the Flammable Storage, Carpenter Shop and Helicopter Operations buildings. The DFO Warehouse does not have an existing fire alarm system. On the other site, the Welding Shop and Tx building also do not have existing fire alarm systems.
2.07	Q7) *What are the hours of work? Can we work after hours and weekends?* A7) Regular business hours are 8:00AM to 5:00PM. Work after hours and on weekends will be permitted on a case-by-case basis to reduce interruption to staff working in occupied buildings. Requests for after hours work must be coordinated with the owner and approved in advance. Refer to specification changes below.
2.08	Q8) *How much space above the T-bar ceiling in the administration building?* A8) On-site measurement during the tender site visit confirmed the height above the T-bar ceiling in the Administration Building is approximately 2 feet.
2.09	Q9) *Does DFO allow cutting front concrete for trench at the administration building?* A9) Trench and conduit routing shall be coordinated in the field to avoid cutting existing concrete where possible. If concrete must be cut, it shall be restored to equal or better than pre-project condition.
2.10	Q10) *During the tender site visit it was identified that two rooms in the warehouse weren't on the original floorplan and the flammable storage building has two devices attached to the outside of the building that need to be removed as they are part of the original fire suppression system.* A10) Refer to attached sketches for drawing revisions.
2.11	Q11) *In the Flammable Stores building we are to do a 2 hour fire rated wall as per note 6 can you please get us the height of the building?* A11) The height of the rated wall between the two halves of the building is approximately 4m high. Refer to Keynote 6 on E440 for dimensions.
2.12	Q12) *For the Campus style system with the Style C Network loop what is the requirement for the cable?* A12) The Network Communication Link cable shall be #18AWG shielded twisted pair in accordance with manufacturer's requirements. Refer to specifications below.

2.13	Q13) *For the carpentry shop can we please get the electrical for all the equipment identified for Note 7 so as to properly size contactors and relays for the interlock to dust collector.* A13) Exact equipment data is not immediately available. Assume for bidding purposes, maximum 5HP, 230V, three phase for each piece of equipment. Confirm exact equipment specifications on site prior to ordering materials.
2.14	Q14) *could you please provide a more detailed drawing for the site work ie asphalt locations, and any civil site services drawings that are up to date.* A14) Refer to attached existing drawings for known information on existing site services. The accuracy of this information cannot be guaranteed and has not been surveyed for this project. Contractor is responsible to provide locates for underground services prior to digging/trenching. Refer to revised drawing notes in attached sketches.
2.15	Q15) *E410 Note 1, What is the Hazard. Need to know if these will need to be explosion proof devices. General note beside Note 1- What does this mean for the supplier.* A15) Note 1 is referring to the Maintenance Garage area. This area is classified as CSA Zone 2 hazardous location from the floor level up to 50mm above the floor in accordance with CEC Section 20, 20-102. It is anticipated that the devices and wiring installed for this project will be outside the limits of this hazardous zone, but the contractor should be aware of the hazardous zone requirements in accordance with the CEC.
2.16	Q16) *E420 Note 1 – 3, Again What is the hazard?* A16) Hazardous zones are classified in accordance with the CEC. Carpentry workshops area is Zone 22 due to combustible dusts created from woodworking equipment. Paint shop areas classified as either Zone 1 or Zone 2 in accordance with CEC 20-302 for paint spraying applications.
2.17	Q17) *E440 Note 4, What is the hazard?* A17) Refer to Detail 5/E440, hazardous area is classified as CSA Zone 2 in accordance with CEC. Hazard is due to storage and dispensing of flammable liquids.
2.18	Q18) *E460 Note 1, Again, what id the hazard.* A18) Hazard is classified as Zone 2 in accordance with CEC 20-102 for repair garages.
2.19	Q19) *is the computer to be text or graphic and are you able to provide auto cad drawings?* A19) Graphic display is required for the workstation. AutoCAD drawings to be provided to successful bidder for the purpose of creating the graphic display.

3.	**Scope of the Addendum – CONTRACT Specifications**
Item No.	**Description**
3.01	Section 01 11 00 – Summary of Work Part 1 – General 1.5 OWNER OCCUPANCY **ADD**: .3 Normal working hours are 8:00am to 5:00pm. After hours and weekend work will be permitted to minimize disturbance to occupants. Requests for after-hours work to be coordinated on a case-by-case basis in advance with Departmental Representative.

3.02	Section 26 05 21 – Wires and Cables (0-1000V) Part 2 – Products **ADD**: 2.6 FIRE ALARM NETWORK COMMUNICATION CABLE .1 1-Pair, #18AWG, twisted and shielded 58pF/ft or less. .2 Coordinate with requirements of fire alarm panel manufacturer to ensure that cable is compatible with fire alarm panel network communication link requirements for the required distances.

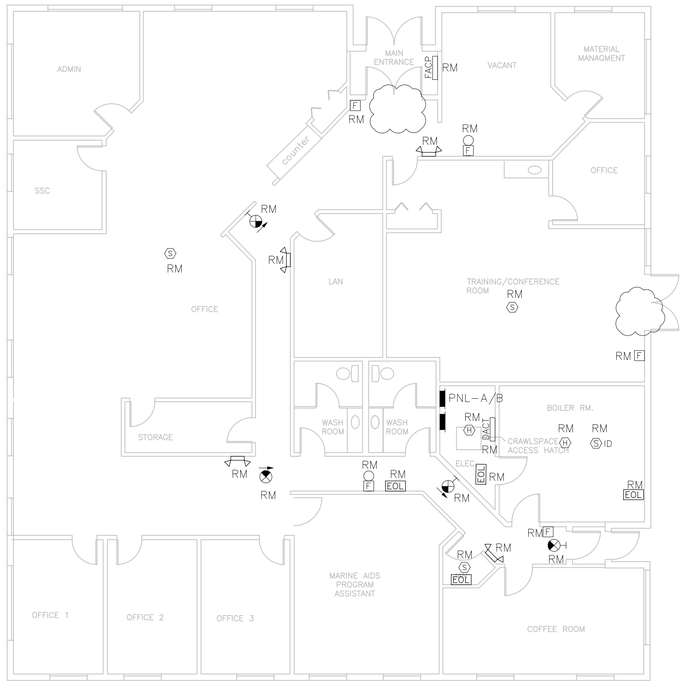
4. Scope of the Addendum – CONTRACT DRAWINGS:

Item No.	Drawing	Drawing/Sketch Name	Description
4.01	VARIOUS	ESK-1	Drawings to be modified in accordance with sketch ESK-1.
4.02	VARIOUS	ESK-2	Drawings to be modified in accordance with sketch ESK-2.
4.03	VARIOUS	ESK-3	Drawings to be modified in accordance with sketch ESK-3.
4.04	VARIOUS	ESK-4	Drawings to be modified in accordance with sketch ESK-4.

5. Attachments:

Item No.	Description
5.01	As-built of new water line Coast Guard Property, Rowes Construction, Ltd., September 2017
5.02	Canadian Coast Guard Base Hay River NT Water Line Replacement, Site Plan, Issued for Tender, July 2016
5.03	Hay River Base Detailed Site/Utilities Plan, Revision 5, October 1995
5.04	Hay River Navaids Storage Compound Site Plan, Revision 1, October 1995
5.05	DFO Hay River Coast Guard Fiber Optics As-built
5.06	Hay River Base Detailed Site/Utilities Plan, Revision 6, December 1996
5.07	Hay River Base Main Shops Area Site Plan, Revision 1, October 1995
5.08	ESK-1, Electrical Addendum Sketch
5.09	ESK-2, Electrical Addendum Sketch
5.10	ESK-3, Electrical Addendum Sketch
5.11	ESK-4, Electrical Addendum Sketch

End of Addendum



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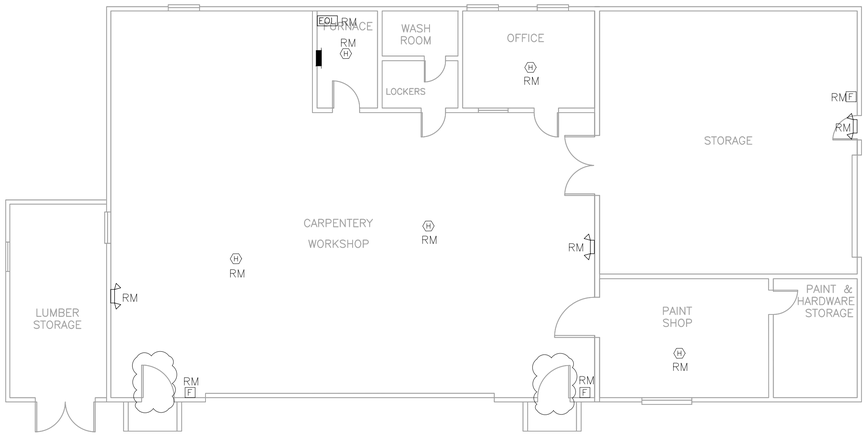
1:100



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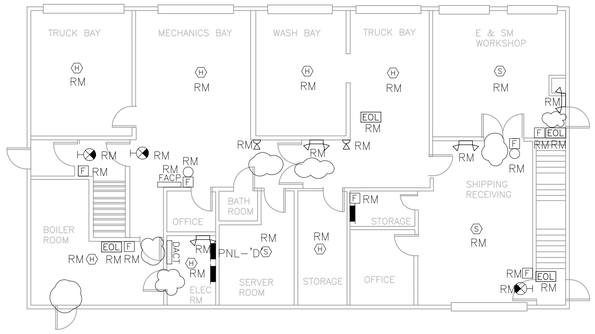

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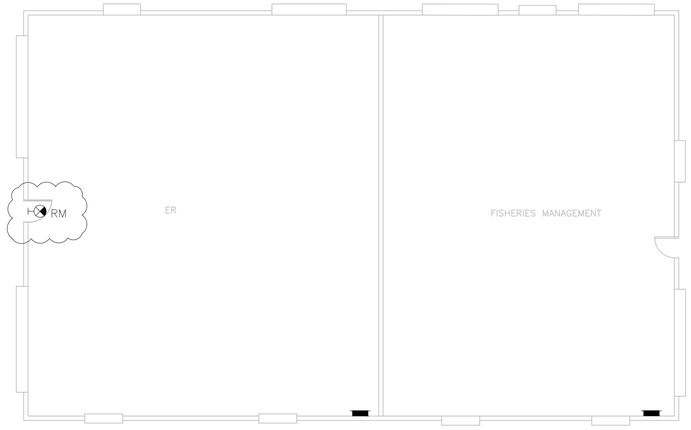

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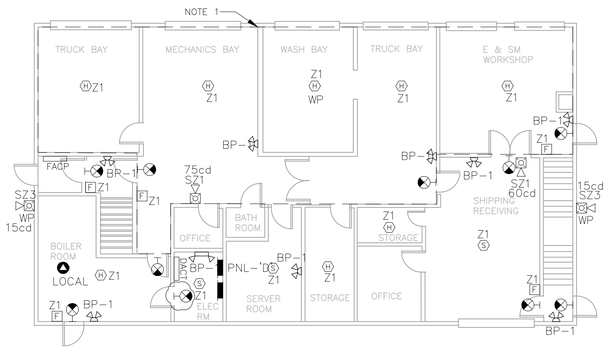

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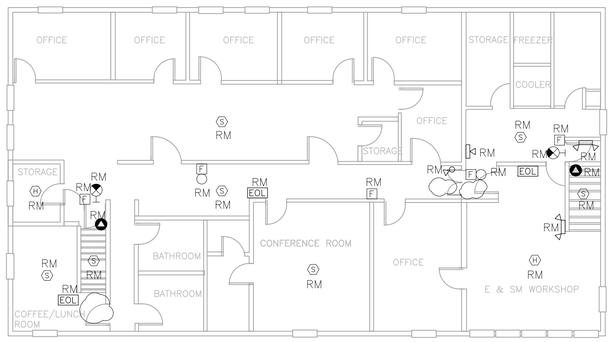

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1:100

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GENERAL NOTE

1 REVISIONS ARE ONLY PERFORMED AMONG THE DEVICES/AREAS INSIDE THE REVISION CLOUDS.

Revision	Description	Date
NA	ISSUED FOR ADDENDUM	2021.12.03

Client: client

Project title / Projet:
HAY RIVER, NT
42043 MACKENZIE HWY
ADMINISTRATION BUILDING

DEPT. OF FISHERIES & OCEANS LIFE SAFETY SYSTEMS REPLACEMENT

Designed by / Conçu par: H.R.
Drawn by / Dessiné par: WA
Approved by / Approuvé par: J.Y.
PWGSC Project Manager / Administrateur de Projets TPSGC: Y.W.

Drawing title / Titre du dessin:
ELECTRICAL ADDENDUM SKETCHES

LIFE SAFETY SYSTEMS EXISTING AND UPGRADE LAYOUTS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
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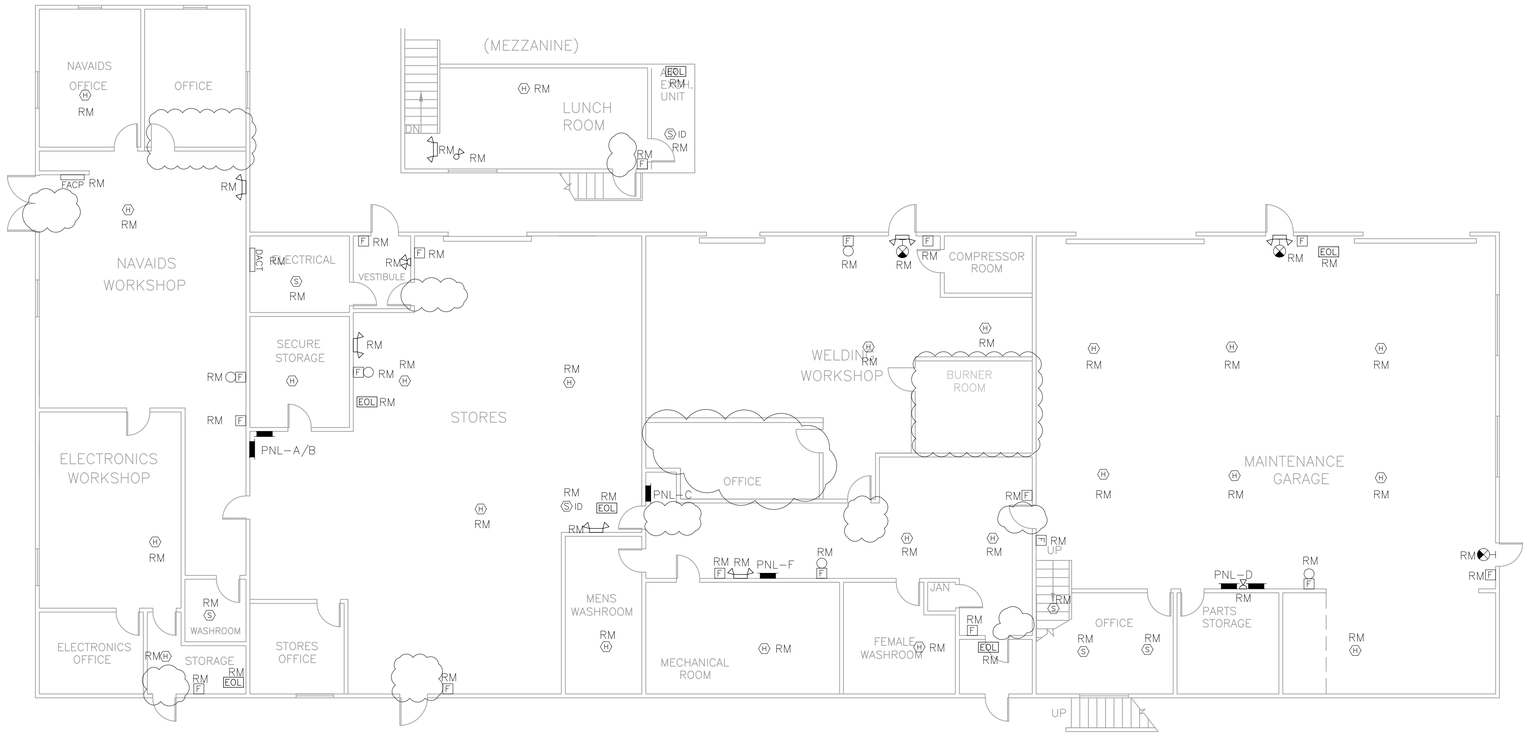

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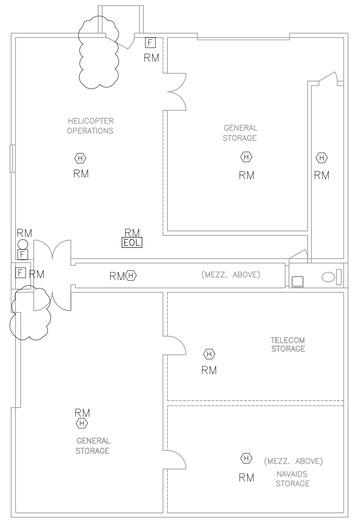

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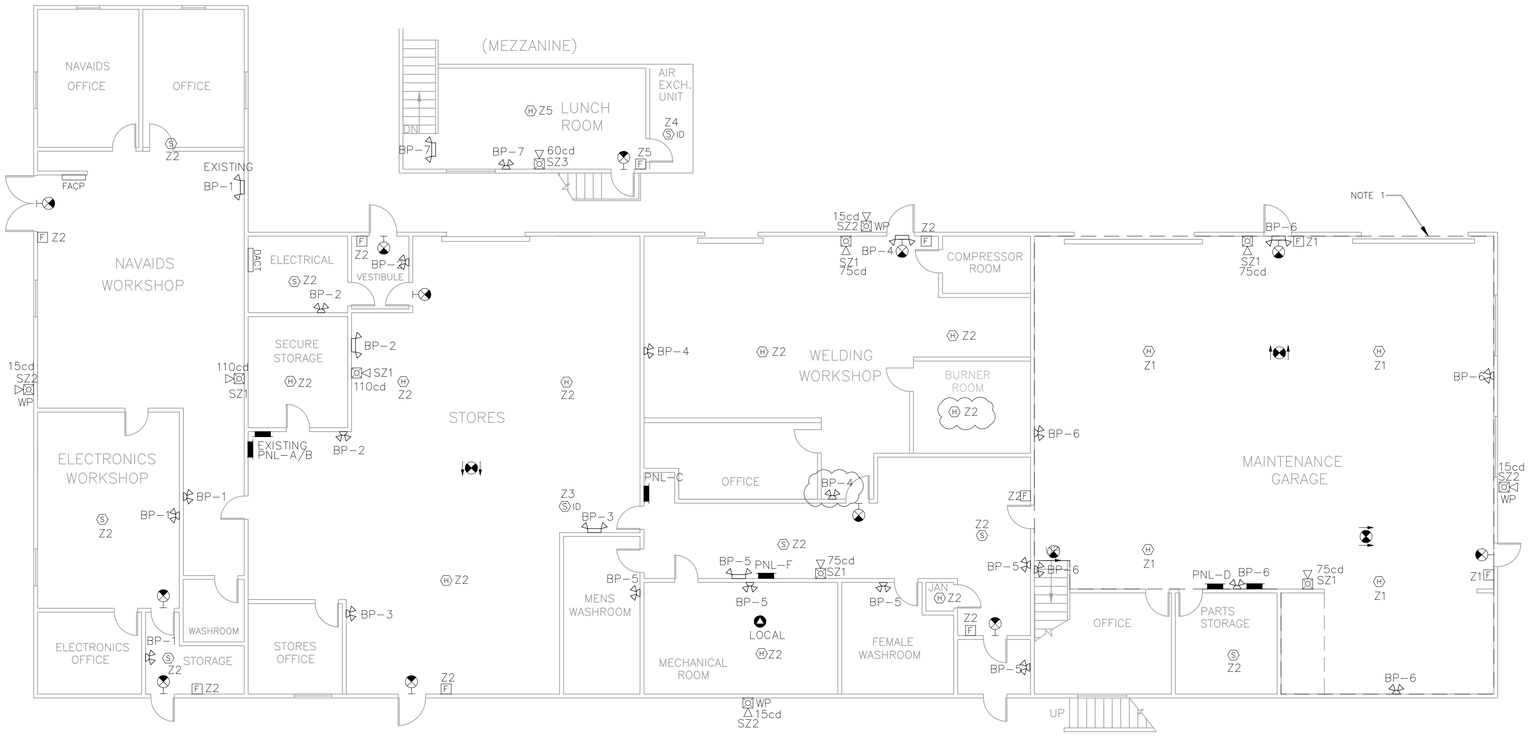

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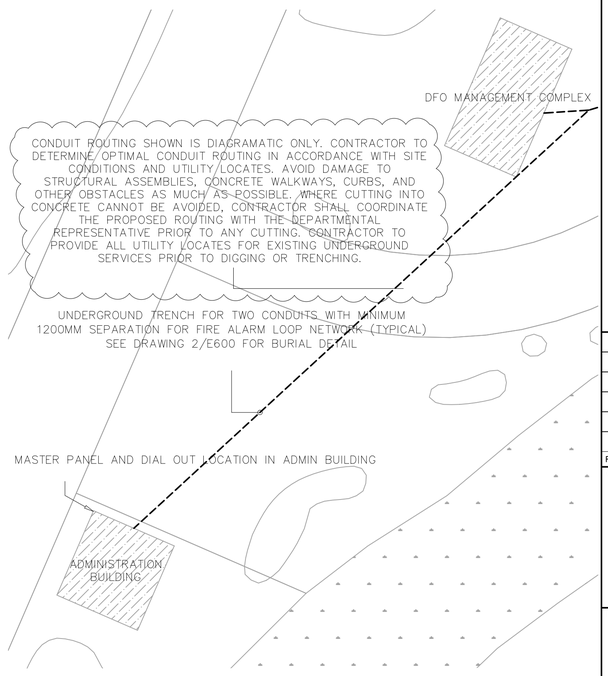

9. WHERE EXISTING SYSTEMS ARE REPLACED, EXISTING CONDUITS/PENETRATIONS TO BE REUSED AS MUCH AS POSSIBLE TO MINIMIZE INTERVENTION WITH HERITAGE ELEMENTS.

10. SYSTEMS TO BE REPLACED BUILDING BY BUILDING. UPON COMPLETION OF THE SYSTEMS WITHIN ONE BULIDING, PERFORM FUNCTIONAL TEST OF ALL NEW SYSTEMS TO CONFIRM OPERATION LOCALLY. FOR THE NETWORKED CAMPUS FIRE ALARM SYSTEM AT THE DFO SITE, ONLY ONE FORMAL ULC FIRE ALARM VERIFICATION IS REQUIRED ONCE ALL BUILDINGS AND COMMUNICATION LOOPS ARE COMPLETE AND FULLY FUNCTIONAL. UNTIL COMPLETE SYSTEM IS FULLY VERIFIED, EACH COMPLETED BUILDING SHALL BE TEMPORARILY CONFIGURED TO ANNUNCIATE LOCALLY.

11. FIRE WATCH IS NOT REQUIRED WHEN EXISTING SYSTEMS ARE TAKEN OUT OF OPERATION.

4 ESK-2 REVISIONS ON E010 - ELECTRICAL SITE PLAN
1:750

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LIFE SAFETY SYSTEMS REPLACEMENT

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Drawing title / Titre du dessin
ELECTRICAL ADDENDUM SKETCHES

LIFE SAFETY SYSTEMS EXISTING AND UPGRADE LAYOUTS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
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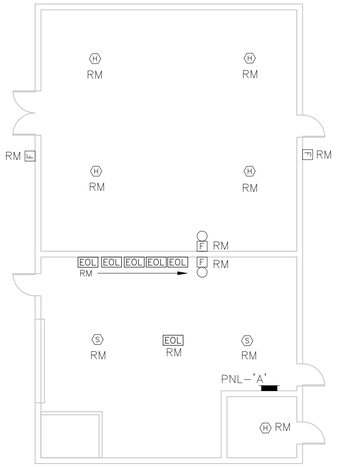
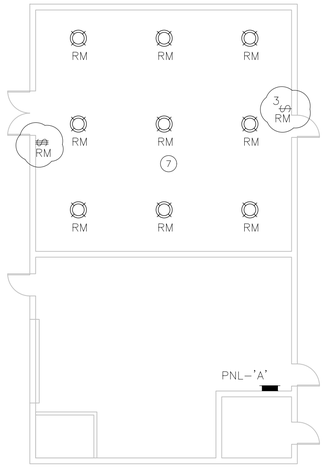


1 ESK-3 FLAMMABLE STORES LIFE SAFETY LAYOUT - EXISTING/DEMO
1:100



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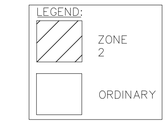

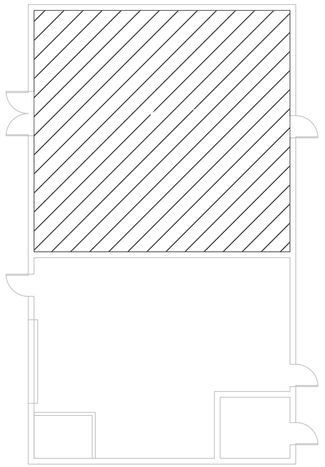

5 ESK-3 HAZARDOUS AREA CLASSIFICATION
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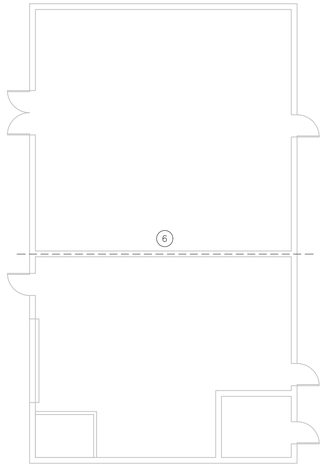

6 ESK-3 HAZARDOUS AREA PARTITION UPGRADE
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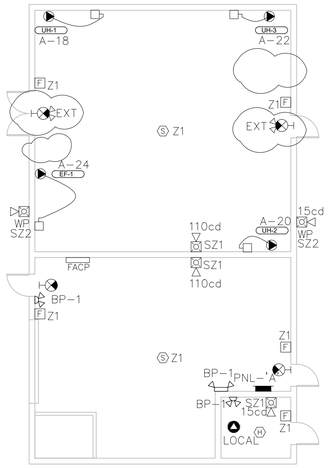

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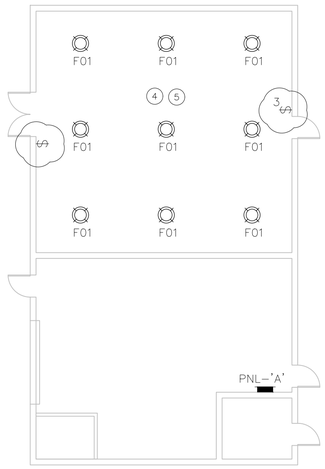

4 ESK-3 FLAMMABLE STORES LIGHTING LAYOUT - NEW
1:100

KEYNOTES	
1	USE THE EXISTING FOUR SPARE BREAKERS TO PROVIDE CIRCUITS TO NEW MECHANICAL EQUIPMENT.
2	PROVIDE NEW BREAKERS FOR CONNECTIONS TO ALL THE CONTROL DAMPERS AND VALVES. COORDINATE THE EXACT QUANTITIES AND LOCATIONS WITH MECHANICAL DIVISION.
3	DEVICE PLACEMENTS AND MOUNTING TO BE DETERMINED AND COORDINATED AS PER SITE CONDITIONS.
4	RE-USE THE EXISTING CIRCUIT FROM THE REMOVED LIGHT FIXTURE TO PROVIDE CIRCUIT TO NEW LIGHTS.
5	PROVIDE NEW WIRING FOR THE NEW LIGHTS. TO BE IN ACCORDANCE WITH HAZARDOUS AREA CLASSIFICATION AS INDICATED. REFER TO THE LUMINAIRE AND EMERGENCY LIGHT SCHEDULE FOR DEVICES DETAIL.
6	EXISTING PARTITION TO BE UPGRADED TO A 2 HOURS FIRE RESISTANCE RATING, REFER TO SPECIFICATION SECTION 092116.08 & 078400. WALL DIMENSIONS: 8300mm x 3800mm
7	REMOVE ALL EXISTING LIGHT FIXTURES, SWITCHES, WIRING AND CONDUITS BACK TO SOURCE.

GENERAL NOTES

1. ALL ELECTRICAL INSTALLATIONS WITHIN THE FLAMMABLE LIQUID STORAGE ROOM SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS FOR ZONE 2 LOCATIONS IN ACCORDANCE WITH SECTIONS 18 AND 20 OF THE CANADIAN ELECTRICAL CODE.
2. ELECTRICAL INSTALLATIONS WITHIN THE REMAINDER OF THE BUILDING TO BE TREATED AS ORDINARY LOCATIONS.
3. THE DIVIDING WALL BETWEEN THE FLAMMABLE LIQUID STORAGE ROOM AND THE REMAINDER OF THE BUILDING SHALL BE A CONTINUOUS 2 HOUR RATED FIRE SEPARATION. ALL PENETRATIONS SHALL BE SEALED BY APPROVED FIRE STOP SYSTEMS. REFER TO SPECIFICATION 07 84 00.
4. HAZARDOUS AREA CLASSIFICATION IS BASED ON THE STORAGE AND DISPENSING OF CLASS I FLAMMABLE LIQUIDS. THE DEPARTMENTAL REPRESENTATIVE SHALL ENSURE THE MAXIMUM QUANTITIES, STORAGE ARRANGEMENT AND HEIGHTS ARE IN ACCORDANCE WITH THE NATIONAL FIRE CODE OF CANADA,PART 4. REFER TO CLAUSES 4.2.9.1(1) AND (3), 4.2.7.5(3) AND (4). WHERE CLASS 1A LIQUIDS ARE STORED, MAXIMUM QUANTITY FOR ALL FLAMMABLE LIQUIDS WITHIN THE ENTIRE ROOM SHALL BE 2500L.

LUMINAIRE SCHEDULE FOR FLAMMABLE LIQUIDS STORAGE

TYPE	DESCRIPTION	MOUNTING	MANUFACTURER	CATALOG NO.	ALTERNATIVE MANUFACTURERS	LUMENS	COLOR	WATTS	VOLTS	COMMENTS/NOTES
F01	BAY LIGHTING	SURFACE	EATON	CHAMP VMVL-5-UPLT	EMERSON, RAB	5500	4000K	43	120	CLASS 1, DIV. 2, UPLIGHT REFRACTOR LENS, WIRE GUARD, CEILING MOUNT.
EXT	EXIT SIGN	WALL MOUNTED	LUMACELL	LHC SERIES	READY-LITE LDX-HZ	-	-	-	-	CLASS 1, DIV. 2

BATTERY PACK SCHEDULE

ID	LOCATION	TIME (MIN)	POWER (W)	CIRCUITS #	COMMENTS
BP#1	GENERAL FLAMMABLE	30	72	EXISTING NORMAL LIGHTING	

1. SIZING IS BASED ON A PARTICULAR MANUFACTURER AT 24V DC WITH 6 WATT MR16 LED LAMPS AND A 5 WATT ALLOWANCE FOR EACH LIGHT.
2. HEADS TO BE MOUNTED AT 2200mm A.F.F. TO CENTER.
3. BATTERY PACK INDICATED TO BE MINIMUM ALLOWABLE SIZE.
4. PROVIDE ZONE SENSING RELAYS AS REQUIRED TO MONITOR CIRCUITS TO NORMAL LIGHTING ZONES WHERE REQUIRED.
5. ALL EMERGENCY LIGHTS AND EXIT SIGNS WIRING TO BE FOLLOWED AND ENSURE THEIR CONNECTION AS PER CEC 46-108.
6. ALL EMERGENCY LIGHTING CIRCUITS TO MATCH WITH THE EXISTING LIGHTING CIRCUITS.

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Revision	Description	Date
0	ISSUED FOR TENDER	2021.08.06

Client / client

Project title / Projet
HAY RIVER, NT
42043 MACKENZIE HWY
FLAMMABLE STORES

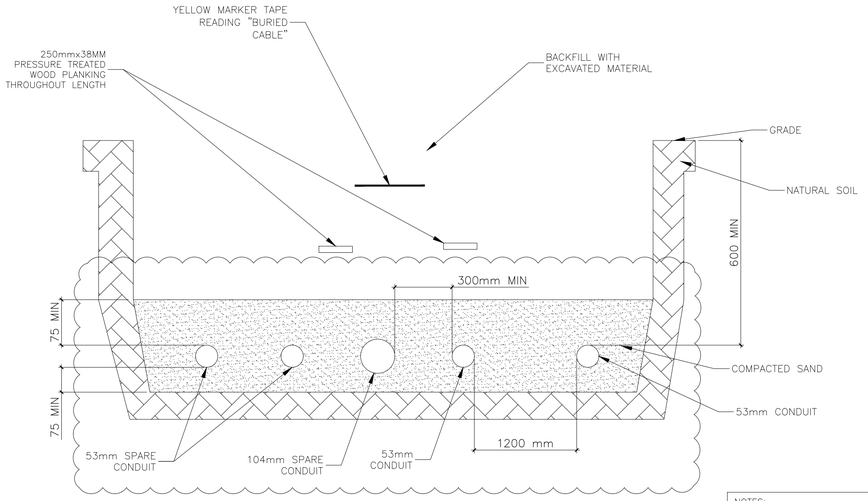
DEPT. OF FISHERIES & OCEANS LIFE SAFETY SYSTEMS REPLACEMENT

Designed by / Conçu par: H.R.
Drawn by / Dessiné par: HANI R.
Approved by / Approuvé par: J.Y.
PWGSC Project Manager / Administrateur de Projets TPSGC: Y.W.

Drawing title / Titre du dessin
ELECTRICAL ADDENDUM SKETCHES

LIFE SAFETY SYSTEMS EXISTING AND UPGRADE LAYOUTS REVISIONS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
144903068	ESK-3 1 OF 1	0



2 ESK-4 **CONDUIT BURIAL DETAIL**
N.T.S.

NOTES:

1. MINIMUM COVER TO BE IN ACCORDANCE WITH CEC RULES 12-012 AND 60-600. REDUCED MINIMUM COVER PER CEC IS ACCEPTABLE, WHERE MECHANICAL PROTECTION IS PROVIDED ACCORDINGLY.
2. MARKER TAPE TO BE APPROXIMATELY HALF WAY BETWEEN FINISHED GRADE AND CONDUIT OR CABLE.
3. MINIMUM SEPARATION BETWEEN CABLES TO BE 1200mm.

FIRE ALARM NOTES:

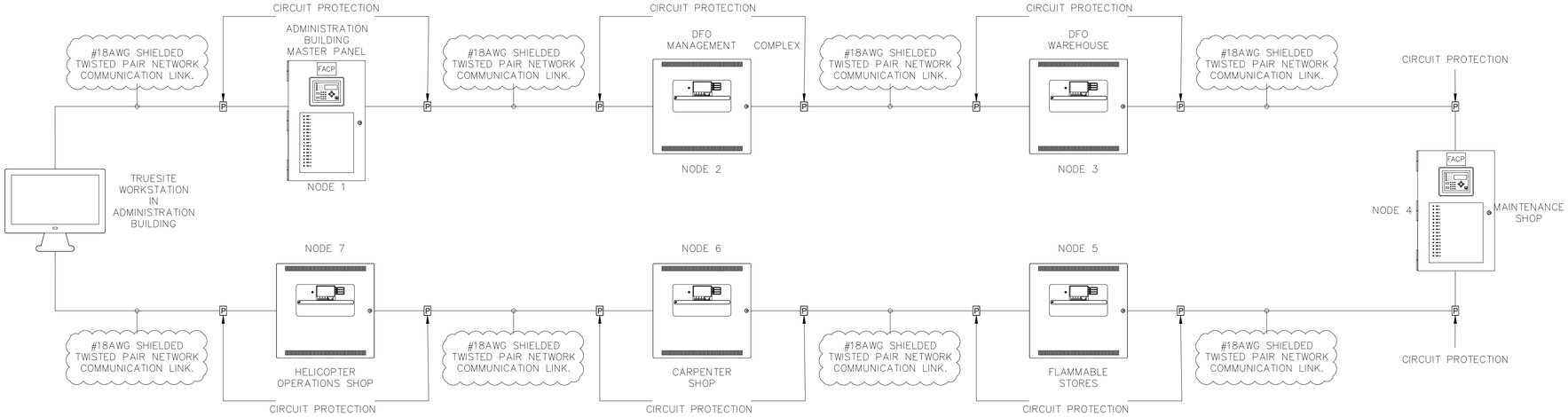
1. AS PER CAN/ULC S524, PROVIDE FAULT ISOLATORS BETWEEN ZONES CONTAINED ON THE SAME ADDRESSABLE LOOP. THE RISER DIAGRAM SHOWN HERE INDICATES PROPER LOCATION FOR LINE ISOLATORS, SHOULD THE SYSTEM BE INSTALLED AS ONE CONTINUOUS CLASS 'A' LOOP WITH THE SAME SEQUENCE OF DEVICES INDICATED.

2. THIS RISER IS FOR EXAMPLE ONLY AND CONTRACTOR MAY USE MORE LOOPS AS IS CONVENIENT FOR INSTALLATIONS PROVIDED CAN/ULC S524, 'THE STANDARD FOR INSTALLATION OF FIRE ALARM SYSTEMS' IS ADHERED TO. FAULT ISOLATION MODULES ARE TO BE PROVIDED BETWEEN FIRE COMPARTMENTS SHARING A COMMON LOOP. FAULT ISOLATION MODULES SHOWN HERE MAY REQUIRE TWO (OR MORE) DEVICES INSTALLED BACK-TO-BACK DEPENDING ON ASSEMBLY(IES) PENETRATED AND LOCATION/ROUTE CHOSEN. IN GENERAL, ISOLATORS REQUIRED FOR PENETRATION OF RATED ASSEMBLIES FOR SERVICE ROOMS (INCLUDING ELECTRICAL AND MECHANICAL ROOMS) JANITOR'S ROOMS, STAIR SHAFTS AND BETWEEN FLOORS. FAULT ISOLATOR MODULES THAT ARE INSTALLED BACK-TO-BACK TO BE HORIZONTALLY OFFSET BY MINIMUM OF 400mm AND IF ASSEMBLY PENETRATED IS WOOD OR STEEL-STUD CONSTRUCTION NOT LOCATED WITHIN THE SAME STUD SPACE. REFER TO CAN/ULC-S524, 10.2.

3. PROVIDE SURGE PROTECTION DEVICE FOR FIRE ALARM CONTROL PANEL.

4. RISER DIAGRAM IS FOR INFORMATION PURPOSES ONLY. QUANTITIES OF SIGNAL AND INITIATING DEVICES ARE GOVERNED BY FLOOR PLANS RATHER THAN THIS RISER.

5. PROVIDE A RED COLORED LOCKABLE BREAKER FOR THE FIRE ALARM CONTROL PANEL WITH PROPER LABELING.



1 ESK-4 **MULTIPLE BUILDING LOOP DIAGRAM**
N.T.S.

Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

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Western Region
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Région de l'ouest

Stantec

Stantec Architecture Ltd.
4910 - 53 Street, PO Box 1777
Yellowknife NT
Tel. 867.920.2882
www.stantec.com

Stantec No: 144903068

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Revision	Description	Date
0	ISSUED FOR TENDER	2021.08.06

Client / client

Project title / Projet
HAY RIVER, NT
42043 MACKENZIE HWY
-
DEPT. OF FISHERIES & OCEANS
LIFE SAFETY SYSTEMS
REPLACEMENT

Designed by / Conçu par: **H.R.**
Drawn by / Dessiné par: **HANI R.**
Approved by / Approuvé par: **J.Y.**
PWGSC Project Manager / Administrateur de Projets TPSGC: **Y.W.**

Drawing title / Titre du dessin
ELECTRICAL
MULTIPLE BUILDING LOOP DIAGRAM
REVISIONS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
144903068	ESK-4 1 OF 1	0

PWGSC – A1 – 841X594

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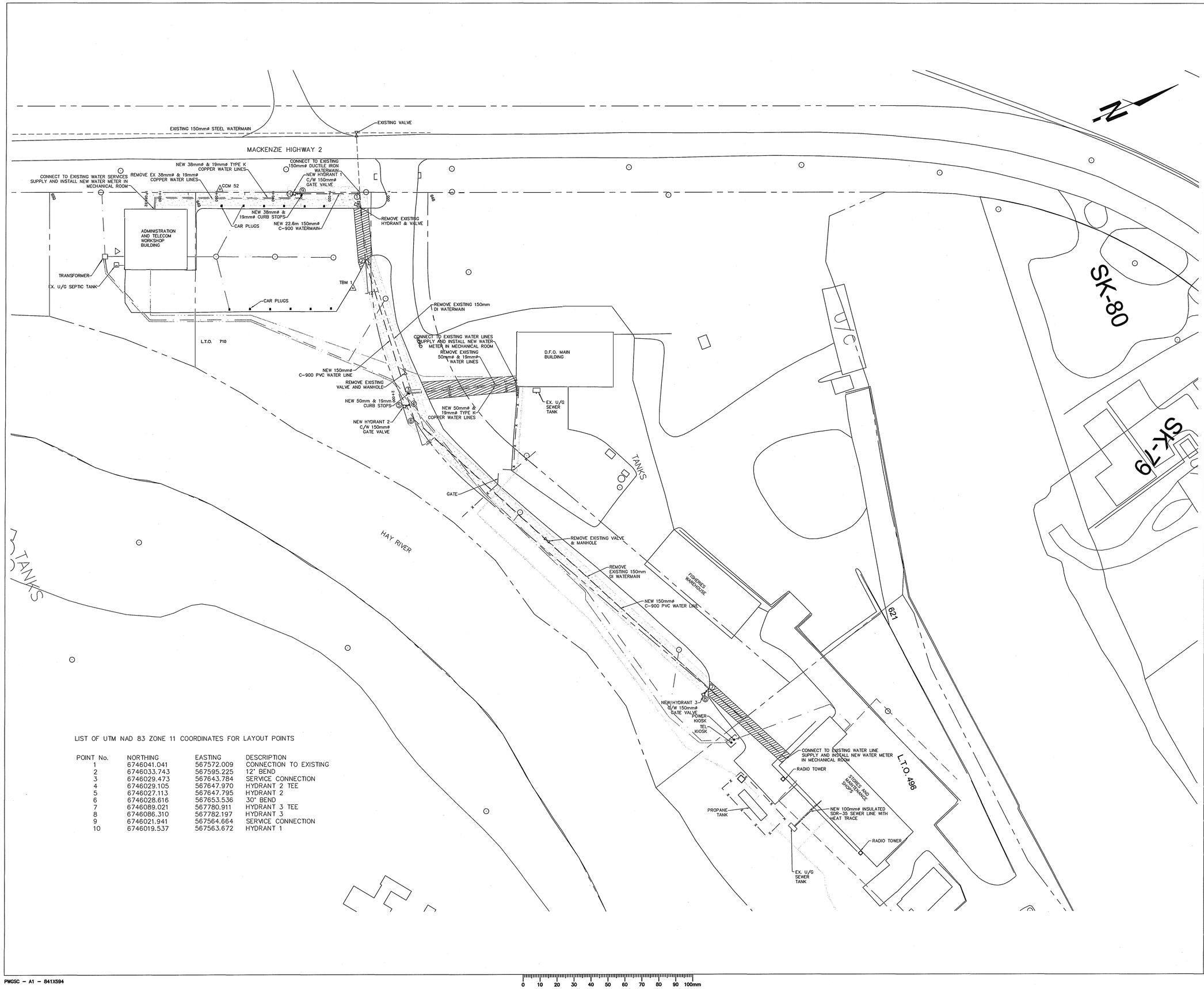
144903068_elec.dwg



LIST OF UTM NAD 83 ZONE 11 COORDINATES FOR LAYOUT POINTS

POINT No.	NORTHING	EASTING	DESCRIPTION
1	6746041.041	567572.009	CONNECTION TO EXISTING
2	6746033.743	567595.225	12° BEND
3	6746029.473	567643.784	SERVICE CONNECTION
4	6746029.105	567647.970	HYDRANT 2 TEE
5	6746027.113	567647.795	HYDRANT 2
6	6746028.616	567653.536	30° BEND
7	6746089.021	567780.911	HYDRANT 3 TEE
8	6746086.310	567782.197	HYDRANT 3
9	6746021.941	567564.664	SERVICE CONNECTION
10	6746019.537	567563.672	HYDRANT 1

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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Engineering and Project Management

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LEGEND
NEW WATER LINE
NEW VALVE
NEW SEWER LINE
EXISTING WATER LINE
EXISTING SEWER LINE
EXISTING VALVE
EXISTING GAS LINE
EXISTING COMMUNICATIONS
EXISTING POWER
POWER POLE
FENCE
BENCHMARK
AREA OF SOD
AREA OF ASPHALT

ALL DIMENSIONS IN IN METERS
CONTRACTOR RESPONSIBLE FOR VERIFYING LOCATION OF ALL UTILITIES AND EXISTING WATER LINES PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT ALL UTILITIES DURING CONSTRUCTION ACTIVITIES

ALL COORDINATES ARE UTM NAD 83 ZONE 11
DERIVED FROM CONTROL MONUMENT CCM 52
N. 6745995.726
E. 567552.164
EL. 160.729
COMBINED SCALE FACTOR 0.9996346
TBM 1
N. 6746026.066
E. 567602.323
EL. 161.040

DESIGNER
REGISTERED PROFESSIONAL ENGINEER
N.K. BEVINGTON
NWT/NU
DATE July 04, 2016

PERMIT TO PRACTICE
REV North
Signature
Date July 04, 2016
PERMIT NUMBER: P 655
The Association of Professional Engineers, Geologists and Geophysicists of the NWT/NU

Revision	Description	Date
5		
4		
3		
2		
1		
0	Issued for Tender	July 2016

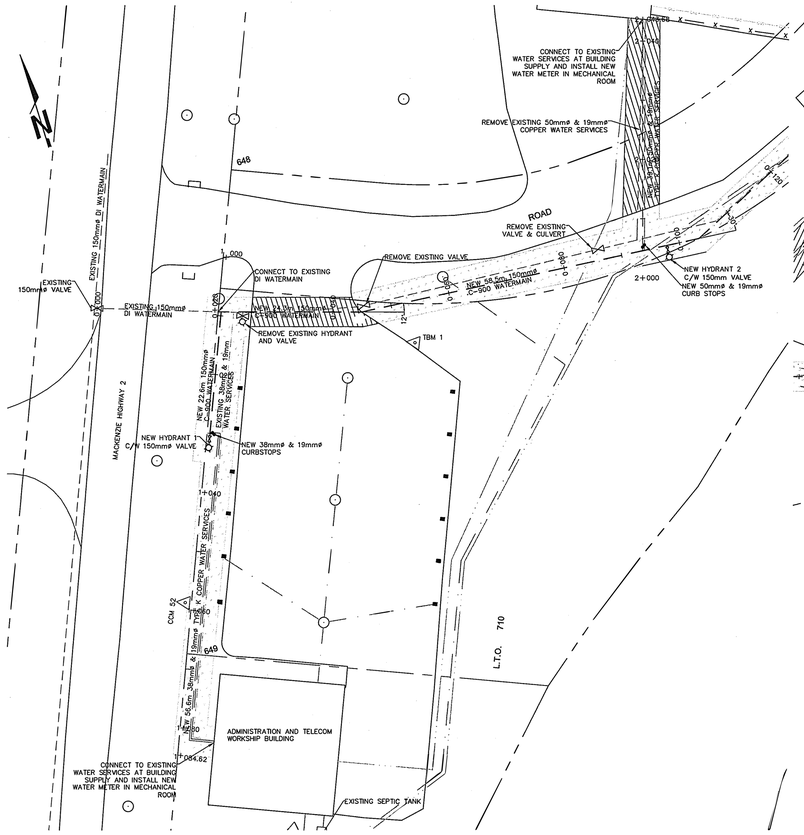
Client / client
Public Works & Government Services Canada

Project title / Projet
Canadian Coast Guard Base Hay River NT Water Line Replacement

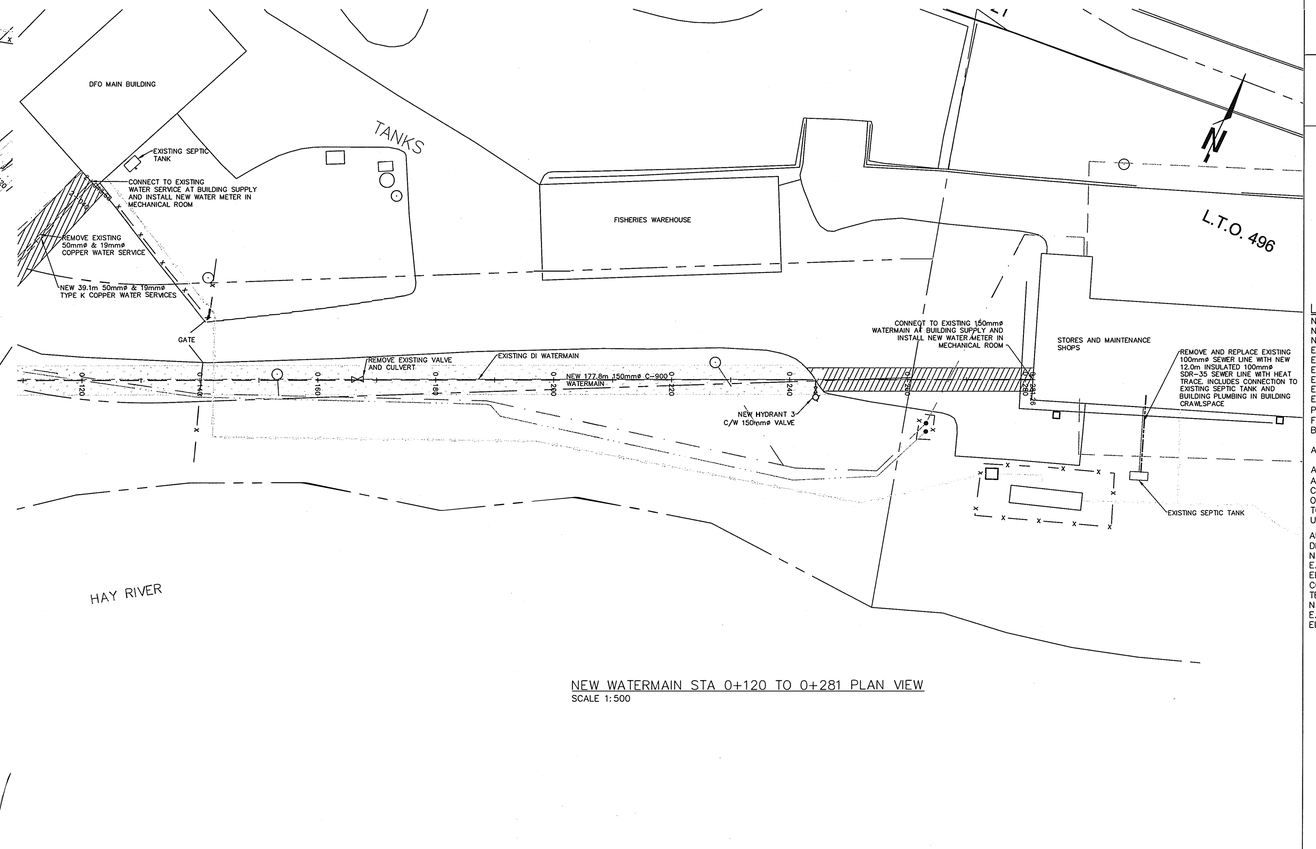
Designed by / Conçu par: MH
Drawn by / Dessiné par: MH
Approved by / Approuvé par: NB
PWGSC Project Manager / Administrateur de Projets TPSGC

Drawing title / Titre du dessin
Site Plan

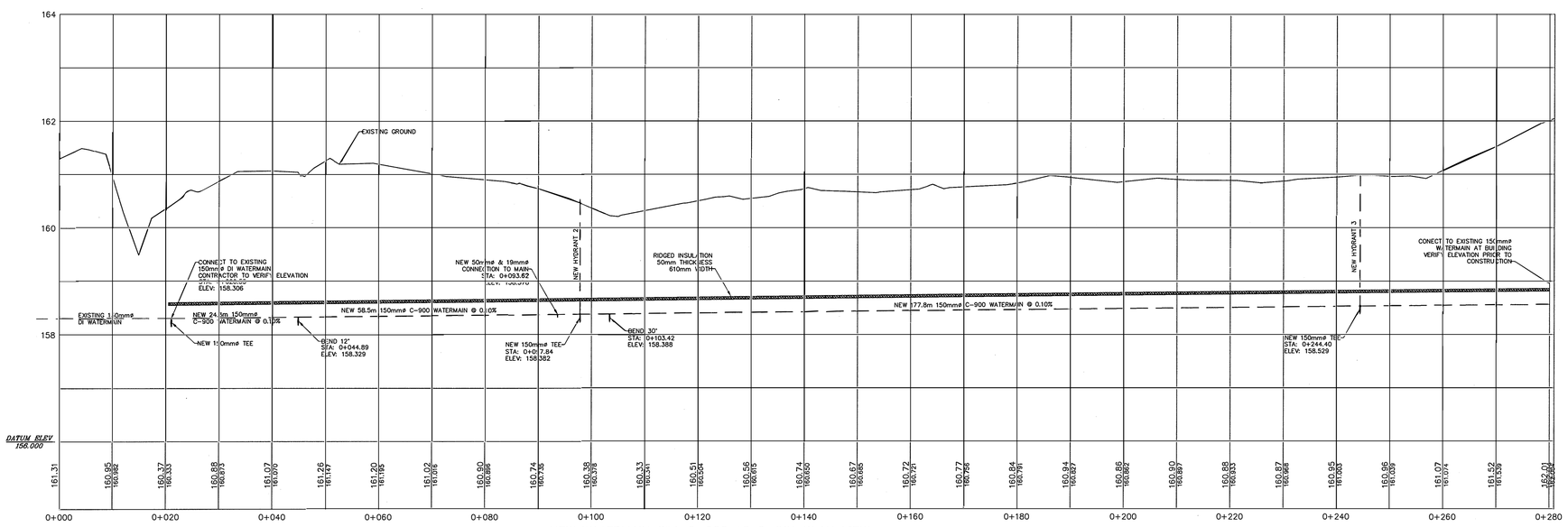
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.078314.001	C1 OF 5	0



NEW WATERMAIN STA 0+000 TO 0+120 PLAN VIEW
SCALE 1:500



NEW WATERMAIN STA 0+120 TO 0+281 PLAN VIEW
SCALE 1:500



NEW WATERMAIN STA 0+000 TO 0+281 PLAN VIEW
SCALE H 1:500 V 1:50

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LEGEND

NEW WATER LINE	
NEW VALVE	
NEW SEWER LINE	
EXISTING WATER LINE	
EXISTING SEWER LINE	
EXISTING VALVE	
EXISTING GAS LINE	
EXISTING COMMUNICATIONS	
EXISTING POWER	
POWER POLE	
FENCE	
BENCHMARK	
AREA OF SOD	
AREA OF ASPHALT	

ALL DIMENSIONS IN METERS
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COMBINED SCALE FACTOR 0.9996346
TBM 1
N. 6746026.066
E. 567602.323
EL. 161.040

DESIGNER
REGISTERED PROFESSIONAL ENGINEER
N.K. BEVINGTON
NWT/NU
DATE: July 06, 2016

PERMIT TO PRACTICE
REV North
Signature
Date July 06, 2016
PERMIT NUMBER: P 855
The Association of Professional Engineers, Geologists and Geophysicists of the NWT/NU

Revision	Description	Date
5		
4		
3		
2		
1		
0	Design Completion	July 2016

Client / client
Public Works & Government Services Canada

Project title / Projet
Canadian Coast Guard Base Hay River NT Water Line Replacement

Designed by / Conçu par: MH
Drawn by / Dessiné par: MH
Approved by / Approuvé par: NB
PWGSC Project Manager / Administrateur de Projets TPSGC

Drawing title / Titre du dessin
New Watermain Plan Profile Sta 0+000 to 0+281

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.078314.001	C2 OF 5	0

PWGSC – A1 – 841X594

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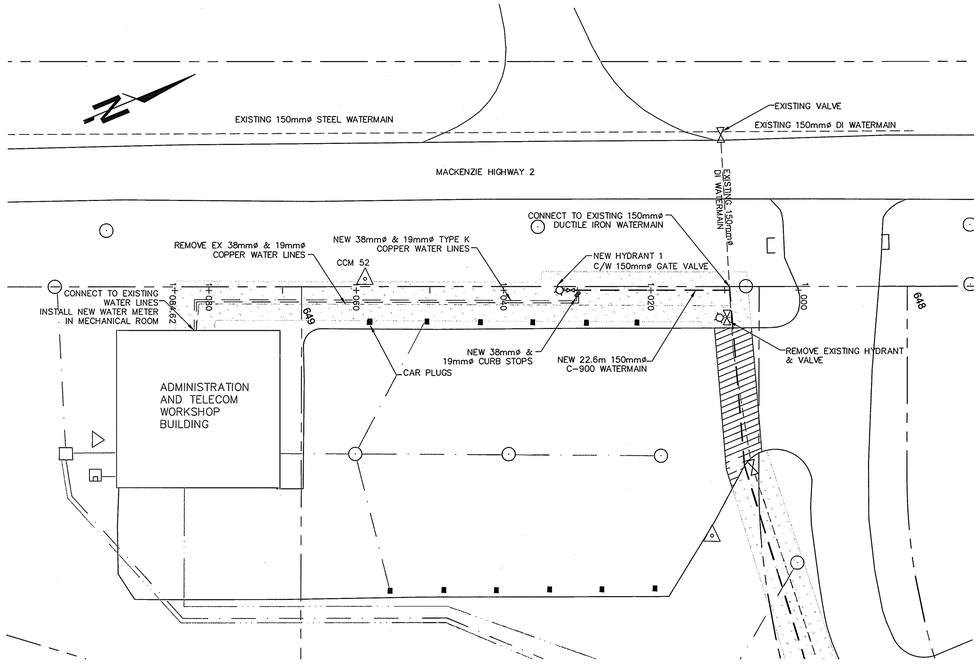
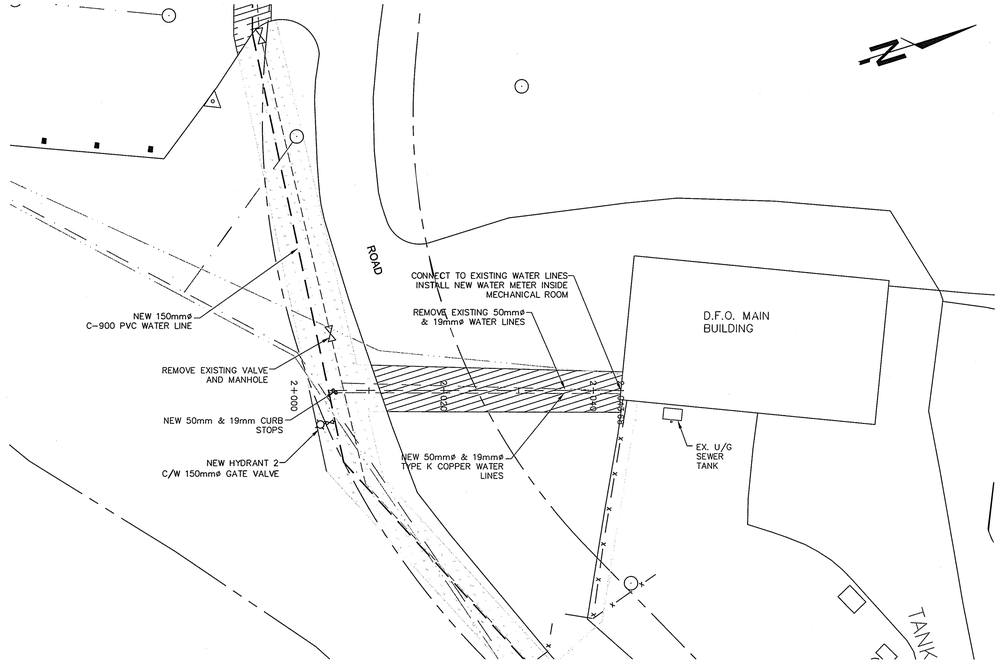
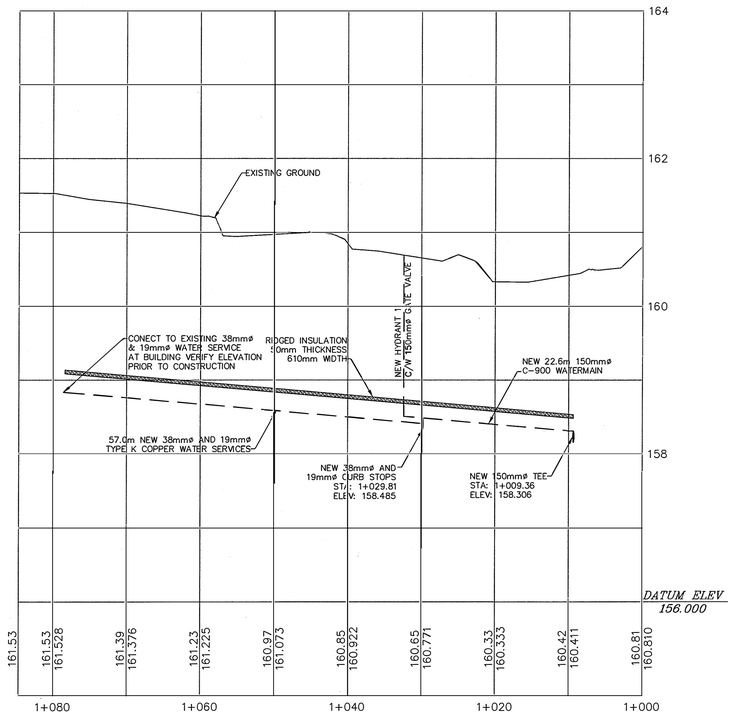


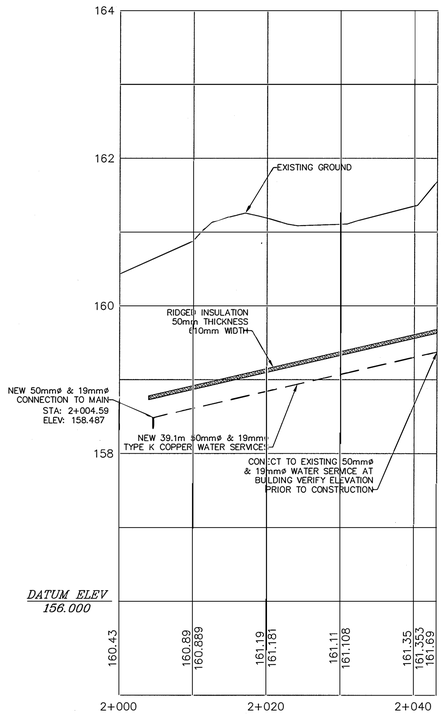
NEW SERVICE TO ADMINISTRATION BUILDING PLAN VIEW
SCALE 1:400



NEW SERVICE TO DFO BUILDING PLAN VIEW
SCALE 1:400



NEW SERVICE TO ADMIN BUILDING PROFILE VIEW
SCALE H 1:400 V 1:40



NEW SERVICE TO DFO BUILDING PROFILE VIEW
SCALE H 1:400 V 1:40

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LEGEND
NEW WATER LINE
NEW VALVE
NEW SEWER LINE
EXISTING WATER LINE
EXISTING SEWER LINE
EXISTING VALVE
EXISTING GAS LINE
EXISTING COMMUNICATIONS
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E. 567602.323
EL. 161.040

DESIGNER
REGISTERED PROFESSIONAL ENGINEER
N.K. BEVINGTON
NWT/NU
DATE: July 06, 2016

PERMIT TO PRACTICE
REV NORTH
Signature
Date July 06, 2016
PERMIT NUMBER: P 855
The Association of Professional Engineers, Geologists and Geophysicists of the NWT/NU

Revision	Description	Date
5		
4		
3		
2		
1		
0	Design Completion	July 2016

Client / client
Public Works & Government Services Canada

Project title / Projet
Canadian Coast Guard Base Hay River NT Water Line Replacement

Designed by / Conçu par: MH
Drawn by / Dessiné par: MH
Approved by / Approuvé par: NB
PWGSC Project Manager / Administrateur de Projets TPSGC

Drawing title / Titre du dessin
New Services Administration Building & DFO Building

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.078314.001	C3 OF 5	0

PWGSC – A1 – 841X594

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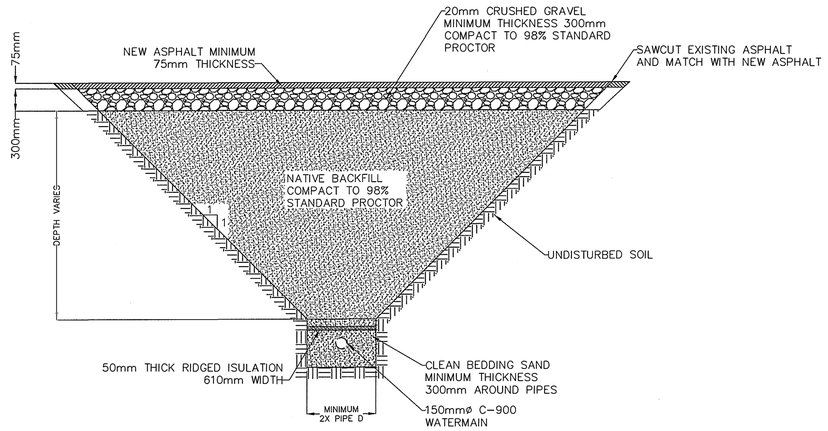
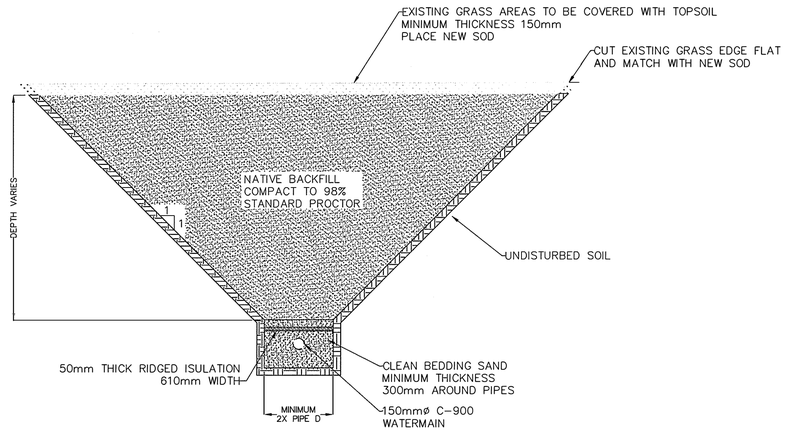


TYPICAL TRENCH DETAIL
UNDER ASPHALT
SCALE 1:40



TYPICAL TRENCH DETAIL
UNDER GRASS
SCALE 1:40

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LEGEND
NEW WATER LINE
NEW VALVE
NEW SEWER LINE
EXISTING WATER LINE
EXISTING SEWER LINE
EXISTING VALVE
EXISTING GAS LINE
EXISTING COMMUNICATIONS
EXISTING POWER
POWER POLE
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ALL DIMENSIONS IN METERS
CONTRACTOR RESPONSIBLE FOR VERIFYING LOCATION OF ALL UTILITIES AND EXISTING WATER LINES PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT ALL UTILITIES DURING CONSTRUCTION ACTIVITIES

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E. 567602.323
EL. 161.040

DESIGNER
REGISTERED PROFESSIONAL ENGINEER
N.K. BEVINGTON
NWT/NU
DATE July 06, 2016

PERMIT TO PRACTICE
REV North
Signature
Date July 06, 2016
PERMIT NUMBER: P 855
The Association of Professional Engineers, Geologists and Geophysicists of the NWT/NU

Revision	Description	Date
5		
4		
3		
2		
1		
0	Design Completion	July 2016

Client / client
Public Works & Government Services Canada

Project title / Projet
Canadian Coast Guard Base Hay River NT Water Line Replacement

Designed by / Conçu par: MH
Drawn by / Dessiné par: MH
Approved by / Approuvé par: NB
PWGSC Project Manager / Administrateur de Projets TPSGC:

Drawing title / Titre du dessin
Trench Details

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.078314.001	C4 OF 5	0

PWGSC – A1 – 841X594

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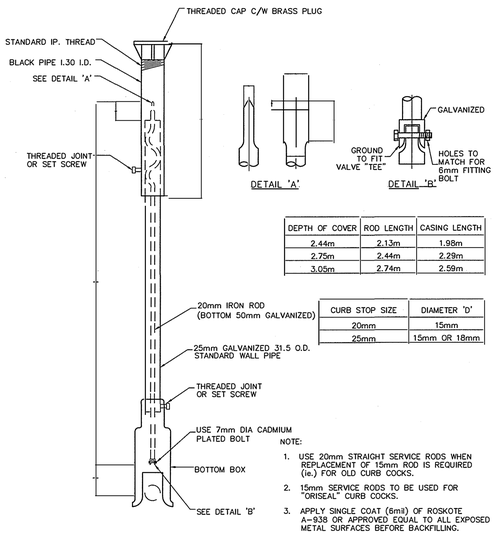
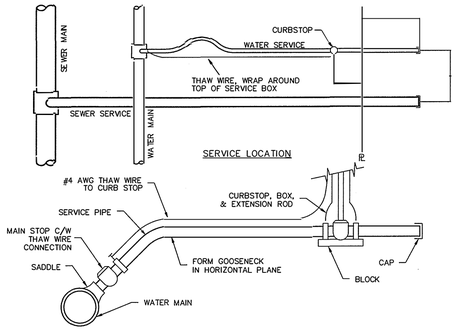


DEPTH OF COVER	ROD LENGTH	CASING LENGTH
2.44m	2.13m	1.98m
2.75m	2.44m	2.29m
3.05m	2.74m	2.59m

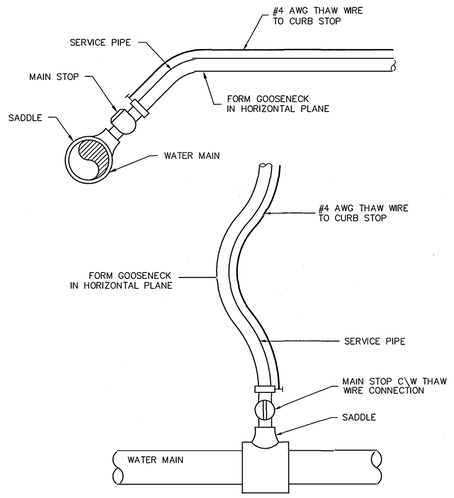
CURB STOP SIZE	DIAMETER 'D'
20mm	15mm
25mm	15mm OR 18mm

NOTE:
1. USE 20mm STRAIGHT SERVICE RODS WHEN REPLACEMENT OF 15mm ROD IS REQUIRED (ie.) FOR OLD CURB COCKS.
2. 15mm SERVICE RODS TO BE USED FOR "ORISEAL" CURB COCKS.
3. APPLY SINGLE COAT (6mil) OF ROSKOTE A-938 OR APPROVED EQUAL TO ALL EXPOSED METAL SURFACES BEFORE BACKFILLING.

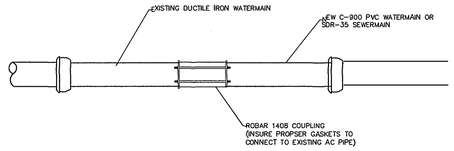
STANDARD SERVICE BOX DETAIL
SCALE NTS



WATER SERVICE CONNECTION TO MAIN
SCALE NTS

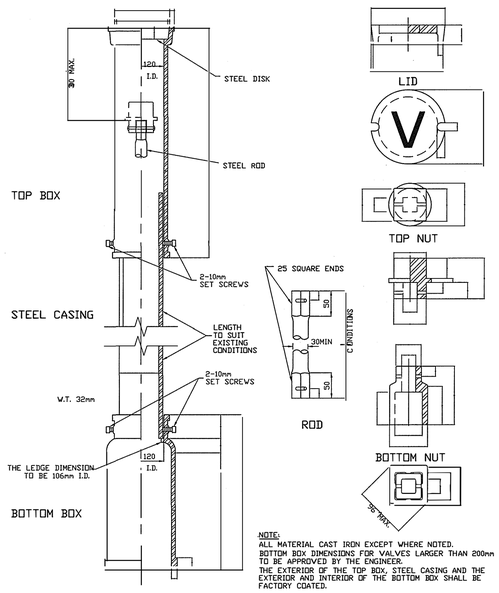


WATER SERVICE CONNECTION TO MAIN
SCALE NTS



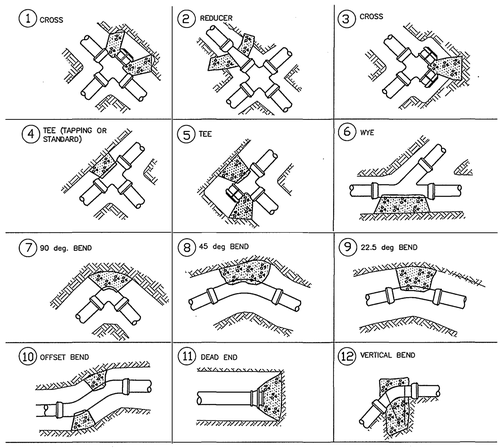
NOTE:
NATIVE BACKFILL TO BE COMPACTED IN MAXIMUM 300mm LIFTS IN ORDER TO PROTECT NEW AND EXISTING PIPES.
ALL PIPE BEDDING TO BE FREE OF STANDING WATER AND ANY SATURATED SOIL TO BE REMOVED AND REPLACED WITH CLEAN DRY MATERIAL AND RE-COMPACTED TO 100% STANDARD PROCTOR

CONNECTION DETAIL
SCALE NTS



NOTE:
ALL MATERIAL CAST IRON EXCEPT WHERE NOTED.
BOTTOM BOX DIMENSIONS FOR VALVES LARGER THAN 200mm TO BE APPROVED BY THE ENGINEER.
THE EXTERIOR OF THE TOP BOX, STEEL CASING AND THE EXTERIOR AND INTERIOR OF THE BOTTOM BOX SHALL BE FACTORY COATED.

STANDARD VALVE BOX DETAIL
SCALE NTS

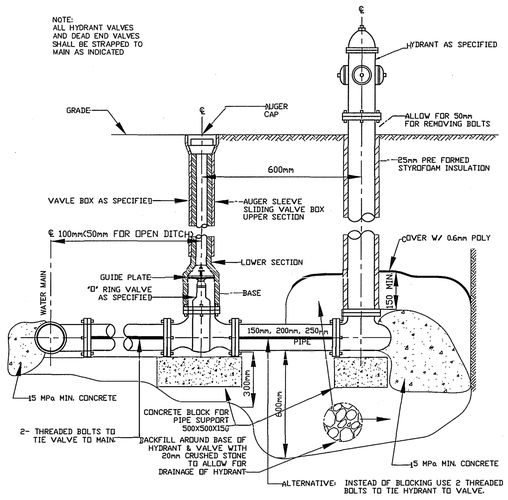


BEARING AREA OF BLOCKS

CONCRETE AREA IN SQUARE METRES						
PIPE SIZE	100	150	200	250	300	400
1,4,11	0.2	0.4	0.7	1.0	1.4	1.9
3,5,7	0.3	0.5	0.9	1.4	2.0	2.7
2			0.2	0.5	0.7	1.6
6,8,12	0.2	0.3	0.5	0.6	1.1	1.4
9	0.1	0.2	0.3	0.4	0.6	0.7

NOTES:
1. DESIGN ASSUMPTION
   a. HYDRAULIC PRESSURE 1.38 Mpa
   b. SOIL BEARING -100 kpa (CLAY)
2. CONCRETE SHALL BE SULPHATE RESISTANT
3. TEMPORARY BLOCKING MUST BE APPROVED BY THE ENGINEER.
4. 2 PLY OF 0.15mm POLYETHEYLENE SHALL BE PLACED BETWEEN PIPE AND CONCRETE.
5. CONCRETE SHALL BE 20 MPa AT 28 DAY STRENGTH MAX SLUMP 75mm.

THRUST BLOCK SCHEDULE
SCALE NTS



TYPICAL HYDRANT AND VALVE DETAIL
SCALE NTS

Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

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LEGEND
NEW WATER LINE
NEW VALVE
NEW SEWER LINE
EXISTING WATER LINE
EXISTING SEWER LINE
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AREA OF ASPHALT

ALL DIMENSIONS IN METERS
CONTRACTOR RESPONSIBLE FOR VERIFYING LOCATION OF ALL UTILITIES AND EXISTING WATER LINES PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT ALL UTILITIES DURING CONSTRUCTION ACTIVITIES

ALL COORDINATES ARE UTM NAD 83 ZONE 11
DERIVED FROM CONTROL MONUMENT CCM 52
N. 6745995.726
E. 567552.164
EL. 160.729
COMBINED SCALE FACTOR 0.9996346
TBM 1
N. 6746026.066
E. 567602.323
EL. 161.040

DESIGNER
REGISTERED PROFESSIONAL ENGINEER
N.K. BEVINGTON
NWT/NU
DATE July 06, 2016

PERMIT TO PRACTICE
RAB
Signature
Date July 06, 2016
PERMIT NUMBER: P 855
The Association of Professional Engineers, Geologists and Geophysicists of the NWT/NU

Revision	Description	Date
5		
4		
3		
2		
1		
0	Design Completion	July 2016

Client / client
Public Works & Government Services Canada

Project title / Projet
Canadian Coast Guard Base Hay River NT Water Line Replacement

Designed by / Conçu par: MH
Drawn by / Dessiné par: MH
Approved by / Approuvé par: NB
PWGSC Project Manager / Administrateur de Projets TPSGC

Drawing title / Titre du dessin
Standard Details

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.078314.001	C5 OF 5	0

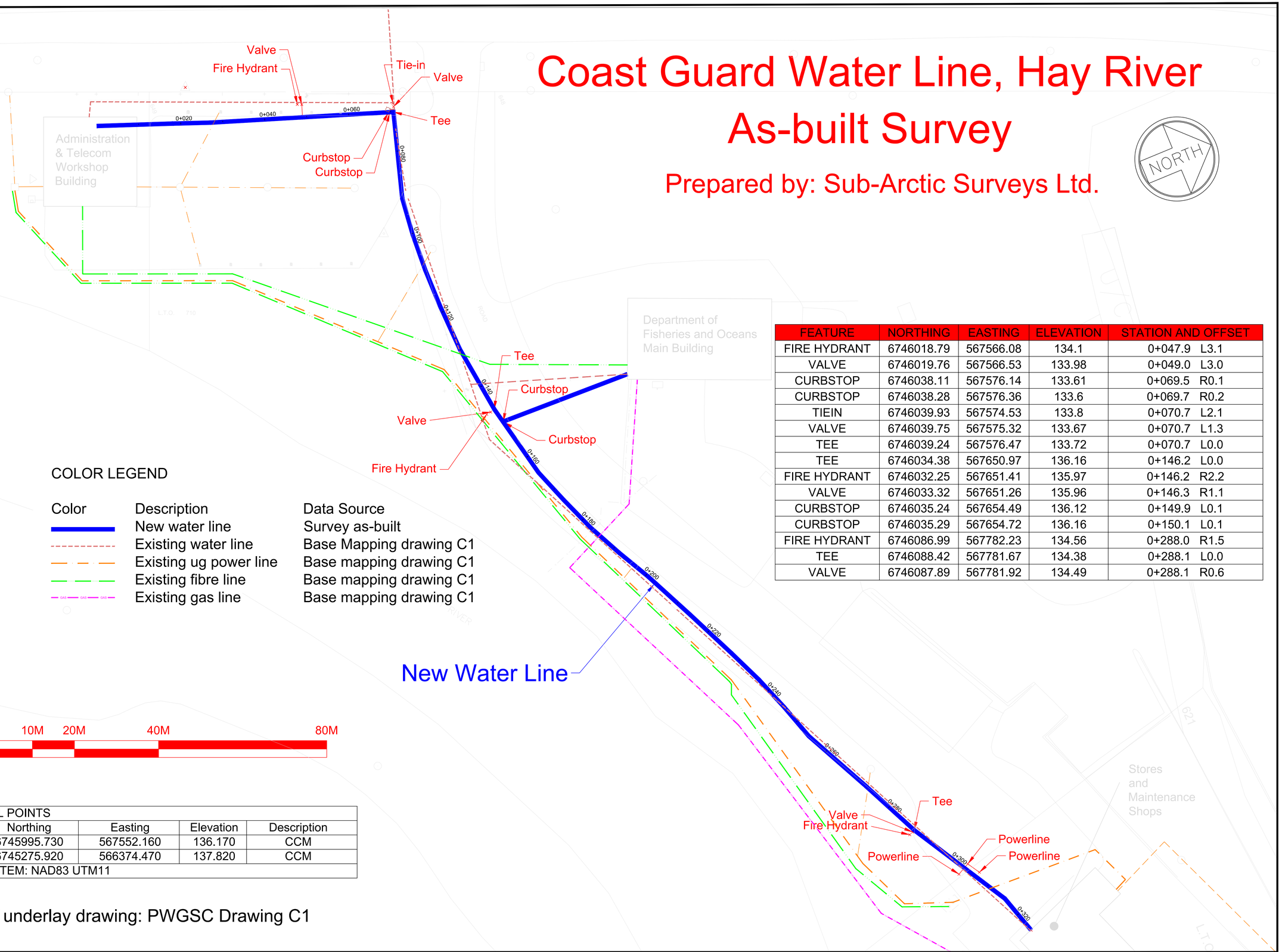
PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

Coast Guard Water Line, Hay River

As-built Survey

Prepared by: Sub-Arctic Surveys Ltd.



FEATURE	NORTHING	EASTING	ELEVATION	STATION AND OFFSET
FIRE HYDRANT	6746018.79	567566.08	134.1	0+047.9 L3.1
VALVE	6746019.76	567566.53	133.98	0+049.0 L3.0
CURBSTOP	6746038.11	567576.14	133.61	0+069.5 R0.1
CURBSTOP	6746038.28	567576.36	133.6	0+069.7 R0.2
TIEIN	6746039.93	567574.53	133.8	0+070.7 L2.1
VALVE	6746039.75	567575.32	133.67	0+070.7 L1.3
TEE	6746039.24	567576.47	133.72	0+070.7 L0.0
TEE	6746034.38	567650.97	136.16	0+146.2 L0.0
FIRE HYDRANT	6746032.25	567651.41	135.97	0+146.2 R2.2
VALVE	6746033.32	567651.26	135.96	0+146.3 R1.1
CURBSTOP	6746035.24	567654.49	136.12	0+149.9 L0.1
CURBSTOP	6746035.29	567654.72	136.16	0+150.1 L0.1
FIRE HYDRANT	6746086.99	567782.23	134.56	0+288.0 R1.5
TEE	6746088.42	567781.67	134.38	0+288.1 L0.0
VALVE	6746087.89	567781.92	134.49	0+288.1 R0.6

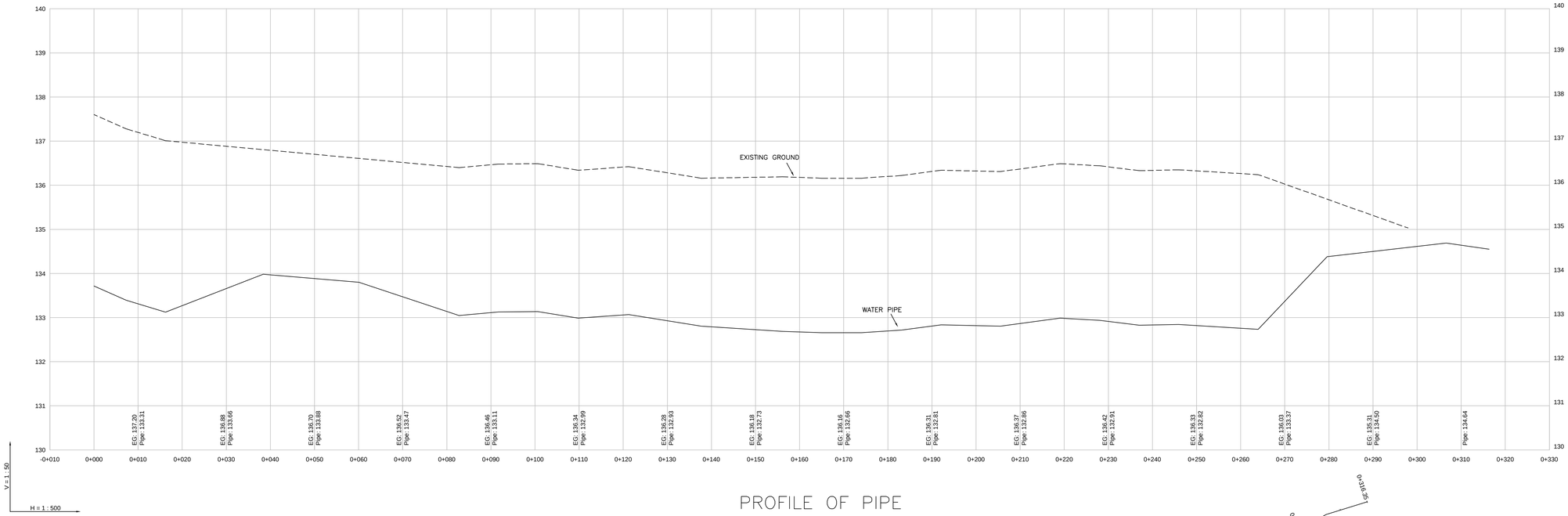
COLOR LEGEND

Color	Description	Data Source
	New water line	Survey as-built
	Existing water line	Base Mapping drawing C1
	Existing ug power line	Base mapping drawing C1
	Existing fibre line	Base mapping drawing C1
	Existing gas line	Base mapping drawing C1

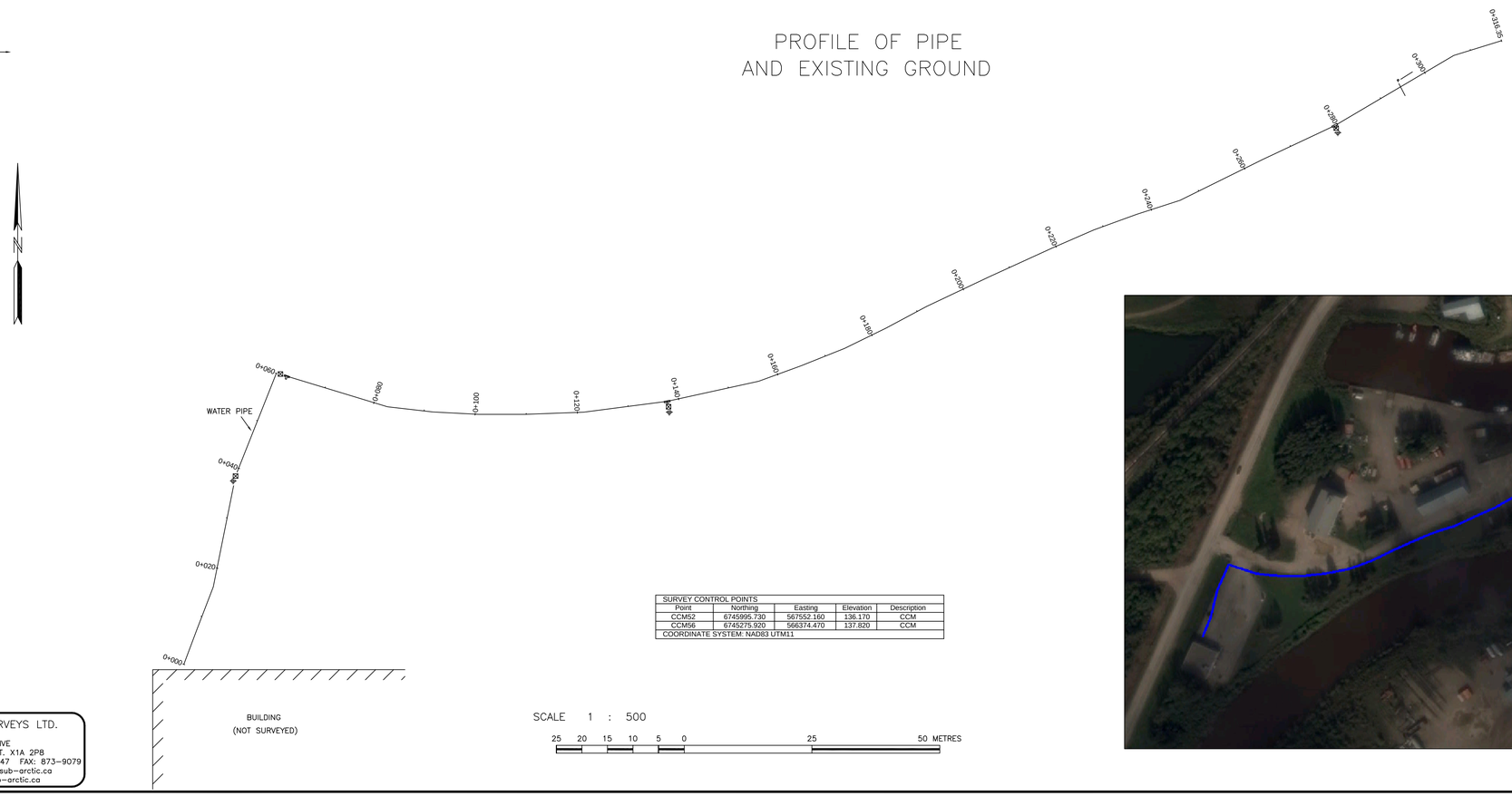
20M 0M 10M 20M 40M 80M

SURVEY CONTROL POINTS				
Point	Northing	Easting	Elevation	Description
CCM52	6745995.730	567552.160	136.170	CCM
CCM56	6745275.920	566374.470	137.820	CCM
COORDINATE SYSTEM: NAD83 UTM11				

Source of underlay drawing: PWGSC Drawing C1



PROFILE OF PIPE AND EXISTING GROUND



SURVEY CONTROL POINTS				
Point	Northing	Easting	Elevation	Description
CCM52	6745995.730	567552.160	136.170	CCM
CCM56	6745275.920	566374.470	137.820	CCM
COORDINATE SYSTEM: NAD83 UTM11				

SCALE 1 : 500

25 20 15 10 5 0 25 50 METRES

NOTES:

DATE OF SURVEY: OCTOBER 12, 2016

ALL ELEVATIONS ARE EXPRESSED IN METRES OR DECIMALS THEREOF.

LEGEND:

FIRE HYDRANT .....

WATER VALVE .....

T–SECTION .....

POWER LINE .....

PROFILE LEGEND:

PIPE .....

GROUND .....

VERTICAL EXAGGERATION OF PROFILE = 10

NO.	REVISION\ISSUE	DATE:

DRAWN BY: J.N.

CHECKED BY: G.C.

ROWE'S CONSTRUCTION LTD.

AS–BUILT OF NEW WATER LINE COAST GUARD PROPERTY HAY RIVER – NT

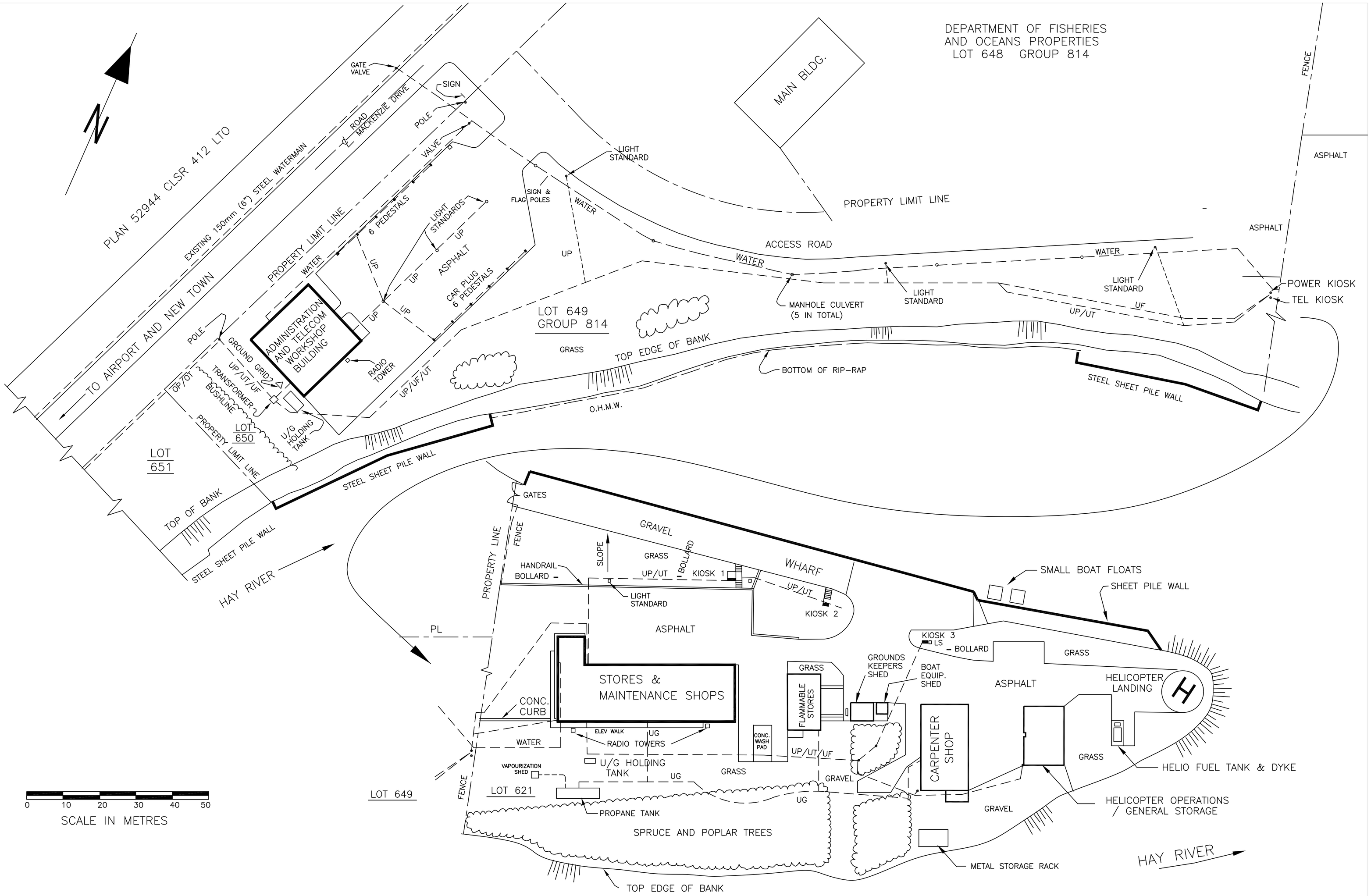
PROJECT NO.: 16–001–34

FILE NO.: 16–001–34–OC12–ASBUILT

DATE: OCTOBER 20, 2016

SCALE: 1:500

SUB–ARCTIC SURVEYS LTD.
P.O. BOX 2441
226 UTSINGI DRIVE
YELLOWKNIFE, NT. X1A 2P8
PHONE: 873–2047 FAX: 873–9079
WEB PAGE www.sub–arctic.ca
E–MAIL sos@sub–arctic.ca



1 metre = 0.0278 units

LEGEND

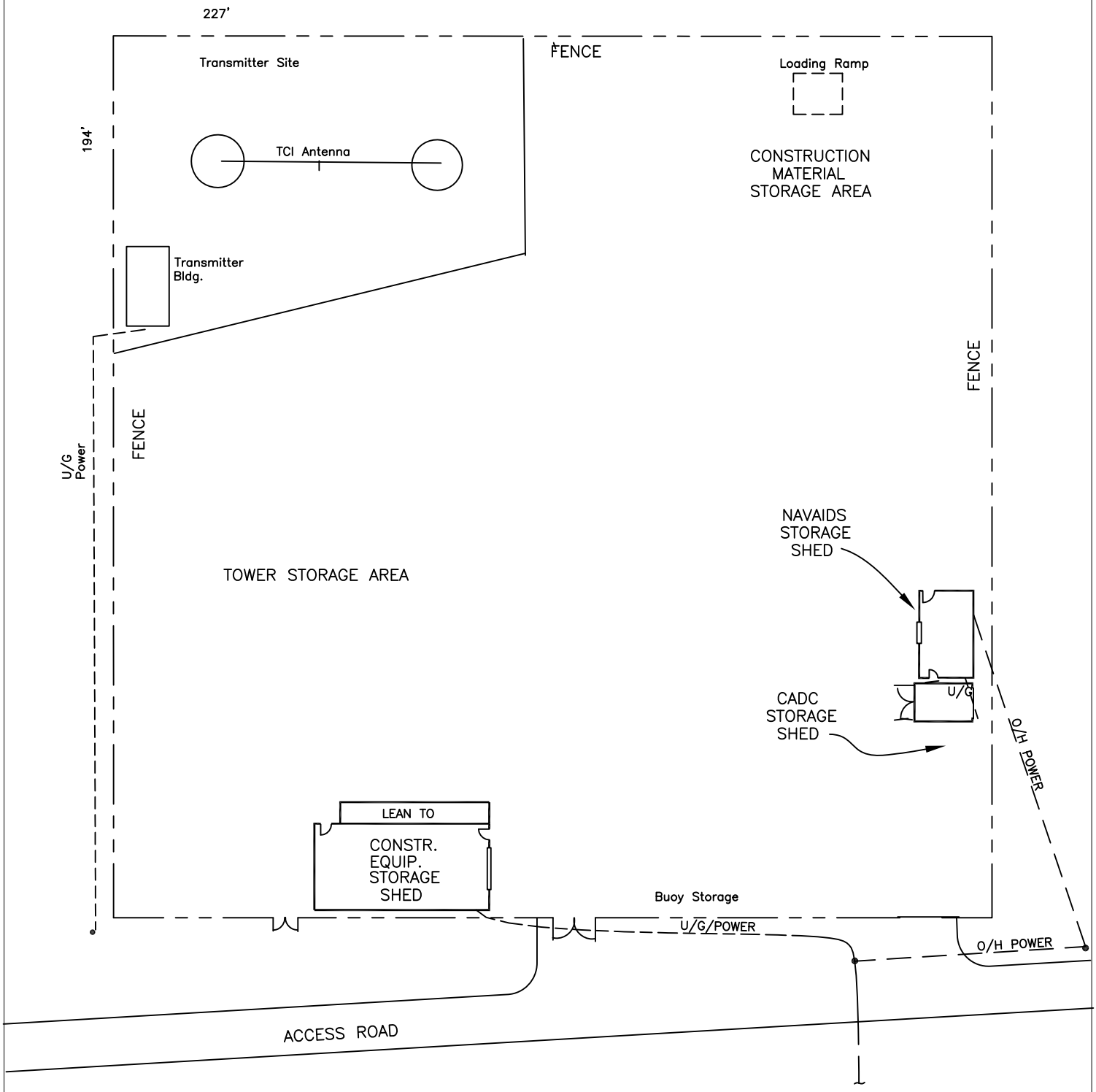
OP OVERHEAD POWER
UP UNDERGROUND POWER
OT OVERHEAD TELEPHONE
UT UNDERGROUND TELEPHONE
OF OVERHEAD FIRE ALARM
UF UNDERGROUND FIRE ALARM
UG UNDERGROUND PROPANE GAS

HAY RIVER BASE

DETAILED SITE / UTILITIES PLAN

CHART 4.22

REVISION 5 OCTOBER 95

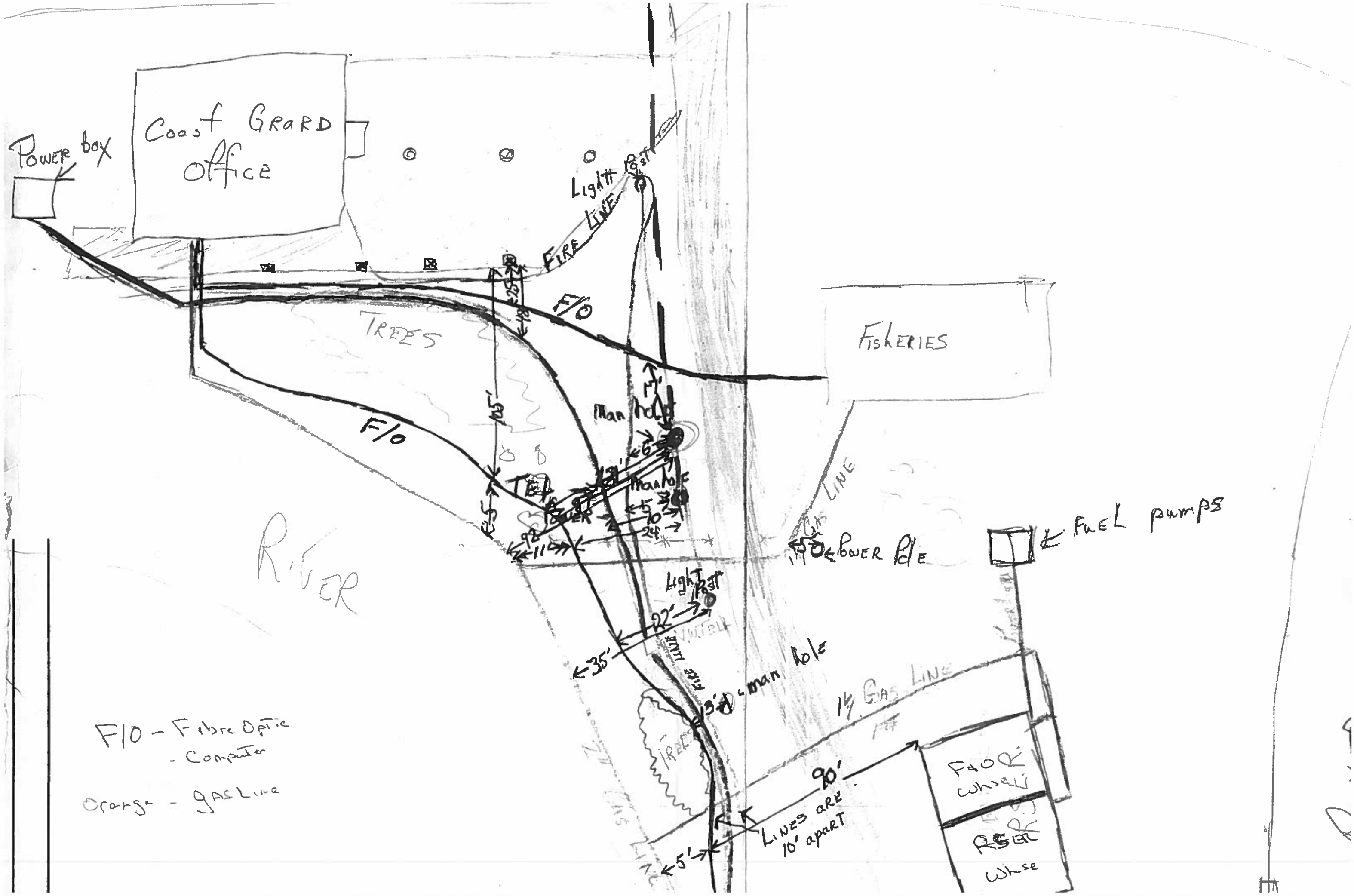


0 10 20 30
SCALE (IN METRES)

HAY RIVER
NAVAIDS STORAGE COMPOUND
SITE PLAN

CHART 4.24

REVISION 1 OCTOBER 95


Power box
Coast Guard office
Light Post
Fire Line
F/O
Trees
Fisheries
Man hole
Tel Power
Man hole
Power Pole
Fuel pumps
Light Post
Man hole
Gas Line
Gas Line
Trees
Fire Line
River
Floor whse
Rser whse
35'
22'
90'
Lines are 10' apart
5'
11'
24'
10'
5'
6'
13'
25'
18'
65'
13'
F/O - Fibre Optic - Computer
Orange - gas Line

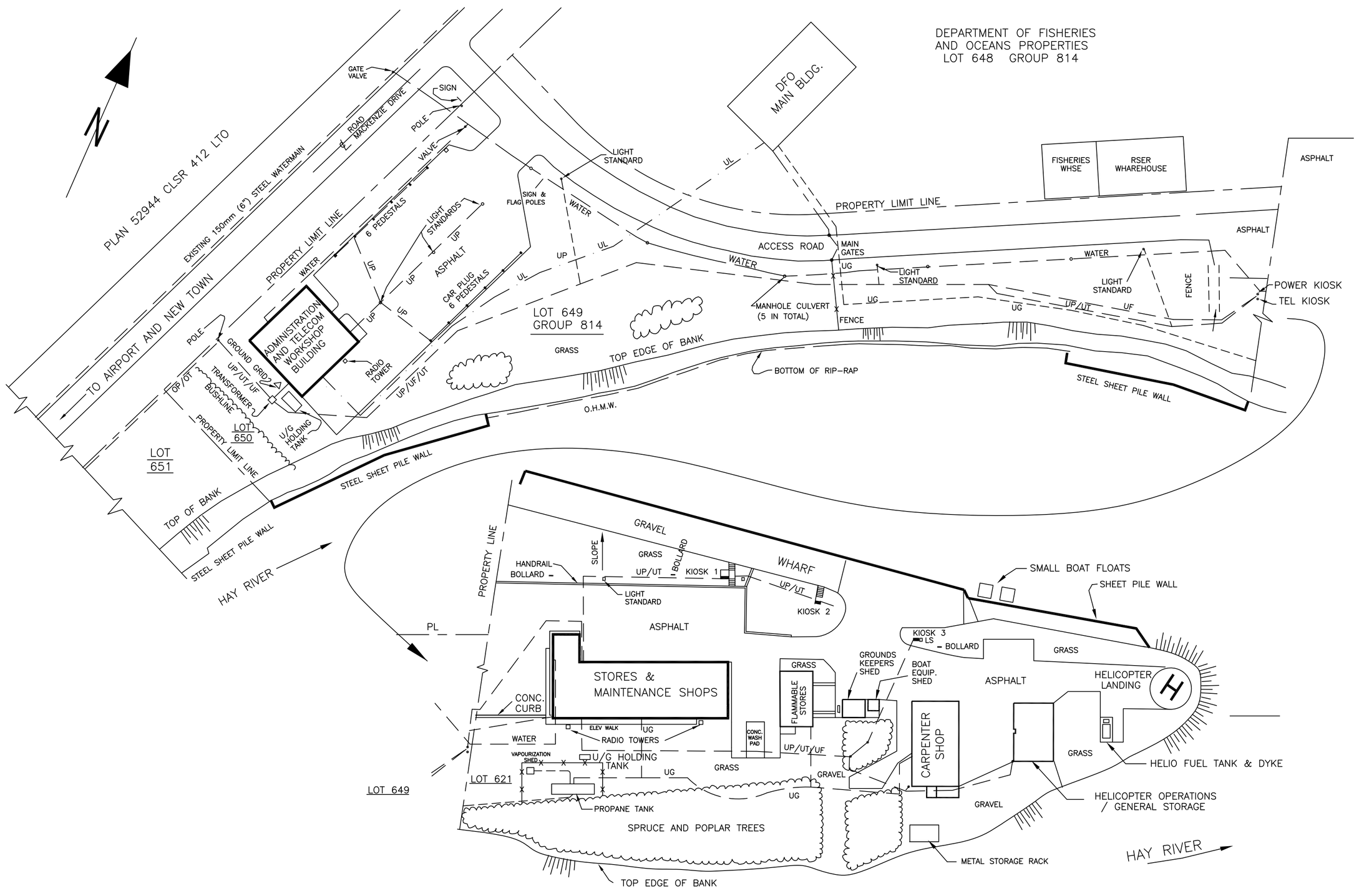
CAD PRODUCED DRAWING
FAIT PAR CAD

REPORT ANY ERRORS OR OMISSIONS TO DRAFTING OFFICE
SIGNALER LES ERREURS OU LES OMISSIONS A BUREAU DE DESSIN

Canadian Coast Guard — Garde Côtière Canadienne

LIST OF MATERIALS
LISTE DU MATERIEL

qty quant.	item article	description description	part no. no piece	reference reference



LEGEND

OP OVERHEAD POWER
UP UNDERGROUND POWER
OT OVERHEAD TELEPHONE
UT UNDERGROUND TELEPHONE
OF OVERHEAD FIRE ALARM
UF UNDERGROUND FIRE ALARM
UG UNDERGROUND PROPANE GAS
UL UNDERGROUND LANDLINE & COMPUTER CABLE

0 10 20 30 40 50
SCALE IN METRES

no. no	eco no. eco no	revision revision	date date	by par	approved approuve
6		ADDED WHSE'S, LANDLINE/COMP CABLE	12-11-96	SF	

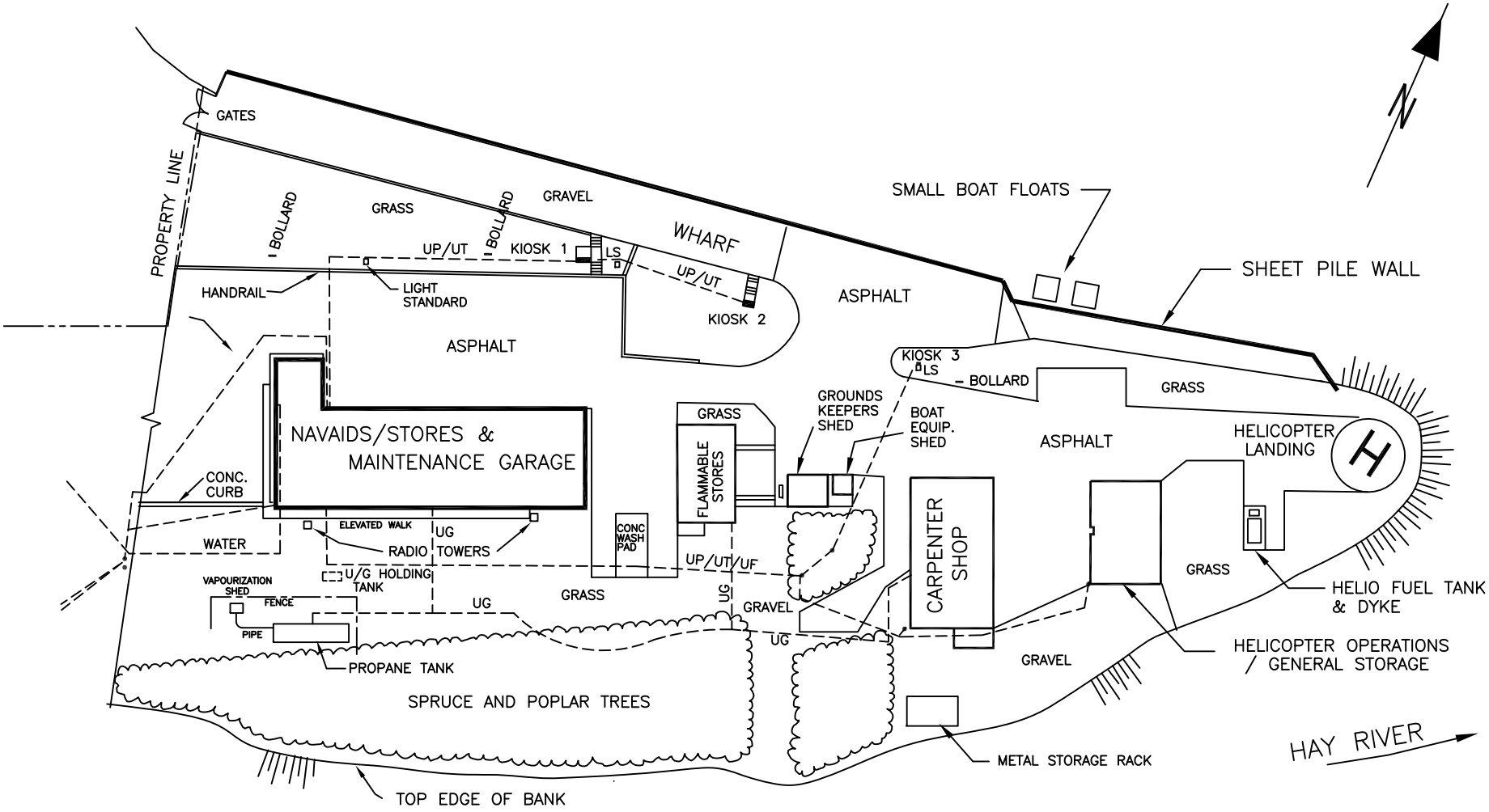
TELECOMMUNICATIONS AND ELECTRONICS BRANCH
DIRECTION DES TELECOMMUNICATIONS ET DE L'ELECTRONIQUE

HAY RIVER BASE
DETAILED SITE/UTILITIES PLAN
CHART 4.22

date – date	drawn – dessine	checked – verifie	approved approuve

scale – echelle	reference – reference	drawing no. – no du dessin	sheet feuille
1:750		A1 4-22RS	1/1

Canada



1 metre = 0.04279 units

LEGEND

OP OVERHEAD POWER
UP UNDERGROUND POWER
OT OVERHEAD TELEPHONE
UT UNDERGROUND TELEPHONE
OF OVERHEAD FIRE ALARM
UF UNDERGROUND FIRE ALARM
UG UNDERGROUND PROPANE GAS

0 10 20 30 40 50

SCALE IN METRES

HAY RIVER BASE

MAIN SHOPS AREA SITE PLAN

CHART 4.225

R1 OCTOBER 95