



# PROPOSED 3-STOREY STACKED TOWNHOUSE DEVELOPMENT

320 N NANAIMO ST, & 2407,2415 ETON ST., VANCOUVER

TEMPORARY EXCAVATION AND SHORING DESIGN
DECEMBER 18, 2024

DATE:

REVISION:

2024 / AUG./ IG

ISSUED FOR COORDINATION

2024 / SEP. / 03

ISSUED FOR COORDINATION

2024 / SEP. / 18

ISSUED FOR COORDINATION

2024 / OCT./ 08

ISSUED FOR BP APPLICATION

2024 / DEC./ 18

ISSUED FOR BP APPLICATION

# GENERAL

- THE WORK DESCRIBED HEREIN PROVIDES TEMPORARY EXCAVATION AND SHORING DESIGN FOR THE PROPOSED 3-STOREY STACKED TOWNHOUSE WITH ONE LEVEL UNDERGROUND PARKADE DEVELOPMENT.
- THE TEMPORARY SHORING DESIGN IS BASED ON THE ARCHITECTURAL DRAWINGS PROVIDED TO TETRIS GEOTECHNICAL ENGINEERING LTD. (TETRISGEO) BY MATTHEW CHENG ARCHITECT INC. DRAWING DATED MARCH 20, 2024.
- 3. IN THESE NOTES, THE ENGINEER IS TETRIS GEOTECHNICAL ENGINEERING LTD. THE ATTACHED DRAWINGS SHOULD BE READ WITH THESE NOTES SINCE TETRISGEO IS NOT PARTY TO THE CONTRACT BETWEEN THE CLIENT AND THE CONTRACTOR, THESE RECOMMENDATIONS CONSTITUTE AGREEMENT BY BOTH, CLIENT AND CONTRACTOR, IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE THE SUB-CONTRACTOR (IF ANY) AWARE OF THE RECOMMENDATIONS OF THESE DRAWINGS.
- 4. DIMENSIONS, SETBACKS AND CLEARANCES NOTED ON THESE DWGS INDICATE GENERAL INTENT ONLY. THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING FINAL DIMENSIONS, AND FOR RESOLVING CONFLICTS IN NOTED DIMENSIONS, AND FOR VERIFYING DIMENSIONS AND QUANTITY TAKE OFF FOR BIDDING ESTIMATION.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL SETTING OUT, INCLUDING CUT LINES, EXCAVATIONS, GRADES, ANCHOR LOCATIONS, ETC.
- 6. LOCATION OF ALL UNDERGROUND SERVICES AND ANY POTENTIAL CONFLICT SHALL BE CONFIRMED BY THE CONTRACTOR BEFORE DRILLING, AND MEMO STATING SUCH SHALL BE FORWARDED BY CONTRACTOR TO THE ENGINEER. CONTRACTOR TO OBTAIN ALL RELEVANT UTILITY LOCATION DRAWINGS AND APPROVALS FROM ALL UTILITY COMPANIES WHOSE UTILITIES ARE WITHIN THE ANCHOR PENETRATION ZONE, BEFORE DRILLING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL SURROUNDING UNDERGROUND UTILITY AND OBTAIN PERMISSION TO CONDUCT THE SHORING WORK.
- 7. ALL RELEVANT PERMITS FROM GOVERNING AUTHORITIES (IFA REQUIRED) SHALL BE IN PLACE PRIOR TO START OF EXCAVATION.
- 8. ALL RELEVANT INFORMATION WHICH MAY AFFECT THE PERFORMANCE OF THE SHORING SYSTEM (SITE TRAILERS, STORAGE AREAS ETC.) SHALL BE REPORTED IN WRITING TO THE ENGINEER PRIOR TO START OF CONSTRUCTION.
- 9. 'ENCROACHMENT AGREEMENT,' FROM THE ADJACENT PROPERTY OWNER/S IN WHICH THE ANCHORS AND OR THE EXCAVATION WILL BE ENCROACHING INTO, SHALL BE OBTAINED AND FORWARDED TO TETRISGEO PRIOR TO COMMENCEMENT OF WORK.
- 10. A PRE-CONSTRUCTION CONDITION SURVEY OF ADJACENT BUILDINGS/ROADS BE CARRIED OUT BOTH TO IDENTIFY EXISTING DAMAGE AND TO RECORD ANY DAMAGE (IF ANY) CAUSED BY THE EXCAVATION AND SHORING OPERATIONS. IT IS ALSO ESSENTIAL THAT REGULAR (DEFINED LATER DURING INSTALLATION) SURVEYS OF ADJACENT STRUCTURES AND OF THE ANCHOR HEADS BE CARRIED OUT IN ORDER TO IDENTIFY POTENTIAL MOVEMENTS AT THE EARLIEST OPPORTUNITY.
- THE CONTRACTOR WILL REPORT ALL DIMENSIONAL DISCREPANCIES IN THESE DWGS TO THE ENGINEER.
   THE CONTRACTOR SHALL CONFIRM THE LOCATION AND CONDITION OF ALL MAN—MADE ELEMENTS WHICH MAY GET DAMAGED DURING ANCHOR INSTALLATION.
- 13. THE CONTRACTOR SHALL INSPECT THE SHORING SYSTEM AND THE ADJACENT GROUND DAILY, AND REPORT ALL SOIL MOVEMENTS IMMEDIATELY TO THE GEOTECHNICAL ENGINEER.
- 14. WHERE SPECIALIZED DE-WATERING SYSTEMS ARE REQUIRED, THE WORK SHALL BE UNDERTAKEN IN SUCH A MANNER TO ENSURE THAT DAMAGE TO THE SHORING SYSTEM AND ADJACENT PROPERTIES DOES NOT OCCUR. WHERE ROOTS GREATER THAN 10mm IN DIAMETER ARE EXPOSED, CONSULT AN ARBORIST BEFORE SHOOTING SHOTCRETE.
- 15. ALL EXCAVATED PANELS SHALL BE SHOTCRETED THE SAME DAY THEY ARE EXCAVATED.
- 16. ALL INTERIOR EXCAVATIONS NOT SHOWN ON SHORING DRAWINGS SHALL BE COMPLETED IN CONFORMANCE WITH THE WorkSafe BC's SAFETY REGULATION. THE CONTRACTOR SHALL TAKE THE OVERALL RESPONSIBILITY FOR SITE SAFETY.
- 17. THE DRILL PENETRATION AND EXTRACTION RATE SHALL BE APPROPRIATE TO THE GROUND CONDITIONS. IF THIS RATE IS NOT CONTROLLED, EXCESS GROUND CAN BE WITHDRAWN WITH THE BIT RESULTING IN GROUND DEFORMATIONS.
- 18. THE SOIL PARAMETERS USED IN THE SHORING DESIGN IS BASED ON AVAILABLE SOIL INFORMATION PROVIDED BY TETRIS GEO FROM SOIL LOGS CONDUCTED DURING SITE DEVELOPMENT.
- 19. IF DIFFERENT SOIL CONDITIONS ARE ENCOUNTERED DURING SHORING, TETRISGEO WILL REVISE THE DESIGN ACCORDINGLY.
- 20. THE GROUTED BONDED ZONE ANCHOR LENGTH ARE BASED ON ASSUMED SOIL CONDITIONS. THE CAPACITY OF THE ANCHORS WILL BE VERIFIED AND CONFIRMED AT THE BEGINNING OF THE SHORING WORK.
- 21. TWO SACRIFICIAL VERIFICATIONS ANCHORS WILL BE INSTALLED AT THE BEGINNING OF THE CONTRACT AND TESTED TO FAILURE DURING THE PRESENCE OF TETRISGEO'S STAFF.
- 22. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL THE ANCHORS IN THE ACTUAL SITE CONDITIONS ENCOUNTERED.

# MATERIALS

SHOTCRETE: SHOTCRETE SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF 5 MPa AT 24 HOURS AND 30 MPa AT 28 DAYS. SHOTCRETING SHALL BE CARRIED OUT IN ACCORDANCE WITH ACI 506 (SPECIFICATIONS FOR MATERIALS PROPORTIONING AND APPLICATION OF SHOTCRETE).

SOIL NAILS ARE DSI R32N AND R38N NON-GALVANIZED HOLLOW INJECTION BARS. ALL ANCHORS SHOULD BE SUPPLIED WITH COMPATIBLE NUTS AND COUPLERS AS REQUIRED. ALL ANCHORS SHOULD BE GALVANIZED FOR CORROSION PROTECTION.

WELDED WIRE MESH: WELDED WIRE MESH SHALL BE DOUBLE 102 x 102 MW13.3/13.3 (4"x4"-8/8), SHALL HAVE A MINIMUM YIELD STRENGTH OF 60ksi (450 MPg) AND IN ACCORDANCE WITH CSA G30.5.

GROUT: THE GROUT SHALL BE NON-SHRINK CEMENTITIOUS GROUT (MICROSIL PREFERRED), OR EQUIVALENT, WITH A MINIMUM COMPRESSIVE STRENGTH OF 7 MPa IN 24 HOURS AND 40 MPa IN 28 DAYS. THE CONTRACTOR IS RESPONSIBLE FOR THE MIX DESIGN OF GROUT AND SHOTCRETE AND REGULAR TESTING TO ENSURE SPECIFICATIONS. NOTIFY TETRISGEO IMMEDIATELY OF LOW TEST RESULTS, IF ANY.

WATER/CEMENT: 0.33 MAX WATER 10.0L/30KG BAG.

BEARING PLATES: BEARING PLATES SHALL HAVE MINIMUM YIELD STRENGTH OF 260 MPa IN ACCORDANCE WITH CSA G40.21-M 87. ALTERNATE PLATES WILL NOT BE ACCEPTABLE UNLESS APPROVAL HAS BEEN OBTAINED FROM THE ENGINEER. BEARING PLATE DIMENSIONS TO BE 10" x 10" x 5/8" THICK.

# CONSTRUCTION

## WELDED WIRE MESH:

- ALL MESH JOINTS SHALL MAINTAIN A MINIMUM OVERLAP OF 8 INCHES (200 mm).

# ANCHOR + GROUT:

- ANCHORS SHALL BE INSTALLED AT RIGHT ANGLES TO THE EXCAVATION IN PLAN WITHIN 50mm OF MARKED LOCATION. THE ANCHORS AND SHOTCRETE SHALL BE INSTALLED IN STAGES TO MAINTAIN THE EXCAVATION STABILITY. THE HOLE SHOULD BE FREE FROM DEBRIS. ANCHORS TO BE HAND TIGHTENED IMMEDIATELY AFTER THE SHOTCRETE IS APPLIED. NEXT MORNING THE ANCHORS SHALL BE TESTED WITH 'PROOF LOAD' AND LOCKED AT LOCK-OFF LOAD. THE ANCHORS SHALL BE TENSIONED AS SOON AS PRACTICABLE BUT NOT SOONER THAN 18 HOURS AFTER SHOTCRETE PLACEMENT. EXTRA ANCHOR ROW MAY BE REQUIRED DUE TO ANCHOR TESTING RESULT AND SOIL CONDITIONS.
- START PUMPING THE GROUT SO THAT GROUT CAN EXIT DRILL BIT.
- GROUT SHALL BE INSTALLED BY BY PRESSURE GROUTING OR INJECTION GROUT AS DRILLING.
- GROUT SHALL BE APPLIED CONTINUOUSLY DURING DRILLING WITH A GROUT PUMP 60L/MIN VOLUME CAPACITY AND CAN MAINTAIN 2-10MPA PRESSURE RANGE (300PS) TO 1500), 1000-1500 PSI PRESSURE RANGE IS PREFERRED.
- DRILLING ROTATION SHALL BE APPROXIMATELY 60-120 RPM AT APPROXIMATELY 1m/MIN RATE WITH ROTARY DRILLING AND FLUSHING (DEPENDING ON ACTUAL SITE CONDITIONS).
- FOR MORE DETAILS, REFER TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.



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GENERAL NOTES # DETAILS

SEA

PROJECT NO. TG24-023 I

SHEET NO. G-01

STEEL PIPE PILE MATERIALS AND CONSTRUCTION:

#### AUGER METHOD

- 1. STEEL PILES SHALL CONSIST OF SCHEDULE 80 4", 6", OR 8", OR AN APPROVED EQUIVALENT.
- 2. PILE LOCATIONS MUST BE CLEARLY MARKED ON-SITE PRIOR TO DRILLING.
- PILES SHALL BE AUGERED AND PLACED ONE AT A TIME, WITH PILES DROPPED INTO POSITION AS CONSTRUCTION PROGRESSES.
- 4. AUGERED HOLES SHALL BE BACKFILLED WITH STRUCTURAL CONCRETE UP TO THE PROPOSED BOTTOM ELEVATION OF THE EXCAVATION. LEAN CONCRETE SHALL BE USED TO FILL THE REMAINING VOID FROM THE BOTTOM OF THE EXCAVATION TO THE EXISTING GRADE.

#### CASING METHOD

- STEEL PIPE PILES SHALL BE INSTALLED IN PRE-DRILLED HOLES USING A TEMPORARY CASING WITH A DIAMETER AS SPECIFIED IN THE DRAWINGS OR LARGER, TO PREVENT HOLE COLLAPSE DURING INSTALLATION.
- STEEL PIPE PILES MUST BE CENTERED WITHIN THE CASING, WHICH SHALL BE BACKFILLED WITH MICROSIL GROUT USING THE TREMIE METHOD.
- THE TEMPORARY CASING SHALL BE INCREMENTALLY EXTRACTED WHILE INJECTING MICROSIL GROUT, ENSURING THE GROUT EXTENDS TO THE TOP ELEVATION SPECIFIED IN THE DRAWINGS AFTER THE CASING REMOVAL.
- 4. STEEL PIPE PILES SHALL BE INSTALLED WITH A MAXIMUM PLAN VARIATION OF 50 MM AND SHALL NOT DEVIATE MORE THAN 2% FROM PLUMB.
- THE CONTRACTOR MUST PROVIDE APPROPRIATE EQUIPMENT TO VERIFY ALIGNMENT OF THE STEEL PIPE PILES DURING INSTALLATION AND CONTINUOUSLY MONITOR THE PILES TO ENSURE COMPLIANCE WITH PROJECT TOLERANCES.
- 6. ADJUSTMENTS TO THE STEEL PIPE PILE LENGTHS SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL FROM THE GEOTECHNICAL ENGINEER.
- THE DRILLING CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER OF ANY SIGNIFICANT CHANGES IN DRILLING CONDITIONS, SUCH AS OBSTRUCTIONS OR VOIDS, AS THEY OCCUR.

SHOTCRETE PLACEMENT: SHOTCRETE TO BE PLACED IN SUCH A MANNER THAT REGREGATION OF MATERIAL OR POST PLACEMENT SLUMPING DOES NOT OCCUR. UPWARD PLACEMENT OF SHOTCRETE FOR UNDERPINNING PANEL IS NOT ACCEPTABLE. ALL REINFORCING AND WELDED MESH SHALL BE FULLY CONTAINED IN THE SHOTCRETE WITH AT LEAST 25mm OF COVER. REMOVAL OF DEFECTIVE SHOTCRETE SHALL BE AT CONTRACTOR'S EXPENSE, SHOTCRETE SHOULD NOT BE PLACED UNDER SUBJERO TEMPERATURE.

#### TESTING

ANCHORS: ALL ANCHORS SHALL BE APPLIED 'PROOF LOAD' AS GIVEN IN THE TABLE. THE LOAD SHALL BE MAINTAINED AND MONITORED FOR 3 MINUTES. IF THE REDUCTION IN LOAD IS LESS THAN 2% OF PROOF LEAD, THE ANCHOR SHALL BE LOCKED AT THE LOCK-OFF LOAD/DESIGN LOAD. ALL ANCHORS SHALL BE TESTED IN THE PRESENCE OF GEOTECHNICAL ENGINEER. PROOF TESTING MAY REQUIRE DIAL GAUGE AND TRIPOD STAND IF THE GROUND IS SOFT.

IF THE ANCHOR DOES NOT HOLD THE PROOF LOAD FOR 3 MINUTES (FAILURE), ATTEMPT SHALL BE MADE TO SEE AT WHAT LOAD THE ANCHOR CAN HOLD FOR SEVERAL MINUTES, THE ANCHOR SHALL BE LOCKED AT THIS LOAD, IF SEVERAL ANCHORS CANNOT HOLD THE DESIGN LOAD, ADDITIONAL ANCHORS SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR WILL PROVIDE THE REQUIRED TESTING APPARATUS INCLUDING RECENTLY CALIBRATED JACK AND PERFORM THE ANCHOR TESTING.

GROUT: THE CONTRACTOR TO PROVIDE GROUT SAMPLES WHEN REQUESTED BY THE ENGINEER. COST OF SAMPLING AND TESTING OF GROUT AND SHOTCRETE TO BE ON OWNER'S EXPENSE.

GROUNDWATER CONTROL: THE CONTRACTOR IS REQUIRED TO PROVIDE CONVENTIONAL GROUNDWATER CONTROL INCLUDING, BUT NOT EXCLUSIVE TO, SUMPS, PUMPS AND DITCHES. EXCAVATION IS TO PROCEED IN SUCH A MANNER THAT WATER DOES NOT POND AT THE BASE OF THE SHOTCRETE OR EXCAVATED PANELS. LOSS OF SOIL FROM GROUNDWATER MOVEMENT SHALL BE CONTROLLED BY USE OF FILTER FABRICS. WHERE MATERIAL LOST BEHIND SHOTCRETE FACE, THE VOID SHALL BE BACKFILLED USING SHOTCRETE, GROUT, OR GRAVEL AS DIRECTED BY THE ENGINEER.

WEEP HOLE INSTALLATION TO BE DETERMINED BASED ON THE ACTUAL GROUND CONDITION THAT WILL BE ENCOUNTERED.

SHOTCRETE CORES MAY BE REQUIRED BY TETRISGEO TO VERIFY THE COMPRESSIVE STRENGTH.

NOTIFICATION OF WORK AND ENGINEERING REVIEWS

THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 24 HOURS PRIOR TO START OF FOLLOWING ACTIVITIES (BUT NOT LIMITED TO) FOR REVIEWS:

- 1. COMMENCEMENT OF WORK.
- 2. EXCAVATION AT 1.2 DEPTH.
- 3. ANCHOR'S FREE LENGTH TESTING, PROOF TESTING, PULL TESTING, AND DETENTIONING AND REMOVAL.
- 4. PLACEMENT OF BACKFILL.

FAILURE OF ADEQUATE NOTIFICATION MAY RESULT IN RE-EXCAVATION OF BACKFILLED AREAS, OR FAILURE TO PROVIDE 'LETTERS OF COMPLETION' BY THE ENGINEER. TETRISGEO IS THE SOLE JUDGE OF WHETHER A TECHNICIAN OR ENGINEER IS REQUIRED ON SITE.

SHOTCRETE REMOVAL / ANCHOR DETENSIONING:

ALL ANCHORS SHALL BE DE-TENSIONED PROGRESSIVELY IN SEQUENCES AS DIRECTED BY THE GEOTECHNICAL ENGINEER AS THE BASEMENT WALL IS BACKFILLED.

ALL ANCHOR RODS LEFT IN PLACE BELOW 1,50m SHALL BE DE-TENSIONED OR FULLY GROUTED.

ALL EXCAVATION AND SUPPORT WORKS WITHIN THE CITY OF VANCOUVER SHALL BE IN STRICT ACCORDANCE WITH THE CITY'S REQUIREMENTS.

NO PART OF THE ANCHOR SYSTEM SHALL REMAIN IN PLACE WITHIN 1.5m (5FT.) OF FINAL GRADE. ANCHORS 1.5m (5FT.) BELOW FINAL GRADE SHALL BE DE-TENSIONED OR FULLY GROUTED WHEN NO LONGER REQUIRED IN THE OPINION OF THE GEOTECHNICAL ENGINEER.

NO SHOTCRETE SHALL REMAIN IN PLACE WITHIN 1.5m (5FT.) OF FINAL GRADE. A BOND BREAKER MUST BE INSTALLED BETWEEN BLIND FORMED FOUNDATION WALLS AND SHOTCRETE ON CITY PROPERTY TO ALLOW FOR SHOTCRETE REMOVAL.

## POST CONSTRUCTION:

ALL SHOTCRETE WALL(S) WITHIN THE MUNICIPALITY ROW SHALL BE REMOVED TO A DEPTH OF 1.5m (5FT.)
ALL ANCHOR RODS WITHIN THE MUNICIPALITY ROW SHALL BE REMOVED TO A DEPTH OF 1.5m (5FT) AND WITHIN A 1.0m CIRCUMFERENCE OF ANY UNDERGROUND UTILITY.

#### EROSION PROTECTION:

ALL SLOPES MUST BE COMPLETELY COVERED WITH SECURED POLYETHYLENE SHEETINGTO PROTECT FROM EROSION BY PRECIPITATION.

# LIMITATIONS

THIS DESIGN MAY BE REVISED DURING THE CONSTRUCTION STAGE DUE TO THE FOLLOWING REASONS:

- A. THE DESIGN IS BASED ON THE ASSUMED VALUE SOIL-GROUT BOND. THIS WILL BE CONFIRMED BY PULL TESTS/PROOF TEST DURING ANCHOR INSTALLATION. THE ACTUAL BOND MAY BE LESS THAN THE ASSUMED VALUE.
- B. DUE TO THE VARIABLE SOIL CONDITIONS
- C. FEATURES INCONSISTENT WITH THE DESIGN.

TETRISGEO WILL HAVE NO SHARE OF COSTS OF EXTRA WORK OR SAVINGS DUE TO DESIGN CHANGE. TETRISGEO WILL NOT BE LIABLE TO ANY PARTY FOR THE COST OF ADDITIONAL SHORING OR DELAYS OR DESIGN CHANGES. TETRISGEO WILL NOT BE RESPONSIBLE FOR RECORDING QUANTITIES.

ANY DISCREPANCY SHALL BE REPORTED IMMEDIATELY TO THE UNDERSIGNED BEFORE THE COMMENCEMENT OF WORK. THE LOCATION OF THE SHOTCRETE WALL SHALL BE MARKED ON-SITE BY OTHERS (GENERALLY SURVEYOR) AND THIS DRAWING SHOULD NOT BE USED FOR SUCH PURPOSE.

PRIOR TO DRILLING, CONSTRUCTION SEQUENCE AND EXECUTION PLAN MUST BE DISCUSSED AND REVIEWED WITH THE GEOTECHNICAL ENGINEER OR APPROVED TETRISGEO ENGINEERING STAFF.

IT IS IMPERATIVE THAT ONLY QUALIFIED CONTRACTORS SHALL BE SELECTED FOR THIS BID ON THIS PROJECT AS IT IS A HIGHLY SPECIALIZED PROJECT.

THE CONTRACTOR MUST PROVIDE THE FOLLOWING PLANS AND TO BE REVIEWED BY TETRISGEO.

- 1. GENERAL HEALTH AND SAFETY PLANS.
- 2. GROUT SPILL AND DISPOSAL PLAN,
- 3. ESC PLAN (IF REQUIRED),
- 4. GENERAL SPILL RESPONSE PLAN,
- 5. INSPECTION AND TESTING PLAN, AND
- 6. TRAFFIC MANAGEMENT PLAN, IF REQUIRED, DURING SHOTCRETING.

## POST CONSTRUCTION:

ALL SHOTCRETE WALL(S) WITHIN THE MUNICIPALITY ROW SHALL BE REMOVED TO A DEPTH OF 1.5m

ALL ANCHOR RODS WITHIN THE MUNICIPALITY ROW SHALL BE REMOVED TO A DEPTH OF 1.5m AND WITHIN A 1.0m RADIUS OF ANY UNDERGROUND UTILITY.

## EROSION PROTECTION:

ALL SLOPED MUST BE COMPLETELY COVERED WITH SECURED POLYETHYLENE SHEETING TO PROTECT FROM EROSION BY PRECIPITATION.

### DISCLAIMER:

IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO DO THEIR OWN DUE DILIGENCE IN PROPERLY LOCATING UTILITIES AND FIBER OPTICS IN AND AROUND THE SITE.

TETRISGEO IS NOT RESPONSIBLE FOR ANY DAMAGES OF ANY PROPERTIES DURING CONSTRUCTION.

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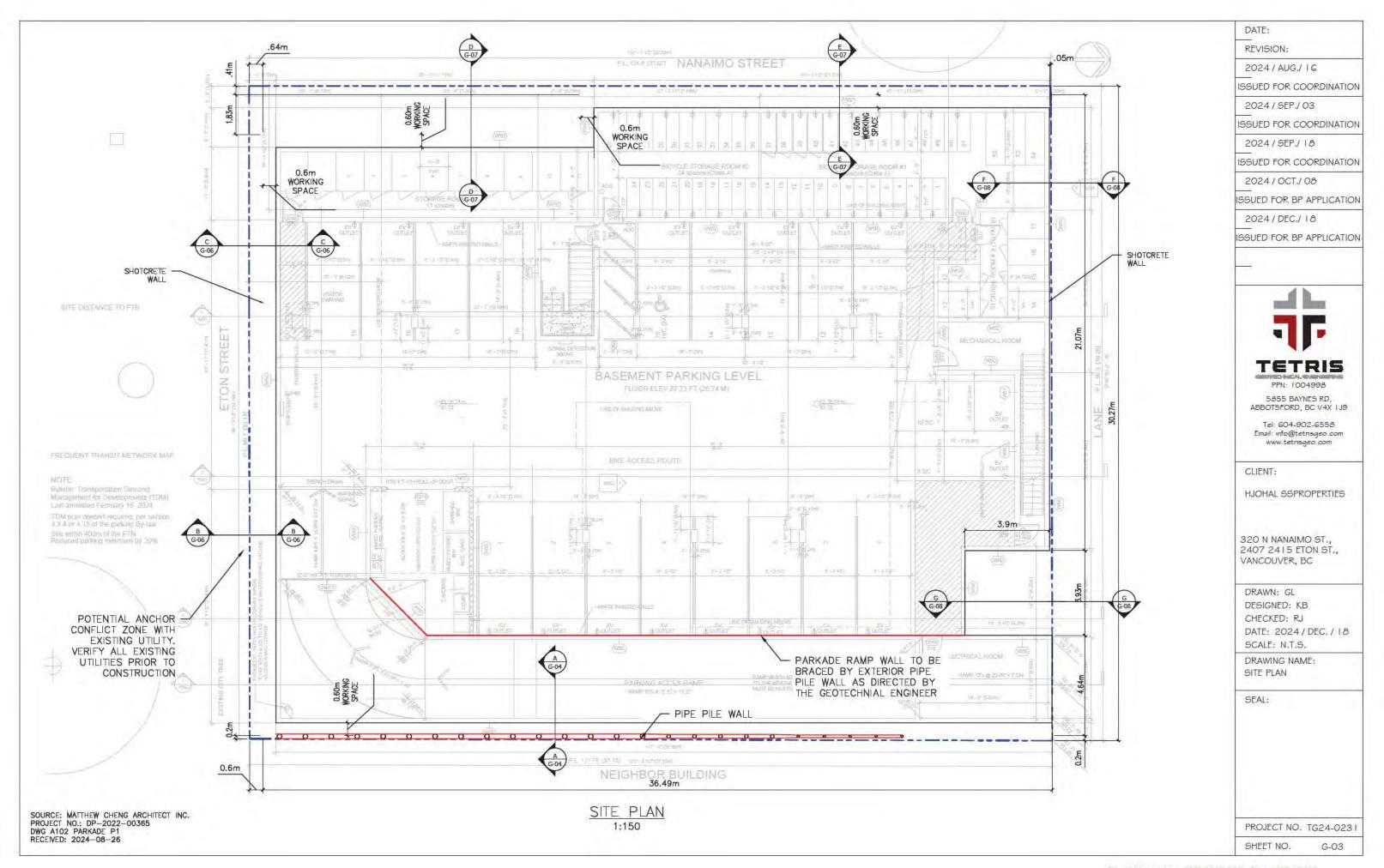
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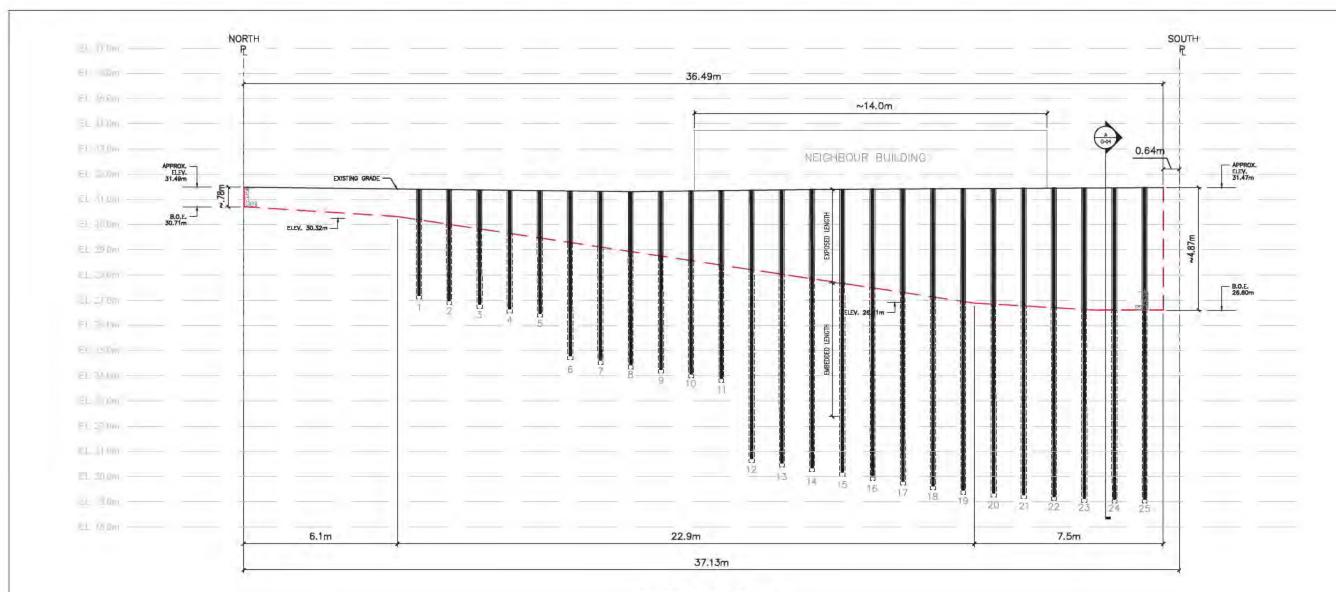
DRAWING NAME: GENERAL NOTES

SEAL:

PROJECT NO. TG24-0231

SHEET NO. G-02





EAST ELEVATION 1:150

PILENO.	PILETYPE	EXPOSED LENGTH (m)	EXPOSED LENGTH (ft)	EMBEDDED LENGTH (m)	EMBEDDED LENGTH (ft)	TOTAL LENGTH (m)	TOTAL LENGTH (ft.)
1	SCH 80 4" STEEL PILE	2.0	6.56	3.00	9.84	5.00	16.41
2	SCH 80 4" STEEL PILE	2.0	6.56	3.00	9.84	5.00	16.41
3	SCH 80 4" STEEL PILE	2.0	6.56	3.00	9.84	5.00	16.41
4	SCH 80 4" STEEL PILE	2.0	6,56	3.00	9.84	5.00	16.41
5	SCH 80 4" STEEL PILE	2.0	6.56	3.00	9.84	5.00	16.41
6	SCH 80 6" STEEL PILE	3.0	9.84	3.90	12.80	6.90	22.64
7	SCH 80 6" STEEL PILE	3.0	9.84	3.90	12.80	6.90	22.64
8	SCH 80 6" STEEL PILE	3.0	9.84	3.90	12.80	6.90	22.64
9	SCH 80 6" STEEL PILE	3.0	9.84	3.90	12.80	6.90	22.64
10	SCH 80 6" STEEL PILE	3.0	9,84	3.90	12.80	6.90	22.64
11	SCH 80 6" STEEL PILE	3.0	9.84	3.90	12.80	6.90	22.64

PILENO.	PILETYPE	EXPOSED LENGTH (m)	EXPOSED LENGTH (ft)	EMBEDDED LENGTH (m)	EMBEDDED LENGTH (ft)	TOTAL LENGTH (m)	TOTAL LENGTH (ft.)
12	SCH 80 8" STEEL PILE	5.0	16.41	6.50	21.33	11.50	37.73
13	SCH 80 8" STEEL PILE	5.0	16.41	6.50	21.33	11.50	37.73
14	SCH 80 8" STEEL PILE	5.0	16.41	6.50	21.33	11.50	37.73
15	SCH 80 8" STEEL PILE	5.0	16.41	6.50	21.33	11.50	37.73
16	SCH 80 8" STEEL PILE	5.0	16.41	6.50	21.33	11.50	37.73
17	SCH 80 8" STEEL PILE	5.0	16.41	6.50	21.33	11.50	37.73
18	SCH 80 8" STEEL PILE	5.0	16.41	6.50	21.33	11.50	37.73
19	SCH 80 8" STEEL PILE	5.0	16.41	6.50	21.33	11.50	37.73
20	SCH 80 8" STEEL PILE	5.0	16.41	6.50	21.33	11.50	37.73
21	SCH 80 8" STEEL PILE	5.0	16.41	6.50	21.33	11,50	37.73
22	SCH 80 8" STEEL PILE	5.0	16.41	6,50	21.33	11.50	37.73
23	SCH 80 8" STEEL PILE	5.0	16.41	6,50	21.33	11.50	37.73
24	SCH 80 8" STEEL PILE	5.0	16.41	6,50	21.33	11.50	37.73
25	SCH 80 8" STEEL PILE	5.0	16.41	6,50	21.33	11,50	37.73

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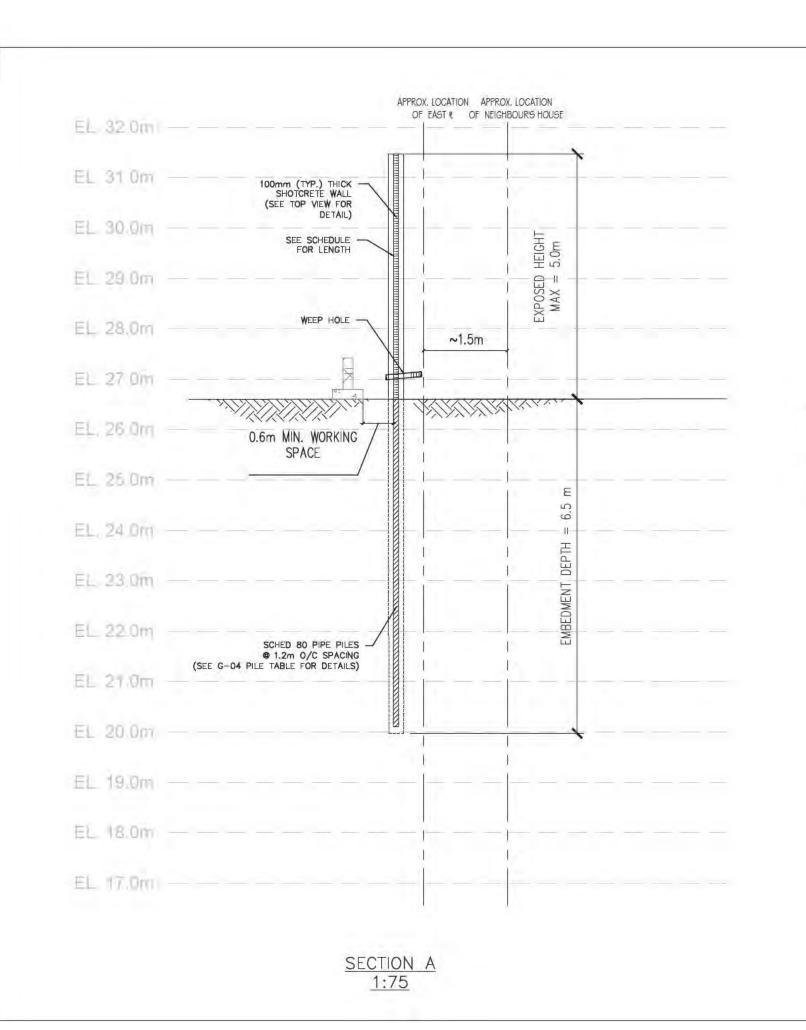
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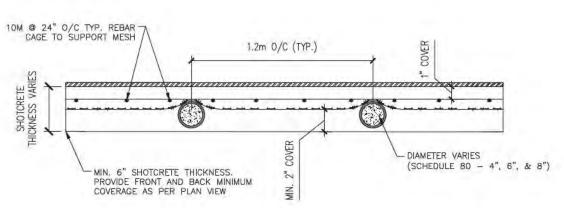
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DRAWING NAME:
EAST ELEVATION #
SECTIONS
SEAL:

PROJECT NO. TG24-0231 SHEET NO. G-04



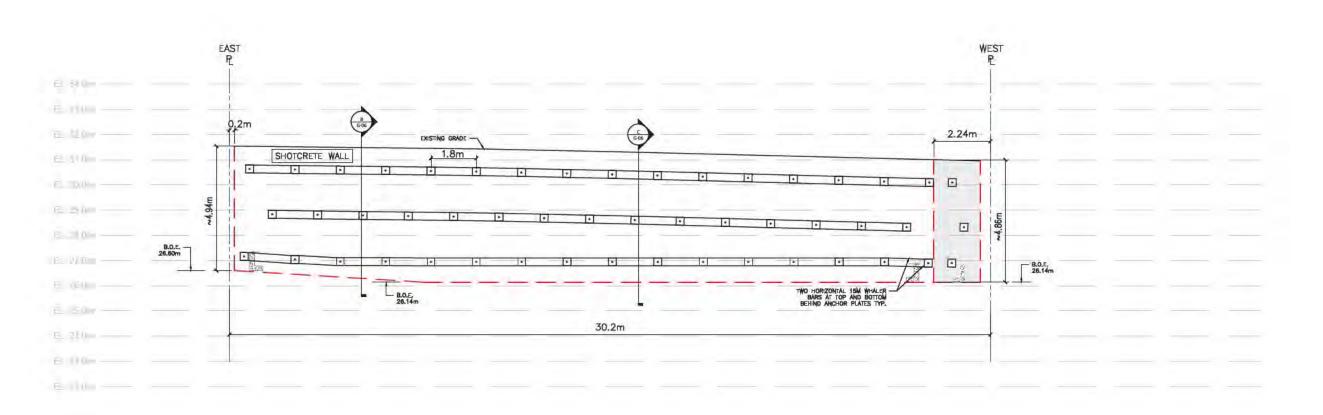


SHOTCRETE WALL — TOP VIEW DETAIL

1:100

DATE: REVISION: 2024 / AUG./ 16 ISSUED FOR COORDINATION 2024 / SEP. / 03 ISSUED FOR COORDINATION 2024 / SEP. / 18 ISSUED FOR COORDINATION 2024 / OCT./ 08 ISSUED FOR BP APPLICATION 2024 / DEC./ 18 ISSUED FOR BP APPLICATION PPN: 1004998 5855 BAYNES RD, ABBOTSFORD, BC V4X 1J9 Tel: 604-902-6558 Email: info@tetrisgeo.com www.tetrisgeo.com CLIENT: HJOHAL SSPROPERTIES 320 N NANAIMO ST., 2407 2415 ETON ST., VANCOUVER, BC DRAWN: GL DESIGNED: KB CHECKED: RJ DATE: 2024 / DEC. / 18 SCALE: N.T.S. DRAWING NAME: SOLDIER PILE SECTIONS SEAL:

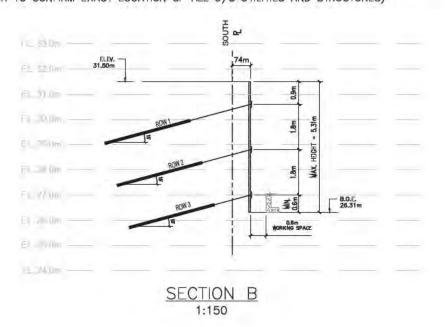
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SOUTH ELEVATION 1:150

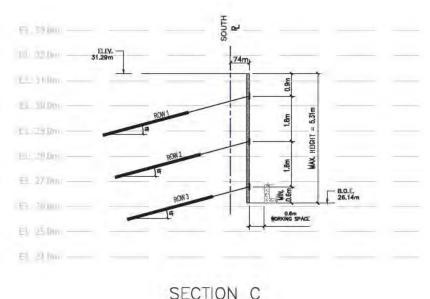
			DSI R	32N NON-	-GALVANIZED	HOLLOW BARS	i .	
ROW	LENGTH (m)	UNBONDED (m)	BONDED (m)	LOCKOFF (kN)		HORIZONTAL SPACING (m)	VERTICAL SPACING (m)	ANGLE OF INCLINATION (*)
1	6.0	3.5	2.5	76	98	1.8	AS NOTED	15
2	5.5	3.5	2.0	76	98	1.8	AS NOTED	15
3	5.0	3.5	1.5	76	98	1.8	AS NOTED	15

(NOTE: CONTRACTOR TO CONFIRM EXACT LOCATION OF ALL U/G UTILITIES AND STRUCTURES)



DSI R32N NON-GALVANIZED HOLLOW BARS											
ROW	LENGTH (m)	UNBONDED (m)	BONDED (m)	LOCKOFF (kN)		HORIZONTAL SPACING (m)	VERTICAL SPACING (m)	ANGLE OF INCLINATION (*)			
1	6.0	3.5	2.5	76	98	1.8	AS NOTED	15			
2	5.5	3.5	2.0	76	98	1.8	AS NOTED	15			
3	5.0	3.5	1.5	76	98	1.8	AS NOTED	15			

(NOTE: CONTRACTOR TO CONFIRM EXACT LOCATION OF ALL U/G UTILITIES AND STRUCTURES)



SECTION C

ISSUED FOR COORDINATION 2024 / SEP. / 03 ISSUED FOR COORDINATION 2024 / SEP. / 18 ISSUED FOR COORDINATION 2024 / OCT./ 08 ISSUED FOR BP APPLICATION 2024 / DEC./ 18 ISSUED FOR BP APPLICATION

DATE: REVISION:

2024 / AUG./ 16

5855 BAYNES RD, ABBOTSFORD, BC V4X 1J9

Tel: 604-902-6558 Email: info@tetrisgeo.com www.tetrisgeo.com

CLIENT:

HJOHAL SSPROPERTIES

320 N NANAIMO ST., 2407 2415 ETON ST., VANCOUVER, BC

DRAWN: GL DESIGNED: KB CHECKED: RJ DATE: 2024 / DEC. / 18 SCALE: N.T.S.

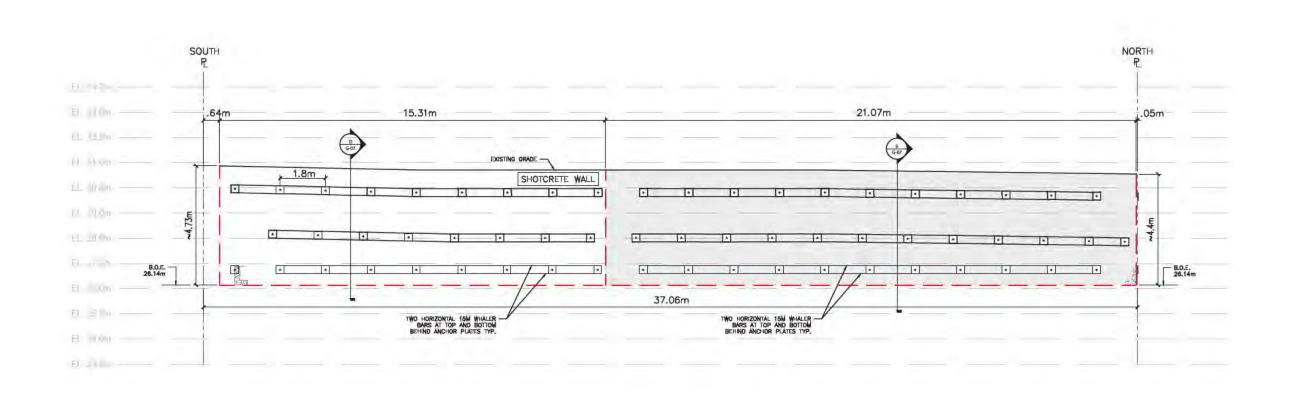
DRAWING NAME: SOUTH ELEVATION # SECTIONS

SEAL:

PROJECT NO. TG24-0231 SHEET NO.

G-06

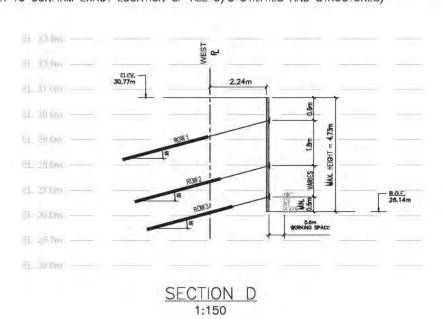
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WEST ELEVATION 1:150

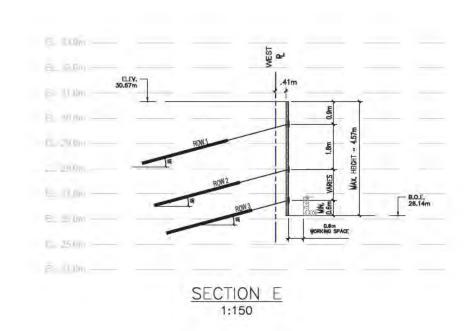
DSI R32N NON-GALVANIZED HOLLOW BARS										
ROW	LENGTH (m)	UNBONDED (m)	BONDED (m)	LOCKOFF (kN)		HORIZONTAL SPACING (m)	VERTICAL SPACING (m)	ANGLE OF INCLINATION (*)		
1	6.0	3.5	2.5	76	98	1.8	AS NOTED	15		
2	5.5	3.5	2.0	76	98	1.8	AS NOTED	15		
3	5.0	3.5	1.5	76	98	1.8	AS NOTED	15		

(NOTE: CONTRACTOR TO CONFIRM EXACT LOCATION OF ALL U/G UTILITIES AND STRUCTURES)



DSI R32N NON-GALVANIZED HOLLOW BARS										
ROW	LENGTH (m)	UNBONDED (m)	BONDED (m)	LOCKOFF (kN)		HORIZONTAL SPACING (m)	VERTICAL SPACING (m)	ANGLE OF INCLINATION (')		
1	6.0	3.5	2.5	76	98	1.8	AS NOTED	15		
2	5.5	3.5	2.0	76	98	1.8	AS NOTED	15		
3	5.0	3.5	1.5	76	98	1.8	AS NOTED	15		

(NOTE: CONTRACTOR TO CONFIRM EXACT LOCATION OF ALL U/G UTILITIES AND STRUCTURES)



DATE: REVISION: 2024 / AUG./ 16 ISSUED FOR COORDINATION 2024 / SEP. / 03 ISSUED FOR COORDINATION 2024 / SEP. / 18

ISSUED FOR COORDINATION

2024 / OCT./ 08 ISSUED FOR BP APPLICATION

2024 / DEC./ 18

ISSUED FOR BP APPLICATION



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CLIENT:

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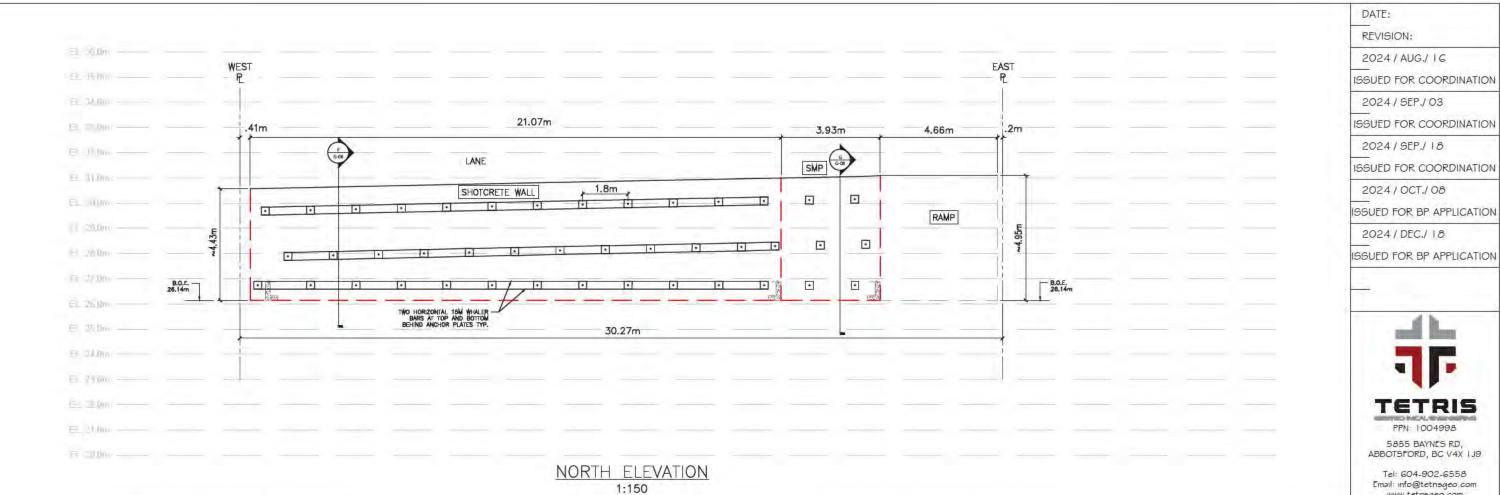
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DRAWING NAME: WEST ELEVATION # SECTIONS

SEAL:

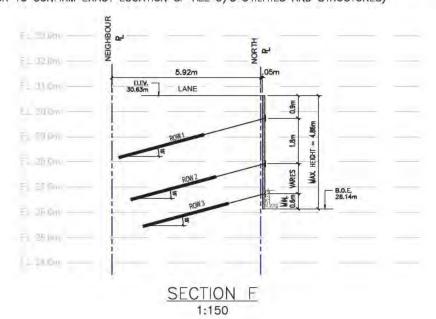
PROJECT NO. TG24-0231

SHEET NO. G-07



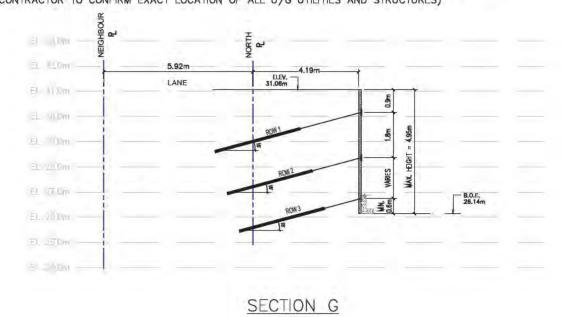
			DSI R	32N NON-	-GALVANIZED	HOLLOW BARS		
ROW	LENGTH (m)	UNBONDED (m)	BONDED (m)	LOCKOFF (kN)		HORIZONTAL SPACING (m)	VERTICAL SPACING (m)	ANGLE OF INCLINATION (*)
1	6.0	3.5	2.5	76	98	1.8	AS NOTED	15
2	5.5	3.5	2.0	76	98	1.8	AS NOTED	15
3	5.0	3.5	1.5	76	98	1.8	AS NOTED	15

(NOTE: CONTRACTOR TO CONFIRM EXACT LOCATION OF ALL U/G UTILITIES AND STRUCTURES)



			DSI R	32N NON-	-GALVANIZED	HOLLOW BARS		
ROW	LENGTH (m)	UNBONDED (m)	BONDED (m)	LOCKOFF (kN)	PROOF LOAD (kN)		VERTICAL SPACING (m)	ANGLE OF INCLINATION (*)
1	6.0	3.5	2.5	76	98	1.8	AS NOTED	15
2	5.5	3.5	2.0	76	98	1.8	AS NOTED	15
3	5.0	3.5	1.5	76	98	1.8	AS NOTED	15

(NOTE: CONTRACTOR TO CONFIRM EXACT LOCATION OF ALL U/G UTILITIES AND STRUCTURES)



CLIENT:

HJOHAL SSPROPERTIES

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Tel: 604-902-6558

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DRAWING NAME: NORTH ELEVATION ≢ SECTIONS

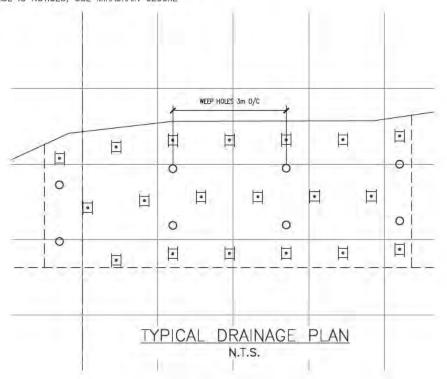
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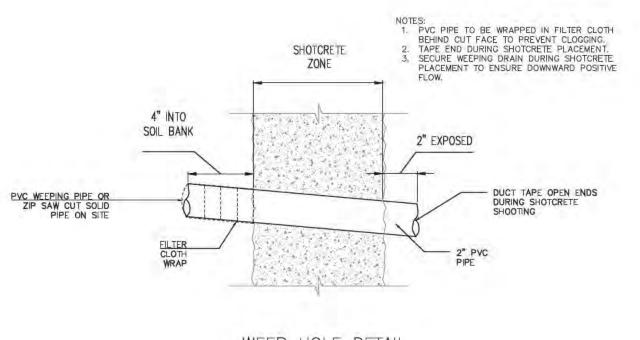
PROJECT NO. TG24-0231

SHEET NO. G-08

WEEPING HOLES TO BE INSTALLED ALL THROUGHOUT SHORING RETAINING WALL

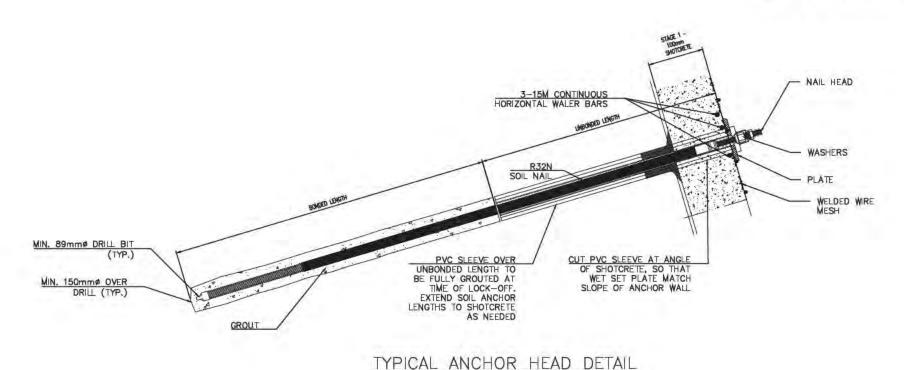
2. IF SURFACE IS DAMP, INSTALL WEEPING HOLES EVERY ON OTHER ROW
3. IF SURFACE IS WET, INSTALL WEEPING HOLES ON EVERY ROW
4. IF HEAVY SEEPAGE IS NOTICED, USE MIRADRAIN 6200XL





WEEP HOLE DETAIL N.T.S.

USE CENTRALIZER @ EACH COUPLER TO MINIMIZE DRILLING ANGLE DEVIATION



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REVISION: 2024 / AUG./ 1G

DATE:

ISSUED FOR COORDINATION

2024 / SEP. / 03

ISSUED FOR COORDINATION

2024 / SEP. / 18

ISSUED FOR COORDINATION

2024 / OCT./ 08

ISSUED FOR BP APPLICATION

2024 / DEC./ 18

ISSUED FOR BP APPLICATION



PPN: 1004998

5855 BAYNES RD, ABBOTSFORD, BC V4X 1J9

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HJOHAL SSPROPERTIES

320 N NANAIMO ST., 2407 2415 ETON ST., VANCOUVER, BC

DRAWN: GL DESIGNED: KB CHECKED: RJ

DATE: 2024 / DEC. / 18 SCALE: N.T.S.

DRAWING NAME: DRAINAGE PLAN # ANCHOR DETAIL

SEAL:

PROJECT NO. TG24-0231

SHEET NO. G-09

