

BUILDING KEY PLAN

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STAMP SCEAU

02	TENDER	2016-09-09
01	ISSUED FOR REVIEW	2016-06-19
REV	Description	Date

A detail no. du detail
 B location drawing no. sur dessin no.
 C drawing no. dessin no.

project projet
STORAGE UNITS AND GRADING
 ENVIRONMENT CANADA
 335 River Rd
 Ottawa ON, K1V 1C7

drawing dessin
CIVIL DRAWING LIST AND LEGEND

Designed By É. POTVIN Conçu par

Drawn By J.-P. PHARAND Dessiné par

Reviewed By H. BISSON Examiné par

Approved By H. BISSON Approuvé par

Tender Soumission

GREG MULHOLLAND
 Project Manager Administrateur de projets

EC PMDI Proj no. Consultant Proj no.

RR-019B A000498A

Drawing no. No. du dessin

C0

LIST OF DRAWINGS

C0	CIVIL DRAWING LIST AND LEGEND
C1	TOPOGRAPHIC SURVEY PLAN
C2	GENERAL NOTES
C3	REMOVALS
C4	SITE PLAN
C5	GRADING PLAN
C6	DETAILS

EXISTING

- MH-S
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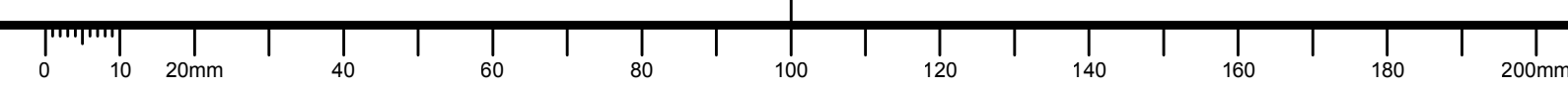
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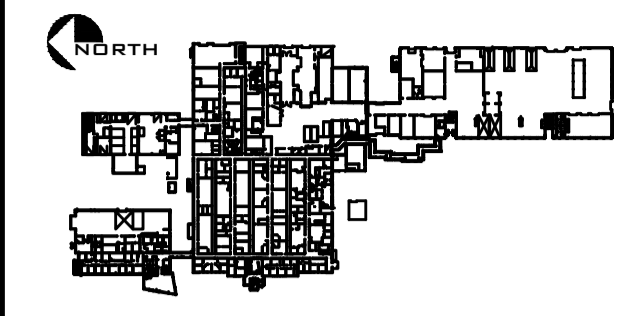
- Maintenance Hole (Sanitary)
- Maintenance Hole (Unidentified)
- Catch Basin
- Catch Basin Inlet
- Corrugated Steel Pipe
- Corrugated Plastic Pipe
- Gas Meter
- Handhole
- Bollard
- Sign
- Chain Link Fence (X = Exact location of new Fence Post)
- Gate
- Metal Pole
- Utility Pole
- Anchor
- Light Standard
- Well Cap
- Air Conditioner
- Fuel Tank Vent
- Deciduous Tree
- Coniferous Tree
- Shrubs
- Fire Hydrant
- Water Valve
- Diameter
- Location Elevations
- Location Elevations (Top of Wall)
- Top of Gate
- Top of Pipe
- Invert
- Centreline
- Property Line
- Concrete Retaining Wall
- Underground Storm Sewer
- Subdrain
- Underground Sanitary Sewer
- Underground Water
- Underground Power
- Underground Gas
- Underground Bell
- Overhead Wires
- Underground High Voltage
- Underground Electrical
- Underground Compressed Air
- Underground Concrete Duct Bank
- Concrete Curb
- Concrete Slab
- Monitoring Well
- Depressed Curb
- Jersey Barrier
- Cut Cross
- Work Limit Area
- Survey Station
- Bench mark
- Ditch
- Top of Slope
- Asphalt
- Gravel
- Borehole

NEW

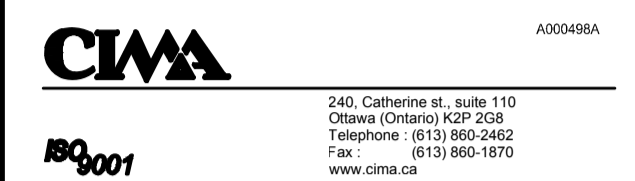
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project
UNITÉS D'ENTREPOSAGE ET NIVELLEMENT / STORAGE UNITS AND GRADING

ENVIRONMENT CANADA
335 River Rd
Ottawa ON, K1V 1C7

drawing
TOPOGRAPHIC SURVEY PLAN

Scale 1:200

Designed By
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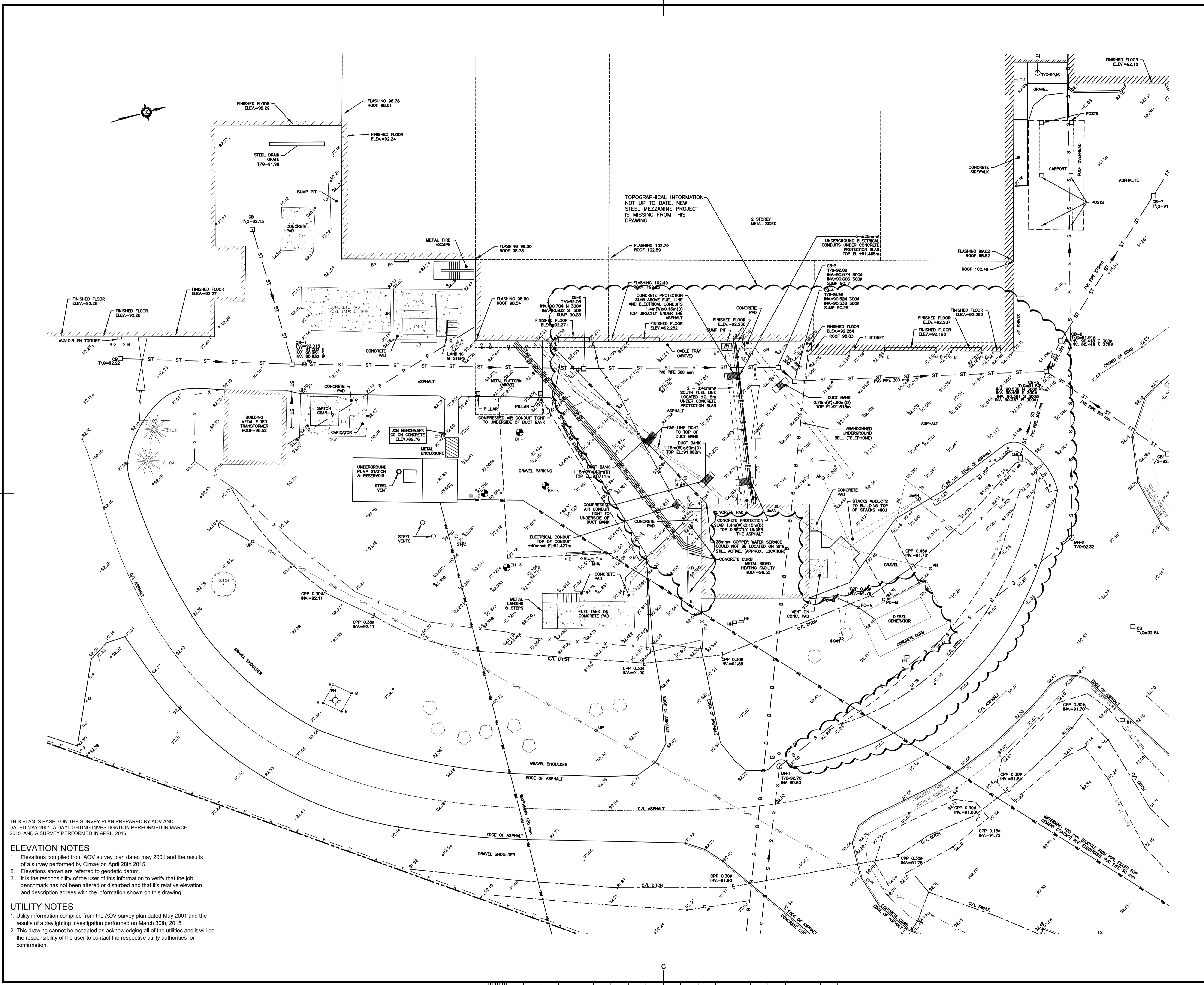
Tender
GREG MULHOLLAND

Project Manager
Administrateur de projets

EC PMDI Proj no.
RR-019B

Consultant Proj no.
A000498A

Drawing no.
C1



THIS PLAN IS BASED ON THE SURVEY PLAN PREPARED BY AOV AND DATED MAY 2001. A DAYLIGHTING INVESTIGATION PERFORMED IN MARCH 2015, AND A SURVEY PERFORMED IN APRIL 2015

ELEVATION NOTES

- Elevations compiled from AOV survey plan dated may 2001 and the results of a survey performed by Cima+ on April 28th 2015.
- Elevations shown are referred to geodetic datum.
- It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that its relative elevation and description agrees with the information shown on this drawing.

UTILITY NOTES

- Utility information compiled from the AOV survey plan dated May 2001 and the results of a daylighting investigation performed on March 30th, 2015.
- This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.

Plotted by: jonathan.hamel, Sep 09, 2016 - 11:45am

1. GENERAL - GRADING

- 1.1. The Contractor must conform to all laws, codes, ordinances, and regulations adopted by federal, provincial or municipal government councils and government agencies, applying to work to be carried out.
- 1.2. Unless otherwise indicated, all materials and construction methods to be in accordance with the latest edition of the Ontario Provincial Standard Specifications and Drawings (OPSS and OPSD), the municipal standard specifications and drawings, and all other governing authorities as they apply.
- 1.3. Wherever standards, laws and/or regulations are mentioned they refer to their current versions, modifications included.
- 1.4. The drawings topographical information North of the work zone is not accurate. The work performed during the new mezzanine project is not reflected on these drawings.
- 1.5. The boreholes and test pits shown on the plan are for information purposes only. Their location on the plan is approximate. The Contractor shall refer to the boreholes and test pit records to obtain information about observed stratigraphy on site.
- 1.6. Site preparation includes stripping of topsoil, demolition, removal of unsuitable materials, cut, fill and rough grading of all areas to receive finished surfaces.
- 1.7. The location of existing underground municipal services and public utilities as shown on the plans are approximate. The Contractor must determine the exact location, size, material and elevation of all existing utilities (on-site and off-site) prior to any excavation work. Damage to any existing services and/or existing utilities during construction, whether or not shown on the drawings must be repaired by the Contractor at his own expense.
- 1.8. All material shall conform to the Ontario Provincial Standard Specifications (OPSS) and municipal specifications, be compacted as per the requirements of the governing authority and be approved by the Departmental Representative prior to delivery to the site.
- 1.9. Compaction shall conform to the following requirements:
 - Exposed subgrade: 95% Standard Proctor maximum dry density (SPMDD)
 - Granular foundations: 100% Standard Proctor maximum dry density (SPMDD)
 - Asphalt pavement: 92% - 96% Maximum relative density
 - Subgrade fill (OPSS Select Subgrade Material): 95% Standard Proctor Maximum Dry Density (SPMDD)
- 1.10. If groundwater is encountered during construction, dewatering of excavations could be required. It is assumed that groundwater may be controlled by sump and pumping methods. The Contractor shall obtain a 'permit to take water' (PTTW) if site conditions require taking more than a total of 50 000 L/day.
- 1.11. The Contractor must maintain benchmarks and landmark references as is. Otherwise these references will be repositioned by a certified land surveyor at the Contractor's expense.
- 1.12. If applicable, the Contractor is responsible for obtaining all permits required to complete all works and bear all associated cost.
- 1.13. The Contractor is the only person in charge of safety on site. The Contractor is responsible for providing adequate protection of the workers, other personnel and the general public, protection of materials, as well as maintaining in good condition the completed works and works to be completed.

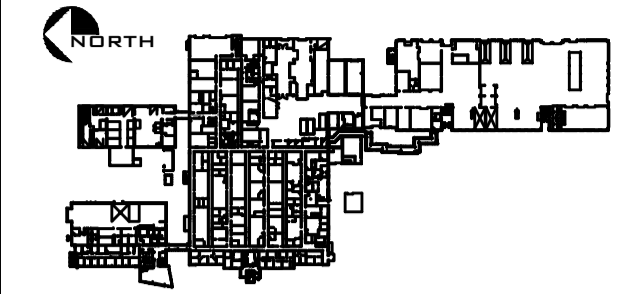
The Contractor must provide at any time:

 - 1.13.1. A sufficient number of fences, barriers, posters, and others to ensure safety;
 - 1.13.2. Necessary conveniences for the completion of the work such as heating, lighting, ventilation etc.
- 1.14. Temporary excavations in the overburden must be completed as per the requirements of the Occupational Health and Safety Act (OHS), O. Reg. 213/91. That is, side slopes must extend 1 horizontal and 1 vertical from the base of the excavation. If excavations extend below the water table then side slopes of 3 horizontal to 1 vertical, or gentler, may be required to maintain stability of the side slopes. Where these slopes are not practical due to obstacles or space restrictions, shoring must be implemented according to the OHS, O. Reg. 213/91.
- 1.15. The Contractor must pace deliveries and removals in order to minimize and control stockpiles.
- 1.16. Stockpile material must be stored away from excavations at a distance at least equal to the depth of the excavation. Construction traffic should be limited near open excavation.
- 1.17. Cleanliness on the site:
 - 1.17.1. The Contractor shall clean roadways at his own cost as directed by the Departmental Representative;
 - 1.17.2. All site road and walkways to and from the construction zone must be kept clean at all times, from mud, dirt, granular material, debris, etc.;
 - 1.17.3. The Contractor must leave the work area clean at the end of each day;
 - 1.17.4. The Contractor must lay out materials and equipment in an organized and safe manner on site;
 - 1.17.5. All material, equipment and temporary structures which are no longer necessary for the execution of the Contract must be removed from the site;
 - 1.17.6. If required the Contractor must use screens, bulkheads, or any other recognized means in order to reduce noise, dust, interference, obstruction, etc., in conformity with the requirements of the provincial and municipal authorities having jurisdiction.

- 1.18. The Contractor must control surface runoff from precipitation during construction
 - 1.19. The Contractor must supply, install and maintain an appropriate safety fence along the work perimeter until the work is complete.
 - 1.20. The Contractor must ensure the following mitigation measures are implemented in order to reduce the risk of ground contamination from petroleum products:
 - 1.20.1. The list of persons and agencies to contact in the event of an emergency must be posted in plain sight on the work site for the duration of the construction period;
 - 1.20.2. Machinery must be clean and kept clean to limit any grease or oil deposits inside the work area;
 - 1.20.3. Frequent inspections must be performed to detect any oil, fuel, grease or other leaks. If a leak is detected, the necessary corrective action must be taken immediately;
 - 1.20.4. An emergency kit for the recovery of petroleum products must be kept on site at all times. The kit must include at least 30 m of absorbent booms, a box of absorbent pads and solid absorbent material (powder or granules). The kit must be stored near the location of work and machinery, and kept within easy reach at all times to ensure a rapid response;
 - 1.20.5. In the event of a spill the Contractor must immediately report to the Spills Action Centre of the Ministry of Environment and Climate Change at 1-800-268-6060. Hydrocarbons and contaminated soils will be recovered by a specialized firm.
 - 1.21. The Contractor must ensure the following measures are implemented regarding the handling of concrete:
 - 1.21.1. Concrete should either be mixed away from the site or should be prepared on paved surfaces if only small quantities are required (i.e. minor repairs);
 - 1.21.2. Excess concrete must be disposed off-site at a location that meets all regulatory requirements;
 - 1.21.3. The washing of concrete trucks and other equipment used for mixing concrete should not be carried out within 30 m of a watercourse or wetland and should take place outside of the work site;
 - 1.21.4. All concrete trucks should collect their wash water and recycle it back into their trucks for disposal off-site at a location meeting all regulatory requirements.
2. SEDIMENT AND EROSION CONTROL
- 2.1. Specifically, sediment and erosion control measures to be constructed as per OPSS 805.
 - 2.2. Sediment and Erosion Control Plan objectives:
 - 2.2.1. Prevent soil erosion which can result from streaming rain water or wind erosion during construction;
 - 2.2.2. Prevent sediment deposits in the storm sewer and/or collecting streams and;
 - 2.2.3. Prevent air pollution from dust and particulate matter.
 - 2.3. Provisions must be made for sediment and erosion control measures prior to stripping the site of vegetation and other deleterious materials. Measures such as phase stripping, vegetation buffer zones, silt fences, straw bales, etc. must be constructed and maintained in order to control sediment, as required by the provincial and municipal governing authorities.
 - 2.4. The Contractor must set up the measures indicated on the plan, inspect them frequently and clean and repair or replace the deteriorated structures. At the end of the construction period, the Contractor is responsible for removal of the temporary structures and reconditioning the affected areas.
 - 2.5. When the sediment and erosion control measures must be removed in order to complete a portion of the work, these same measures must be reinstated.
 - 2.6. When storing soil on site in piles the Contractor must cover each pile with tarps, straw or a geotextile fabric to avoid fine particle transport by wind and/or streaming rain water.
 - 2.7. During construction a temporary filter cloth must be placed between the frame and cover on all catch basins North (downstream) of the proposed work area.
 - 2.8. At all times the Contractor must maintain the access lanes clean and free of sediments. When cleaning the access roads, the Contractor must take the necessary precautions to clear the surfaces covered with sediment prior to cleaning with water.
 - 2.9. For dust control, Contractor to apply calcium chloride (Type I - OPSS 2501 and CAN/CGSB-15-1) and water with equipment approved by the Departmental Representative at rate in accordance to OPSS 506 when directed by Departmental Representative.
 - 2.10. All sediment and erosion control measures to be removed by the Contractor following the completion of the work.
3. DEMOLITION AND REMOVALS
- 3.1. The Contractor must visit the premises in order to be fully aware of existing conditions on site, including all elements to be removed and demolished. No claim will be accepted due to a poor evaluation of the work to be completed.
 - 3.2. The Contractor must protect and maintain in service the existing works which must remain in place. If they are damaged, the Contractor must immediately make the replacements and necessary repairs to the satisfaction of the Departmental Representative and without additional expense.
 - 3.3. The Contractor must carry out necessary saw cuts.

- 3.4. The Contractor must entirely remove the demolition wreckage from the construction site in accordance with the requirements of the Ministry of Environment and Climate Change (MOECC).
 - 3.4.1. The Contractor must discard recyclable demolition materials in collaboration with a regional recycling company. The Contractor must provide proof to the Departmental Representative that the materials were properly recycled and that the chosen recycling company is recognized in the recycling field.
 - 3.4.2. All other demolition materials must be disposed off-site at authorized licensed landfills and in conformity with the applicable laws and regulations. The Contractor must be able to provide, upon request, copies of the disposal tickets to the Departmental Representative.
 - 3.5. All materials, products and others coming from the demolition belong to the Contractor, unless specified otherwise.
 - 3.6. The Contractor is responsible for locating and the request for interruption of public utility services, such as gas, telephone, power, cable, sewers, watermain, etc.
 - 3.7. The Contractor must complete all removals as shown on the drawings and as required to make the work complete.
 - 3.8. Surfaces and works located outside of the construction work limit must be reinstated as they were before beginning of work.
4. GENERAL SUBGRADE PREPARATION
- 4.1. Earth removal shall be inspected by the Departmental Representative to ensure that all unsuitable materials are removed prior to the placement of fill, including concrete and/or others, and to confirm the compaction degree and condition of the founding soils. All unsuitable materials must be hauled off site and disposed as per provincial and municipal regulations.
 - 4.2. Subgrade must be approved by the Departmental Representative before proceeding with placement of fill.
 - 4.3. All soft, wet or disturbed areas revealed under surface compaction must be removed to a minimum depth of 500 mm and replaced with compacted OPSS Granular 'B' Type I or II, or suitable subgrade fill as directed by the Geotechnical Engineer and/or an approved woven geotextile, as per OPSS 1860. Transition around sub-excavation, where backfill and native material are not of similar nature, shall be sloped at 3 horizontal to 1 vertical, within 1.8 m of finished surface.
 - 4.4. All subgrade fill must be placed in maximum 200 mm thick loose lifts and compacted using suitable methods as per the requirements.
 - 4.5. All heavy equipment shall not operate directly on the subgrade. A minimum of 500 mm of fill shall be used to allow traffic over subgrade. Subgrade surfaces will be prone to disturbance by weather and traffic, therefore preparation of the subgrade shall be scheduled such that the granular materials are placed as quickly as possible.
 - 4.6. If contaminated material is encountered during the work, the Contractor must dispose off-site all materials from the contaminated area in accordance with the requirements of the Ontario Ministry of the Environment and Climate Change (MOECC). Prior to the start of work the Contractor must provide the name and location of landfill(s) where the contaminated materials will be disposed to the Departmental Representative. The Contractor must obtain from the landfill Owner documents confirming that he has the right to accept the contaminated material. During the work, the Contractor must provide the Departmental Representative a copy of all check-in receipts issued by the landfill Owner.
 - 4.7. The Contractor is responsible to provide a confirmation that the imported material used as subgrade fill is free of any contaminants such as Petroleum Hydrocarbons (C10-C50), PAH (Polycyclic Aromatic Hydrocarbons), MAH (Monocyclic Aromatic Hydrocarbons) and metals like mercury, silver, arsenic, cadmium, cobalt, chromium, copper, tin, manganese, molybdenum, nickel, lead and zinc.
5. EXCAVATION AND BACKFILL
- 5.1. The parking and access road subgrade preparation shall be completed as per Section "4.0 General Subgrade Preparation".
 - 5.2. Beneath the proposed pavement area, all surface vegetation, surface water, rootmat, organics, underlying topsoil, frozen soils, debris, soft drainage ditch sediments, test pit backfill and other deleterious material must be removed. Organic soils below 1.2 m of finished grade may remain beneath proposed pavement areas provided they are proven competent by proof rolling and approved by the Departmental Representative.
 - 5.3. Subgrade fill, used for grading under the pavement areas, must consist of OPSS select subgrade material or equivalent, approved by the Departmental Representative prior to delivery to the site. Subgrade fill must not contain more than 25% silt.
 - 5.4. In landscaping areas, non-specified fills and on-site excavated soils may be used. The fill must be spread in thin lifts and compacted by the tracks of spreading equipment to minimize voids.
 - 5.5. Non-specified fills and on-site excavated soils are not suitable for use as backfill against the proposed retaining wall unless a composite drainage blanket connected to a perimeter drainage blanket is used.
 - 5.6. The Contractor is responsible for constructing all temporary access roads, as required to complete the work. The Contractor must also maintain all temporary access roads in good and tidy condition at all times to the satisfaction of the Departmental Representative.

6. PAVEMENT STRUCTURES AND CURBS
- 6.1. Construction of granulars must conform to OPSS 314.
 - 6.2. Granular materials used on site must conform to the requirements of OPSS 1010.
 - 6.3. Asphalt pavement structure to be constructed as per Detail #202 and #206 with the exception of the existing fuel tank asphalt pavement which must be constructed as per grading plan specifications.
 - 6.4. Construction of asphalt must conform to OPSS 310.
 - 6.5. Asphalt concrete material shall conform to OPSS 1150 for Hot Mix Asphalt and OPSS 1151 for Superpave and Stone Mastic Asphalt Mixtures. Minimum Performance Graded (PG) 58-34 asphalt cement must be used for this project.
 - 6.6. Asphalt mix design shall be reviewed and approved by the Departmental Representative prior to start of paving.
 - 6.7. Concrete curbs must conform to OPSS 353.
 - 6.8. Concrete curbs to be constructed as per Detail #112.
 - 6.9. The top of the new concrete curbs to be minimum 300 mm above the new asphalt pavement surrounding the existing fuel tank concrete slab.
7. MISCELLANEOUS
- 7.1. Bollard to be constructed as per detail #403.
 - 7.2. Retaining wall to be constructed as per Structural drawings.
 - 7.3. Chain-link fence on top of new retaining wall to be constructed as per OPSS 972.130 and 972.132 (Detail D : Footing in retaining wall).
 - 7.4. Storage unit concrete slabs and pile foundations to be constructed as per Structural drawings.
 - 7.5. The three (3) new storage units are already on site (±160m South of their final locations) and must be moved in place using cranes. Refer to the "Storage Units Info" Appendix of the tender documents for more information (e.g. location sketch, lifting hook sketch, weight of the units, anchor detail, etc.).



BUILDING KEY PLAN

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project

STORAGE UNITS AND GRADING

project

ENVIRONMENT CANADA
335 River Rd
Ottawa ON, K1V 1C7

drawing

dessin

GENERAL NOTES

Designed By **É. POTVIN** Conçu par

Drawn By **J-P. PHARAND** Dessiné par

Reviewed By **H. BISSON** Examiné par

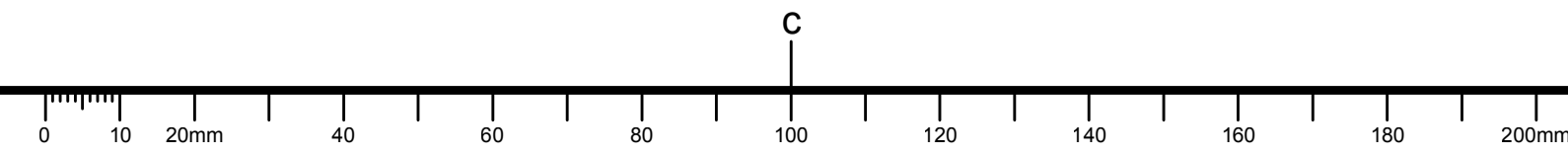
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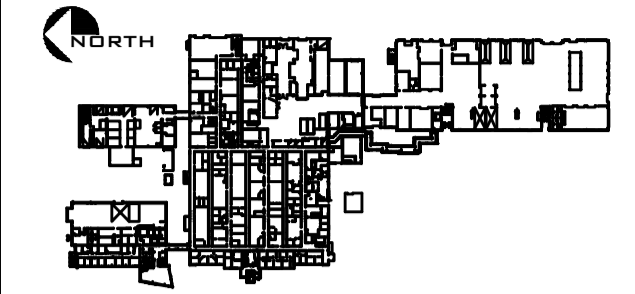
Tender **GREG MULHOLLAND** Soumission

Project Manager **GREG MULHOLLAND** Administrateur de projets

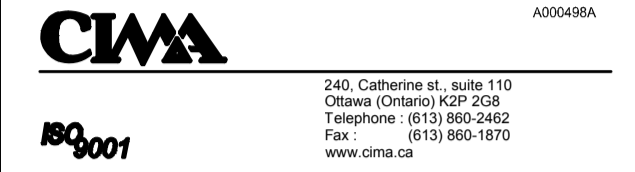
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Drawing no. **C2** No. du dessin





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project project

STORAGE UNITS AND GRADING

ENVIRONMENT CANADA
335 River Rd
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drawing dessin

REMOVALS

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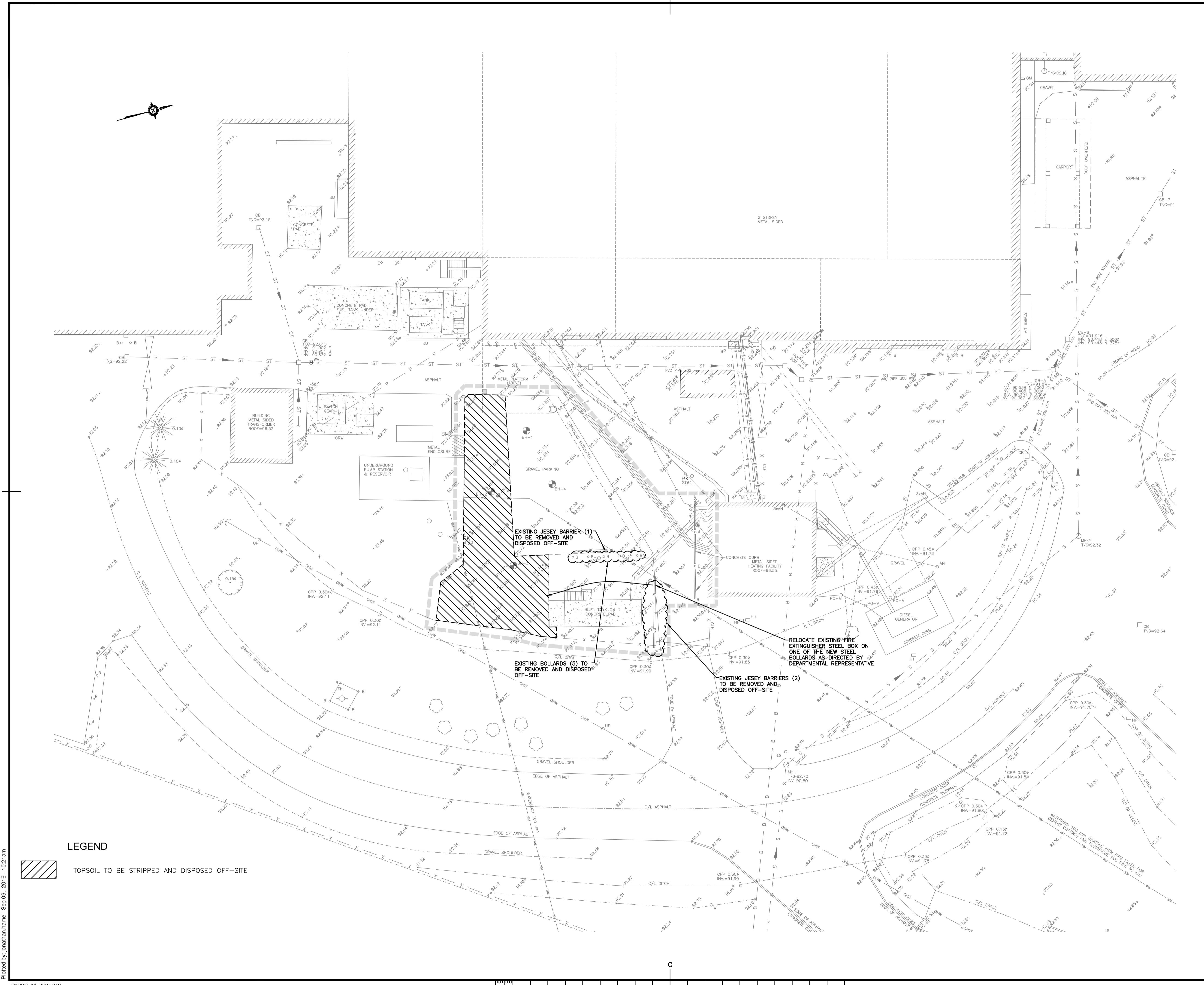
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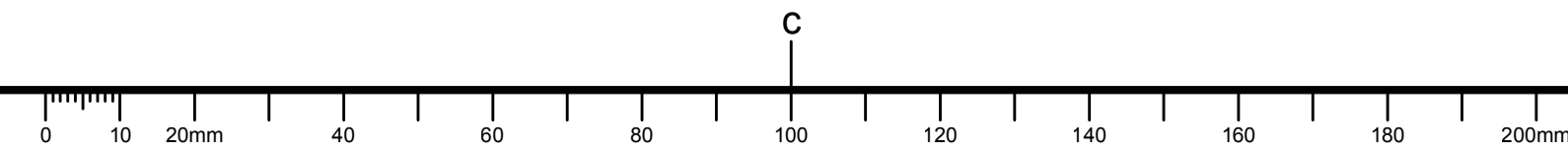
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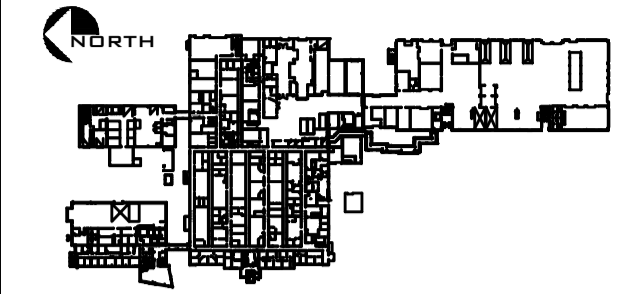


LEGEND

TOPSOIL TO BE STRIPPED AND DISPOSED OFF-SITE

Plotted by: jonathan.hamel Sep. 09, 2016 - 10:21 am





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project **STORAGE UNITS AND GRADING** projet
ENVIRONMENT CANADA
335 River Rd
Ottawa ON, K1V 1C7

drawing **SITE PLAN** dessin
Scale 1:200

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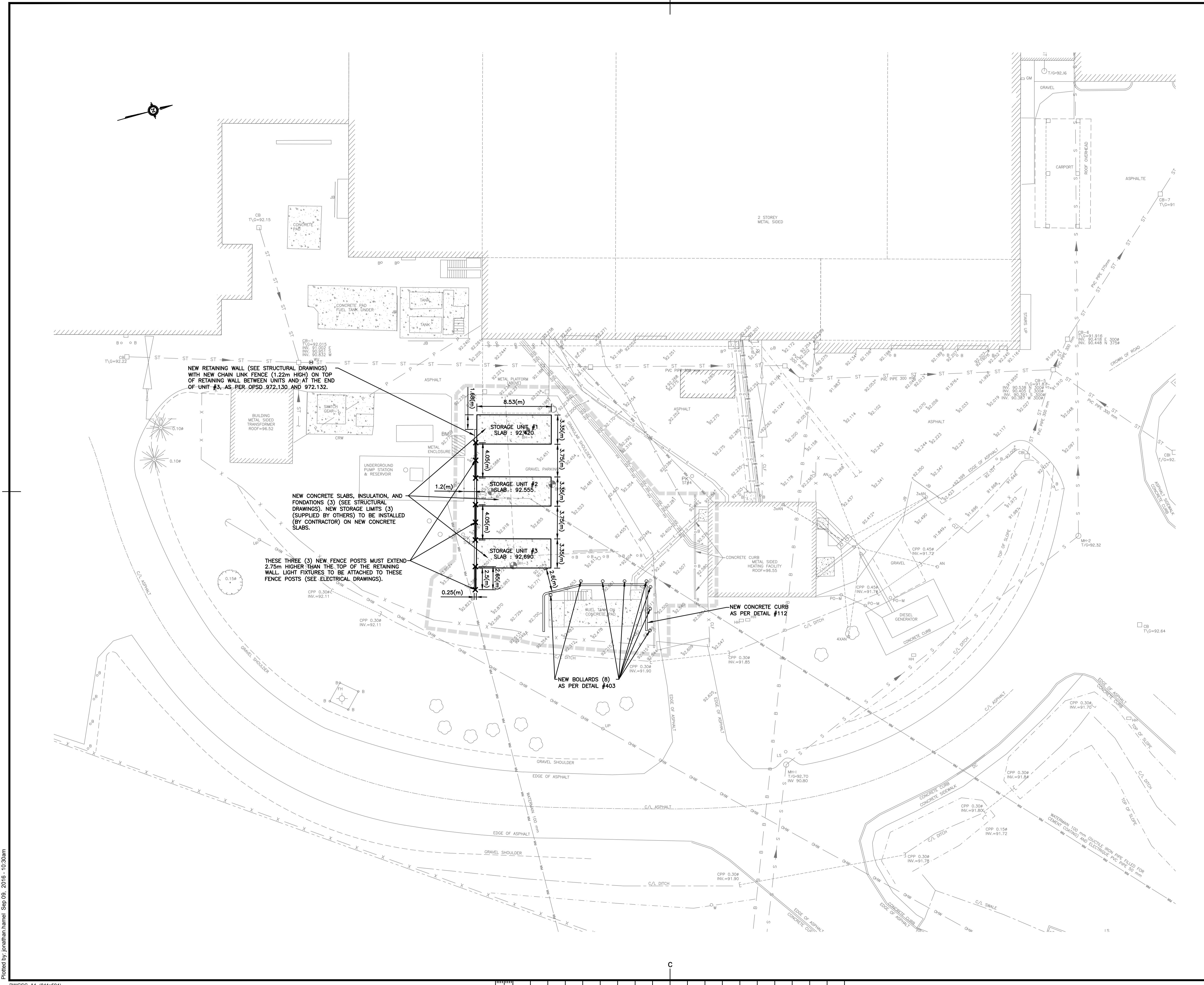
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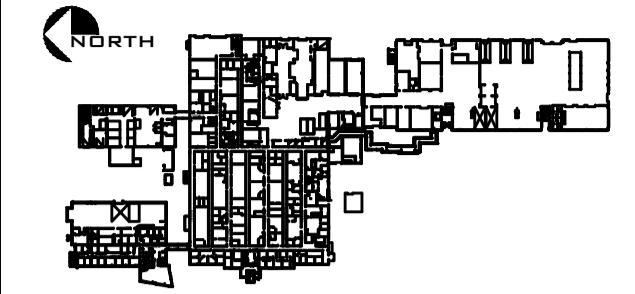
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Project Manager **Administrateur de projets**

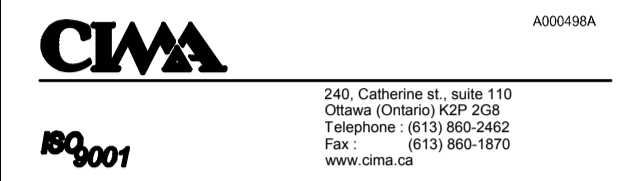
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01	ISSUED FOR REVIEW	2016-06-19

A	A detail no. no. du détail	A
B	B location drawing no. sur dessin no.	B
C	C drawing no. dessin no.	C

project project

STORAGE UNITS AND GRADING

ENVIRONMENT CANADA
335 River Rd
Ottawa ON, K1V 1C7

drawing dessin

GRADING PLAN

Scale 1:200

Designed By **É.POTVIN** Conçu par

Drawn By **J-P.PHARAND** Dessiné par

Reviewed By **H.BISSON** Examiné par

Approved By **H.BISSON** Approuvé par

Tender Soumission

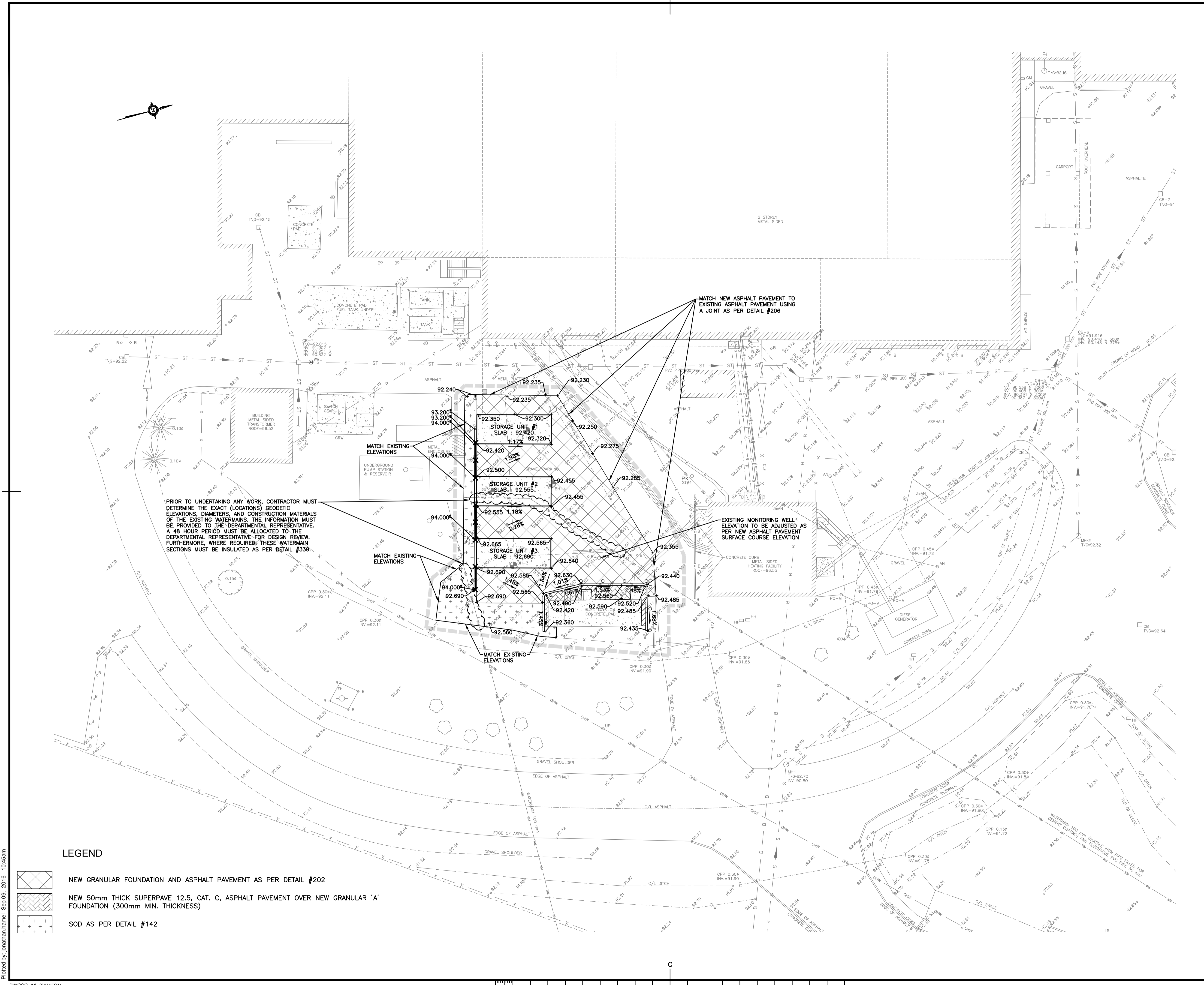
GREG MULHOLLAND
Project Manager Administrateur de projets

EC PMDI Proj no. Consultant Proj no.

RR-019B **A000498A**

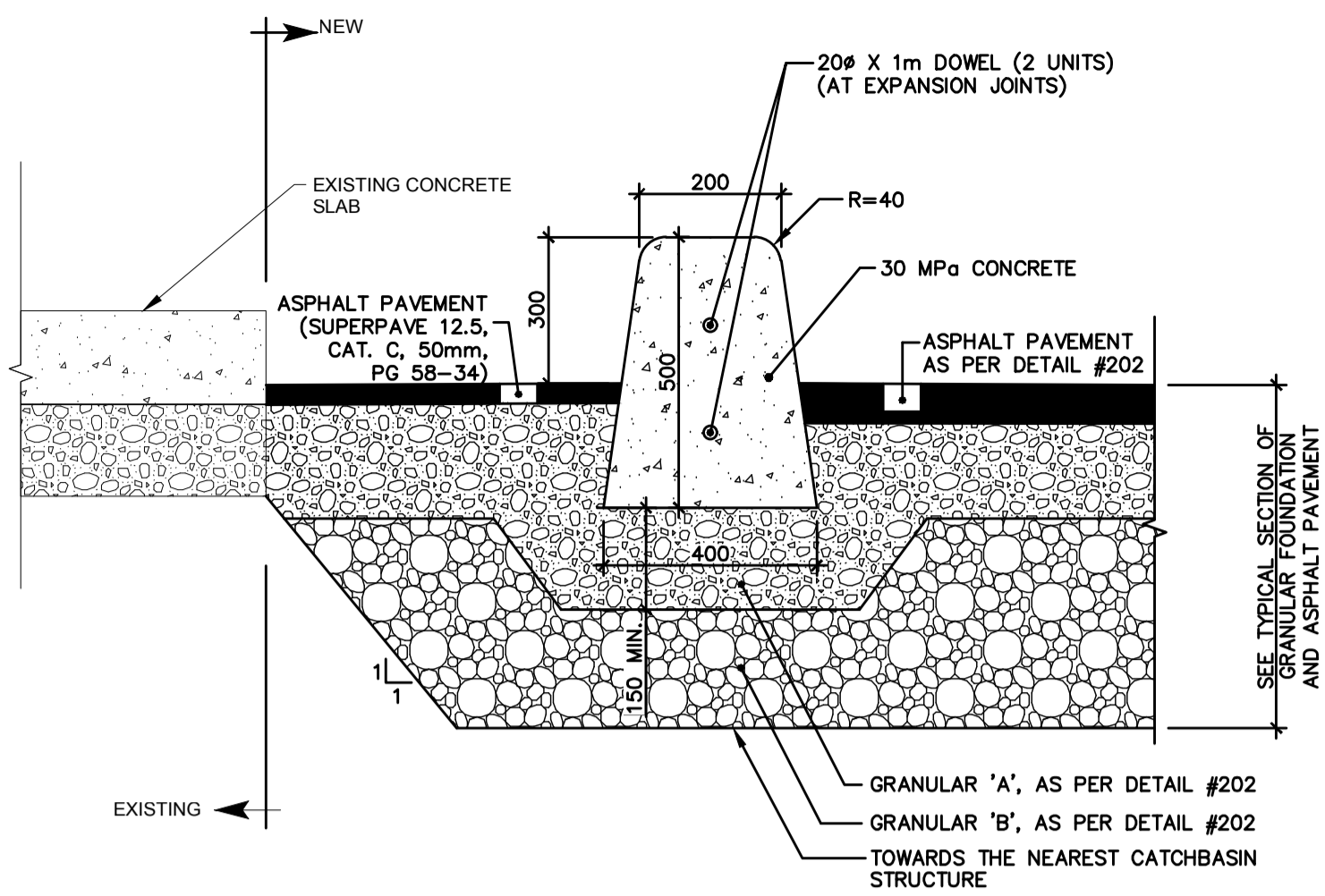
Drawing no. No. du dessin

C5



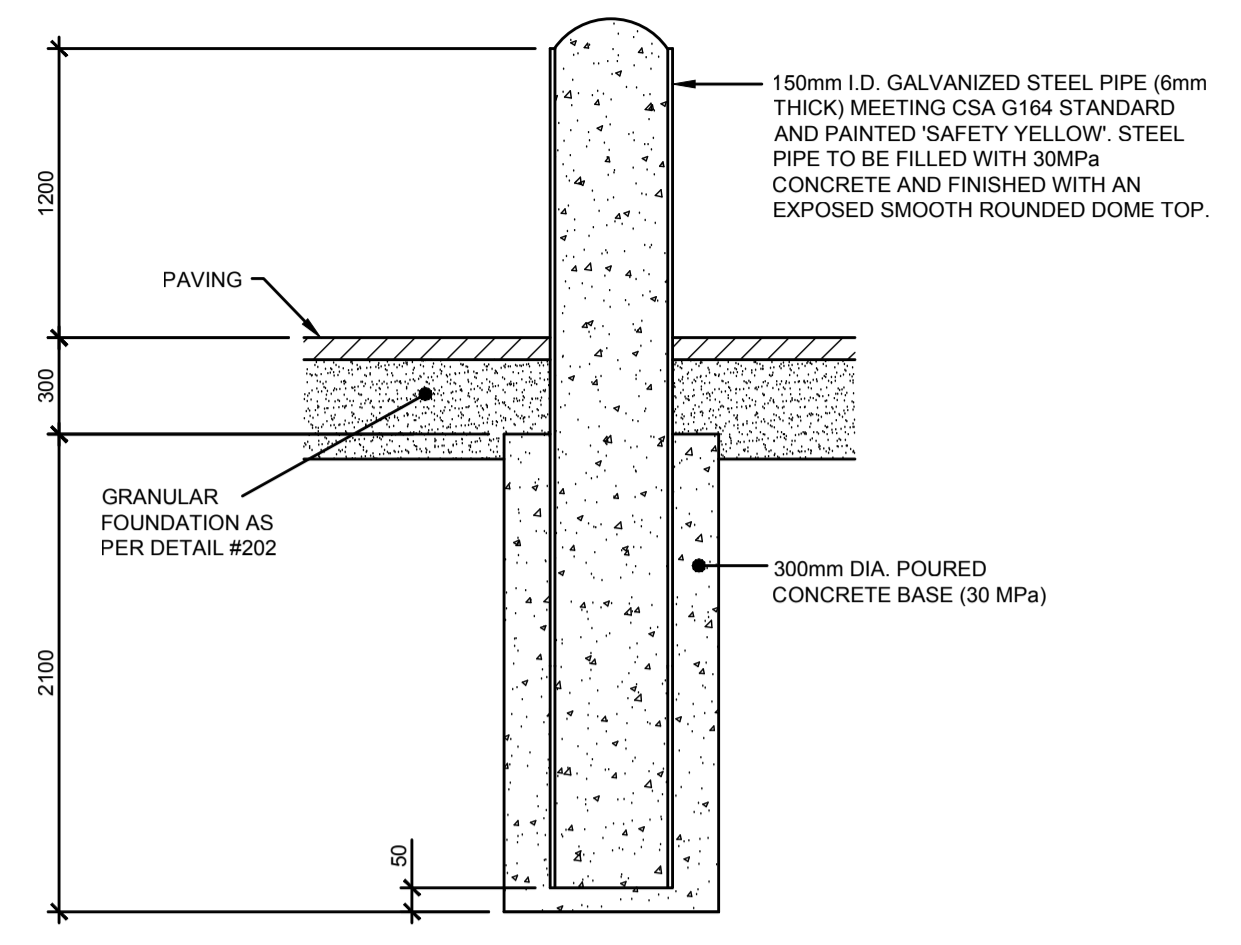
Plotted by: jmahajan@amec Sep. 09, 2016 - 10:45am



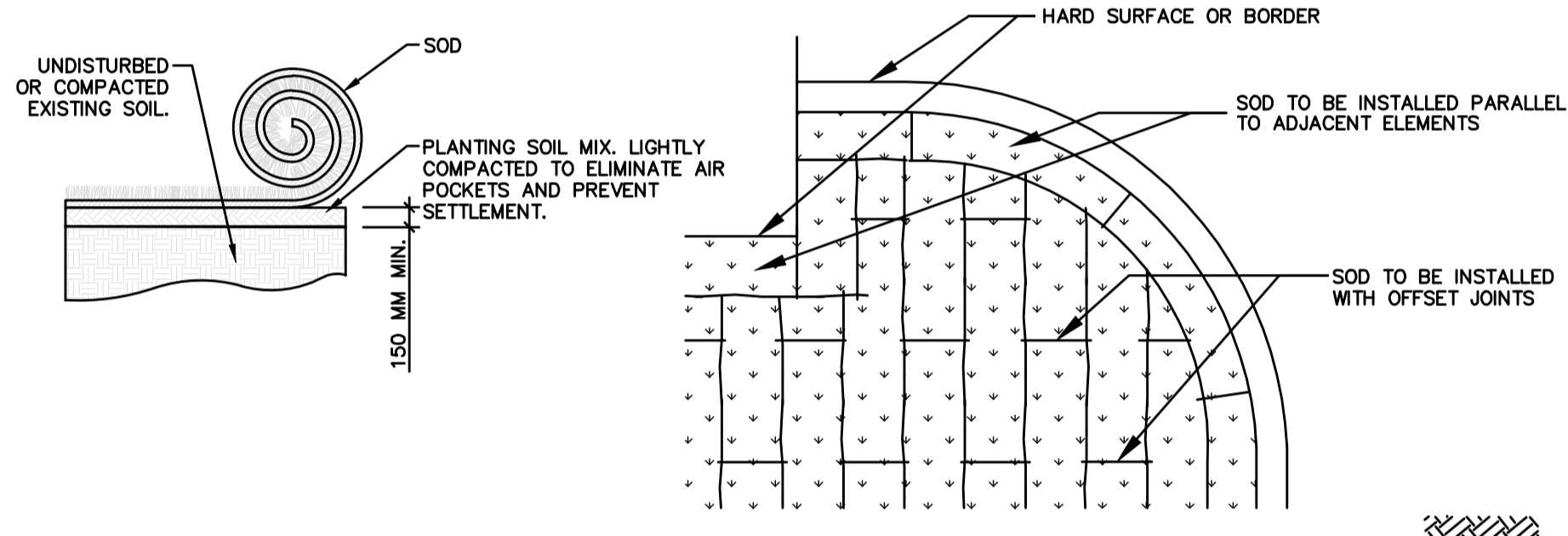


NOTES:
- EXPANSION JOINT AT 6.0m C/C MAX.

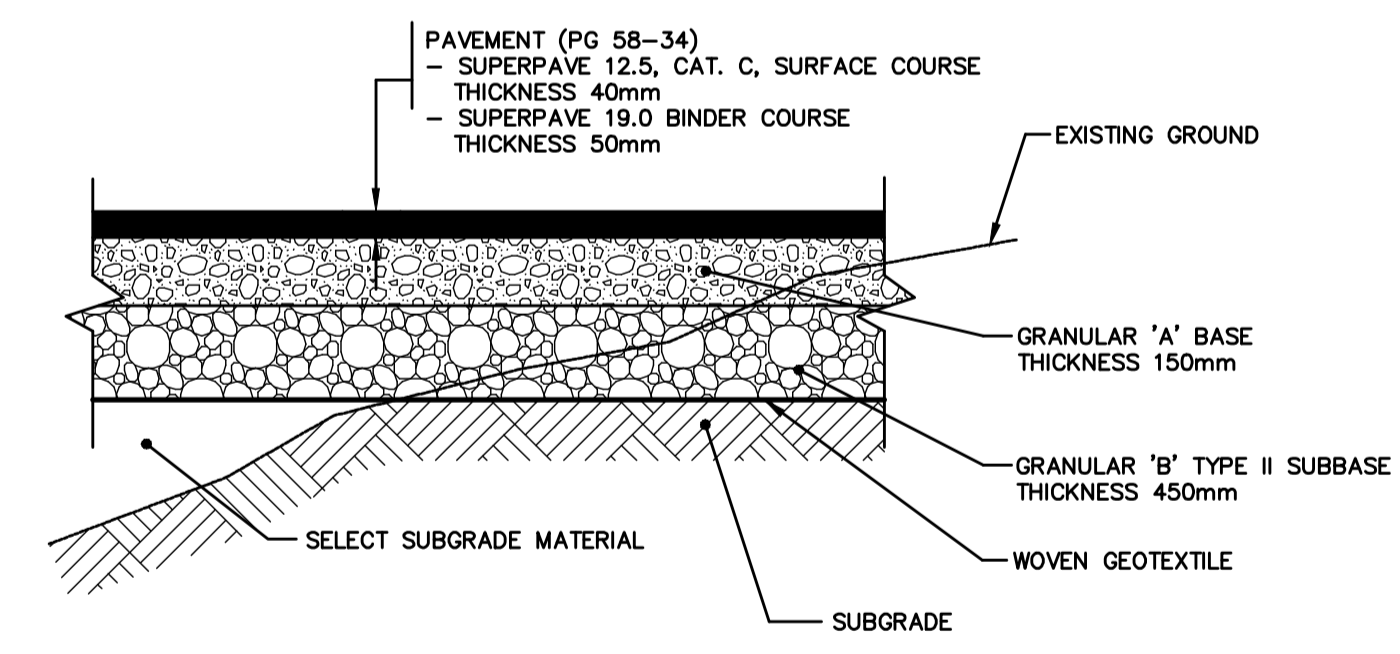
112 CONCRETE CURB



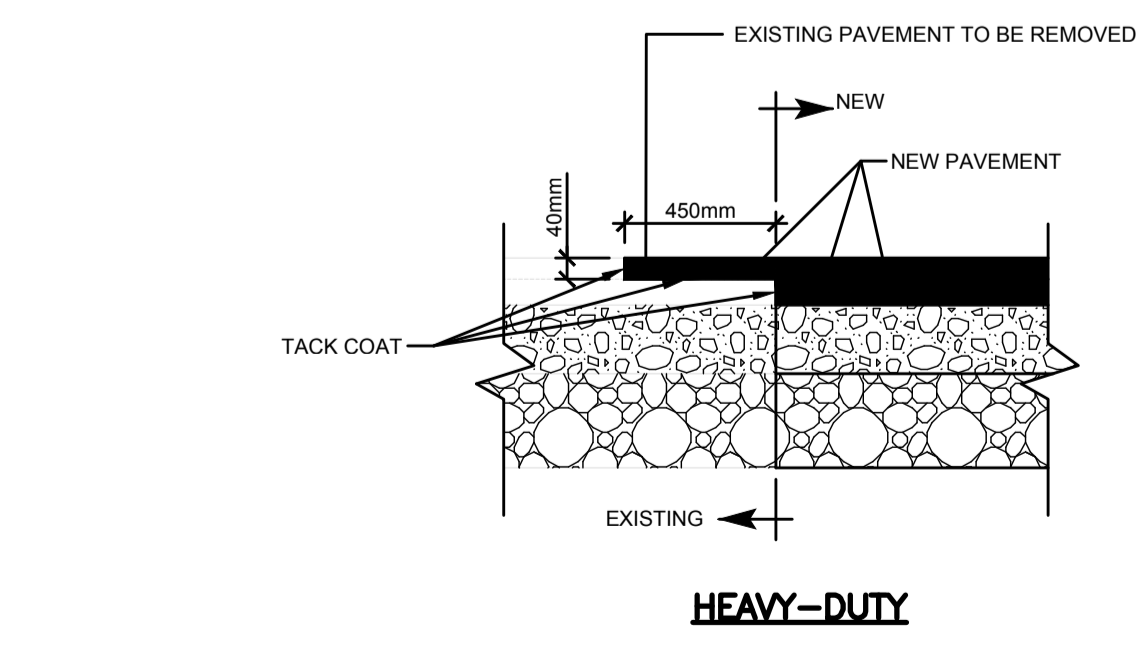
403 STANDARD BOLLARD



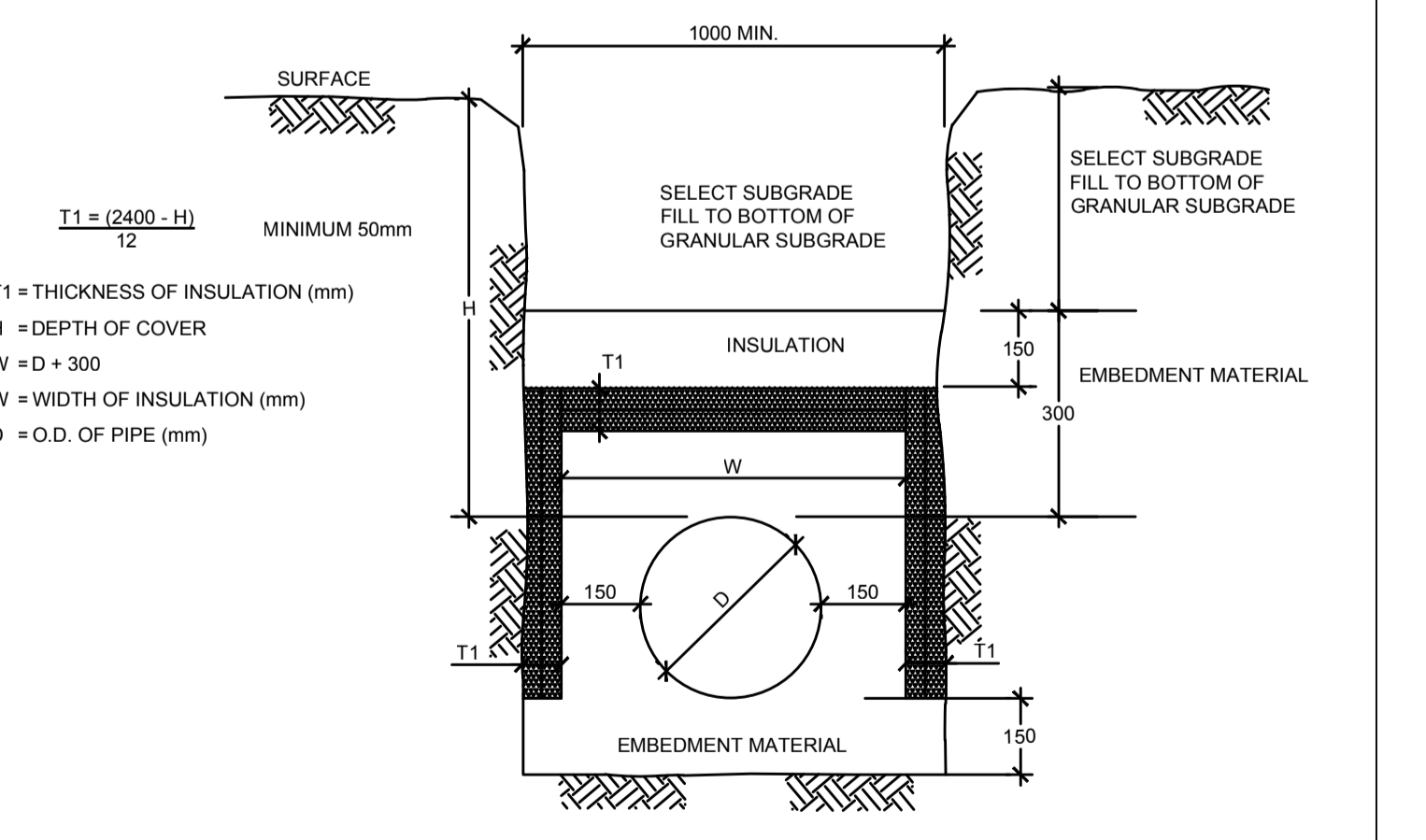
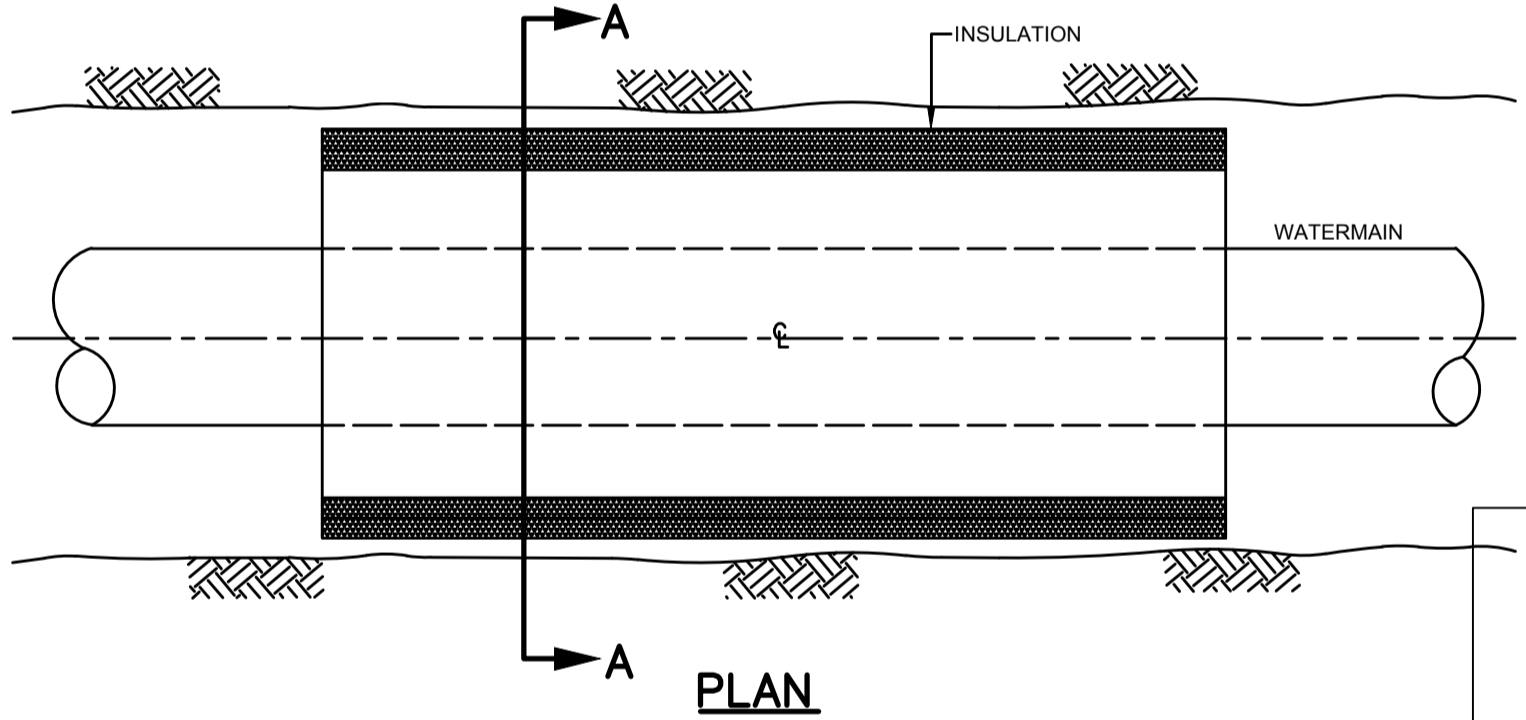
142 SOD PLANTING



202 TYPICAL SECTION - GRANULAR FOUNDATION AND ASPHALT PAVEMENT

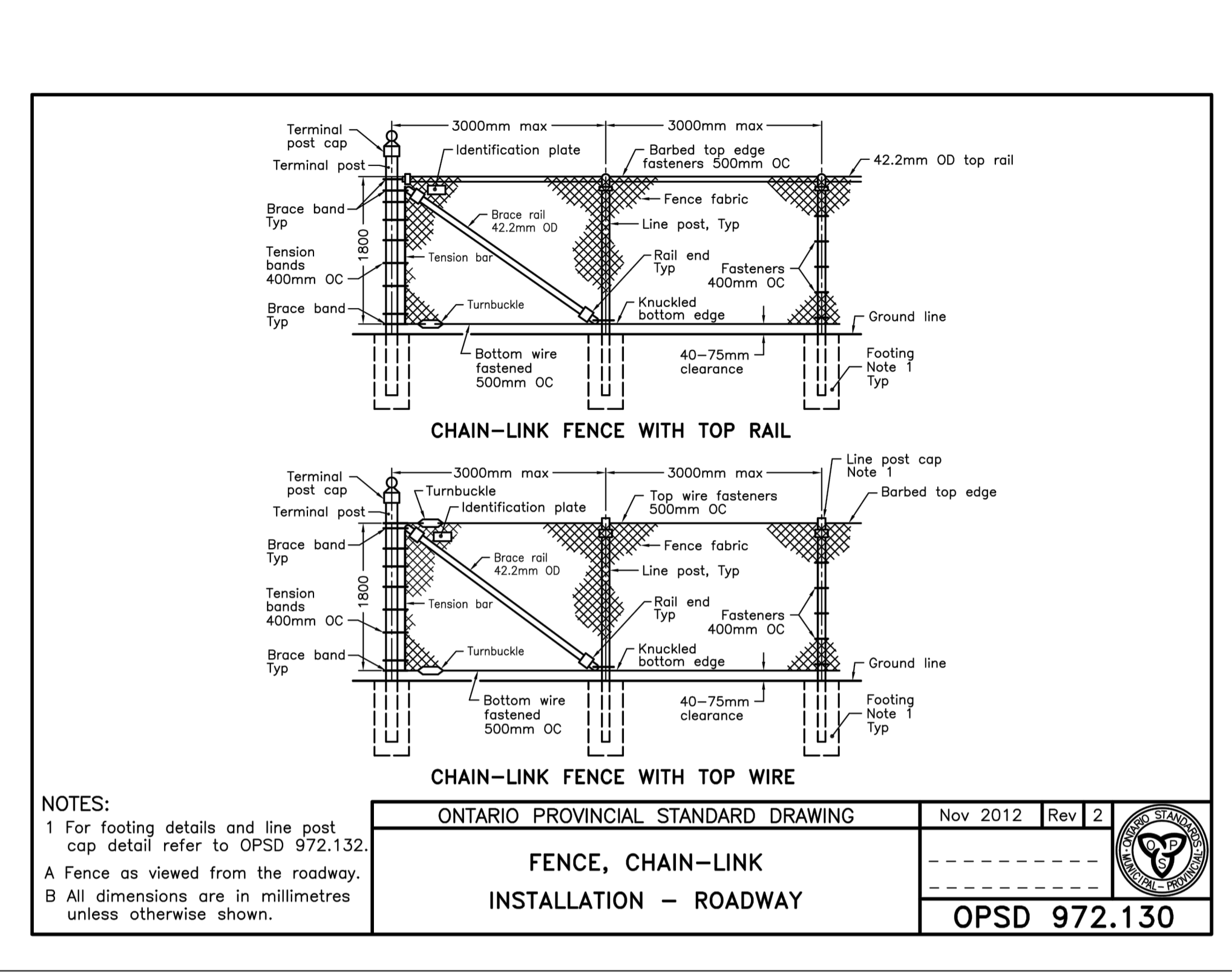


206 TYPICAL SECTION - TRANSITION BETWEEN EXISTING AND NEW PAVEMENT



NOTES:
FOR 100 - 400mm (NORMAL DIAMETER) WATERMANS, WHERE THE DEPTH OF COVER IS LESS THAN 2400mm
1. INCREMENTS OF THICKNESS SHALL BE ADJUSTABLE TO 25mm.
2. INSULATION TO BE STYROFOAM HI-60 OR APPROVED EQUIVALENT
3. STAGGER JOINTS OF MULTIPLE SHEETS.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

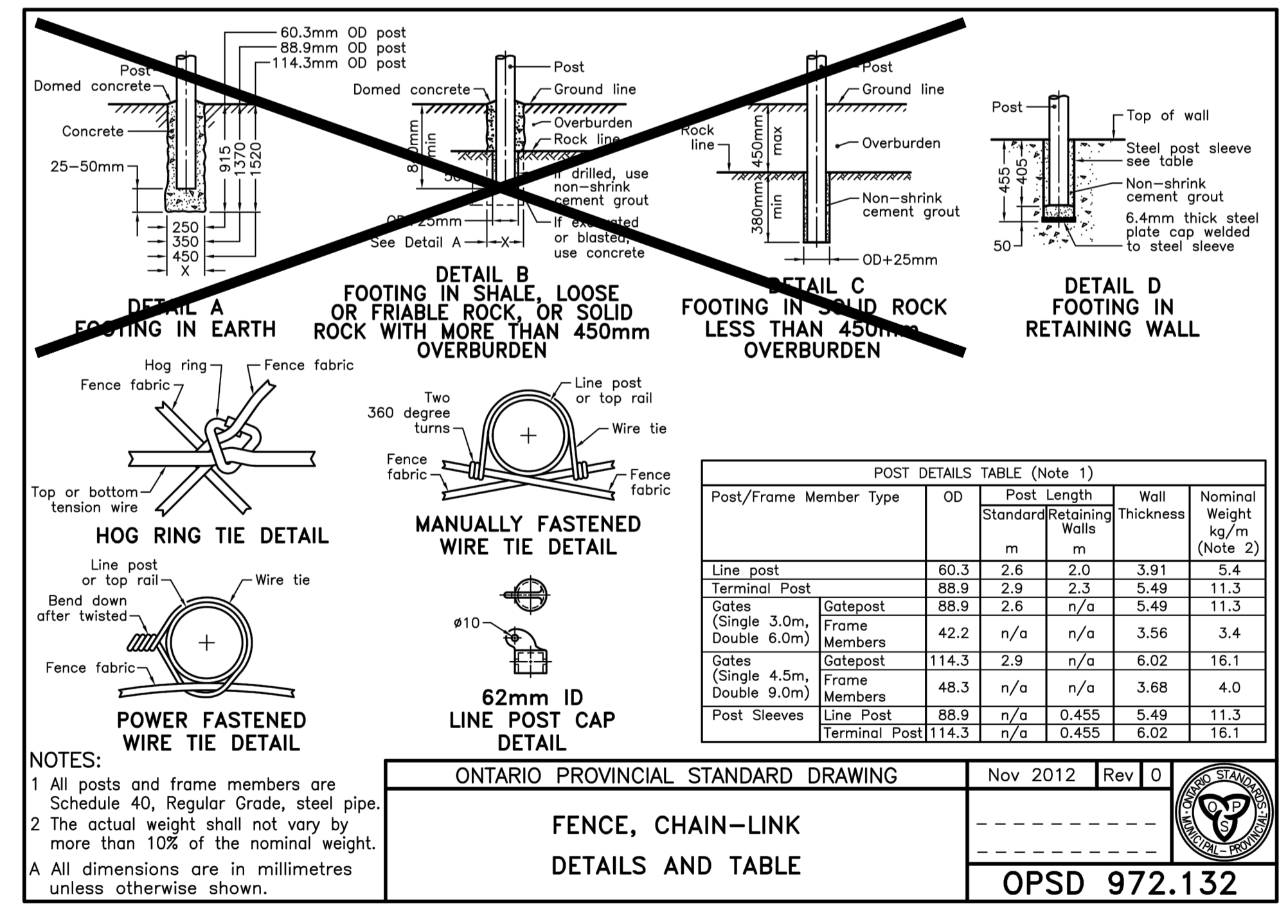
339 THERMAL INSULATION FOR WATERMAIN



NOTES:
1 For footing details and line post cap detail refer to OPSD 972.132.
A Fence as viewed from the roadway.
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2012	Rev 2
FENCE, CHAIN-LINK		
INSTALLATION - ROADWAY		
		OPSD 972.130

NOTE:
1. OPSD 972.130 MUST BE MODIFIED AS FOLLOWS: FENCE HEIGHT TO BE 1.22m (4').



NOTES:
1 All posts and frame members are Schedule 40, Regular Grade, steel pipe.
2 The actual weight shall not vary by more than 10% of the nominal weight.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2012	Rev 0
FENCE, CHAIN-LINK		
DETAILS AND TABLE		
		OPSD 972.132

Environment Canada
Environnement Canada

Real Property Management Division / Division Gestion des biens immobiliers
Technical Services / Services Techniques

BUILDING KEY PLAN

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CLELAND JARDINE ENGINEERING LIMITED

580 TERRY FOX DRIVE, SUITE 200
KANATA, ONTARIO, K2L 4B9
TEL: (613) 691-1533 FAX: (613) 691-1703
e-mail: mail@clelandjardine.com

STAMP

SCEAU

02	TENDER	2016-09-09
01	ISSUED FOR REVIEW	2016-06-19
REV	Description	Date

A
C

A
B
C

project: **STORAGE UNITS AND GRADING** project

ENVIRONMENT CANADA
335 River Rd
Ottawa ON, K1V 1C7

DETAILS

Scale N.T.S.

Designed By	É.POTVIN	Conçu par
Drawn By	J-P.PHARAND	Dessiné par
Reviewed By	H.BISSON	Examiné par
Approved By	H.BISSON	Approuvé par
Tender	Soumission	
	GREG MULHOLLAND Project Manager / Administrateur de projets	
EC PMDI Proj no.	RR-019B	Consultant Proj no.
	A000498A	
Drawing no.	No. du dessin	

C6

Printed by: jonathan.hamel Sep. 09, 2016 - 10:57 am