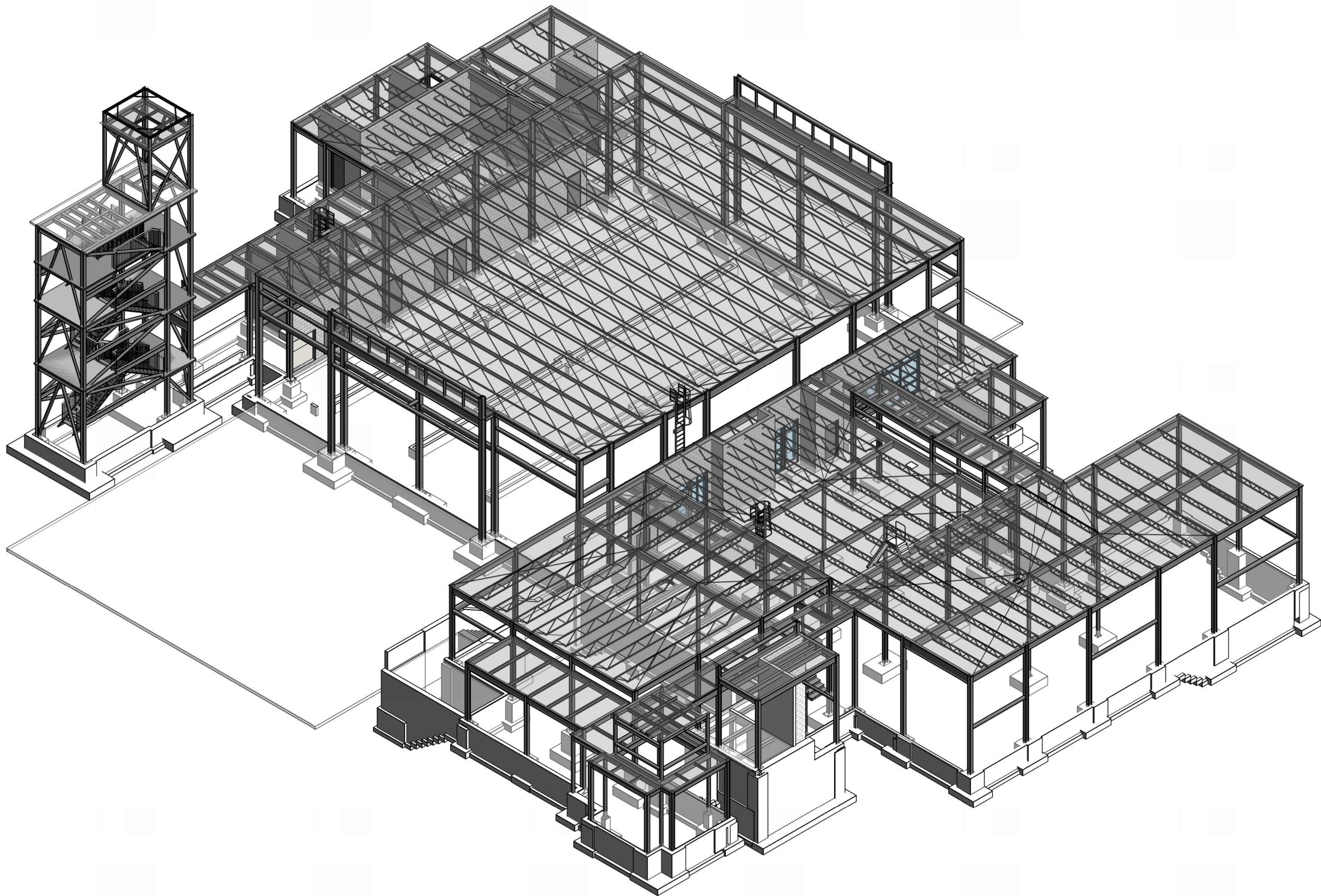



1 3D VIEW-1  
SCALE:



2 3D VIEW-2  
SCALE:

DRAWING LIST	
SHEET NUMBER	SHEET NAME
S0.00	3D VIEWS
S1.01	GENERAL NOTES
S1.02	TYPICAL DETAILS
S1.03	SNOW DRIFTING LOAD PLAN AND DIAGRAM
S1.04	SFRS PLAN AND SEISMIC LOADING
S1.05	WIND UPLIFT PLAN AND WIND LOADING
S1.06	ROOF DRAINAGE PLAN & DECK FASTENING DETAILS
S2.00	ABS LAYOUT - BPL SCHEDULE
S2.01	FOUNDATION PLAN
S2.02	FOUNDATION SECTIONS
S2.03	FOUNDATION SCHEDULES AND PLAN DETAILS
S3.01	LOW ROOF FRAMING PLAN
S3.02	MID ROOF FRAMING PLAN
S3.03	HIGH ROOF FRAMING PLAN
S4.01	HOSE TOWER - STRUCTURAL STEEL ELEVATIONS, SECTION & DETAILS
S4.02	HOSE TOWER - STRUCTURAL STEEL ELEVATION
S4.03	HOSE TOWER ROOF FLOOR FRAMING PLANS
S5.01	APPARATUS BAY - STRUCTURAL STEEL ELEVATIONS & SECTIONS
S5.02	APPARATUS BAY STRUCTURAL STEEL ELEVATIONS & SECTIONS
S5.03	APPARATUS SUPPORT STRUCTURAL STEEL ELEVATIONS & SECTIONS
S5.04	Fitness/Kitchen/Living Area STRUCTURAL STEEL ELEVATIONS & SECTIONS
S6.01	BUILDING A - STRUCTURAL STEEL ELEVATIONS
S6.02	BUILDING A ROOF SECTIONS
S6.03	UPPER FLOOR FRAMING & DETAILS
S6.04	UPPER FLOOR FRAMING SECTIONS

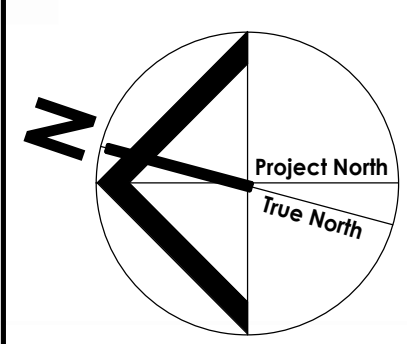



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EXSEN ENGINEERING LTD.  
CONSULTING ENGINEERS

1211-111 PACIFIC AVE.  
TORONTO, ON  
M6P 2P2  
Ph: (416) 712-9870  
exseneng11@gmail.com

alaimo architecture inc.

202-8551 Weston Road  
Woodbridge, ON L4L 9R4  
P: (905) 856-2840  
F: (905) 856-4912  
info@alaimoarchitecture.com

Drawing Title	
3D VIEWS	
Project	
TOWN OF ORANGEVILLE FIRE STATION PROJECT	
10 COMMERCE ROAD ORANGEVILLE, ON L9W 1P8	
Scale	
Issued by	
Checker	File No.
23000R	Plot Date
10.11.2023	

THIS 3D VIEW IS FOR ILLUSTRATION ONLY AND SHOULD NOT BE USED FOR CONSTRUCTION

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1. THESE DRAWINGS SHOW THE COMPLETE STRUCTURE. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO CHOOSE CONSTRUCTION METHODS AND CARRY OUT THE WORK BASED ON SITE CONDITIONS.
2. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS AND OTHER CONTRACT DOCUMENTS FOR ALL DIMENSIONS AND DETAILS.
3. DESIGNATIVE LOADS FOR EACH PORTION OF THE STRUCTURE ARE SHOWN. DO NOT EXCEED THESE LOADS DURING CONSTRUCTION. ALL LOADS GIVEN ARE UNFACTORED (WORKING) LOADS.
4. CONFORM TO THE REQUIREMENTS OF THE (ONTARIO BUILDING CODE, MOST RECENT EDITION), AND ANY APPLICABLE LOCAL BUILDING BY-LAWS.
5. THE BUILDING IS DESIGNED FOR THE LOADS SHOWN ON THE DRAWINGS AND THOSE LOADS SPECIFIED IN THE RELEVANT PARTS OF THE CODE (AS N.B. PARTS) (OR EQUIVALENT PREVIOUS EDITION). CRITICAL CODES TO BE CONSTRUCTED TO CONFORM TO IN ACCORDANCE WITH THE GENERAL LAWFY PLAN AND DETAIL DRAWING & ANY OTHER SPECIFICATIONS SUPPLIED WITH THE CONTRACT DOCUMENTS. NO PORTIONS OF THE BUILDING SHALL BE CHANGED OR MODIFIED (UNLESS SPECIFICALLY NOTED ON THE DRAWINGS) WITHOUT THE WRITTEN APPROVAL OF THE REGISTERED PROFESSIONAL ENGINEER. WRITTEN NOTICE AND DETAILS OF ANY SUCH CHANGES OR MODIFICATIONS SHALL BE GIVEN TO THE ENGINEER PRIOR TO SUCH CHANGES.
6. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS AND DETAILS IN FIELD AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES AND INCOMPATIBILITIES. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF ALL TEMPORARY STRUCTURES, FORMWORK, AND ALL SAFETY ASPECTS OF THE CONSTRUCTION.
7. DO NOT CUT OR DRILL INTO ANY STRUCTURAL MEMBERS, OR CUT REBAR PROJECTIONS WITHOUT THE ENGINEER'S WRITTEN APPROVAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT FOR THE EXECUTION OF QUALITY CONTROL OF THE WORK SHOWN IN THE CONTRACT DOCUMENTS, INCLUDING ALL WORK OF SUBSIDIARY NATURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER PERFORMANCE OF HIS WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. ANY ERRORS AND/OR OMISSIONS IN THE WORK SHALL BE REPORTED TO THE ENGINEER FOR REVIEW.
8. CONSTRUCTION LOADS SHALL NOT EXCEED THE SPECIFIED DESIGN LOADS, OTHER LOADING AS REQUIRED, FOR ANY PORTIONS OF THE STRUCTURE. ALL WORK SHALL BE DESIGNED UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO.

1. MINIMUM 28-DAY STRENGTH OF CONCRETE TO BE 25 MPa. UNLESS NOTED ON PLAN.
2. CONFORM TO CAN STANDARD CSA A23.3-14 FOR MATERIALS AND METHOD OF CONSTRUCTION UNLESS NOTED OTHERWISE.
3. TOLERANCES:
  - a. TOP SURFACES OF FINISHED SLABS, TOPPING AND WALLS - WITHIN 6mm (1/4") OF ANY 600mm (2'-0") SQUARE AREA, AND WITHIN 6mm (1/4") UNDER ANY 300mm (1'-0") STRAIGHT EDGE.
  - b. FOR SLABS UNDER APPLIED FINISHED FLOORING MATERIALS: WITHIN 6mm (1/8") OF ESTABLISHED ELEVATION IN ANY 600 (2'-0") SQUARE AREA, AND REFINISHED REQUIREMENT OF CAN-608.
  - c. FOR FOOTINGS - 2% OF FOOTING WIDTH AND 25mm (1") MAXIMUM ON PLACEMENT OR ECCENTRICITY, AND 3% MAXIMUM DISCREPANCY IN LENGTH.
  - d. FOR PILES - WITHIN 3mm (1/8") IN 300mm (1'-0") AND 12mm (1/2") MAXIMUM ON UNPLACEMENT AND ANCHORAGE.
4. PRODUCTS:
  - a. CONCRETE - TO MEET SPECIFIED REQUIREMENTS OF CAN A23.3-14 READY-MIXED: MIXTURE RATIO - IN ACCORDANCE WITH CAN-603.
  - b. WELDING - REDUCING ADMIXTURE TO MEET SPECIFIED REQUIREMENTS OF CAN-486 (2) TYPE IWN.
  - c. REINFORCING ADJUSTIVE: RAIL AND REFINISHED REQUIREMENT OF CAN-608.
  - d. REINFORCEMENT TO MEET REQUIREMENTS OF CSA G40.12 GRADE 400MS (A66).
  - e. ENFORCEMENT MESH: 150mm (6") SQUARE.
  - f. FLOOR HARDWARE - EMBLEMATIC TYPE 35 BY STENSON LIMITED, APPLIED AT THE RATE OF 3 TO 4 PER SQ. METRE.
  - g. CURING AND SEALING COMPOUND FOR CONCRETE FLOORS - FLORESOL BY STENSON LTD.
  - h. SAWCUT FILLER FOR CONCRETE FLOORS - LOADSEAL BY STENSON LIMITED OR COLMAUR BY IRMA BY STENSON LTD.
  - i. SAWCUT FILLER FOR CONCRETE FLOORS - MASTERFLOW 737 BY MASTER BUILDERS CO. LTD. OR M-84 BY STENSON LTD.
5. CURE ALL CONCRETE SURFACES WITH REFINISHED COMPOUND.
6. FINISH CONCRETE SLAB WITH A STEEL TROWELLED FINISH WHERE LOCATED IN INTERIOR OF BUILDING AND EXPOSED TO VIEW UNDER FINISH FLOOR INSTALLATIONS UNLESS SPECIFIED OTHERWISE, AND ON TOP OF SILLS.
7. GROUT UNDER SLAB PLATES AS REQUIRED BY OTHER SECTIONS.

1. STUD STRUCTURE PROPERTIES SHALL BE COMPLIED IN ACCORDANCE W/CSA STANDARD CAN/CSA S137-16. NORTH AMERICA SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURE.
2. STEEL SHALL MEET THE REQUIREMENTS OF CAN/CSA S137-16 WITH A MIN. YIELD STRENGTH OF 330kN FOR THICKNESSES LESS THAN OR EQUAL TO .045" AND 50kSI IF GREATER THAN OR EQUAL TO .050".
3. MINIMUM 2 ZYS (90°) HOT DIPPED GALVANIZED METALLIC COATING SHALL BE APPLIED TO ALL EXTERIOR STUDS, TRACKS AND CONNECTORS;
4. SPACING OF STUDS IS NOT PERMITTED.
5. TEMPORARY BRACING SHALL BE PROVIDED UNTIL WORK IS PROPERLY SECURED.
6. METAL STUDS SIZE AND LAYOUT AS SHOWN ON THESE DWGS ARE FOR GUIDANCE ONLY.
7. G.C. SHALL RETAIN A P.E. IN ONTARIO WITH EXPERIENCE IN STEEL STUD FRAMING WORK OF COMPARABLE COMPLEXITY & SCOPE TO PERFORM THE FOLLOWING:
  - A. STRUCTURAL DESIGN (CSA S137-16) UNDER DEAD, LIVE, WIND, UPLIFT, SEISMIC, HANDLING & TRANSPORTATION LOADS & ALL LOADING SHOWN ON THESE DWGS.
  - B. SEAL & LEAK/TEST SHOP DWGS FOR APPROVAL PRIOR TO INSTALLATION INDICATING MEMBER SIZES, THICKNESSES & CONNECTION DETAILS FOR ATTENDING FRACTION TO ITSELF AND TO THE STRUCTURE.
  - C. CONDUCT SITE SURVEYS, PREPARE & SIGN/STAMPED SITE REPORTS THAT THE WORK IS IN ACCORDANCE W/ CONTRACT DOCUMENTS & RELEVANT SHOP DWGS.

DESIGN, FABRICATE, AND ERECT STRUCTURAL STEEL, IN ACCORDANCE WITH CSA S16-19 AND THE OSC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL.

2. MAKE ALL FIELD MEASUREMENTS REQUIRED FOR FABRICATION.

3. CONFORM TO THE FOLLOWING STANDARDS FOR ALL STEEL, INCLUDING PLATES:

- \* CAN 3 - G40 20 & 21, GRADE 300W (50 KSI) CLASS H FOR HSS, 300W (50 KSI) FOR REMANDER,
- \* S16 AND S16S3 FOR WELDMAN,
- \* CSA FOR BOLT WELDING.

4. APPLY ONE COAT SHOP PRIMER CONFORMING TO CGSB-G-9140M TO ALL STRUCTURAL STEEL MEMBERS, AND TOUCH UP AFTER FABRICATION.

5. SUPPLY ANCHOR RODS F1554 ASTM GRADE A36 (TYP) UN OTHERWISE.

6. SUPPLY ANCHOR BOLTS A325M GRADE (TYP) UN OTHERWISE.

7. QUALIFICATIONS: WELDING SHALL BE PERFORMED BY A FABRICATOR FULLY CERTIFIED TO CSA W47 AND IN ACCORDANCE WITH THE APPLICABLE CSA WELDING CODES.

8. **QUALITY CONTROL:** AN INDEPENDENT TESTING COMPANY SHALL BE APPOINTED BY GENERAL CONTRACTOR TO CONDUCT FIELD INSPECTION AND TESTING. FIELD INSPECTION AND TESTING SHALL BE MADE BY GENERAL CONTRACTOR. FIELD REVIEW REPORTS FOR STEEL FRAMING ERECTION AND MEMBER CONNECTIONS SHALL BE SEALED BY P.E. IN ONTARIO AND SENT TO ENGINEER OF RECORD AT [ENSGENENG1@GMAIL.COM](mailto:ENSGENENG1@GMAIL.COM)

9. PRODUCTS:

- 1. STRUCTURAL STEEL AND HOLLOW STRUCTURAL SECTIONS AS PER NOTE #2 ABOVE.
- 2. SHOP PAINT PRIMER AS PER NOTE #3 ABOVE.
- 3. FABRICATE MEMBERS TO INCORPORATE HOLES & ATTACHMENTS & ANCHORAGES OF WORK BY OTHERS AS LOCATED AND DIRECTED BY THEM.
- 4. PRIME PAINT MEMBERS IN SHOP AS SPECIFIED IN CSA S16.

10. VERIFY AT SITE THAT WORK TO RECEIVE STRUCTURAL MEMBERS IS LOCATED CORRECTLY, AND AT PROPER LEVEL FOR ERECTION.

11. ERECTION TO MEET REQUIREMENTS OF CSA S16.

12. TOUCH UP FIELD CONNECTIONS AND SCRATCHED OR BURST SURFACES OF PRIMED STEEL, WITH PRIME PAINT TO MATCH SHOP COAT WHEN ERECTION IS COMPLETED. WHERE PRIMED SURFACES ARE DAMAGED, REMOVE RUST AND RE-PRIME.

13. HOT-SPR GALVANIZE ALL STEEL MEMBERS IN EXTERIOR WALLS.

14. SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER FOR ALL CONNECTION DETAILS.

ALL MASONRY SHALL BE PLACED IN ACCORDANCE WITH NORMAL GOOD PRACTICE AND CANCSA S304-24, TRUE TO LINE AND PLUMB:

1.1 ALLOWABLE TOLERANCES

- VARIATION FROM TRUE PLANE: -1:500
- VARIATION FROM PLUMB: -1:500
- VARIATION FROM PLANE POSITION: -1:500, 20mm Max
- VARIATION FROM GRADE: -1:500, 12mm Max

1.2 MATERIALS

CONCRETE MASONRY UNITS CONFORMING TO CSA A154 SERIES M NORMAL WEIGHT CONCRETE AUTOCURE BLOCKS

- HOLLOW UNITS TYPE H154M
- SOLID UNITS TYPE S154M
- SPECIAL UNITS (BULLNOSE, CORNERS, JAMBS, LINTELS, ETC) PROVIDE BULLNOSE FLAT FACE UNITS AT ALL MASONRY CORNERS
- CORE FILL GROUT: ZOMPA TO CSA A179
- MORTAR: TYPE S TO CSA A179

1.3 MASONRY ACCESSORIES

CONNECTORS TO CSA A370 AND CSA S384

COLUMN TIES: CONNECT MASONRY WALLS TO ADJOINING STEEL COLUMNS/ FERRI COTTO, SPOT WELD TO COLUMNS AT 400mm c/c

- BAR REINFORCEMENT TO CSA A370 AND CSA S384 18 GAUGE 400R, DEFORMED
- HORIZONTAL WIRE REINFORCEMENT TO CSA A370 AND CSA S384 3 LAGERS TYPE: INSTAL 200mm ABOVE THE FOUNDATION WALL AND AT 400mm THEREAFTER.
- INTERIOR NON BEARING WALLS: HOT DIP GALVANIZED, STANDARD DUTY, 3.6mm wire DIAMETER
- INTERIOR/EXTERIOR BEARING WALLS: AT HOT DIP GALVANIZED, STANDARD DUTY, 4.76mm wire DIAMETER
- DOWEL ANCHORS: HOT DIP GALVANIZED 1/2" GAUGE HOT DIP GALVANIZED, WITH 4.76 mm tie, HOT DIP GALVANIZED IN ACCORDANCE TO ASTM A151 CLASS B2

MOVEMENT JOINTS (EXPANSION AND CONTROL): SUBMIT TO THE ENGINEER FOR APPROVAL THE LOCATIONS AND DETAILS. FOR ALL MOVEMENT JOINTS TO BE INCORPORATED IN THE WORKS. VERTICAL JOINTS TO BE SPACED NOT MORE THEN 30FT AND ALSO BE ADDED AT CORNERS, OFFSETS, OPENINGS, WALL INTERSECTIONS, CHANGES IN WALL HEIGHTS. HORIZONTAL EXPANSION JOINTS TO BE PLACED SHELF ANGLES SUPPORTING BRICK MASONRY.

2. ALL AVAILABLE BEARING AREAS OF MASONRY UNITS SHALL BE FULLY COVERED WITH MORTAR, SPREAD IN AN EVEN LAYER AND VERTICAL REBARS SHALL BE FILLED SOLIDLY WITH MORTAR.

3. ALL INTERSECTING MASONRY WALLS TO HAVE MASONRY BOND OR HEAVY DUTY (BLOK-LOK) OR EQUIVALENT AT 200mm VERTICALLY MAXIMUM.

4. FOR BONDING BRICK AND BLOCK USE HEAVY DUTY TRUSS TYPE REINFORCING OR EQUIVALENT @ 400 VERTICALLY MAXIMUM COMPLETELY EMBEDDED IN MORTAR.

5. MASONRY WALLS SHALL BE ADEQUATELY BRACED TO RESIST WIND PRESSURE DURING CONSTRUCTION.

6. ALL SOLID MASONRY SHALL BE LAID WITH FULL HEAD AND BED JOINTS.

7. PROVIDE ALL ENCLOSURES, HEATING AND UNDERTAKE METHODS OF LAYING MASONRY IN COLD WEATHER.

8. PROVIDE LINTELS OVER ALL OPENINGS AND RECESSES FOR MECHANICAL AND ELECTRICAL TRADES AS SPECIFIED ON PLANS. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATIONS AND SIZES OF OPENINGS AND RECESSES.

9. CONCRETE AND STEEL BEAMS BEARING ON MASONRY WALLS SHALL HAVE A MINIMUM BEARING OF 400mm UNLESS OTHERWISE NOTED ON PLAN.

10. PROVIDE 3 COURSES OF SOLID BRICK MASONRY UNDER ALL BEARING PLATES BEARING ON MASONRY FOR A DISTANCE OF NOT LESS THAN 200mm PAST BEARING PLATE ON EACH SIDE.

11. MORTAR SHALL BE TYPE "S" WITH A MINIMUM COMPRESSIVE STRENGTH OF A 9.5 MPa BASED ON A NET CROSS-SECTIONAL AREA.

12. SOLID CONCRETE BLOCK MASONRY WITH MORTAR TYPE "S" SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 7.5 MPa - FM.

13. HOLLOW CONCRETE BLOCK MASONRY WITH MORTAR TYPE "S" SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 9.8 MPa - F.M.

14. COMPRESSIVE STRENGTH OF CONCRETE BLOCKS SHALL BE 15 MPa MINIMUM, BASED ON NET CROSS-SECTIONAL AREA

MIN. REINFORCING STEEL SPECIFIED YIELD STRESS SHALL BE 400MPa;  
D. HORIZONTAL REINFORCEMENT SHALL BE PROVIDED:  
A) AT TOP OF MASONRY FOUNDATION WALLS;  
B) AT TOP & BOTTOM OF EVERY WALL OPENING OVER 6' (1830mm) HIGH;  
C) IN THE COURSE IMMEDIATELY BELOW THE SOFFIT AND FLOOR LEVEL;  
D) AT TOP OF EVERY PARAPET WALLS (IF ANY).  
CONCRETE BLOCK WORK PARTITION WALLS AS SHOWN ON PLANS SHALL BE MADE OF 190mm and Fully Grouted Concrete Blocks.  
FULLY GROUTED (INCLUDING CATCHES) WITH 7% MORSTAR AND MINIMUM COMPRESSION STRENGTH OF MASONRY AT 28 DAYS OF 20MPa.  
240mm CONCRETE BLOCK PARTY WALLS SHALL BE REINFORCED WITH 15M VERT. BARS @ EVERY OTHER COURSE (SEE PLAN CALL OUT TO CORNER WALLS); HORIZONTAL GALVANIZED TENSILE LAP SPOT @ EVERY OTHER COURSE (SEE PLAN CALL OUT TO CORNER WALLS);  
150mm CONCRETE BLOCK PARTY WALLS SHALL BE REINFORCED WITH 15M VERT. BARS @ EVERY OTHER COURSE (SEE PLAN CALL OUT TO CORNER WALLS); HORIZONTAL GALVANIZED CONTINUOUS LADDER TYPE-B @ EVERY OTHER COURSE (SEE PLAN CALL OUT TO CORNER WALLS).

1. WORK TO BE IN ACCORDANCE WITH THE CANADIAN SHEET PILING INSTITUTE STANDARDS, UNLESS NOTED.
2. WELDING TO BE TO CSA W59.1, UNLESS NOTED.
3. METAL DECKING TO RESIST ALL LOADS INCLUDING UPLIFT STRESSES AS INDICATED IN THE ONTARIO BUILDING CODE OR WITHOUT EXCEEDING THE ALLOWABLE MATERIAL STRESS. LIMIT LIVE LOAD DEFLECTION TO 1/800TH OF THE SPAN.
4. SUBMIT SHOP DRAWINGS CLEARLY IDENTIFYING DECKING PLAN, PROFILE, DIMENSIONS, CORE THICKNESS, ANCHORAGE, SUPPORTS, PROJECTIONS, OPENINGS, AND REINFORCEMENT DETAILS AND ACCESSORIES.
5. PRODUCTS:
  - METAL TO MEET REQUIREMENTS OF ASTM A466 GALVANIZED STEEL SHEET WITH WIPED ZINC COATING, GRADE A MINIMUM STEEL QUALITY.
  - COVER PLATES, SEEL GUSSETERS AND FLASHINGS GALVANIZED STEEL SHEET WITH A MINIMUM CORE THICKNESS OF 0.94 (0.037" 20 GA) TYP (UNLESS OTHERWISE SHOWN).
  - PRIMER: ZINC CHROMATE READY MIX TO COE81 (P) UNLESS OTHERWISE SHOWN.
  - ROOF DECK: SINGLE LUTED FLAT GALVANIZED STEEL WITH A MINIMUM CORE THICKNESS AS SHOWN ON ROOF FRAMING PLAN, MAXIMUM DEPTH OF 30mm THICKNESS AS SHOWN ON ROOF FRAMING PLAN.
  - MAXIMUM DEPTH OF: 30mm.
6. ERECT METAL DECK TO MANUFACTURER'S REQUIREMENTS.  
SEE "METAL DECK FASTENING NOTES" ON DRAWING S1.06 FOR LONGITUDINAL, SIDE LAPs AND TRANSVERSE WELDS DETAILS.
7. IMMEDIATELY AFTER FASTENING IS IN PLACE IN CURVED, WHERE GALVANIZED SURFACE IS BURNED BY WELDING, TOUCH WITH PRIMER.
8. GENERAL CONTRACTOR SHALL SUBMIT METAL DECK SHOP DRAWINGS SEALED BY P.E.G. PRIOR TO INSTALLATION.

2. WORK TO BE IN ACCORDANCE WITH THE CANADIAN SHEET STEEL BUILDING INSTITUTE STANDARDS, UNLESS NOTED.

3. WELDING TO BE TO CSA W59 - UNLESS NOTED.

4. METAL, DESIGN TO RESIST ALL LOADS INCLUDING ULTIMATE STRESSES AS INDICATED IN THE DECK AND NACRO OF THE DECK, WITHOUT EXCEEDING THE ALLOWABLE MATERIAL STRESS. LIMIT LIVE LOAD DEFLECTION TO 1/40TH OF THE SPAN.

5. SUBMIT SHOP DRAWINGS SAVED BY PLY ENGINEERING INDICATING DECKING PANEL PROFILE, DIMENSIONS, CORNER THICKNESS, ANCHORAGES, SUPPORTS, JOINTS, OPENINGS, AND REINFORCEMENT DETAILS AND ACCESSORIES.

6. PRODUCTS:

- METAL: TO MEET REQUIREMENTS OF ASTM A466 GALVANIZED STEEL SHEET WITH WIPED ZINC COATING, GRADE A MINIMUM STEEL QUALITY.
- COATING: GALV. COLOURS AND FINISHING: GALVANIZED STEEL SHEET WITH A MINIMUM COR. THICKNESS OF 7.6  $\mu$ m (0.0022 GA) TYP. UNIFORM OVER THE SPAN.
- PRIMER: ZINC RICH, RARELY TO C558 (1.0% IBA).
- DECKING: SINGLE OR DOUBLE DECKING WITH MINIMUM COR. THICKNESS OF 7.6mm (0.0022 GA), MAXIMUM DEPTH OF 38mm (1.5") MAXIMUM RIB SPACING OF 200 (8") TYP. MAX. SUB. THICKNESS OF 22mm.

7. EFFECT METAL TO CONTACT MANUFACTURER'S REQUIREMENTS. READ NOTES ON DRAWING S1.06 FOR LONGITUDINAL, SIDE LAPS AND TRANSVERSE WELDS, NUMBER, SPACING & DETAILS.

8. IMMEDIATELY AFTER DECKING IS IN SECURED IN PLACE, WHEN GALVANIZED SURFACE IS BURNED BY WELDING, TOUCH UP WITH PRIMER.

2. PRECAST SUPPLIER TO COMPLY WITH 4.1.3.3.6 AND 08C24 REQUIREMENTS AS PC PANELS ARE NOT CONSIDERED PART OF THE SEISMIC FORCE RESISTANT SYSTEM (FRS) ON THIS DESIGN.

3. THE CONNECTIONS SHOWN ON STRUCTURAL DETAILS, BOTH IN TERMS OF LOCATION AND DETAILS, ARE FOR CONCEPT DESIGN ONLY.

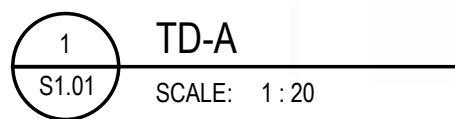
4. FINAL CONFIGURATION OF PRECAST SUPPORT CONNECTIONS TO BE DETERMINED BY PRECAST SUPPLIER.

5. PC SUPPLIER SHALL PREPARE A STRUCTURAL DESIGN IN ACCORDANCE WITH CSA A23.3 AND CSA A23.4/A21.5L SEAL BEAD PER PENDING FOR APPROVAL, TO SUBMIT ERM PRIOR TO FABRICATION.

6. GLAZING COMPONENTS SHALL BE DESIGNED TO RESIST WIND, SEISMIC FORCES GENERATED BY THEIR OWN WEIGHT AND FORCES REQUIRED TO TRANSFER THE WEIGHT OF GLAZING TO THE SUPPORT.

7. THE CRITERIA USED TO DESIGN PRECAST CONNECTIONS SHALL INCLUDE BUT NOT LIMITED TO:

- DUCTILITY
- VOLUME CHANGE ACCOMMODATIONS
- DURABILITY
- FIRE RESISTANCE
- CONSTRUCTABILITY



 **EXSEN ENGINEERING LTD.**  
*CONSULTING ENGINEERS*

1211-111 PACIFIC Ave.  
TORONTO, ON  
M6P 2P2

Ph. (416) 712-0970  
exseng11@gmail.com

202-8551 Weston Road  
Woodbridge, ON L4L 9R4  
P: (905) 856-2840  
F: (905) 856-4912  
[info@alaimoarchitecture.com](mailto:info@alaimoarchitecture.com)

## GENERAL NOTES

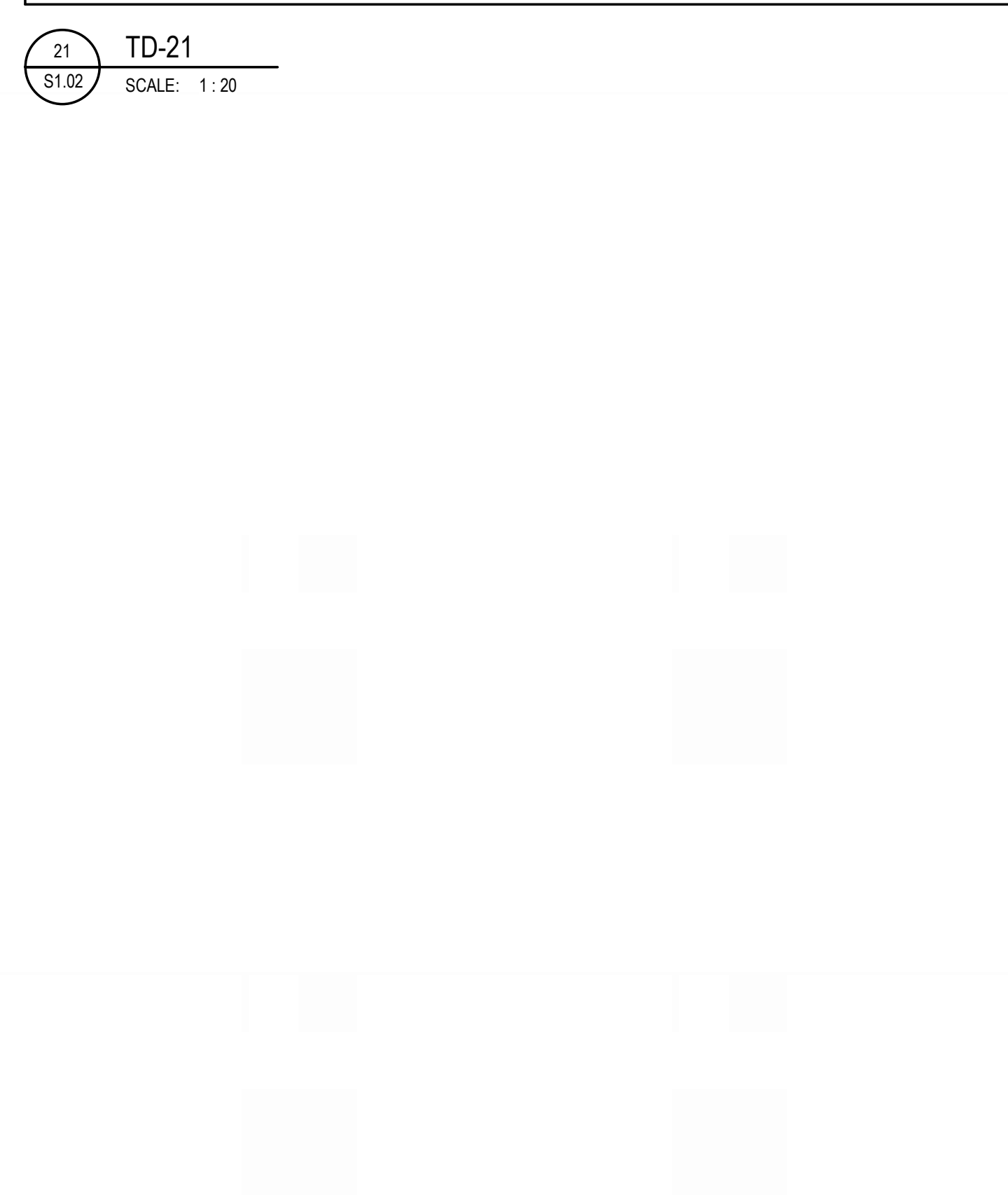
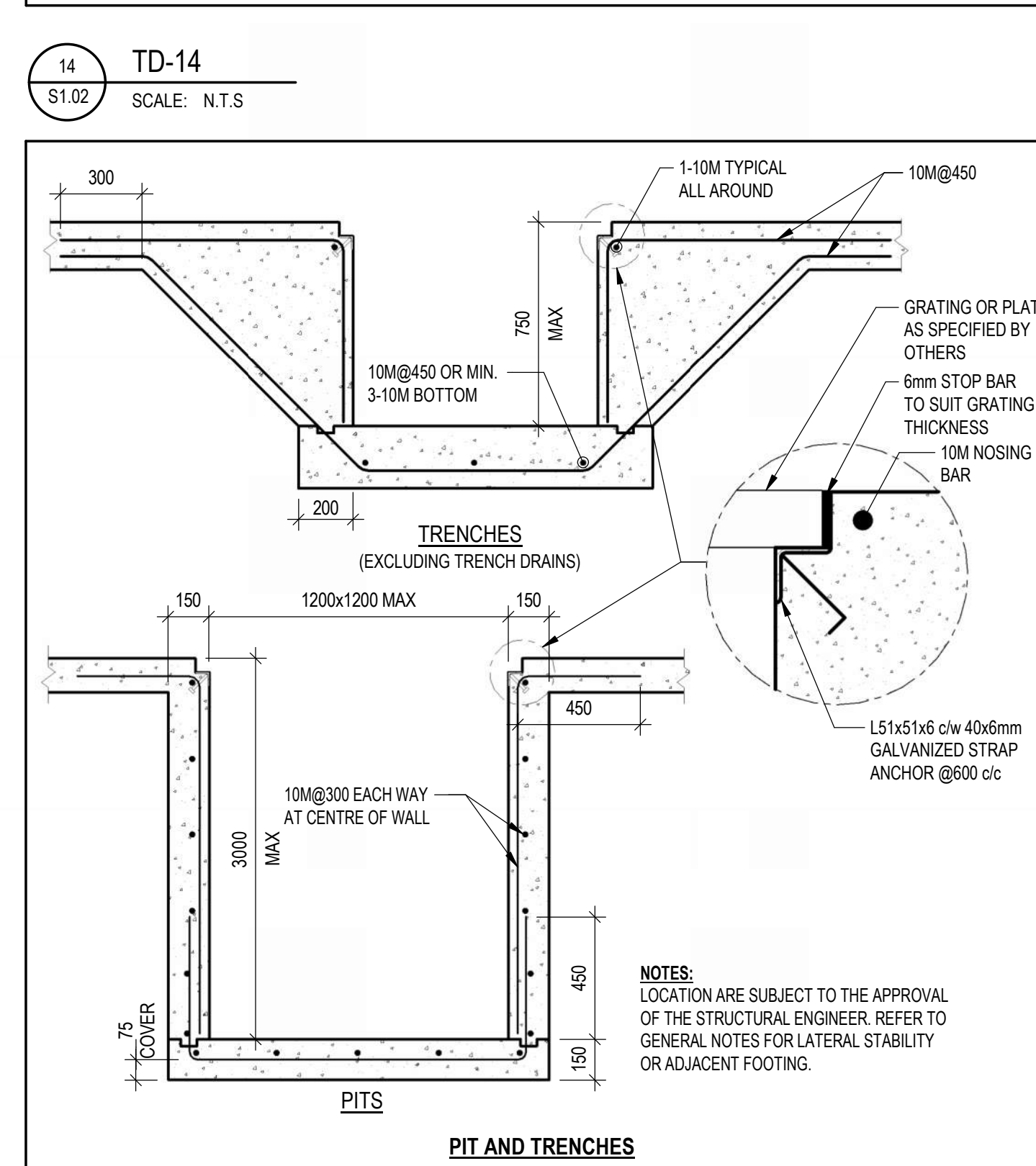
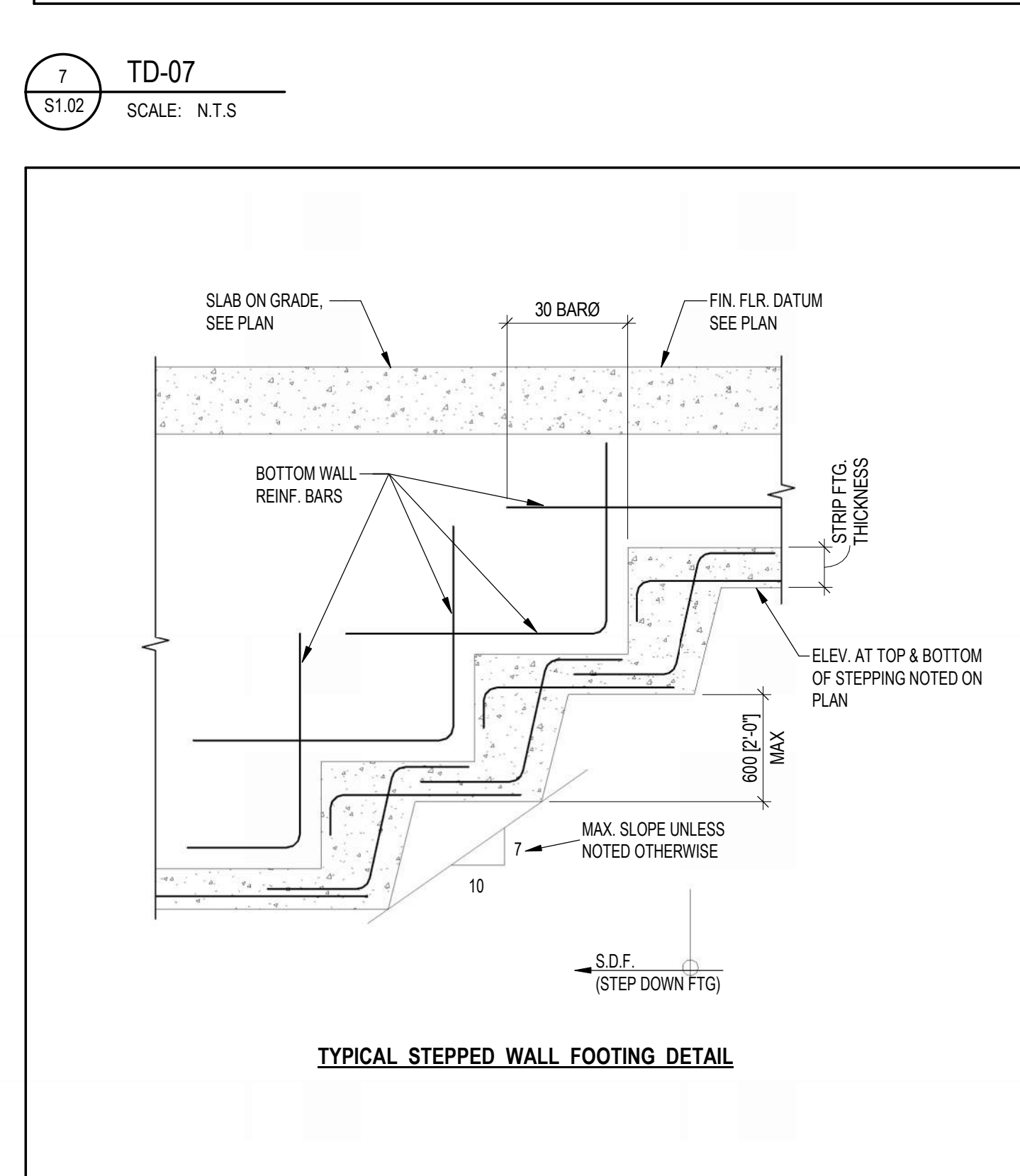
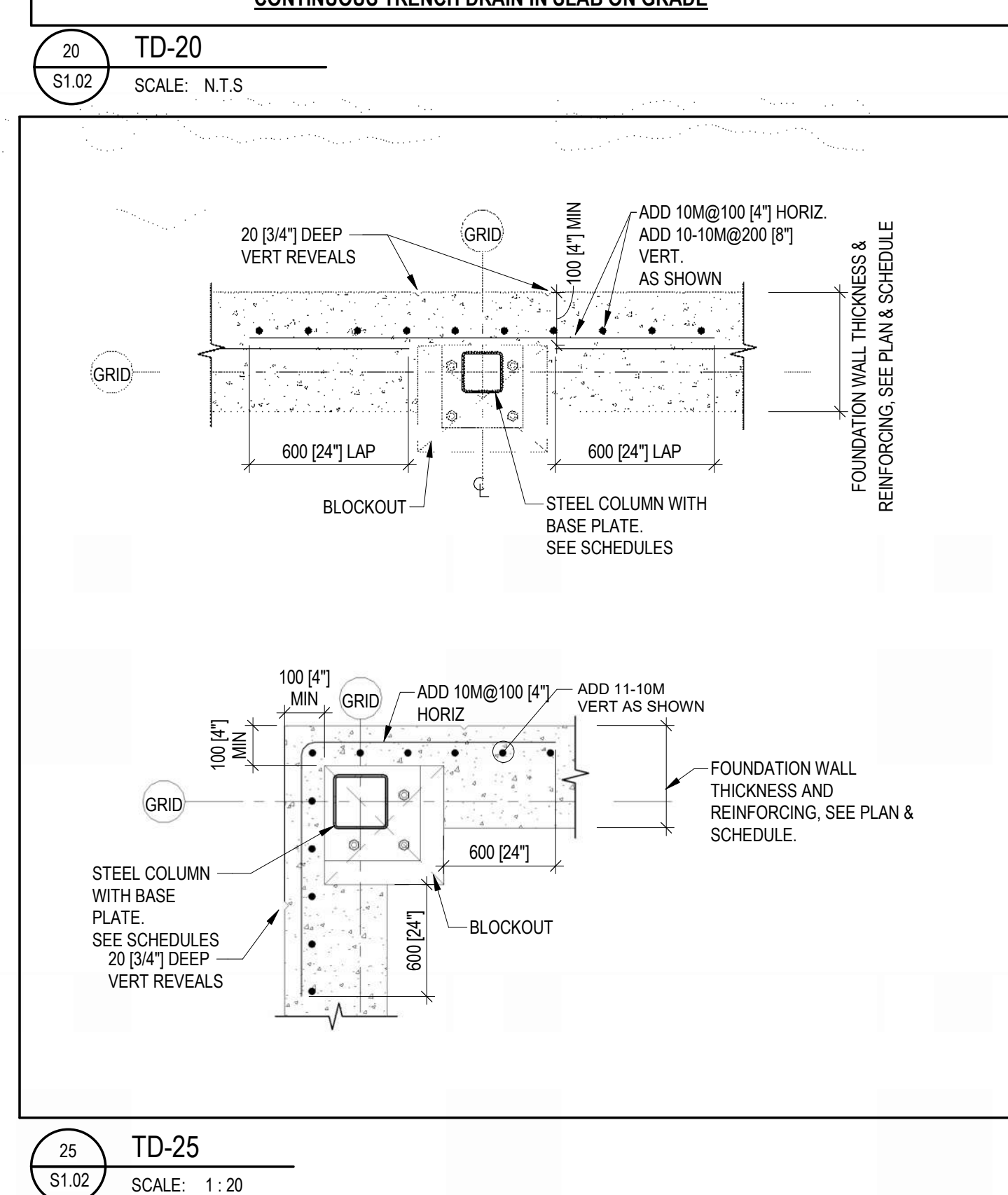
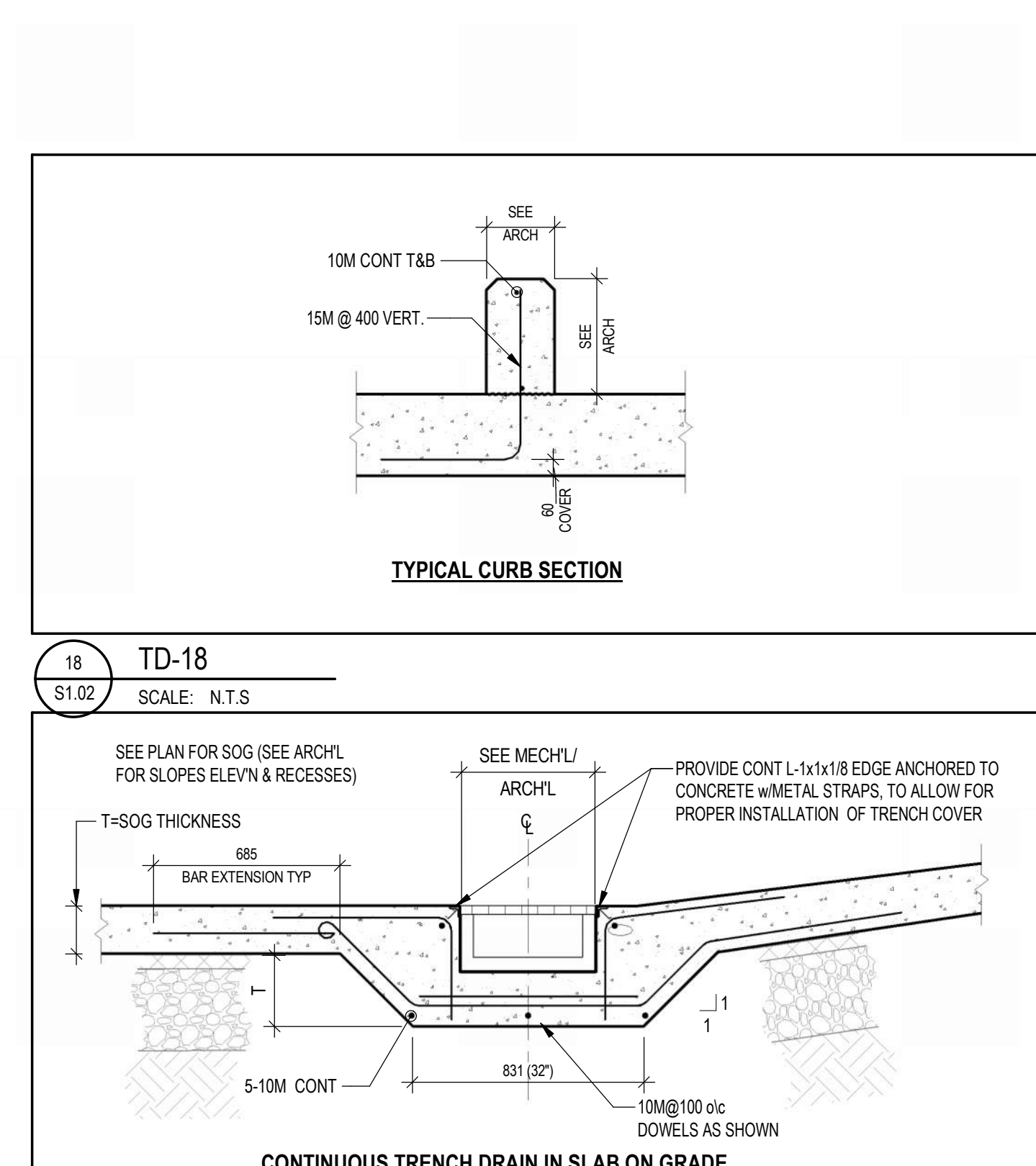
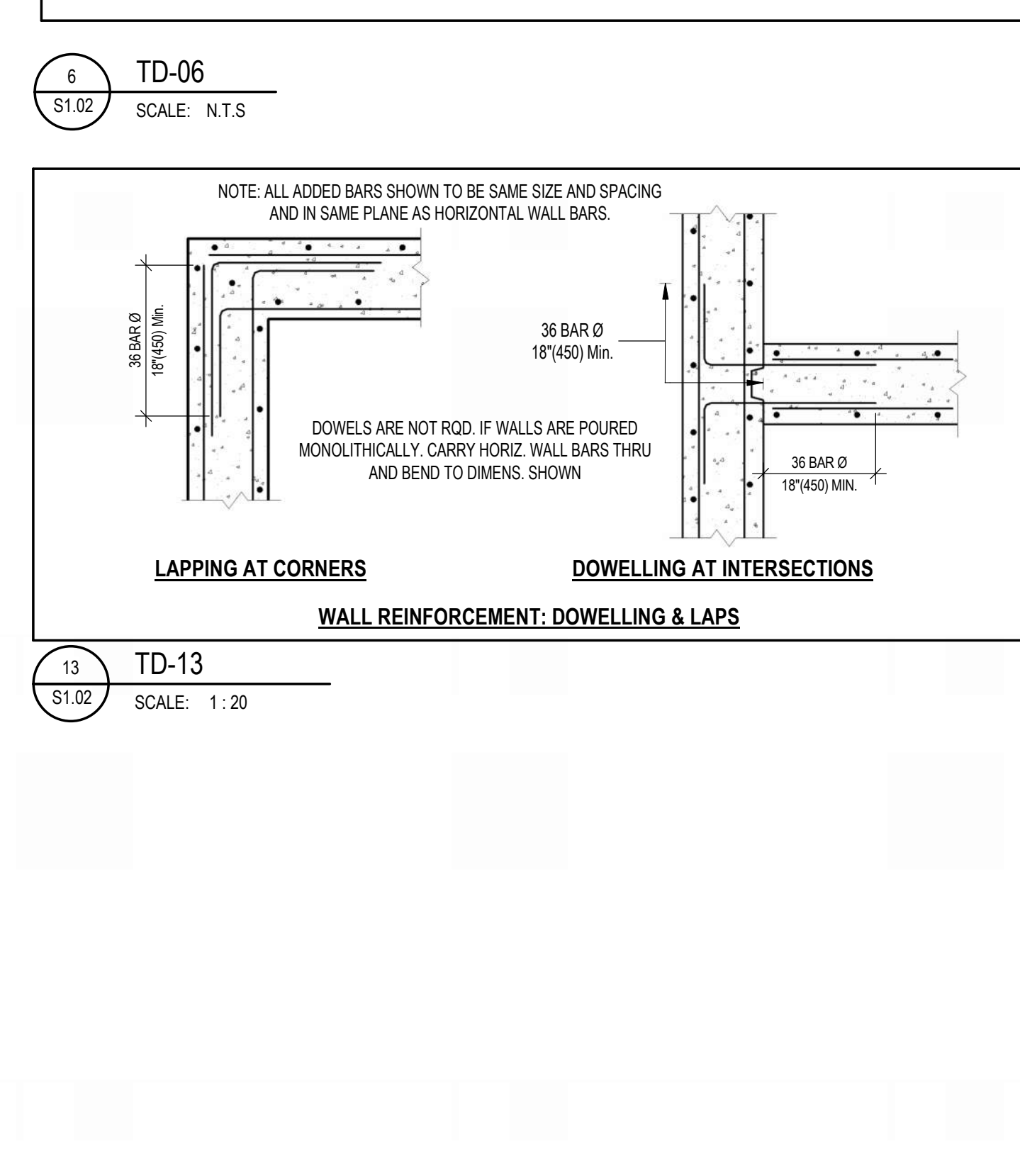
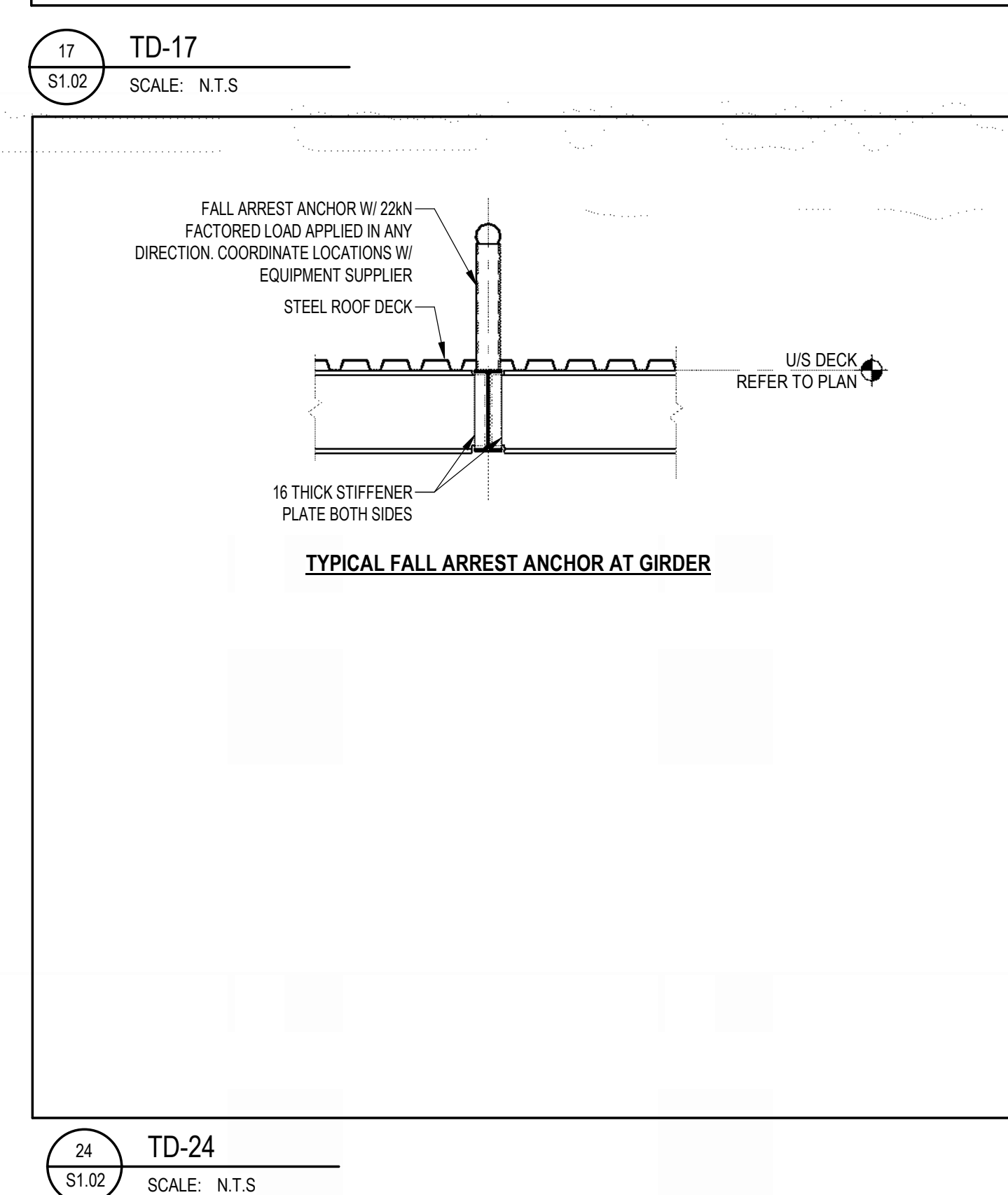
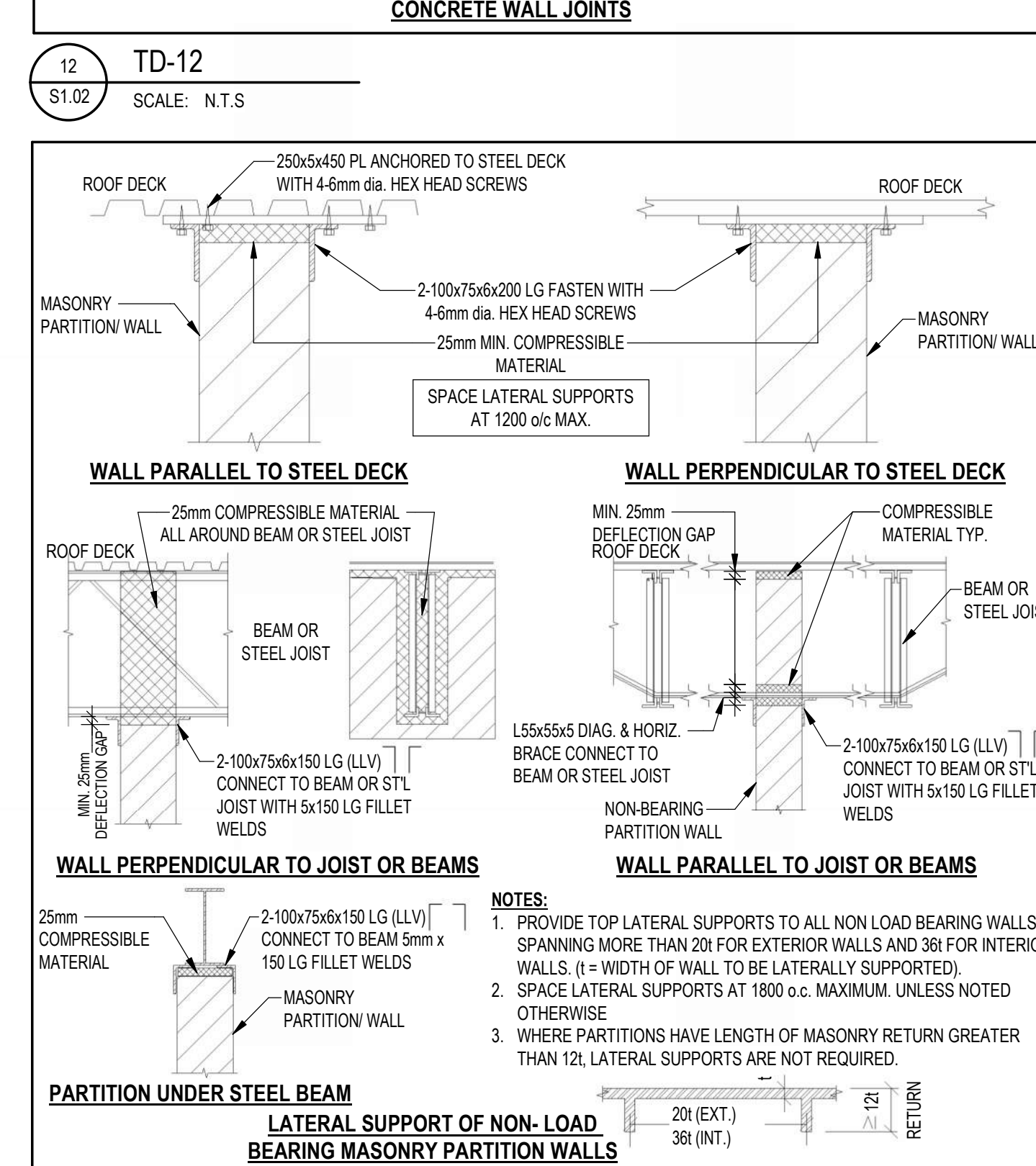
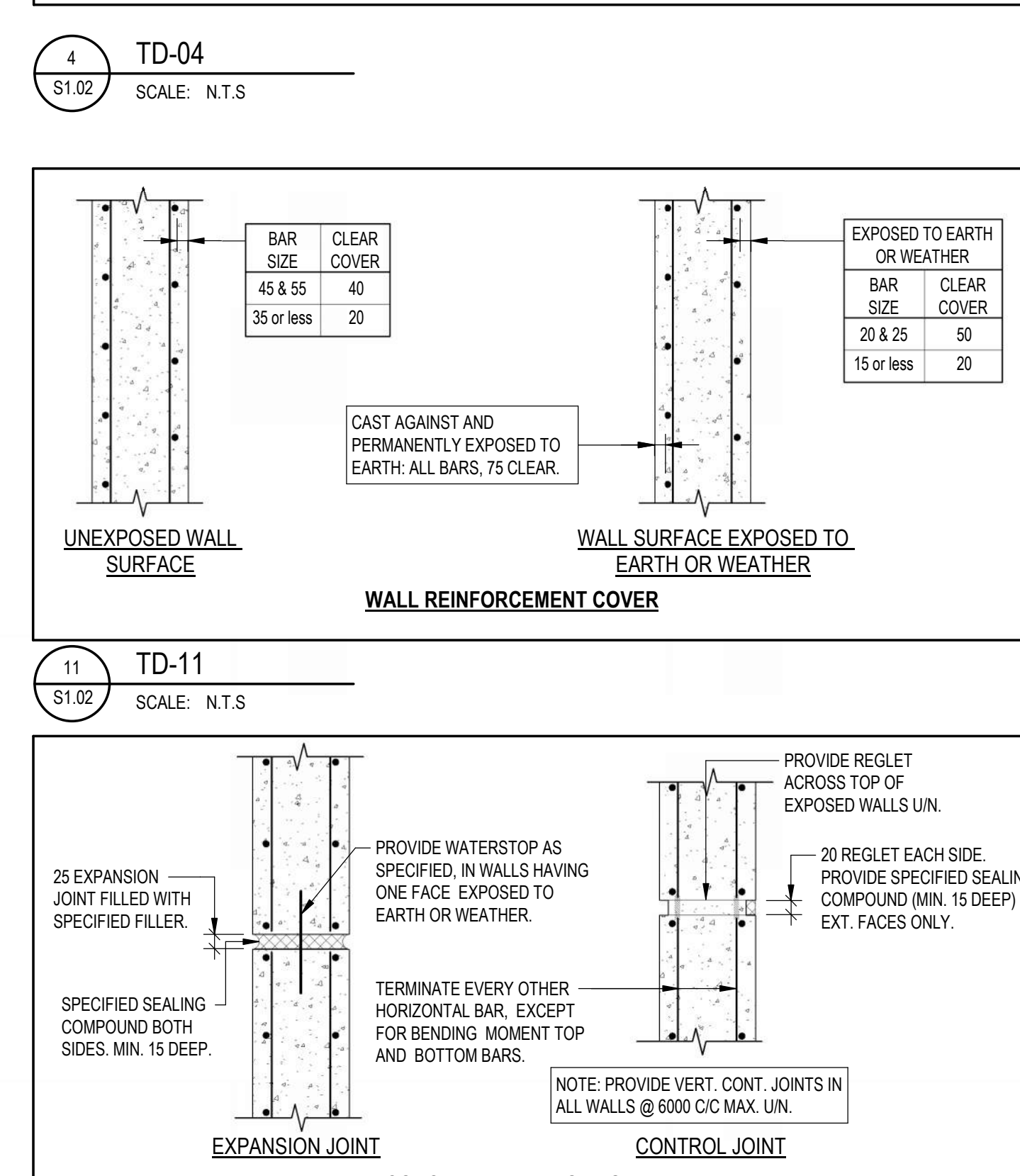
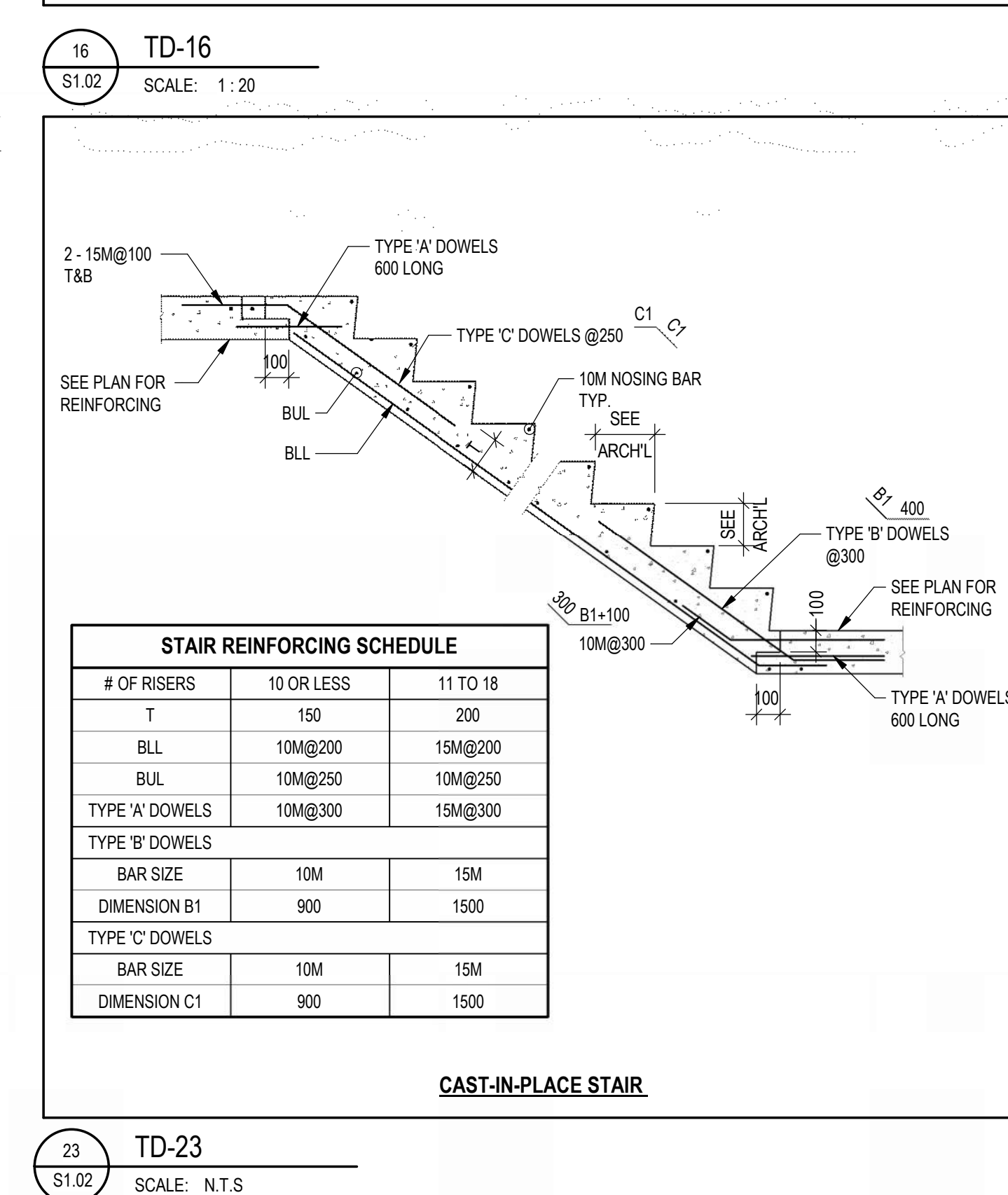
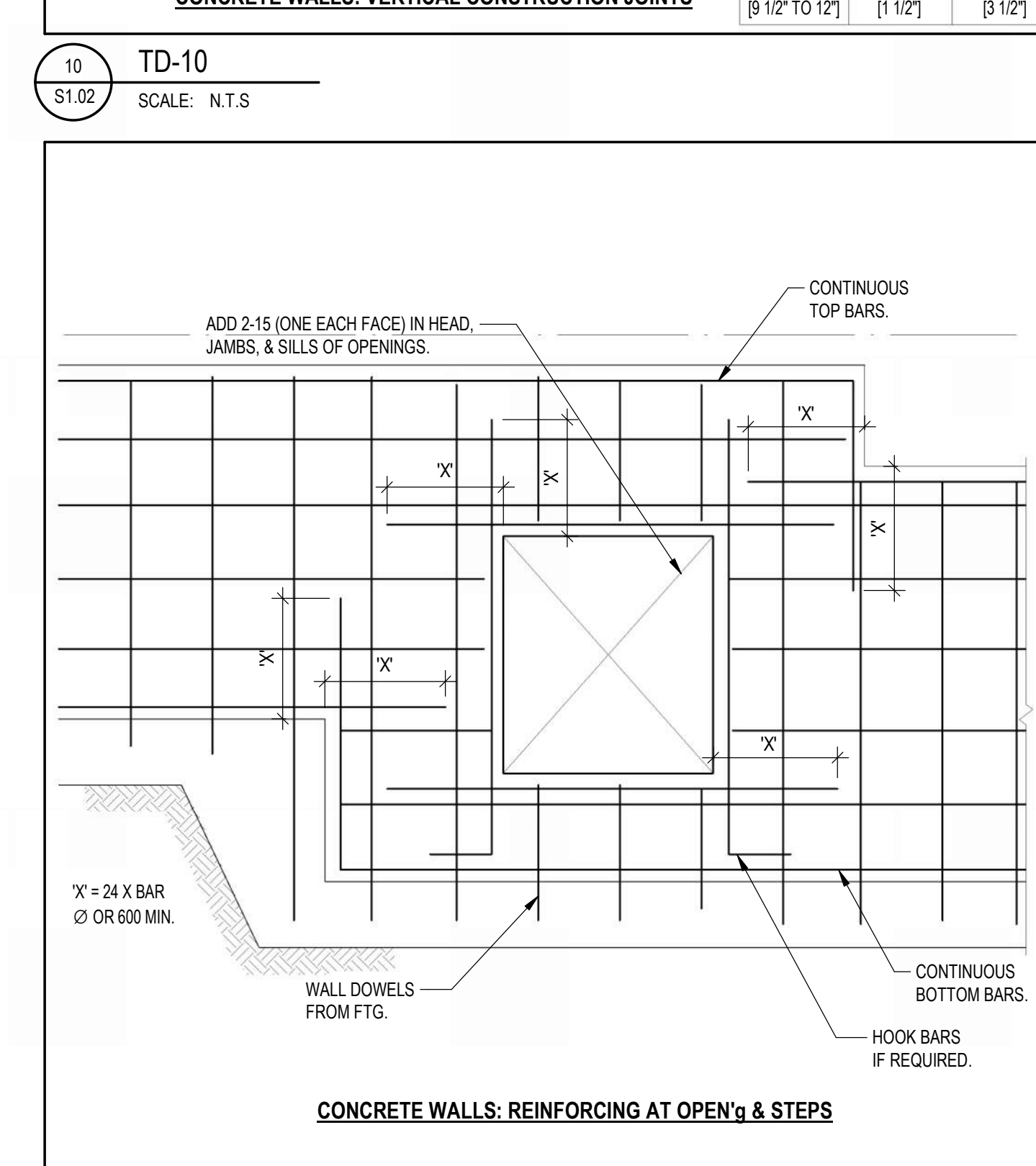
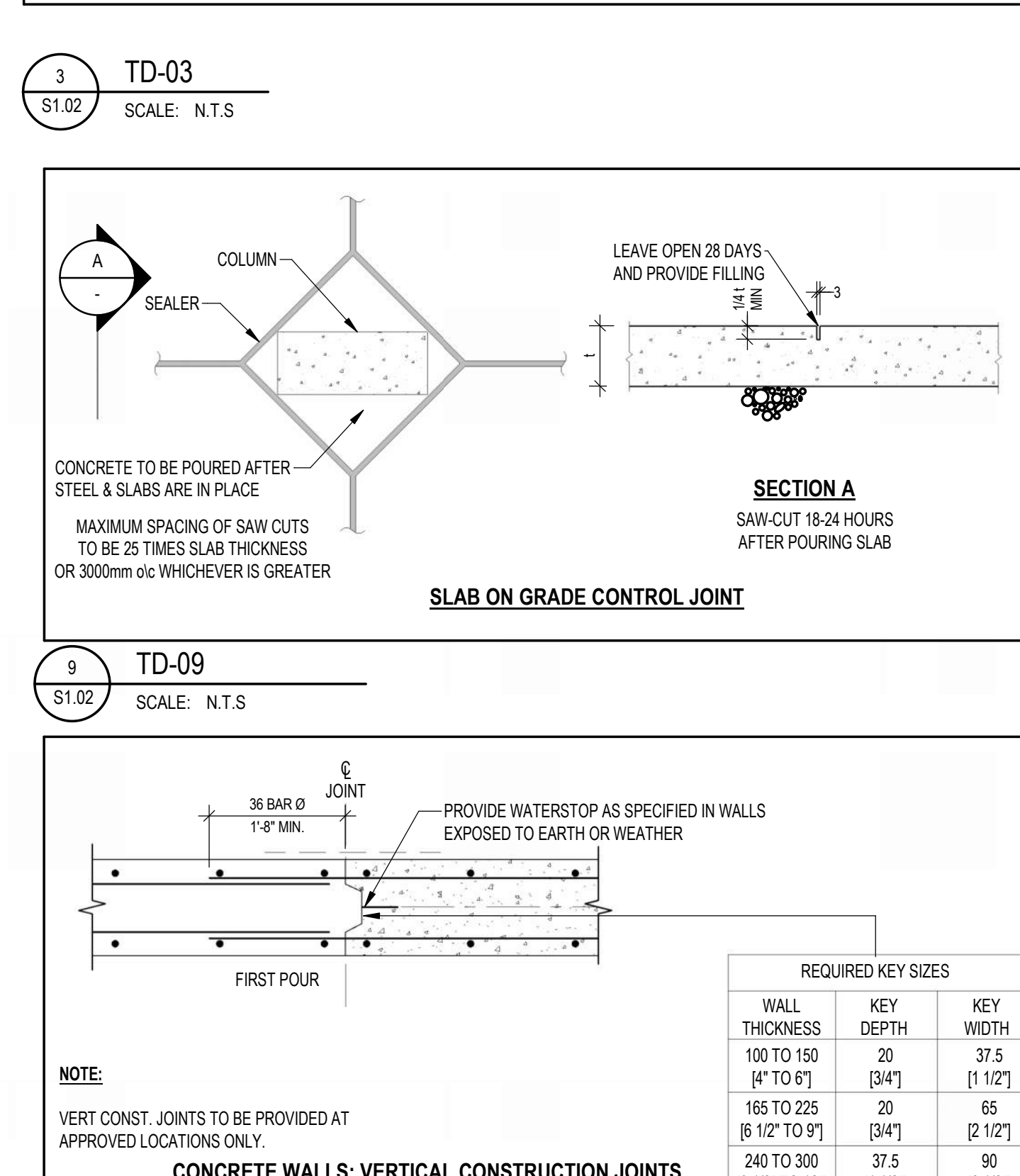
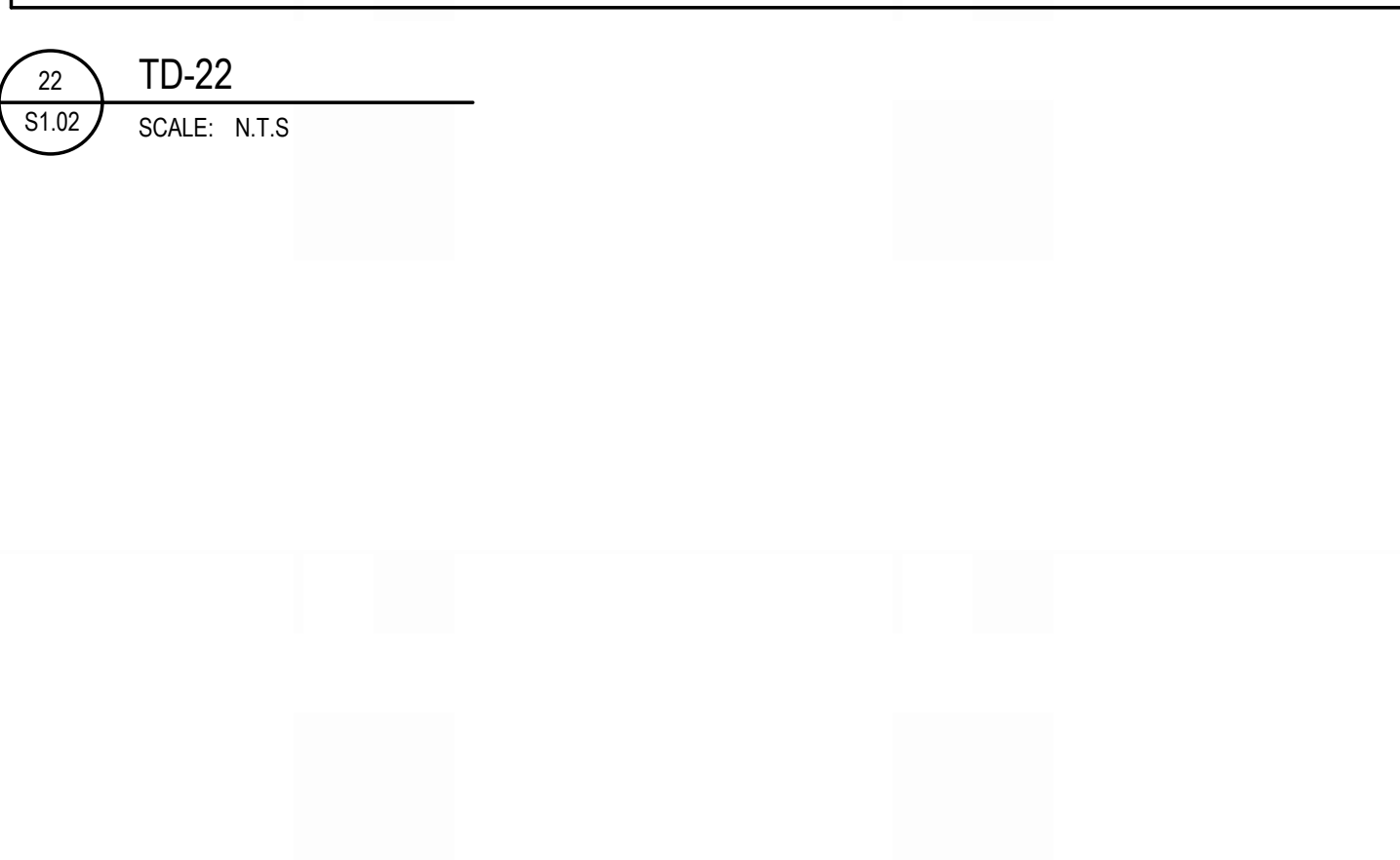
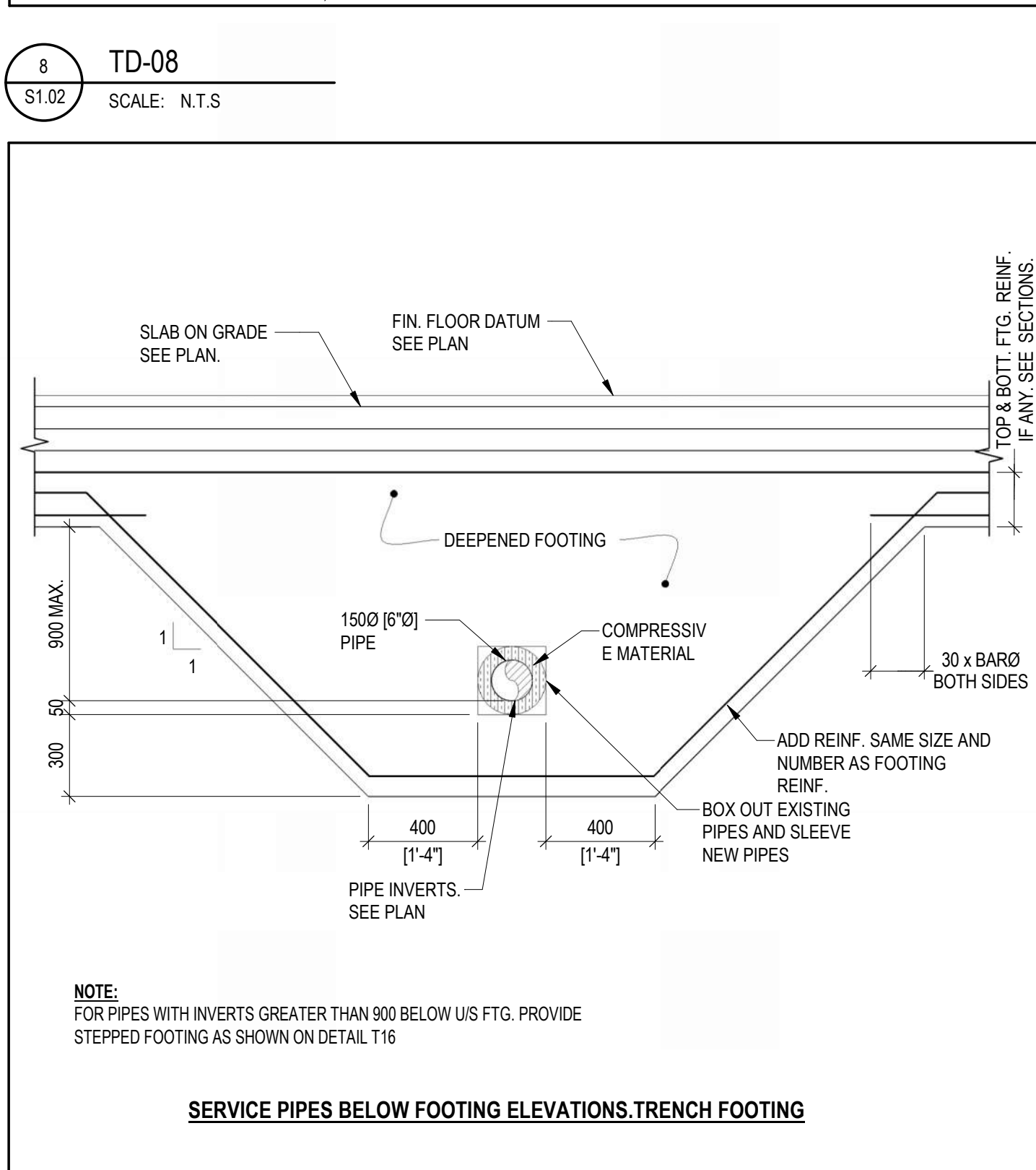
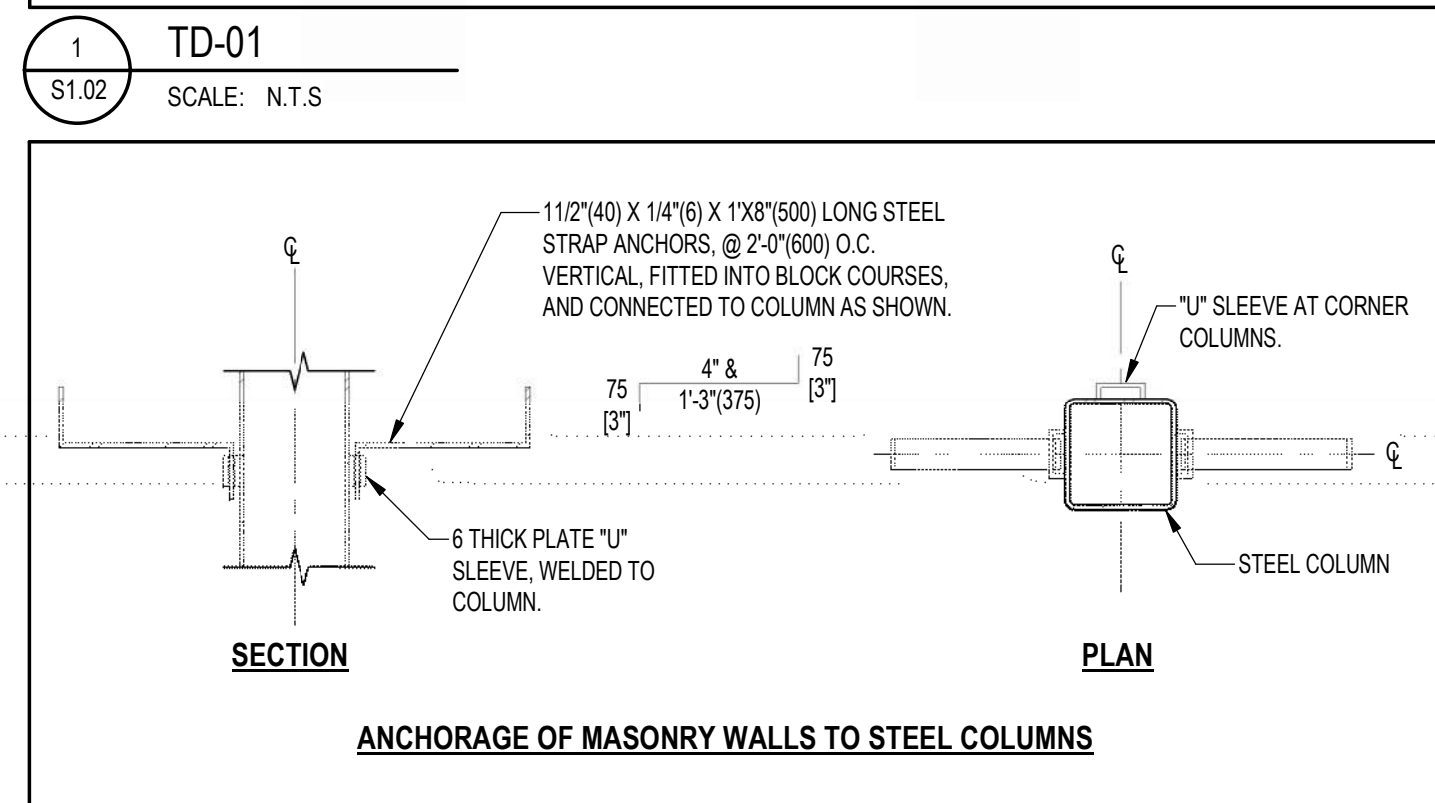
TOWN OF ORANGEVILLE  
FIRE STATION PROJECT

10 COMMERCE ROAD  
ORANGEVILLE, ON L9W 1P8

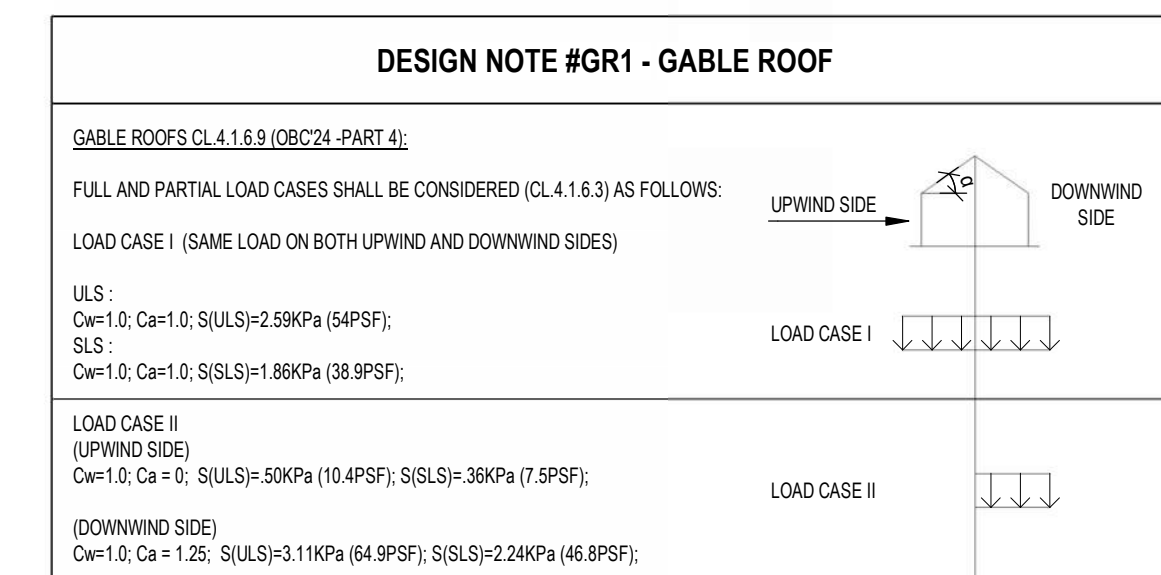
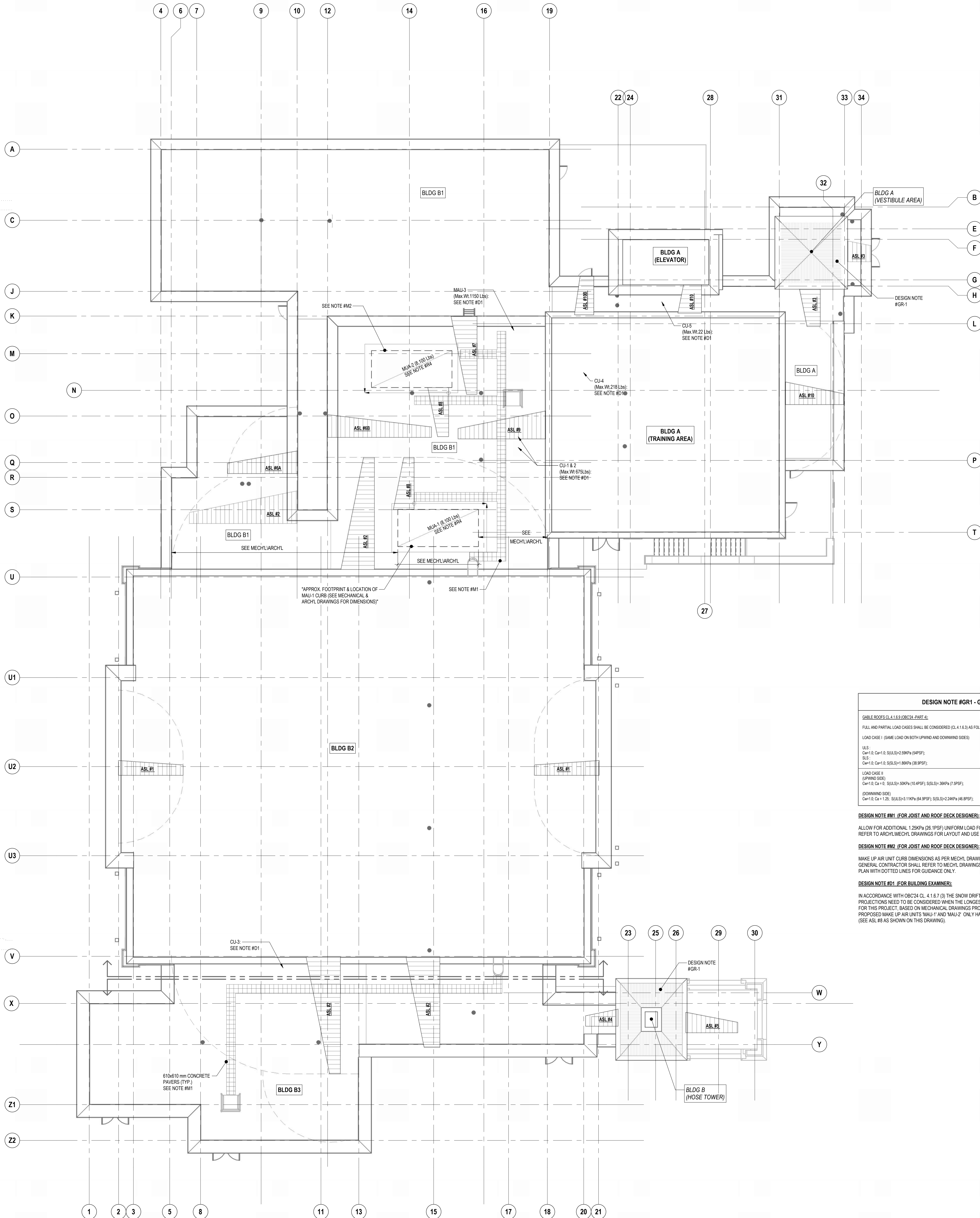
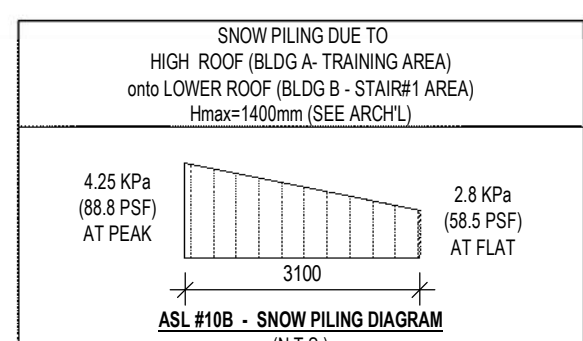
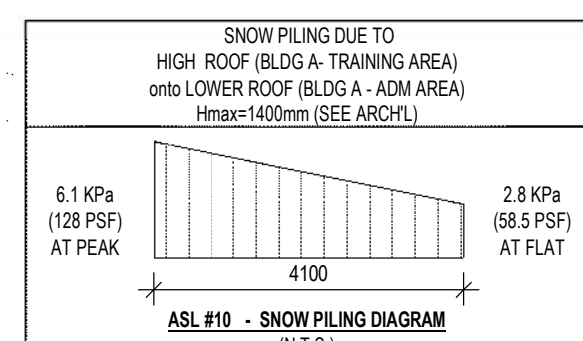
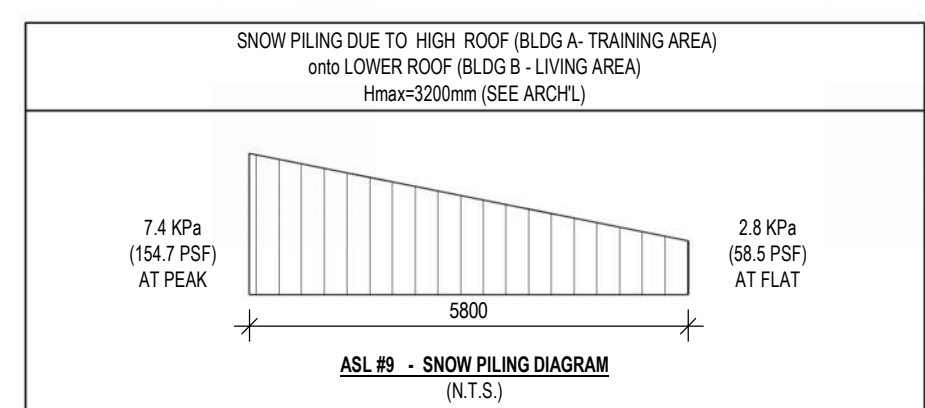
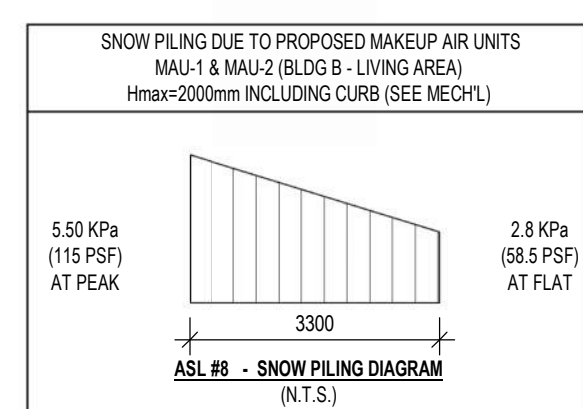
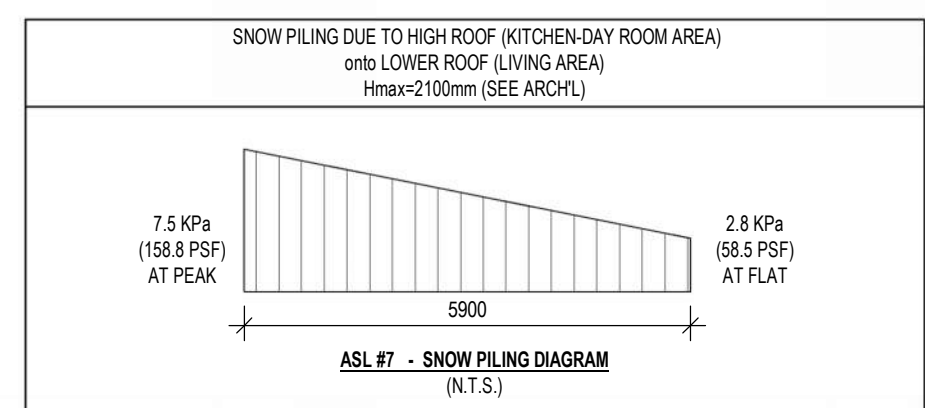
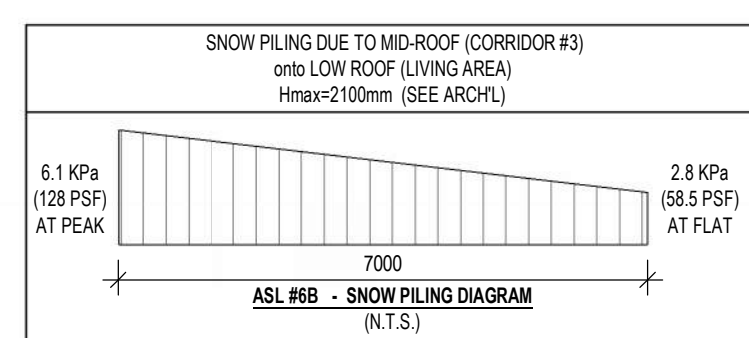
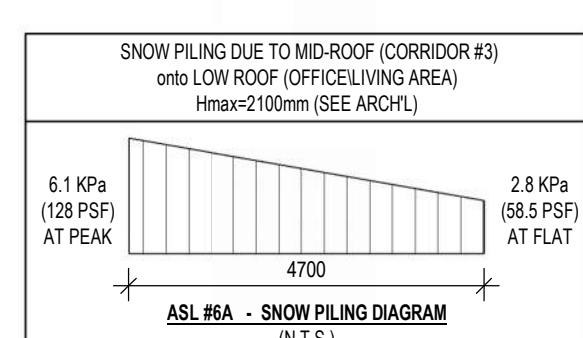
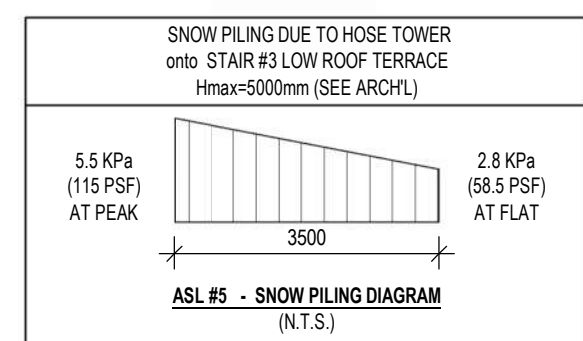
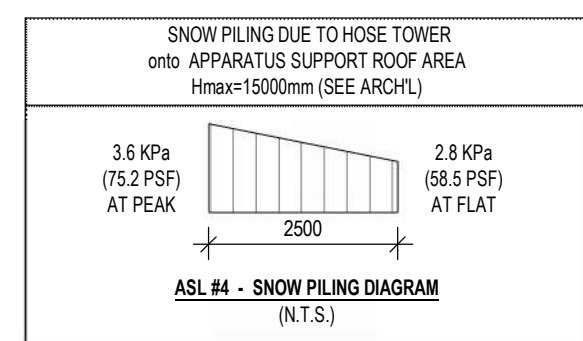
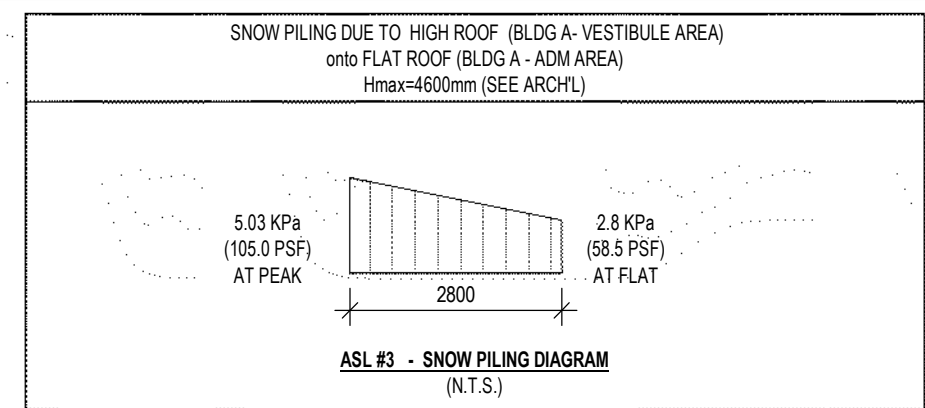
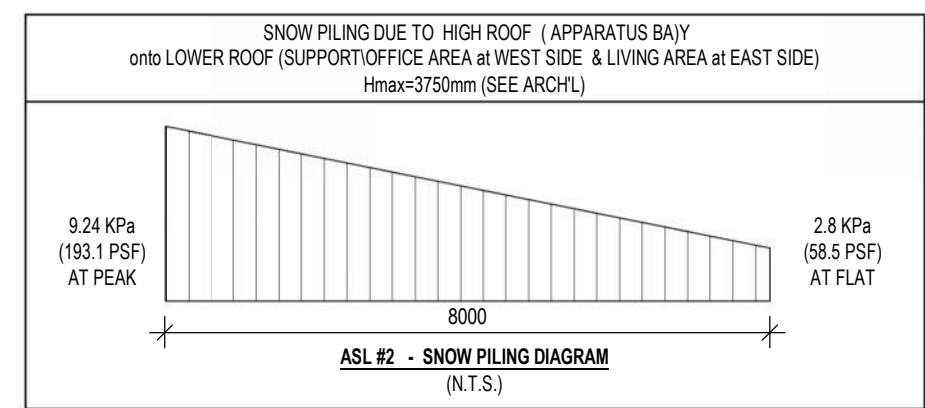
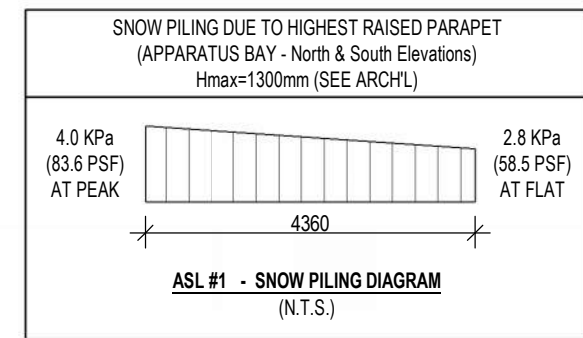
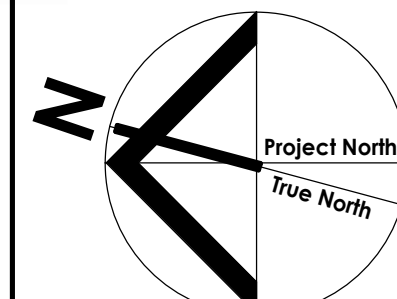
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23000R
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## S1.01









**DESIGN NOTE #M1 (FOR JOIST AND ROOF DECK DESIGNER):**

ALLOW FOR ADDITIONAL 1.25kPa (26 PSF) UNIFORM LOAD FOR WEIGHT OF PROPOSED CONCRETE PAVERS. REFER TO ARCH'L/MECH'L DRAWINGS FOR LAYOUT AND USE THIS PLAN FOR GUIDANCE ONLY.

**DESIGN NOTE #M2 (FOR JOIST AND ROOF DECK DESIGNER):**

MAKE UP AIR UNIT CURB DIMENSIONS AS PER MECH'L DRAWINGS ARE AS FOLLOWS: 2800mm x 635mm x 470mm (11'1" x 2'6" x 1'7") IN GENERAL CONTRACTOR SHALL REFER TO MECH'L DRAWINGS AND USE CURB LOCATION AND EXTENT AS SHOWN ON PLAN WITH DOTTED LINES FOR GUIDANCE ONLY.

**DESIGN NOTE #D1 (FOR BUILDING EXAMINER):**

IN ACCORDANCE WITH OBC24 CL 4.1.6.7 (3) THE SNOW DRIFT SURCHARGE ADJACENT TO THE PROPOSED ROOF PROJECTIONS NEED TO BE CONSIDERED WHEN THE LONGEST HORIZONTAL DIMENSION EXCEEDS 3m. FOR THIS PROJECT BASED ON MECHANICAL DRAWINGS PROVIDED BY REAMY CONSULTING ENGINEERS LTD. THE PROPOSED MAKE UP AIR UNITS MAU-1 AND MAU-2 ONLY HAVE 0-3.0m (SEE ASL #8 AS SHOWN ON THIS DRAWING).

**1 SNOW DRIFTING PLAN**  
S1.03 SCALE: 1 : 100

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CONSULTING ENGINEERS  
1211-1111 PACIFIC AVE.  
TORONTO, ON  
M6P 2P2  
Ph: (416) 712-9970  
exseneng11@gmail.com

**alaimo architecture inc.**

202-8551 Weston Road  
Woodbridge, ON L4L 9R4  
P: (905) 856-2840  
F: (905) 856-4912  
info@alaimoarchitecture.com

Drawing Title  
**SNOW DRIFTING LOAD PLAN AND DIAGRAMS**

Project  
**TOWN OF ORANGEVILLE  
FIRE STATION PROJECT**

**10 COMMERCE ROAD  
ORANGEVILLE, ON L9W 1P8**

Scale  
**1 : 100**  
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SEISMIC LOAD PARAMETERS (4.1.8 OBC'24, NBC'20)		
REFERENCE	ITEM	DESIGN PARAMETERS
TABLE 4.1.8.5.A	IMPORTANCE FACTOR	$I_p=1.5$
TABLE 4.1.8.1.1	HIGH-RISE FACTOR	$H_p=1.5$
TABLE 4.1.8.1.1	BASE REDUCTION FACTOR	$R=1.0$
EARTHQUAKE SPECTRUM (CL 4.1.8.1.2)	5% PROBABILITY OF EXCEEDANCE IN 10 YEARS (POST-OCCUPANCY BLDG)	$S_{d1}(0.020)=0.11; S_{d1}(0.050)=0.082; S_{d1}(0.100)=0.058; S_{d1}(0.200)=0.038; S_{d1}(0.500)=0.020; S_{d1}(1.000)=0.015$
LAYTIME 45"X12" LAYOUT USE 86"X18" (WOMEN/MEN'S)	PEAK GROUND ACCELERATION	$P_G=0.050$
SOIL REPORT ARE P-22 (2023)304 BY FISHER ENGINEERING LTD. (REVISED MAR 23, 23)	COMPUTED SITE CLASS	$10m$ $10m/30m$ $30m/90m$
ART. 4.1.8.7.1a TABLE 4.1.8.5.B	SEISMIC CATEGORY	CLAS C
ART. 4.1.8.1.1	METHOD OF ANALYSIS	EQUIVALENT STATIC FORCE PROCEDURE

GRAN TOTAL SEISMIC LOADS - BUILDING A & B	
$V_{TOTAL}=442\text{ KN}$	$M_{TOTAL}=2346\text{ KNm}$

DESIGN NOTES (NOTES):  
BUILDING 'A' AND 'B' DENOTE RESPECTIVELY UPPER AND LOWER FLOOR AREAS AS DEFINED BY ARCHITECTURAL DRAWINGS. THERE IS NO STRUCTURAL SEPARATION AS PER OBC'24 CL 4.1.8.14 BETWEEN THE TWO AFOREMENTIONED BUILDING AREAS.

I LOW ROOF LEVEL (BUILDING B1 - LIVING AREA) US DECK EL. (SEE ARCH'L)		
SFRS MODIFICATION FACTORS		
TABLE 4.1.8.9	LIMITED DUCTILITY STEEL MOMENT FRAMES	$R_d=2.0; R_o=1.3$ (CAN/CSA S16)
CL 4.1.8.11 (a) (i)	FUNDAMENTAL PERIOD	$T_n=28\text{ sec}$
CL 4.1.8.11 (a) (ii)	BASE SHEAR	$V_{BASE}=25.0\text{ KN}$
	OVERTURNING MOMENT	$M_{OT}=40.0\text{ KNm}$

II HIGH ROOF LEVEL (BUILDING B2 - APPARATUS BAY) US DECK EL. (SEE ARCH'L)		
SFRS MODIFICATION FACTORS		
TABLE 4.1.8.9	LIMITED DUCTILITY STEEL MOMENT FRAMES	$R_d=2.0; R_o=1.3$ (CAN/CSA S16)
CL 4.1.8.11 (a) (i)	FUNDAMENTAL PERIOD	$T_n=42\text{ sec}$
CL 4.1.8.11 (a) (ii)	BASE SHEAR	$V_{BASE}=15.0\text{ KN}$
	OVERTURNING MOMENT	$M_{OT}=24.0\text{ KNm}$

III LOW-ROOF LEVEL (BUILDING B3 - APPARATUS SUPPORT) US DECK EL. (SEE ARCH'L)		
SFRS MODIFICATION FACTORS		
TABLE 4.1.8.9	LIMITED DUCTILITY STEEL MOMENT FRAMES	$R_d=2.0; R_o=1.3$ (CAN/CSA S16)
CL 4.1.8.11 (a) (i)	FUNDAMENTAL PERIOD	$T_n=28\text{ sec}$
CL 4.1.8.11 (a) (ii)	BASE SHEAR	$V_{BASE}=25.0\text{ KN}$
	OVERTURNING MOMENT	$M_{OT}=40.0\text{ KNm}$

IV ROOF LEVEL (BUILDING B - HOSE TOWER) TOWER US DECK EL. - STAR US DECK EL. (SEE ARCH'L)		
SFRS MODIFICATION FACTORS		
TABLE 4.1.8.9	LIMITED DUCTILITY CONCENTRICALLY BRACED STEEL MOMENT FRAMES	$R_d=2.0; R_o=1.3$ (CAN/CSA S16)
CL 4.1.8.11 (a) (i)	FUNDAMENTAL PERIOD	$T_n=48\text{ sec}$
CL 4.1.8.11 (a) (ii)	BASE SHEAR	$V_{BASE}=12.0\text{ KN}$
	OVERTURNING MOMENT	$M_{OT}=192.0\text{ KNm}$

V MID-ROOF LEVEL (BUILDING B1 - FITNESS/KITCHEN/DAY ROOM CORRIDOR AREA) US DECK EL. (SEE ARCH'L)		
SFRS MODIFICATION FACTORS		
TABLE 4.1.8.9	LIMITED DUCTILITY STEEL MOMENT FRAMES	$R_d=2.0; R_o=1.3$ (CAN/CSA S16)
CL 4.1.8.11 (a) (i)	FUNDAMENTAL PERIOD	$T_n=36\text{ sec}$
CL 4.1.8.11 (a) (ii)	BASE SHEAR	$V_{BASE}=18.0\text{ KN}$
	OVERTURNING MOMENT	$M_{OT}=36.0\text{ KNm}$

VI LOW ROOF LEVEL (BUILDING A - ADMINISTRATION AREA) US DECK EL. (SEE ARCH'L)		
SFRS MODIFICATION FACTORS		
TABLE 4.1.8.9	LIMITED DUCTILITY STEEL MOMENT FRAMES	$R_d=2.0; R_o=1.3$ (CAN/CSA S16)
CL 4.1.8.11 (a) (i)	FUNDAMENTAL PERIOD	$T_n=24\text{ sec}$
CL 4.1.8.11 (a) (ii)	BASE SHEAR	$V_{BASE}=10.0\text{ KN}$
	OVERTURNING MOMENT	$M_{OT}=20.0\text{ KNm}$

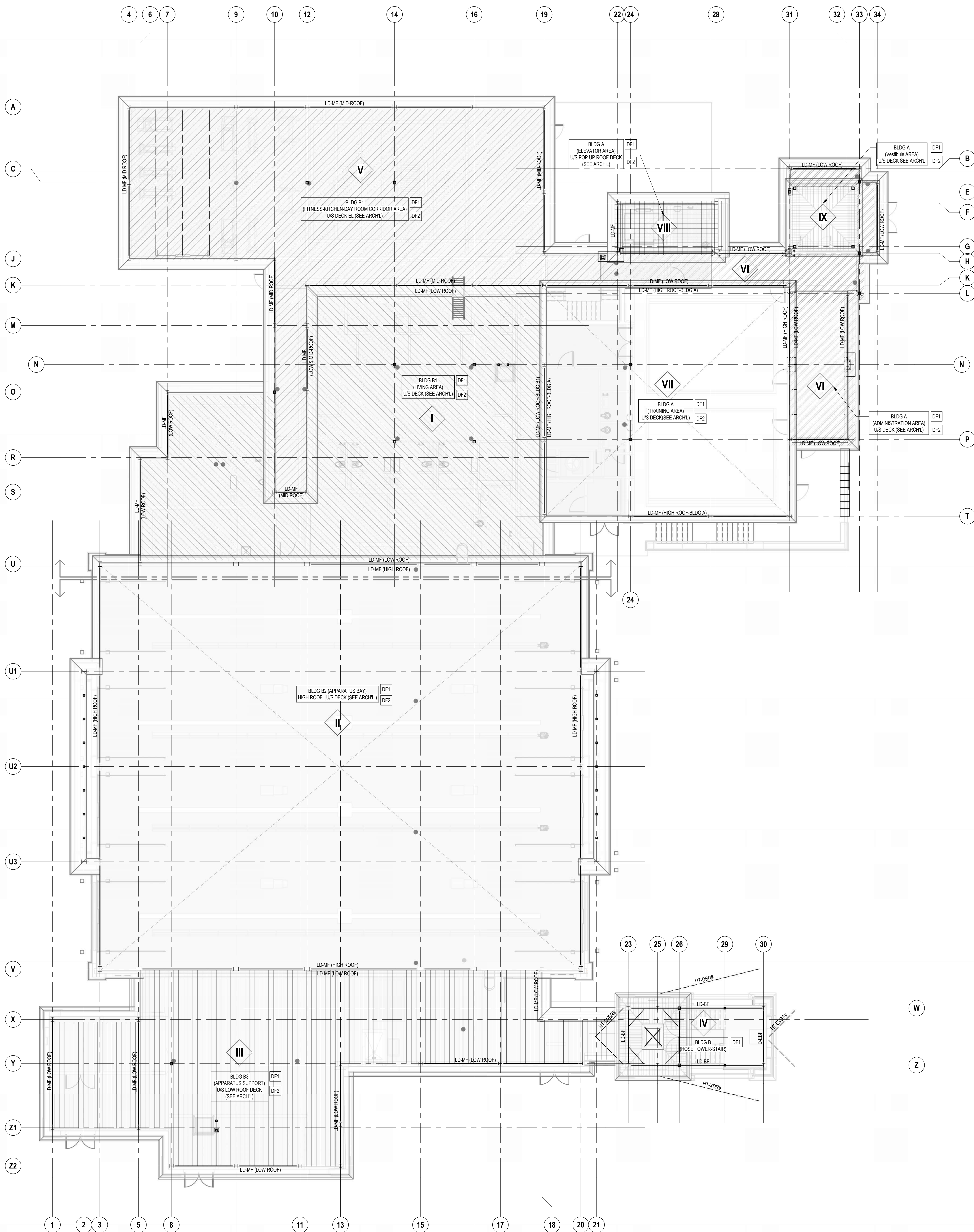
VII UPPER ROOF LEVEL (BUILDING A - TRAINING AREA) US DECK EL. (SEE ARCH'L)		
SFRS MODIFICATION FACTORS		
TABLE 4.1.8.9	LIMITED DUCTILITY STEEL MOMENT FRAMES	$R_d=2.0; R_o=1.3$ (CAN/CSA S16)
CL 4.1.8.11 (a) (i)	FUNDAMENTAL PERIOD	$T_n=28\text{ sec}$
CL 4.1.8.11 (a) (ii)	BASE SHEAR	$V_{BASE}=10.0\text{ KN}$
	OVERTURNING MOMENT	$M_{OT}=20.0\text{ KNm}$

VIII POP-UP ROOF LEVEL (BUILDING A - ELEVATOR AREA) US DECK EL. (SEE ARCH'L)		
SFRS MODIFICATION FACTORS		
TABLE 4.1.8.9	LIMITED DUCTILITY STEEL MOMENT FRAMES	$R_d=2.0; R_o=1.3$ (CAN/CSA S16)
CL 4.1.8.11 (a) (i)	FUNDAMENTAL PERIOD	$T_n=28\text{ sec}$
CL 4.1.8.11 (a) (ii)	BASE SHEAR	$V_{BASE}=10.0\text{ KN}$
	OVERTURNING MOMENT	$M_{OT}=20.0\text{ KNm}$

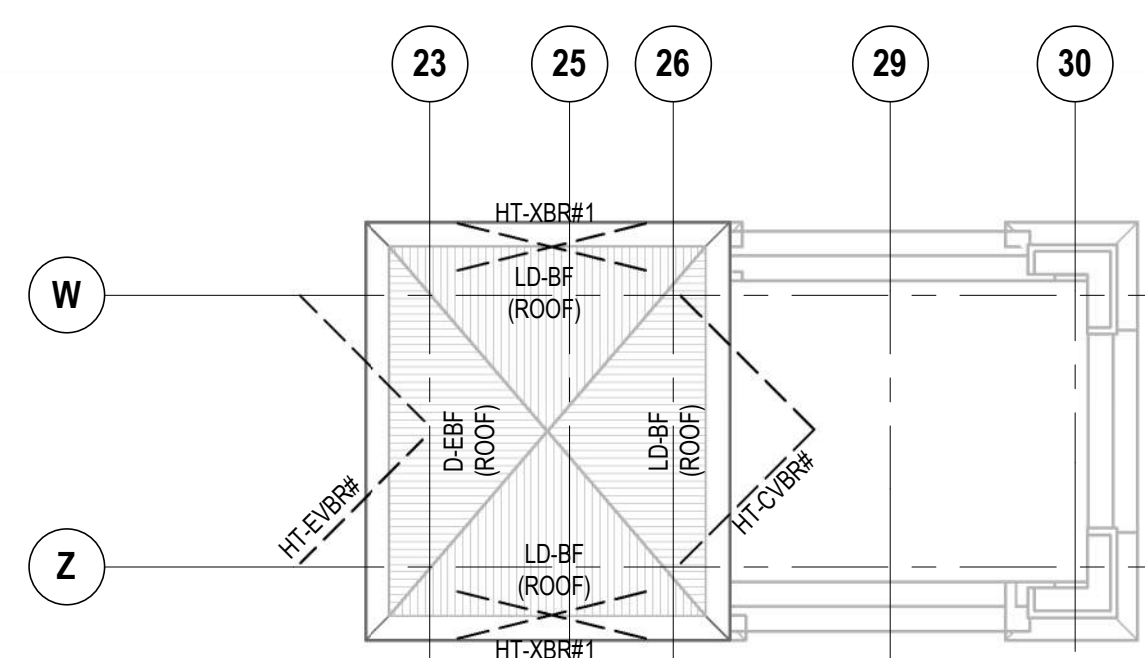
IX HIGH ROOF LEVEL (BUILDING A - VESTIBULE AREA) US DECK EL. (SEE ARCH'L)		
SFRS MODIFICATION FACTORS		
TABLE 4.1.8.9	LIMITED DUCTILITY STEEL MOMENT FRAMES	$R_d=2.0; R_o=1.3$ (CAN/CSA S16)
CL 4.1.8.11 (a) (i)	FUNDAMENTAL PERIOD	$T_n=28\text{ sec}$
CL 4.1.8.11 (a) (ii)	BASE SHEAR	$V_{BASE}=10.0\text{ KN}$
	OVERTURNING MOMENT	$M_{OT}=20.0\text{ KNm}$

DRIVING NOTES (NOTES):  
BUILDING A AND BUILDING B DENOTE RESPECTIVELY UPPER AND LOWER FLOOR AREAS AS DEFINED BY ARCHITECTURAL DRAWINGS. THERE IS NO STRUCTURAL SEPARATION AS PER OBC'24 CL 4.1.8.14 BETWEEN THE TWO AFOREMENTIONED BUILDING AREAS.

DRIVING NOTES (NOTES):  
SOURCE OF ROOF DECK ELEVATIONS AS SHOWN ON THIS DRAWING AREA FOR CLADDING ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATION DATA AND ROOF EXTENT ON PLAN.



1 SFRS PLAN  
SCALE: 1:100



2 HOSE TOWER SFRS - ROOF LEVEL  
SCALE: 1:100 (SEE ARCH'L FOR ELEVATION) [DF2]

SFRS - LEGEND (OBC'24 TABLE 4.1.8.9)	
'LD-MF' ON PLAN DENOTES	LIMITED DUCTILITY STEEL MOMENT FRAME
( $R_d=2.0; R_o=1.3$ )	
'LD-BF' ON PLAN DENOTES	LIMITED DUCTILITY CONCENTRICALLY BRACED STEEL FRAME
( $R_d=2.0; R_o=1.3$ )	
'D-EBF' ON PLAN DENOTES	DUCTILE ECCENTRICALLY STEEL BRACED FRAME
( $R_d=4.0; R_o=1.5$ )	

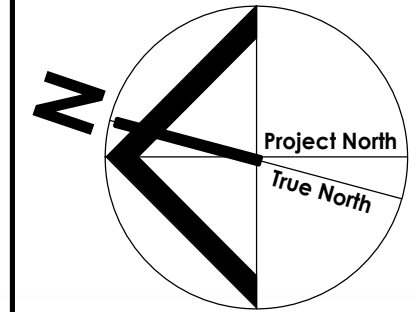
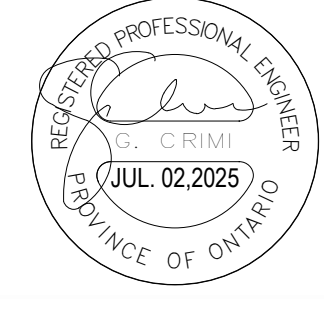


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CONSULTING ENGINEERS  
1211-111 PACIFIC AVE.  
TORONTO, ON  
M6P 2P2  
Ph: (416) 712-0970  
exseneng11@gmail.com

alaimo architecture inc.

202-8551 Weston Road  
Woodbridge, ON L4L 9R4  
P: (905) 856-2840  
F: (905) 856-4912  
info@alaimoarchitecture.com

Drawing Title  
SFRS PLAN AND SEISMIC  
LOADING

Project  
TOWN OF ORANGEVILLE  
FIRE STATION PROJECT

10 COMMERCE ROAD  
ORANGEVILLE, ON L9W 1P8

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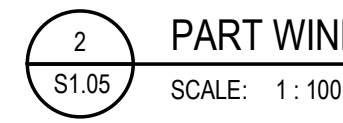
S1.04



JOIST DESIGN	-0.91	-1.12	-1.12
DECK DESIGN	-1.04	-1.33	-2.12

1.75	0.73	0.44	E+	1.11	0.66
INTERNAL WIND PRESSURE (KPa)			W+	1.11	0.66

$V_{\text{max}} = V_{\text{min}} = 25 \text{ kN}$   
(Max. & Min. at Elevations)



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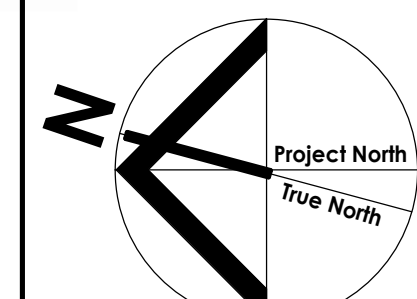
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1211-111 PACIFIC Ave.  
TORONTO, ON  
M6P 2P2

Ph. (416) 712-0970  
[exseneng11@gmail.com](mailto:exseneng11@gmail.com)

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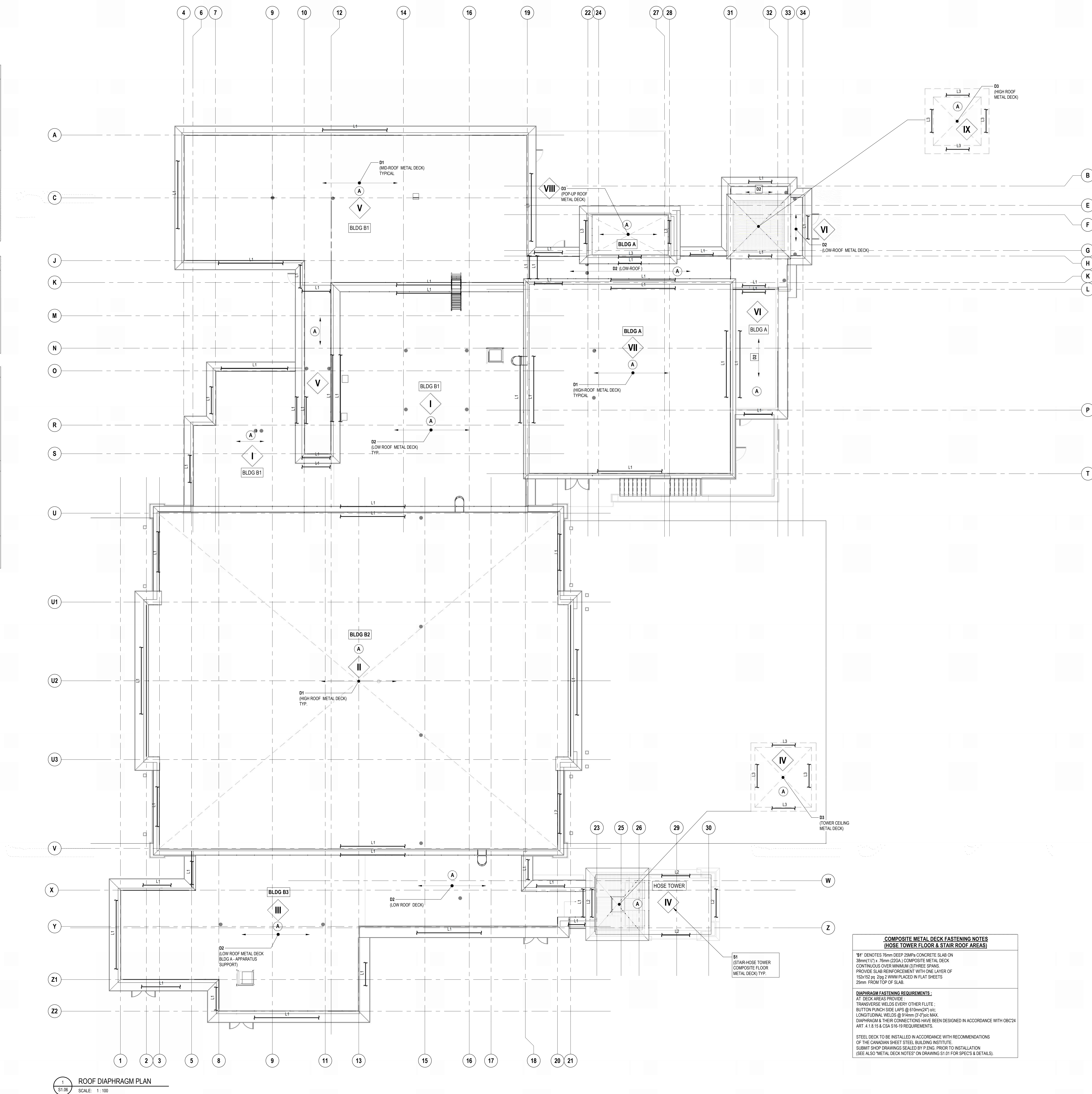
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exseneng11@gmail.com

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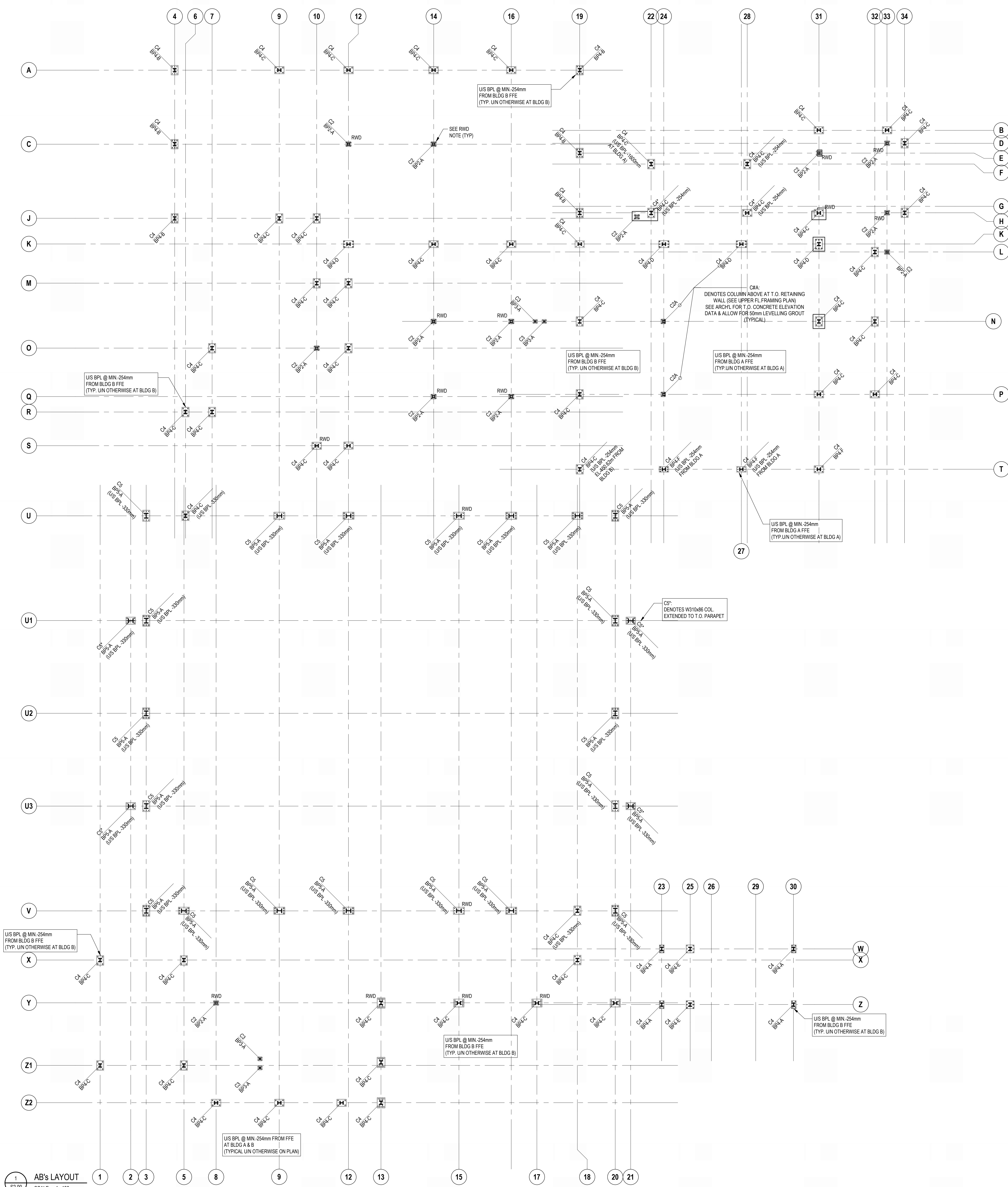
## ROOF DIAPHRAGM PLAN & DECK FASTENING DETAILS

10 COMMERCE ROAD  
ORANGEVILLE, ON L9W 1P8

S1.06







1 AB'S LAYOUT  
SCALE: 1: 100  
NOTE:  
- RWD: US BASE PLATE COLUMNS AT 400mm FROM FFE  
- RWD LOCATIONS AS SHOWN ON PLAN ARE FOR GUIDANCE ONLY. GENERAL CONTRACTOR AND STEEL DETAILER SHALL REFER TO ARCH. DRAWINGS

STEEL COLUMN BASE PLATE SCHEDULE				
MARK	COLUMN SIZE	(350W) BASE PLATE SIZE	ANCHOR RODS (A36)	ANCHOR RODS (A36)
C1	NOT USED			
C2	HSS 152x152x6.4 (HSS 6"x6"x1/4") G40.1 350 W CLASS H	304x19x304 (12"x3/4" x12")	4-19mm $\varnothing$ ABs, MIN. 300mm EMBEDMENT +75mm LG. BOTTOM HOOK	BP2-A 40 TYP
C3	HSS 102x102x6.4 (HSS 4"x4"x1/4") G40.1 350 W CLASS H	254x19x254 (10"x3/4" x10")	4-19mm $\varnothing$ ABs, MIN. 300mm EMBEDMENT +75mm LG. BOTTOM HOOK	BP2-B 40 TYP
C4	W200x86 (W8x58) CSA G40.21 350W		4-16mm $\varnothing$ HLT/HY 150 MIN. 150mm EMBEDMENT INTO CONCRETE PAD-1 (SEE NOTE #4#1 BELOW)	BP3-A 40 TYP
		610x38x456 (24"x1 1/2" x18")	6-25mm(1") $\varnothing$ ABs x 525mm MIN. EMBED INTO CONCRETE w/150x25x450 LG. BOTT. PL. FOR EACH GROUP OF THREE ANCHORS	BP3-B 52 TYP
		610x45x456 (24"x1 3/4" x18")	4-25mm $\varnothing$ ABs, MIN. 225mm EMBEDMENT +15mm LG. BOTTOM HOOK	BP4-C 52 TYP
		660x45x456 (26"x1 3/4" x18")	6-25mm(1") $\varnothing$ ABs x 525mm MIN. EMBED INTO CONCRETE w/150x25x450 LG. BOTT. PL. FOR EACH GROUP OF THREE ANCHORS	BP4-D 52 TYP
		610x45x356 (24"x1 3/4" x14")	6-25mm $\varnothing$ ABs, MIN. 225mm EMBEDMENT w/150x25x300 LG. BOTT. PL. FOR EACH GROUP OF THREE ANCHORS	BP4-F 52 TYP
C5	W310x86 (W12x58) G40.21 350 W	710x45x456 (28"x1 3/4" x18")	6-32mm(1 1/4") $\varnothing$ ABs x 525mm MIN. EMBED INTO CONCRETE w/150x25x450 LG. BOTT. PL. FOR EACH GROUP OF THREE ANCHORS	BP5-A 52 TYP
		610x38x456 (24"x1 1/2" x18")	6-25mm $\varnothing$ ABs, MIN. 225mm EMBEDMENT +75mm LG. BOTTOM HOOK	BP5-B 52 TYP

NOTE #4#1:  
PROVIDE PAD-1 500 WIDE x 250 mm DP. 25MPa CONCRETE SLAB ON GRADE THICKENING REINF.  
W/ 3-10M CONT. + 10M BENT BARS @300 ON TYP. UNDER C3 POST. SEE SECTION 10S2.02.

STEEL COLUMN BASE PLATE SCHEDULE - HOSE TOWER				
MARK	COLUMN SIZE	(350W) BASE PLATE SIZE	ANCHOR RODS (A36)	ANCHOR RODS (A36)
C4	W200x86 (W8x58) CSA G40.21 350W	508x45x304 (20"x1 3/4" x12")	8-32mm(1 1/4") $\varnothing$ A36 ABs x 575mm MIN. EMBED INTO CONCRETE w/150x25x450 LG. BOTT. PL. FOR EACH GROUP OF TWO ANCHORS	BP4-A 52 TYP
		508x38x408 (20"x1 1/2" x20")	6-32mm(1 1/4") $\varnothing$ A36 ABs x 575mm MIN. EMBED INTO CONCRETE w/150x25x450 LG. BOTT. PL. FOR EACH GROUP OF THREE ANCHORS	BP4-E 52 TYP

CONSTRUCTION NOTES AB-1:  
1. US BASE PLATE ELEVATIONS AT 254mm (10") BELOW FFE EXCEPT AS SHOWN ON PLAN.  
C.C. STEEL MANUFACTURER SHALL COORDINATE W/ ARCHITECT FOR ELEVATION DATA AND  
SUBMIT SHOP DRAWINGS SEALED BY P. ENG FOR REVIEW AND APPROVAL;  
2. PROVIDE MIN. 50mm LEVELLING GROUT AT US BASE PLATES (TYP.)  
3. TO OBTAIN NOMINAL RODS LENGTH, ADD TO REQUIRED CONCRETE EMBEDMENT:  
- ANCHOR PROJECTION, BASE PLATE AND LEVELLING PLATE THICKNESSES, 50mm LEVELLING  
GROUT.

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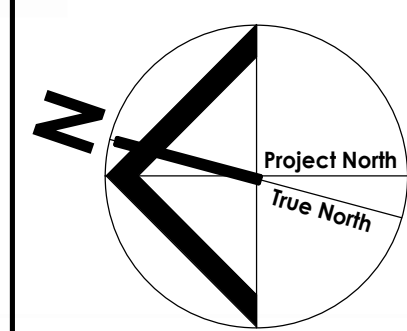
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Ph: (416) 712-9970  
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alaimo architecture inc.  
202-8551 Weston Road  
Woodbridge, ON L4L 9R4  
P: (905) 856-2840  
F: (905) 856-4912  
info@alaimoarchitecture.com

Drawing Title  
AB's LAYOUT - BPL SCHEDULE  
Project  
TOWN OF ORANGEVILLE  
FIRE STATION PROJECT  
10 COMMERCE ROAD  
ORANGEVILLE, ON L9W 1P8  
Scale  
As indicated  
Checker  
23000R  
10.11.2023  
Plot Date





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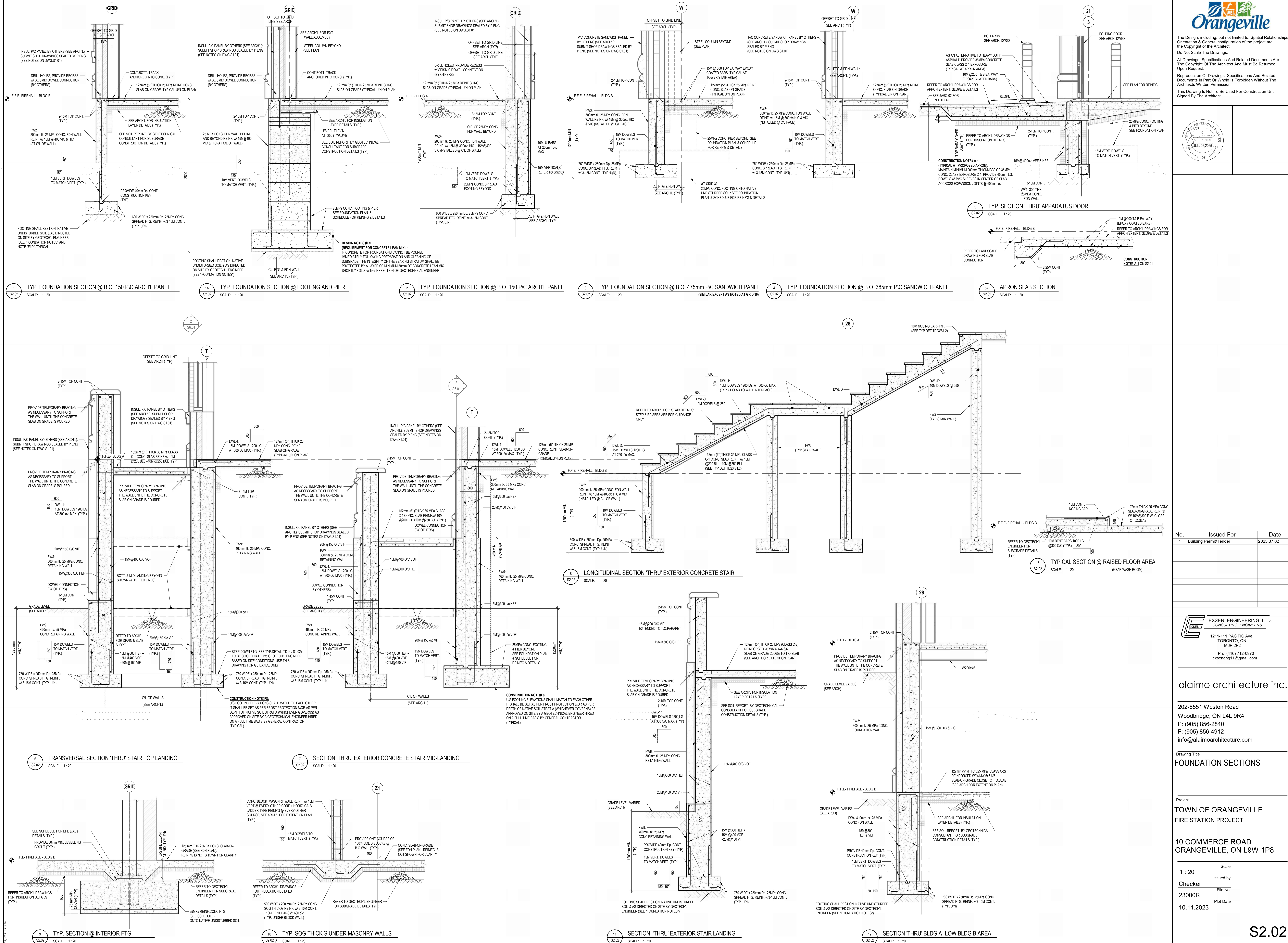
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Woodbridge, ON L4L 9R4  
P: (905) 856-2840  
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10.11.2023	Plot Date

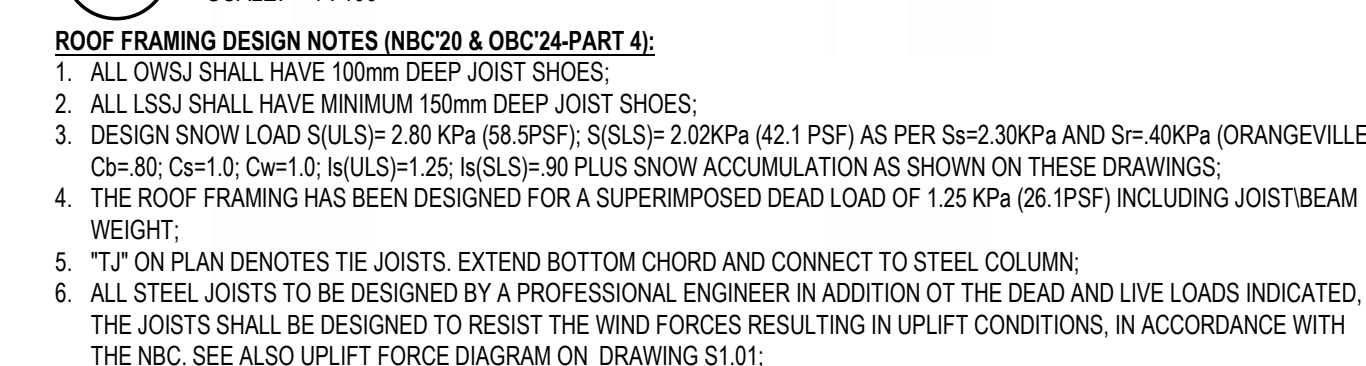
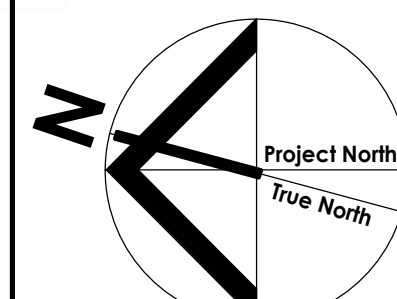










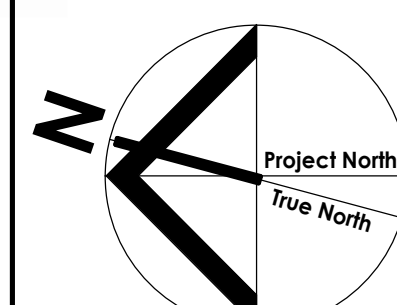


**UPPER VESTIBULE CEILING FRAMING PLAN**  
**CEILING/ROOF FRAMING DESIGN NOTES (NBC'15 & OBC'12-PART 4):**

1. LL = 50 KPa (10.5PSF) FOR CEILING AREA WITH LIMITED ACCESSIBILITY (NO STORAGE);
2. DL = 25 KPa (5.2PSF)  
 FOR DESIGN OF GABLE ROOF ONLY (BY OTHERS) :
3. DESIGN SNOW LOAD  $S(S/L) = 2.80$  KPa (58.5PSF);  $S(S/L) = 2.02$  KPa (42.1 PSF) AS PER SE-2.30KPa AND  
 $S = 40$  KPa (ORANGEVILLE);  $Cp = 80$ ;  $Cs = 1$ ;  $Cd = 1$ ;  $U(L/S/L) = 1.25$ ;  $U(S/L) = 90$ ;
4. ROOF FRAMING SUPERIMPOSED DEAD LOAD  $Sd = 1.00$  KPa (20.0 PSF) NOT INCLUDING JOIST/BEAM WEIGHT

ALL STRUCTURAL STEEL MEMBERS EXPOSED TO THE EXTERIOR SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH CSA-G164.





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Scale

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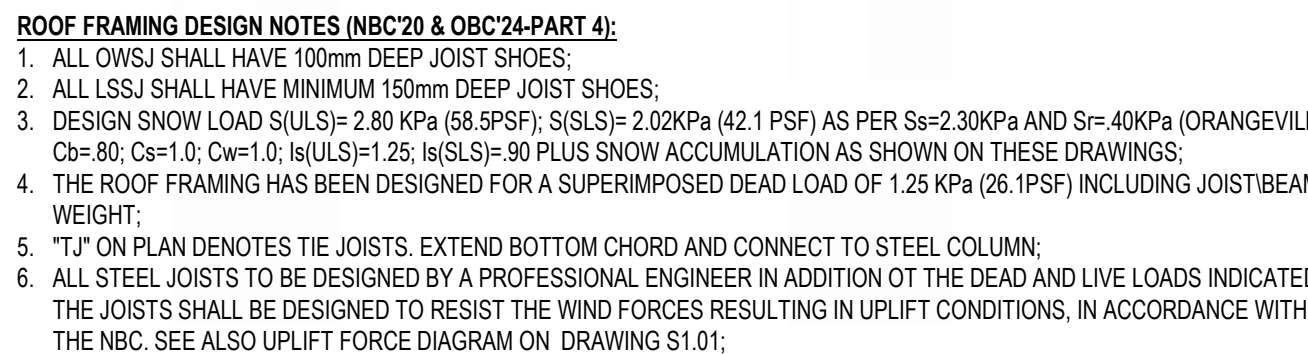
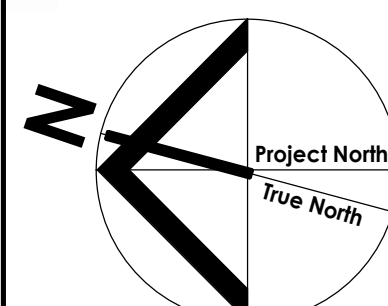
File No.

23000R

Plot Date

23000R  
Plot Date  
10.11.2023



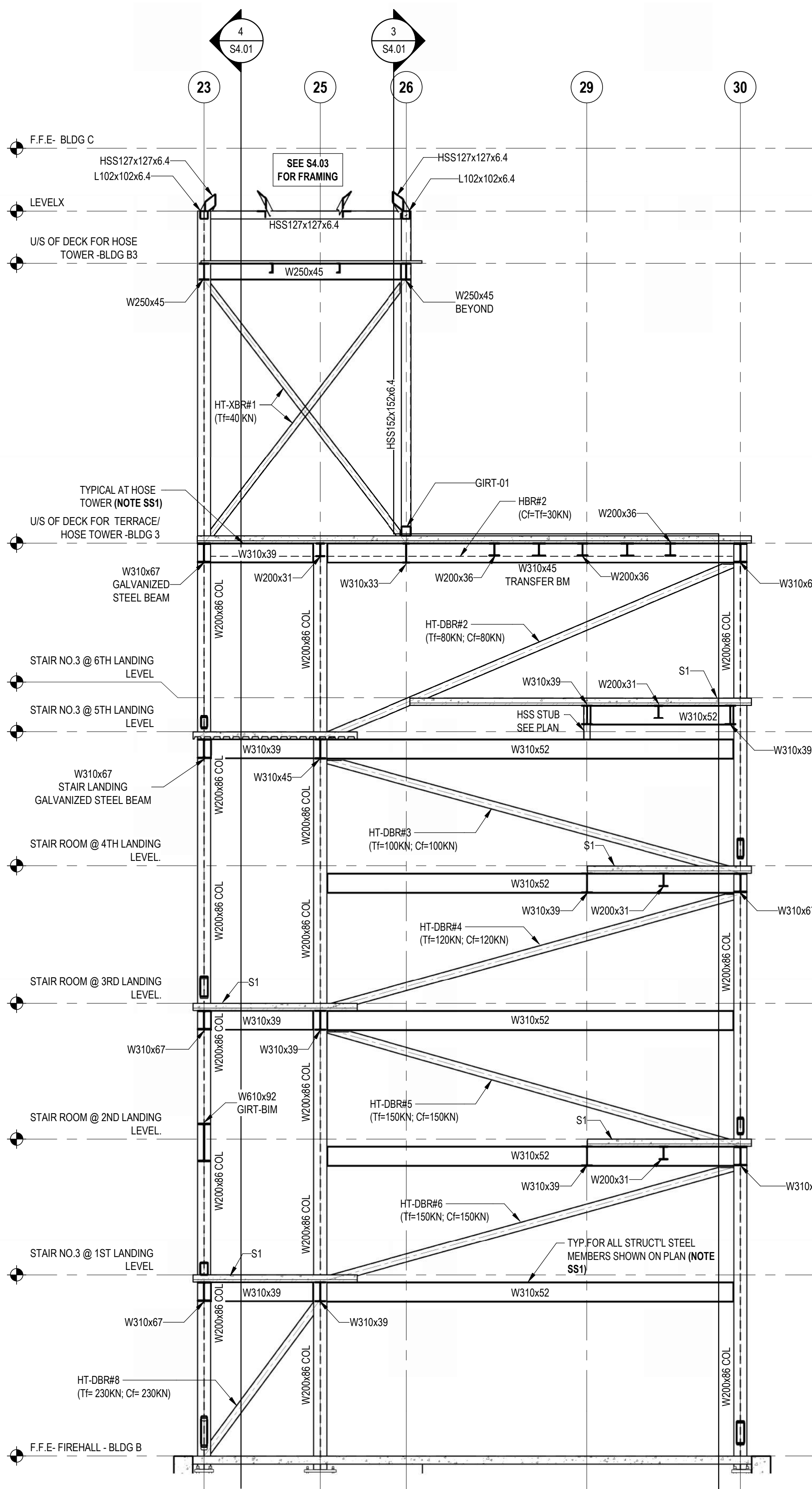


ENG FOR CONNECTIONS PRIOR TO COMMENCING ANY WORK.

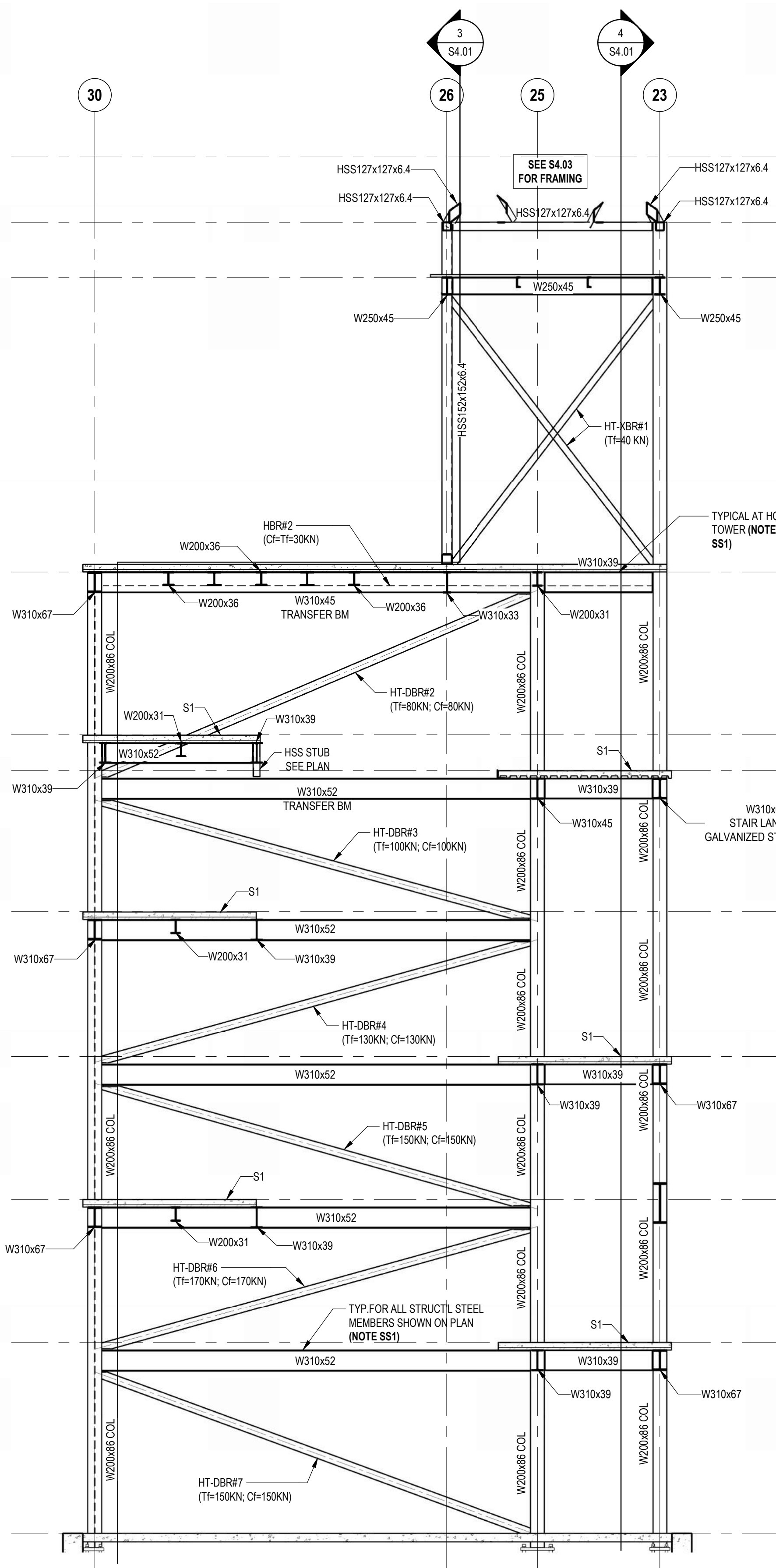
ALL EXPOSED TO THE EXTERIOR LADDERS SHALL BE GALVANIZED OR PAINTED WITH MINIMUM TWO COATS OF ZINC BASED PRIMER.

**CONSTRUCTION NOTE #SS1**  
 REQUIREMENT FOR GALVANIZED STRUCTURAL STEEL AT HOSE TOWER:

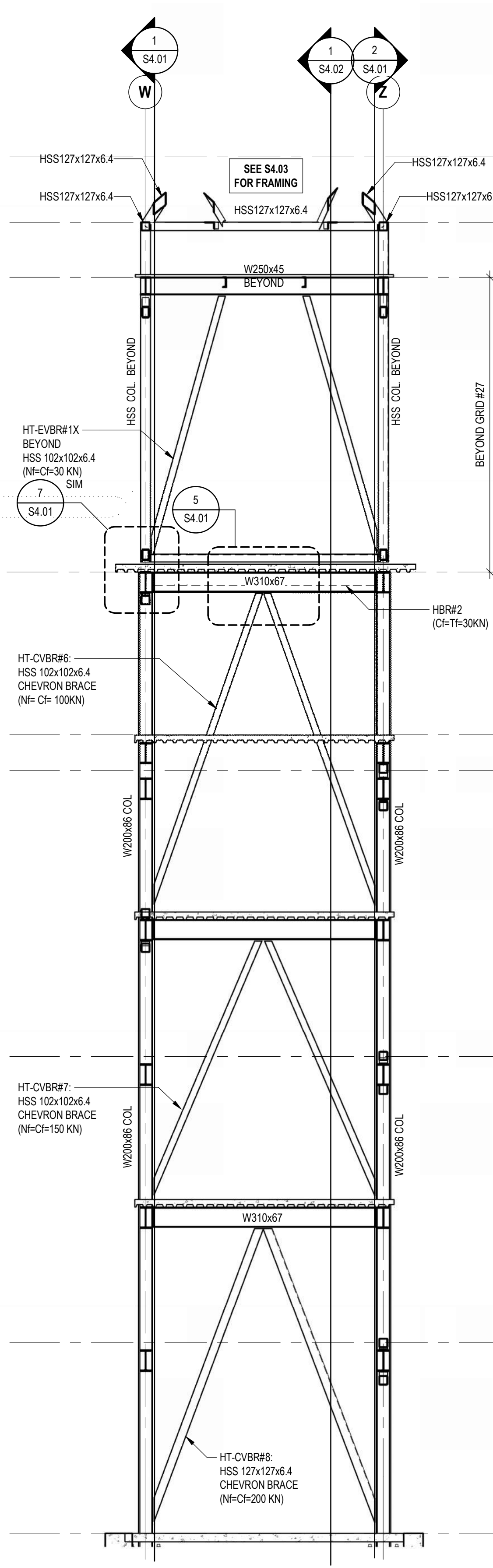




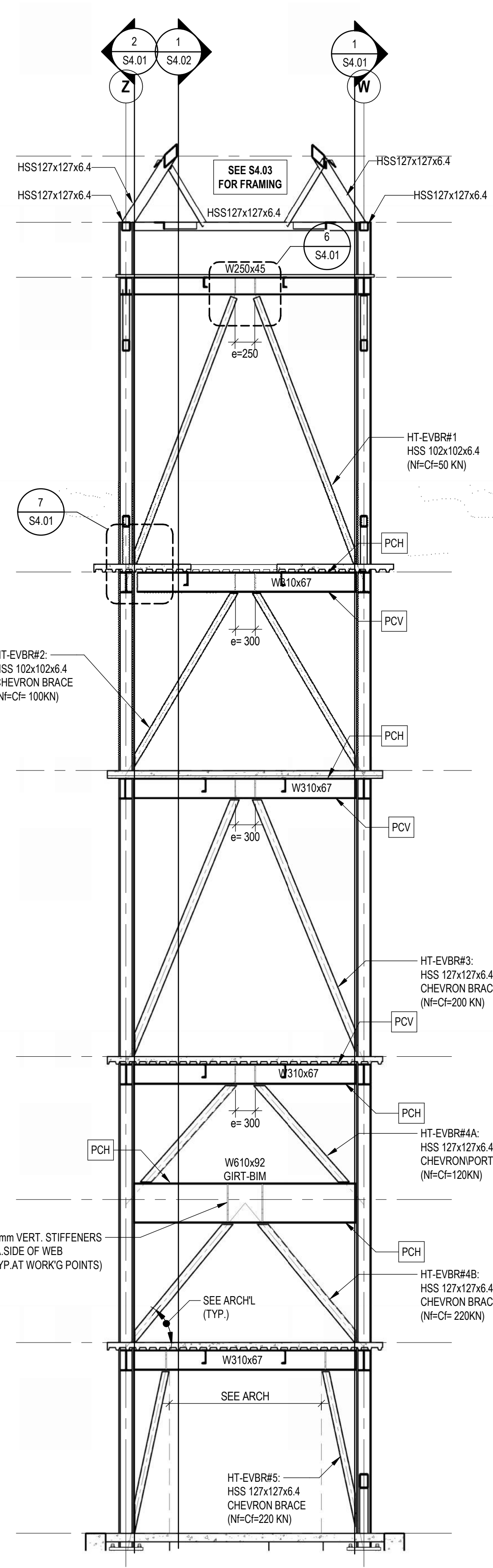
1 HOSE TOWER EAST SFRS #GRID LINE #T  
SCALE: 1:50 LIMITED DUCTILITY CONCENTRICALLY TENSION ONLY BRACES (CSA S16.19 CL.27.6 R<sub>h</sub>=2.0, R<sub>m</sub>=1.3)



2 HOSE TOWER WEST SFRS #GRID LINE #V  
SCALE: 1:50 LIMITED DUCTILITY CONCENTRICALLY TENSION ONLY BRACES (CSA S16.19 CL.27.6 R<sub>h</sub>=2.0, R<sub>m</sub>=1.3)



3 HOSE TOWER SOUTH SFRS  
SCALE: 1:50 LIMITED DUCTILITY CONCENTRICALLY TENSION-COMPRESSION BRACES (CSA S16.19 CL.27.6 R<sub>h</sub>=2.0, R<sub>m</sub>=1.3)



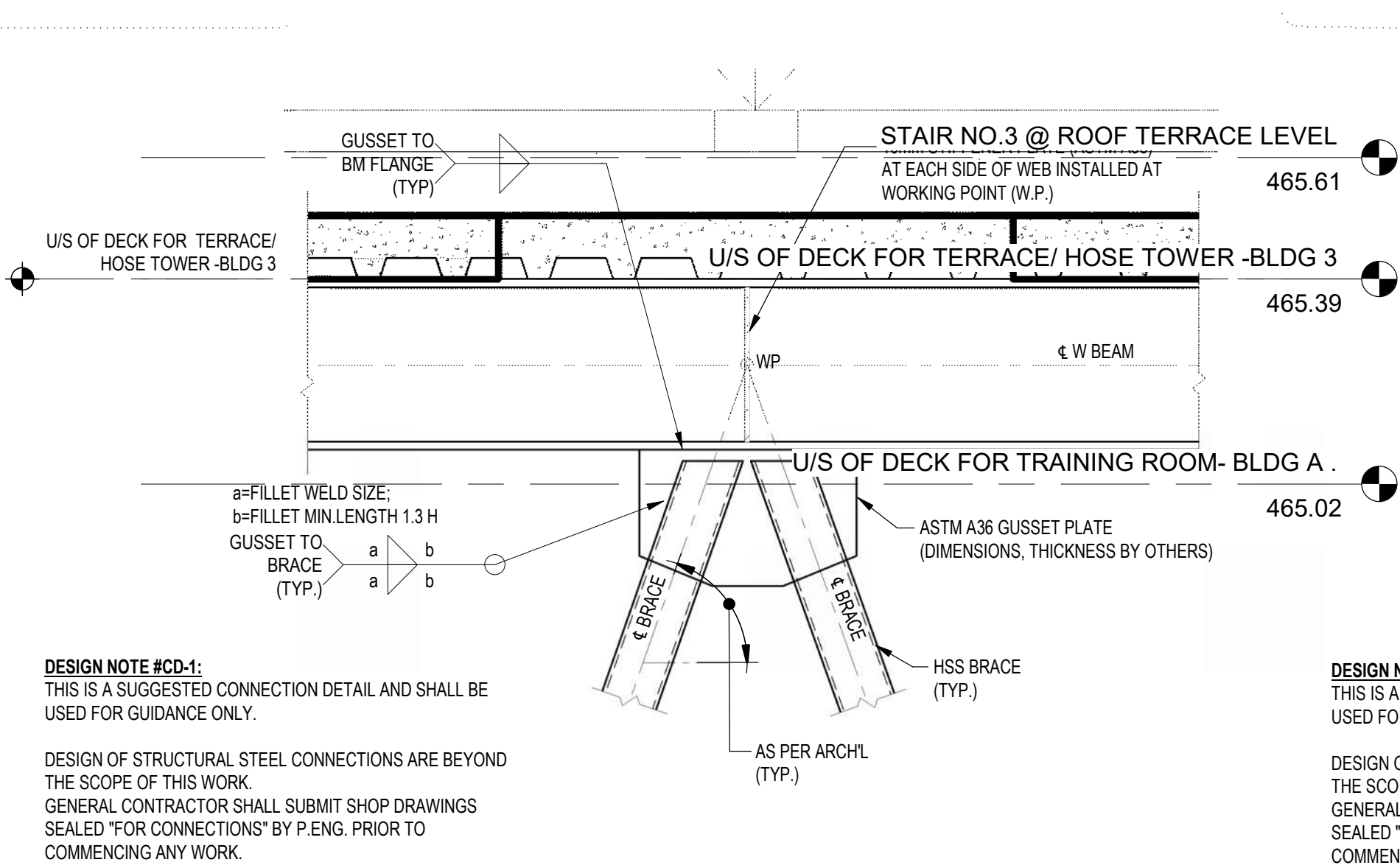
4 HOSE TOWER NORTH SFRS  
SCALE: 1:50 DUCTILE ECCENTRICALLY BRACED FRAME (CSA S16.19 CL.27.7 R<sub>h</sub>=4.0, R<sub>m</sub>=1.5)

LD-BRACED FRAME LEGEND	
HT-DBR#	ON PLAN DENOTES GALVANIZED HSS 102x102x6.4 (HSS 4"x4"x1/4") TYPICAL UNLESS NOTED OTHERWISE ON STRUCTURAL STEEL ELEVATIONS LIMITED DUCTILITY (CSA S16.19 CL.27.6) TENSION ONLY CONCENTRICALLY VERTICAL 'X' BRACES
HT-DBR#	ON PLAN DENOTES GALVANIZED HSS 127x127x6.4 (HSS 5"x5"x1/4") LIMITED DUCTILITY TENSION & COMPRESSION VERTICAL CONCENTRICALLY DIAGONAL BRACES
DESIGN NOTE # DB-1	REFER TO STRUCTURAL STEEL ELEVATIONS FOR FACTORED AXIAL LOADS OF BRACE MEMBERS AND SUBMIT SHOP DRAWINGS SEALED "FOR CONNECTIONS" BY P.ENG. PRIOR TO PROCEED FOR FABRICATION.

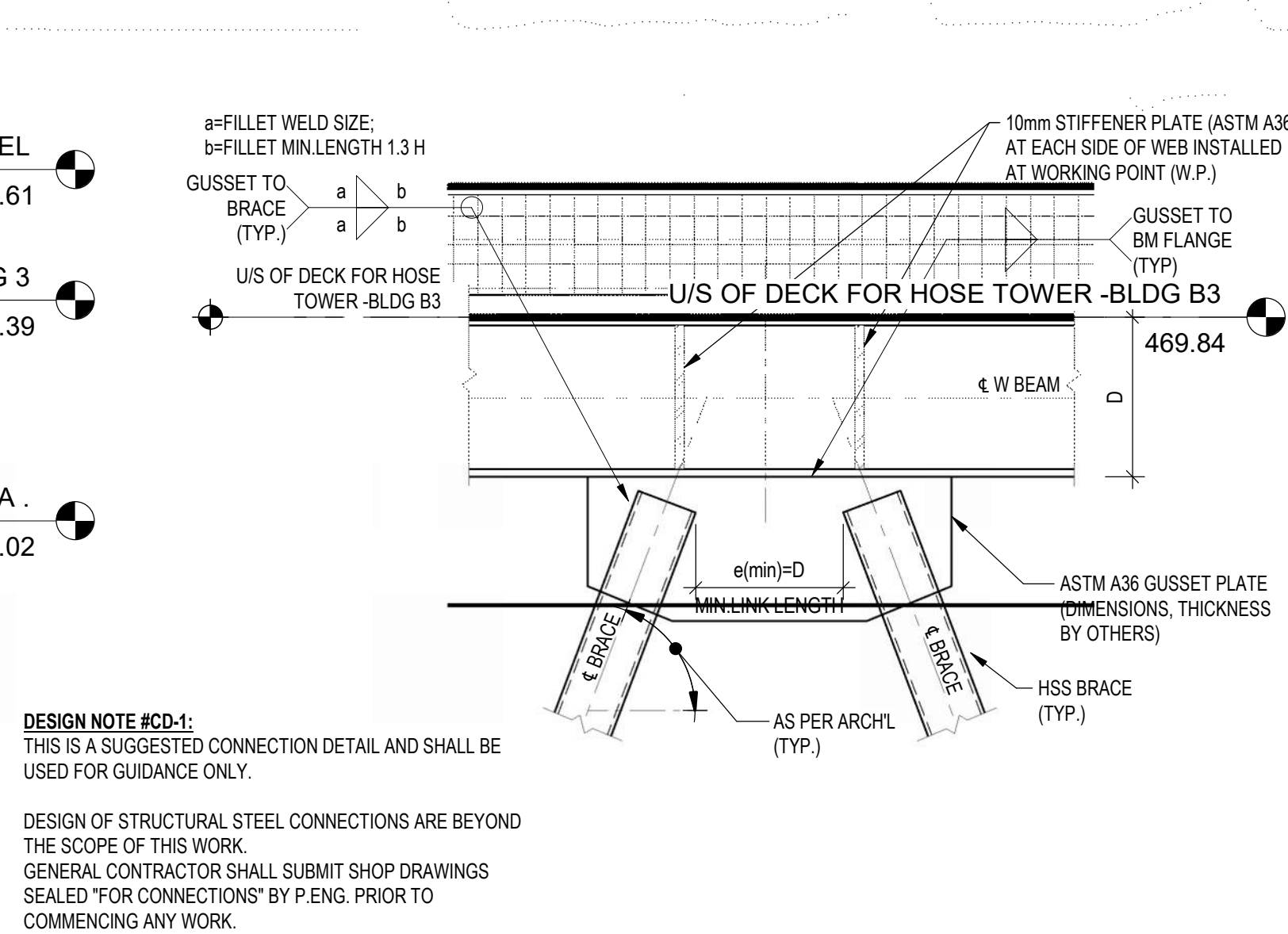
CONSTRUCTION NOTE #S1:	
(REQUIREMENT FOR GALVANIZED STRUCTURAL STEEL AT HOSE TOWER):	ALL STRUCTURAL STEEL MEMBERS AT HOSE TOWER/STAIR AREA SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH CSA G186.

BRACED FRAME LEGEND	
HBR#2	L-102x102x6.4 GALVANIZED HORIZ 'X' BRACES INSTALLED AT US OF W200 BEAMS c/w ST. COL. AT ONE END & TO W310 BEAM AT OPPOSITE END (FACTORED AXIAL LOAD CH=300KN)
HT-EVBR#	ON PLAN DENOTES GALVANIZED HSS 102x102x6.4 (HSS 4"x4"x1/4") (TYPICAL SECTION UNLESS NOTED OTHERWISE ON STRUCTURAL STEEL ELEVATIONS) DUCTILE (CSA S16.14 CL.27.7) ECCENTRICALLY 'CHEVRON' BRACES
	e=MINIMUM LINK LENGTH (CSA S16.14 CL.27.7.4.1 & 27.7.4.2)
HT-CVBR#	ON PLAN DENOTES GALVANIZED HSS 102x102x6.4 (HSS 4"x4"x1/4") (TYPICAL SECTION UNLESS NOTED OTHERWISE ON STRUCTURAL STEEL ELEVATIONS) LIMITED DUCTILITY (CSA S16.14 CL.27.6) TENSION-COMPRESSION CONCENTRICALLY VERTICAL 'CHEVRON' BRACES
DESIGN NOTE # DB-1	REFER TO STRUCTURAL STEEL ELEVATIONS FOR FACTORED AXIAL LOADS OF BRACE MEMBERS AND SUBMIT SHOP DRAWINGS SEALED "FOR CONNECTIONS" BY P.ENG. PRIOR TO PROCEED FOR FABRICATION.

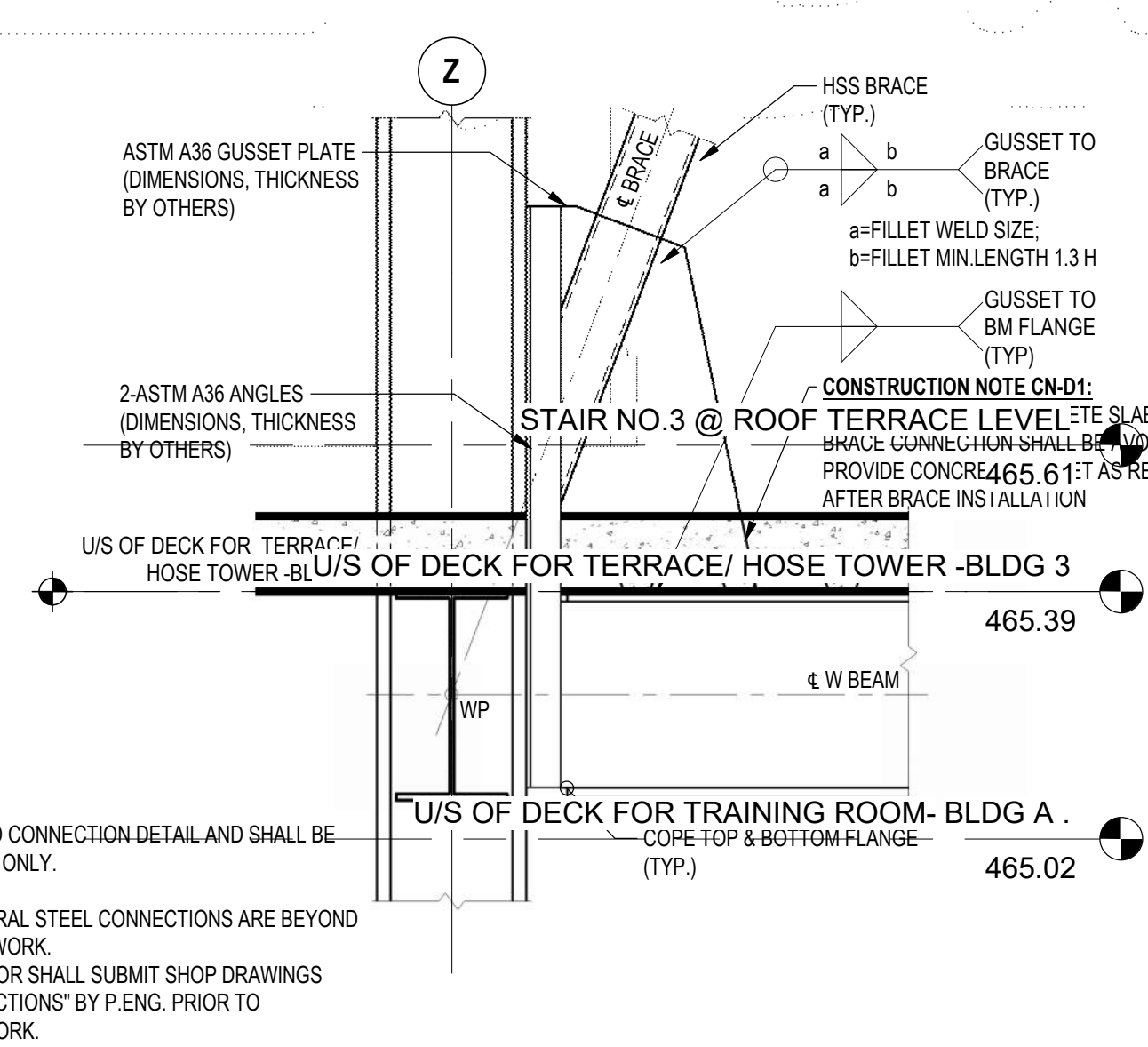
GRT-1	HSS 102x152x6.4 (340.21 355W CLASS H)
PCV	PIC PANEL VERTICAL SUPPORT
PCV	PIC PANEL HORIZONTAL SUPPORT
CONSTRUCTION NOTE #PC-1:	GENERAL CONTRACTOR SHALL SUBMIT PRECAST PANELS SHOP DRAWINGS SEALED BY P.ENG. AND USE LATERAL AND VERTICAL SUPPORT LOCATIONS AS SHOWN ON THESE DRAWINGS FOR GUIDANCE ONLY.



5 TYPICAL HSS BRACE CONNECTION AT BEAM MIDSPAN  
SCALE: 1:10 LIMITED DUCTILITY CONCENTRICALLY CHEVRON BRACES



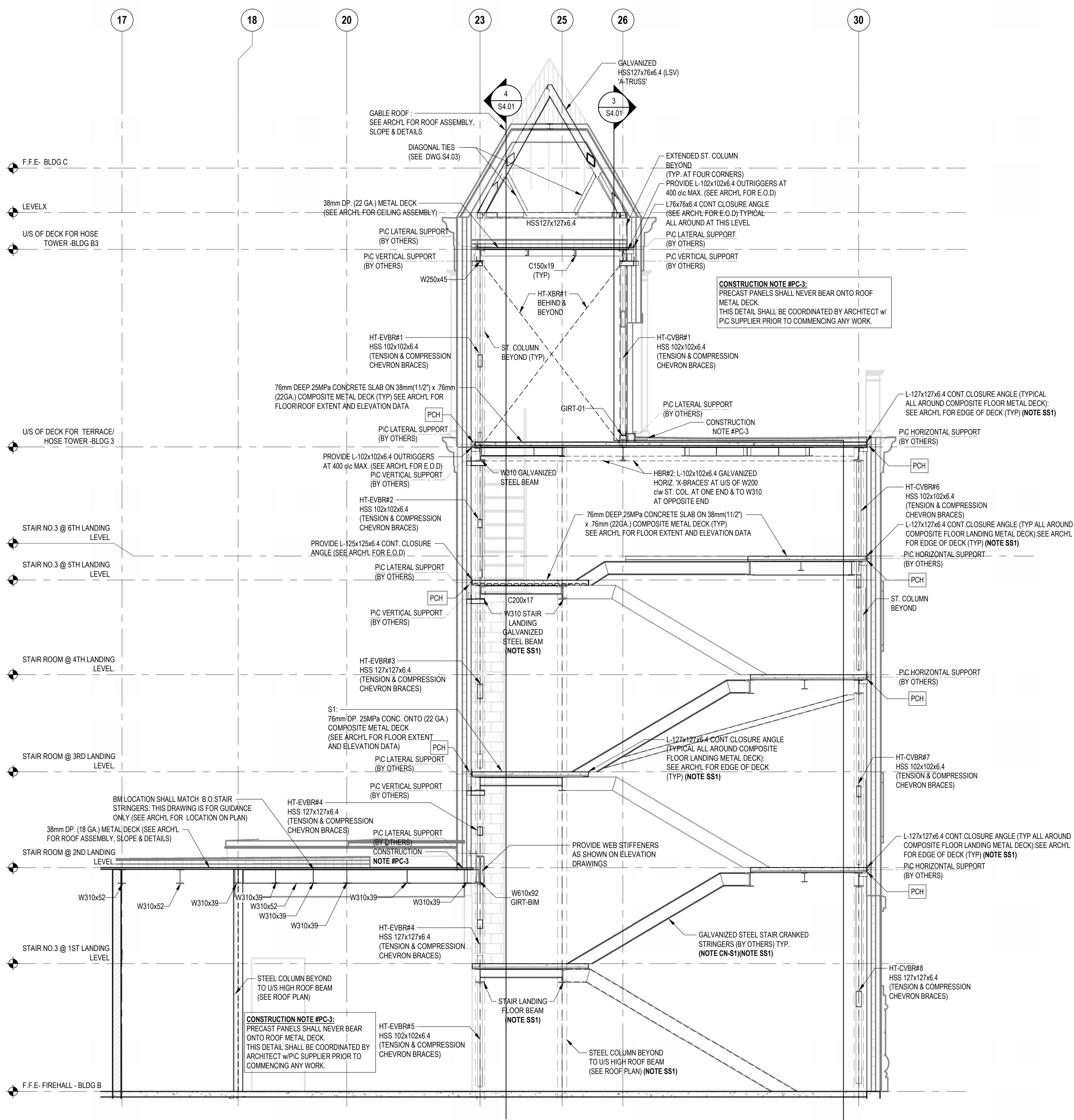
6 TYPICAL HSS BRACE CONNECTION AT LINK BEAM  
SCALE: 1:10 DUCTILE ECCENTRICALLY CHEVRON BRACES



7 TYPICAL HSS BRACE CONNECTION AT COLUMN  
SCALE: 1:10 HSS CHEVRON BRACES

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1 ROOF SECTION 'THRU' HOSE TOWER & APPARATUS SUPPORT BAY  
S4.02 SCALE: 1:50


CONSTRUCTION NOTES	
CONSTRUCTION NOTE #SS1: REQUIREMENT FOR GALVANIZED STRUCTURAL STEEL AT HOSE TOWER: ALL STRUCTURAL STEEL MEMBERS AT HOSE TOWER/STAIR AREA SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH CSA-G-164.	
CONSTRUCTION NOTE #CN-S1: METAL STAIR DESIGN AND ASSEMBLY ARE BEYOND THE SCOPE OF THIS WORK AND SHALL BE PREPARED BY OTHERS. GENERAL CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS FOR STAIR LOCATION, EXTENT, FINISH AND DETAILS. THIS PLAN SHALL BE USED FOR GUIDANCE ONLY.	



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TORONTO, ON  
M6P 2P2  
Ph: (416) 712-9970  
exseneng11@gmail.com

alaimo architecture inc.

202-8551 Weston Road  
Woodbridge, ON L4L 9R4  
P: (905) 856-2840  
F: (905) 856-4912  
info@alaimoarchitecture.com

Drawing Title  
HOSE TOWER - STRUCTURAL  
STEEL ELEVATION

Project  
TOWN OF ORANGEVILLE  
FIRE STATION PROJECT

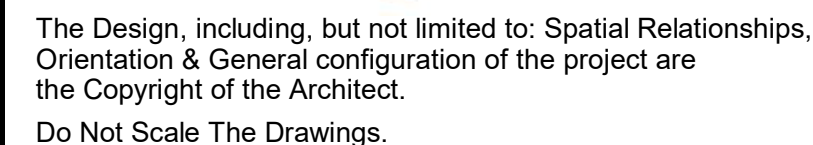
10 COMMERCE ROAD  
ORANGEVILLE, ON L9W 1P8

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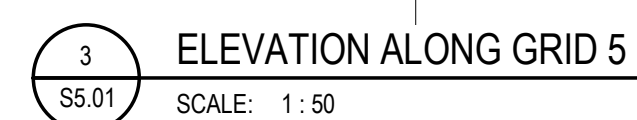




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GIRT SCHEDULE		
Type Mark	Type	REMARK
GIRT-01	HSS152x152x6.4	(G40 21 350W CLASS H)
GIRT-02	HSS178x178x6.4	(G40 21 350W CLASS H)
GIRT-03	HSS203x203x6.4	(G40 21 350W CLASS H)
GIRT-04	HSS306x203x8.0	(G40 21 350W CLASS H)

PCV :  
P/C PANEL VERTICAL SUPPORT  
PCH :  
P/C PANEL HORIZONTAL SUPPORT

**CONSTRUCTION NOTE #PC-1:**  
GENERAL CONTRACTOR SHALL SUBMIT PRECAST PANELS  
SHOP DRAWINGS SEALED BY P.ENG.  
AND USE LATERAL AND VERTICAL SUPPORT LOCATIONS AS  
SHOWN ON THESE DRAWINGS FOR GUIDANCE ONLY.

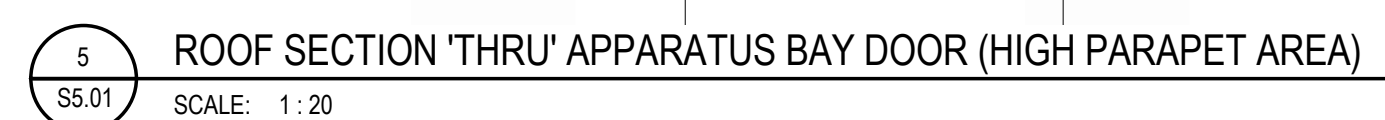
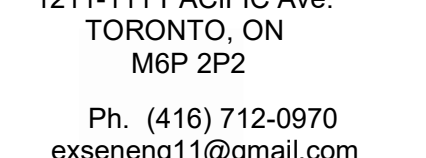
**DESIGN NOTE #A (MOMENT CONNECTIONS):**  
 THIS SYMBOL ON PLAN DENOTES BEAM TO COLUMN MOMENT CONNECTION FOR THE FOLLOWING FACTORED VALUES:  
 M1= 30 KNm;  
 M2= 60 KNm;  
 M3= 100 KNm;

MOMENT CONNECTIONS SHALL BE DESIGNED IN ACCORDANCE WITH CSA S16.14 CL.27.4.2 FOR LIMITED DUCTILITY MOMENT FRAMES.  
G.C. SHALL SUBMIT STRUCTURAL STEEL SHOP DRAWINGS SEALED "FOR CONNECTIONS" BY P.ENG IN ONTARIO PRIOR TO FABRICATION/ERECTION (SEE "STRUCTURAL STEEL NOTES" ON DRAWING S1.01 FOR DETAILS).  
G.C. SHALL HIRE AN INDEPENDENT TESTING AGENCY TO SITE VERIFY ALL BOLTED AND WELDED CONNECTIONS. A FIELD REVIEW REPORT SEALED AND PREPARED BY P.ENG IN ONTARIO SHALL CERTIFY COMPLIANCE WITH DESIGN DRAWINGS, CURRENT CODES AND REGULATIONS.

**C3A:**  
HSS 102x102x6.4 (HSS 4"x4"x1/4")  
POST ABOVE @ 1500± o/c FROM  
T.O.W690 BEAM TO U/S HSS TOP GIRT

**GIRT-TIE:** HSS152x152x6.4  
FULLY WELDED TO STEEL COLUMN  
BEYOND AND TO GIRT-2

**C5\*:**  
ST.COL. TO BE EXTENDED TO T.O.  
PARAPET (SEE ARCH'L FOR ELDATA)

[illegible]

alaimo architecture inc.

202-8551 Weston Road  
Woodbridge, ON L4L 9R4  
P: (905) 856-2840  
F: (905) 856-4912  
info@alaimoarchitecture.com

Drawing Title

## APPARATUS BAY - STRUCTURAL STEEL ELEVATIONS & SECTIONS

Project

TOWN OF ORANGEVILLE  
FIRE STATION PROJECT

10 COMMERCE ROAD  
ORANGEVILLE, ON L9W 1P8

As indicated

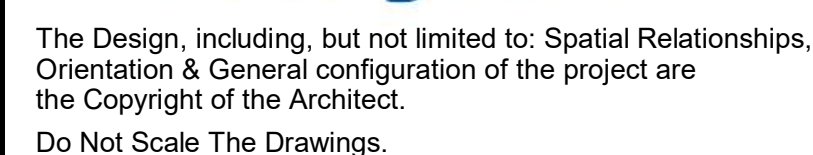
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S5.01

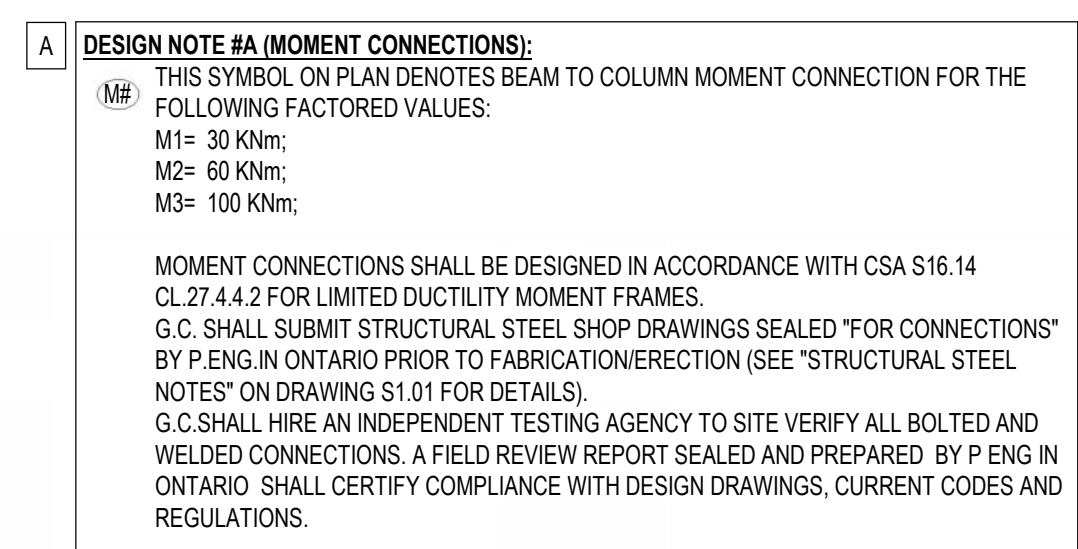




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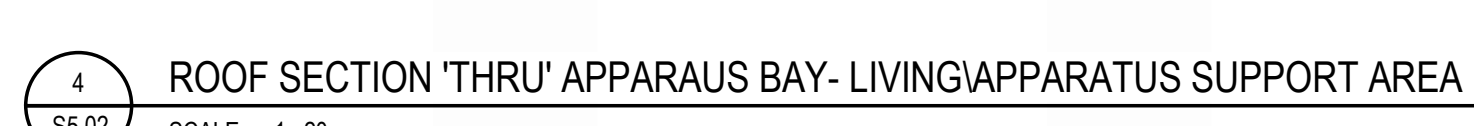
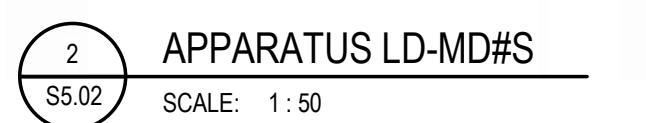
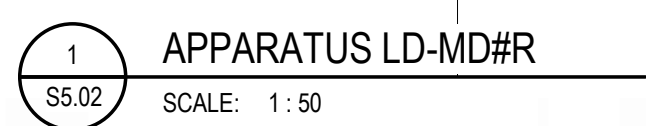
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<b>*VSC:</b> VERTICAL SLOTTED CONNECTION (TYP AT HSS COLUMNS AT EACH END OF APPARATUS BAY FOLDING DOORS)	<b>PCV :</b> PIC PANEL VERTICAL SUPPORT <b>PCH:</b> PIC PANEL HORIZONTAL SUPPORT
---	---

**CONSTRUCTION NOTE #PC-1:**  
GENERAL CONTRACTOR SHALL SUBMIT PRECAST PANELS  
SHOP DRAWINGS SEALED BY P.ENG.  
AND USE LATERAL AND VERTICAL SUPPORT LOCATIONS AS  
SHOWN ON THESE DRAWINGS FOR GUIDANCE ONLY.



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1211-111 PACIFIC Ave.  
TORONTO, ON  
M6P 2P2

Ph. (416) 712-0970  
exseneng11@gmail.com

202-8551 Weston Road  
Woodbridge, ON L4L 9R4  
P: (905) 856-2840  
F: (905) 856-4912  
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Drawing Title

## APPARATUS BAY STRUCTURAL STEEL ELEVATIONS & SECTIONS

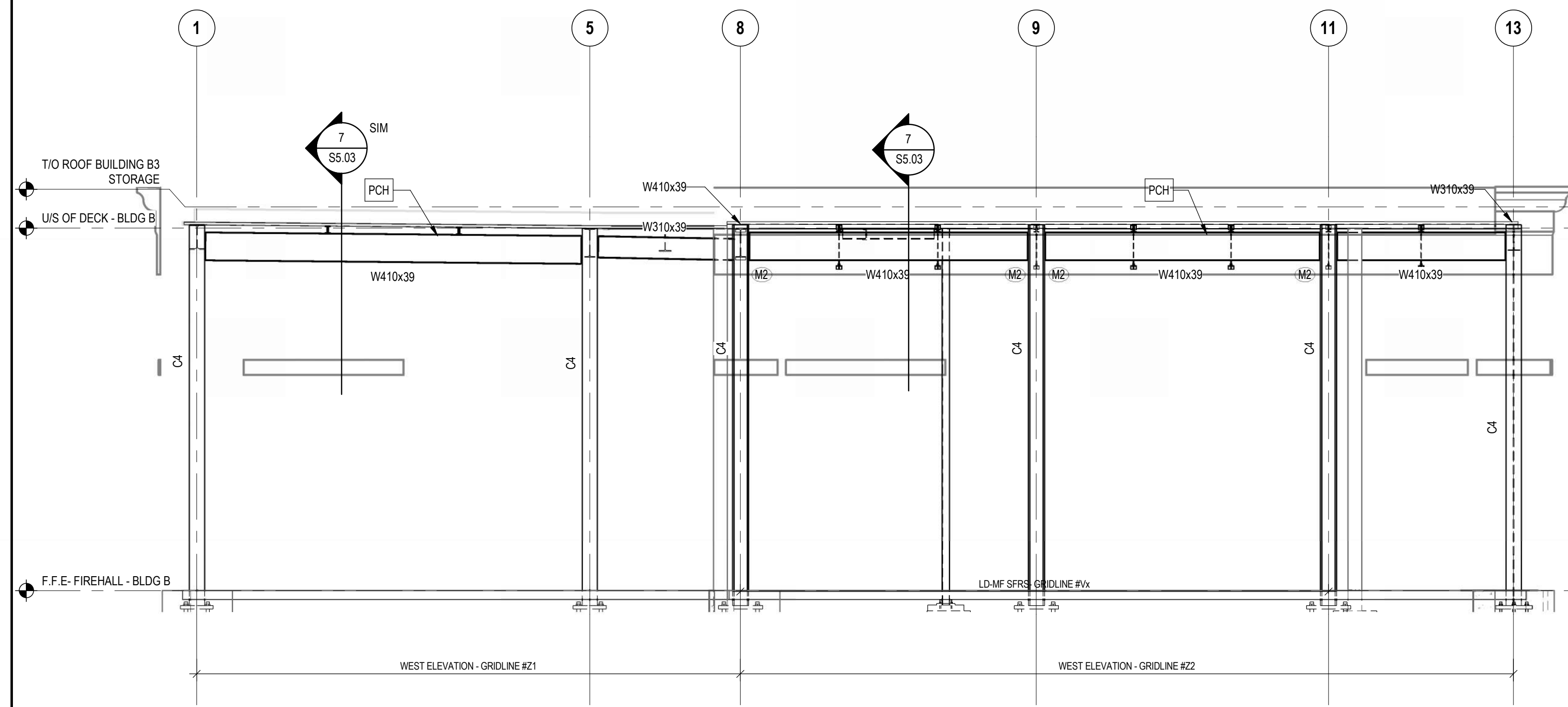
Project

TOWN OF ORANGEVILLE  
FIRE STATION PROJECT

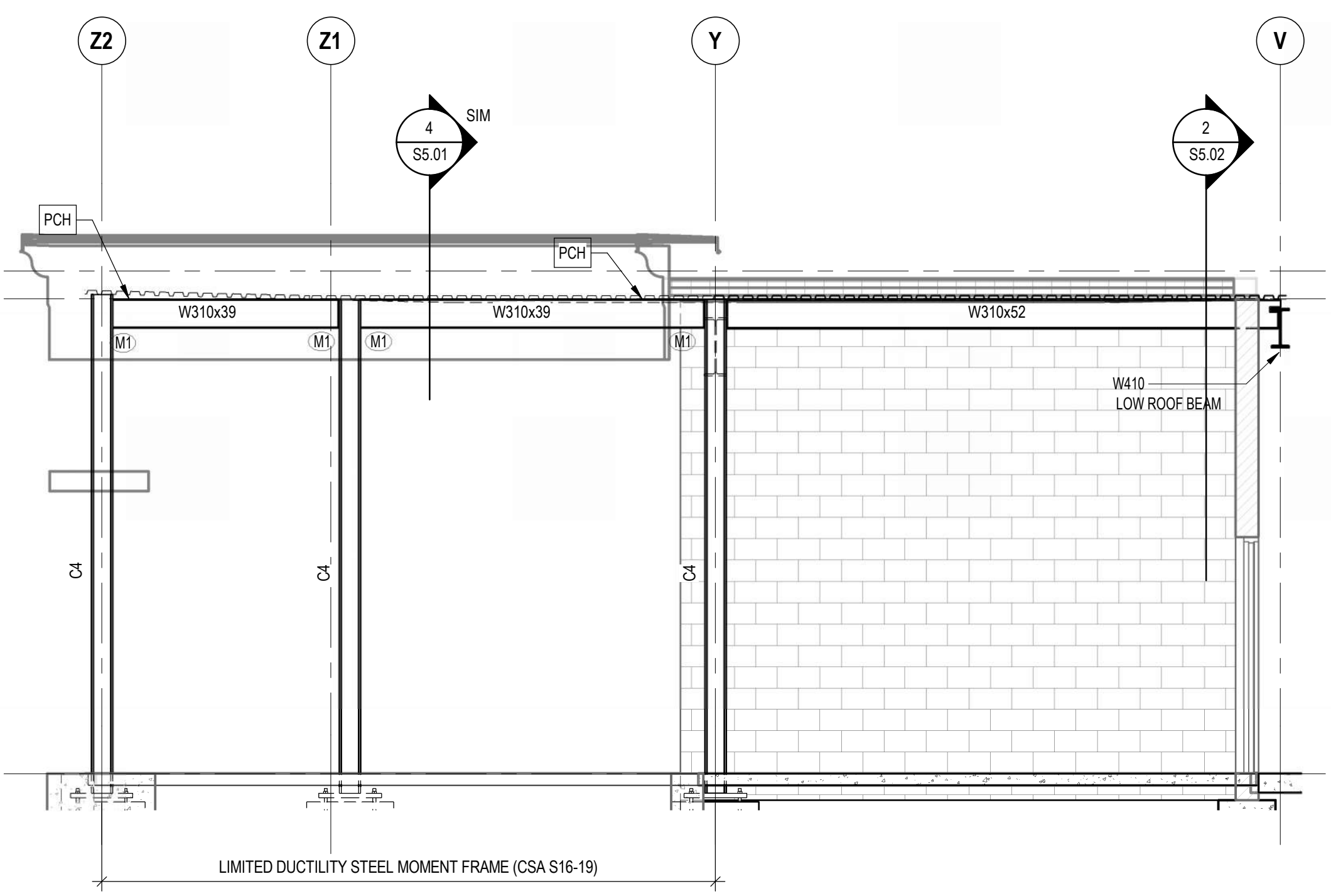
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ORANGEVILLE, ON L9W 1P8

As indicated	Scale
Checker	Issued by
23000R	File No.
10.11.2023	Plot Date

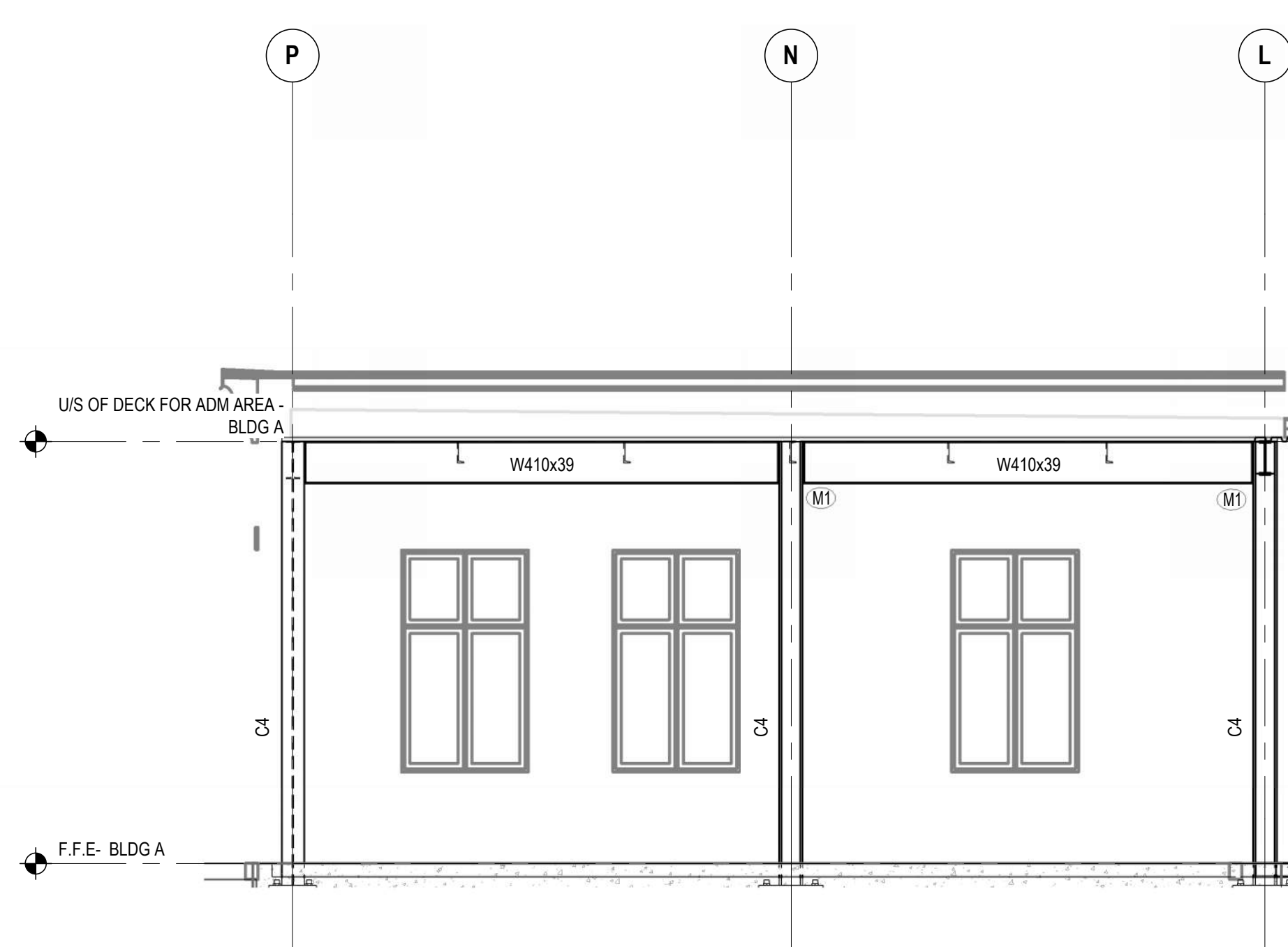




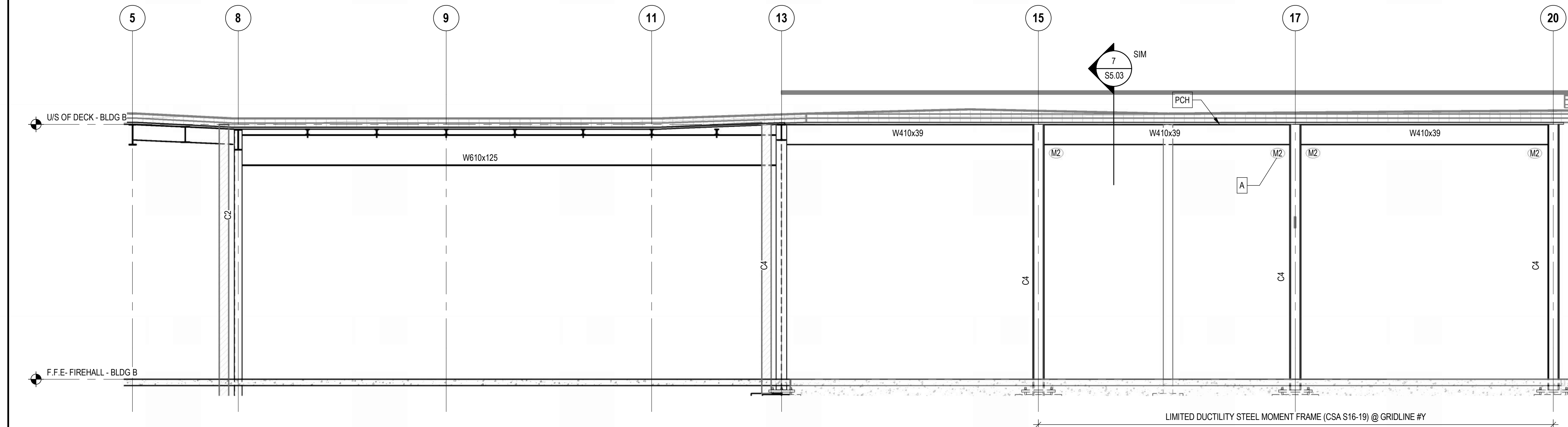
1 WEST ELEVATION (APPARATUS SUPPORT BAYS - BLDG B3)  
SCALE: 1:50



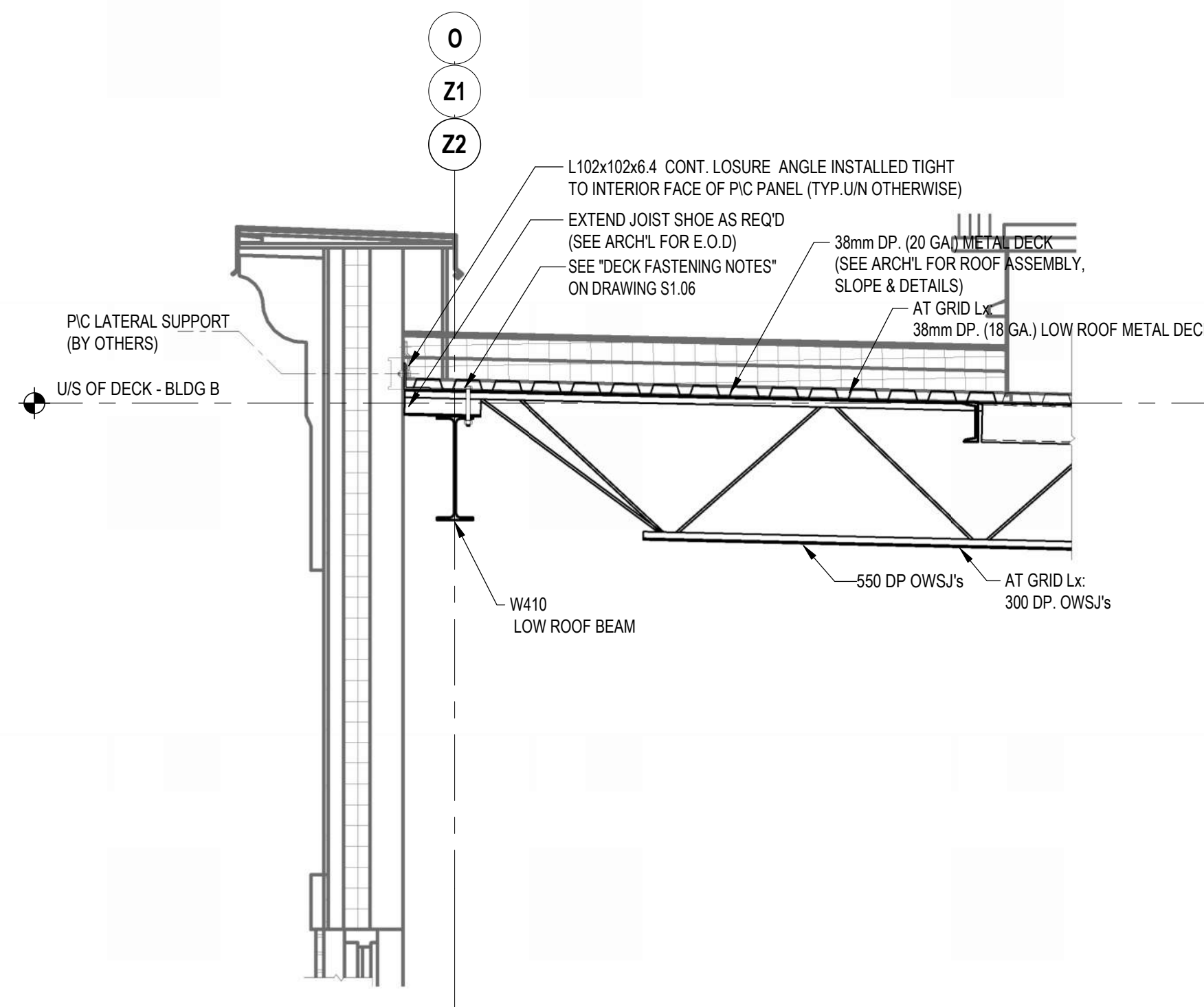
2 SFRS #13 (APPARATUS SUPPORT AREA - BLDG B3)  
SCALE: 1:50



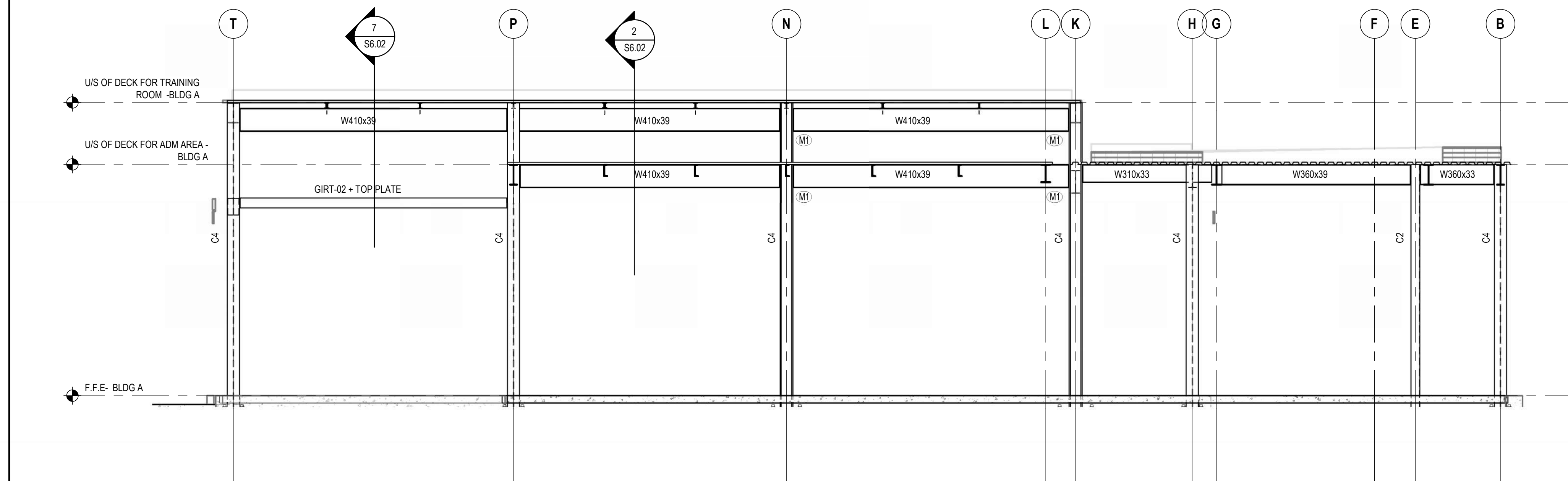
3 'LD' MOMENT FRAME #32 SFRS - SOUTH ELEVATION LOW ROOF BLDG A  
SCALE: 1:50



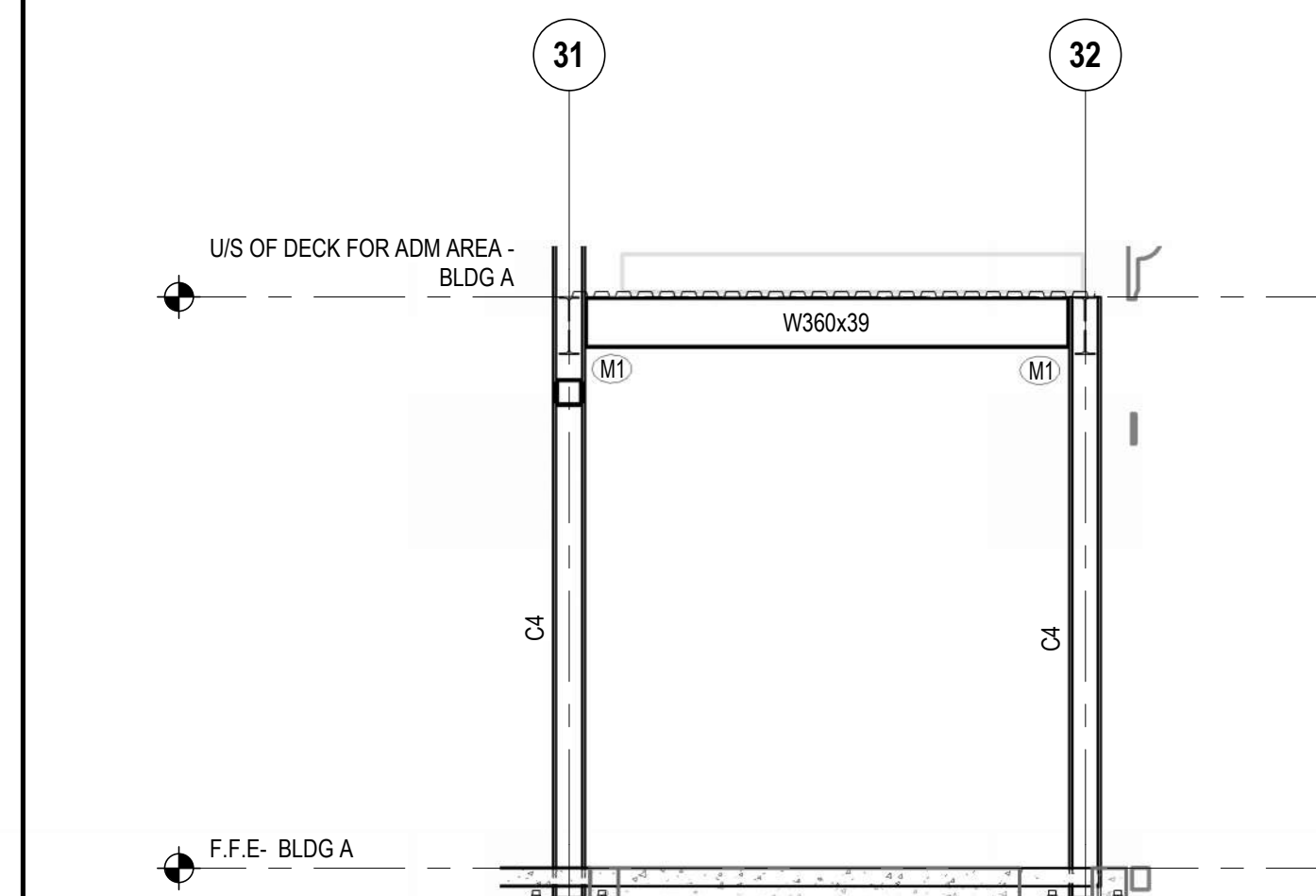
4 EAST SIDE ELEVATION #Y (APPARATUS SUPPORT AREA - BLDG B3)  
SCALE: 1:50



7 ROOF SECTION 'THRU' APPARATUS SUPPORT  
SCALE: 1:20 (SIMILAR EXCEPT AS NOTED AT GRID L4)



5 'LD' MOMENT FRAME #31 SFRS - BLDG A  
SCALE: 1:50



6 'LD' MOMENT FRAME #P SFRS - WEST ELEVATION LOW ROOF BLDG A  
SCALE: 1:50

**CONSTRUCTION NOTE #PC-1:**  
GENERAL CONTRACTOR SHALL SUBMIT PRECAST PANELS SHOP DRAWINGS SEALED BY P.ENG. AND USE LATERAL AND VERTICAL SUPPORT LOCATIONS AS SHOWN ON THESE DRAWINGS FOR GUIDANCE ONLY.

PCV: PC PANEL VERTICAL SUPPORT  
PCH: PC PANEL HORIZONTAL SUPPORT

**DESIGN NOTE #A (MOMENT CONNECTIONS):**  
THIS SYMBOL ON PLAN DENOTES BEAM TO COLUMN MOMENT CONNECTION FOR THE FOLLOWING FACTORED VALUES:  
M1+ 30 KNm;  
M2- 60 KNm;  
M3+ 100 KNm;  
M4+ 150 KNm;  
MOMENT CONNECTIONS SHALL BE DESIGNED IN ACCORDANCE WITH CSA S16.14 CL 27.4.2.2 FOR LIMITED DUCTILITY MOMENT FRAMES.  
G.C. SHALL SUBMIT STRUCTURAL STEEL SHOP DRAWINGS SEALED "FOR CONNECTIONS" BY P.ENG. IN ONTARIO PRIOR TO FABRICATION/ERECTION (SEE "STRUCTURAL STEEL NOTES" ON DRAWING S1.01 FOR DETAILS).  
G.C. SHALL HIRE AN INDEPENDENT TESTING AGENCY TO SITE VERIFY ALL BOLTED AND WELDED CONNECTIONS. A FIELD REVIEW REPORT SEALED AND PREPARED BY P.ENG. IN ONTARIO SHALL CERTIFY COMPLIANCE WITH DESIGN DRAWINGS, CURRENT CODES AND REGULATIONS.

GIRT SCHEDULE		
Type Mark	Type	REMARK
GRT-01	HS18x212x6.4	(G40.21 350W CLASS H)
GRT-02	HS17x176x6.4	(G40.21 350W CLASS H)
GRT-03	HS30x420x6.4	(G40.21 350W CLASS H)
GRT-04	HS30x420x6.3	(G40.21 350W CLASS H)

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Drawing Title  
**APPARATUS SUPPORT  
STRUCTURAL STEEL  
ELEVATIONS & SECTIONS**

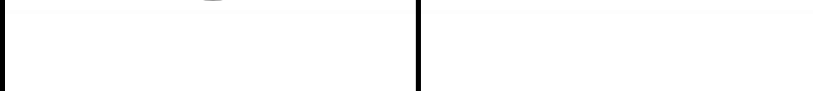
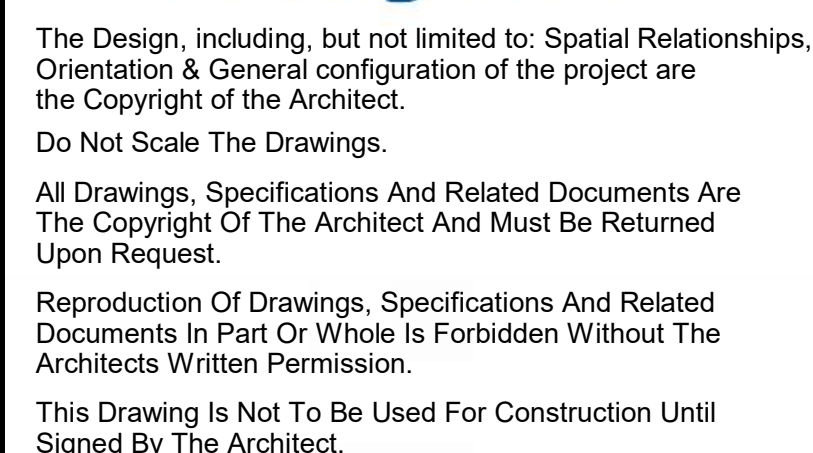
Project  
**TOWN OF ORANGEVILLE  
FIRE STATION PROJECT**

**10 COMMERCE ROAD  
ORANGEVILLE, ON L9W 1P8**

Scale  
As indicated  
Checked  
23000R  
10.11.2023

S5.03





 **EXSEN ENGINEERING LTD**  
CONSULTING ENGINEERS

1211-111 PACIFIC Ave.  
TORONTO, ON  
M6P 2P2

Ph. (416) 712-0970  
exseneng11@gmail.com

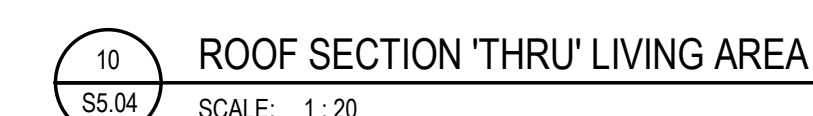
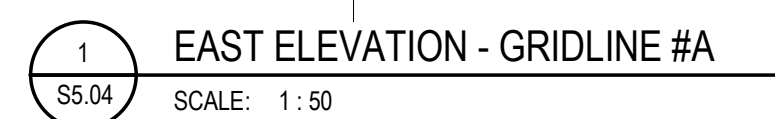
202-8551 Weston Road  
Woodbridge, ON L4L 9R4  
P: (905) 856-2840  
F: (905) 856-4912  
info@alaimoarchitecture.com

## Fitness/Kitchen-Living Area STRUCTURAL STEEL ELEVATIONS & SECTIONS

10 COMMERCE ROAD  
ORANGEVILLE, ON L9W 1P8

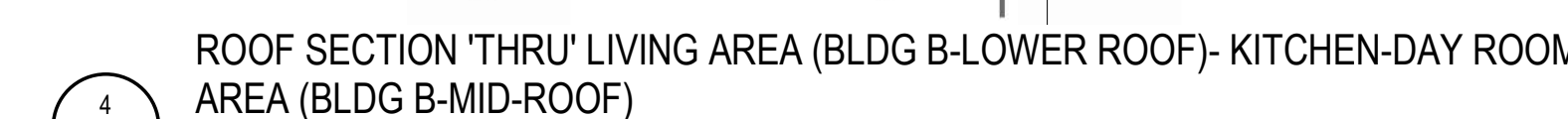
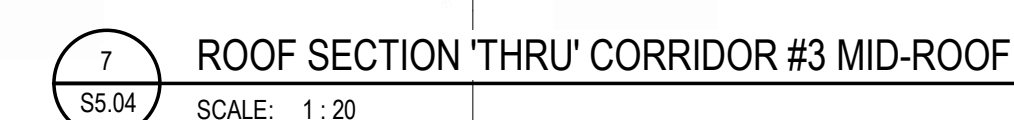
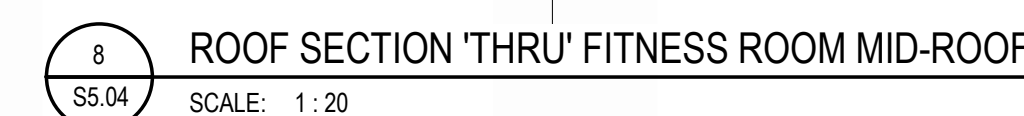
As indicated  
Checker  
23000R  
10.11.2023

S5.04

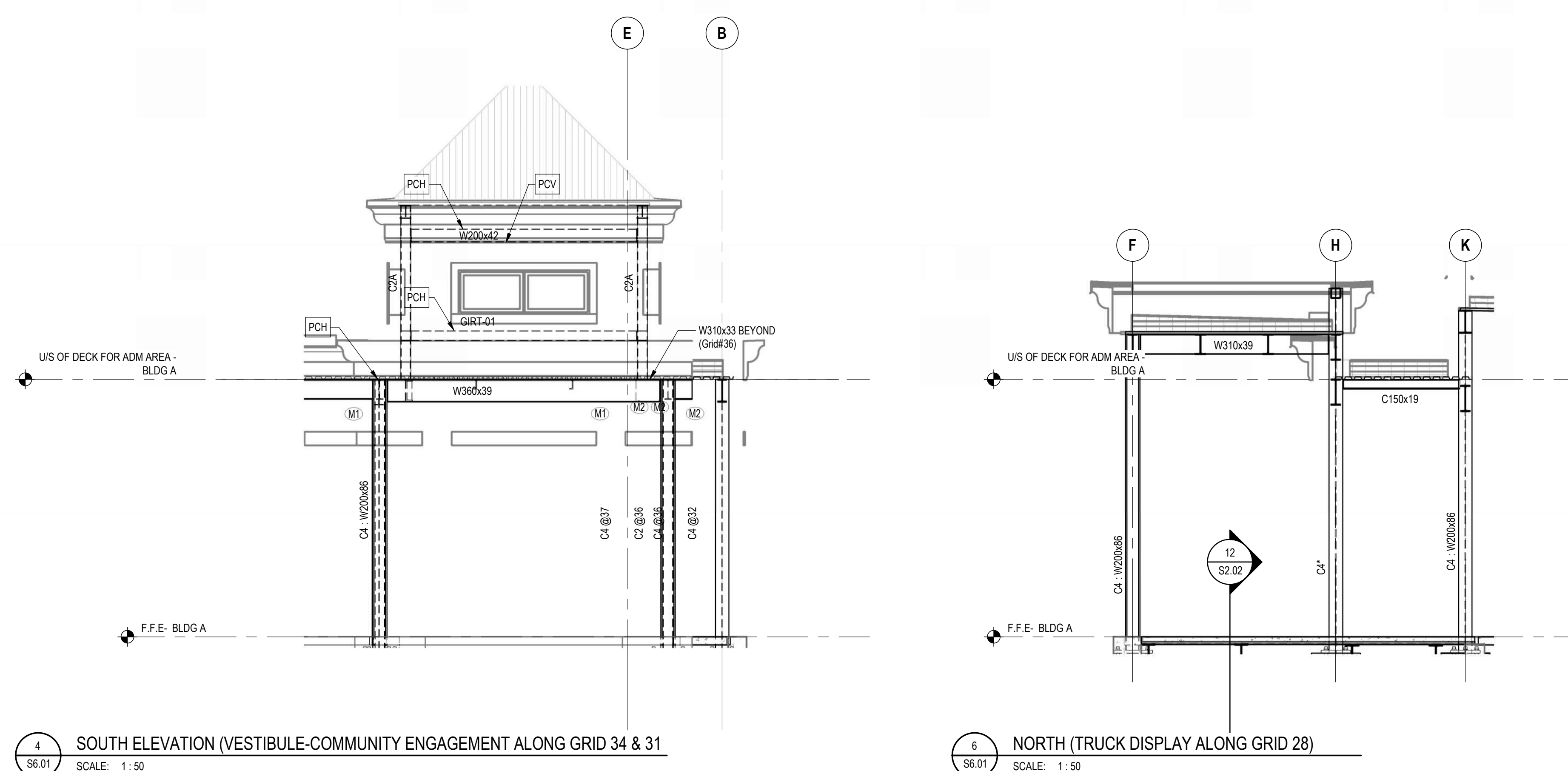
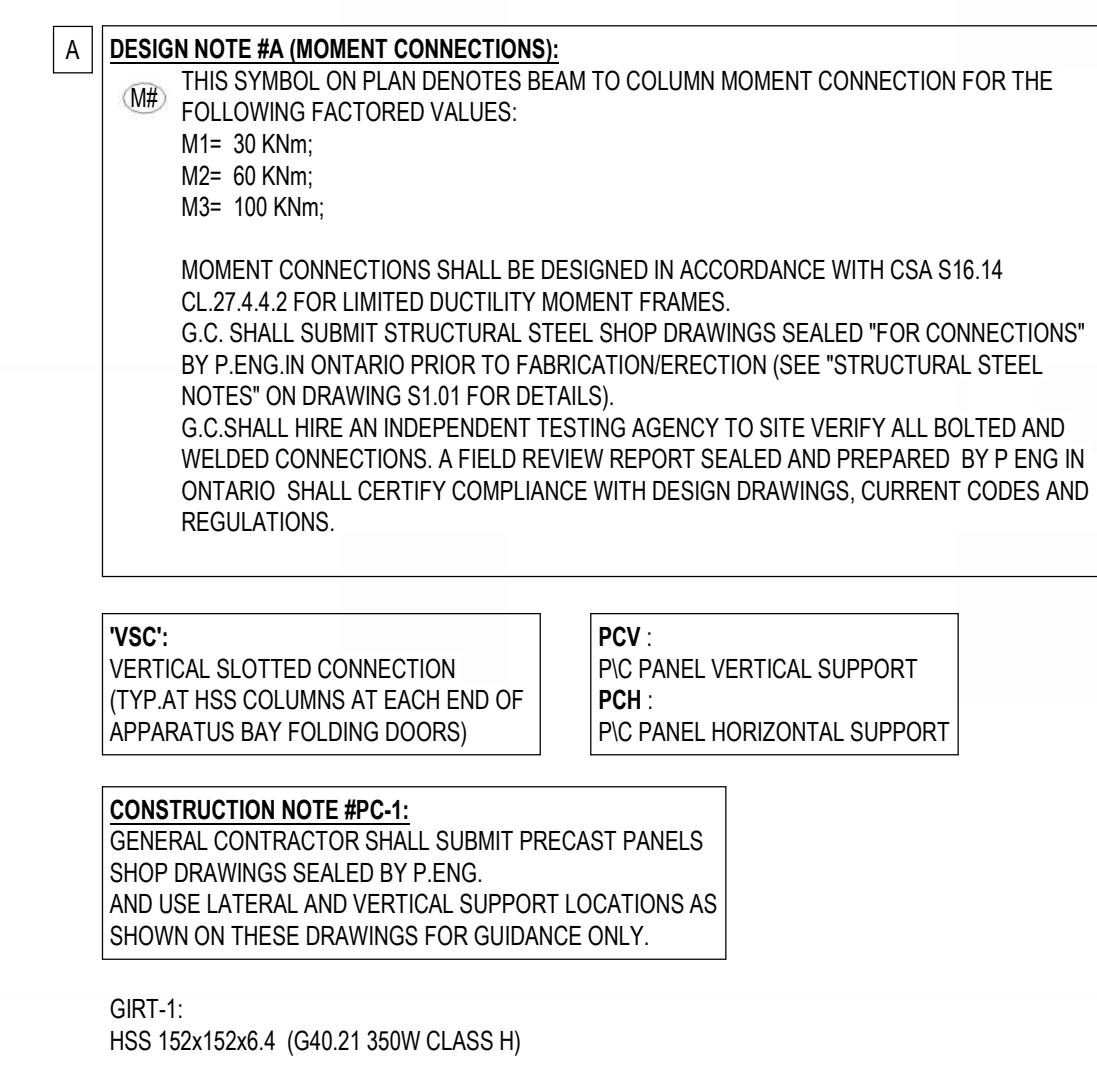


<b>VSC:</b> VERTICAL SLOTTED CONNECTION (TYP AT HSS COLUMNS AT EACH END OF APPARATUS BAY FOLDING DOORS)	<b>PCV:</b> PIC PANEL VERTICAL SUPPORT <b>PCH:</b> PIC PANEL HORIZONTAL SUPPORT
--	--

GIRT-1:  
HSS 152x152x6.4 (G40.21 350W CLASS H)







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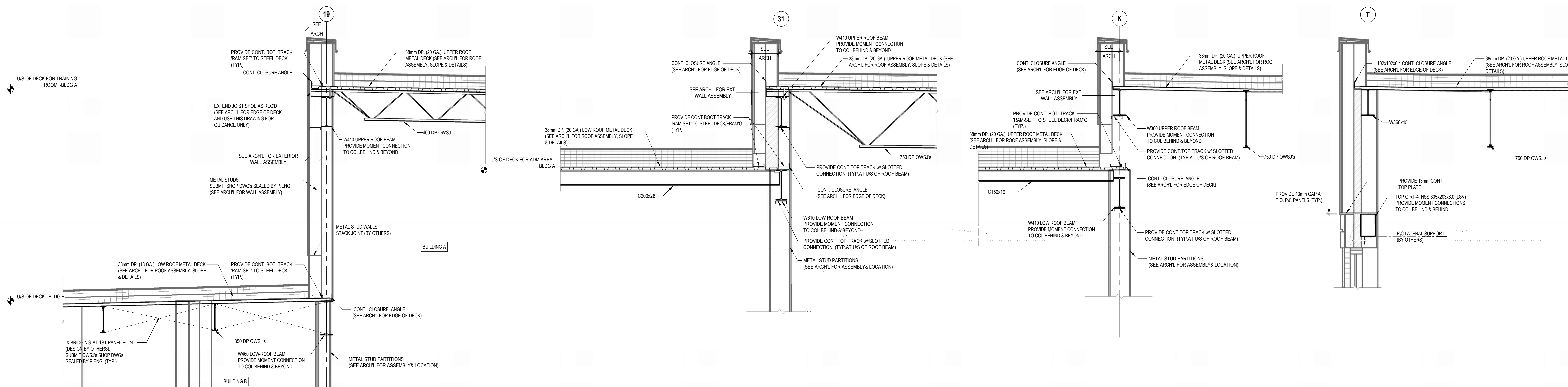
1211-111 PACIFIC Ave.  
TORONTO, ON  
M6P 2P2

Ph. (416) 712-0970  
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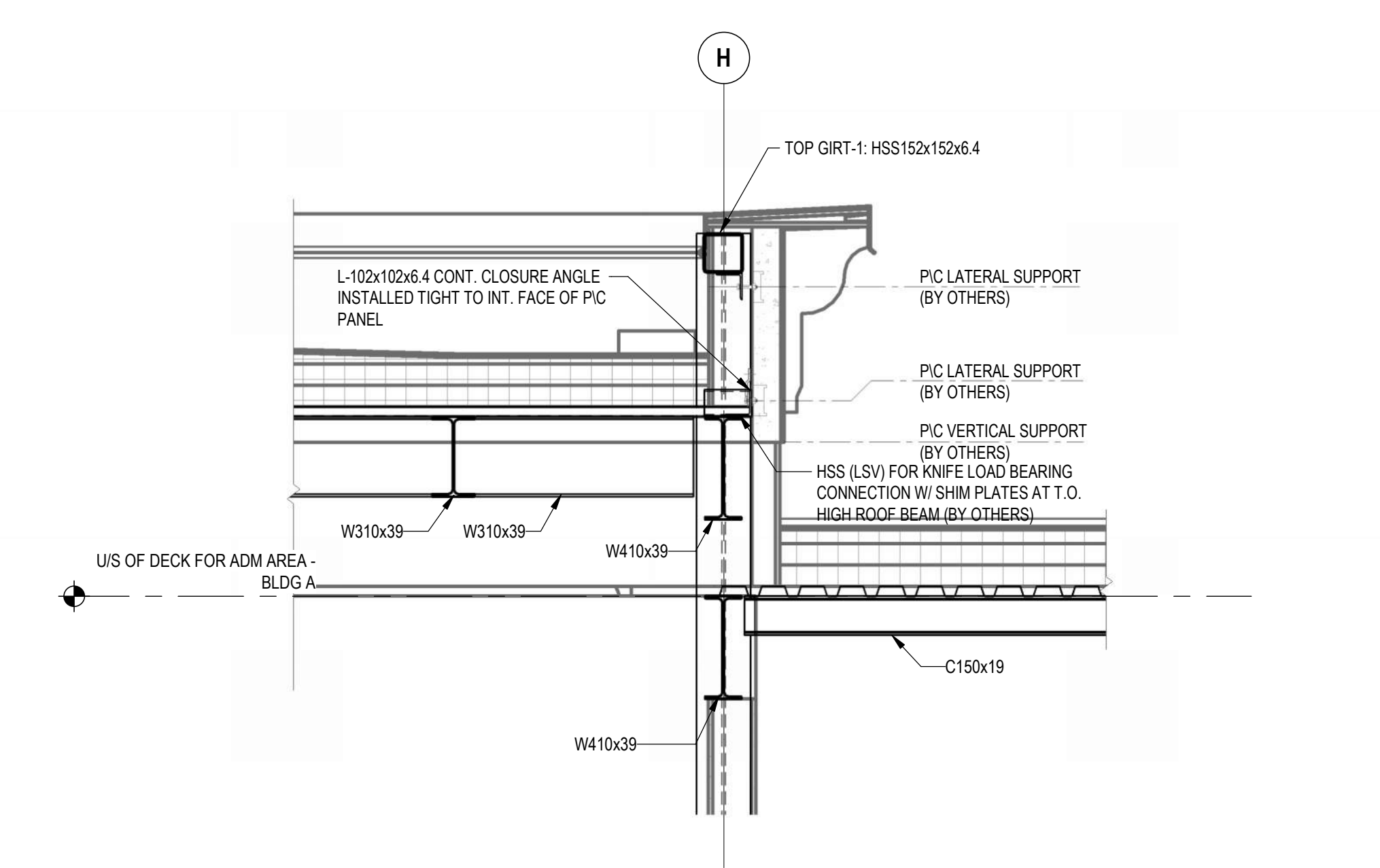
202-8551 Weston Road  
Woodbridge, ON L4L 9R4  
P: (905) 856-2840  
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1 : 50	Scale
Checker	Issued by
23000R	File No.
10.11.2023	Plot Date

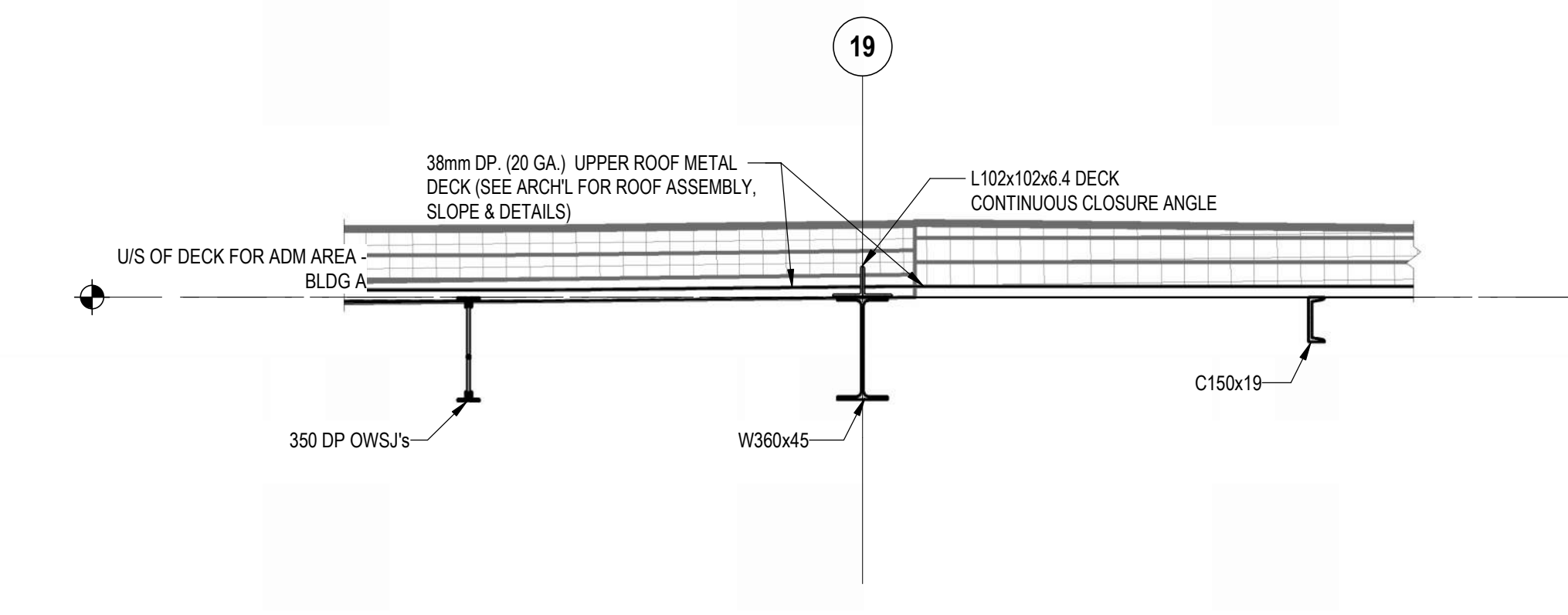




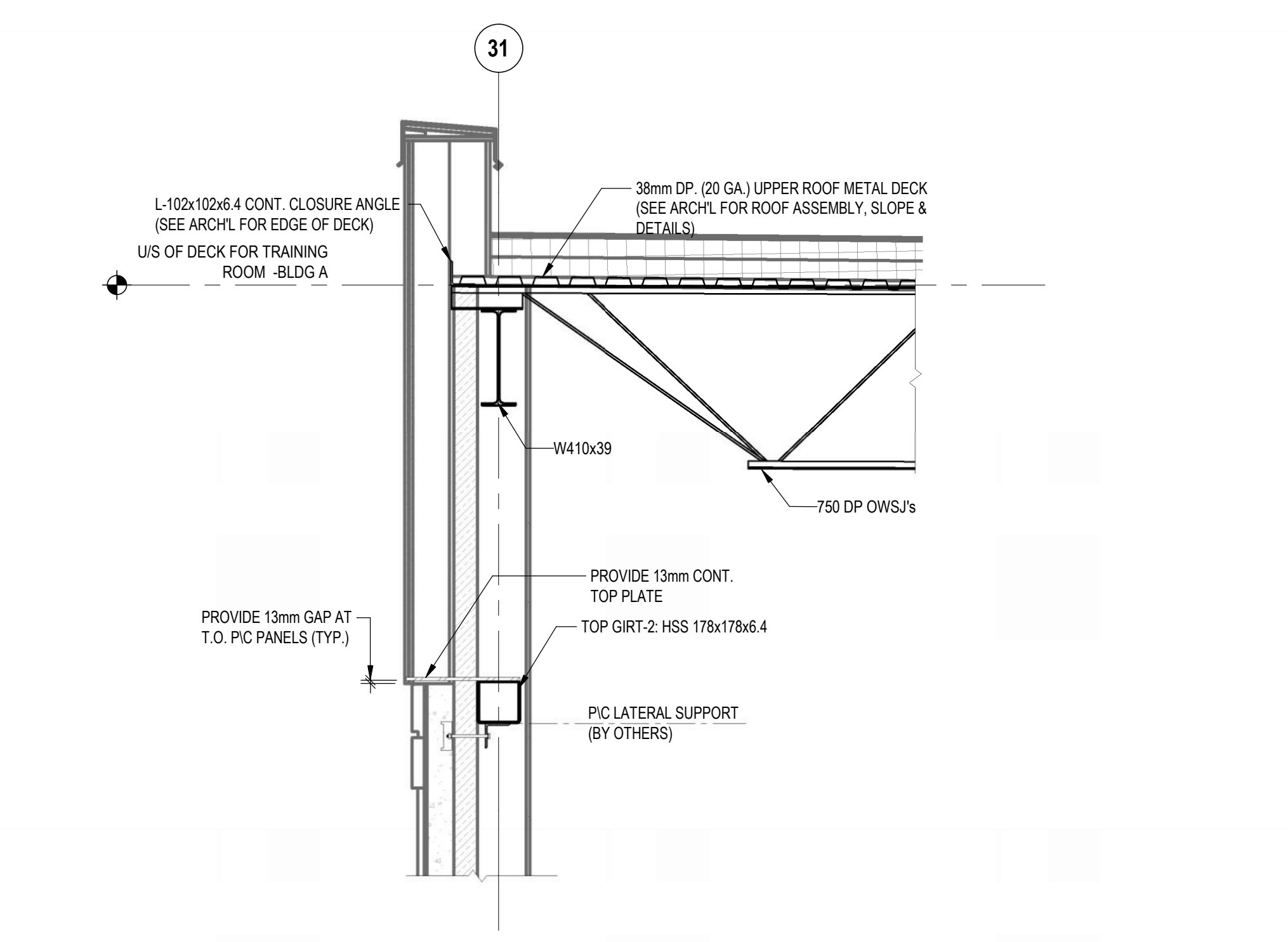
1 ROOF SECTION 'THRU' LIVING AREA (BLDG B-LOWER ROOF)- TRAINING ROOMS AREA (BLDG A-UPPER ROOF) SCALE: 1:20  
2 ROOF SECTION 'THRU' ADM AREA (BLDG A-LOWER ROOF)- TRAINING ROOMS AREA (BLDG A-UPPER ROOF) SCALE: 1:20  
3 ROOF SECTION 'THRU' ADM AREA (BLDG A-LOWER ROOF)- TRAINING ROOMS AREA (BLDG A-UPPER ROOF) SCALE: 1:20  
9 ROOF SECTION 'THRU' ADM AREA (BLDG A-LOWER ROOF) SCALE: 1:20



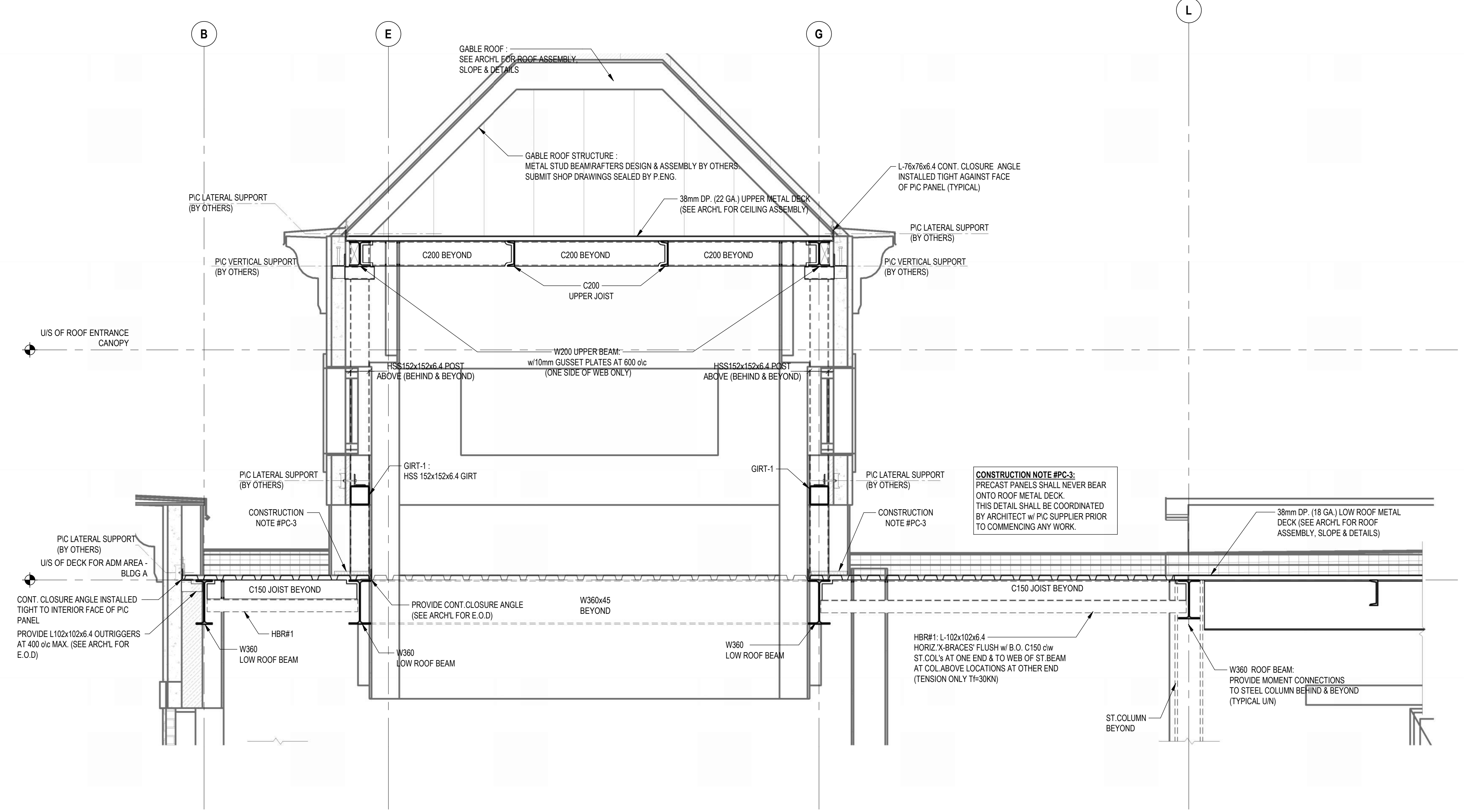
4 ROOF SECTION 'THRU' ELEVATOR AREA SCALE: 1:20



6 ROOF DECK DIAPHRAGM TRANSITION SCALE: 1:20

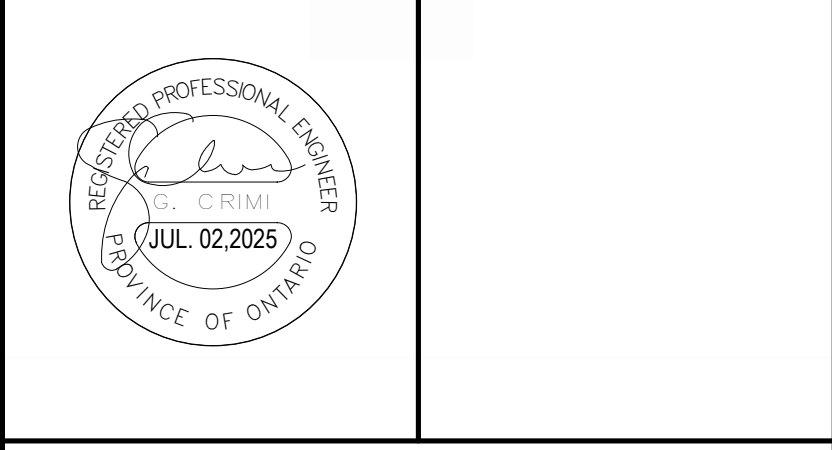


7 ROOF SECTION 'THRU' ADM AREA (BLDG A-LOWER ROOF) SCALE: 1:20



5 ROOF SECTION 'THRU' ADM AREA (BLDG A-LOWER ROOF) - VESTIBULE SCALE: 1:20

**Orangeville**  
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No.	Issued For	Date
1	Building Permit/Tender	2025.07.02

**EXSEN ENGINEERING LTD.**  
CONSULTING ENGINEERS  
1211-111 PACIFIC AVE.  
TORONTO, ON  
M6P 2P2  
Ph: (416) 712-9970  
exseneng11@gmail.com

**alaimo architecture inc.**  
202-8551 Weston Road  
Woodbridge, ON L4L 9R4  
P: (905) 856-2840  
F: (905) 856-4912  
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Drawing Title  
**BUILDING A  
ROOF SECTIONS**

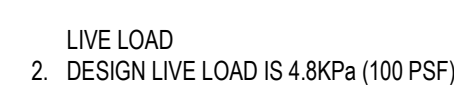
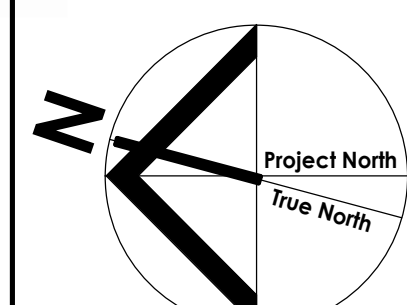
Project  
**TOWN OF ORANGEVILLE  
FIRE STATION PROJECT**

**10 COMMERCE ROAD  
ORANGEVILLE, ON L9W 1P8**

Scale  
**1:20**  
Issued by  
**Checker**  
File No.  
**23000R**  
Plot Date  
**10.11.2023**

**S6.02**





STEEL DECK TO BE INSTALLED IN ACCORDANCE WITH RECOMMENDATIONS OF THE CANADIAN SHEET  
STEEL BUILDING INSTITUTE. SUBMIT SHOP DRAWINGS SEALED BY P.ENG. PRIOR TO INSTALLATION.  
SEE ALSO "METAL DECK NOTES" ON DRAWING S1.01 FOR SPEC'S & DETAILS.

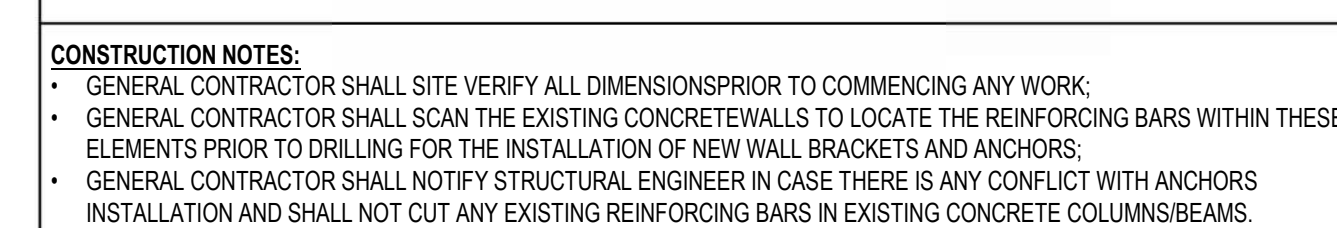
**MASONRY STEEL LINTELS LEGEND**

DSL-1 : DOUBLE STEEL ANGLE (LLV) AS PER TYPICAL DETAIL TD-3/S1.02	DSL-1	
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W8KT-1 :  
L-178x102x9.5 (LLV) x 240LG. STEEL BRACKET  
w/ 2-169mm (5/8") Ø HILTI HY200 ANCHORS  
MIN. 150mm (5") EMBEDMENT INTO  
CONCRETE WALL FACE

**CONSTRUCTION NOTES # RC-W:**

1. CONCRETE SHALL HAVE MINIMUM 28MPa COMPRESSIVE STRENGTH AT 28 DAYS;
2. MINIMUM REBAR COVER 1" (25mm) IN ACCORDANCE WITH CSA A23.3 REQUIREMENTS;
3. GENERAL CONTRACTOR SHALL COMPLY WITH "CONCRETE NOTES" AS SHOWN ON DRAWING S1.01;
4. GENERAL CONTRACTOR SHALL REFER TO ARCHT. DRAWINGS FOR TOP OF WALL ELEVATION AND EXTENT ON PLAN AND USE THESE DRAWINGS FOR GUIDANCE ONLY.



WBKT-2 DENOTES A WALL BRACKET  
L-178x102x9.5 (L-7x4x3/8) LLV x 240 LG  
+2-16 (5/8")Ø HILTI HY200 ANCHORS MIN. 150mm  
EMBEDMENT INTO CONCRETE WALL:

- GENERAL CONTRACTOR SHALL SITE VERIFY ALL DIMENSIONS PRIOR TO COMMENCING ANY WORK.
- GENERAL CONTRACTOR SHALL SCAN THE EXISTING CONCRETE WALLS TO LOCATE THE REINFORCING BARS WITHIN THESE ELEMENTS PRIOR TO DRILLING FOR THE INSTALLATION OF NEW WALL BRACKETS AND ANCHORS.
- GENERAL CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER IN CASE THERE IS ANY CONFLICT WITH ANCHORS INSTALLATION AND SHALL NOT CUT ANY EXISTING REINFORCING BARS IN EXISTING CONCRETE COLUMNS/BEAMS.

S6.03 SCALE: 1:10



