

SCALE 1:40



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SCALE 1:50



**LILY XU, MCIP, RPP, MANAGER
DEVELOPMENT REVIEW SOUTH
PLANNING, INFRASTRUCTURE AND ECONOMIC
DEVELOPMENT DEPARTMENT, CITY OF OTTAWA**

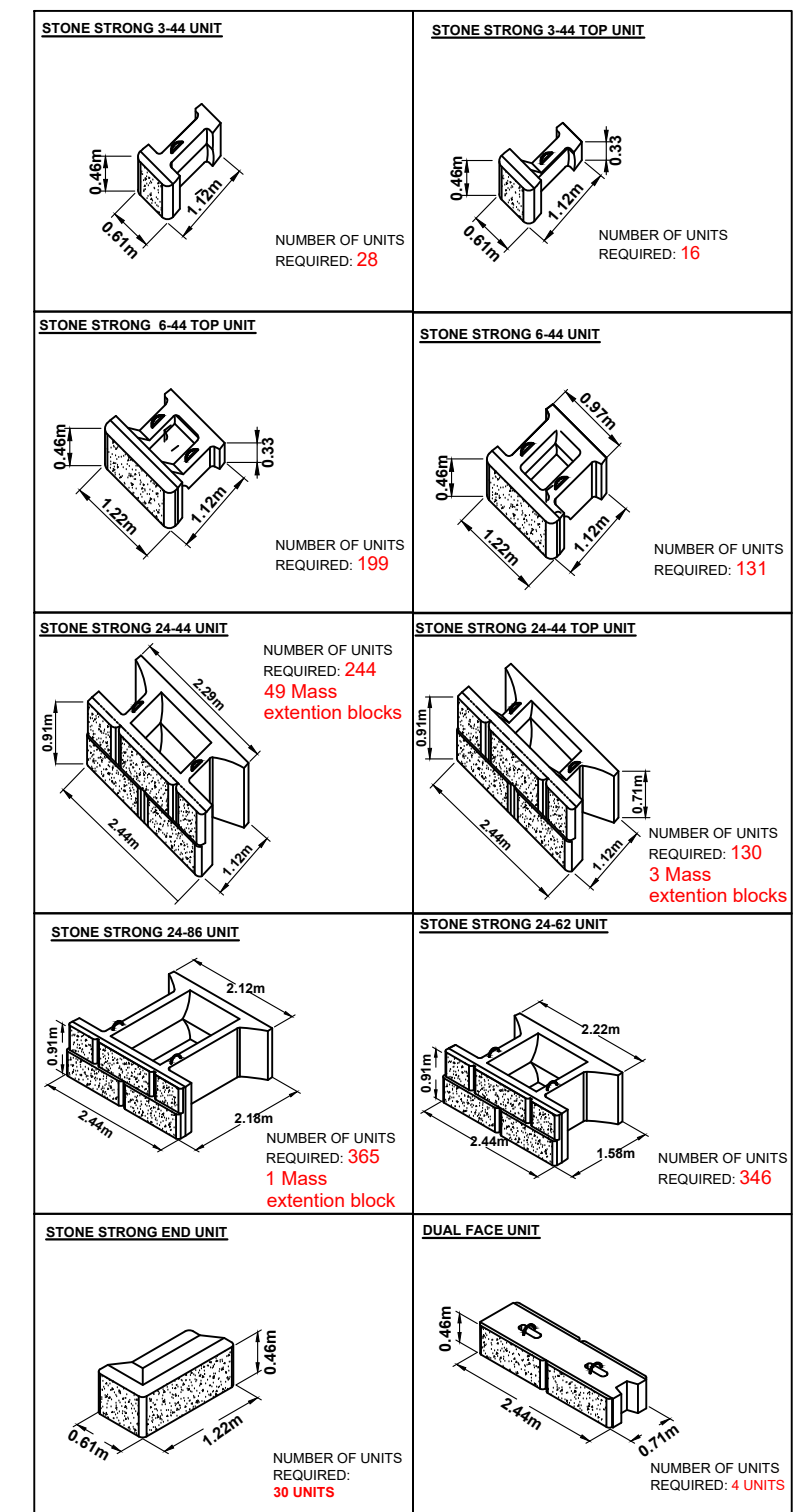
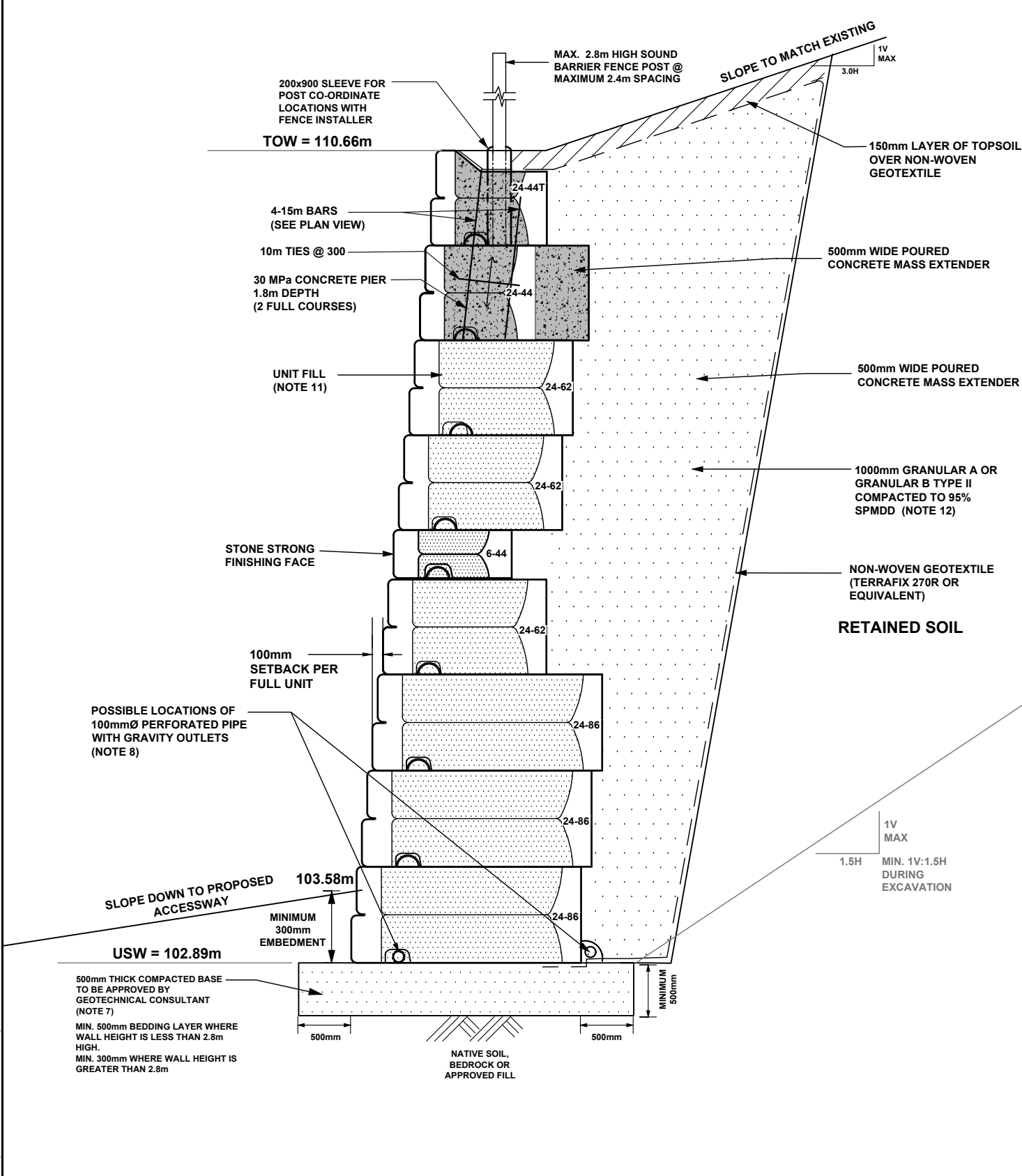
PYTHON LP.

**PROPOSED DEVELOPMENT - PROPOSED RETAINING WALL
HIGHWAY 416 AT FALLOWFIELD ROAD
OTTAWA, ONTARIO**

Diagram illustrating the construction of a 15° corner using three courses of blocks:

- BLOCKS STEP BACK 100mm PER COURSE (7 COURSES/6.40m MAX HEIGHT)**
- BOTTOM COURSE (24-96 UNIT)**
- THIRD COURSE FROM BOTTOM (24-62 UNIT)**
- SECOND COURSE FROM BOTTOM (24-86 UNIT)**
- FILL VOID WITH 35 MPa CONCRETE**
- 15° CORNER**

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NOTES

1. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR UTILITY CLEARANCES AND CONSTRUCTION SITE SAFETY. PATERSON GROUP SHALL NOT BE RESPONSIBLE FOR MEANS OR METHODS OF CONSTRUCTION OR FOR SAFETY OF WORKERS OR OF THE PUBLIC.

PROPERTY	RETAINED FILL	FOUNDATION MEDIUM(1)	
FOUNDATION MEDIUM(2)			
FRICTION ANGLE - ϕ	40°	35°	45°
UNIT WEIGHT - γ	22 kN/m3	20 kN/m3	24 kN/m3
COHESION - C	0	2 kPa	500 kPa
SOIL TYPE	OPSS GRANULAR B Type II	GLACIAL TILL	BEDROCK

MATERIAL PROPERTIES ARE BASED ON SITE EVALUATION BY PATERSON GROUP AND DISCUSSIONS WITH THE CONTRACTOR. SEISMIC LOADING WAS EVALUATED ACCORDING TO THE CURRENT CANADIAN HIGHWAY AND BRIDGE DESIGN CODE WITH A PEAK GROUND ACCELERATION VALUE OF 0.28.

1. THE WALL BASE DESIGN ASSUMES A BEARING RESISTANCE AT SLS OF 200kPa. PATERSON GROUP ENGINEER SHOULD OBSERVE THE BEARING CONDITIONS AND ADJUST THE THICKNESS OF THE GRANULAR BASE TO ACHIEVE THE REQUIRED BEARING CAPACITY. THE SURFACE FINISH OF THE FILL MATERIAL WILL BE REMOVED TO NATIVE BEARING SURFACE INSPECTED AND APPROVED BY PATERSON AT THE TIME OF CONSTRUCTION.
2. THIS DESIGN HAS CONFIRMED THE RETAINING WALL SYSTEM STABILITY AS WELL AS THE GLOBAL STABILITY WITH A FACTOR OF SAFETY GREATER THAN 1.5 FOR STATIC CONDITIONS AND 1.1 FOR SEISMIC CONDITIONS OF RETAINING WALL BASED ON THE GRADING PROVIDED. IF ACTUAL SITE GRADES VARY SIGNIFICANTLY FROM THOSE SHOWN OR IF THE BACK SLOPE DOES NOT CONFORM, INSTALLATION SHALL NOT PROCEED UNTIL THE WALL DESIGN IS VERIFIED OR MODIFIED IN THE APPLICABLE AREA.
3. PRECAST UNITS SHALL BE STONE STONE RETAINING WALL UNITS MANUFACTURED UNDER LICENSE FROM MASON PRODUCTS.
4. THE WALL BASE FOR THE WALL SHALL CONSIST OF A MIN. 300mm THICK OPSPS GRANULAR B TYPE II COMPACTED TO MIN. 98% OF THE MATERIALS SPMD AND TESTED BY PATERSON/GROUP GEOTECHNICAL PERSONNEL. AT THE TIME OF CONSTRUCTION, SURFACE OF GRANULAR BASE MAY BE DRESSED WITH FINER OF FINEGRADATION TO AID LEAKAGE. ENGINEERING DESIGN OF THE SURFACE OF THE BASE IS SUCH AS TO PRECLUDE LOSS OF FINES INTO BASE. THE THICKNESS OF DRESSING LAYER SHOULD NOT EXCEED 3 TIMES THE MAXIMUM PARTICLE SIZE USED.
5. CONCRETE LEVELING PAD CONSTRUCTED FROM 35 MPa COMPRESSIVE STRENGTH CONCRETE CAN BE USED TO LEVEL THE BULKING THE RETAINING WALL UNITS ONTO THE SURFACE OF THE GRANULAR BEDDING LAYER.
6. WALL IS DESIGNED WITH A MIN. 300mm TOE EMBEDEDMENT WITH A MIN. HORIZONTAL LEDGE WITH A GRANULAR BEDDING LAYER EXTENDING A MIN. 300mm BEYOND THE FACE AND HEEL OF THE BASE BLOCK.
7. INSTALL 150mm DIAMETER PERFORATED PIPE WRAPPED WITH A GEOSECK DRAIN BEHIND HEEL OF WALL. PROVIDE CLEAR STONE SURROUND TO PROTECT PIPE FROM CLOGGING AND DAMAGE. PROVIDE OUTLETS THROUGH WALL. NO FURTHER APART THAN 15m ON CENTRES.
8. THE CONDITIONS WILL BE EVALUATED BY THE GEOTECHNICAL ENGINEER DURING PREPARATION FOR WALL. IF THE WALL IS FOUND TO BE IN CONTACT WITH GRANULAR BEDDING WILL NOT BE SUFFICIENT THE USE OF CONCRETE BEDDING MAY BE REQUIRED.
9. ALIGNMENT OF THE BOTTOM WALL UNIT COURSE SHOULD BE PLANNED TO CONSIDER THAT A NOMINAL 100mm AUTOMATIC SETBACK WILL OCCUR WITH EACH 9.0m INCREMENT OF HEIGHT.
10. BACKFILL MATERIAL SHALL BE APPROVED BY THE SITE GEOTECHNICAL ENGINEER PRIOR TO USE AND SHALL CONSIST OF OPSPS GRANULAR B TYPE II FOLLOWED BY SUITABLE BACKFILL MATERIAL. ALL FILL FROM THE 100mm SETBACK ZONE TO THE FACE OF THE WALL SHOULD ALSO BE COMPACTED. BACKFILL SHALL BE PLACED IN MAXIMUM 300mm LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 96% MOISTURE. MOISTURE CONTENT SHOULD BE CONTROLLED AND MAINTAINED WITHIN -3 TO +4 PERCENT OF OPTIMUM.
11. MAINTAIN TEMPORARY GRADINGS TO DIVERT SURFACE WATER AWAY FROM THE RETAINING WALL. PROVIDE SLOPE FROM BACKSIDE OF WALL TO PROVIDE POSITIVE DRAINAGE AND TO ELIMINATE PONDING.
12. BACKSLOPE SHOULD BE CUT BACK TO A MINIMUM OF 3H:1V TO MAINTAIN A LONG TERM SAFE SLOPE BEHIND THE RETAINING WALL. IT SHOULD BE NOTED THAT WHERE TREES ARE PRESENT WITHIN THE TOP OF SLOPE, A MINIMUM 1:1m SET BACK IS REQUIRED FOR EXCAVATION FROM THE EDGE OF THE TREE.
13. EXCAVATION SIDE SLOPE SHOULD BE PROTECTED TEMPORARILY DURING CONSTRUCTION FROM PRECIPITATION EVENTS BY PLACEMENT OF TARPS.
14. ALL RETAINING WALL RELATED SPECIFICATIONS (BEARING SURFACE, COMPACTION, BLOCK INSTALLATION, ETC.) SHALL BE MONITORED BY PATERSON GROUP ENGINEER. THE WALL DESIGN SHALL BE REVIEWED AND REVIEWED BY PATERSON DURING CONSTRUCTION. A CERTIFICATE LETTER WILL BE ISSUED BY PATERSON GROUP.
15. ANY CUTTING OF BLOCKS TO SUIT SITE CONDITIONS OR WALL DESIGN WILL BE RESPONSIBILITY OF THE CONTRACTOR.
16. CONCRETE MASS EXTENDER POUND BEHIND THE WALL SHOULD CONSIST OF MINIMUM 25MPa COMPRESSIVE STRENGTH CONCRETE. THE MASS EXTENDER SHOULD BE ANCHORED TO THE BACK TAIL OF THE RETAINING WALL BLOCK USING A 15mm REBAR ANCHOR EXTENDING A MINIMUM 300mm INTO THE MASS EXTENDER. THE RETAINED SOIL BEHIND THE WALL SHOULD BE PLACED IN MAXIMUM 300mm LIFTS.
17. SOUND BEDDING SURFACE WILL NEED TO BE CONFIRMED DURING CONSTRUCTION. PATERSON WILL COMPLETE THE REQUIRED ADJUSTMENT TO THE DESIGN BASED ON THE SITE FINDINGS. IT IS EXPECTED THAT THE UPPER WEATHERED LAYER OF BEDROCK WILL BE REMOVED.
18. WHERE THE ROCK IS PLACED DIRECTLY ON THE BEDROCK SURFACE, THE BOTTOM COURSE SHOULD BE ANCHORED TO THE ROCK. ROCK ANCHORS SHOULD BE PLACED AT A MAXIMUM SPACING OF 1.2m. THE ANCHORS SHALL BE 15mm REBAR ANCHORS EXTENDING A MINIMUM 300mm INTO THE BEDROCK SURFACE. THE BOTTOM BLOCK SHOULD BE INFILLED WITH 35 MPa CONCRETE TO SECURE THE BLOCKS TO THE BEDROCK.
19. THE PREPARED FENCING ON TOP OF THE RETAINING WALL SHOULD BE SPECIFIED TO ENSURE THE DESIGN PROVIDED HEREIN IS SUFFICIENT.

Scale:

AS SHOWN

Drawn by: **RCG**

Checked by:

	JV

Approved by: FA

Report No.: **PG5284**

Drawing No.:

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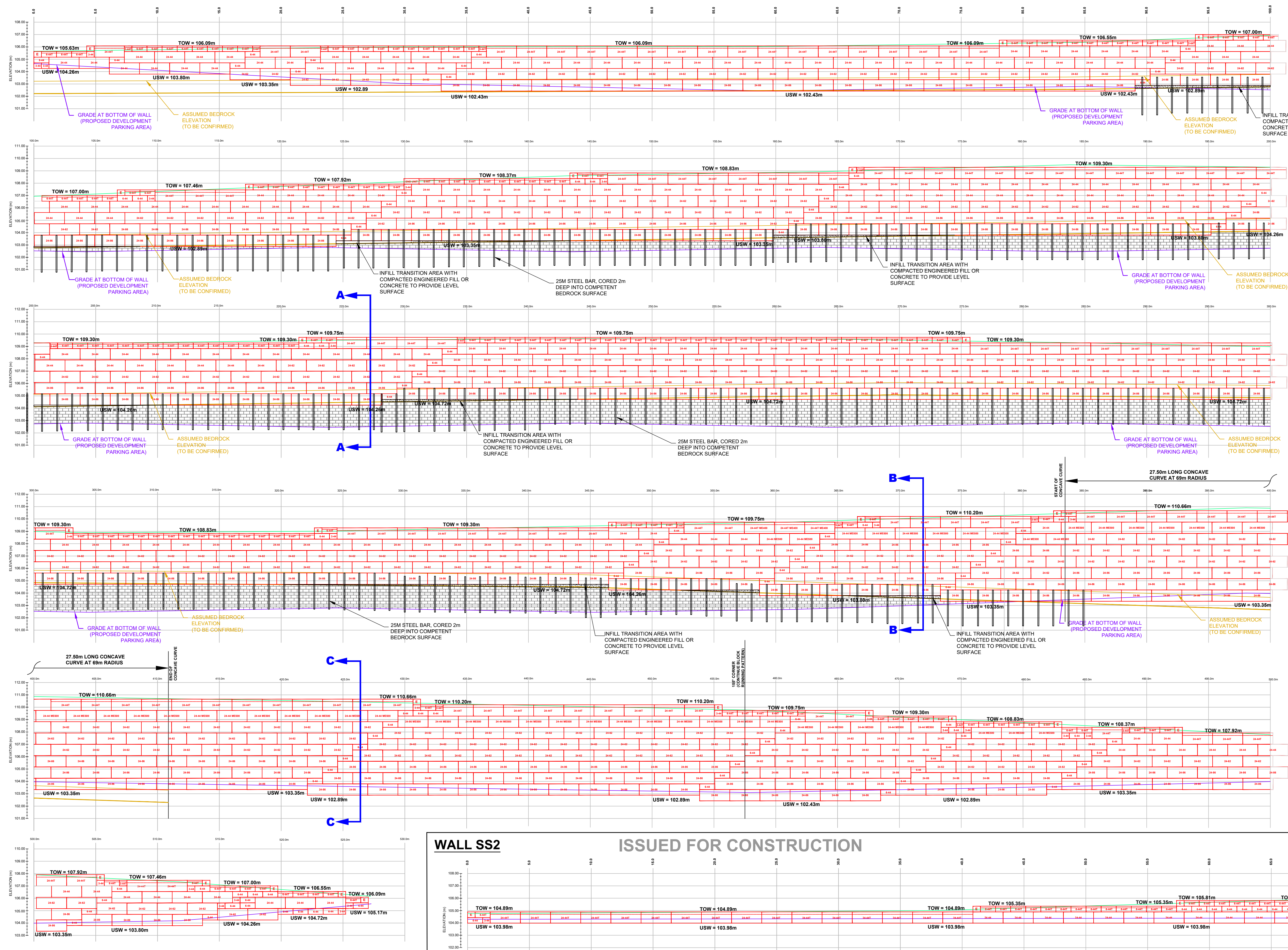
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PG5284-3



STONE STRONG RETAINING WALL DESIGN - WALL SS1 AND SS2

WALL SS1



THIS PLAN IS APPROVED BY THE CITY OF OTTAWA
UNDER SECTION 41 OF THE PLANNING ACT THIS
9 DAY OF JULY, 2020.

[Signature]

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1	ISSUED FOR CONSTRUCTION	14/05/2020	FA
NO.	REVISIONS	DATE	INITIAL

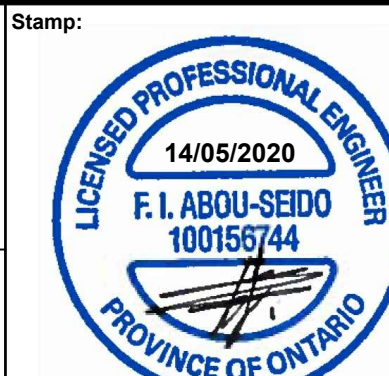
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**PROPOSED DEVELOPMENT - PROPOSED RETAINING WALL
HIGHWAY 416 AT FALLOWFIELD ROAD
OTTAWA, ONTARIO**

Title:

STONE STRONG RETAINING WALL PROFILE - SS1 AND SS2

Stamp:



Scale:

AS SHOWN

RCG

Checked by: _____

Approved by:

FA

Report No.:

PG5284

Drawing No.:

PG5284-2

Revision No.: 0