GENERAL NOTES:

1. GEOTECHNICAL INFORMATION IS BASED ON THE REPORT No.*02602682.000* PREPARED BY CAMBIUM DATED JUNE 11, 2026. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE INTERPRETATION OF THE GEOTECHNICAL INFORMATION IN THIS REPORT.
2. REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ON GEOTECHNICAL CONDITIONS, FOUNDATION RECOMMENDATIONS, AND FOR ALL EARTHWORK INCLUDING EXCAVATION, BACKFILL, AND SUBGRADE PREPARATION.
3. FOLLOW ALL SECTIONS, DETAILS, AND STATEMENTS NOTED AS "TYPICAL", UNLESS OTHERWISE NOTED ON DRAWINGS. TYPICAL DETAILS SHOW STRUCTURAL INTENT RATHER THAN ACTUAL CONDITIONS FOR THE PROJECT. TYPICAL DETAILS APPLY TO SIMILAR CONDITIONS THROUGHOUT THE PROJECT UNLESS OTHERWISE NOTED.
4. USE OF THESE DRAWINGS IS LIMITED TO THAT IDENTIFIED IN THE REVISIONS COLUMN. DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR PERMIT AND/OR CONSTRUCTION"
5. DO NOT USE INFORMATION ON THESE DRAWINGS FOR ANY OTHER PROJECT OR WORKS.
6. THE CONTRACTOR SHALL REVIEW ALL DRAWINGS AND CONTRACT DOCUMENTS PRIOR TO AND DURING CONSTRUCTION TO ENSURE THAT THE ASSUMPTIONS MADE IN THE DRAWINGS REFLECT THE REQUIREMENTS OF CONSTRUCTION AND FIELD CONDITIONS ENCOUNTERED. WHERE DISCREPANCIES ARISE OR THE CONTRACTOR FINDS AN ERROR OR OMISSION RELATING TO THE CONTRACT, THE CONTRACTOR SHALL PROMPTLY REPORT IT TO THE ENGINEER AND SHALL NOT PROCEED WITH THE ACTIVITY AFFECTED UNTIL RECEIVING DIRECTION FROM THE ENGINEER.
7. THE DRAWINGS SHOW THE COMPLETED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY ON THE JOB SITE AND FOR DESIGN, INSTALLATION AND SUPERVISION OF ALL TEMPORARY BRACING AND FALSEWORK TO SUIT THE CONSTRUCTION METHODS AND TO SUPPORT THE SUPERIMPOSED CONSTRUCTION LOADS. DESIGN AND FIELD REVIEW OF ALL TEMPORARY WORKS TO BE CARRIED OUT BY A PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR, LICENSED AND INSURED IN THE PROVINCE OF ONTARIO.
8. ALL WORK AND MATERIALS SHALL CONFORM TO REQUIREMENTS SET OUT IN THE 2024 ONTARIO BUILDING CODE.
9. ALL CODES AND STANDARDS REFERENCED SHALL BE THE LATEST EDITION REFERENCED BY THE 2024 ONTARIO BUILDING CODE (DIV. B, 1.3.1.2).
10. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT OF ONTARIO.
11. ALL DESIGN LOADS NOTED ON DRAWINGS ARE SPECIFIED LOADS (UNFACTORED) TO BE USED FOR ULS (FACTORED) DESIGN, UNLESS OTHERWISE NOTED:
    A) LIVE LOAD SURCHARGE = 4.8 kPa
    B) GUARD LOAD = OBC 2024 CL 4.1.5.14

    CLIMATIC DATA (MINDEN):
    SNOW:
    Ss = 2.7 kPa
    Sr = 0.4 kPa
    WIND:
    q (1/50 YEAR) = 0.35 kPa
12. THE RETAINING WALL HAS BEEN DESIGNED BASED ON THE RETAINED HEIGHT(S) SHOWN ON THE DRAWINGS WITH A BACKSLOPE AND/OR SURCHARGE AS FOLLOWS:
    A) MAXIMUM BACKSLOPE: 0 DEGREES
    B) SURCHARGE (LIVE), Ss: 4.8 kPa
    C) WIND LOAD, q1/50: 0.35 KPA
13. THE SOIL PARAMETERS ASSUMED FOR THE DESIGN OF THE RETAINING WALL ARE AS FOLLOWS:
    A) SOIL UNIT WEIGHT [SILT AND SAND TILL]: 18.5 kN/m³
    B) ANGLE OF INTERNAL FRICTION OF SOIL: 33.5 DEGREES
    C) ANGLE OF FRICTION BETWEEN SOIL-STRUCTURE: 0 DEGREES

    IF THE CONDITIONS ENCOUNTERED DURING CONSTRUCTION DIFFER FROM THOSE SHOWN, THE CONTRACTOR SHALL INFORM THE STRUCTURAL CONSULTANT BEFORE CONTINUING WITH THE WORK.
14. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE ALL REQUIRED EROSION AND SEDIMENT CONTROLS ARE INSTALLED BEFORE WORK BEGINS, MAINTAINED THROUGHOUT THE DURATION OF THE WORK AND REMOVED ONLY AFTER THE WORK AREA HAS BEEN STABILIZED.
15. RETAINING WALL SHALL BE CONSTRUCTED OF SIENASTONE BLOCKS WITH DIMENSIONS AS SHOWN ON THE DRAWINGS.
16. BLOCKS SHALL BE PLACED IN RUNNING BOND PATTERN
17. GRANULAR BASE AND BACKFILL SHALL BE PLACED AND COMPACTED IN MAXIMUM 200mm LIFTS AS INDICATED ON THE DRAWINGS.
18. ONLY HAND OPERATED COMPACTION EQUIPMENT SHALL BE USED WITHIN 1.0m OF THE RETAINING WALL. HEAVY EQUIPMENT SHALL NOT BE OPERATED ON THE RETAINED SIDE OF THE WALL WITHIN A 7:10 ANGLE OF REPOSE.
19. RETAINING WALL DESIGN ASSUMES NO HYDROSTATIC FORCES WILL DEVELOP BEHIND THE WALL.
20. DRAINAGE COLLECTION SHALL BE 100mm DIAMETER, PERFORATED, HDPE PIPE WITH A MINIMUM STIFFNESS OF 150kPa, COMPLETE WITH A NON-WOVEN GEOTEXTILE COVERING. DAYLIGHT OUTLETS SHALL BE PROVIDED AT INTERVALS NOT EXCEEDING 15.0m.
21. NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE DRAINAGE AGGREGATE AND RETAINED SOIL TO PREVENT THE MIGRATION OF FINES.
22. NON-WOVEN GEOTEXTILE SHALL BE TENCATE MIRAFI 140N OR APPROVED EQUIVALENT.
23. FINISH EXPOSED CONCRETE BLOCK FACE WITH ANTI-GRAFFITI SI-COAT OR EQUIVALENT.
24. IMPORTANCE CATEGORY FOR BUILDINGS: NORMAL
25. SHOP DRAWINGS SHALL BE SUBMITTED PRIOR TO COMMENCEMENT OF FABRICATION. DIGITAL DRAWING FILES OF THE STRUCTURAL PLANS WILL NOT BE MADE AVAILABLE TO THE CONTRACTOR FOR THE PURPOSE OF PREPARING SHOP DRAWINGS. THE FOLLOWING SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL:
    A) CONCRETE MIX DESIGN
    B) CONCRETE REINFORCING STEEL
    C) HELICAL PILE DESIGN & LAYOUT (P.ENG. STAMP REQUIRED)
    D) STRUCTURAL CONNECTION BRACKETS (P.ENG. STAMP REQUIRED)
26. SUBMITTED SHOP DRAWINGS SHALL:
    - BEAR THE CONTRACTOR'S REVIEW STAMP
    - BE SEALED, SIGNED AND DATED BY AN ENGINEER AS REQUIRED BY SPECIFICATIONS
    - INCLUDE ALL CORRECTIONS REQUIRED BY PREVIOUS REVIEWS BEFORE ANY RESUBMISSION. ALL CHANGES AND ADDITIONS TO BE CLEARLY INDICATED SUBMISSIONS NOT CONFORMING WILL BE MARKED "RESUBMIT" AND RETURNED WITHOUT BEING REVIEWED.
27. REVIEW OF SHOP DRAWINGS DOES NOT IMPLY ANY CHANGE IN ANY OTHER CONSULTANTS' OR PROFESSIONALS' RESPONSIBILITIES RELATED TO DESIGN OF SPECIFIC ITEMS AS OUTLINED BY THE SPECIFICATIONS.
28. REVIEW OF SHOP DRAWINGS IS ON A RATIONAL SAMPLING BASIS, FOR GENERAL CONFORMITY WITH THE INTENT OF THE STRUCTURAL CONTRACT DOCUMENTS. IT IS NOT A DETAILED CHECK AND MUST NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR OF RESPONSIBILITY FOR MAKING THE WORK ACCURATE AND IN CONFORMITY WITH THE CONTRACT DOCUMENTS.
29. ALLOW A MINIMUM OF 10 WORKING DAYS FOR REVIEW OF EACH SUBMISSION OF SHOP DRAWINGS IN THE STRUCTURAL OFFICE. ALLOW MORE TIME WHEN LARGE QUANTITIES OF SHOP DRAWINGS ARE SUBMITTED ALONG WITH A PRIORITY LIST OF SUBMITTALS. SUBMIT IN ORDER WITH THE INTENDED SEQUENCE OF CONSTRUCTION.
30. DO NOT COMMENCE FABRICATION UNTIL RETURNED SHOP DRAWINGS HAVE BEEN EXAMINED.
31. ALL PROPRIETARY PRODUCTS SPECIFIED ON THESE DRAWINGS SHALL BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN SPECIFICATIONS. ALTERNATIVE PRODUCTS MAY ONLY BE USED WITH THE PRIOR APPROVAL OF THE STRUCTURAL CONSULTANT. CONTRACTOR IS RESPONSIBLE FOR PROVIDING WRITTEN DOCUMENTATION AND SPECIFICATIONS AS REQUIRED BY STRUCTURAL CONSULTANT FOR EVALUATION OF SUITABILITY OF ALTERNATE PRODUCTS.
32. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING LOCATES FOR ALL UTILITIES AND UNDERGROUND SERVICES PRIOR TO COMMENCING WORK AND SHALL COORDINATE WORK WITH SERVICES AND UTILITIES ADJACENT TO OR WITHIN THE AREA OF WORK.
33. DO NOT CUT OR DRILL ANY OPENINGS IN STRUCTURAL MEMBERS WITHOUT WRITTEN PERMISSION FROM THE STRUCTURAL CONSULTANT UNLESS SPECIFICALLY NOTED ON THE STRUCTURAL DRAWINGS.
34. THE CONTRACTOR SHALL TAKE PRECAUTIONS AS REQUIRED TO PROTECT EXISTING STRUCTURE FROM DAMAGE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING STRUCTURES RESULTING FROM THE CONTRACTOR'S OPERATIONS.
35. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLANNING, DESIGN, CONSTRUCTION, MAINTENANCE, AND REMOVAL OF ALL TEMPORARY WORKS REQUIRED TO SHORE THE EXISTING STRUCTURE DURING CONSTRUCTION. ALL TEMPORARY WORKS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN ONTARIO.
36. THE DESIGN OF TEMPORARY WORKS SHALL ACCOUNT FOR ALL ANTICIPATED CONSTRUCTION LOADS AND THE GEOTECHNICAL CONDITIONS.
37. WHERE REQUIRED FOR THE DESIGN OF TEMPORARY WORKS, RETAIN A GEOTECHNICAL ENGINEER TO PROVIDE THE NECESSARY GEOTECHNICAL RECOMMENDATIONS.
38. DISPOSAL OF DEMOLISHED MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. EXCEPT FOR MATERIALS SALVAGED FOR THE BENEFIT OF THE OWNER, DEMOLISHED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR ALL SHALL BE REMOVED FROM THE PROJECT SITE.
39. EXCEPT FOR MATERIALS FOR SALVAGING FOR THE BENEFIT OF THE OWNER, ALL DEMOLISHED MATERIALS REMOVED FROM THE PROJECT SITE SHALL BE DISPOSED OF AT A FACILITY ACCEPTABLE TO THE OWNER AND IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND STANDARDS.
40. AT NO TIME SHALL THE DEMOLITION CONTRACTOR ALLOW THE EXISTING STRUCTURE TO STAND UN-BRACED IN ANY DIRECTION. THE SITE SHALL BE LEFT IN A SAFE AND STABLE CONDITION AT ALL TIMES AND AT THE END OF EACH WORKDAY SO THAT NO AREA POSES A RISK TO SAFETY OR PROPERTY DAMAGE.

STRUCTURAL STEEL:

1. ALL STRUCTURAL STEEL SHALL BE NEW STOCK AND CONFORM TO THE FOLLOWING GRADES AND STANDARDS:
    A) PLATES, BARS: CAN/CSA G40.21 TYPE 300W
2. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH CAN/CSA S16.
3. ALL BOLTS, NUTS AND WASHERS FOR STRUCTURAL STEEL CONNECTIONS SHALL CONFORM TO ASTM F3125.
4. NO HOLES SHALL BE CUT IN THE STRUCTURAL STEEL WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL CONSULTANT. NO STRUCTURAL STEEL SHALL BE CUT IN THE FIELD UNLESS REVIEWED AND APPROVED BY THE STRUCTURAL CONSULTANT.
5. SUBSTITUTIONS FOR STEEL SECTIONS SHOWN ON DRAWINGS SHALL NOT BE MADE WITHOUT THE WRITTEN APPROVAL OF THE STRUCTURAL CONSULTANT.
6. OTHER THAN SITE WELDS SHOWN ON THE CONTRACT DRAWINGS/SHOP DRAWINGS; DO NOT WELD ON SITE WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL CONSULTANT.
7. SPLICES IN STEEL MEMBERS OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL NOT BE PERMITTED.
8. ALL EXTERIOR EXPOSED STEEL SHALL BE PROTECTED BY HOT DIP GALVANIZING.

CONCRETE:

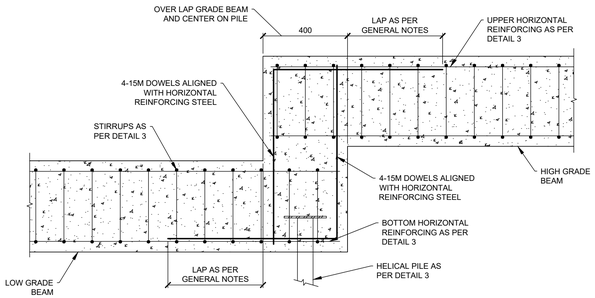
1. ALL CONCRETE SHALL CONFORM TO CAN/CSA-A23.1 AND BE READY MIX TYPE.
2. CONCRETE SHALL BE PROPORTIONED IN ACCORDANCE WITH CAN/CSA A23.1 AS FOLLOWS:

COMPONENT	EXPOSURE CLASS	MIN. 28 DAY COMPRESSIVE STRENGTH (MPa)	AIR CONTENT CATEGORY
A) GRADE BEAM	F-2	30	2
B) GUARD ANCHOR GROUT	N	20	-

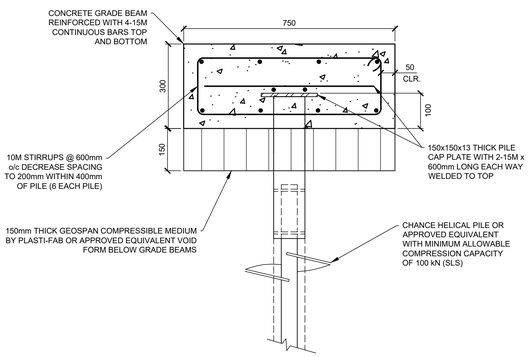
    - 75* TYPE 'GU' PORTLAND CEMENT + 25% SLAG CEMENT
    - 20mm MAXIMUM NOMINAL SIZE OF COURSE AGGREGATE
3. ALL CONCRETE ADDITIVES SHALL BE APPROVED BY THE STRUCTURAL CONSULTANT.
4. NO CONCRETE SHALL BE POURED WITHOUT PRIOR REVIEW OF THE STRUCTURAL CONSULTANT. THE CONTRACTOR SHALL REQUEST THE REVIEW TO THE CONSULTANT 48 HOURS MINIMUM PRIOR TO THE INTENDED CONCRETE POUR TIME.
5. ALL CONCRETE SHALL BE WET CURED FOR A MINIMUM OF 7 DAYS AFTER PLACEMENT OF CONCRETE. CURING SHALL CONFORM TO CAN/CSA-A23.1.
6. UNLESS OTHERWISE NOTED ON THE DRAWINGS THE FOLLOWING COVER TO REINFORCEMENT, INCLUDING STIRRUPS AND TIES, SHALL BE PROVIDED:
    A) EXPOSED TO FILL = 75mm
    B) FORMED SURFACES = 50mm
7. USE HIGH FREQUENCY VIBRATION TO PLACE ALL CONCRETE. EXTRA CARE SHALL BE TAKEN WHEN PLACING AND VIBRATING CONCRETE TO ENSURE HOMOGENEOUS DISTRIBUTION OF CONCRETE MIX IN COLUMN AND WALLS.
8. PROTECT CONCRETE FROM EXCESSIVE HEAT AND DRYING. USE HOT OR COLD WEATHER CONCRETING METHODS IN ACCORDANCE WITH CAN/CSA-A23.1.
9. THE CONCRETE SUPPLIER TO BE CERTIFIED BY "CONCRETE ONTARIO" (FORMERLY RMCAO CERTIFICATION)

CONCRETE REINFORCEMENT:

1. ALL REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 400 MPA AND SHALL CONFORM TO CAN/CSA G30.18.
2. ALL REINFORCING STEEL SHALL BE DETAILED, FABRICATED, PLACED AND SUPPORTED ACCORDANCE WITH REINFORCING STEEL MANUAL OF STANDARD PRACTICE BY THE REINFORCING STEEL INSTITUTE OF CANADA AND CAN/CSA-A23.3.
3. UNLESS NOTED OTHERWISE, REINFORCING BARS SHALL BE LAPPED AS FOLLOWS WHEN SPLICED:
    - 10M 450mm
    - 15M 630mm
4. THE CONTRACTOR SHALL PROVIDE CONTINUOUS SUPERVISION DURING PLACEMENT OF CONCRETE TO ENSURE THAT THE REINFORCING STEEL IS MAINTAINED IN ITS CORRECT POSITION THROUGHOUT THE PREPARATION AND PLACEMENT OF CONCRETE.
5. REINFORCING STEEL THAT IS STORED ON SITE IS TO BE PLACED ON BLOCKS SO THAT IT IS NOT IN DIRECT CONTACT WITH THE GROUND AND SHALL BE PROTECTED FROM RAIN AND SNOW WITH THE USE OF TARPAULINS.
6. ALL REINFORCEMENT SHALL BE SECURELY SUPPORTED IN ITS CORRECT POSITION DURING CONCRETE PLACEMENT BY APPROVED BAR CHAIRS, SPACERS OR SUPPORT BARS AT 1000mm MAXIMUM CENTERS. THE CHAIR MATERIAL SELECTED SHALL SUIT THE EXPOSURE CONDITIONS.
7. PROVIDE MIN. 48-HOURS NOTICE PRIOR TO CLOSING FORMS OR PLACING CONCRETE TO ALLOW FOR FIELD REVIEW OF THE REINFORCING STEEL BY THE STRUCTURAL CONSULTANT.
8. ALL REINFORCING STEEL IS TO BE CLEAN, FREE OF LOOSE SCALE, OIL, DIRT, RUST, AND ANY OTHER FOREIGN COATING THAT COULD AFFECT BONDING CAPACITY.
9. CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS, AND TIE WIRE SHALL COMPLY WITH THE REQUIREMENTS OF THE REINFORCING STEEL MANUAL OF STANDARD PRACTICE AND SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT THE REINFORCING STEEL IN ITS CORRECT POSITION THROUGHOUT THE CONCRETE PLACEMENT PROCESS.

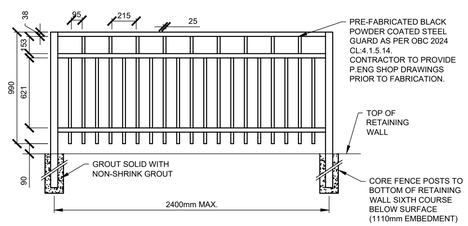


DETAIL 4 - TYPICAL GRADE BEAM STEP
NOT TO SCALE

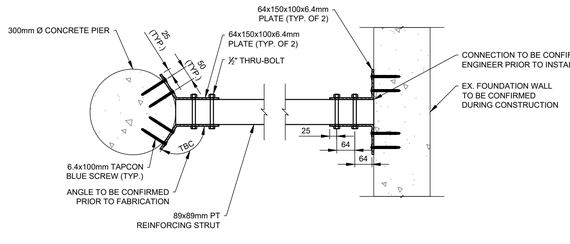


DETAIL 3 - GRADE BEAM
1:10

NOTES:
1. HELICAL PILES SHALL BE DESIGN IN ACCORDANCE WITH RECOMMENDATIONS FROM GEOTECHINCAL INVESTIGATION REPORT BY CAMBIUM DATED JUNE 11, 2026



DETAIL 1 - TYPICAL NON-CLIMBABLE POWDER COATED STEEL GUARD DETAIL
NOT TO SCALE



DETAIL 2 - REINFORCING STRUT
SCALE: 1:10

LEGEND

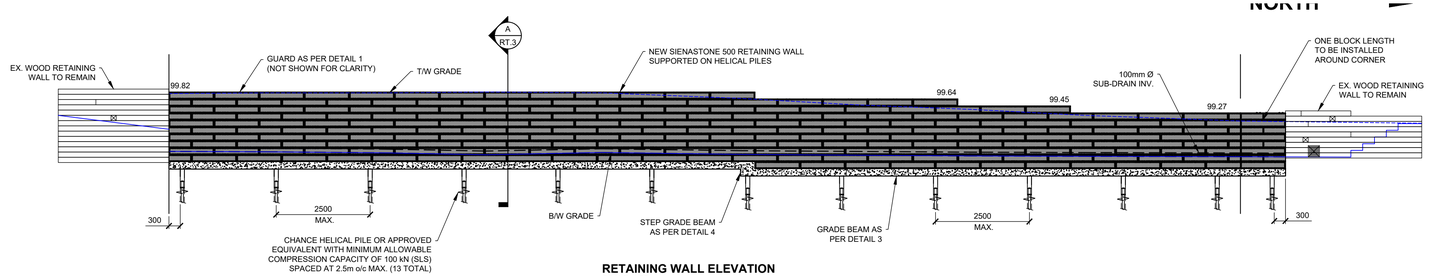
PROPOSED FINAL TOP GRADE

PROPOSED FINAL BOTTOM GRADE

SIENASTONE 500 STANDARD 1200mm BLOCK (STANDARD BATTER 25.4mm)

Standard 500

Length	1000mm	39"
Height	185mm	7.25"
Depth	500mm	20"
Weight	210kg	463lbs



RETAINING WALL ELEVATION
SCALE: 1:75

KEY PLAN

DISCLAIMER & COPYRIGHT
THIS DRAWING IS NOT A LEGAL SURVEY AND MUST NOT BE USED FOR DEFINING PROPERTY BOUNDARIES OR LOCATING SURVEY MONUMENTS. PROPERTY LINES, DIMENSIONS AND ANY REFERENCE TO SURVEY BARS SHOWN HEREIN ARE APPROXIMATE AND FOR ILLUSTRATIVE OR PLANNING PURPOSES ONLY.

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

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VERSION	DATE
1 ISSUED FOR CLIENT REVIEW	2025 11 11
2 ISSUED FOR TENDER	2026 06 26

DESIGN BY	DRAWN BY	CHECKED BY
CG/KM	CG	MT

STAMP

425143 JET
LICENSED PROFESSIONAL ENGINEER
M. TATA
JUNE 26/2026
PROVINCE OF ONTARIO

TATHAM ENGINEERING

COLLINGWOOD - BRACEBRIDGE - ORILLIA - BARRIE - OTTAWA - GUELPH

PROJECT TITLE

176 BOBCAYGEON ROAD RETAINING WALL TOWNSHIP OF MINDEN HILLS

DRAWING TITLE

GENERAL NOTES, KEY PLAN AND DETAIL

PROJECT	SCALE	DRAWING
425143	AS SHOWN	RT.1

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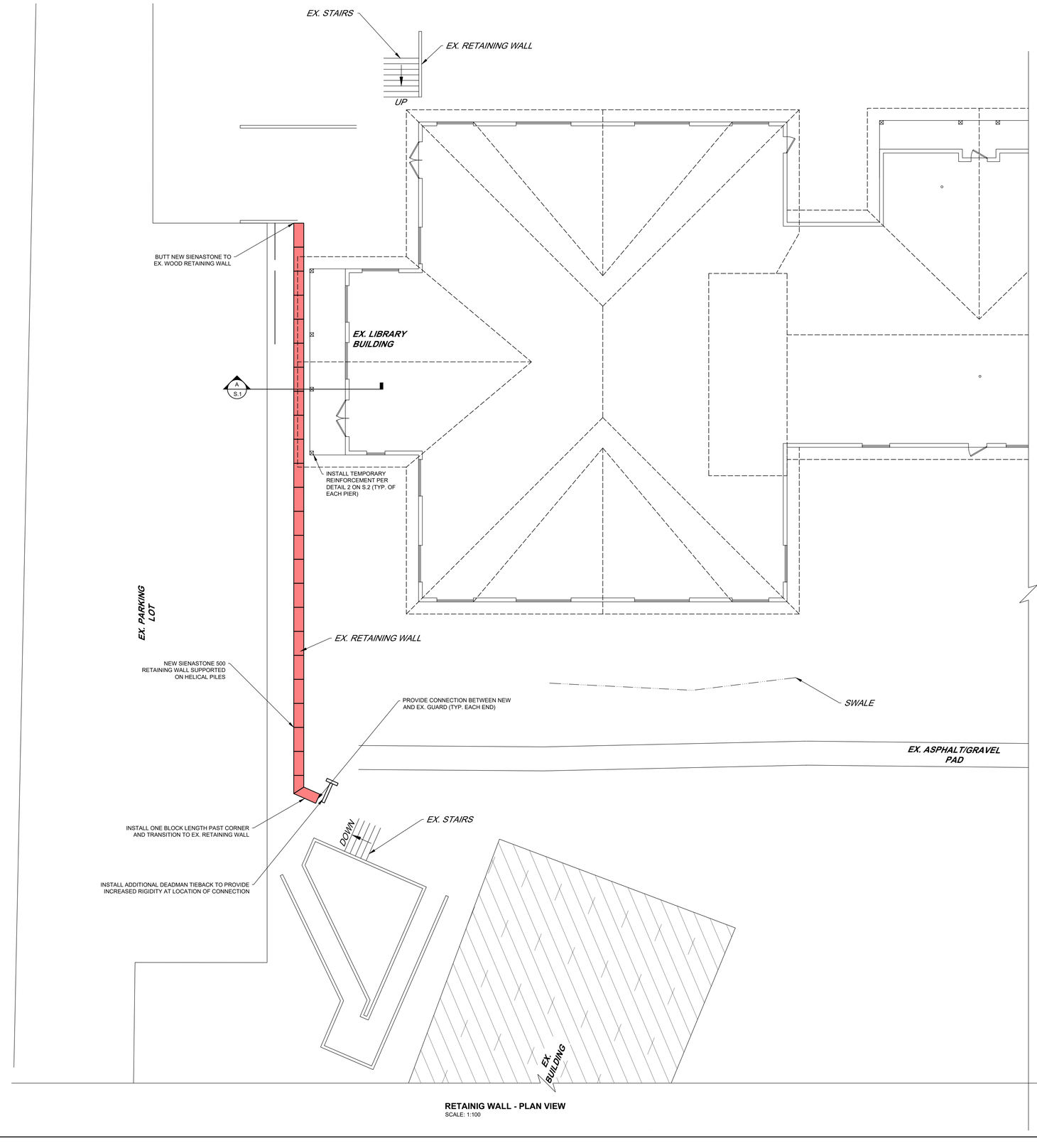

RETAINIG WALL - PLAN VIEW
SCALE: 1:100

KEY PLAN

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176 BOBCAYGEON ROAD RETAINING WALL TOWNSHIP OF MINDEN HILLS

DRAWING TITLE

GENERAL NOTES, KEY PLAN AND DETAIL

PROJECT	SCALE	DRAWING
425143	AS SHOWN	RT.2

Drawing Path: C:\Users\mcourt\AppData\Local\Temp\AcPublish_20984\425143-BMH.dwg Tuesday, June 26, 2026

HELICAL PILES:

1. PILE CUT OFF ELEVATIONS ARE TO TOP OF PILE CAP PLATE. PILES SHALL NOT BE CUT OFF UNTIL ALL FINAL ADJUSTMENTS, MEASUREMENTS, AND LOAD TESTING IS COMPLETE.

2. MAINTAIN ACCURATE RECORDS OF CONSTRUCTION FOR EACH PILE. ALL CONSTRUCTION RECORDS SHALL BE SUBMITTED TO THE STRUCTURAL CONSULTANT UPON REQUEST. EACH CONSTRUCTION RECORD SHALL INCLUDE THE FOLLOWING INFORMATION:
   - A) PILE SIZE, TYPE, LENGTH, AND LOCATION.
   - B) FINAL TIP AND CUT OFF ELEVATIONS.
   - C) INSTALLATION TORQUE MEASURED AT 300MM INCREMENTS.
   - D) PILE LOAD CAPACITY.
   - E) TYPE AND MAKE OF EQUIPMENT.
   - F) TIME AND DATE OF CONSTRUCTION.
   - G) NAME OF CONTRACTOR'S SUPERVISOR DURING CONSTRUCTION.
   - H) TYPE OF TORQUE INDICATOR USED.
   - I) DURATION OF PILE CONSTRUCTION AND NOTABLE OBSERVATIONS.
   - J) COMMENTS PERTAINING TO INTERRUPTIONS AND OBSTRUCTIONS.

3. PILES SHALL BE CONSTRUCTED BY A CONTRACTOR CERTIFIED BY THE MANUFACTURER.

4. PILE LENGTHS ARE BASED ON DEPTH TO THE SUPPORTING SOILS INDICATED IN THE GEOTECHNICAL REPORT.

5. SITE SPECIFIC SHOP DRAWINGS FOR THE DESIGN OF THE HELICAL PILES SHALL BE SUBMITTED TO THE STRUCTURAL CONSULTANT FOR REVIEW AND ACCEPTANCE PRIOR TO MANUFACTURING. SHOP DRAWINGS SHALL BEAR THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN ONTARIO.

6. SHOP DRAWINGS OF THE HELICAL PILE DESIGN SHALL INCLUDE THE FOLLOWING INFORMATION:
   - A) HELICAL PILE NUMBER, LOCATION, AND PATTERN ASSIGNED BY IDENTIFICATION NUMBER.
   - B) HELICAL PILE DESIGN LOAD.
   - C) ASSUMED GEOTECHNICAL RESISTANCE FACTOR.
   - D) TYPE AND SIZE OF HELICAL PILE.
   - E) HELICAL CONFIGURATION (NUMBER AND DIAMETER OF HELICAL PLATES).
   - F) MINIMUM EFFECTIVE TORQUE REQUIREMENT.
   - G) GROUT COLUMN DIAMETER AND LENGTH.
   - H) CONNECTION DETAILS.
   - I) PILE LENGTHS

7. ALL HELICAL PILES INCLUDING ALL APPURTENANCES SHALL BE DESIGNED TO MEET THE SPECIFIED LOADS AND COMPLY WITH THE SITE-SPECIFIC SOIL PARAMETERS INDICATED IN THE GEOTECHNICAL REPORT. THE GEOTECHNICAL REPORT PROVIDED SHALL BE CONSIDERED REPRESENTATIVE OF THE IN-SITU SUBSURFACE CONDITIONS EXPECTED ON THE PROJECT SITE.

8. CALIBRATION REPORTS FOR THE PILE CONSTRUCTION EQUIPMENT SHALL BE SUBMITTED TO THE STRUCTURAL CONSULTANT PRIOR TO THE CONSTRUCTION OF PILES. THE CALIBRATION TESTING SHALL HAVE BEEN COMPLETED WITHIN ONE YEAR OF THE DATE SUBMITTED.

9. LEAD SECTIONS AND EXTENSION SECTIONS SHALL CONSIST OF SOLID STEEL, ROUND CORNERED, SQUARE SHAFT, OR ROUND STEEL PIPE SHAFT, OR COMPOSITE STEEL AND GROUT SHAFT CONFIGURED WITH ONE OR MORE HELICAL BEARING PLATES WELDED TO THE SHAFT.

10. ALL HELICAL PILE SHAFTS AND HELICES SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 AFTER FABRICATION. ALL BARE METAL EXPOSED IN THE FIELD BY DAMAGE DUE TO HANDLING, WELDING, DRILLING, ETC. SHALL BE PAINTED WITH 2 COATS OF ZINC RICH PAINT.

11. CEMENT FOR HELICAL PILE PULLDOWN MICROPILE GROUT SHALL BE TYPE G PORTLAND CEMENT CONFORMING TO CSA A3000 CEMENTATION MATERIAL COMPENDIUM.

12. WATER FOR MIXING GROUT SHALL BE POTABLE, CLEAN, AND FREE FROM IMPURITIES, WHICH MAY BE DETRIMENTAL TO GROUT OR STEEL. POTABLE WATER SHALL BE AVAILABLE IN QUANTITIES SUFFICIENT TO MIX GROUT AND FOR EQUIPMENT CLEAN UP.

13. SAND FILLERS MAY BE USED IN THE GROUT MIX AS AN EXTENDER WITH LARGE DIAMETER GROUT COLUMNS, SUBJECT TO THE ACCEPTANCE OF THE STRUCTURAL CONSULTANT. USE FINE SAND ONLY. MEDIUM OR COARSE SAND SHALL NOT BE PERMITTED. SMALL DIAMETER GROUT COLUMNS SHALL NOT INCLUDE AGGREGATE.

14. A TORQUE INDICATOR SHALL BE USED DURING HELICAL PILE CONSTRUCTION. THE TORQUE INDICATOR CAN BE AN INTEGRAL PART OF THE CONSTRUCTION EQUIPMENT OR EXTERNALLY MOUNTED IN-LINE WITH THE TOOLING. THE TORQUE INDICATOR SHALL BE MADE ACCESSIBLE TO THE STRUCTURAL CONSULTANT AT ALL TIMES DURING INSTALLATION.

15. IF THE HELICAL PILE IS REFUSED OR DEFLECTED BY A SUBSURFACE OBSTRUCTION, THE INSTALLATION SHALL BE TERMINATED AND THE PILE REMOVED. THE OBSTRUCTION SHALL BE REMOVED, IF FEASIBLE, AND THE PILE RE-CONSTRUCTED. IF THE OBSTRUCTION CANNOT BE REMOVED, THE HELICAL PILE SHALL BE CONSTRUCTED AT AN ADJACENT LOCATION, SUBJECT TO REVIEW AND ACCEPTANCE OF THE STRUCTURAL CONSULTANT.

16. IF THE TORSIONAL STRENGTH RATING OF THE CENTRAL STEEL SHAFT AND/OR CONSTRUCTION EQUIPMENT HAS BEEN REACHED PRIOR TO PROPER POSITIONING OF THE LAST PLAIN EXTENSION SECTION RELATIVE TO THE FINAL ELEVATION, THE CONTRACTOR MAY REMOVE THE LAST PLAIN EXTENSION AND REPLACE IT WITH A SHORTER LENGTH EXTENSION. IF IT IS NOT FEASIBLE TO REMOVE THE LAST PLAIN EXTENSION, THE CONTRACTOR MAY CUT SAID EXTENSION SHAFT TO THE CORRECT ELEVATION. THE CONTRACTOR SHALL NOT REVERSE (BACK-OUT) THE HELICAL PILE TO FACILITATE EXTENSION REMOVAL.

17. THE CONTRACTOR SHALL RECORD THE TORQUE VALUES FOR EACH INDIVIDUAL PILE AT 300mm INCREMENTS DURING CONSTRUCTION. THESE RECORDS SHALL BE AVAILABLE TO THE STRUCTURAL CONSULTANT UPON REQUEST.

18. EQUIPMENT SHALL BE ROTARY TYPE, HYDRAULIC POWER-DRIVEN TORQUE MOTOR WITH CLOCKWISE AND COUNTER-CLOCKWISE ROTATION CAPABILITIES. THE TORQUE MOTOR SHALL BE CAPABLE OF CONTINUOUS ADJUSTMENT TO REVOLUTIONS PER MINUTE. PERCUSSION DRILLING EQUIPMENT SHALL NOT BE PERMITTED. THE TORQUE MOTOR SHALL HAVE A TORQUE CAPACITY OF 15% GREATER THAN THE TORSIONAL STRENGTH RATING OF THE CENTRAL STEEL SHAFT.

19. PILE CONSTRUCTION TOLERANCES SHALL CONFORM TO THE FOLLOWING:
   - A) HORIZONTAL LOCATION ± 75mm
   - B) PLUMBNESS ± 2°
   - C) CUT OFF ELEVATION + 25mm TO -50mm

20. ALL WELDING OF MATERIALS SHALL BE ACCORDING TO CSA W59 AND SHALL BE PERFORMED BY A QUALIFIED WELDER CERTIFIED ACCORDING TO CSA W47.1, DIVISION 1 OR DIVISION 2.

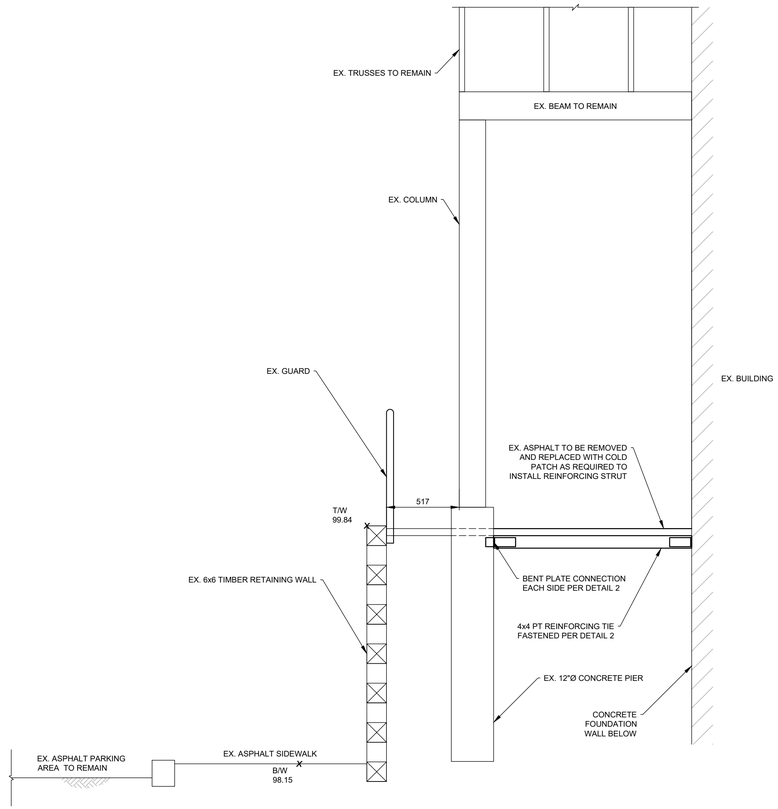
21. DAMAGED PILES, PILES CONSTRUCTED OUT OF THEIR PROPER LOCATIONS, PILES CONSTRUCTED BELOW THE CUT OFF ELEVATION, AND PILES THAT DO NOT MEET OTHER SPECIFIED REQUIREMENTS SHALL BE CORRECTED BY A METHOD ACCEPTABLE TO THE STRUCTURAL CONSULTANT.

22. DO NOT CONSTRUCT PILES DURING HEAVY RAIN OR SNOWFALL.

23. DO NOT PLACE GROUT MATERIALS THAT ARE FROZEN OR PARTIALLY HYDRATED

24. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES IN THE FIELD PRIOR TO PREPARATION OF SHOP DRAWINGS AND VERIFY THAT NO UTILITIES WILL BE IN CONFLICT WITH THE PILE CONSTRUCTION. THE FINAL PILE DESIGN SHOP DRAWINGS SHALL ACCOMMODATE THE EXISTING UTILITIES AS REQUIRED. UTILITY CONFLICTS FOUND SHALL BE REPORTED TO THE STRUCTURAL CONSULTANT IMMEDIATELY.

25. THE CONTRACTOR SHALL RETAIN A THIRD-PARTY ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO. THE THIRD-PARTY ENGINEER SHALL BE RESPONSIBLE FOR OBSERVING AND MONITORING THE PILE CONSTRUCTION ON SITE. ONCE THE CONSTRUCTION OF ALL PILES IS COMPLETE, THE CONTRACTOR SHALL SUBMIT A CERTIFICATE OF CONFORMANCE STATING THAT THE PILES HAVE BEEN CONSTRUCTED IN CONFORMANCE WITH ALL DRAWINGS AND SPECIFICATIONS. THE CERTIFICATE SHALL CERTIFY THE ULTIMATE LOAD CAPACITY OF THE PILES AND SHALL BE SEALED AND SIGNED BY THE THIRD-PARTY ENGINEER RETAINED BY THE CONTRACTOR.



SECTION A EXISTING
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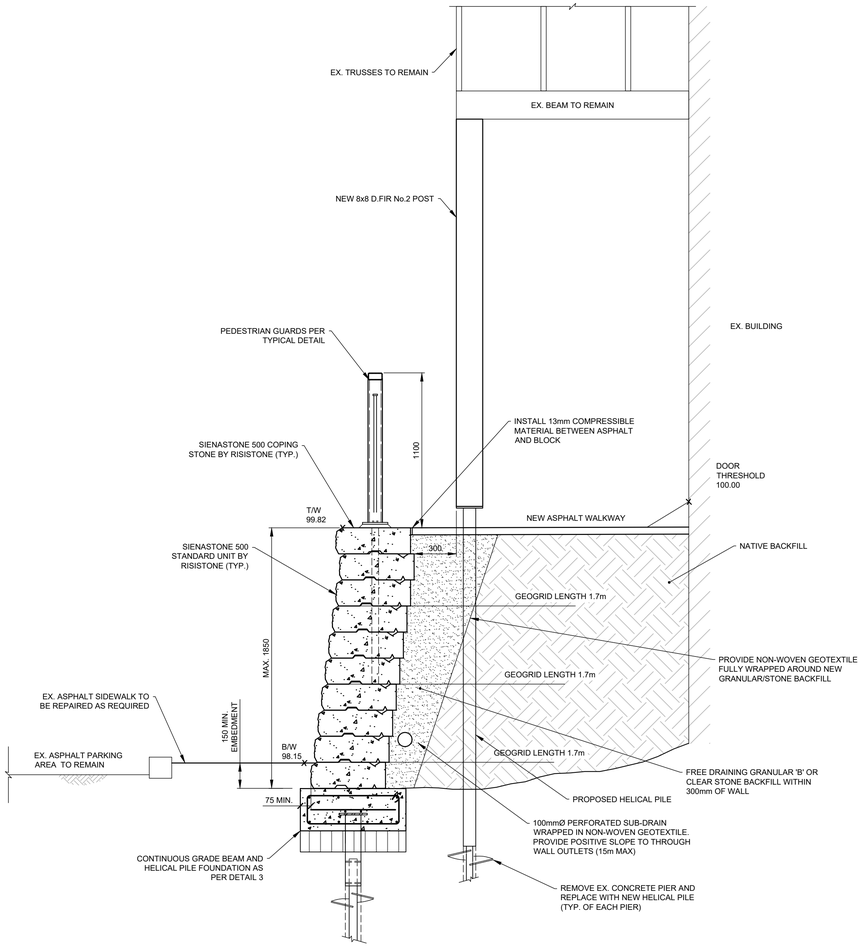

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KEY PLAN

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1	ISSUED FOR CLIENT REVIEW	2025 11 11
2	ISSUED FOR TENDER	2026 06 26

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STAMP
425143 JET
LICENSED PROFESSIONAL ENGINEER
M. TATA
JUNE 26/2026
PROVINCE OF ONTARIO

TATHAM ENGINEERING
COLLINGWOOD - BRACEBRIDGE - ORILLIA - BARRIE - OTTAWA - GUELPH

PROJECT TITLE
176 BOBCAYGEON ROAD RETAINING WALL TOWNSHIP OF MINDEN HILLS

DRAWING TITLE
RETAINING WALL

PROJECT	SCALE	DRAWING
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