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Project  
Issue  
Issue Date

**HIGH PARK NATURE AND VISITOR'S CENTER**  
ISSUED FOR TENDER  
2025/02/25

Owner  
Project Address  
Project Number

375 COLBORNE LODGE DR, TORONTO, ON M6R 2Z3  
22-142



STRUCTURAL MECHANICAL PROCESS ELECTRICAL CIVIL  
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# GENERAL NOTES

1. THE GENERAL NOTES MUST BE READ IN CONJUNCTION WITH THE DESIGN DRAWINGS AND SPECIFICATIONS OF ENGINEERING AND ARCHITECTURAL DISPLINES WHICH FORM PART OF THIS CONTRACT. THIS INCLUDES DRAWING SPECIFICATIONS AND SKETCHES. SHOULD THERE BE CONTRADICTORY INFORMATION BETWEEN DRAWINGS, SKETCHES AND SPECIFICATIONS, THE ONE WHICH IS MOST STRINGENT TAKES PRECEDENCE.
2. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION AND SIZE OF OPENINGS, TRENCHES, PITS, EQUIPMENT, SLEEVES, DEPRESSIONS, GROOVES AND CHAMFERS NOT INDICATED ON STRUCTURAL DRAWINGS.
3. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS, NO PROVISION HAS BEEN MADE IN THE DESGIN FOR CONDITIONS OCCURING DURING CONSTRUCTION. THE CONTRACTOR IS TO PROVIDE ALL NECESSARY BRACING AND SHORING REQUIRED FOR STRESSES AND INSTABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION. THE CONTRACTOR SHALL ACCEPT FULL RESPONSIBILITY FOR ALL SUCH MEASURES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL NECESSARY BRACING, SHORING, SHEET PILING OR OTHER TEMPORARY SUPPORTS TO SAFEGUARD ALL EXISTING OR ADJACENT STRUCTURES AFFECTED BY THE WORK.
4. ALL CONNECTIONS CONNECTED TO EXISTING STRUCTURE ARE TO BE SITE VERIFIED.
5. REVIEW OF SHOP DRAWINGS BY STRUCTURAL CONSULTANT IS ONLY TO ASSESS THAT SUBMITTED SHOP DRAWINGS REFLECT THE INTENT OF THE STRUCTURAL DESIGN.
6. REVIEW BY THE STRUCTURAL CONSULTANT SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FORSEEN THAT THE WORK IS COMPLETE, ACCURATE AND IN CONFORMITY WITH THE STRUCTURAL DRAWINGS AND SPECIFICATIONS.
7. TYPICAL DETAILS SHALL BE USED WHERE SPECIFIC DETAILS ARE NOT SHOWN ON THE DRAWINGS.
8. ALL WORK REQUIRED, INCLUDING ANY DEMOLITION, SHALL BE CARRIED OUT IN A MANNER THAT WILL NOT DAMAGE THE EXISTING SITE OR STRUCTURE. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
9. ALL DESIGN, DETAILING, CONSTRUCTION, EXCAVATION AND SHORING, MUST CONFORM TO THE PRESENT ONTARIO BUILDING CODE, OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS LATEST EDITION. ALL ASSOCIATED COST WITH THE DESIGN, SUPPLY AND INSTALLATION OF TEMPORARY SHORING IS THE RESPONSIBILITY OF THE GENERAL CONTRIKTOR. GENERAL CONTRACTOR TO PROVIDE STAMPED, ENGINEERED SHORING DRAWINGS.
10. THE GENERAL CONTRACTOR IS RESPONSIBLE TO COORDINATE WORK OF ALL SUBCONTRACTORS.
11. THE GENERAL CONTRACTOR MUST REVIEW ALL DIMENSIONS PRIOR TO THE COMMENCEMENT OF ALL WORK AND MUST REPORT ALL DISCREPANCIES TO THE ENGINEER/ARCHITECT.
12. STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS.
13. PROVIDE STAMPED STRUCTURAL SHOP DRAWINGS AS NOTED IN THE FOLLOWING TABLE.

ITEMS	REQ'D SUBMITTAL	ENGINEER'S STAMP REQ'D	NOTES
REBAR SHOP DWGS.	YES	NO	
CONC. MIX DESIGNS	YES	NO	
STRUCT. STEEL SHOP DWGS.	YES	YES	
STUD WALL SHOP DWGS.	YES	YES	
14. PROJECTS WHICH INCLUDE ANY DEMOLITION AND OR RENOVATION WORK, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND EXISTING CONSTRUCTION. SHOULD A DISCREPANCY ON EITHER BE FOUND, REPORT FINDINGS TO ENGINEER/ARCHITECT.
15. ALL DETAILS SHOWN ARE SPECIFIC TO THE PROJECT. WHERE A LOCATION IS NOT SPECIFIED FOR A DETAIL, DETAILS IN THE DRAWINGS INCLUDING TYPICAL DETAILS WHICH CLOSELY RESEMBLES THE WORK, WILL APPLY.
16. ALL CODES AND REGULATIONS QUOTED ARE TO BE THE LATEST EDITION.

SLAB ON GRADE NOTES
1. TOP OF FINISHED CONCRETE SLAB ON GRADE ELEVATION AS NOTED ON PLAN.
2. SLAB ON GRADE SHALL BE 125mm THICK UNLESS NOTED OTHERWISE C/W 152x152x10 I10 WELDED WIRE MESH @ MID-DEPTH. SLAB SHALL BEAR DIRECTLY ON A MINIMUM OF 200mm WELL COMPACTED 15mm CLEAR STONE.
3. SEE PLAN FOR SAWCUT/CONTROL JOINTS LOCATIONS.CO-ORDINATE LOCATION OF FLOOR CONTROL JOINTS AND/OR CONSTRUCTION JOINTS WITH ARCHITECTURAL FLOOR FINISHES.
4. SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS, WALL THICKNESS FLOOR SLOPES AND FLOOR FINISHES NOT SHOWN.
5. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION AND OF ALL PITS,INSERTS,DRAINS AND HOUSEKEEPING PADS.
6. ALL ISOLATION JOINTS AROUND COLUMNS AND FLOOR DRAINS ARE TO BE FORMED NOT SAWCUT.
7. PROVIDE SLAB THICKENING/ISOLATED FOOTING BELOW ALL INTERIOR CONCRETE BLOCK PARTITION WALLS UNLESS NOTED OTHERWISE.
8. DEPRESS AND MAINTAIN SPECIFIED SLAB ON GRADE THICKNESS AT MAT SINKAGES AND OTHER FLOOR DEPRESSIONS. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS.

STRUCTURAL STEEL
1. STRUCTURAL STEEL DESIGN,FABRICATION AND ERECTION SHALL CONFORM TO THE LATEST EDITION OF: C.S.A. S16.1: LIMIT STATES DESIGN OF STEEL STRUCTURES, C.S.A. G40-20: GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEELS C.S.A. G40-21: STRUCTURAL QUALITY STEELS C.S.A. W59: WELDED STEEL CONSTRUCTION C.S.A. S136: COLD FORMED STEEL STRUCTURAL MEMBERS
2. STRUCTURAL STEEL SHALL CONFORM TO G40.21 GRADE 350W FOR W SHAPES AND CHANNELS, AND GRADE 300W FOR PLATES, ANGLES, SQUARE/RECTANGULAR HSS (HOLLOW STRUCT. SECTIONS) SHALL BE GRADE 350W, CLASS C. ROUND HSS SHALL BE ASTM A500 GRADE C.
3. UNLESS NOTED ON DRAWINGS, ALL BOLTS SHALL CONFORM TO A325 HIGH STRENGTH BOLTS IN BEARING M20 DIAMETER MINIMUM.
4. THE DESIGN OF BEAM SHEAR CONNECTIONS SHALL BE THE GREATER OF 50% OF THE BEAM SHEAR OR THE BEAM REACTION CALCULATED USING THE DESIGN LOADS SHOWN ON THE DRAWINGS, OR THE DESIGN SHEAR SHOWN. USE A MINIMUM OF TWO BOLTS.
5. WELDED CONNECTIONS SHALL BE UNDERTAKEN ONLY BY CERTIFIED WELDERS APPROVED BY C.W.B. TO THE REQUIREMENTS OF W47.1 DIVISION 1 AND 2. WELDING SHOULD BE DONE IN ACCORDANCE WITH W59. USE WELDING ELECTRODES WITH LOW HYDROGEN E60XX (E70XX) OR APPROVED EQUAL.
6. SHOULD THE FABRICATOR ELECT TO USE AN ALTERNATE ELECTRODE, THE ALTERNATE ELECTRODE SHALL MEET THE INTENT OF THE CONNECTION DESIGN AND MUST BE CERTIFIED BY A LICENSED WELDING ENGINEER IN THE PROVINCE OF ONTARIO.THE COST OF THE CERTIFICATION MUST BE BOURN BY THE CONTRIKTOR.
7. WHEN WELDING TO EXISTING STEEL OR FIELD WELDING NEW STEEL, THE LOCATION OF THE WELD MUST BE FREE OF PAINT AND PRIMER.
8. CONNECTIONS FOR BRACING MEMBERS MUST BE DESIGNED FOR THE FULL TENSILE STRENGTH OF THE MEMBER, UNLESS LOADS ARE OTHERWISE INDICATED ON THE DRAWINGS.
9. ALL EXTERIOR EXPOSED STEEL INCLUDING MISCELLANEOUS EMBEDDED PLATES SUPPORTING SHELF ANGLES AND SHELF ANGLES SHALL BE HOT DIPPED GALVANIZED.

WOOD AND WOOD JOISTS
1. ALL WOOD SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH CSA STANDARD CAN/CSA-086-01 ENGINEERING DESIGN IN WOOD AND THE WOOD DESIGN MANUAL, PUBLISHED BY THE CANADIAN WOOD COUNCIL.
2. ALL TRUSSES ARE TO BE PRE-ENGINEERED IN ACCORDANCE WITH CSA STANDARD CAN/CSA-086-01 ENGINEERING DESIGN IN WOOD. DESIGN SHALL CONSIDER DEAD LOADS AND LIVE LOADS INCLUDING, BUT NOT LIMITED TO, SHOW PILE-UP AND EQUIPMENT LOADS AS SHOWN ON DRAWINGS. CONTRACTOR SHALL SUBMIT FOR REVIEW FABRICATION DRAWINGS AND CALCULATIONS SHOWING DESIGN LOADS, MEMBER SIZES,BRACING AND CONNECTION DETAILS STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF ONTARIO.
3. JOISTS HANGERS SHALL BE MINIMUM 20 GAUGE GALVANIZED STEEL AND SHALL CONFORM TO THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS "ACCEPTANCE CRITERIA FOR JOIST HANGERS AND SIMILAR DEVICES"
4. TRUSS PLATES SHALL CONFORM TO THE CSA STANDARD S347-A80 "METHOD OF TEST FOR EVALUATION OF TRUSS PLATES USED IN LUMBER JOINTS"
5. NAILS AND SPIKES SHALL CONFORM TO THE CSA STANDARD B111-1974 "WIRE NAILS, SPIKES AND STAPLES"
6. SAWN TIMBER PRODUCTS SHALL CONFORM TO THE CSA STANDARD CAN/CSA-041-91 "SOFTWOOD LUMBER" AND GRADING OF TIMERS IN ACCORDANCE WITH THE NATIONAL LUMBER GRADES AUTHORITY "STANDARD GRADING RULES FOR CANADIAN LUMBER"
7. GLUED-LAMINATED TIMBER PRODUCTS SHALL CONFORM TO CSA STANDARD CAN/CSA-0122-M89 "STRUCTURAL GLUED-LAMINATED TIMBER"
8. STRUCTURAL COMPOSITE LUMBER (SCL) INCLUDING LAMINATED VENEER LUMBER (LVL) AND PARALLEL STRAND LUMBER (PSL) SHALL BE FABRICATED AND ERECTED IN STRICT ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS
9. PLYWOOD SHEATHING SHALL CONFORM TO THE CSA STANDARD 0121-M1978 "DOUGLAS FIR PLYWOOD" AND 0151-M1978 "CANADIAN SOFTWOOD PLYWOOD"
10. WAFERBOARD AND ORIENTED STRAND BOARD SHALL CONFORM TO THE CSA STANDARD CAN3-0437.0/0437.1-M85 "WAFERBOARD AND STRANDBOARD"
11. ALL STEEL BEARING AND CONNECTOR PLATES SHALL CONFORM TO THE CSA STANDARD CAN/CSA-G40.21-M92 "WELDED STRUCTURAL QUALITY STEEL/STRUCTURAL QUALITY STEELS HAVING A YIELD STRENGTH OF 300 MPa
12. ALL BOLTS AND THREADED ROD CONNECTING WOOD MEMBERS SHALL CONFORM TO ASTM A307
13. ALL WOOD STUDS SHALL BE SPRUCE-PINE-FIR NO. 1 AND 2 GRADE OR BETTER
14. ALL WOOD JOISTS, NAILERS AND BLOCKING SHALL BE SPRUCE-PINE-FIR NO. 1 AND 2 GRADE OR BETTER
15. ALL BUILT-UP WOOD BEAMS AND COLUMNS SHALL BE SPRUCE-PINE-FIR NO. 1 AND 2 GRADE OR BETTER
16. FOR ALL WOOD CONSTRUCTION NOT DETAILED, FOLLOW THE ONTARIO BUILDING CODE 2012, SECTION 9.23 "WOOD FRAME CONSTRUCTION"
WOODEN NAILERS AND BLOCKING
17. ALL WOODEN NAILERS AND BLOCKING SHALL BE SAWN LUMBER SPF N01/N02 TO CAN/CSA-086.1 SIZE SHALL BE AS SHOWN ON DRAWINGS
18. WOODEN BLOCKING SHALL BE LOCATED OVER THE NAILER IN BETWEEN JOISTS. THE SIZE OF BLOCKING SHALL BE AS SHOWN ON DRAWINGS. THE LENGTH OF BLOCKING SHALL BE AS LONG AS POSSIBLE BETWEEN JOIST (PIVAL LENGTH) TO BE COORDINATED WITH JOIST SUPPORTS. THE BLOCKING SHALL BE CONNECTED TO WOODEN NAILER WITH 65MM COMMON WIRE NAILS. 2 NAILS PER ROW, ROWS SPACED AT 250 CENTRES UNLESS OTHERWISE MENTIONED IN DRAWINGS.

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7. WHEN WELDING TO EXISTING STEEL OR FIELD WELDING NEW STEEL, THE LOCATION OF THE WELD MUST BE FREE OF PAINT AND PRIMER.
8. CONNECTIONS FOR BRACING MEMBERS MUST BE DESIGNED FOR THE FULL TENSILE STRENGTH OF THE MEMBER, UNLESS LOADS ARE OTHERWISE INDICATED ON THE DRAWINGS.
9. ALL EXTERIOR EXPOSED STEEL INCLUDING MISCELLANEOUS EMBEDDED PLATES SUPPORTING SHELF ANGLES AND SHELF ANGLES SHALL BE HOT DIPPED GALVANIZED.

SOILS AND FOUNDATIONS
1. ALL THE SPREAD FOOTINGS AND STRIP FOOTINGS TO BE CONSTRUCTED ON UNDISTURBED NATIVE SOIL OR ENGINEERED FILL CAPABLE OF RESISTING 150 kPa (3133 PSF) ACCORDING TO GEOTECHNICAL INVESTIGATION REPORT BY ORBIT ENGINEERING LIMITED (PROJECT NO.0E23146SDG, MARCH 31, 2023). THE GEOTECHNICAL CONSULTANT TO CONFIRM THE SOIL BEARING RESISTANCE BEFORE CONSTRUCTION.
2. THE GEOTECHNICAL REPORT PROVIDED IS A GUIDE ONLY. MANTECON PARTNERS INC. IS NOT RESPONSIBLE FOR ITS CONTENT, RECOMMENDATIONS, CORRECTNESS AND OMISSIONS, THE GENERAL CONTRACTOR SHOULD FAMILIARIZE HIMSELF WITH THE REPORT AND THE SITE.
3. FOR THE DURATION OF THE EXCAVATION, THE GEOTECHNICAL AND STRUCTURAL ENGINEERS MUST BE MADE AWARE OF ALL SOIL CONDITIONS FOUND WHICH ARE DIFFERENT THAN REPORTED IN THE GEOTECHNICAL REPORT.
4. FOUNDING ELEVATION, BACKFILL AND COMPACTION MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER.
5. ALL FOOTINGS MUST BE FOUNDED AT THE ELEVATIONS SHOWN ON THE CONTRACT DOCUMENTS, UNLESS POORER SOIL CONDITIONS ARE ENCOUNTERED, WHERE THE GEOTECHNICAL ENGINEER WILL DETERMINE FOUNDING ELEVATIONS.
6. ALL EXTERIOR FOOTINGS AND FOOTINGS EXPOSED TO FREEZING MUST BE FOUNDED TO A MINIMUM FROST PROTECTION DEPTH OF 1.2m (4') BELOW FINISHED GRADE. REFER TO GRADING PLAN FOR FINISH EXTERIOR GRADE ELEVATIONS.
7. ALL SPREAD FOOTINGS, CONTINUOUS FOOTINGS AND DEEP FOUNDATIONS, WHICH INCLUDES BUT IS NOT LIMITED TO, MASSONS AND PILES, MUST BE CONSTRUCTED CONCENTRIC TO THE COLUMN AND/OR WALL WHICH THEY ARE SUPPORTING UNLESS OTHERWISE NOTED.
8. ALL EXCAVATIONS MUST BE CARRIED OUT IN CONFORMANCE TO THE GEOTECHNICAL REPORT AND OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS, LATEST EDITION GUIDELINES.
9. DO NOT EXCEED A MAXIMUM RISE TO RUN OF 7 TO 10 SLOPE BETWEEN ADJACENT FOOTINGS UNLESS DIRECTED IN WRITING BY THE GEOTECHNICAL ENGINEER.
10. BACKFILL MATERIAL AND COMPACTION SHOULD BE IN CONFORMANCE WITH GEOTECHNICAL REPORT.
11. PRIOR TO BACKFILLING, CONCRETE FLOOR OR STRUCTURAL STEEL FLOOR AND SLAB ON GRADE MUST BE IN PLACE TO PREVENT WALLS FROM COLLAPSE. THE CONCRETE MUST HAVE ACHIEVED A STRENGTH OF MINIMUM 75% OF ITS DESIGN STRENGTH.
12. IN WALLS WHERE THE CONTRACT DOCUMENTS CALL FOR WATER STOPS AT THE INTERFACE OF THE TOP OF FOOTING AND THE UNDERSIDE OF THE WALL, THE GENERAL CONTRACTOR MUST PROVIDE THE STRUCTURAL ENGINEER SKETCHES OF THE PROPOSED INSTALLATION FOR REVIEW. SIMILAR DIRECTION MUST BE FOLLOWED FOR WALL CONSTRUCTION JOINTS.

# CONCRETE AND REINFORCING

1. CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION, TESTING AND STANDARD PRACTICES FOR CONCRETE SHALL BE IN ACCORDANCE WITH CSA STANDARD A23.1/A23.2 (LATEST EDITION).

2. CONCRETE DESIGN SHALL BE IN ACCORDANCE WITH THE DESIGN OF CONCRETE STRUCTURES CSA STANDARD A23.3 (LATEST EDITION).

3. SUPPLY AND PLACE CONCRETE IN ACCORDANCE TO TABLE 1

TABLE 1					
	LOCATION	MIN. COMPRESSIVE STRENGTH (f'c) AT 28 DAYS MPa (PSI)	SLUMP mm (in)	EXPOSURE CLASS	AIR CONTENT (%)
F/GS	FND. WALL FOOTINGS	25 (3500)	80 ± 30 (3 ± 1)	N	0
	FND. WALLS/BEAR WALLS, ABOVE GRADE WALLS RETAINING WALLS	35 (5077)	80 ± 30 (3 ± 1)	C-1	5-8
SLABS, BEAMS, COLUMNS AND STAIRS	INTERIOR SLAB ON GRADE, AND CONC. SLAB ON DECK	25 (3500)	80 ± 30 (3 ± 1)	N	0
	INTERIOR SLAB, BEAMS, COLUMNS AND STAIRS	25 (3500)	80 ± 20 (3 ± 3) <sub>4</sub>	N	0
OTHER	SIDEWALK/CURBS PAVING SLABS, EXTERIOR CONC. AND TOPPING	32 (4650)	40 ± 20 (1 1/2 ± 3/4)	C-2	5-8
	HOUSEKEEPING PADS	25 (3500)	80 ± 30 (3 ± 1)	N	0
	NON-SHRINKABLE GROUT	30	AS PER MANUF. RECOMEN.	N	0
	LEAN MIX CONCRETE	8 (1000)	80 ± 30 (3 ± 1)	N	0

4. THE COMPRESSIVE STRENGTH OF THE CONCRETE IS BASED ON THE FOLLOWING CONDITIONS:

a. TYPE GU NORMAL PORTLAND CEMENT UNLESS OTHERWISE NOTED OR APPROVED

b. MAXIMUM SIZE OF AGGREGATE 20mm (3/4") WASHED IRREGULAR CUT CLEAR STONE

c. SLUMP SHOWN ON THE TABLE IS SLUMP WITHOUT SLUMP AID ADMIXTURE. WHERE THE USE OF AN ADMIXTURE IS PREFERRED TO INCREASE THE SLUMP, THE SUPERPLASTICIZED CONCRETE SLUMP MUST REMAIN BELOW THE POINT AT WHICH SEGREGATION WILL OCCUR.

5. REINFORCEMENT SHALL CONFORM TO CSA G30.3,G30.5 AND G30.18 (LATEST EDITION) YIELD STRENGTH FOR CONCRETE AND MASONRY REINFORCEMENT, fy=400MPa YIELD STRENGTH FOR WELDED WIRE FABRIC fy=360MPa

6. WHEN COLUMNS AND WALLS ARE POURED INTEGRALLY USE THE HIGHER STRENGTH CONCRETE OF THE ELEMENT WHICH SPECIFIED IN TABLE 1.

7. MINIMUM CONCRETE COVER FOR REINFORCING, WHERE NOT SHOWN ON DESIGN DRAWINGS SHALL BE AS FOLLOWS:

a. ALL STEEL NOT CAST IN FORMS PERMANENTLY AGAINST EARTH OR ROCK AND IN A NON-CORROSIVE ENVIRONMENT, COVER SHALL BE 75mm (3").

b. ALL STEEL CAST IN FORMS SHALL FOLLOW TABLE 2 OR AS NOTED ON DRAWINGS.

TABLE 2			
STRUCTURAL ELEMENT	COVER mm (in)	STRUCTURAL ELEMENT	COVER mm (in)
CONCRETE POURED IN FORMS BUT EXPOSED TO WEATHER OR EARTH		CONCRETE NOT EXPOSED TO WEATHER OR EARTH	
-BARS LARGER THAN 15M	50 (2")	-SLABS AND WALLS	25 (1")
-BARS 15M AND SMALLER	38 ( 1 1/2")	-BEAMS AND GRIDERS	38 ( 1 1/2")
		-COLUMNS MAIN STEEL	50 (2")
F/GS & OTHER ELEMENTS POURED AGAINST EARTH	75 (3")		

8. THE GENERAL CONTRACTOR MUST COORDINATE THE INSTALLATION OF MECHANICAL AND ELECTRICAL OPENINGS AND SLEEVES. THEY MUST FOLLOW THE GUIDE LINES BELOW:

a. NO SLEEVES SHALL BE PLACED VERTICALLY OR HORIZONTALLY THROUGH BEAMS UNLESS APPROVED BY THE STRUCTURAL ENGINEER.

b. NO OPENINGS SHALL BE MADE IN FLAT SLABS OR TWO WAY SLAB COLUMN STRIPS EXCEPT AS SHOWN ON THE DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.

c. WHERE A CORE DRILL OR AN OPENING IS REQUIRED IN HARDENED CONCRETE THE GENERAL CONTRACTOR MUST SEEK THE APPROVAL OF THE STRUCTURAL ENGINEER.

d. ELECTRICAL CONDUITS SHALL NOT PASS THROUGH COLUMNS AND ARE NOT TO RUN HORIZONTALLY IN WALLS.

e. CONDUITS WITHIN SLABS MUST NOT HAVE A (OUTER) DIAMETER GREATER THAN ONE-QUARTER OF THE SLAB THICKNESS. SPACING BETWEEN CONDUITS MUST BE AT LEAST 3 TIMES THE OUTER DIAMETER (CLEAR SPACING). CONDUITS MUST BE PLACED WITHIN MIDDLE THIRD OF SLAB. CONDUITS SHALL BE LAID SUCH THAT ONLY SINGLE CROSS OVERS OCCUR WITHIN MAXIMUM 500mm OF ONE ANOTHER. ALL CONDUITS WITHIN SLAB ARE SUBJECT TO APPROVAL BY STRUCTURAL CONSULTANT.

9. REFER TO DESIGN DRAWINGS FOR TYPICAL DETAILS OF CONTROL JOINTS, EXPANSION JOINTS AND CONSTRUCTION JOINTS. UNLESS OTHERWISE NOTED ON THE DESIGN DRAWINGS, THE FOLLOWING MAXIMUM DISTANCE BETWEEN JOINTS MUST BE FOLLOWED:

a. CONTROL JOINTS IN WALLS 6m (20') MAXIMUM

b. MAXIMUM POUR LENGTH FOR SLAB ON GRADE IS 30m (100').

c. ALL SAWCUTS MUST BE MADE WITHIN 24 HRS. FROM PLACING OF CONCRETE. THE DEPTH OF THE SAWCUT MUST BE 1/3 THE DEPTH OF THE SLAB.

TOPPING

10. THE CONTRACTOR SHALL PROVIDE A SUITABLE TOP FINISH TO ACCEPT DIRECT APPLICATION OF FINISHED FLOORING/ROOFING AS PER ROOM FINISH SCHEDULE

# TESTING AND INSPECTION

1. THE FOLLOWING ITEMS REQUIRE TESTING OR INSPECTION BY A CERTIFIED INDEPENDENT TESTING OR INSPECTION AGENCY UNLESS NOTED OTHERWISE. THE AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS TO THE ENGINEER FOR REVIEW.

ITEMS	REQ'D?	COMMENTS
SOIL BEARING CAPACITY	YES	BY SOILS ENGINEER
SOIL COMPACTION	YES	BY SOILS ENGINEER
REINF. STEEL PLACEMENT	YES	INSPECT FINAL PLACEMENT
CONC. COMPRESSIVE TESTS	YES	MIN. 2 SETS PER X m³
CONC. SLUMP	YES	
STEEL CONNECTIONS	YES	INSPECT ALL CONNECTIONS
MORTAR CUBES	NO	
GROUT CUBES	NO	

\* CONCRETE POURS IN WINTER MONTHS TO HAVE MIN. 2 SETS LAB CURED AND 2 SETS FIELD CURED.

STRUCTURAL ABBREVIATIONS
A.B. ANCHOR BOLT ALT. ALTERNATE ALUM. ALUMINUM ANCHS. ANCHORS APPROX. APPROXIMATELY ARCH. ARCHITECTURAL B. BOTTOM B/F BOTTOM FACE B/FTG. BOTTOM OF FOOTING B.A. BASE PLATE BLK. BLOCK BM. BEAM BTM. BOTTOM BRG. BEARING BT.PL. BENT PLATE B.L.L. BOTTOM LOWER LEVEL B.U.L. BOTTOM UPPER LEVEL C/W COMPLETE WITH C/C CENTRE TO CENTRE C.-J. CONTROL JOINT BT. CENTRE LINE CLG. CEILING COL. COLUMN CONC. CONCRETE CONN. CONNECTION CONST. CONSTRUCTION CONT. CONTINUOUS DEMO. DEMOLITION DET.L. DETAIL DIA. DIAMETER DIM. DIMENSION DO. Drip DP. DEEP DWG. DRAWING DNL. DOWEL EF. EACH FACE E.F.H. EACH FACE HORIZ. E.J. EXPANSION JOINT ELEC. ELECTRICAL E.S. EACH SIDE E.W. EACH WAY EA. EACH ELEV. ELEVATION EQ. EQUAL EXIST. EXISTING F.F. FACE TO FACE FIN. FINISHED FL. FLOOR FDN. FOUNDATION F/G. FOOTING GA. GAUGE GALV. GALVANIZED GRID. GRID HORIZ. HORIZONTAL H.D. HEAVY DUTY H.D.G. HOT DIPPED GALVANIZED H.E.F. HORIZONTAL EACH FACE H.P. HIGH POINT HSS HOLLOW STRUCT. SECTION HT. HEIGHT I.D. INSIDE DIAMETER INV. ELEV. INVERT ELEVATION I.S.-V. INSIDE VERTICAL KLN. KILONEWTON kn/m KILONEWTON METERS kPa KILOPASCAL L. ANGLE
LL.H. LONG LEG HORIZONTAL LL.V. LONG LEG VERTICAL LP. LOW POINT LG. LONG L.S.H. LONG SIDE HORIZONTAL L.S.V. LONG SIDE VERTICAL LL.B.B. LONG LEG BACK TO BACK M.C. MOMENT CONNECTION MAX. MAXIMUM MECH. MECHANICAL MET.L. METAL MIN. MINIMUM MISC. MISCELLANEOUS METER mm MILLIMETER MPa MEGAPASCAL N.I.C. NOT IN CONTRACT N.T.S. NOT TO SCALE No. NUMBER NS/FS NEAR SIDE/FAR SIDE O.A.E. OR APPROVED EQUAL O.C. ON CENTRE O.C.B. ON CENTRE BOTTOM O.D. OUTSIDE DIAMETER O.H. OVER HEAD OWSJ OPEN WEB STEEL JOIST OPG. OPENING O.S.F.V. OUTSIDE FACE VERTICAL PARTN. PARTITION PL. PLATE R.C. REINFORCED CONCRETE R.D. ROOF DRAIN R.O. ROUGH OPENING REF. REFERENCE REINF. REINFORCED REQD. REQUIRED SECT. SECTION S.D.F. STEP DOWN FOOTING S.L.H. SHORT LEG HORIZONTAL S.L.V. SORT LEG VERTICAL S.L.B.B. SHORT LEG BACK TO BACK S.O.G. SLAB ON GRADE S.P.D.D. STANDARD PROCTOR DRY DENSITY S.S. STAINLESS STEEL STL. STEEL STIFF. STIFFENER STRUCT. STRUCTURAL T. TOP T/C TOP OF CONCRETE T/F TOP OF FOOTING T/O TOP OF T/S TOP OF STEEL T/W. TOP OF WALL T.L.L. TOP LOWER LEVEL TYP. TYPICAL U/G UNDERGROUND U.N.O. UNLESS NOTED OTHERWISE U/S UNDERSIDE VERT. VERTICAL V.E.F. VERTICAL EACH FACE V.I.F. VERTICAL INSIDE FACE V.O.F. VERTICAL OUTSIDE FACE V.S.C. VERTICAL SLOTTED CONNECTION WORKING POINT W.W.M. WELDED WIRE MESH @ SPACED AT

# DESIGN LOADS

## GRAVITY LOADS

### 1 DEAD LOADS

	EXISTING (kPa)	NEW (kPa)
LEVEL 1 WOOD FLOOR	0.5	0.65
LEVEL 1 DECK + CONC.	N/A	2.8
ATTIC (LIMITED ACCESS)	0.1	0.15
ATTIC (MECHANICAL)	N/A	0.4
ROOF (MAIN)	0.7	N/A

[DL OF WOOD FLOORS INCLUDE JOIST SELF WEIGHTS] + SELF WEIGHT OF NEW STRUCTURAL MEMBERS

SOLAR PANEL ALLOWANCE 0.5 kPa (INCLUDING FRAMING)

M+E+CEILING ALLOWANCE 0.3 kPa

SPRINKLER ALLOWANCE 0.2 kPa

### 2. LIVE LOADS

ATTIC (LIMITED ACCESS - NO STORAGE)	0.5 kPa
ATTIC LEVEL (NEW MECHANICAL SPACE)	2.4 kPa
WASHROOMS	2.4 kPa
OTHERS	4.8 kPa

### 3. SNOW LOADS HAVE BEEN DETERMINED IN ACCORDANCE WITH THE O.B.C. USING THE FOLLOWING CRITERIA:

TORONTO, ON  
S<sub>s</sub> = 0.9 kPa, S<sub>x</sub> = 0.4 kPa  
BASIC SNOW LOAD = 1.12 kPa

REFER TO PLANS FOR SNOW PILE UP CONDITIONS.  
NO GAP IS ALLOWED BETWEEN FUTURE SOLAR PANELS AND ROOF

## LATERAL LOADS

### 1. WIND LOADS HAVE BEEN DETERMINED WITH THE O.B.C. USING THE FOLLOWING CRITERIA:

TORONTO,ON  
q<sub>10</sub> = 0.34 kPa q<sub>50</sub> = 0.44 kPa  
NO GAP IS ALLOWED BETWEEN FUTURE SOLAR PANELS AND ROOF

### 2. SEISMIC LOADS HAVE BEEN DETERMINED IN ACCORDANCE WITH THE O.B.C. USING THE FOLLOWING CRITERIA: TORONTO, ON:

S<sub>a</sub> (0.2) = 0.249 S<sub>a</sub> (0.5) = 0.126 S<sub>a</sub> (1.0) = 0.063  
S<sub>a</sub> (2.0) = 0.029 S<sub>a</sub> (5.0) = 0.0071 S<sub>a</sub> (10.0) = 0.0028  
PGA = 0.16 PGV = 0.099

### 3. LATERAL EARTH PRESSURE HAS BEEN DETERMINED BASED ON THE FOLLOWING CRITERIA:

k(active) = 0.5  
SOIL DENSITY = 20.5 kn/m<sup>3</sup>

### 4. VEHICLE GUARDRAILS HAVE BEEN DESIGNED FOR LOADING GIVEN IN 4.1.5.16 OF OBC.

### 5. HANDRAILS HAVE BEEN DESIGNED FOR LOADING GIVEN IN 2012 OBC 3.4.6.5(12)

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4	ISSUED FOR TENDER	2025/02/25
3	ISSUED FOR TENDER REVIEW	2025/02/21
2	ISSUED FOR COSTING	2024/02/08
1	ISSUED FOR PERMIT	2024/01/31
Rev #	Description	Date

Consultants



Seals

375 COLBORNE LODGE DR, TORONTO, ON M6R 2Z3

HIGH PARK NATURE AND VISITOR'S CENTER

Drawing Name:  
GENERAL NOTES

Project Number: 22-142  
Drawing Scale: As Indicated  
Date: 2025/02/25

File Name:  
Drawn By: D.N  
Reviewed By: D.U

Drawing No.:

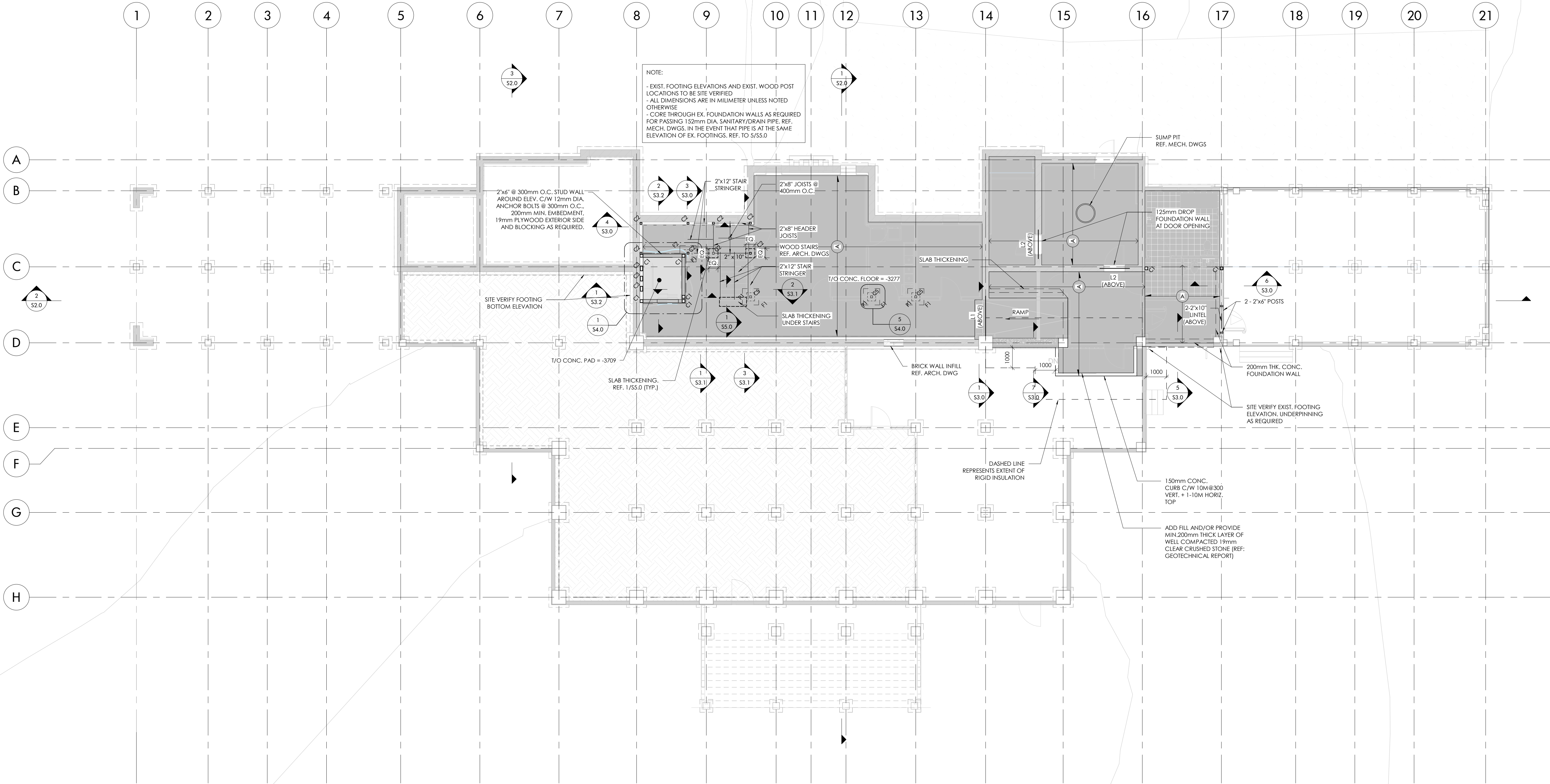


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Rev #	Description	Date

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Seals

1 FLOOR PLAN - BASEMENT - PHASE 1  
S1.0 1 : 100

LINTEL SCHEDULE			
MARK	SIZE	DETAIL	NOTES
L1	2-L152x152x9.5 C/W 300mm (W) x 9.5mm (T) STL. PLATE		REF. 1/S4.0 FOR DETAIL
L2	2-L102x102x6.4 C/W 300mm (W) x 6.4mm (T) STL. PLATE		

COLUMN SCHEDULE			
MARK	SIZE	BASEPLATE	ANCHOR BOLTS
C1	6"x6" SPF TYPE 1/2		
C2	4"x4" SPF TYPE 1/2		
C3	3 PLY 2"x10"		
C5	HS102x102x6.4	300 x 300 x19	4-Ø1/2" ANCHOR BOLTS
C5A	HS102x102x6.4 (A)		
C6	HANGER D20mm ROD		
EXIST. WOOD COL. 1		152mm x 152mm	

PIER SCHEDULE				
Type Mark	SIZE	REINFORCEMENT	TIES	REMARKS
P1	400mm x 400mm	8-15M	2 SETS 10M@250mm TIE	

FOOTING SCHEDULE					
MARK	SIZE	THICKNESS (mm)	REINFORCEMENT		REMARKS
			BOTTOM	TOP	
F1	800x800mm	250	3-15M E.W.		HOOKED END
F2	REF. PLAN DETAIL	250	REF. PLAN DETAIL	REF. PLAN DETAIL	

STRUCTURAL FLOOR SCHEDULE	
Type Mark	Description
A	125mm S.O.G. C/W 152x152x10x10 WELDED WIRE MESH @MID-DEPTH. SLAB SHALL BEAR DIRECTLY ON COMPACTED GRANULAR. REFER TO GEO-TECHNICAL REPORT FOR SPECIAL REQUIREMENT
B	19mm PLYWOOD GLUED AND SCREWED
C	19mm PLYWOOD TOP & BOTTOM GLUED AND SCREWED C/W 2"x4" @ 400mm O.C.

375 COLBORNE LODGE DR, TORONTO, ON M6R 2Z3

HIGH PARK NATURE AND VISITOR'S CENTER

Drawing Name:

FLOOR PLAN - BASEMENT - PHASE 1

Project Number: 22-142

Drawing Scale: As Indicated

Date: 2025/02/25

File Name:

Drawn By: D.N

Reviewed By: D.U

Drawing No.:



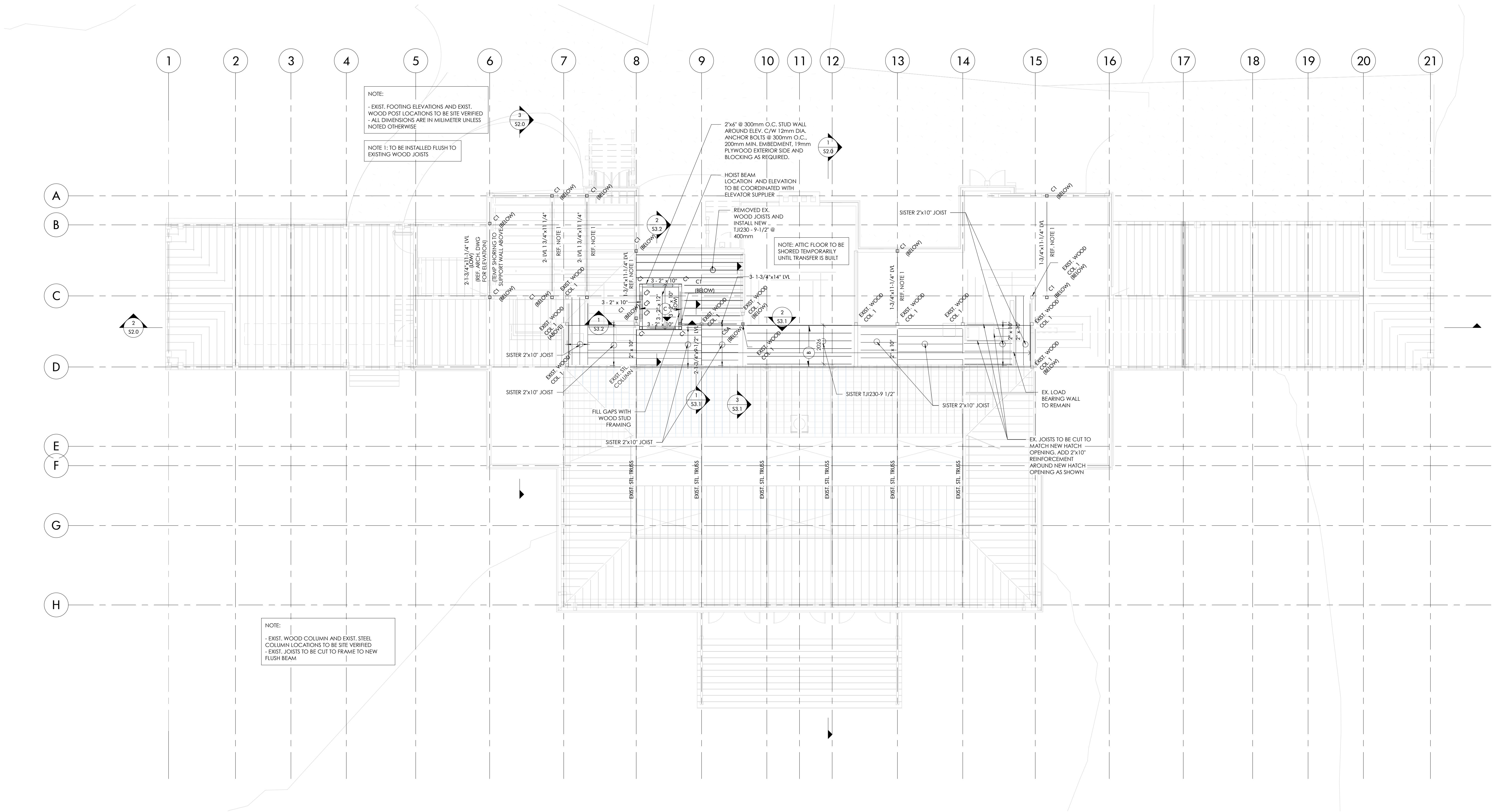
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Seals

1 ATTIC LEVEL -PHASE 1  
S1.2 1 : 100

COLUMN SCHEDULE			
MARK	SIZE	BASEPLATE	ANCHOR BOLTS
C1	6"x6" SPF TYPE 1/2		
C2	4"x4" SPF TYPE 1/2		
C3	3 PLY 2"x10"		
C5	HS102x102x6.4	300 x 300 x19	4-Ø1/2" ANCHOR BOLTS
C5A	HS102x102x6.4 (A)		
C6	HANGER Ø20mm ROD		
EXIST. WOOD COL. 1	152mm x 152mm		

STRUCTURAL FLOOR SCHEDULE	
Type Mark	Description
A	125mm S.O.G. C/W 152x152x10/10 WELDED WIRE MESH @MID-DEPTH. SLAB SHALL BEAR DIRECTLY ON COMPACTED GRANULAR. REFER TO GEO-TECHNICAL REPORT FOR SPECIAL REQUIREMENT
B	19mm PLYWOOD GLUED AND SCREWED
C	19mm PLYWOOD TOP & BOTTOM GLUED AND SCREWED C/W 2"x4" @ 400mm O.C.

375 COLBORNE LODGE DR, TORONTO, ON M6R 2Z3

HIGH PARK NATURE AND  
VISITOR'S CENTER

Drawing Name:  
ATTIC PLAN - PHASE 1

Project Number: 22-142  
Drawing Scale: As Indicated  
Date: 2025/02/25  
File Name:  
Drawn By: D.N  
Reviewed By: D.U

Drawing No.:



NORTH ARROW

S1.2









NOTE: REFER TO ARCHITECTURAL  
DRAWINGS FOR PHASING INFORMATION



#### Consultants



Seals

## HIGH PARK NATURE AND VISITOR'S CENTER

Drawing Name:

SECTIONS

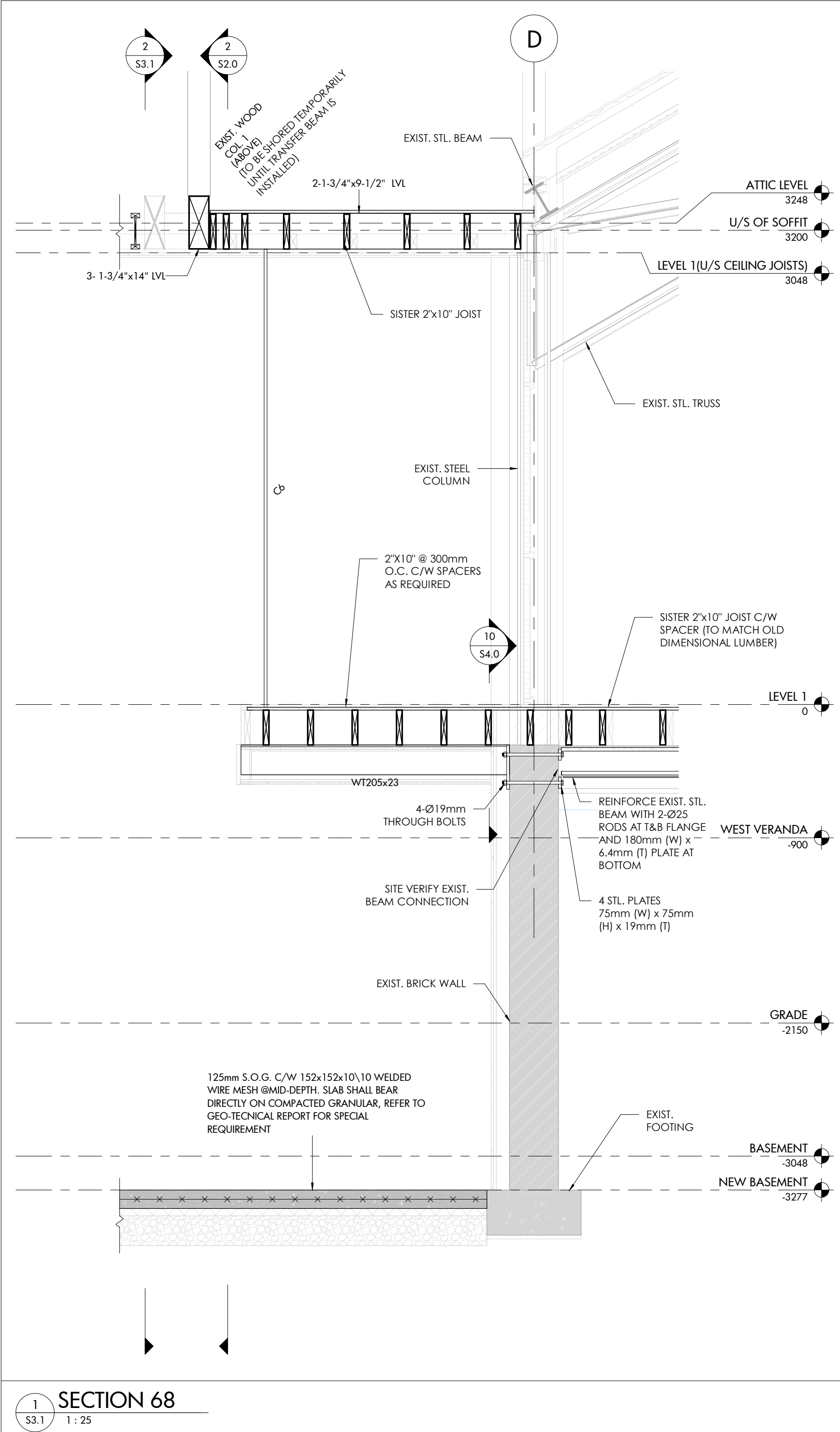


NORTH ARROW

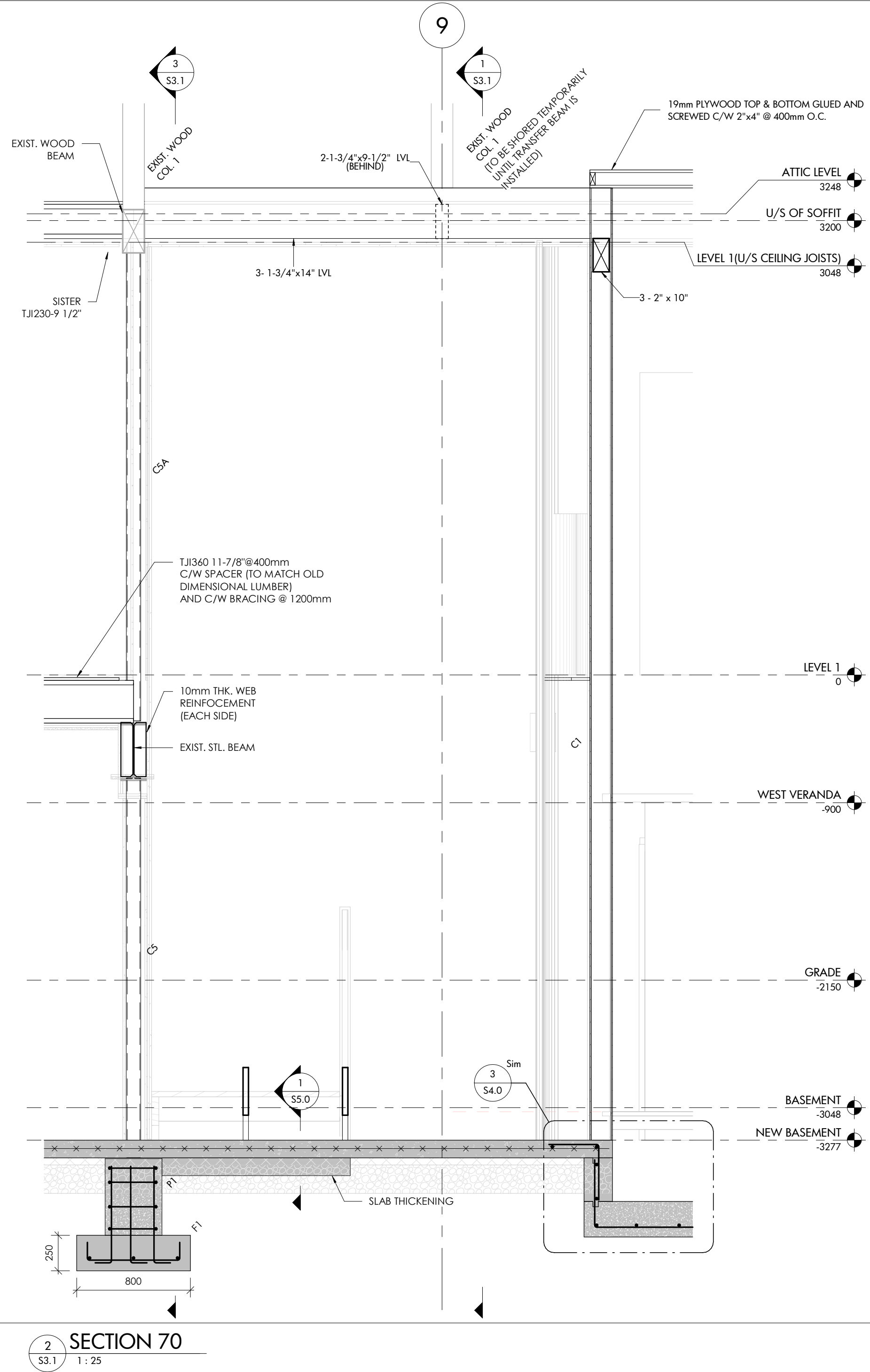
### S3.0

### S3.0

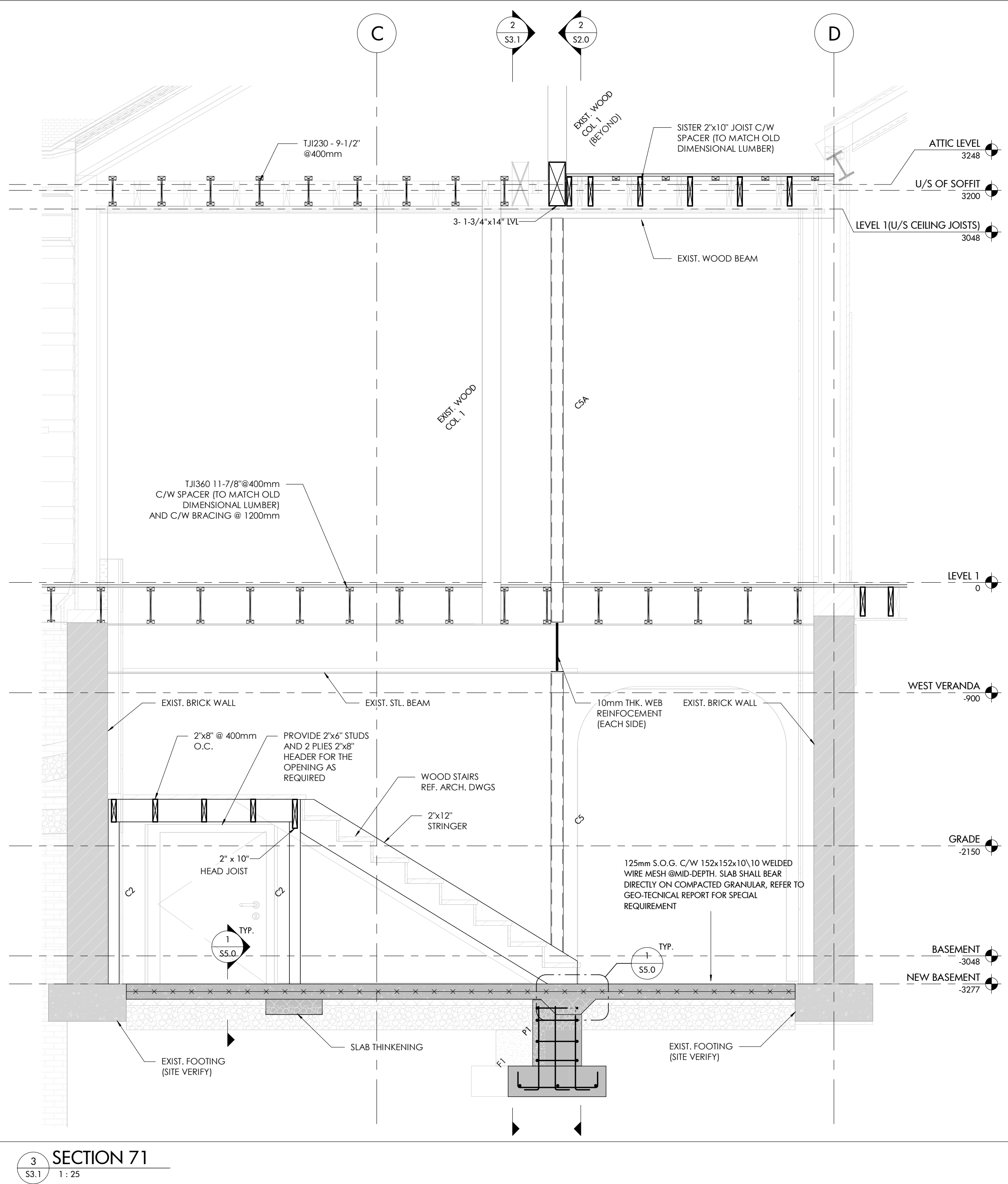




1 SECTION 68  
S3.1 1:25



2 SECTION 70  
S3.1 1:25



3 SECTION 71  
S3.1 1:25

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HIGH PARK NATURE AND  
VISITOR'S CENTER

Drawing Name:  
SECTIONS

Project Number: 22-142  
Drawing Scale: As Indicated  
Date: 2025/02/25  
File Name:  
Drawn By: D.N  
Reviewed By: D.U  
Drawing No.:

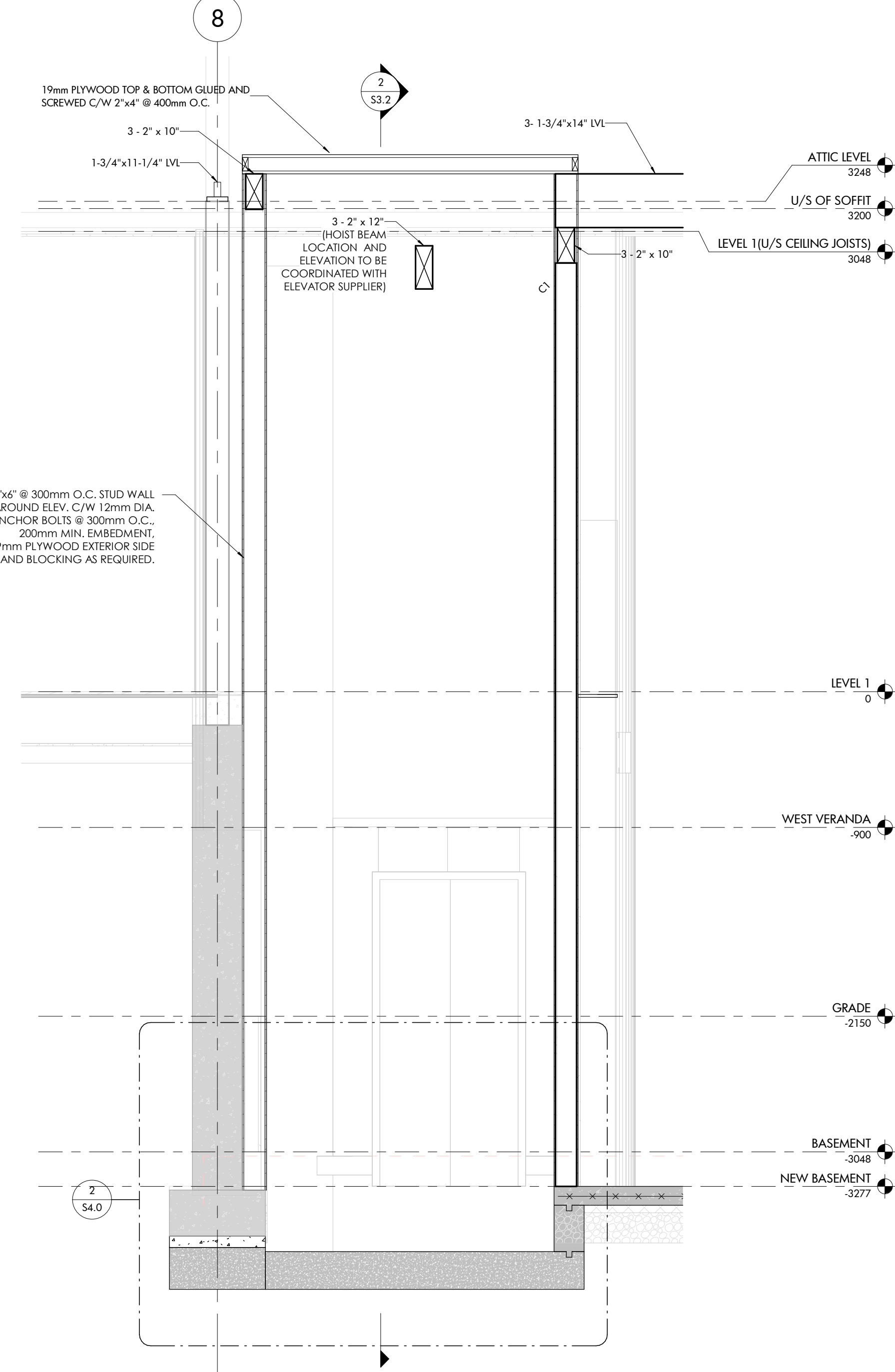


S3.1

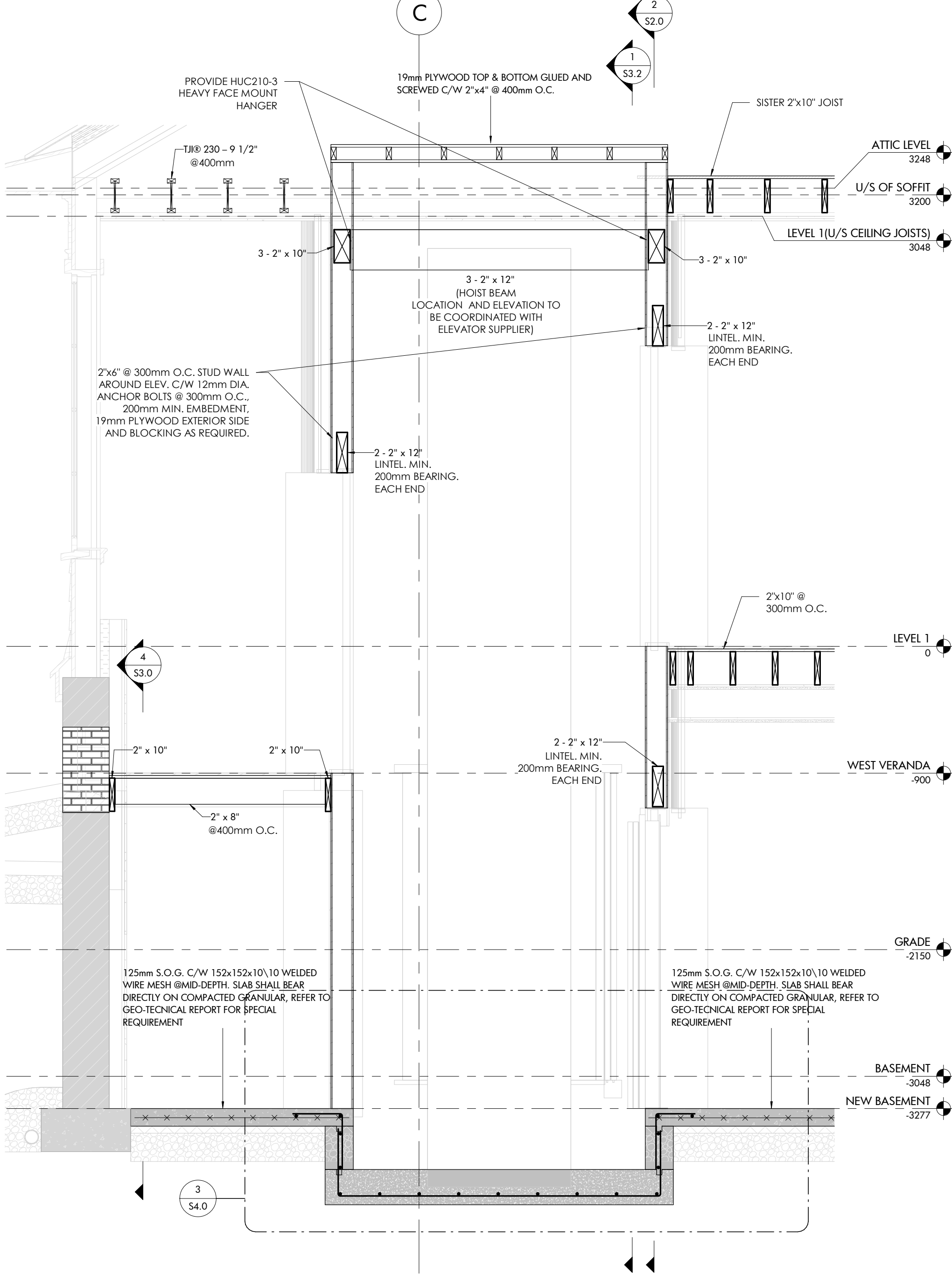


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Section 74  
S3.2 1:25



Section 75  
S3.2 1:25

2	ISSUED FOR TENDER	2025/02/25
1	ISSUED FOR TENDER REVIEW	2025/02/21
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Seals

375 COLBORNE LODGE DR, TORONTO, ON M6R 2Z3

HIGH PARK NATURE AND  
VISITOR'S CENTER

Drawing Name:  
SECTIONS

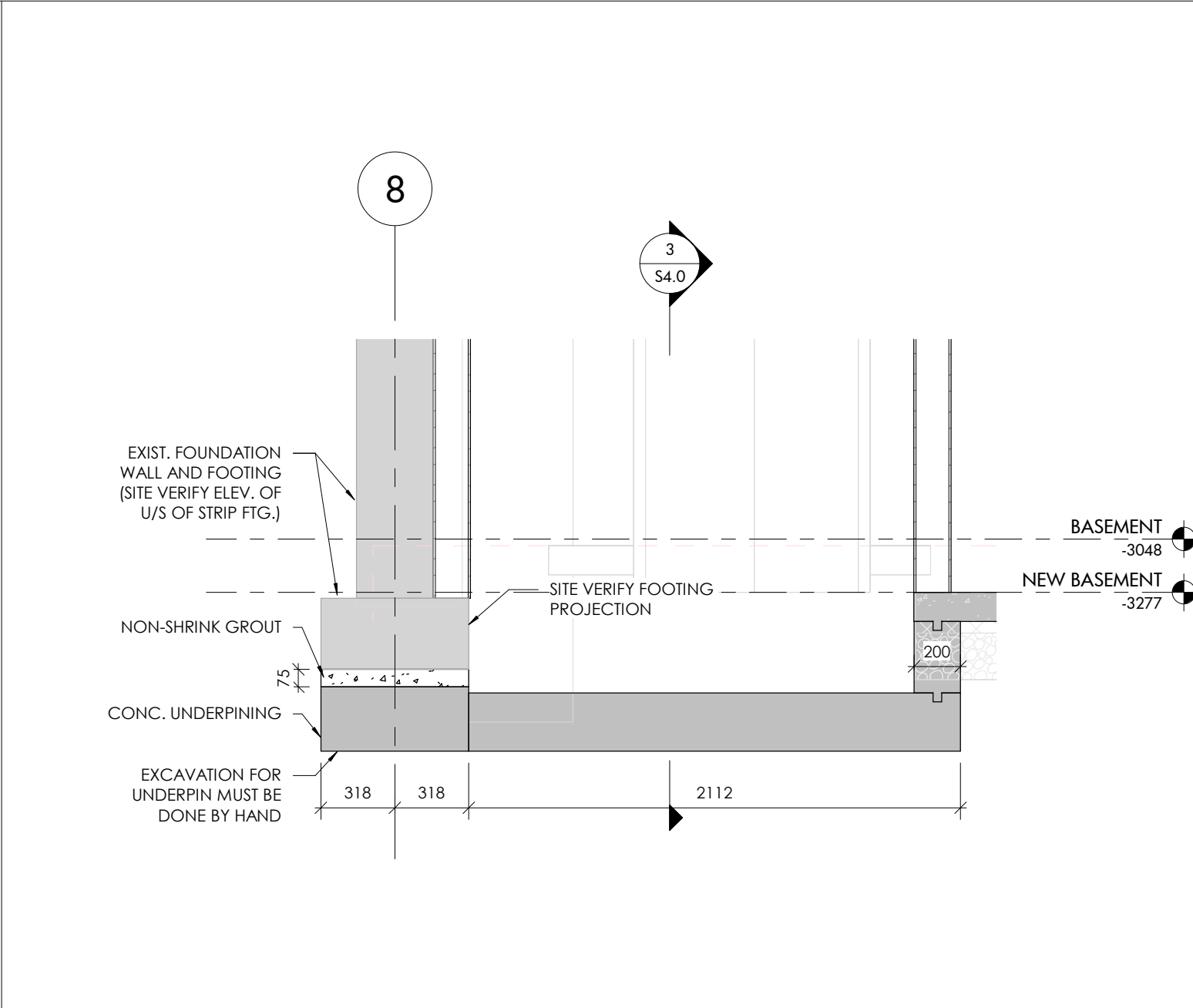
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Drawing Scale: As Indicated  
Date: 2025/02/25  
Drawn By: D.N.  
Reviewed By: D.U.

Drawing No.:

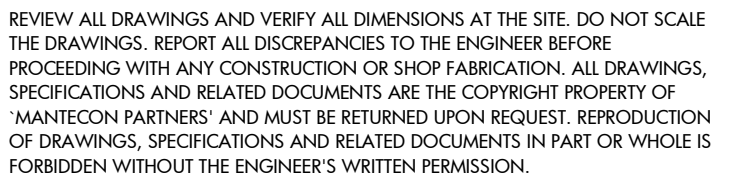


S3.2



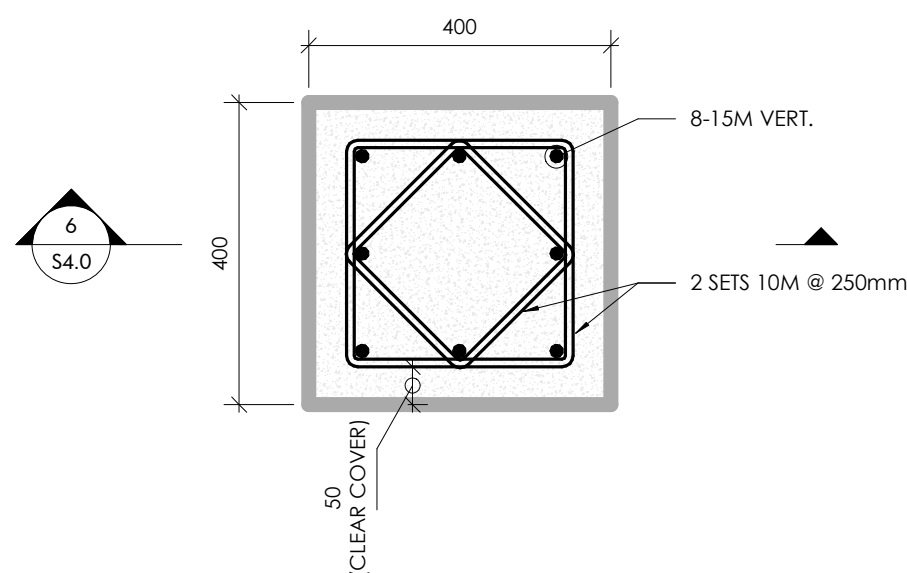


1. UNDERPINNING TO BE PLACED USING 30MPa CONCRETE AT 28 DAYS. MINIMUM STRENGTH AT 3 DAYS TO BE 25MPa
2. UNDERPINNING SECTIONS IN 625mm MAXIMUM WIDTHS IN ORDER 1 AND 2 AS SHOWN ON PLAN
3. EXCAVATION SPECIFICATIONS: PERFORM STAGED EXCAVATION AS PER DRAWING 1/520. EACH SECTION MUST BE COMPLETED PRIOR TO STARTING NEXT ONE. UNDERPINNING IS TO BE PLACED DIRECTLY AGAINST EXISTING UNDISTURBED SOIL. ENSURE AGAINST VOID NOT FILLED WITH CONCRETE. ALLOW A MIN. OF 24 HRS. FOR UNDERPINNING CONC. AND THEN A MIN. OF 24 HRS. FOR PLACING GROUT BEFORE STARTING AN ADJACENT SECTION.
4. RAMP PILE (75mm) OF NON-SHRINK GROUT OR 13% CEMENT/SAND GROUT BETWEEN UNDERSIDE OF EXISTING FOOTING AND TOP OF UNDERPINNING NO SOONER THAN 24 HRS. AFTER PLACING UNDERPINNING.
5. ENSURE AGAINST LOSS OF MATERIAL FROM BENEATH EXISTING BUILDING.
6. PROVIDE ALL NECESSARY SHORING (PROVIDE AT LEAST 6" MIN. CLEARANCE FROM STAGING AREA ON BASEMENT SLAB FOR SHORING) AND NEEDLING IN ORDER TO SAFELY CARRY OUT THIS WORK AND TO PREVENT DISTRESS IN THE EXISTING BUILDING.
7. DETAILS SHOWN ARE FOR ASSUMED CONDITIONS. ANY VARIATIONS TO BE APPROVED BY THE STRUCTURAL CONSULTANT BEFORE PROCEEDING.

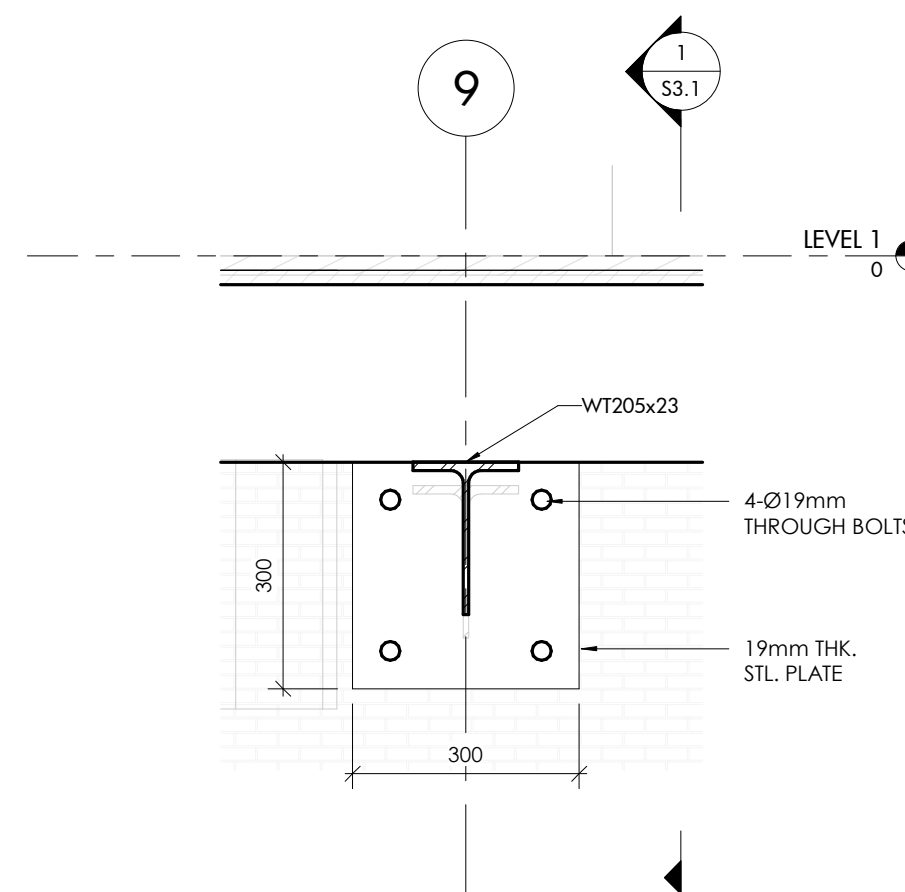


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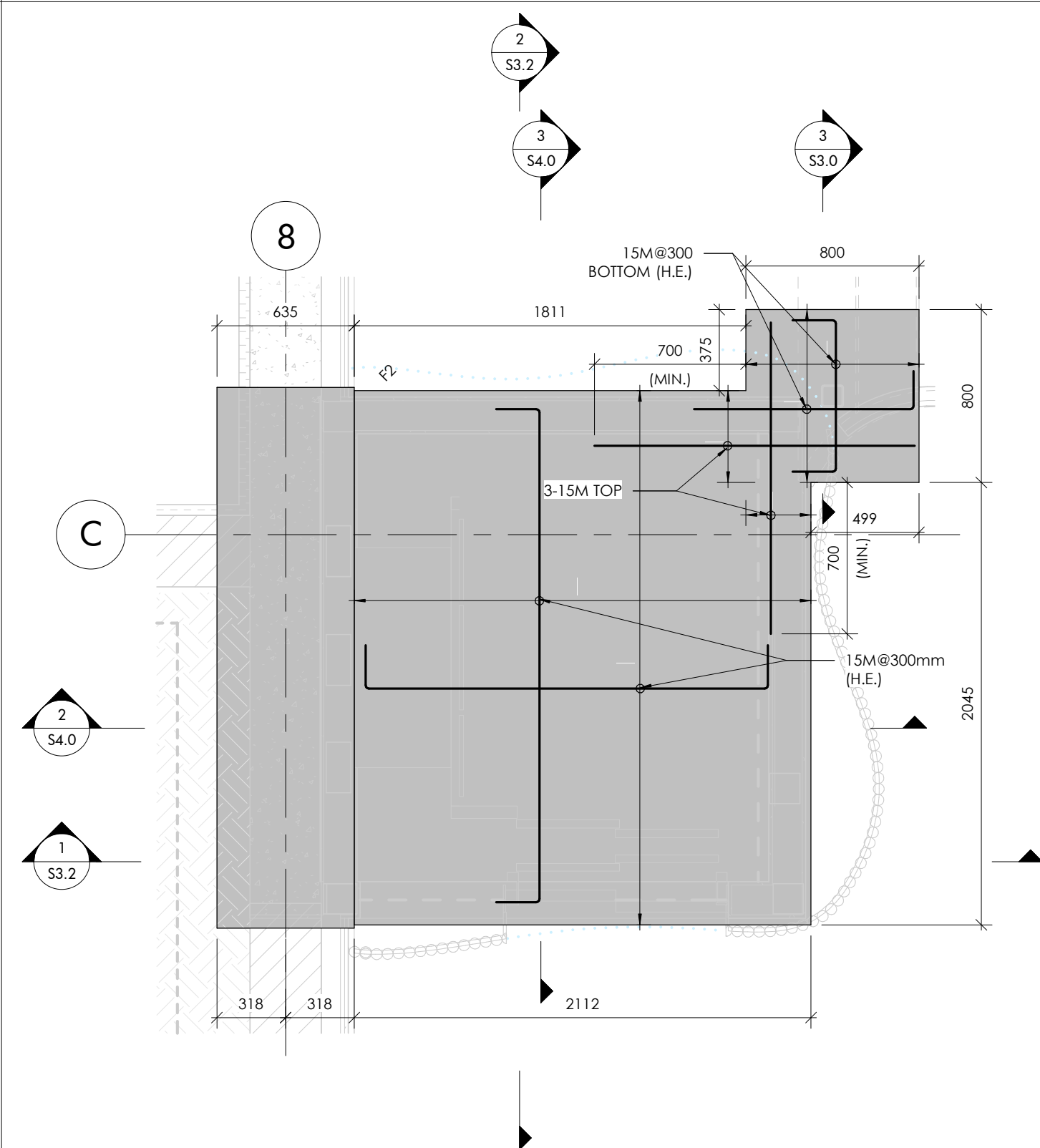
2 Section 31  
S4.0 1 : 25



## PIER 1 REINFORCEMENT DETAIL



10 WALL PLATE WP1 DETAIL  
S4.0 1:10



8 F2 MAT FOUNDATION DETAIL  
4.0 1:25

125mm S.O.G. C/W 152x152x10/10 WELDED WIRE MESH 80HD DEPTH. SLAB SHALL BEAR DIRECTLY ON COMPACTED GRANULAR. REFER TO GEO-TECHNICAL REPORT FOR SPECIAL REQUIREMENT

DOWEL 10M @ 400mm O.C.

10M@400mm O.C.

800

4-10M CONT.

EXIST. WALL

BASEMENT -3048

NEW BASEMENT -3277

2-15M CONT.

REINF. CONC. FDN. WALL

75

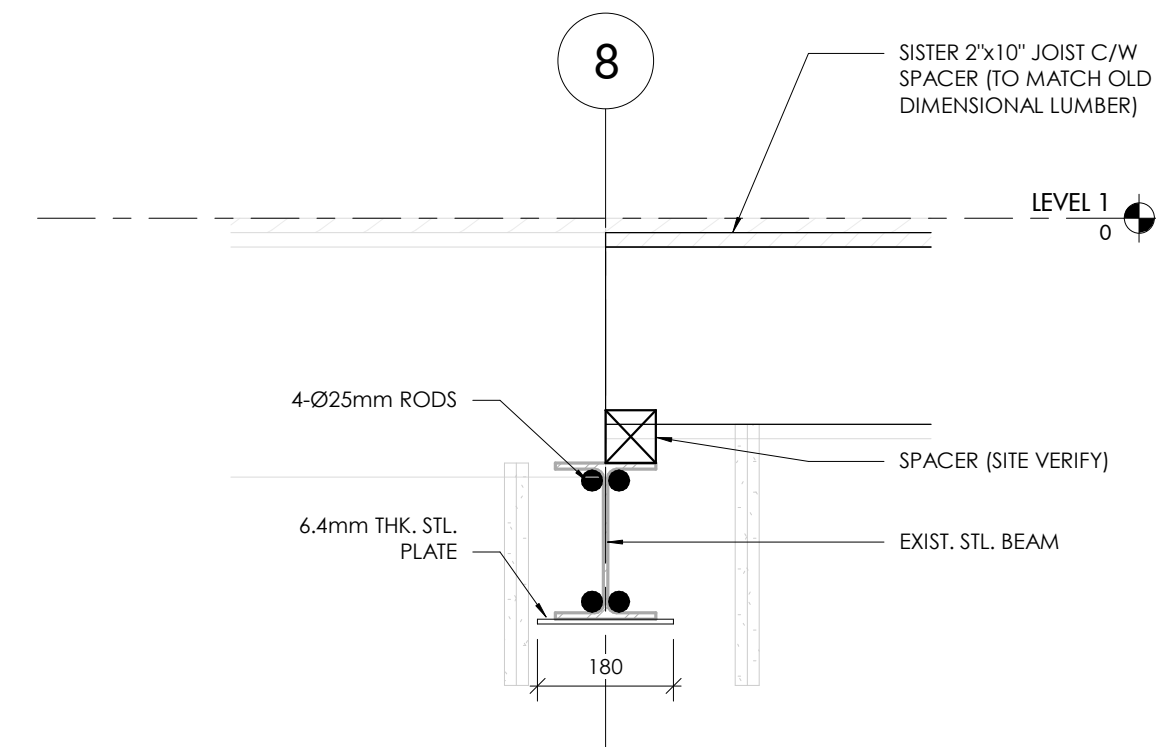
40

300

300

D

12 REINFORCED STEEL DETAIL 2  
S4.0 1 : 10



12 REINFORCED STEEL DETAIL 2  
S4.0 1 : 10

Seals:

## HIGH PARK NATURE AND VISITOR'S CENTER

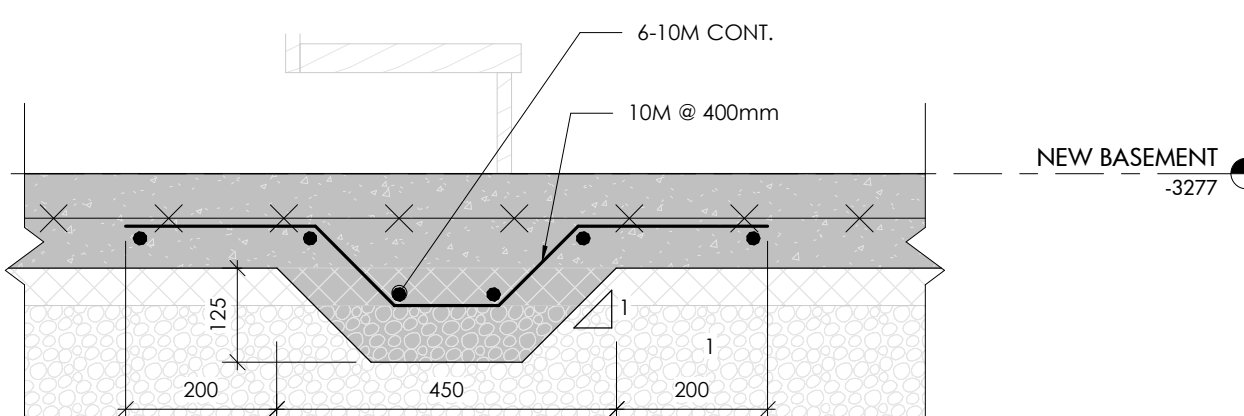
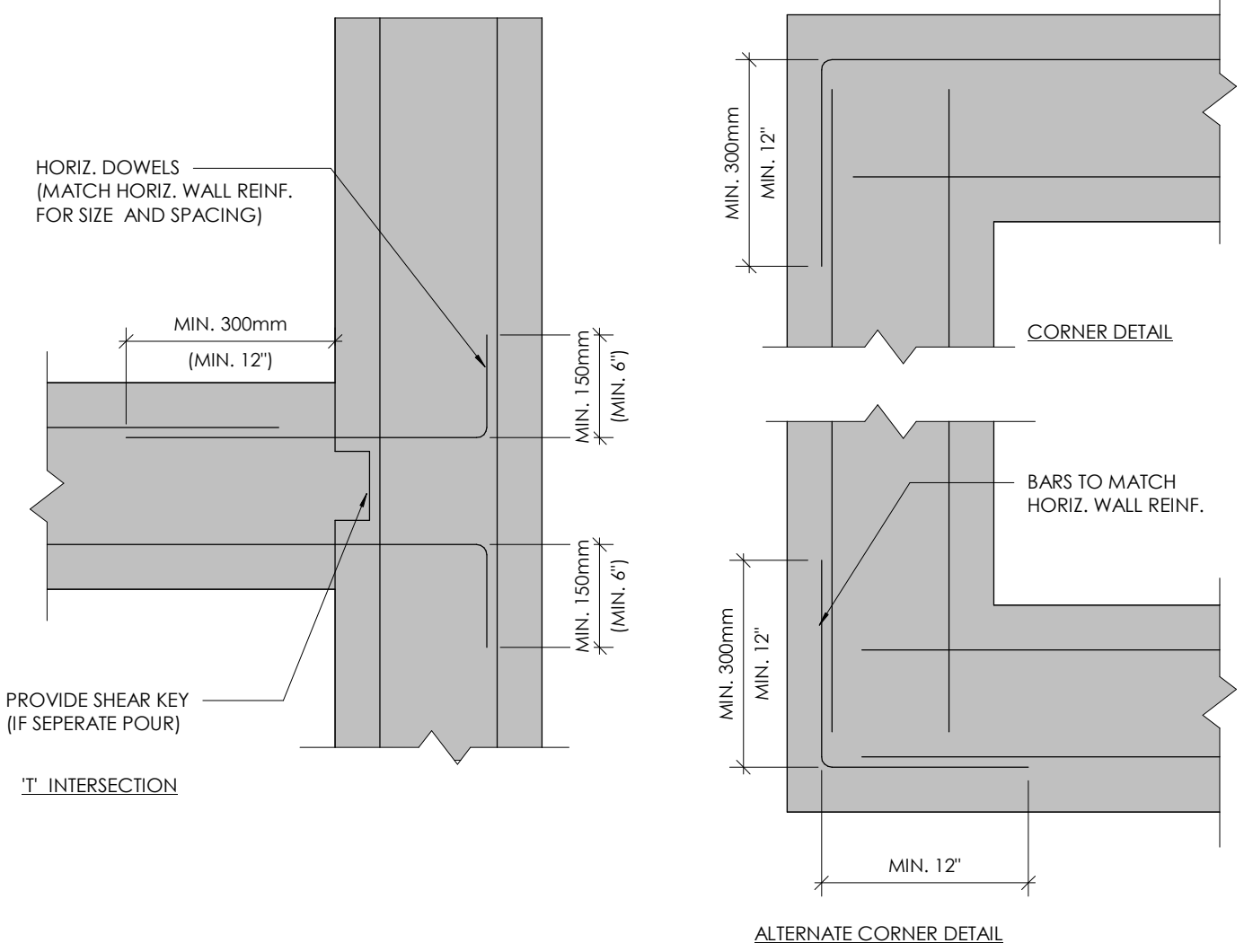
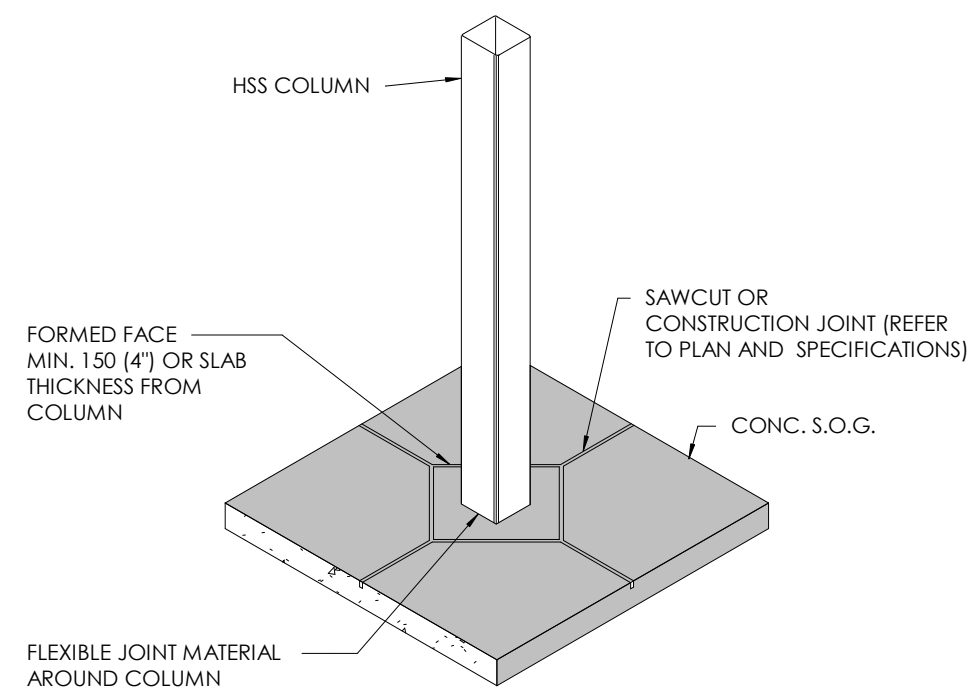
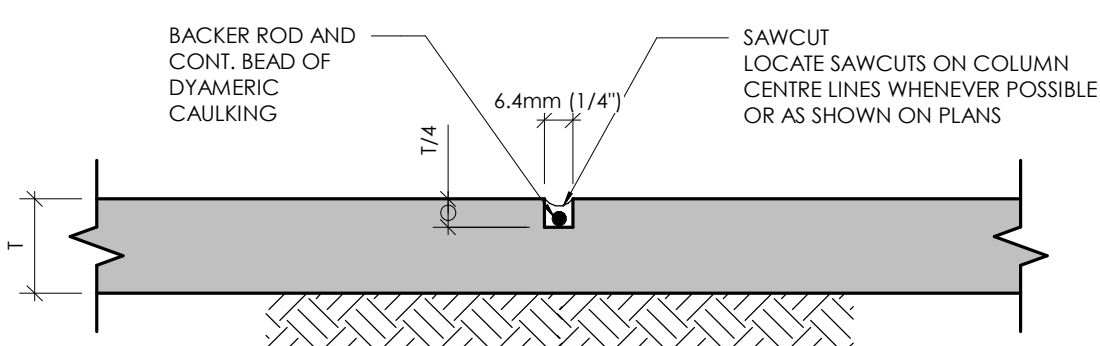
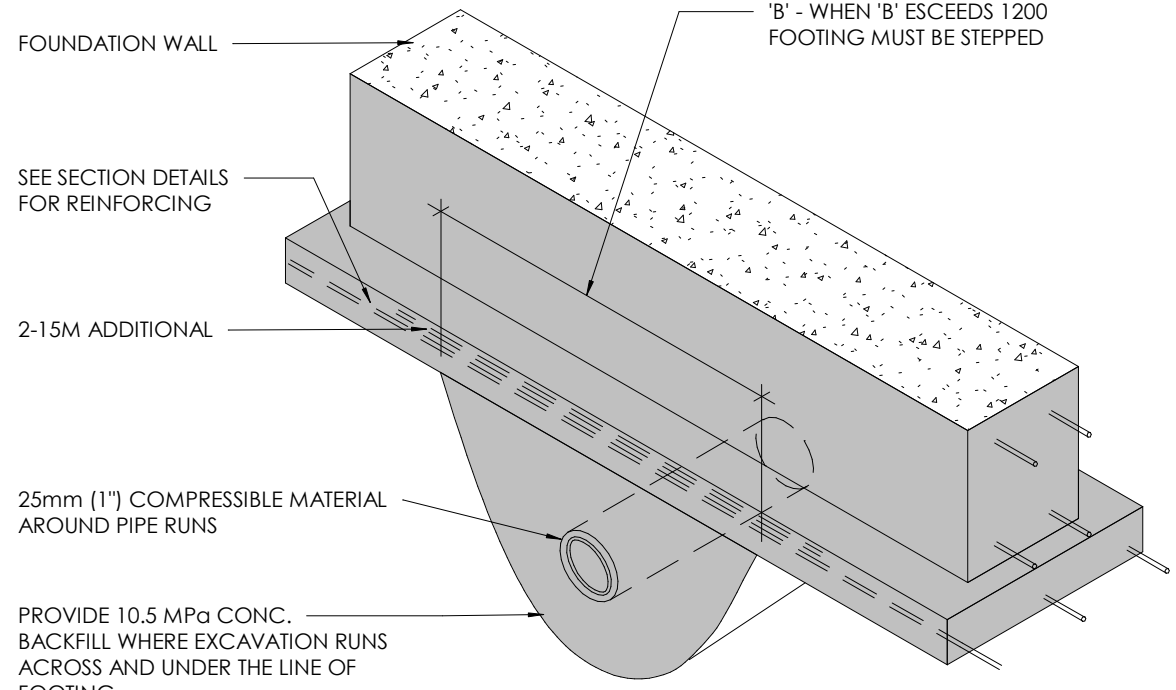
Drawing No.



NORTH ARROW

## S4.0

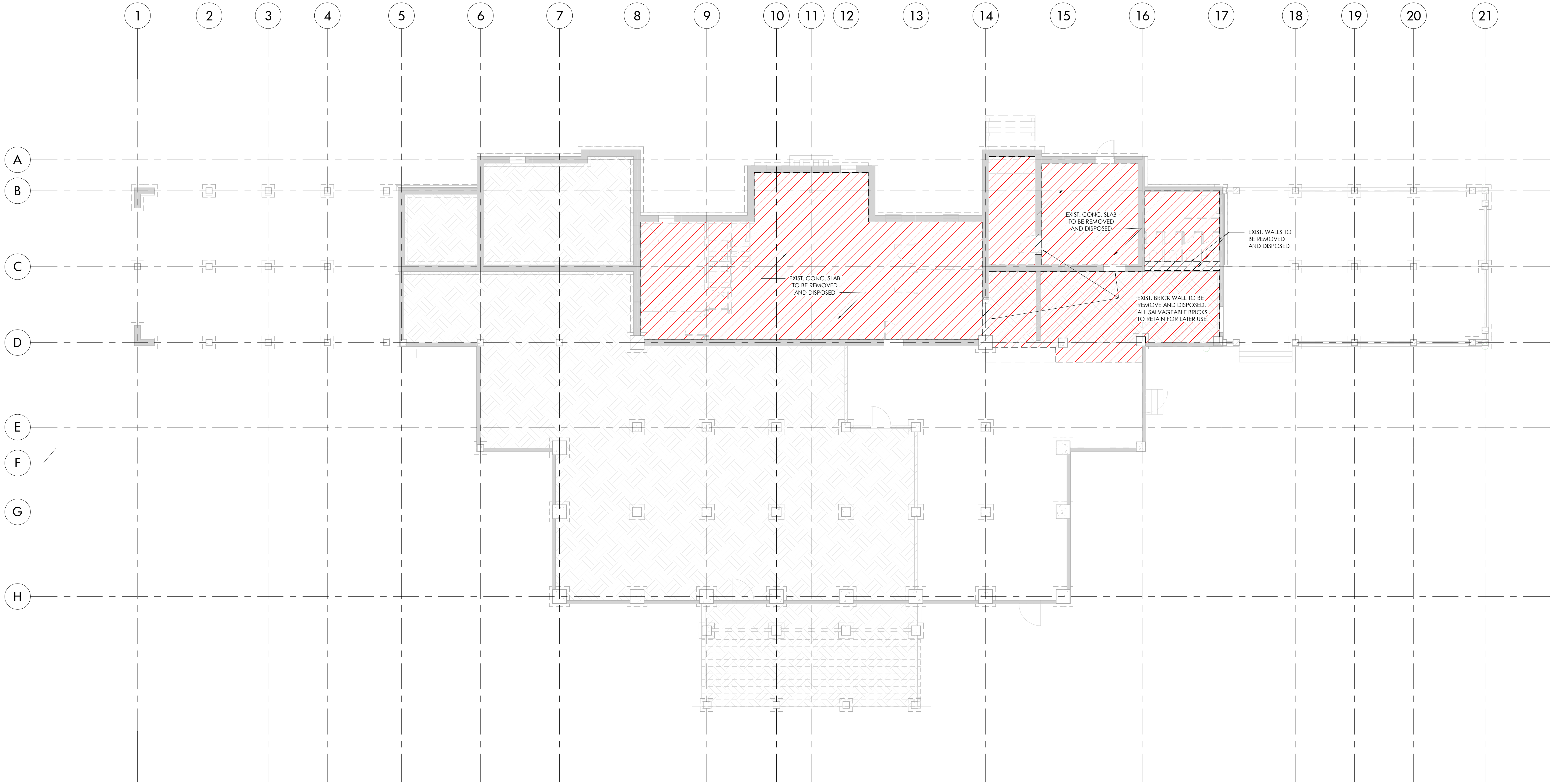


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<div>1S5.01 : 10</div> <div>TYP. SLAB THICKENING</div>	<div>2S5.01 : 10</div> <div>TYP. FOUNDATION PLAN DETAIL- WALL INTERSECTION</div>	<div>3S5.01 : 10</div> <div>TYP. COLUMN ISOLATION JOINT</div>	<div>4S5.01 : 10</div> <div>TYP. SAWCUT CONTROL JOINT IN SLAB ON GRADE</div>	
				
<div>5S5.01 : 10</div> <div>TYP. PIPE UNDERNEATH FOOTING DETAIL</div>				
				<div><div><div>4ISSUED FOR TENDER2025/02/25</div><div>3ISSUED FOR TENDER REVIEW2025/02/21</div><div>2ISSUED FOR COSTING2024/02/08</div><div>1ISSUED FOR PERMIT2024/01/31</div><div>Rev.#DescriptionDate</div></div><div>Consultants</div><div><div><div><div></div></div><div>MANTECONPARTNERS</div></div><div>STRUCTURAL MECHANICAL PROCESS ELECTRICAL CIVIL ENGINEERS AND PROJECT MANAGERS 15 Foundry Street, Oakville, ON L6M 2H6 Phone: (905) 644-8372 www.manteconpartners.com</div></div><div>Seals</div><div>375 COLBORNE LODGE DR., TORONTO, ON M6R 2Z3</div><div>HIGH PARK NATURE AND VISITOR'S CENTER</div><div><div>Drawing Name: TYPICAL DETAIL</div><div><div>Project Number: 22-142</div><div>Drawing Scale: As Indicated</div><div>Date: 2025/02/25</div><div>File Name:</div><div>Drawn By: D.N.</div><div>Reviewed By: D.U.</div></div><div>Drawing No.: S5.0</div><div><div></div><div>NORTH ARROW</div></div></div></div>



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4	ISSUED FOR TENDER	2025/02/25
3	ISSUED FOR TENDER REVIEW	2025/02/21
2	ISSUED FOR COSTING	2024/02/08
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Seals

1  
SD1.0  
1:100

DEMOLITION BASEMENT FLOOR PLAN

375 COLBORNE LODGE DR, TORONTO, ON M6R 2Z3

HIGH PARK NATURE AND  
VISITOR'S CENTER

Drawing Name:  
DEMOLITION FLOOR PLAN -  
BASEMENT - PHASE 1

Project Number: 22-142  
Drawing Scale: As Indicated  
Date: 2025/02/25  
File Name:  
Drawn By: D.N.  
Reviewed By: D.U.

Drawing No.:

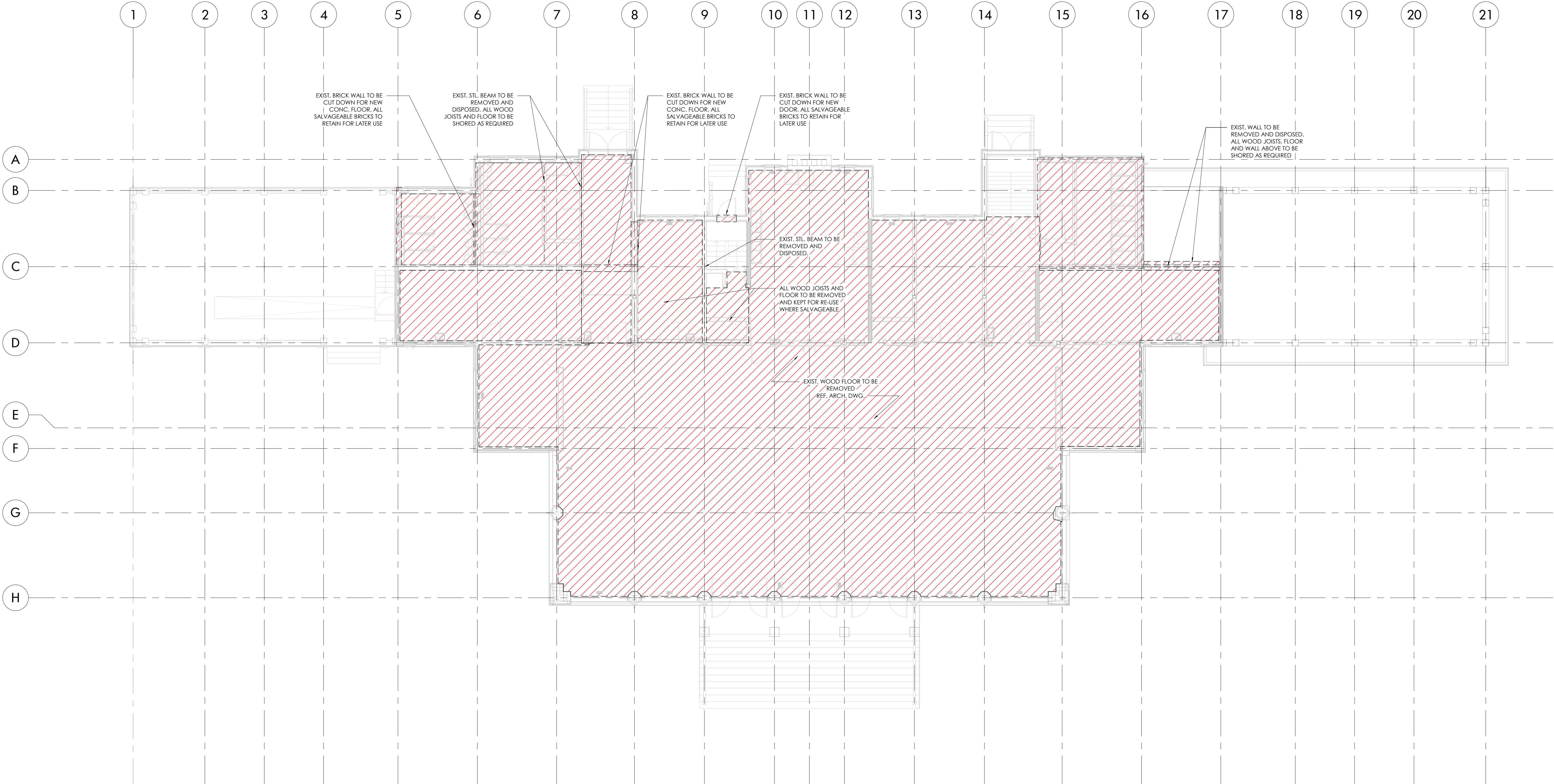


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4	ISSUED FOR TENDER	2025/02/25
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Seals

1 DEMOLITION LEVEL 1 FLOOR PLAN  
SD2.0 1 : 100

375 COLBORNE LODGE DR, TORONTO, ON M6R 2Z3

HIGH PARK NATURE AND  
VISITOR'S CENTER

Drawing Name:  
DEMOLITION FLOOR PLAN -  
FIRST FLOOR - PHASE 1

Project Number: 22-142  
Drawing Scale: As Indicated  
Date: 2025/02/25  
File Name:  
Drawn By: D.N.  
Reviewed By: D.U.

Drawing No.:



SD2.0