

ISSUED FOR TENDER (PHASE 4)

FEB 24, 2023



National Research
Council Canada

Conseil National de
Recherches Canada

NATIONAL RESEARCH COUNCIL CANADA (NRC)

SANITARY AND STORM SEWER SEPARATION (PHASE 4)
1200 MONTREAL ROAD (CAMPUS), OTTAWA, ONTARIO

National Research Council Canada
Administrative Services and Property Management Branch

Conseil national de recherches Canada
Division des services administratifs et gestion de l'immobilier

NRC - CNRC
CIMA+

T: 613-960-2462
600-1400 Blair Towers Place, Ottawa, ON K1J 9B8 CANADA

LIST OF CIVIL DRAWINGS

5097-C400-1 PHASE 4 - COVERSHEET

5097-C401-1 PHASE 4 - LEGEND

5097-C402-1 PHASE 4 - NOTES

5097-C402-2 PHASE 4 - NOTES

5097-C403-1 (NOT INCLUDED)

5097-C403-2 (NOT INCLUDED)

5097-C404-1 (NOT INCLUDED)

5097-C404-2 (NOT INCLUDED)

5097-C405-1A PHASE 4 - TOPOGRAPHICAL SURVEY
ALIGNMENT "H"
70+000 TO 70+300

5097-C405-1B PHASE 4 - TOPOGRAPHICAL SURVEY
MARION STREET

5097-C405-2 PHASE 4 - TOPOGRAPHICAL SURVEY
ALIGNMENT "B"
80+050 TO 80+300
(NOT INCLUDED)

5097-C405-3 PHASE 4 - TOPOGRAPHICAL SURVEY
ALIGNMENT "F"
100+000 TO 100+115
(NOT INCLUDED)

5097-C405-4 PHASE 4 - TOPOGRAPHICAL SURVEY
ALIGNMENT "G"
110+000 TO 110+190

5097-C406-1A PHASE 4 - GEOMETRY, GRADING AND
PAVEMENT MARKINGS
ALIGNMENT "H"
70+000 TO 70+300

5097-C406-1B PHASE 4 - GEOMETRY, GRADING AND
PAVEMENT MARKINGS
MARION STREET

5097-C406-2 PHASE 4 - GEOMETRY, GRADING AND
PAVEMENT MARKINGS
ALIGNMENT "B"
80+050 TO 80+300
(NOT INCLUDED)

5097-C406-3 PHASE 4 - GEOMETRY, GRADING AND
PAVEMENT MARKINGS
ALIGNMENT "F"
100+000 TO 100+115
(NOT INCLUDED)

5097-C406-4 PHASE 4 - GEOMETRY, GRADING AND
PAVEMENT MARKINGS
ALIGNMENT "G"
110+000 TO 110+190

5097-C407-1 PHASE 4 - PLAN VIEW AND PROFILE
ALIGNMENT "H"
70+000 TO 70+150

5097-C407-2 PHASE 4 - PLAN VIEW AND PROFILE
ALIGNMENT "H"
70+150 TO 70+300

5097-C407-3 PHASE 4 - PLAN VIEW AND PROFILE
ALIGNMENT "B"
80+050 TO 80+150
(NOT INCLUDED)

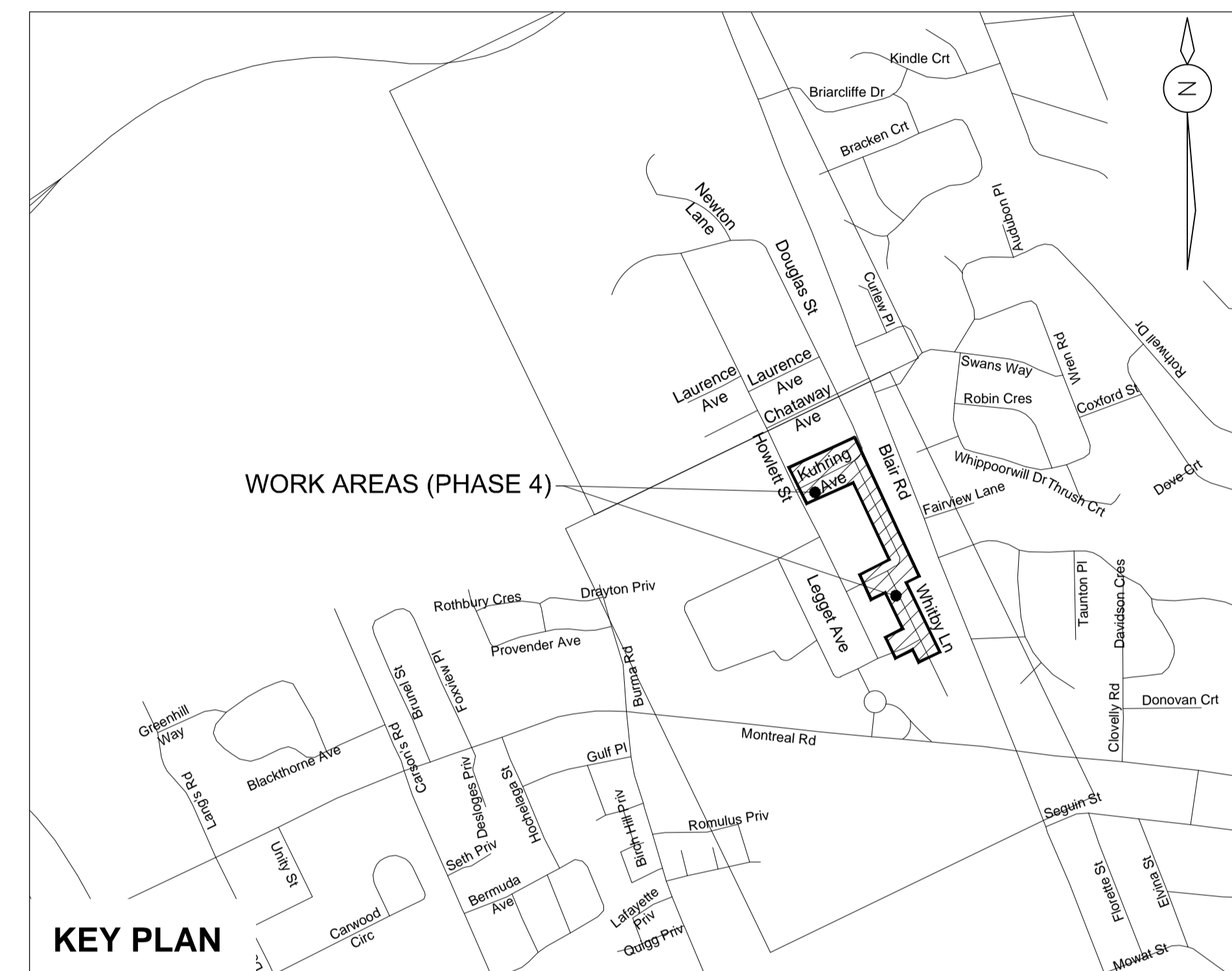
5097-C407-4 PHASE 4 - PLAN VIEW AND PROFILE
ALIGNMENT "B"
80+150 TO 80+300
(NOT INCLUDED)

5097-C407-5 PHASE 4 - PLAN VIEW AND PROFILE
ALIGNMENT "F"
100+000 TO 100+115
(NOT INCLUDED)

5097-C407-6 PHASE 4 - PLAN VIEW AND PROFILE
ALIGNMENT "G"
110+000 TO 110+090

5097-C407-7 PHASE 4 - PLAN VIEW AND PROFILE
ALIGNMENT "G"
110+090 TO 110+190

5097-C408-1 PHASE 4 - DETAILS



- o Verify all dimensions and site conditions and be responsible for same
- o Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité

A	A Detail no. No. du détail	A
C	B Location drawing no. sur dessin no.	B C
	C Drawing no. dessin no.	

project SANITARY AND STORM SEWER SEPARATION

1200 MONTREAL ROAD (CAMPUS)
OTTAWA, ONTARIO

drawing PHASE 4 - COVERSHEET

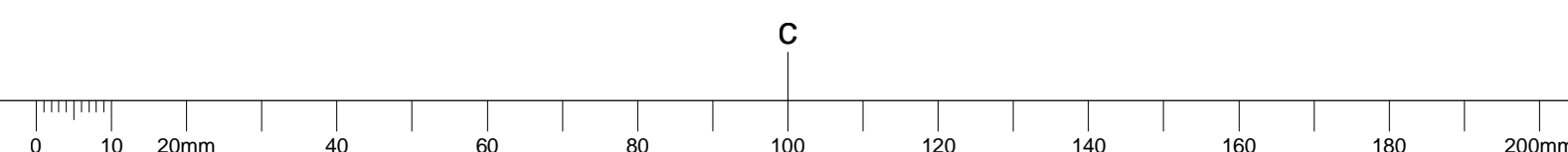
designed	conçu	date	date
J.SAUVÉ		JANUARY 2017	

drawn	dessiné	scale	échelle
J.SAUVÉ		NTS	

checked	vérifié	sheet	of/de	feuille
H.BISSON		1	1	1

approved	approuvé	W.O.no.	D.T.no.
H.BISSON		-	

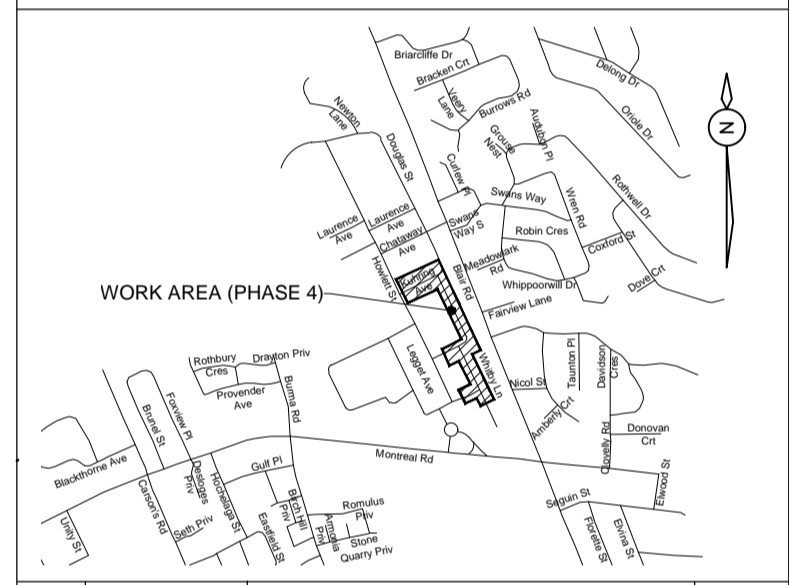
dwg.no.	dessin no.
5097-C400-1	



GENERAL NOTES

- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
- MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE ALL LABOUR AND MATERIAL REQUIRED TO FORM A COMPLETE FUNCTIONAL SYSTEM AS DESCRIBED ON DRAWINGS.

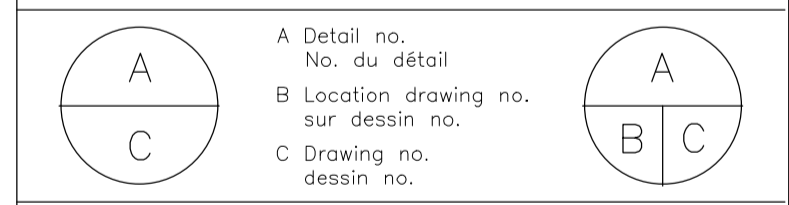
KEY PLAN



No.	Date	Revision	By:	Par:
2	2023-02-24	ISSUED FOR TENDER (P4)	H.B.	
1	2019-09-29	ISSUED FOR TENDER (P4)	H.B.	

Date Printed: _____ Date imprimée: _____

- Verify all dimensions and site conditions and be responsible for same
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité



project: **SANITARY AND STORM SEWER SEPARATION** projet

1200 MONTREAL ROAD (CAMPUS)
 OTTAWA, ONTARIO

drawing: **PHASE 4 - LEGEND** dessin

designed	conçu	date	date
J.SAUVÉ		JANUARY 2017	
drawn	dessiné	scale	échelle
J.SAUVÉ		NTS	
checked	vérifié	sheet	feuille
H.BISSON		1 of/de 1	
approved	approuvé	W.O.no.	D.T.no.
H.BISSON		-	
dwg.no.			dessin no.

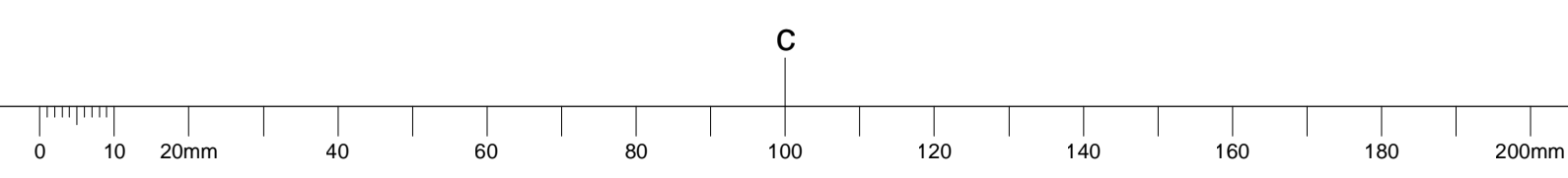
5097-C401-1

EXISTING	PROPOSED
WM	WM
SAN	SAN
STM	STM
COMB	COMB
IOS	IOS
G	G
T	T
C	C
L	L
CTR	CTR
CTS	CTS
HPC	HPC
F	F
CWR	CWR
CWS	CWS
A	A
X	X
TOP OF SLOPE	TOP OF SLOPE
DITCH	DITCH
BOTTOM OF SLOPE	BOTTOM OF SLOPE
REMOVAL	REMOVAL

WATERMAIN
SANITARY SEWER
STORM SEWER
COMBINED SEWER
INTERCEPTOR OUTFALL SEWER
GAS LINE (APPROX. LOC.)
UNDERGROUND TELEPHONE (APPROX. LOC.)
UNDERGROUND COMMUNICATION (APPROX. LOC.)
UNDERGROUND LIGHTNING (APPROX. LOC.)
UNDERGROUND COOLING TOWER RETURN (APPROX. LOC.)
UNDERGROUND COOLING TOWER SUPPLY (APPROX. LOC.)
UNDERGROUND STEAM CONDENSATE (APPROX. LOC.)
UNDERGROUND PROPANE GAS (APPROX. LOC.)
UNDERGROUND CHILLED WATER RETURN (APPROX. LOC.)
UNDERGROUND CHILLED WATER SUPPLY (APPROX. LOC.)
UNDERGROUND COMPRESSED AIR (APPROX. LOC.)
OVERHEAD WIRES
FENCE
TOP OF SLOPE
DITCH
BOTTOM OF SLOPE
REMOVAL

EXISTING	PROPOSED
WOOD AREA	
TREE	
CATCHBASIN	
MANHOLE/CATCHBASIN	
MANHOLE	
FIRE HYDRANT	
VALVE	
REDUCER	
TEE	
VALVE CHAMBER	
NATURAL GAS VALVE	
SIGN	
STOP SIGN	
ELECTRICITY POLE	
TELEPHONE POLE	
STREET LIGHT POLE	
ELECTRICITY MANHOLE	
TELEPHONE MANHOLE	
MONITORING WELL (STANDPIPE PIEZOMETER)	

WOOD AREA
TREE
CATCHBASIN
MANHOLE/CATCHBASIN
MANHOLE
FIRE HYDRANT
VALVE
REDUCER
TEE
VALVE CHAMBER
NATURAL GAS VALVE
SIGN
STOP SIGN
ELECTRICITY POLE
TELEPHONE POLE
STREET LIGHT POLE
ELECTRICITY MANHOLE
TELEPHONE MANHOLE
MONITORING WELL (STANDPIPE PIEZOMETER)



1.0 GENERAL - SITE WORKS

- 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 City of Ottawa municipal standard specifications and drawings...

A City of Ottawa Sewer Use permit is required in order to discharge the construction water to the sewers. Groundwater pumped from the site during infrastructure work will need to be evaluated in accordance with City of Ottawa By-Law 2003-514 (Schedule A: Table 1 Limits for Sanitary and Combined Sewers Discharge; and Table 2 - Limits for Storm Sewer Discharge).

Suitable detention and filtration will be required before discharging the water to any sewers. The Contractor must prepare and submit an excavation and groundwater management plan to the Departmental Representative for review and approval.

- 1.7 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.
1.8 The Contractor is the only person in charge of safety on the site. The Contractor is responsible for providing adequate protection of the workers, other personnel and the general public...
1.12 The location of existing underground municipal services and public utilities as shown on the plans are approximate.

- 1.20 The Contractor must control surface runoff from precipitation during construction.
1.21 Protection of existing trees and shrubs:
- The Contractor must ensure that the existing trees and shrubs that are to remain on site are protected throughout the construction phase...

- 1.22 The Contractor must comply with the Migratory Birds Convention Act, 1994 and prevent any harming or killing of migratory birds and prevent the destruction or disturbance of their nests or eggs.

Tree cutting should be performed outside of the core Migratory Birds nesting period specified by Environment and Climate Change Canada, April 15 to August 31. Should it be required, tree cutting during this period can only be performed after a qualified contractor has confirmed to the Departmental Representative the absence of any migratory bird nests.

Trees with a diameter at breast height (DBH, established at 1.3 m above ground level) less than 300 mm that must be removed must be transplanted.

Trees with DBH greater than or equal to 300 mm that must be removed must be cut down, removed, de-stumped and replaced with new trees at a 2:1 ratio.

New trees and transplanted trees must be planted in the area south of Building M21, parallel to the roadway, away from existing underground utilities and services.

New trees must be "fast growing", have a minimum DBH of 100 mm, and be of the following type: Silver Fir, Blue Spruce, Crab Apple, Hackberry, Common Horse Chestnut, Autumn Blaze Maple, Red Maple, Sargur Maple or Japanese Lilac.

- 1.23 The Contractor must ensure the following mitigation measures are implemented in order to reduce the risk of ground contamination from petroleum products:
- The list of persons and agencies to contact in the event of an emergency must be posted in plain sight on the work site...
- An emergency kit for the recovery of petroleum products must be kept on site at all times.

- 1.24 The Contractor must ensure the following measures are implemented regarding the handling of concrete:
- 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);
- Excess concrete must be disposed off-site at a location that meets all regulatory requirements;

2.0 SEDIMENT AND EROSION CONTROL

- 2.1 Sediment and erosion control measures to be constructed as per OPSS.MUNI 805.
2.2 The Contractor must implement best management practices and provide adequate sediment and erosion control measures during construction in order to:
a) Prevent soil erosion which can result from stormwater runoff or wind erosion during construction;
b) Prevent sediment deposits in the sewer and/or collecting streams and;
c) Prevent air pollution from dust and particulate matter.

- 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 with OPSS 506.MUNI when directed by Departmental Representative.
2.10 At the end of the construction period, the Contractor is responsible for removal of the temporary sediment and erosion control measures and reconditioning the affected areas.

3.0 DEMOLITION AND REMOVALS

- 3.1 Removals shall be completed in accordance with OPSS 510.MUNI.
3.2 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.
3.3 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 at the Contractor's expense.

- 3.4 The Contractor must carry out necessary saw cuts.
3.5 The Contractor must entirely remove the demolition wreckage from the construction site in accordance with the requirements of the MECP.
- 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.
- 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.
- The Contractor is to assume that all existing pipes having a 300mm diameter, or less, contain asbestos and that, if removed, these pipes are to be properly disposed off-site as per OPSS.MUNI 510.

4.0 GENERAL SUBGRADE PREPARATION

- 4.1 Earth removal shall be inspected by the Departmental Representative (experienced geotechnical engineer) to ensure that all unsuitable materials are removed prior to the placement of fill 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 (experienced geotechnical engineer) 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 suitable subgrade fill as directed by the Departmental Representative (experienced geotechnical engineer) and/or an approved non-woven Class 1 geotextile, as per OPSS.MUNI 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. The frost taper and subexcavation requirements must be assessed at the time of construction by the Departmental Representative (experienced Geotechnical Engineer).

- 4.4 The petroleum hydrocarbon (PHC) contaminated soil around borehole BH16-105E and any additional contaminated soils can be excavated and remediated (biopile, land farming, etc.) at a suitable location on the property upon approval by the Departmental Representative. Otherwise contaminated soils shall be transported offsite for disposal as waste in accordance with Ontario Regulation 347.
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.

- 4.9 The Contractor is responsible to provide a confirmation that the imported material used as 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.

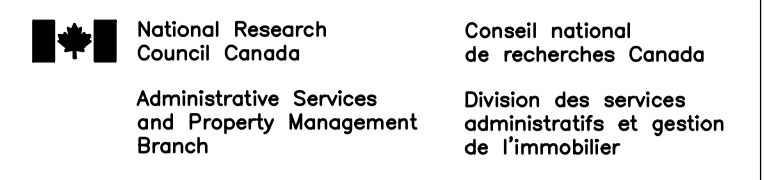
5.0 ROCK EXCAVATION

- 5.1 Bedrock excavation is anticipated along the proposed service trenches and shall be completed in accordance with OPSS.MUNI 403 and all laws, codes, ordinances and regulations adopted by federal, provincial and municipal government councils and government agencies, applying to the work to be carried out.
5.2 Bedrock removal must be carried out using hoe ramming techniques in conjunction with line drilling on close centres. Provided that good bedrock excavation techniques are used, the bedrock may be excavated using near vertical side walls. Any loose rock must be scaled from the sides of the excavation.
Monitoring of the hoe ramming must be carried out to measure the vibrations at the nearest structure or service in order to ensure that they are below the acceptable threshold values shown in the following table:

Table with 2 columns: Frequency of Vibration (Hz) and Vibration Limits (mm/s). Values range from < 10 to > 40 Hz, with corresponding vibration limits of 5, 5 to 50 (interpolated), and 50 mm/s.

These criteria, although conservative, were established to prevent damage to existing buildings and services in good condition. More stringent criteria may be required to prevent damage to freshly placed (uncured) concrete or vibration sensitive equipment or utilities. The Contractor must perform pre-construction condition surveys of nearby structures and existing buried services and provide copy of survey results to the Departmental Representative.

- 5.3 Bedrock excavation material may be reused as backfill material provided the size of particle is less than 300 mm along the longest face.



600-1400 Bell Towers Place, Ottawa, ON K1J 9B8 CANADA

GENERAL NOTES

- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.

KEY PLAN

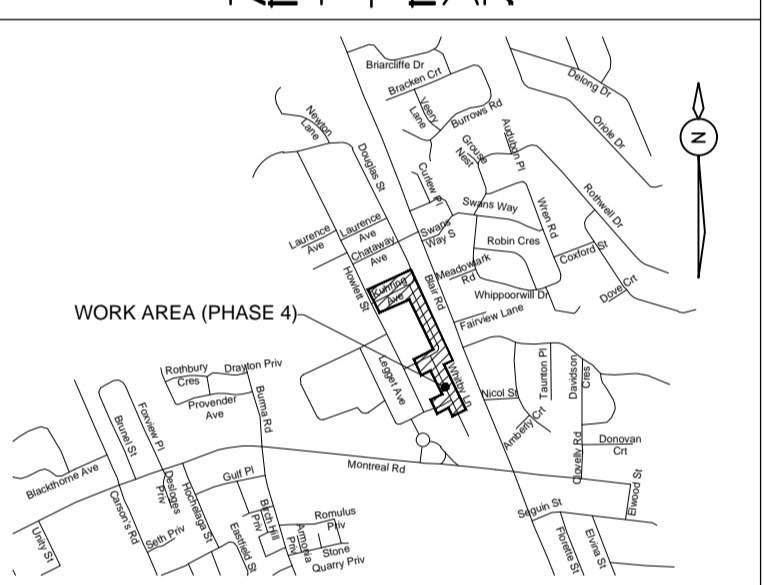
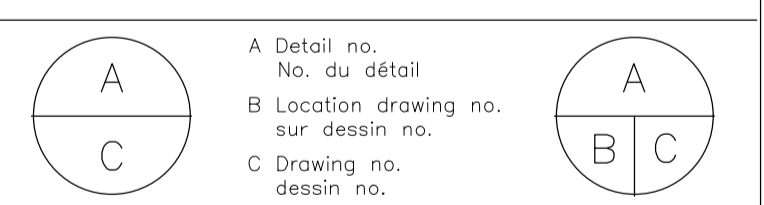


Table with 4 columns: No., Date, Revision, and By: For. Contains revision information for drawings 2 and 1, dated 2013-02-14 and 2015-05-29 respectively.

- Verify all dimensions and site conditions and be responsible for same.
Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité.



project SANITARY AND STORM SEWER SEPARATION

1200 MONTREAL ROAD (CAMPUS) OTTAWA, ONTARIO

PHASE 4 - NOTES

Table with 4 columns: designed, drawn, checked, approved, and dwg.no. Lists design and drawing personnel including J.SAUBE and H.BISSON, along with dates and scales.

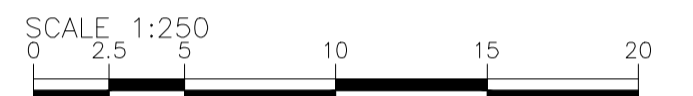


5097-C402-1

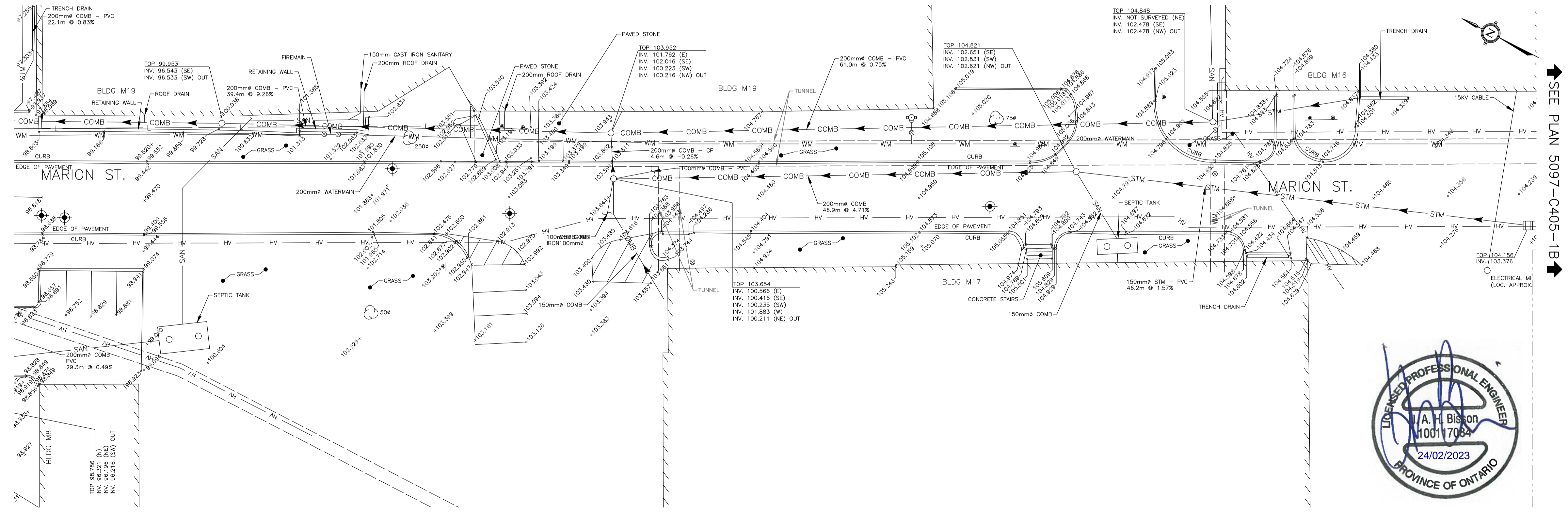
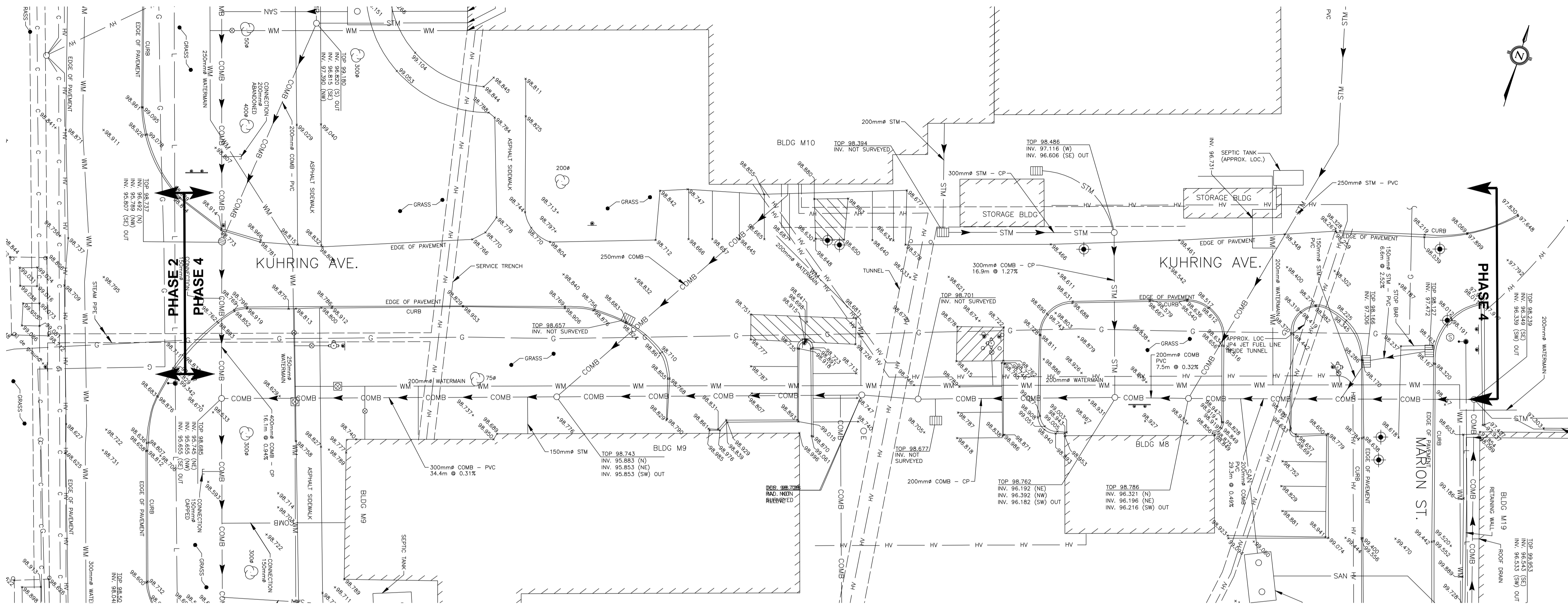
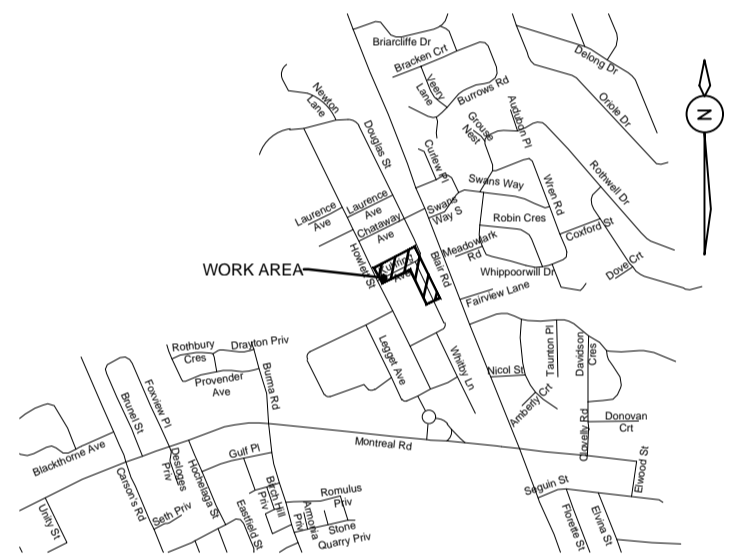


GENERAL NOTES

- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
- MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE ALL LABOUR AND MATERIAL REQUIRED TO FORM A COMPLETE FUNCTIONAL SYSTEM AS DESCRIBED ON DRAWINGS.



KEY PLAN



SEE PLAN 5097-C405-1B

NOTE OF CAUTION

THE GEODETIC COORDINATES OF EVERY ITEM INCLUDED AS PART OF THIS DOCUMENT HAVE NO LEGAL VALUE. THE SITE LAYOUT MUST BE COMPLETED USING THE OFFICIAL BENCHMARKS OF AN ACCREDITED LAND SURVEYOR.

THE UNDERGROUND FEATURES THAT APPEAR ON THE DRAWINGS WERE OBTAINED FROM THE PUBLIC UTILITY COMPANIES AND/OR FROM THE NRC.

ALL INFORMATION UNDER THE LEGEND 'EXISTING' IS FOR INFORMATION ONLY. COMPLETE OR EXACT LOCATION AND ELEVATION OF UNDERGROUND SERVICES ARE NOT GUARANTEED. IN SOME CASES, EXISTING UNDERGROUND FEATURES ON PRIVATE PROPERTY ARE NOT SHOWN ON THE CURRENT DRAWING.

ANYONE WHO PROCEEDS WITH EXCAVATION WORK SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND FEATURES, BY EXPLORATORY EXCAVATIONS, AND SHALL ASSUME FULL RESPONSIBILITY IF THERE IS ANY DAMAGE THAT OCCURS DURING WORK.

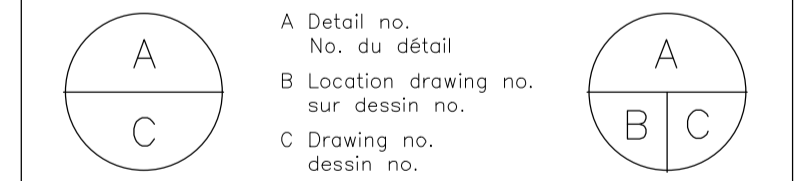
THE CONTRACTOR MUST VERIFY, BY EXPLORATORY EXCAVATION, THE SIZE OF THE PUBLIC UTILITIES UNDERGROUND SERVICES AND TO WARN THE DEPARTMENTAL REPRESENTATIVE OF ANY CONFLICT WITH THE PROJECTED WORK.



No.	Date	Revision	By:
4	2013-02-24	ISSUED FOR TENDER (P4)	HB.
3	2013-05-29	ISSUED FOR TENDER (P4)	HB.
2	2011-03-03	APPROVAL 30% (P2)	-
1	2010-12-21	PRELIMINARY 60% (P2)	-

Date Printed: _____ Date imprimée: _____

- Verify all dimensions and site conditions and be responsible for same
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité

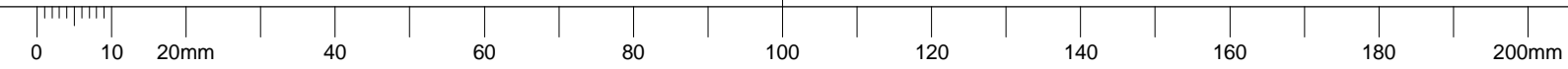


project: _____ projet: _____

SANITARY AND STORM SEWER SEPARATION

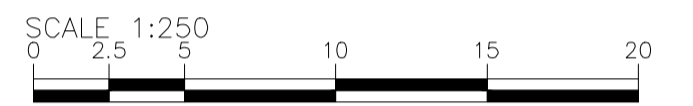
1200 MONTREAL ROAD (CAMPUS)
 OTTAWA, ONTARIO
 drawing: _____ dessin: _____
PHASE 4 - TOPOGRAPHICAL SURVEY
 ALIGNMENT "H"
 70+000 TO 70+300

designed	conçu	date	date
J.SAUVÉ	J.SAUVÉ	JANUARY 2017	JANUARY 2017
drawn	dessiné	scale	échelle
J.SAUVÉ	J.SAUVÉ	1:250	1:250
checked	vérifié	sheet	of/de
H.BISSON	H.BISSON	1	of/de 3
approved	approuvé	W.O.no.	D.T.no.
H.BISSON	H.BISSON	-	-
dwg.no.	dessin no.		
5097-C405-1A	5097-C405-1A		

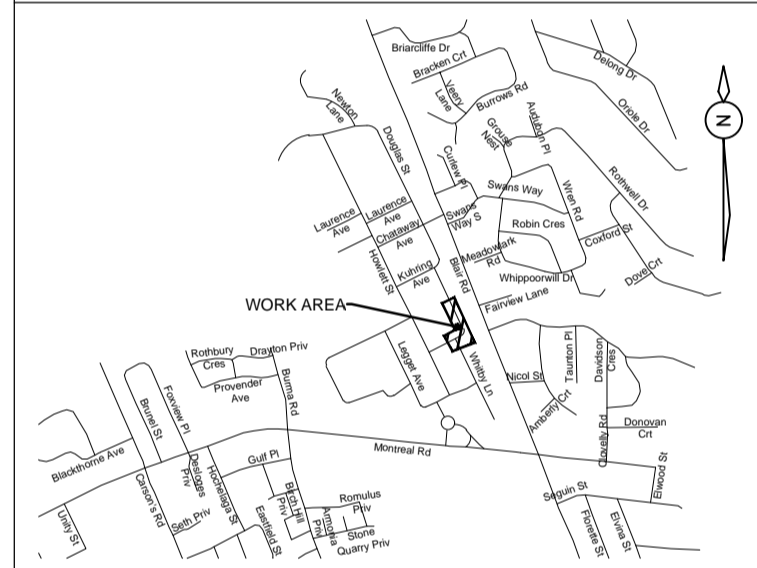


GENERAL NOTES

- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
- MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE ALL LABOUR AND MATERIAL REQUIRED TO FORM A COMPLETE FUNCTIONAL SYSTEM AS DESCRIBED ON DRAWINGS.



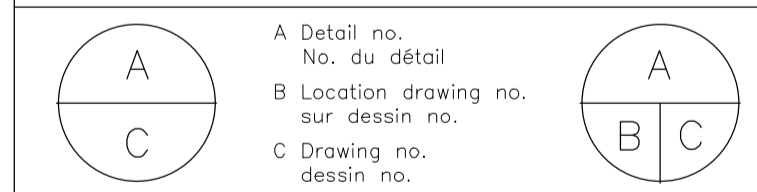
KEY PLAN



No.	Date	Revision	By:
3	2013-02-24	ISSUED FOR TENDER (P4)	HB
2	2019-05-13	ISSUED FOR TENDER (P4)	HB
1	2018-05-14	PRELIMINARY 60% (P4)	-

Date Printed: _____ Date imprimée: _____

- Verify all dimensions and site conditions and be responsible for same
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité



project: **SANITARY AND STORM SEWER SEPARATION** projet

1200 MONTREAL ROAD (CAMPUS)
 OTTAWA, ONTARIO

drawing: **PHASE 4 - TOPOGRAPHICAL SURVEY** dessin
MARION STREET

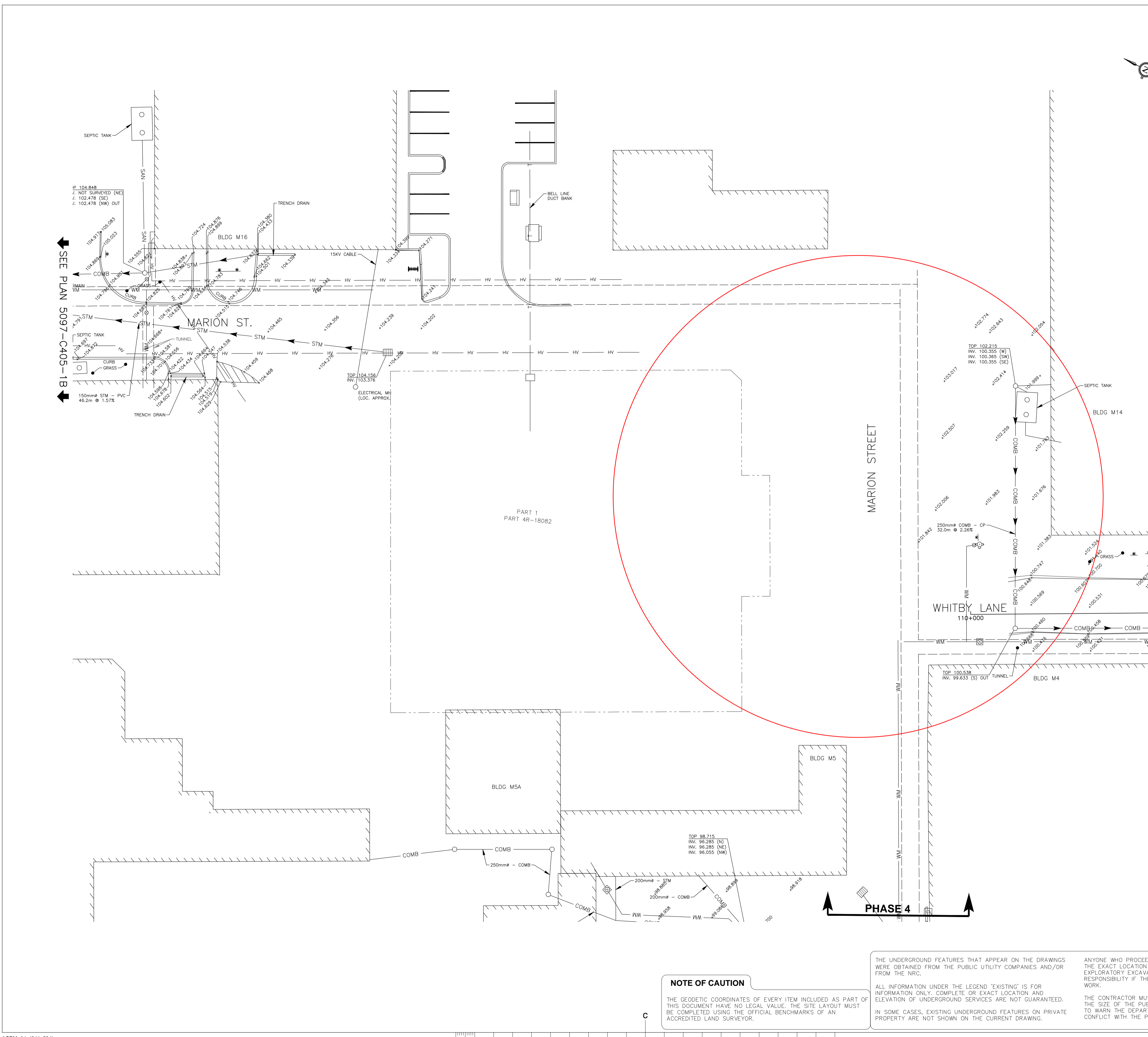
designed: **J.SAUVÉ** conçu date: **APRIL 2019** date

drawn: **J.SAUVÉ** dessiné scale: **1:250** échelle

checked: **H.BISSON** vérifié sheet: **2** of/de **3** feuille

approved: **H.BISSON** approuvé W.O.no.: - D.T.no.: -

dwg.no.: **5097-C405-1B** dessin no.



NOTE OF CAUTION

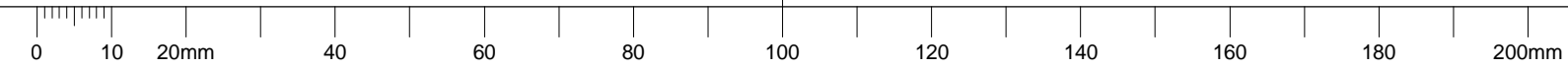
THE GEODETIC COORDINATES OF EVERY ITEM INCLUDED AS PART OF THIS DOCUMENT HAVE NO LEGAL VALUE. THE SITE LAYOUT MUST BE COMPLETED USING THE OFFICIAL BENCHMARKS OF AN ACCREDITED LAND SURVEYOR.

THE UNDERGROUND FEATURES THAT APPEAR ON THE DRAWINGS WERE OBTAINED FROM THE PUBLIC UTILITY COMPANIES AND/OR FROM THE NRC.

ALL INFORMATION UNDER THE LEGEND 'EXISTING' IS FOR INFORMATION ONLY. COMPLETE OR EXACT LOCATION AND ELEVATION OF UNDERGROUND SERVICES ARE NOT GUARANTEED. IN SOME CASES, EXISTING UNDERGROUND FEATURES ON PRIVATE PROPERTY ARE NOT SHOWN ON THE CURRENT DRAWING.

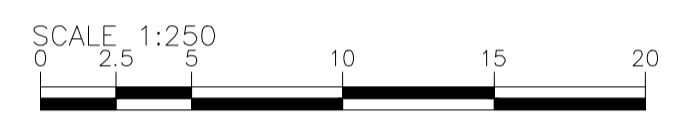
ANYONE WHO PROCEEDS WITH EXCAVATION WORK SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND FEATURES, BY EXPLORATORY EXCAVATIONS, AND SHALL ASSUME FULL RESPONSIBILITY IF THERE IS ANY DAMAGE THAT OCCURS DURING WORK.

THE CONTRACTOR MUST VERIFY, BY EXPLORATORY EXCAVATION, THE SIZE OF THE PUBLIC UTILITIES UNDERGROUND SERVICES AND TO WARN THE DEPARTMENTAL REPRESENTATIVE OF ANY CONFLICT WITH THE PROJECTED WORK.

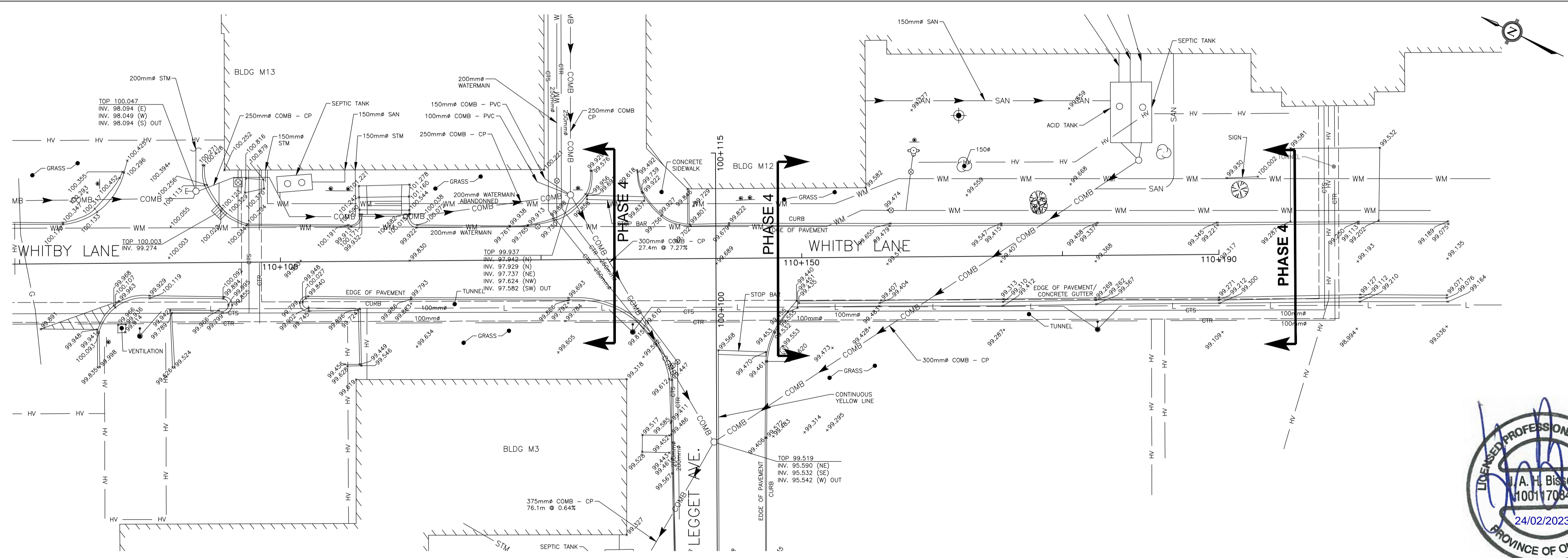
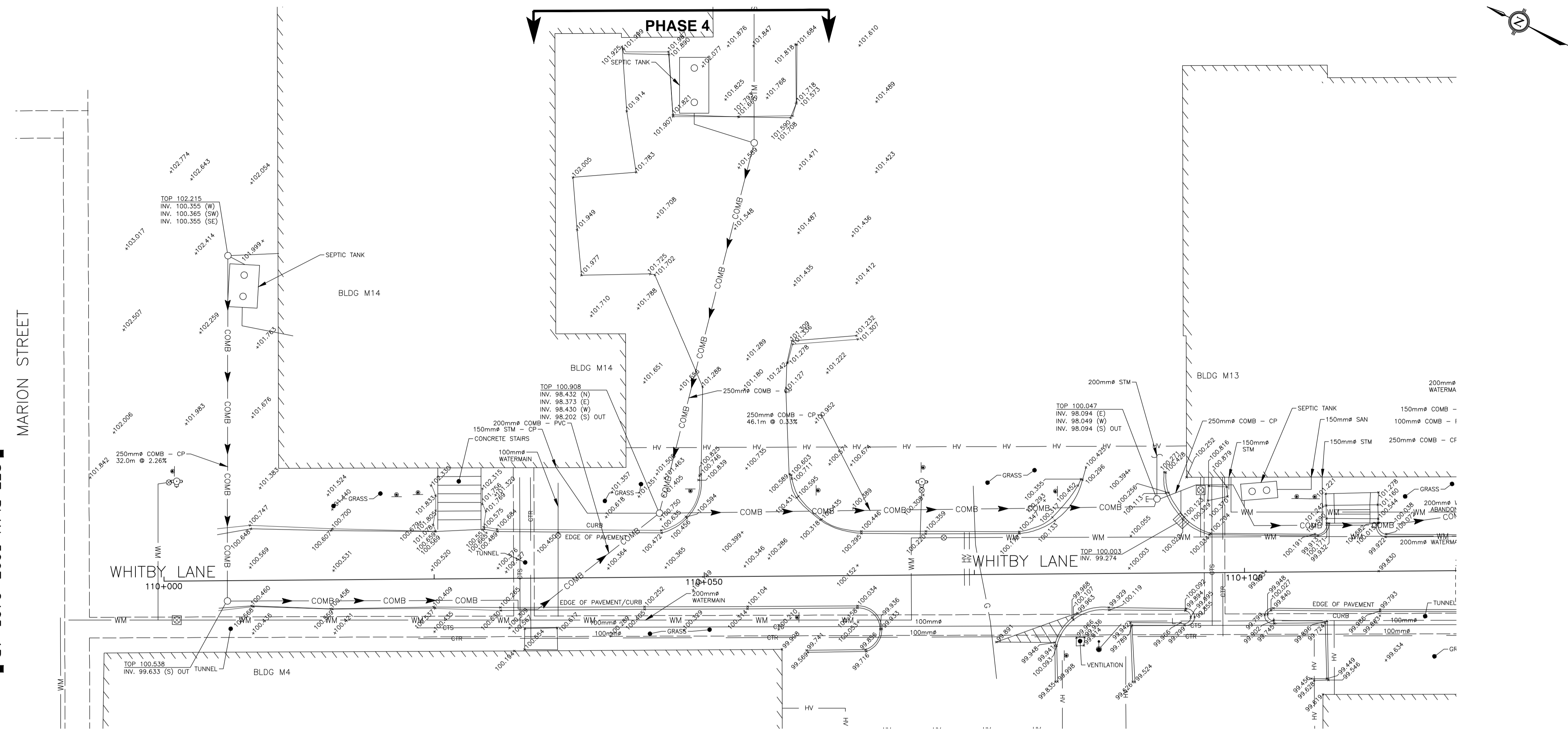
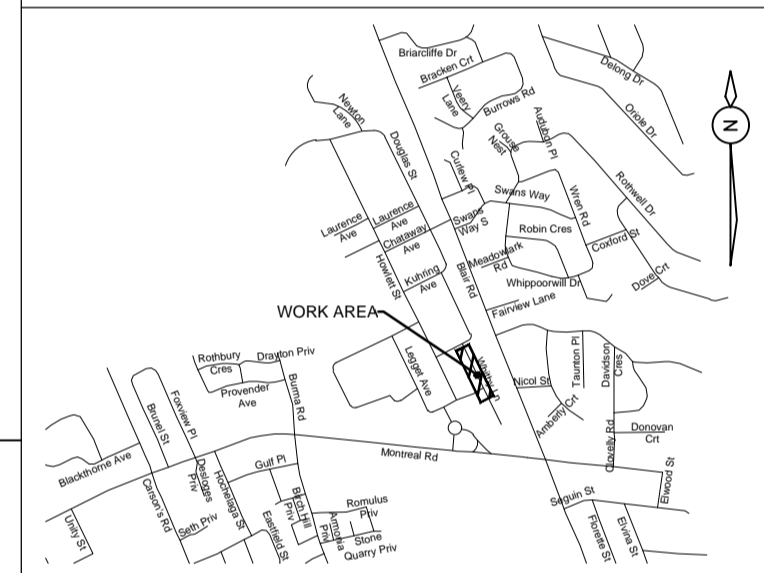


GENERAL NOTES

- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
- MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE ALL LABOUR AND MATERIAL REQUIRED TO FORM A COMPLETE FUNCTIONAL SYSTEM AS DESCRIBED ON DRAWINGS.



KEY PLAN



NOTE OF CAUTION
 THE GEODETIC COORDINATES OF EVERY ITEM INCLUDED AS PART OF THIS DOCUMENT HAVE NO LEGAL VALUE. THE SITE LAYOUT MUST BE COMPLETED USING THE OFFICIAL BENCHMARKS OF AN ACCREDITED LAND SURVEYOR.

THE UNDERGROUND FEATURES THAT APPEAR ON THE DRAWINGS WERE OBTAINED FROM THE PUBLIC UTILITY COMPANIES AND/OR FROM THE NRC.

ALL INFORMATION UNDER THE LEGEND 'EXISTING' IS FOR INFORMATION ONLY. COMPLETE OR EXACT LOCATION AND ELEVATION OF UNDERGROUND SERVICES ARE NOT GUARANTEED. IN SOME CASES, EXISTING UNDERGROUND FEATURES ON PRIVATE PROPERTY ARE NOT SHOWN ON THE CURRENT DRAWING.

ANYONE WHO PROCEEDS WITH EXCAVATION WORK SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND FEATURES, BY EXPLORATORY EXCAVATIONS, AND SHALL ASSUME FULL RESPONSIBILITY IF THERE IS ANY DAMAGE THAT OCCURS DURING WORK.

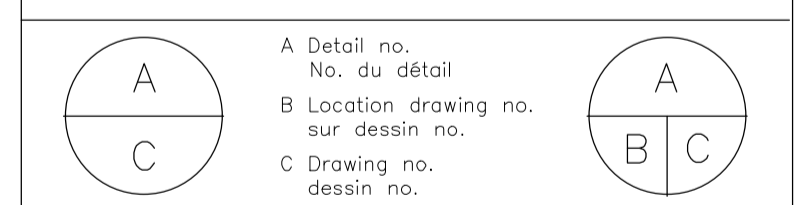
THE CONTRACTOR MUST VERIFY, BY EXPLORATORY EXCAVATION, THE SIZE OF THE PUBLIC UTILITIES UNDERGROUND SERVICES AND TO WARN THE DEPARTMENTAL REPRESENTATIVE OF ANY CONFLICT WITH THE PROJECTED WORK.



No.	Date	Revision	By:
5	2013-02-24	ISSUED FOR TENDER (P4)	HB
4	2013-05-28	ISSUED FOR TENDER (P4)	HB
3	2011-11-14	ISSUED FOR TENDER (P3)	-
2	2011-09-28	ISSUED FOR FINAL DESIGN (100%) (P3)	-
1	2011-01-23	PRELIMINARY 60% (P3)	-

Date Printed: _____ Date imprimée: _____

- Verify all dimensions and site conditions and be responsible for same.
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité.



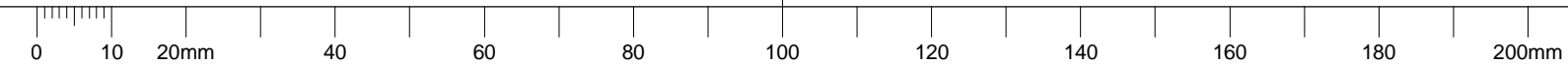
project: **SANITARY AND STORM SEWER SEPARATION** projet

1200 MONTREAL ROAD (CAMPUS)
 OTTAWA, ONTARIO

drawing: **PHASE 4 - TOPOGRAPHICAL SURVEY ALIGNMENT "G" 110+000 TO 110+190** dessin

designed	conçu	date	date
J.SAUVÉ	J.SAUVÉ	JANUARY 2017	
drawn	dessiné	scale	échelle
J.SAUVÉ	J.SAUVÉ	1:250	
checked	vérifié	sheet	of/de
H.BISSON	H.BISSON	3	of/de 3
approved	approuvé	W.O.no.	D.T.no.
H.BISSON	H.BISSON	-	-
dwg.no.	dessin no.		

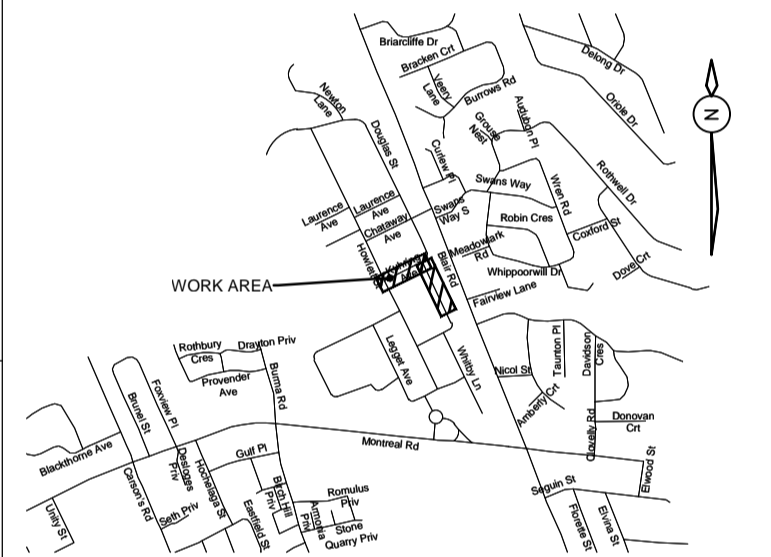
5097-C405-4



GENERAL NOTES

- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
- MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE ALL LABOUR AND MATERIAL REQUIRED TO FORM A COMPLETE FUNCTIONAL SYSTEM AS DESCRIBED ON DRAWINGS.

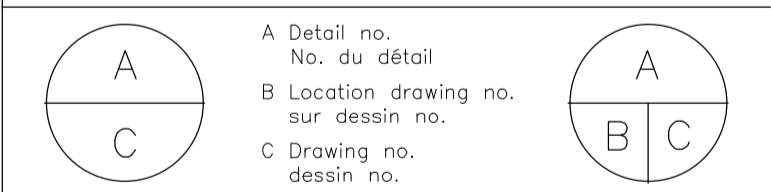
KEY PLAN



No.	Date	Revision	By:
5	2013-02-24	ISSUED FOR TENDER (P4)	HB
4	2013-05-28	ISSUED FOR TENDER (P4)	HB
3	2010-04-11	ISSUED FOR CLIENT REVIEW (P4)	-
2	2011-03-03	APPROVAL 30% (P2)	-
1	2010-12-21	PRELIMINARY 60% (P2)	-

Date Printed: _____ Date imprimée: _____

- o Verify all dimensions and site conditions and be responsible for same
- o Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité



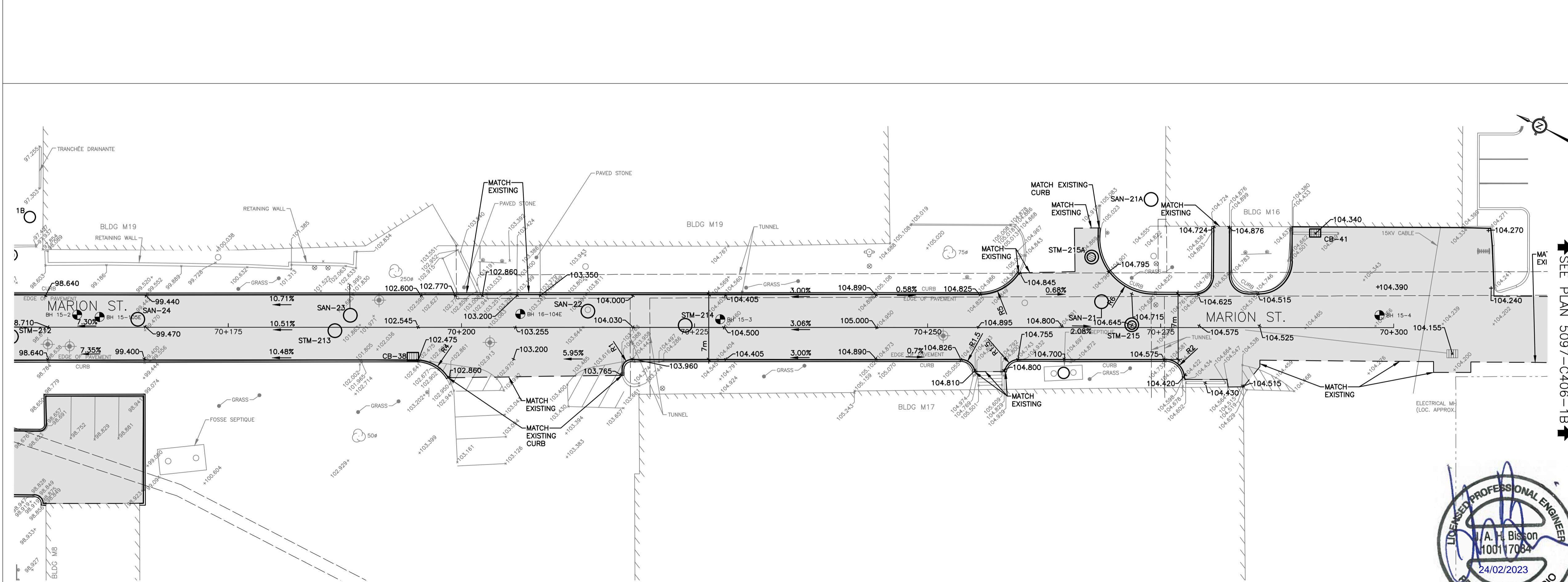
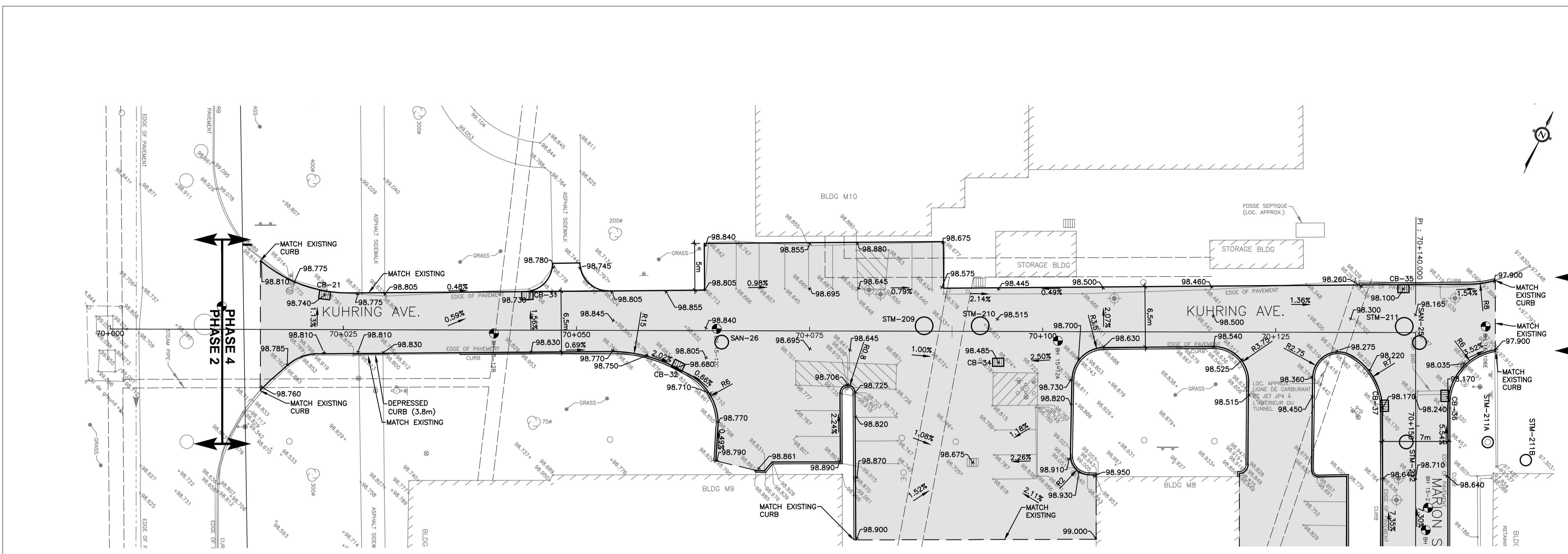
project: **SANITARY AND STORM SEWER SEPARATION** projet

1200 MONTREAL ROAD (CAMPUS)
 OTTAWA, ONTARIO

drawing: **PHASE 4 - GEOMETRY, GRADING AND PAVEMENT MARKINGS ALIGNMENT "H" 70+000 TO 70+300** dessin

designed	conçu	date	date
J.SAUVÉ		FEBRUARY 2017	
drawn	dessiné	scale	échelle
J.SAUVÉ		1:250	
checked	vérifié	sheet	1 of/de 3
H.BISSON			
approved	approuvé	W.O.no.	D.T.no.
H.BISSON			
dwg.no.			dessin no.

5097-C406-1A



- NOTE:**
- THE PROPOSED SAWCUT, ASPHALT AREAS AND CONCRETE CURBS SHOWN ON THIS PLAN REPRESENT THE MINIMUM REQUIRED REINSTATEMENT AND EXCLUDE THE AREAS THAT MUST BE DEMOLISHED AND REINSTATED DUE TO CONSTRUCTION.
 - CONTRACTOR MUST REINSTATE ALL AREAS AFFECTED BY CONSTRUCTION TO MATCH EXIST. CONDITIONS, EXCEPT WHERE OTHERWISE INDICATED ON THE DRAWINGS.
 - CONTRACTOR MUST REINSTATE PAVEMENT MARKINGS PER EXISTING CONDITIONS.

LEGEND

---	SAW CUT EXISTING ASPHALT AND TRANSITION BETWEEN EXISTING AND PROPOSED PAVEMENT PER DETAIL 206
---	PROPOSED CURB/ EDGE OF PAVEMENT
+94.000	PROPOSED ELEVATIONS
■	NEW ASPHALT TO PROPOSED GRADE

NOTE OF CAUTION

THE GEODETIC COORDINATES OF EVERY ITEM INCLUDED AS PART OF THIS DOCUMENT HAVE NO LEGAL VALUE. THE SITE LAYOUT MUST BE COMPLETED USING THE OFFICIAL BENCHMARKS OF AN ACCREDITED LAND SURVEYOR.

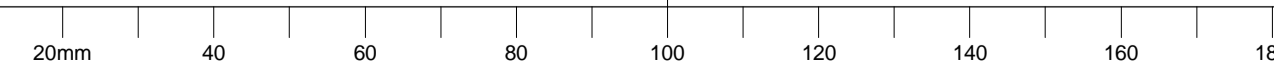
THE UNDERGROUND FEATURES AND INFORMATION THAT APPEAR ON THE DRAWINGS WERE OBTAINED FROM THE PUBLIC UTILITY COMPANIES AND/OR FROM THE NRC EACH RESPECTIVELY.

ANYONE WHO PROCEEDS WITH EXCAVATION WORK SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND FEATURES, BY EXPLORATORY EXCAVATIONS, AND SHALL ASSUME FULL RESPONSIBILITY IF THERE IS ANY DAMAGE THAT OCCURS DURING WORK.

ALL INFORMATION UNDER THE LEGEND "EXISTING" IS FOR INFORMATION ONLY. COMPLETE OR EXACT LOCATION AND ELEVATION OF UNDERGROUND SERVICES ARE NOT GUARANTEED.

CERTAIN UNDERGROUND FEATURES ON PRIVATE PROPERTY ARE NOT SHOWN ON THE CURRENT DRAWING.

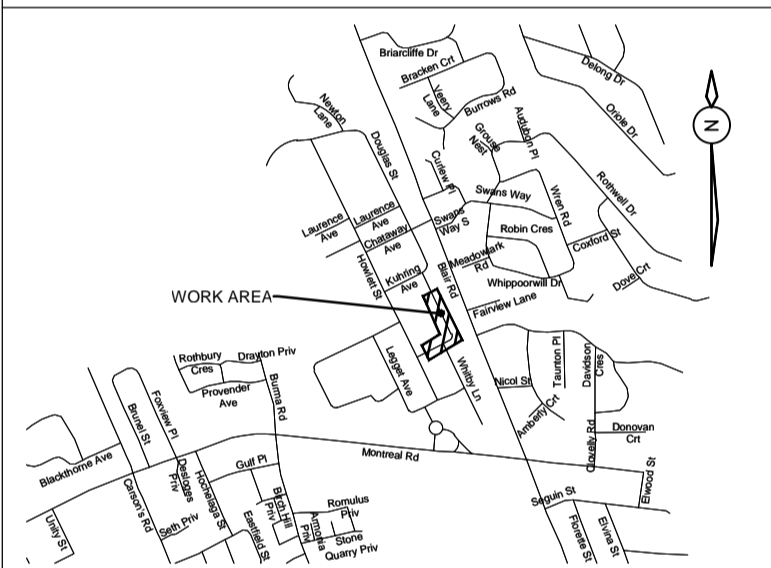
THE CONTRACTOR WILL HAVE THE RESPONSIBILITY AND THE OBLIGATION TO VALIDATE, BY EXPLORATORY EXCAVATION, THE SIZE OF THE PUBLIC UTILITIES UNDERGROUND SERVICES AND TO WARN THE DEPARTMENTAL REPRESENTATIVE OF ANY CONFLICT WITH THE PROJECTED WORK.



GENERAL NOTES

- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
- MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE ALL LABOUR AND MATERIAL REQUIRED TO FORM A COMPLETE FUNCTIONAL SYSTEM AS DESCRIBED ON DRAWINGS.

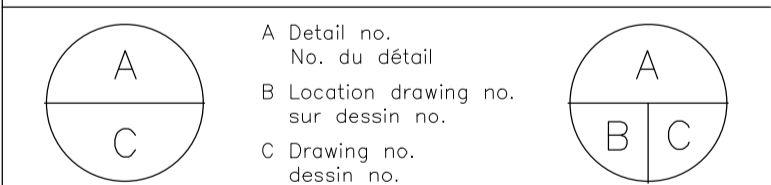
KEY PLAN



No.	Date	Revision	By:
3	2013-02-24	ISSUED FOR TENDER (P4)	HB
2	2019-05-13	ISSUED FOR TENDER (P4)	HB
1	2018-05-10	PRELIMINARY 60% (P4)	-

Date Printed: _____ Date imprimée: _____

- Verify all dimensions and site conditions and be responsible for same.
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité.



project: _____ projet: _____

SANITARY AND STORM SEWER SEPARATION

1200 MONTREAL ROAD (CAMPUS)
 OTTAWA, ONTARIO

drawing: _____ dessin: _____
PHASE 4 - GEOMETRY, GRADING AND PAVEMENT MARKINGS

MARION STREET

designed: J.SAUVÉ conçu: _____ date: APRIL 2019 date: _____

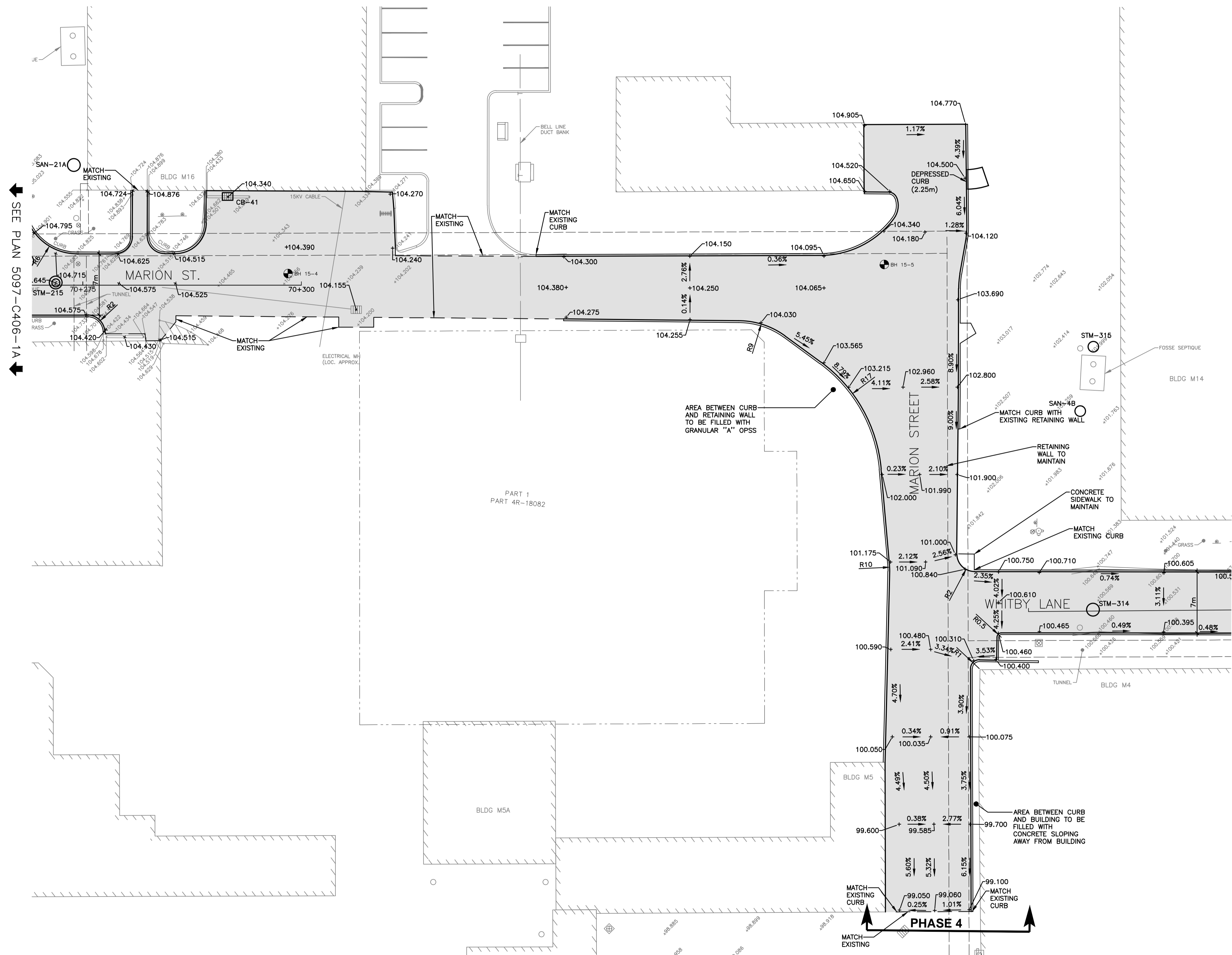
drawn: J.SAUVÉ dessiné: _____ scale: 1:250 échelle: _____

checked: H.BISSON vérifié: _____ sheet: 2 of/de 3 feuille: _____

approved: H.BISSON approuvé: _____ W.O.no.: _____ D.T.no.: _____

dwg.no.: _____ dessin no.: _____

5097-C406-1B



SEE PLAN 5097-C406-1A

SEE PLAN 5097-C406-4

NOTE:

- THE PROPOSED SAWCUT, ASPHALT AREAS AND CONCRETE CURBS SHOWN ON THIS PLAN REPRESENT THE MINIMUM REQUIRED REINSTATEMENT AND EXCLUDE THE AREAS THAT MUST BE DEMOLISHED AND REINSTATED DUE TO CONSTRUCTION.
- CONTRACTOR MUST REINSTATE ALL AREAS AFFECTED BY CONSTRUCTION TO MATCH EXIST. CONDITIONS, EXCEPT WHERE OTHERWISE INDICATED ON THE DRAWINGS.
- CONTRACTOR MUST REINSTATE PAVEMENT MARKINGS PER EXISTING CONDITIONS.

LEGEND

- SAW CUT EXISTING ASPHALT AND TRANSITION BETWEEN EXISTING AND PROPOSED PAVEMENT PER DETAIL 206
- ==== PROPOSED CURB/ EDGE OF PAVEMENT
- +94.000 PROPOSED ELEVATIONS
- NEW ASPHALT TO PROPOSED GRADE

NOTE OF CAUTION

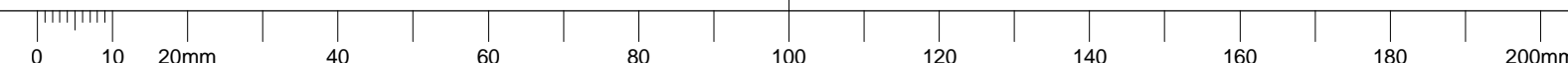
THE GEODETIC COORDINATES OF EVERY ITEM INCLUDED AS PART OF THIS DOCUMENT HAVE NO LEGAL VALUE. THE SITE LAYOUT MUST BE COMPLETED USING THE OFFICIAL BENCHMARKS OF AN ACCREDITED LAND SURVEYOR.

THE UNDERGROUND FEATURES AND INFORMATION THAT APPEAR ON THE DRAWINGS WERE OBTAINED FROM THE PUBLIC UTILITY COMPANIES AND/OR FROM THE NRC EACH RESPECTIVELY.

ALL INFORMATION UNDER THE LEGEND "EXISTING" IS FOR INFORMATION ONLY. COMPLETE OR EXACT LOCATION AND ELEVATION OF UNDERGROUND SERVICES ARE NOT GUARANTEED. CERTAIN UNDERGROUND FEATURES ON PRIVATE PROPERTY ARE NOT SHOWN ON THE CURRENT DRAWING.

ANYONE WHO PROCEEDS WITH EXCAVATION WORK SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND FEATURES, BY EXPLORATORY EXCAVATIONS, AND SHALL ASSUME FULL RESPONSIBILITY IF THERE IS ANY DAMAGE THAT OCCURS DURING WORK.

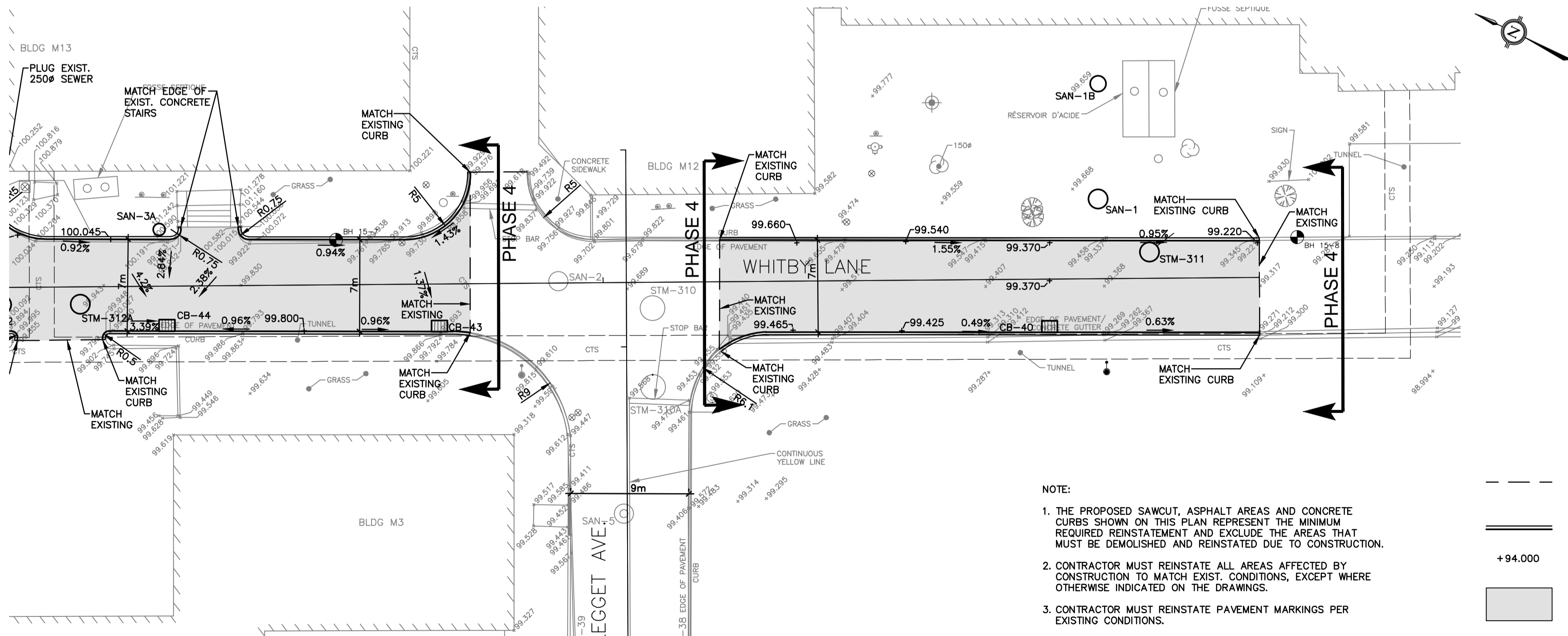
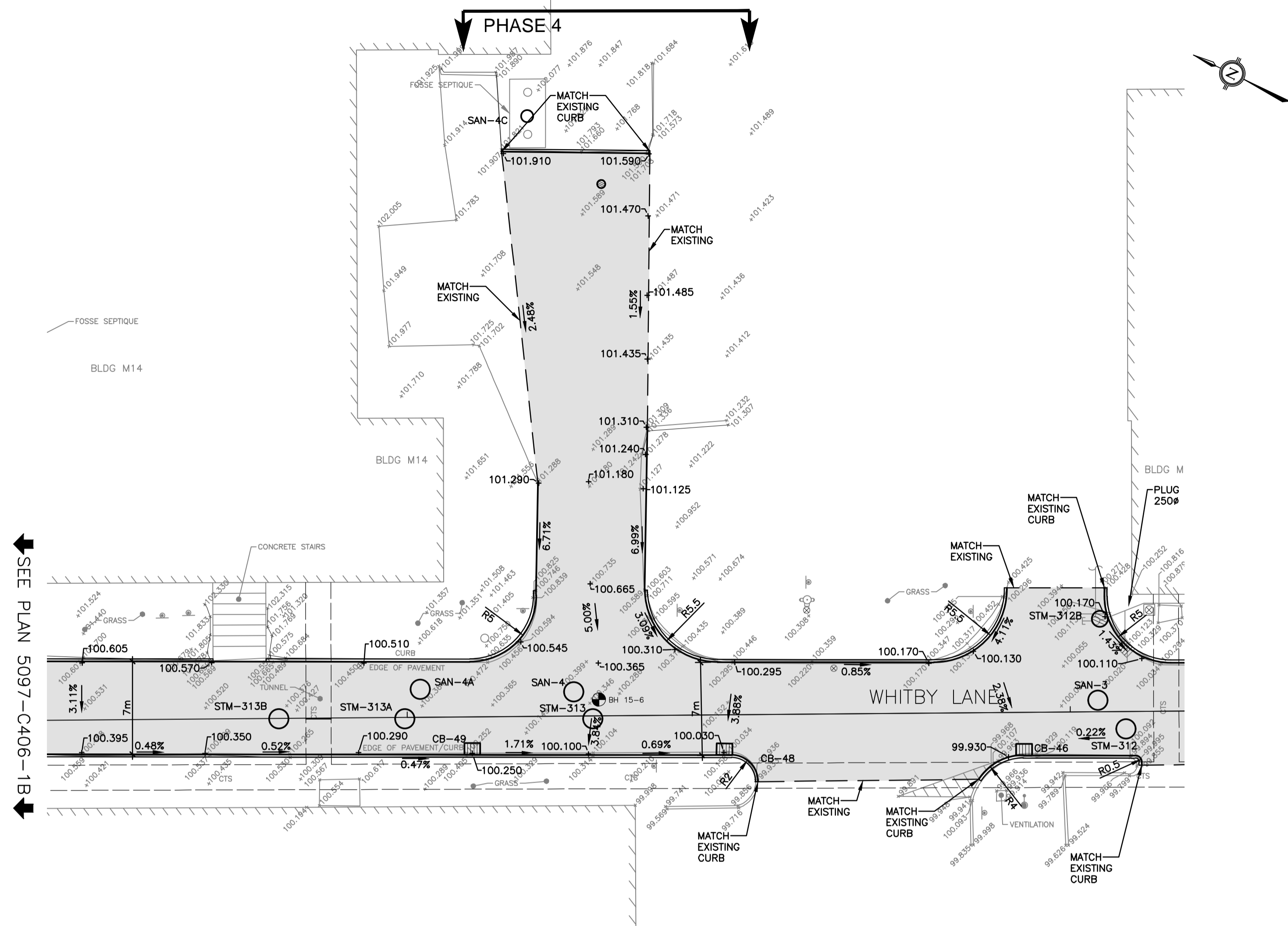
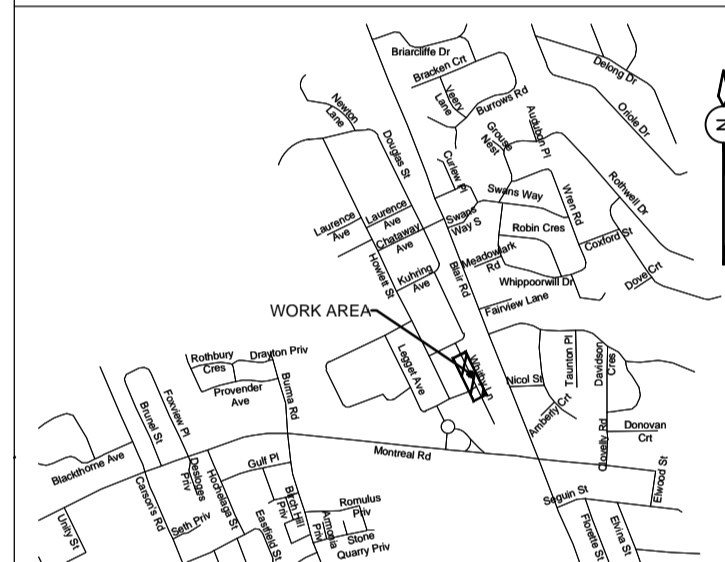
THE CONTRACTOR WILL HAVE THE RESPONSIBILITY AND THE OBLIGATION TO VALIDATE, BY EXPLORATORY EXCAVATION, THE SIZE OF THE PUBLIC UTILITIES UNDERGROUND SERVICES AND TO WARN THE DEPARTMENTAL REPRESENTATIVE OF ANY CONFLICT WITH THE PROJECTED WORK.



GENERAL NOTES

- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
- MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE ALL LABOUR AND MATERIAL REQUIRED TO FORM A COMPLETE FUNCTIONAL SYSTEM AS DESCRIBED ON DRAWINGS.

KEY PLAN



LEGEND

- SAW CUT EXISTING ASPHALT AND TRANSITION BETWEEN EXISTING AND PROPOSED PAVEMENT PER DETAIL 206
- ==== PROPOSED CURB AND EDGE OF PAVEMENT
- +94.000 PROPOSED ELEVATION
- NEW ASPHALT TO PROPOSED GRADE

- NOTE:**
- THE PROPOSED SAWCUT, ASPHALT AREAS AND CONCRETE CURBS SHOWN ON THIS PLAN REPRESENT THE MINIMUM REQUIRED REINSTATEMENT AND EXCLUDE THE AREAS THAT MUST BE DEMOLISHED AND REINSTATED DUE TO CONSTRUCTION.
 - CONTRACTOR MUST REINSTATE ALL AREAS AFFECTED BY CONSTRUCTION TO MATCH EXIST. CONDITIONS, EXCEPT WHERE OTHERWISE INDICATED ON THE DRAWINGS.
 - CONTRACTOR MUST REINSTATE PAVEMENT MARKINGS PER EXISTING CONDITIONS.

NOTE OF CAUTION

THE GEODETIC COORDINATES OF EVERY ITEM INCLUDED AS PART OF THIS DOCUMENT HAVE NO LEGAL VALUE. THE SITE LAYOUT MUST BE COMPLETED USING THE OFFICIAL BENCHMARKS OF AN ACCREDITED LAND SURVEYOR.

THE UNDERGROUND FEATURES AND INFORMATION THAT APPEAR ON THE DRAWINGS WERE OBTAINED FROM THE PUBLIC UTILITY COMPANIES AND/OR FROM THE NRC EACH RESPECTIVELY.

ALL INFORMATION UNDER THE LEGEND 'EXISTING' IS FOR INFORMATION ONLY. COMPLETE OR EXACT LOCATION AND ELEVATION OF UNDERGROUND SERVICES ARE NOT GUARANTEED. CERTAIN UNDERGROUND FEATURES ON PRIVATE PROPERTY ARE NOT SHOWN ON THE CURRENT DRAWING.

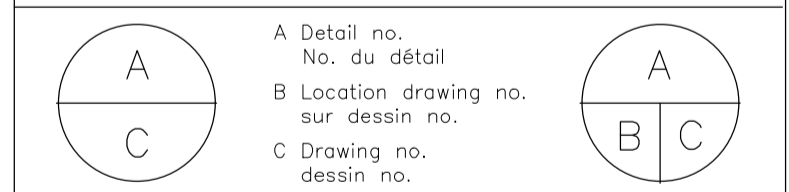
ANYONE WHO PROCEEDS WITH EXCAVATION WORK SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND FEATURES, BY EXPLORATORY EXCAVATIONS, AND SHALL ASSUME FULL RESPONSIBILITY IF THERE IS ANY DAMAGE THAT OCCURS DURING WORK.

THE CONTRACTOR WILL HAVE THE RESPONSIBILITY AND THE OBLIGATION TO VALIDATE, BY EXPLORATORY EXCAVATION, THE SIZE OF THE PUBLIC UTILITIES UNDERGROUND SERVICES AND TO WARN THE DEPARTMENTAL REPRESENTATIVE OF ANY CONFLICT WITH THE PROJECTED WORK.

No.	Date	Revision	By:
8	2023-02-24	ISSUED FOR TENDER (P4)	H.B.
7	2019-05-23	ISSUED FOR TENDER (P4)	H.B.
6	2018-04-11	ISSUED FOR CLIENT REVIEW (P4)	-
5	2011-11-14	ISSUED FOR TENDER (P3)	-
4	2011-05-28	ISSUED FOR FINAL DESIGN (100%) (P3)	-
3	2011-06-05	APPROVAL 100% (P3)	-
2	2011-04-17	APPROVAL 30% (P3)	-
1	2011-01-23	PRELIMINARY 60% (P3)	-

Date Printed: _____ Date imprimée: _____

- o Verify all dimensions and site conditions and be responsible for same
- o Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité



project: **SANITARY AND STORM SEWER SEPARATION**

1200 MONTREAL ROAD (CAMPUS)
 OTTAWA, ONTARIO

drawing: **PHASE 4 - GEOMETRY, GRADING AND PAVEMENT MARKINGS ALIGNMENT 'G' 110+000 TO 110+190**

designed: **J.SAUVÉ** conçu: **SEPTEMBER 2017**

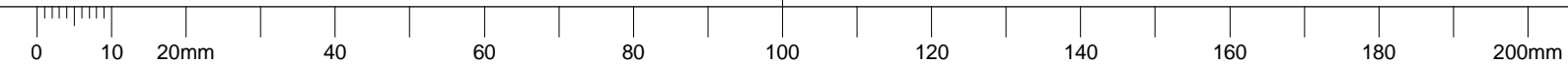
drawn: **J.SAUVÉ** dessiné: scale: **1:250** échelle:

checked: **H.BISSON** vérifié: sheet: **3** of/de: **3** feuille

approved: **H.BISSON** approuvé: W.O.no.: _____ D.T.no.: _____

dwg.no.: _____ dessin no.:

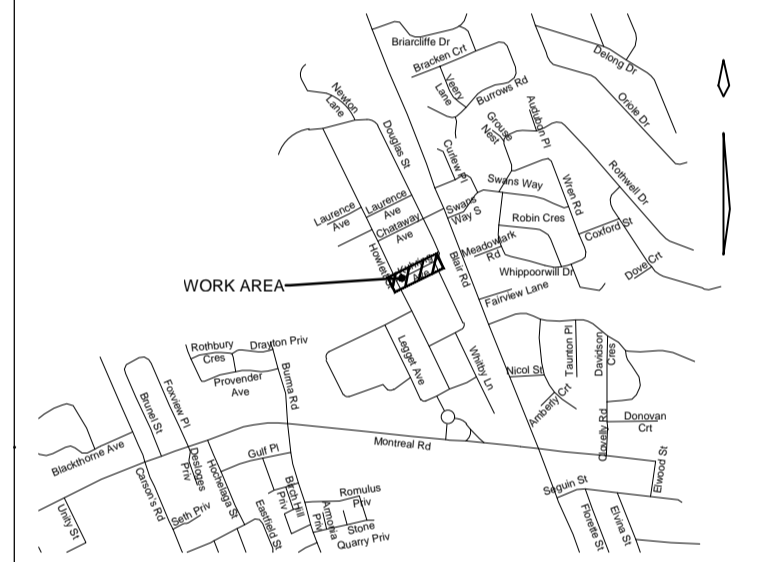
5097-C406-4



GENERAL NOTES

- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
- MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE ALL LABOUR AND MATERIAL REQUIRED TO FORM A COMPLETE FUNCTIONAL SYSTEM AS DESCRIBED ON DRAWINGS.

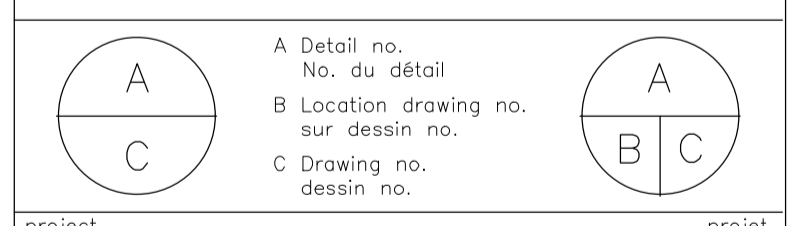
KEY PLAN



No.	Date	Revision	By:
5	2023-02-24	ISSUED FOR TENDER (P4)	HB.
4	2019-05-29	ISSUED FOR TENDER (P4)	HB.
3	2018-04-11	ISSUED FOR CLIENT REVIEW (P4)	-
2	2017-03-03	APPROVAL 30% (P2)	-
1	2016-12-21	PRELIMINARY 60% (P2)	-

Date Printed: _____ Date imprimée: _____

o Verify all dimensions and site conditions and be responsible for same
 o Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité

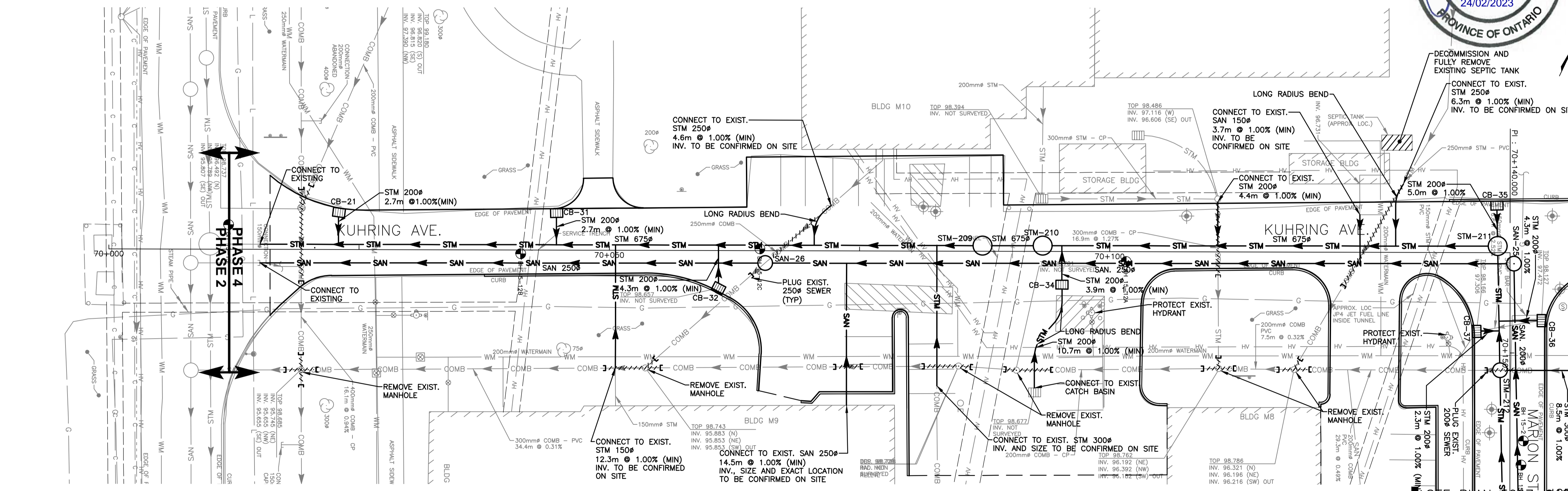
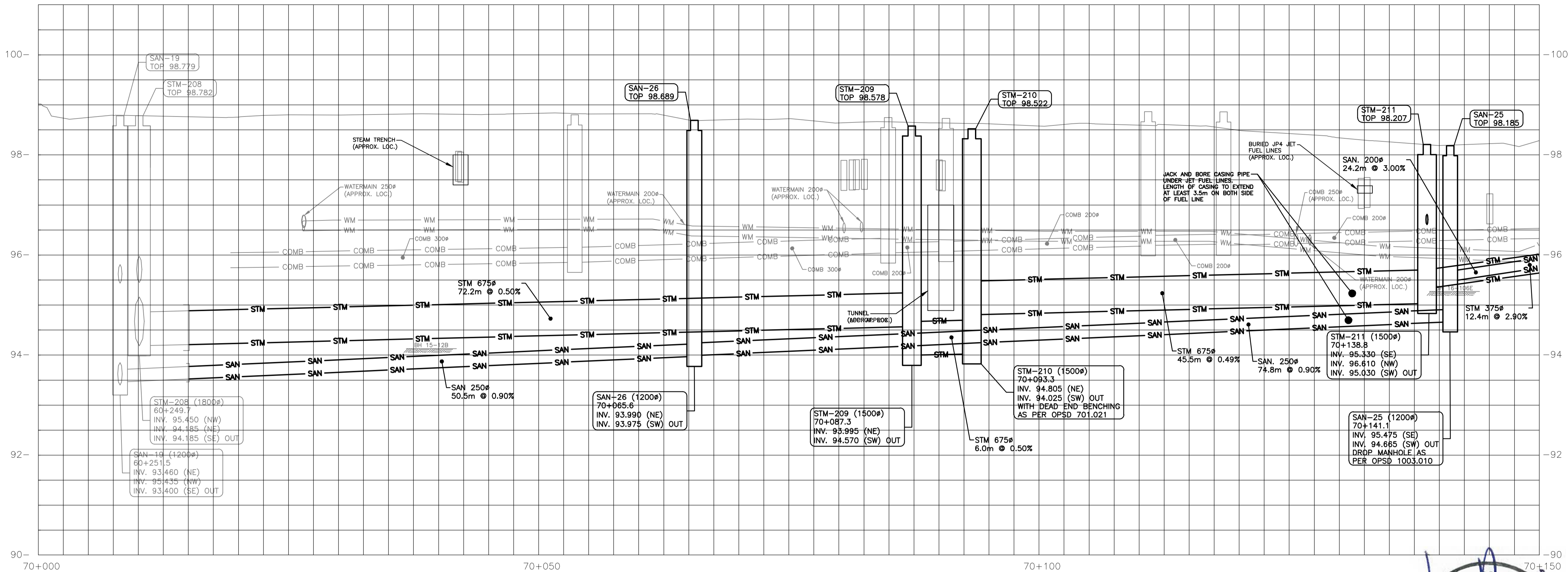


project: **SANITARY AND STORM SEWER SEPARATION**

1200 MONTREAL ROAD (CAMPUS) OTTAWA, ONTARIO

PHASE 4 - PLAN VIEW AND PROFILE ALIGNMENT "H" 70+000 TO 70+150

designed	conçu	date	date
J.SAUVÉ		NOVEMBER 2016	
drawn	dessiné	scale	échelle
J.SAUVÉ		H 1:250 V 1:50	
checked	vérifié	sheet	1 of/de 4
H.BISSON			
approved	approuvé	W.O.no.	D.T.no.
H.BISSON			
dwg.no.	dessin no.		
5097-C407-1			



MANHOLE #	TYPE	SIZE	TOP	INVERT	SPECIAL
CB-21	STM	600 X 600	98.740	97.340	SUMP
CB-31	STM	600 X 600	98.750	97.050	SUMP
CB-32	STM	600 X 600	98.660	96.960	SUMP
CB-34	STM	600 x 600	98.665	96.965	SUMP
CB-35	STM	600 x 600	98.060	96.360	SUMP

- NOTES:**
- INVERT ELEVATIONS OF SERVICE CONNECTIONS TO EXISTING BUILDING ARE APPROXIMATE. THE CONTRACTOR MUST DETERMINE EXACT INVERT ELEVATIONS ON SITE PRIOR TO CONSTRUCTION START.
 - THE CONTRACTOR MUST DETERMINE ON SITE IF EXIST. SEWER CONNECTIONS ARE "STM" OR "SAN", AND MUST ENSURE TO CONNECT THEM ACCORDINGLY TO THE NEW SEWER NETWORKS.
 - PROJECT DESIGN IS INVERT SENSITIVE.
 - ALL REINSTATEMENTS BY CONTRACTOR. REFER TO DRAWINGS C402 AND C406 FOR MINIMUM REQUIREMENTS.

NOTE OF CAUTION
 THE GEODETIC COORDINATES OF EVERY ITEM INCLUDED AS PART OF THIS DOCUMENT HAVE NO LEGAL VALUE. THE SITE LAYOUT MUST BE COMPLETED USING THE OFFICIAL BENCHMARKS OF AN ACCREDITED LAND SURVEYOR.

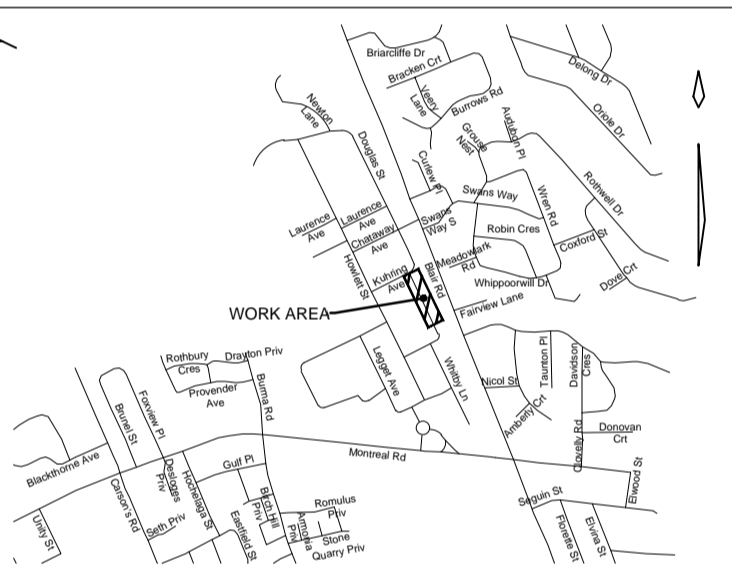
THE UNDERGROUND FEATURES AND INFORMATION THAT APPEAR ON THE DRAWINGS WERE OBTAINED FROM THE PUBLIC UTILITY COMPANIES AND/OR FROM THE NRC EACH RESPECTIVELY.
 ALL INFORMATION UNDER THE LEGEND "EXISTING" IS FOR INFORMATION ONLY. COMPLETE OR EXACT LOCATION AND ELEVATION OF UNDERGROUND SERVICES ARE NOT GUARANTEED.
 ALL UNDERGROUND FEATURES ON PRIVATE PROPERTY ARE NOT SHOWN ON THE CURRENT DRAWING.

ANYONE WHO PROCEEDS WITH EXCAVATION WORK SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND FEATURES, BY EXPLORATORY EXCAVATIONS, AND SHALL ASSUME FULL RESPONSIBILITY IF THERE IS ANY DAMAGE THAT OCCURS DURING WORK.
 THE CONTRACTOR WILL HAVE THE RESPONSIBILITY AND THE OBLIGATION TO VALIDATE, BY EXPLORATORY EXCAVATION, THE SIZE OF THE PUBLIC UTILITIES UNDERGROUND SERVICES AND TO WARN THE DEPARTMENTAL REPRESENTATIVE OF ANY CONFLICT WITH THE PROJECTED WORK.

GENERAL NOTES

- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
- MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE ALL LABOUR AND MATERIAL REQUIRED TO FORM A COMPLETE FUNCTIONAL SYSTEM AS DESCRIBED ON DRAWINGS.

KEY PLAN

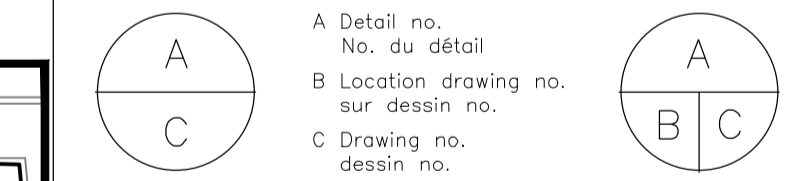


SEE PLAN 5097-C407-6

No.	Date	Revision	By:
5	2013-02-24	ISSUED FOR TENDER (P4)	HB.
4	2010-05-28	ISSUED FOR TENDER (P4)	HB.
3	2010-04-11	ISSUED FOR CLIENT REVIEW (P4)	-
2	2011-03-03	APPROVAL 30% (P2)	-
1	2010-12-21	PRELIMINARY 60% (P2)	-

Date Printed: _____ Date imprimée: _____

- Verify all dimensions and site conditions and be responsible for same.
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité.



project: **SANITARY AND STORM SEWER SEPARATION**

1200 MONTREAL ROAD (CAMPUS) OTTAWA, ONTARIO

drawing: **PHASE 4 - PLAN VIEW AND PROFILE ALIGNMENT "H" 70+150 TO 70+300**

designed: **J.SAUVÉ** conçu: **J.SAUVÉ** date: **NOVEMBER 2016** date: _____

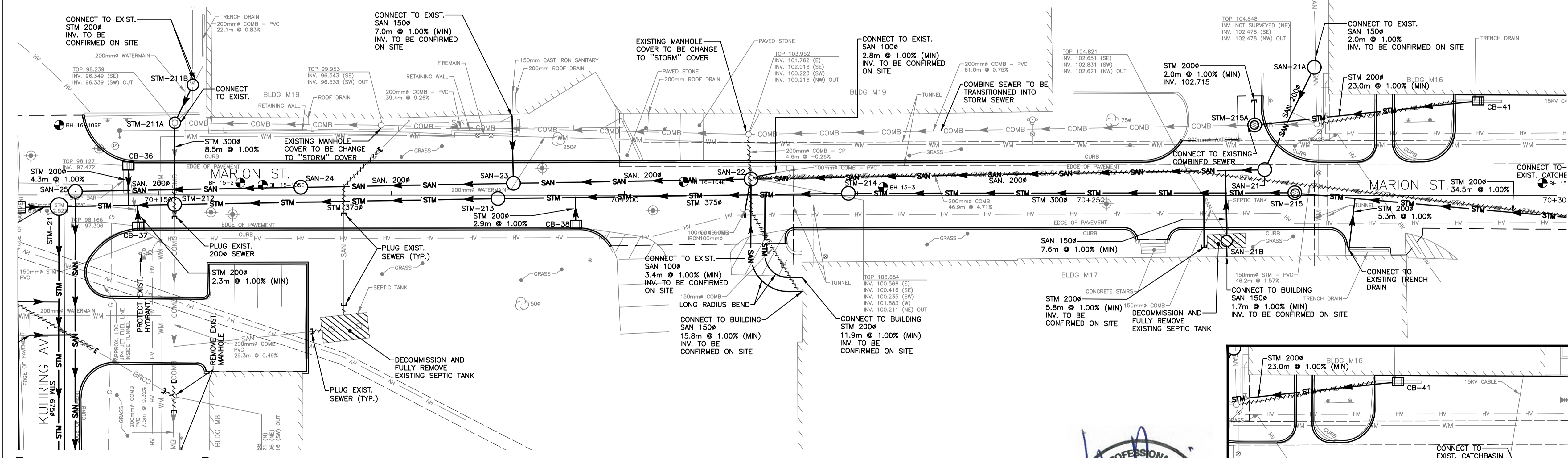
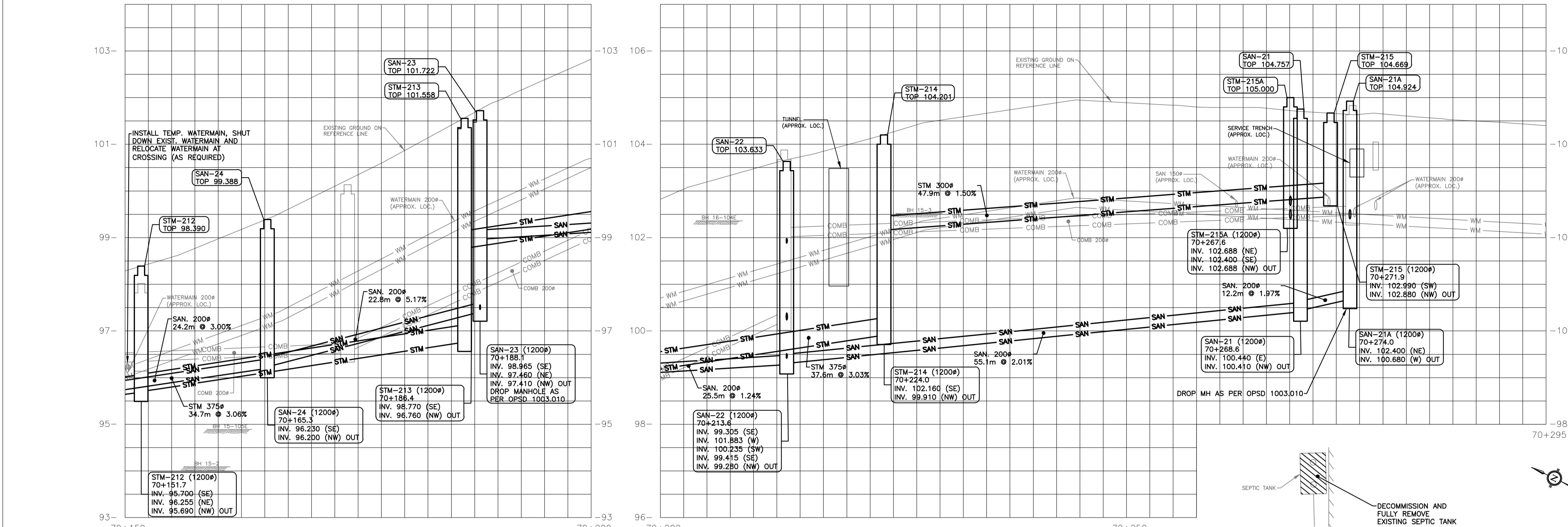
drawn: **J.SAUVÉ** dessiné: **J.SAUVÉ** scale: **H 1:250 V 1:50** échelle: _____

checked: **H.BISSON** vérifié: **H.BISSON** sheet: **2 of 4** feuille: **4**

approved: **H.BISSON** approuvé: **H.BISSON** W.O.no.: _____ D.T.no.: _____

dwg.no.: _____ dessin no.: _____

5097-C407-2



SEE PLAN 5097-C407-1

MANHOLE #	TYPE	SIZE	TOP	INVERT	SPECIAL
CB-36	STM	600 X 600	98.130	96.630	SUMP
CB-37	STM	600 X 600	98.165	96.465	SUMP
CB-38	STM	600 X 600	102.415	100.715	SUMP
CB-41	STM	TRENCH DRAIN	104.340	102.940	SUMP
SAN-21B*	SAN	900ø	104.860	102.660 102.650 OUT	BENCHING
SAN-22A*	SAN	900ø	103.875	101.762 100.008 OUT	DEAD-END BENCHING
SAN-23A*	SAN	900ø	101.200	97.265 97.255 OUT	BENCHING
STM-211A	STM	1200ø	98.239	96.350 96.350 OUT	SUMP
STM-211B	STM	1200ø	98.250	TBD 96.395 OUT	SUMP

* SAMPLING MANHOLE

- NOTES:
- INVERT ELEVATIONS OF SERVICE CONNECTIONS TO EXISTING BUILDING ARE APPROXIMATE. THE CONTRACTOR MUST DETERMINE EXACT INVERT ELEVATIONS ON SITE PRIOR TO CONSTRUCTION START.
 - THE CONTRACTOR MUST DETERMINE ON SITE IF EXIST. SEWER CONNECTIONS ARE "STM" OR "SAN", AND MUST ENSURE TO CONNECT THEM ACCORDINGLY TO THE NEW SEWER NETWORKS.
 - PROJECT DESIGN IS INVERT SENSITIVE.
 - ALL REINSTATEMENTS BY CONTRACTOR. REFER TO DRAWINGS C402 AND C406 FOR MINIMUM REQUIREMENTS.

NOTE OF CAUTION

THE GEODETIC COORDINATES OF EVERY ITEM INCLUDED AS PART OF THIS DOCUMENT HAVE NO LEGAL VALUE. THE SITE LAYOUT MUST BE COMPLETED USING THE OFFICIAL BENCHMARKS OF AN ACCREDITED LAND SURVEYOR.

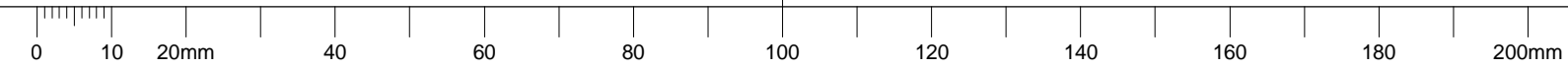


THE UNDERGROUND FEATURES AND INFORMATION THAT APPEAR ON THE DRAWINGS WERE OBTAINED FROM THE PUBLIC UTILITY COMPANIES AND/OR FROM THE NRC EACH RESPECTIVELY.

ALL INFORMATION UNDER THE LEGEND "EXISTING" IS FOR INFORMATION ONLY. COMPLETE OR EXACT LOCATION AND ELEVATION OF UNDERGROUND SERVICES ARE NOT GUARANTEED.

ANYONE WHO PROCEEDS WITH EXCAVATION WORK SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND FEATURES, BY EXPLORATORY EXCAVATIONS, AND SHALL ASSUME FULL RESPONSIBILITY IF THERE IS ANY DAMAGE THAT OCCURS DURING WORK.

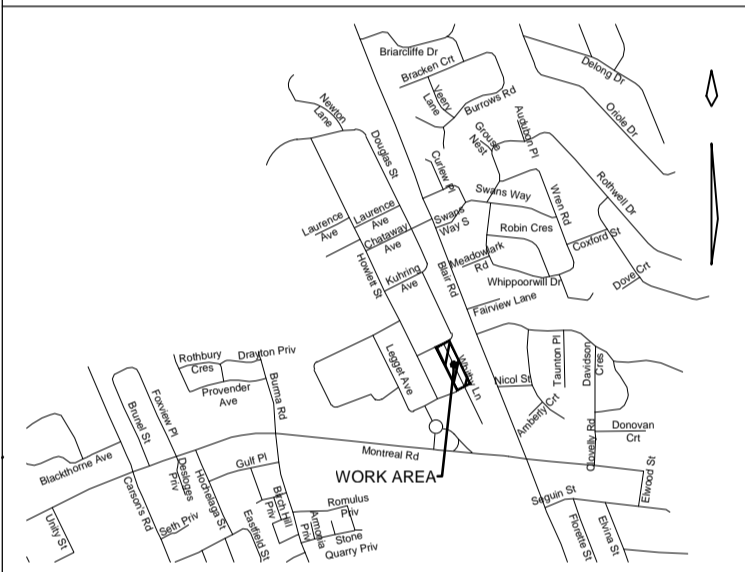
THE CONTRACTOR WILL HAVE THE RESPONSIBILITY AND THE OBLIGATION TO VALIDATE, BY EXPLORATORY EXCAVATION, THE SIZE OF THE PUBLIC UTILITIES UNDERGROUND SERVICES AND TO WARN THE DEPARTMENTAL REPRESENTATIVE OF ANY CONFLICT WITH THE PROJECTED WORK.



GENERAL NOTES

- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
- MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE ALL LABOUR AND MATERIAL REQUIRED TO FORM A COMPLETE FUNCTIONAL SYSTEM AS DESCRIBED ON DRAWINGS.

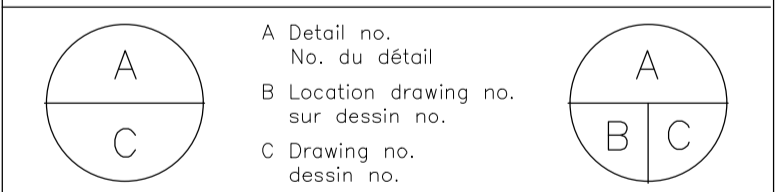
KEY PLAN



No.	Date	Revision	By:
8	2013-02-24	ISSUED FOR TENDER (P4)	HB
7	2010-05-28	ISSUED FOR TENDER (P4)	HB
6	2010-04-11	ISSUED FOR CLIENT REVIEW (P4)	-
5	2011-11-14	ISSUED FOR TENDER (P3)	-
4	2011-09-28	ISSUED FOR FINAL DESIGN (100%) (P3)	-
3	2011-06-05	APPROVAL 100% (P3)	-
2	2011-04-17	APPROVAL 30% (P3)	-
1	2011-01-23	PRELIMINARY 60% (P3)	-

Date Printed: _____ Date imprimée: _____

- Verify all dimensions and site conditions and be responsible for same.
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité.

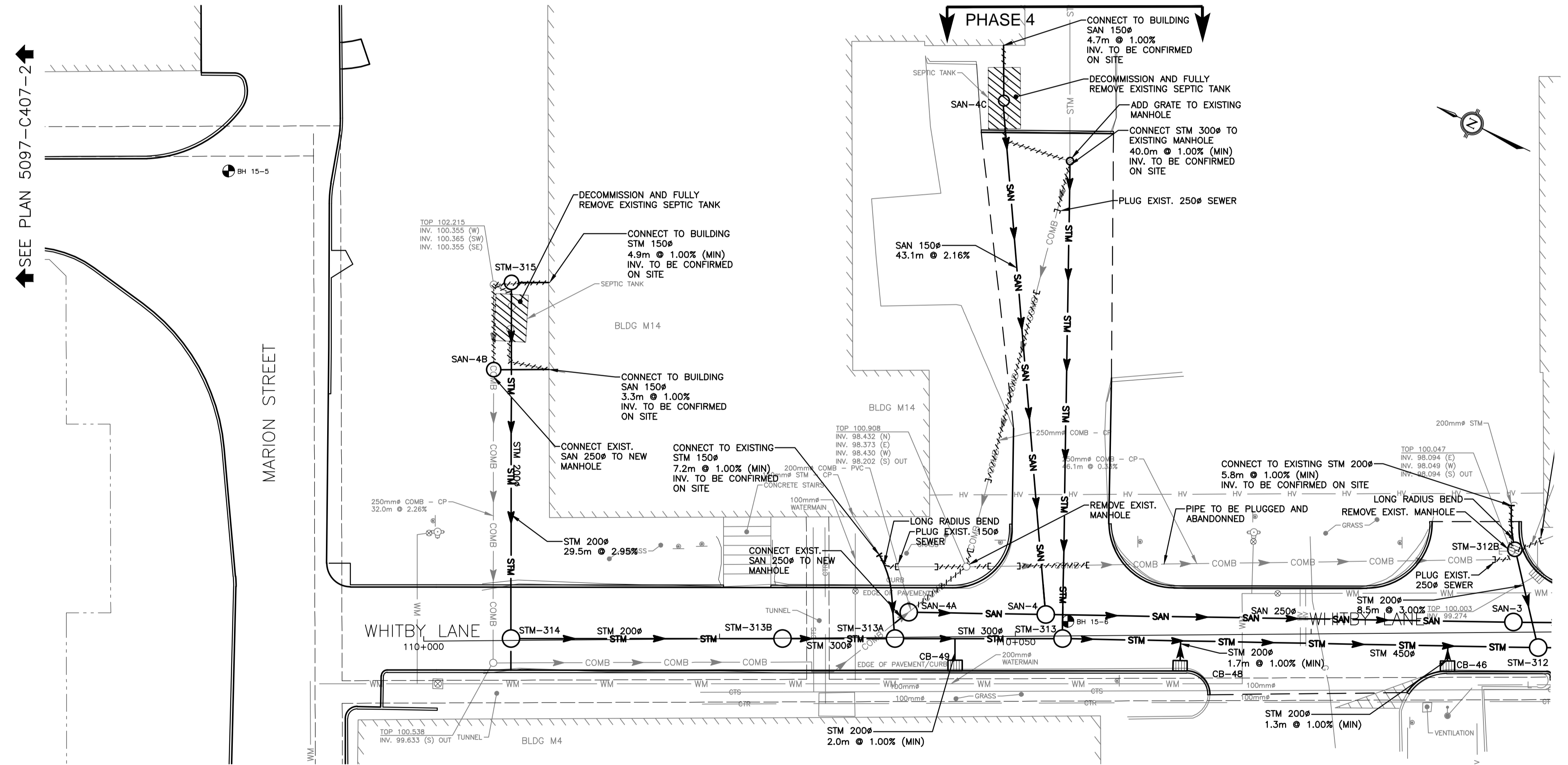
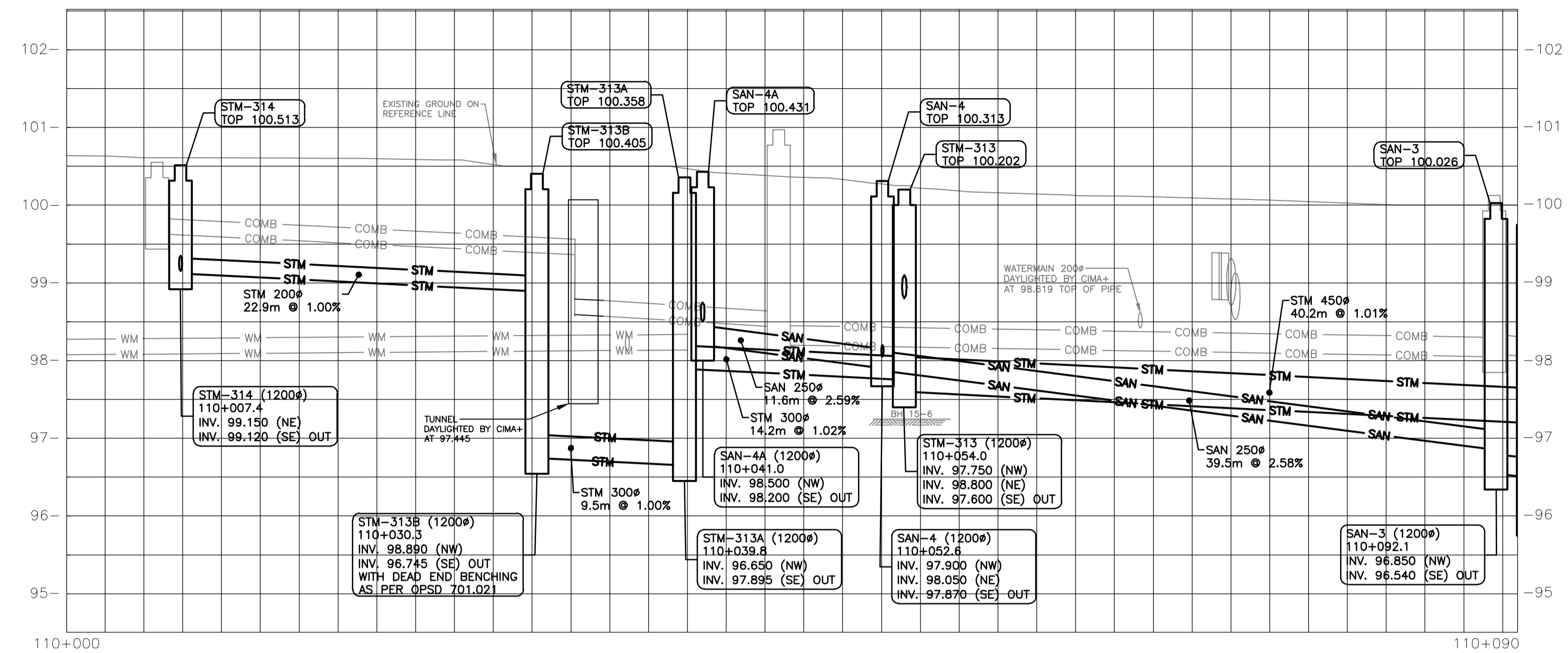


project: **SANITARY AND STORM SEWER SEPARATION**

1200 MONTREAL ROAD (CAMPUS)
 OTTAWA, ONTARIO

drawing: **PHASE 4- PLAN VIEW AND PROFILE ALIGNMENT "G"**
 110+000 TO 110+090

designed	conçu	date	SEPTEMBER 2017
J.SAUVÉ			
drawn	dessiné	scale	H 1:250 V 1:50
J.SAUVÉ			
checked	vérifié	sheet	3 of/de 4 feuille
H.BISSON			
approved	approuvé	W.O.no.	D.T.no.
H.BISSON			
dwg.no.			dessin no.
5097-C407-6			



MANHOLE #	TYPE	SIZE	TOP	INVERT	SPECIAL
CB-46	STM	600 X 600	99.930	98.530	SUMP
CB-48	STM	600 X 600	100.025	98.625	SUMP
CB-49	STM	600 X 600	100.155	98.755	SUMP
STM-312B	STM	1200#	100.000	98.090 (OUT) 97.755 (OUT)	SUMP
STM-314	STM	1200#	102.220	100.070 (OUT) 97.755 (OUT)	SUMP
SAN-4B*	SAN	900#	101.950	99.040 (OUT) 98.980 (OUT)	BENCHING
SAN-4C*	SAN	900#	102.000	100.000 (OUT) 99.990 (OUT)	BENCHING

* SAMPLING MANHOLE

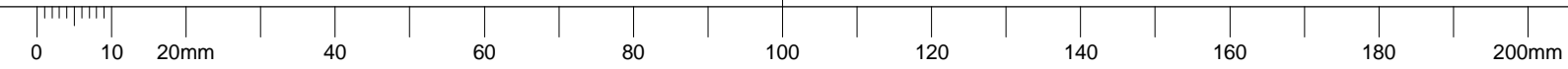
- NOTES:
- INVERT ELEVATIONS OF SERVICE CONNECTIONS TO EXISTING BUILDING ARE APPROXIMATE. THE CONTRACTOR MUST DETERMINE EXACT INVERT ELEVATIONS ON SITE PRIOR TO CONSTRUCTION START.
 - THE CONTRACTOR MUST DETERMINE ON SITE IF EXIST. SEWER CONNECTIONS ARE "STM" OR "SAN", AND MUST ENSURE TO CONNECT THEM ACCORDINGLY TO THE NEW SEWER NETWORKS.
 - PROJECT DESIGN IS INVERT SENSITIVE.
 - ALL REINSTATEMENTS BY CONTRACTOR. REFER TO DRAWINGS C402 AND C406 FOR MINIMUM REQUIREMENTS.

NOTE OF CAUTION

THE GEODETIC COORDINATES OF EVERY ITEM INCLUDED AS PART OF THIS DOCUMENT HAVE NO LEGAL VALUE. THE SITE LAYOUT MUST BE COMPLETED USING THE OFFICIAL BENCHMARKS OF AN ACCREDITED LAND SURVEYOR.

THE UNDERGROUND FEATURES AND INFORMATION THAT APPEAR ON THE DRAWINGS WERE OBTAINED FROM THE PUBLIC UTILITY COMPANIES AND/OR FROM THE NRC EACH RESPECTIVELY.
 ALL INFORMATION UNDER THE LEGEND "EXISTING" IS FOR INFORMATION ONLY. COMPLETE OR EXACT LOCATION AND ELEVATION OF UNDERGROUND SERVICES ARE NOT GUARANTEED.
 CERTAIN UNDERGROUND FEATURES ON PRIVATE PROPERTY ARE NOT SHOWN ON THE CURRENT DRAWING.

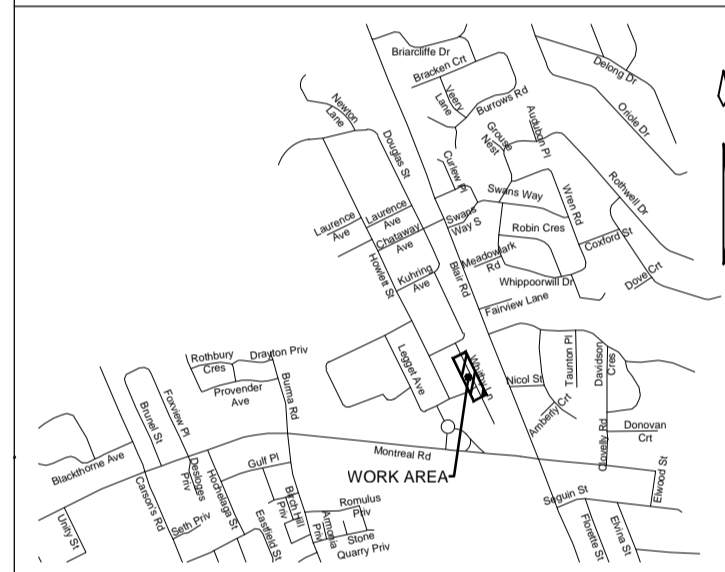
ANYONE WHO PROCEEDS WITH EXCAVATION WORK SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND FEATURES, BY EXPLORATORY EXCAVATIONS, AND SHALL ASSUME FULL RESPONSIBILITY IF THERE IS ANY DAMAGE THAT OCCURS DURING WORK.
 THE CONTRACTOR WILL HAVE THE RESPONSIBILITY AND THE OBLIGATION TO VALIDATE, BY EXPLORATORY EXCAVATION, THE SIZE OF THE PUBLIC UTILITIES UNDERGROUND SERVICES AND TO WARN THE DEPARTMENTAL REPRESENTATIVE OF ANY CONFLICT WITH THE PROJECTED WORK.



GENERAL NOTES

- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
- MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE ALL LABOUR AND MATERIAL REQUIRED TO FORM A COMPLETE FUNCTIONAL SYSTEM AS DESCRIBED ON DRAWINGS.

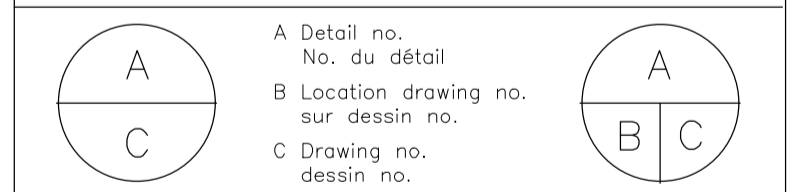
KEY PLAN



No.	Date	Revision	By:
8	2023-02-24	ISSUED FOR TENDER (P4)	HB
1	2019-09-29	ISSUED FOR TENDER (P4)	HB
6	2018-04-11	ISSUED FOR CLIENT REVIEW (P4)	-
5	2017-11-14	ISSUED FOR TENDER (P3)	-
4	2017-09-28	ISSUED FOR FINAL DESIGN (100%) (P3)	-
3	2017-06-05	APPROVAL 100% (P3)	-
2	2017-04-17	APPROVAL 30% (P3)	-
1	2017-01-23	PRELIMINARY 60% (P3)	-

Date Printed: _____ Date imprimée: _____

- Verify all dimensions and site conditions and be responsible for same.
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité.



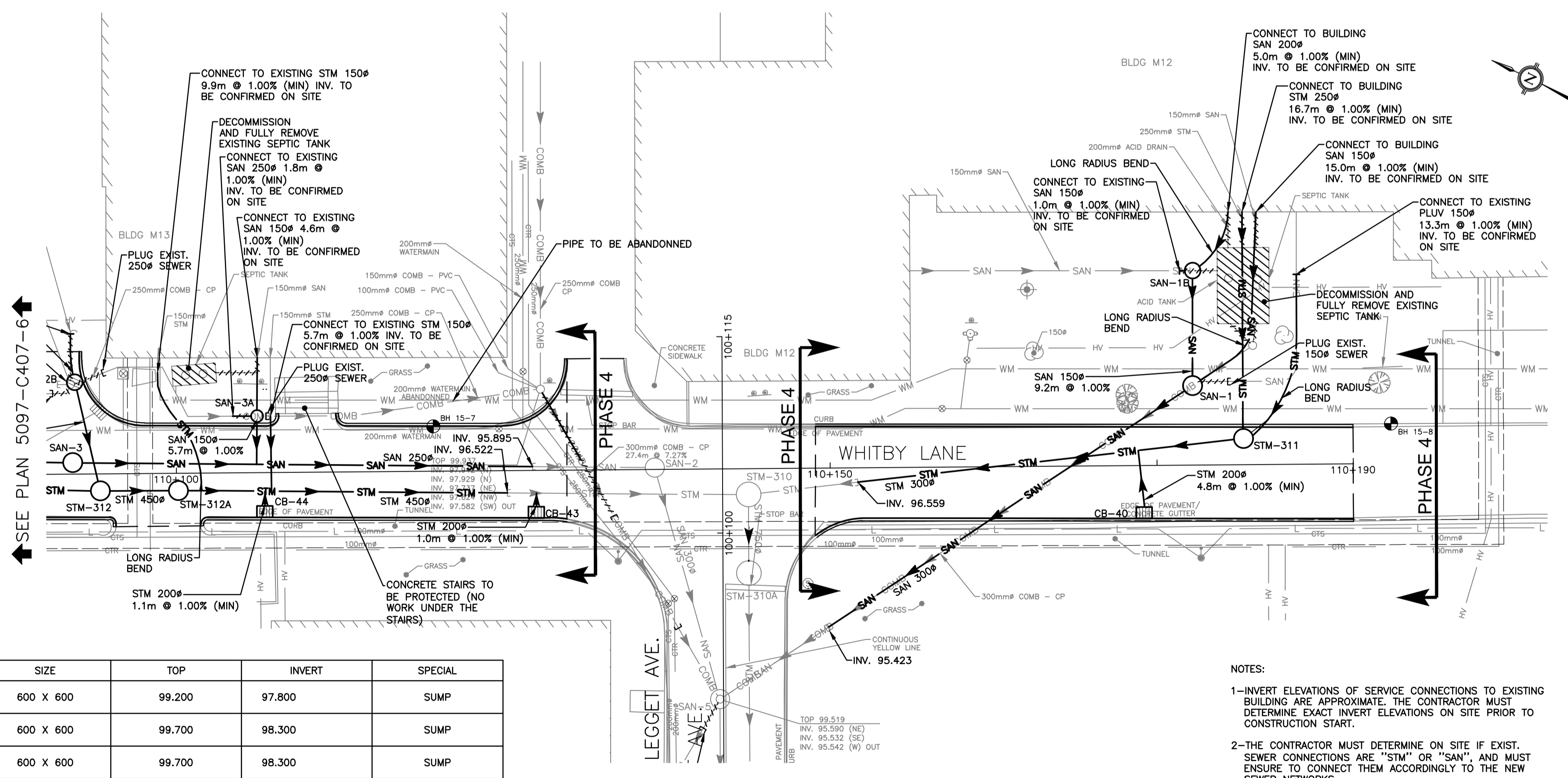
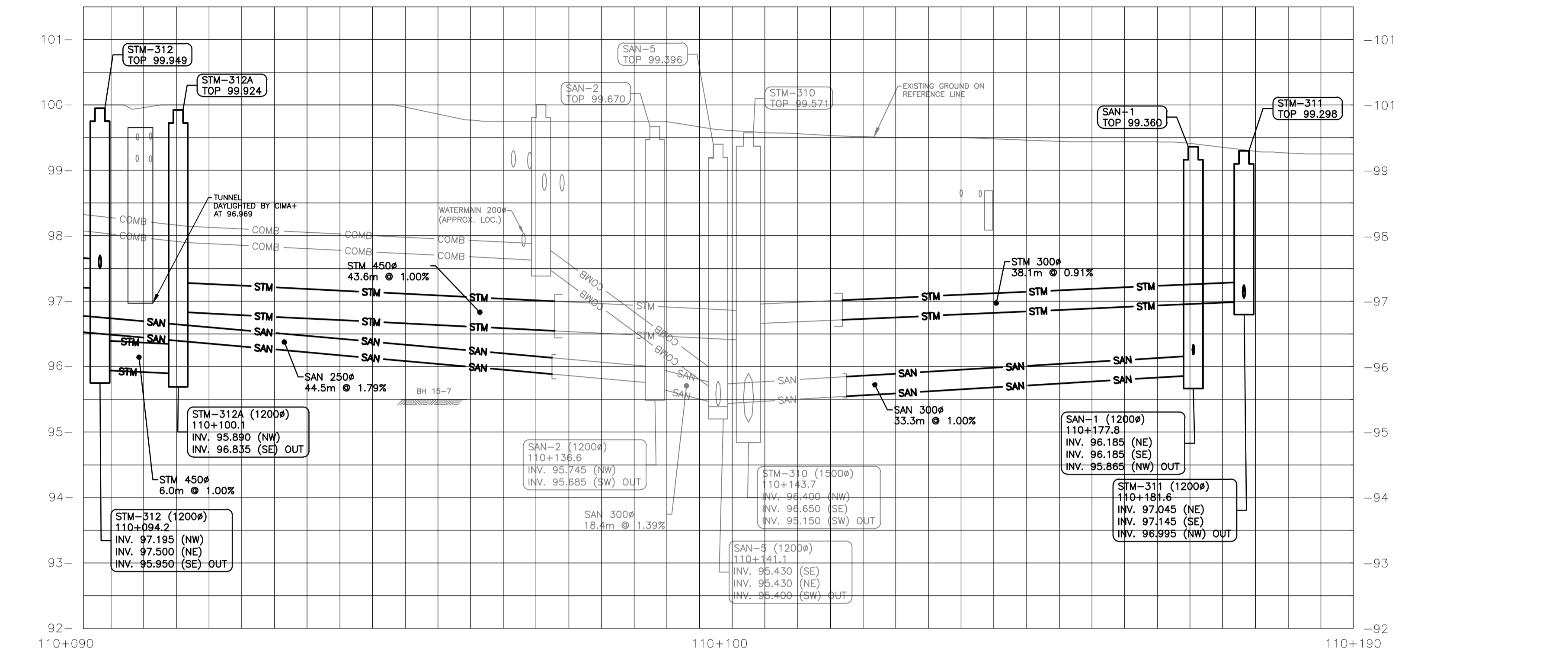
SANITARY AND STORM SEWER SEPARATION

1200 MONTREAL ROAD (CAMPUS)
 OTTAWA, ONTARIO

PHASE 4 - PLAN VIEW AND PROFILE
 ALIGNMENT "G"
 110+090 TO 110+190

designed	conçu	date	date
J.SAUVÉ	J.SAUVÉ	SEPTEMBER 2017	SEPTEMBER 2017
drawn	dessiné	scale	échelle
J.SAUVÉ	J.SAUVÉ	H 1:250 V 1:50	H 1:250 V 1:50
checked	vérifié	sheet	feuille
H.BISSON	H.BISSON	4 of/ de 4	4 of/ de 4
approved	approuvé	W.O.no.	D.T.no.
H.BISSON	H.BISSON	-	-
dwg.no.	dessin no.		

5097-C407-7



MANHOLE #	TYPE	SIZE	TOP	INVERT	SPECIAL
CB-40	STM	600 X 600	99.200	97.800	SUMP
CB-43	STM	600 X 600	99.700	98.300	SUMP
CB-44	STM	600 X 600	99.700	98.300	SUMP
SAN-1A*	SAN	900#	96.600	96.275(NE) 96.255(E) 96.245(W) (OUT)	BENCHING
SAN-1B*	SAN	900#	99.750	96.305(NE) 96.335(NW) 96.275(W) (OUT)	BENCHING
SAN-3A*	SAN	900#	100.450	98.000(N) 97.950(NE) 97.940(SW) (OUT)	BENCHING

* SAMPLING MANHOLE

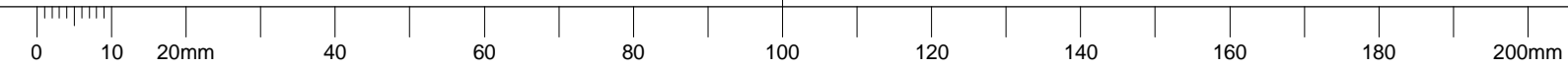
- NOTES:**
- INVERT ELEVATIONS OF SERVICE CONNECTIONS TO EXISTING BUILDING ARE APPROXIMATE. THE CONTRACTOR MUST DETERMINE EXACT INVERT ELEVATIONS ON SITE PRIOR TO CONSTRUCTION START.
 - THE CONTRACTOR MUST DETERMINE ON SITE IF EXIST. SEWER CONNECTIONS ARE "STM" OR "SAN", AND MUST ENSURE TO CONNECT THEM ACCORDINGLY TO THE NEW SEWER NETWORKS.
 - PROJECT DESIGN IS INVERT SENSITIVE.
 - ALL REINSTATEMENTS BY CONTRACTOR. REFER TO DRAWINGS C402 AND C406 FOR MINIMUM REQUIREMENTS.

NOTE OF CAUTION

THE GEODETIC COORDINATES OF EVERY ITEM INCLUDED AS PART OF THIS DOCUMENT HAVE NO LEGAL VALUE. THE SITE LAYOUT MUST BE COMPLETED USING THE OFFICIAL BENCHMARKS OF AN ACCREDITED LAND SURVEYOR.

THE UNDERGROUND FEATURES AND INFORMATION THAT APPEAR ON THE DRAWINGS WERE OBTAINED FROM THE PUBLIC UTILITY COMPANIES AND/OR FROM THE NRC EACH RESPECTIVELY. ALL INFORMATION UNDER THE LEGEND "EXISTING" IS FOR INFORMATION ONLY. COMPLETE OR EXACT LOCATION AND ELEVATION OF UNDERGROUND SERVICES ARE NOT GUARANTEED. CERTAIN UNDERGROUND FEATURES ON PRIVATE PROPERTY ARE NOT SHOWN ON THE CURRENT DRAWING.

ANYONE WHO PROCEEDS WITH EXCAVATION WORK SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND FEATURES, BY EXPLORATORY EXCAVATIONS, AND SHALL ASSUME FULL RESPONSIBILITY IF THERE IS ANY DAMAGE THAT OCCURS DURING WORK. THE CONTRACTOR WILL HAVE THE RESPONSIBILITY AND THE OBLIGATION TO VALIDATE, BY EXPLORATORY EXCAVATION, THE SIZE OF THE PUBLIC UTILITIES UNDERGROUND SERVICES AND TO WARN THE DEPARTMENTAL REPRESENTATIVE OF ANY CONFLICT WITH THE PROJECTED WORK.



GENERAL NOTES

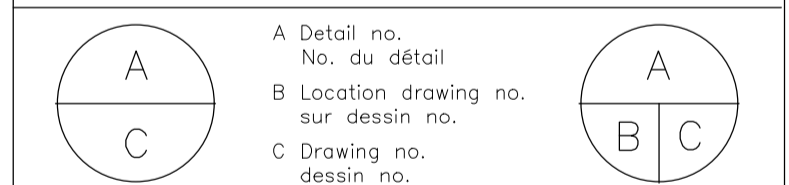
- CONTRACTORS TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO DEMOLITION OR CONSTRUCTION AND REPORT ANY ERRORS OR OMISSIONS TO DEPARTMENTAL REPRESENTATIVE.
- CONTRACTORS MUST VISIT THE SITE & FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK.
- PREVENT THE SPREAD OF DUST & DEBRIS BEYOND THE WORK AREA AND CLEAN ALL SURFACES AT COMPLETION.
- MAKE GOOD ALL SURFACES AFFECTED BY THIS WORK.
- COORDINATE ALL SHUTDOWNS WITH THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE ALL LABOUR AND MATERIAL REQUIRED TO FORM A COMPLETE FUNCTIONAL SYSTEM AS DESCRIBED ON DRAWINGS.

KEY PLAN

No.	Date	Revision	By:
2	2013-02-14	ISSUED FOR TENDER (P4)	H.B.
1	2013-05-29	ISSUED FOR TENDER (P4)	H.B.

Date Printed: _____ Date imprimée: _____

- Verify all dimensions and site conditions and be responsible for same
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité



project: _____ projet: _____

SANITARY AND STORM SEWER SEPARATION

1200 MONTREAL ROAD (CAMPUS)
 OTTAWA, ONTARIO

drawing: _____ dessin: _____

PHASE 4 - DETAILS

designed: J.SAUVÉ conçu: _____ date: FEBRUARY 2017 date: _____

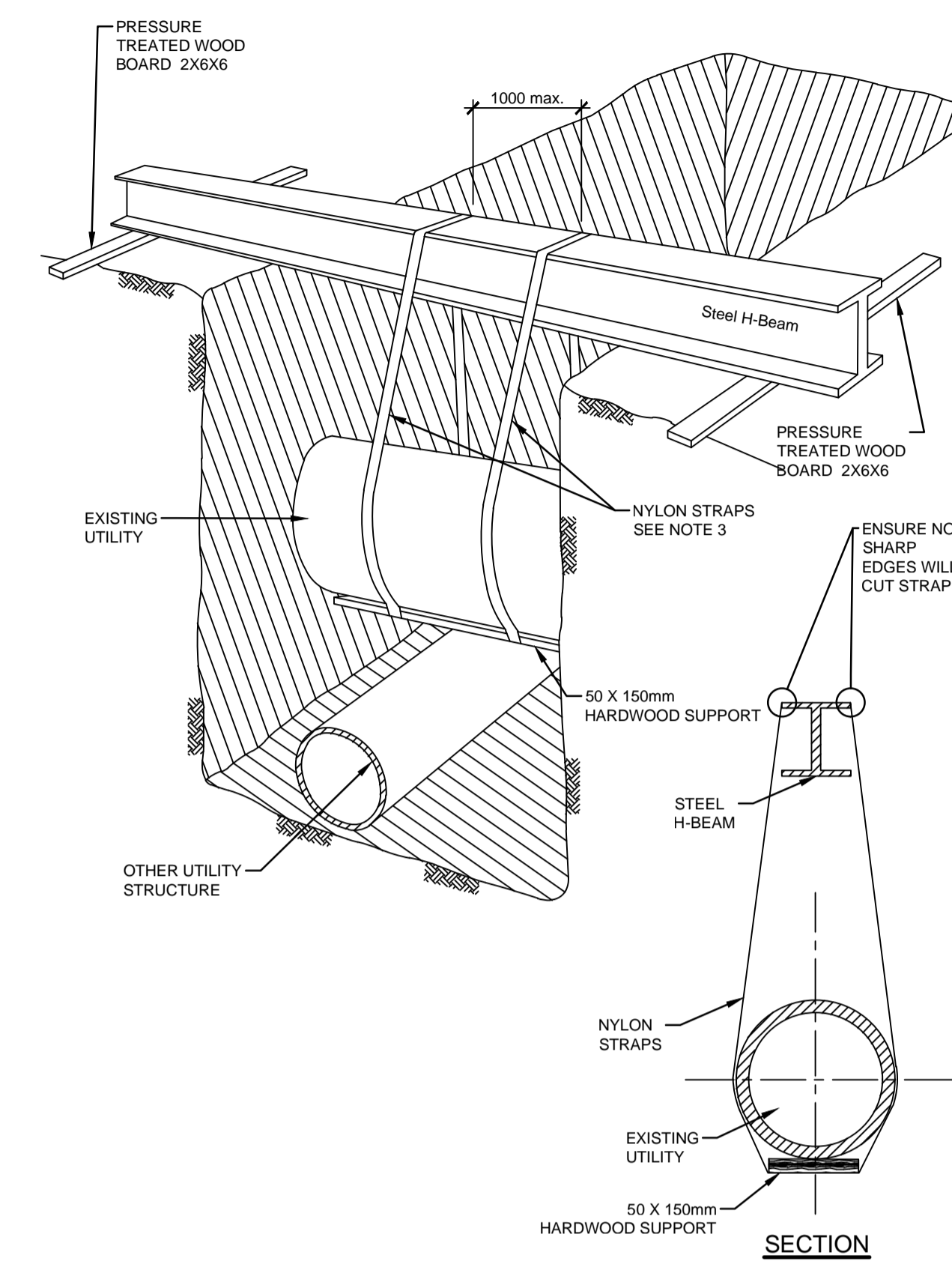
drawn: J.SAUVÉ dessiné: _____ scale: NTS échelle: _____

checked: H.BISSON vérifié: _____ sheet: 1 of/de 8 feuille: _____

approved: H.BISSON approuvé: _____ W.O.no.: _____ D.T.no.: _____

dwg.no.: _____ dessin no.: _____

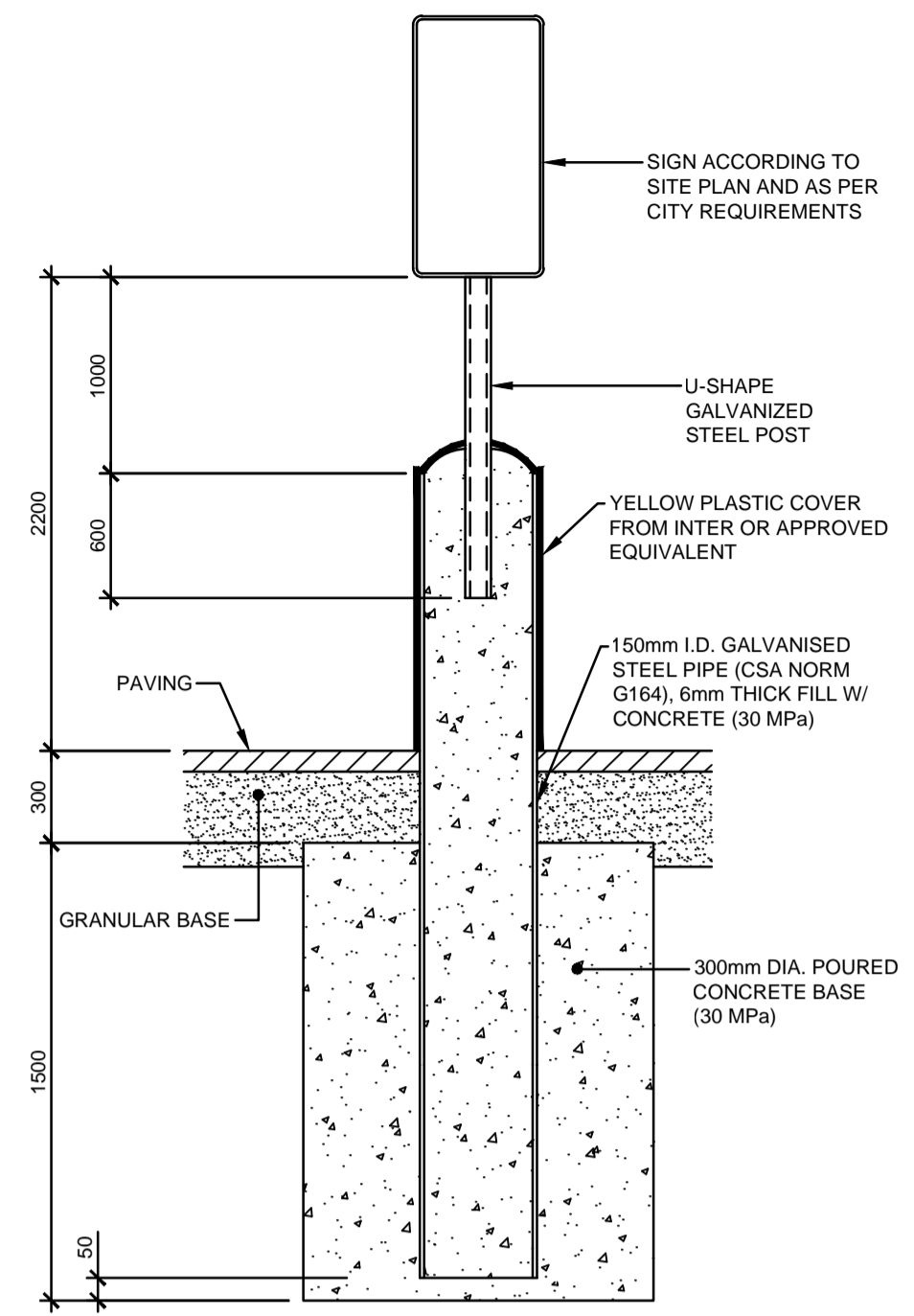
5097-C408-1



- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
 - THE UNSUPPORTED LENGTH OF THE EXISTING UTILITY SHALL NOT EXCEED 1000mm.
 - STRAPS MUST MEET THE REQUIREMENTS OF THE O.H.S.A. CHAINS ARE NOT PERMITTED.

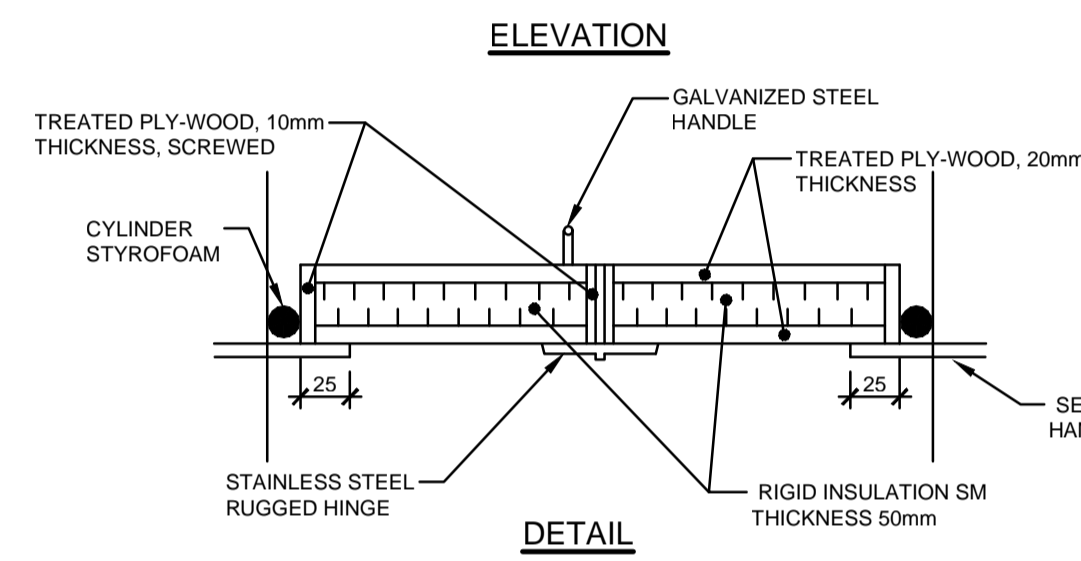
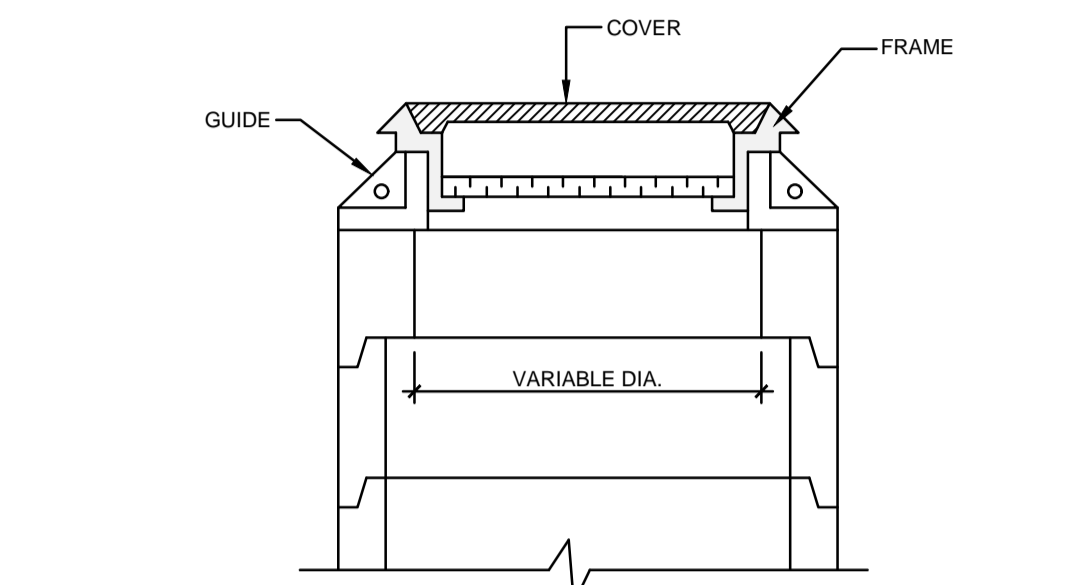
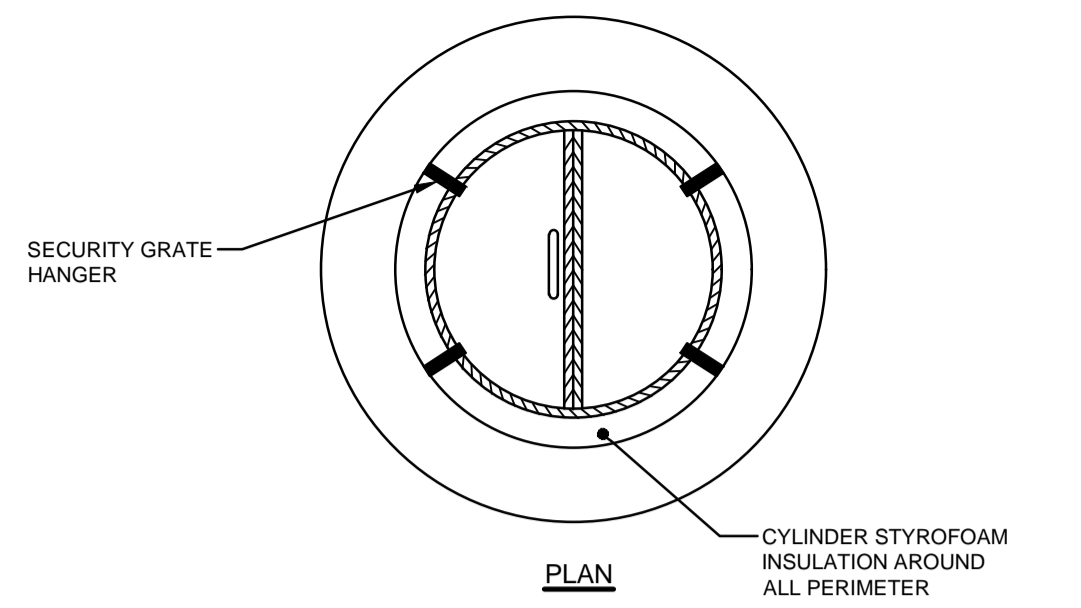
337

TEMPORARY SUPPORT FOR EXISTING UTILITY



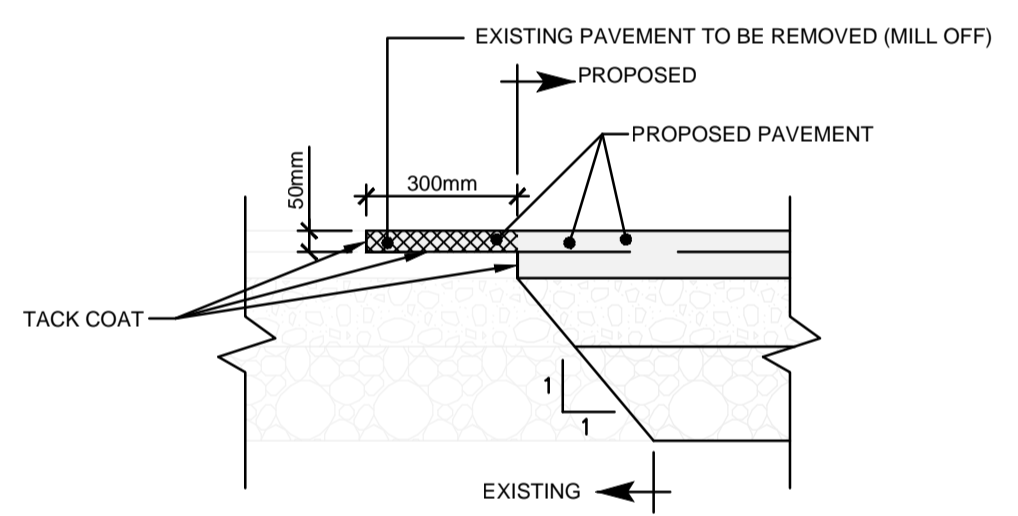
402

BOLLARD SIGN



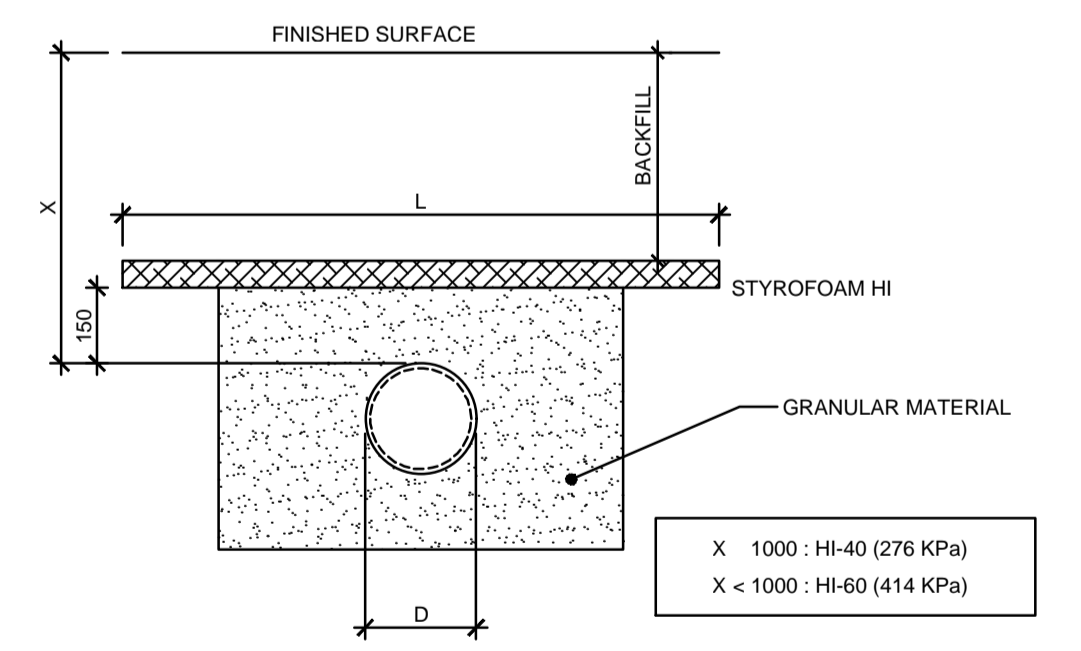
306

INSULATED MANHOLE COVER



206

TYPICAL SECTION - TRANSITION BETWEEN EXISTING AND PROPOSED PAVEMENT



MINIMUM WIDTH OF ISULATION TABLE (L)

X \ D	150	200	250	300	400	500	600
750	1650	1700	1750	1800	1900	2000	2100
1000	1150	1200	1250	1300	1400	1500	1600
1250	650	700	750	800	900	1000	1100
1450	650	600	600	600	600	600	700

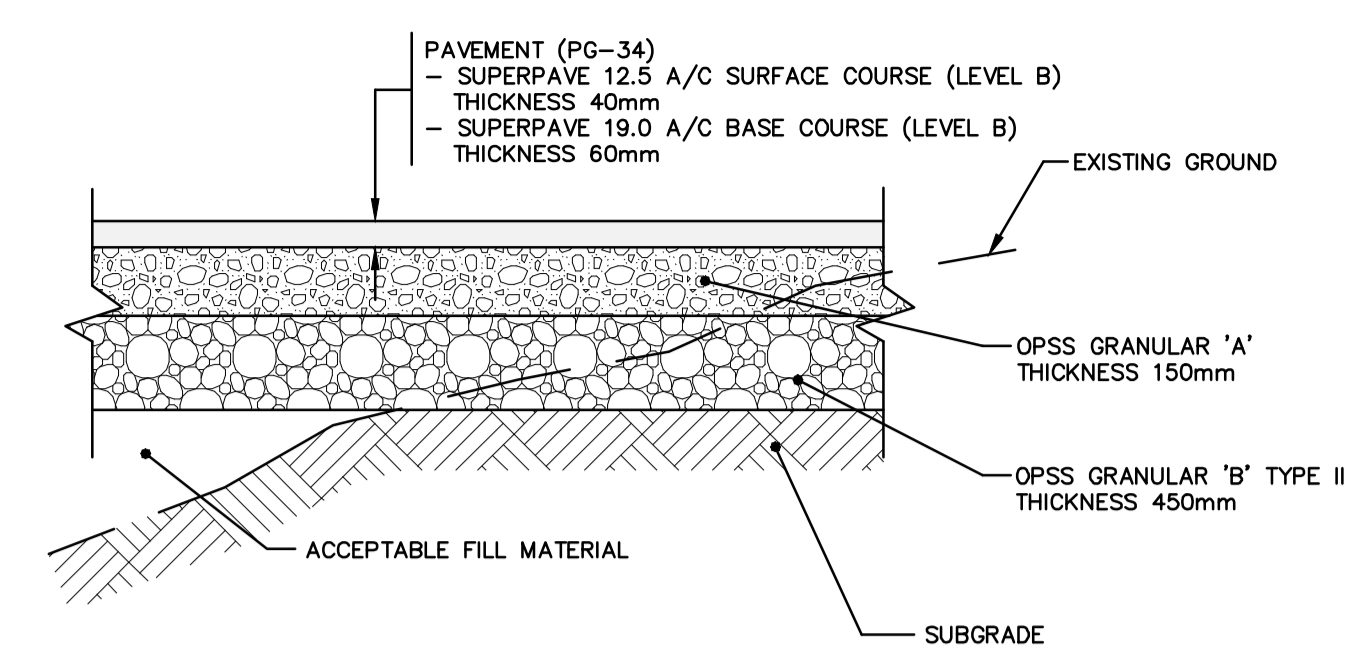
L= INSULATION WIDTH (mm)
 D=PIPE DIAMETER (mm)

INSULATION THICKNESS
100
100
100
75

X 1000 : HI-40 (276 KPa)
 X < 1000 : HI-60 (414 KPa)

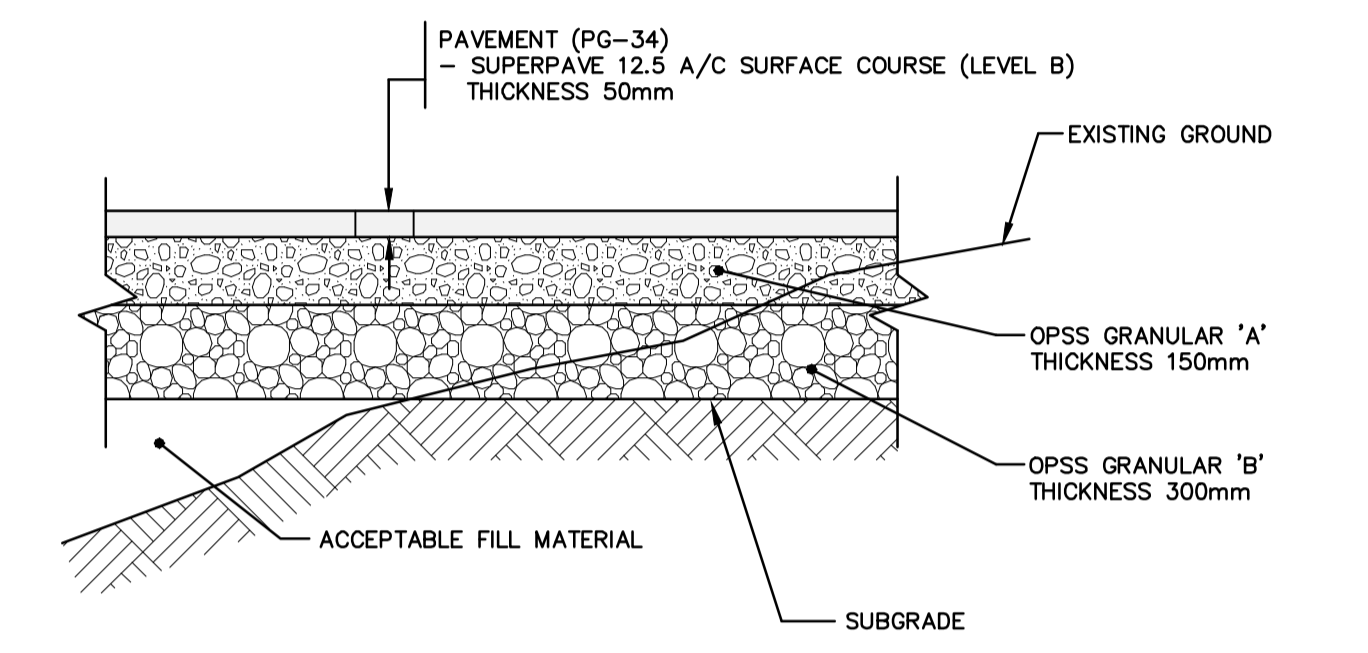
314F

PIPE INSULATION (1.5m-COVER)



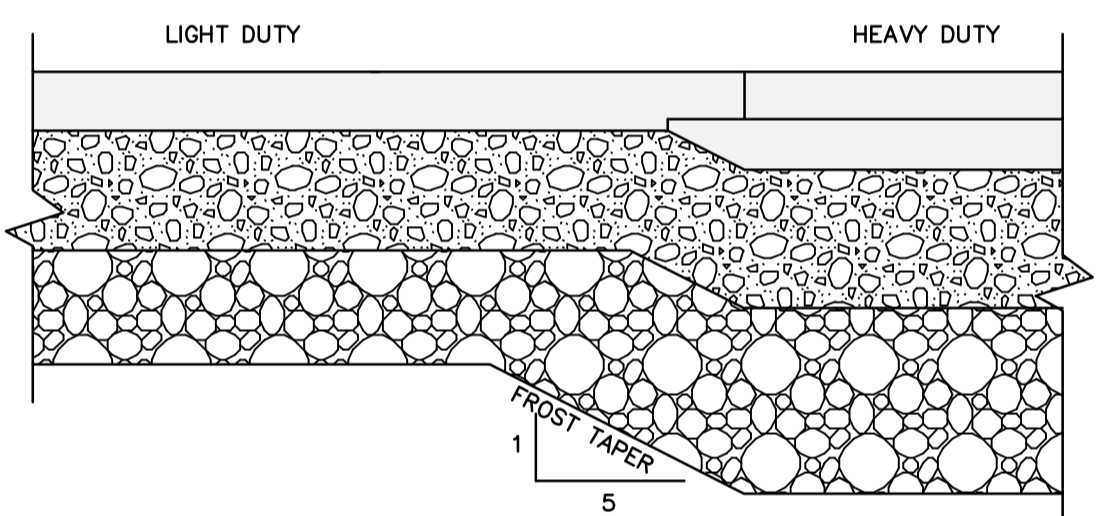
202

TYPICAL SECTION - GRANULAR FOUNDATION AND ASPHALT PAVEMENT HEAVY DUTY (ROADS)



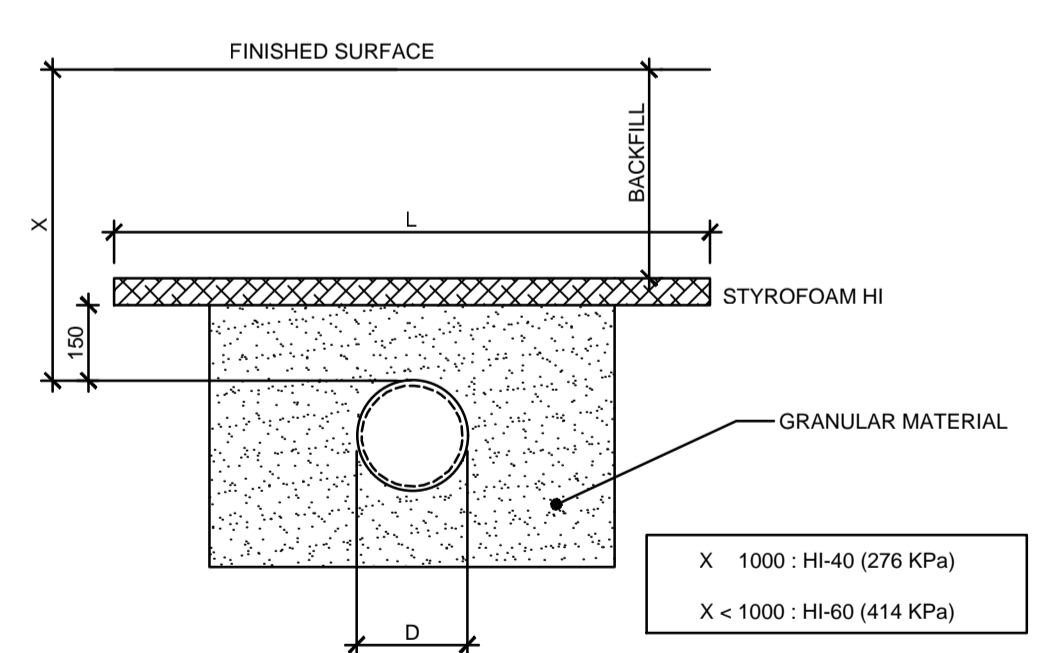
203

TYPICAL SECTION - GRANULAR FOUNDATION AND ASPHALT PAVEMENT LIGHT DUTY (PARKING)



205

TYPICAL SECTION - TRANSITION BETWEEN DIFFERING PAVEMENT STRUCTURES



314A

PIPE INSULATION (1.8m-COVER)

MINIMUM WIDTH OF ISULATION TABLE (L)

X \ D	150	200	250	300	400	500	600
750	2250	2300	2350	2400	2500	2600	2700
1000	1750	1800	1850	1900	2000	2100	2200
1250	1250	1300	1350	1400	1500	1600	1700
1500	750	800	850	900	1000	1100	1200
1750	600	600	600	600	600	600	700

L= INSULATION WIDTH (mm)
 D= PIPE DIAMETER (mm)

INSULATION THICKNESS
100
100
100
75
75

X 1000 : HI-40 (276 KPa)
 X < 1000 : HI-60 (414 KPa)