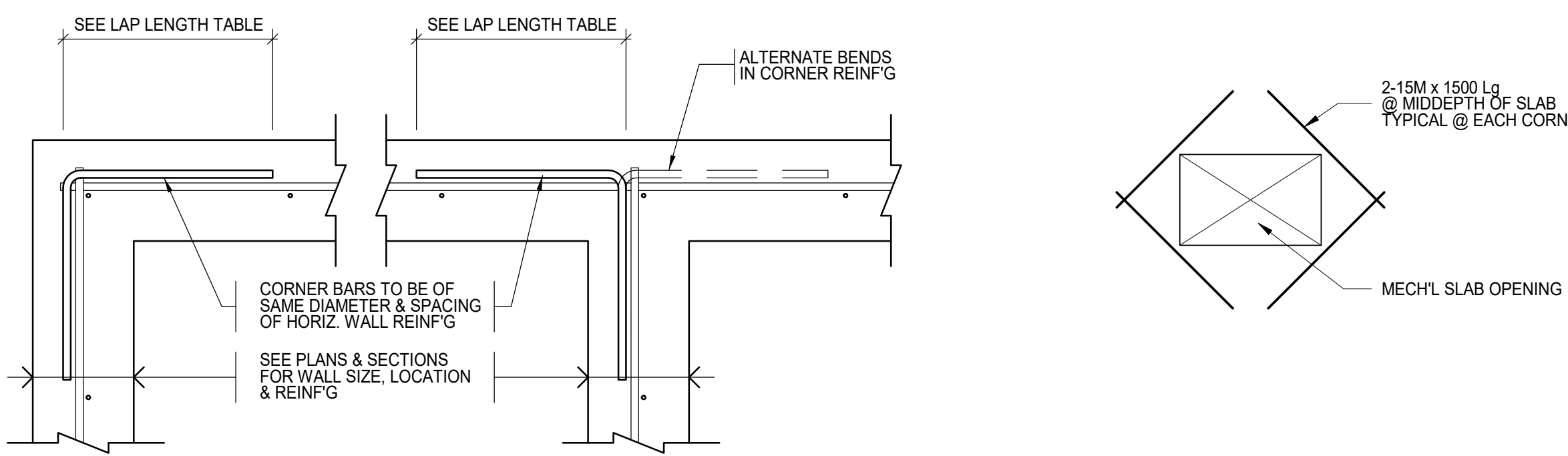


TYPICAL WALL INTERSECTION REINFORCEMENT

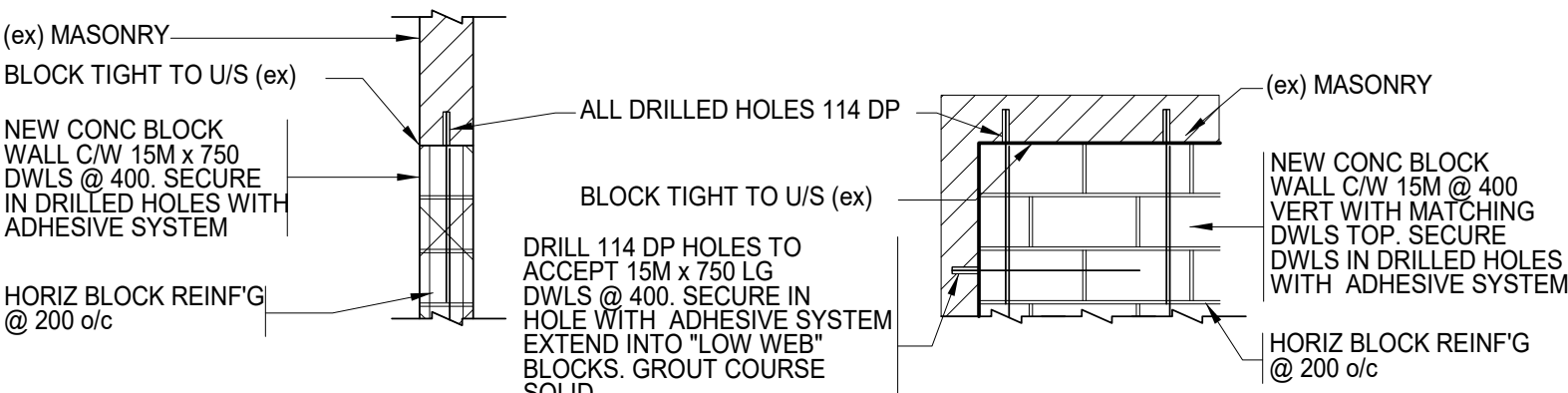
CONCRETE WALLS WITH 2 SHEETS OF REINFORCING (WALL THICKNESS GREATER THAN 215 mm)
NOT APPLICABLE TO SHEARWALLS. SEE SHEARWALL ELEVATION DRAWINGS



TYPICAL WALL INTERSECTION REINFORCEMENT

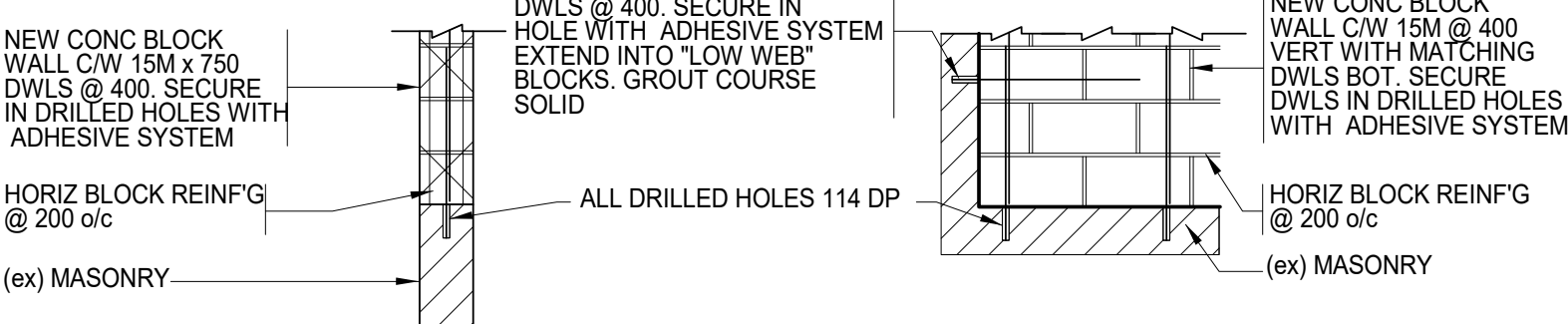
CONCRETE WALLS WITH 1 SHEET OF REINFORCING (WALL THICKNESS LESS THAN 215 mm)
NOT APPLICABLE TO SHEARWALLS. SEE SHEARWALL ELEVATION DRAWINGS

TYPICAL DETAIL AT CONCRETE SLAB OPENING U/I



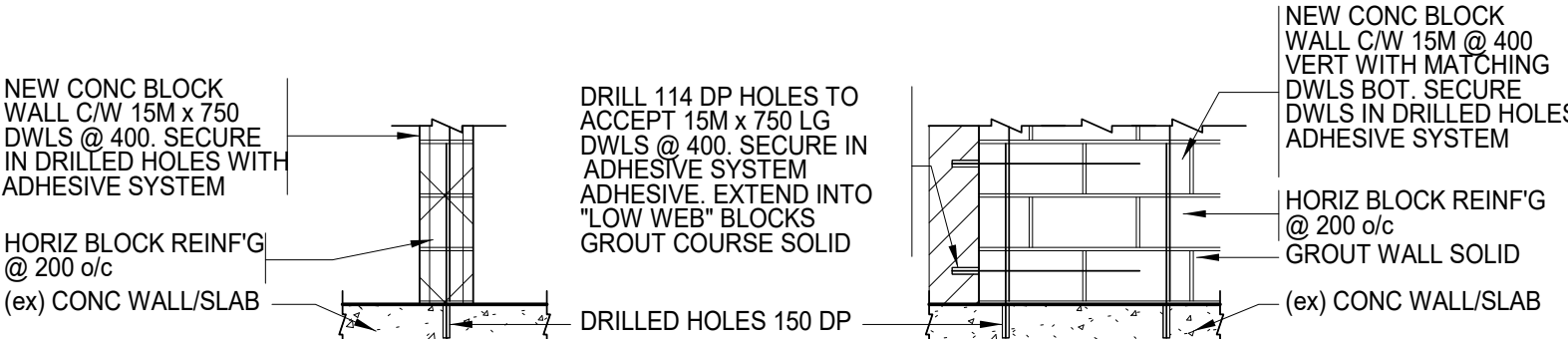
SECTION @ HEAD

ELEVATION @ HEAD & SIDE



SECTION @ SILL

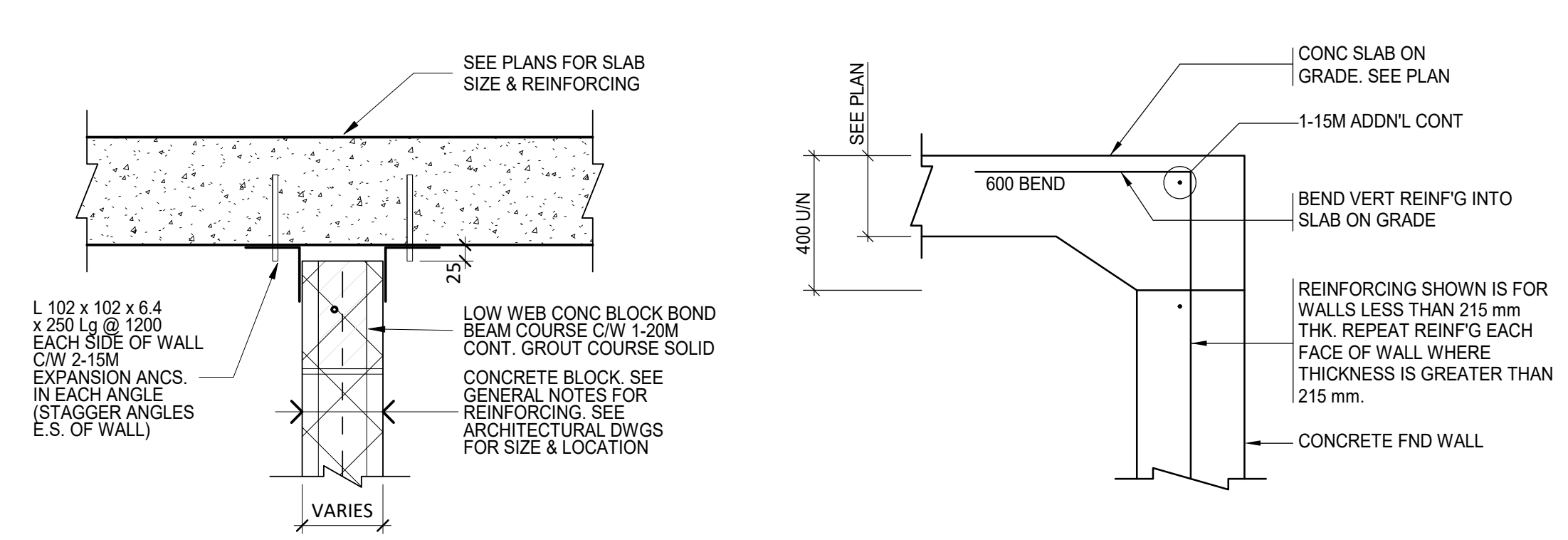
ELEVATION @ SILL & SIDE



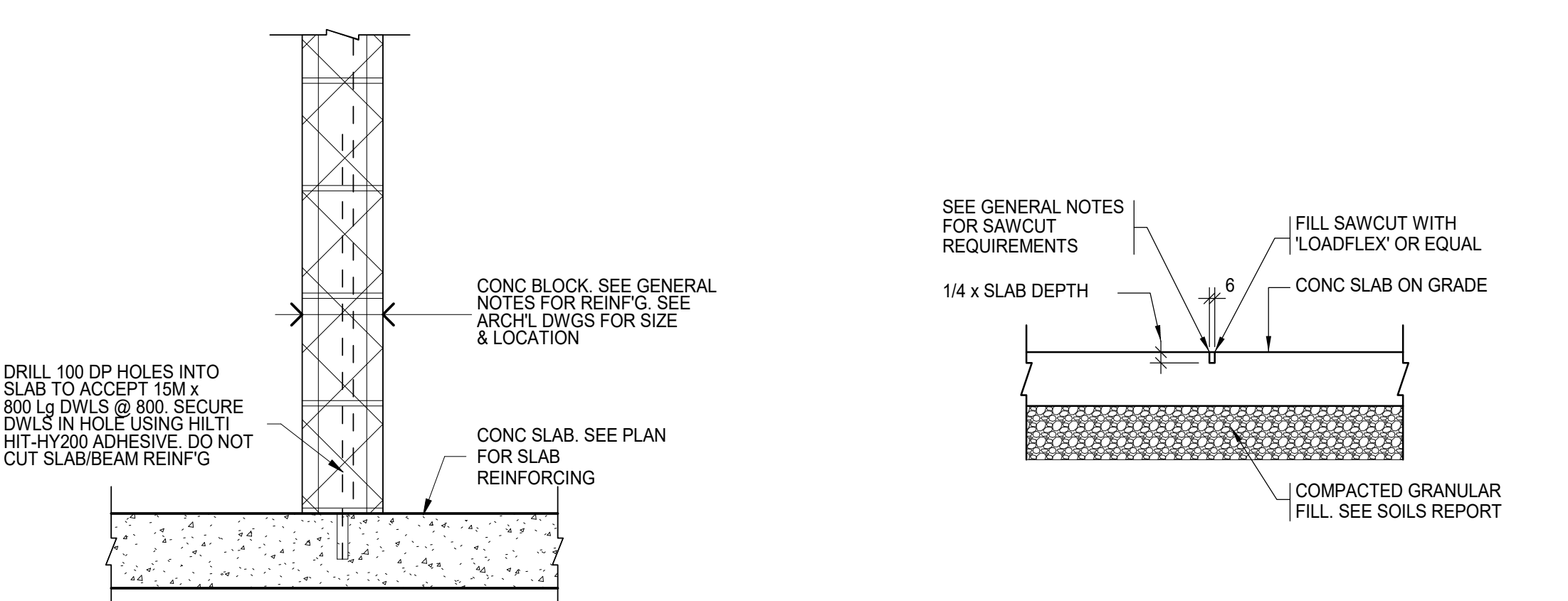
SECTION @ SILL

ELEVATION @ SILL & SIDE

DETAILS FOR INFILLING (ex) OPENINGS IN BLOCK WALLS
SEE DWG S100 & ARCHL DWGS FOR LOCATIONS OF OPENINGS TO BE INFILLED



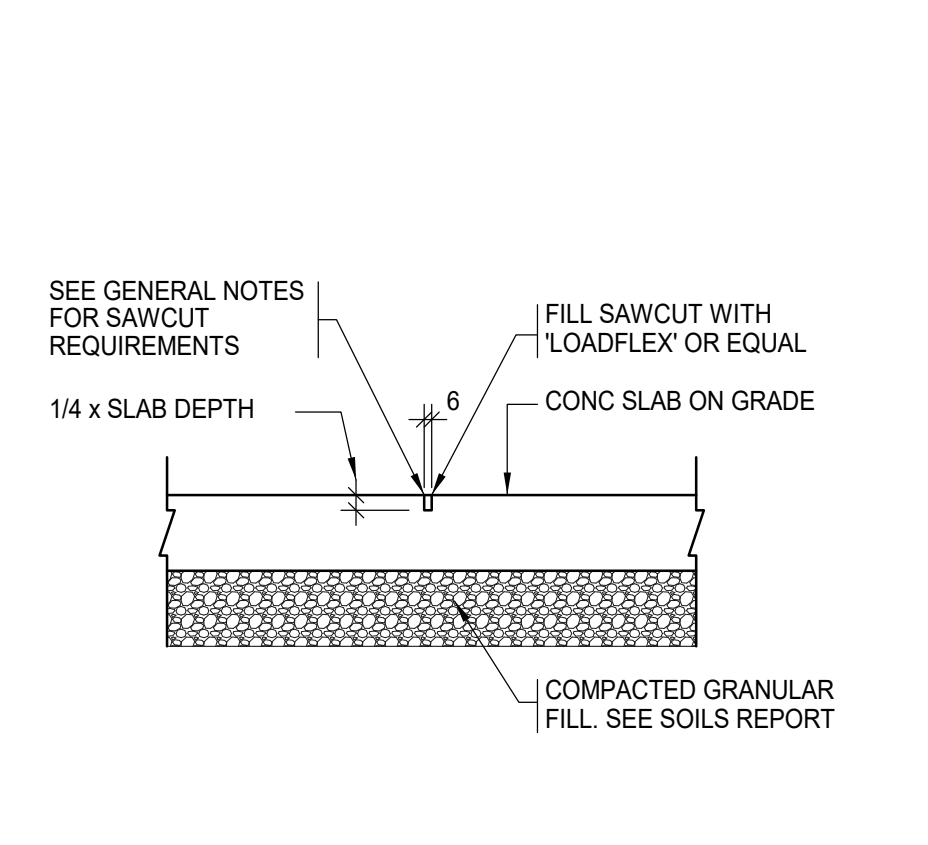
MASONRY WALL LATERAL SUPPORT DETAIL AT CONCRETE SLAB



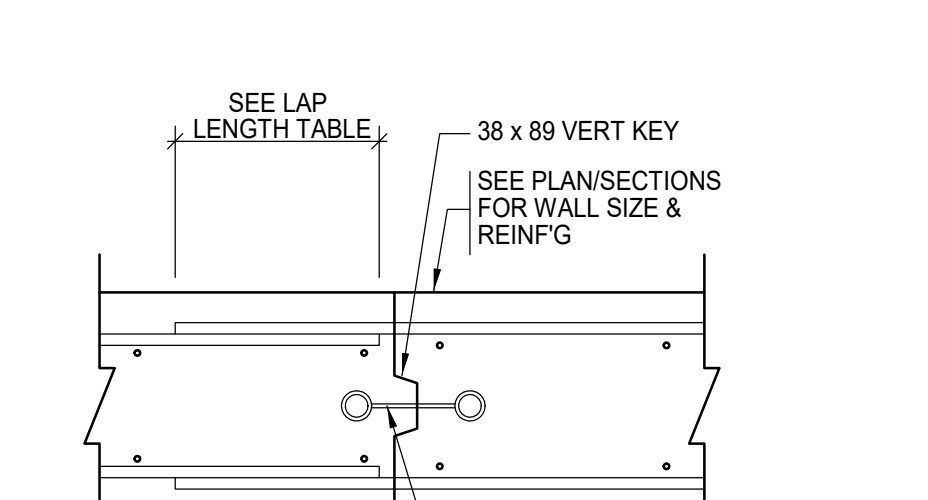
TYPICAL DETAIL AT NON-LOAD BEARING BLOCK WALLS ON CONCRETE SLAB

DETAIL-SLAB THICKENING AT DOORS

UNLESS DETAILED OTHERWISE ON DRAWINGS

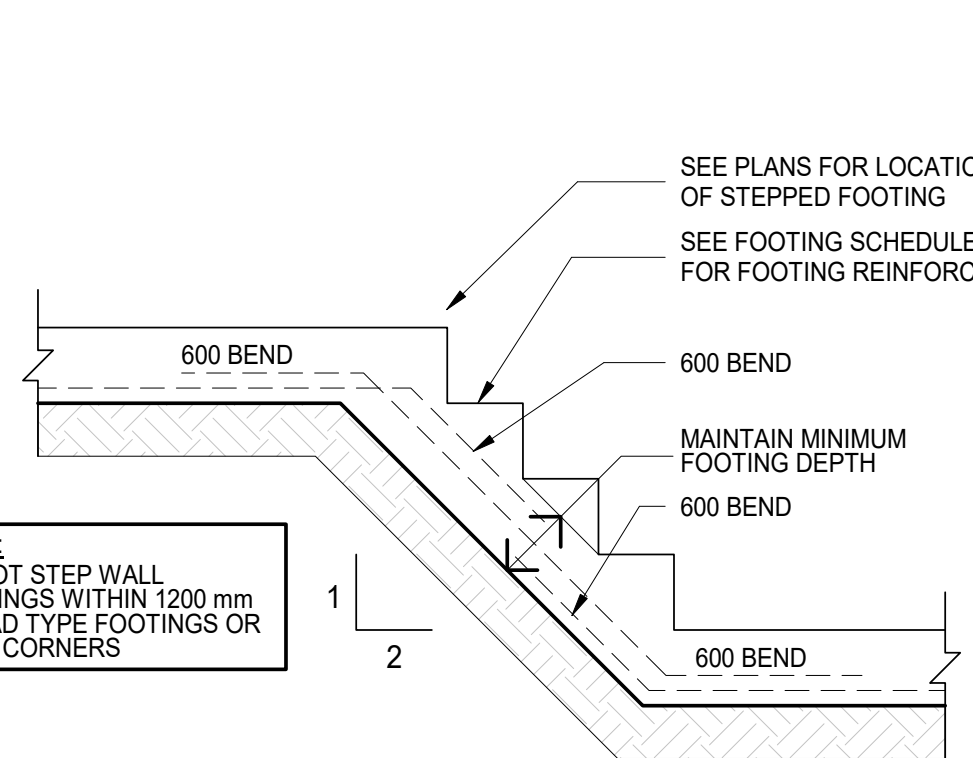


TYPICAL SAWCUT IN SLAB ON GRADE DETAIL

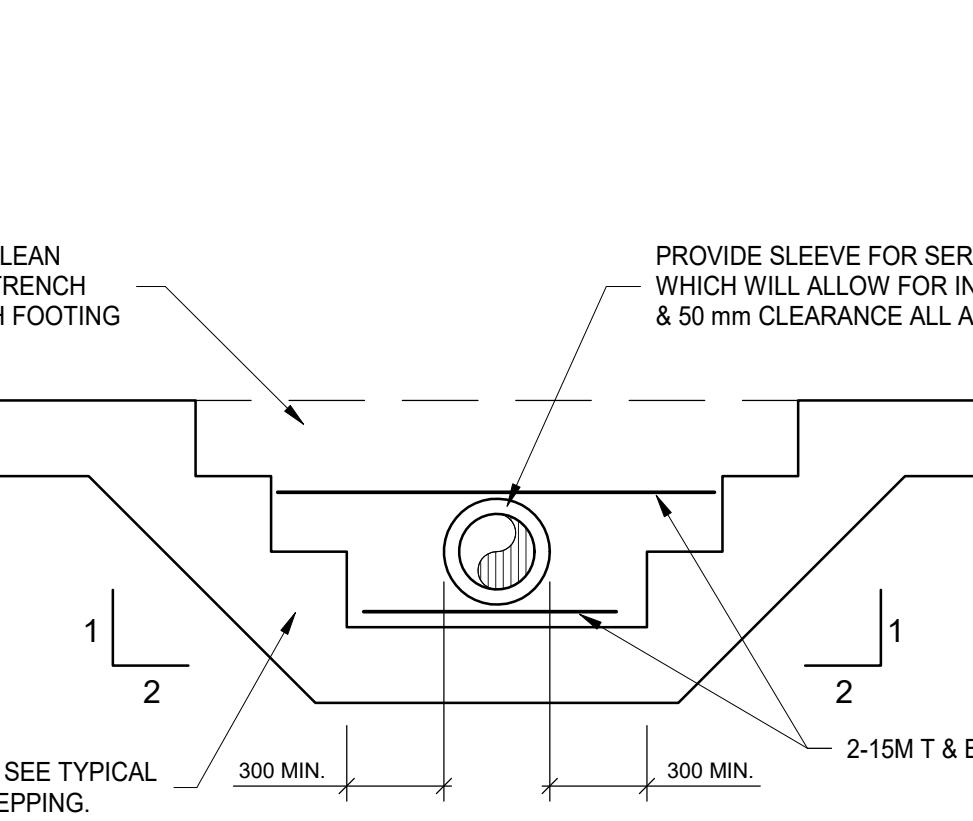


TYPICAL WALL CONSTRUCTION JOINT DETAIL

MAXIMUM SPACING OF CONSTRUCTION JOINTS TO BE 20 metres



TYPICAL STEPPED WALL FOOTING DETAIL



DETAIL-FOUNDATION AT UNDERGROUND SERVICE ENTRY

SEE PLANS AND MECHANICAL FOR LOCATION

GENERAL NOTES

- ANY DEVIATION FROM THE CONDITIONS SHOWN ON THESE DRAWINGS MUST BE REPORTED TO THE ENGINEER
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF PART 4 OF THE 2012 OBC (R2020) and NBC 2015
- STANDARDS**
 - CSA STANDARD A23.3-14 DESIGN OF CONCRETE STRUCTURES
 - CSA STANDARD S16-14 DESIGN OF STEEL STRUCTURES
- ANY MODIFICATIONS TO EXISTING STRUCTURES ARE TO BE LIMITED TO WORK NOTED ON THESE DRAWINGS. ANY ADDITIONAL OR PROPOSED MODIFICATIONS TO EXISTING STRUCTURES MUST BE APPROVED BY THE ENGINEER
- FOUNDATIONS**
 - ALL FOOTINGS ARE TO BEAR ON IN SITU SOIL OR ENGINEERED FILL
 - BEARING CAPACITY USED IN THE FOOTING DESIGN IS ASSUMED TO BE $SLS = 180 \text{ kPa}$ $ULS = 250 \text{ kPa}$
 - BEARING SURFACE IS TO BE INSPECTED BY GEOTECHNICAL ENGINEER PRIOR TO PLACING CONCRETE
 - FOR FURTHER INFORMATION SEE GEOTECHNICAL REPORT PROPOSED UNDERGROUND STORAGE TANK - HANGAR T-58 DATED AUGUST 2019 AND TECHNICAL MEMORANDUM - CONCEPTUAL GEOTECHNICAL DESIGN HANGAR T-58 - PUMP BUILDING AND FOAM SYSTEM DATED MAY 17, 2019 WITH NO. 184624
 - STEP FOOTINGS WHERE INDICATED ON PLAN AT THE RATE OF 2 HORIZONTAL TO 1 VERTICAL
- SLAB ON GRADE**
 - SLAB ON GRADE TO BE REINFORCED AS NOTED
 - FOR COMPOSITION & COMPACTION OF FILL SUPPORTING SLABS ON GRADE SEE GEOTECHNICAL REPORT
 - PROVIDE 12 mm ASPHALT IMPREGATED FIBREBOARD BETWEEN SLABS ON GRADE & FOUNDATION WALLS OR COLUMNS
 - SAWCUT SLAB ON GRADE TO (114 x SLAB DEPTH) 8 HOURS AFTER CONCRETE PLACEMENT
 - SPACE SAWCUTS ON A 4500 mm x 4500 mm MAXIMUM GRID. AVOID LONG & NARROW SAWCUT PATTERNS. LOCATE SAWCUTS ALONG COLUMN LINES WHERE POSSIBLE. CONTRACTOR IS TO PROVIDE THE ENGINEER WITH DOCUMENTATION SHOWING PROPOSED SAWCUT LOCATIONS FOR APPROVAL. UNLESS SAWCUTS LOCATIONS ARE OTHERWISE INDICATED ON THESE DRAWINGS.
- MATERIALS**
 - CONCRETE STRENGTH AT 28 DAYS TO BE AS NOTED ON THESE DRAWINGS AND SPECIFICATIONS
 - REINFORCING STEEL TO BE DEFORMED GRADE 400R WITH $F_y = 400 \text{ MPa}$
 - HOLLOW STRUCTURAL STEEL SECTIONS TO BE ASTM A500 GRADE C OR G40.21 350W CLASS C
 - ALL "W" & "WP" SHAPE STEEL SECTIONS TO BE GRADE G40.21 350W WITH $F_y = 350 \text{ MPa}$ UNLESS NOTED OTHERWISE
 - ALL STRUCTURAL STEEL TO RECEIVE 1 SHOP APPLIED COAT OF PRIMER UNLESS NOTED
 - ALL STRUCTURAL STEEL EXPOSED TO EXTERIOR IS TO BE HOT DIP GALVANIZED UNLESS NOTED
 - ANCHOR BOLTS TO BE A307
 - ALL OTHER BOLTS TO BE A305
 - A307 BOLTS EXPOSED TO EXTERIOR ARE TO BE GALVANIZED
- CONCRETE COVER**
 - FOOTINGS 75 mm BOTTOM
 - WALLS/BREAMS 50 mm SIDES
 - COLUMNS 40 mm
 - SUSPENDED SLABS 25 mm U/I ON DRAWINGS
 - GRADE BEAMS 75 mm BOTTOM-50 mm SIDE & TOP
- REINFORCING STEEL DESIGNATION**
 - 8-20M x 1500 T/B
 - 8 = NUMBER OF BARS
 - 20M = SIZE OF BARS
 - 1500 = LENGTH OF BARS
 - T = BAR LOCATION - TOP
 - B = BAR LOCATION - BOT
 - LENGTH OF BARS DOES NOT INCLUDE HOOKS OR BENDS
- DOWELS**
 - DOWELS TO FOOTINGS TO BE OF SAME DIAMETER AS THE LOWEST LIFT OF VERTICAL REINFORCING IN COLUMNS, PIERS OR WALLS.
- REINFORCING STEEL SPLICES**
 - REINFORCING STEEL SPLICES TO BE AS NOTED IN REINFORCING BAR LAP LENGTH TABLE ON S100 U/I.
- OPENINGS**
 - AT OPENINGS IN FLOOR SLABS PROVIDE 1-15M x 1500 Lg TOP & BOTTOM DIAGONALLY AT CORNERS OF OPENINGS
 - AT OPENINGS IN WALLS PROVIDE 2-20M T & B OF OPENINGS EXTENDING 600 mm MIN. BEYOND CORNERS OF OPENINGS
 - FOR ADDITIONAL OPENINGS 300 x 300 OR SMALLER SEE ARCHITECTURAL & MECHANICAL DRAWINGS
 - REPORT ANY OPENINGS LARGER THAN 300 x 300 NOT SHOWN ON THESE DRAWINGS TO THE ENGINEER
- SUSPENDED SLABS**
 - ALL BEAMS ARE TO BE PLACED MONOLITHICALLY WITH SLAB
 - AT SLAB OPENINGS DISPLACE SLAB REINFORCING TO EACH SIDE. DO NOT CUT BARS
- LOADS**
 - ALL LOADS & FORCES INDICATED ON THESE DRAWINGS ARE UNFACTORED WORKING LOADS UNLESS NOTED.
- LEGEND**
 - B = BOTTOM
 - B1 = BOTTOM LOWER LAYER
 - B2 = BOTTOM UPPER LAYER
 - BL = BOTTOM LOWER LAYER
 - BP1 = BEAM (OR DWG) BEARING PLATE NUMBER
 - BP1 = BASE PLATE NUMBER
 - BUL = BOTTOM UPPER LAYER
 - CONT = CONTINUOUS
 - DW = DEPTH
 - DWL = DOWELS
 - EF = EACH FACE
 - E = ELEVATION
 - ES = EACH SIDE
 - EW = EACH WAY
 - F1 = PAD FOOTING NUMBER
 - H = HORIZONTAL
 - (H) = HOOKED BAR
 - O/C = ON CENTER
 - T = TOP
 - T1 = TOP UPPER LAYER
 - T2 = TOP LOWER LAYER
 - TUL = TOP LOWER LAYER
 - TUL = TOP UPPER LAYER
 - U/I = UNLESS NOTED OTHERWISE
 - V = VERTICAL
 - WF = WALL FOOTING NUMBER

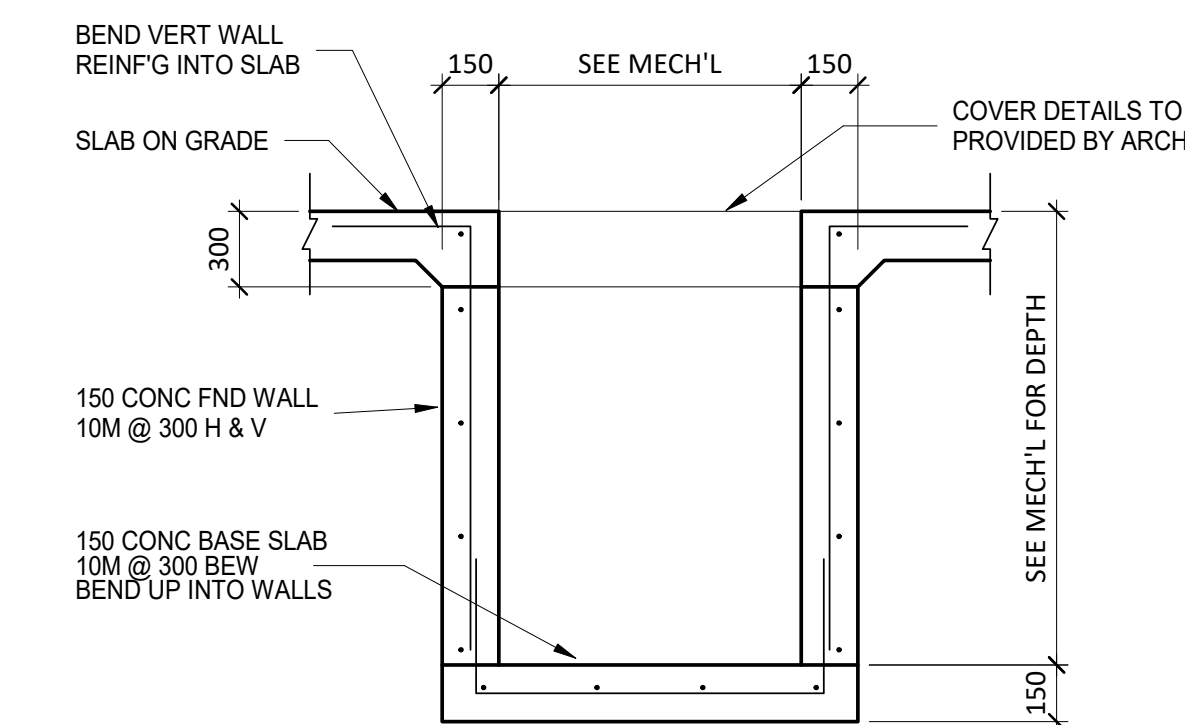
DESIGN & DETAILING CRITERIA FOR SUPPLIERS

- MISCELLANEOUS METALS & STEEL STAIRS**
 - MISC METALS & STEEL STAIRS ARE TO BE DESIGNED & DETAILED BY MISC METALS & STEEL STAIRS SUPPLIER. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL MISC METAL & STEEL STAIR WORK IS TO BE INSPECTED DURING CONSTRUCTION BY THE MISC METALS & STEEL STAIRS DESIGN ENGINEER
 - TEMPORARY SHORING (FOR DEMOLITION AND/OR CONSTRUCTION)**
 - TEMPORARY SHORING FOR THE PURPOSES OF DEMOLITION AND/OR CONSTRUCTION IS TO BE DESIGNED & DETAILED BY A PROFESSIONAL ENGINEER LICENSED IN ONTARIO. SHOP DRAWINGS ARE TO BE SUBMITTED TO THE DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. PERMIT REVIEW OF TEMPORARY SHORING BY CULNIFEA & ASSOCIATES PRIOR TO COMMENCEMENT OF CONSTRUCTION AND/OR DEMOLITION AND ALSO PRIOR TO REMOVAL OF TEMPORARY SHORING.
 - SEISMIC RESTRAINT OF MECHL EQUIPMENT & PIPING**
 - SEISMIC RESTRAINT OF MECHL EQUIPMENT & PIPING TO BE DETAILED BY MECHL EQUIPMENT & PIPING SUPPLIER OR CONTRACTOR. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL SEISMIC RESTRAINT INSTALLATIONS ARE TO BE INSPECTED DURING CONSTRUCTION BY THE DESIGN ENGINEER OR RECORD
 - SEISMIC RESTRAINT OF SUSPENDED CEILINGS**
 - SEISMIC RESTRAINT OF SUSPENDED CEILINGS TO BE DETAILED BY CEILING SUPPLIER OR CONTRACTOR. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL SEISMIC RESTRAINT INSTALLATIONS ARE TO BE INSPECTED DURING CONSTRUCTION BY THE DESIGN ENGINEER OR RECORD
 - PRE-MANUFACTURED PRECAST CONCRETE TRENCH DRAIN**
 - PRE-MANUFACTURED PRECAST CONCRETE TRENCH DRAIN SYSTEM TO BE DESIGNED & DETAILED BY TRENCH DRAIN SUPPLIER. SHOP DRAWINGS ARE TO BE SUBMITTED TO THE DEPARTMENTAL REPRESENTATIVE FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. TRENCH DRAIN INSTALLATIONS ARE TO BE INSPECTED DURING CONSTRUCTION BY THE DESIGN ENGINEER OR RECORD
 - SEISMIC RESTRAINT OF SUSPENDED CEILINGS**
 - SEISMIC RESTRAINT OF SUSPENDED CEILINGS TO BE DETAILED BY CEILING SUPPLIER OR CONTRACTOR. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL SEISMIC RESTRAINT INSTALLATIONS ARE TO BE INSPECTED DURING CONSTRUCTION BY THE DESIGN ENGINEER OR RECORD
 - COLD FORMED STEEL STUDS & JOISTS**
 - STEEL STUDS & JOISTS ARE TO BE DESIGNED AND DETAILED BY STEEL STUDS & JOISTS SUPPLIER. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL STEEL STUD & JOIST WORK IS TO BE INSPECTED DURING CONSTRUCTION BY THE STEEL STUD & JOIST DESIGN ENGINEER.
 - GUARDS & HANDRAILS**
 - GUARDS & HANDRAILS ARE TO BE DESIGNED & DETAILED BY STEEL SUPPLIER IN ACCORDANCE WITH THE CURRENT BUILDING CODE REQUIREMENTS. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL GUARDS & HANDRAIL WORK IS TO BE INSPECTED DURING CONSTRUCTION BY THE GUARD & HANDRAIL DESIGN ENGINEER.
 - NOTICE TO FIRE PROTECTION CONTRACTORS**
 - THE STRUCTURE HAS BEEN DESIGNED TO THE 2012 OBC AND HAS NOT BEEN DESIGNED WITH LOAD RESTRICTIONS THAT ARE DESCRIBED IN THE B30VC GUIDE.
 - ASSUME THAT THE FLOOR STRUCTURE IS NOT "RESTRAINED" WITH RESPECT TO THERMAL EXPANSION UNLESS THIS IS VERIFIED BY A PROFESSIONAL ENGINEER LICENSED IN ONTARIO AND SEALED CALCULATIONS ARE SUBMITTED FOR REVIEW.
 - FIRE PROTECTION CONTRACTOR IS TO REVIEW ALL MEMBER SIZES SHOWN ON THE STRUCTURAL DRAWINGS TO ENSURE FIRE RATING APPLICATION IS COMPATIBLE AND MEETS THE FIRE RATING REQUIREMENTS PROVIDED BY THE ARCHITECT.
 - REFER TO OTHER NOTES ON THE PLANS RELATING TO COMPATIBILITY OF PRIMERS AND FIRE PROTECTION MATERIALS AND STRUCTURAL STEEL OPEN WEB STEEL JOIST DESIGN AND COORDINATION.
- NOTE:**
INSPECTION REPORTS CREATED AS A RESULT OF THE ABOVE NOTED WORK MUST BE SUBMITTED TO THE CONSTRUCTION MANAGER. CONSTRUCTION MANAGER IS TO PROVIDE COPIES TO THE CONSULTANTS.

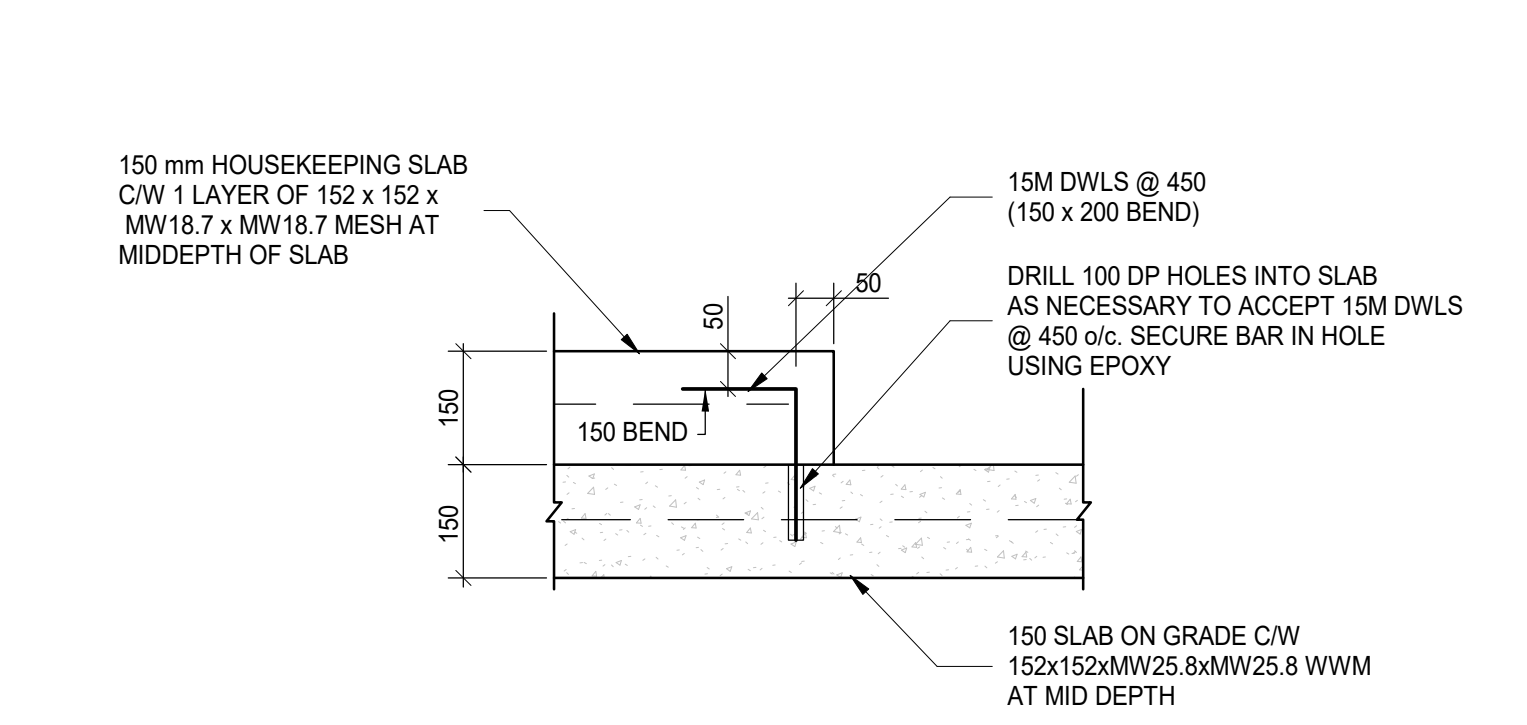
REINFORCING BAR LAP LENGTH TABLE

CONCRETE STRENGTH (MPa)	REINFORCING BAR LAP LENGTH (mm)			
	10M	15M	20M	25M
25	425	600	750	1200
30	400	550	675	1100
35	375	525	625	1000
40	350	475	600	950
45	325	450	550	900

FOR SPECIAL CONDITIONS MULTIPLY THE VALUES LISTED ABOVE BY THE FOLLOWING FACTORS:
1. EPOXY COATED REINFORCING (X 1.5)
2. HORIZONTAL REINFORCING WITH >300 mm CONCRETE BELOW (X 1.3)
3. FOR CONDITIONS 1 & 2 OCCURRING SIMULTANEOUSLY (X 1.7)

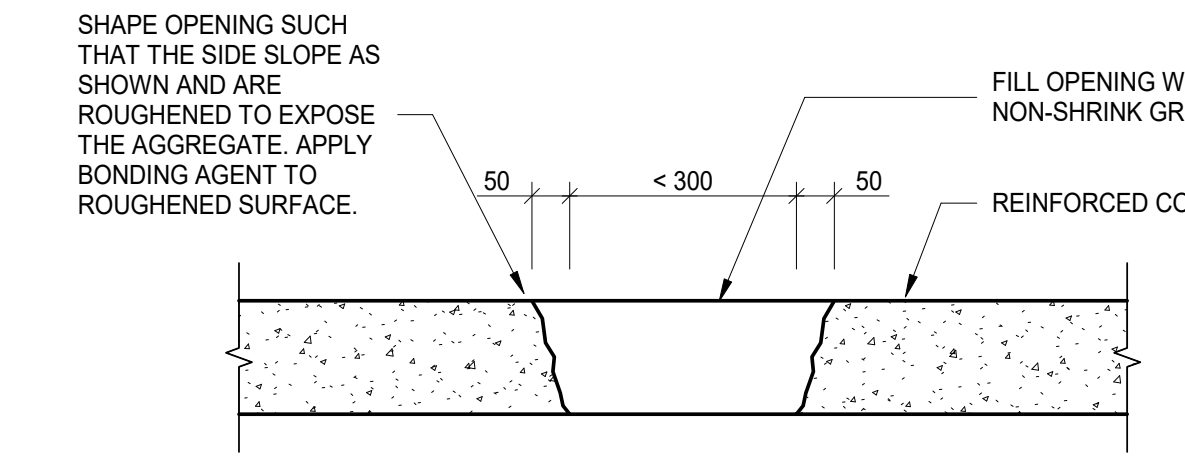


TYPICAL PIT DETAIL

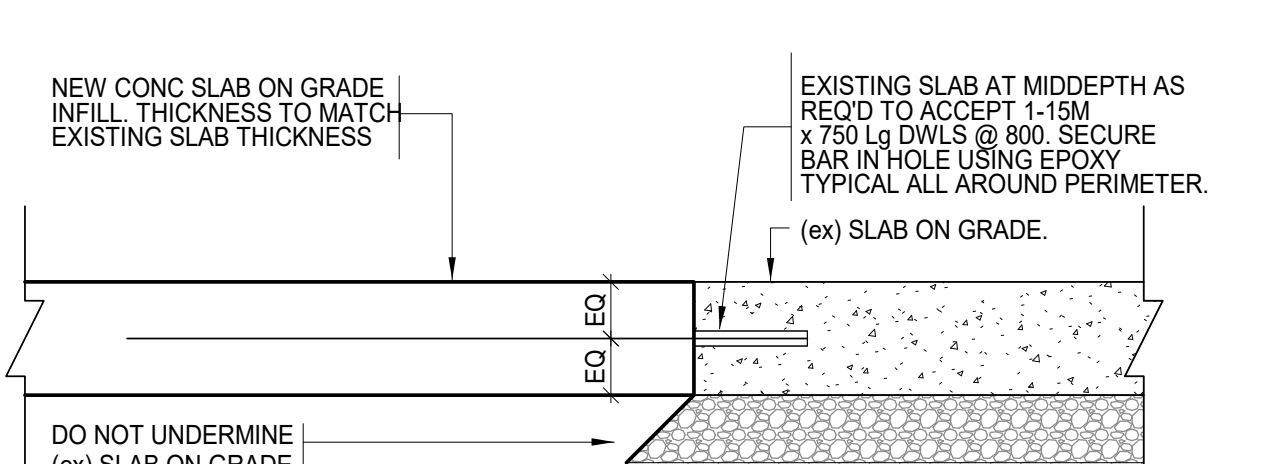


TYPICAL HOUSEKEEPING PAD DETAIL ON SLAB ON GRADE IN EAST PUMP ROOM

COORDINATE LOCATION & DIMENSIONS WITH MECHANICAL DRAWINGS



TYPICAL SMALL OPENING INFILL IN REINFORCED CONCRETE SLAB

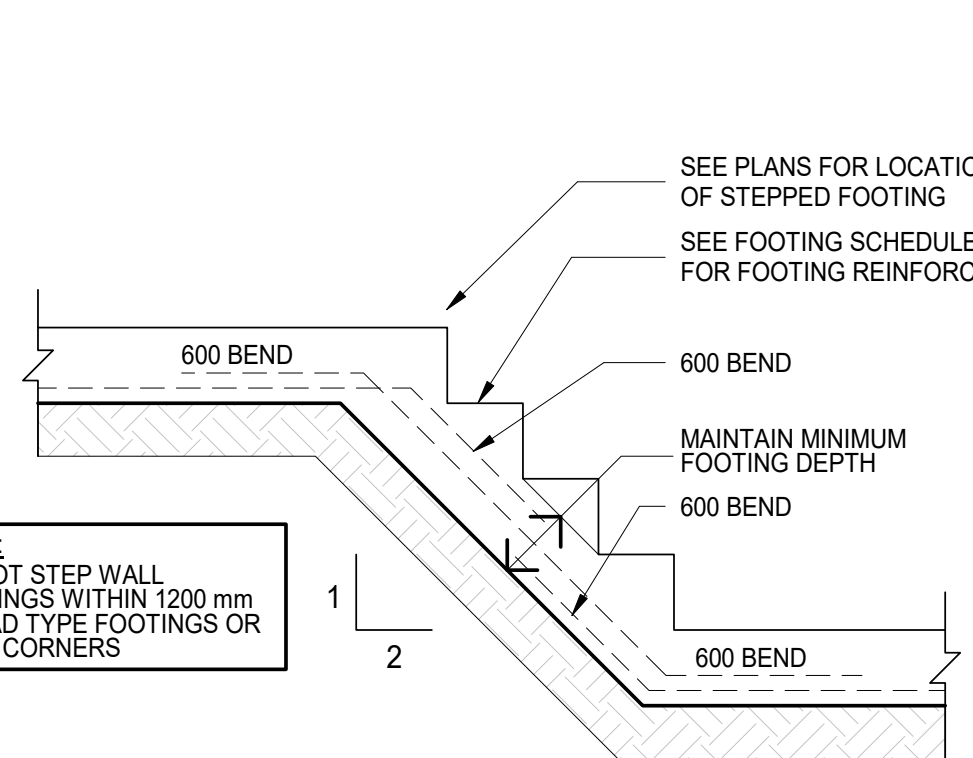


TYP. DETAIL- EXISTING SLAB ON GRADE INFILL

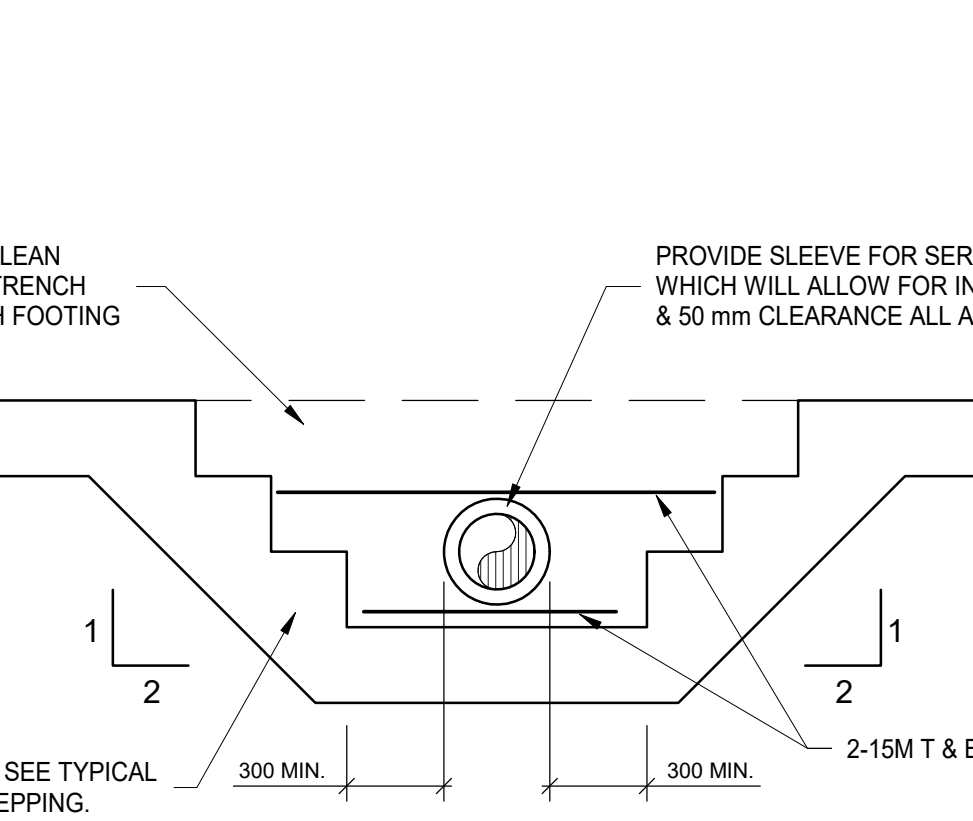
DO NOT UNDERMINE (ex) SLAB ON GRADE

TYPICAL PLAN DETAIL-MECHL PENETRATIONS THRU SLAB

MAXIMUM SPACING OF CONSTRUCTION JOINTS TO BE 20 metres



TYPICAL STEPPED WALL FOOTING DETAIL



DETAIL-FOUNDATION AT UNDERGROUND SERVICE ENTRY

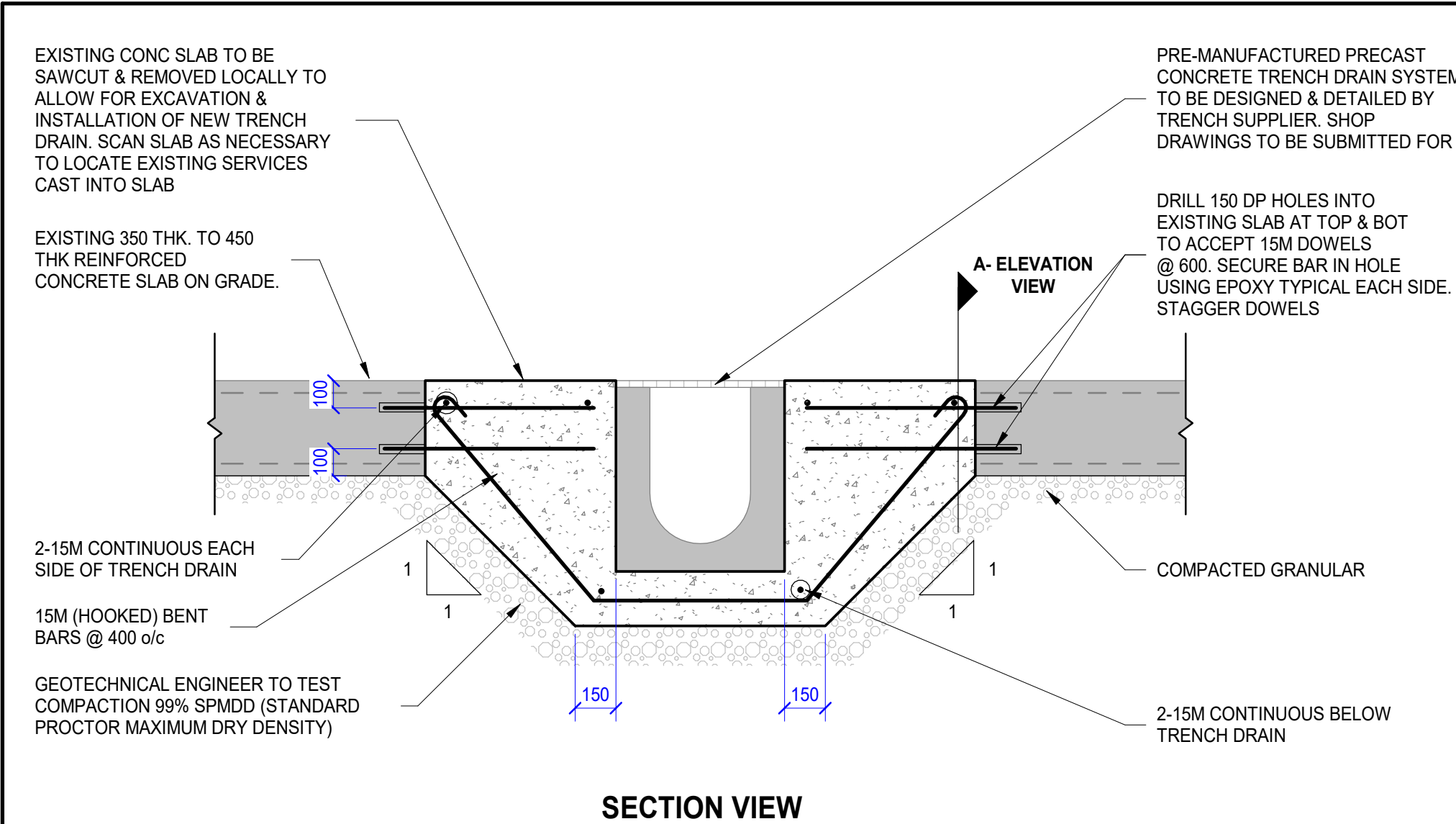
SEE PLANS AND MECHANICAL FOR LOCATION

CONCRETE COMPRESSIVE STRENGTH

SLAB ON GRADE INFILL- 35 MPa FAST-CURING CONCRETE



TYPICAL HANGER SLAB ON GRADE REPAIR COORDINATE LOCATION & DIMENSIONS WITH MECHANICAL DRAWINGS & TRENCH DRAIN SUPPLIER



SECTION VIEW

TYPICAL DETAIL AT NEW TRENCH DRAIN IN EXISTING HANGER SLAB ON GRADE

COORDINATE LOCATION & DIMENSIONS WITH MECHANICAL
DRAWINGS & TRENCH DRAIN SUPPLIER

A- ELEVATION VIEW



KEY PLAN
PLAN CLÉ



revision	description	date
07	ISSUED FOR TENDER	JAN 22 nd / 2021
06	ISSUED FOR TRANSLATION DOCUMENT, A TRADUIRE	JULY 20 th / 2020
05	ISSUED FOR 100% REVIEW DOCUMENT A 100%, A REVISER	JUNE 5 th / 2020
04	ISSUED FOR 96% REVIEW DOCUMENT A 96%, A REVISER	APR 30 / 2020
03	ISSUED FOR 66% REVIEW DOCUMENT A 66%, A REVISER	FEB 14 / 2020
02	ISSUED FOR 66% REVIEW DOCUMENT A 66%, A REVISER	SEP 30 / 2019
01	ISSUED FOR 66% REVIEW DOCUMENT A 66%, A REVISER	JAN 19 / 2018

A detail no. no. de plan	B location drawing no. no. de localisation	C drawing no. no. du dessin
A	B	C

project

project

PWGS#R.038348.001 HANGAR

N° DE PROJET DU HANGAR T-58 DE TPSCG

R.038348.001

200 COMET PRIVATE, OTTAWA, ONT.

FIRE SUPPRESSION SYSTEM

SYSTÈME DE SUPPRESSION D'INCENDIE

drawing

dessin

GENERAL NOTES &
TYPICAL DETAILS /

designed J. CUFF

conçu

date 2021-01-19

drawn A.M.

dessiné

date 2021-01-19

revised

révisé

date

approved

approuvé

date

lender KAILIE DUNN

soumission

PWC Project Manager

Administrateur de projets TPC

project no. R.038348.011

no. du projet

drawing no. S100 (ENGLISH)