

3. THIS IS A METRIC PROJECT. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE IN MILLIMETERS AND ALL FORCES ARE IN METRIC UNITS (PER TG-ABBR-02).
2. "WSP-S" REFERS TO WSP CANADA STRUCTURAL CONSULTANT.
3. PROVIDE ALL MATERIAL AND LABOUR REQUIRED FOR COMPLETION OF THE WORK.
4. PRIOR TO CONSTRUCTION, REVIEW STRUCTURAL DRAWINGS IN CONJUNCTION WITH DRAWINGS PROVIDED BY ALL OTHER CONSULTANTS, AND WITH EXISTING CONDITIONS.
5. REPORT DISCREPANCIES TO THE CONSULTANT BEFORE PROCEEDING WITH THE WORK.
6. VERIFY EXISTING DIMENSIONS AND CONDITIONS ON SITE PRIOR TO CONSTRUCTION.
7. USE THESE DRAWINGS ONLY FOR THE PURPOSE IDENTIFIED IN THE REVISIONS COLUMN. DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED 'ISSUED FOR CONSTRUCTION'.
8. DO NOT USE INFORMATION ON THESE DRAWINGS FOR ANY OTHER PROJECT OR WORKS.
9. DO NOT SCALE THESE DRAWINGS.
10. ALL SECTIONS, DETAILS, AND STATEMENTS NOTED AS "TYPICAL" APPLY TO LIKE/SIMILAR CONDITIONS IN THE STRUCTURE.
11. SEE ARCHITECTURAL DRAWINGS FOR FIRE RATING AND FIREPROOFING REQUIREMENTS.
12. DRAWINGS SHOW COMPLETED STRUCTURE ONLY. THEY DO NOT SHOW TEMPORARY WORKS FOR WHICH THE CONTRACTOR IS RESPONSIBLE AND WHICH MAY BE REQUIRED FOR EXECUTION OF THE PROJECT. THE CONTRACTOR TO ESTABLISH CONSTRUCTION PROCEDURE AND SEQUENCE TO ENSURE SAFETY OF THE WHOLE STRUCTURE AND ALL ITS COMPONENTS DURING ERECTION.
13. MAKE ADEQUATE PROVISIONS FOR ALL LOADS ACTING ON THE STRUCTURE DURING ERECTION. PROVIDE TEMPORARY SHORING AND BRACING TO KEEP THE STRUCTURE PLUMB AND IN TRUE ALIGNMENT DURING CONSTRUCTION.
14. DESIGN AND CONSTRUCTION REVIEW OF ALL TEMPORARY WORKS TO BE CARRIED OUT BY A PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR, LICENSED IN THE PLACE WHERE THE PROJECT IS LOCATED.
15. DESIGN OF NON-STRUCTURAL AND SECONDARY STRUCTURAL ELEMENTS (SUCH AS MISCELLANEOUS STEEL STAIRS, RAILINGS AND GUARDRAILS, PARTITIONS, CLADDING, BULKHEADS, ETC.) IS THE RESPONSIBILITY OF SPECIALTY PROFESSIONAL ENGINEERS ENGAGED BY THE CONTRACTOR OR THE SUPPLIERS; IT IS NOT WITHIN THE SCOPE OF SERVICES PROVIDED BY WSP-S AND WILL NOT BE REVIEWED BY WSP-S.
16. CONSTRUCTION LOADS ON COMPLETED STRUCTURE NOT TO EXCEED DESIGN LOADS INDICATED ON DRAWINGS. FULL DESIGN LOADS MAY ONLY BE APPLIED AFTER THE CONCRETE REACHES ITS DESIGN STRENGTH.

1. STRUCTURAL DESIGN IS IN ACCORDANCE WITH THE 2024 BRITISH COLUMBIA BUILDING CODE (BCBC) NATIONAL BUILDING CODE (NBC) 2020, SUPPLEMENTED BY THE USER'S GUIDE — NBC 2015 STRUCTURAL COMMENTARIES (WHEN NBC 2020 COMMENTARIES ARE RELEASED, DESIGN IS TO BE REVIEWED TO CONFIRM COMPLIANCE).
2. ALL REFERENCED STANDARDS SHALL BE THE CURRENT EDITION UNLESS DIFFERENT EDITION IS REFERENCED BY THE APPLICABLE BUILDING CODE NOTED ABOVE.
3. THE VALUES FOR CLIMATIC DATA USED IN THE DETERMINATION OF DESIGN LOADS HAVE BEEN OBTAINED FROM SUNSHINE COAST REGIONAL DISTRICT BUILDING BYLAW NO. 687 PART 18 (CLIMATIC DATA).
4. BASED ON THE USE AND OCCUPANCY, THE BUILDING IS DESIGNED TO THE REQUIREMENTS OF A NORMAL IMPORTANCE CATEGORY.
5. SELF WEIGHT (SWT) IS DUE TO THE WEIGHT OF THE STRUCTURE ITSELF. IT VARIES WITH THE STRUCTURAL SYSTEM, AND INCLUDES CONCRETE TOPPINGS ON STEEL DECK.
6. SUPERIMPOSED DEAD LOADS (SDL) ARE NON-STRUCTURAL DEAD LOADS DUE TO NON-STRUCTURAL TOPPINGS, FINISHES, PARTITIONS, ROOFING MATERIALS, SUSPENDED EQUIPMENT, PAVERS, SOIL, ETC.
7. DEAD LOAD (DL) IS THE SELF WEIGHT OF THE STRUCTURE PLUS THE SUPERIMPOSED DEAD LOAD.
8. UNLESS OTHERWISE NOTED, DESIGN LOADS SHOWN ON DRAWINGS ARE SPECIFIED (UNFACTORED) LOADS. TO BE USED FOR ULS DESIGN. FOR SLS DESIGN, THESE LOADS CAN BE REDUCED BY MULTIPLYING WITH THE RATIO OF APPROPRIATE IMPORTANCE FACTORS $\gamma_f(SLS)$ / $\gamma_f(SLS)$ GIVEN BELOW.
9. IF ONLY ONE VALUE IS GIVEN FOR A LOAD, CONSIDER IT LIVE LOAD.
10. FOR CONNECTION LOADS, "+" SIGN INDICATES TENSION AND "-" SIGN INDICATES COMPRESSION, EXCEPT FOR COLUMN LOADS WHERE "+" SIGN INDICATES COMPRESSION AND "-" SIGN INDICATES TENSION.
11. SNOW: $S_s = 2.30 \text{ kPa}$; $S_r = 0.4 \text{ kPa}$; $I_s (ULS) = 1.0$; $I_s (SLS) = 0.9$
MINIMUM UNFACTORED SNOW LOAD = $2.24 \text{ kPa} \times I_s$
12. RAIN: 24 HOUR RAINFALL = 63 mm
13. WIND: $q_{50} = 0.53 \text{ kPa}$; $I_w (ULS) = 1.0$; $I_w (SLS) = 0.75$
TERRAIN TYPE: OPEN
14. SEISMIC:

Sa (0.2) = 1.13
Ie = 1.0
SITE CLASS: E (ASSUMED)
Fa = 1.176

$A_x = 1.0$ $R_p = 2.50$ $V_p = 0.38 \times W_p$
 $C_p = 1.0$ $R_p(\text{anchor}) = 1.50$ $V_p(\text{anchor}) = 0.64 \times W_p$
 $A_r = 2.50$

1. WSP-S WILL PROVIDE PERIODIC FIELD REVIEW OF A REPRESENTATIVE SAMPLE OF THE STRUCTURAL WORKS DETAILED ON THESE DRAWINGS FOR GENERAL CONFORMANCE WITH CONTRACT DOCUMENTS. THESE REVIEWS DO NOT REPLACE THE CONTRACTOR'S RESPONSIBILITY TO IMPLEMENT AND MAINTAIN A QUALITY CONTROL PROGRAM, AND DO NOT MAKE WSP-S A GUARANTOR OF THE CONTRACTOR'S WORK.
2. ASSIST WSP-S DURING FIELD REVIEW AND PROVIDE SAFE ACCESS TO WORK AREAS AS REQUIRED.
3. CHECK THE WORK PRIOR TO FIELD REVIEW TO CONFIRM IT IS COMPLETED AND IN ACCORDANCE WITH CONTRACT DOCUMENTS.
4. NOTIFY WSP-S 48 HOURS PRIOR TO CONCRETE POURS, BACKFILLING, AND COVERING UP THE STRUCTURE WITH FINISHES.

1. STRUCTURAL DESIGN IS BASED ON THE GEOTECHNICAL REPORT PREPARED BY RYZUK GEOTECHNICAL LTD.; REPORT NUMBER 10908-2; DATED NOVEMBER 7, 2024 AS WELL AS THE INFORMATION RECEIVED FROM PATRICK SAILS OF RYZUK GEOTECHNICAL LTD. VIA EMAIL AND DATED FEBRUARY 27, 2025. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL FOUNDATION AND EARTHWORK INFORMATION.
2. SET FOUNDATIONS ON HORIZONTAL UNDISTURBED SOIL CAPABLE OF SUPPORTING BEARING PRESSURE OF 150 kPa AT ULS AND 100 kPa AT SLS.
3. PRIOR TO PLACING FOOTINGS, BEARING CAPACITY OF EACH FOOTING TO BE CONFIRMED IN WRITTEN REPORTS BY A GEOTECHNICAL ENGINEER RETAINED BY CONTRACTOR. GEOTECHNICAL ENGINEER TO CARRY MINIMUM \$1,000,000 IN LIABILITY INSURANCE. SUBMIT EACH REPORT IMMEDIATELY TO WSP-S.
4. IF THE ASSUMED BEARING RESISTANCE IS NOT OBTAINED AT THE UNDERSIDE OF FOOTING ELEVATION INDICATED ON DRAWINGS, EXTEND EXCAVATION UNTIL COMPETENT SOIL IS REACHED, AND PROVIDE LEAN CONCRETE FILL (OR CONCRETE SAME AS SPECIFIED FOR THE FOOTING) TO UNDERSIDE OF FOOTING. DO NOT DROP DOWELS; MAINTAIN THE SPECIFIED PROJECTION REQUIRED FOR LAPS.
5. FOR FROST PROTECTION, MINIMUM DISTANCE FROM FINISHED GRADE TO UNDERSIDE OF FOUNDATIONS TO BE NOT LESS THAN 450mm OR PROVIDE EQUIVALENT INSULATION. WHERE UNDERSIDES OF WALLS, GRADE BEAMS, OR PILE CAPS ARE NOT BELOW THE FROST PROTECTION DEPTH, PROVIDE FROST CUSHION BETWEEN SOIL AND STRUCTURE WHERE FROST ACTION MAY CAUSE UPLIFT.
6. UNLESS OTHERWISE NOTED, CENTRE FOOTINGS, PIERS, PILES, AND PILE CAPS UNDER CENTROID OF COLUMNS. WHERE THERE ARE NO COLUMNS ABOVE, CENTRE UNDER WALLS OR GRADE BEAMS.
7. PLACE ANCHOR RODS AND DOWELS BEFORE CONCRETE IS CAST. USE TEMPLATES TO KEEP IN POSITION.
8. LOCATE ALL EXISTING UNDERGROUND SERVICES PRIOR TO EXCAVATION AND/OR PILE INSTALLATION.
9. KEEP EXCAVATION DRAINED AND FREE OF WATER AT ALL TIMES.
10. PROTECT FOOTINGS, PIERS, PILE TOPS, PILE CAPS, GRADE BEAMS, FOUNDATION WALLS, SLABS-ON-GRADE AND ADJACENT SOIL AGAINST FREEZING AND FROST ACTION AT ALL TIMES DURING CONSTRUCTION. DO NOT POUR CONCRETE AGAINST FROZEN EARTH.
11. DO NOT PLACE CONCRETE IN WATER OR ON FROZEN SOIL.
12. UNLESS NOTED OTHERWISE, PROVIDE DRAINAGE WITH WEEPING TILES TIED INTO MECHANICAL DRAINAGE SYSTEM AT ALL WALLS RETAINING EARTH. IF WEEPING TILE IS NOT LOCATED ON THE SIDE OF THE WALL RETAINING EARTH, PROVIDE MIN. 50 (2") DIA. WEEPERS AT MAX 2000 (6'-8") O/C THROUGH THE WALL. LOCATE JUST ABOVE TOP OF FOOTING.
13. WHERE SLAB ON GRADE IS USED TO TIE THE TOP OF A WALL RETAINING EARTH, PROVIDE TEMPORARY SHORING OF THE WALL FROM START OF BACKFILLING UNTIL THE SLAB ON GRADE REACHES 75% OF ITS DESIGN STRENGTH.
14. FOR ELEMENTS THAT ARE TO BE BACKFILLED ON BOTH SIDES, PLACE BACKFILL SIMULTANEOUSLY ON BOTH SIDES SUCH THAT HEIGHTS DO NOT VARY BY MORE THAN 600 (2') FROM ONE SIDE TO THE OTHER.

1. CONFORM TO CSA A23.1 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION".
2. CONCRETE IS SPECIFIED PER ALTERNATIVE 1 - PERFORMANCE SPECIFICATION, AS OUTLINED IN CAN/CSA A23.1. THE CONTRACTOR AND THE CONCRETE SUPPLIER TO MEET ALL CERTIFICATION, DOCUMENTATION, AND QUALITY CONTROL REQUIREMENTS.
3. THE CONCRETE SUPPLIER TO BE CERTIFIED BY THE BC READY MIXED CONCRETE ASSOCIATION.
4. CONCRETE TO BE NORMAL DENSITY (MIN. 2300 kg/m³) UNLESS NOTED OTHERWISE.
5. CEMENT TO BE PORTLAND CEMENT TYPE GU OR GUL, UNLESS NOTED OTHERWISE OR REQUIRED BY EXPOSURE CLASS. CEMENT TO CONFORM TO CSA A3000.
6. AGGREGATE TO CONFORM TO CSA A23.1 / A23.2. DO NOT USE RECYCLED CONCRETE AS AGGREGATE.
7. CONCRETE ADMIXTURES SHALL NOT CONTAIN CHLORIDES.
8. SUBMIT CONCRETE MIX DESIGNS TO WSP-SFOR REVIEW BEFORE START OF WORK.
9. PERIMETER AND EXTERIOR FOUNDATION WALLS AND FOOTINGS:
 - EXPOSURE CLASS: F1
 - MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS: 35 MPa
 - NOMINAL SIZE OF COARSE AGGREGATE: 20 (3/4")
10. PROTECT CONCRETE FROM EXCESSIVE HEAT AND DRYING. USE HOT WEATHER CONCRETING METHODS IN ACCORDANCE WITH CAN/CSA-A23.1 WHENEVER THE OUTDOOR TEMPERATURE IS GREATER THAN 27°C.
11. PROTECT CONCRETE FROM FREEZING. USE COLD WEATHER CONCRETING METHODS IN ACCORDANCE WITH CAN/CSA-A23.1 WHENEVER OUTDOOR TEMPERATURE IS LESS THAN -5°C. ALL INSULATED COVERS, HEATERS, AND OTHER MATERIALS REQUIRED TO PROTECT CONCRETE TO BE ON HAND PRIOR TO POUR. DELIVER CONCRETE AT A TEMPERATURE BETWEEN +15°C AND +27°C. ENSURE A MINIMUM CONCRETE TEMPERATURE OF 10° IS MAINTAINED THROUGHOUT THE CURING PERIOD (MINIMUM 3 DAYS).
12. MAXIMUM OUTSIDE DIAMETER OF ANY CONDUIT OR PIPE EMBEDDED IN SLAB NOT TO EXCEED ONE THIRD OF THE SLAB THICKNESS.
13. FORMWORK DESIGN, MATERIAL, FABRICATION, AND ERECTION TO CONFORM TO CSA S269.1

14. FORMWORK MATERIAL TO BE NEW EXTERIOR PLYWOOD CONFORMING TO CSA 0121, EXCEPT FOR ROUGH CONCRETE IN UNEXPOSED LOCATIONS (SUCH AS FOUNDATIONS) WHERE USED MATERIAL IS ACCEPTABLE.
15. USE REMOVABLE INTERNAL FORM TIES OR ADJUSTABLE METAL TIES DESIGNED TO ACT AS SPREADERS, WHICH WILL, WHEN REMOVED, LEAVE NO METAL CLOSER THAN 25 (1") TO CONCRETE SURFACE.
16. DO NOT SUPPORT FORMWORK SHORING ON FROZEN SOILS.
17. PROVIDE 25 (1") CHAMFER STRIPS ON EXTERNAL CORNERS AND 25 (1") FILLETS AT INTERIOR CORNERS.
18. VOID FORM TO BE CELLULAR CARDBOARD WITH A MINIMUM COMPRESSIVE STRENGTH OF 62 kPa (9 psi) DESIGNED TO DISINTEGRATE AND CREATE AN AIR SPACE BELOW THE FULLY HARDENED CONCRETE. IF VOID FORM COLLAPSES DURING CONSTRUCTION, REMOVE AND REPLACE AFFECTED AREA.
19. RIGID INSULATION TO BE EXTRUDED POLYSTYRENE BOARD CONFORMING TO ASTM C578, STRUCTURAL GRADE, WITH A COMPRESSIVE STRENGTH OF 275 kPa (40 psi).
20. PVC WATERSTOPS TO BE FLEXIBLE, EXTRUDED, HEAT WELDABLE, RIBBED TO CGSB 41-GP-35M. INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.
21. SWELLABLE WATERSTOPS TO BE TRAPEZOIDAL SHAPE, FLEXIBLE, NON-BENTONITE SYNTHETIC RUBBER. INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.
22. CONVEY CONCRETE FROM TRUCK TO FINAL LOCATION BY METHODS WHICH WILL PREVENT SEPARATION OR LOSS OF MATERIAL. MAXIMUM FREE FALL NOT TO EXCEED 1.5m (5'-0"). CONSOLIDATE CONCRETE USING MECHANICAL VIBRATORS.
23. UNLESS OTHERWISE NOTED, PROVIDE STANDARD CONTINUOUS 38 x 89 (2x4) FORMED KEYS AT ALL CONSTRUCTION JOINTS. CENTER AT JOINTS AND CHAMFER SIDES.
24. PROVIDE SLAB-ON-GRADE CONSTRUCTION JOINTS AT MAXIMUM 30m (100 ft) ON CENTER IN BOTH DIRECTIONS. PROVIDE CONTROL JOINTS IN SLABS-ON-GRADE AT 25 TIMES THE SLAB THICKNESS, BUT NOT MORE THAN 4.5m (15ft) MAXIMUM ON CENTER EACH WAY, 6 TO 18 HOURS AFTER PLACING CONCRETE. SAW CUT DEPTH TO BE EQUAL TO ON QUARTER OF THE CONCRETE THICKNESS. FILL JOINTS WITH SEMI-RIGID TWO COMPONENT EPOXY FILLER AFTER SLAB IS 120 DAYS OLD.
25. CURE CONCRETE SURFACES NOT IN CONTACT WITH FORMS IN ACCORDANCE WITH A23.1 / A23.2, BY APPLICATION OF A CURING-SEALING COMPOUND CONFORMING TO ASTM C309 IMMEDIATELY AFTER DISAPPEARANCE OF SURFACE WATER SHEEN. ENSURE CURING-SEALING COMPOUND IS COMPATIBLE WITH APPLIED FINISHES.
26. ENSURE THAT SLEEVES AND OPENINGS DO NOT IMPAIR THE REQUIRED STRENGTH OF THE MEMBER, AND UNLESS SHOWN ON THE STRUCTURAL DRAWINGS, ARE ACCEPTED BY THE CONSULTANT FOR SIZE, LOCATION, AND REINFORCEMENT BEFORE CONCRETE IS CAST. NO TRADE SHALL CUT HOLES THROUGH EXISTING CONCRETE UNLESS ACCEPTABLE TO THE CONSULTANT.

1. CONFORM TO CSA 23.1 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION".
2. REINFORCEMENT — DEFORMED BAR REINFORCEMENT CONFORMING TO CSA G30.18 GRADE 400R OR 400W. USE 400W WHERE BARS ARE SHOWN TO BE WELDED.
3. WELDED WIRE FABRIC — CONFORM TO ASTM A1064/A1064M, YIELD STRENGTH 450 MPa, SUPPLIED IN FLAT SHEETS ONLY.
4. LAP WELDED WIRE FABRIC SHEETS BY ONE SPACING OF CROSS WIRES + 50 (2"), MEASURED BETWEEN THE OUTERMOST CROSS WIRES IN EACH SHEET. IN SLABS, PLACE AT 1/3 SLAB THICKNESS BELOW TOP OF SLAB.
5. ACCESSORIES, BAR SUPPORTS, AND TIES TO CONFORM TO REINFORCING STEEL INSTITUTE OF CANADA (RSIC) MANUAL OF STANDARD PRACTICE AND CSA A23.1 / A23.2.
6. ALL REINFORCING BAR SIZES ARE METRIC; "M" IS NOT NECESSARILY MARKED AFTER A BAR SIZE. FOR EXAMPLE, 10-15B NOTED ON PLAN INDICATES 10 BARS OF 15M DIAMETER, PLACED AT BOTTOM.
7. SUBMIT SHOP DRAWINGS FOR REINFORCEMENT DETAILED IN ACCORDANCE WITH THE RSIC MANUAL OF STANDARD PRACTICE. SUBMIT PLANS AND DETAILS NECESSARY TO FABRICATE, PLACE, AND REVIEW REINFORCEMENT.
8. ALL REBAR HOOKS TO BE STANDARD LENGTH 90° OR 180° HOOKS. REBAR LENGTHS LISTED ON DRAWINGS DO NOT INCLUDE THE HOOK LENGTH. BARS MARKED CONTINUOUS TO BE TERMINATED IN STANDARD HOOKS AT ENDS AND SPOOLED USING CLASS B LAPS.
9. FIELD BENDING OF BARS IS NOT PERMITTED UNLESS INDICATED OR APPROVED BY WSP-S. APPROVED FIELD BENDING TO BE DONE WITHOUT THE USE OF HEAT, THROUGH APPLICATION OF SLOW AND STEADY PRESSURE. REPLACE BARS WITH CRACKS OR SPLITS.
10. ALL REINFORCING TO BE CLEAN, FREE OF LOOSE SCALE, OIL, DIRT, RUST, AND ANY OTHER FOREIGN COATING THAT AFFECT BONDING CAPACITY.
11. UNLESS OTHERWISE NOTED, LAP ALL HORIZONTAL GRADE BEAM REINFORCING WITH CLASS B LAPS. CARRY CONTINUOUSLY THROUGH PIERS AND PILE CAPS WHERE APPLICABLE
12. WHERE REINFORCEMENT IS CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH, MINIMUM CONCRETE COVER TO REINFORCING BARS CLOSEST TO THE CONCRETE SURFACE TO BE 75 (3").
13. FOR CLASS N CONCRETE, MINIMUM CONCRETE COVER TO REINFORCING BARS CLOSEST TO THE CONCRETE SURFACE TO BE 40 (1 1/2") FOR BEAMS AND COLUMNS AND 25 (1") FOR SLABS AND WALLS.
14. FOR CLASS C-1 CONCRETE, MINIMUM COVER TO BE 60 (2 1/2") EXCEPT FOR SLABS PROTECTED BY MEMBRANE WHERE THE COVER SHALL BE 40 (1 1/2") TO THE TOP BARS AND 30 (1 1/4") TO THE BOTTOM BARS.
15. FOR CLASS F-1 AND F-2 CONCRETE, MINIMUM COVER TO BE 40 (1 1/2").
16. INCREASE COVER WHERE REQUIRED TO MAINTAIN MINIMUM RATIO OF COVER TO NOMINAL BAR DIAMETER OF 1 FOR CLASS N, 1.5 FOR CLASSES F1 AND C1 (FOR MEMBRANE PROTECTED SLABS ONLY), AND 2 FOR CLASS C1 (ALL OTHER STRUCTURES).
17. ENSURE COVER TO REINFORCEMENT IS MAINTAINED DURING CONCRETE POUR.

1. PROVIDE INSPECTION REPORTS PREPARED BY AN INDEPENDENT INSPECTION AND TESTING AGENCY FOR THE SCOPES LISTED BELOW. THE COST OF THE INSPECTION WILL BE BORNE BY THE CONTRACTOR.
2. MAKE ONE STANDARD TEST FOR EACH 100 CUBIC METRES OF CONCRETE, BUT NOT LESS THAN ONE TEST FOR CONCRETE CAST EACH DAY. PROVIDE A GROUP OF THREE CONCRETE CYLINDERS FOR EACH STANDARD CONCRETE TEST IN ACCORDANCE WITH CSA A23.1 AND 2.

3. PROVIDE AT LEAST 3 CYLINDERS TO BE TESTED FOR EACH 20 CUBIC METRES OF MASONRY GROUT, IN ACCORDANCE WITH CSA A179. MAKE AT LEAST ONE SET OF CYLINDERS EACH DAY THE GROUT IS PLACED.
4. STRUCTURAL STEEL INSPECTION REPORTS TO INCLUDE VERIFICATION OF SPECIFIED MEMBER SIZES AND TOLERANCES AND INSPECTION OF WELDING AND BOLTING. INSPECTOR TO REVIEW WELDERS' CWB CERTIFICATION.

1. DO NOT DELIVER MATERIALS WHICH ARE KNOWN NOT TO MEET THE REQUIREMENTS OF THE SPECIFICATIONS. IF REJECTED AFTER DELIVERY, REMOVE IMMEDIATELY FROM SITE.
2. ALL WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

SEAL:	
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ORIGINAL SCALE:	DATE:
APPROVED BY:	2025-04-10
SC	
CHECKED BY:	IF THIS BAR IS NOT 25mm
AS	LONG, ADJUST YOUR
	PLOTTING SCALE.
DRAWN BY:	
HM	
(Optional)	
(Optional)	

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CLIENT:

CLIENT REF. #

TITL

S101

R2

TENSION DEVELOPMENT LENGTHS AND
LAP SPLICES FOR BARS GRADE 400 MPa

TC-REINF-01

TENSION DEVELOPMENT LENGTHS l_d FOR GRADE 400 INDIVIDUAL BLACK BAR IN NORMAL
DENSITY CONCRETE

BAR SIZE	fc = 25		fc = 30		fc = 35		fc = 40		fc = 50		fc = 60	
	BOTTOM	TOP	BOTTOM	TOP	BOTTOM	TOP	BOTTOM	TOP	BOTTOM	TOP	BOTTOM	TOP
10	300 (12")	380 (15")	300 (12")	350 (14")	300 (12")	320 (13")	300 (12")	300 (12")	300 (12")	300 (12")	300 (12")	300 (12")
15	440 (17")	570 (23")	400 (16")	520 (21")	370 (14")	480 (19")	350 (14")	450 (18")	310 (12")	400 (16")	300 (12")	370 (14")
20	580 (23")	750 (30")	530 (21")	690 (27")	490 (19")	640 (25")	460 (18")	600 (24")	410 (16")	530 (21")	380 (15")	490 (19")
25	900 (36")	1170 (46")	830 (32")	1070 (42")	770 (30")	990 (39")	720 (28")	930 (37")	640 (25")	830 (33")	590 (23")	760 (30")
30	1080 (43")	1410 (55")	990 (39")	1290 (51")	920 (36")	1190 (47")	860 (34")	1110 (44")	770 (30")	1000 (39")	700 (28")	910 (36")
35	1260 (50")	1640 (65")	1160 (46")	1500 (60")	1070 (42")	1390 (55")	1000 (40")	1300 (52")	900 (35")	1160 (46")	820 (32")	1060 (42")
45	1620 (64")	2110 (83")	1480 (59")	1930 (76")	1370 (54")	1780 (71")	1290 (51")	1670 (66")	1150 (46")	1490 (59")	1050 (42")	1360 (54")
55	1980 (78")	2580 (102")	1810 (72")	2350 (93")	1680 (66")	2180 (86")	1570 (62")	2040 (81")	1410 (56")	1820 (72")	1280 (51")	1670 (66")

CLASS B TENSION LAP SPlice LENGTHS FOR GRADE 400 INDIVIDUAL BLACK BAR IN NORMAL
DENSITY CONCRETE

BAR SIZE	fc = 25		fc = 30		fc = 35		fc = 40		fc = 50		fc = 60	
	BOTTOM	TOP	BOTTOM	TOP	BOTTOM	TOP	BOTTOM	TOP	BOTTOM	TOP	BOTTOM	TOP
10	390 (16")	490 (19")	390 (16")	450 (18")	390 (16")	420 (17")	390 (16")	390 (16")	390 (16")	390 (16")	390 (16")	390 (16")
15	570 (23")	740 (29")	520 (21")	670 (27")	480 (19")	620 (25")	450 (18")	580 (23")	400 (16")	520 (20")	390 (16")	480 (19")
20	750 (29")	980 (39")	690 (27")	890 (35")	640 (25")	830 (33")	600 (24")	770 (30")	530 (21")	690 (27")	490 (19")	630 (25")
25	1170 (46")	1530 (61")	1070 (42")	1390 (55")	990 (39")	1290 (51")	930 (37")	1210 (48")	830 (33")	1080 (43")	760 (30")	990 (39")
30	1410 (56")	1830 (72")	1290 (51")	1670 (66")	1190 (47")	1550 (61")	1110 (44")	1450 (57")	1000 (39")	1300 (51")	910 (36")	1180 (46")
35	1640 (65")	2130 (84")	1500 (60")	1950 (77")	1390 (55")	1800 (72")	1300 (52")	1690 (67")	1160 (46")	1510 (59")	1060 (42")	1380 (54")

- FOR EPOXY BARS MULTIPLY VALUES IN TABLE BY 1.5 EXCEPT THAT A MULTIPLIER OF 1.2 CAN BE USED WHEN CLEAR COVER IS MORE THAN 3x BAR DIAMETER AND CLEAR SPACING BETWEEN BARS IS MORE THAN 6x BAR DIAMETER.

- FOR SEMI LOW DENSITY CONCRETE ($1850 < Y_c \leq 2150 \text{ kg/m}^3$) MULTIPLY VALUES IN TABLE BY 1.2. FOR LOW DENSITY CONCRETE ($Y_c \leq 1850 \text{ kg/m}^3$) MULTIPLY VALUES IN TABLE BY 1.3.

- FOR BUNDLED BARS, MULTIPLY VALUES IN TABLE BY 1.1 FOR A TWO BAR BUNDLE, 1.2 FOR A THREE BAR BUNDLE AND 1.33 FOR A FOUR BAR BUNDLE

- "TOP" MEANS THAT THERE IS MORE THAN 300 (12") OF CONCRETE BELOW, AND LESS THAN 300 (12") OF CONCRETE ABOVE THE HORIZONTAL BAR WITHIN THE INDIVIDUAL CONCRETE POUR. ALL HORIZONTAL BARS IN WALLS TO BE CONSIDERED "TOP".

- ALL VERTICAL BARS ARE CONSIDERED "BOTTOM"

MINIMUM TENSION EMBEDMENT LENGTHS WITH STANDARD END
HOOKS l_{dh} , FOR GRADE 400 BAR IN NORMAL WEIGHT CONCRETE

BAR SIZE	fc = 25	fc = 30	fc = 35	fc = 40	fc = 50	fc = 60
10	150 (6")	150 (6")	150 (6")	150 (6")	150 (6")	150 (6")
15	210 (8")	200 (8")	180 (7")	170 (7")	150 (6")	150 (6")
20	280 (11")	260 (10")	240 (10")	230 (9")	190 (8")	190 (8")
25	350 (14")	320 (13")	300 (12")	280 (11")	240 (9")	230 (9")
30	420 (17")	390 (16")	360 (14")	340 (14")	290 (11")	280 (11")
35	490 (20")	450 (18")	420 (17")	390 (16")	340 (13")	320 (13")

- FOR EPOXY BARS MULTIPLY VALUES IN TABLE BY 1.2

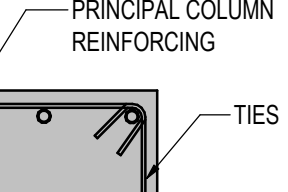
- FOR LOW DENSITY CONCRETE ($Y_c \leq 1850 \text{ kg/m}^3$) MULTIPLY VALUES IN TABLE BY 1.3

- FOR HOOKS WITH COVER LESS THAN SHOWN IN DETAILS 'A', 'B' AND 'C' MULTIPLY VALUES IN TABLE BY 1.5

FOR VALUES NOT PROVIDED IN TABLES INTERPOLATE BETWEEN THE NEAREST VALUES PROVIDED.

JUNE 2017

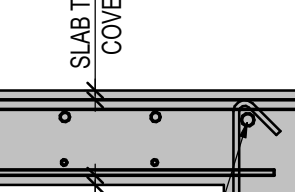
CONCRETE COVER	TC-REINF-21
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PRINCIPAL COLUMN REINFORCING

TIES

COLUMN COVER



SLAB TOP COVER

SLAB BOTTOM COVER

BEAM TOP COVER; INCREASE THE SPECIFIED MINIMUM WHERE REQUIRED TO ACCOMMODATE SLAB TOP COVER

SLAB REINFORCING

STIRRUPS

BEAM BOTTOM COVER

BEAM SIDE COVER

PRINCIPAL BEAM REINFORCING

CONCRETE COLUMN,
PIER AND CAP REINFORCED AS COLUMN

CONCRETE SLAB AND BEAM
(INCLUDING GRADE BEAM)

NOTES:

1. SEE CONCRETE REINFORCEMENT NOTES FOR MINIMUM COVER REQUIREMENTS.
2. FOR WALLS AND SLABS, "PRINCIPAL" REINFORCING IS THE ONE CLOSEST TO THE CONCRETE SURFACE (AT EACH SIDE OF WALL / SLAB)

JUNE 2019

REVISIONS:			
2	2025-04-10	ISSUED FOR IFT	
1	2025-03-07	ISSUED FOR 80% REVIEW	
REV	DATE	DESCRIPTION	BY

SEAL:

WSP Canada Inc.
Engineers & Geoscientists BC
Permit #1000200



2025-04-11

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COPYRIGHT:

DATE: 2025-04-10

ORIGINAL SCALE:
1 : 100

APPROVED BY:
SC

CHECKED BY:
AS

DRAWN BY:
HM

(Optional)

(Optional)

IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.

25mm

DISCIPLINE:

STRUCTURAL

wsp

WSP Canada Inc.
#100 - 20339 90th AVENUE
LANGLEY, B.C. V3M 0E4
TEL 604-525-4651
www.wsp.com

PROJECT NUMBER : CA0042029.5153

CLIENT:

SUNSHINE COAST
REGIONAL DISTRICT

CLIENT REF. #:

PROJECT:

SEAVIEW CEMETERY
LANDSCAPE INFILL

TITLE:

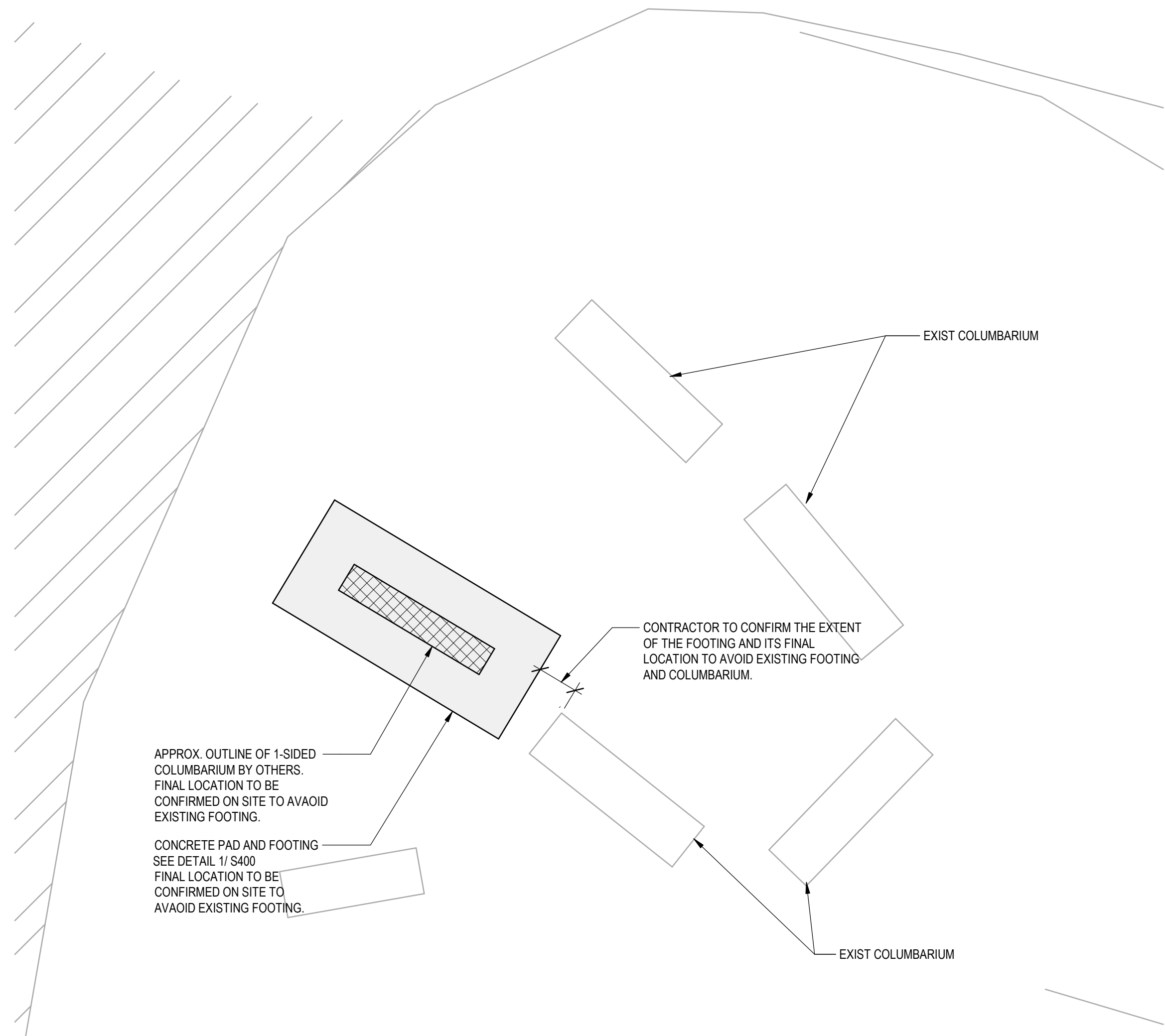
TYPICAL DETAILS

DRAWING NUMBER:

S103

REV.

R2



2 PARTIAL SITE PLAN

S200 1 : 50

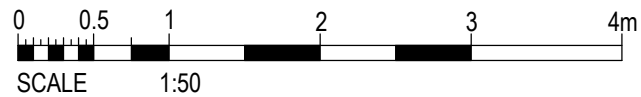
NOTES:

- 24 NICHE COLUMBARIUM MAX. WEIGHT = 14.80 kN
- COLUMBARIUM L=2175mm , W=400mm, H=1630mm. DIMENSIONS ARE APPROXIMATE. PLEASE REFER TO MANUFACTURER SHOP DRAWINGS.
- COLUMBARIUM ATTACHMENT TO FOOTING BY OTHERS.
- CONTRACTOR TO PROVIDE FURTHER INSTALLATION INFORMATION BEFORE COMMENCEMENT OF WORK AND POURING CONCRETE.
- REFER TO MANUFACTURER FOR FURTHER INFORMAITON ON THE HOLD DOWN AND ATTACHMENT OF COLUMBRIUM TO PAD AND FOOTING.



SITE PLAN

1 : 500



REVISIONS:

REV	DATE	DESCRIPTION	BY
2	2025-04-10	ISSUED FOR IFT	
1	2025-03-07	ISSUED FOR 80% REVIEW	

SEAL:

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ORIGINAL SCALE: As indicated	DATE: 2025-04-10
APPROVED BY: SC	
CHECKED BY: AS	
DRAWN BY: HM	
(Optional)	
(Optional)	

IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.

25mm

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LANGLEY, B.C. V1M 0E4
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PROJECT NUMBER: CA0042029.5153

CLIENT:

SUNSHINE COAST
REGIONAL DISTRICT

CLIENT REF. #:

PROJECT:

SEAVIEW CEMETERY
LANDSCAPE INFILL

TITLE:

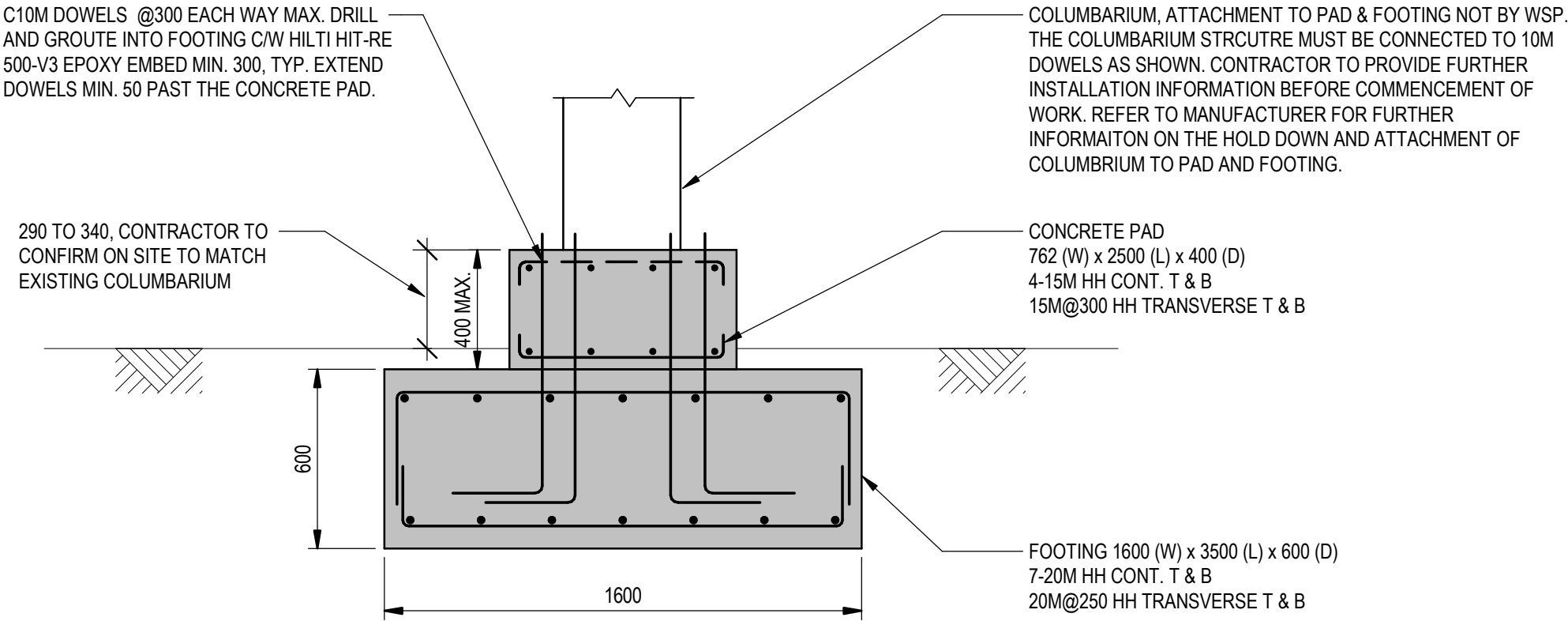
SITE PLAN

DRAWING NUMBER:

S200

REV.

R2



- NOTES:
1. CONTRACTOR TO CONFIRM LOCATION OF EXISTING UNGERGROUND SERVICES ON SITE AND NOTIFY WSP OF ANY CONFLICT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
 2. BOTTOM OF FOOTING TO EXTEND PAST GROUND FROST DEPTH. CONTRACTOR TO VERIFY FROST DEPTH WITH GEOTECHNICAL ENGINEER. WSP IS NOT RESPONSIBLE FOR VERIFYING SOIL BEARING PRESSURE OR GROUND FROST DEPTH. CONTRACTOR TO PROVIDE WSP WITH GEOTECHNICAL REPORT PRIOR TO PLACEMENT OF REINFORCING STEEL AND CONCRETE.

1
S400
1 : 20



REVISIONS:			
2	2025-04-10	ISSUED FOR IFT	
1	2025-03-07	ISSUED FOR 80% REVIEW	
REV	DATE	DESCRIPTION	BY

SEAL:

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2025-04-11

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ORIGINAL SCALE:
1 : 20

APPROVED BY:
SC

CHECKED BY:
AS

DRAWN BY:
HM

(Optional)

(Optional)

DATE
2025-04-10

IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.

25mm

DISCIPLINE: STRUCTURAL

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PROJECT NUMBER: CA0042029.5153

CLIENT:

SUNSHINE COAST
REGIONAL DISTRICT

CLIENT REF. #:

PROJECT:

SEAVIEW CEMETERY
LANDSCAPE INFILL

TITLE:

SECTIONS AND DETAILS

DRAWING NUMBER: S400

REV: R2