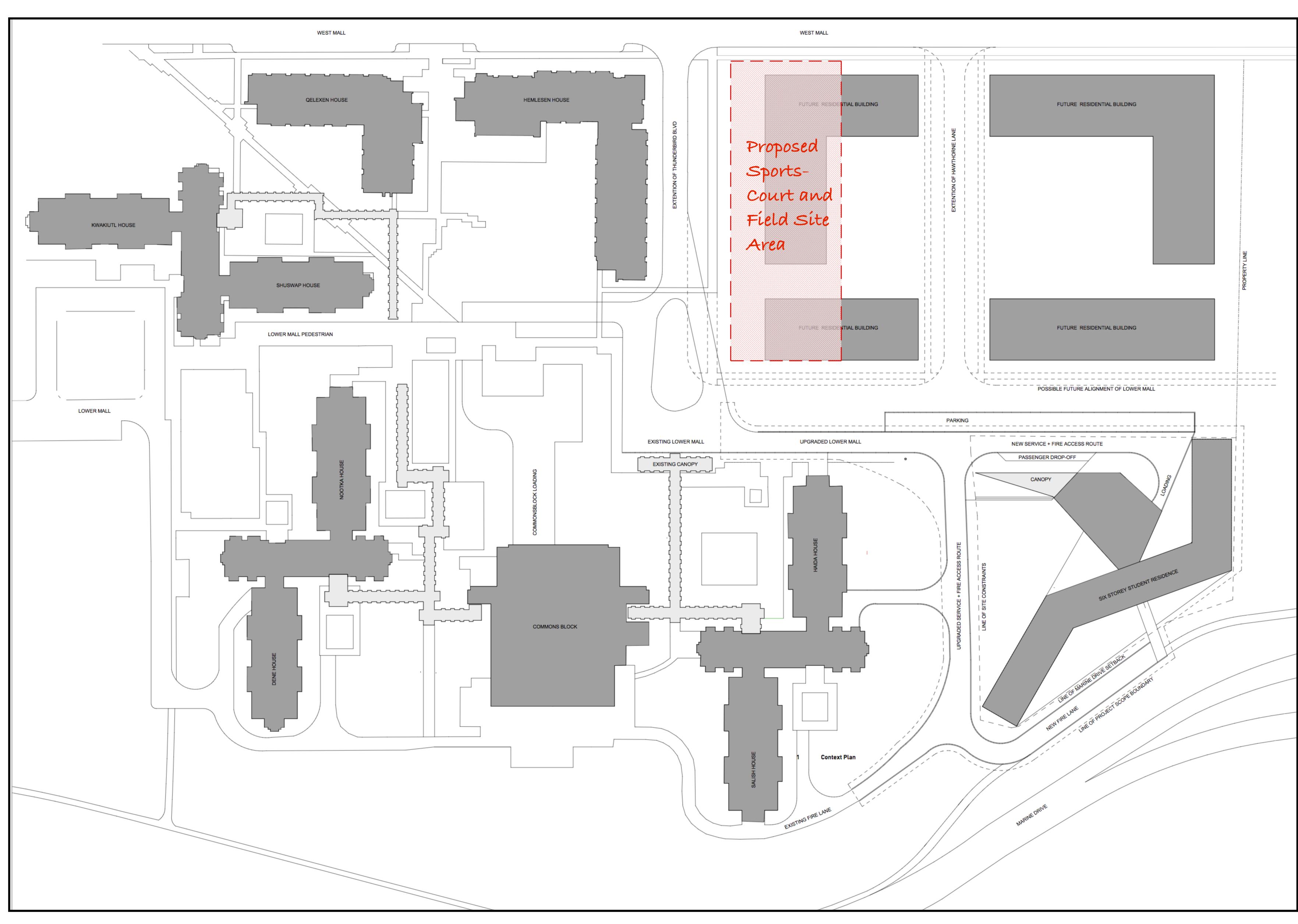




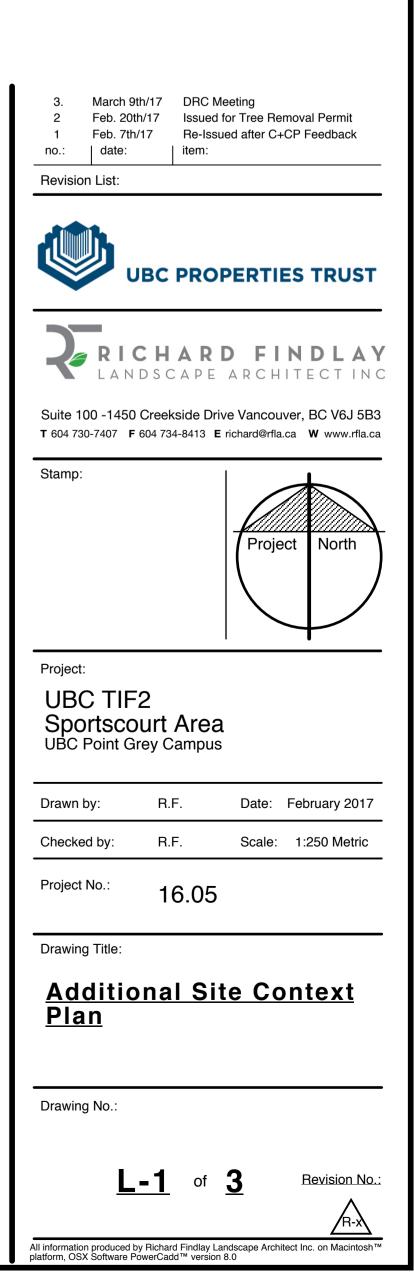
What the Totem Design Guidelines Inform

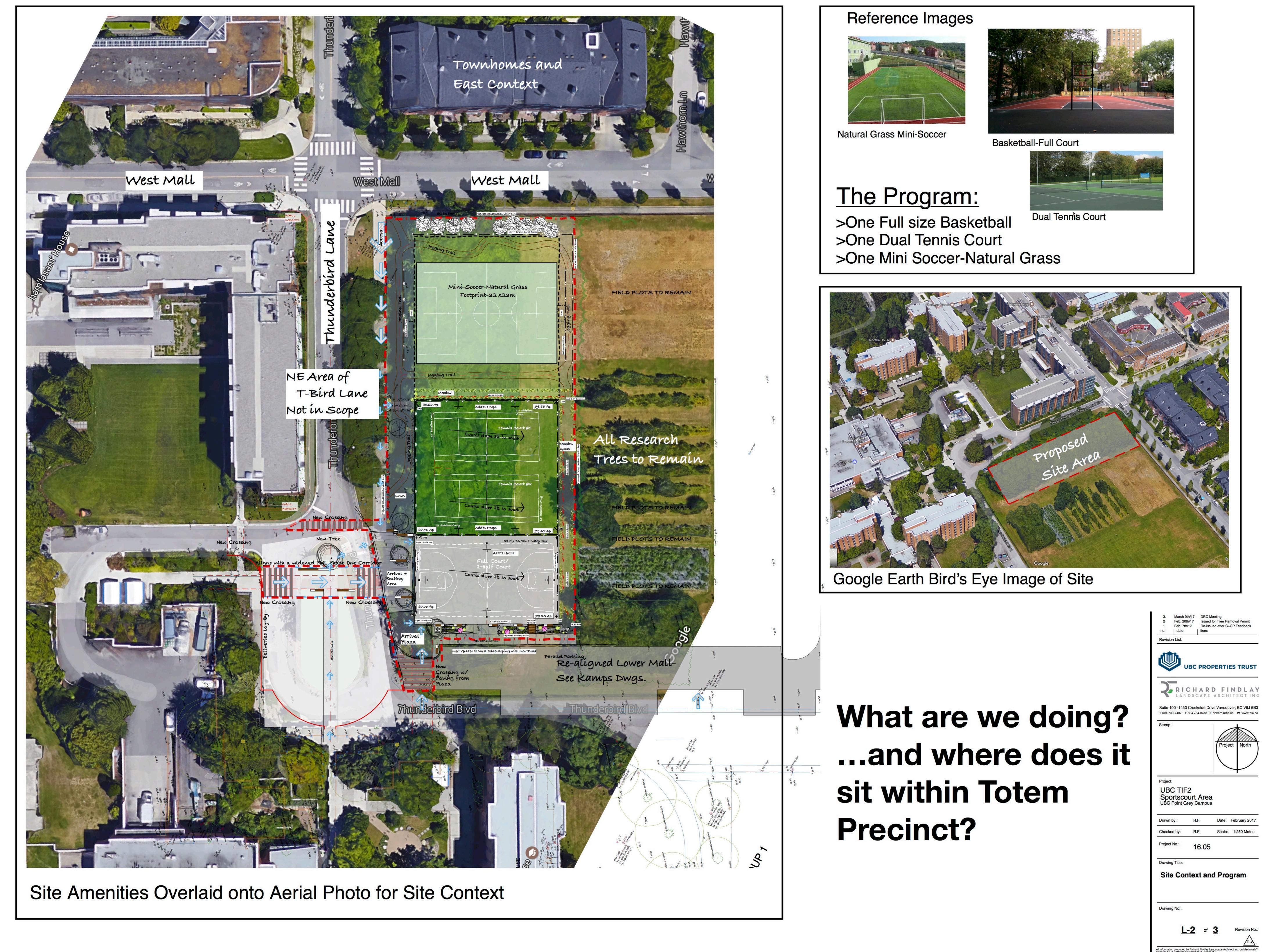
UBC TIF2 Sportscourt

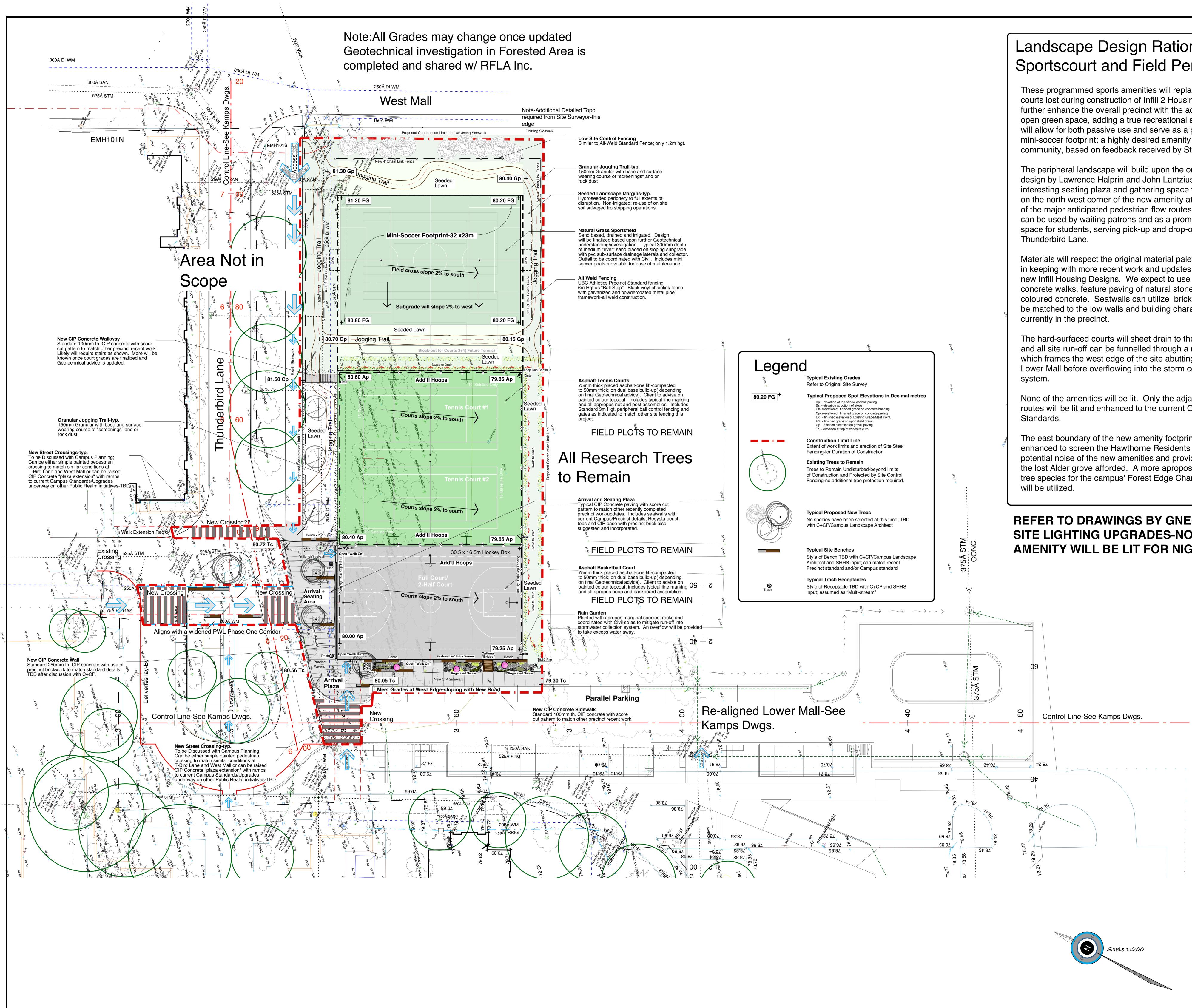
February, 2017



Excerpt of DP15032 Totem Infill Housing by "Public" for Additional Site Context







Landscape Design Rationale-Sportscourt and Field Periphery:

These programmed sports amenities will replace the original courts lost during construction of Infill 2 Housing and will further enhance the overall precinct with the addition of more open green space, adding a true recreational sports field. This will allow for both passive use and serve as a programmed mini-soccer footprint; a highly desired amenity to the student community, based on feedback received by Student Housing.

The peripheral landscape will build upon the original precinct design by Lawrence Halprin and John Lantzius in 1964. An interesting seating plaza and gathering space will be created on the north west corner of the new amenity at the confluence of the major anticipated pedestrian flow routes. This space can be used by waiting patrons and as a prominent meeting space for students, serving pick-up and drop-off activity on

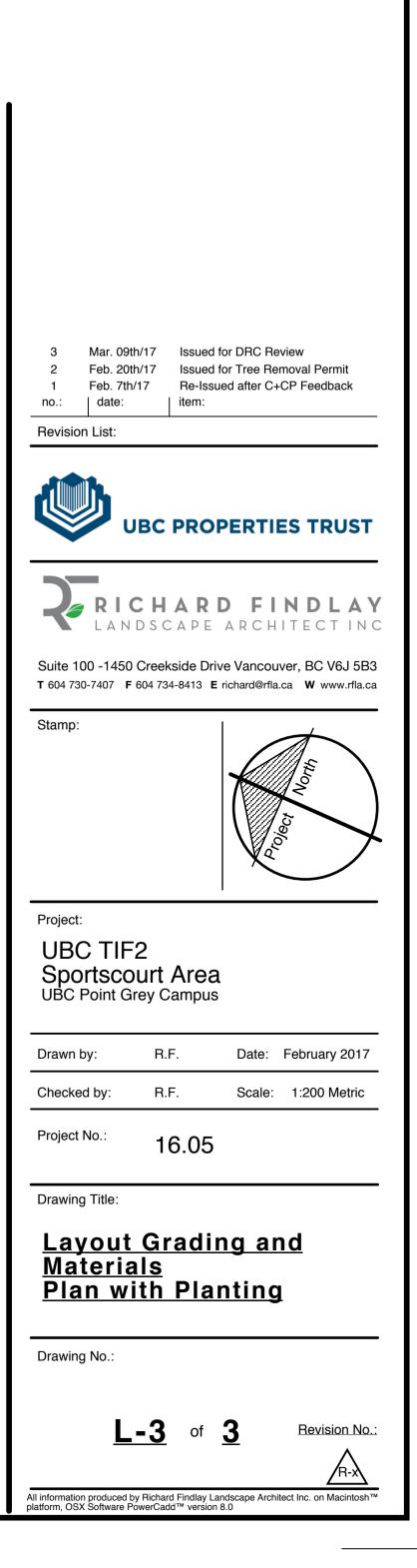
Materials will respect the original material palette as well as be in keeping with more recent work and updates of some of the new Infill Housing Designs. We expect to use cast in place concrete walks, feature paving of natural stone, unit pavers or coloured concrete. Seatwalls can utilize brick work that will be matched to the low walls and building character found

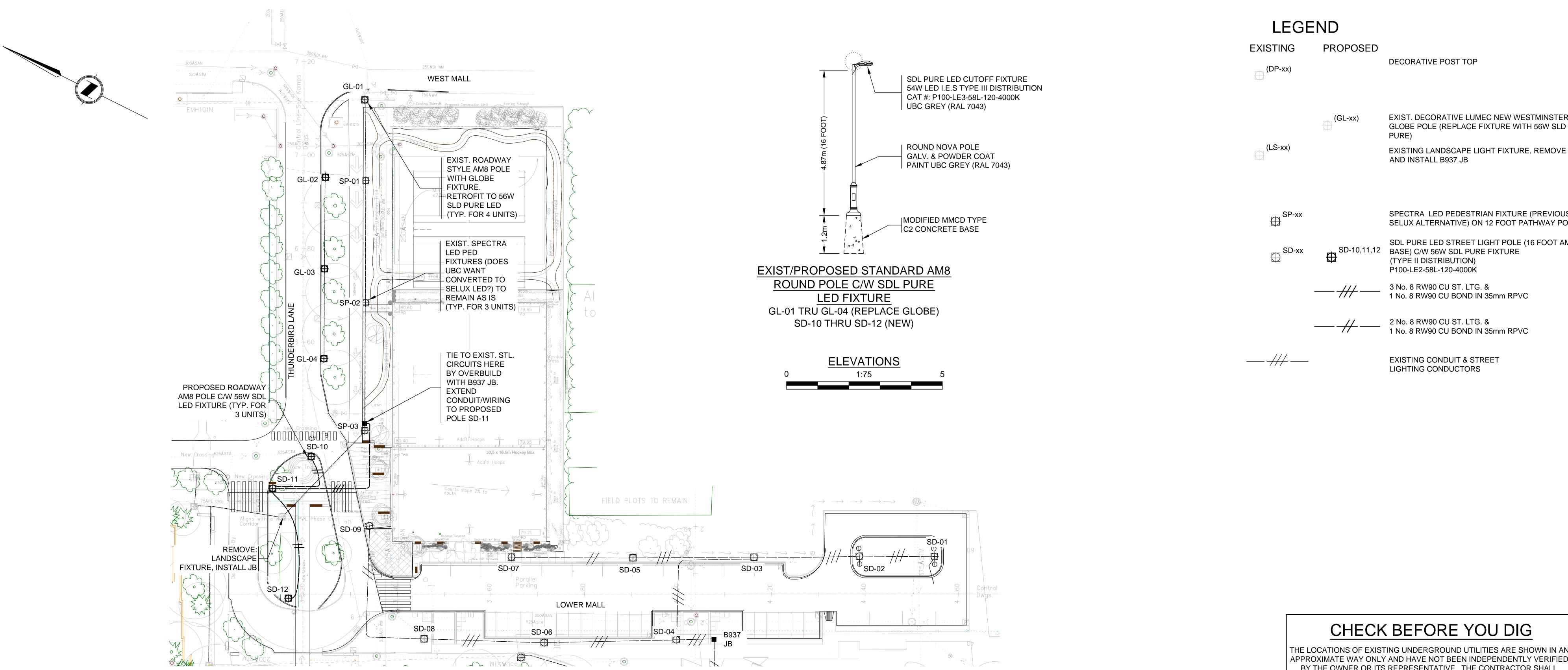
The hard-surfaced courts will sheet drain to the south edge, and all site run-off can be funnelled through a rain garden which frames the west edge of the site abutting the realigned Lower Mall before overflowing into the storm collection

None of the amenities will be lit. Only the adjacent pedestrian routes will be lit and enhanced to the current Campus Design

The east boundary of the new amenity footprint will be enhanced to screen the Hawthorne Residents from the potential noise of the new amenities and provide buffering that the lost Alder grove afforded. A more apropos selection of tree species for the campus' Forest Edge Character District

REFER TO DRAWINGS BY GNEC FOR ALL SITE LIGHTING UPGRADES-NO SPORTS AMENITY WILL BE LIT FOR NIGHT USE.





SCHEE	TABLE-01 DULE OF LIGHTING INSTALLATIONS/RE
POLE TAG	DESCRIPTION
GL-01 GL-02 GL-03 GL-04	EXISTING WESTMINSTER GLOBE MH LIGHT. REPLACE F PURE LED RETROFIT FIXTURE/TENON (SEE ELEVATION)
SP-01 SP-02 SP-03	EXISTING SPECTRA VERSION OF SELUX FIXTURE (CURR TO REMAIN AS IS, QUESTION: DOES UBC WANT THEM CI STYLE OF LED PED FIXTURE?)
SD-01 SD-02 SD-03 SD-04 SD-05 SD-06 SD-07 SD-08 SD-09 SD-10 SD-11 SD-12	SD-01 THROUGH SD-09 FROM TOTEM IN-FILL PROJEC THESE ARE SDL PURE FIXTURE ON ROADWAY AM8 S INSTALL NEW SDL PURE FIXTURE POLE AND BASE INSTALL NEW SDL PURE FIXTURE POLE AND BASE INSTALL NEW SDL PURE FIXTURE POLE AND BASE

MOVALS	

FIXTURE WITH SDL

RENTLY PROPOSED CHANGED TO SELUX

ECT (2016) B STYLE PÓLE

LIGHTING DESIGN CRITERIA							
PER: (ANSI/IES RP-8-14 & UBC PART 3 DESIGN GUIDELINES)							
ROADWAY (NAME)			NEW X-WALKS ASSOCIATED WITH THUNDERBIRD L ANE				
ROAD CLASSIFICATION			SHARED PEDESTRIAN & SERVICE LANE				
HORIZ. ILLUM RECOMMENDED/DELIVERED VERT. ILLUM RECOMMENDED/DELIVERED			18 LUX in X-WALK - 20 LUX MET 20 LUX in X-WALK - > 12 LUX				
UNIFORMITY RECOMMENDED/DELIVERED			6.0:1 / 6.0:1				
LIGHT LOSS FACTOR			.84				
SPACING (OPPOSITE)			UPSTREAM OF X-WALKS				
EQUIPMENT:							
FIXTURE TYPE: LED WATTAGE: 54W FIXT			. HEIGHT:	4.8m	DIST TYPE: III		

IES FILE: P100-LE3-58L-120-4000K.IES

|--|

APPROXIMATE WAY ONLY 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 OCCUR DUE TO THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

STREET LIGHTING NOTES:

- 1. UBC ORNAMENTAL STREET LIGHT STANDARDS AND SPECIFICATIONS TO APPLY.
- 2. CONTRACTOR TO ARRANGE FOR LOCKOUT OF POWER WITH UBC UTILITIES PRIOR TIE INTO EXIST. STREET LIGHT CIRCUIT FOR EXTENSION OF STREET LIGHT SYSTEM POWER CONDUCTORS.
- 3. ALL LUMINARIES ARE LED TYPE.
- 3. CONTRACTOR TO NUMBER POLES AS PER UBC INSTRUCTIONS.
- 4. ALL POLES ARE TO BE PAINTED WITH AN APPLICATION OF A THERMOSETTING POLYESTER POWDER COAT PAINT, APPLIED BY MEANS OF AN ELECTROSTATIC PROCESS, COLOUR TO BE UBC GREY (RAL 7043).
- 5. CONTRACTOR SHALL OBTAIN ALL PERMITS & LICENSES PRIOR TO CONSTRUCTION.

- CONSTRUCTION.
- BALLS.

LIGHTING DESIGN CRITERIA PER: (ANSI/IES RP-8-14 & UBC PART 3 DESIGN GUIDELINES)						
ROADWAY (NAME)			THUNDER	RBIRD L	ANE	
ROAD CLASSIFICATION			SHARED PEDESTRIAN & SERVICE LANE			
ILLUMINANCE RECOMMENDED/DELIVERED			4 LUX / 11 LUX			
UNIFORMITY RECOMMENDED/DELIVERED			6.0:1 / 6.0:1			
LIGHT LOSS FACTOR			.84			
SPACING (SINGLE SIDED)			(MATCH E	EXISTIN	G -REPLACEM	1ENT)
EQUIPMENT:						
FIXTURE TYPE: LED WATTAGE: 54W FIXT			. HEIGHT	4.8m	DIST TYPE:	III
IES FILE: P100-LE3-58L-120-4000K.IES						

CONFIRM LAYOUT WITH ENGINEER PRIOR TO BASE INSTALL

PLEASE CONTACT GREAT NORTHERN ENGINEERING AT 1-855-463-2266 EXT. 102 3 WORKING DAYS PRIOR TO PLANNED BASE INSTALLATION TO ARRANGE FOR A CHECK OF THE LAYOUT AGAINST KNOWN UTILITIES FOR THE ENGINEER TO RESOLVE ANY CONFLICTS

DECORATIVE POST TOP

EXIST. DECORATIVE LUMEC NEW WESTMINSTER GLOBE POLE (REPLACE FIXTURE WITH 56W SLD PURE)

EXISTING LANDSCAPE LIGHT FIXTURE, REMOVE AND INSTALL B937 JB



202 - 8525 Baxter Place Burnaby, BC V5A 4V7 Phone: 1-855-463-2266 www.gnec.ca

SPECTRA LED PEDESTRIAN FIXTURE (PREVIOUSLY APROVED SELUX ALTERNATIVE) ON 12 FOOT PATHWAY POLE

- SDL PURE LED STREET LIGHT POLE (16 FOOT AM8 STYLE ON MOD. C2 SD-10,11,12 BASE) C/W 56W SDL PURE FIXTURE (TYPE II DISTRIBUTION) P100-LE2-58L-120-4000K
 - 3 No. 8 RW90 CU ST. LTG. & 1 No. 8 RW90 CU BOND IN 35mm RPVC
 - 2 No. 8 RW90 CU ST. LTG. & 1 No. 8 RW90 CU BOND IN 35mm RPVC

EXISTING CONDUIT & STREET LIGHTING CONDUCTORS



UNIVERSITY OF **BRITISH COLUMBIA**

Project:

UBC TIF2 Sportscourt Area UBC Point Grey Campus

UBC PROPERTIES TRUST

Drawing Street Light Plan

2017/03/07 date: AR drawn by: CC checked by: 17BC-0033 project #:

REVISIONS	
issue:	date:
DRC PACKAGE	2017/03/07

6. CONTRACTOR SHALL SUBMIT DRAWINGS TO INSPECTION AUTHORITIES, OBTAIN ELECTRIC PERMITS AND INSPECTIONS, MAKE ALL NECESSARY ARRANGEMENTS WITH UBC UTILITIES FOR SERVICE CONNECTIONS AND PAY ASSOCIATED FEES.

7. CONTRACTOR SHALL OBTAIN BASE TEMPLATES FROM THE POLE MANUFACTURER FOR ANCHOR BOLT INSTALLATION.

8. PROVE LOCATIONS OF ALL UTILITIES AND SERVICES BEFORE STARTING

9. CONDUIT TO BE INSTALLED 1m (min) BELOW GRADE TO AVOID TREE ROOT

sheet:

STL-01



P (604) 439 0922 F (604) 439 9189 www.geopacific.ca #215-1200 West 73rd Ave. Vancouver, B.C. Canada V6P 6G5

June 10, 2016 File: 13966

UBC Properties Trust 200 – 3313 Shrum Lane Vancouver, BC V6S 0C8

Attention: Cecile Ouillet

Re: Geotechnical Investigation Report: Proposed Outdoor Tennis & Basketball Courts Totem Park Infill Student Residency, Lower Mall & Thunderbird Boulevard, UBC

1.0 INTRODUCTION

It is intended to construct two new outdoor tennis courts and a basketball court as part of the Totem Park Infill project. We have referenced the preliminary concept plan drawings prepared by Richard Findlay Landscape Architect Inc. dated March 2016, in preparation of this report.

GeoPacific carried out an investigation of the soil and groundwater conditions within the area of the proposed improvements. This report presents the findings of our investigation and makes geotechnical recommendations for design and construction.

2.0 SITE DESCRIPTION AND INVESTIGATION

The proposed development is currently undeveloped and covered with vegetation and large trees. The site is rectangular in shape and essentially flat. A small strip along the west side of the proposed courts was cleared to allow us to carry our investigation. Existing site grade is estimated to be at elevation 80.3 m.

GeoPacific conducted a geotechnical investigation for the project on May 25, 2016. Two test pits were advanced to depths of up to 1 m below existing site grades. The area available for investigation was limited due to the presence of the vegetation. The soil conditions were logged by a technologist from our office and backfilled. The test pit locations are shown on our Drawing No. 13966-1, included with this report.

3.0 SUBSURFACE CONDITIONS

3.1 Soil Conditions

The general geology of the region is described on the Geological Survey of Canada map 1484A as Vachon glacial drift overlying Quadra fluvial deposits. The glacial drift is described as lodgement and minor flow till with lenses and interbeds of substratified glaciofluvial sand and gravel including lenses and interbeds of glaciolacusterine stony silt. The Quadra deposits are described as channel fill and floodplain deposits; crossbedded sand with minor silt and gravel lenses.

A general description of the soils encountered at our test pit locations is provided below.

TOPSOIL

Sandy Topsoil of 0.5 and 0.8 m thick was encountered at the two test pits.

SAND to SILTY SAND (Glacial Till)

Glacial till underlies the topsoil. The glacial till consists of sand with trace to some silt and trace to some fine gravel and is dense.

The detailed test pit logs are included in Appendix A.

3.2 Groundwater Conditions

The groundwater table was not encountered during our investigation and is expected to be well below the proposed development. However, perched groundwater should be expected overlaying the dense glacial till in the more permeable sand or topsoil.

4.0 DISCUSSION

We understand that it is proposed to construct outdoor tennis and basketball courts as part of the Totem Park Infill Student Residency project. The proposed development will be constructed along the southeast corner of the intersection of Thunderbird Boulevard and the proposed Lower Mall.

The proposed courts are to be near road grades with elevations varying from 80.6 m to 79.25 m. We understand that the courts are to be surfaced with asphalt. Associated improvements consist of concrete curbs, sidewalks, turf and other landscape features.

5.0 RECOMMENDATIONS

5.1 Site Stripping and Filling

Prior to placement of fill required to meet the court elevations all topsoil, trees, roots, unsuitable fill or otherwise disturbed materials should be removed to expose a subgrade of dense glacial till. Any disturbed or softened fill materials will require removal.

Stripping should extend beyond the outer edge of the proposed courts field a distance equal to the total thickness of fill required including all engineered subgrade fill, sub-base and base materials. For example, if 1 m of fill is to be placed beneath the final grade, then stripping should extend a minimum distance of 1 m beyond the outer edge of the field.

Where grade reinstatement is required to meet the underside of the recommended road structure, engineered fill should be used. In the context of this report "engineered fill" is defined as clean sand to sand and gravel fill, compacted in 300 mm loose lifts to a minimum standard of 95% of its Modified Proctor Maximum Dry Density (ASTM D1557) while at moisture content that is within 2% of its optimum for compaction.

5.2 Pavement Structure- Tennis & Basketball Courts

Table 1:				
Recommended Minimum Pavement Structure for the Courts at Totem Infill Park Project, UBC				
Material	Thickness (mm)			
Asphalt Pavement	60			
19 mm CGB (Crushed Granular Base Course)	100			
75 mm minus SGSB (Select Granular Sub-base)	200			

1212

The minimum recommended pavement structure for the courts area is shown in Table 1.

All base and sub-base materials should be compacted to a minimum of 95% Modified Proctor maximum dry density (ASTM D1557) while at a moisture content within 2% of optimum for compaction.

6.0 DESIGN REVIEWS AND CONSTRUCTION INSPECTIONS

The preceding sections make recommendations for the design and construction of the new courts. It is the responsibility of the contractors carrying out the work to contact GeoPacific at least 24 hours in advance of construction to arrange for field reviews. Reviewed should be completed for the following construction activities.

- 1. Stripping Review stripped subgrade
- 2. Materials Review of materials for backfill under the courts
- 3. Compaction Review compaction of backfill under the courts

7.0 CLOSURE

This report has been prepared exclusively for UBC Properties Trust, and for the use of others within their design and construction team, for the purpose of providing geotechnical recommendations for the project. This report remains the property of GeoPacific Consultants Ltd. and unauthorized use or duplication of this report is prohibited.

If you would like further details or clarification please contact the undersigned.

For: GeoPacific Consultants Ltd.

Arye Lipshitz Geotechnical Technician

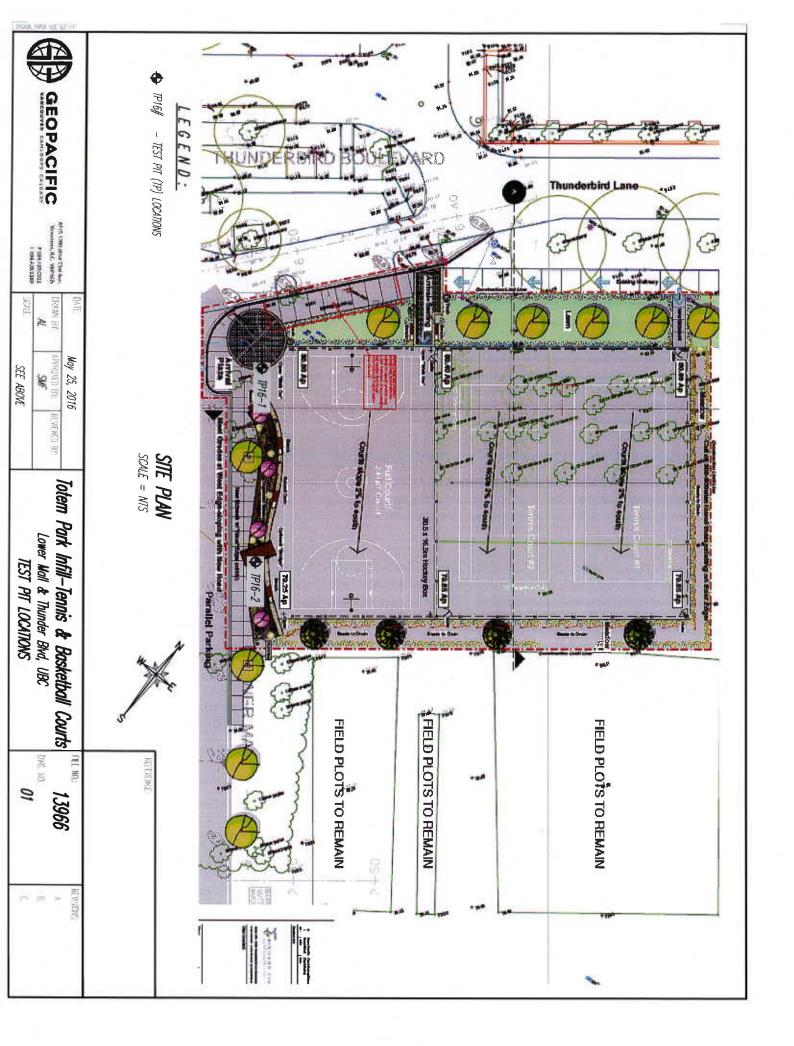
Reviewed by:

K.E. ROBINSO

Keith Robinson, M. Eng. P.Eng. Senior Geotechnical Engineer

File: 13966

Proposed Tennis & Basketball Courts - Totem Park Infill, Thunderbird Boulevard & Lower Mall, UBC



Test Pit Log: TP16-1

File: 13966 *Project:* Totem Park Infill - Proposed Tennis Courts & Parking *Client:* UBC Properties Trust *Site Location:* Lower Mall & Thunderbird Boulevard, UBC



215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5 Tel: 604-439-0922 Fax:604-439-9189

INFERRED PROFILE			()			
Depth	Symbol	SOIL DESCRIPTION	Depth/Elev (m)	Moisture Content (%)	Groundwater	Remarks
ft m 0-0	0.1	Ground Surface				
2		Topsoil Loose, sand, trace fine gravel, dark brown, moist	0.0			
3-1		Sand (Till) Dense, some silt, trace to some fine gravel, golden-brown, moist	0.8			
4 5 6 7 7 8 1 9 1 3		End of Test Pit	1.0			
Metho	ed: A.L. od: Exc May 25					Datum: Ground surface Figure Number: A.1. Page: 1 of 1

Test Pit Log: TP16-2

File: 13966 *Project:* Totem Park Infill - Proposed Tennis Courts & Parking *Client:* UBC Properties Trust *Site Location:* Lower Mall & Thunderbird Boulevard, UBC



215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5 Tel: 604-439-0922 Fax:604-439-9189

		INFERRED PROFILE		()		
Depth	Symbol	SOIL DESCRIPTION	Depth/Elev (m)	Moisture Content (%)	Groundwater	Remarks
		Ground Surface				
1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	lllllllllllllllllllllllllllllllllllllll	Topsoil Loose, sand, trace fine gravel, dark brown, moist	0.0			
2-		Sand (Till) Dense, some silt, trace to some fine gravel,	0.5			
3		golden-brown, moist End of Test Pit	0.7			
4						
5-						
6						
7						
8						
9-						
-3						
Metho	ed: A.L. od: Exc May 25					Datum: Ground surface Figure Number: A.2. Page: 1 of 1

Tree removal questions for communications

Update July 2016

Species in English	Red Alder
Species in Latin	Alnus Rubra
Number of trees being removed	Approx. 80
Reason for removal	For the construction of a sport court facility.
Condition of tree (dead, dying, sick, etc.)	Normal/Poor
Does the tree have any historical or research value to the university?	The trees were likely planted for research, however the research conducted has been completed and many of the trees are beginning to fall apart.
Exact location of the tree (please include a map with a point indicating tree location)	See attached
Surrounding buildings or landmarks (please include anything roughly within 30 meters)	Totem Park Residences
Will there be a replacement tree?	There will be some new vegetation in the surrounding area.
Replacement species in English	Not yet finalized.
When will the tree be replaced? (day, month, season, etc.)	Not yet finalized.
Will there be any traffic or pedestrian disruption during the removal?	N/A
Will there be any extreme noise or other disruptions during removal?	N/A
How will the tree be used once it is removed? (chipping for campus use, etc)	N/A

Please include pictures of the tree with the following in mind:

- Photos to be horizontal (landscape)
- Include any surrounding items/infrastructure that will help give context to the tree location (a street sign, a fire hydrant, a building)

- Include a map (informal) that indicates the exact location of trees to be removed.



March 1, 2017

UBC Properties Trust Suite 200 - 3313 Shrum Lane Vancouver, British Columbia Canada V6S 0C87

Attention: Dan Giordano

Re: Totem Phase 2 – Arborist Site Visit

An arborist report prepared by this office was submitted for the Totems Phase 2 project dated January 18, 2016. In this report there were a number red alder trees identified to the west of the project towards West Mall. Many of these red alder trees were subsequently removed to allow additional laydown for construction materials and work space for the project. **Sixty-seven red alder trees remain at the site**¹. The stand is shown in the red box in Figure 1. These trees are all are part of a planted stand that have grown together as a group and rely on one another for structural stability. In addition many of them contain structural defects (codominant or multiple stems emanating from included bark) that make them unsuitable as trees to retain adjacent to structures or people. The trees measure on average 15-30cm in diameter at breast height and their heights reaching up to 20m. It is not possible to retain individual or small groups of trees in a tree stand of this nature as they will be prone to windfall. Figure 1 below shows the planted red alder stand prior to its western edge being partially removed for laydown construction.



Figure 1. The red box indicates the entire red alder stand before some of it was removed (67 trees remain).

¹ A tree is counted as one even though it may have multiple stems emanating from a single point above the ground.

^{◎ 3551} Commercial Street, Vancouver B.C. V5N 4E8 T 604-733-4886 F 604-733-4879



Figure 2. The tree survey indicating the alder trees in the upper section of the photo. Note that only a portion of the stand is indicated.

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Photographs

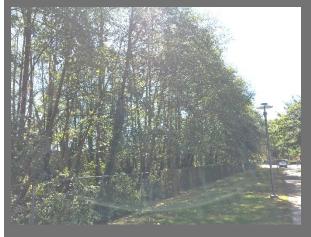




Photo 1. Looking west along the length of the stand.

Photo 2 Looking at the red alder stand. Note that almost every tree is made up of multiple stems emanating from the base.



Photo 4. Note that a chain link fence surrounds the stand. Tree protection of the street trees on the east and north side will be required.

If you have any questions about the findings of this memo, please don't hesitate to call us.

Sincerely,

Trevor Cox, RPP ISA Certified Arborist (PN1920A) Certified Tree Risk Assessor (43) BC Parks Wildlife and Danger Tree Assessor

Phone:604-733-4886Fax:604-733-4879Email:trevor@diamondheadconsulting.comWebsite:www.diamondheadconsulting.com

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