

CONTRACTOR MUST CHECK A UTILITY ALL DIMENSIONS ON THE JOB.
 90% NOT SCALE DRAWING.
 ALL DIMENSIONS SHOWN ARE APPROXIMATE AND THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UTILITIES AND THE DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR AS A RESULT OF ANY AND ALL UTILITIES NOT BEING EXACTLY LOCATED OR DEPTHS NOT BEING EXACTLY VERIFIED.
 THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS ISSUED BY THE ARCHITECT.



NOT FOR CONSTRUCTION

ISSUED

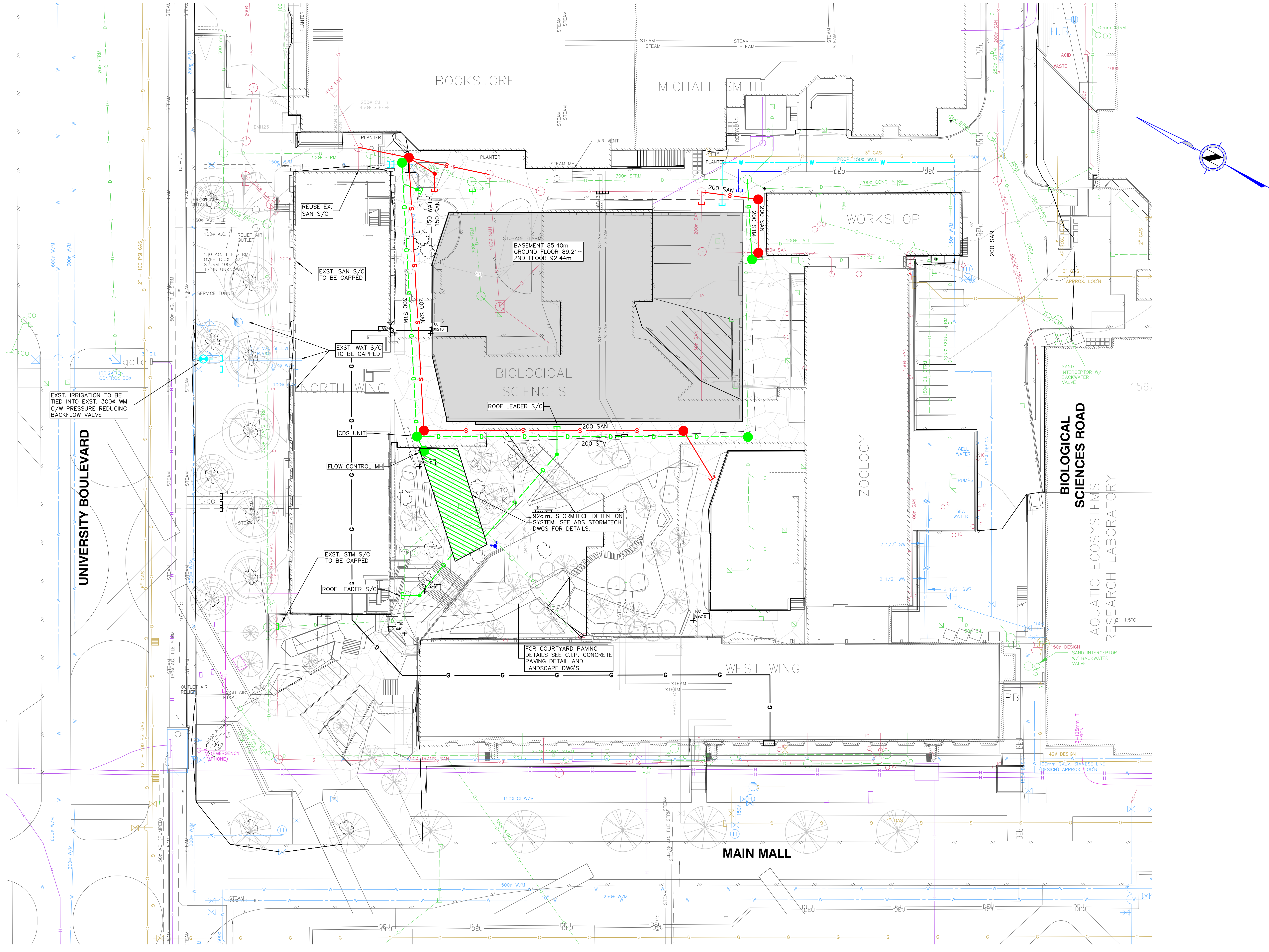
No.	Date	Description
1	2015-04-17	Issued for Design Development
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3	2016-04-29	Re-issued for Development Permit

UTILITY INFORMATION COMPILED USING 2008 UBC BASE MAP WITH MURRAY AND ASSOC. SURVEY FOR ELEVATIONS. SOME DISCREPANCIES APPEAR TO EXIST BETWEEN DATA WHICH WERE UNABLE TO BE VERIFIED IN THE FIELD.

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CONTACT U.B.C. UTILITIES 72 HOURS PRIOR TO START OF CONSTRUCTION
 604-822-9570.

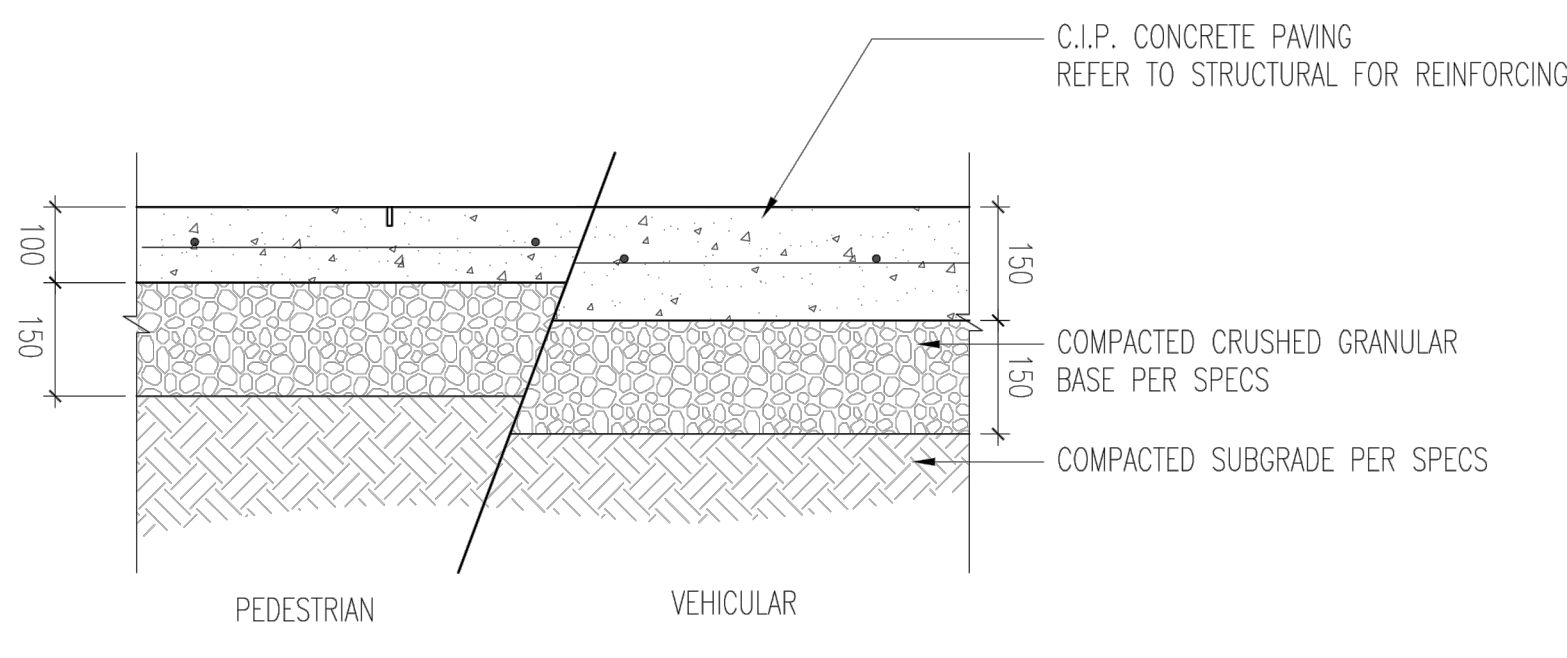
ALL CONSTRUCTION TO MMCD (2009) AND U.B.C. TECHNICAL GUIDELINES



EXIST. IRRIGATION TO BE TIED INTO EXIST. 300mm W/M C/W PRESSURE REDUCING BACKFLOW VALVE

92cm. STORMWATER DETENTION SYSTEM. SEE ADD. STORMWATER DWGS FOR DETAILS.

FOR COURTYARD PAVING DETAILS SEE C.I.P. CONCRETE PAVING DETAIL AND LANDSCAPE DWGS.



C.I.P. CONCRETE PAVING DETAIL
 SCALE: 1:10

NOTICE TO CONTRACTOR
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Diamond Schmitt Architects
 384 Adelaide Street West, Suite 200, Toronto, Canada, M5V 1S8
 Tel: 416 862 2800 Fax: 416 862 2268 dsinfo@diamondschmitt.com
 In Collaboration With:
HDR CEI Architecture Associates, Inc.
 550 - 1500 West Georgia Street, Vancouver, British Columbia, Canada V6G 2Z6
 Tel: 604 687 1888 Fax: 604 687 2268 www.hdrcei.com



UBC Undergrad Life Sciences Teaching Labs

6270 UNIVERSITY BOULEVARD, VANCOUVER, BC

KEY PLAN

Scale: 1:250
 Project No: 14-038
 Date: October 15, 2014

C-001

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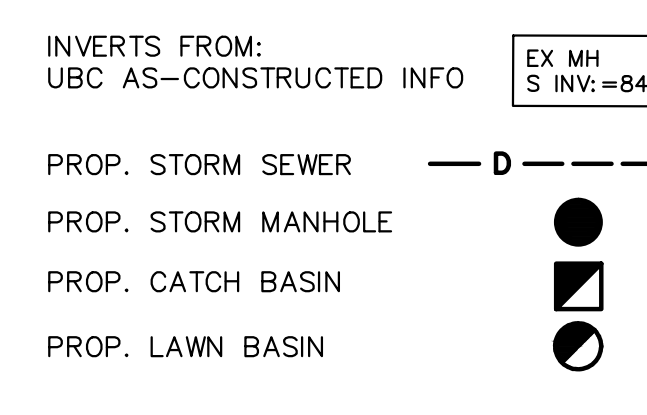


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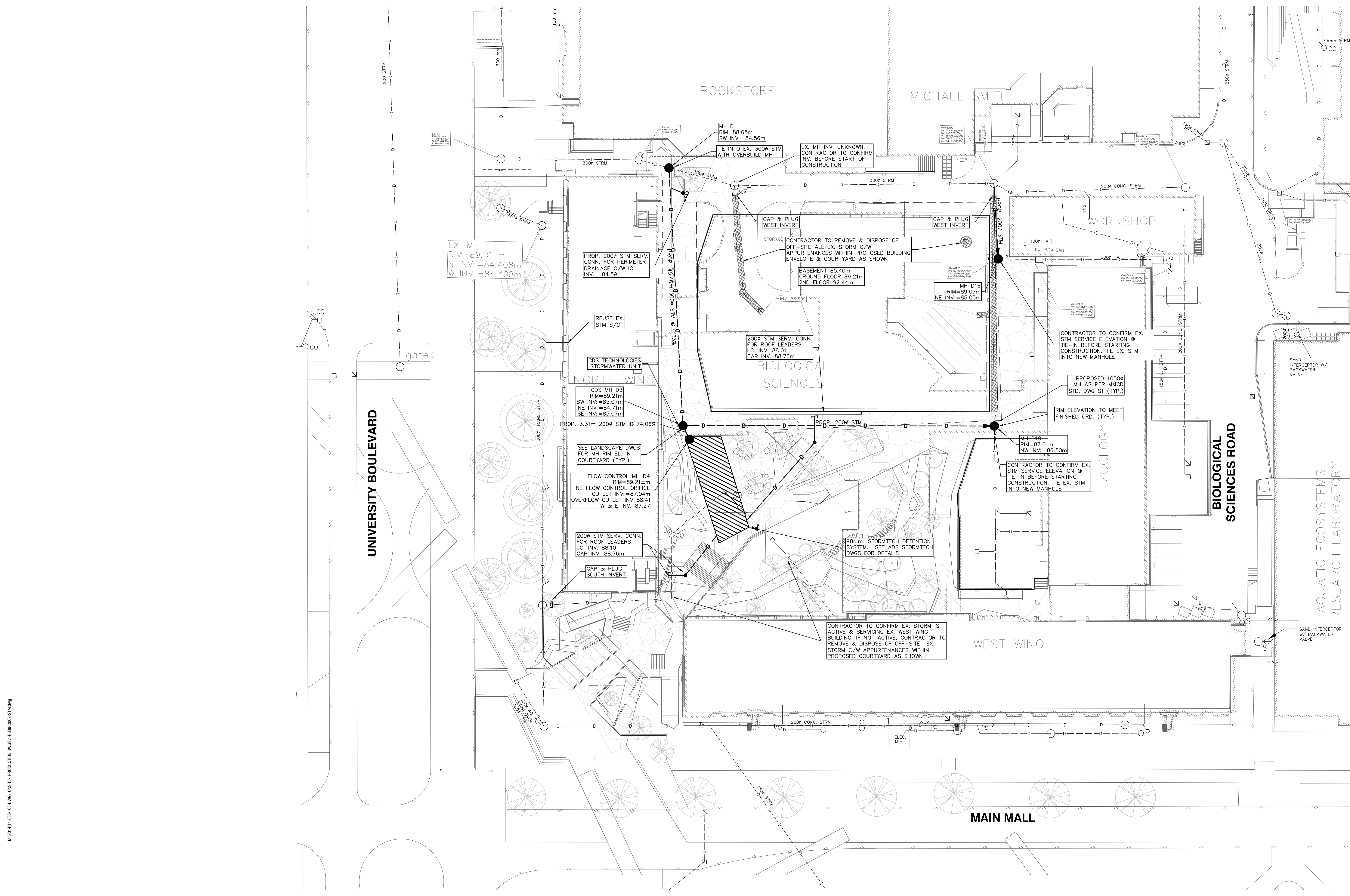
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LEGEND:
 INVERTS FROM:
 UBC AS-CONSTRUCTED INFO
 EX. MH S INV. = 84.54m



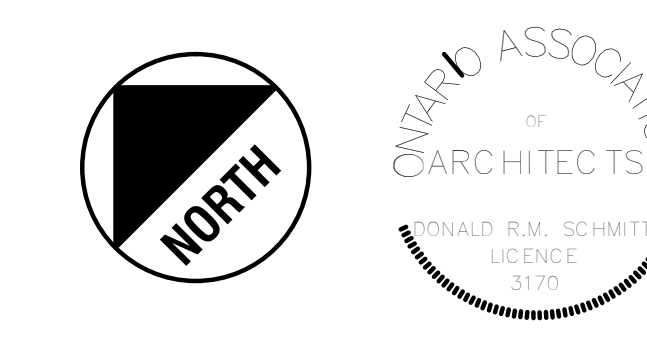
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 CONTACT U.B.C. UTILITIES 72 HOURS PRIOR TO START OF CONSTRUCTION 604-822-9570.
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Diamond Schmitt Architects
 384 Adelaide Street West, Suite 300, Toronto, Canada, M5V1P6
 Tel: 416 597 2800 Fax: 416 597 2808 www.diamondschmitt.com
 In Collaboration With:
HDR CEI Architecture Associates, Inc.
 550 - 1500 West Georgia Street, Vancouver, British Columbia, Canada V6E 2Z6
 Tel: 604 687 1888 Fax: 604 687 2288 www.hdrcei.com



UBC Undergrad Life Sciences Teaching Labs

6270 UNIVERSITY BOULEVARD, VANCOUVER, BC

STORM SEWER

Scale: 1:250
 Project No: 14-038
 Date: October 15, 2014

C-002

14-038-01-14-038_CS_DWG_LAYOUT_PRODUCTION.DWG 14-038-0001-STM.dwg

14-038-01-14-038_CS_DWG_LAYOUT_PRODUCTION.DWG 14-038-0001-STM.dwg

CONTRACTOR MUST CHECK A UTILITY ALL DIMENSIONS ON THE JOB.
 30' X 60' SCALE DRAWING.
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LEGEND:

INVERTS FROM: SEPT 17, 2009 SURVEY

Rim=88.92
Inv.=87.19(150)

INVERTS FROM: UBC AS-CONSTRUCTED INFO

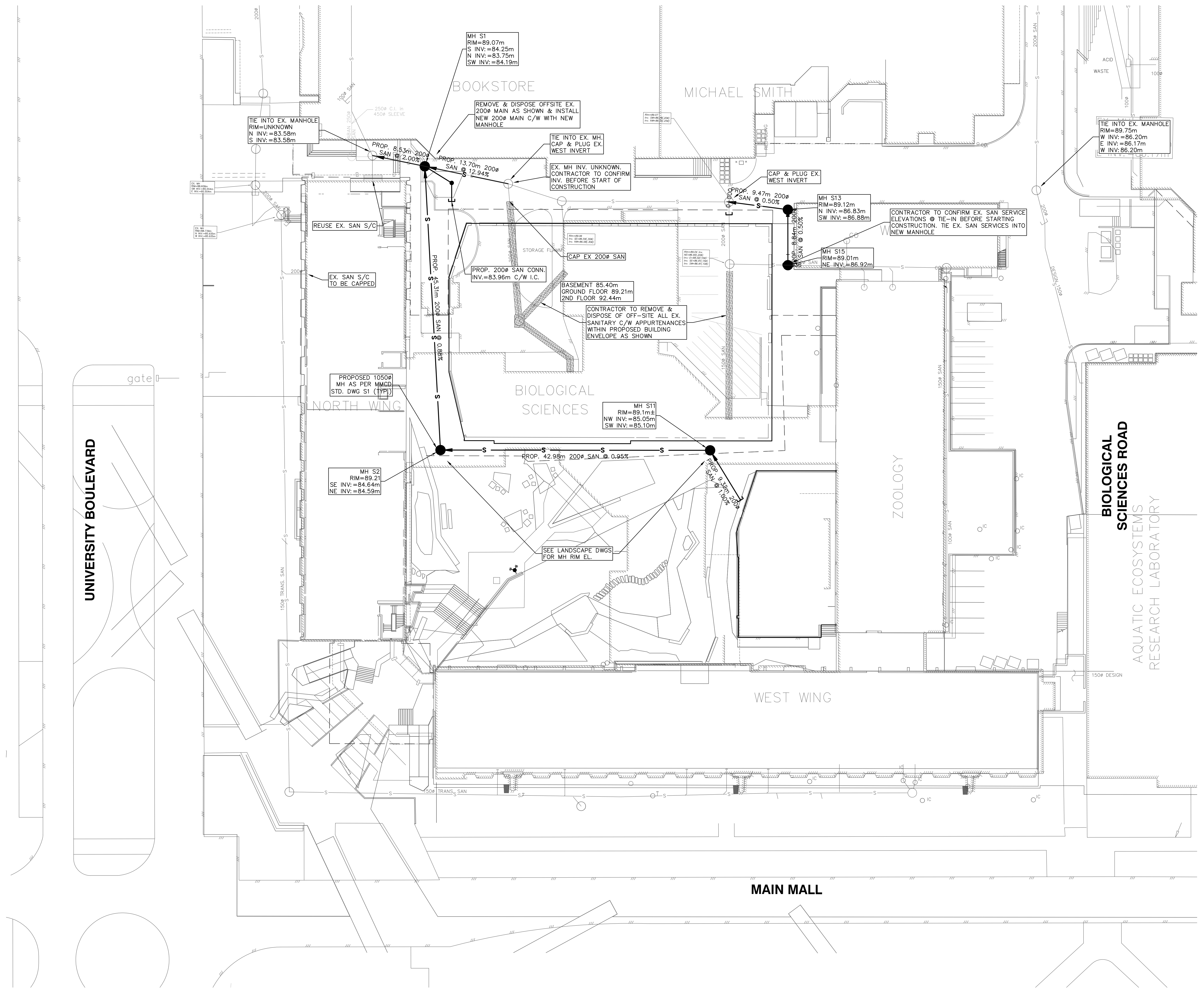
EX MH S INV.=84.54m

PROP. SANITARY SEWER
 PROP. SANITARY MANHOLE

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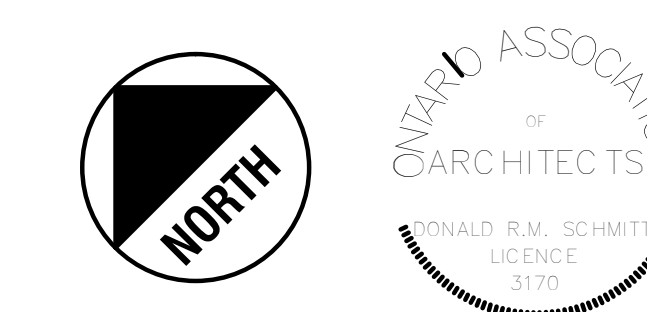
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 Tel: 416 862 2800 Fax: 416 862 2288 info@diamondschmitt.com
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UBC Undergrad Life Sciences Teaching Labs

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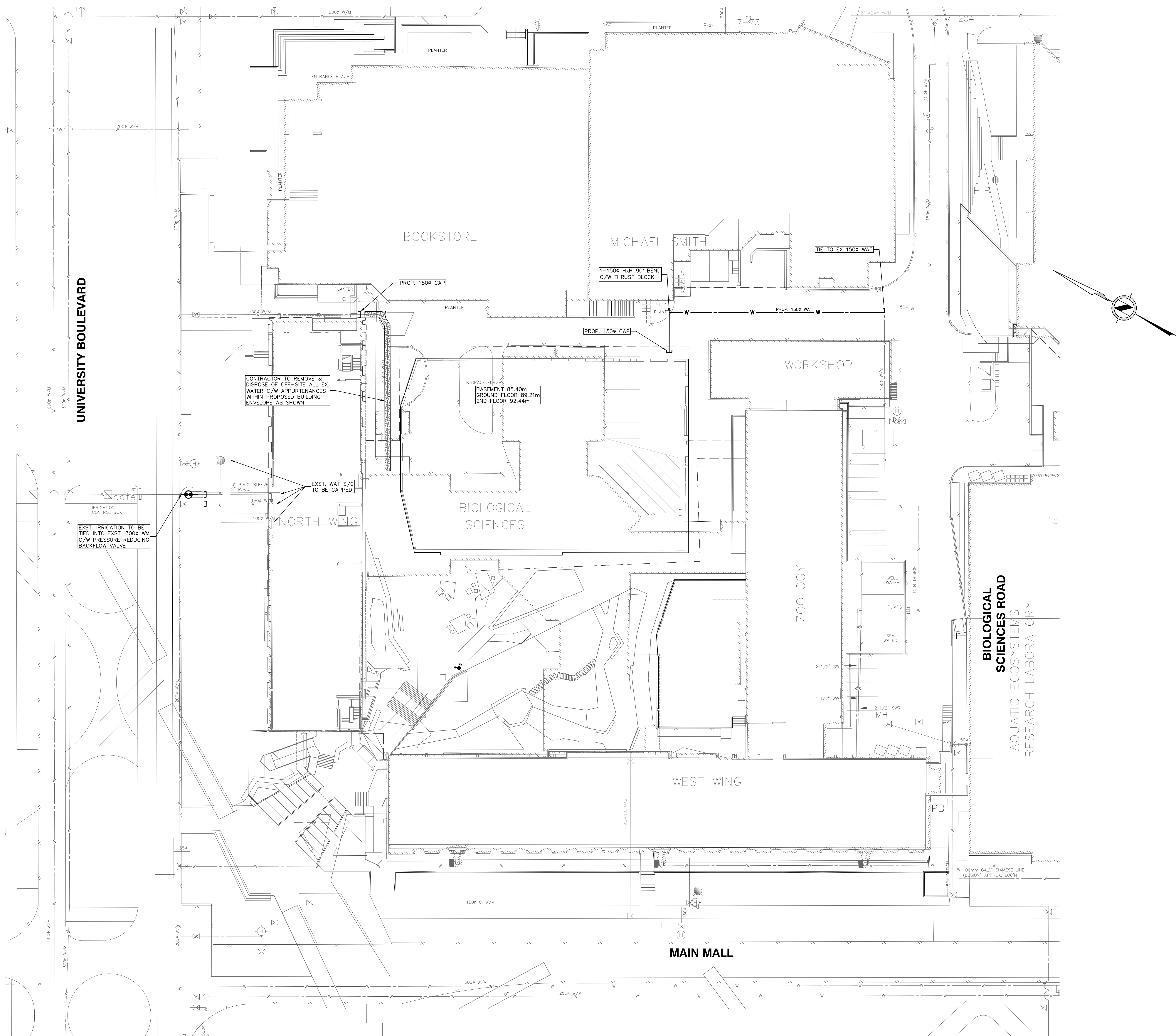
SANITARY SEWER

Scale: 1:250
 Project No: 14-038
 Date: October 15, 2014

C-003

MURRAY & ASSOC. CS DWG, CIVIL, PRODUCTION DWGS 14-038-0003 SAN.MXD

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INVERTS FROM:
 SEPT 17, 2009 SURVEY
 Rm=88.92
 Inv.=87.19(159)

INVERTS FROM:
 UBC AS-CONSTRUCTED INFO
 EX MH
 INV=84.54m

PROP. WATER MAIN
 PROP. FIRE HYDRANT

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Diamond Schmitt Architects
 384 Adelaide Street West, Suite 200, Toronto, Canada, M5V1P5
 Tel: 416 862 2807 Fax: 416 862 2268 info@diamondschmitt.com www.diamondschmitt.com

In Collaboration With:
HDR CEI Architecture Associates, Inc.
 550 - 1500 West Georgia Street, Vancouver, British Columbia, Canada V6E 2Z6
 Tel: 604 687 1858 Fax: 604 687 2268 www.ceiarchitects.com



UBC Undergrad Life Sciences Teaching Labs

6270 UNIVERSITY BOULEVARD, VANCOUVER, BC

WATERMAIN

Scale: 1:250
 Project No: 14-438
 Date: October 15, 2014

C-004

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CONTRACTOR MUST CHECK ALL DIMENSIONS ON THE JOB.
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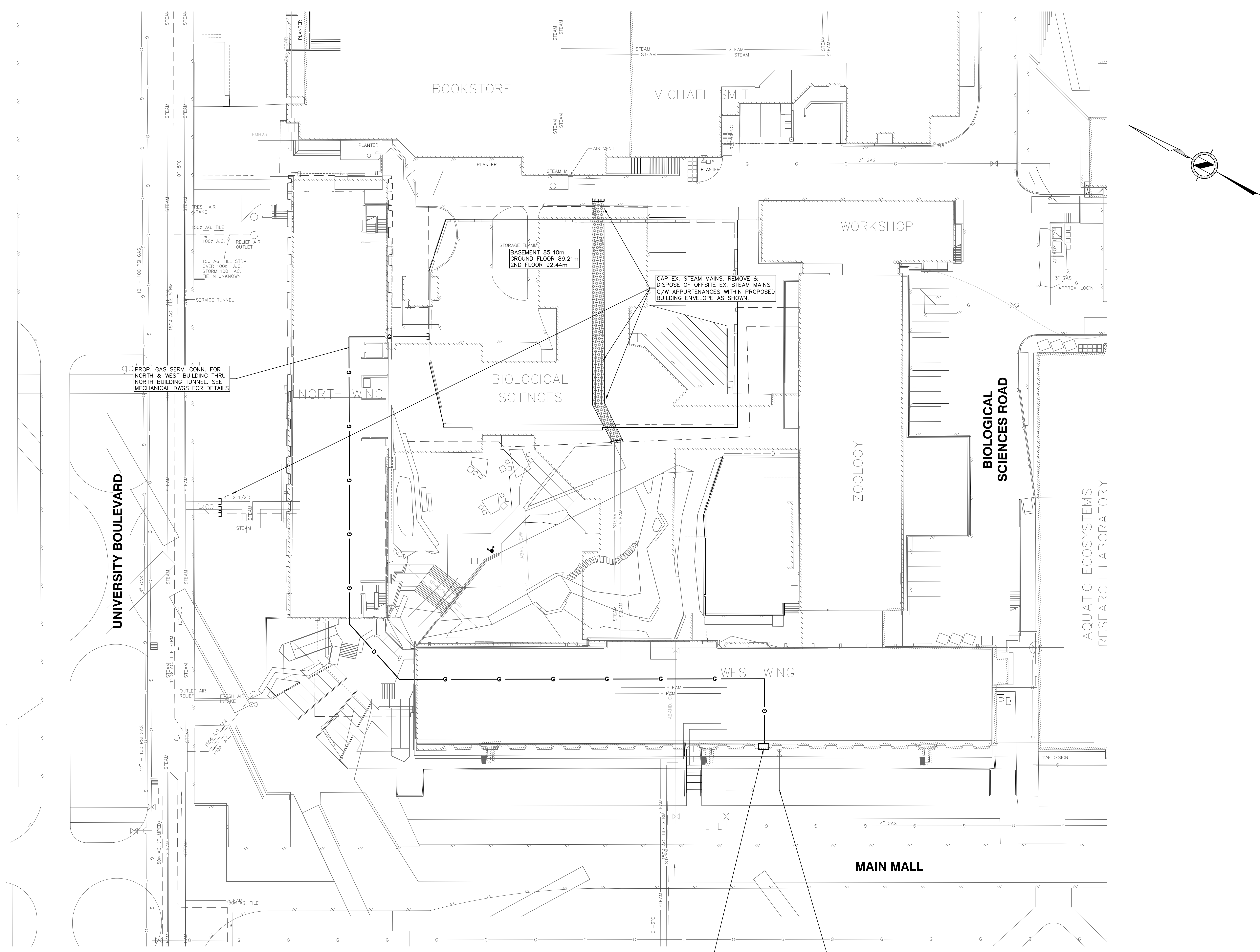
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PROP. GAS SERV. CONN. FOR NORTH & WEST BUILDING THRU NORTH BUILDING TUNNEL. SEE MECHANICAL DWGS FOR DETAILS

BASEMENT 85.40m
 GROUND FLOOR 89.21m
 2ND FLOOR 92.44m

CAP EX. STEAM MAINS REMOVE & DISPOSE OF OFFSITE EX. STEAM MAINS C/W APPURTENANCES WITHIN PROPOSED BUILDING ENVELOPE AS SHOWN.

NEW GAS METER FOR NORTH & WEST BUILDING. SEE MECHANICAL DWGS FOR DETAILS

EXIST. GAS SERV. CONN. C/W METER FOR WEST BUILDING TO REMAIN. SEE MECHANICAL DWGS FOR DETAILS

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 384 Adelaide Street West, Suite 200, Toronto, Canada, M5V1P7
 Tel: 416 862 2807 Fax: 416 862 2268 info@diamondschmitt.com www.diamondschmitt.com
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HDR CEI Architecture Associates, Inc.
 550 - 1500 West Georgia Street, Vancouver, British Columbia, Canada V6E 2Z6
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UBC Undergrad Life Sciences Teaching Labs

6270 UNIVERSITY BOULEVARD, VANCOUVER, BC

GAS AND STEAM

Scale: 1/250
 Project No: 14-0381
 Date: October 15, 2014

C-005

CONTRACTOR MUST CHECK A VERIFY ALL DIMENSIONS ON THE JOB.
 50% NOT SCALE DRAWING.
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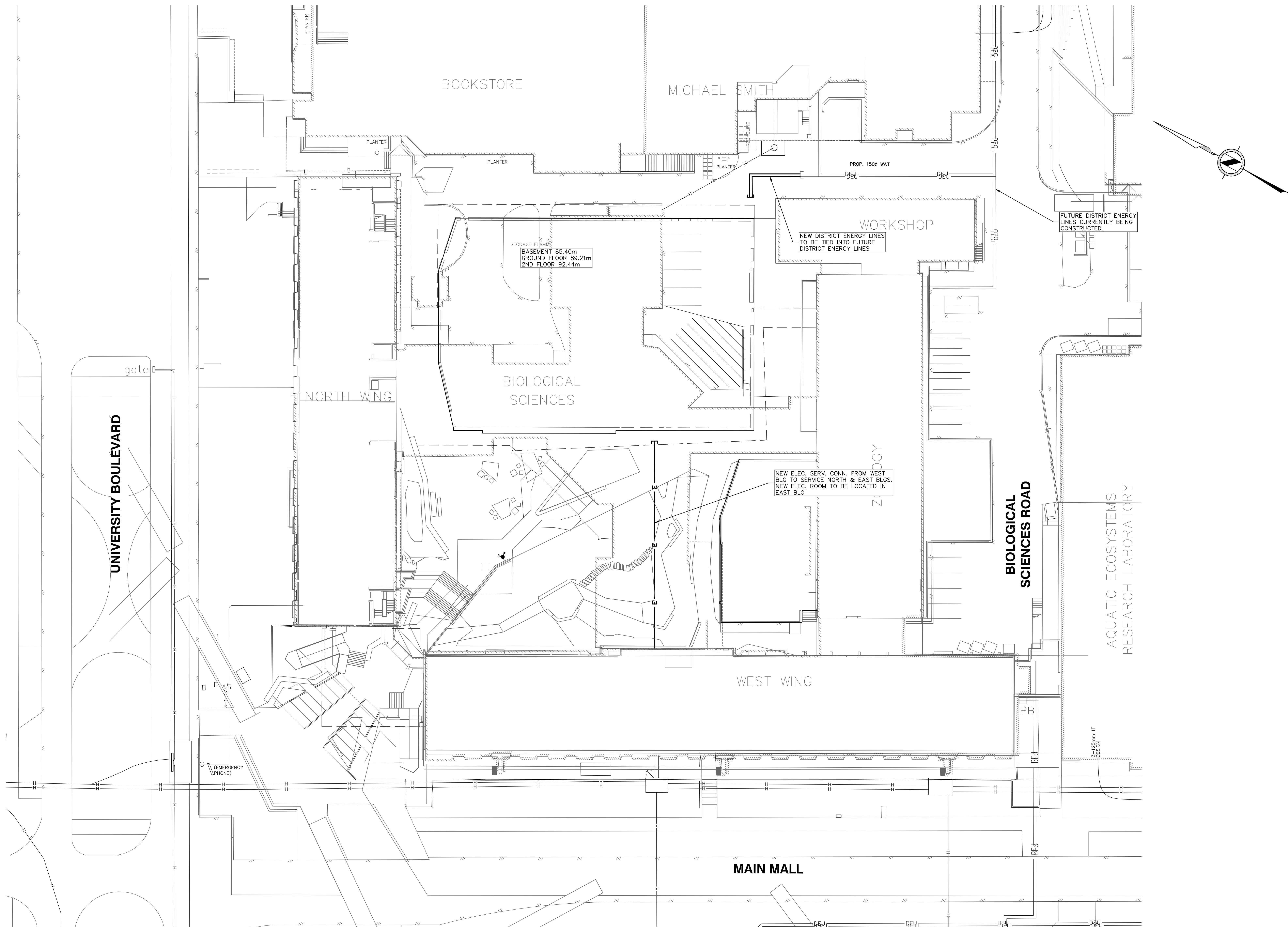


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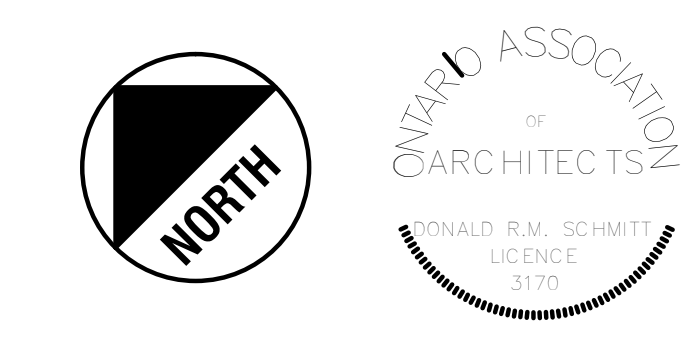
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6270 UNIVERSITY BOULEVARD, VANCOUVER, BC

POWER AND TELECOM

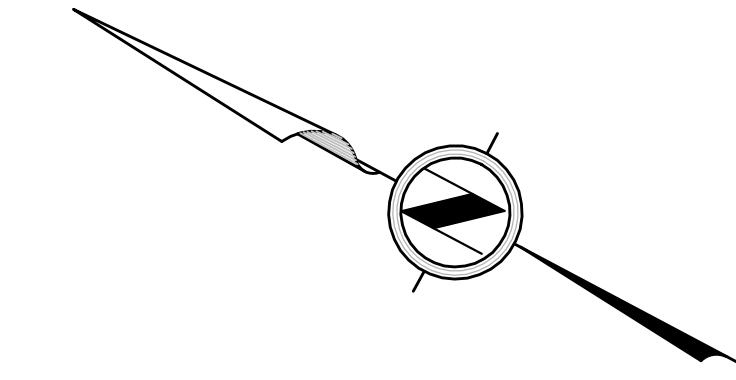
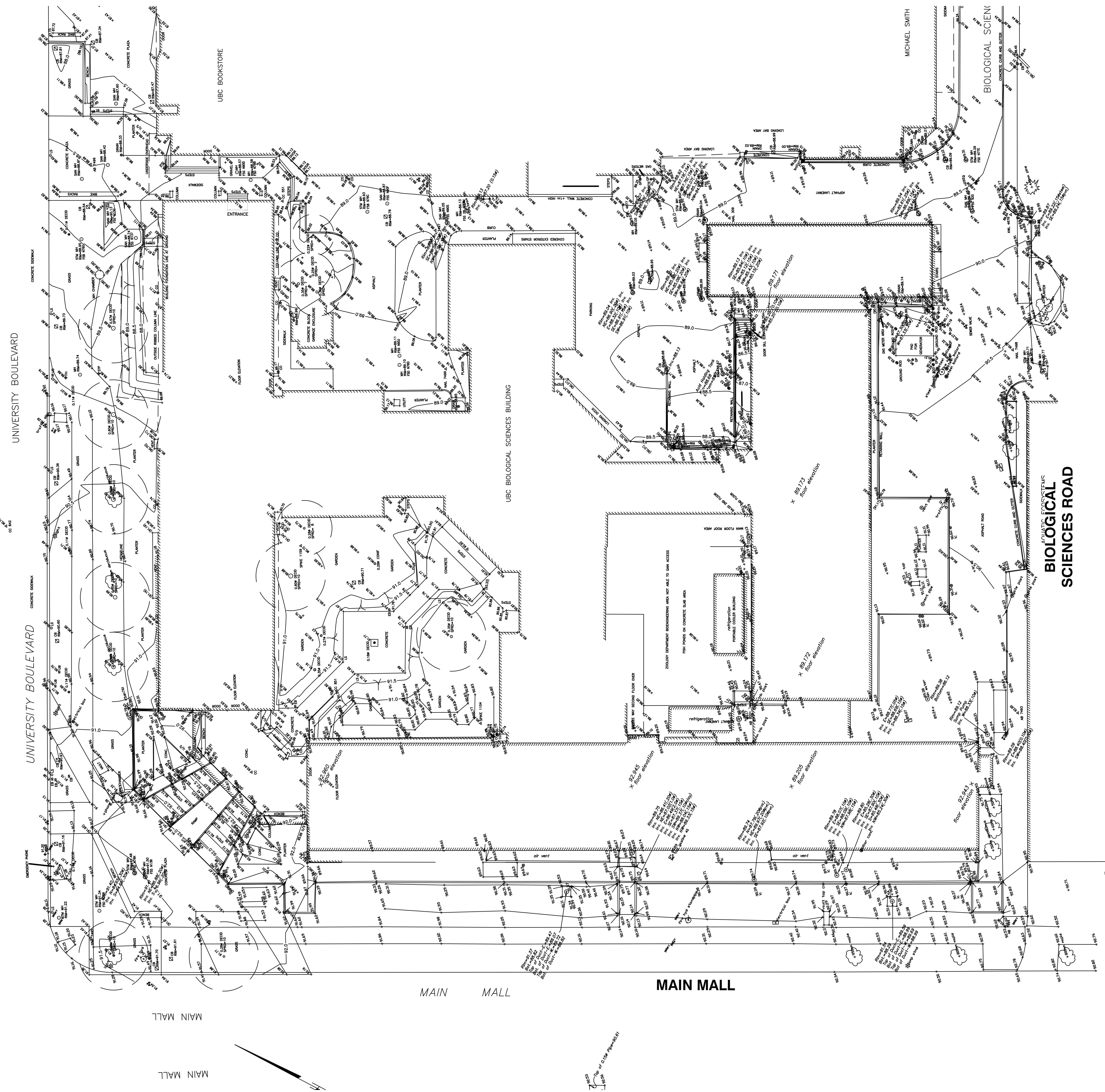
Scale: 1:250
 Project No: 14-038
 Date: October 15, 2014

C-006

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UNIVERSITY BOULEVARD



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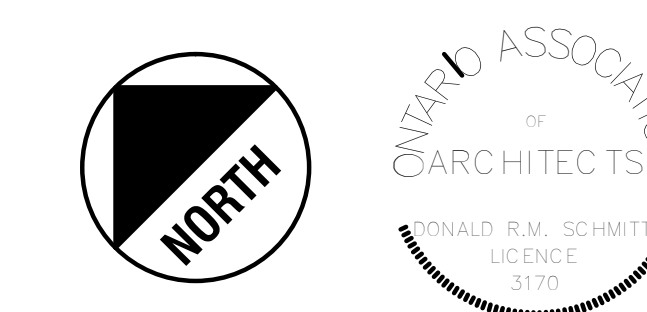


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UBC Undergrad Life Sciences Teaching Labs

6270 UNIVERSITY BOULEVARD, VANCOUVER, BC

SURVEY

Scale: 1:250
 Project No: 14-038
 Date: October 15, 2014

DETAILED SPECIFICATIONS

- 1.0 Extent of Work
The Contractor is for the supply and installation of asphalt and concrete roadways including curbs, sidewalks, construction of manholes, covers, extension and installation of storm sewer, sanitary sewer and fire water installation.

- 1.8.0 Situation Control
The Contractor shall comply with all regulatory authorities, Fish and Wildlife Branches of the Provincial Ministry of Environment, and Fish and Oceans Canada in the protection of fish and wildlife habitat during the construction of the works and shall be responsible for all costs in complying with these requirements.

- 1.20 Over Excavation
The Contractor is fully responsible for making his own allowance for any over excavation due to soil conditions and no extra payment for such work will be made. For water main, sanitary sewers, storm sewers, natural gas, and electrical and telecommunications ducts, the Contractor is responsible for making his own allowance for any over excavation of unsuitable material, large boulders and backfilling and no extra payment for such work will be made.

- 1.22 Traffic Management Plan
General Requirements
The Contractor shall cooperate with UBC Properties Trust to prepare a Traffic Management Plan for the scheduled works. The Traffic Management Plan consists of six (6) types of sub-plans:

- 1.3 Spacing Requirements
The Contractor shall be responsible for the supply, installation, maintenance, and removal of all temporary (construction) signing, materials and equipment shall not be stored within the Clear Zone of the traveled portion of any roadway.

- 1.4 Location of Storage of Materials and Equipment
Unless protected by traffic control devices and / or barrier, materials and equipment shall not be stored within the Clear Zone of the traveled portion of any roadway.

- 1.5 Permissible Delays
Permissible delays shall be approved by UBC Properties Trust and are categorized as follows:
a) Minor Delays - Less than two (2) minutes in duration for occasional interruption signal to construction activities.

- 1.6 Additional Jurisdictional Considerations
The Contractor shall comply with all Municipal by-laws and Provincial regulations etc., applicable, alternate routes.

CONTRACTOR MUST CHECK A LEGAL OBLIGATION ON THE JOB... NOT FOR CONSTRUCTION... LEGEND: INVERTS FROM: SEPT 17, 2009 SURVEY... UTILITY INFORMATION COMPILED USING 2008 UBC BASE MAP WITH MURPHY AND ASSOC. SURVEY FOR ELEVATIONS... DIAMOND SCHMIDT ARCHITECTS... HDR CEI Architecture Associates, Inc.

UNDERGROUND UTILITIES SERVICES SECTION 02610

1. UBC Utilities Jurisdiction
UBC Utilities is part of Land & Building Services at the University. It is responsible for the design, construction, maintenance, and overall stewardship for each of the following underground utilities services:

2. UBC Utilities Contact Information
Administration Office:
UBC Utilities
2440 West Mall
Vancouver, BC V6T 1Z2
Telephone: (604) 822-9445
Facsimile: (604) 822-9833

3. Designer Responsibility
UBC Utilities establishes the minimum acceptable standards for the supply and installation of the underground utility services to the buildings on the design drawings. It is the designer's responsibility to ensure that the standards stipulated herein are consistent with the project requirements and are reflected in the project specifications.

4. UBC Utilities Development Support Services
UBC Utilities provides support services for the development of underground utility services. These services include design support, permit processing, and construction oversight.

1. General
The project designer shall provide building load (first of all) and the steam distribution system (second of all) design and construction details in accordance with the UBC Technical Guidelines and the project specifications.

2. Design and Materials
The designer shall specify the materials and equipment to be used in the underground utility services. The materials shall be consistent with the UBC Technical Guidelines and the project specifications.

3. Development Permit Approval by UBC Utilities
The project designer shall submit the development permit application to UBC Utilities for review and approval. The application shall include all required information and drawings.

4. Field Inspections
The project designer shall coordinate with UBC Utilities for field inspections of the underground utility services. The inspections shall be conducted in accordance with the UBC Technical Guidelines and the project specifications.

5. Shutdowns
The project designer shall coordinate with UBC Utilities for shutdowns of the underground utility services. The shutdowns shall be conducted in accordance with the UBC Technical Guidelines and the project specifications.

6. Water Distribution Section 02600
The project designer shall provide building load (first of all) and the water distribution system (second of all) design and construction details in accordance with the UBC Technical Guidelines and the project specifications.

7. Water Distribution Standards & Policies
The latest revisions of the following standards shall apply to water distribution at UBC:
• UBC Policy Development Policy # 5 (www.policy.ubc.ca)
• B.C. Master Municipal Construction Documents (MMCD)
• Water Works Association (BOWMA)
• American Water Works Association
• CSA Standards (as applicable)

8. Metering
Water meters are required for all buildings as per the design requirements shown in Figure xx (Insert Water Meter Drawing standard).

9. Sanitary Sewer Standards
The project designer shall provide building load (first of all) and the sanitary sewer system (second of all) design and construction details in accordance with the UBC Technical Guidelines and the project specifications.

10. Stormwater Control Plan
The project designer shall provide building load (first of all) and the stormwater control plan (second of all) design and construction details in accordance with the UBC Technical Guidelines and the project specifications.

11. Sanitary Sewer Discharge Characterization
The project designer shall provide building load (first of all) and the sanitary sewer discharge characterization (second of all) design and construction details in accordance with the UBC Technical Guidelines and the project specifications.

12. Sanitary Sewer Design
The project designer shall provide building load (first of all) and the sanitary sewer design (second of all) design and construction details in accordance with the UBC Technical Guidelines and the project specifications.

13. Sanitary Sewer Discharge Characterization
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14. Sanitary Sewer Design
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15. Sanitary Sewer Discharge Characterization
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16. Sanitary Sewer Design
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17. Stormwater Control Plan
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18. Sanitary Sewer Discharge Characterization
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19. Sanitary Sewer Design
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26. Sanitary Sewer Discharge Characterization
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27. Stormwater Control Plan
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28. Sanitary Sewer Discharge Characterization
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46. Sanitary Sewer Discharge Characterization
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UBC POLICY DEVELOPMENT POLICY # 5 (WWW.POLICY.UBC.CA)
B.C. MASTER MUNICIPAL CONSTRUCTION DOCUMENTS (MMCD)
WATER WORKS ASSOCIATION (BOWMA)
AMERICAN WATER WORKS ASSOCIATION
CSA STANDARDS (AS APPLICABLE)

NOT FOR CONSTRUCTION

Table with 3 columns: No., Date, Description. Includes revision history for the document.

LEGEND:

INVERTS FROM: SEPT 17, 2009 SURVEY

INVERTS FROM: AS-CONSTRUCTED INFO

PROP. STORM SEWER

PROP. STORM MANHOLE

PROP. CATCH BASIN

PROP. LAWN BASIN

UTILITY INFORMATION COMPILED USING 2008 UBC BASE MAP WITH MURRAY AND ASSOC. SURVEY FOR ELEVATIONS. SOME DISCREPANCIES APPEAR TO EXIST BETWEEN DATA WHICH WERE UNABLE TO BE VERIFIED IN THE FIELD.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE MANNER AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

CONTACT UBC'S UTILITIES 72 HOURS PRIOR TO START OF CONSTRUCTION (604-822-9570).

ALL CONSTRUCTION TO MMCD (2009) AND U.B.C. TECHNICAL GUIDELINES

1. Steam Distribution Design and Materials
Steam piping:
• Design pressure shall be 1,030 kPa (150 psig), A106 Grade B seamless.
• Schedule 40 is required for pipe sizes over 2", and Schedule 80 is required for pipe sizes 2" and smaller.

2. Condensate piping:
• Design pressure shall be 1,030 kPa (150 psig), A106 Grade B seamless.
• Schedule 80 is required for all pipe sizes in consideration of corrosion.

3. Design and Materials
1. Design piping pressure: 415 kPa (60 psig).

2. Connections shall be to the highest available pressure.

3. New underground piping shall be SDR11 Series 125 Polyethylene, manufactured to CAN 3-B137/4M86.

4. New aboveground piping up to but not including the top of electrical ductbank cannot be installed at piping up to 2" size shall be socket welded, manufactured to ASTM A182.

5. Permits by B.C. Gas Safety Branch and inspections/witnesses shall be required for all gas piping, including venting and purging and the gas responsibility of the project.

6. Execution
1. Minimum soil cover shall be 600 mm.

7. Warning tape at 300 mm below grade level shall be provided.

8. Minimum 750 mm horizontal clearance is required from all other services.

9. When crossing electrical ductbank, run pipe above electrical ductbank with minimum vertical clearance 150 mm from the top of electrical ductbank capping up to 100 mm depth.

10. Execution
1. Minimum soil cover shall be 600 mm.

11. Hot tapping may be done only with a written permission from the Manager, Mechanical Utilities, UBC Utilities. If hot tapping is permitted, Pacific Flow Control or equivalent shall be used.

12. Execution
1. Minimum soil cover 700 mm. 2. Minimum 750 mm horizontal clearance required from all other services, except for condensate.

13. Cross electrical duct-bank above and leave vertical space for 14 hours above the ductbank. Minimum 200 mm vertical clearance from the top of electrical duct-bank and minimum 50 mm extruded polystyrene insulation overlapping minimum 250 mm on each side.

14. Shutdowns must be requested in writing adhering to UBC's campus-wide standard shutdown procedures as per Division 2, Section 02610. Operating valves on the gas distribution system shall only be performed by UBC's drawing room.

END OF SECTION 02695

STEAM AND CONDENSATE DISTRIBUTION SECTION 02695

GENERAL NOTES

620 UNIVERSITY BOULEVARD, VANCOUVER, BC

NOTICE TO CONTRACTOR

IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SURVEYOR TO VERIFY THAT ALL LEGAL SURVEY INFORMATION SHOWN ON THE ENGINEERING DRAWINGS IS ACCURATE AND THAT THOSE ON THE REGISTERED LEGAL SURVEY PLAN SHOULD THERE BE ANY DISCREPANCIES, THEN IMMEDIATELY NOTIFY THE ENGINEER OF RECORD

ALL CONSTRUCTION TO MMCD (2009) AND U.B.C. TECHNICAL GUIDELINES

C-009



NOT FOR CONSTRUCTION

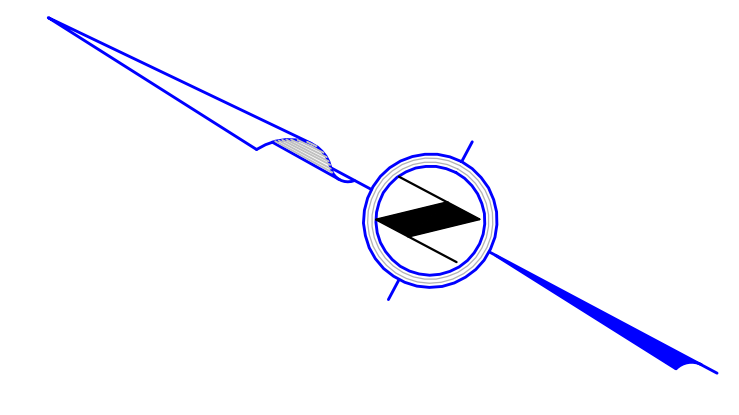
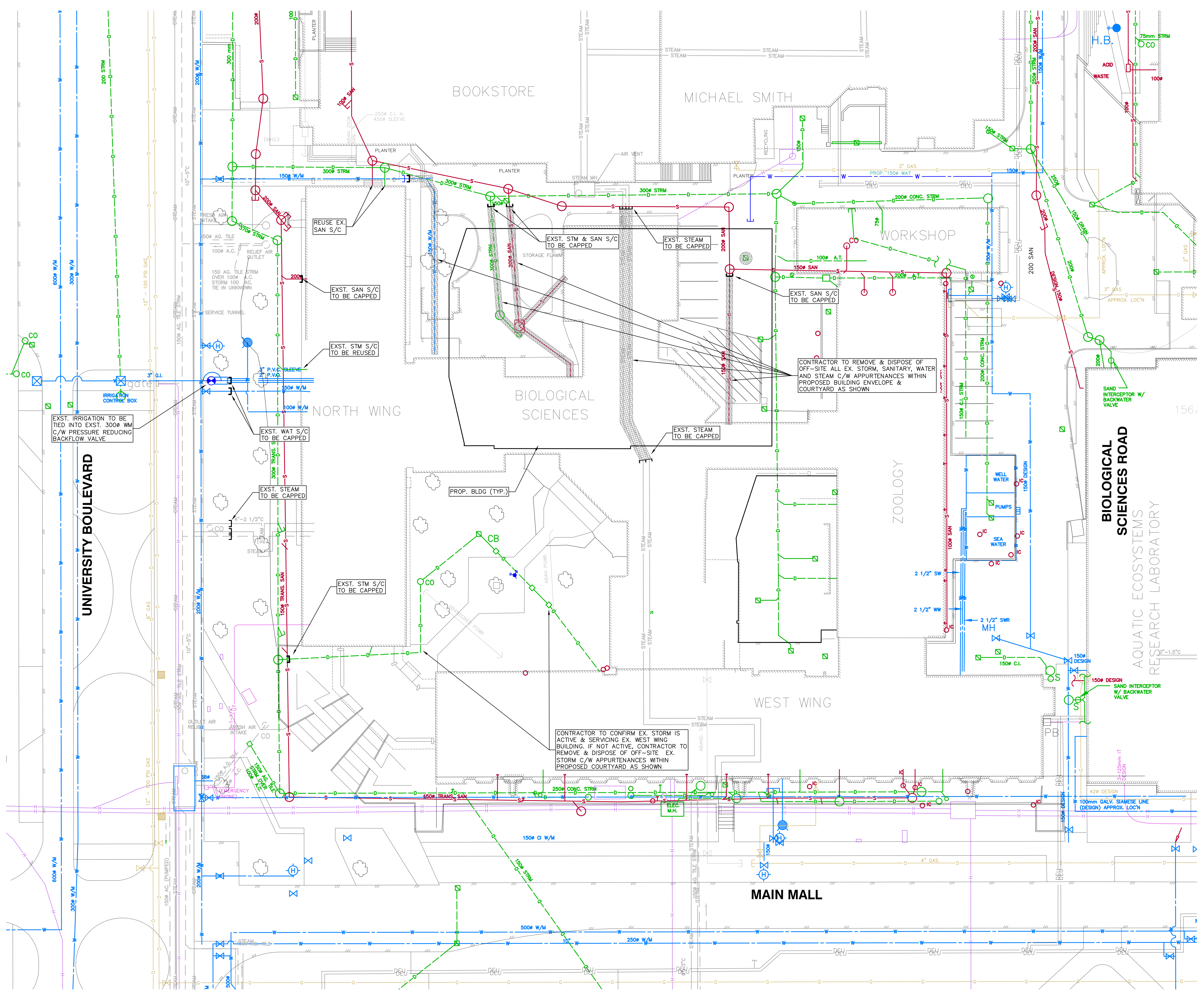
ISSUED

No.	Date	Description
1	2015-04-17	Issued for Design Development
2	2015-12-04	Issued for Development Permit
3	2016-04-29	Re-issued for Development Permit

UTILITY INFORMATION COMPILED USING 2008 UBC BASE MAP WITH MURRAY AND ASSOC. SURVEY FOR ELEVATIONS. SOME DISCREPANCIES APPEAR TO EXIST BETWEEN DATA WHICH WERE UNABLE TO BE VERIFIED IN THE FIELD.
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CONTACT U.B.C. UTILITIES 72 HOURS PRIOR TO START OF CONSTRUCTION
 604-822-9570

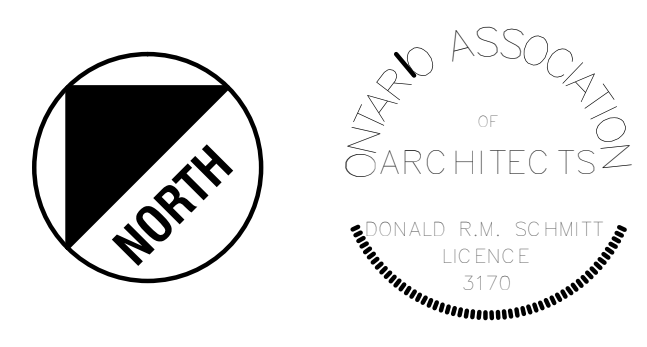
ALL CONSTRUCTION TO MMCD (2009) AND U.B.C. TECHNICAL GUIDELINES



NOTICE TO CONTRACTOR
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ALL CONSTRUCTION TO MMCD (2009) AND U.B.C. TECHNICAL GUIDELINES

Diamond Schmitt Architects
 384 Adelaide Street West, Suite 200, Toronto, Canada, M5V 1S8
 Tel: 416 862 2800 Fax: 416 862 2288 www.diamondschmitt.com
 In Collaboration With:
HDR CEI Architecture Associates, Inc.
 550 - 1500 West Street, Vancouver, British Columbia, Canada V6E 2Z6
 Tel: 604 687 1888 Fax: 604 687 2288 www.hdrcei.com



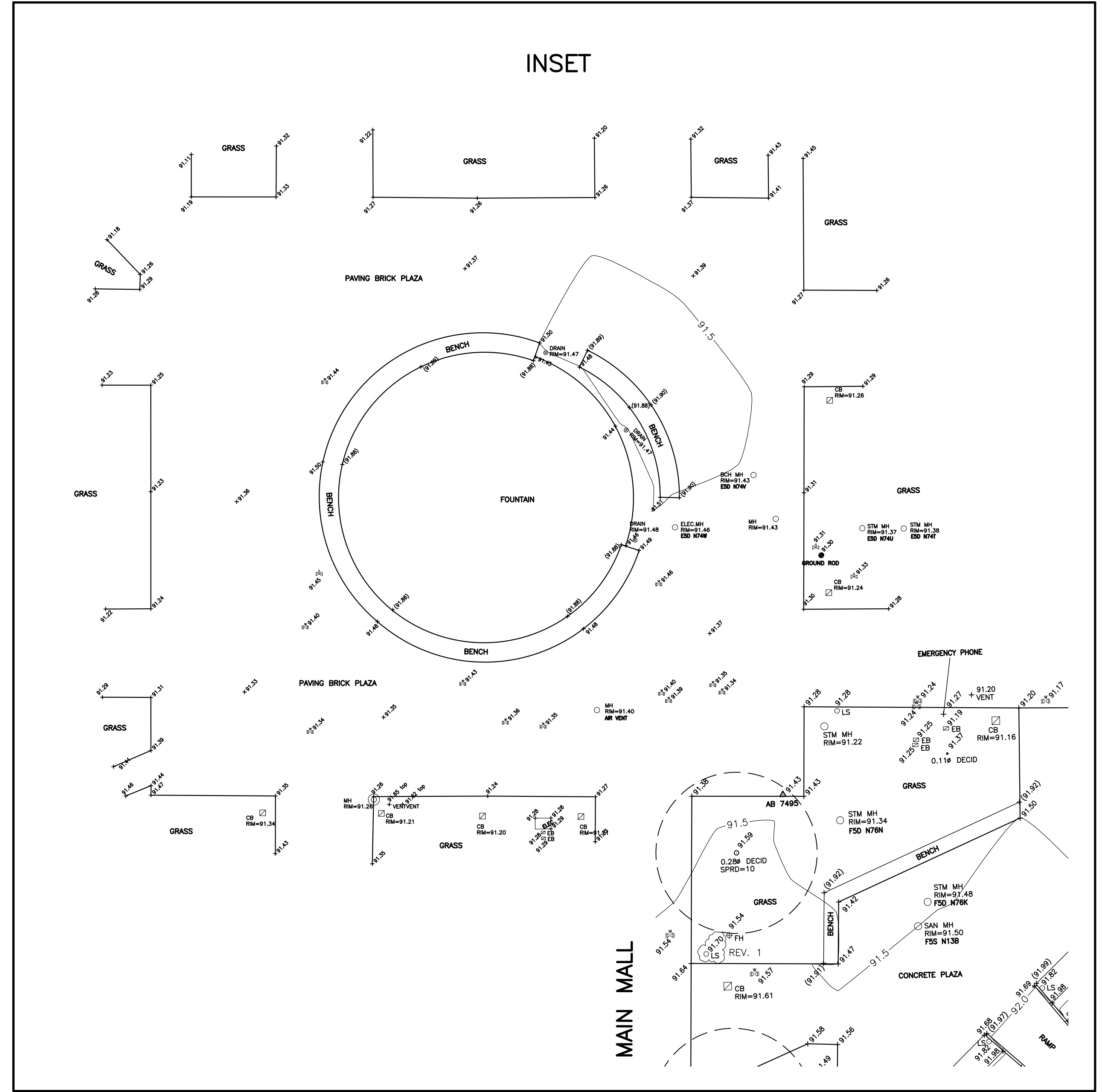
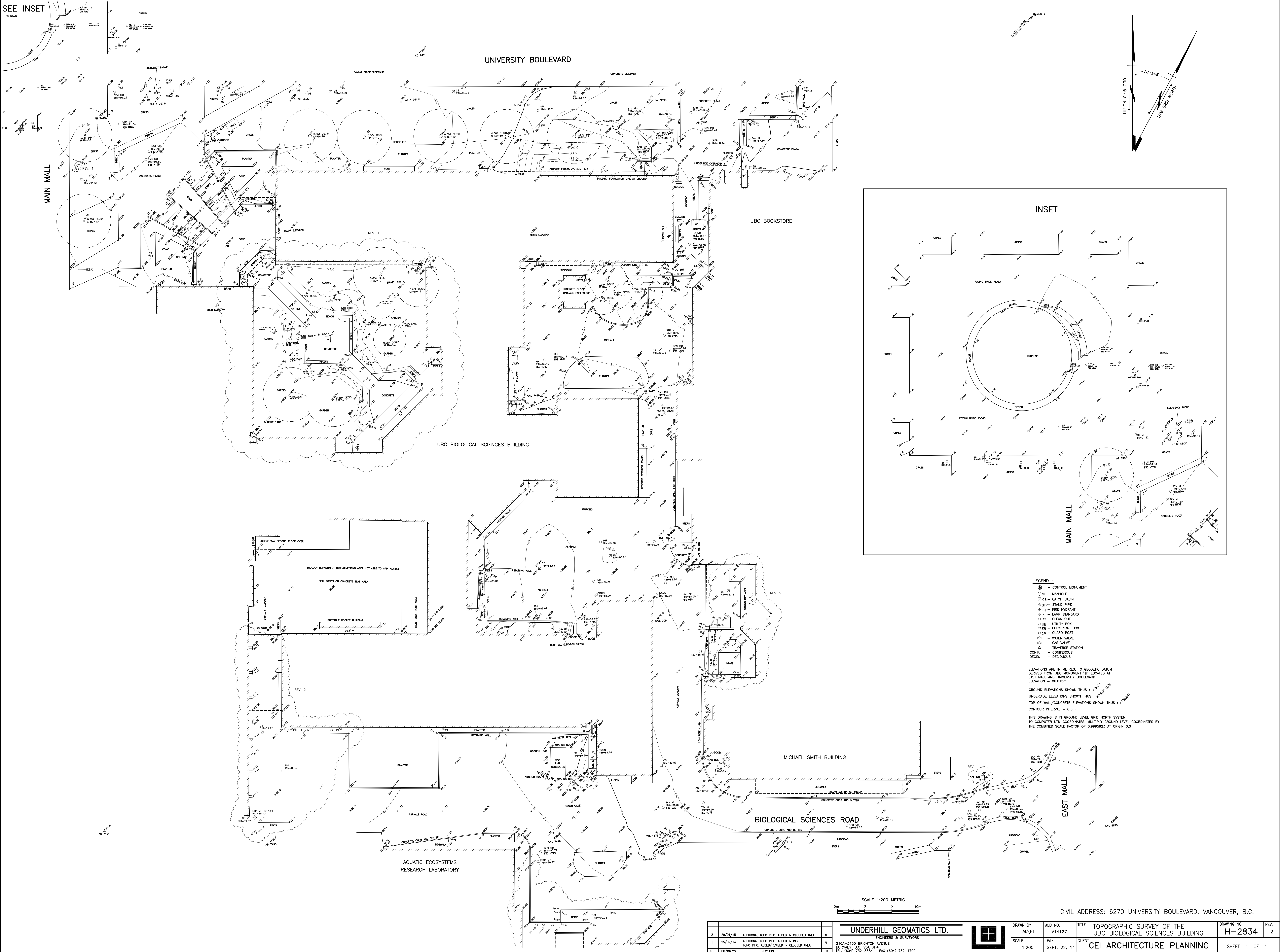
UBC Undergrad Life Sciences Teaching Labs

6270 UNIVERSITY BOULEVARD, VANCOUVER, BC

DEMOLITION PLAN

Scale: 1:250
 Project No: 14-438
 Date: October 15, 2014

C-010



- LEGEND**
- ⊙ - CONTROL MONUMENT
 - - MANHOLE
 - ⊠ - CATCH BASIN
 - ⊞ - STAND PIPE
 - ⊕ - FIRE HYDRANT
 - ⊡ - LAMP STANDARD
 - ⊙ - CLEAN OUT
 - ⊞ - UTILITY BOX
 - ⊞ - ELECTRICAL BOX
 - ⊞ - GUARD POST
 - ⊞ - WATER VALVE
 - ⊞ - GAS VALVE
 - ⊞ - TRAVERSE STATION
 - CONF. - CONFERIOUS
 - DECD. - DECIDUOUS

ELEVATIONS ARE IN METRES, TO GEODETIC DATUM DERIVED FROM UBC MONUMENT #1 LOCATED AT EAST MALL AND UNIVERSITY BOULEVARD ELEVATION = 86.015m

GROUND ELEVATIONS SHOWN THIS : +88.71

UNDERSE ELEVATIONS SHOWN THIS : +88.80 U/S

TOP OF WALL/CONCRETE ELEVATIONS SHOWN THIS : +88.80

CONTOUR INTERVAL = 0.5m

THIS DRAWING IS IN GROUND LEVEL GRID NORTH SYSTEM TO COMPUTER UTM COORDINATES, MULTIPLY GROUND LEVEL COORDINATES BY THE COMBINED SCALE FACTOR OF 0.9995923 AT ORIGIN 0.0

SCALE 1:200 METRIC

0 5 10m

CIVIL ADDRESS: 6270 UNIVERSITY BOULEVARD, VANCOUVER, B.C.

2		29/01/15	ADDITIONAL TOPO INFO. ADDED IN CLOUDED AREA	AL	UNDERHILL GEOMATICS LTD.		DRAWN BY AL/FT		JOB NO. V14127	TITLE TOPOGRAPHIC SURVEY OF THE UBC BIOLOGICAL SCIENCES BUILDING	DRAWING NO. H-2834	REV. 2
1		25/06/14	ADDITIONAL TOPO INFO. ADDED IN INSET TOPO INFO. ADDED/PREVISED IN CLOUDED AREA	AL	210A-3430 BRIGHTON AVENUE SURREY, B.C. V3A 3H4 TEL. (604) 732-3384 FAX (604) 732-4709		SCALE 1:200		DATE SEPT. 22, 14	CLIENT CEI ARCHITECTURE PLANNING	SHEET 1 OF 1	
NO.		00/AM/YY	REVISION	BY								