

GENERAL NOTES:

1. THIS DRAWING(S) CONFORMS TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE 2012.
2. THE STRUCTURAL DRAWINGS ARE TO BE READ AND USED IN CONJUNCTION WITH THE SPECIFICATIONS AND ALL OTHER CONTRACT DOCUMENTS INCLUDING BUT NOT LIMITED TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DOCUMENTS AND DRAWINGS.
3. ALL DIMENSIONS, DRAWINGS, AND DOCUMENTS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING ANY WORK. ANY DISCREPANCY MUST BE COMMUNICATED TO THE ENGINEER.
4. AJW ENGINEERING TO INSPECT SITE PRIOR TO INITIAL USE TO VERIFY COMPLIANCE WITH THIS DRAWING. IT IS THE CONTRACTORS RESPONSIBILITY TO CONTACT AJW ENGINEERING ONCE STRUCTURE IS COMPLETE.
5. ALL TEMPORARY STRUCTURES OR WORKS INCLUDING SHORING, FORM WORK, SCAFFOLDING, AND FALSE WORK SHALL BE PROVIDED BY THE CONTRACTOR.
6. AJW ENGINEERING LTD. WILL TAKE NO RESPONSIBILITY FOR ANY CHANGES TO OR DEVIATIONS FROM THIS DRAWING UNLESS APPROVED BY OUR OFFICE IN WRITING.
7. THE INFORMATION ON THIS DRAWING SHALL NOT BE USED FOR ANY OTHER PROJECT OR WORKS. THE INFORMATION ON THESE DRAWINGS APPLIES SOLELY TO THIS PROJECT.

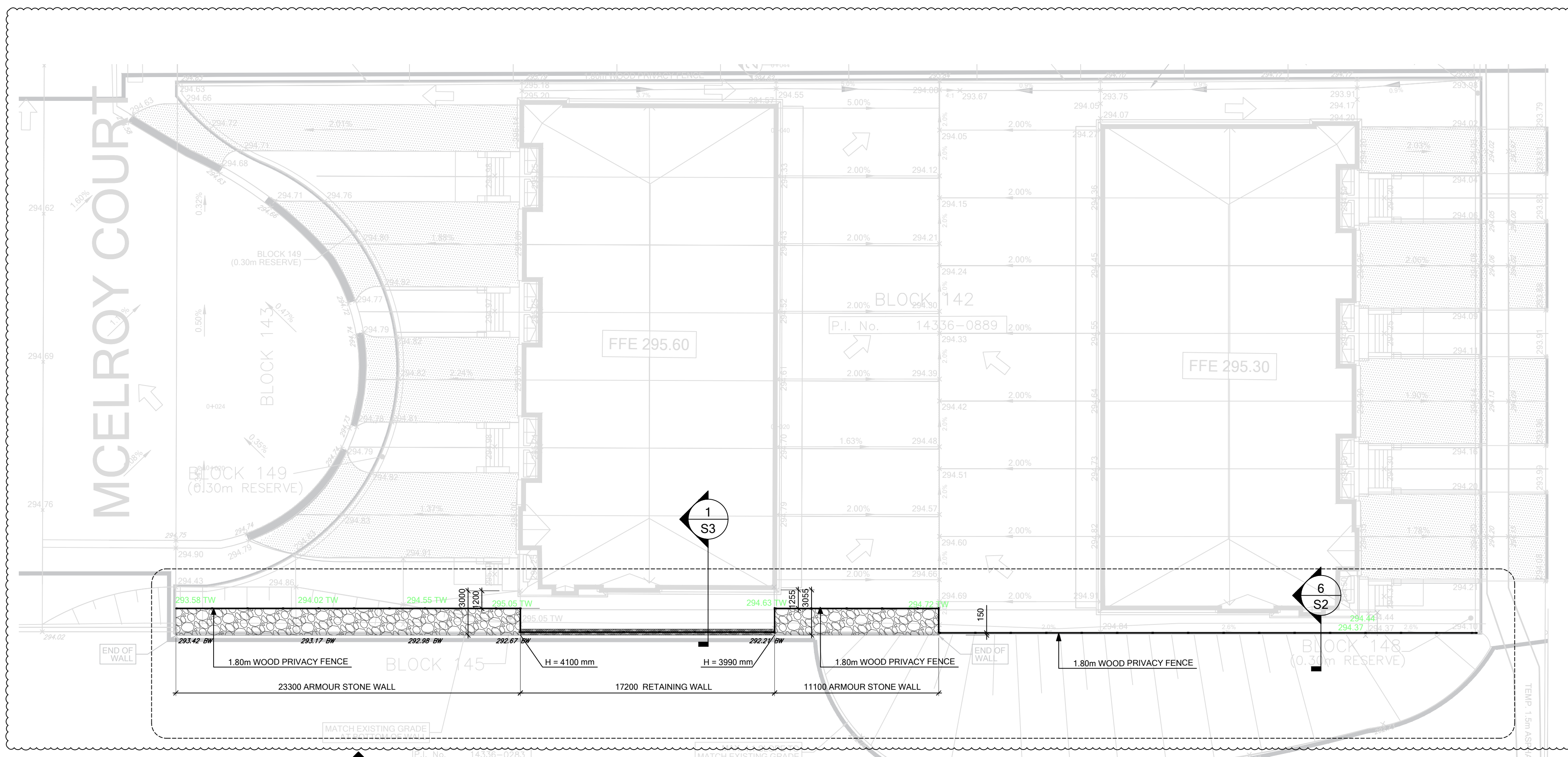
ARMOUR STONE WALL DESIGN ASSUMPTIONS :

1. CLIMATE DATA FOR BRAMPTON $q_{10} = 0.44 \text{ kPa}$
2. SOIL ASSUMPTION (TO BE CONFIRMED)
 $\gamma_{\text{soil}} = 20 \text{ kN/m}^3$ & $\phi = 30^\circ$
3. ALL BACKFILL TO BE COMPACTED TO 98% SPMD AND TO BE NON FROST SUSCEPTIBLE.
4. ALL BACKFILL AND UNDISTURBED SOIL TO HAVE A MINIMUM 100 kPa (5L) ALLOWABLE SOIL BEARING

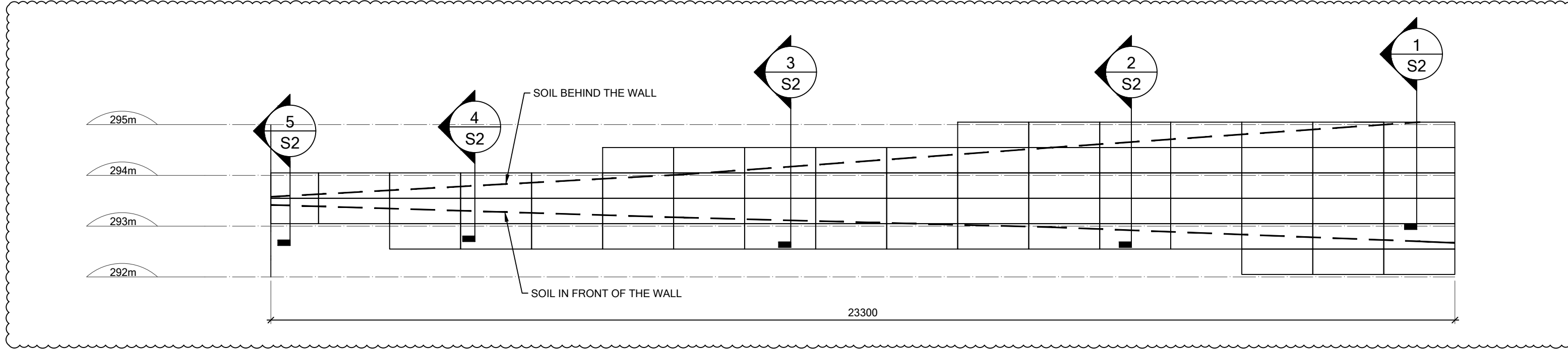
ARMOUR STONE WALL CONCRETE NOTES:

1. CONCRETE WORK SHALL CONFORM TO CSA A23.1-09 FOR MATERIALS AND WORKMANSHIP.
2. THE CONCRETE SHALL HAVE A MINIMUM 32 MPA COMPRESSIVE STRENGTH AT 28 DAY, AND SHALL MEET THE FOLLOWING SPECIFICATIONS:
CONCRETE CLASS EXPOSURE IS C-2
MAXIMUM WCM RATIO = 0.40
AIR CONTENT = 4 - 7%
MAXIMUM COARSE AGGREGATE SIZE = 19mm"
3. ALL CONCRETE SHALL BE KEPT MOIST DURING THE FIRST THREE DAYS OF CURING.
4. THE ABOVE REQUIREMENTS DO NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY OF MEETING MORE RIGID REQUIREMENTS SPECIFIED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS OR AS REQUIRED BY EQUIPMENT SHOP DRAWINGS OR SPECIFICATIONS SUCH AS THOSE FOR ELEVATORS ETC.
5. CONCRETE IS SPECIFIED AS PER THE "PERFORMANCE" ALTERNATE AS OUTLINED IN TABLE 5 OF CAN/CSA-A23.1-09.
6. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR WORKING WITH THE CONCRETE SUPPLIER TO ENSURE THAT THE PLASTIC AND HARDENED MIX PROPERTIES MEET SITE REQUIREMENTS FOR PLACING, FINISHING, AND THE OWNERS' SPECIFIED PERFORMANCE REQUIREMENTS. THE GENERAL CONTRACTOR SHALL MEET THE DOCUMENTATION AND QUALITY CONTROL REQUIREMENTS OUTLINED UNDER THE "PERFORMANCE" ALTERNATE OF TABLE 5 OF CAN/CSA-A23.1-09.
7. THE CONCRETE SUPPLIER SHALL BE CERTIFIED BY THE READY MIXED CONCRETE ASSOCIATION OF ONTARIO.
8. CONCRETE SHALL HAVE A UNIT WEIGHT OF 145.5 PSF (23.5 kN/m³) UNLESS NOTED OTHERWISE.
9. SLUMP AND AGGREGATE SIZE TO BE DETERMINED BY THE GENERAL CONTRACTOR AND SUPPLIER TO MEET PLACEMENT, AND FINISHING REQUIREMENTS WITHOUT SEGREGATION WHILE MEETING ALL OWNER SPECIFICATIONS.
10. MAXIMUM WATER/CEMENT RATIO AND AIR CONTENT TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN TABLE 2, 4 AND 20 OF CAN/CSA-A23.1-09.
11. CEMENT TYPE FOR EXPOSURE CLASSES S-1, S-2, AND S-3 SHALL BE AS OUTLINED IN TABLE 3 OF CAN/CSA-A23.1-09.
12. AT THE REQUEST OF THE OWNER, THE SUPPLIER WILL FURNISH TEST DATA RESULTS FOR EACH PROPOSED MIX DESIGN DEMONSTRATING THAT THEY MEET THE STRENGTH, DURABILITY, AND SHRINKAGE REQUIREMENTS SPECIFIED.
13. CURING OF CONCRETE TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN CLAUSE 7.4.1.7 AS WELL AS TABLES 2 AND 20 OF CAN/CSA-A23.1-09. CURING COMPOUNDS ARE NOT PERMITTED FOR SUSPENDED PARKING SLABS OR EXPOSURE CLASS C-XL CONCRETE.
14. NO CALCIUM CHLORIDE IS PERMITTED, IN ANY FORM, IN ANY CONCRETE MIX WITHOUT THE EXPRESS WRITTEN CONSENT OF AJW ENGINEERING.

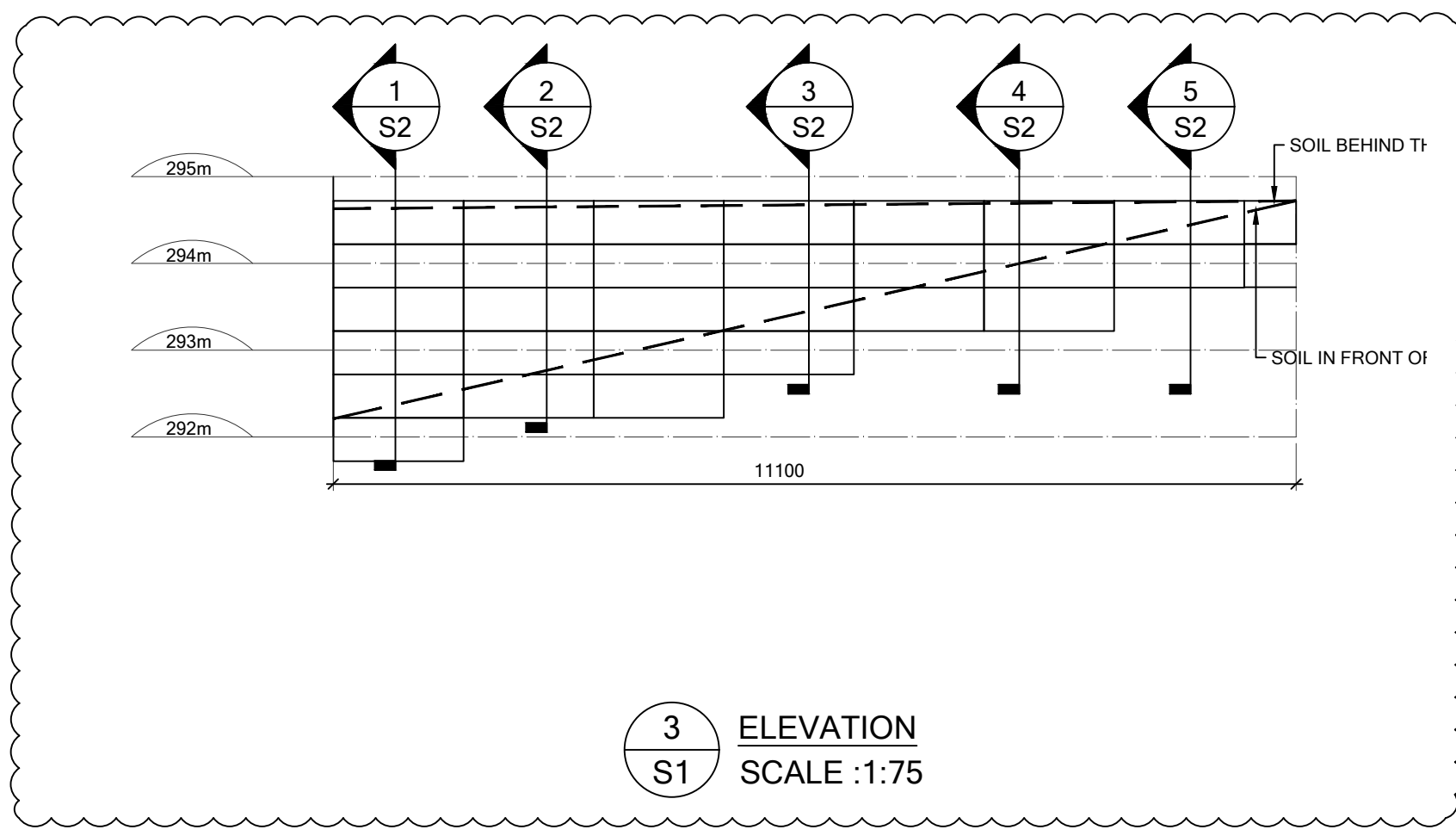
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2	SECTIONS AND DETAIL OF ARMOUR STONE WALL	R2	26 APR. 2019
3	NOTES, SECTION AND DETAIL OF RETAINING WALL	R1	09 APR. 2019



1 SITE PLAN
SCALE : NTS



2 ELEVATION
SCALE : 1:75



3 ELEVATION
SCALE : 1:75



REVISION / ISSUED:	DATE	DESCRIPTION
R2	26/04/19	Revised As Noted
R1	09/04/19	Revised As Noted
R0	08/04/19	Issued For Construction

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ENGINEER:
ajw engineering
5080 Timberlea Blvd., Unit #42-44,
Mississauga, Ontario, CANADA, L4W 4M2
Phone: (905)-840-0530
Fax: (905)-212-9012

ORDERED BY:
PLURIBUS CORPORATION

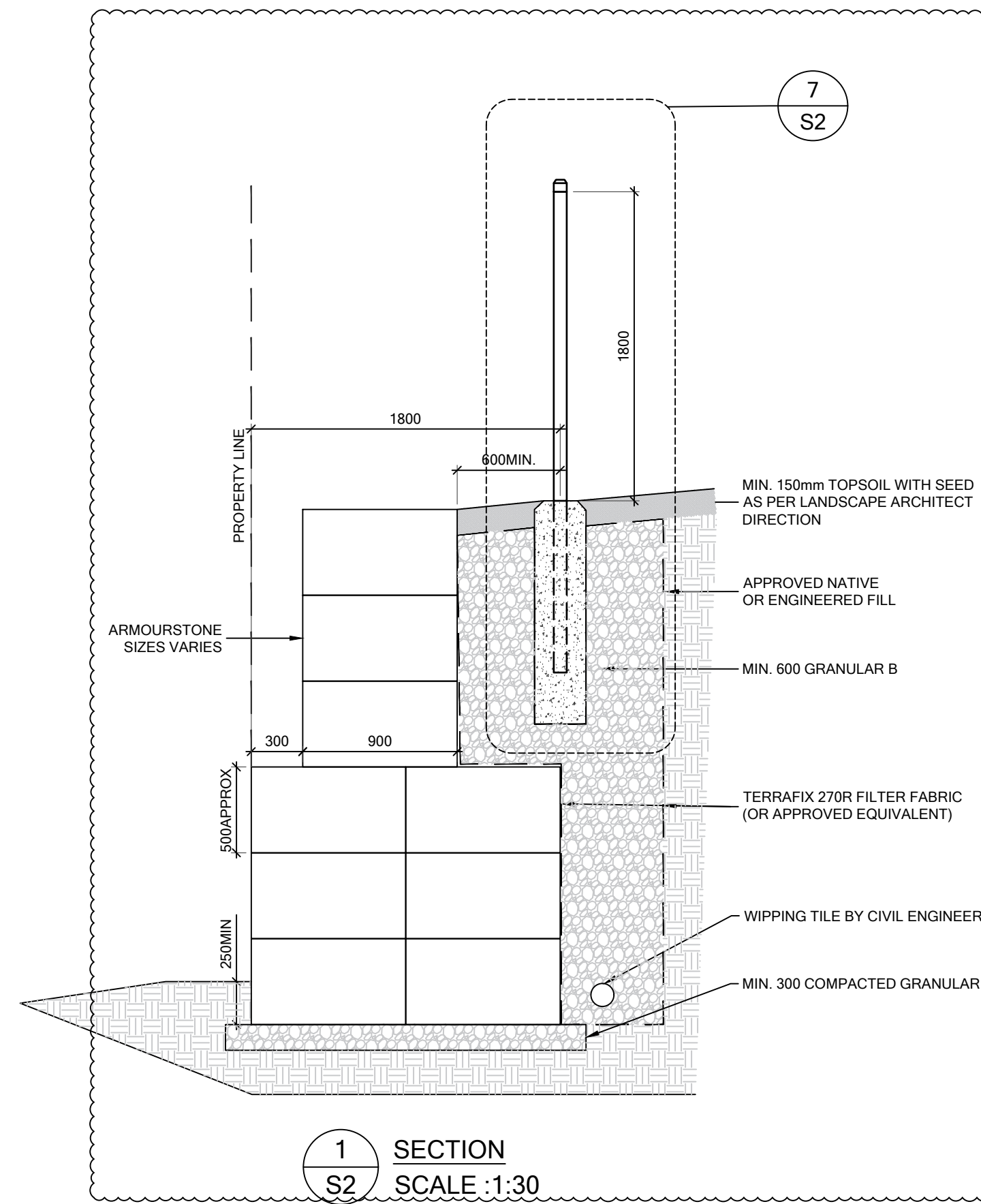
ADDRESS:
MCELROY CRT., CALEDON, ON

PROJECT:
DESIGN OF RETAINING & ARMOUR STONE WALL

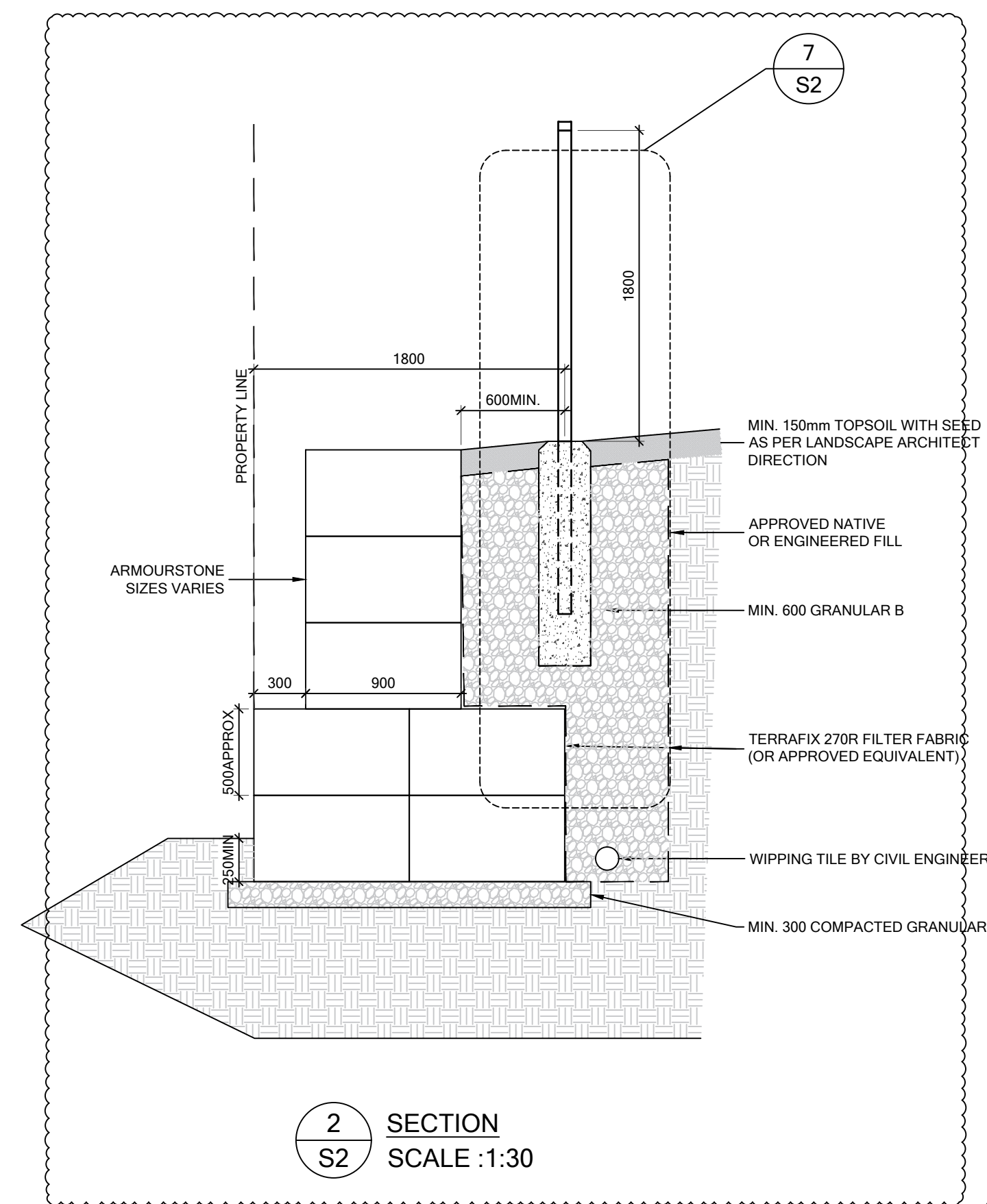
DRAWING DESCRIPTION:
PROPOSED ARMOUR STONE AND RETAINING WALL PLAN, ARMOUR STONE NOTES AND ELEVATIONS

REFERENCE FILE:
THIS DRAWING HAS BEEN PREPARED FROM INFORMATION SHOWN ON DWG NO.:

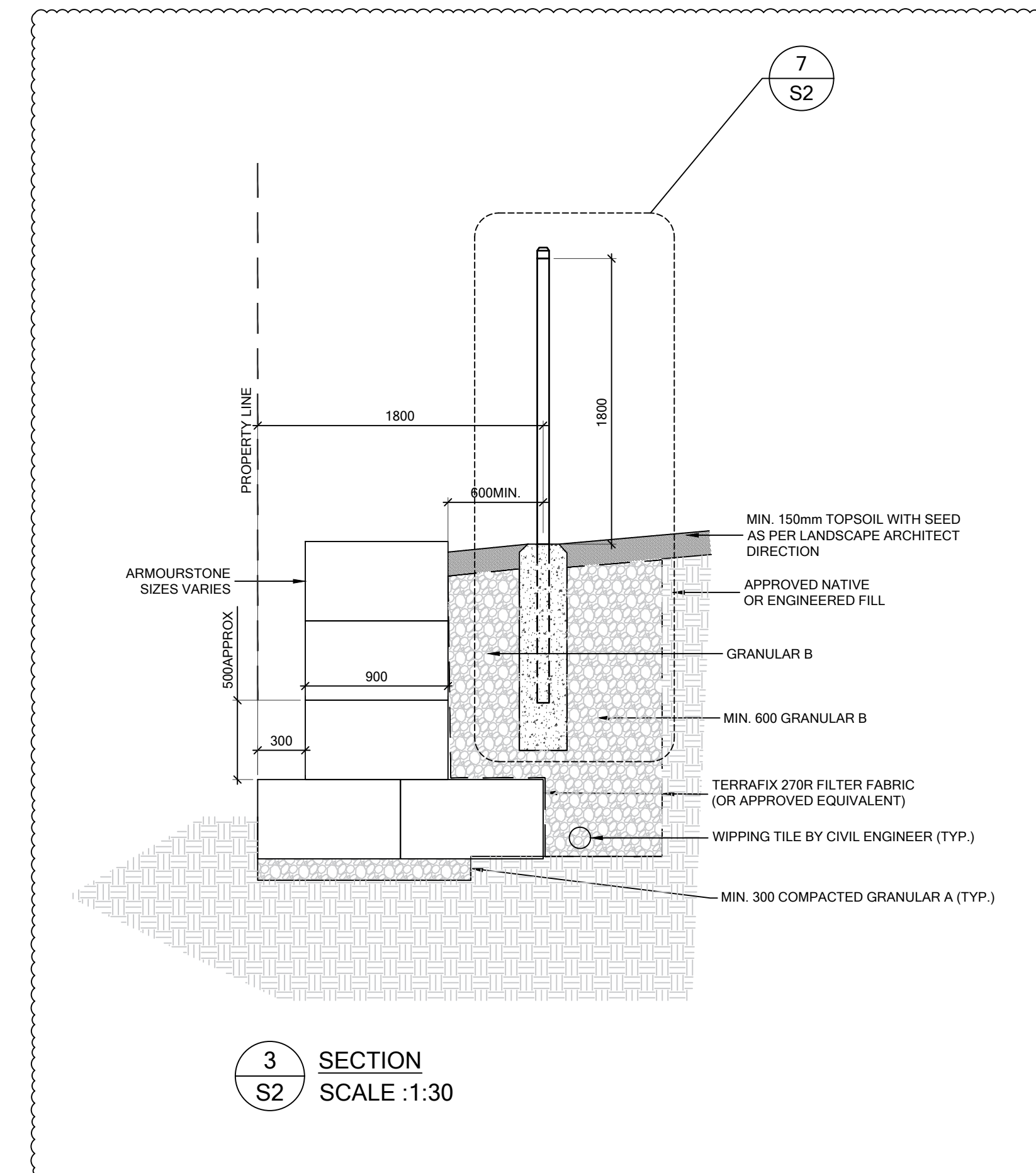
FILE NAME: 19-10536-17743-R2	CHECKED BY: MHAW
DRAWN BY: ASF	SCALE: AS NOTED
DATE STARTED: APR. 04, 2019	PROJECT NUMBER: 19-10536.17743
DRAWING NUMBER: S1	



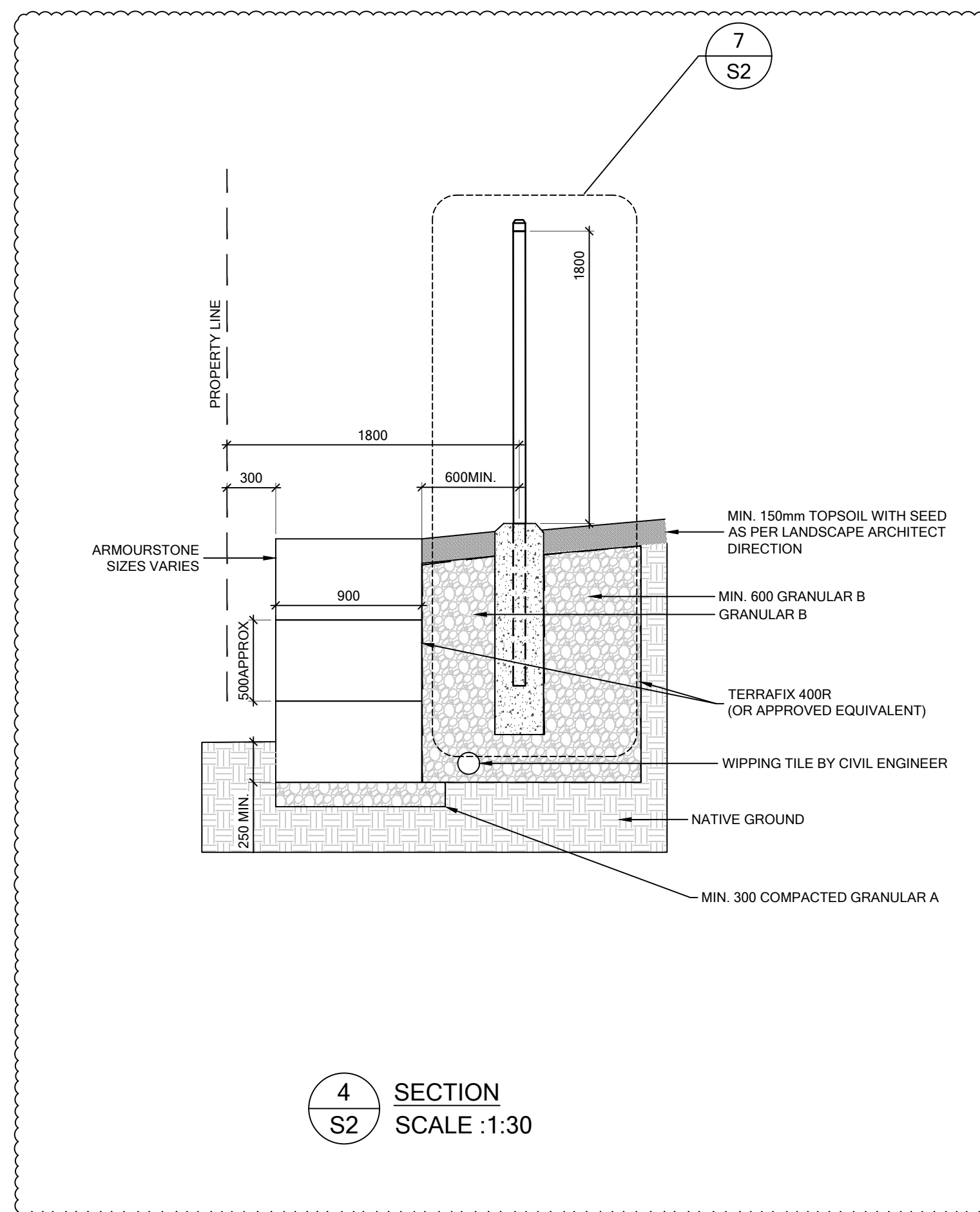
1 SECTION
S2 SCALE :1:30



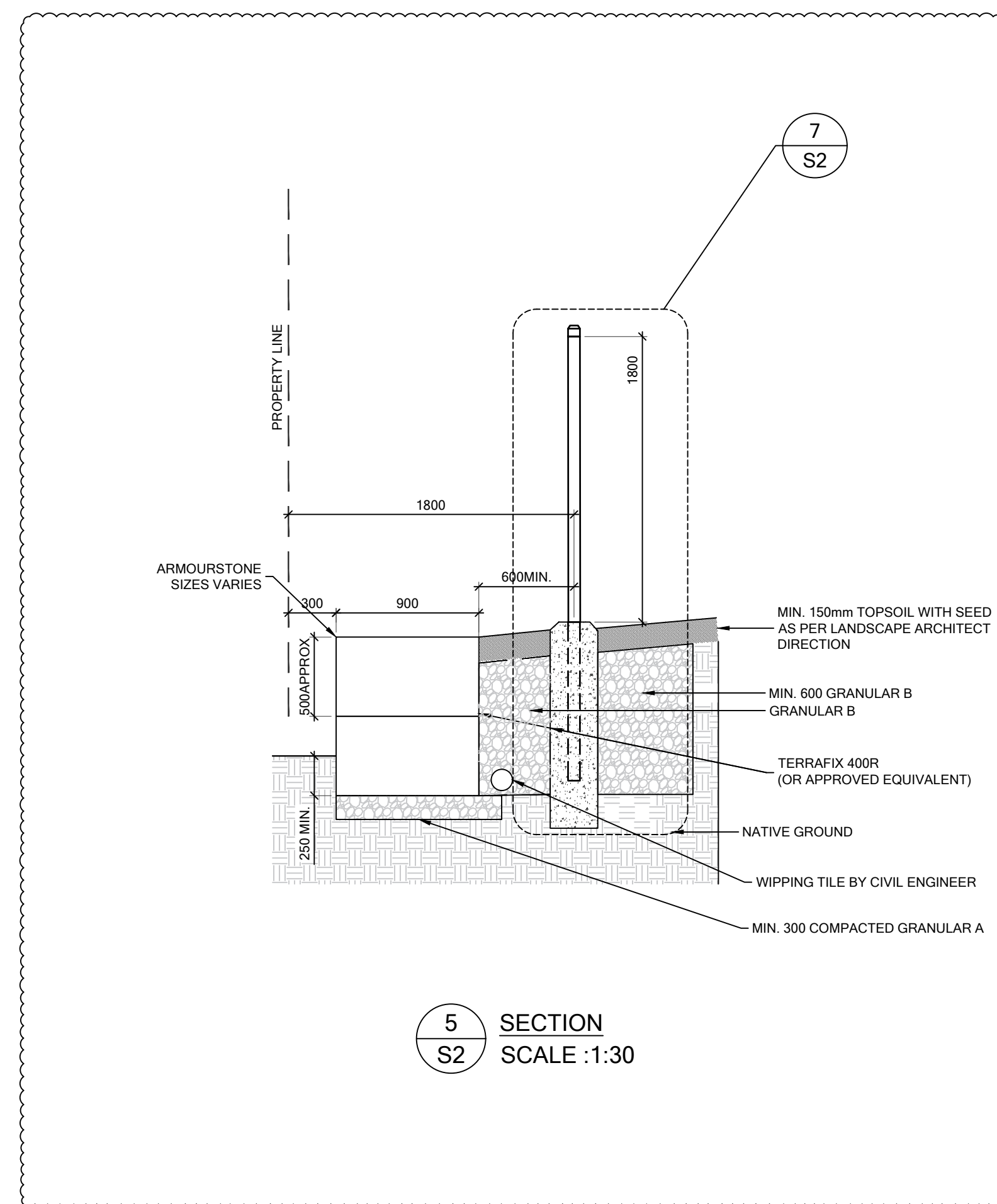
2 SECTION
S2 SCALE :1:30



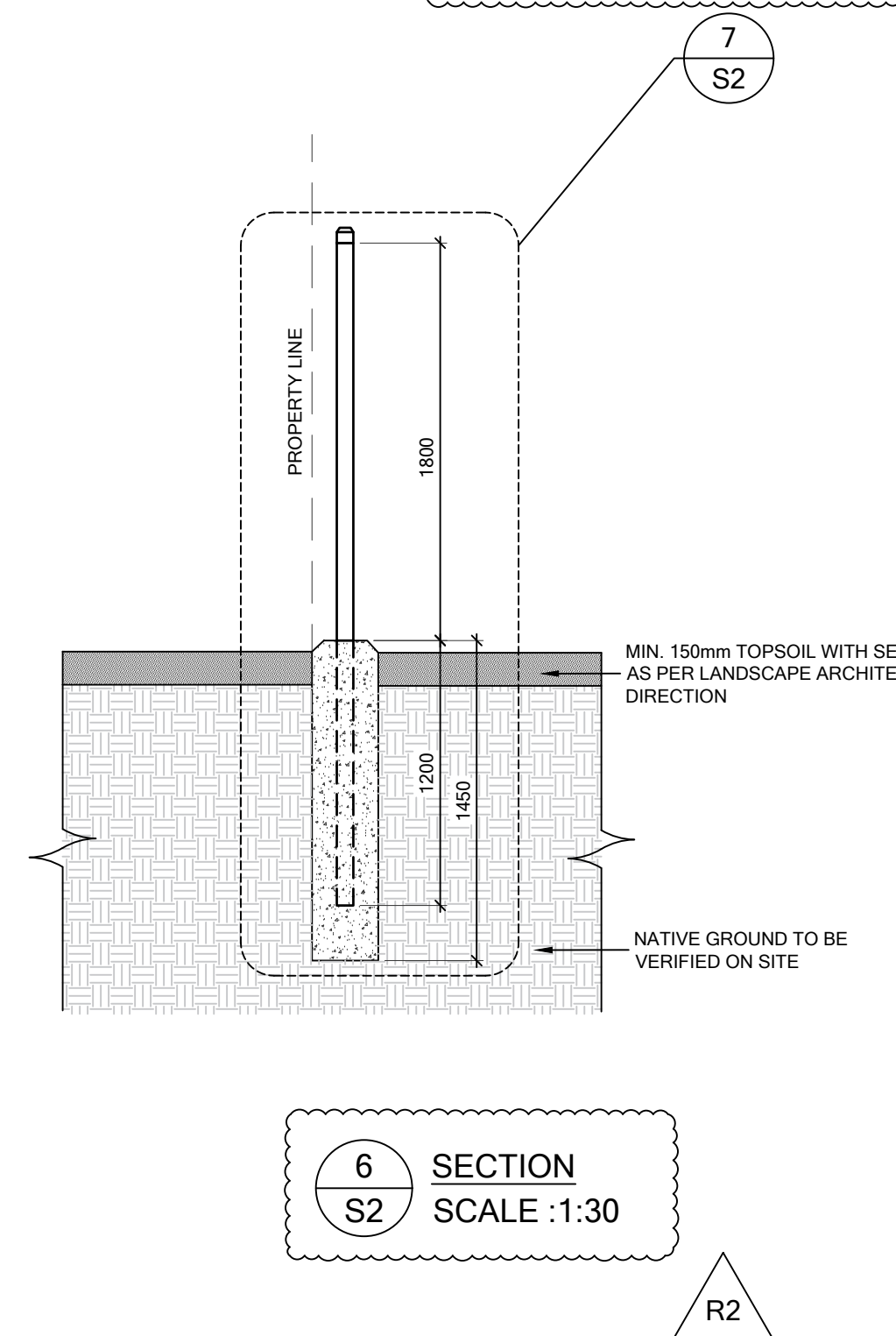
3 SECTION
S2 SCALE :1:30



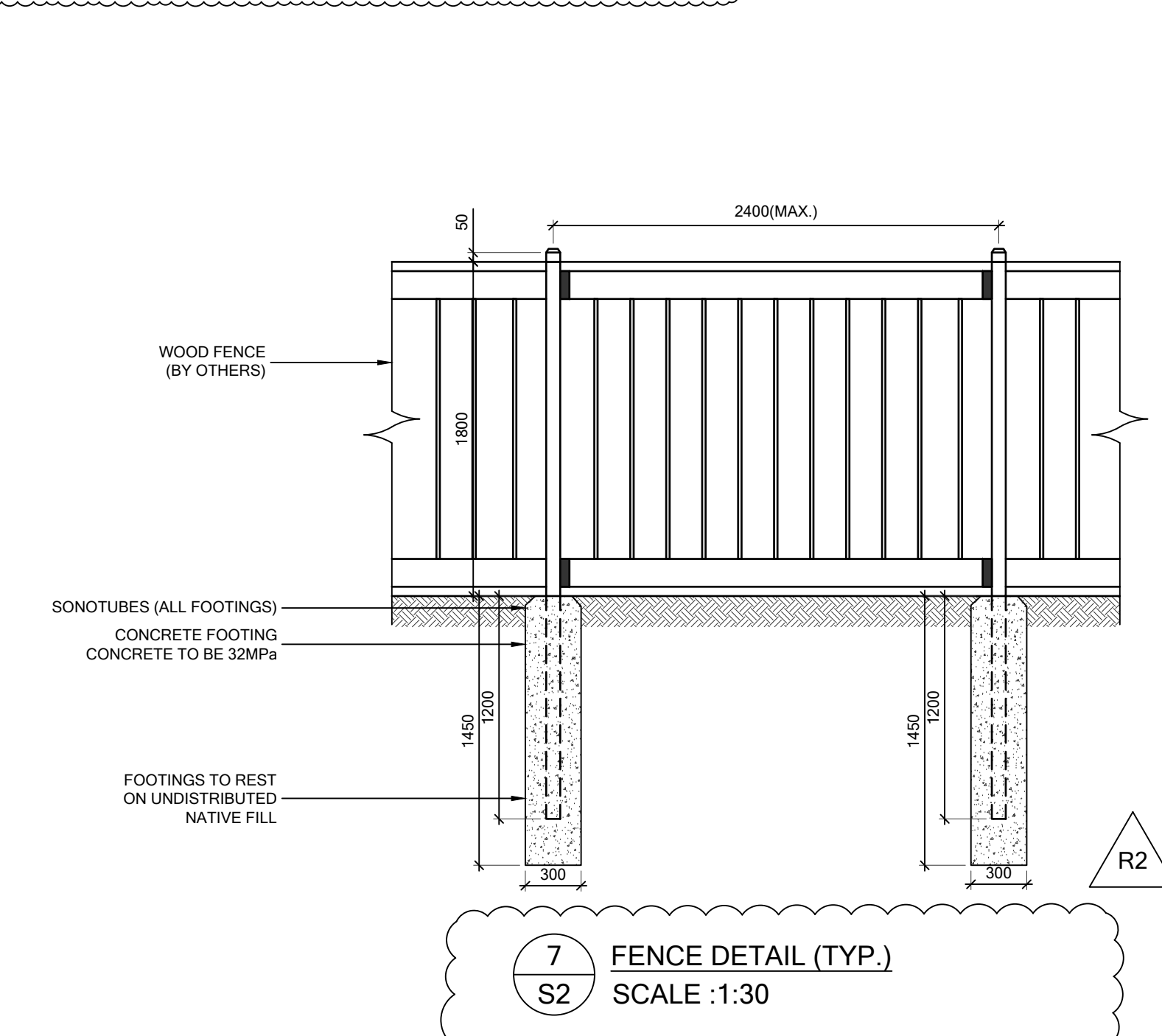
4 SECTION
S2 SCALE :1:30



5 SECTION
S2 SCALE :1:30



6 SECTION
S2 SCALE :1:30

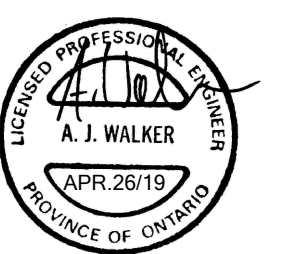


7 FENCE DETAIL (TYP.)
S2 SCALE :1:30

NOTE:
WOOD COLUMNS SHALL BE SEPARATED FROM CONCRETE IN CONTACT WITH GROUND BY 0.05 mm POLYETHYLENE OR TYPE S ROLL ROOFING.

REVISION / ISSUED:	DATE	DESCRIPTION
R2	26/04/19	Revised As Noted
R1	09/04/19	Revised As Noted
R0	08/04/19	Issued For Construction

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ENGINEER:
ajw
engineering
5080 Timberlea Blvd., Unit #42-44,
Mississauga, Ontario, CANADA. L4W 4M2
Phone: (905) 840-0530
Fax: (905) 212-9012

ORDERED BY:
PLURIBUS CORPORATION

ADDRESS:
MCELROY CRT., CALEDON, ON

PROJECT:
DESIGN OF RETAINING & ARMOUR STONE WALL

DRAWING DESCRIPTION:
SECTIONS AND DETAILS OF ARMOUR STONE WALL

REFERENCE FILE:
THIS DRAWING HAS BEEN PREPARED FROM INFORMATION SHOWN ON DWG NO.:

FILE NAME:
19-10536-17743-R2

DRAWN BY: ASF CHECKED BY: MH,AW

SCALE: AS NOTED

DATE STARTED: APR. 04, 2019

PROJECT NUMBER: 19-10536.17743

DRAWING NUMBER: S2

RETAINING WALL DESIGN ASSUMPTIONS:

- SOIL ALLOWABLE BEARING CAPACITY (SLS) : 250 KPa (PER SOIL REPORT OF DEPTHS 3.2m+ - TO BE CONFIRMED BY GEOTECHNICAL E.O.R.)
- SOIL ASSUMPTION TO BE CONFIRMED
 $\gamma_{SOIL} = 20 \text{ kN/m}^3$ & $\phi_{PROJECTION \text{ ANGLE}} = 30^\circ$

RETAINING WALL CONCRETE NOTES:

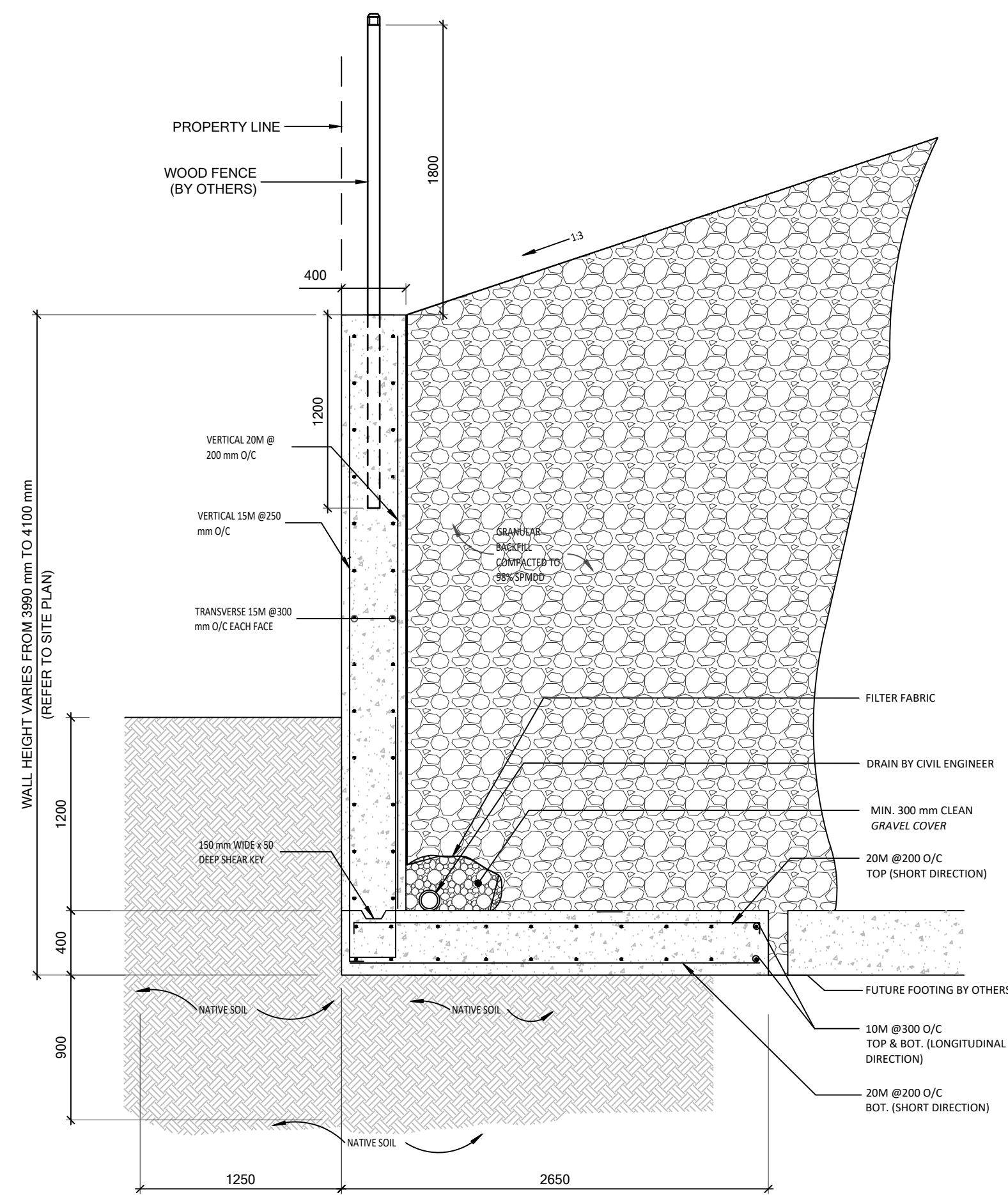
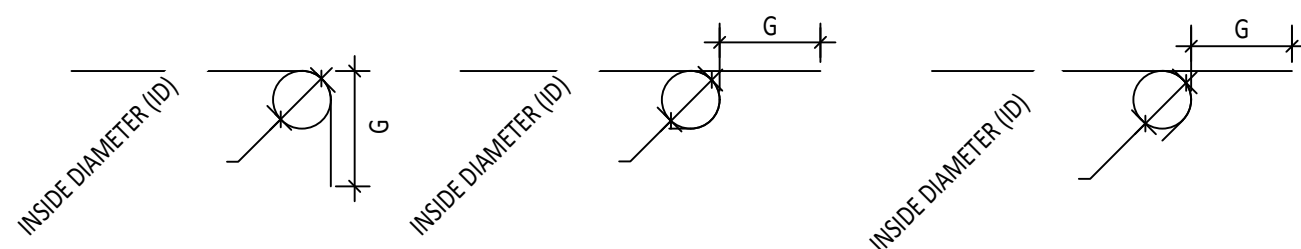
- CONCRETE WORK SHALL CONFORM TO CSA A23.1-09 FOR MATERIALS AND WORKMANSHIP.
- THE CONCRETE SHALL HAVE A MINIMUM 35 MPA COMPRESSIVE STRENGTH AT 28 DAY, AND SHALL MEET THE FOLLOWING SPECIFICATIONS:
 MAXIMUM W/C RATIO = 0.40
 AIR CONTENT = 5 - 8%
 MAXIMUM COARSE AGGREGATE SIZE = 19mm
- CONCRETE SHALL HAVE AN EXPOSURE CLASS AS OUTLINED IN TABLE 2, 4, 20 OF CAN/CSA-A23.1-09.
- ALL CONCRETE SHALL BE KEPT MOIST DURING THE FIRST THREE DAYS OF CURING.
- PROVIDE COLD WEATHER PROTECTION TO PREVENT SLAB ON GRADE FROM HEAVING.
- (TOLERANCES AS PER CAN/CSA-A23.1 CLAUSE 6.4.2, EXCEPT AS NOTED BELOW.)
- THE ABOVE REQUIREMENTS DO NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY OF MEETING MORE RIGID REQUIREMENTS SPECIFIED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS OR AS REQUIRED BY EQUIPMENT SHOP DRAWINGS OR SPECIFICATIONS SUCH AS THOSE FOR ELEVATORS ETC.
- CONCRETE IS SPECIFIED AS PER THE "PERFORMANCE" ALTERNATE AS OUTLINED IN TABLE 5 OF CAN/CSA-A23.1-09.
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- SLUMP AND AGGREGATE SIZE TO BE DETERMINED BY THE GENERAL CONTRACTOR AND SUPPLIER TO MEET PLACEMENT, AND FINISHING REQUIREMENTS WITHOUT SEGREGATION WHILE MEETING ALL OWNER SPECIFICATIONS.
- MAXIMUM WATER/CEMENT RATIO AND AIR CONTENT TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN TABLE 2, 4 AND 20 OF CAN/CSA-A23.1-09.
- CEMENT TYPE FOR EXPOSURE CLASSES S-1, S-2, AND S-3 SHALL BE AS OUTLINED IN TABLE 3 OF CAN/CSA-A23.1-09.
- CHLORIDE ION PENETRABILITY FOR EXPOSURE CLASS C-1 AND C-XL SHALL MEET THE REQUIREMENTS OF TABLE 2 OF CAN/CSA-A23.1-09.
- AT THE REQUEST OF THE OWNER, THE SUPPLIER WILL FURNISH TEST DATA RESULTS FOR EACH PROPOSED MIX DESIGN DEMONSTRATING THAT THEY MEET THE STRENGTH, DURABILITY, AND SHRINKAGE REQUIREMENTS SPECIFIED.
- CURING OF CONCRETE TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN CLAUSE 7.4.1.7 AS WELL AS TABLES 2 AND 20 OF CAN/CSA-A23.1-09. CURING COMPOUNDS ARE NOT PERMITTED FOR SUSPENDED PARKING SLABS OR EXPOSURE CLASS C-XL CONCRETE.
- CORROSION INHIBITORS ARE TO BE USED IN CONCRETE IN AREAS NOTED ON THE STRUCTURAL DRAWINGS. USE 270 OZ PER CUBIC YARD OF "DCI S" BY GRACE CONSTRUCTION PRODUCTS OR "RHEOCRETE CN1" BY MASTER BUILDERS TECHNOLOGIES LTD.
- ALL BOTTOM EDGES OF WALLS TO BE CHAMFERED 19 mm X 19 mm. SEE ALSO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR OTHER FINISH REQUIREMENTS.
- NO CALCIUM CHLORIDE IS PERMITTED, IN ANY FORM, IN ANY CONCRETE MIX WITHOUT THE EXPRESS WRITTEN CONSENT OF AJW ENGINEERING.
- CURING AND PROTECTION OF CONCRETE FOR HOT, COLD OR DRY WEATHER IS TO BE AS PER CLAUSES 7.4.1.8 AND 7.4.2 OF CAN/CSA-A23.1-09 AS A MINIMUM. SEE ALSO "COLD WEATHER REQUIREMENTS" IN THE STRUCTURAL DRAWINGS.

RETAINING WALL CONCRETE REINFORCEMENT:

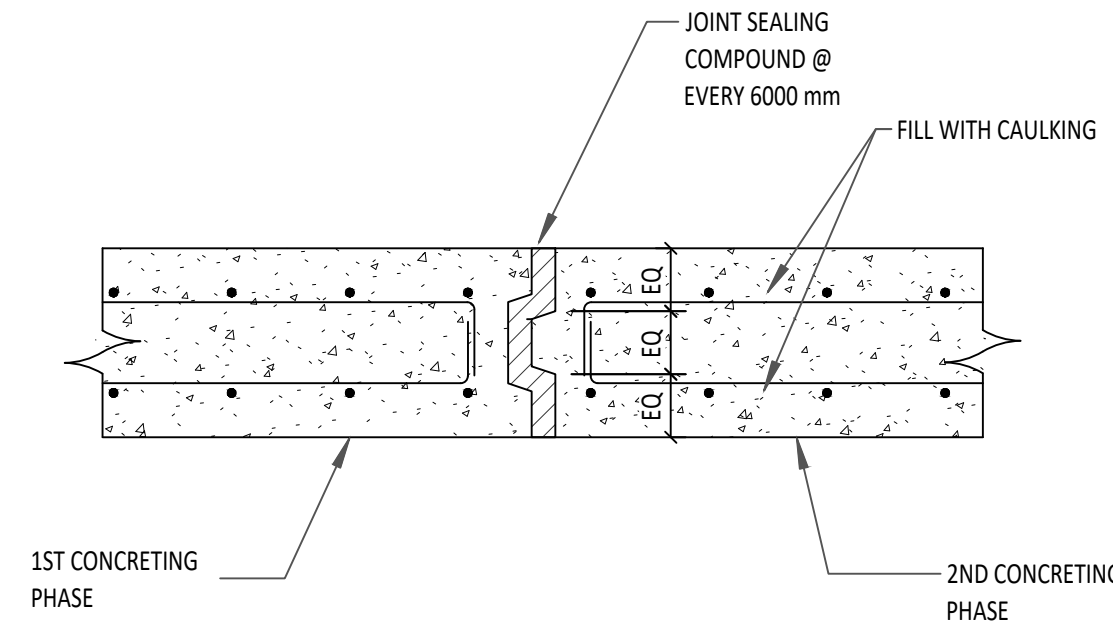
- REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS:
 CAN/CSA-G30.18R-GRADE 400 MPa - 10M AND LARGER (U.N.O.)
 (NOTE: G30.18W MAY BE SUBSTITUTED FOR G30.18R)
- SUPPORT REINFORCING WITH CHAIRS, ACCESSORIES, OR REINFORCING BARS AS REQUIRED. BARS USED AS SUPPORT BARS SHALL BE CONSIDERED AS ACCESSORIES.
- PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN CONCRETE PROTECTION AS SPECIFIED. ALL SUPPORTS AND BARS MUST BE TIED TOGETHER TO MAINTAIN REINFORCING STEEL SECURELY IN PLACE DURING CONCRETE PLACEMENT.
- REINFORCEMENT LAP SPLICES SHALL BE STAGGERED, AND SHALL HAVE A MINIMUM 40D LAP LENGTH (40 TIMES THE DIAMETER OF THE REINFORCEMENT UNLESS NOTED OTHERWISE).
- PROVIDE CONCRETE COVER OVER REINFORCING STEEL ACCORDING TO CSA A23.1 AND DETAILED AS FOLLOWS:

EXPOSURE CONDITION	CONCRETE COVER (mm)
SURFACES CAST AGAINST AND PERMANENT EXPOSED TO EARTH	75
SURFACES EXPOSED TO DE-ICING CHEMICALS	60
FORMED SURFACES EXPOSED TO EARTH OR WEATHER	40
WALLS NOT EXPOSED TO WEATHER	20

BAR SIZE (mm)	90° HOOK		180° HOOK		135° HOOK	
	ID (mm)	LENGTH 'G' (mm)	ID (mm)	LENGTH 'G' (mm)	ID (mm)	LENGTH 'G' (mm)
10M	70	160	70	140	40	90
15M	100	260	100	180	60	140
20M	120	310	120	220	80	180



1 PROPOSED RETAINING WALL SECTION
 SCALE : 1:30



2 CONTROL JOINT
 SCALE : 1:16

R1	09/04/19	Revised As Noted
R0	08/02/19	Issued For Construction
No.	DATE	DESCRIPTION
	DDMMYY	

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 engineering
 5080 Timberlea Blvd., Unit #42-44,
 Mississauga, Ontario, CANADA, L4W 4M2
 Phone: (905)-840-0530
 Fax: (905)-212-9012

ORDERED BY:
PLURIBUS
CORPORATION

ADDRESS:
 MCELROY CRT., CALEDON, ON

PROJECT:
 DESIGN OF RETAINING & ARMOUR
 STONE WALL

DRAWING DESCRIPTION:
 NOTES, SECTION AND DETAILS OF
 RETAINING WALL

REFERENCE FILE:
 THIS DRAWING HAS BEEN PREPARED FROM
 INFORMATION SHOWN ON DWG NO.:

FILE NAME: 19-10536.17743-R2	CHECKED BY: SM
DRAWN BY: ASF,MH	SCALE: AS NOTED
DATE STARTED: JAN. 29, 2019	PROJECT NUMBER: 19-10536.17743
DRAWING NUMBER: S3	