

GENERAL NOTES AND SPECIFICATIONS

1. GENERAL

- 1.1. CHECK DIMENSIONS ON STRUCTURAL DRAWINGS AGAINST ARCHITECTURAL AND MECHANICAL DRAWINGS AND EXISTING SITE CONDITIONS. REPORT INCONSISTENCIES TO CONSULTANT BEFORE PROCEEDING WITH THE WORK.
- 1.2. READ DRAWINGS IN CONJUNCTION WITH THE SPECIFICATIONS ON THESE DRAWINGS.
- 1.3. DO NOT EXCEED DURING CONSTRUCTION, DESIGN LIVE LOADS SHOWN ON PLANS, REDUCE AS NECESSARY UNTIL MATERIALS REACH DESIGN STRENGTH.
- 1.4. DO NOT SCALE DRAWINGS.
- 1.5. PROVIDE NECESSARY SHORING FOR SAFE COMPLETION OF WORK.
- 1.6. WHERE NEW WORK CONNECTS TO EXISTING CONSTRUCTION, DETERMINE EXISTING CONDITIONS AND ALL DIMENSIONS ON SITE INCLUDING VERIFICATION OF ALL DIMENSIONS ON DRAWINGS. REPORT ANY NECESSARY ADJUSTMENT TO CONSULTANT
- 1.7. CLEAN UP:
- 1.7.1. CLEAR AWAY FROM BUILDING SITE, EXCESS AND WASTE MATERIALS AND DEBRIS RESULTING FROM WORK. LEAVE PREMISES IN CONDITION ACCEPTABLE TO OWNER.

2. DESIGN, CONSTRUCTION SAFETY, AND REVIEW

- 2.1. DESIGN IS IN ACCORDANCE WITH THE ONTARIO BUILDING CODE, LATEST EDITION.
- 2.2. CONCRETE IS DESIGNED IN ACCORDANCE WITH CSA STANDARD CAN/CSA-A23.3.
- 2.3. STRUCTURAL STEEL IS DESIGNED IN ACCORDANCE WITH CSA STANDARD CAN/CSA-S16-14.
- 2.4. MASONRY IS DESIGNED IN ACCORDANCE WITH CSA STANDARD CAN/CSA-S304-14
- 2.5. UNIT FLOOR LOADINGS GIVEN ON DRAWINGS ARE UNFACTORED.
- 2.6. MEMBER FORCES GIVEN ON DRAWINGS ARE FACTORED.
- 2.7. CONSTRUCTION PROCEDURES AND SAFETY:
- 2.7.1. MILMAN & ASSOCIATES LIMITED SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION SAFETY, MEANS, TECHNIQUES, AND CONSTRUCTION PROCEDURES OR ANY TEMPORARY WORK AS MAY BE REQUIRED BY THE CONTRACTOR TO BUILD AND COMPLETE THE STRUCTURE IN CONFORMITY WITH CONTRACT DOCUMENTS.
- 2.7.2. CONTRACTOR IS RESPONSIBLE FOR SAFE COMPLETION OF WORK.
- 2.7.3. THE CONTRACTOR SHALL MAKE ADEQUATE PROVISIONS FOR SUFFICIENT TEMPORARY BRACING TO KEEP THE STRUCTURE PLUMB AND IN TRUE ALIGNMENT AT ALL PHASES OF THE CONSTRUCTION, UNTIL COMPLETION.
- 2.7.4. THE CONTRACTOR SHALL MAKE ADEQUATE PROVISIONS FOR SAFE SAW CUTTING/JACK HAMMERING/REMOVAL OF THE EXISTING CONCRETE.
- 2.8. REVIEW OF CONSTRUCTION:
- 2.8.1. CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR SUPERVISION OF CONSTRUCTION.
- 2.8.2. SITE VISITS AND REVIEW BY CONSULTANT OR HIS REPRESENTATIVE ARE INTENDED FOR THE SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH THE GENERAL DESIGN CONCEPT.
- 2.8.3. CONSULTANT'S REVIEW SHALL NOT MEAN THAT MILMAN & ASSOCIATES LIMITED HAS SEEN AND SUPERVISED ALL CONSTRUCTION PROCEDURES. RESPONSIBILITY FOR CONSTRUCTION PROCEDURES SHALL REMAIN WITH THE CONTRACTOR PERFORMING THE WORK.
- 2.8.4. REVIEW BY THE CONSULTANT WILL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY FOR ERRORS AND OMISSIONS AND FOR MEETING ALL REQUIREMENTS LISTED IN CONTRACT DOCUMENTS.

3. CONCRETE AND REINFORCING STEEL

- 3.1. PROPORTION OF CONCRETE IN ACCORDANCE WITH CSA STANDARD CAN/CSA-A23.1/A23.2. "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION/METHODS OF TEST FOR CONCRETE".

3.1.1. CONCRETE PROPERTIES:

ELEMENT	MIN. 28-DAY COMPRESSIVE STRENGTH (MPa)	MAX. SLUMP (mm)	MAX. AGG. (mm)	EXPOSURE CLASS	RAPID CHLORIDE ION PERMEABILITY (COULOMBS)
CONC. SLAB	35	75	20	C-1	< 1500
CONC. SLAB-ON-GRADE	32	75	20	C-2	< 1500
GENERATOR FOUNDATION	35	75	20	C-1	< 1500
PITCH POCKET	35	75	20	C-1	< 1500

- 3.1.2. PORTLAND CEMENT: TYPE 10, NORMAL.
- 3.1.3. COARSE AGGREGATE: NORMAL WEIGHT, MAXIMUM SIZE 19mm [3/4"].
- 3.1.4. MAXIMUM SLUMP AT POINT OF DISCHARGE, PRIOR TO THE ADDITION OF SUPERPLASTICIZER, AS SHOWN IN TABLE ABOVE
- 3.1.5. AIR ENTRAINMENT: TOTAL AIR CONTENT AS RECOMMENDED BY THE REFERENCE STANDARD FOR THE CLASS OF EXPOSURE.
- 3.1.6. CONCRETE MIXES:
- 3.1.6.1. READY MIX, WITH 28 DAY COMPRESSIVE STRENGTH AS INDICATED ON DRAWINGS, AND IN SPECIFICATIONS.
- 3.1.6.2. AIR DRY UNIT WEIGHT: MAXIMUM 2300kg/m<sup>3</sup> [145lbs/ft<sup>3</sup>] ADJUSTED PROPORTIONALLY FOR MAXIMUM AIR CONTENT LISTED IN CSA STANDARD A23.1.
- 3.1.6.3. DESIGN CONCRETE MIX IN CONFORMANCE WITH CSA STANDARD A23.1
- 3.2. REINFORCING STEEL:
- 3.2.1. DEFORMED BARS TO CSA STANDARD CAN/CSA-G30.18-09, GRADE 400R, WELDED WIRE FABRIC: TO CSA G30.5.
- 3.3. JOB CONDITIONS:
- 3.3.1. PLACING, FINISHING, AND CURING OF CONCRETE SHOULD CONFORM WITH CSA STANDARD A23.1
- 3.3.2. IN ADDITION TO COLD WEATHER AND HOT WEATHER REQUIREMENTS OF CSA STANDARD A23.1, THE FOLLOWING SHALL APPLY TO WORK OF THIS SECTION:
- 3.3.2.1. PROVIDE PROTECTION AGAINST HEAT, OR BOTH, SO THAT TEMPERATURE OF CONCRETE AT SURFACES IS MAINTAINED AT NOT LESS THAN 21 °C [70 °F] FOR THE NEXT SEVEN (7) DAYS AND ABOVE FREEZING FOR THE NEXT SEVEN (7) DAYS.
- 3.3.2.2. DO NOT PERMIT ALTERNATE FREEZING AND THAWING FOR FOURTEEN DAYS AFTER PLACING.
- 3.3.2.3. FOR FIELD CURED CYLINDERS REPRESENTING STRENGTH DEVELOPMENT OF IN-SITU CONCRETE, PROVIDE SAME SPECIFIED NOT COLD WEATHER PROTECTION FOR STORAGE OF EACH CONCRETE COMPRESSION SPECIMEN AS FOR CONCRETE FROM WHICH IT WAS TAKEN UNTIL IT IS SENT TO A TESTING LABORATORY.
- 3.3.2.4. DO NOT PLACE CONCRETE WHEN IT IS RAINING. SHOULD RAIN COMMENCE DURING PLACING, COVER FRESHLY PLACED CONCRETE.

3.4. PLACING CONCRETE:

CONCRETE ITEM	MIN. CONC. COVER
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3" (75mm)
FORMED CONCRETE EXPOSED TO EARTH OR WEATHER BAR SIZE <15M	1 ½" (40mm)
FORMED CONCRETE EXPOSED TO EARTH OR WEATHER BAR SIZE 15M TO 55M	2" (50mm)
FORMED CONCRETE NOT EXPOSED TO EARTH OR WEATHER (SLABS, WALLS, JOISTS) BAR SIZE 45M TO 55M	1 ½" (40mm)
FORMED CONCRETE NOT EXPOSED TO EARTH OR WEATHER (SLABS, WALLS, JOISTS) BAR SIZE <45M	¾" (20mm)
FORMED CONCRETE NOT EXPOSED TO EARTH OR WEATHER (BEAMS, COLUMNS)	1 ½" (40mm)

- 3.4.1. NOTIFY ENGINEER AT LEAST 24 HOURS BEFORE COMMENCING CONCRETE PLACEMENT, AND 24 HOURS BEFORE WALL FORMS ARE CLOSED IN, REGARDLESS OF ANY REQUIREMENT OF REFERENCE STANDARDS TO INSPECT ALL OF THE WORK PRIOR TO PLACING CONCRETE.
- 3.4.2. NO CONSTRUCTION JOINTS OR "COLD" JOINTS SHALL BE PERMITTED DURING CONCRETE PLACEMENT OF MAT FOUNDATION OR CAISSONS
- 3.5. CURING:
- 3.5.1. CURE CONCRETE IN ACCORDANCE WITH CSA STANDARD A23.1, AND AS SPECIFIED HEREIN.
- 3.5.2. BE AWARE THAT PROPER CURING IS ESSENTIAL FOR CONCRETE; AND FAILURE TO CURE PROPERLY CAUSES SCALING, DUSTING, AND LACK OF DURABILITY.
- 3.5.3. CURING SLAB ON GRADE:  
CURING TYPE 1 WITH MOIST CURE CONCRETE SURFACES A MINIMUM OF 4 CONSECUTIVE DAYS AT A MINIMUM TEMPERATURE OF 10°C OR ATTAINING 40% OF THE SPECIFIED COMPRESSIVE STRENGTH.
- 3.5.4. CURING BUILDING FOUNDATION, GRADE BEAMS AND PIERS:  
CURING TYPE 2 WITH MOIST CURE CONCRETE SURFACES A MINIMUM OF 7 CONSECUTIVE DAYS AT A MINIMUM TEMPERATURE OF 10°C OR ATTAINING 70% OF THE SPECIFIED COMPRESSIVE STRENGTH.
- 3.5.5. CURING COLUMNS, WALLS, SUSPENDED BEAMS AND SUSPENDED SLAB:  
CURING TYPE 3 WITH MOIST CURE CONCRETE SURFACES A MINIMUM OF 7 CONSECUTIVE DAYS AT A MINIMUM TEMPERATURE OF 10°C OR ATTAINING 70% OF THE SPECIFIED COMPRESSIVE STRENGTH.
- 3.5.6. CURING MAT FOUNDATION; EQUIPMENT AND TANK FOUNDATIONS:  
CURING TYPE 3 WITH MOIST CURE CONCRETE SURFACES A MINIMUM OF 7 CONSECUTIVE DAYS AT A MINIMUM TEMPERATURE OF 10°C OR 70% OF THE SPECIFIED COMPRESSIVE STRENGTH. APPLICATION OF SEAL WATER BASED COMPOUNDS IN LEU MOIST CURING IS NOT ACCEPTABLE.
- 3.5.7. FORMS LEFT IN PLACE MAY BE USED AS PROTECTION AGAINST LOSS OF MOISTURE PROVIDED THAT EXPOSED CONCRETE SURFACES AND WOOD FORMS ARE KEPT WET FOR A DURATION OF 7 CONSECUTIVE DAYS. WHEN MOIST CURING IS NOT SUITED, CURING SHALL BE ACHIEVED BY APPLYING TWO COATS OF CPD ACRYLIC CURE AND SEAL WATER BASED COMPOUND AT A RATE OF 200 SQUARE FEET PER U.S. GALLON (5 SQUARE METER PER LITER) EXCEPT FOR MAT FOUNDATION, EQUIPMENT AND TANK FOUNDATIONS.
- 3.5.8. CONCRETE PROTECTION DURING CURING:  
ALL FRESHLY PLACED AND CONSOLIDATED CONCRETE SHALL BE SUITABLY PROTECTED DURING THE CURING PERIOD AGAINST ADVERSE WEATHER CONDITIONS IN ACCORDANCE WITH METHODS AND PROCEDURES AS NOTED IN CSA STANDARD A23.1.
- 3.5.9. WHEN THE AIR TEMPERATURE IS AT OR ABOVE 27°C(81°F) PROTECTION OF THE FRESHLY PLACED CONCRETE FROM THE EFFECTS OF HOT AND OR DRYING WEATHER CONDITIONS SHALL BE IN PLACE IN ACCORDANCE WITH METHODS AND PROCEDURES AS NOTED IN CSA STANDARD A23.1.
- 3.5.10. WHEN THE AIR TEMPERATURE IS AT OR BELOW 5 DEG. C (41 DEG. F) ALL MATERIALS AND EQUIPMENT NEEDED FOR ADEQUATE PROTECTION AND CURING SHALL BE IN PLACE BEFORE CONCRETE PLACEMENT IS STARTED IN ACCORDANCE WITH METHODS AND PROCEDURES AS NOTED IN CSA STANDARD A23.1.

3.6. INSPECTION:

- 3.6.1. CONTRACTOR IS TO ENGAGE AT HIS/HER OWN EXPENSE, AN INDEPENDENT TESTING AND INSPECTION COMPANY FOR INSPECTION OF COMPACTION, REBAR PLACEMENT, AND CONCRETE TESTING.
- 3.7. DRY-PACK GROUT: ONE PART PORTLAND CEMENT, TWO PARTS SAND, WITH ONLY SUFFICIENT WATER TO DAMPEN THE MIXTURE.

3.8. SHOP DRAWINGS

- 3.8.1. REFER TO "REINFORCING STEEL MANUAL OF STANDARD PRACTICE", LATEST EDITION.
- 3.8.2. SUBMIT FOR REVIEW SHOP DRAWINGS OF REINFORCEMENT, ANCHOR BOLTS, EMBEDDED ELEMENTS, AND TEMPLATES, INCLUDING LAYOUT, DETAILS, SPLICES, AND SUPPORT; DO NOT COMMENCE FABRICATION UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED BY THE CONSULTANT.
- 3.8.3. STAGGER SPLICES UNLESS NOTED OTHERWISE.
- 3.8.4. PRIOR TO SUBMISSION TO CONSULTANT, CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS. BY THIS REVIEW CONTRACTOR REPRESENTS TO HAVE DETERMINED AND VERIFIED ALL FIELD MEASUREMENTS, SITE CONDITIONS, MATERIALS, CATALOGUE NUMBER AND SIMILAR DATA, AND TO HAVE CHECKED AND COORDINATED EACH SHOP DRAWING WITH THE REQUIREMENTS OF WORK AND OF CONTRACT DOCUMENTS. CONTRACTOR'S REVIEW OF EACH SHOP DRAWING SHALL BE INDICATED BY STAMP, DATE AND SIGNATURE OF A RESPONSIBLE PERSON.
- 3.8.5. CONSULTANT SHALL REVIEW AND RETURN SHOP DRAWINGS IN ACCORDANCE WITH AN AGREED SCHEDULE. CONSULTANT'S REVIEW SHALL BE FOR CONFORMITY TO DESIGN CONCEPT AND FOR GENERAL ARRANGEMENT, AND SHALL NOT RELIEVE CONTRACTOR OF RESPONSIBILITY OF MEETING ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- 3.8.6. CONTRACTOR SHALL MAKE CHANGES TO SHOP DRAWINGS AS SPECIFIED BY CONSULTANT, CONSISTENT WITH CONTRACT DOCUMENTS, AND RESUBMIT UNLESS OTHERWISE DIRECTED BY CONSULTANT. WHEN RESUBMITTING, CONTRACTOR SHALL NOTIFY CONSULTANT IN WRITING OF REVISIONS OTHER THAN THOSE REQUESTED BY CONSULTANT.

3.9. FINISHING

- 3.9.1. CONCRETE SURFACES SHALL BE BROOM FINISHED, UNO ON PLANS

3.10. CONCRETE ANCHORS, INSERTS, BOLTS, ETC.:

- 3.10.1. EMBEDDED ANCHOR BOLTS: FABRICATE TO ASTM A307, AND REFER TO FOUNDATION DRAWINGS FOR BOLT TYPE, LENGTH, QUANTITY, DIAMETER AND PROJECTION UNO.
- 3.10.2. NUTS SHALL BE ASTM A563 HEAVY HEX NUTS CONFORMING TO ANSI B18.2.2. ANCHOR BOLT SLEEVES IF REQUIRED SHOULD BE PROVIDED BY THE ANCHOR BOLT SUPPLIER AND SHOULD BE FROM 28 GA. MIN. GALV. SHEET STEEL.
- 3.10.3. CONCRETE ANCHORS FOR CONNECTING NEW STEEL ASSEMBLIES TO EXISTING CONCRETE, (POST INSTALLED) IF REQUIRED; TO BE INSTALLED AS PER MANUFACTURER'S TECHNICAL GUIDE.  
HIT HY200 INJECTION ADHESIVE ANCHORS BY HILTI (CANADA) LTD.  
HILTI HVA CAPSULE ADHESIVE ANCHOR BY HILTI (CANADA) LTD.  
HILTI KWIK BOLT III BY HILTI (CANADA) LTD.
- 3.10.4. SCAN EXISTING CONCRETE ELEMENTS TO LOCATE EXISTING REINFORCEMENT PRIOR TO DRILLING. DO NOT DAMAGE EXISTING REINFORCEMENT. REPORT INTERFERENCES TO THE CONSULTANT PRIOR TO DRILLING.

3.11. GROUTING FOR STEEL MEMBERS:

- 3.11.1. PROVIDE AND PLACE GROUT UNDER COLUMN BASE AND BEAM BEARING PLATES. COOPERATE WITH OTHER TRADES THAT SUPPLY AND SET PLATES.
- 3.11.2. DAMPEN CONCRETE SURFACES IMMEDIATELY BEFORE INSTALLING GROUT.
- 3.11.3. INSTALL GROUT IN A MANNER TO ENSURE POSITIVE BEARING OF FULL AREA OF STEEL PLATE.
- 3.11.4. USE NON-SHRINK AND SHRINKAGE COMPENSATING GROUTS ONLY WHEN GROUT WILL BE CONSTRAINED AGAINST EXPANSION AND SELF-DISINTEGRATION.
- 3.11.5. SLOPE GROUT BEYOND BASE OF PLATE AT 45 DEGREES.
- 3.11.6. PROVIDE SAME ENVIRONMENTAL PROTECTION AND CURING AS SPECIFIED FOR CONCRETE.
- 3.11.7. DO NOT USE FLOWABLE GROUT AT BEAM BEARING PLATES UNLESS OTHERWISE INDICATED, OR APPROVED BY CONSULTANT.
- 3.12. DEFECTIVE WORK:
- 3.12.1. VARIATIONS IN EXCESS OF SPECIFIED TOLERANCES AND MARKED AND DISFIGURED SURFACES THAT CANNOT BE REPAIRED BY APPROVED METHODS WILL BE CONSIDERED DEFECTIVE WORK PERFORMED BY THIS SECTION.
- 3.12.2. REPLACE OR REPAIR DEFECTIVELY PLACED OR FINISHED CONCRETE AS DIRECTED BY CONSULTANT AT NO COST TO OWNER.
- 3.12.3. CONTRACTOR SHALL PAY FOR ADDITIONAL TESTING, DESIGN, AND RELATED EXPENSES IF CONCRETE PROVES TO BE DEFICIENT.

4. STRUCTURAL STEEL

GENERAL:

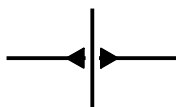
- 4.1. BEFORE COMMENCING WORK, REVIEW WITH CONSULTANT WORK PERFORMED UNDER THIS SECTION. VERIFY DIMENSIONS AND SIZE OF EXISTING SITE CONDITIONS BEFORE COMMENCING FABRICATION.
- 4.2. QUALITY ASSURANCE:
- 4.2.1. REFERENCE STANDARDS:  
THE FOLLOWING REFERENCE STANDARDS SHALL GOVERN WORK OF THIS SECTION, EXCEPT WHERE THEY ARE IN CONFLICT WITH REQUIREMENTS IMPOSED BY THIS SPECIFICATION, IN WHICH CASE THE LATTER SHALL GOVERN. STANDARDS REFERENCED BY FOLLOWING STANDARDS APPLY BUT ARE NOT NECESSARILY REPEATED IN FOLLOWING LIST:
- 4.2.1.1. CAN/CSA G164-18, HOT DIP GALVANIZING OF IRREGULARLY SHAPED ARTICLES.
- 4.2.1.2. CAN/CSA S16.1-14, LIMIT STATES DESIGN OF STEEL STRUCTURES.
- 4.2.1.3. CSA W178.2-14, CERTIFICATION OF WELDING INSPECTORS.
- 4.2.1.4. SSPC-SP 6/NACE No. 3, STRUCTURAL STEEL PAINTING COUNCIL, COMMERCIAL BLAST CLEANING.
- 4.2.1.5. ASTM A1011/A1011M, SPECIFICATION FOR STEEL, SHEET AND STRIP, HOT-ROLLED, CARBON, STRUCTURAL; HIGH-STRENGTH LOW-ALLOW, HIGH STRENGTH LOW-ALLOY WITH IMPROVED FORMABILITY, AND ULTRA HIGH-STRENGTH.
- 4.2.1.6. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) CODE OF STANDARD PRACTICE FOR STEEL BUILDING AND BRIDGES SECTION 10, ARCHITECTURAL EXPOSED STRUCTURAL STEEL, LATEST EDITION.

4.3. QUALIFICATION:

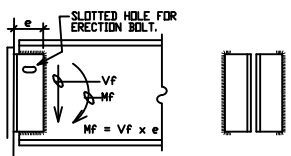
- 4.3.1. UNDERTAKE WELDING ONLY BY FABRICATORS CERTIFIED BY CANADIAN WELDING BUREAU UNDER CSA STANDARD W47.1, DIVISION 2.1.
- 4.3.2. CONNECTIONS DESIGNED BY CONSULTANT:
- 4.3.2.1. SUBMISSION OF SHOP DRAWINGS FOR CONNECTIONS WHICH HAVE BEEN DETAILED ON DRAWINGS BY CONSULTANT SHALL REPRESENT ACCEPTANCE BY CONTRACTOR THAT CONNECTION CAN BE EXECUTED SUCCESSFULLY.
- 4.3.3. OTHER CONNECTIONS:
- 4.3.3.1. DESIGN OF OTHER CONNECTIONS WHICH CAN NOT BE SELECTED FROM STANDARD DESIGNS TABULATED IN CISC HANDBOOK OF STEEL CONSTRUCTION SHALL BE BY A PROFESSIONAL ENGINEER, LICENSED IN THE PROVINCE OF ONTARIO, EXPERIENCED IN STRUCTURAL STEEL CONNECTION DESIGN.
- 4.3.3.2. DESIGN OF FULL MOMENT CONNECTIONS AND SUBMIT FOR ENGINEER'S APPROVAL.
- 4.3.3.3. CONSULTANT WILL REVIEW CONNECTION ARRANGEMENT TO VERIFY GENERAL CONFORMANCE WITH OVERALL DESIGN CONCEPT OF STRUCTURE.
- 4.3.3.4. CONNECTION DESIGN ENGINEER SHALL BE INSURED AGAINST PROFESSIONAL LIABILITY IN ACCORDANCE WITH SECTION 74 SUBSECTION (1) OF REGULATION 941 OF THE ONTARIO PROFESSIONAL ENGINEERS ACT. THE ALTERNATIVE OF COMPLIANCE WITH SUBSECTION (2) IS NOT ACCEPTABLE.

4.4. DESIGN:

- 4.4.1. CONNECTIONS:
- 4.4.1.1. PROVIDE BOLTED OR WELDED CONNECTIONS, UNLESS SHOWN OTHERWISE ON DRAWINGS.
- 4.4.1.2. USE HIGH STRENGTH BOLTS, EXCEPT THAT A307 BOLTS MAY BE USED FOR CONNECTIONS BETWEEN STRUCTURAL STEEL AND EXISTING CONCRETE MEMBERS AS NOTED ON DRAWINGS.
- 4.4.1.3. BOLTS SHALL BE A325 19Ø MINIMUM.
- 4.4.1.4. BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF TWO BOLTS IN EACH CONNECTED PIECE AND BE DESIGNED AS BEARING CONNECTIONS, U.N.O.
- 4.4.1.5. ALL WELDED HEADED STUDS AND WELDED DEFORMED BAR ANCHORS SHALL BE INSTALLED AS PER THE MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS OR SHOP FILLET WELDED. ANY FIELD FILLET WELDED DEFORMED BARS OR STUDS WILL BE REJECTED. SEE PLANS, SECTIONS, DETAILS, AND SCHEDULES FOR LOCATIONS ETC., THE CONTRACTOR SHALL COORDINATE THE DESIGN, SUPPLY, AND INSTALLATION OF ALL STUDS AND ANCHORS.
- 4.4.1.6. DESIGN ALL SPLICES IN BEAMS AND COLUMNS AS FULL MOMENT CONNECTIONS UNLESS NOTED OTHERWISE.
- 4.4.2. BEAM CONNECTIONS:
- 4.4.2.1. PROVIDE CONNECTIONS ADEQUATE TO RESIST REACTION OF BEAM, WHEN BEAM IS LOADED TO MAXIMUM FLEXURAL CAPACITY UNDER UNIFORMITY DISTURBED LOAD, UNLESS REACTION OR CONNECTION DETAIL IS SHOWN ON DRAWINGS.
- 4.4.2.2. SELECT CONNECTIONS, WHEREVER POSSIBLE, FROM STANDARD DESIGNS TABULATED IN CURRENT EDITION OF CISC HANDBOOK OF STEEL CONSTRUCTION, EXCEPT THAT LENGTH OF BEAM WEB ANGLES SHALL NOT BE LESS THAN HALF THE DEPTH OF BEAM, AND SINGLE ANGLES SHALL NOT BE USED FOR BEAMS DEEPER THAN 600mm [24"].
- 4.4.2.3. DO NOT USE FISH PLATE, SHEAR PLATE OR TAB CONNECTIONS.
- 4.4.2.4. THIS SYMBOL INDICATES BEAM IS MOMENT CONNECTED THROUGH A SUPPORTING BEAM OR COLUMN. PROVIDE A FULL STRENGTH MOMENT CONNECTION U.N.O.
- 4.4.2.5. PROVIDE 6mm CAP PLATES FOR ALL HSS MEMBERS U.N.O.



4.4.3. BEAMS AND GIRDERS:

- 4.4.3.1. UNLESS NOTED, BEAMS AND GIRDER CONNECTIONS TO EMBEDDED PLATES SHALL BE DOUBLE ANGLE FRAMING CONNECTIONS WELDED TO BEAM WEB THUS:
- 4.4.3.2. 
- 4.4.3.3. TOP FLANGES OF BEAMS TO BE FREE OF ALL PAINT, DIRT, HEAVY RUST, MILL SCALE, SAND AND OTHER MATERIALS WHICH WOULD INTERFERE WITH THE WELDING OF SHEAR STUDS AND/OR STEEL DECK TO SUPPORTING BEAMS AND GIRDERS.

4.5. TOLERANCES:

- 4.5.1. IN ADDITION TO TOLERANCES SPECIFIED IN CSA-S16, ERECT SHELF ANGLES AND MEMBERS TO WHICH FRAMES OF WINDOWS, DOORS AND LOUVERS ARE CONNECTED DIRECTLY AND WHICH ARE ATTACHED TO STEEL FRAME, WITHIN A TOLERANCE OF 3mm [1/8"] PLUS OR MINUS, AND WITH ABUTTING ENDS OF MEMBERS AT SAME LEVEL.
- 4.6. SOURCE QUALITY CONTROL:
- 4.6.1. CONTRACTOR IS TO ENGAGE AT HIS/HER OWN EXPENSE AN INSPECTION AND TESTING COMPANY TO PERFORM INSPECTION AND TESTING OF MATERIALS AND SHOP FABRICATION OF WORK OF THIS SECTION, AND FIELD QUALITY CONTROL SPECIFIED ELSEWHERE IN THIS SECTION.
- 4.6.2. REVIEW PROVIDED BY INSPECTION AND TESTING COMPANY DOES NOT RELIEVE CONTRACTOR OF HIS SOLE RESPONSIBILITY FOR QUALITY CONTROL OVER WORK. PERFORMANCE OR NON-PERFORMANCE OF INSPECTION AND TESTING COMPANY SHALL NOT LIMIT, REDUCE, OR RELIEVE CONTRACTOR OF HIS RESPONSIBILITIES IN COMPLYING WITH THE REQUIREMENTS OF THE SPECIFICATION.
- 4.6.3. INSPECTION AND TESTING COMPANY SHALL BE CERTIFIED BY CANADIAN WELDING BUREAU, IN CATEGORY 1, BUILDING, UNDER CSA W178.1.
- 4.6.4. WELDING INSPECTORS AND SUPERVISORS SHALL BE CERTIFIED BY CANADIAN WELDING BUREAU TO CSA W178.2, TO MINIMUM LEVEL 2 CERTIFICATION.
- 4.7. SHOP DRAWINGS:
- 4.7.1. SUBMIT FOR REVIEW TYPICAL DETAILS OF CONNECTIONS AND ANY SPECIAL CONNECTIONS, BEFORE PREPARATION OF SHOP DRAWINGS.
- 4.7.2. PROFESSIONAL ENGINEER RESPONSIBLE FOR CONNECTION DESIGN SHALL EITHER SIGN AND SEAL EACH SHOP DRAWING SUBMITTED, OR SHALL SUBMIT A SIGNED AND SEALED LETTER AT COMMENCEMENT OF SHOP DRAWING PREPARATION STATING HE WILL ASSUME RESPONSIBILITY FOR COMPLIANCE OF CONNECTIONS WITH THIS SPECIFICATION.
- 4.7.3. WHERE NEW WORK CONNECTS TO EXISTING CONSTRUCTION, DETERMINE EXISTING CONDITIONS AND ALL DIMENSIONS ON SITE, INCLUDING VERIFICATION OF ALL DIMENSIONS ON DRAWINGS. REPORT ANY NECESSARY ADJUSTMENT TO CONSULTANT.
- 4.7.4. SHOW SPLICE LOCATIONS AND DETAILS.
- 4.7.5. PRIOR TO SUBMISSION TO CONSULTANT, CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS. BY THIS REVIEW CONTRACTOR REPRESENTS TO HAVE DETERMINED AND VERIFIED ALL FIELD MEASUREMENTS, SITE CONDITIONS, MATERIALS, CATALOGUE NUMBER AND SIMILAR DATA, AND TO HAVE CHECKED AND COORDINATED EACH SHOP DRAWING WITH THE REQUIREMENTS OF WORK AND OF CONTRACT DOCUMENTS. CONTRACTOR'S REVIEW OF EACH SHOP DRAWING SHALL BE INDICATED BY STAMP, DATE AND SIGNATURE OF A RESPONSIBLE PERSON.
- 4.7.6. CONSULTANT WILL REVIEW AND RETURN SHOP DRAWING IN ACCORDANCE WITH AN AGREED SCHEDULE. CONSULTANT'S REVIEW WILL BE FOR CONFORMITY TO DESIGN CONCEPT AND FOR GENERAL ARRANGEMENT, AND SHALL NOT RELIEVE CONTRACTOR OF RESPONSIBILITY FOR MEETING ALL REQUIREMENTS OF CONTRACT DOCUMENTS.
- 4.7.7. CONTRACTOR SHALL MAKE CHANGES IN SHOP DRAWINGS WHICH CONSULTANT MAY REQUIRE, CONSISTENT WITH CONTRACT DOCUMENTS, AND RESUBMIT UNLESS OTHERWISE DIRECTED BY CONSULTANT. WHEN RESUBMITTING, CONTRACTOR SHALL NOTIFY CONSULTANT IN WRITING OF REVISIONS OTHER THAN THOSE REQUESTED BY CONSULTANT.

4.8. PRODUCT HANDLING:

- 4.8.1. DELIVER PRODUCTS THAT ARE SUPPLIED ONLY UNDER WORK OF THIS SECTION TO TRADES RESPONSIBLE FOR THEIR INSTALLATION, TO LOCATION THEY DIRECT, AND TO MEET CONSTRUCTION SCHEDULE.
- 4.8.2. HANDLE AND STORE STRUCTURAL STEEL SO THAT NO DAMAGE OR CORROSION IS CAUSED TO STORED OR ERECTED WORK, OR TO OTHER PROPERTY.

4.9. MATERIALS:

- 4.9.1. PROVIDE NEW MATERIALS IN ACCORDANCE WITH REFERENCE STANDARDS, OF STRENGTH AND QUALITY NOTED ON STRUCTURAL DRAWINGS. PROVIDE NEW STEEL IN COMPLIANCE WITH CSA STANDARD CAN/CSA-A40. 20/640.21-13 AS FOLLOWS:
- 4.9.1.1. ROLLED SHAPES, (EXCEPT WIDE FLANGES) AND ROLLED PLATE SHALL BE TO CAN/CSA-A40.21-M-300W OR EQUIVALENT (fy=300 MPa).
- 4.9.1.2. ROLLED WIDE FLANGES AND WELDED WIDE FLANGE SECTIONS SHALL BE TO CAN/CSA-A40.21-M-350W OR EQUIVALENT (fy=350 MPa).
- 4.9.1.3. CIRCULAR HOLLOW STRUCTURAL SECTIONS SHALL BE TO ASTM A500 GRADE C (fy=317 MPa).
- 4.9.1.4. SQUARE AND RECTANGULAR HOLLOW STRUCTURAL SECTIONS SHALL BE TO ASTM A500 GRADE C (fy=345 MPa)
- 4.9.2. PAINT:
- 4.9.2.1. SHOP COAT PAINT, FOR STEEL THAT WILL NOT RECEIVE FINISH COAT: TO CISC/CPMA STANDARD 1-73A, A QUICK-DRYING ONE COAT PAINT FOR USE ON STRUCTURAL STEEL.
- 4.9.2.2. INORGANIC ZINC PRIMER:  
- CARBO ZINC 12, BY CORROSION SERVICE CO. LTD.  
- DIMETCOTE 9, BY CAMERON C. ONTARIO, CANADA INC., OAKVILLE.  
- GLUD-ZINC 5530/5531, BY GLIDDEN COMPANY (CANADA) LTD.
- 4.9.3. HOT DIP GALVANIZING
- 4.9.3.1. ALL STEEL EXTERIOR TO THE VAPOUR BARRIER SHALL BE HOT DIP GALVANIZED.
- 4.9.3.2. BOLTS EXTERIOR TO THE VAPOUR BARRIER SHALL BE ZINC-PLATED.

4.10. FABRICATION:

- 4.10.1. FABRICATE WORK OF THIS SECTION IN ACCORDANCE WITH CSA-S16.1, AND AS SPECIFIED BELOW.
- 4.10.2. HOLES:
- 4.10.2.1. PUNCH HOLES 11mm [7/16"] TO 28mm [1-1/16"] DIAMETER AS REQUIRED FOR ATTACHING THE WORK OF OTHER SECTIONS TO STRUCTURAL STEEL MEMBERS. LOCATE HOLES SO THAT NO APPRECIABLE REDUCTION OF STRENGTH OF MEMBERS IS CAUSED.
- 4.10.3. BASE PLATES: - PROVIDE SINGLE BASE PLATES. DO NOT USE SEPARATE LEVELING PLATES FOR COLUMNS.
- 4.10.4. CLEANING STEEL:
- 4.10.4.1. CLEAN STEEL, WHETHER IT IS TO BE PAINTED OR NOT, TO THE DEGREE REQUIRED BY CISC/CPMA 1-73A, EXCEPT AS SPECIFIED BELOW.
- 4.10.4.2. CLEAN STEEL WHICH IS SPECIFIED TO BE PAINTED TO CISC/CPMA 2-75 IN ACCORDANCE WITH THAT STANDARD.



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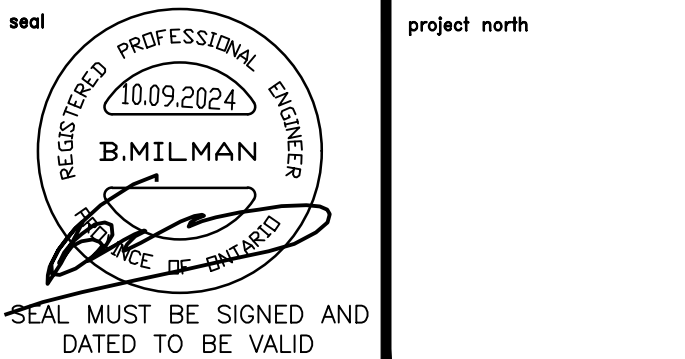
225-1750 Steeles Ave. W., Vaughan, Ontario L4K 2J7  
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B.M.	2023.06.09	A	ISSUED FOR COSTING

APPROVED	DATE	NO.	REVISIONS
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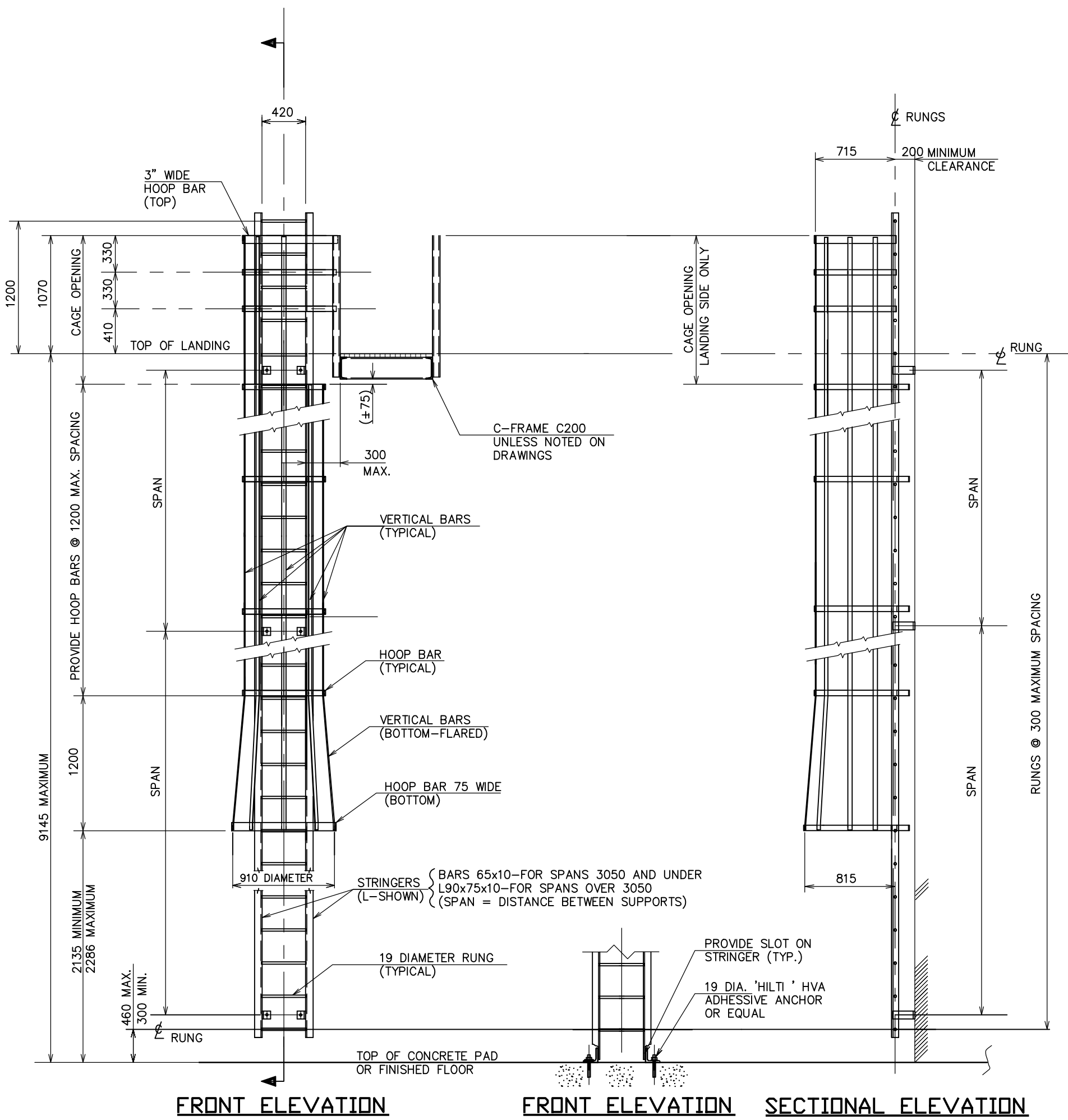
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GENERAL NOTES & SPECIFICATIONS

SCALE	AS SHOWN	DRAWING NO.
DRAWN BY	J.C.	S1.0
CHECKED BY	B.M.	
DATE	NOV 2021	
CAD FILE	22009-SK1	





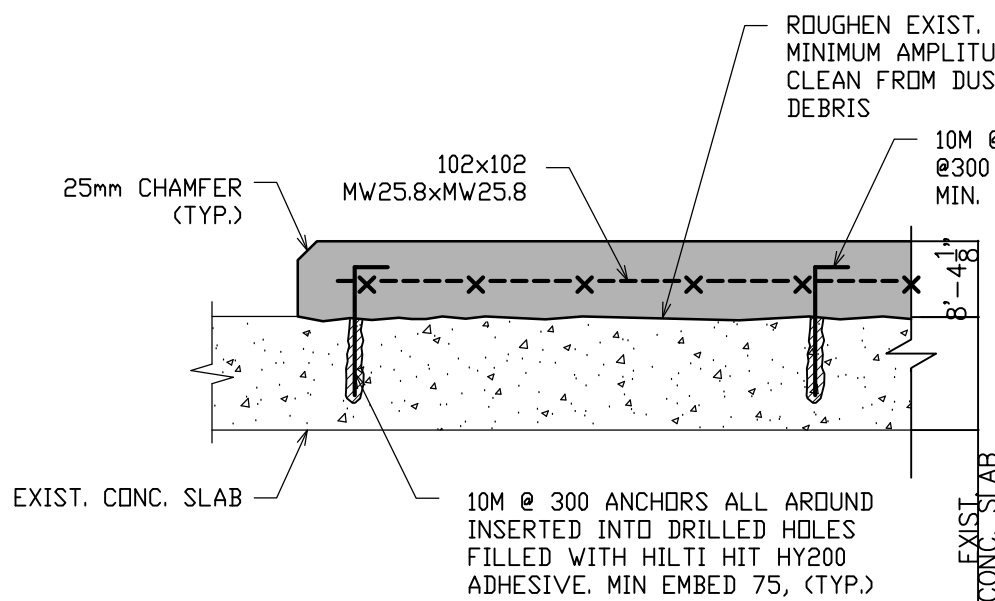




ACCESS LADDER DETAIL OVER 6.1m\*  
(\* DENOTES HEIGHT BETWEEN PLATFORM LEVELS)

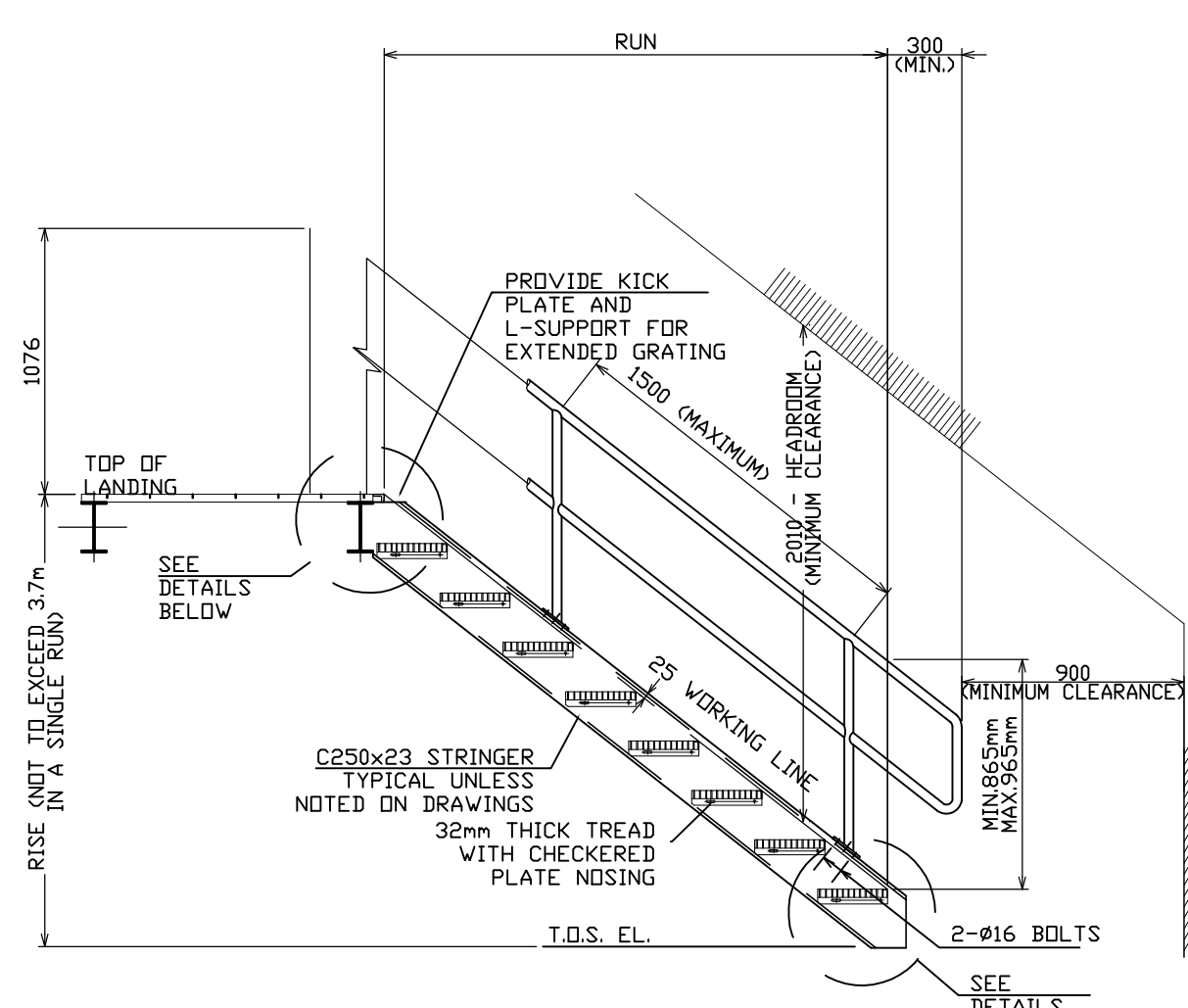
NOTES:

- PROVIDE SAFETY CAGE WHEN TOP OF LADDER IS AT A GREATER DISTANCE THAN 6m ABOVE GROUND LEVEL, PLATFORM OR ROOF, UNLESS NOTED OTHERWISE.
- CONNECTION OF SUPPORT BRACKETS TO STRUCTURE:
  - CONCRETE BLOCK – 19MM DIA. THRU BOLTS WITH MALLEABLE IRON WASHER.
  - REINFORCED CONCRETE – 19MM DIA. 'HILTI' HVA ADHESIVE ANCHORS.
  - WOOD – 19MM THRU BOLTS WITH MALLEABLE IRON WASHER.
- ENSURE LADDERS ARE FREE OF ALL BURRS AND SHARP EDGES.

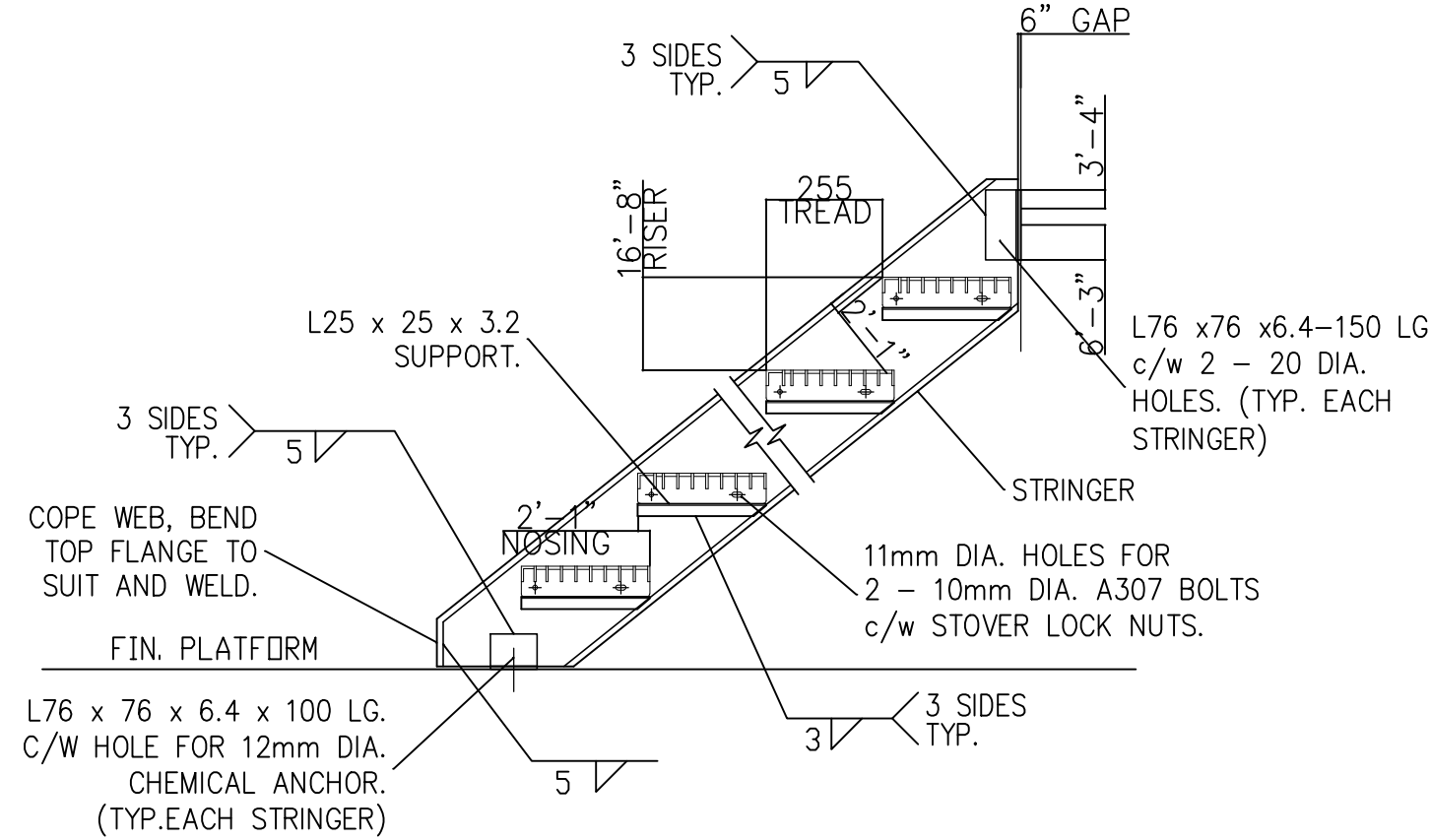


MECHANICAL HOUSEKEEPING PADS

SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATIONS.



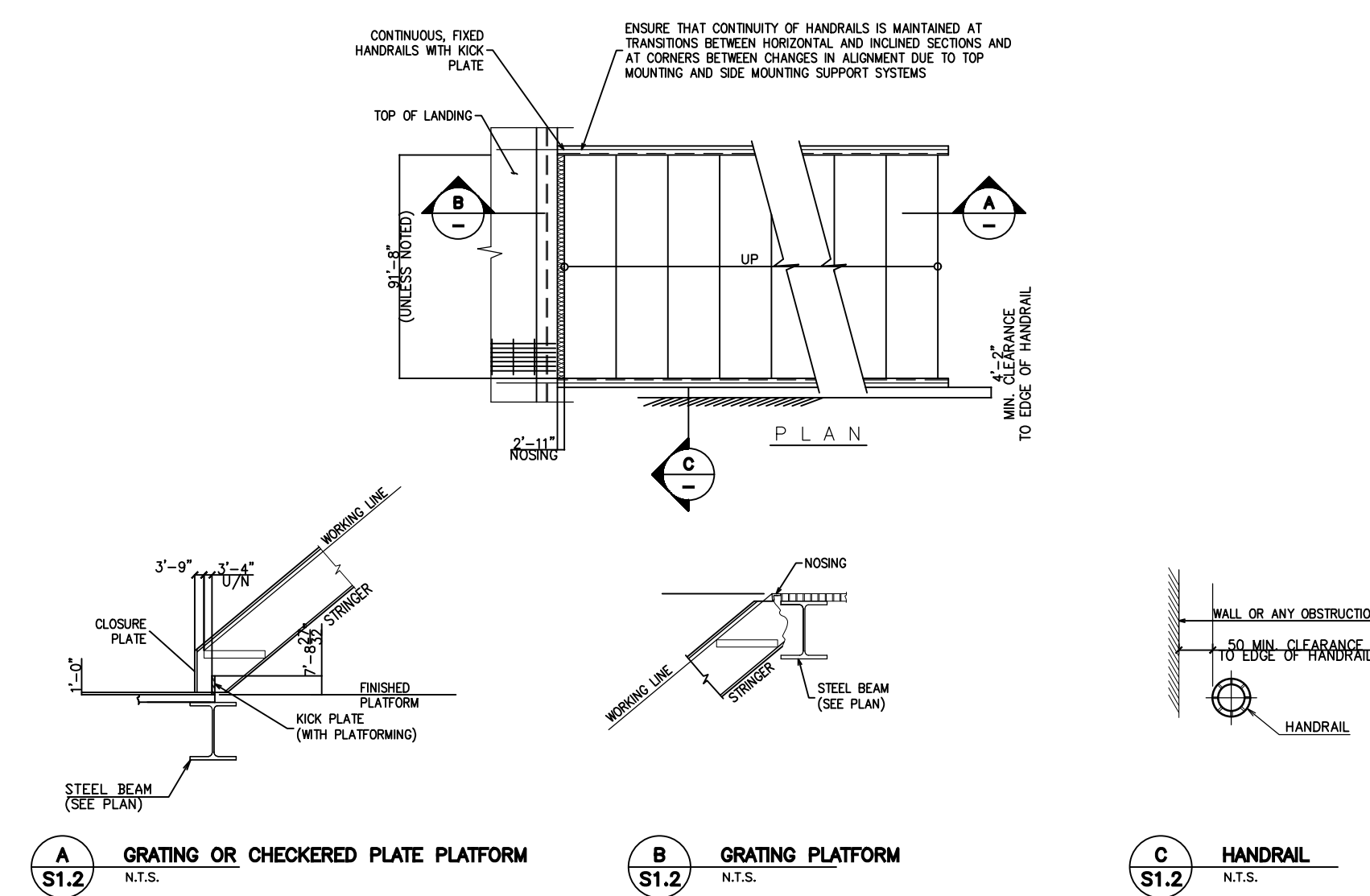
STAIR DETAILS - (TYPICAL UNLESS NOTED ON PLATFORM PLANS)



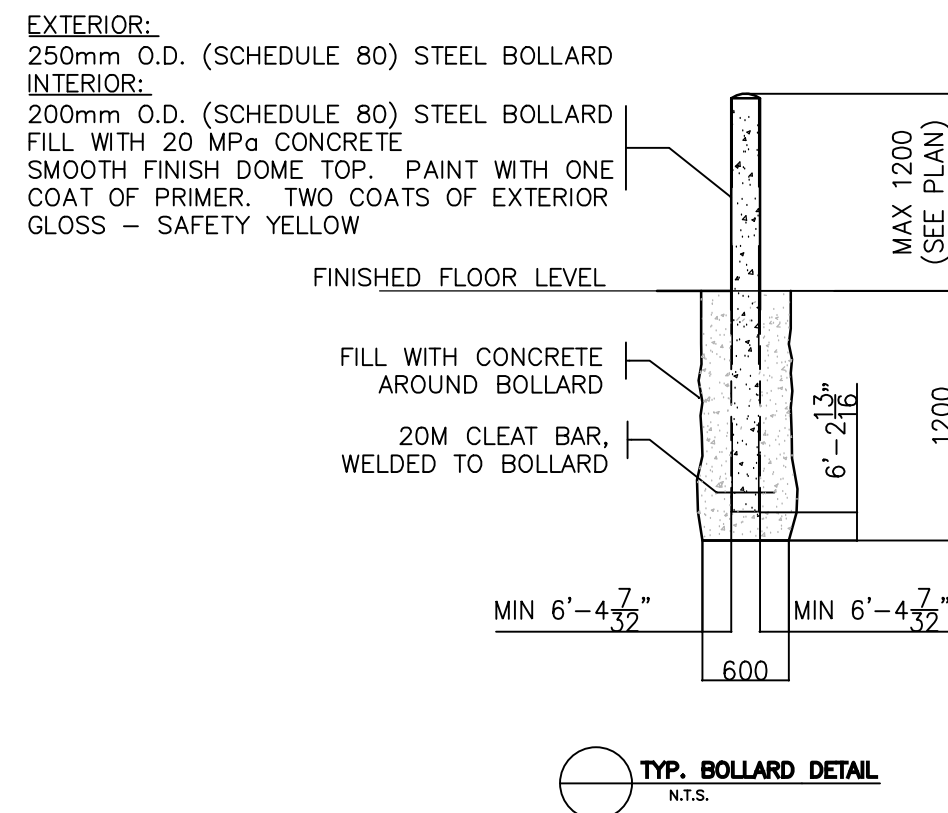
STEEL STAIR TREADS:

WELDED STEEL TREADS WITH 30 x 5 SERRATED BEARING BARS AT 30 c/c, 5mm SQUARE TWISTED CROSS BARS AT 100 c/c AND CHECKERED PLATE NOSING, TO MAX. WIDTH OF 1100 c/w HOLES FOR 2 - 10 DIA. BOLTS.

TYPICAL DETAIL FOR STEEL STAIR ASSEMBLY  
SCALE 1:20



TYPICAL DETAIL OF STAIR STRINGER CONNECTION TO FINISHED PLATFORM  
NOTE: CONNECT ALL STAIR STRINGERS TO STEEL SUPPORT UNLESS OTHERWISE NOTED.



NOTE:

- CONTRACTOR TO OBTAIN SITE LOCATES PRIOR TO EXCAVATION. REPORT ANY INCONSISTENCIES TO CONSULTANT.

LISTS OF DRAWINGS

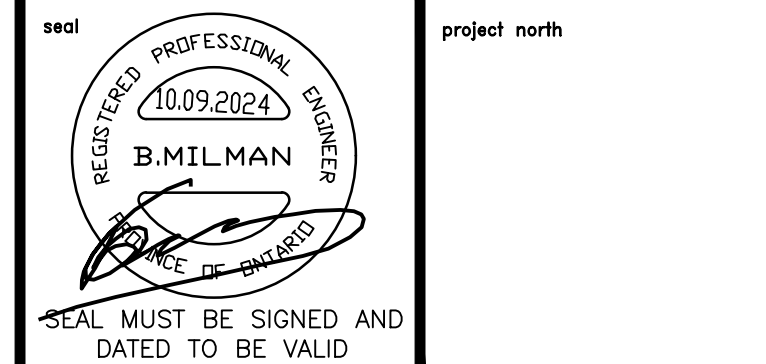
- S1.0 GENERAL NOTES AND SPECIFICATIONS
- S1.1 GENERAL NOTES AND SPECIFICATIONS CONTINUATION
- S1.1 TYPICAL DETAILS
- S2.0 KEY PLAN, NEW GENERATOR AND STACK TOWER
- S2.1 GENERATOR FOUNDATION PLAN, SECTIONS AND DETAILS
- S2.2 TOWER PLAN, SECTION AND DETAILS
- S3.1 EXISTING GENERATOR AND ELECTRICAL ROOM FLOOR PLANS
- S3.2 NEW ELECTRICAL ROOM FLOOR PLANS
- S3.3 EAST ELEVATION AND SECTION
- S3.4 ELEVATIONS AND SECTION
- S3.5 MASONRY WALL REINFORCEMENT AND DETAILS
- S3.6 EXISTING RETAINING WALL REINF.

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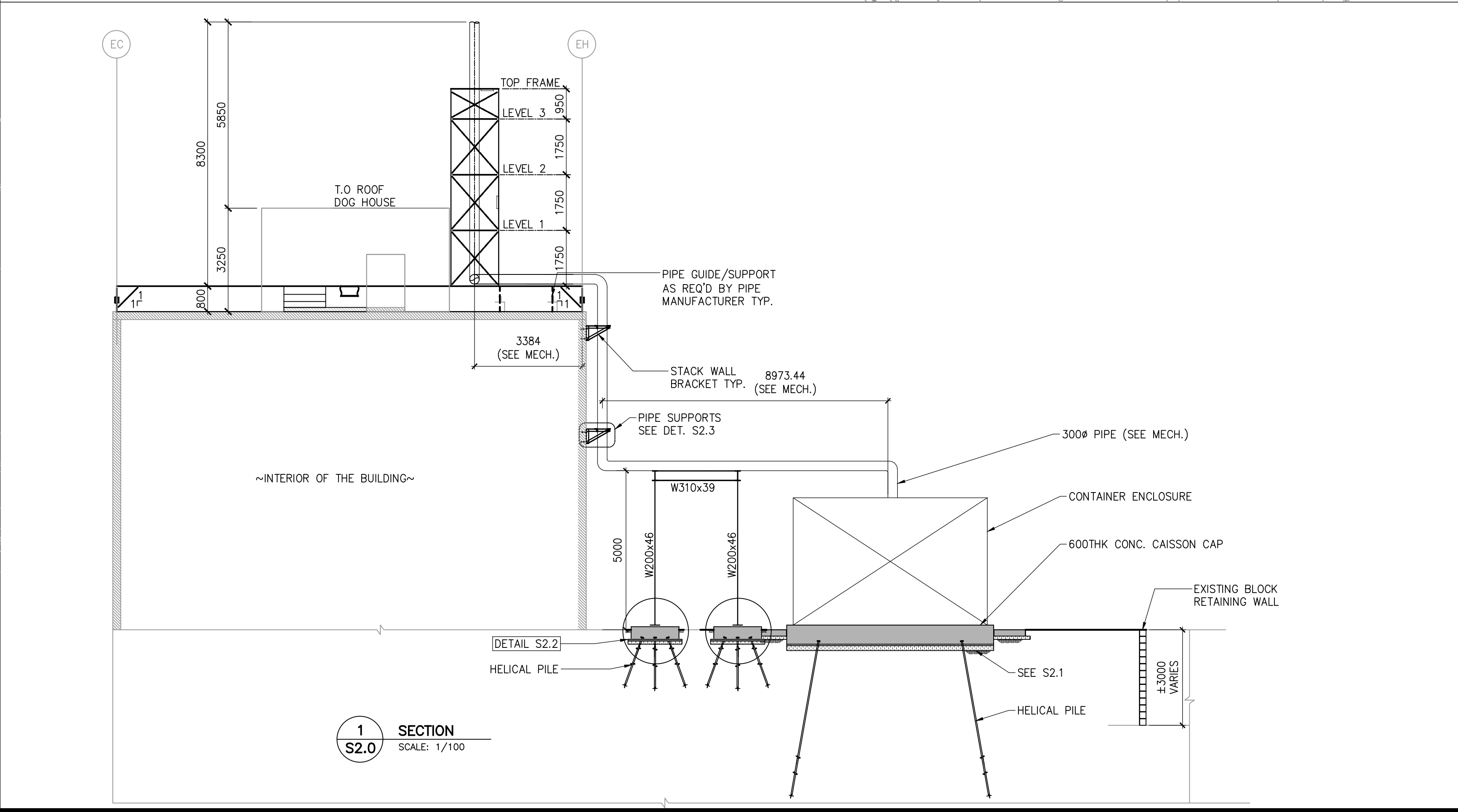
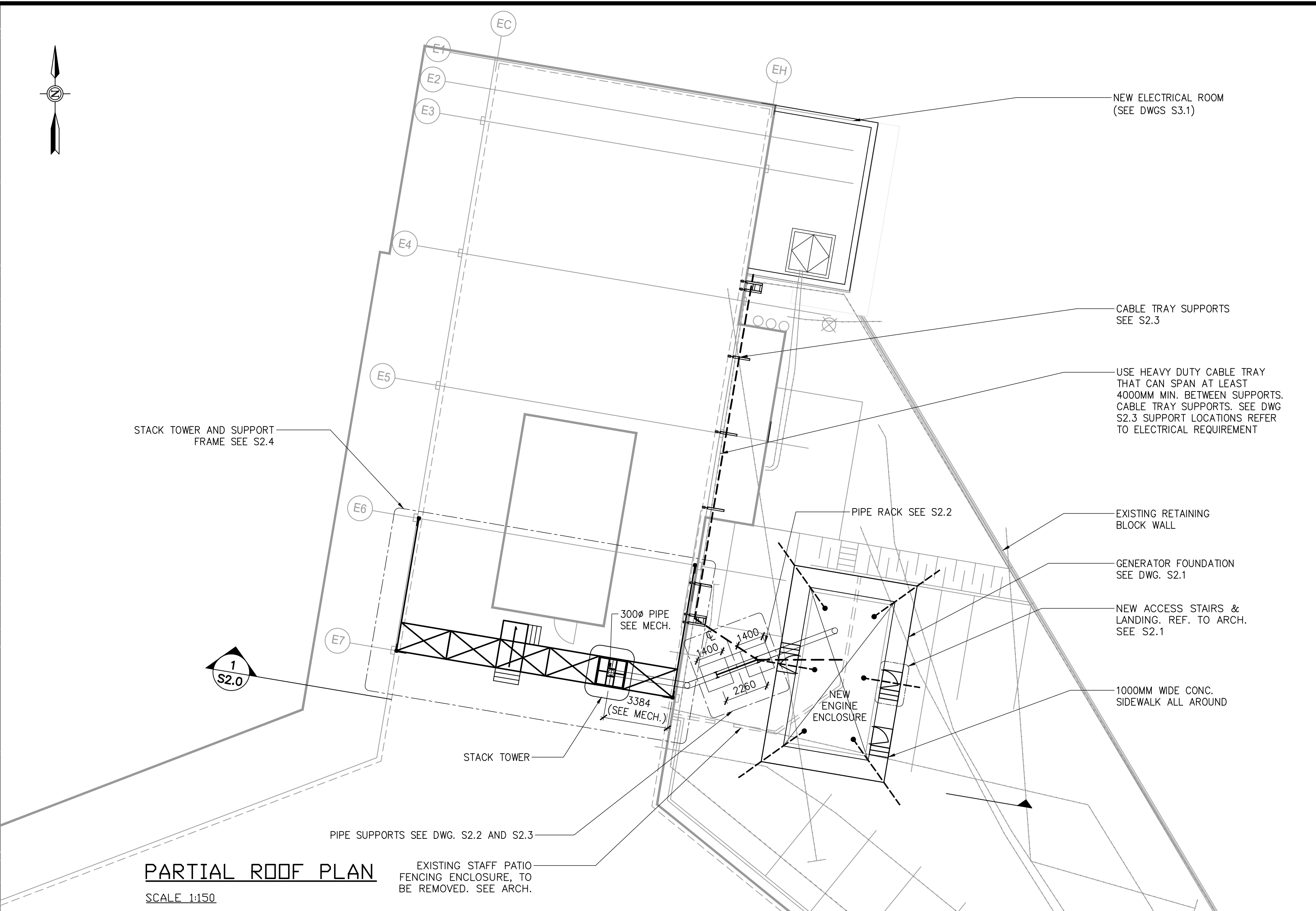
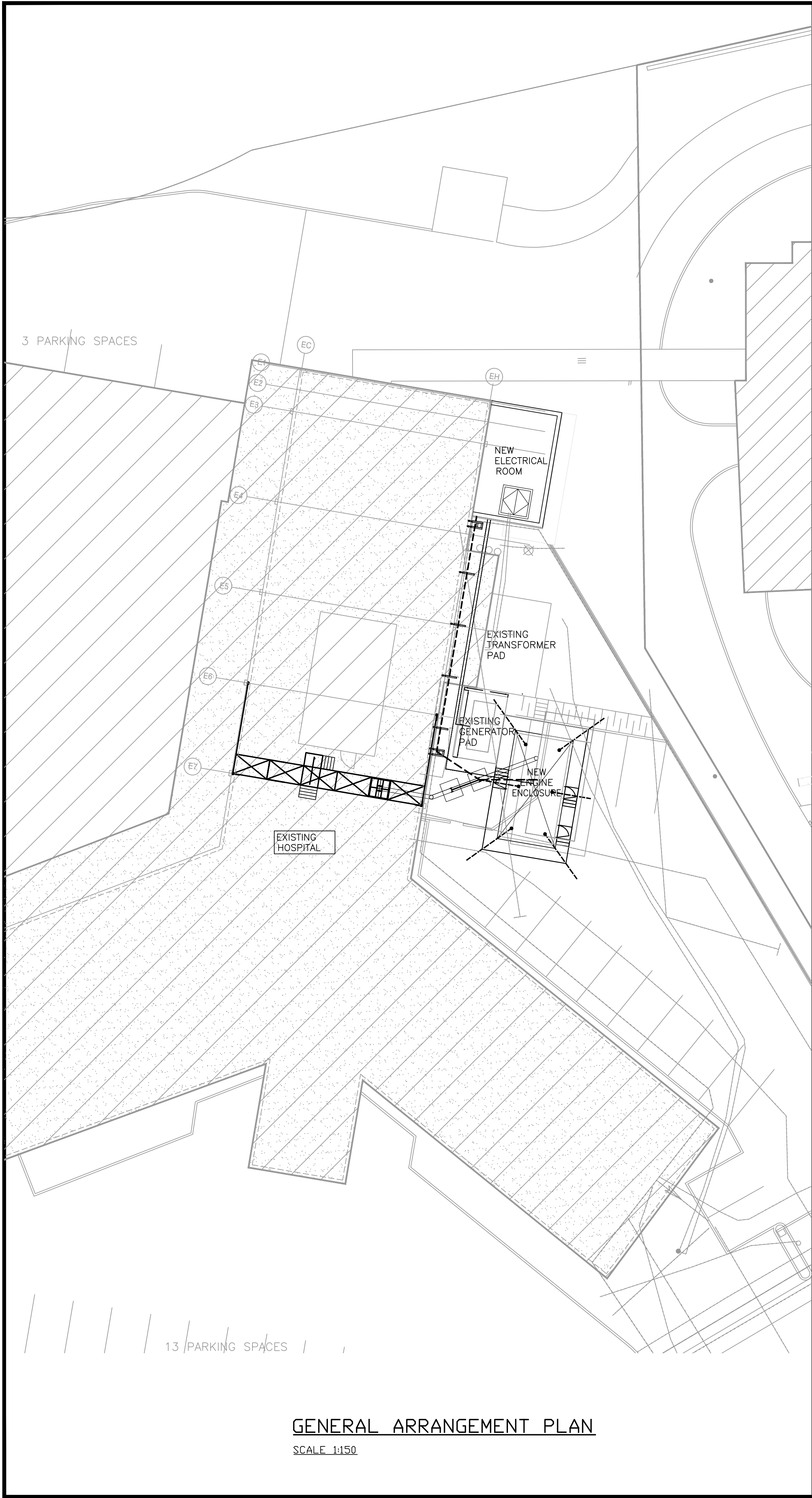


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**TYPICAL DETAILS I**

SCALE	AS SHOWN	DRAWING NO.
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225-1750 Steeles Ave. W., Vaughan, Ontario L4K 2J7  
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APR'D	DATE	NO.	REVISIONS

SEAL MUST BE SIGNED AND DATED TO BE VALID

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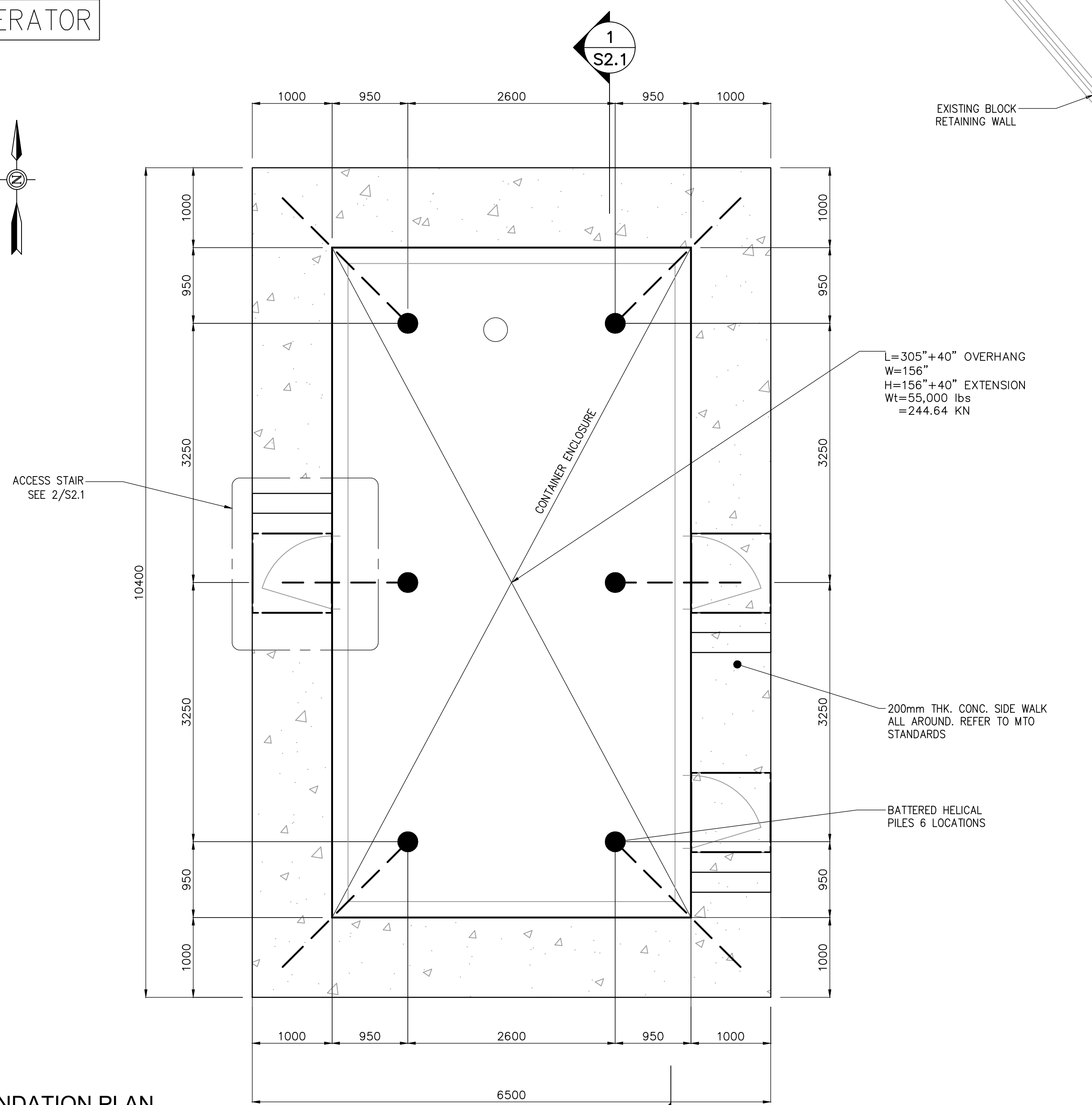
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**GENERAL ARRANGEMENT, PARTIAL ROOF PLAN AND SECTION**

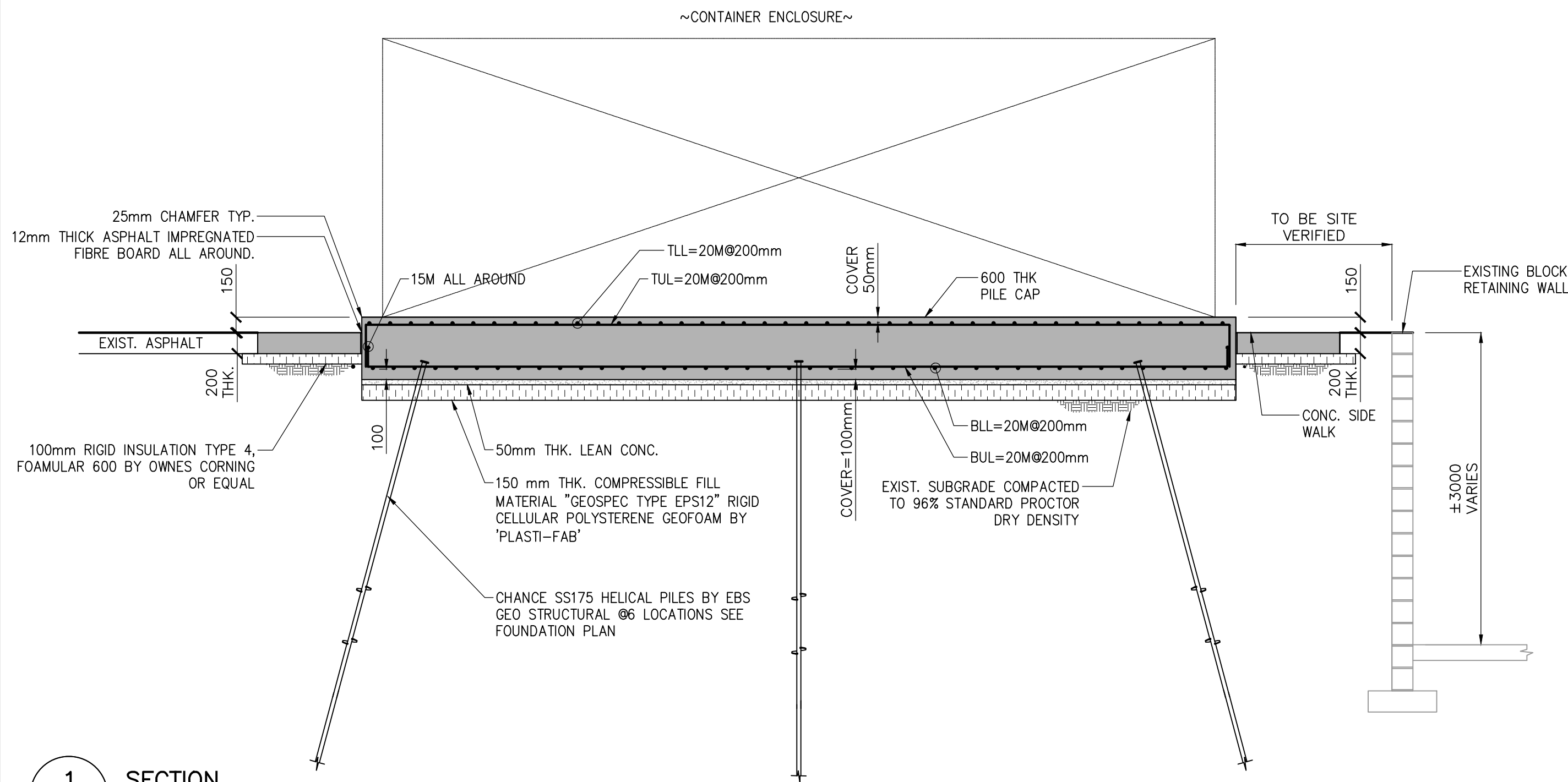
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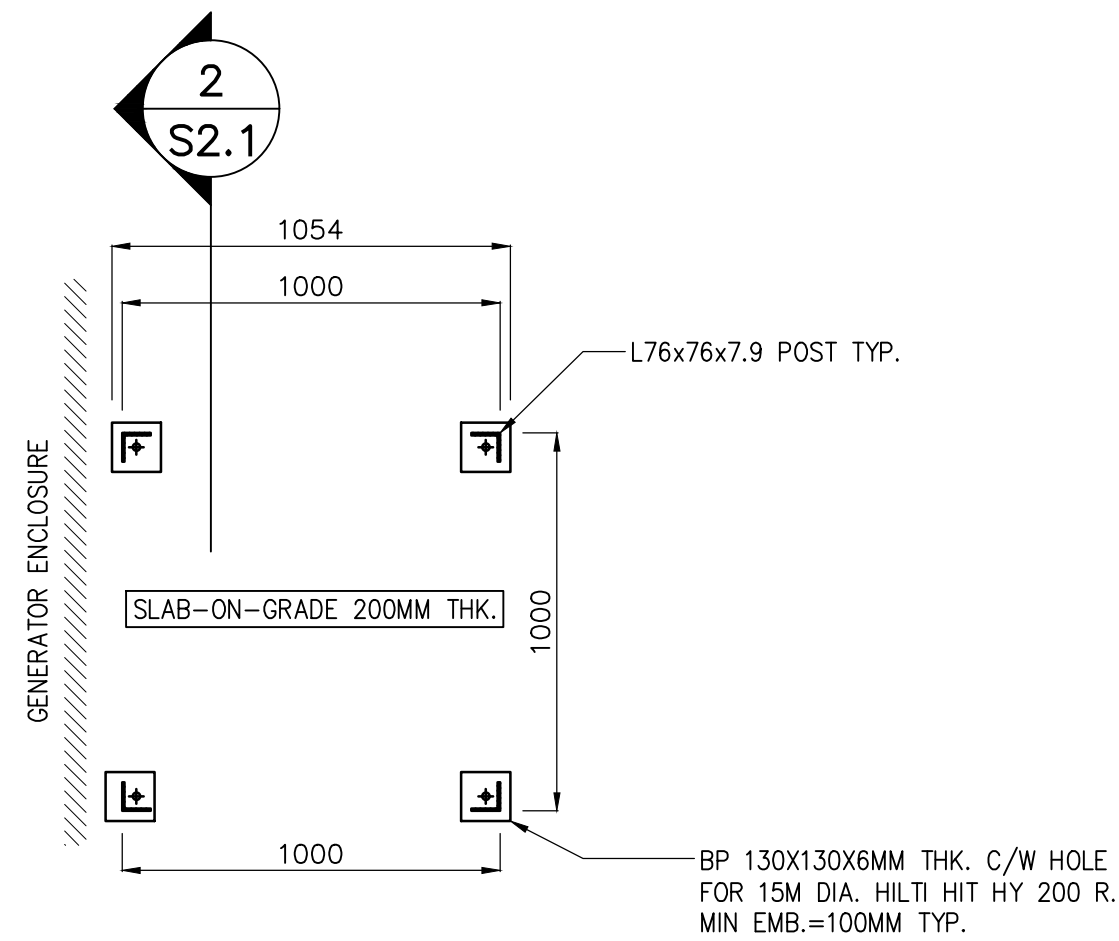
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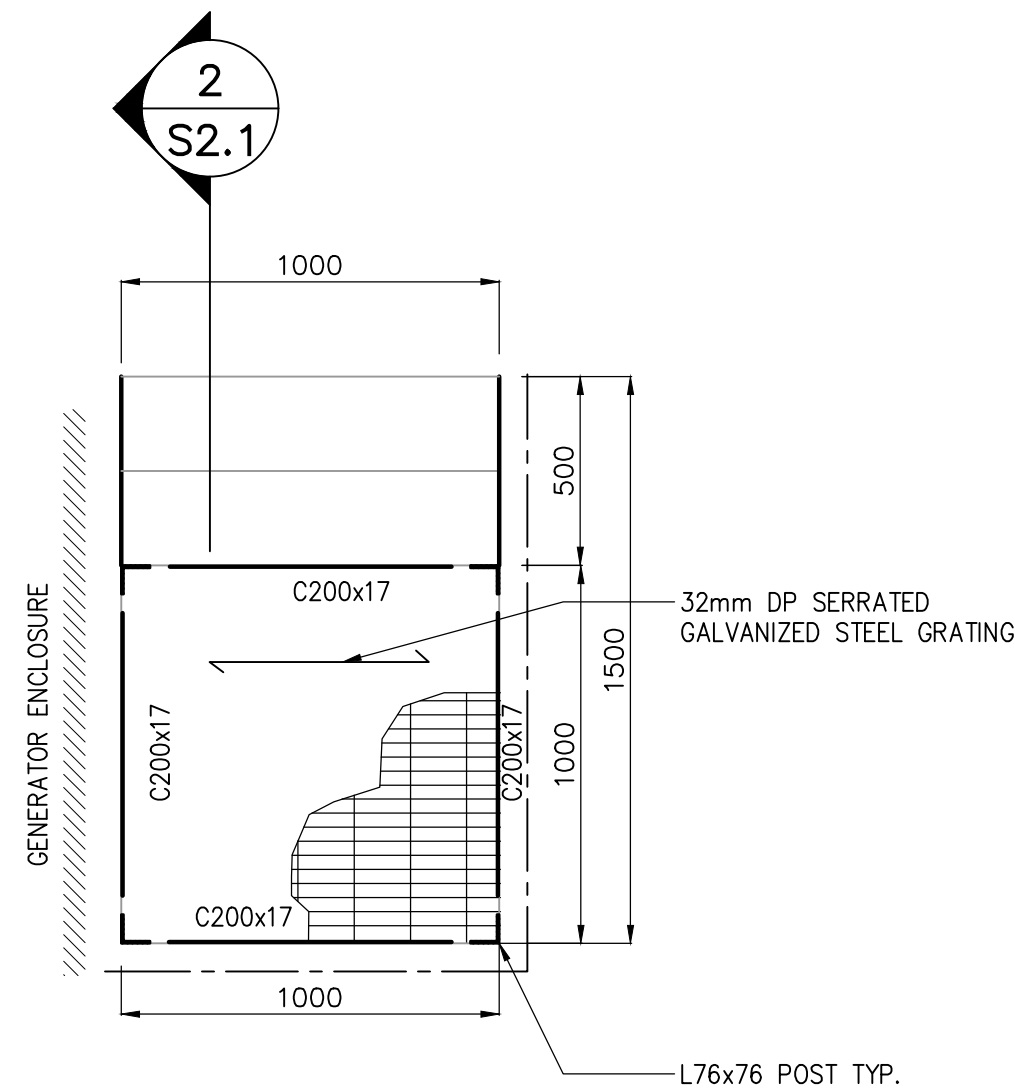
**FOUNDATION PLAN**  
SCALE 1:50



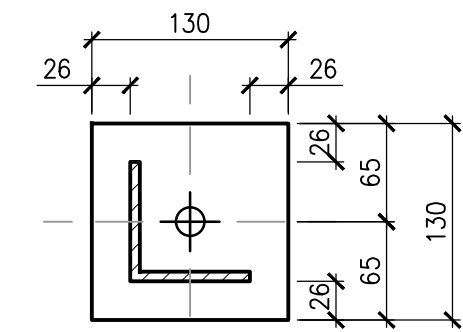
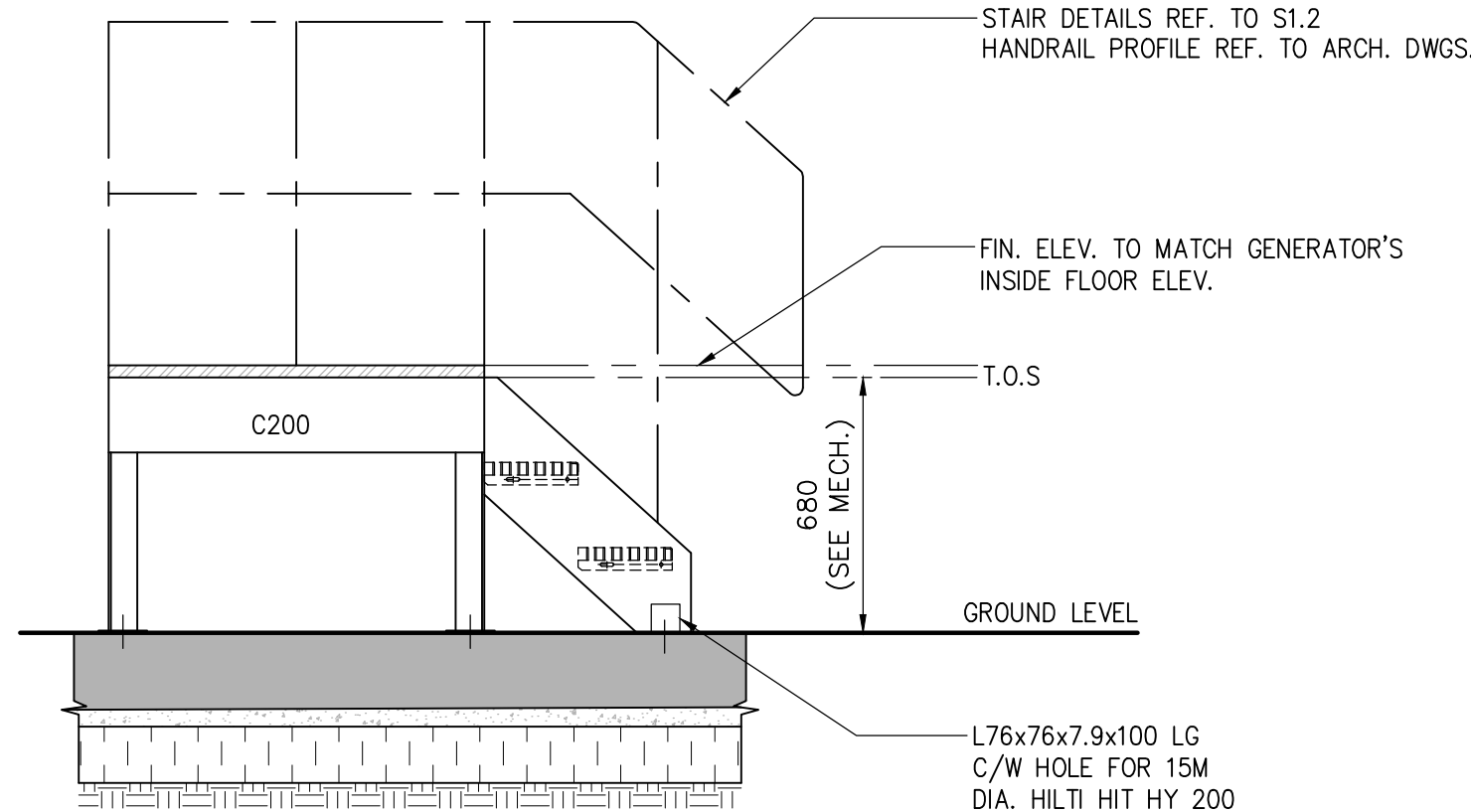
# ACCESS STAIR AND LANDING



**FOUNDATION PLAN**  
SCALE 1:50



**FRAMING PLAN**  
SCALE 1:50



## HELICAL PILE NOTES

- REFER TO GENERAL NOTES AND SPECIFICATIONS. SEE DWG S1.1
- FOR SOIL REPORT, REFER TO GEMTEC PROJECT NO. 101993.002 DATED MARCH 23, 2023 BY GEMTEC CONSULTING ENGINEERS AND SCIENTISTS LIMITED.
- DESIGN OF HELICAL PILES BY A SPECIALTY HELICAL PILE CONTRACTOR SUCH AS "EBS GEOSTRUCTURAL" OR "POSTECH SCREW PILES".
- USE CHANCE SS175 HELICAL PILE SYSTEM BY "EBS GEOSTRUCTURAL" OR 42" DIAMETER SCREW PILE BY "POSTECH".
- HELICAL PILE CAPACITY, DEPTH, NUMBER OF PILES, LAYOUT AND NUMBER OF BATTERED PILES TO BE DETERMINED BY THE SPECIALTY HELICAL PILE CONTRACTOR. ASSUMED MINIMUM PILE DEPTH IS 3M TO 5M. CONTRACTOR TO CONFIRM.
- NUMBER AND LOCATION OF BATTERED PILES TO RESIST HORIZONTAL FORCES AS SHOWN ON PLAN TO BE CONFIRMED BY THE SPECIALTY HELICAL PILE CONTRACTOR.
- DESIGN AND INSTALLATION OF HELICAL PILES SHOULD BE DONE BY A QUALIFIED CONTRACTOR EXPERIENCED IN THIS TYPE OF CONSTRUCTION. THE PILE CONTRACTOR MUST CARRY A PROFESSIONAL LIABILITY INSURANCE OF \$5M FOR EACH OCCURRENCE AND HAVE A SOIL ENGINEER STAMP THE LOAD CAPACITY OF PILES AND DRAWINGS WITH PILE LAYOUT.
- CONTRACTOR TO FOLLOW MANUFACTURER'S HELICAL PILE DESIGN, RECOMMENDED SITE PREPARATION, PRODUCT INSTALLATION AND APPLICATION PROCEDURES.
- ACTUAL DEPTH OF HELICAL PILES ARE TO BE DETERMINED DURING INSTALLATION WHEN THE REQUIRED TORQUE IS ACHIEVED BASED ON REQUIRED PILE CAPACITY.
- ALL DIMENSIONS TO BE VERIFIED ON SITE WITH MECHANICAL DRAWINGS.
- DESIGN OF CONNECTION AND EMBEDMENT OF HELICAL PILES TO THE CONCRETE FOUNDATION BY THE SPECIALTY HELICAL PILE CONTRACTOR.
- THE HELICAL PILE CONTRACTOR TO SUBMIT SHOP DRAWINGS OF HELICAL PILE LAYOUT, DIAMETER (SIZE), CONNECTION AND EMBEDDED DETAILS FOR CONSULTANT'S REVIEW AND APPROVAL.
- CONTRACTOR TO BRING DRILLING EQUIPMENT OVER THE RETAINED SOIL AREA NOT TO DAMAGE EXISTING RETAINING WALL.
- BEARING SURFACE MUST BE PROTECTED FROM FREEZING BEFORE AND AFTER FOUNDATION IS POURED.
- FOR GROUND ELEVATIONS AND DRAINAGE SLOPES, REFER TO CIVIL DRAWINGS.
- CONTRACTOR MUST IDENTIFY ON SITE ALL EXISTING SUBSURFACE UTILITIES PRIOR TO INSTALLING THE HELICAL PILES. REFER TO SUE REPORT PROJ. #23-0304 DATED OCTOBER 10, 2023 BY 4SIGHT UTILITY ENGINEERS
- CONTRACTOR TO EXERCISE CAUTION IN WORKING BESIDE EXISTING GENERATOR AND SUBSURFACE UTILITY STRUCTURES

## HELICAL PILE DESIGN LOAD SCHEDULE

EQUIP.	MARK	P <sub>r</sub> (kN)	T <sub>r</sub> (kN)	V <sub>r</sub> (kN)
PIPE RACK	HP-PR01	70	70	±20
GENSET	HP-GS01	290	-	±80

## NOTE:

- DESIGN LOADS ARE ULS.
- "P<sub>r</sub>" DENOTES COMPRESSION. "T<sub>r</sub>" DENOTES TENSION. "V<sub>r</sub>" DENOTES HORIZONTAL FORCE IN EITHER ORTHOGONAL DIRECTION.
- PILES SHOULD BE DESIGNED FOR THE FOLLOWING LOAD COMBINATIONS:
  - P<sub>r</sub>±V<sub>r</sub>
  - T<sub>r</sub>±V<sub>r</sub>



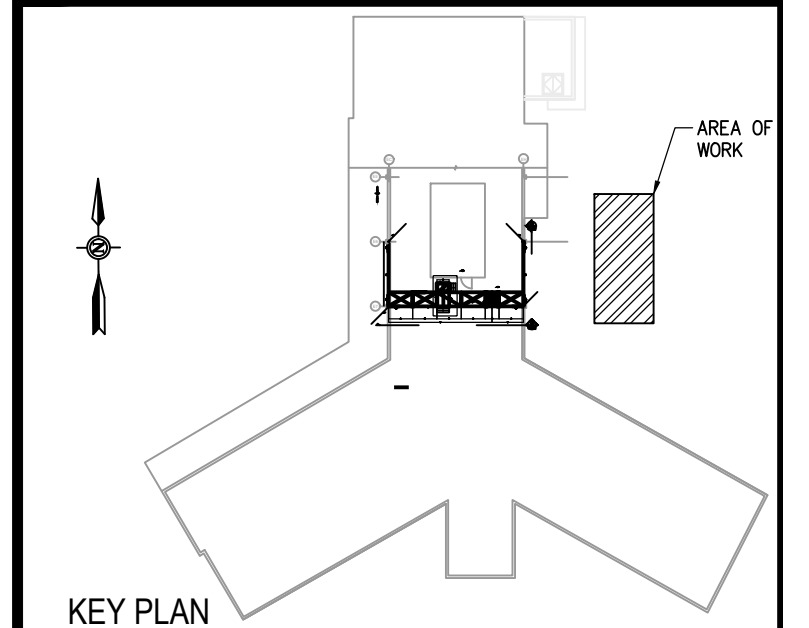
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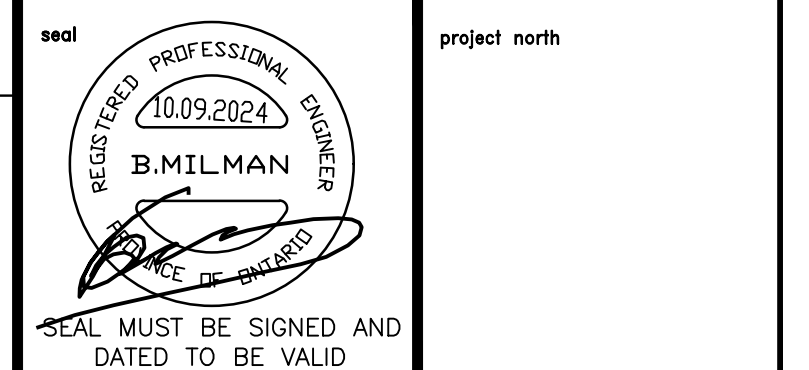
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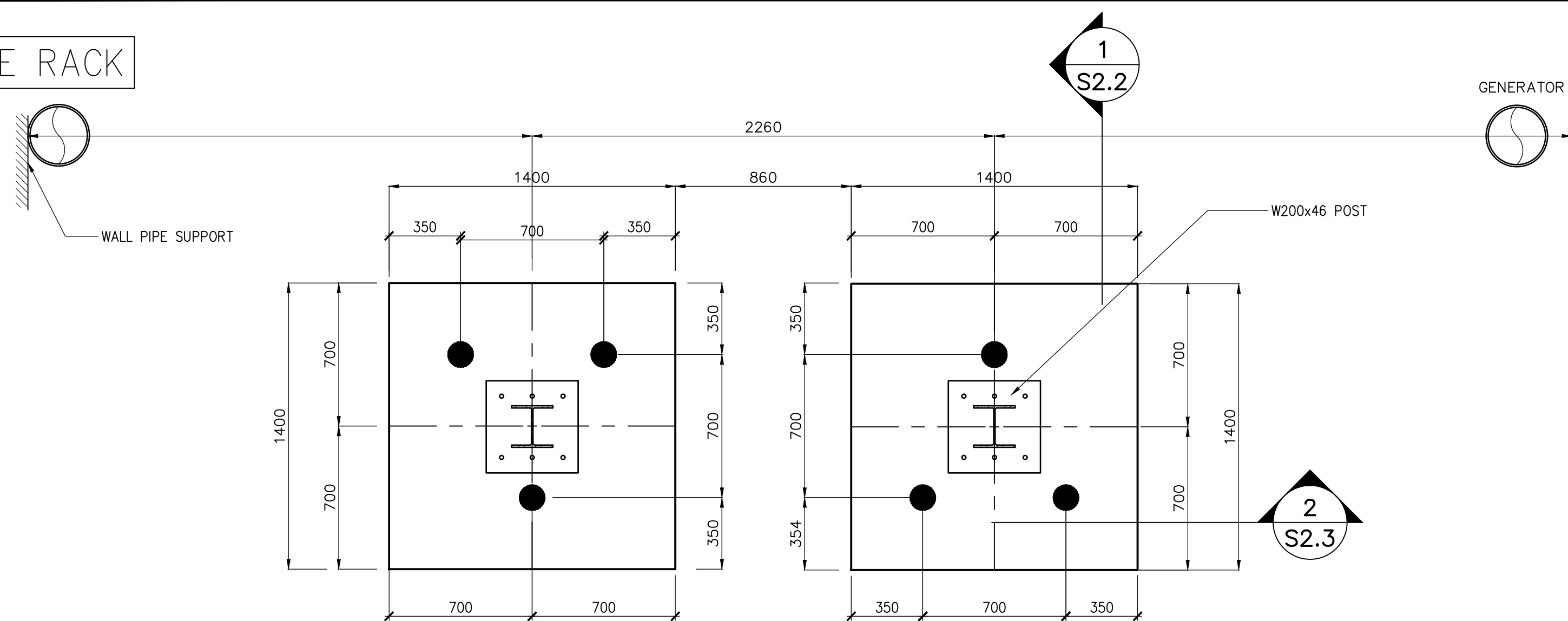
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Title  
**GENERATOR FOUNDATION PLAN, SECTIONS & DETAILS**

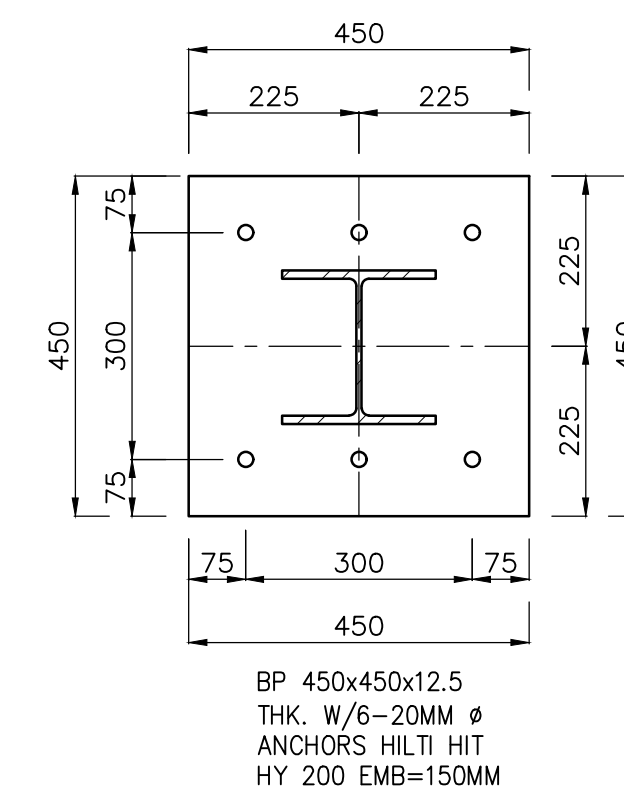
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CHECKED BY	B.M.	
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PIPE RACK



**PLAN**  
SCALE 1:20



## BASE PLATE

## NOTES

1. REFER TO GENERAL NOTES AND SPECIFICATIONS.  
SEE DWG S1.1
2. REFER TO HELICAL PILE NOTES, SEE DWG S2.1

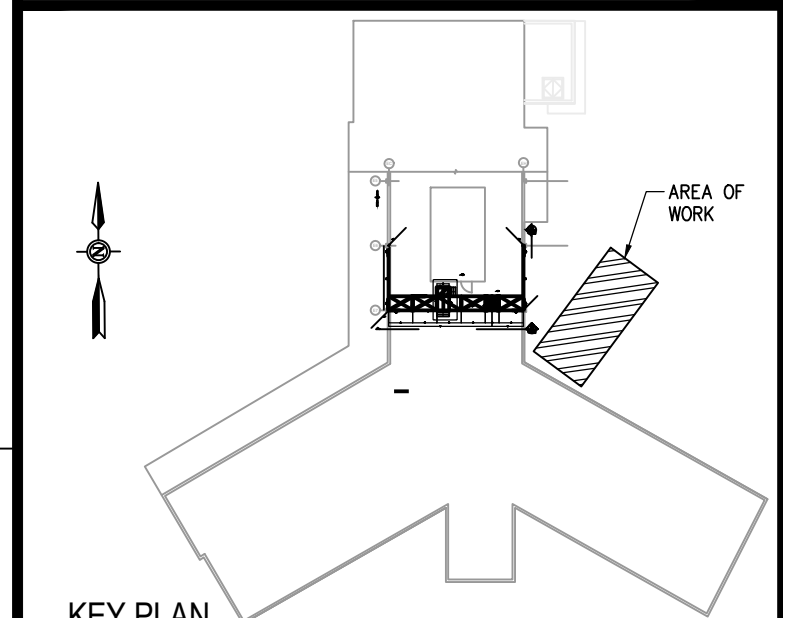


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## KEY PLAN

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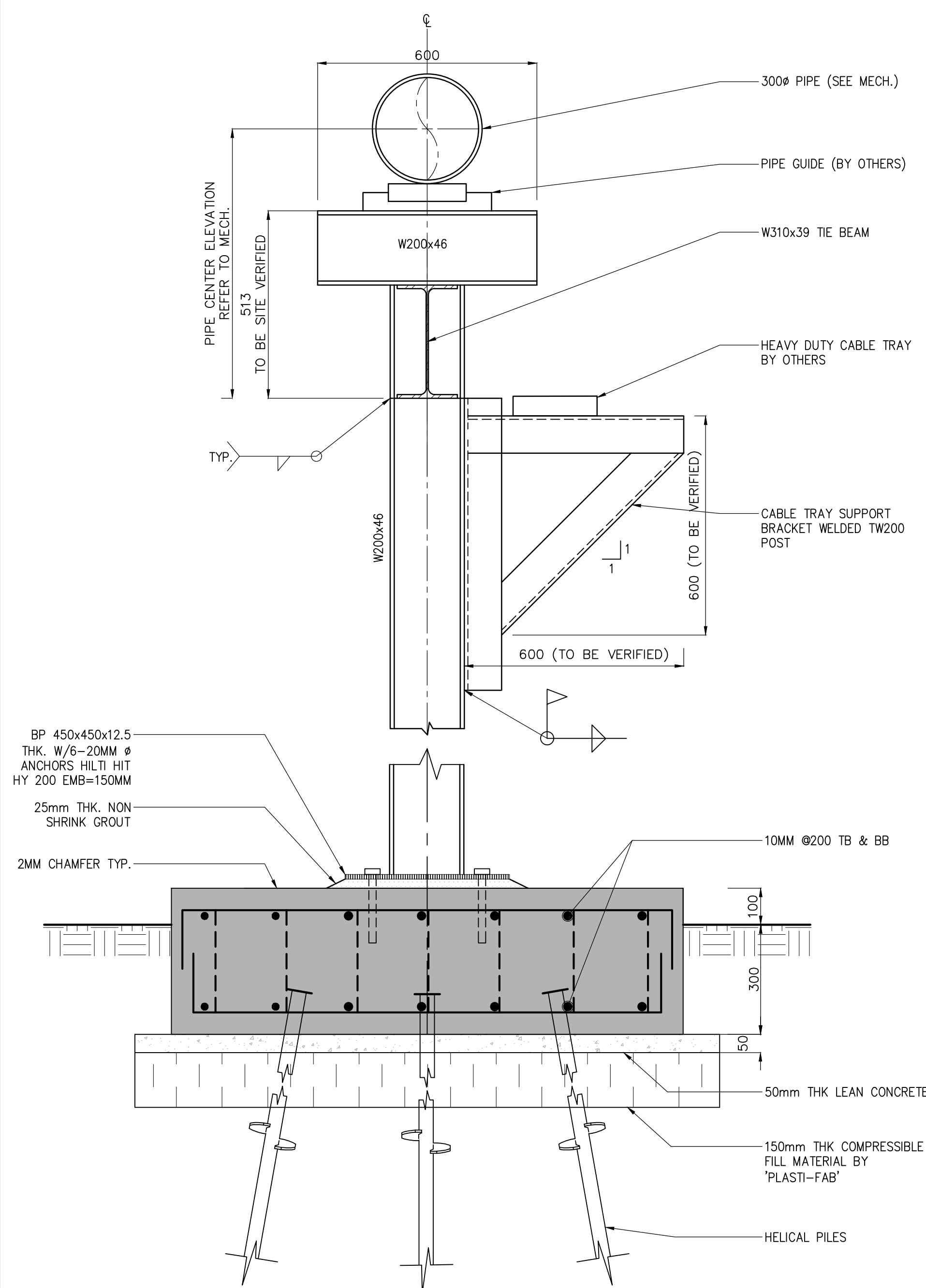
project north

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title  
PIPE RACK  
PLAN, SECTIONS & DETAILS

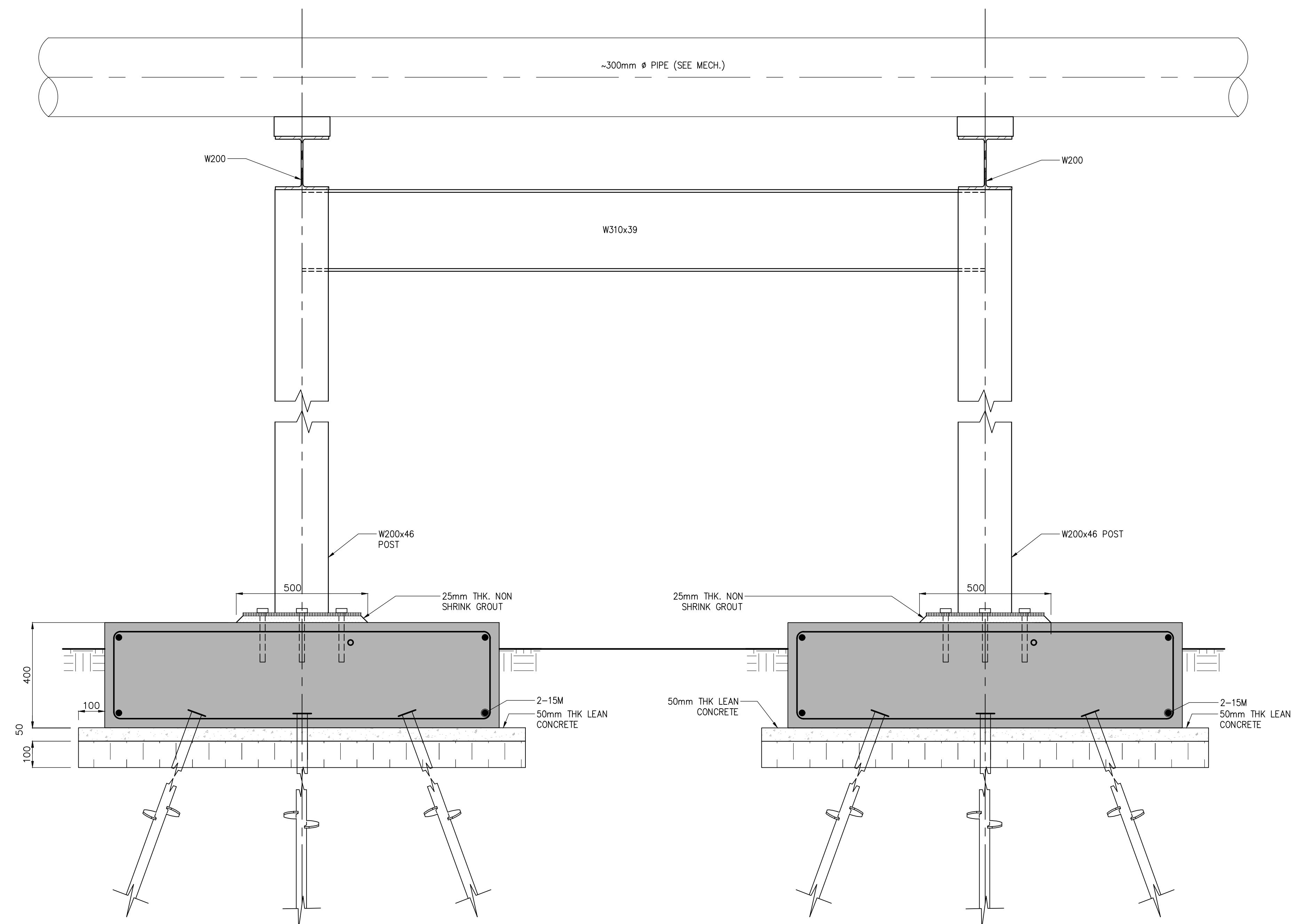
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CAD FILE	22009-SK1

## S2.2



1  
S2.2

DETAIL  
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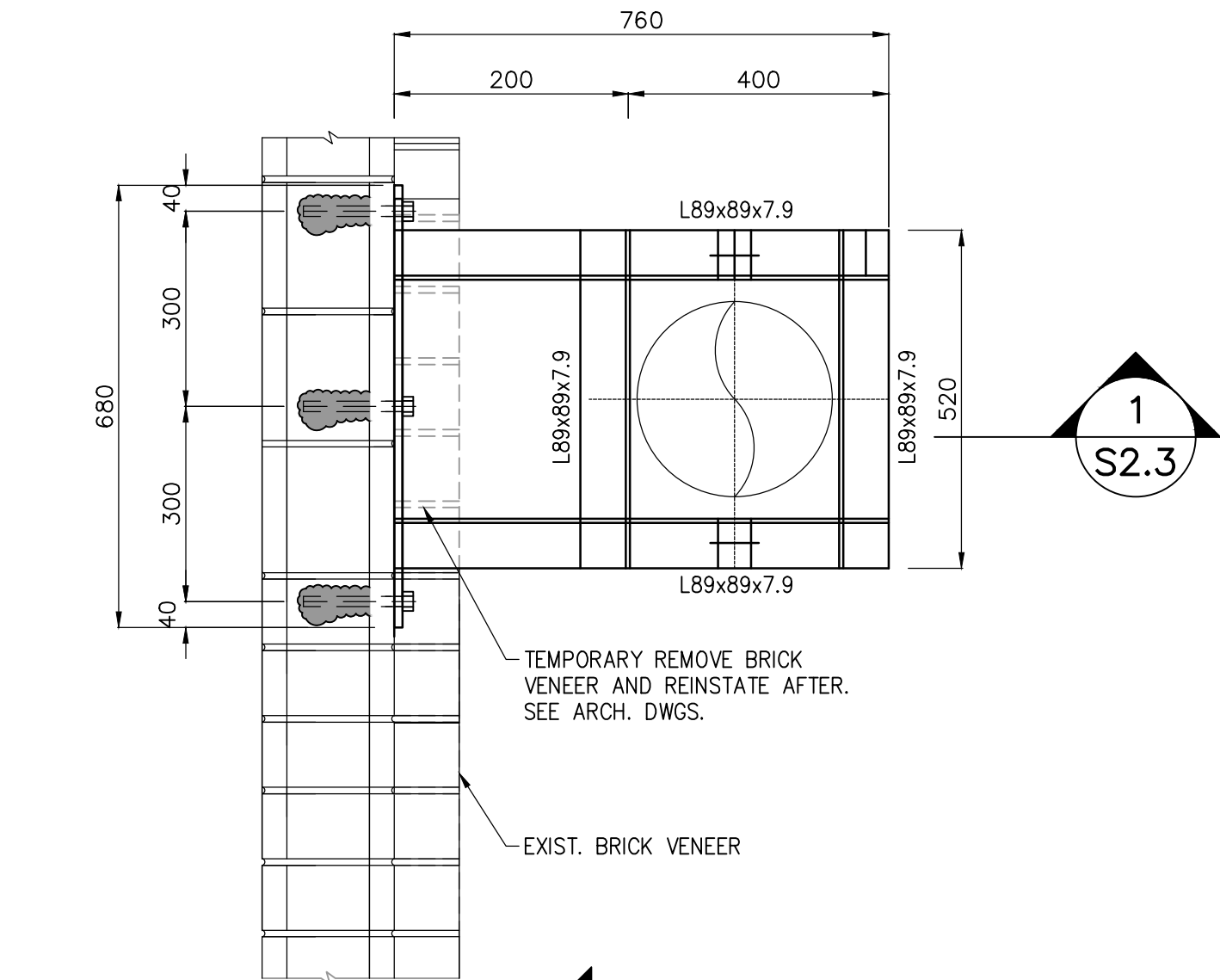


2  
S2.2

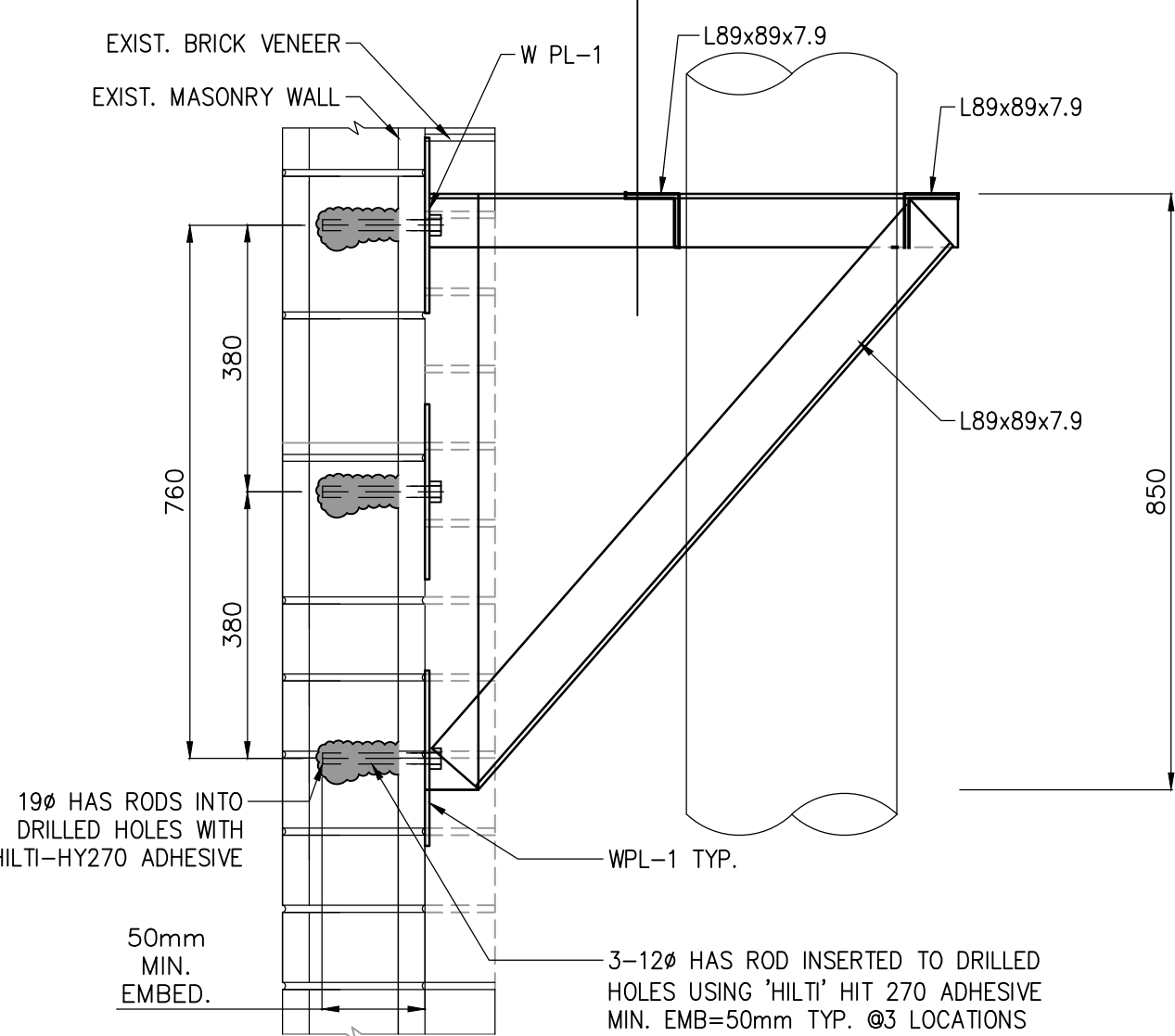
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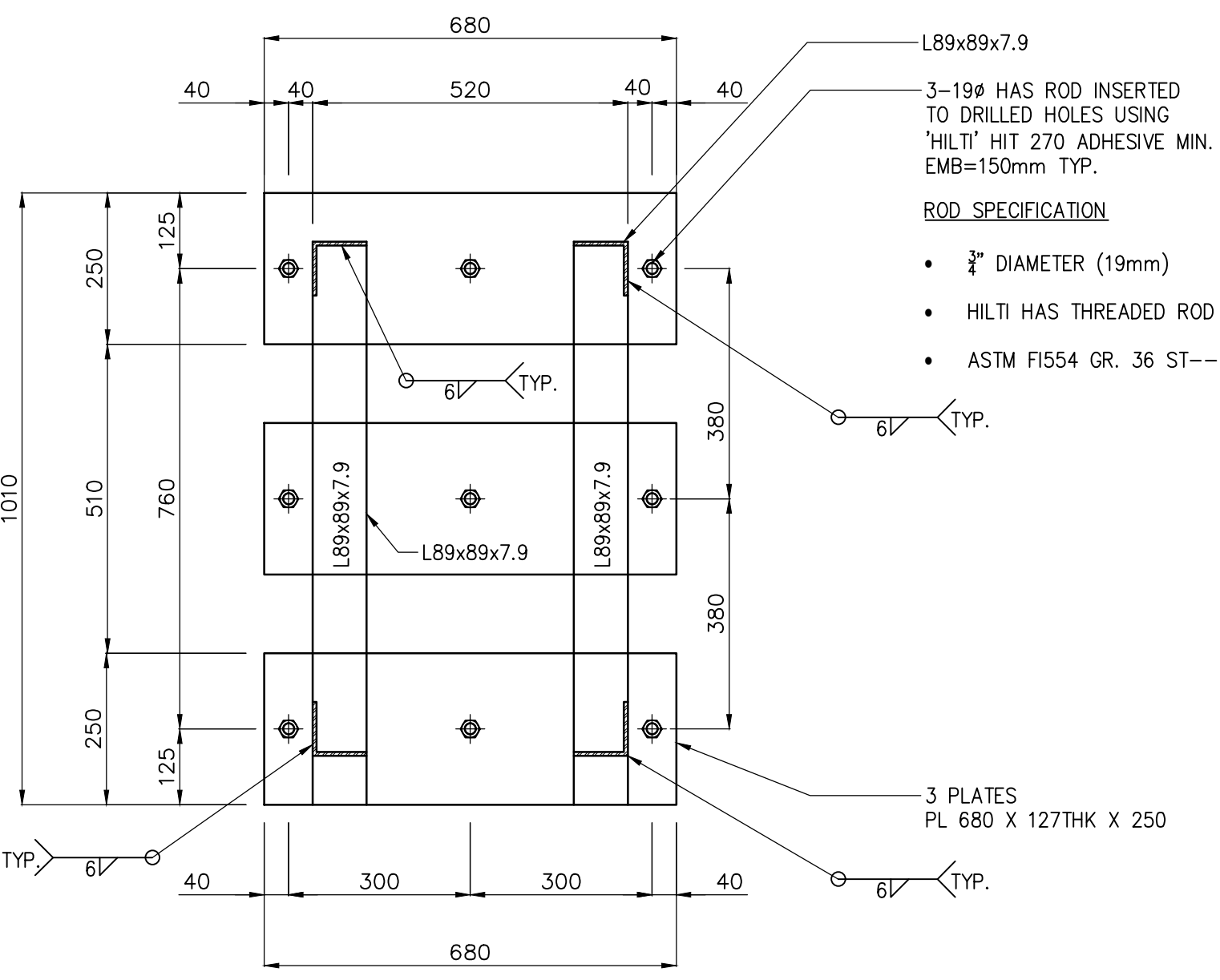
PIPE SUPPORTS



PLAN VIEW  
SCALE 1:10

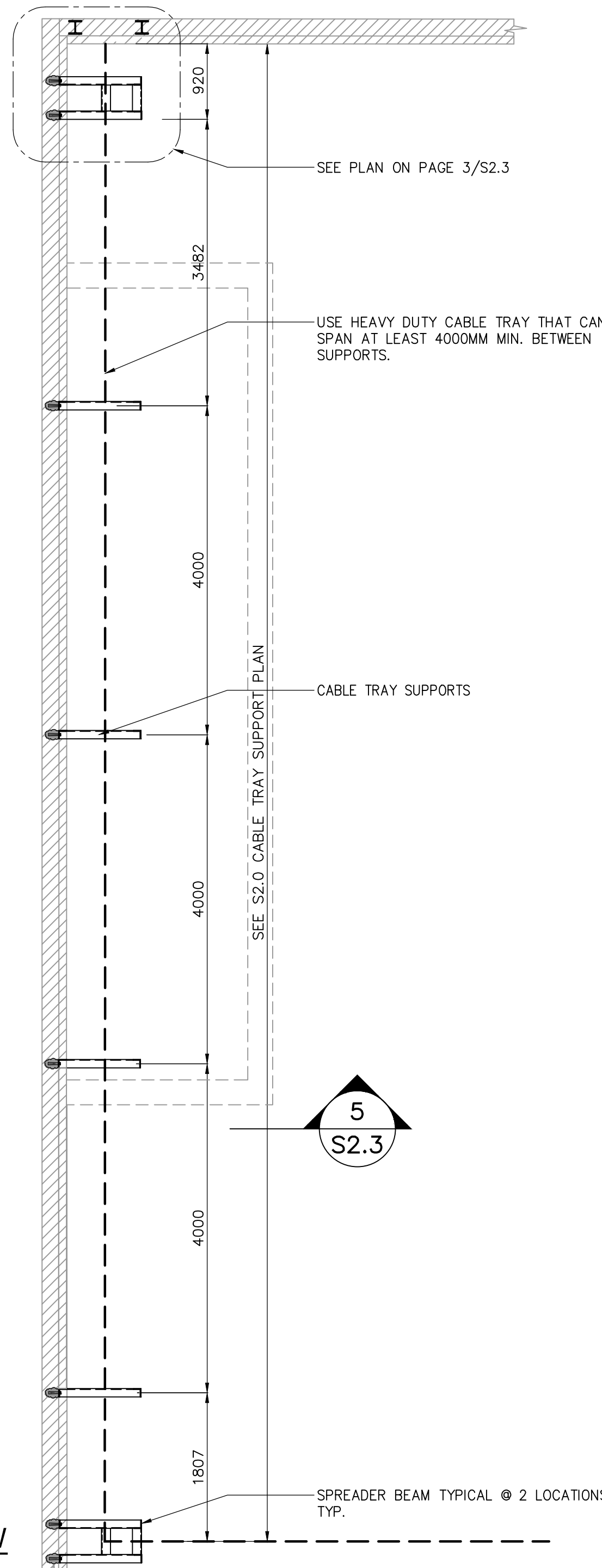


1 SECTION  
S2.3  
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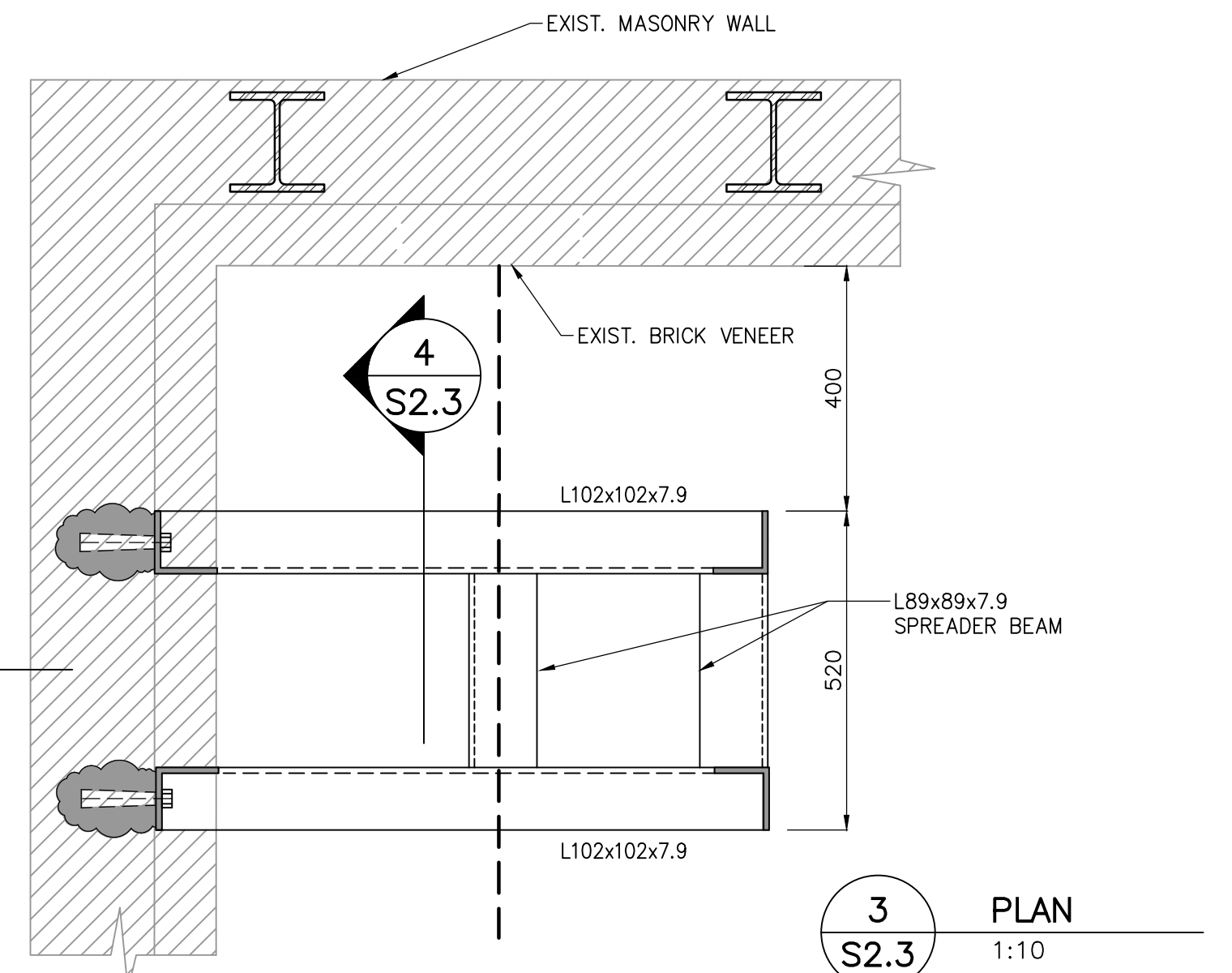


2 WALL PLATE WPL-1 SECTION  
S2.3  
1:10

CABLE TRAY SUPPORTS



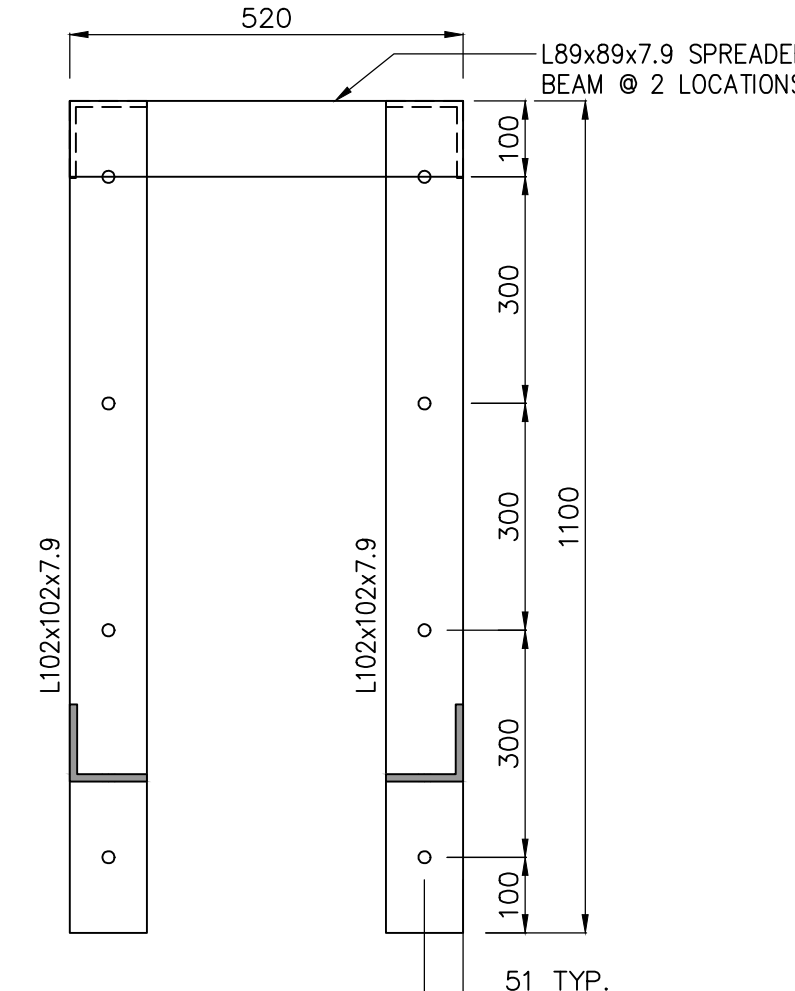
PARTIAL PLAN VIEW  
SCALE 1:50



3 PLAN  
S2.3  
1:10

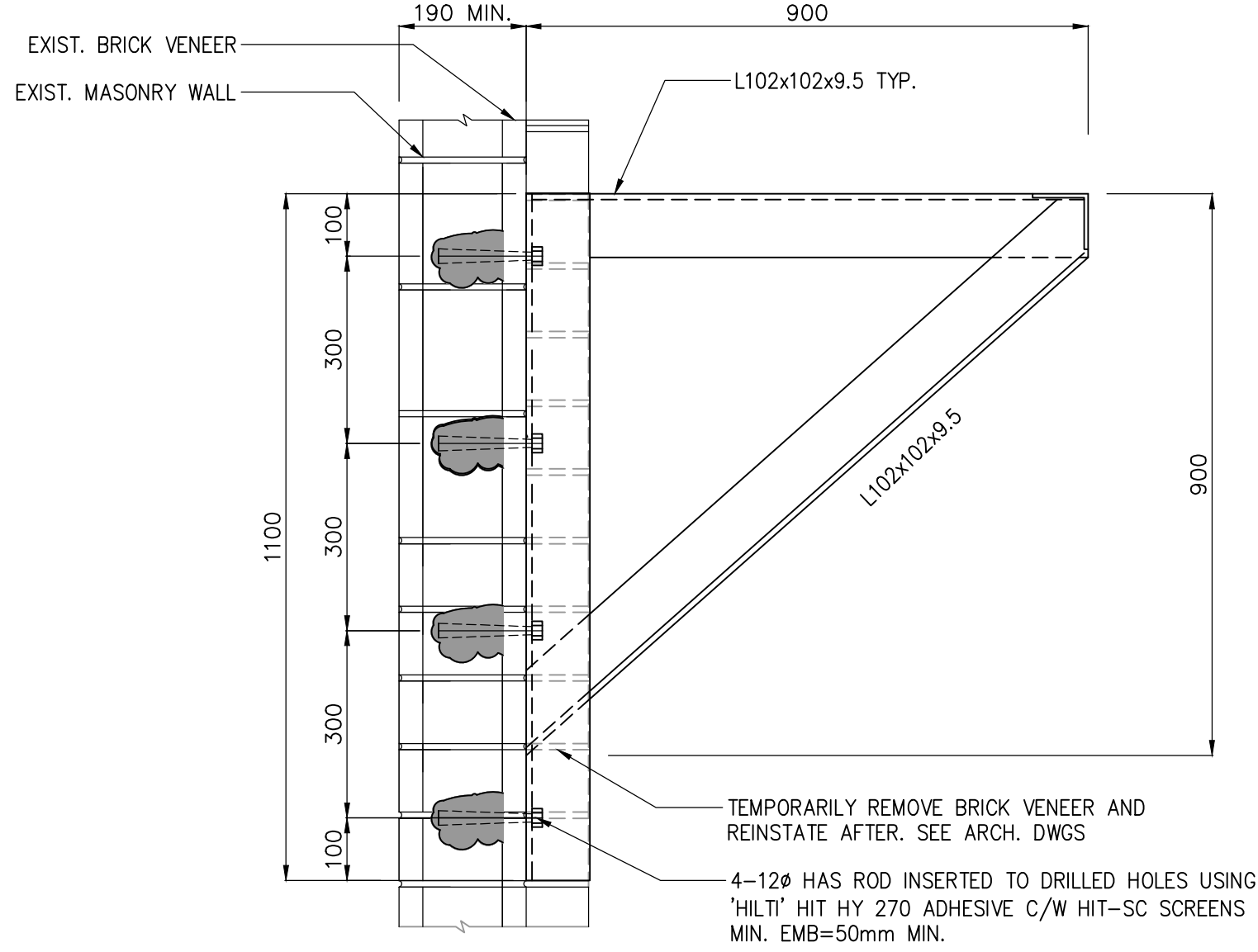
4 SECTION  
S2.3  
1:10

SECTION  
1:10

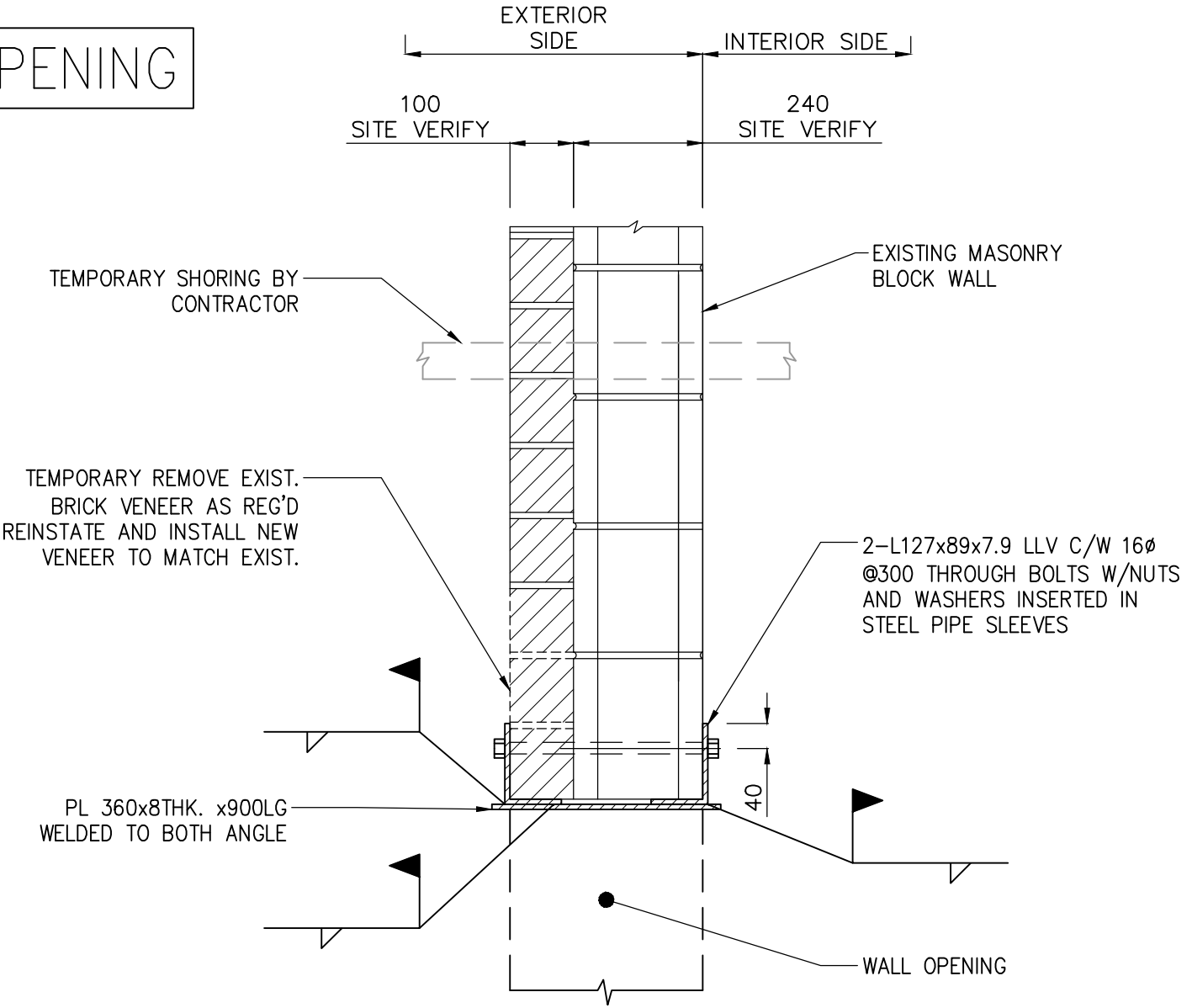


5 SECTION  
S2.3  
1:10

CABLE TRAY SUPPORT BRACKET TYP. SECTION  
SCALE: 1/10



MASONRY WALL OPENING



SECTION  
S2.3  
1:10

MASONRY WALL REINFORCEMENT FOR NEW WALL OPENING  
1:10

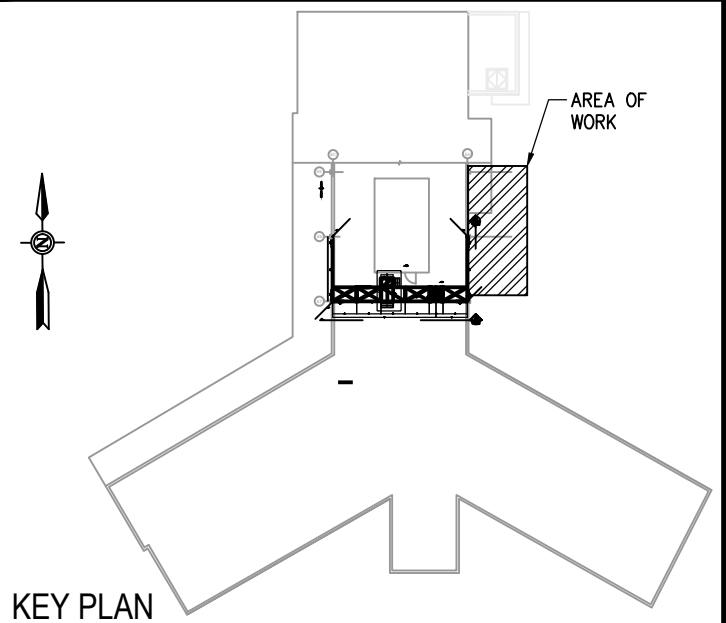


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B.M.	2024-10-09	E	ISSUED FOR BID AND PERMIT
B.M.	2024-06-04	D	ISSUED FOR CLIENT REVIEW
B.M.	2024-03-19	C	REISSUED FOR MOH CONTRACT DOCUMENT
B.M.	2023-01-19	B	ISSUED FOR MOH STAGE 2.3 COSTING
B.M.	2023.06.09	A	ISSUED FOR COSTING



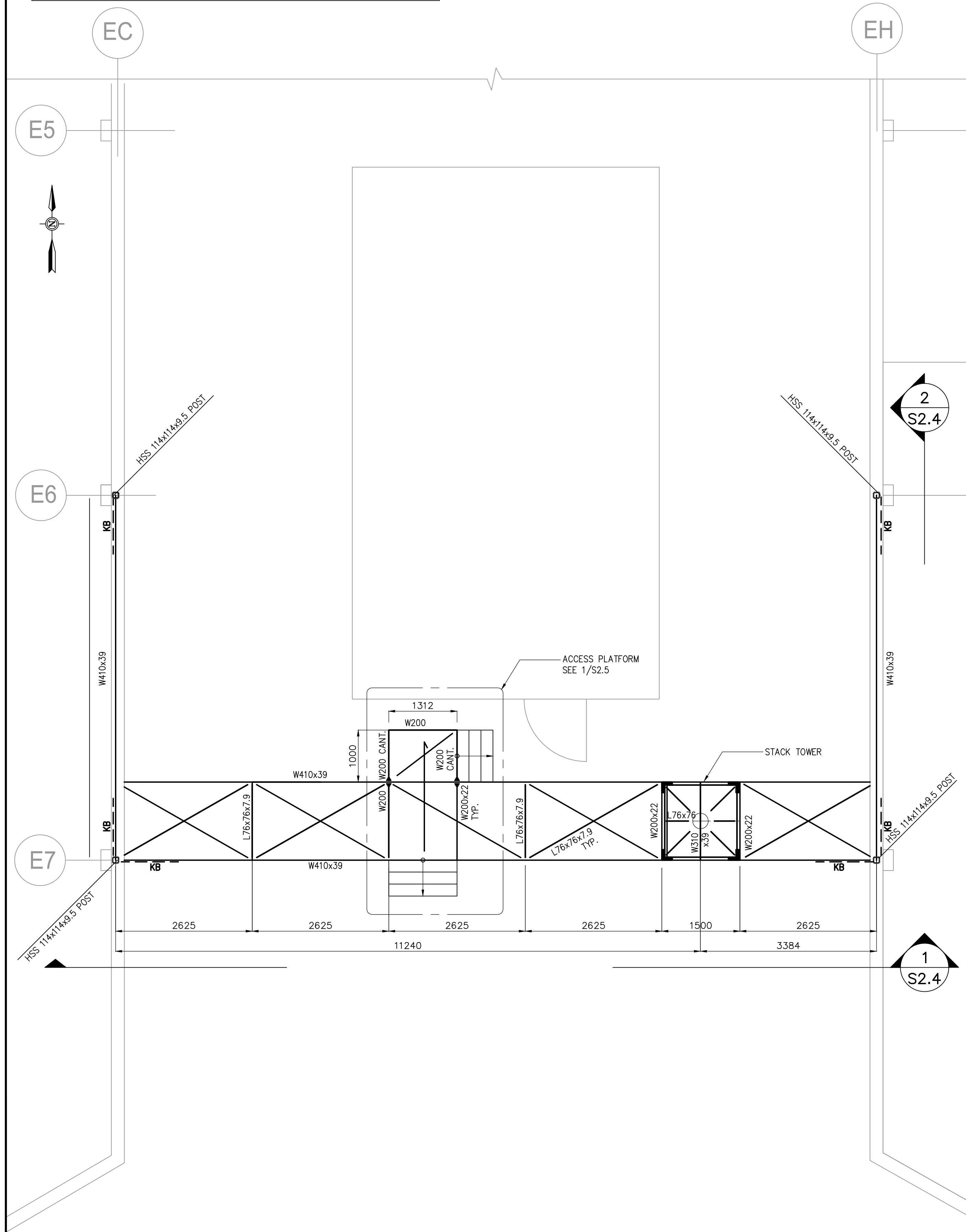
project  
**CAMPBELLFORD MEMORIAL HOSPITAL**

title  
**AS SHOWN PLAN, SECTIONS AND DETAILS**

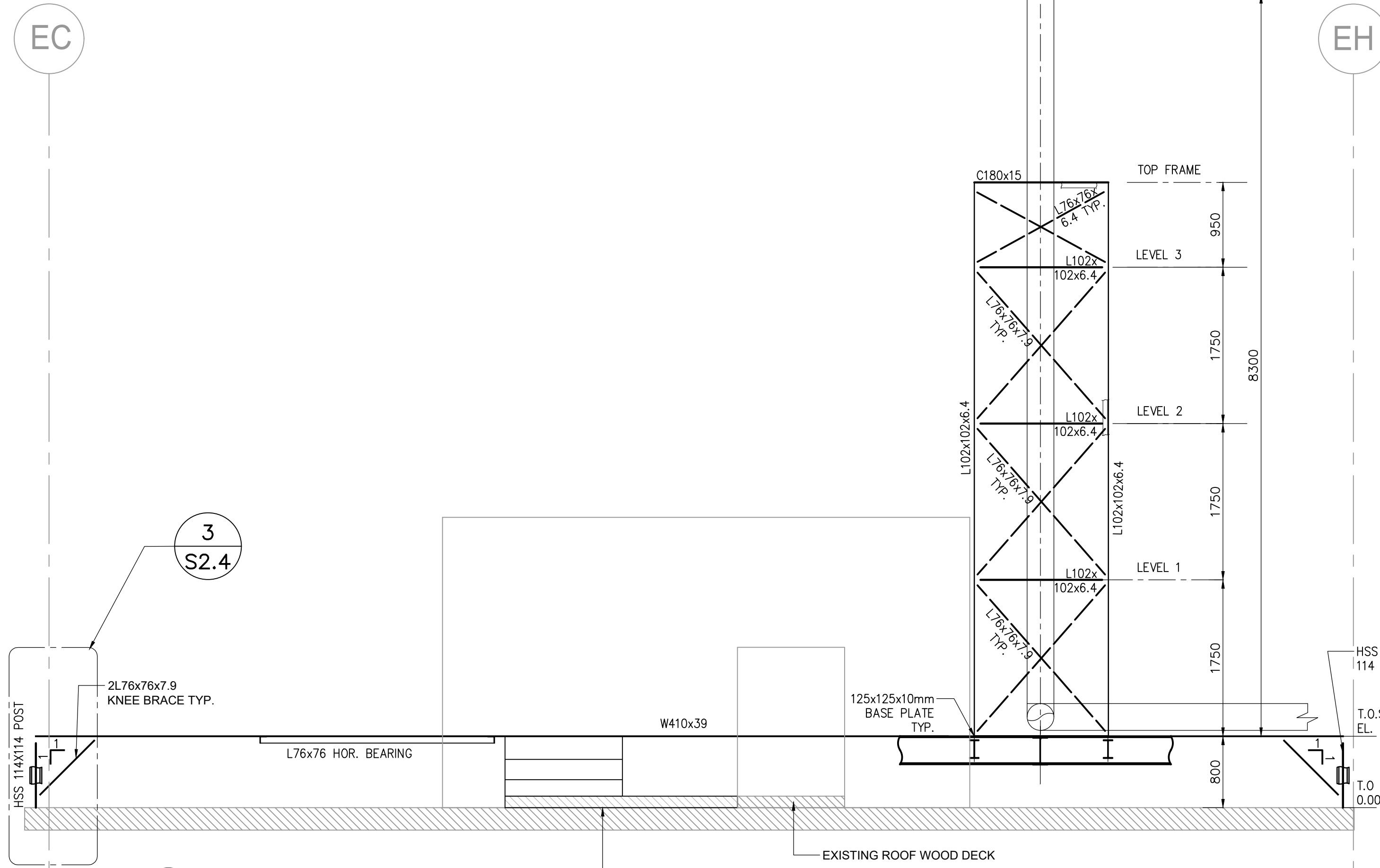
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DRAWN BY	R.B.	<b>S2.3</b>
CHECKED BY	B.M.	
DATE	NOV 2021	
CAD FILE	22009-SK1	



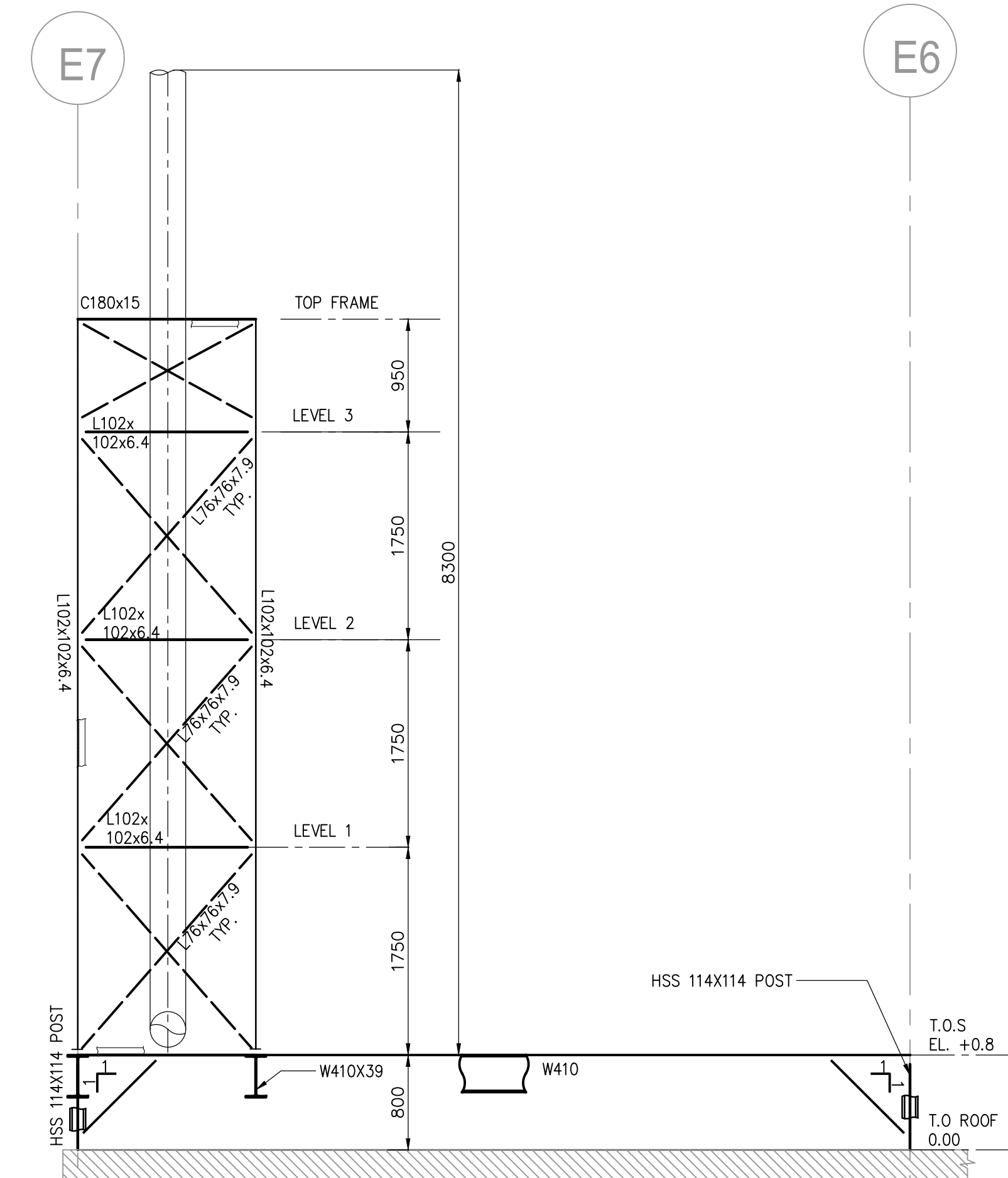
STACK TOWER AND SUPPORT FRAME



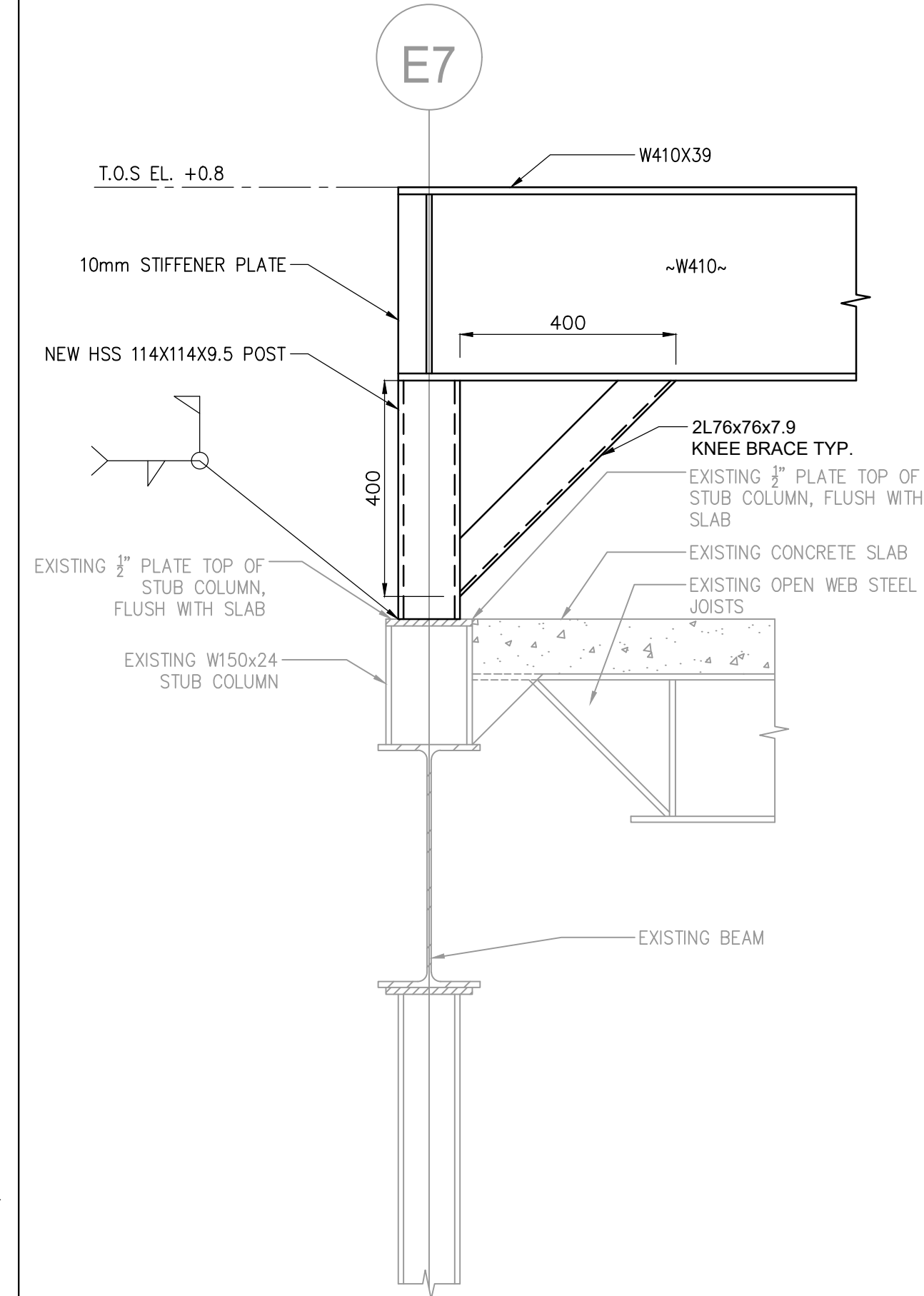
SUPPORT FRAME PLAN @ T.O.S @ELEV. +0.8  
SCALE 1:50



1 SECTION  
S2.4  
SCALE: 1:40



2 SECTION  
S2.4  
SCALE: 1:40



3 DETAIL  
S2.4  
SCALE: 1:10

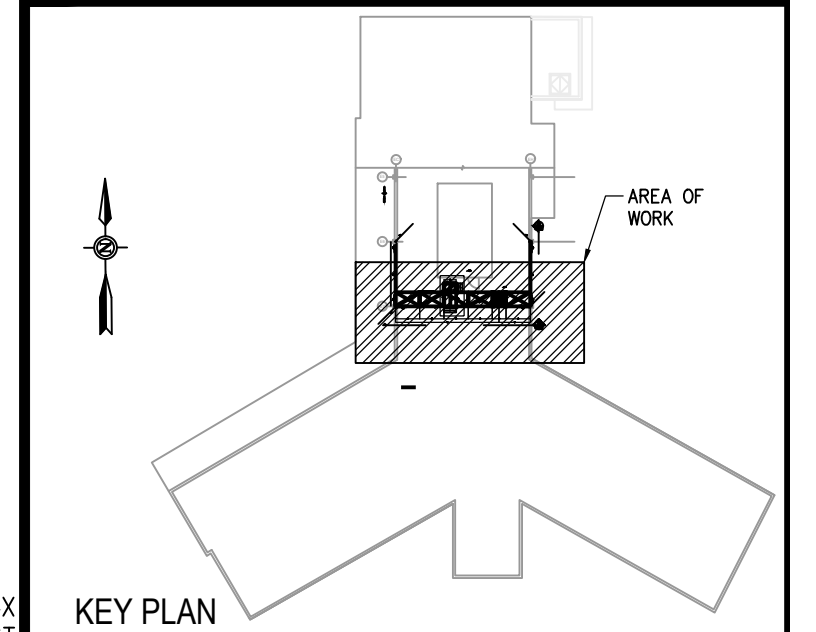


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www.hhangus.com | T 416 443 8200 | F 416 443 8290



DRAWINGS MUST NOT BE SCALED. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AGAINST ARCHITECTURAL DRAWINGS AND MUST REPORT ANY INCONSISTENCY TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

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B.M.	DATE	NO.	REVISIONS
B.M.	2024-10-09	E	ISSUED FOR BID AND PERMIT
B.M.	2024-06-04	D	ISSUED FOR CLIENT REVIEW
B.M.	2024-02-12	C	ISSUED FOR MOH CONTRACT DOCUMENTS
B.M.	2023-01-19	B	ISSUED FOR MOH STAGE 2.3 COSTING
B.M.	2021.11.12	A	ISSUED FOR PRICING

APPROVED	DATE	NO.	REVISIONS


seal	project north


project	CAMPBELLFORD MEMORIAL HOSPITAL
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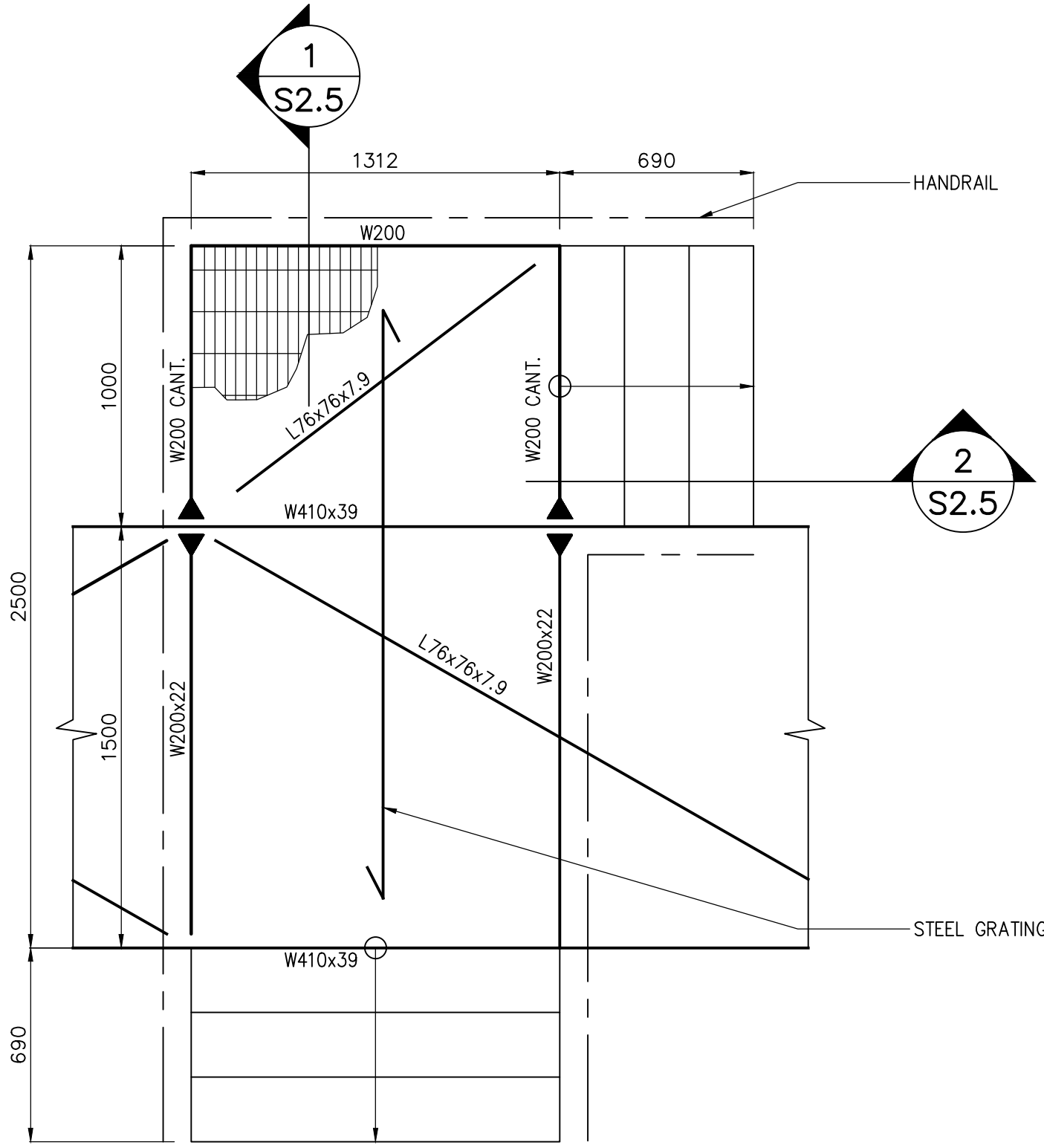
title	STACK TOWER PLAN AND SECTION
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SCALE	AS SHOWN	DRAWING NO.
DRAWN BY	R.B.	
CHECKED BY	B.M.	
DATE	NOV 2021	
CAD FILE	22009-SK1	

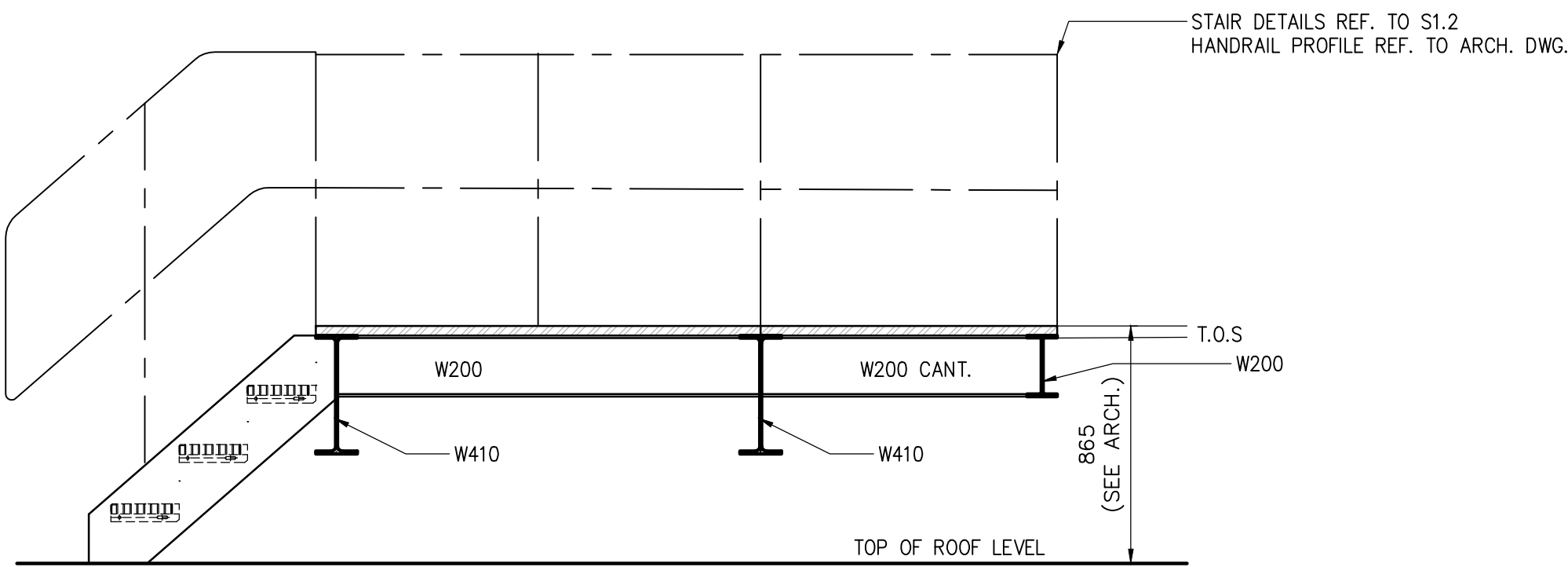
S2.4



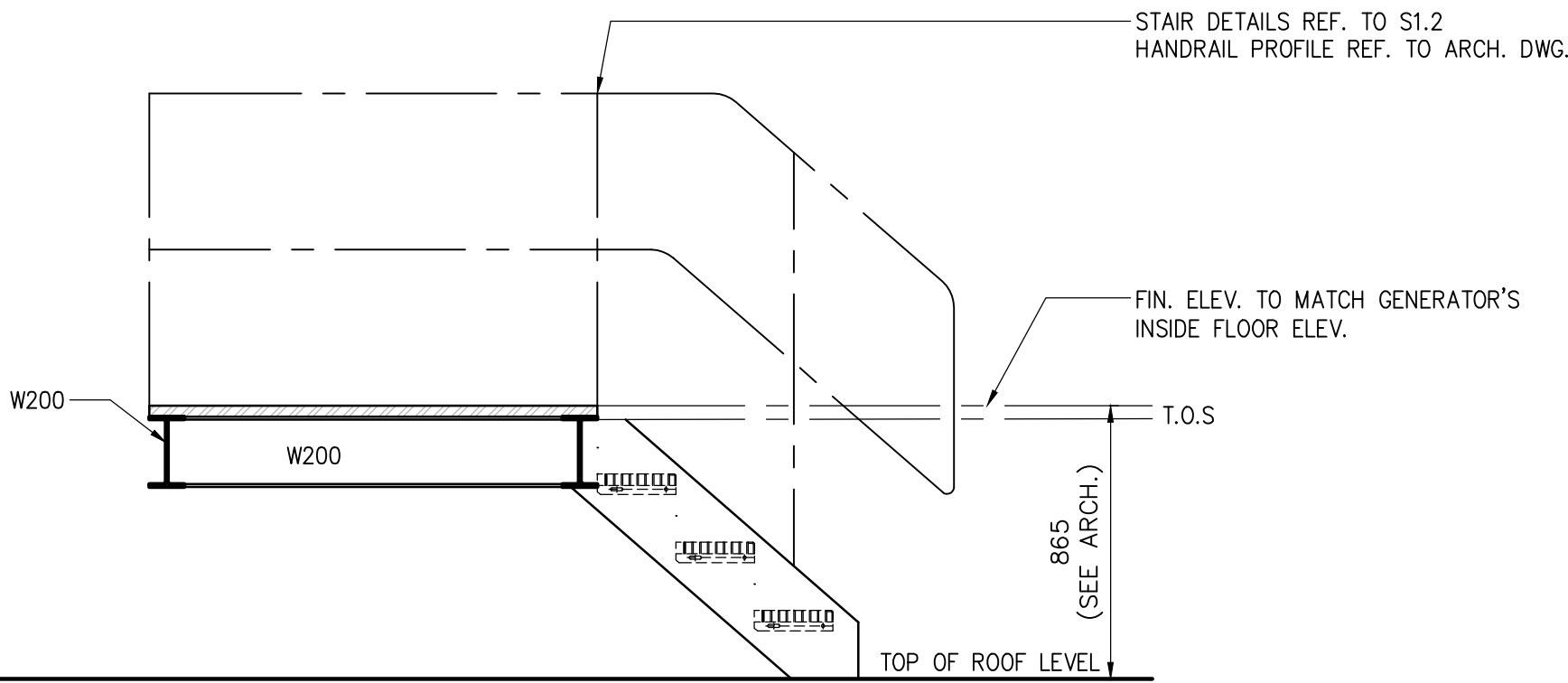
ACCESS PLATFORM



PLAN VIEW  
SCALE 1:20



1 SECTION  
SCALE: 1/20



2 SECTION  
SCALE: 1/20

STAIR TO BE SELF SUPPORTED AND FOR THE GC TO SUBMIT SHOP DRAWINGS.

STAIR DETAILS REF. TO S1.2  
HANDRAIL PROFILE REF. TO ARCH. DWG.

FIN. ELEV. TO MATCH GENERATOR'S INSIDE FLOOR ELEV.

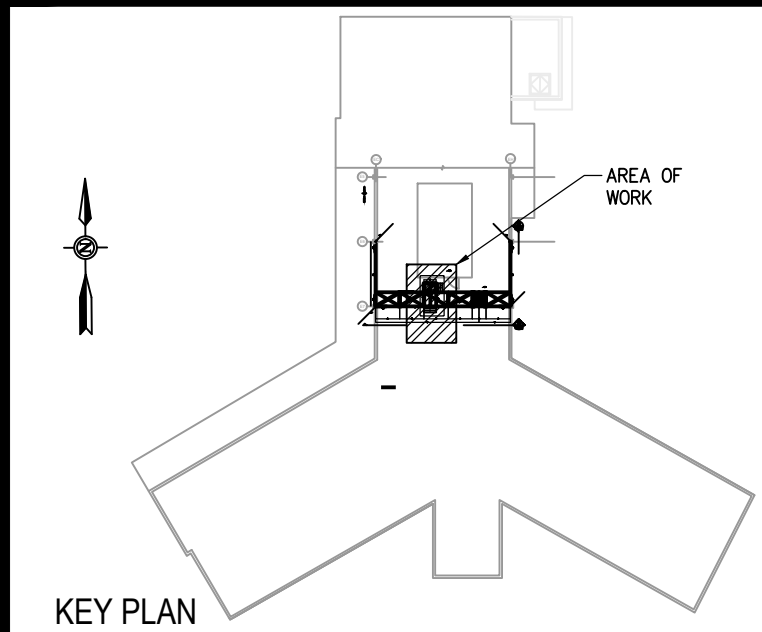


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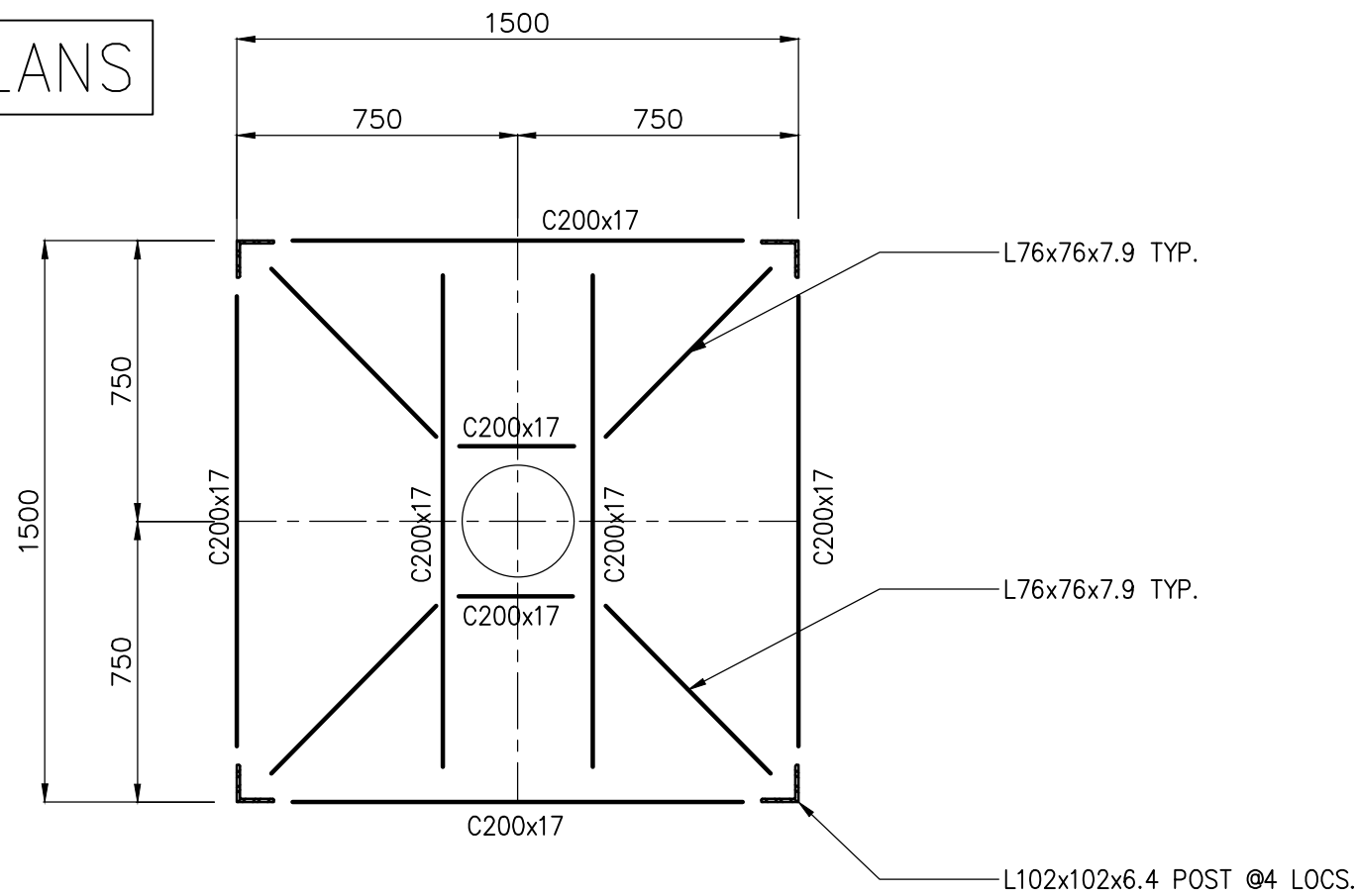


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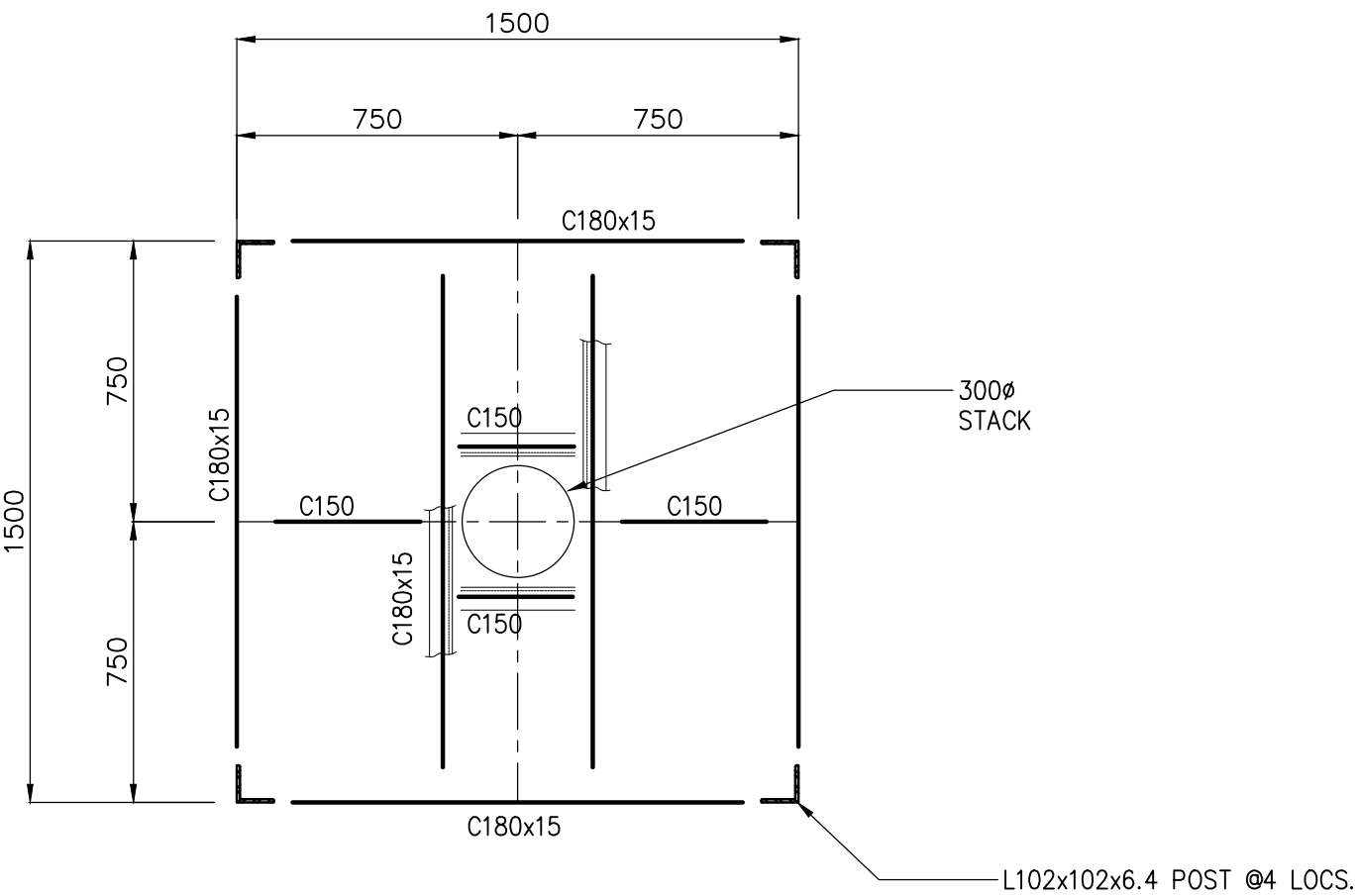
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TOWER FRAMING PLANS



FRAMING PLAN. TOP FRAME  
SCALE 1:20



FRAMING PLAN. LEVEL 1 TO LEVEL 3  
SCALE 1:20

NOTES:

- FOR GENERAL NOTES AND SPECIFICATIONS, SEE DWG S1.0, S1.1 AND S1.2
- ANY DIMENSIONS AND ELEVATIONS MUST BE VERIFIED AND CONFIRMED BY MECHANICAL AND ELECTRICAL DRAWINGS. REPORT ANY INCONSISTENCIES TO CONSULTANT.
- STEEL GRATING MIN. 32x4.8 STANDARD FLOW FORGE GRATING BY FISHER AND LUDLOW OR APPROVED EQUIVALENT.
- REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION OF GENERATOR, PIPES AND CABLE TRAYS AND TO MANUFACTURER'S DRAWINGS FOR LOCATION OF BOLTS CONNECTIONS.
- ALL ELEVATIONS AND DIMENSIONS OF THE EXISTING STRUCTURAL MEMBERS ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR A DETAILED SURVEY OF ALL ELEVATIONS AND DIMENSIONS. THE CONTRACTOR SHALL NOTIFY THE CONSULTANT IMMEDIATELY IN THE EVENT OF ANY DISCREPANCY IN ORDER TO ADJUST LENGTHS AND ELEVATIONS OF NEW STEEL FRAMES

APPRO'D	DATE	NO.	REVISIONS
B.M.	2024-10-09	E	ISSUED FOR BID AND PERMIT
B.M.	2024-06-04	D	ISSUED FOR CLIENT REVIEW
B.M.	2024-02-12	C	ISSUED FOR MOH CONTRACT DOCUMENTS
B.M.	2023-01-19	B	ISSUED FOR MOH STAGE 2.3 COSTING
B.M.	2023.06.09	A	ISSUED FOR COSTING



project north

project  
CAMPBELLFORD MEMORIAL HOSPITAL

title  
AS SHOWN PLAN,  
SECTIONS AND DETAILS

SCALE	AS SHOWN	DRAWING NO.
DRAWN BY	R.B.	
CHECKED BY	B.M.	
DATE	NOV 2021	
CAD FILE	22009-SK1	

S2.5





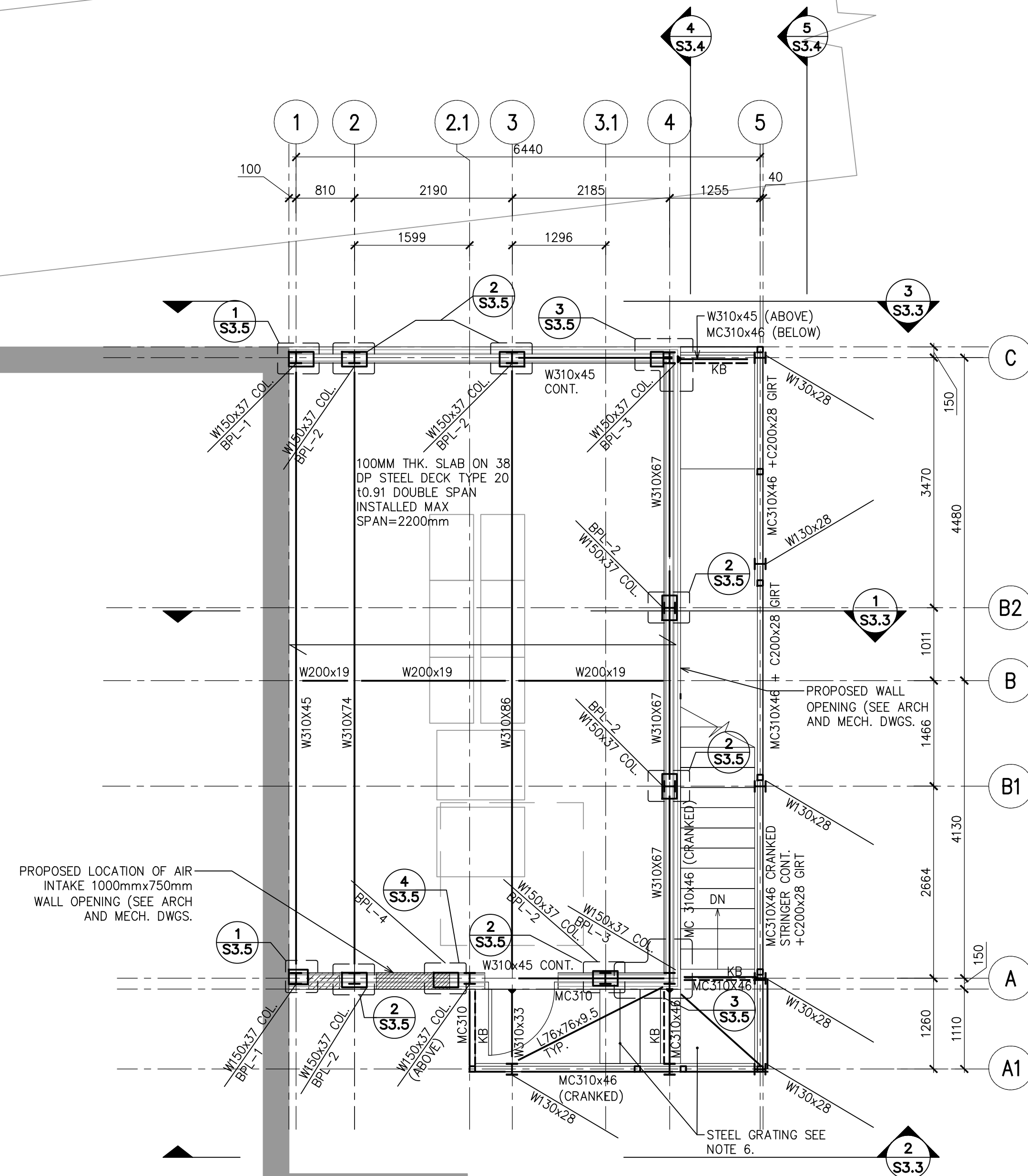




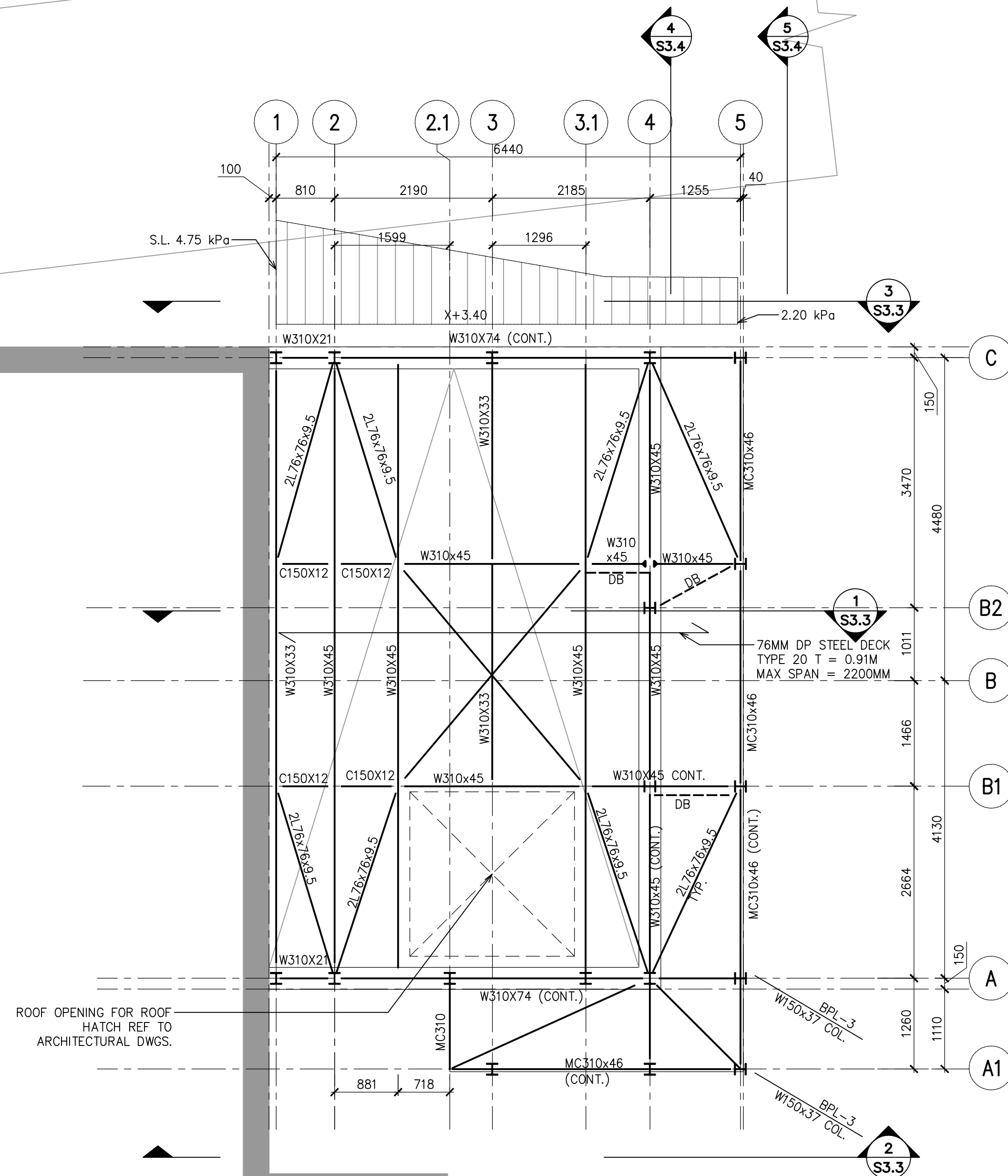


DRAWINGS MUST NOT BE SCALED THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AGAINST ARCHITECTURAL DRAWINGS AND MUST REPORT ANY INCONSISTENCY TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

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NEW ELECTRICAL ROOM/ FLOOR AND  
ENCLOSED STAIR FRAMING PLAN  
SCALE: 1:50



NEW ROOF AND ENCLOSED  
STAIR FRAMING PLAN  
SCALE: 1:50

NOTES:

1. FOR GENERAL NOTES AND SPECIFICATIONS, SEE DWG. S1.0, S1.1, & S1.2.
2. ANY DIMENSIONS MUST BE SITE VERIFIED AND CONFIRMED BY ELECTRICAL AND ARCHITECTURAL DRAWINGS. REPORT ANY INCONSISTENCIES TO CONSULTANT.
3. FOR LOCATION OF ACCESS STAIRS AND LADDER, REFER TO ARCHITECTURAL DRAWINGS.
4. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR EXACT SIZE/WEIGHT AND LOCATION OF EQUIPMENT.
5. DESIGN LOADS:  
  
DL: 3.0 kPa  
  
LL: 4.8 kPa
6. STEEL GRATING MIN. 32x4.8 STANDARD FLOW FORGE GRATING BY FISHER AND LUDLOW OR APPROVED EQUIVALENT.
7. CONTRACTOR TO CREATE "PITCH-POCKETS" ON THE EXISTING ROOF PARAPET WALL TO BE ABLE TO INSTALL NEW STEEL BEAMS. REFER TO DETAILS 3, 4, & 5 SHOWN IN THE PLAN.
8. CONTRACTOR TO EXCAVATE AND EXPOSE WIDTH OF EXIST. WALL FOUNDATION TO ABLE TO DETERMINE ITS CAPACITY TO ACCOMMODATE HELICAL PILE REINFORCEMENT. NOTIFY CONSULTANT
9. PROVIDE 15MM THK. STIFFENER PLATES DIRECTLY UNDER ALL NEW W150 COLUMNS TYPE.

LEGEND

KB - 76X76X9.5 DIAGONAL KNEE  
DB - 76x76x9.5 DIAGONAL BRACE

seal

REGISTERED PROFESSIONAL ENGINEER

10.09.2024

B. MILMAN

PROVINCE OF ONTARIO

SEAL MUST BE SIGNED AND DATED TO BE VALID

project north

project  
CAMPBELLFORD MEMORIAL  
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title	FLOOR PLANS
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SCALE AS SHOWN

DRAWN BY R.B.

CHECKED BY BM

CHECKED BY	G.M.
DATE	NOV 2001

DRAWING NO.

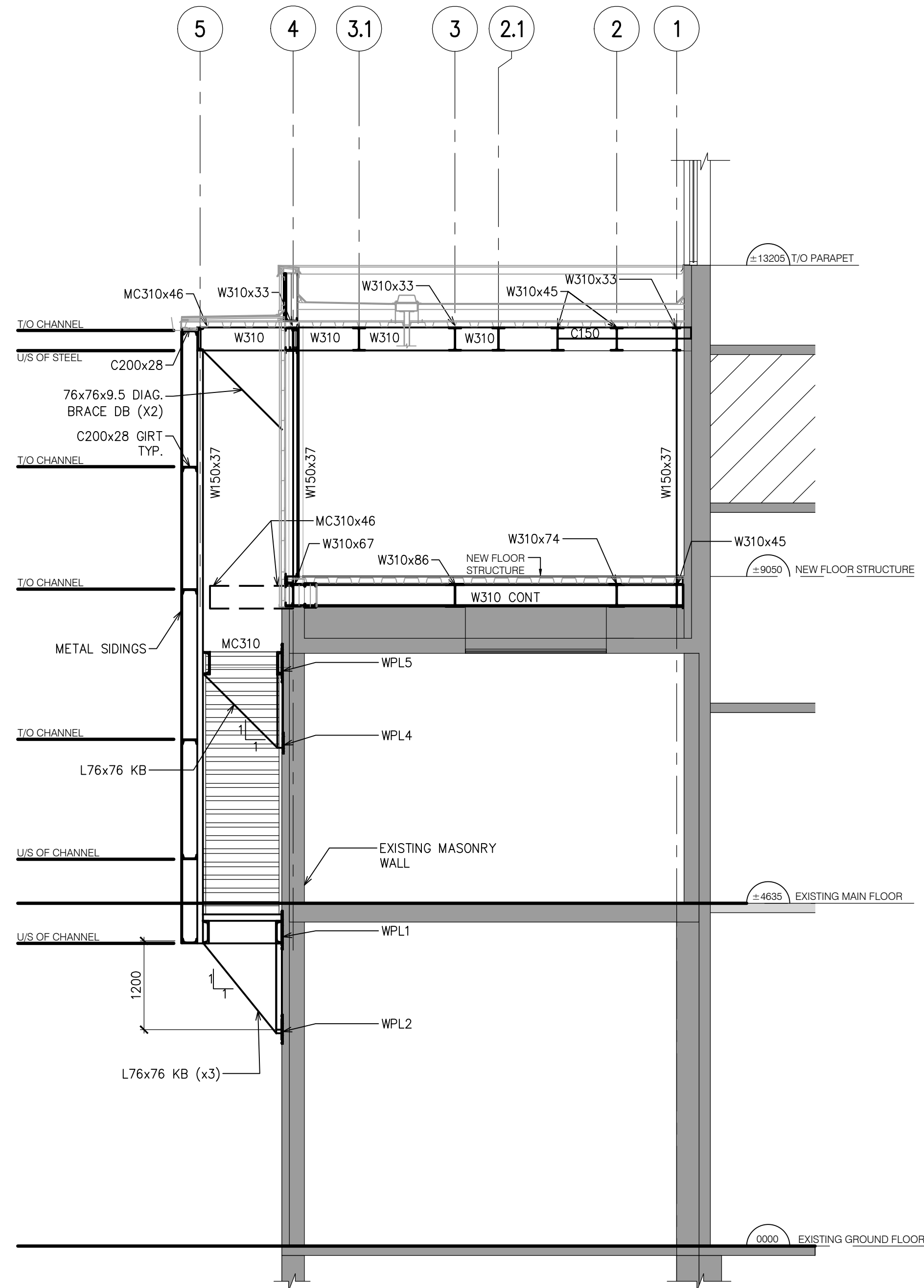
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### 55.2

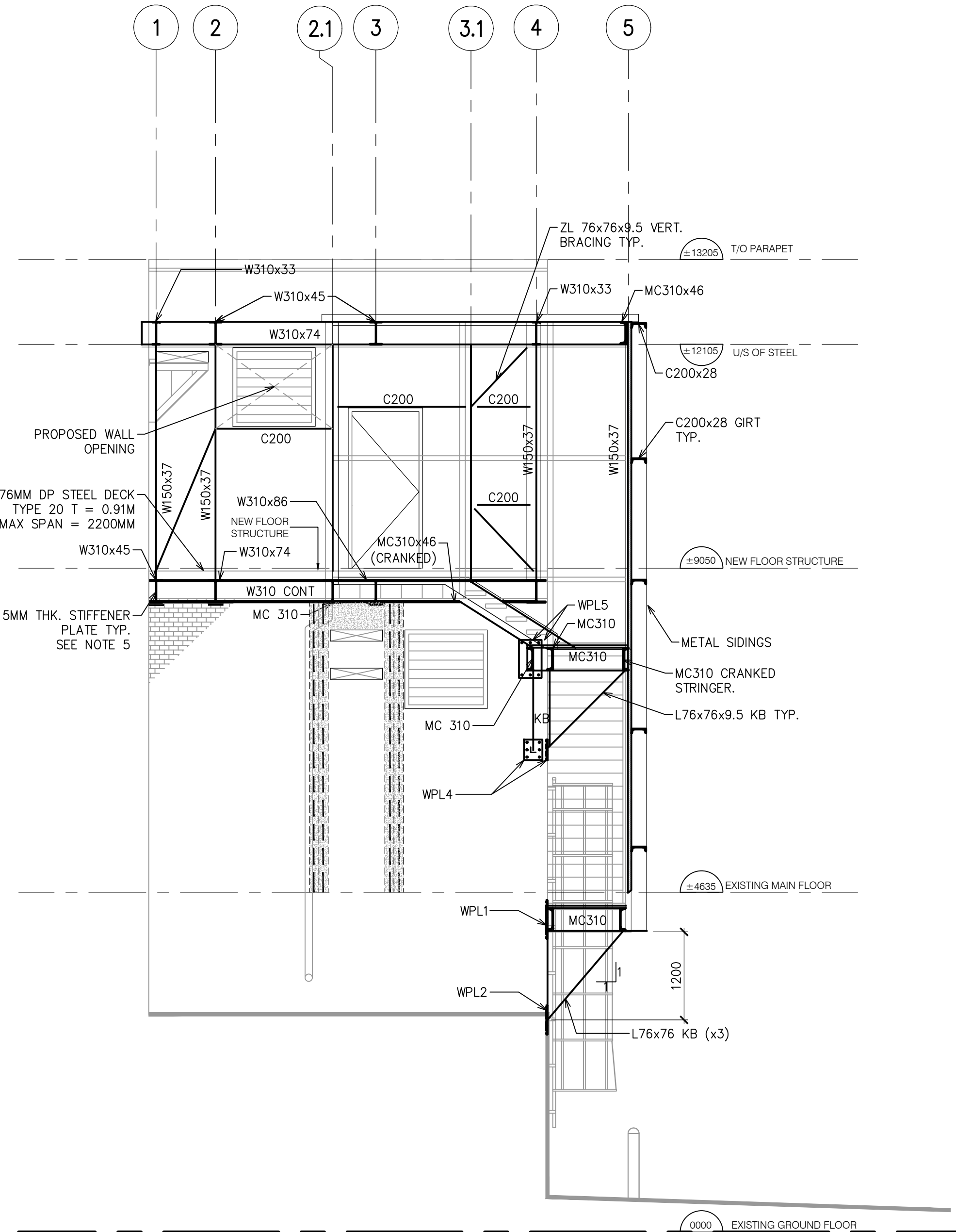


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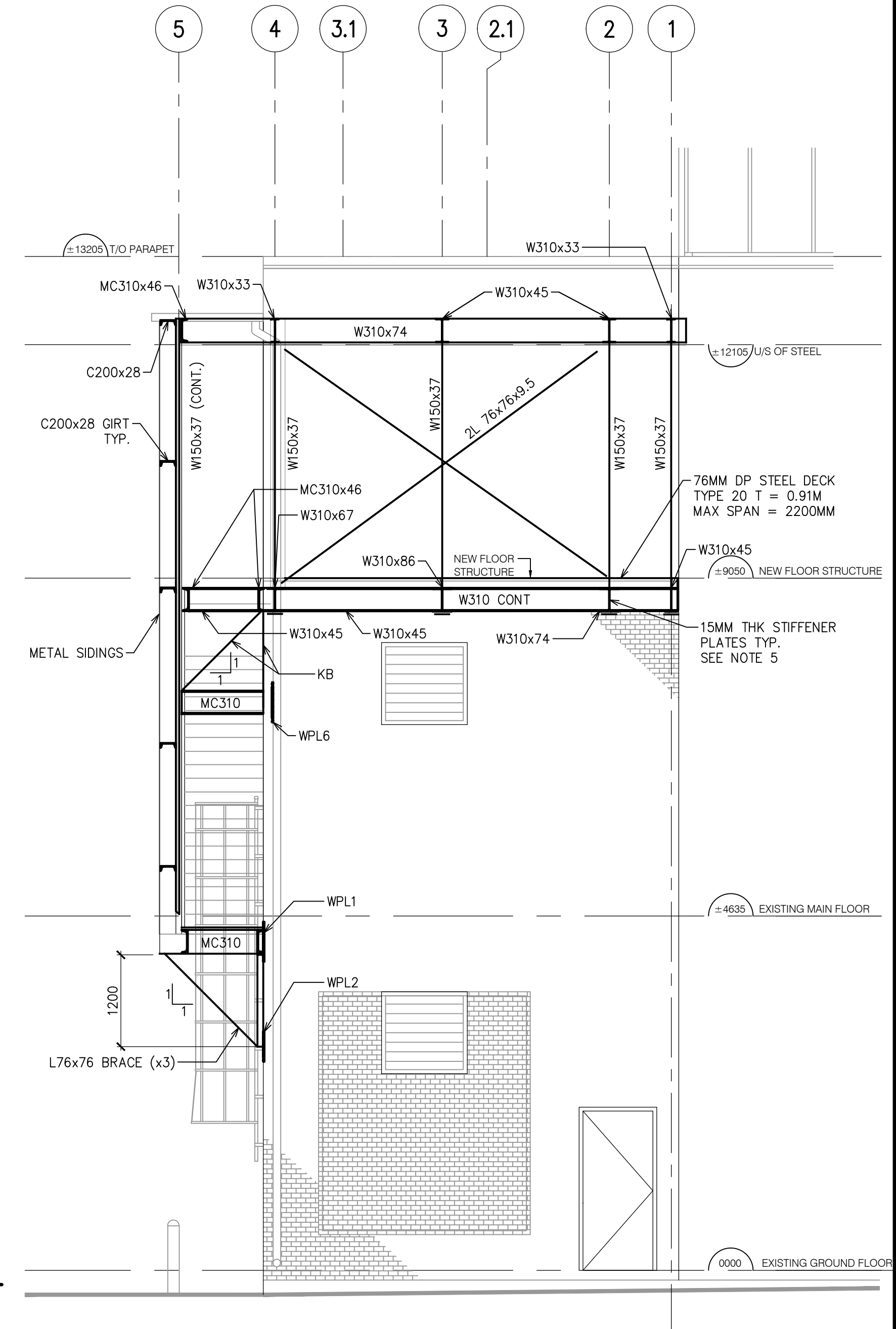
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**1**  
**S3.3**  
SECTION  
LOOKING SOUTH  
1:50



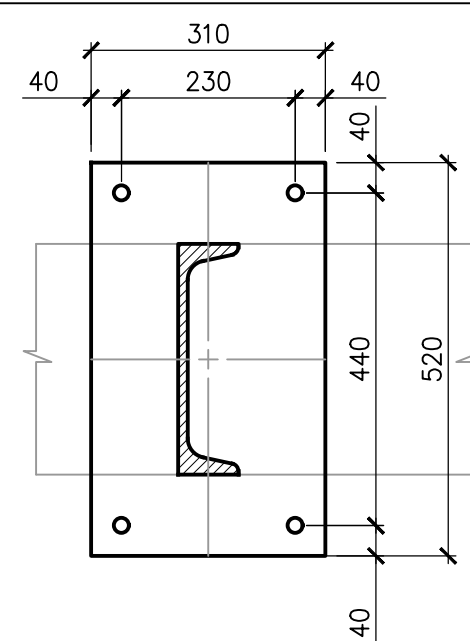
**2**  
**S3.3**  
SOUTH ELEVATION  
1:50



**3**  
**S3.3**  
NORTH ELEVATION  
1:50

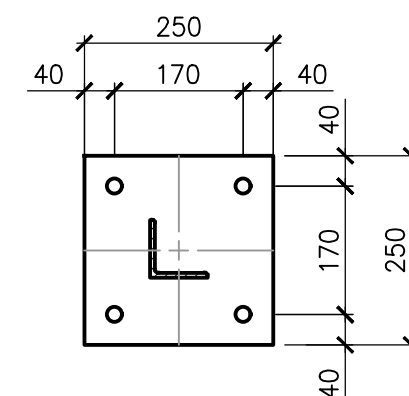
**NOTES:**

- REFER TO DRAWINGS S1.0, S1.1, & S1.2 FOR GENERAL NOTES AND TYPICAL DETAILS.
- CONTRACTOR TO SITE VERIFY DIMENSIONS OF EXISTING STRUCTURE AND CONFIRM WITH ARCHITECTURAL AND ELECTRICAL DRAWINGS.
- FOR LOCATION OF ACCESS STAIRS AND LADDER, REFER TO ARCHITECTURAL DRAWINGS.
- ALL ELEVATIONS AND DIMENSIONS OF EXISTING STRUCTURAL MEMBERS ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR A DETAILED SURVEY OF ALL ELEVATIONS AND DIMENSIONS. THE CONTRACTOR SHALL NOTIFY THE CONSULTANT IMMEDIATELY IN THE EVENT OF ANY DISCREPANCY IN ORDER TO ADJUST LENGTHS AND ELEVATIONS OF THE NEW STEEL FRAMES.
- PROVIDE 15MM THK. STIFFENER PLATES DIRECTLY UNDER ALL NEW W150 COLUMNS TYP.



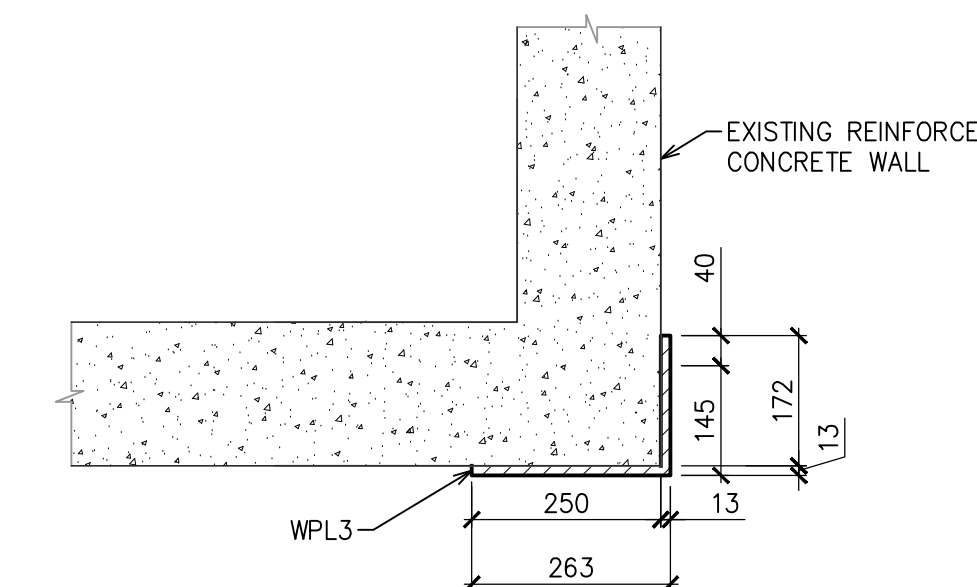
WPL1

WALL PLATE WPL1:  
310x520x12.7 THK. W/4-20MM DIA. HAS ROD  
INSERTED THROUGH HOLES FILLED W/HILTI HH HY  
200R ADHESIVE TYP. AT 3 LOCATIONS. MINIMUM  
150 EMBEDMENT

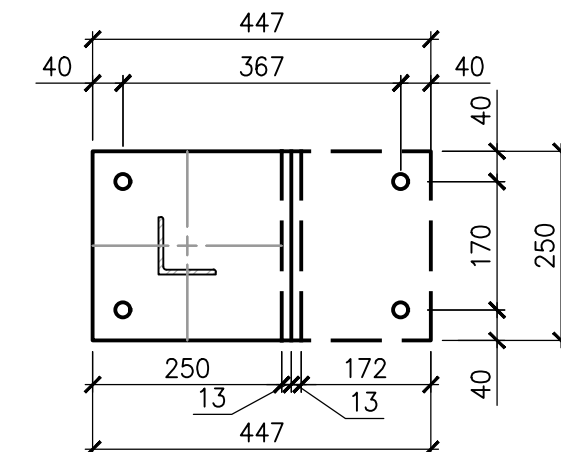


WPL2

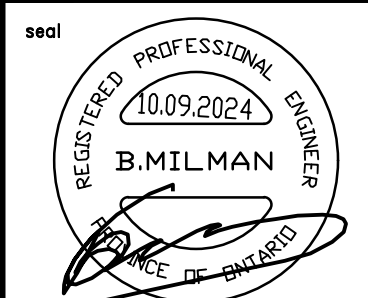
WALL PLATE WPL2:  
250x250x12.7 THK. W/4-20MM DIA. HAS ROD  
INSERTED THROUGH HOLES FILLED W/HILTI HH HY  
200R ADHESIVE TYP. AT 3 LOCATIONS. MINIMUM  
150 EMBEDMENT

PLAN VIEW  
WPL3

WALL PLATE WPL3:  
420x250x12.7 THK. W/4-20MM DIA. HAS ROD  
INSERTED THROUGH HOLES FILLED W/HILTI HH HY  
200R ADHESIVE TYP. AT 3 LOCATIONS



ELEVATION VIEW



project north

project  
**CAMPBELLFORD MEMORIAL  
HOSPITAL**

title  
**ELEVATION & SECTION  
OPTION 1**

SCALE  
AS SHOWN  
DRAWN BY  
R.B.  
CHECKED BY  
B.M.  
DATE  
NOV 2021  
CAD FILE  
22009-SK1

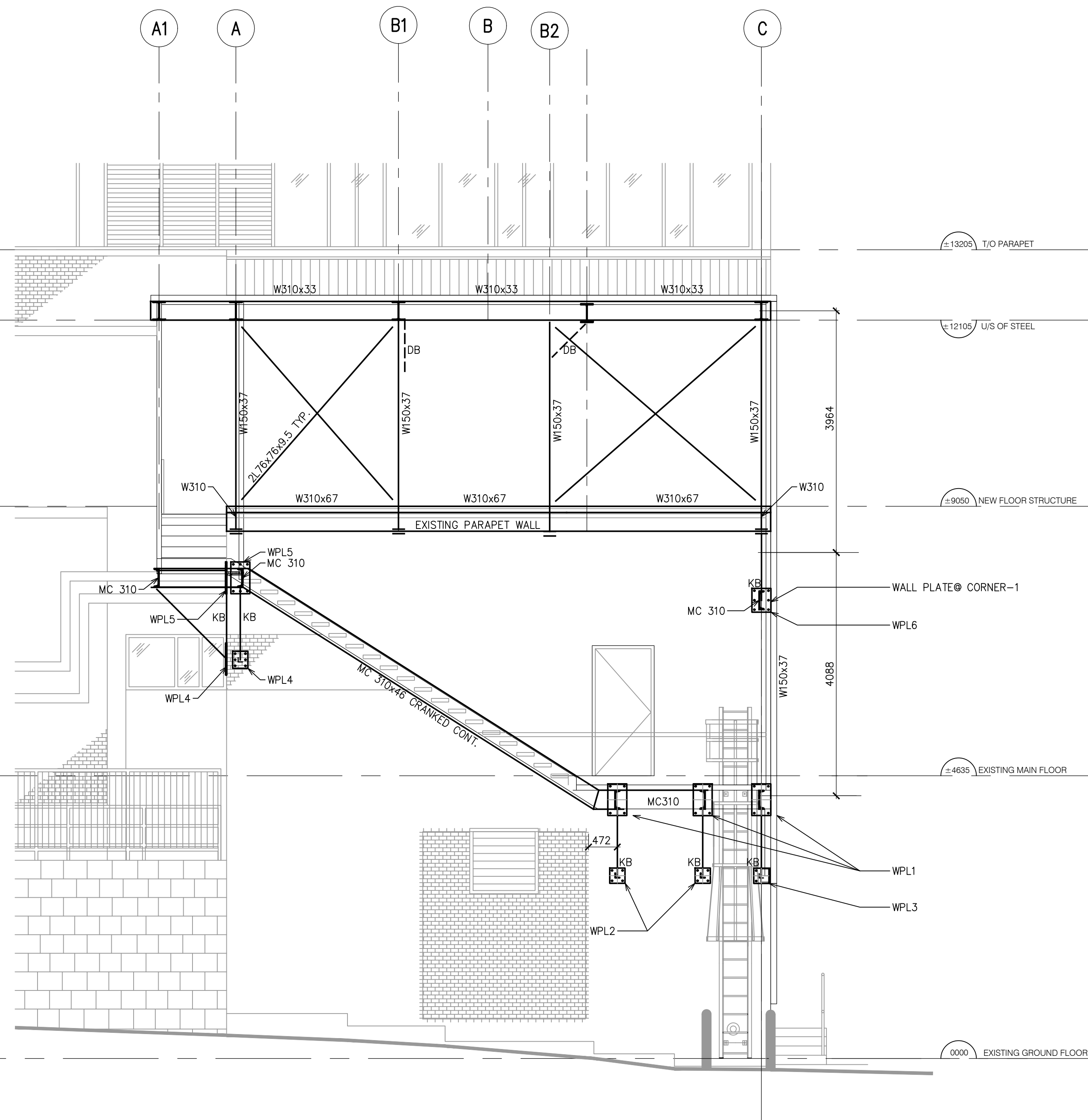
DRAWING NO.

**S3.3**



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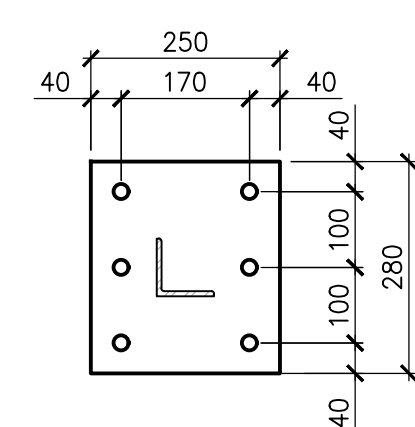
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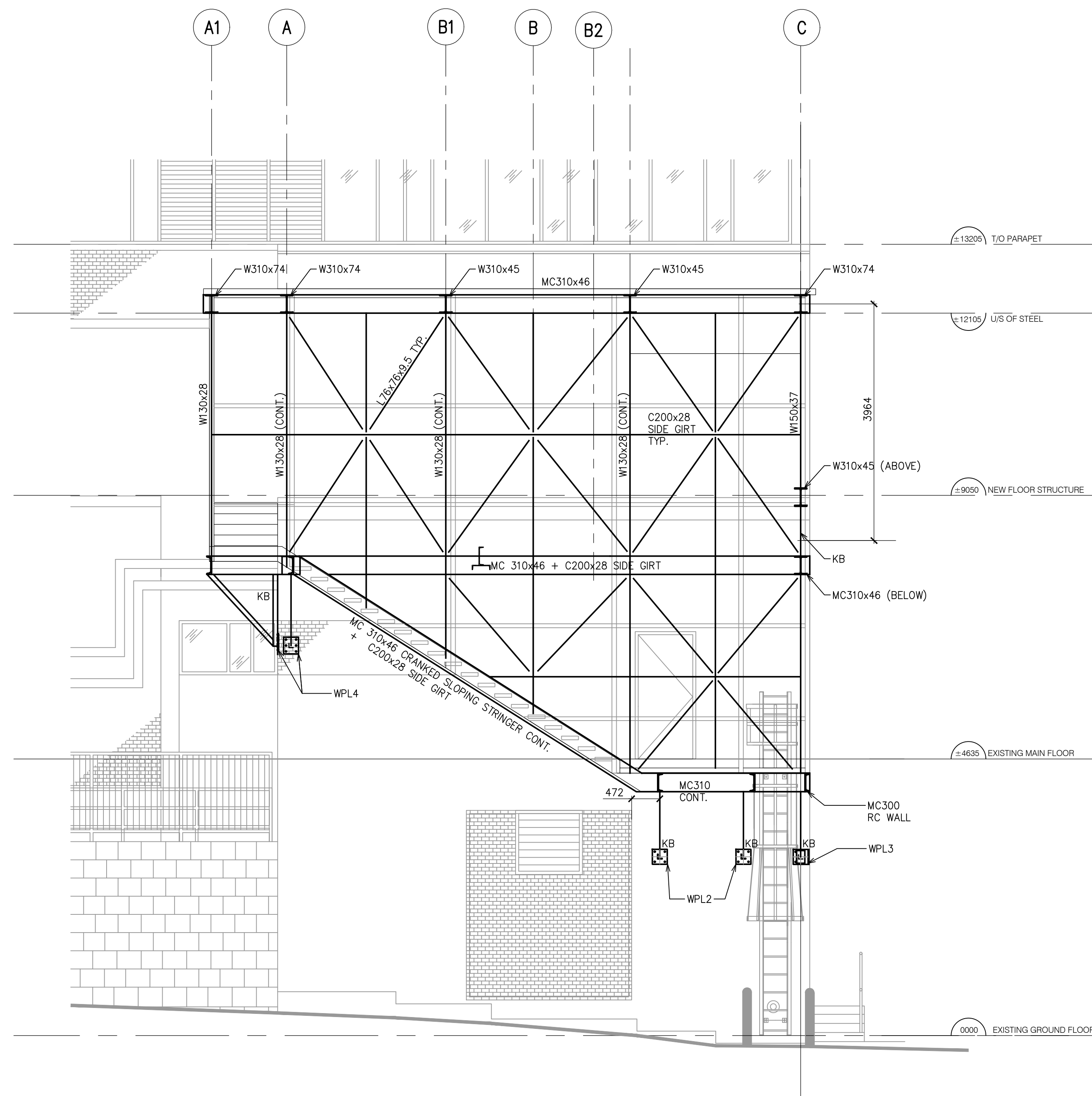
4 SECTION LOOKING WEST  
S2.2 1:50

NOTES:

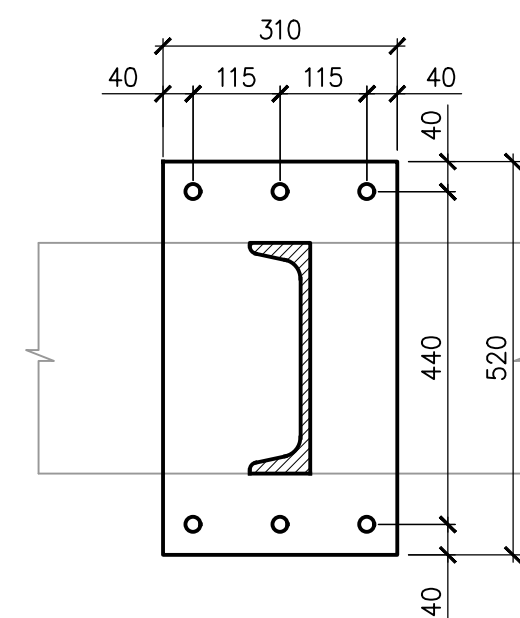
1. REFER TO DRAWINGS S1.0, S1.1, & S1.2 FOR GENERAL NOTES AND TYPICAL DETAILS.
2. CONTRACTOR TO SITE VERIFY DIMENSIONS OF EXISTING STRUCTURE AND CONFIRM WITH ARCHITECTURAL AND ELECTRICAL DRAWINGS.
3. FOR LOCATION OF ACCESS STAIRS AND LADDER, REFER TO ARCHITECTURAL DRAWINGS.
4. ALL ELEVATIONS AND DIMENSIONS OF EXISTING STRUCTURAL MEMBERS ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR A DETAILED SURVEY OF ALL ELEVATIONS AND DIMENSIONS. THE CONTRACTOR SHALL NOTIFY THE CONSULTANT IMMEDIATELY IN THE EVENT OF ANY DISCREPANCY IN ORDER TO ADJUST LENGTHS AND ELEVATIONS OF THE NEW STEEL FRAMES.
5. PROVIDE 15MM THK. STIFFENER PLATES DIRECTLY UNDER ALL NEW W150 COLUMNS TOP.



WPL4  
MASONRY WALL PLATE WPL4:  
250x280x12.7 THK. W/6-20MM DIA.  
THROUGH BOLTS C/W NUTS AND WASHERS  
INSERTED IN 20 STD. PIPE SLEEVES.

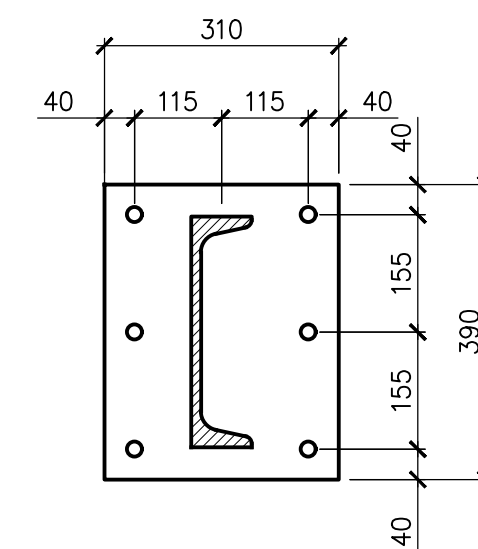


5 EAST ELEVATION  
S2.2 1:50



WPL5

MASONRY WALL PLATE WPL5: 310x520x12.7 THK. W/6-20MM DIA. THROUGH BOLTS C/W NUTS AND WASHERS INSERTED IN 20 STD. PIPE SLEEVES



WPL6

MASONRY WALL PLATE WPL6:  
310x390x12.7 THK. W/6-20MM DIA. THROUGH  
BOLTS C/W NUTS AND WASHERS INSERTED IN  
20 STD. PIPE SLEEVES

B.M.	2024-10-09	D	ISSUED FOR BID AND PERMIT
B.M.	2024-02-12	C	ISSUED FOR MOH CONTRACT DOCUMENTS
B.M.	2023-01-19	B	ISSUED FOR MOH STAGE 2.3 COSTING
B.M.	2023.06.09	A	ISSUED FOR COSTING
		NO.	REVISIONS

SEAL MUST BE SIGNED AND  
DATED TO BE VALID

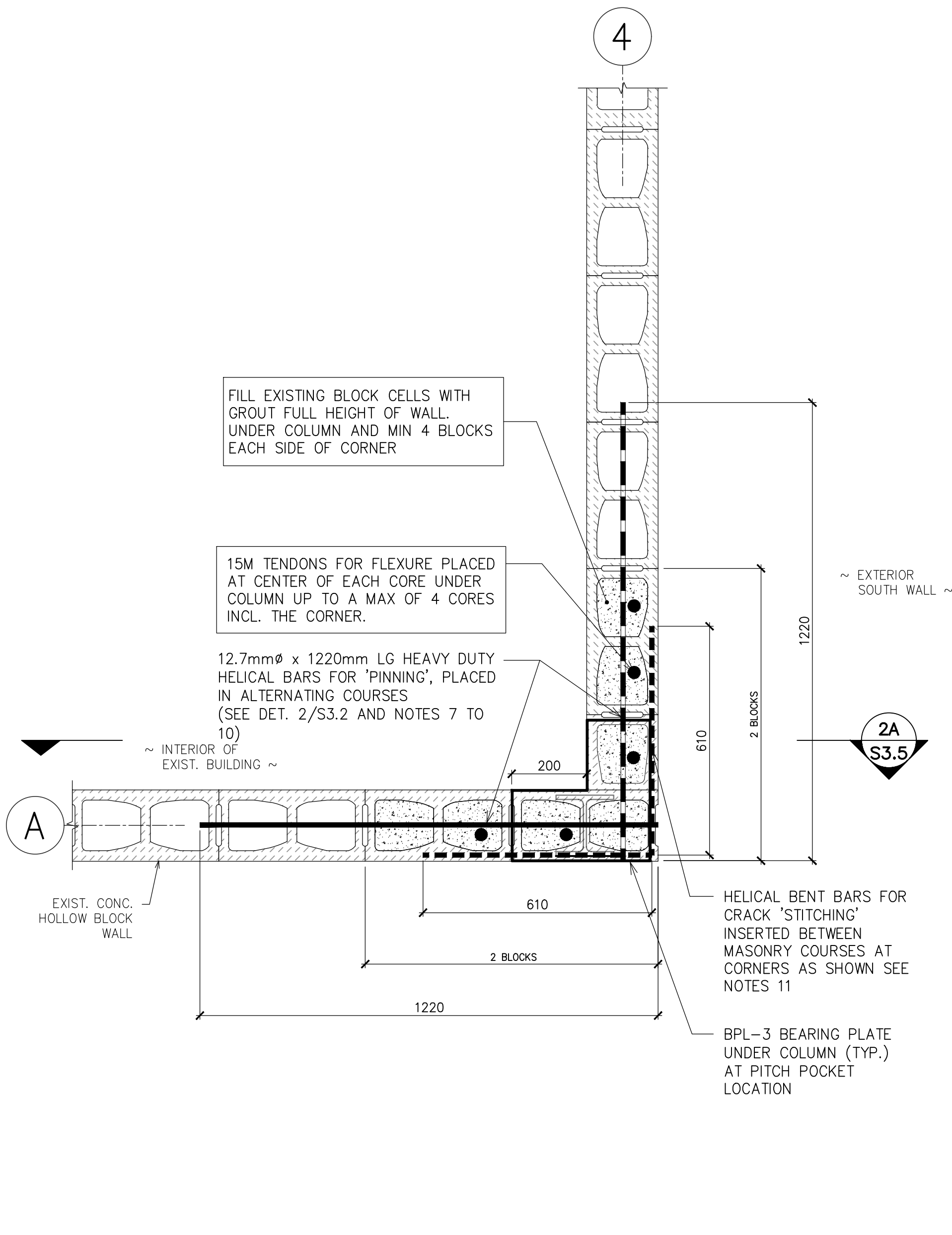
project north

project  
CAMPBELLFORD MEMORIAL  
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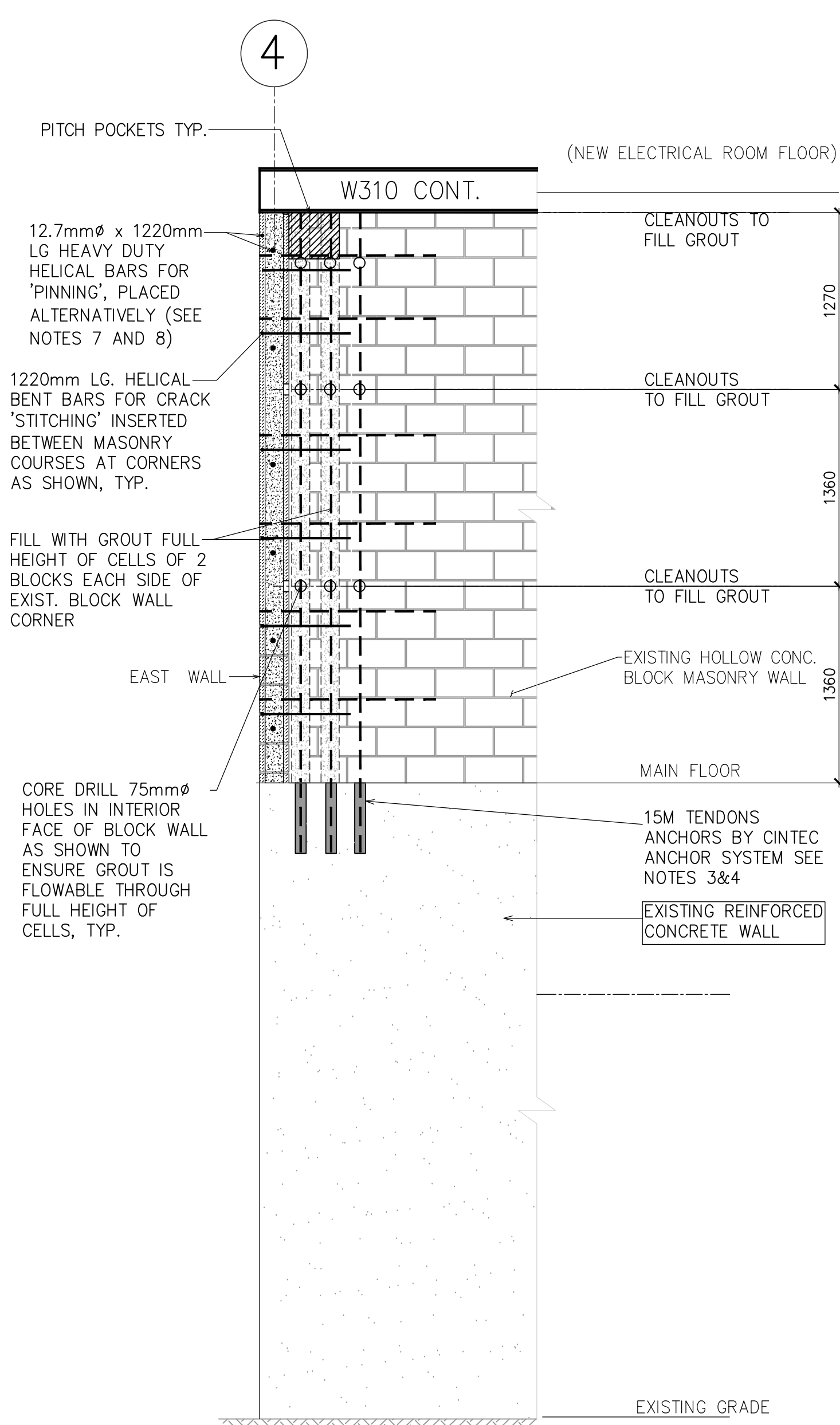
title	ELEVATION & SECTION OPTION 1
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SCALE	AS SHOWN	DRAWING NO.  <b>S3.4</b>
DRAWN BY	R.B.	
CHECKED BY	B.M.	
DATE	NOV 2021	
CAD FILE	22009-SK1	

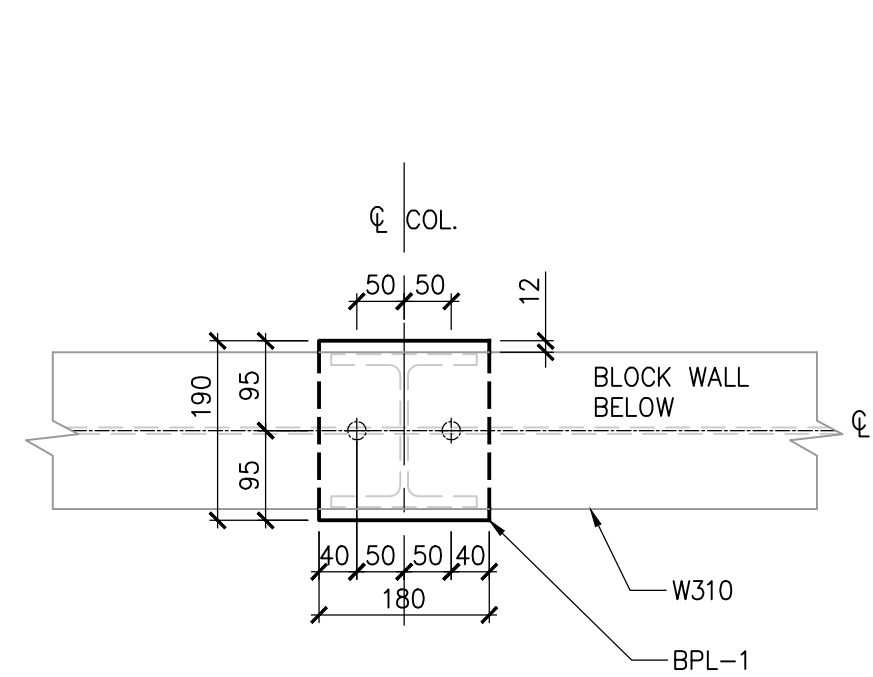




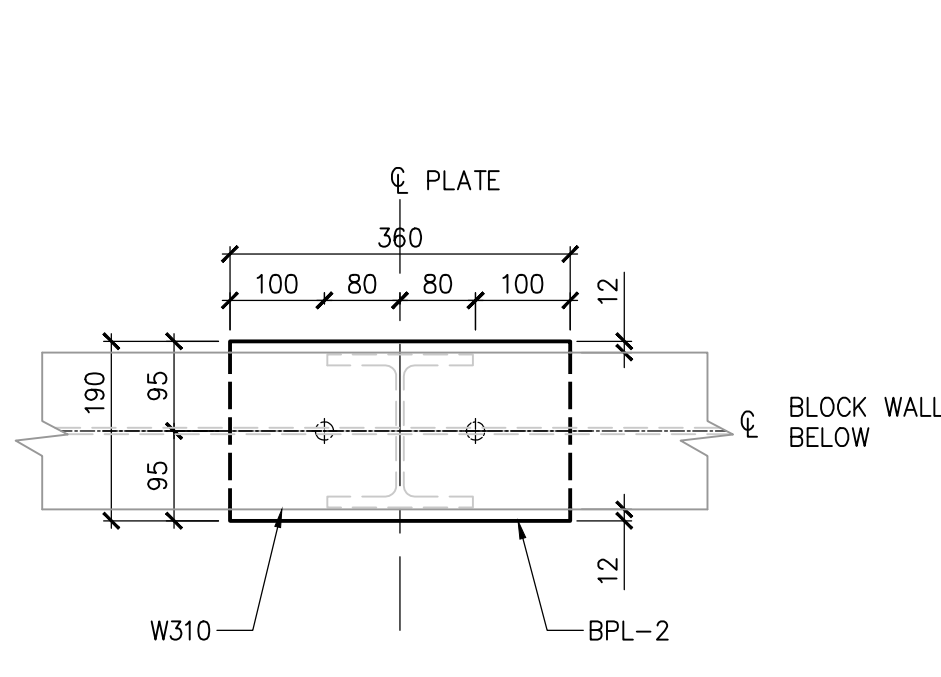
**1A**  
**S3.5**  
UNDERSIDE OF NEW ELECTRICAL ROOM TO MAIN FLOOR  
SCALE: 1:10



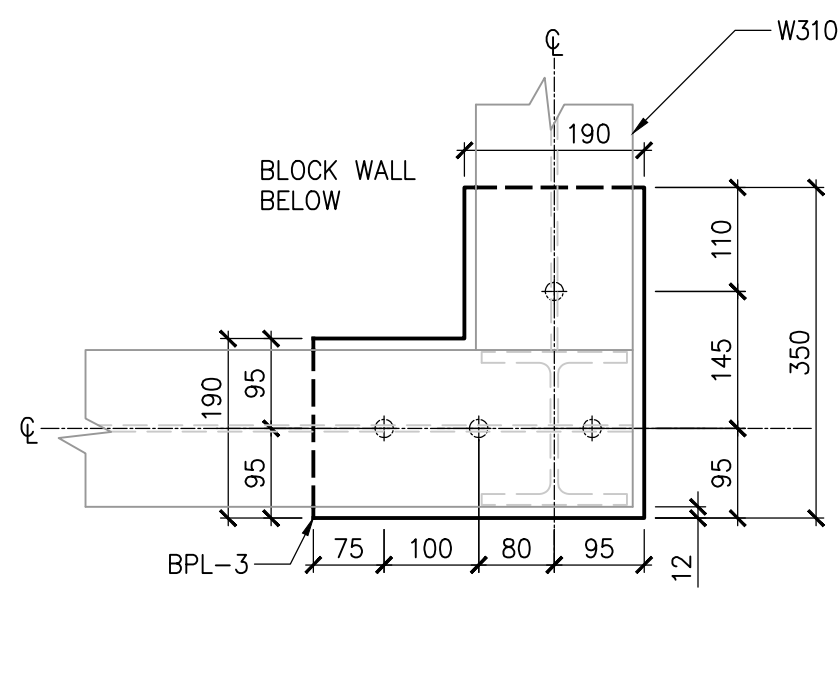
**2A**  
**S3.5**  
SECTION; TYP. CLEANOUT LOCATION FOR GROUT FILLING  
SCALE: 1:30



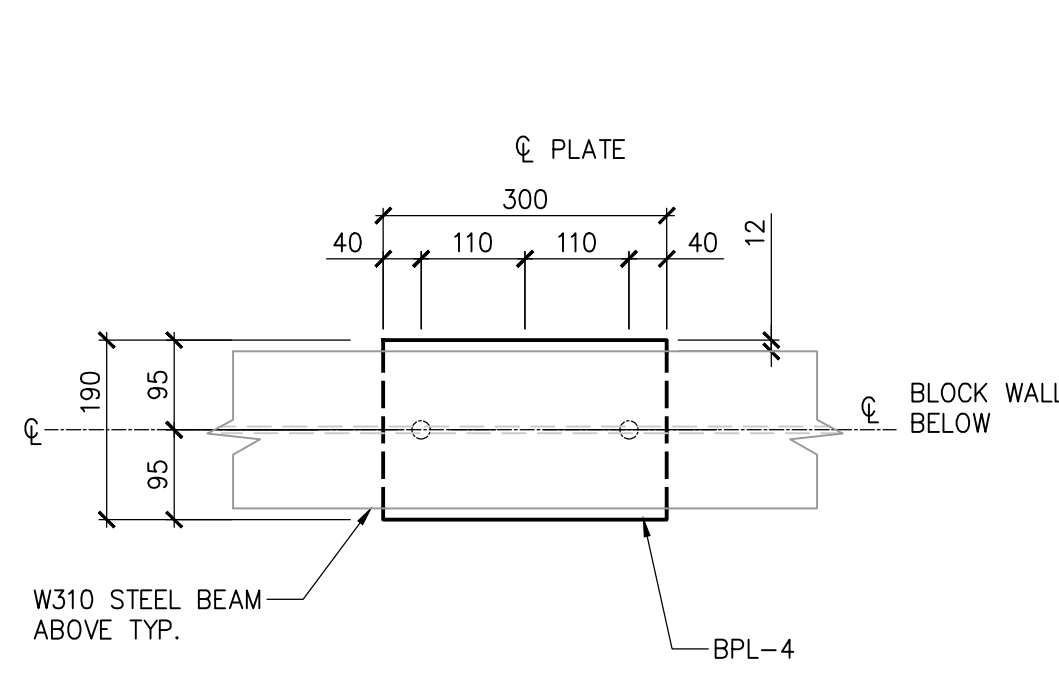
**1**  
**S3.2**  
**BPL-1**  
SCALE: 1:8  
PL 190x12.7x350  
C/W (4) 19# CAST-IN ANCHOR BOLTS  
PLACED ON 12.7 THK NON-SHRINK GROUT



**2**  
**S3.2**  
**BPL-2**  
SCALE: 1:8  
PL 190x12.7x350  
C/W (2)-19# CAST-IN ANCHOR BOLTS  
BOLT LOCATIONS TBD  
PLACED ON 12.7 THK NON-SHRINK GROUT



**3**  
**S3.2**  
**BPL-3**  
SCALE: 1:8  
PL 190x12.7x350  
C/W (4)-19# CAST-IN ANCHOR BOLTS  
PLACED ON 12.7 THK NON-SHRINK GROUT



**4**  
**S3.2**  
**BPL-4**  
SCALE: 1:8  
PL 190x12.7x350  
C/W (4) 19# CAST-IN ANCHOR BOLTS  
PLACED ON 16 THK NON-SHRINK GROUT

WORK PROCEDURE FOR MASONRY CRACK REPAIRS:  
CRACKS THROUGH BLOCKS AND CRACKS THROUGH MORTAR JOINTS

- PRIOR TO COMMENCE REPAIR WORK, REMOVE ALL LOOSE AND DAMAGED MORTAR WITH A WIRE BRUSH. CONTINUE REMOVING DAMAGED MORTAR AT JOINTS UP TO 12.7 MM DEPTH, USING A CHISEL. VACUUM DEBRIS OUT OF THE CRACK AND JOINTS. ALL SURFACES MUST BE CLEAN, SOUND AND FROST-FREE.
- SAWCUT TO REMOVE MORTAR AT THE NEXT MORTAR JOINT. REPEAT ITEM 2.
- HELICAL BARS SHOULD NOT INTERSECT VERTICAL CONTROL JOINTS IN BLOCK WALLS.
- INJECT 'WHO 60' GROUT' INTO JOINTS WITH HELICAL BARS.
- FOLLOW MANUFACTURER'S RECOMMENDED PRODUCT INSTALLATION.
- AFTER INSTALLATION OF THE TENSION BARS IS COMPLETE, INJECT INTO CRACK 'SIKA TOP 123 PLUS' CEMENTITIOUS NON-SHRINK PATCHING GROUT OR APPROVED EQUAL.
- NEW MORTAR TO BE TOOLED TO MATCH OVERALL LOOK OF EXISTING WALL.
- FOLLOW MANUFACTURER'S RECOMMENDED PRODUCT SURFACE PREPARATION, MIXING, APPLICATION, AND CURING.
- ONCE THE MORTAR HAS SET, USE A WIRE BRUSH TO REMOVE EXCESS MORTAR FROM THE WALL SURFACE.

WORK PROCEDURE NOTES:

- CONTRACTOR TO PROTECT EXISTING FLOOR FROM ANY DAMAGES. INSTALL PROTECTION PRIOR TO COMMENCING ANY WORK.
- CORE DRILL 75mm DIA. HOLES ONLY ON THE INTERIOR FACE OF THE BLOCK AT EACH LEVEL OF CORE-HOLES AS SHOWN IN DET. 3/S3.5
- CONTRACTOR TO CREATE "PITCH POCKETS" CORRESPONDING TO THE SIZE OF THE BASE PLATES W/DEPTH EQUAL TO THE HEIGHT OF THE EXISTING MASONRY BLOCK.
- INSTALL 15M TENDONS-ANCHORS BY CINTEC ANCHOR SYSTEM PLACED AT CENTER OF EACH CORE FOR CORNER LOCATIONS AND SIDE LOCATIONS
- FOLLOW MANUFACTURER'S INSTALLATION PROCEDURE AND REQUIRED EMBEDMENT
- COMPLETELY FILL EMPTY CELLS WITH GROUT FROM BOTTOM TO TOP. GROUT MUST FILL CELLS WITHOUT VOIDS. REFER TO DRAWING S1.1 FOR GROUT SPECIFICATION.
- REPEAT STEPS 1 TO 3 AT EVERY VOID CELL AS SHOWN IN DET. E & 3/S3.2 UNTIL FULL HEIGHT OF WALL SECTION IS FILLED WITH GROUT.
- INSTALL THE BEARING PLATES FORM AND POUR THE PITCH POCKETS
- WAIT FOR 48 HOURS IN ORDER FOR THE GROUT AND CONCRETE TO REACH STRENGTH.
- DRILL 7.9mm DIA. PILOT HOLE AT CENTRE OF BLOCK COURSES TO A DEPTH OF 49".
- DRILL 12.7mm DIA. x 1220mm LG HEAVY-DUTY HELICAL BARS INTO PRE-DRILLED HOLES FOR MASONRY 'PINNING' AT EVERY 3<sup>RD</sup> COURSE AS SHOWN IN DET. 3/S3.2. REFER TO S1.1 (6.13.3).
- FOLLOW MANUFACTURER'S RECOMMENDED PRODUCT INSTALLATION PROCEDURE AND EMBEDMENT.
- PATCH PILOT HOLE WITH MORTAR AFTER INSTALLATION OF THE HELICAL STRAP BENTS.
- INSTALL HELICAL BENT BARS INTO THE BED JOINTS BETWEEN THE HELICAL BARS FOR PINNING OF MASONRY WALL AS SHOWN IN DET. 3/S3.2.
- FOR INSTALLATION OF HELICAL BENT BARS, FOLLOW PROCEDURE AT 4/S3.5

B.M.	DATE	NO.	REVISIONS
B.M.	2024-10-09	D	ISSUED FOR BID AND PERMIT
B.M.	2024-02-12	C	ISSUED FOR MOH CONTRACT DOCUMENTS
B.M.	2023-01-19	B	ISSUED FOR MOH STAGE 2.3 COSTING
B.M.	2023.06.09	A	ISSUED FOR COSTING

seal

project north

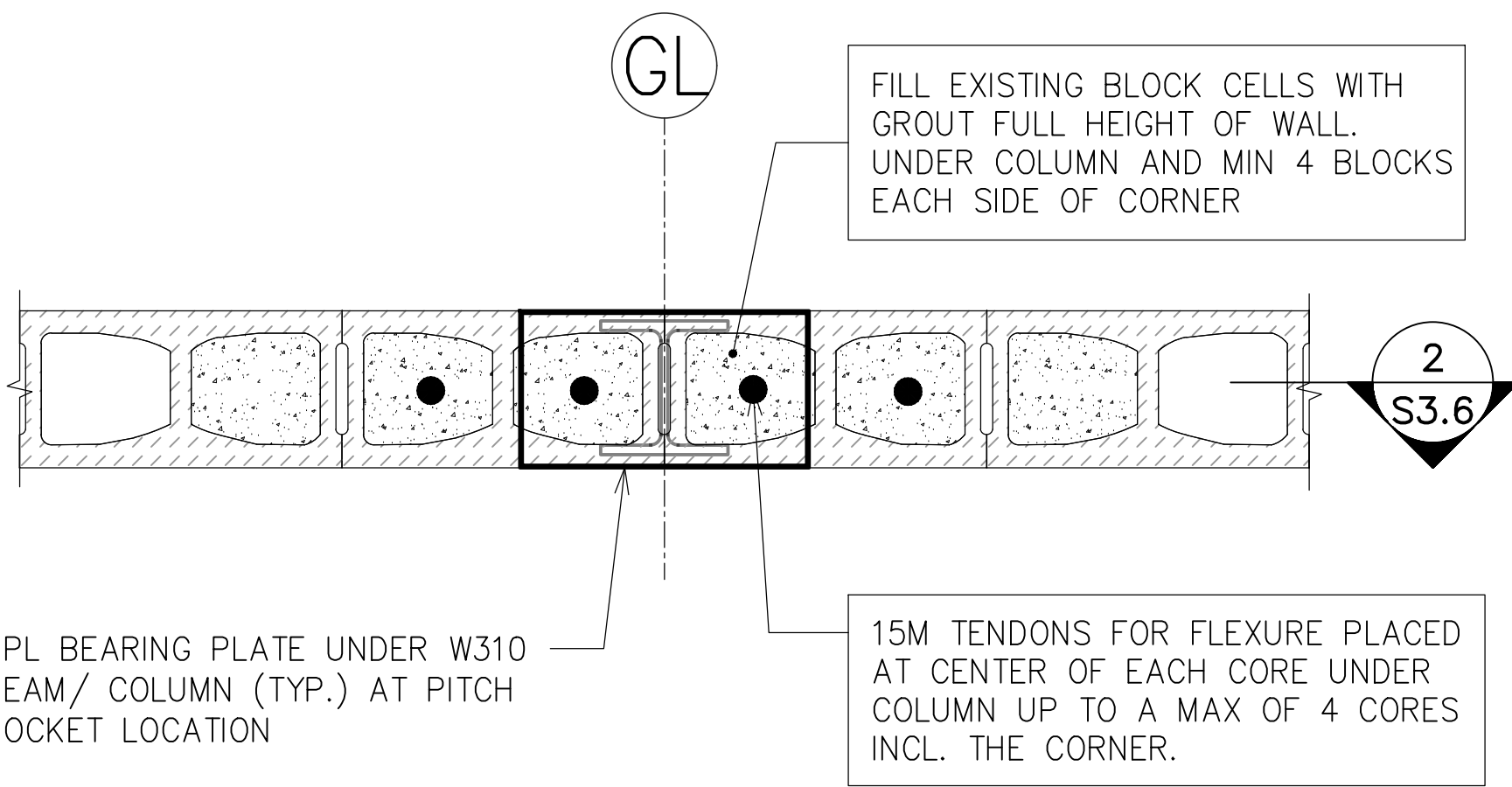
REGISTERED PROFESSIONAL ENGINEER  
B. MILMAN  
10.09.2024  
SEAL MUST BE SIGNED AND DATED TO BE VALID

project  
**CAMPBELLFORD MEMORIAL HOSPITAL**

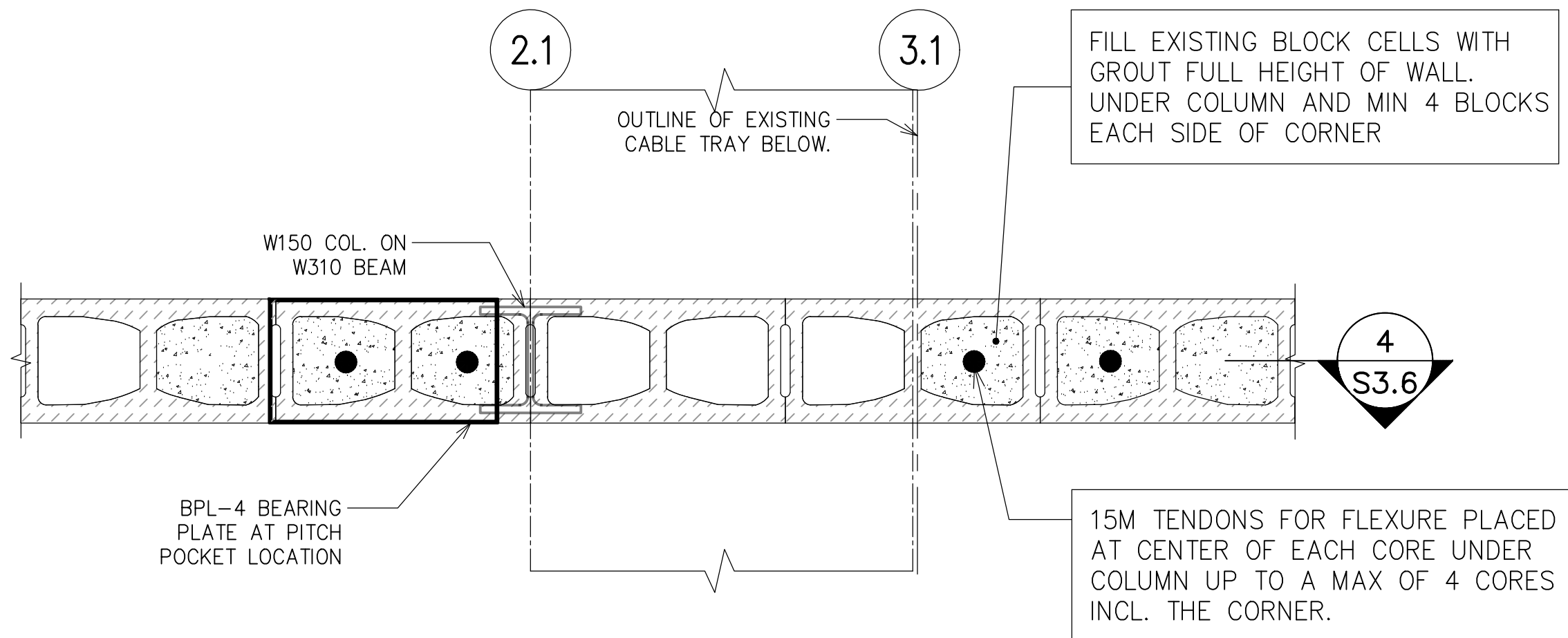
title  
**MASONRY AND BASE PLATE DETAILS**

SCALE	AS SHOWN	DRAWING NO.
DRAWN BY	R.B.	<b>S3.5</b>
CHECKED BY	B.M.	
DATE	NOV 2021	
CAD FILE	22009-SK1	

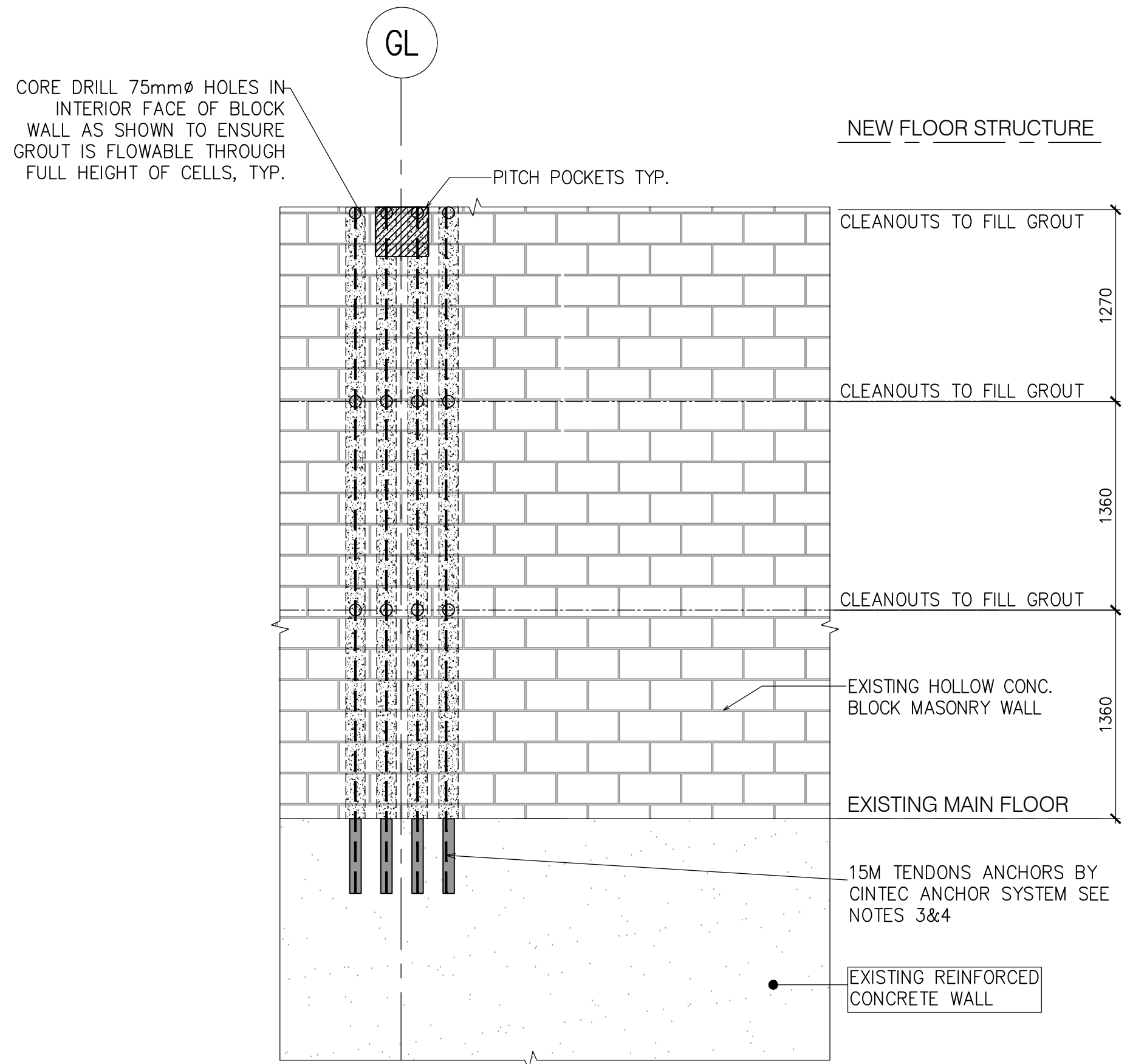




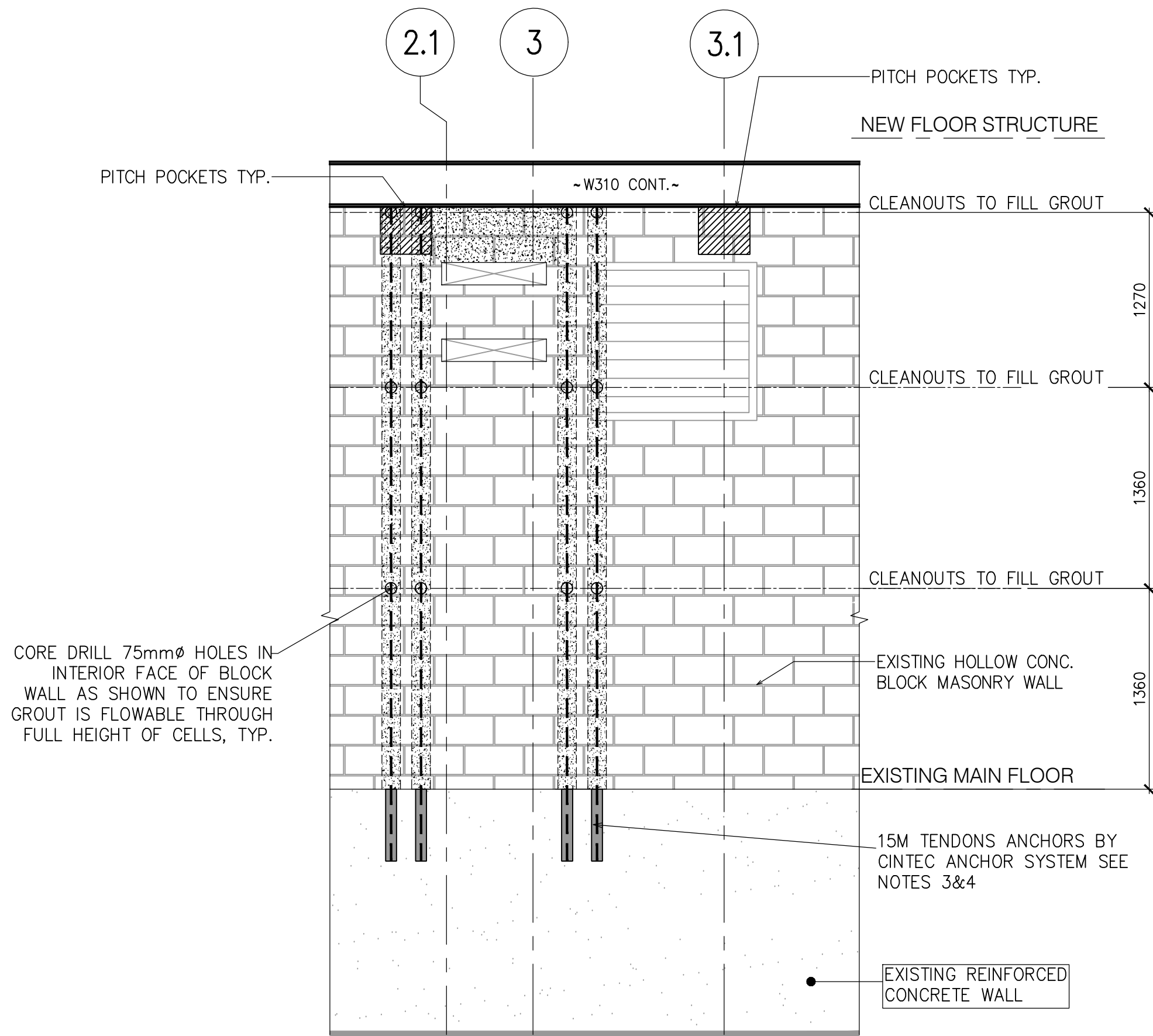
1  
S3.6 TYPE 2 UNDERSIDE OF NEW ELECTRICAL ROOM TO MAIN FLOOR  
G.L. 2 & 3 MASONRY WALL REINF.  
SCALE: 1:10



3  
S3.6 TYPE 3 UNDERSIDE OF NEW ELECTRICAL ROOM TO MAIN FLOOR  
G.L. 2 & 3 MASONRY WALL REINF.  
SCALE: 1:8



2  
S3.6 SECTION; TYP. CLEANOUT  
LOCATION FOR GROUT FILLING  
SCALE: 1:30



4  
S3.6 SECTION; TYP. CLEANOUT  
LOCATION FOR GROUT FILLING  
SCALE: 1:30

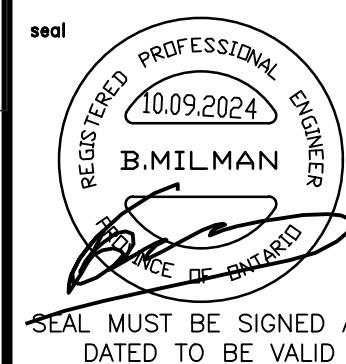
#### WORK PROCEDURE FOR MASONRY CRACK REPAIRS CRACKS THROUGH BLOCKS AND CRACKS THROUGH MORTAR JOINTS

1. PRIOR TO COMMENCE REPAIR WORK, REMOVE ALL LOOSE AND DAMAGED MORTAR WITH A WIRE BRUSH. CONTINUE REMOVING DAMAGED MORTAR AT JOINTS UP TO 12.7 MM DEPTH, USING A CHISEL. VACUUM DEBRIS OUT OF THE CRACK AND JOINTS. ALL SURFACES MUST BE CLEAN, SOUND AND FRST-FREE.
2. SAWCUT TO REMOVE MORTAR AT THE NEXT MORTAR JOINT. REPEAT ITEM 2.
3. HELICAL BARS SHOULD NOT INTERSECT VERTICAL CONTROL JOINTS IN BLOCK WALLS.
4. INJECT 'WHO 60' GROUT' INTO JOINTS WITH HELICAL BARS.
5. FOLLOW MANUFACTURER'S RECOMMENDED PRODUCT INSTALLATION.
6. AFTER INSTALLATION OF THE TENSION BARS IS COMPLETE, INJECT INTO CRACK 'SIKA TOP 123 PLUS' CEMENTITIOUS NON-SHRINK PATCHING GROUT OR APPROVED EQUAL.
7. NEW MORTAR TO BE TOOLED TO MATCH OVERALL LOOK OF EXISTING WALL.
8. FOLLOW MANUFACTURER'S RECOMMENDED PRODUCT SURFACE PREPARATION, MIXING, APPLICATION, AND CURING.
9. ONCE THE MORTAR HAS SET, USE A WIRE BRUSH TO REMOVE EXCESS MORTAR FROM THE WALL SURFACE.

#### WORK PROCEDURE NOTES:

1. CONTRACTOR TO PROTECT EXISTING FLOOR FROM ANY DAMAGES. INSTALL PROTECTION PRIOR TO COMMENCING ANY WORK.
2. CORE DRILL 75mm DIA. HOLES ONLY ON THE INTERIOR FACE OF THE BLOCK AT EACH LEVEL OF CORE-HOLES AS SHOWN IN DET. 3/S3.5
3. CONTRACTOR TO CREATE "PITCH POCKETS" CORRESPONDING TO THE SIZE OF THE BASE PLATES W/DEPTH EQUAL TO THE HEIGHT OF THE EXISTING MASONRY BLOCK.
4. INSTALL 15M TENDONS-ANCHORS BY CINTEC ANCHOR SYSTEM PLACED AT CENTER OF EACH CORE FOR CORNER LOCATIONS AND SIDE LOCATIONS
5. FOLLOW MANUFACTURER'S INSTALLATION PROCEDURE AND REQUIRED EMBEDMENT
6. COMPLETELY FILL EMPTY CELLS WITH GROUT FROM BOTTOM TO TOP. GROUT MUST FILL CELLS WITHOUT VOIDS. REFER TO DRAWING S1.1 FOR GROUT SPECIFICATION.
7. REPEAT STEPS 1 TO 3 AT EVERY VOID CELL AS SHOWN IN DET. E & 3/S3.2 UNTIL FULL HEIGHT OF WALL SECTION IS FILLED WITH GROUT.
8. INSTALL THE BEARING PLATES FORM AND POUR THE PITCH POCKETS
9. WAIT FOR 48 HOURS IN ORDER FOR THE GROUT AND CONCRETE TO REACH STRENGTH.
10. DRILL 7.9mm DIA. PILOT HOLE AT CENTRE OF BLOCK COURSES TO A DEPTH OF 49".
11. DRILL 12.7mm DIA. x 1220mm LG HEAVY-DUTY HELICAL BARS INTO PRE-DRILLED HOLES FOR MASONRY 'PINNING' AT EVERY 3<sup>RD</sup> COURSE AS SHOWN IN DET. 3/S3.2. REFER TO S1.1 (6.13.3).
12. FOLLOW MANUFACTURER'S RECOMMENDED PRODUCT INSTALLATION PROCEDURE AND EMBEDMENT.
13. PATCH PILOT HOLE WITH MORTAR AFTER INSTALLATION OF THE HELICAL STRAP BENTS.
14. INSTALL HELICAL BENT BARS INTO THE BED JOINTS BETWEEN THE HELICAL BARS FOR PINNING OF MASONRY WALL AS SHOWN IN DET. 3/S3.2.
15. FOR INSTALLATION OF HELICAL BENT BARS, FOLLOW PROCEDURE AT 4/S3.5

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title  
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