

1. THE GENERAL NOTES AND TYPICAL DETAILS ARE APPLICABLE TO ALL PARTS OF THE PROJECT AND SHALL BE READ IN CONJUNCTION WITH THE DRAWINGS AND SPECIFICATIONS.
2. USE ONLY THE LATEST ISSUES OF ANY GOVERNMENT CODES, STANDARDS OR REGULATIONS MENTIONED IN THE FOLLOWING NOTES, UNLESS NOTED OTHERWISE.
3. NEW STRUCTURAL ELEMENTS SHOWN ON THESE DRAWINGS ARE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF ONTARIO REGULATION 350/06 (2012 ONTARIO BUILDING CODE). ALL CONSTRUCTION, EXCEPT WHERE NOTED OTHERWISE, SHALL COMPLY WITH THAT SAME CODE.
4. VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE CONSULTANT BEFORE PROCEEDING WITH THE WORK.
5. FOR DETAILS AND DIMENSIONS NOT GIVEN ON STRUCTURAL DRAWINGS REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS. VERIFY LOADINGS AND DIMENSIONS OF ALL OPENINGS, PIPE SLEEVES, ETC. AS REQUIRED WITH THE MECHANICAL AND ELECTRICAL CONTRACTORS.
6. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DIMENSIONS AND FOR COORDINATION OF SUB-TRADES.
7. DO NOT SCALE THE DRAWINGS, USE FIGURE DIMENSIONS ONLY.
8. MAKE ADEQUATE PROVISIONS FOR CONSTRUCTION STRESSES AND FOR SUFFICIENT TEMPORARY BRACING AND SHORING TO KEEP THE STRUCTURE PLUMB AND LEVEL DURING ALL PHASES OF WORK. ANY BRACING MEMBERS SHOWN ON STRUCTURAL DRAWINGS ARE THOSE REQUIRED FOR THE FINISHED STRUCTURE AND MAY NOT BE ADEQUATE FOR ERECTION PURPOSES.
9. ALL DESIGN LOADINGS INDICATED ON THESE DRAWINGS ARE SPECIFIED (I.E. UNFACTORED SERVICE) LOADINGS UNLESS NOTED OTHERWISE.
10. ALL CONNECTION FORCES AND BRACING FORCES SHOWN ON THESE DRAWINGS ARE THE CRITICAL FACTORED FORCES UNLESS NOTED OTHERWISE.
11. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SAFEGUARD ALL EXISTING STRUCTURES AFFECTED BY THIS CONSTRUCTION. ON ANY NEW STRUCTURE, DO NOT EXCEED THE DESIGN LOADINGS INDICATED ON THESE DRAWINGS.
12. ALL STRUCTURAL MEMBERS SHOWN ARE NEW UNLESS NOTED OTHERWISE.
13. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
14. DRAWINGS AND DETAILS ARE INTENDED TO SHOW THE END RESULT OF DESIGN. MODIFICATIONS TO THE DESIGN NECESSARY TO SUIT SITE DIMENSIONS OR CONDITIONS SHALL BE SUBMITTED TO CONSULTANT FOR APPROVAL BEFORE PROCEEDING.
15. THE SCHEDULING OF ALL WORK, INCLUDING ACCESSIBILITY, FLAGGING AND LOGISTICS SHALL BE COORDINATED AND AGREED WITH THE OWNER PRIOR TO COMMENCEMENT.
16. ANY DEVIATION FROM THE SEQUENCE OF WORK INDICATED ON THE DRAWINGS SHALL BE APPROVED BY THE CONSULTANT PRIOR TO COMMENCEMENT.
17. ALL DETAILS AND DIMENSIONS SHOWN REGARDING THE EXISTING STRUCTURE AND ITS LOCATION RELATIVE TO NEW STRUCTURE OBTAINED FROM ORIGINAL DESIGN DRAWINGS. NO SHOP DRAWINGS OF THE EXISTING STRUCTURAL STEEL OR REINFORCED CONCRETE ARE AVAILABLE. THE CONTRACTOR HAS THE RESPONSIBILITY TO VERIFY ALL DETAILS AND DIMENSIONS. REPORT ANY DISCREPANCIES TO THE CONSULTANT BEFORE PROCEEDING WITH THE WORK. COMMENCEMENT OF THE WORK IMPLIES ACCEPTANCE OF THE EXISTING CONDITIONS

1. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROTECTION OF THE EXISTING STRUCTURE AND ITS OCCUPANTS DURING ALL PHASES OF CONSTRUCTION.
2. PROVIDE ALL NECESSARY HOARDING AND SECURITY MEASURES TO RESTRICT ACCESS OF THE PUBLIC TO THE WORK AREA.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF TEMPORARY SHORING AND BRACING OF THE EXISTING STRUCTURE WHERE LOAD BEARING ELEMENTS ARE TO BE REMOVED AND/OR RECONSTRUCTED. KEEP THE STRUCTURE PLUMB, LEVEL AND FREE OF CRACKS OR OTHER DISTRESS DURING ALL PHASES OF THE WORK.
4. MAKE ADEQUATE PROVISIONS FOR CONSTRUCTION STRESSES AND FOR ADEQUATE TEMPORARY SHORING AND BRACING TO KEEP THE STRUCTURE PLUMB AND LEVEL DURING ALL PHASES OF WORK.
5. SUBMIT SHOP DRAWINGS FOR ALL SHORING AND BRACING. DRAWINGS TO BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO.
6. CONTRACTOR SHALL CARRY OUT A PRE-CONSTRUCTION VISUAL SURVEY OF THE CONDITION OF THE EXISTING STRUCTURE PRIOR TO THE BEGINNING OF SHORING AND BRACING. AFTER INSTALLATION OF SHORING AND BRACING AND DURING PROCESS OF WORK, CONTRACTOR SHALL MONITOR STRUCTURE (VISUALLY AND USING SURVEY EQUIPMENT) FOR SIGNS OF MOVEMENT, CRACKING OR DISTRESS. MONITORING TO BE TWICE WEEKLY OR MORE FREQUENTLY, IF DETERMINED BY THE ENGINEER RESPONSIBLE FOR SHORING DESIGN.
7. DO NOT DEViate FROM OR FIELD-ALTER SHORING AND BRACING INDICATED ON REVIEWED SHOP DRAWINGS WITHOUT PRIOR WRITTEN APPROVAL OF ENGINEER RESPONSIBLE FOR SHORING DESIGN. NOTIFY CONSULTANT OF ANY DEVIATIONS.
8. DO NOT COMMENCE REMOVAL OF EXISTING STRUCTURAL ELEMENTS UNTIL ALL REQUIRED SHORING AND BRACING IS IN PLACE AND HAS BEEN INSPECTED BY THE ENGINEER RESPONSIBLE FOR SHORING DESIGN.
9. DO NOT REMOVE TEMPORARY SHORING OR BRACING UNTIL APPROVED BY CONSULTANT.
10. MAKE GOOD ANY DAMAGE RESULTING FROM WORK, TO THE SATISFACTION OF THE OWNER AND THE CONSULTANT.
11. VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND SERVICES THAT MAY INTERFERE WITH THE WORK, AND COORDINATE WITH THE OWNER, CONSULTANT AND OTHER AUTHORITIES AS MAY BE REQUIRED FOR THE PROTECTION, REMOVAL OR RELOCATION OF SUCH BURIED SERVICES.
12. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
13. CONTRACTOR TO RETAIN SERVICES OF GEOTECHNICAL ENGINEER FOR THE DESIGN AND REVIEW OF ALL REQUIRED EXCAVATIONS, UNDERPINNING AND TEMPORARY SUPPORT STRUCTURE.
14. THE DETAILS SHOWN ON THESE DRAWINGS ILLUSTRATE THE GENERAL ARRANGEMENT AND PERFORMANCE REQUIREMENTS ONLY. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL ASPECTS OF THE STRUCTURAL ADEQUACY AND SAFETY OF THE SHORING.
15. CONTRACTOR'S ENGINEER SHALL INVESTIGATE AND REVIEW THE CONDITION OF THE EXISTING FRAMING MEMBERS TO BE SHORED TO DETERMINE REQUIREMENTS FOR ADDITIONAL SHORING, BRACING OR BLOCKING WHERE LOCALIZED MEMBER DEFECTS, DISTRESS OR OTHER UNSAFE CONDITIONS EXIST WITHIN THE AREA OF WORK.

1. HELICAL PILE FOUNDATIONS SHALL BE DESIGNED AND INSTALLED BY FOUNDATION CONTRACTOR SPECIALIZING IN HELICAL PILES. HELICAL PILE GROUPS SHALL BE DESIGNED FOR VERTICAL AND HORIZONTAL FACTORED REACTION FORCES INDICATED ON THE FOUNDATION PLAN. FOUNDATION CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR CONSULTANT REVIEW PRIOR TO INSTALLATION. SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEERING LICENSED IN THE PROVINCE OF ONTARIO.
2. INSTALLATION OF THE HELICAL PILE FOUNDATIONS AND SLAB-ON-GRADE TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL INVESTIGATION REPORT DATED FEBRUARY 24, 2016, PREPARED BY GEOPRO CONSULTING LTD. UNDER REPORT NO. 16-1274-1.
3. OBTAIN WRITTEN APPROVAL OF GEOTECHNICAL ENGINEER FOR PREPARATION OF SUBGRADE PRIOR TO PLACEMENT OF ANY CONCRETE FOR FOUNDATIONS OR SLAB ON GRADE.
4. REFER TO GEOTECHNICAL REPORT FOR EXCAVATION, Dewatering AND BACKFILLING PROCEDURES.
5. IF THE STRUCTURAL CONSULTANT APPROVES THE PROCEDURE, ANY SOFT SPOT ENCOUNTERED IN THE BEARING AREA OF FOUNDATION EXCAVATION SHALL BE REMOVED AND FILLED TO THE UNDERSIDE OF FOUNDATION USING CONCRETE OF MINIMUM 10 MPa COMPRESSIVE STRENGTH.
6. ALL FOUNDATIONS EXPOSED TO FREEZING SHALL BE PLACED AT LEAST 1200 mm (4') BELOW FINISHED GRADE, OR BE FOUNDED SOUND UNWEATHERED BEDROCK.
7. ALL FOUNDATIONS SHALL:
 - a. BE PLACED ON UNFROZEN GROUND ONLY.
 - b. BE PROTECTED BY 1200 mm (4') OF EARTH OR AN EQUIVALENT INSULATING VALUE WHEN EXPOSED TO FROST ACTION DURING CONSTRUCTION.
 - c. BE STEPPED AS REQUIRED AS THE UNDERSIDE ELEVATION CHANGES.
 - d. BE CONSTRUCTED ON A LEVEL 50 mm MINIMUM THICK SKIM SLAB OF 10 MPa CONCRETE, PLACED IMMEDIATELY AFTER COMPLETION OF EXCAVATION, WHETHER THE SKIM SLAB IS SPECIFICALLY INDICATED OR NOT.
8. ALL EXISTING FOUNDATIONS EXPOSED TO FREEZING SHALL BE PROTECTED BY 1200 mm (4') OF EARTH OR AN EQUIVALENT INSULATING VALUE WHEN EXPOSED TO FROST ACTION DURING THE CONSTRUCTION.
9. SLAB ON GRADE TO BE PLACED ON 200 mm THICK LAYER OF GRANULAR A-1 SUB-BASE COMPACTED TO 100% SPMD/OVER GRANULAR B-1 SUBGRADE COMPACTED TO 98% SPMD. REFER TO GEOTECHNICAL REPORT FOR FULL SUBGRADE PREPARATION REQUIREMENTS FOR SLAB ON GRADE.
10. ALL FOOTINGS TO BE CENTERED UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE.
11. BEAR 90 mm (4") AND 140 mm (6") MASONRY PARTITION WALLS ON SLAB ON GRADE UNLESS NOTED OTHERWISE. BEAR ALL OTHER MASONRY WALLS ON FOOTINGS AS DETAILLED.
12. WHEN BACKFILL IS REQUIRED ON BOTH SIDES OF A WALL, THE BACKFILL LEVEL SHALL BE RAISED SIMULTANEOUSLY ON BOTH SIDES WITH THE DIFFERENCE IN HEIGHT BETWEEN THE TWO SIDES NOT TO EXCEED 600 mm (2').
13. NO BACKFILL SHALL BE PLACED AGAINST A CANTILEVERED RETAINING WALL UNTIL THE WALL HAS ATTAINED ITS DESIGN STRENGTH.
14. THE LINE OF SLOPE BETWEEN ADJACENT FOOTINGS OR EXCAVATION SHALL NOT EXCEED A RISE OF 7 IN A RUN OF 10 UNLESS APPROVED BY THE GEOTECHNICAL ENGINEER.
15. NO BACKFILL SHALL BE PLACED AGAINST A BASEMENT FOUNDATION WALL UNTIL THE FLOOR STRUCTURE AT THE TOP OF THE WALL HAS BEEN CONSTRUCTED AND HAS ACQUIRED ITS DESIGN STRENGTH.

1. ALL CONCRETE TO CONFORM TO THE REQUIREMENTS OF CSA STANDARD A23.1-04 AND THE CONCRETE SECTIONS OF THE SPECIFICATIONS FOR THIS CONTRACT.
2. ALL CONCRETE FORMWORK AND FALSEWORK TO CONFORM TO CSA-S269-1:1975-(R2003).
3. ALL CONCRETE IS TO HAVE THE MINIMUM SPECIFIED 28 DAY COMPRESSIVE STRENGTH, WATER/CEMENTING MATERIALS RATIO, AND AIR CONTENT IN ACCORDANCE WITH THE REQUIREMENTS OF CSA STANDARD A23.1.
4. ALL CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 32 MPa, UNLESS NOTED OTHERWISE. THIS MINIMUM DOES NOT APPLY WHERE CONCRETE EXPOSURE CLASSIFICATIONS DICTATE A GREATER MINIMUM COMPRESSIVE STRENGTH REQUIREMENT.
5. ALL CONCRETE WHICH WILL BE SUBJECTED TO FREEZING AND THAWING OR SUBJECTED TO APPLICATIONS OF DE-ICING CHEMICALS IS TO HAVE THE 28 DAY COMPRESSIVE STRENGTH, WATER/CEMENTING MATERIALS RATIO, AND AIR CONTENT IN ACCORDANCE WITH THE REQUIREMENTS OF CSA STANDARD A23.1.
6. ALL CONCRETE SHALL BE NORMAL DENSITY CONCRETE AND CONFORMING TO THE FOLLOWING UNLESS NOTED OTHERWISE:

LOCATION	EXPOSURE CLASS	MINIMUM F _c @ 28 DAYS	MAXIMUM AGGREGATE SIZE	REMARKS
ALL INTERIOR CONCRETE, UNO	N	25 MPa	20 mm (3/4")	
PILE CAPS	N	30 MPa	20 mm (3/4")	
PIERS	F-2	25 MPa	20 mm (3/4")	
CONCRETE TOPPING ON STEEL DECK	F-2	25 MPa	13 mm (1/2")	

LOCATION	SPECIFIED COVER (mm)
CONCRETE CAST AGAINST EARTH (PILECAPS)	75 (3")
CONCRETE ON SKIM SLAB	50 (2")
INTERIOR SLAB ON GRADE (*)	50 (2")
FORMED SLABS AND WALLS NOT EXPOSED TO EARTH OR WEATHER	25 (1")
FORMED SLABS EXPOSED TO WEATHER	40 (1 1/2")
FORMED PIERS, BEAMS AND COLUMNS NOT EXPOSED TO EARTH OR WEATHER	40 (1 1/2")
FORMED WALLS EXPOSED TO WEATHER	50 (2")
TOP OF SLAB ON GRADE TO WELDED WIRE MESH	50 (2")
TOP OF SLAB ON COMPOSITE STEEL DECK	25 (1") UNO. OR 40 (1 1/2") IF EXPOSED TO WEATHER

NOTE: (*) COVER ON BOTTOM BARS MAY BE REDUCED TO 25 mm (1") IF SLAB IS PLACED ON 50 mm (2") SKIM SLAB OR RIGID INSULATION

8. ADMIXTURES THAT CONTAIN CHLORIDES SHALL NOT BE USED.
9. UNLESS NOTED OTHERWISE, PROVIDE THE FOLLOWING CLEAR CONCRETE COVER FOR REINFORCING STEEL:
- | LOCATION | SPECIFIED COVER (mm) |
|---|---|
| CONCRETE CAST AGAINST EARTH (PILECAPS) | 75 (3") |
| CONCRETE ON SKIM SLAB | 50 (2") |
| INTERIOR SLAB ON GRADE (*) | 50 (2") |
| FORMED SLABS AND WALLS NOT EXPOSED TO EARTH OR WEATHER | 25 (1") |
| FORMED SLABS EXPOSED TO WEATHER | 40 (1 1/2") |
| FORMED PIERS, BEAMS AND COLUMNS NOT EXPOSED TO EARTH OR WEATHER | 40 (1 1/2") |
| FORMED WALLS EXPOSED TO WEATHER | 50 (2") |
| TOP OF SLAB ON GRADE TO WELDED WIRE MESH | 50 (2") |
| TOP OF SLAB ON COMPOSITE STEEL DECK | 25 (1") UNO, OR 40 (1 1/2") IF EXPOSED TO WEATHER |
- NOTE: (*) COVER ON BOTTOM BARS MAY BE REDUCED TO 25 mm (1") IF SLAB IS PLACED ON 50 mm (2") SKIM SLAB OR RIGID INSULATION
10. BONDING NEW CONCRETE TO EXISTING CONCRETE:
- a. UNLESS SHOWN OTHERWISE, ALL EXISTING CONCRETE SUBSTRATES TO BE BONDED TO NEW CONCRETE SHALL BE INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF 6 mm (1/4 ") , AND SHALL BE CLEANED OF ALL DIRT, RUST AND LAITENCE.
- b. DO NOT CUT EXISTING REINFORCING BARS WHICH INTERSECT JOINTS OF NEW-TO-EXISTING CONCRETE.
- c. PREPARED SURFACES OF EXISTING CONCRETE SHALL BE THOROUGHLY WETTED DOWN WITH POTABLE WATER FOR NOT LESS THAN ONE (1) HOUR PRIOR TO PLACEMENT OF CONCRETE.
- d. PUDDLES AND/OR FREE WATER SHALL BE BLOWN CLEAR OF THE REPAIR AREA IMMEDIATELY BEFORE PLACEMENT OF CONCRETE.
- e. CONCRETE SUBSTRATE MUST BE CLEAN, SOUND, AND IN A SATURATED SURFACE DRY CONDITION AT TIME OF APPLICATION.
- f. TEMPERATURE OF SLAB AND AIR TEMPERATURE MUST NOT BE BELOW +10 °C.
11. DO NOT PLACE FOOTINGS, WALLS AND SLABS IN ONE CONTINUOUS POUR THAT WOULD EXCEED 30 METRES IN LENGTH. CONTRACTOR TO SUBMIT PROPOSED LOCATIONS OF CONSTRUCTION JOINTS FOR APPROVAL PRIOR TO START OF WORK.
12. PROVIDE 20 mm (3/4 ") CHAMFER AT ALL EXPOSED CORNERS AND EDGES UNLESS OTHERWISE NOTED.
13. OPENINGS AND SLEEVES:
- a. ALL OPENINGS SHALL BE FORMED OR SLEEVED PRIOR TO PLACING CONCRETE
- b. PROVIDE ADDITIONAL REINFORCING AT OPENINGS AS SHOWN OR DIRECTED
- c. OBTAIN CONSULTANT APPROVAL FOR ANY OPENINGS REQUIRED BUT NOT SHOWN ON STRUCTURAL DRAWINGS.
14. NO HOLES SHALL BE MADE THROUGH CONCRETE WORK OTHER THAN THOSE INDICATED ON THE STRUCTURAL DRAWINGS, WITHOUT APPROVAL FROM THE CONSULTANT.
15. PROVIDE A MINIMUM BEARING LENGTH OF 200 mm (8 ") FOR ALL REINFORCED CONCRETE BEAMS AND 100 mm (4 ") FOR ALL REINFORCED CONCRETE SLABS; UNLESS NOTED OTHERWISE.
16. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL AND OTHER TRADES DRAWINGS FOR SIZE AND LOCATION OF ALL CURBS AND PADS. REINFORCE AS PER TYPICAL DETAILS UNLESS NOTED OTHERWISE.
17. PROVIDE MACHINE TROWEL FINISH TO INTERIOR SLABS, BROOM FINISH TO EXTERIOR SLABS.
18. PROVIDE MINIMUM SEVEN (7) DAY WET BURLAP CURE TO ALL SLABS AND STRIPS.

1. CONFORM TO THE REQUIREMENTS OF CSA STANDARDS A23.1-04 & A23.3-04.
2. REINFORCING STEEL SHALL BE DEFORMED BAR CONFORMING TO CSA STANDARD G30.18-M92, GRADE 400R, UNO.
3. REINFORCING STEEL SPECIFIED TO BE WELDED SHALL CONFORM TO CSA STANDARD G30.18-M92, GRADE 400W, UNO.
4. BAR MARKS WITH PREFIX "S" DENOTES STAINLESS STEEL BARS.
5. BAR MARKS WITH PREFIX "C" DENOTED EPOXY-COATED STEEL BARS.
6. WELDED WIRE FABRIC SHALL HAVE A MINIMUM YIELD STRENGTH OF 450 MPa AND SHALL CONFORM TO ASTM A185. SUPPLY IN FLAT SHEETS ONLY.
7. REINFORCING STEEL IS TO BE DETAILED AND BENT AS OUTLINED IN THE REINFORCING STEEL MANUAL OF STANDARD PRACTICE PUBLISHED BY THE REINFORCING STEEL INSTITUTE OF CANADA.
8. SUBMIT SHOP DRAWINGS SHOWING PLACEMENT AND DETAILS OF ALL REINFORCING STEEL. DRAW ALL WALLS IN FULL ELEVATION, AND SLABS WITH TOP AND BOTTOM BARS ON SEPARATE PLANS.
9. DO NOT FIELD-CUT OR FIELD-BEND BARS WITHOUT CONSULTANT'S APPROVAL.
10. PROVIDE CHAIRS, SPACER BARS, SUPPORT BARS AND OTHER ACCESSORIES TO SUPPORT REINFORCING IN ACCORDANCE WITH A23.1 AND A23.3. ALL WIRE, CHAIRS AND BAR SUPPORTS FOR FOUNDATIONS AND FOR EXPOSED CONCRETE SHALL BE NON-METALLIC OR COATED.
11. PROVIDE CLASS "B" TENSION LAP SPICES UNLESS NOTED OTHERWISE. ALL SPICE LOCATIONS SHALL BE TO THE APPROVAL OF THE CONSULTANT.
12. LAP SPICES IN WELDED WIRE MESH SHALL NOT BE LESS THAN 200 mm (8 "), AS MEASURED BETWEEN THE OUTERMOST CROSS-WIRES OF EACH FABRIC SHEET.
13. BAR LAPS IN REINFORCED MASONRY TO BE NOT LESS THAN 40 BAR DIAMETERS, AND SHALL BE LOCATED AT FLOOR LEVELS ONLY.
14. DOWELS TO EXISTING CONCRETE SHALL USE HILTI HIT HY200 EPOXY ADHESIVE. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
15. PROVIDE ONE 15M NOSING BAR FOR ALL SILLS, LEDGES, AND STEPS, UNLESS NOTED OTHERWISE.
16. PROVIDE ONE CONTINUOUS 15M TOP AND BOTTOM REINFORCING BARS AT ALL EDGES OF SLABS. THIS REINFORCING MAY BE PROVIDED BY MODIFYING THE BARS SHOWN ON PLAN OR SCHEDULE, OR BY PROVIDING ADDITIONAL REINFORCING.
17. PROVIDE MINIMUM 2-20M VERTICAL AT EACH END, TEE AND CORNER OF ALL REINFORCED CONCRETE WALLS UNO.
18. REINFORCING STEEL IN MASONRY BOND BEAMS, TEES AND UNITS SHALL BE MIN. 15M BARS CONTINUOUS (WITHOUT SPLICES). PROVIDE STANDARD HOOKS AT BOTH ENDS TO BARS IN MASONRY UNITS. PROVIDE 90 DEGREE "L-BARS" AT CORNERS IN MASONRY BOND BEAMS, WITH LAPS OF 40 BAR DIAMETERS.

1. DESIGN, FABRICATION AND ERECTION SHALL CONFORM TO CAN/CSA-S16-09 (INCL. S16-05 SUPPLEMENT #1), CISC CODE OF STANDARD PRACTICE, AND THE STRUCTURAL STEEL SECTION OF THE SPECIFICATIONS FOR THIS CONTRACT.
2. ALL STRUCTURAL STEEL TO CONFORM TO CAN/CSA- G40-20-04/G40-21-04, WITH THE FOLLOWING GRADES:
 - a. 350W CLASS H, FOR HSS COLUMNS
 - b. 350W CLASS C, FOR ALL OTHER HSS
 - c. 350W, FOR WELDED OR ROLLED W-SECTIONS
 - d. 300W, FOR CHANNELS, ANGLES AND PLATES
 - e. 350W, FOR ALL OTHER SECTIONS, UNLESS NOTED OTHERWISE.

3. ALL BOLTS ARE TO BE HIGH TENSILE STEEL CONFORMING TO ASTM A325 REQUIREMENTS. USE BEARING TYPE CONNECTIONS (MINIMUM 2- 1/4" DIA. BOLTS PER CONNECTION) UNLESS NOTED OTHERWISE. BOLT THREADS MUST BE EXCLUDED FROM SHEAR PLANES.
4. ANCHOR BOLTS: TO ASTM A307 UNLESS NOTED OTHERWISE.
5. HULTI CONCRETE ANCHOR BOLTS SHALL BE STAINLESS STEEL, AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS. NO PRODUCT SUBSTITUTIONS WILL BE ACCEPTED.
6. WELDING:
 - a. WELDING WORK TO BE IN ACCORDANCE WITH CSA STANDARDS W55.3-1965(R2003) AND W59-03.
 - b. FUSION WELDING ONLY TO BE UNDERTAKEN BY A FABRICATOR CERTIFIED TO CSA-W47-1.03 FOR DIVISION 1 OR 2.
 - c. RESISTANCE WELDING TO COMPLY WITH CSA-W53.
 - d. EXPOSED WELDS SHALL BE CONTINUOUS AND GROUND SMOOTH
7. CONTRACTOR HAS THE RESPONSIBILITY TO VERIFY THE WELDABILITY OF EXISTING STRUCTURAL STEEL. NO SAMPLE ANALYSIS HAS BEEN CONDUCTED. SELECT APPROPRIATE ELECTRODES AND PRE-HEATING TO SUIT SITE CONDITIONS.
8. FABRICATOR SHALL DESIGN CONNECTIONS TO RESIST LOADS AND FORCES SHOWN.
9. UNLESS NOTED, ALL BEAM END CONNECTIONS SHALL BE TWO-SIDED DOUBLE ANGLE CONNECTIONS AND SHALL BE DESIGNED FOR MIN 0.75 TIMES THE FACTORED SHEAR RESISTANCE OF THE SECTION.
10. PROVIDE ALL REQUIRED GUSSETS, SPACERS, FILERS, SHIMS AND BATTEN PLATES.
11. DETAILS SHOWN FOR CONNECTION OF NEW STRUCTURAL STEEL TO EXISTING STRUCTURE ARE FOR CONTRACTOR'S GUIDANCE ONLY. CONTRACTOR HAS THE RESPONSIBILITY TO VERIFY ALL SITE CONDITIONS AND TO MODIFY THESE DETAILS AS NECESSARY TO ALLOW CONNECTION TO THE EXISTING STRUCTURE FOR THE LOADINGS INDICATED ON THE DRAWINGS.
12. PROVIDE BUTTER COAT OR NON-SHRINK GROUT BETWEEN SURFACES WHERE CONNECTING STEEL PLATE TO STRUCTURAL CONCRETE OR MASONRY, UNLESS NOTED OTHERWISE.
13. CENTRE BEARING PLATES UNDER BEAMS EXCEPT WHERE NOTED OTHERWISE.
14. CONNECT ALL BEAMS TO END BEARING PLATES WITH A MIN. OF 50 mm (2 ") LENGTH OF 6 mm (1/4 ") FILLET WELD EACH SIDE OF FLANGE.
15. PROVIDE 4.8 mm (3/16 ") THICK CAP PLATES WITH ALL-AROUND SEAL WELD ON OPEN ENDS OF HSS MEMBERS UNLESS NOTED OTHERWISE.
16. DO NOT MAKE HOLES IN ANY STRUCTURAL STEEL MEMBER OTHER THAN THOSE SHOWN ON REVIEWED SHOP DRAWINGS WITHOUT THE PRIOR APPROVAL OF THE CONSULTANT.
17. FOR LIMITS NOT SPECIFICALLY SIZED ON STRUCTURAL PLANS, REFER TO THE LINTEL SCHEDULE ON THESE DRAWINGS.
18. ALL EXTERIOR STRUCTURAL STEEL TO BE HOT DIPPED GALVANIZED TO CAN/CSA-G164-M92(R2003), WITH A MINIMUM ZINC COATING OF 600 g/sq.m. ALL OTHER STEEL TO BE PRIME PAINTED UNLESS NOTED OTHERWISE.
19. REPAIR DAMAGED AREAS OF GALVANIZED SURFACES WITH TWO COATS OF ZINC-RICH PAINT.

1. DESIGN, FABRICATOR AND ERECTION SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA-5136-07, CSSBI 10M-06 (OR FOOT DECK), CSSBI 12M-06 (FOR COMPOSITE STEEL DECK), CSSBI B13-06 (FOR DIAPHRAGMS).
2. ALL STEEL SHEET PILING SHALL BE STANDARD GALVANIZED DECK OF THE PROFILE DEPTH AND CORKE THICKNESS INDICATED ON THE DRAWINGS (U/N), GALVANIZED TO ASTM A653 WITH Z275 ZINC COATING. MINIMUM DECK PROFILE THICKNESS SHALL BE 38 mm x 0.76 mm (1 1/2" x 22 GA) STEEL DECK. SEE DRAWINGS FOR SPECIFIC LOCATIONS HAVING HEAVY GAUGE DECK.
3. ALL STEEL DECK HAVING COMPOSITE TOPPING SHALL BE COMPOSITE DECK. PROVIDE MIN. ONE LAYER OF 15x12.5x0.1875-7x18.7 (6x6 6x6) WELDED WIRE MESH PLACED IN FLAT SHEETS 25mm (1") FROM TOP OF CONCRETE TOPPING.
4. ELECTRICAL RACEWAY UNITS OF CELLULAR COMPOSITE DECK SHALL ALSO CONFORM TO CSA STANDARD C22.2 No. 79-1978 (R1999).
5. THE DECK FABRICATOR SHALL DESIGN THE DECK TO RESIST THE SPECIFIED DESIGN LOADS. SUBMIT SHOP DRAWINGS, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER. DRAWINGS TO INCLUDE: PROFILE, LAYOUT, OPENINGS (AND REINFORCING), CONNECTIONS, CLOSURES, AND ALL DETAILS OF DECK INSTALLATION.
6. THE DECK CORKE THICKNESS SHALL BE AS REQUIRED FOR DESIGN STRENGTH, BUT NOT BE LESS THAN 0.76 mm (22 Ga).
7. STEEL DECK TO BE CONTINUOUS OVER A MINIMUM OF THREE SPANS UNO. PROVIDE FOR AN INCREASE IN CORKE THICKNESS, AS REQUIRED, TO SUPPORT SPECIFIED LOADS, WHERE FEWER THAN 3 SPANS OCCUR OR WHERE SPANS ARE UNEQUAL.
8. STEEL RIM DECK TO BE USED AS A DIAPHRAGM.
9. MINIMUM BEARING OF DECK UNIT IS TO BE 50 mm (2").
10. PROVIDE SUPPORT FOR THE UNSUPPORTED EDGE PARALLEL TO THE FLUTES WITH A CONTINUOUS 16x46x6.4 (1/2" x 2" x 1/2") UNLESS NOTED OTHERWISE.
11. MINIMUM WELDING AND FASTENING OF DECK TO STEEL SUPPORTING MEMBERS TO BE (SEE DECK FASTENING DIAPHRAGMS ON PLAN:
 - a. TRANSVERSE (BEARING) SUPPORTS: 20 mm (3/4") DIA. PUDDLE WELDS AT 300 mm (12") C/C or AT ALTERNATE FLUTES (WHICHEVER IS LESS), WITH A MINIMUM OF 3 WELDS PER DECK PANEL
 - b. LONGITUDINAL (SIDE PANEL) SUPPORTS: 20 mm (3/4") DIA. PUDDLE WELDS AT 600 mm (2") C/C
 - c. SIDE LAPS: MECHANICALLY CLINCH (BUTTON PUNCH) AT 600 mm (2") C/C.
12. WELDING SHALL BE TO CSA W59-03 BY A FABRICATOR CERTIFIED UNDER DIVISION 1 OR 2 OF CSA W47.1-03 FOR FUSION WELDING AND W55.3-1965 (R2003) FOR RESISTANCE WELDING.
13. MOCK-UP (PRACTICE) WELDS SHALL BE MADE PRIOR TO ACTUAL JOB WELDING, TO DEMONSTRATE THE ADEQUACY OF THE VARIOUS WELDS REQUIRED. BOTH THE PRACTICE WELDS AND THE ACTUAL JOB WELDS SHALL BE INSPECTED FOR SIZE AND SPACING AND TESTED BY PRY TEST TO DEMONSTRATE METAL-TO-METAL FUSION.
14. TOUCH-UP ALL WELDS WITH TWO COATS OF ZINC-RICH PRIMER.

1. ALL MASONRY WORK TO BE IN ACCORDANCE WITH ONTARIO BUILDING CODE, CSA-A179-04 AND CSA-A371-04.
2. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS AND DIMENSIONS OF ALL MASONRY WALLS.
3. PROVIDE TYPE H/15/A/M UNITS CONFORMING TO CSA STANDARDS A165 SERIES FOR ALL CONCRETE BLOCK MASONRY.
4. USE TYPE "S" MORTAR CONFORMING TO CSA-A179 (PROPORTION SPECIFICATION) FOR ALL MASONRY WALLS.
5. MASONRY GROUT TO CONFORM TO CSA-A179, WITH A MINIMUM COMPRESSIVE STRENGTH OF 12.5 MPa AT 28 DAYS.
6. PROVIDE CONTINUOUS 8-ga LADDER-TYPE MILL GALVANIZED HEAVY DUTY HORIZONTAL JOINT REINFORCEMENT CONFORMING TO ASTM-A62 AT:
 - a. EVERY SECOND COURSE (IE. AT 400mm [$16 \frac{1}{4}$ "]) VERTICAL SPACING)
 - b. ADDITIONAL AT FIRST COURSE AT TOP AND BOTTOM OF WALL
7. PROVIDE PREFABRICATED CORNERS AND TEES FOR HORIZONTAL JOINT REINFORCING.
8. PROVIDE VERTICAL WALL REINFORCING IN ALL NEW CONCRETE BLOCK WALLS IN ACCORDANCE WITH TYPICAL WALL REINFORCING DETAILS UNLESS NOTED OTHERWISE.
9. VERTICAL WALL REINFORCING TO BE CONTINUOUS BETWEEN FLOORS AND ROOF. PROVIDE FULL CLASS B TENSION LAP SPICE. INDICATE LOCATION OF ALL PROPOSED LAP SPICES ON SHOP DRAWINGS FOR APPROVAL.
10. USE FULL MORTAR BEDDING FOR ALL WALLS.
11. CONSTRUCT WALLS IN RUNNING BOND ONLY.
12. PROVIDE BULLNOSE BLOCKS AT EXPOSED CORNERS.
13. NEW MASONRY WALLS TO BE TOOTHED INTO EXISTING MASONRY WALLS WHERE SHOWN.
14. BOND BEAMS ARE TO BE CONTINUOUS WHERE INDICATED ON PLANS AND OR SPECIFICATIONS.
15. REFER TO ARCHITECTURAL DRAWINGS FOR CONTROL JOINT (HORIZONTAL MOVEMENT) LOCATIONS.
16. PROVIDE 100% SOLID OR FULLY GROUTED MASONRY AT:

1. ALL MASONRY WORK TO BE IN ACCORDANCE WITH ONTARIO BUILDING CODE, CSA-A179-04 AND CSA-A371-04.
2. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS AND DIMENSIONS OF ALL MASONRY WALLS.
3. PROVIDE TYPE H/15/A/M UNITS CONFORMING TO CSA STANDARDS A165 SERIES FOR ALL CONCRETE BLOCK MASONRY.
4. USE TYPE "S" MORTAR CONFORMING TO CSA-A179 (PROPORTION SPECIFICATION) FOR ALL MASONRY WALLS.
5. MASONRY GROUT TO CONFORM TO CSA-A179, WITH A MINIMUM COMPRESSIVE STRENGTH OF 12.5 MPa AT 28 DAYS.
6. PROVIDE CONTINUOUS 8-g/LADDER-TYPE MILD GALVANIZED HEAVY DUTY HORIZONTAL JOINT REINFORCEMENT CONFORMING TO ASTM-A82 AT:
 - a. EVERY SECOND COURSE (I.E. AT 400mm (16 ") VERTICAL SPACING)
 - b. ADDITIONAL AT FIRST COURSE AT TOP AND BOTTOM OF WALL
7. PROVIDE PREFABRICATED CORNERS AND TEES FOR HORIZONTAL JOINT REINFORCING.
8. PROVIDE VERTICAL WALL REINFORCING IN ALL NEW CONCRETE BLOCK WALLS IN ACCORDANCE WITH TYPICAL WALL REINFORCING DETAILS UNLESS NOTED OTHERWISE.
9. VERTICAL WALL REINFORCING TO BE CONTINUOUS FROM FLOORS AND ROOF. PROVIDE FULL CLASS B TENSION LAP SPlice. INDICATE LOCATION OF ALL PROPOSED LAP SPlices ON SHOP DRAWINGS FOR APPROVAL.
10. USE FULL MORTAR BEDDING FOR ALL WALLS.
11. CONSTRUCT WALLS IN RUNNING BOND ONLY.
12. PROVIDE BULLNOSE BLOCKS AT EXPOSED CORNERS.
13. NEW MASONRY WALLS TO BE TIED INTO EXISTING MASONRY WALLS WHERE SHOWN.
14. BOND BEAMS ARE TO BE CONTINUOUS WHERE INDICATED ON PLANS AND OR SPECIFICATIONS.
15. REFER TO ARCHITECTURAL DRAWINGS FOR CONTROL JOINT (HORIZONTAL MOVEMENT) LOCATIONS.
16. PROVIDE 100% SOLID OR FULLY GROUTED MASONRY AT:
 1. TOP AND BOTTOM COURSE OF WALLS,
 2. TWO COURSES DEEP AND TWO BLOCKS WIDE UNDER ALL BEAMS OR LINTEL BEARINGS,
 3. GROUTED CELLS CONTAINING VERTICAL REINFORCING,
 4. BOND BEAMS,
 5. ALL PIERS BETWEEN ADJACENT OPENINGS LESS THAN 800 mm WIDE, FOR FULL HEIGHT OF PIER,
 6. ALL BELOW GRADE MASONRY,
 7. KEYWAYS AT EACH SIDE OF CONTROL JOINTS, AND
 8. CELLS CONTAINING DOWELS, ANCHOR BOLTS OR OTHER EMBEDDED HARDWARE.

17. SOLID MASONRY MEANS GROUT FILL IN HOLLOW MASONRY, OR 100% SOLID UNITS.
18. CONTRACTOR TO BE RESPONSIBLE FOR THE DESIGN AND PROVISION OF ADEQUATE TEMPORARY BRACING IN ACCORDANCE WITH THE ONTARIO BUILDING CODE, AND APPENDIX H OF CSA-A37.1.
19. MASONRY SHOP DRAWINGS TO INCLUDE, BUT NOT LIMITED TO, FULL WALL ELEVATIONS DETAILING VERTICAL REINFORCING, LAP SPLICES, BONDING BEAMS, OPENINGS AND CONTROL JOINT LOCATIONS.
20. WHERE THE ARCHITECTURAL DRAWINGS SPECIFY THE CELLS OF THE CONCRETE BLOCK TO BE FILLED WITH PERLITE INSULATION THIS DOES NOT INCLUDE CELLS TO BE REINFORCED AND GROUTED.
21. WHERE THE ARCHITECTURAL DRAWINGS SPECIFY A FREE Cavity SPACE (AIR GAP) BETWEEN MASONRY WYTHES, CONTRACTOR TO EMPLOY CONSTRUCTION METHODS TO ENSURE CAVITY IS KEPT CLEAR OF ALL MORTAR DROPPINGS.
22. IF MASONRY CRACKING OCCURS AS A RESULT OF [UNDERPINNING OR SOIL REMEDIATION WORK], REPORT JOINTS AND OR REPLACE UNITS AS DIRECTED BY CONSULTANT.

1. **SHOP DRAWINGS:**
BEFORE PROCEEDING WITH DEMOLITION OPERATIONS, SUBMIT DRAWINGS PREPARED BY A PROFESSIONAL ENGINEER LICENCED IN THE PROVINCE OF ONTARIO, SHOWING THE PROPOSED METHOD OF DEMOLITION AND THE MEANS OF PROTECTING THE EXISTING CONSTRUCTION TO REMAIN.
2. **CONSTRUCT NEW STRUCTURAL STRENGTHENING AS SHOWN ON DETAIL DRAWINGS PRIOR TO CUTTING OF EXISTING STRUCTURE.**
3. **WHERE STRUCTURAL STRENGTHENING INCLUDES CONCRETE WORK, IN SITU STRENGTH OF CONCRETE SHALL REACH 100% OF SPECIFIED STRENGTH PRIOR TO CUTTING OF EXISTING STRUCTURE.**
4. **PROVIDE BRACING AND SHORING AS REQUIRED.**
5. **LOCATE PIPES, CONDUITS AND OTHER SERVICES EMBEDDED, OR SURFACE MOUNTED, IN WORK AREA TO BE CUT. COORDINATE WITH OWNER AND ENGINEER/CONSULTANT FOR RELOCATION OF SERVICES.**
6. **PROTECT THE AREA BELOW FROM THE FREE FALL OF DEBRIS DURING THE MAKING OF NEW OPENINGS. CONTROL THE FLOW AND DIRECTION OF ANY SAW CUTTING FLUID OR DUST EXHAUST. ENSURE THAT ALL EXISTING CONCRETE AND STEEL ELEMENTS TO BE CUT AND REMOVED ARE SHORED AND SUPPORTED PRIOR TO AND DURING CUTTING OPERATIONS.**
7. **PROVIDE TEMPORARY DUST SCREENS, COVERS, GUARDS AND RAILINGS, SUPPORTS AND OTHER PROTECTION AS REQUIRED TO PROTECT THE PUBLIC AND THE ENVIRONMENT.**
8. **REMOVE CONCRETE NEATLY BY SAW CUTTING, CORE DRILLING AND HAND TOOLS TO ACHIEVE CLEAN NEAT SURFACES.**
9. **CORE DRILL 100 mm (4 ") DIA. HOLES AT CORNERS OF OPENINGS PRIOR TO SAW CUTTING.**
10. **NO DRILLING OR WRECKING CRANES SHALL BE PERMITTED.**
11. **EXERCISE CARE NOT TO DAMAGE CONCRETE TO REMAIN.**
12. **TAKE ALL NECESSARY PRECAUTIONS TO AVOID OVER BREAKING OF THE EDGES OF THE OPENING.**
13. **BLAST CLEAN ALL EXISTING REINFORCING STEEL SHOWN TO REMAIN.**
14. **EXISTING REINFORCING STEEL THAT IS SHOWN TO BE CUT SHALL BE CUT BACK 6 mm BEHIND THE EDGE OF THE NEW OPENING AND THE CONCRETE IS TO BE PATCHED WITH EPOXY MORTAR.**

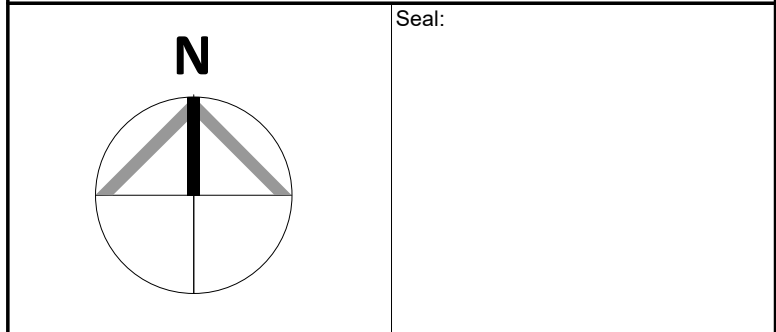
THE CONTRACTOR SHALL ARRANGE AND PAY FOR THE FOLLOWING ITEMS TO BE INSPECTED OR TESTED BY AN INDEPENDENT THIRD PARTY ENGINEER OR CONSULTANT AS APPLICABLE TO THE OWNER AND THE CONSULTANT. COPIES OF ALL TEST REPORTS SHALL BE FORWARDED TO THE OWNER AND CONSULTANT ON THE SAME DAY TESTS ARE MADE. THE ITEMS TO BE TESTED SHALL NOT BE LIMITED TO THE FOLLOWING.

- a. **GEOTECHNICAL:**
PERFORM ALL TESTING AND INSPECTION (COMPACTION, BEARING CAPACITY, SOIL PREPARATION ETC.) AS PER THE REQUIREMENTS OF THE DRAWINGS AND THE GEOTECHNICAL ENGINEERING REPORT.
- b. **CONCRETE:**
CONCRETE TO BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF CSA A23.1 AND A23.2, INCLUDING THE REQUIREMENTS FOR AIR, SLUMP AND AGE PRIOR TO BEING USED. CONTRACTOR TO MAINTAIN RECORDS OF POUR DATES, TESTING PERFORMED, CLASS OF CONCRETE USED AND TEST RESULTS FOR ALL ITEMS PLACED. RESULTS OF CYLINDER STRENGTH TESTING TO BE SENT TO OWNER AND CONSULTANT. ALL MIX DESIGNS TO BE REVIEWED AND APPROVED BY TESTING AGENCY.
- c. **MASONRY:**
MORTAR, GROUT AND CONCRETE MASONRY UNITS:
SAMPLE AND TEST JOB-MIXED MORTARS IN ACCORDANCE WITH CSA A179 AND CSA A304.1. TEST FREQUENCY TO BE IN ACCORDANCE WITH 3304.1, BUT NOT LESS THAN ONE TEST FOR EACH DAY OF WORK. CONTRACTOR TO SUBMIT LABORATORY TEST REPORTS OF MANUFACTURER FOR CONCRETE MASONRY UNITS.
- d. **STRUCTURAL:**
PERFORM VISUAL INSPECTION OF ALL WELDS, TORQUE TESTING OF BOLTED CONNECTIONS AND CHECK ON BEARING, PULLING, ALIGNMENT AND PAINTING. BASIS OF INSPECTION SHALL BE FINAL REVIEW SHOP DRAWINGS. PERFORM NON-DESTRUCTIVE TESTING AT LEAST WHERE RESULTS OF VISUAL INSPECTION ARE NOT ACCEPTABLE OR INCONCLUSIVE.
- e. **REINFORCING STEEL:**
CONTRACTOR SHALL ADVISE CONSULTANT OF PLACEMENT OF ALL REINFORCING STEEL FOR REINFORCED MASONRY AND PRECAST CONCRETE AT LEAST 24 HOURS PRIOR TO PLANNED TIME OF MASONRY GROUT OR CONCRETE PLACEMENT. DO NOT PLACE GROUT OR CONCRETE UNTIL BAR PLACEMENT HAS BEEN APPROVED BY CONSULTANT.

3. PROVIDE ALL NECESSARY EQUIPMENT, LABOR AND EQUIPMENT NECESSARY TO PERFORM ALL WORK TO INSTALL THE PILES. WORK INCLUDES LOCATES FOR U/G SERVICES.
4. ALL INSTALLATION EQUIPMENT AND MATERIAL SHALL BE CAPABLE OF BEING PASSED THROUGH A STANDARD DOME UNLESS OTHERWISE APPROVED BY THE OWNER, AND SHALL BE CAPABLE OF INSTALLING PILES WITH MINIMAL NOISE AND VIBRATION.
5. PILES SHALL DEVELOP LOAD CAPACITIES PER THE LOADS INDICATED ON THE DRAWINGS. PILES SHALL BE DESIGNED WITH SUFFICIENT CAPACITY TO RESIST POSSIBLE NEGATIVE SKIN FRICTION FORCES IN OVERBURDEN SOIL, OR FORCES TO FROST UPLIFT IN UNHEATED AREAS.
6. CONTRACTOR SHALL BE AUTHORIZED, TRAINED AND CERTIFIED BY A.B. CHANCE COMPANY IN THE METHODS OF DESIGN AND INSTALLATION. IN CASE OF ALTERNATIVE EQUIPMENT, THE CONTRACTOR SHALL BE AUTHORIZED, TRAINED AND CERTIFIED BY THE PILE MANUFACTURER AND SHALL SUBMIT COPIES OF CERTIFICATION DOCUMENTS.
7. PILE INSTALLATION SHALL BE CARRIED OUT IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER.
8. PREFABRICATED STEEL PILE CAPS SHALL BE SIZED TO ENSURE THAT FACTORED CONCRETE BEARING STRESS DOES NOT EXCEED 10 MPa, AND SHALL BE 150mm x 150mm IN SIZE.
9. TOLERANCES: 50 mm in PLAN, 2% IN PLUMB, TOP CUT-OF WITHIN PLUS 25 mm OR MINUS 25 mm.
10. THE PILES SHALL BE GROUTED FULL DEPTH USING PUTT-ON NON-SHRINK PREMIUM CEMENTITIOUS GROUT, NON-METALLIC AGGREGATES IN ACCORDANCE WITH MICRO-PILE MANUFACTURER'S RECOMMENDATIONS. PROVIDE 50 MPa (MINIMUM) COMPRESSIVE STRENGTH AT 28 DAYS.
11. CONTRACTOR TO RECORD ALL AS-BUILT DIMENSIONS (INCL. ELEVATIONS AND PLAN LOCATIONS).
12. SUBMIT SHOP DRAWINGS FOR ALL PILING WORK, SHOWING ALL ASPECTS OF THE INSTALLATION. DRAWINGS AND CALCULATIONS TO BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN ONTARIO.
13. AT THE COMPLETION OF WORK, A PROFESSIONAL ENGINEER RETAINED BY THE PILE CONTRACTOR SHALL CERTIFY IN WRITING TO THE CONSULTANT THAT THE AS-BUILT PILES ARE CAPABLE OF SUPPORTING THE SPECIFIED LOADS WITH A SAFETY FACTOR OF 2.0, AND NOT PROCEED WITH CONSTRUCTION OF PILE CAPS UNTIL PILE CAPACITY CERTIFICATION HAS BEEN ACCEPTED BY THE CONSULTANT.
14. ALL WORK MUST BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED BY GEOPRO DATED FEBRUARY 24, 2016.

STRUCTURAL DRAWING LIST	
SHEET NUMBER	SHEET NAME
S001	GENERAL NOTES
S002	TYPICAL DETAILS
S003	TYPICAL DETAILS
S004	TYPICAL DETAILS
S005	TYPICAL DETAILS
S101	FOUNDATION PLAN
S102	ROOF FRAMING PLAN
S201	STRUCTURAL FRAMING ELEVATIONS
S202	STRUCTURAL FRAMING ELEVATIONS
S301	STRUCTURAL SECTIONS

Consultant:



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Project:

NEW POWERHOUSE

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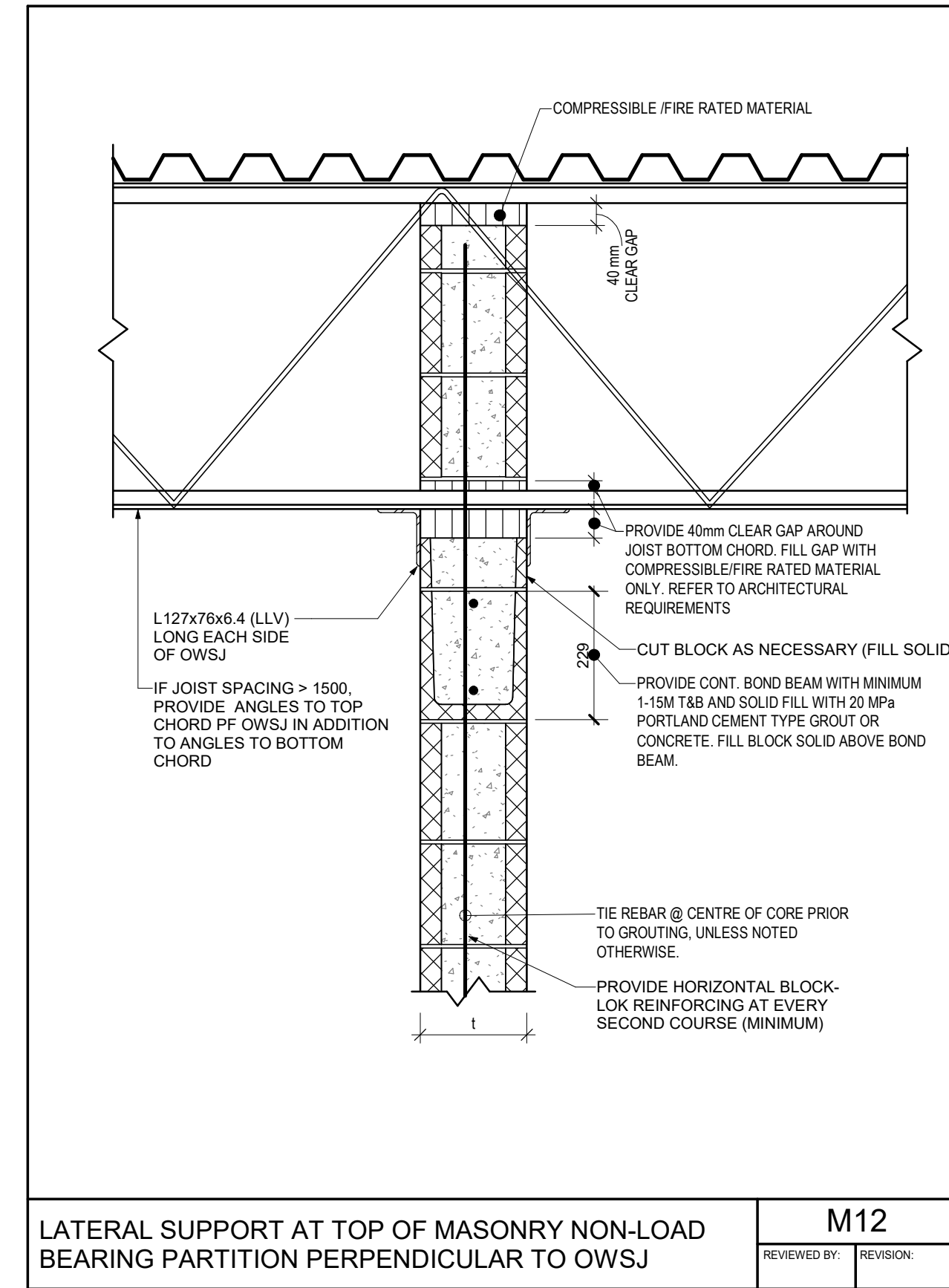
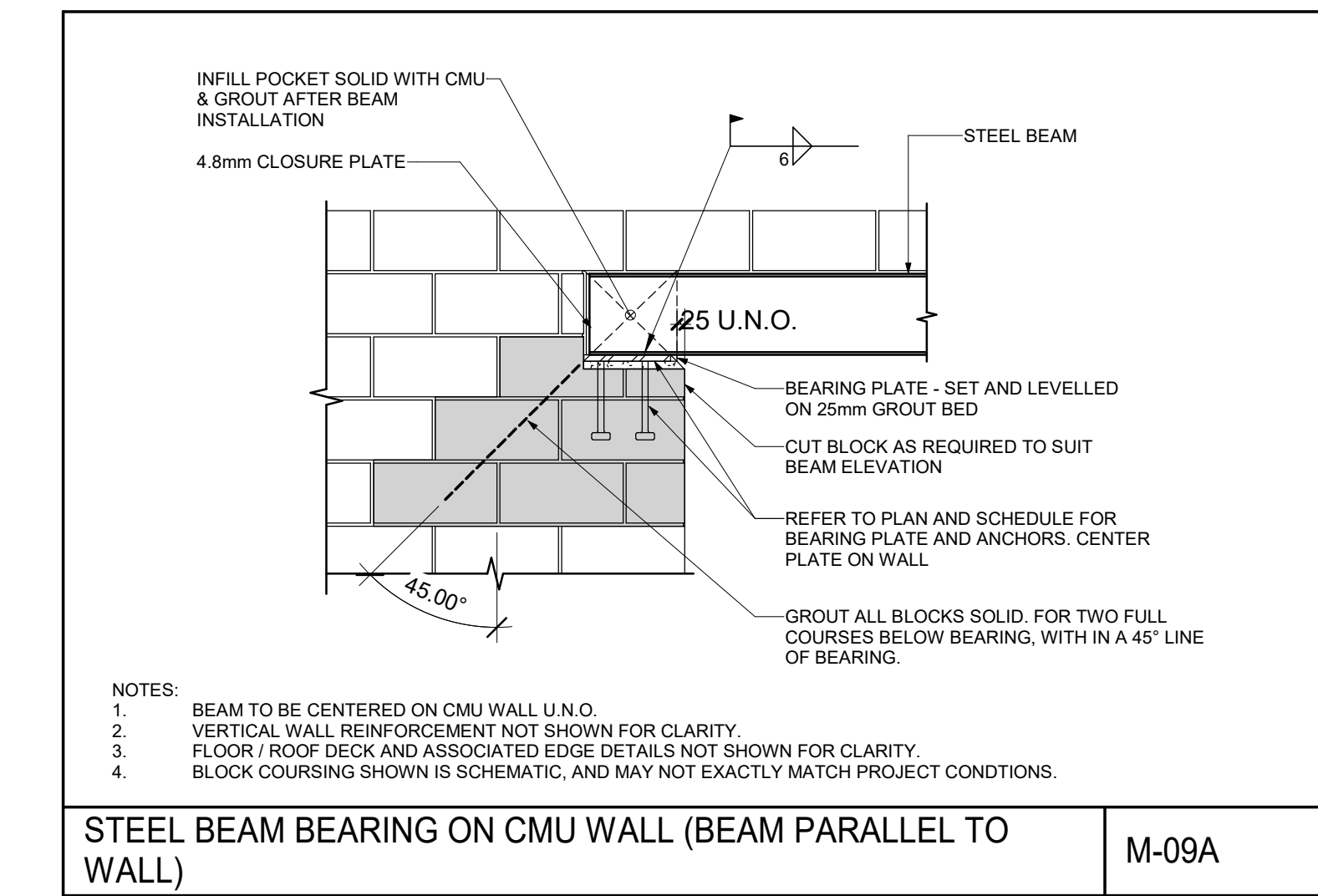
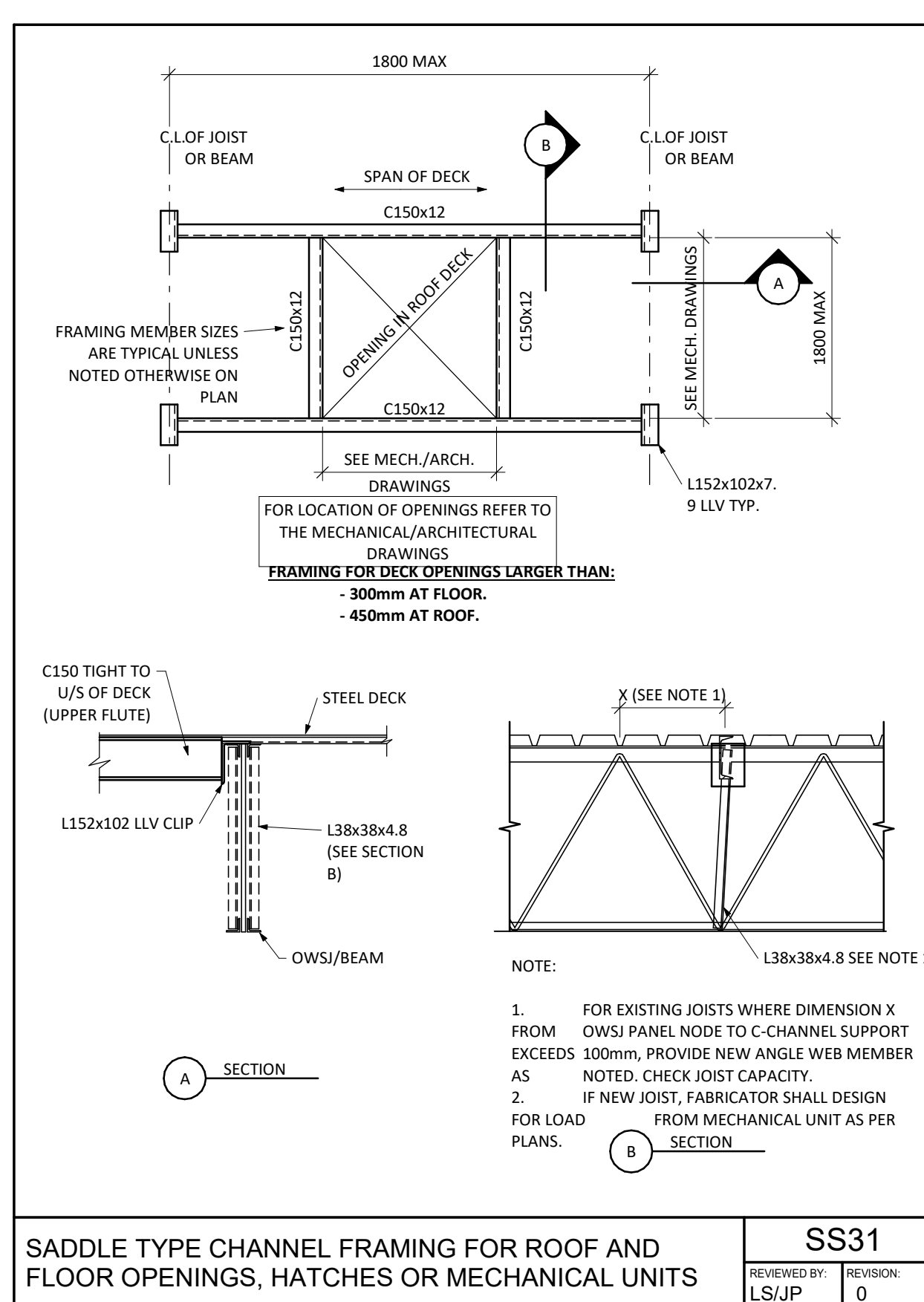
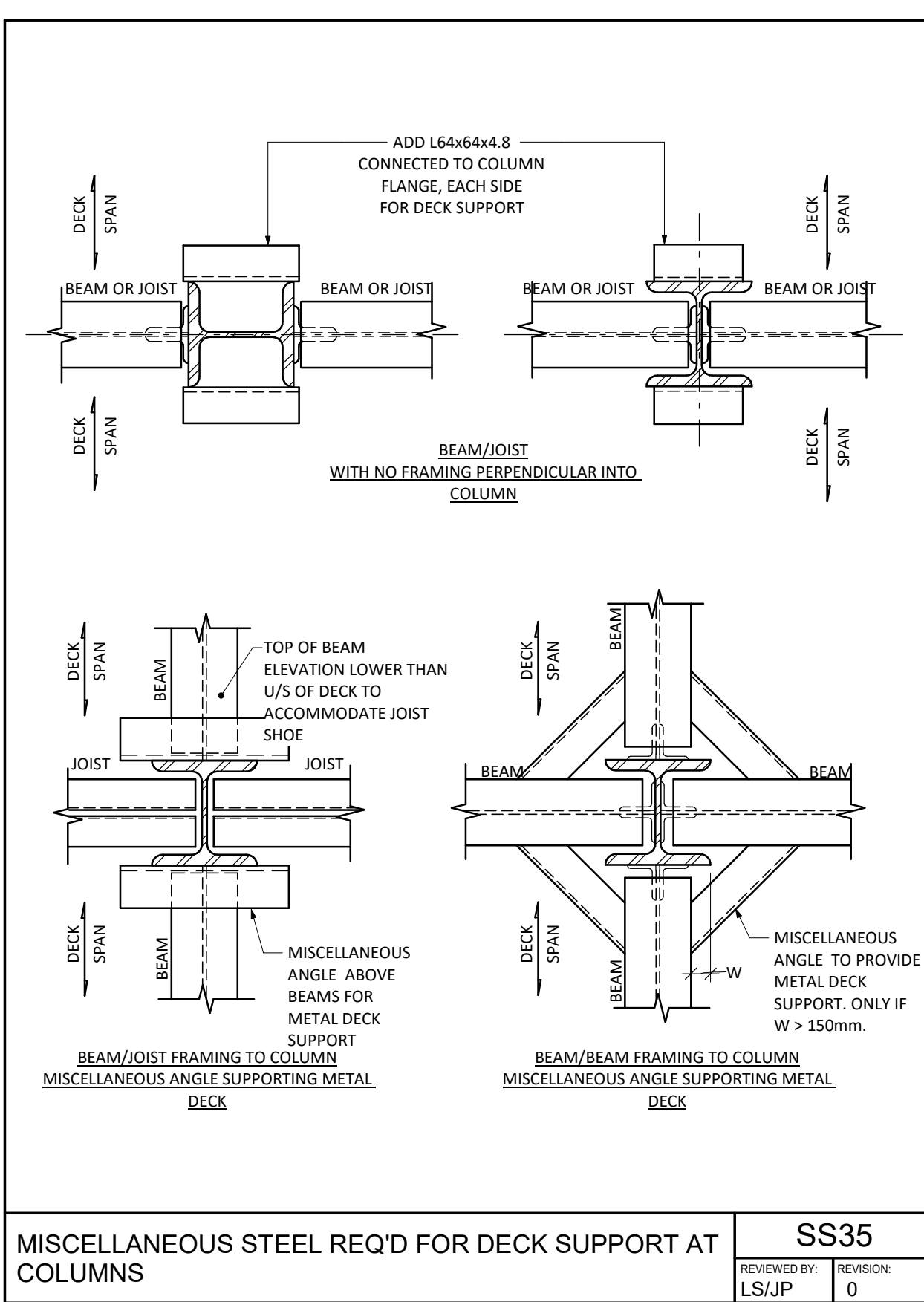
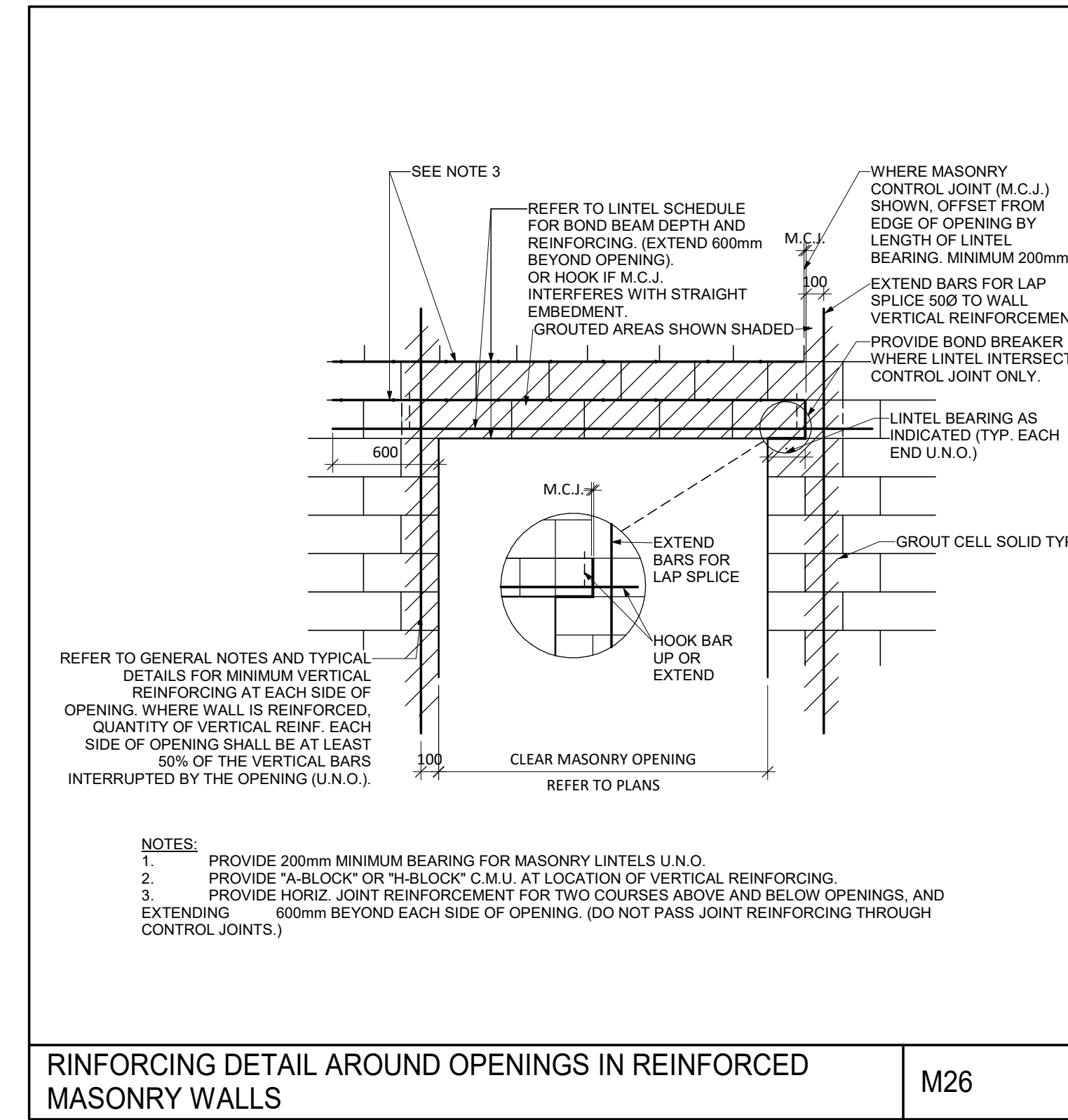
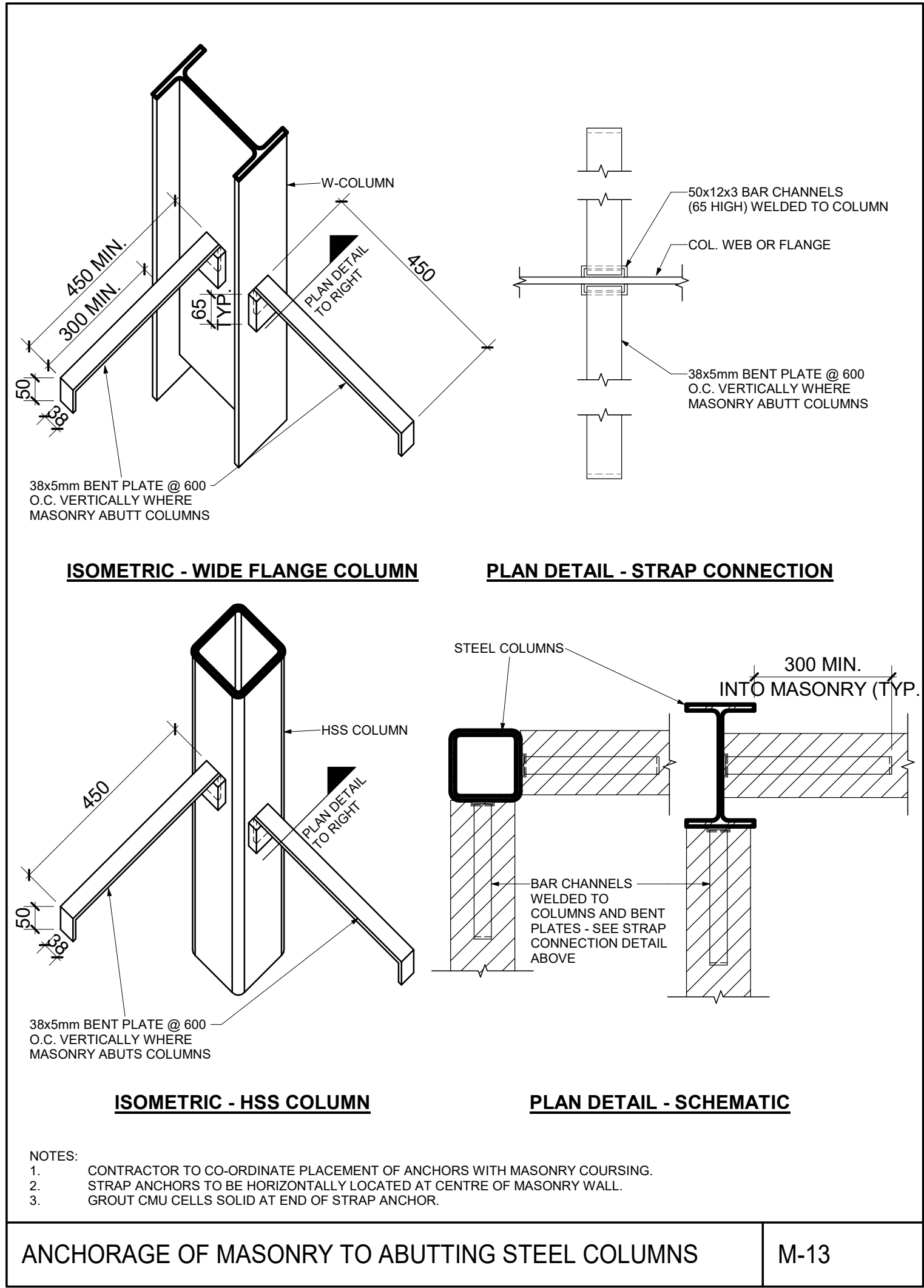
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GENERAL NOTES

Drawn By:	G.N.	Date:	05/06/19
Designed By:	O.P.G.	Checked By:	Z.B.

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Project No:		Drawing No:	

1802218	S001
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Key Plan:

Consultant:

MORRISON HERSHFIELD

Suite 300, 125 Commerce Valley Drive
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Client:

Ontario Shores
Centre for Mental Health Sciences

Project:

NEW POWERHOUSE

700 GORDON ST. W, WHITBY, ON L1N 5S9

Sheet Title:

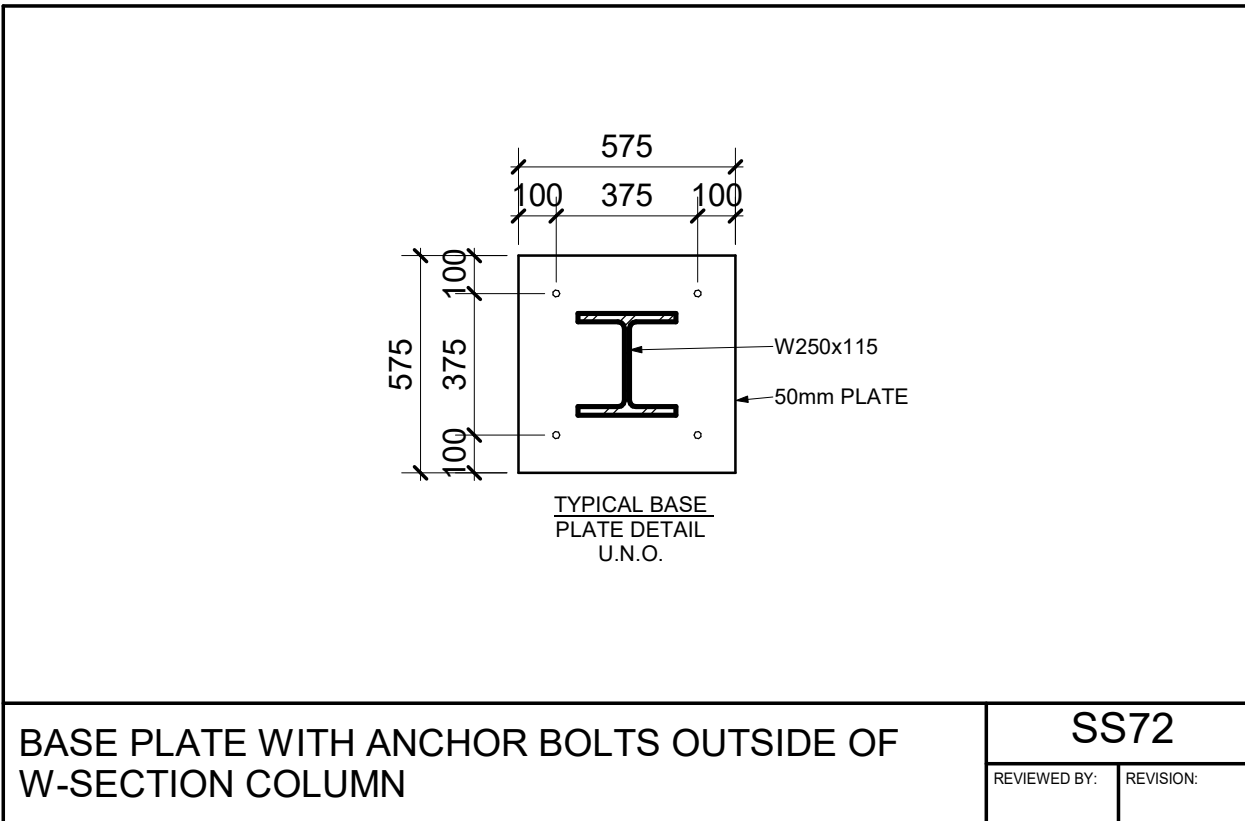
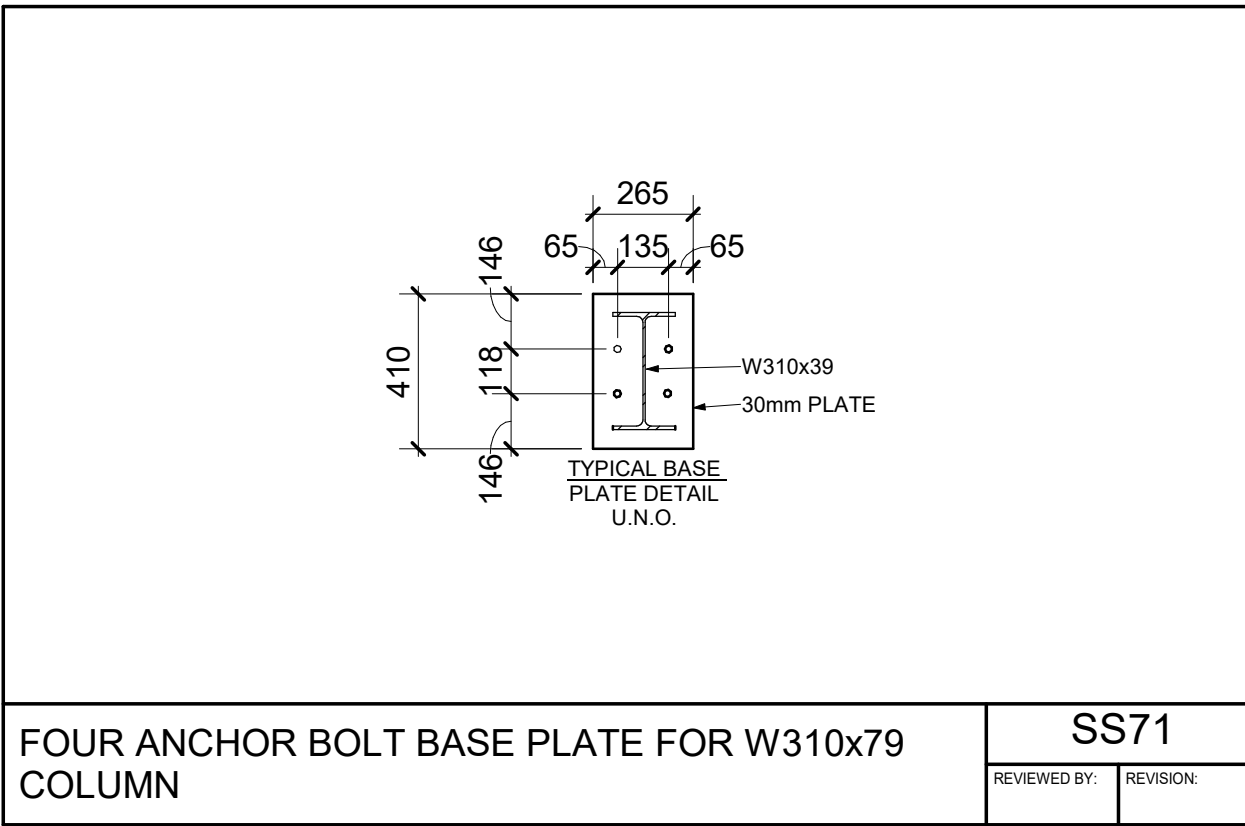
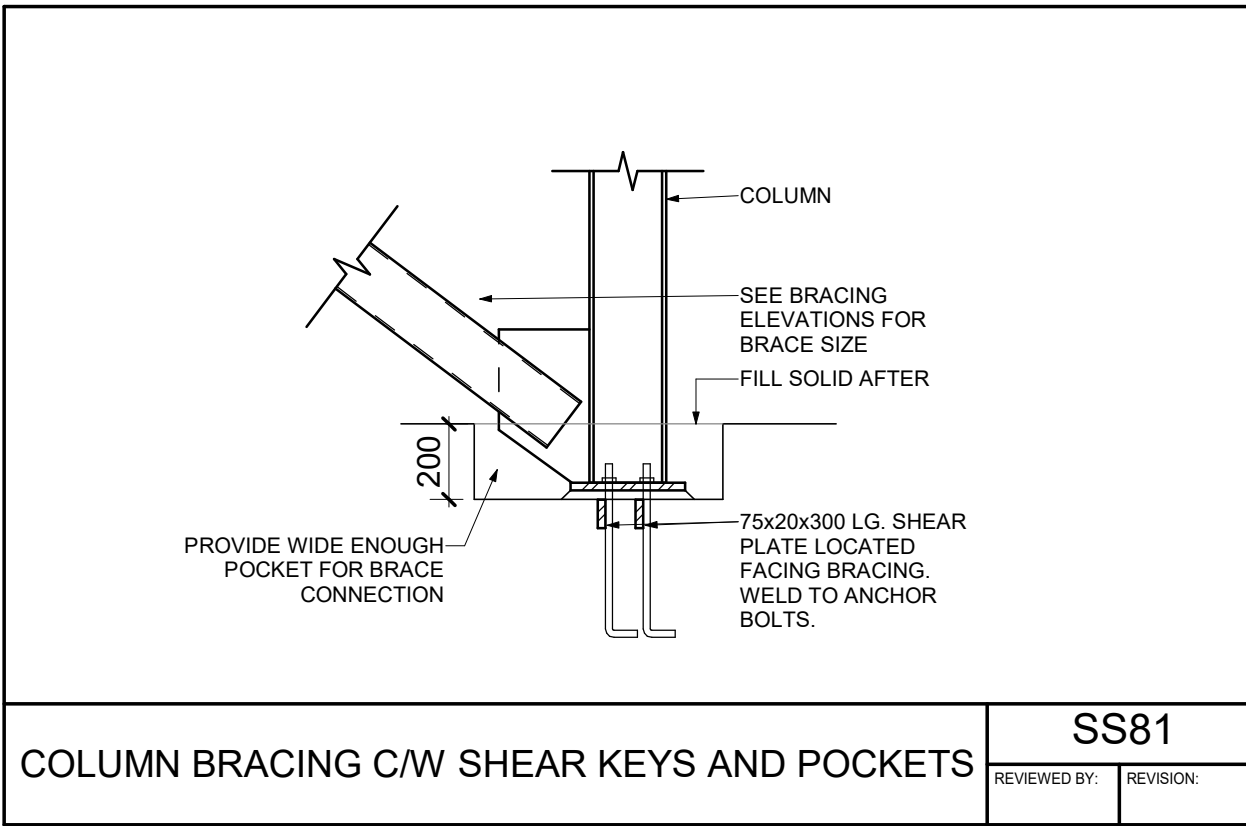
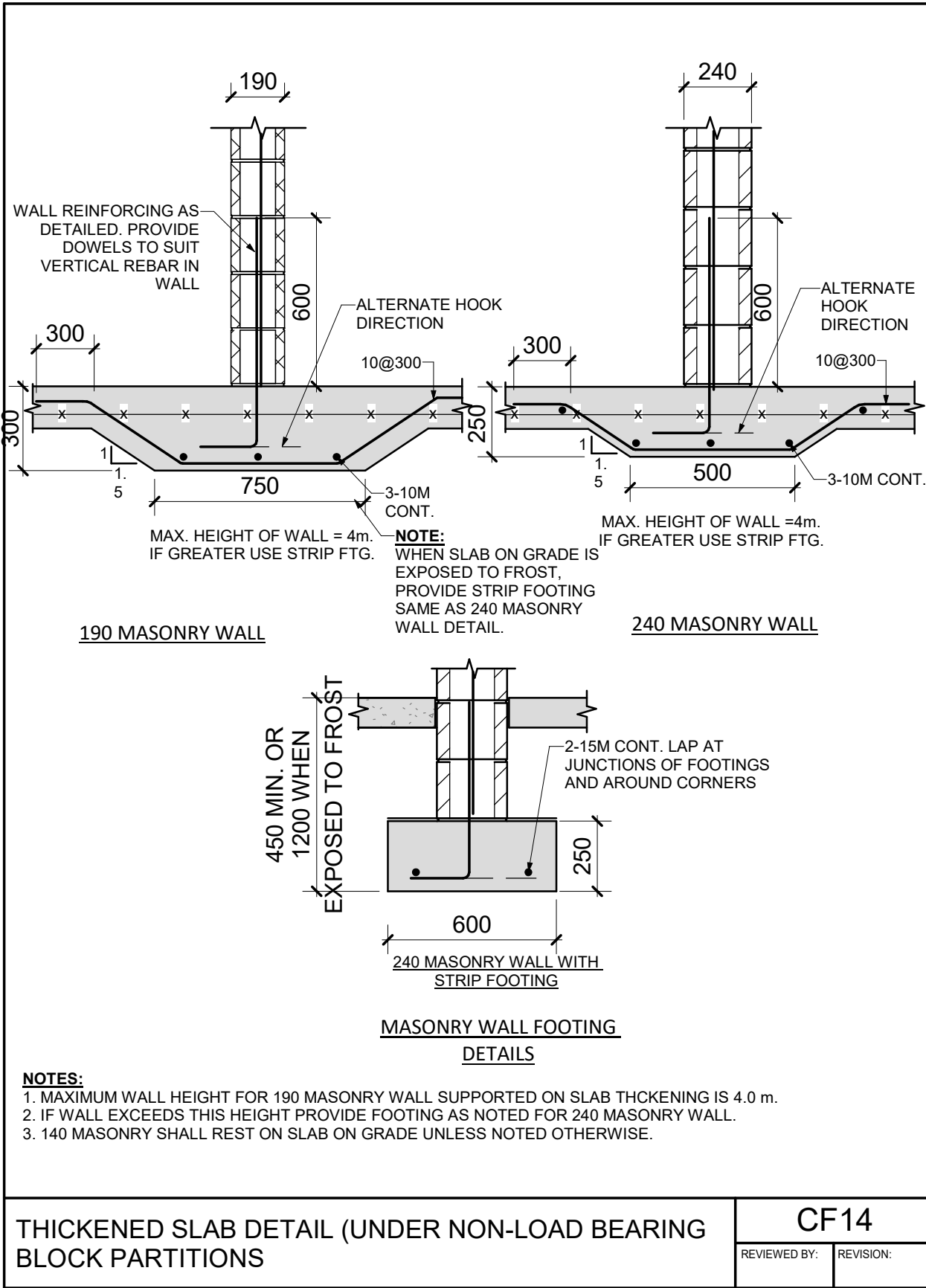
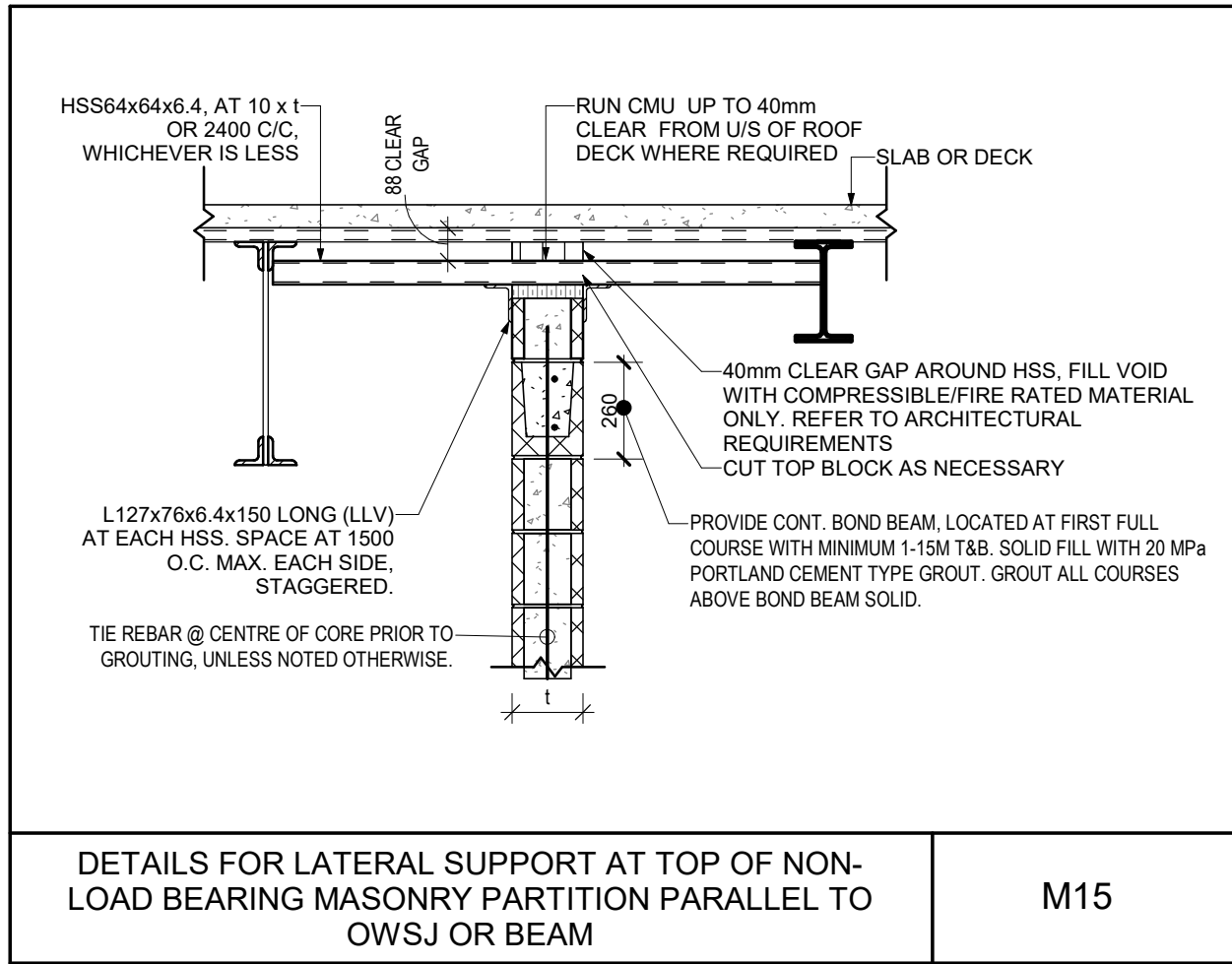
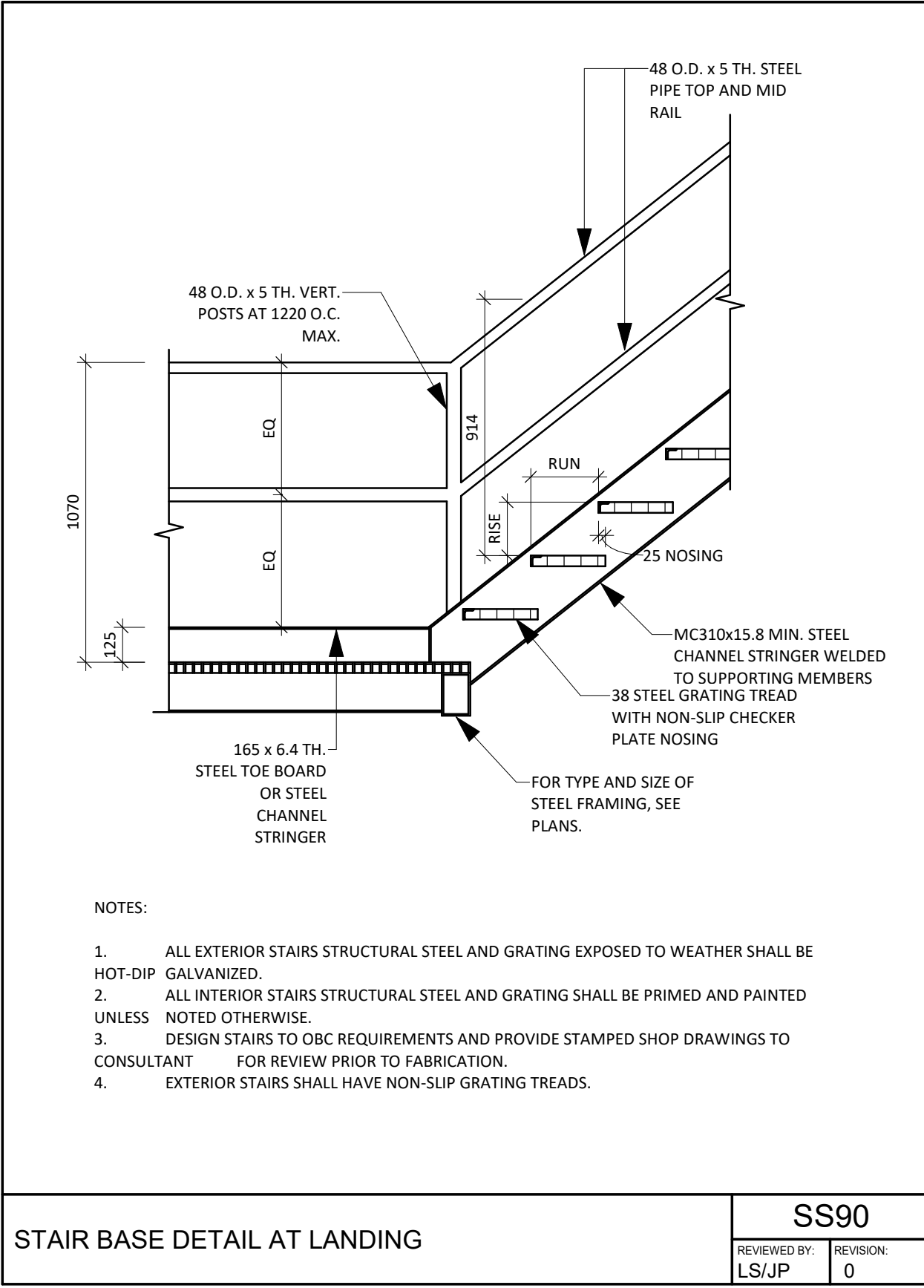
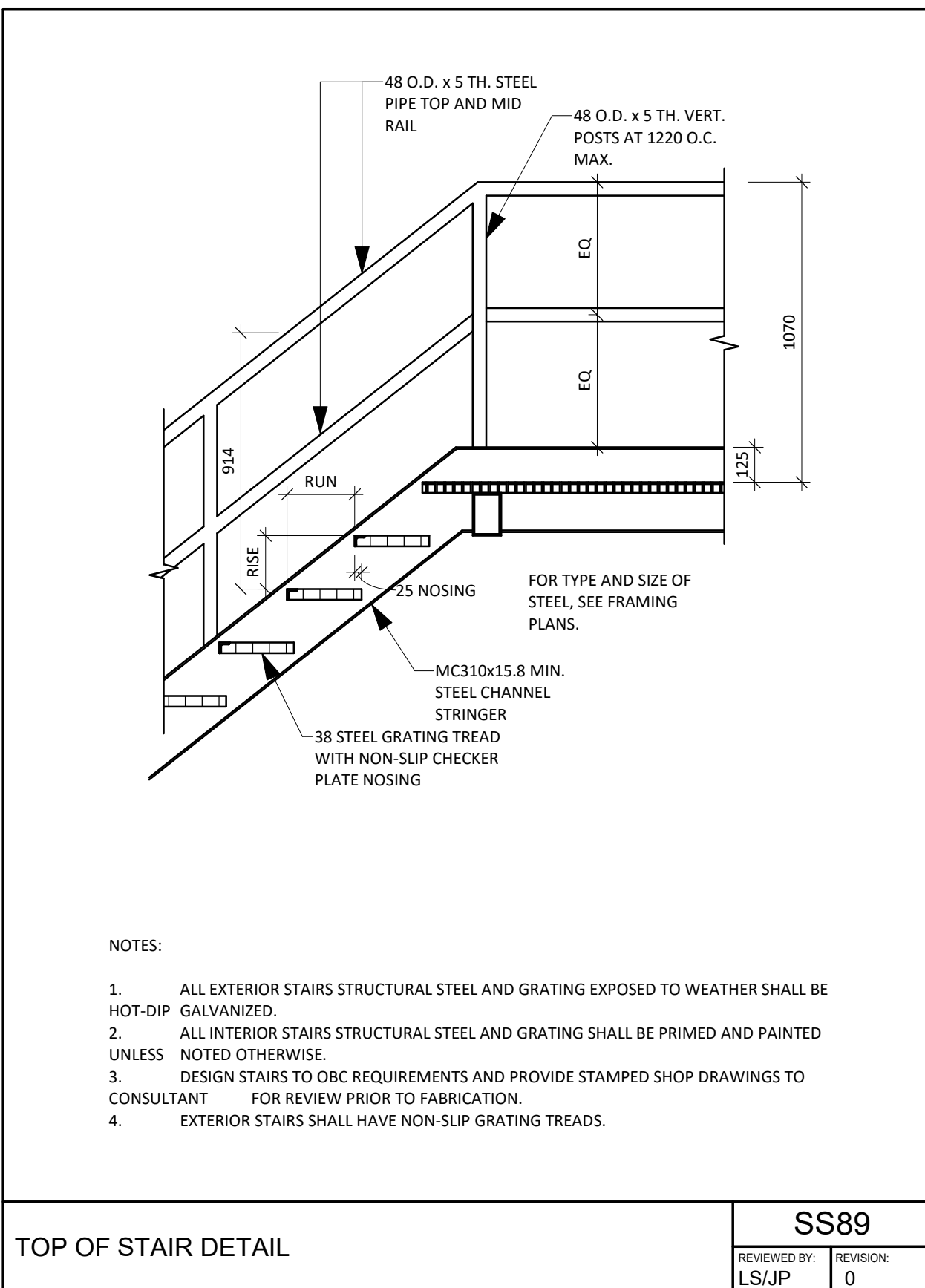
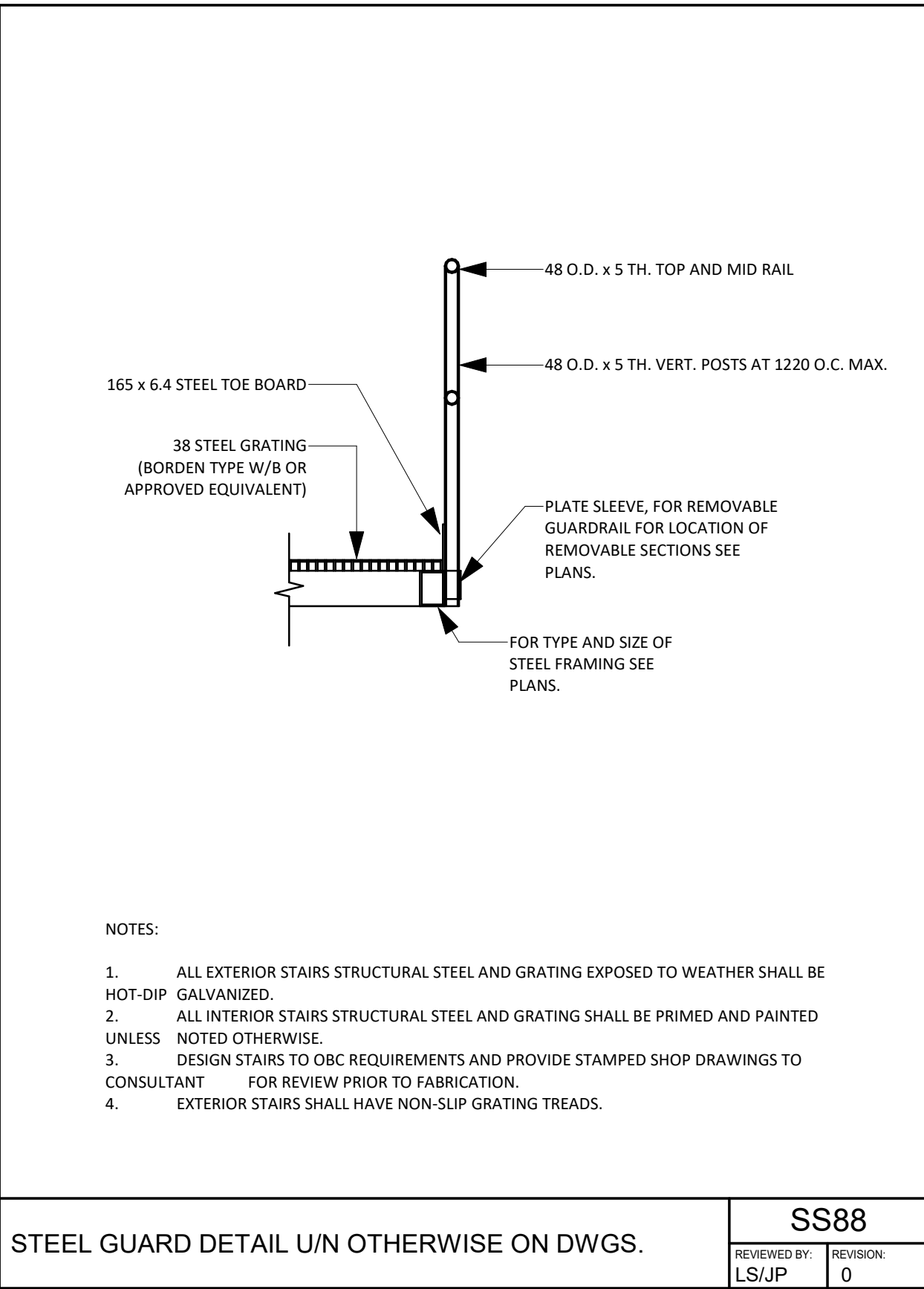
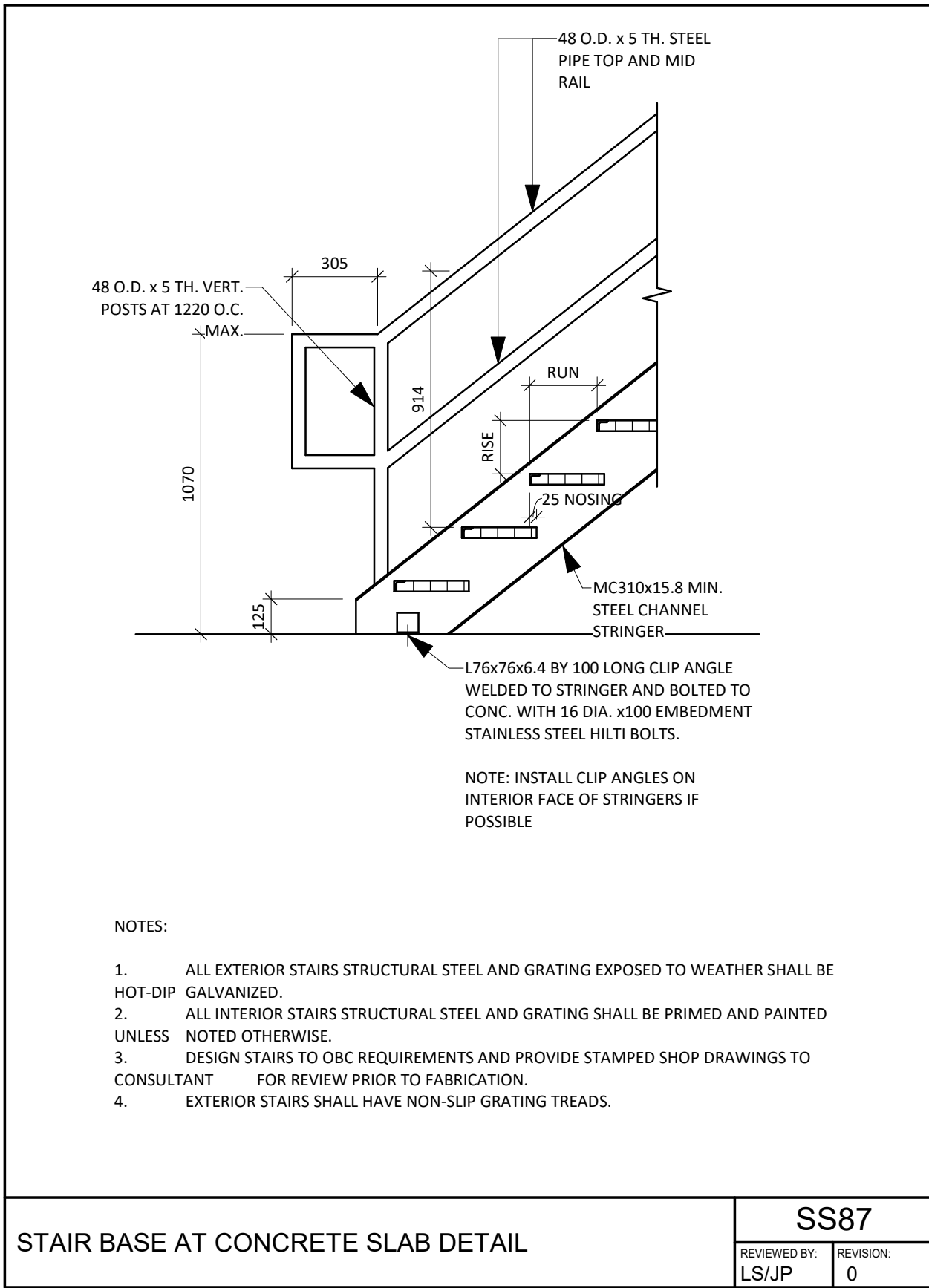
TYPICAL DETAILS

Drawn By: G.N. Date: 05/06/19

Designed By: O.P.G. Checked By: Z.B.

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Project No: 1802218 Drawing No: S004



Key Plan:

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NEW POWERHOUSE

700 GORDON ST. W, WHITBY, ON L1N 5S9

Sheet Title:

TYPICAL DETAILS

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Designed By: O.P.G. Checked By: Z.B.

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Project No: 1802218 Drawing No: S005

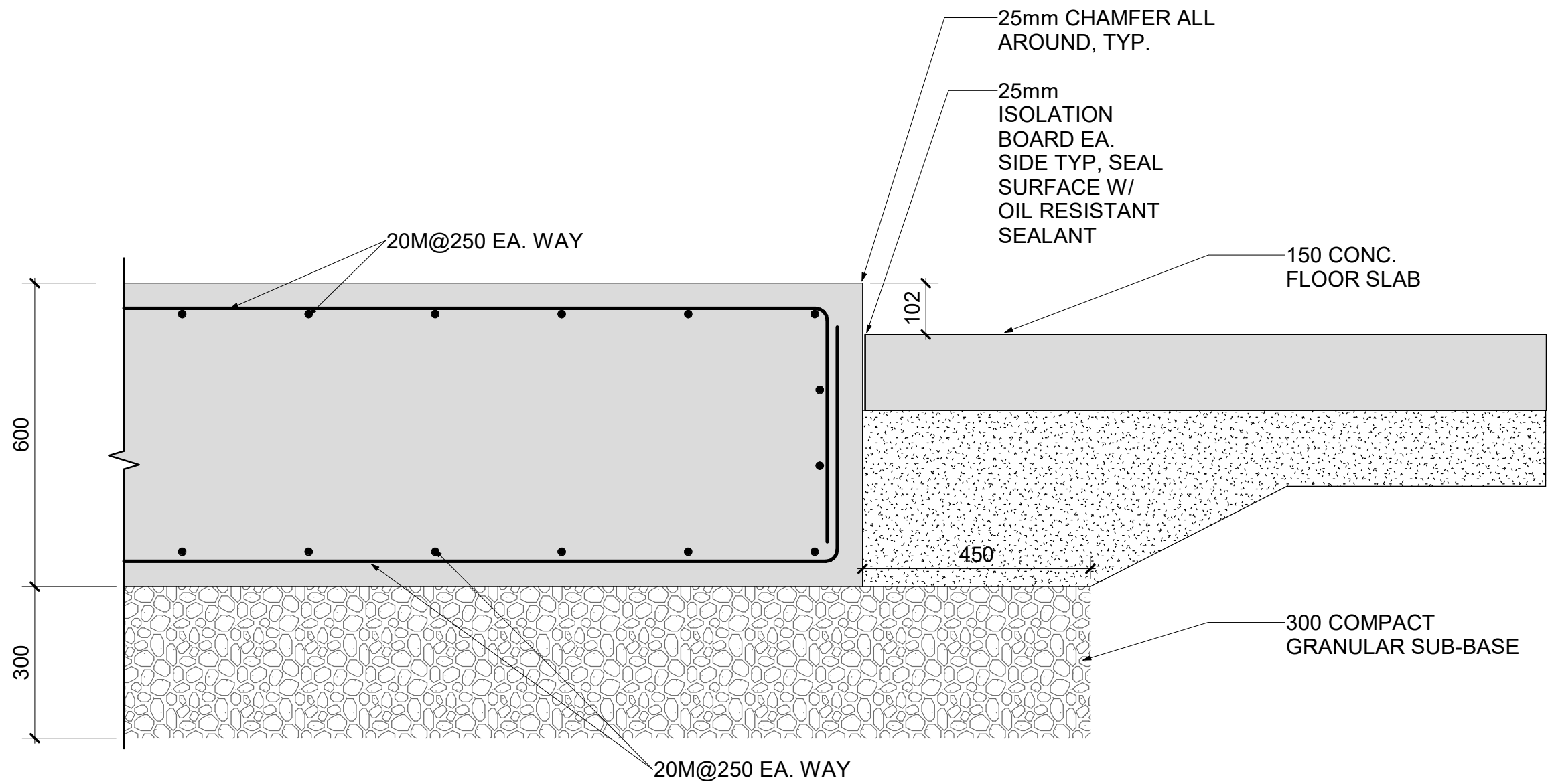
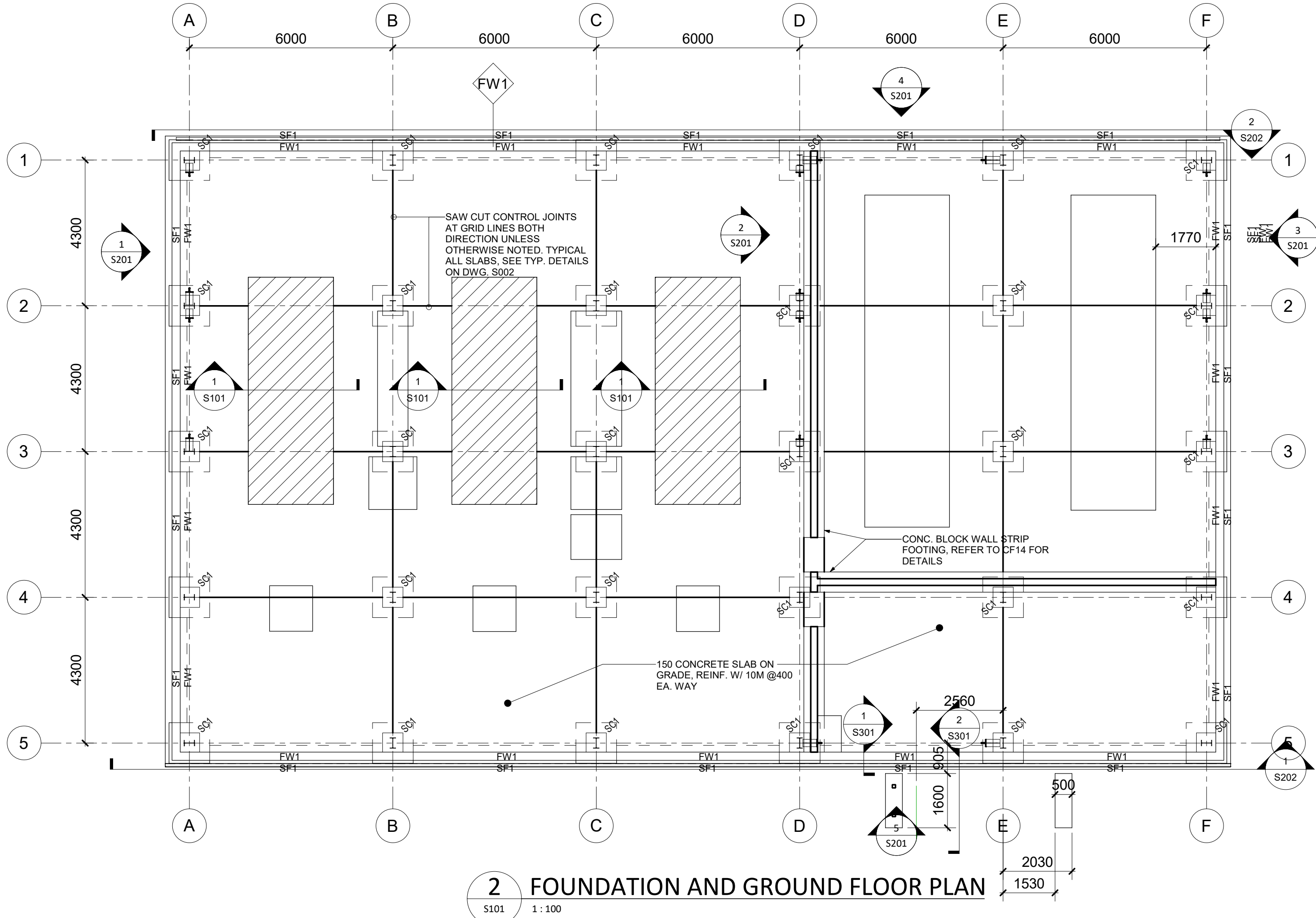
NOTES
THE FOUNDATION WAS DESIGNED FOR A FACTORED GEOTECHNICAL RESISTANCE AT ULTIMATE LIMIT STATE (ULS) OF 450 KPA AND A GEOTECHNICAL REACTION AT SERVICEABILITY LIMIT STATE (SLS) OF 300 KPA. INFORMATION WAS OBTAINED FROM THE FOLLOWING REPORTS:

1. PRELIMINARY GEOTECHNICAL INVESTIGATION 700 GORDON STREET, WHITBY, ONTARIO BY GHD ON SEPTEMBER 30, 2016
2. GEOTECHNICAL INVESTIGATION PROPOSED WHITBY PSYCHIATRIC HOSPITAL REDEVELOPMENT BY GOLDER ASSOCIATES LTD. DATED MARCH 3, 1992

CONTRACTOR TO RETAIN GEOTECHNICAL ENGINEER TO VERIFY BEARING PRESSURE INFORMATION FROM THE ABOVE REPORTS, PRIOR TO PROCEEDING WITH CONSTRUCTION.

DESIGN LOADS (OBC 2012)

1. ROOF DEAD LOAD (UNFACTORED):
ROOFING SYSTEM.....=0.33 kPa
STEEL DECK=0.10 kPa
OWSJ AND STEEL BEAM SELF-WEIGHT.....=0.15 kPa
MECH & ELEC.....=1.00 kPa
2. RAIN & SNOW LOAD (UNFACTORED):
GROUND SNOW Ss.....=1.20 kPa
ASSOCIATED RAIN Sr.....=0.40 kPa
IMPORTANCE FACTOR.....=1.25 (POST-DISASTER)
DESIGN SNOW S = Is x [(Ss X Cb x Cw X Cs Ca) + Sr]
= 1.25 x [(1.2 kPa x 0.80 x 1.0 x 1.0) + 0.40 kPa]
= 1.70 kPa
3. WIND LOAD (UNFACTORED):
HOURLY WIND PRESSURE (WHITBY):
q(1/50)=0.48 kPa
q(1/10)= 0.37 kPa
PRIMARY ACTION I W = Iw x q(WHITBY) x Ce x CpCg
- FOR DESIGN OF BUILDING LATERAL FORCE RESISTING SYSTEMS:
MAIN ZONE = 1.25 x 0.48 kPa x 0.92 x (0.75 + 0.55) = 0.72 kPa
EDGE ZONE = 1.25 x 0.48 kPa x 0.92 x (1.15 + 0.8) = 1.08kPa
(EDGE ZONE WITHIN 1.7m OF BUILDING EDGE)
4. SEISMIC LOAD:
HORIZONTAL SPECTRAL ACCELERATION VALUES:
Sa(0.2) = 0.19, Sa(0.5)=0.12, Sa(1.0)=0.071, Sa(2.0)=0.022
ACCELERATION-BASED SITE COEFFICIENT, Fa = 1.00
VELOCITY-BASED SITE COEFFICIENT, Fv = 1.00
SEISMIC IMPORTANCE FACTOR, IE = 1.5 (POST-DISASTER)
SEISMIC SITE CLASSIFICATION 'C'
IeFaSa(0.2) = 0.29
5. REFER TO MECHANICAL & ELECTRICAL DRAWINGS FOR EQUIPMENT LOCATIONS AND WEIGHTS.



NOTES:

FOUNDATION DESIGN BASED ON CAT 3512C GENERATOR HAVING A GROSS OPERATING WEIGHT OF 30,790 LBS.
FOUNDATION TO BE REVISED, IF REQUIRED, FOR GENERATOR TO BE INSTALLED.
DO NOT PROCEED WITH CONSTRUCTION UNTIL FOUNDATION IS CONFIRMED.

STRIP FOOTING SCHEDULE		
Mark	FOOTING SIZE	REINFORCEMENT
SF1	900X300	3-15M HORIZ.

FOUNDATION WALL SCHEDULE		
Mark	Type Comments	Description
FW1	1200X250	15M HORIZ. @ 250 C/C, 15M VERT. @ 600 C/C

FOOTING SCHEDULE		
MARK	FOOTING SIZE	REINFORCEMENT
F1	1200x1200x350	4-15M EA. WAY

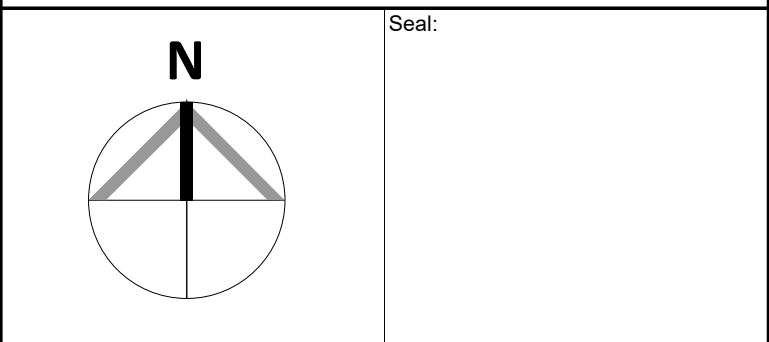
CONCRETE PIER SCHEDULE				
MARK	SIZE (mm)		REINFORCEMENT	REMARKS
	L	W		
P1	600	600	8-20M VERT. 10M@200 TIES	EXTRA 10M TIE @ 100 FROM TOP OF PIER

COLUMN SCHEDULE		
MARK NO.	COLUMN SIZE	BASE PLATE SIZE AND ANCHOR BOLTS
SC1	W310x39	30mm THICK BASE PLATE W/ 4 3/4" A307 BOLTS

Key Plan:

Consultant:

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Client:

Ontario Shores
Centre for Mental Health Sciences

Project:

NEW POWERHOUSE

700 GORDON ST. W, WHITBY, ON L1N 5S9

Sheet Title:

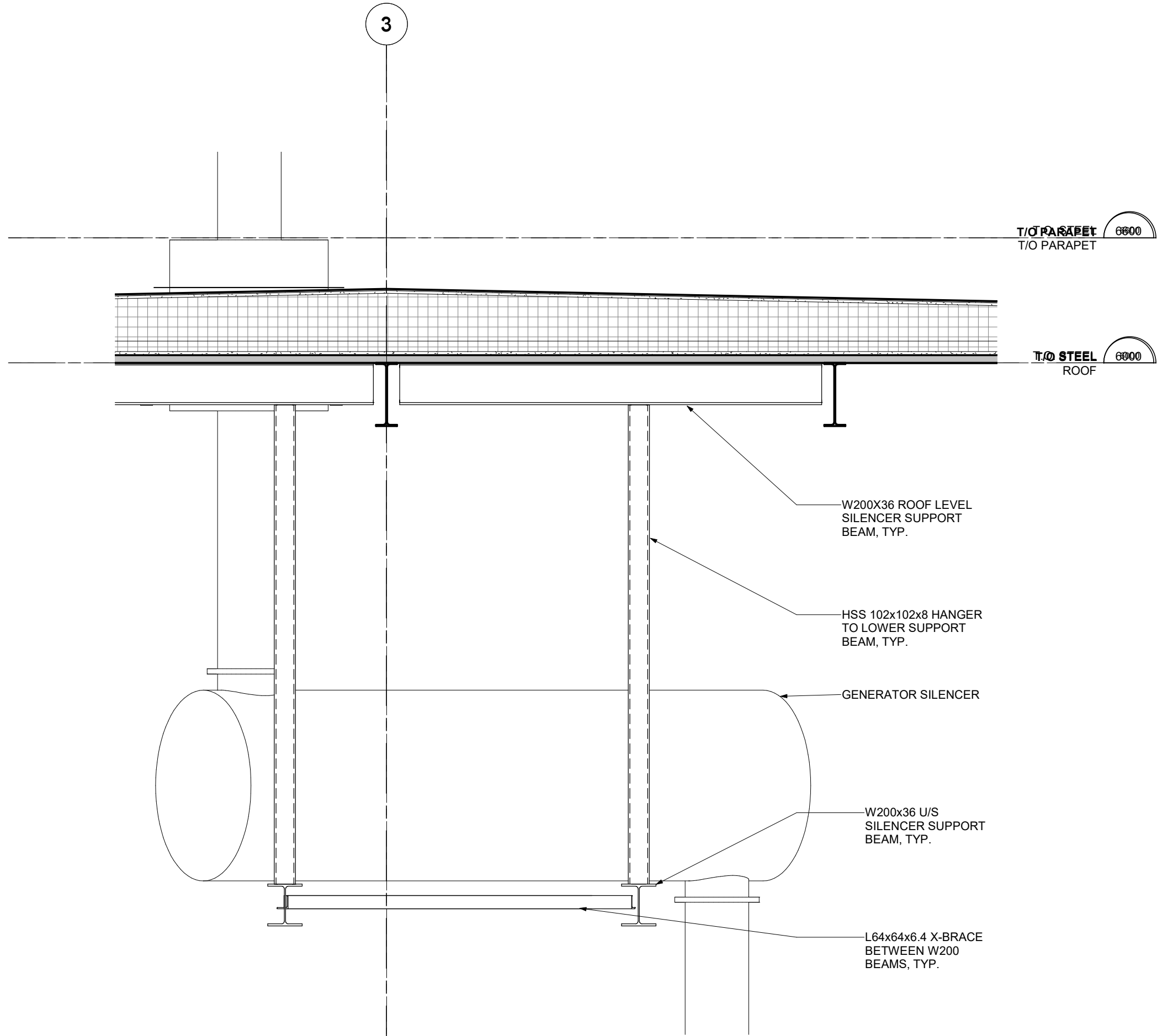
FOUDATION PLAN

Drawn By: GN Date: 05/06/19

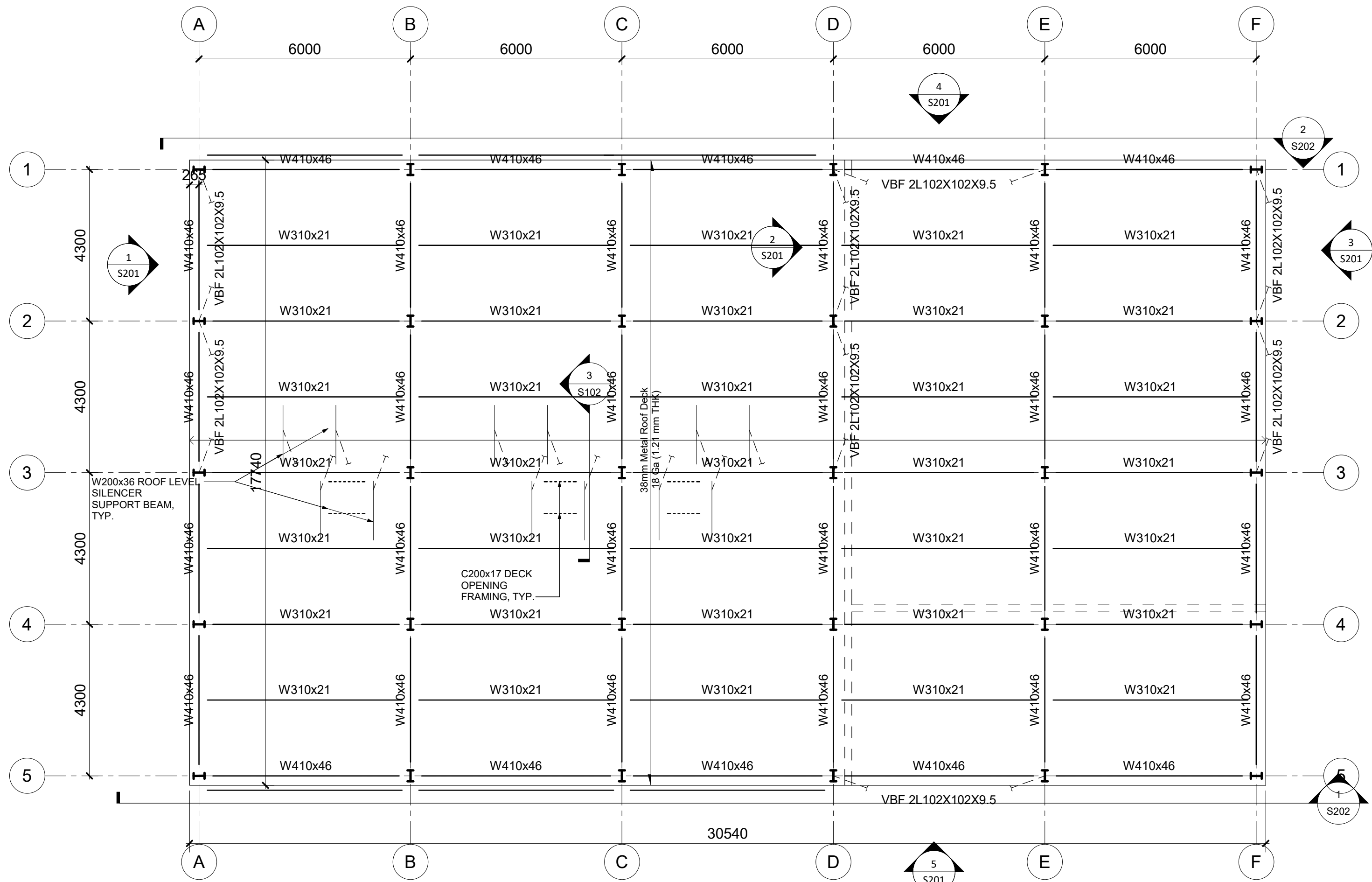
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Project No: 1802218 Drawing No: S101



3 STRUCTURAL SECTION - GENERATOR SILENCER SUPPORT TYP.
S102 1:20



1 ROOF FRAMING PLAN
S102 1:100

WIND UPLIFT LOADING WIND PRESSURE q(WHITBY) = 0.48kPa	
REGION	WIND UPLIFT PRESSURE (kPa)
	1.16
	1.71
	2.92

Endzone = 1700 mm

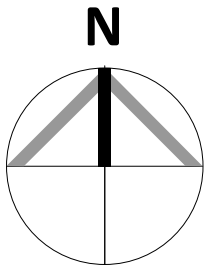


2 WIND UPLIFT DIAGRAM
S102 1:100

Key Plan:

Consultant:

MORRISON HERSHFIELD
Suite 300, 125 Commerce Valley Drive
Markham, ON L3T 7W4
Tel: (416)499-3110 Fax: (416)499-9658



Seal:

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Project:

NEW POWERHOUSE

700 GORDON ST. W, WHITBY, ON L1N 5S9

Sheet Title:

ROOF FRAMING PLAN

Drawn By: G.N. Date: 05/06/19

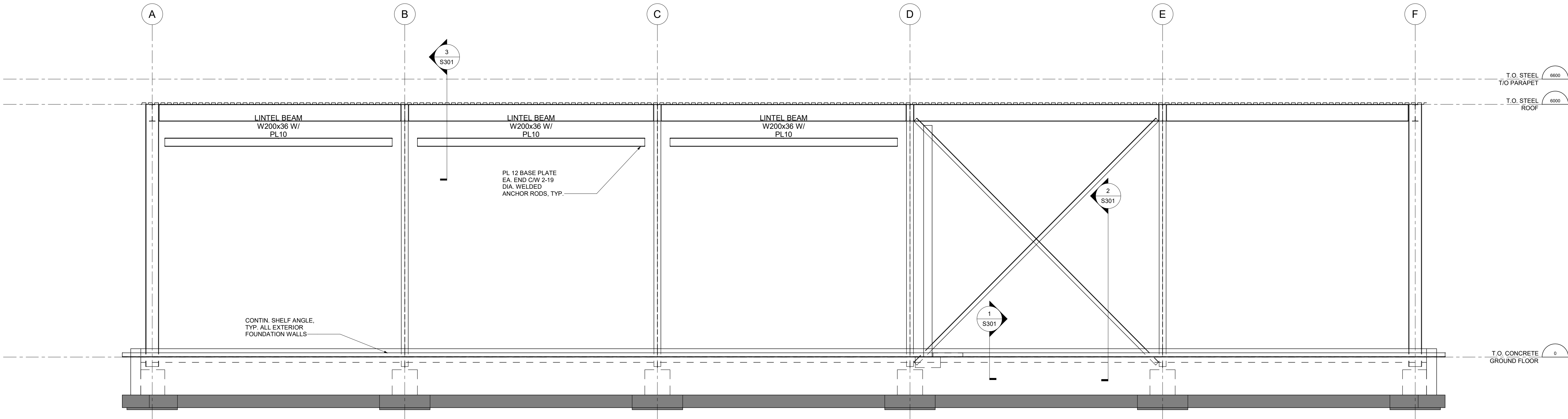
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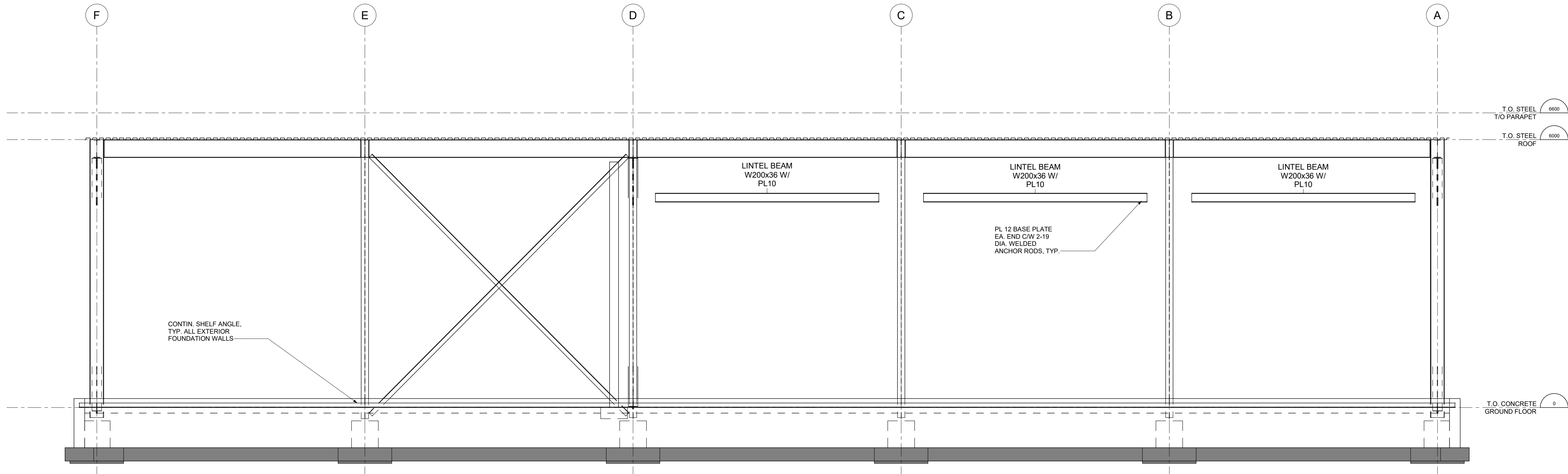
Project No: 1802218 Drawing No: S102



S201



1 SOUTH ELEVATION
1 : 50



2 NORTH ELEVATION
1 : 50

Key Plan:

Consultant:

MORRISON HERSHFIELD

Suite 300, 125 Commerce Valley Drive
Markham, ON L3T 7W4
Tel: (416)499-3110 Fax: (416)499-9658

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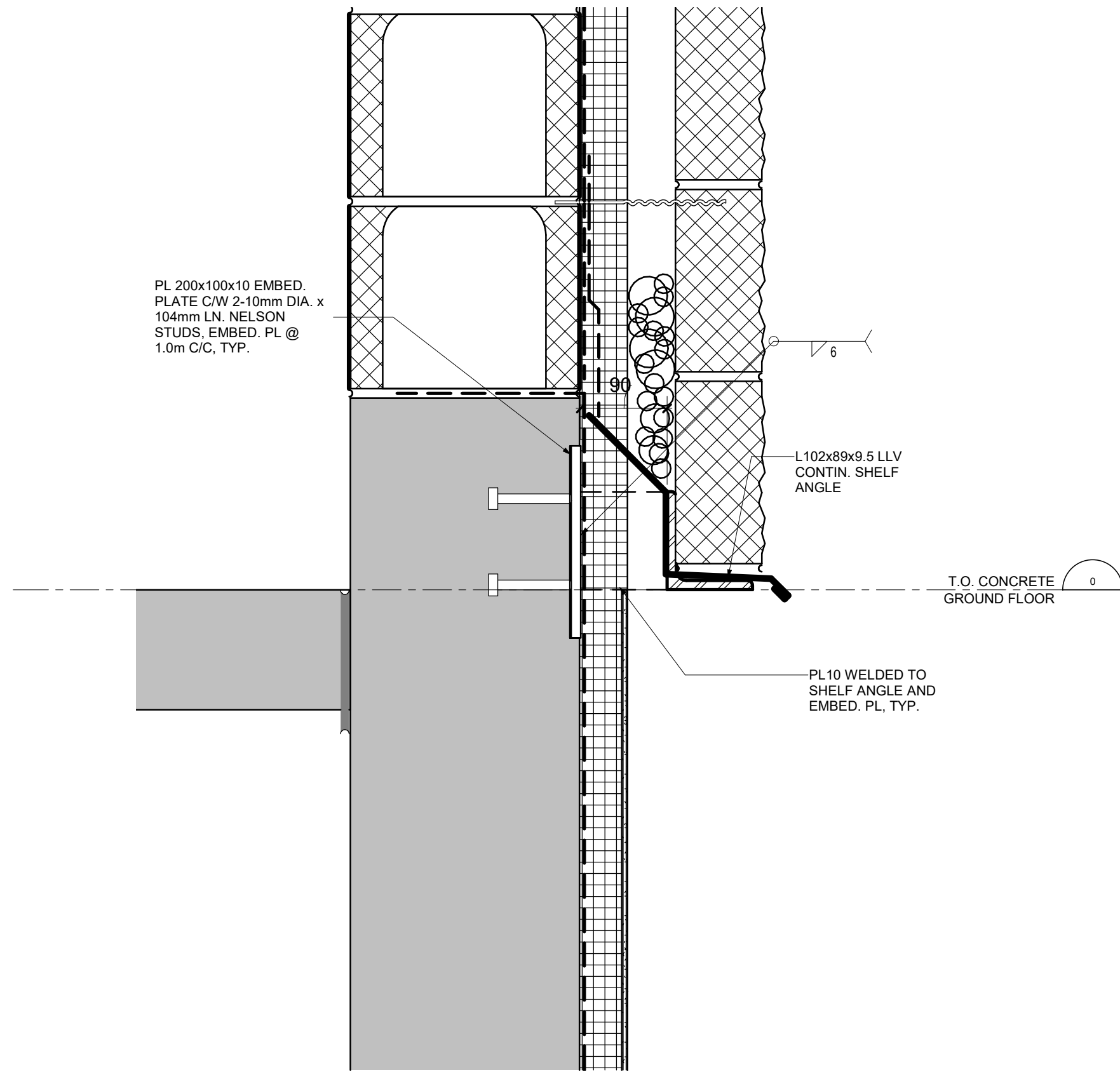
NEW POWERHOUSE

700 GORDON ST. W, WHITBY, ON L1N 5S9

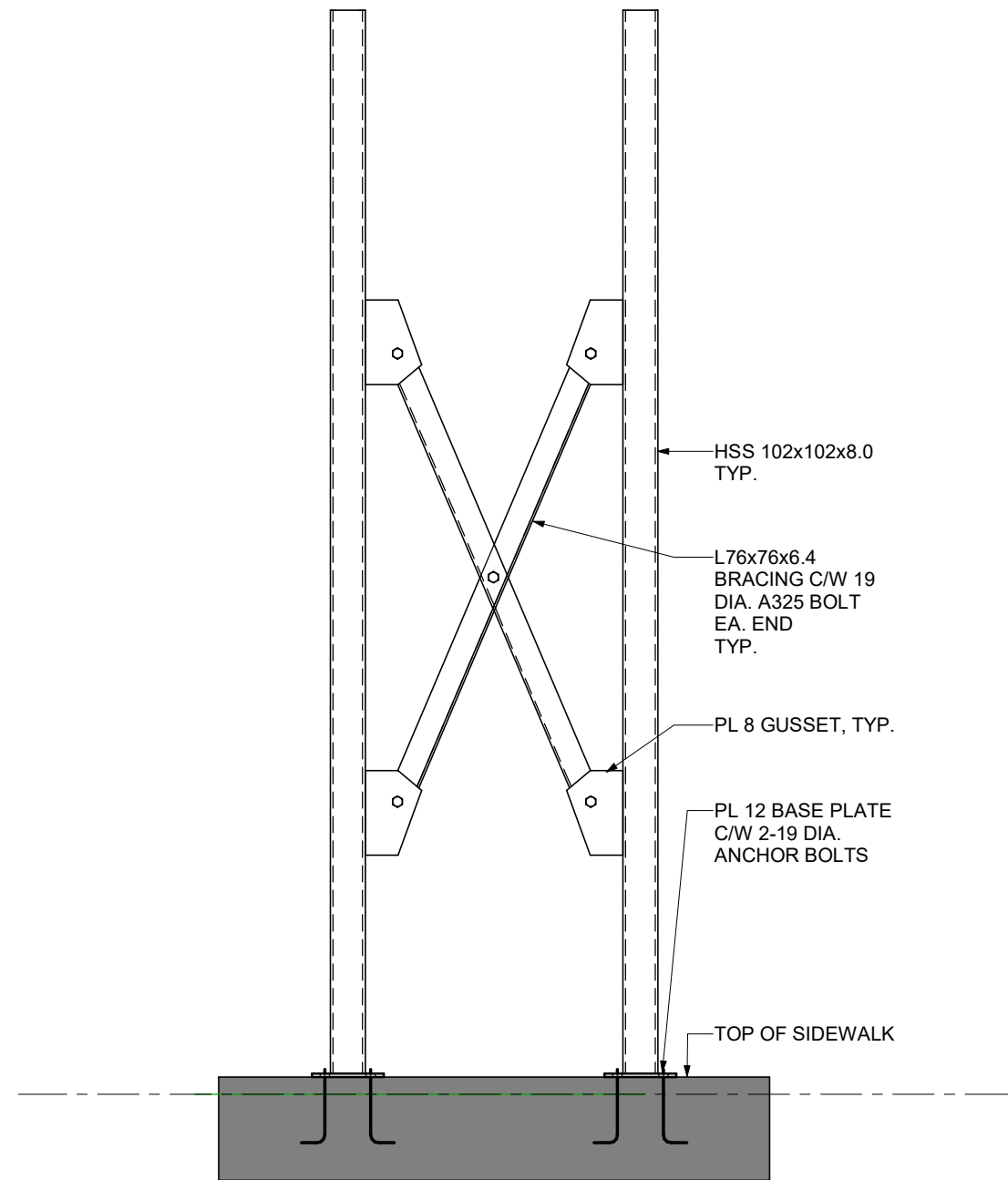
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STRUCTURAL FRAMING
ELEVATIONS

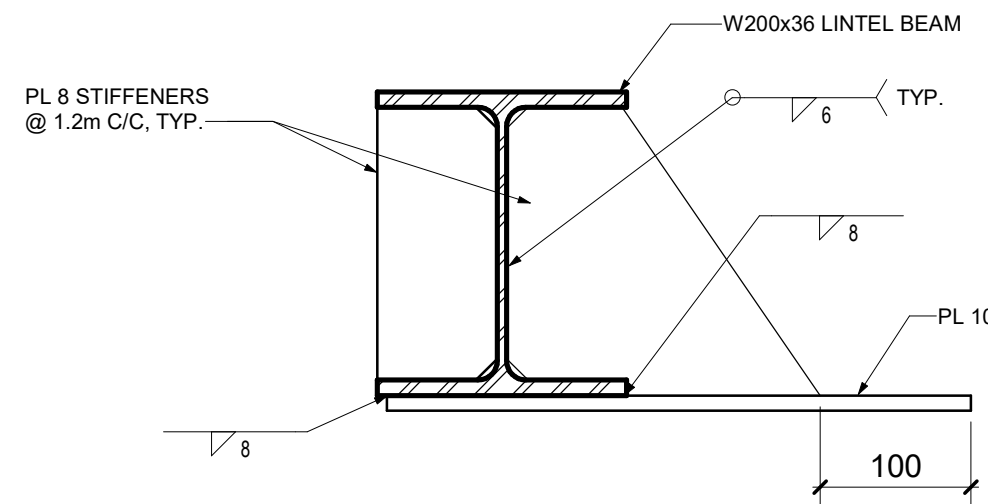
Drawn By:	G.N.	Date:	05/06/19
Designed By:	O.P.G.	Checked By:	Z.B.
Scale:	1 : 50	File Path:	BM 360 (RM) - 1802218 - Ontario Shores Powerhouse 1802218 Ontario Shores Powerhouse 1802218 STRUC.dwg
Project No:	1802218	Drawing No:	S202



1 SECTION DETAIL - TYP. BASE OF WALL
S301 1:5



2 PLATFORM BRACING ELEVATION
S301 1:20

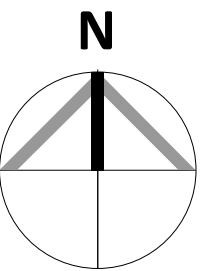


3 LINTEL BEAM
S301 1:5

Key Plan:

Consultant:

MORRISON HERSHFIELD
Suite 300, 125 Commerce Valley Drive
Markham, ON L3T 7W4
Tel: (416)499-3110 Fax: (416)499-9658



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Client:



Project:

NEW POWERHOUSE

700 GORDON ST. W, WHITBY, ON L1N 5S9

Sheet Title:

STRUCTURAL SECTIONS

Drawn By: GN Date: 05/31/19

Designed By: OPG Checked By: ZB

Scale: As indicated File Path: B:\300-1041-1802218-Ontario Shores
Powerhouse\1802218-Ontario Shores
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Project No: 1802218 Drawing No: S301