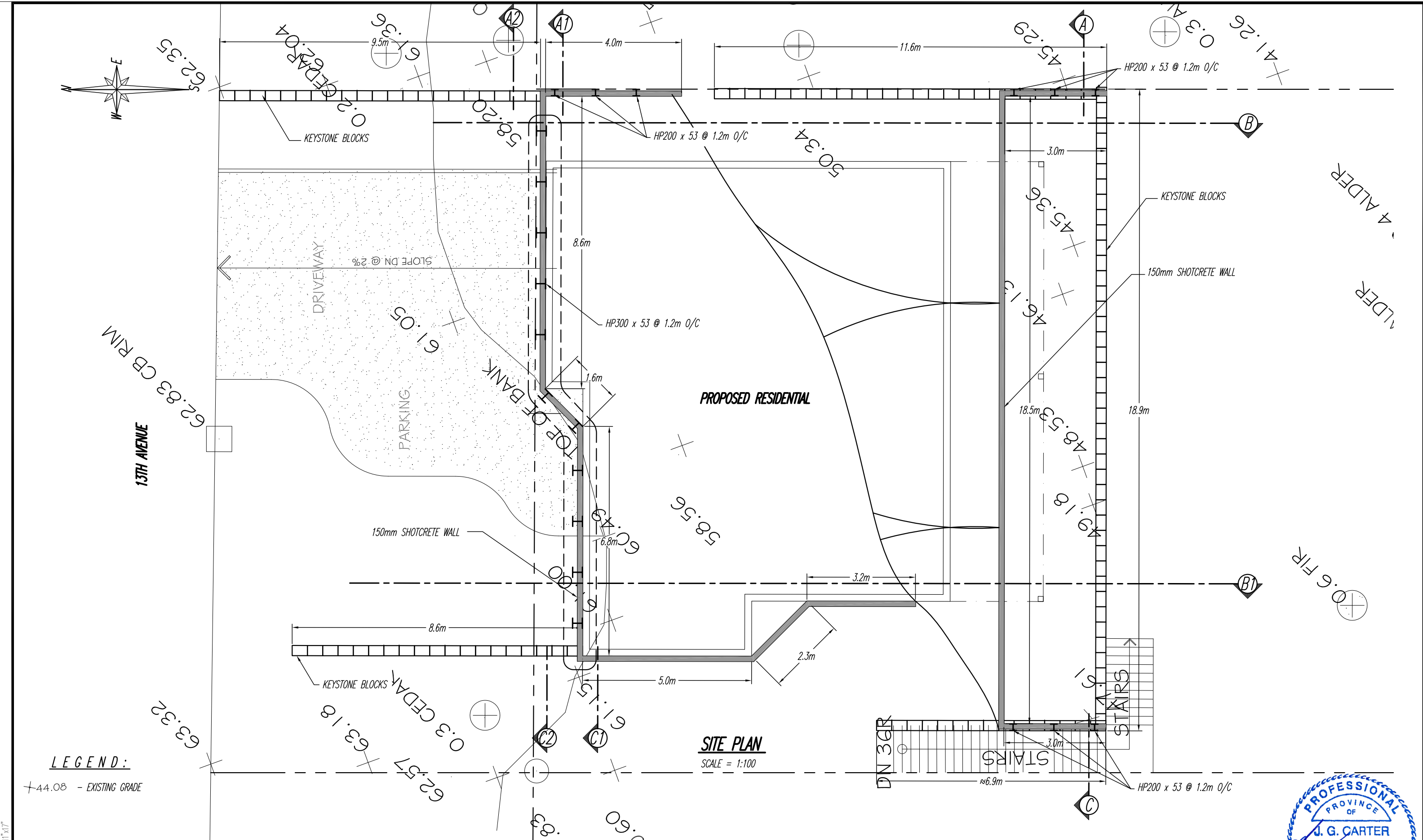




LEGEND:

+44.08 - EXISTING GRADE



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VANCOUVER KAMLOOPS CALGARY

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DRAWN BY:	APPROVED BY:	REVIEWED BY:	
C.T.	J.G.C.	J.G.C.	
SCALE:	AS SHOWN		

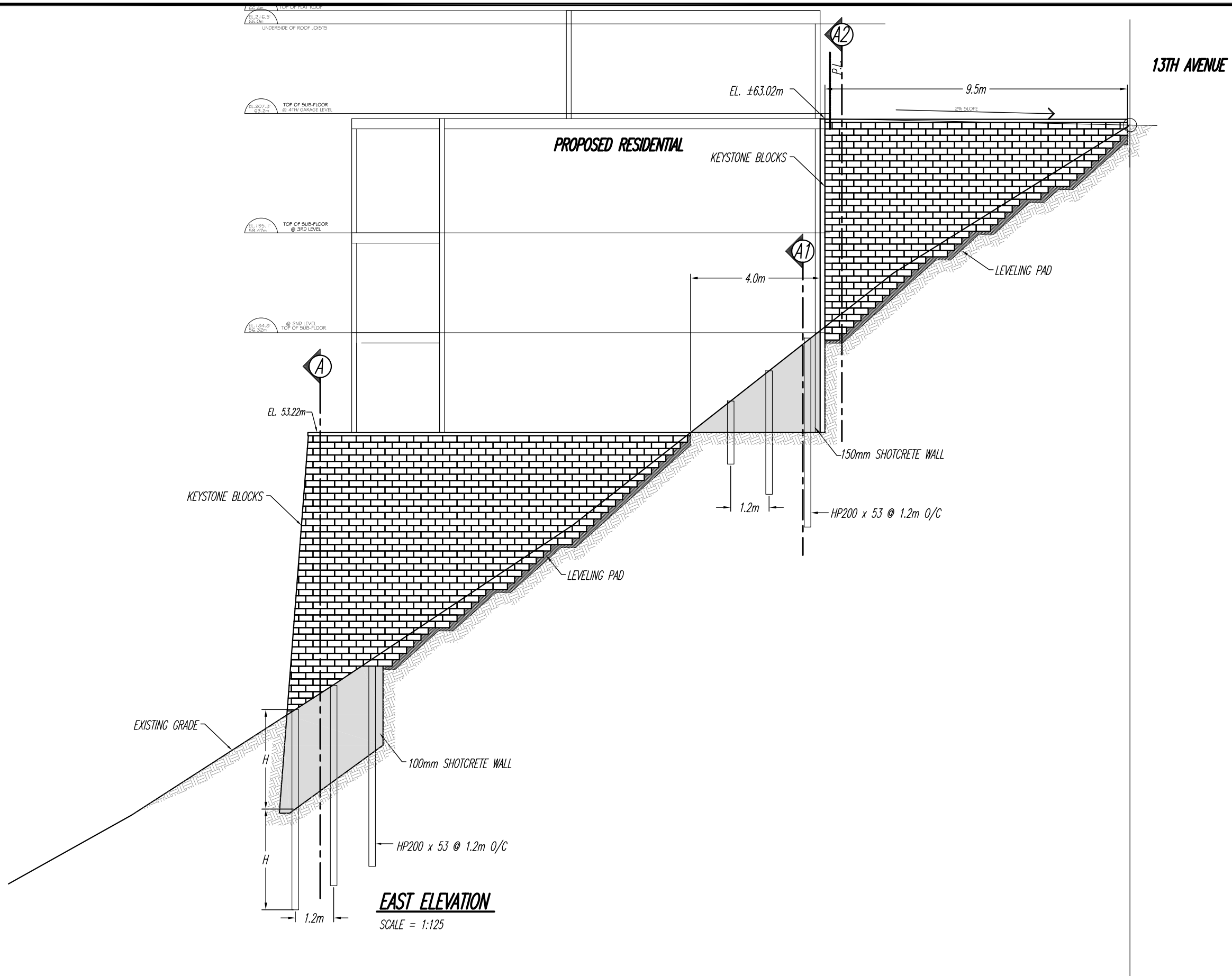
RESIDENTIAL HOME
13048 13TH AVENUE, SURREY, B.C.
ALLAN BLOCK - SITE PLAN

FILE NO.:	13593	REVISIONS:	
DWG. NO.:	G-RW1A	A. NOVEMBER 1, 2017	
		B.	
		C.	



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J.G.C.

REVIEWED BY:

J.G.C.

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RESIDENTIAL HOME
13048 13TH AVENUE, SURREY, B.C.
EXCAVATION - EAST ELEVATION

FILE NO.:

13593

DWG. NO.:

G-RW2A

REVISIONS:

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B.

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DATE: <i>AUGUST 31, 2016</i>		
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SCALE: <i>AS SHOWN</i>		

RESIDENTIAL HOME
13048 13TH AVENUE, SURREY, B.C.
EXCAVATION - SECTION A & A1

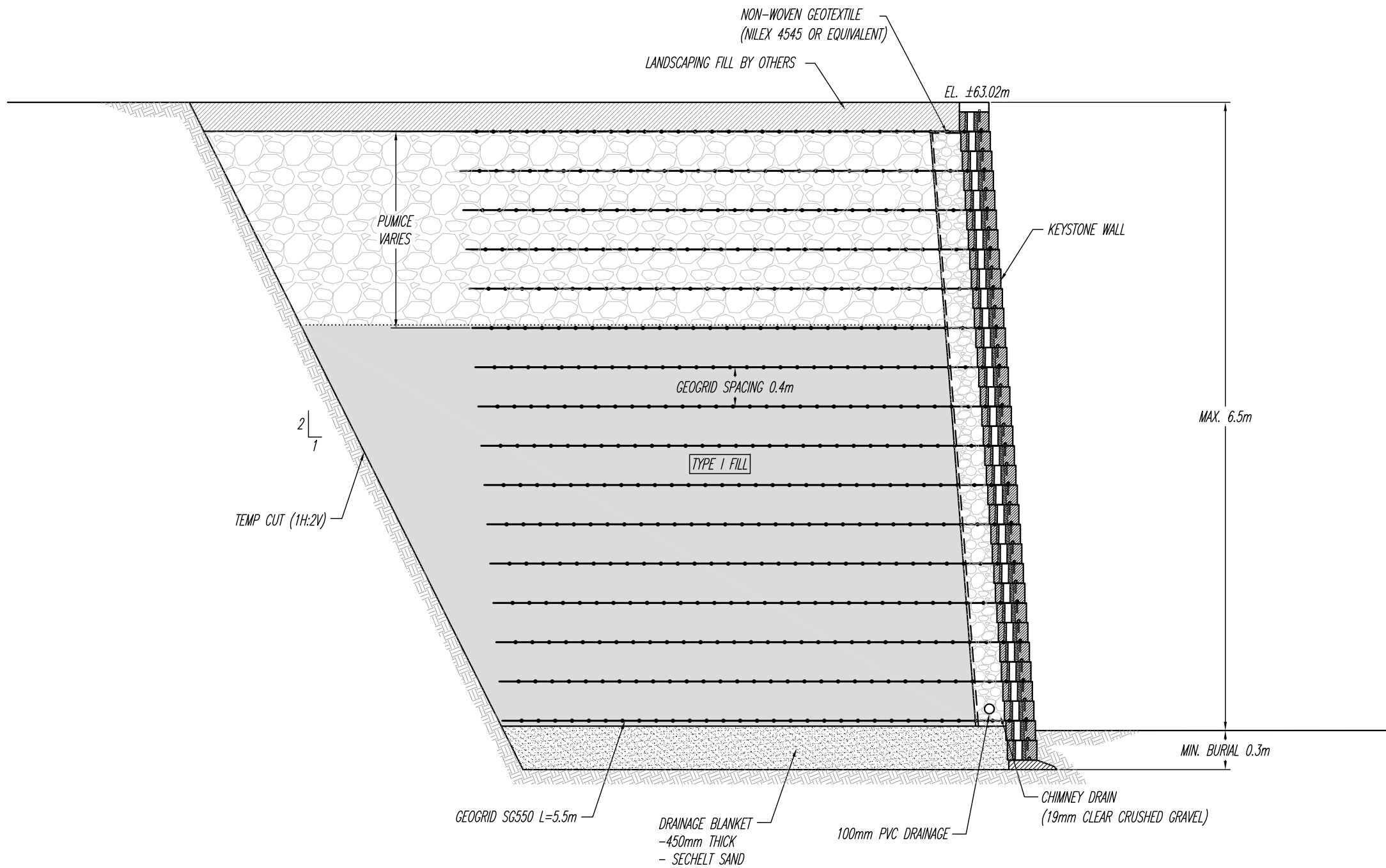
FILE NO.:	13593
DWG. NO.:	G-RW2B

REVISIONS:	
A.	<i>NOVEMBER 1, 2017</i>
B.	
C.	



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SECTION A2
SCALE = 1:50

REFERENCE:



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REVIEWED BY:

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SCALE:

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13048 13TH AVENUE, SURREY, B.C.
EXCAVATION - SECTION A2

FILE NO.:

13593

DWG. NO.:

G-RW2C

REVISIONS:

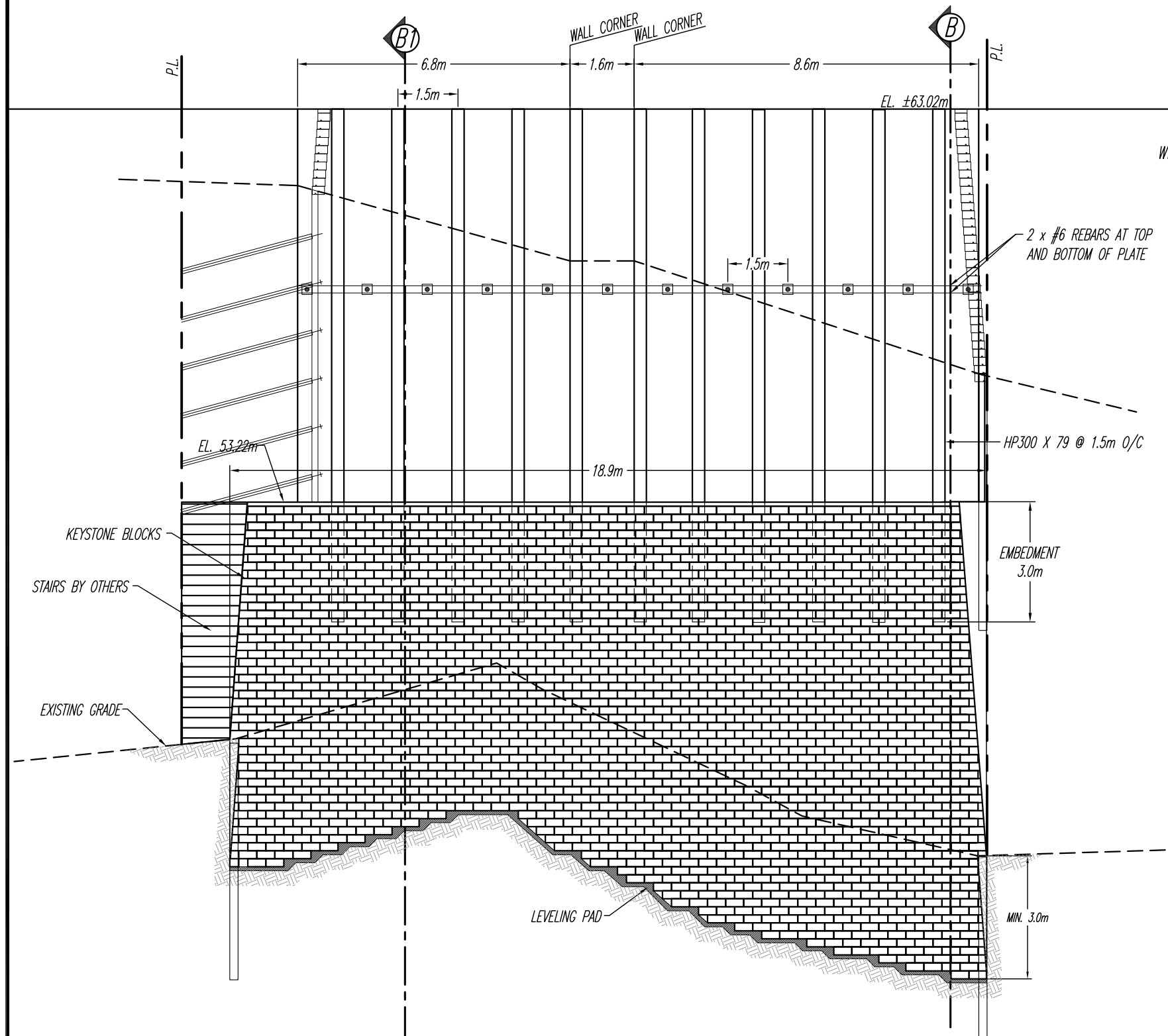
A. NOVEMBER 1, 2017

B.

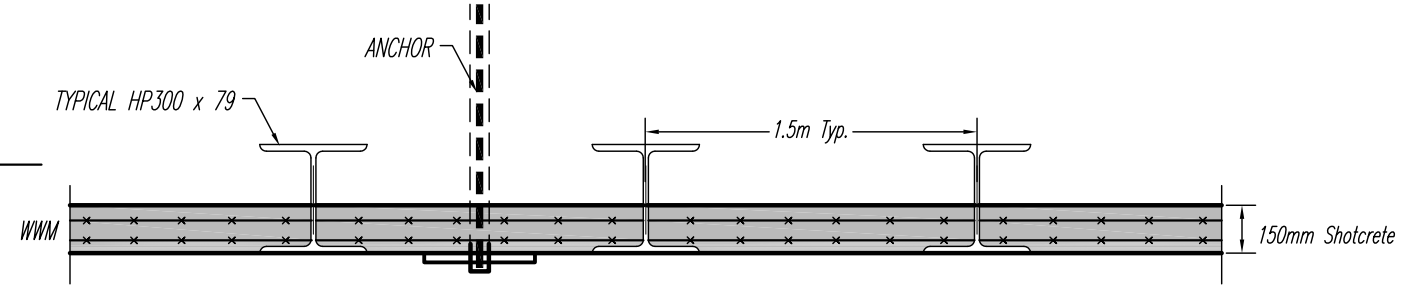
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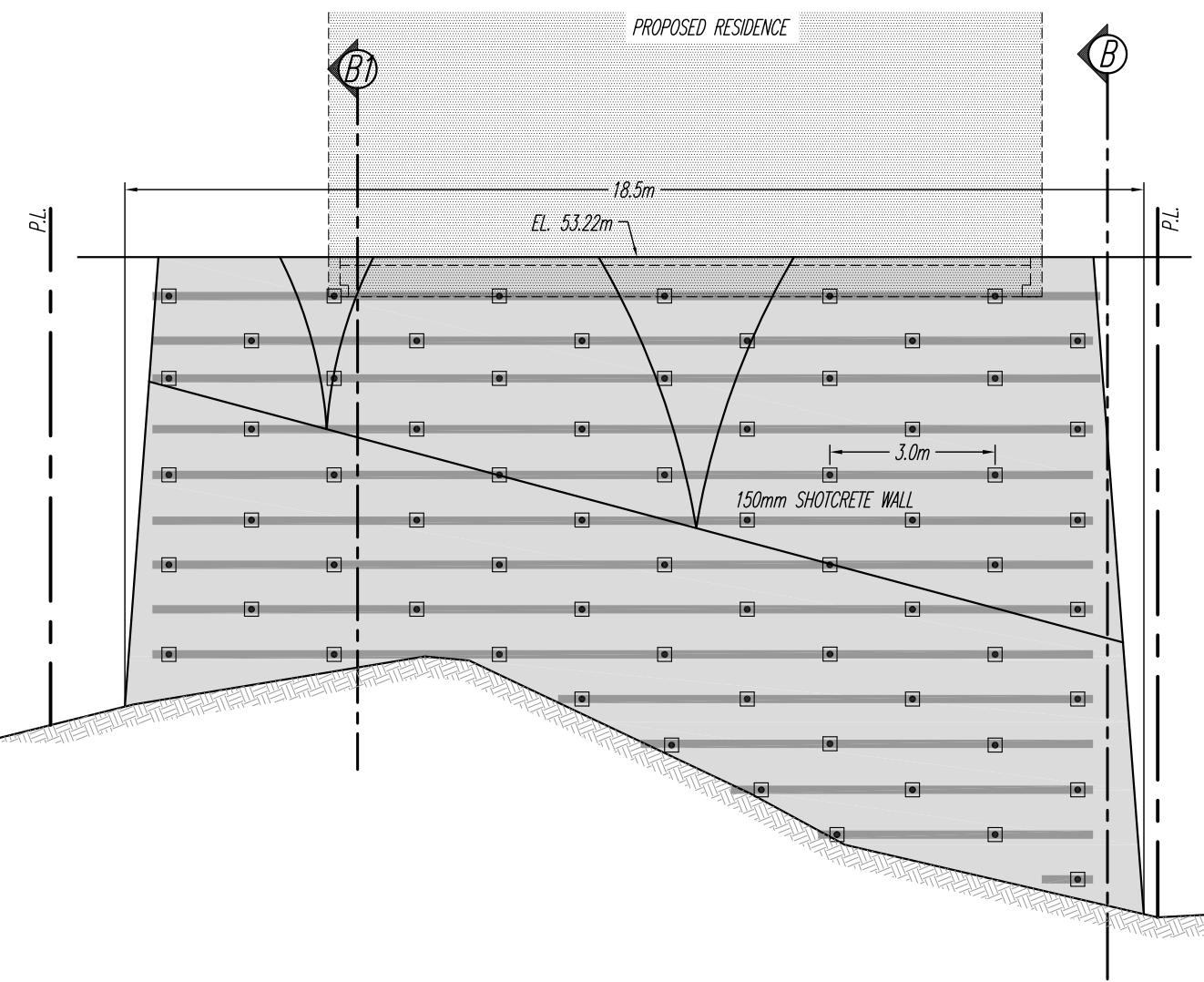
2017-11-10



NORTH ELEVATION
SCALE = 1:125



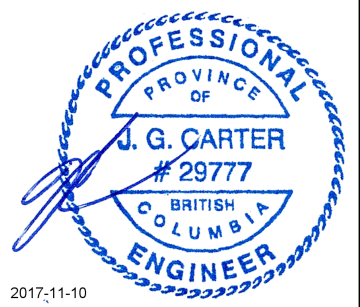
150mm SHOTCRETE DETAILS
N.T.S.



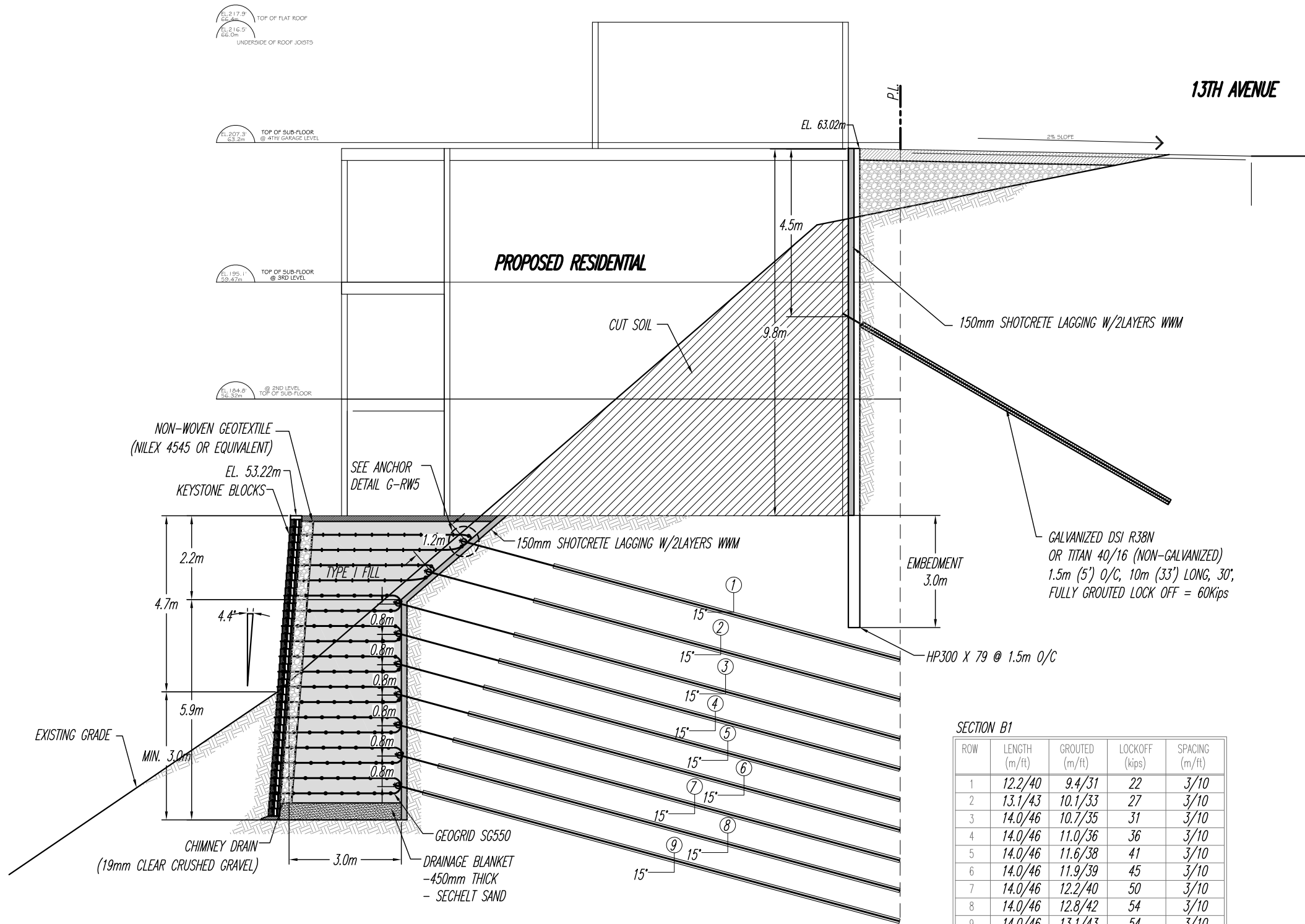
NORTH ELEVATION
SCALE = 1:125

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2017-11-10



SECTION B1
SCALE = 1:125

SECTION B1				
ROW	LENGTH (m/ft)	GROUTED (m/ft)	LOCKOFF (kips)	SPACING (m/ft)
1	12.2/40	9.4/31	22	3/10
2	13.1/43	10.1/33	27	3/10
3	14.0/46	10.7/35	31	3/10
4	14.0/46	11.0/36	36	3/10
5	14.0/46	11.6/38	41	3/10
6	14.0/46	11.9/39	45	3/10
7	14.0/46	12.2/40	50	3/10
8	14.0/46	12.8/42	54	3/10
9	14.0/46	13.1/43	54	3/10

REFERENCE:



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C.T.

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J.G.C.

REVIEWED BY:

J.G.C.

SCALE:

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RESIDENTIAL HOME
13048 13TH AVENUE, SURREY, B.C.
EXCAVATION - SECTION B1

FILE NO.:

13593

DWG. NO.:

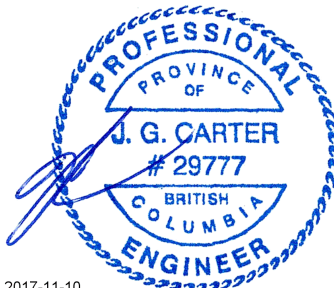
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REVISIONS:

A. NOVEMBER 1, 2017

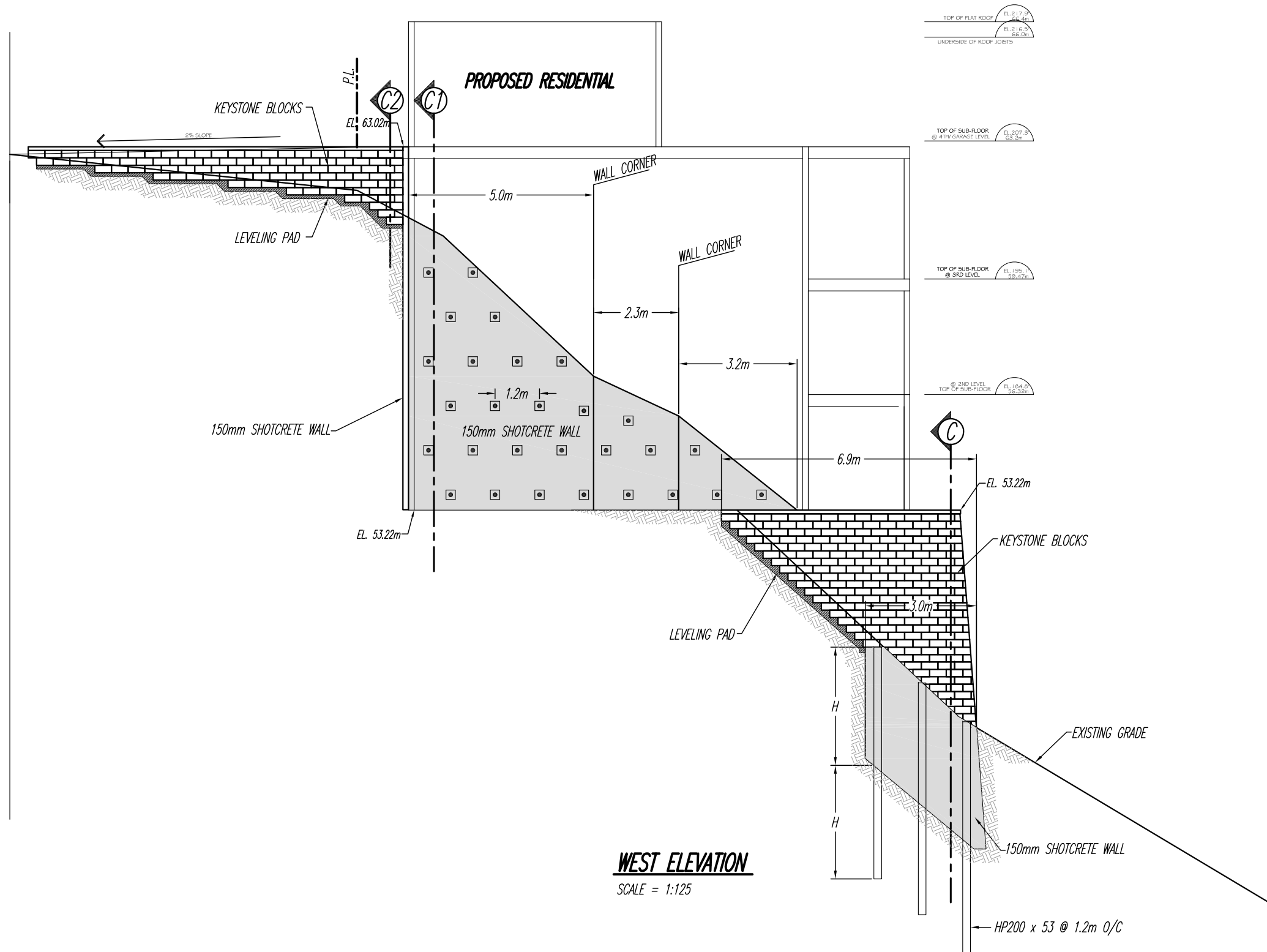
B.

C.



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13TH AVENUE



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APPROVED BY:

J.G.C.

REVIEWED BY:

J.G.C.

SCALE:

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RESIDENTIAL HOME
13048 13TH AVENUE, SURREY, B.C.
EXCAVATION - WEST ELEVATION

FILE NO.:

13593

DWG. NO.:

G-RW4A

REVISIONS:

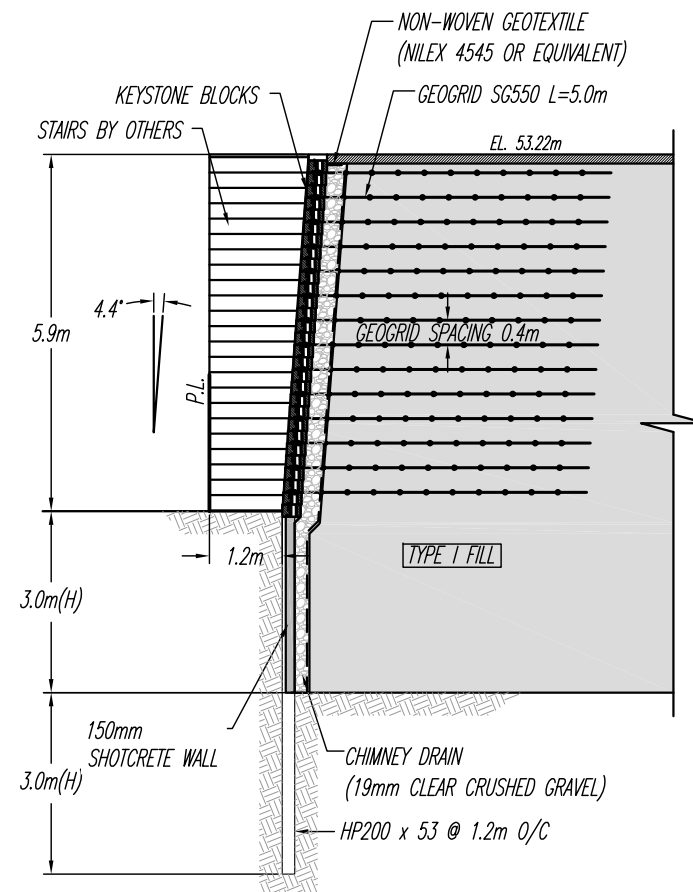
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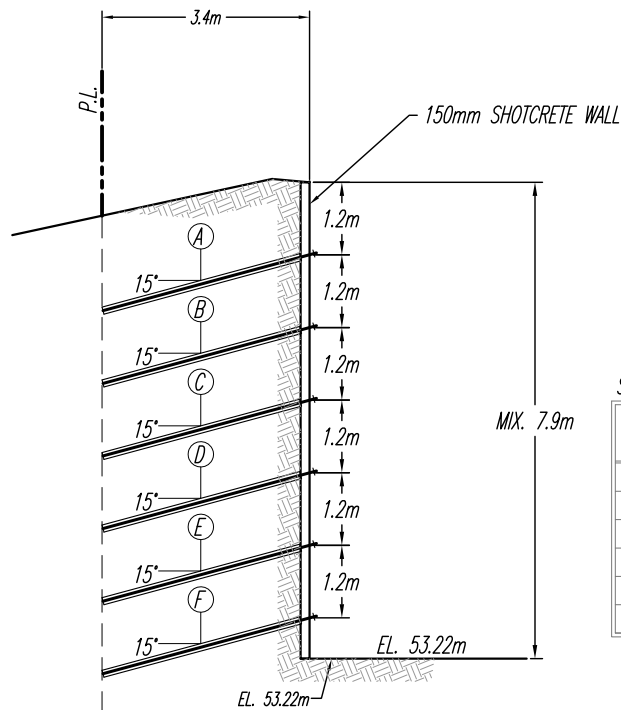


SECTION C

SCALE = 1:125

REFERENCE:	 GEOPACIFIC VANCOUVER KAMLOOPS CALGARY 1779 W. 75th Avenue Vancouver, B.C. V6P 6P2 P 604.439.0922 F 604.439.9189	DATE: <i>AUGUST 31, 2016</i>		<i>RESIDENTIAL HOME</i> <i>13048 13TH AVENUE, SURREY, B.C.</i> <i>EXCAVATION – SECTION C</i>	FILE NO.: <i>13593</i>	REVISIONS:	
		DRAWN BY: <i>C.T.</i>	APPROVED BY: <i>J.G.C.</i>		REVIEWED BY: <i>J.G.C.</i>	DWG. NO.: <i>G-RW4B</i>	A. <i>NOVEMBER 1, 2017</i>
		SCALE: <i>AS SHOWN</i>				B.	
						C.	

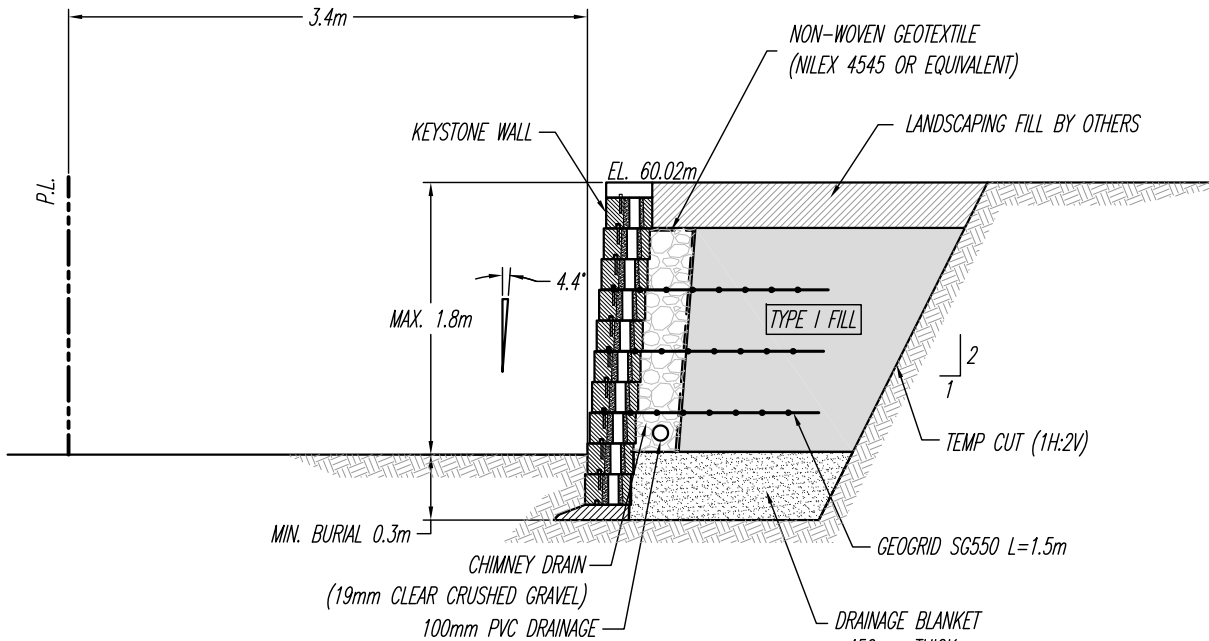




SECTION C1
SCALE = 1:125

SECTION B1

ROW	LENGTH (m/ft)	GROUTED (m/ft)	LOCKOFF (kips)	SPACING (m/ft)
A	3.7/12	3.7/12	-	1.2/4
B	3.7/12	3.7/12	-	1.2/4
C	3.7/12	3.7/12	-	1.2/4
D	3.7/12	3.7/12	-	1.2/4
E	3.7/12	3.7/12	-	1.2/4
F	3.7/12	3.7/12	-	1.2/4



SECTION C2
SCALE = 1:50

REFERENCE:



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F 604.439.9189

DATE:

AUGUST 31, 2016

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C.T.

APPROVED BY:

J.G.C.

REVIEWED BY:

J.G.C.

SCALE:

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13048 13TH AVENUE, SURREY, B.C.
EXCAVATION - SECTION C1 & C2

FILE NO.:

13593

DWG. NO.:

G-RW4C

REVISIONS:

A. NOVEMBER 1, 2017

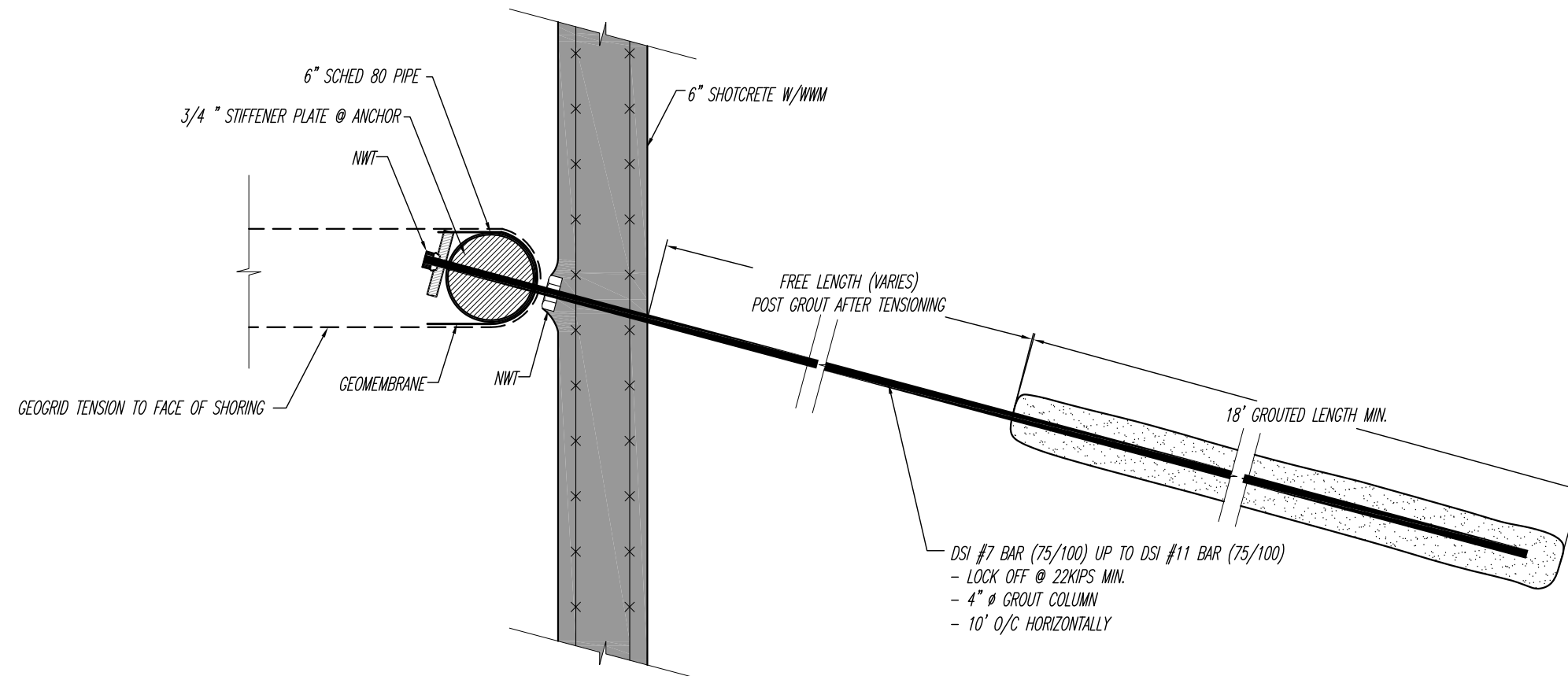
B.

C.



2017-11-10

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ANCHOR DETAIL
N.T.S.

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P 604.439.0922
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DATE:

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APPROVED BY:

J.G.C.

REVIEWED BY:

J.G.C.

SCALE:

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EXCAVATION - ANCHOR DETAIL

FILE NO.:

13593

DWG. NO.:

G-RW5

REVISIONS:

A. NOVEMBER 1, 2017

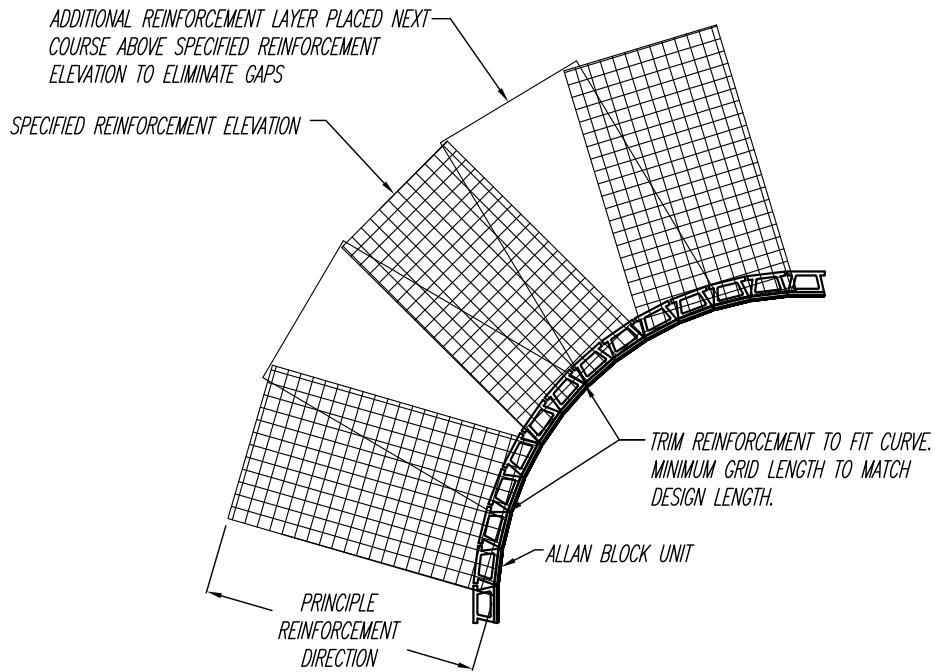
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C.

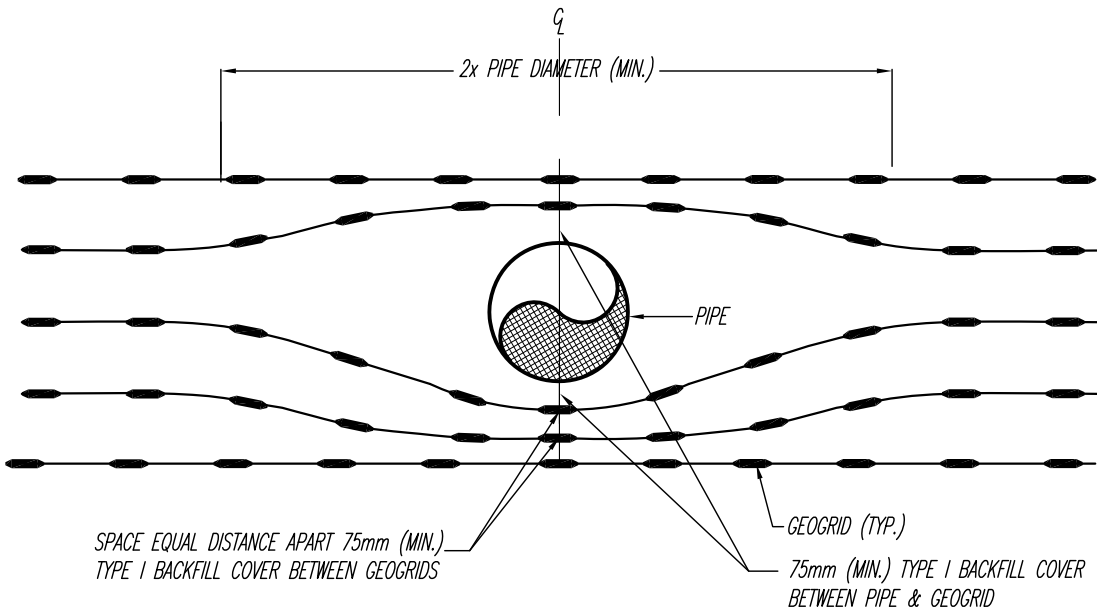


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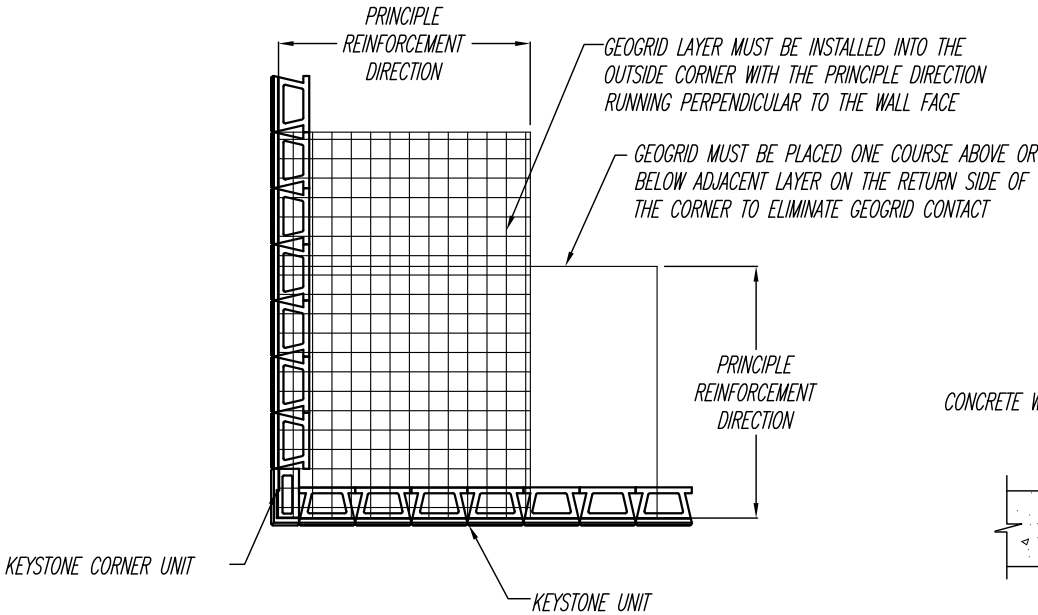
ORIGINAL PAPER SIZE 11"x17"



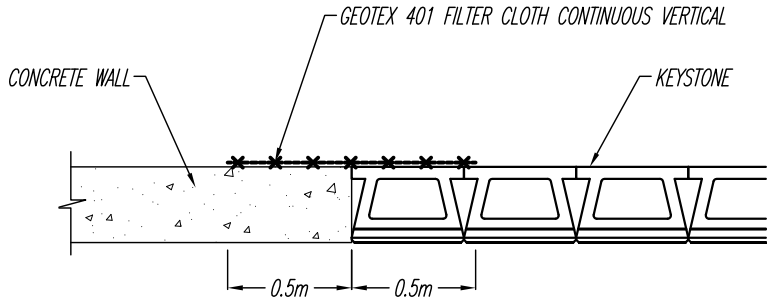
GEOGRID PLACEMENT ON CURVES
N.T.S.



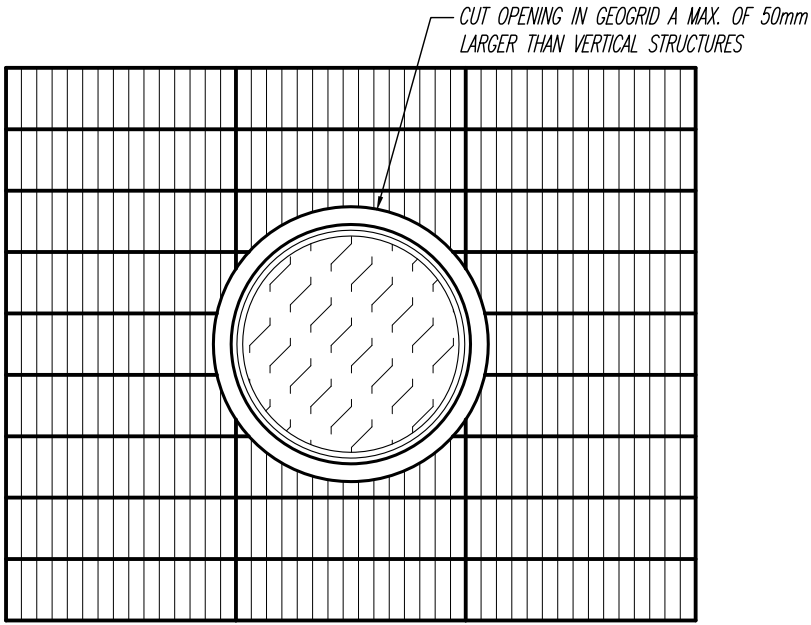
GEOGRID PLACEMENT AT PIPE
N.T.S.



GEOGRID PLACEMENT AT CORNERS
N.T.S.



KEystone BLOCK - CONCRETE WALL TIE IN
N.T.S.



GEOGRID PLACEMENT FOR VERTICAL STRUCTURES
N.T.S.

REFERENCE:



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DATE:

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J.G.C.

REVIEWED BY:

J.G.C.

SCALE:

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13048 13TH AVENUE, SURREY, B.C.
KEystone WALL - DETAILS

FILE NO.:

13593

DWG. NO.:

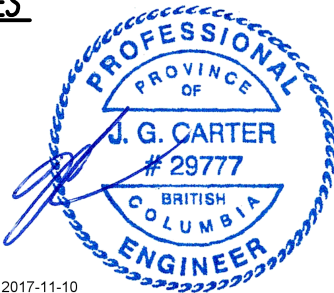
G-RW6

REVISIONS:

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C.



2017-11-10

ORIGINAL PAPER SIZE 11"x17"

PART 1 – GENERAL

1.01: In these Notes, the Engineer is GeoPacific Consultants Ltd.

1.02: These Notes must be read in conjunction with DWG G–RW1 to G–RW4C.

1.03: The work described and shown involves the supply and installation of geogrid reinforced retaining walls with KEYSTONE WALL (12° batter), or approved equivalent.

1.04: It is the Contractor’s responsibility to verify all dimensions and report discrepancies to the Engineer.

PART 2 – MATERIALS

2.01: KEYSTONE WALL – The proposed retaining walls have been designed on the basis of KEYSTONE WALL units with a wall batter of 12° from vertical. Alternative methods of support system will require redesign of the walls by the Engineer and may not be substituted without written authorization from the Engineer.

2.02: GEOGRID – The walls have been designed on the basis of Stratagrid SG550 with a long term design strength at machine direction of 63.4 kN/m. Alternative geogrid will require redesign of the walls by the Engineer and may not be substituted without written authorization from the Engineer.

2.03: LEVELING PAD – The leveling pad shall consists of 19 mm diameter minus, clean sand and crushed gravel or 19mm clear crush gravel. The contractor shall provide samples and/or sieve analysis of the fill to the Engineer prior to use.

2.04: UNIT AND DRAINAGE FILL – The drainage layer shall consists of 19 mm diameter, clear crushed gravel. The contractor shall provide samples and/or sieve analysis of the fill to the Engineer prior to use. Unit shall be filled with grout in the upper 3 courses where a handrail is to be installed. Removal of existing unit fill will be required at the top course of the existing wall, where posts are to be installed.

2.05: TYPE I FILL (REINFORCED & RETAINED BACKFILL) – TYPE I FILL shall consist of clean sand, 19mm minus crushed gravel and containing less than 5% of fines content by weight. Material samples or sieve analysis results shall be provided to the Engineer for approval.

2.06: FOUNDATION SUBGRADE – Existing compact gravel fill / or ensured fill (TYPE I FILL) with an Serviceability Limit States (SLS) bearing capacity of at least 100 kPa. Fill compaction requirements are specified in Note 3.15.

PART 3 – EXECUTION

3.01: Existing fill (Compact sand) / or ensured fill (TYPE I FILL) (Retained Soils, as shown on DWG G–RW2A TO G–RW4C shall be sloped at a maximum angle of 1:1 (V:H). Temporary slopes should be covered in poly sheeting for duration of work. Temporary slopes should not encroach beyond a 1:1 (V:H) projection taken from the edge of any adjacent sidewalks. Excavations may need to proceed in controlled panels to sequentially construct the wall and avoid excavation induced damage to the existing sidewalk.

3.02: The Contractor shall excavate to the lines and grades shown on the latest landscape architectural drawings. The Engineer will inspect stripping and approve subgrade prior to placement of any fill materials. Where blocks are to be added to the existing upper tier of the KEYSTONE WALL, the existing concrete caps shall be removed and, where handrail posts are to be installed, gravel within 0.3m of the existing top of wall elevation shall be removed. Contractor shall installed lamp–posts prior to the placement of the retained TYPE I FILL.

3.03: Over–excavation of unsuitable soils, as directed by the Engineer will be replaced with TYPE I FILL as defined above. Compaction of fill is required, as specified in Note 3.15.

3.04: The leveling pad shall be placed over the approved subgrade prior to placement of the first course of KEYSTONE WALL units. The leveling pad shall be compacted in place, as specified in Note 3.15.

3.05: The first course of blocks shall be placed on the approved subgrade/leveling pad and alignment and level checked.

3.06: KEYSTONE units should be assembled as per manufacture instruction manuals and guidelines.

3.07: Placement of geogrid reinforcement and compaction of TYPE I FILL shall be completed at each facing unit prior to proceeding with the next lift.

3.08: TYPE I FILL shall be placed and compacted within the extension of the required backfill area as shown on G–RW2A TO G–RW4C.

3.09: The geogrid reinforcement shall be placed at the elevations and to the extent shown on the DWG G–RW2 or as directed by the Engineer.

3.10: Where geogrid reinforcement is required, the geogrid reinforcement shall be extended near the face of the KEYSTONE WALL units as per the manufactures instructions.

3.11: The geogrid shall be laid horizontally in its machine direction perpendicular to the face of the retaining wall. The geogrid shall be pulled taut, free of wrinkles and anchored prior to backfill placement on the geogrid.

3.12: The geogrid reinforcement shall be continuous (COVERAGE RATIO = 100 %) throughout their embedment lengths. Spliced connections between shorter pieces of geogrid are not permitted.

3.13: TYPE I FILL shall be placed, spread and compacted in such a manner that minimizes the development of slack in the geogrid reinforcement.

3.14: TYPE I FILL shall be placed and compacted in lifts not to exceed 200 mm where hand compaction equipment is used and not more than 300 mm where heavy compaction equipment is used.

3.15: TYPE I FILL shall be compacted to 98% of the maximum density as determined by ASTM D698 (Standard Proctor) or equivalent. The moisture content of the backfill materials prior to and during compaction shall be uniformly distributed throughout each layer and shall be within 2% of the optimum moisture content for compaction.

3.16: Only lightweight hand–operated equipment shall be allowed within 0.75 meters of the front face of the facing blocks.

3.17: Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 150 mm is required prior to operation of tracked vehicles over the geogrid reinforcement. Tracked vehicles should not turn while within the geogrid zone to prevent tracks from displacing the fill and geogrid or damage the geogrid or cause slack to result in the geogrid reinforcement.

3.18: Rubber tired equipment may pass over the geogrid reinforcement at slow speeds less than 10 kph. Sudden braking and sharp turning shall be avoided.

3.19: At the end of each day of operation, the Contractor shall slope the last lift of reinforced backfill away from the facing units to direct runoff away from the wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

PART 4 – VEGETATION

4.01: Vegetation within 2 metres of the top of the wall shall consist of only grass and/or small to medium sized bushes and shrubs. The planting of trees in these areas is not permitted due to the potential future damage that may be inflicted on the wall as the trees grow in size.

PART 5 – REVIEWS

- 5.01: The Contractor shall notify GeoPacific a minimum of 48 hours in advance of the commencement of the following aspects of the work:
- 1. Site stripping and foundation subgrade
 - 2. Placement of the initial course of the facing blocks
 - 3. Placement of the initial course of the geogrid reinforcement

REFERENCE:



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VANCOUVER KAMLOOPS CALGARY

1779 W. 75th Avenue
Vancouver, B.C. V6P 6P2

P 604.439.0922
F 604.439.9189

DATE:

NOVEMBER 1, 2017

DRAWN BY:

C.T.

APPROVED BY:

J.G.C.

REVIEWED BY:

J.G.C.

SCALE:

AS SHOWN

RESIDENTIAL HOME

13048 13TH AVENUE, SURREY, B.C.

KEYSTONE WALL – SPECIFICATION

FILE NO.:

13593

DWG. NO.:

G–RW7

REVISIONS:

A.

B.

C.



2017-11-10

SHORING CONSTRUCTION NOTES:

1.0 GENERAL

- 1.1
- In these Notes, the Engineer is GeoPacific Consultants Ltd.
- 1.2
- ALL WORK AND METHODOLOGIES USED MUST COMPLY WITH THE REQUIREMENTS OF THE WORKERS SAFE BC CURRENT "OCCUPATIONAL HEALTH AND SAFETY REGULATIONS".
- 1.3
- THE CONTRACTOR UNDERTAKING THESE WORKS SHALL BE EXPERIENCED IN THE TYPE OF WORK DESCRIBED HEREIN.
- 1.4
- THE CONTRACTOR MUST NOTIFY GEOPACIFIC AT LEAST 1 WEEK PRIOR TO COMMENCING EXCAVATION. ALL ANCHORS IN EVERY PROCEEDING STAGE OF THE SHORING DESIGN MUST BE ACCEPTED BY GEOPACIFIC PRIOR TO SUBSEQUENT EXCAVATION STAGES.
- 1.5
- THE CONTRACTOR SHALL CONFIRM THE LOCATIONS AND CONDITION OF ALL EXISTING IMPROVEMENTS, INCLUDING SERVICES AND UTILITIES, WHICH MAY BE IMPACTED BY THE SHORING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE EXISTING IMPROVEMENTS ARE NOT DAMAGED.
- 1.6
- THE SHORING DESIGN WAS BASED ON AVAILABLE SURVEY INFORMATION AND DRAWINGS PROVIDED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ENGINEER.
- 1.7
- THE LAYOUT OF THE SHORING WALL IS TO BE BASED ON ARCHITECTURAL DRAWINGS.
- 1.8
- ALL TEMPORARY EXCAVATION SLOPES SHALL BE COVERED WITH POLYETHYLENE SHEETING SECURED AS REQUIRED.
- 1.9
- THE CONTRACTOR SHALL ERECT AND MAINTAIN A SECURE CLOSED HOARDING AROUND THE SITE FOR THE SAFETY OF ALL PERSONS IN THE VICINITY OF THE WORK SITE AS REQUIRED.
- 1.10
- THE CONTRACTOR SHALL INSPECT THE SLOPES AND SHORING DAILY AND REPORT ANY SIGNIFICANT MOVEMENT AND OR DETERIORATION OF THE SHORING AND/OR GROUND CONDITIONS IMMEDIATELY TO GEOPACIFIC AT 1-604-439-0922.
- 1.11
- ALL APPLICABLE SHOTCRETE WORK SHALL BE IN GENERAL ACCORDANCE WITH ACI 506-R-5 "GUIDE TO SHOTCRETE".
- 1.12
- ALL NOZZLEMEN MUST BE ACI CERTIFIED. THE SHOTCRETE CONTRACTOR IS TO SUPPLY CERTIFICATION OF NOZZLEMEN PRIOR TO STARTING WORK.

2.0 SOLDIER PILE

2.1 MATERIALS

- 2.1.1
- THE PILES SHALL CONSIST OF HP200 x 53 GRADE 300W. MILL CERTIFICATES SHALL BE PROVIDED FROM THE STEEL SUPPLIER.

2.2 PLACEMENT

- 2.2.1
- PLACEMENT TOLERANCE AT TOP OF PILE SHALL BE 25mm, EXCEPT WHERE ADJACENT TO PROPERTY LINES. ENCROACHMENT BEYOND THE PL IS NOT PERMITTED.
- 2.2.2
- INCLINATION TOLERANCE SHALL BE 1%.
- 2.2.3
- TOP OF PILE TO BE DETERMINED BASED ON FINAL GRADES.
- 2.2.4
- DEPTH OF PILES SHALL BE TO THE ELEVATION SHOWN ON THE DRAWINGS.

2.3 QUALITY CONTROL

- 2.3.1
- PILES SHALL BE INSTALLED USING A GUIDE.
- 2.3.2
- INCLINATION OF PILE CASING TO BE VERIFIED BY CONTRACTOR MINIMUM EVERY 3m DURING INSTALLATION.
- 2.3.3
- CONCRETE MIX DESIGN TO BE PROVIDED PRIOR TO STARTING WORK.
- 2.3.4
- CONCRETE MIX DESIGN TO BE PROVIDED PRIOR TO STARTING WORK IF SUPPLIER CHANGED.
- 2.3.5
- THE AIR CONTENT SHALL BE DETERMINED IN ACCORDANCE WITH EITHER CSA A23.2-4C OR CSA A23.2-7C AT THE TRUCK AND ONCE PLACE IN THE SECANT PILES. THE CONCRETE USED FOR DETERMINATION OF AIR CONTENT SHALL BE DISCARDED.
- 2.3.6
- THE TEMPERATURE OF THE GROUND, AIR AND MIX SHALL BE RECORDED.
- 2.3.7
- THE AIR CONTENT OF THE CONCRETE SHALL BE BROUGHT UP TO THE SPECIFIED RANGE BY THE CONCRETE SUPPLIER, BY THE ADDITION OF AN AIR-ENTRAINING AGENT IN THE FIELD, IF NECESSARY. MIXING SHALL FOLLOW TO ENSURE PROPER DISPERSION.

2.4 QUALITY ASSURANCE

- 2.4.1
- STRENGTH TESTING SHALL BE DAILY FOR 7 DAYS THEN WEEKLY THEREAFTER OR MORE FREQUENTLY FOLLOWING REVIEW OF TEST RESULTS BY GEOPACIFIC.
- 2.4.2
- 2 TEST CYLINDERS SHALL BE BROKEN AT 24 HRS, 7 DAYS, AND 28 DAYS (HOWEVER, FOR THE FIRST WEEK AN ADDITIONAL 2 CYLINDERS SHALL BE BROKEN AT 2 DAYS TO ASSESS STRENGTH AGAIN).
- 2.4.3
- STRENGTH TEST CYLINDERS SHALL BE MOULDED AND CURED IN ACCORDANCE WITH CSA A23.2-3C.

REFERENCE:



GEOPACIFIC
VANCOUVER KAMLOOPS CALGARY

1779 W. 75th Avenue
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DATE:

NOVEMBER 1, 2017

DRAWN BY:

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APPROVED BY:

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SCALE:

AS SHOWN

GENERAL NOTES

FILE NO.:

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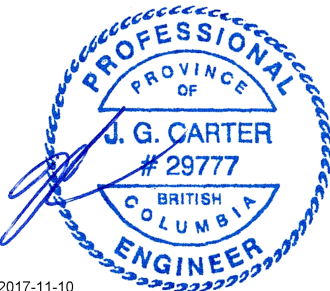
G-RW8 (SHEET 1 OF 2)

REVISIONS:

A.

B.

C.



2017-11-10

3.0 TEMPORARY SHOTCRETE WALL

3.1 MATERIALS

- 3.1.1 ANCHORS BAR SIZE SHALL BE SIZED AS DESCRIBED ON THE DESIGN DRAWINGS.
- 3.1.2 GROUT SHALL BE NON-SHRINK AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 10 MPa IN 24 HOURS, 21 MPa IN 3 DAYS AND 40 MPa IN 28 DAYS. GROUT MIX SHOULD BE REVIEWED BY GEOPACIFIC PRIOR TO USE.
- WELDED WIRE MESH SHALL BE AS SHOWN ON THE DESIGN DRAWINGS WITH MINIMUM YIELD STRENGTH OF 450 MPa AND SHALL CONFORM TO CSA G30.5.
- 3.1.3 THE CONCRETE MIX DESIGN FOR TEMPORARY SHOTCRETE SHALL MEET THE FOLLOWING REQUIREMENTS:
- A. 35 MPa IN 28 DAYS; 21 MPa IN 2 DAYS AND MIN 10 MPa IN 24 HRS.
 - B. F1 EXPOSURE CLASS.
 - C. TYPE 10 OR 30 CEMENT.
 - D. MAXIMUM NOMINAL AGGREGATE SIZE OF 20 mm.
 - E. MAXIMUM WATER/CEMENT RATIO OF 0.5.
 - F. AIR ENTRAINMENT OF 5 TO 8%.
 - G. CEMENT MATERIALS TO BE USED CAN BE: MS, MSb, LH, HS OR HSb.
 - H. AGGREGATE SHALL BE NORMAL-DENSITY, FINE AND COARSE, AND SHALL MEET THE REQUIREMENTS OF CLAUSES 4.2.3.3, 4.2.3.4, 4.2.3.5 AND 4.2.3.9 OF CSA 23.1-04.

3.2 ANCHOR INSTALLATION

- 3.2.1 THE ANCHORS SHALL BE INSTALLED IN A MINIMUM 100 mm DIAMETER BOND ZONE IN HOLES WHICH ARE FREE OF DEBRIS. CENTRALIZERS SHALL BE USED TO ENSURE THAT THE ANCHOR BAR IS CENTERED IN THE HOLE.
- 3.2.2 ANCHORS SHALL BE INSTALLED PERPENDICULAR TO THE SHORING WALL FACE WITHIN A TOLERANCE OF 2.5 DEGREES OF THE DECLINATION SHOWN ON THE DRAWINGS OR AS APPROVED BY THE ENGINEER.
- 3.2.3 GROUT SHALL BE INTRODUCED INTO THE ANCHORED ZONE USING AN INJECT ANCHOR SYSTEM (IBO). THE CONTRACTOR IS TO ENSURE THAT GROUNDWATER AND DEBRIS IS FLUSHED FROM THE HOLE. A BOND BREAKER APPROVED BY THE ENGINEER MUST BE USED.
- 3.2.4 ALL ANCHOR TESTING IS TO BE CARRIED OUT AS DESCRIBED IN THE POST TENSIONING INSTITUTE "RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS".
- 3.2.5 ALL ANCHORS SHALL BE SUBJECTED TO AN INCREMENTAL PROOF LOAD OF 1.33 TIMES THE DESIGN LOAD AND HELD FOR A MINIMUM OF TEN MINUTES. THE ELASTIC DEFORMATION AND CREEP OF THE ANCHOR WILL BE ASSESSED BY GEOPACIFIC. IF THE ANCHOR PERFORMANCE DOES NOT MEET THE DESIGN REQUIREMENTS THE ANCHOR MAY BE DOWNGRADED, REJECTED OR SUBJECTED TO A PERFORMANCE TEST.

- 3.2.6 A MINIMUM OF 2% OF ALL ANCHORS MUST BE SUBJECTED TO PERFORMANCE TESTING. THE NEED FOR FURTHER PERFORMANCE TESTS WILL BE MADE BASED ON THE OUTCOME OF THE PROOF TESTS AT THE DISCRETION OF GEOPACIFIC.
- 3.2.7 THE SHORING CONTRACTOR IS RESPONSIBLE FOR SUPPLYING ALL LABOUR, ANCHOR TESTING EQUIPMENT, DIAL GAUGES, AND STANDS AS REQUIRED TO COMPLETE THE REQUIRED TESTS.
- 3.2.8 ANCHORS WHICH DO NOT MEET THE DESIGN REQUIREMENTS WILL NOT BE ACCEPTED AND WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- 3.2.9 A DAILY RECORD OF PRODUCTION INFORMATION IS TO BE RECORDED BY THE CONTRACTOR. THE INFORMATION IS TO INCLUDE ANCHOR ID, INSTALLED DATE, INSTALLATION LENGTH, FREE LENGTH, TEST DATE, TEST LOAD, AND LOCK-OFF LOAD AND IS TO BE SUPPLIED TO GEOPACIFIC AT THE END OF THE PRODUCTION DAY.

3.3 SHOTCRETE PLACEMENT

- 3.3.1 CONCRETE SHALL BE KEPT FROM FREEZING, BEING EXPOSED TO ABNORMALLY HIGH TEMPERATURES, PREMATURE DRYING AND MOISTURE LOSS FOR A PERIOD OF TIME NECESSARY TO ACHIEVE 70% OF THE SPECIFIED 24 HOUR STRENGTH.
- 3.3.2 CONCRETE SHALL NOT BE PLACED ON SURFACES WHICH WILL LOWER THE CONCRETE TEMPERATURE BELOW 10 DEGREES CENTIGRADE EXCEPT WHEN ACCELERATORS ARE USED IN ACCORDANCE WITH CLAUSE 7.4.2.5.1 OF CSA 23.1-04 AND ACI 306R.
- 3.3.3 IF IT IS FORECAST THAT THE AIR TEMPERATURE WILL DROP BELOW 5 DEGREES CENTIGRADE WITHIN 24 HRS OF SHOTCRETE APPLICATION, ALL EQUIPMENT NEEDED FOR ADEQUATE PROTECTION AND CURING SHALL BE ON HAND AND READY FOR USE BEFORE CONCRETE PLACEMENT HAS STARTED. METHODS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CLAUSE 7.4.2.5.3 OF CSA 23.1-04.
- 3.3.4 THE ANCHORS AND SHOTCRETE SHALL BE INSTALLED IN SEQUENCE AND STAGES TO MAINTAIN THE STABILITY OF THE EXCAVATION. STAGES SHALL NOT EXCEED THE HEIGHT SHOWN ON THE DESIGN DRAWINGS.
- 3.3.5 THE EXCAVATION AND CONSTRUCTION SEQUENCE IS AS FOLLOWS:
- A. THE PROCEDURE SHALL NOT LEAVE ANY VERTICAL CUTS EXPOSED OVERNIGHT UNLESS SUPPORTED BY SHOTCRETE AND ANCHORS (WITH ANCHOR NUT HAND TIGHTENED OR TENSIONED) OR SUPPORTED BY A SOIL BERM.
 - B. WELDED WIRE MESH MUST BE OVERLAPPED BY A MINIMUM 2 SQUARES IN ALL DIRECTIONS.
- 3.3.6 50mm DRAINAGE HOLES MUST BE PROVIDED IN THE SHOTCRETE A MINIMUM OF EVERY 3m HORIZONTAL AND 1.5m VERTICAL, MORE DRAINS MAY BE REQUIRED BY THE ENGINEER SUBJECT TO THE ACTUAL CONDITIONS ENCOUNTERED.

3.4 QUALITY CONTROL

- 3.4.1 THE AIR CONTENT SHALL BE DETERMINED IN ACCORDANCE WITH EITHER CSA A23.2-4C OR CSA A23.2-7C AT THE NOZZLE AND ONCE PLACED ON THE WALL. THE CONCRETE USED FOR DETERMINATION OF AIR CONTENT SHALL BE DISCARDED.
- 3.4.2 THE TEMPERATURE OF THE GROUND, AIR AND MIX SHALL BE RECORDED.
- 3.4.3 THE AIR CONTENT OF THE CONCRETE SHALL BE BROUGHT UP OT THE SPECIFIED RANGE BY THE CONCRETE SUPLIER, BY THE ADDITION OF AN AIR-ENTRAINING AGENT IN THE FIELD, IF NECESSARY. MIXING SHALL FOLLOW TO ENSURE PROPER DISPERSION.
- 3.4.4 REINFORCEMENT PLACED IN PANELS IS TO BE REVIEWED BY GEOPACIFIC PRIOR TO PLACEMENT OF SHOTCRETE.

3.5 QUALITY ASSURANCE

- 3.5.1 2 TEST CYLINDERS SHALL BE BROKEN AT 24 HRS, 7 DAYS AND 28 DAYS.
- 3.5.2 STRENGTH TEST CYLINDERS SHALL BE MOULDED AND CURED IN ACCORDANCE WITH CSA A23.2-3C.

DRAWING LIST:

SITE PLAN----- G-RW1
ELEVATIONS, SECTIONS----- G-RW2A, G-RW2B, G-RW2C, G-RW3A, G-RW3B, G-RW3C,
G-RW4A, G-RW4B, G-RW4C
SHORING DETAIL----- G-RW5
KEYSTONE WALL DETAIL & SPECIFICATION-- G-RW6, G-RW7
SHOTCRETE GENERAL NOTES-----G-RW8, (SHEET 1 TO 2)

REFERENCE:



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