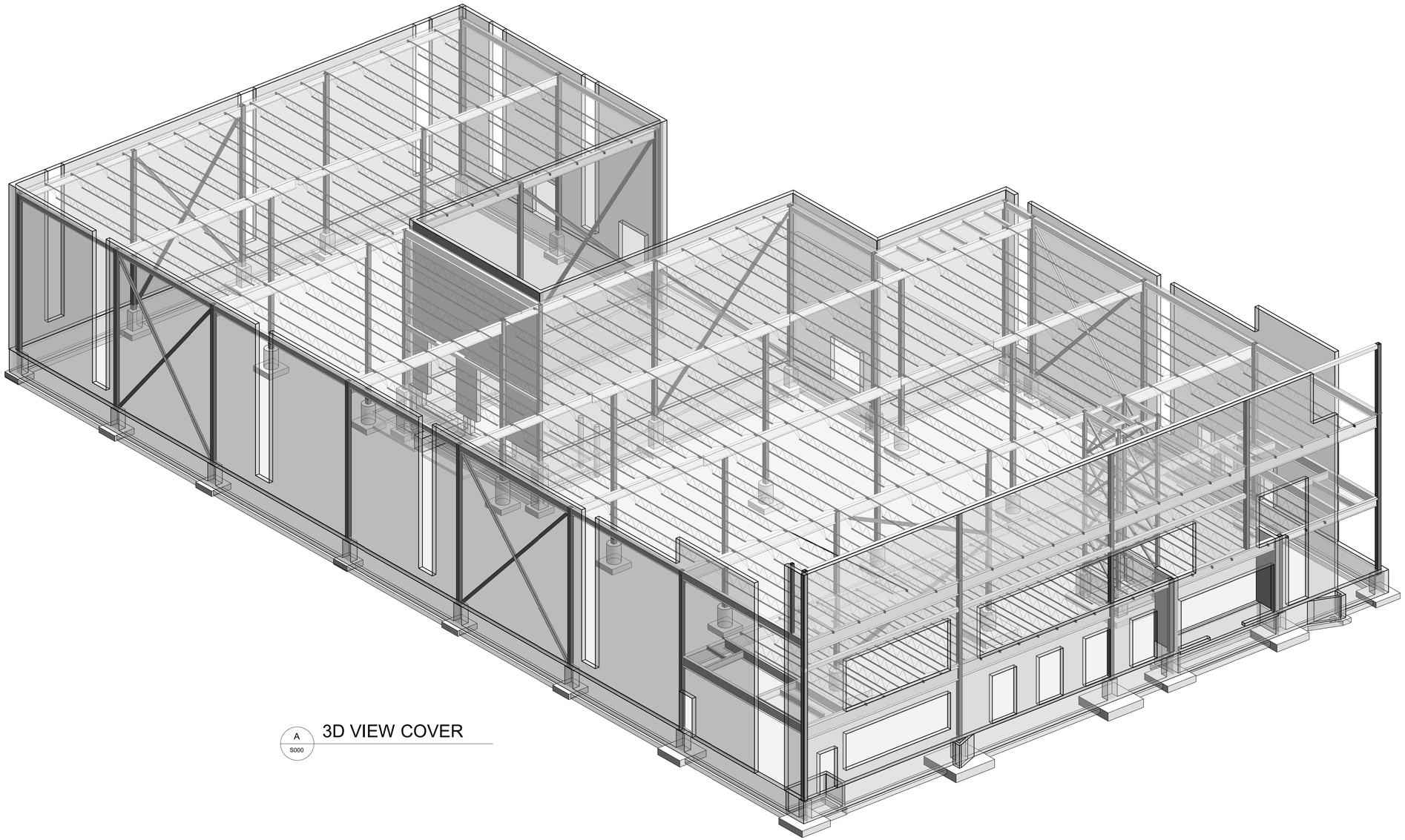


A
S000

3D VIEW COVER

STRUCTURAL ELEMENTS AND THEIR CONFIGURATION DETAILS ARE NOT PRESENTED IN THE 3D MODEL VIEW FOR TENDERING OR CONSTRUCTION PURPOSES AND ARE FOR INFORMATION ONLY.

Consultant:

ARCHITECT:

SAPLYS ARCHITECTS INC.
60 ST. CLAIR AVE E., SUITE 806
TORONTO, ONTARIO M4T 1N5
P: 905.510.0595

No.	Description	Date
2	ISSUED FOR BUILDING PERMIT	JUNE 27,25
1	ISSUED FOR 50% PROGRESS	MAY 30,24

Issues / Revision

CONFIRM ALL GRIDS, DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS. DO NOT SCALE DRAWINGS.

CONTACT ARCHITECT AND ENGINEER FOR ANY DISCREPANCIES.

ONLY LATEST APPROVED DRAWINGS TO BE USED FOR CONSTRUCTION.

AMR ENGINEERING LTD.
STRUCTURAL ENGINEERS
920 Alness Street, Suite 205,
Toronto, ON M3J 2H7
(416) 551 - 1611

Project North

PROJECT N. TRUE N.

Stamp:

LICENSED PROFESSIONAL ENGINEER
06-27-25
D. KOTOBELLI
100159847
PROVINCE OF ONTARIO

Project :

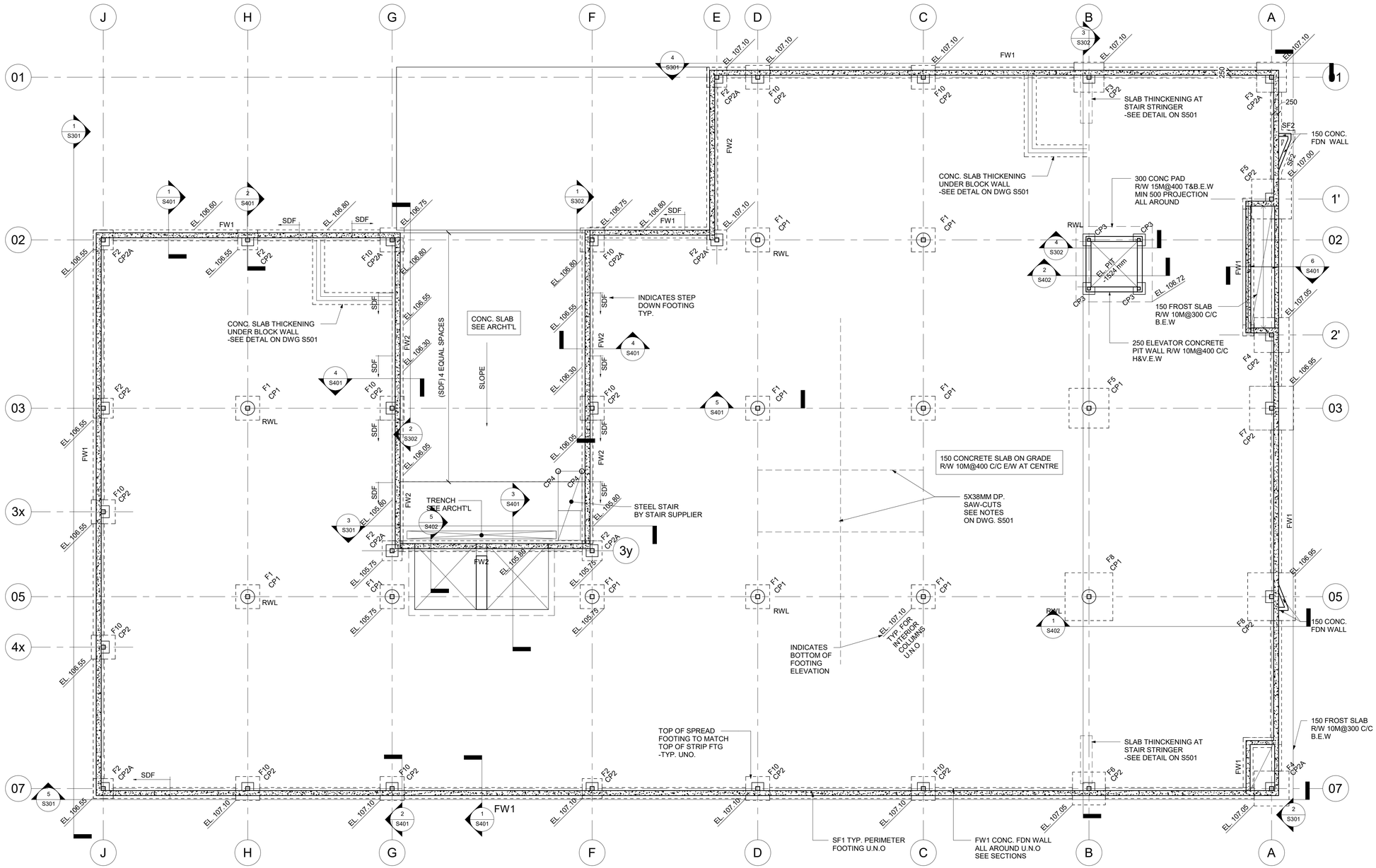
WAREHOUSE AND OFFICE HEADQUARTERS

45 BLOWERS CRES
AJAX, ON L1Z ON4

Drawing Title:

COVER SHEET

Date: 30-05-2024	Drawing No. S000
Scale: As Noted	
Drawn By: OH	
Checked By: DK	Job No: 2280



FOUNDATION PLAN

1 : 100

NOTES:

1. TOP OF CONCRETE ELEVATION IS 108.50 (0.0 DATUM) UNLESS CROSSED & NOTED OTHERWISE ON PLAN OR SECTIONS. CONFIRM TOP OF CONCRETE ELEVATON WITH ARCHT'L AND CIVIL DRAWINGS PRIOR TO FOOTING CONSTRUCTION.
2. SEE ARCHT'L DRAWINGS FOR DIMENSIONS, ELEVATIONS AND SLOPES.
3. PLACE SLAB ON GRADE ON COMPACTED GRANULAR BACKFILL AS RECOMMENDED BY THE SOIL CONSULTANT.
4. CENTER PIERS AND FOOTING UNDER CENTER LINE OF COLUMNS U.N.O. ON PLAN AND/OR SECTIONS.
5. STEP DOWN FOOTING (S.D.F.) AS REQUIRED TO SUIT MECH /ELEC. SERVICES SUCH THAT FOOTING ARE NOT UNDERMINED.
6. ACTUAL FOOTING ELEVATIONS TO BE CONFIRMED BY GEOTECHNICAL ENGINEER FOR THE DESIGN BEARING CAPACITY ON DWG. S501.
7. SEE ALSO GENERAL NOTES AND TYPICAL DETAILS ON DRAWINGS S501 & S502.

Consultant:

ARCHITECT:

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Stamp: LICENSED PROFESSIONAL ENGINEER 06-27-25 D. KOTOBELLI 100159847 PROVINCE OF ONTARIO

Project :

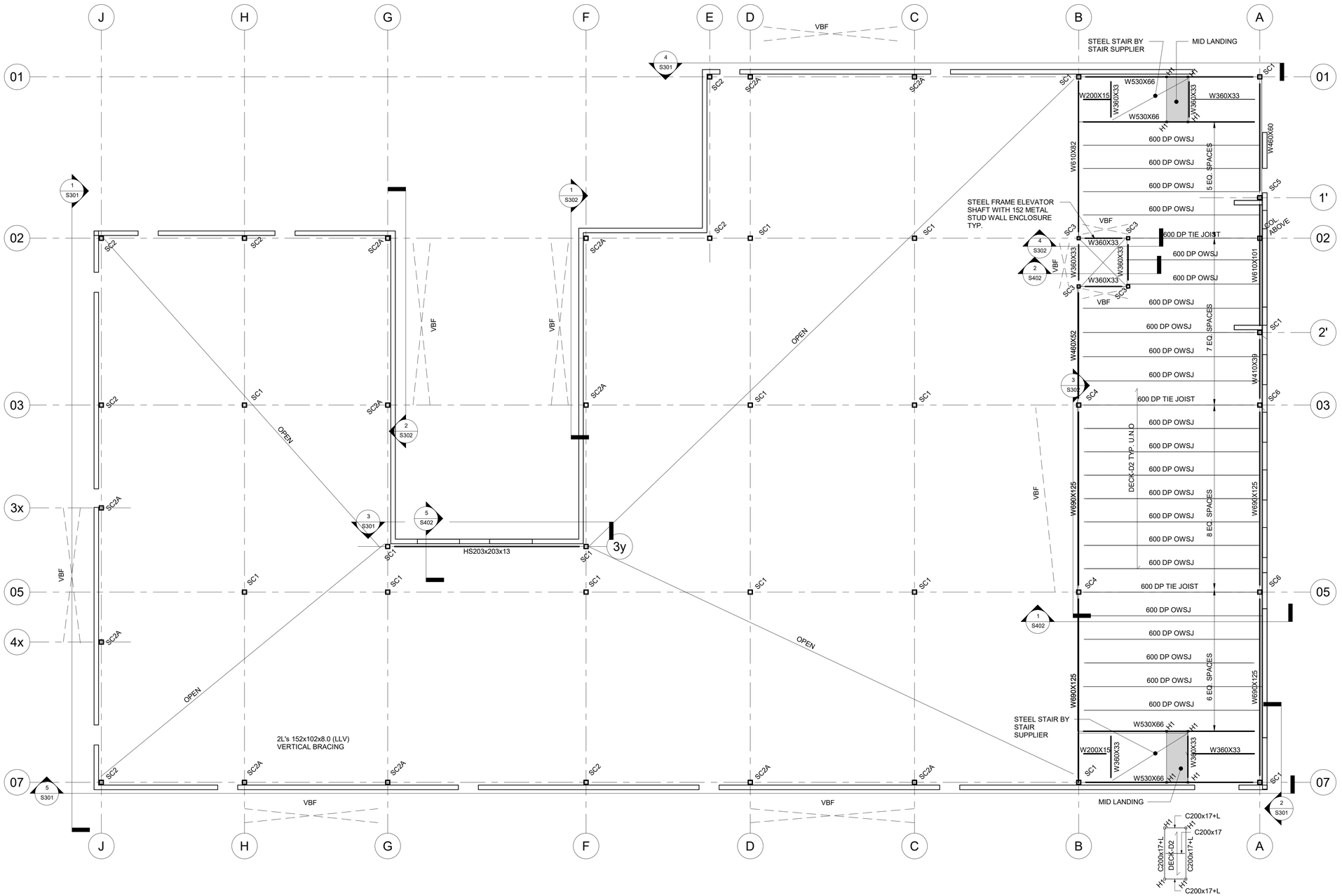
WAREHOUSE AND OFFICE HEADQUARTERS

45 BLOWERS CRES
AJAX, ON L1Z ON4

Drawing Title:

FOUNDATION PLAN

Date: 30-05-2024	Drawing No. S101
Scale: As Noted	
Drawn By: OH	
Checked By: DK	Job No: 2280



A S102

SECOND FLOOR FRAMING PLAN

1 : 100

NOTES:

1. TOP OF CONCRETE AT SECOND FLOOR IS AT ELEVATION +3962mm ABOVE GROUND FLOOR SLAB.
2. TOP OF OWSJ'S IS 100MM BELOW TOP OF CONCRETE.
3. TOP OF STEEL BEAMS SUPPOTING OWSJ'S IS 200MM BELOW TOP OF CONCRETE UNLESS NOTED OTHERWISE ON PLAN AND/ OR SECTIONS. TOP OF STEEL BEAMS SUPPORTING STEEL DECK IS 100MM BELOW TOP OF CONCRETE.
4. COORDINATE CONNECTIONS OF P.C. PANELS TO STEEL BEAMS/COLUMNS WITH P.C. SUPPLIER.
5. SEE ALSO GENERAL NOTES AND TYPICAL DETAILS ON DRAWINGS S501 & S502.

DESIGN LOADS FOR SECOND FLOOR JOISTS:

DEAD LOAD	= 3.86 KPa.
LIVE LOAD	= 4.80 KPa.
TOTAL LOAD	= 8.66 KPa.

1. LIVE LOAD DEFLECTION OF FLOOR JOISTS SHALL NOT EXCEED L/480
2. TOTAL LOAD DEFLECTION OF FLOOR JOISTS SHALL NOT EXCEED L/360

H1: HSS102X102X6.4 HANGER FROM BEAM ABOVE FOR MID-LANDING SUPPORT

B/S102 - MID-LANDING FRAMING PLAN

Consultant:

ARCHITECT:

SAPLYS ARCHITECTS INC.
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Project North

PROJECT N. TRUE N.

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100159847
PROVINCE OF ONTARIO

Project :

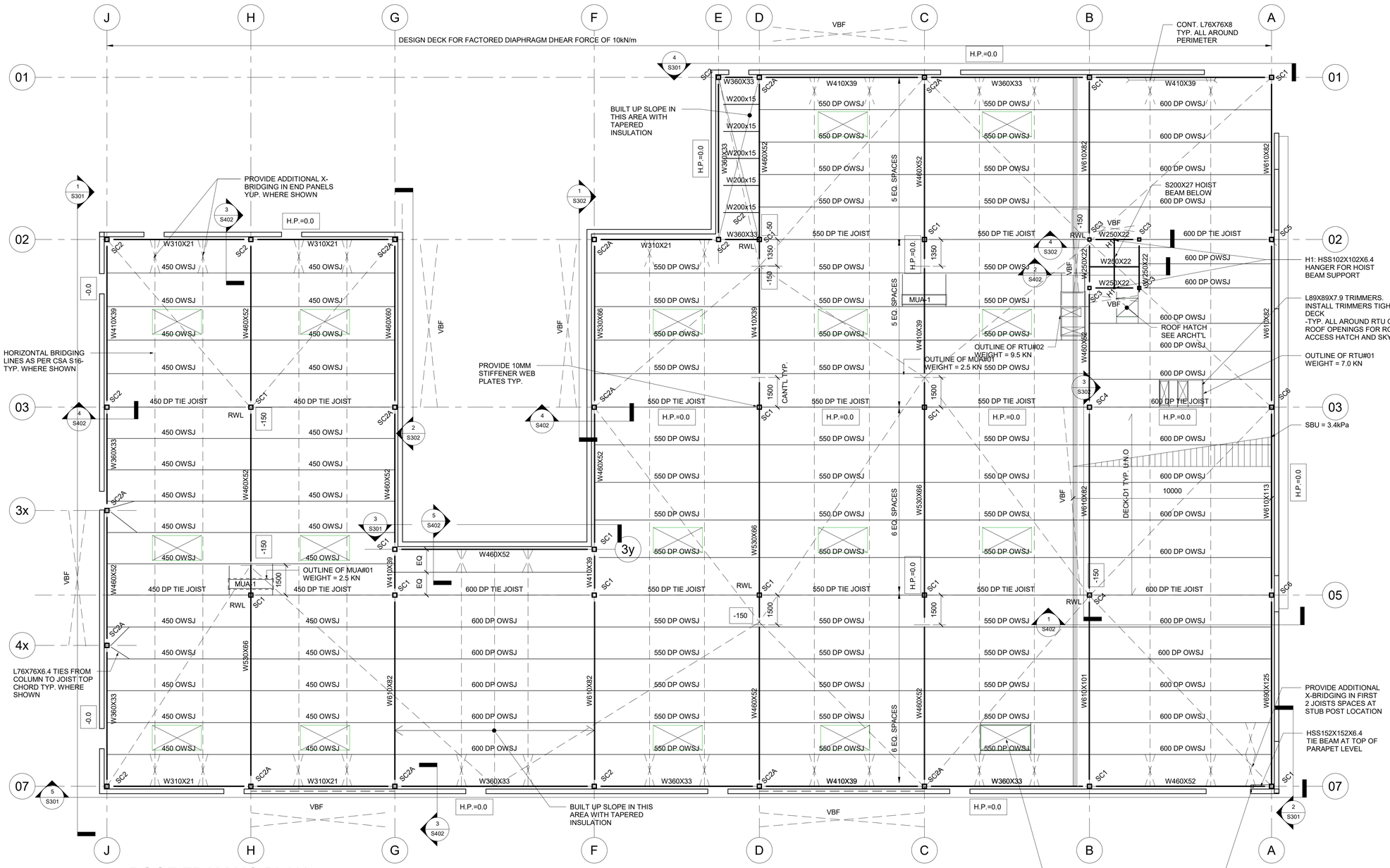
WAREHOUSE AND OFFICE HEADQUARTERS

45 BLOWERS CRES
AJAX, ON L1Z ON4

Drawing Title:

SECOND FLOOR FRAMING PLAN

Date: 30-05-2024	Drawing No. S102
Scale: As Noted	
Drawn By: OH	
Checked By: DK	Job No: 2280



ROOF FRAMING PLAN

A S103

1 : 100

NOTES:

1. TOP OF STEEL DECK AT ROOF HIGH POINT (0.0) ON PLAN IS +8572 MM ABOVE GROUND FLOOR UNLESS NOTED OTHERWISE ON PLAN AND/ OR SECTIONS.
2. TOP OF OWSJ IS 38MM BELOW TOP OF STEEL DECK. TOP OF STEEL BEAMS SUPPORTING OWSJ IS 100MM BELOW TOP OF OWSJ U.N.O. ON PLAN OR SECTIONS. TOP OF STEEL BEAMS SUPPORTING STEEL DECK IS 38MM BELOW TOP OF DECK.
3. COORDINATE CONNECTIONS OF PC. PANEL TO STEEL BEAMS/COLUMNS WITH PC. SUPPLIER.
4. SEE ARCHT'L DRAWINGS FOR DIMENSIONS, ELEVATIONS AND ROOF SLOPES.
5. SEE ALSO GENERAL NOTES AND TYPICAL DETAILS ON DRAWINGS S501 & S502.

DESIGN LOADS FOR ROOF JOISTS

DEAD LOAD	= 1.20 KPa. + MECH'L
LL (SNOW LOAD)	= 1.20 KPa. + SBU
TOTAL LOAD	= 2.40 KPa. +MECH'L + SBU

NOTES:

1. ADD MECHANICAL LOADS WHERE SHOWN ON PLAN.
2. COORDINATE LOCATION OF ROOF TOP UNITS WITH MECHANICAL.
3. DESIGN ALL JOISTS FOR AN ADDITIONAL LOAD ON 1.8KN AT ANY LOCATION ALONG THE SPAN.
4. DESIGN AND CONNECT ALL ROOF JOISTS FOR WIND UPLIFT AS PER WIND DIAGRAM ON THIS DRAWING
5. ALL LOADS ARE SPECIFIED (UNFACTORED) LOADS. LIVE LOAD DEFLECTION < L/360.

NOTE 'A'

ALL INSULATED PRECAST PANELS ARE TO BE SELF SUPPORTING. CONNECT TO STRUCTURE FOR LATERAL SUPPORT ONLY TYP. UNO.

NOTE 'B'

ALL EXTERIOR STEEL FRAMING EXPOSED TO ELEMENTS SHALL BE HOT DIPPED GALVANIZED AS PER CSA-G164-18.

NOTE 'C' - DESIGN CODE

THE COMPLETED BASE BUILDING STRUCTURE SHOWN ON THE STRUCTURAL DRAWINGS HAS BEEN DESIGNED IN SUBSTANTIAL ACCORDANCE WITH THE AMENDED ONTARIO BUILDING CODE 2012 WHICH IS BASED ON THE NATIONAL BUILDING CODE OF CANADA 2015.

Consultant:

ARCHITECT:

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06-27-25
D. KOTOBELLI
100159847
PROVINCE OF ONTARIO

Project :

WAREHOUSE AND OFFICE HEADQUARTERS

45 BLOWERS CRES
AJAX, ON L1Z ON4

Drawing Title:

ROOF FRAMING PLAN

Date: 30-05-2024	Drawing No. S103
Scale: As Noted	
Drawn By: OH	
Checked By: DK	Job No: 2280

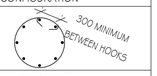
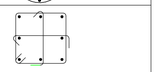
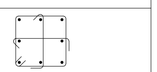
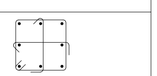
STRIP FOOTING SCHEDULE

MARK	SIZE	NOTES
SF1	600 X 250 DP. + 3-15M CONT.	PROVIDE 15M DOWELS TO FOUNDATION WALL ABOVE (SEE SECTIONS)
SF2	500X 250 DP. + 2-15M CONT.	PROVIDE 15M DOWELS TO FOUNDATION WALL ABOVE (SEE SECTIONS)

SPREAD FOOTING SCHEDULE

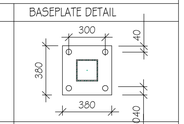
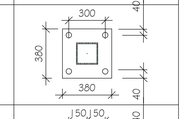
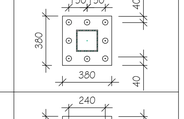
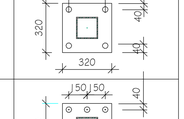
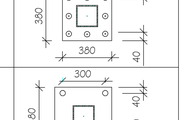
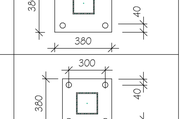
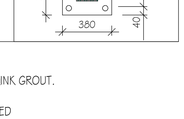
MARK	SIZE	NOTES
F1	1250X1250X300 DP. RW/ 5-15M B.E.W.	PROVIDE DOWELS TO MATCH PIER VERTICALS (SEE SECTIONS)
F2	1000X1000X300 DP. RW/ 4-15M B.E.W.	PROVIDE DOWELS TO MATCH PIER VERTICALS (SEE SECTIONS)
F3	1500X1500X350 DP. RW/ 6-15M B.E.W.	PROVIDE DOWELS TO MATCH PIER VERTICALS (SEE SECTIONS)
F4	1750X1750X350 DP. RW/ 7-15M B.E.W.	PROVIDE DOWELS TO MATCH PIER VERTICALS (SEE SECTIONS)
F5	2000X2000X400 DP. RW/ 8-15M B E.W.	PROVIDE DOWELS TO MATCH PIER VERTICALS (SEE SECTIONS)
F6	1650X1650X350 DP. RW/ 6-15M B E.W.	PROVIDE DOWELS TO MATCH PIER VERTICALS (SEE SECTIONS)
F7	2200X2200X450 DP. RW/ 7-20M B E.W.	PROVIDE DOWELS TO MATCH PIER VERTICALS (SEE SECTIONS)
F8	2400X2400X450 DP. RW/ 8-20M B.E.W.	PROVIDE DOWELS TO MATCH PIER VERTICALS (SEE SECTIONS)
F9	2000X2000X400 DP. RW/ 8-15M T&B E.W.	PROVIDE DOWELS TO MATCH PIER VERTICALS (SEE SECTIONS)
F10	1200X1200X300 DP. RW/ 5-15M T&B E.W.	PROVIDE DOWELS TO MATCH PIER VERTICALS (SEE SECTIONS)

PIER SCHEDULE

MARK	SIZE	PIER CONFIGURATION
CP1	700Ø CONC. PIER +8-20M VERTICALS +10M@300 TIES +2 TIES AT TOP	
CP2	600X650 CONC. PIER + 8-20M VERTICALS +3-10M@300 TIES +2 TIES AT TOP	
CP2A	650X650 CONC. PIER + 8-20M VERTICALS +3-10M@300 TIES +2 TIES AT TOP	
CP3	600X600 CONC. PIER + 8-20M VERTICALS +3-10M@300 TIES +2 TIES AT TOP	
CP4	250 DIA. PIER (UNREINFORCED) 150 ABOVE GARDE	

NOTES:
1. TOP OF PIERS IS 250MM BELOW FINISH FLOOR ELEVATION TYP. U.N.O.
2. TOP ON INTERIOR PIERS AT R.W.L. IS 450MM BELOW FINISH FLOOR ELEVATION TYP. U.N.O.

STEEL COLUMN SCHEDULE

MARK	SIZE	BASEPLATE	ANCHOR BOLTS	BASEPLATE DETAIL
SC1	HSS 203X203X8.0	380X25X380	4- 25Ø X 600 LONG. ANCHOR BOLTS (75 HOOK)	
SC2	HSS 203X203X6.4	380X20X380	4- 25Ø X 600 LONG. ANCHOR BOLTS (75 HOOK)	
SC2A	HSS 203X203X6.4	380X25X380	8- 25Ø X 600 LONG. HEADED ANCHOR BOLTS.	
SC3	HSS 152X152X6.4	320X20X320	4- 25Ø X 600 LONG. ANCHOR BOLTS (75 HOOK)	
SC4	HSS 203X203X8.0	380X25X380	8- 25Ø X 600 LONG. HEADED ANCHOR BOLTS	
SC5	HSS 203X203X9.5	380X25X380	4- 25Ø X 600 LONG. ANCHOR BOLTS (75 HOOK)	
SC6	HSS 203X203X13	380X25X380	4- 25Ø X 600 LONG. ANCHOR BOLTS (75 HOOK)	

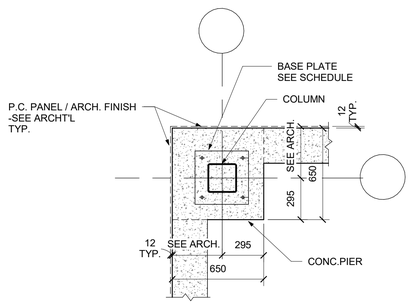
NOTES:
1. UNDER ALL COLUMN BASE PLATE PROVIDE 6MM LEVELING PLATE AND 44MM NON-SHRINK GROUT. LEVELING PLATE SHALL PROJECT 12MM BEYOND COLUMN BASE PLATE ALL AROUND.
2. ALL EXTERIOR STEEL COLUMNS BASE PLATE , ANCHOR BOLTS ETC. SHALL BE HOT DIPPED GALVANIZED DURING STEEL FABRICATION.

STEEL DECK SCHEDULE

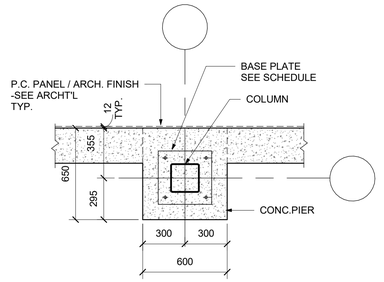
MARK	SIZE	NOTES
D1	38MM STEEL DECK - MIN 22 GA. (0.76mm)	- MIN. 3 SPAN CONTINUOUS WHEREVER POSSIBLE - DESIGN DECK FOR A FACTORED DIAPHRAGM SHEAR FORCES SHOWN ON ROOF FRAMING PLAN
D2	62MM CONC. R/W 152X152 MW18.7 X MW18.7 WWF + 38MM STEEL DECK - MIN 22 GA. (0.76MM COMPOSITE DECK)	- MIN. 3 SPAN CONTINUOUS

FOUNDATION WALL SCHEDULE

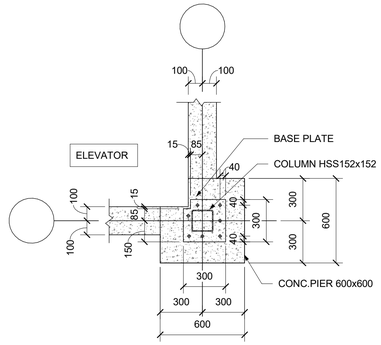
MARK	SIZE	REINFORCING
FW1	250 CONCRETE WALL	2-15M TOP & BOTTOM & MIDDLE SEE ALSO PLAN, SECTIONS AND GENERAL NOTES.
FW2	250 CONCRETE WALL	15M@400 C/C V & H E.F. SEE ALSO PLAN, SECTIONS AND GENERAL NOTES.



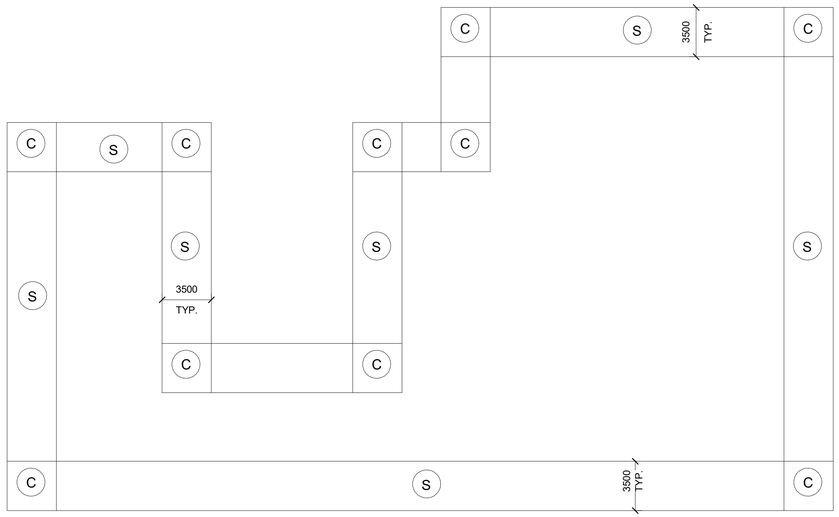
DETAIL OF CONC. PIER
CP2A: 650x650



DETAIL OF CONC. PIER
CP2: 600x650



CONC. PIER CP3 DETAIL



ROOF WIND UPLIFT (GROSS) DIAGRAM

R =0.72 KPa.
S =1.20 KPa.
C =1.62 KPa

FOR CALCULATION OF NET UPLIFT ROOF
DEAD LOAD = 0.72 KPa.

A
S201

ROOF WIND UPLIFT DIAGRAM
1 : 200

Consultant:

ARCHITECT:

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PROVINCE OF ONTARIO

Project :

WAREHOUSE AND OFFICE HEADQUARTERS

45 BLOWERS CRES
AJAX, ON L1Z ON4

Drawing Title:

SCHEDULES & PIER DETAILS

Date: 30-05-2024

Drawing No.

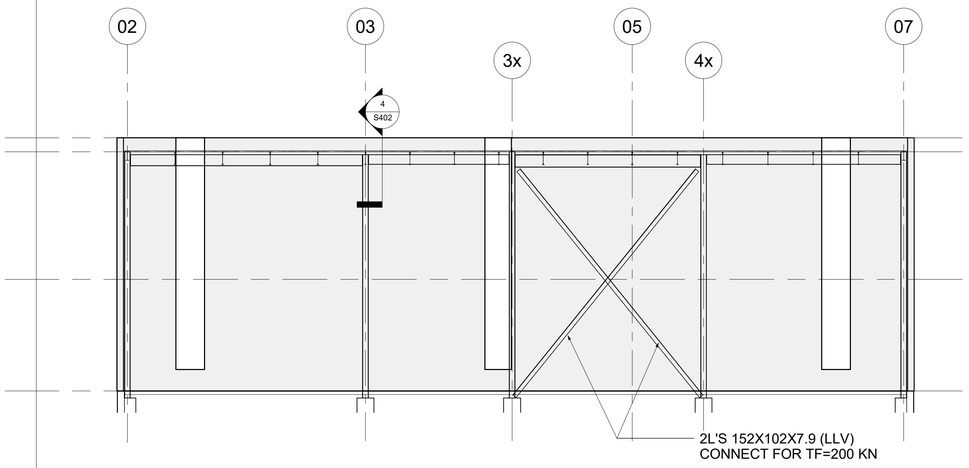
S201

Scale: As Noted

Drawn By: Author

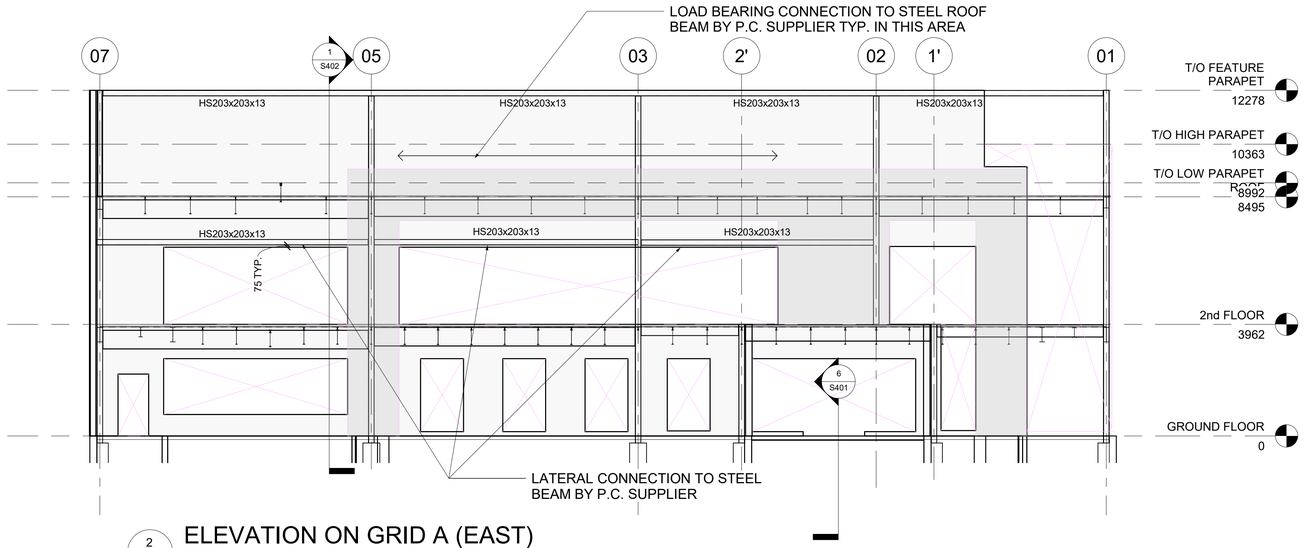
Checked By: Checker

Job No: 2280



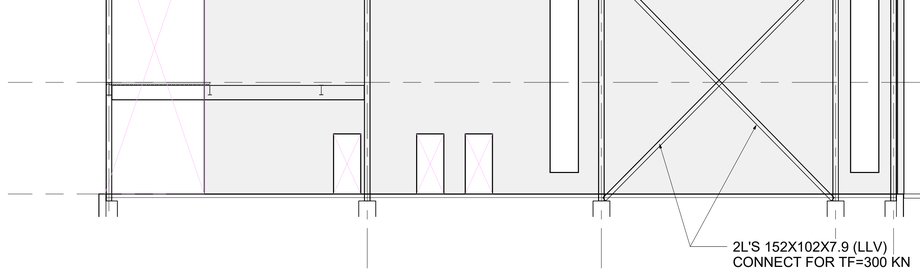
1 S301 ELEVATION ON GRID J (WEST)

1 : 100



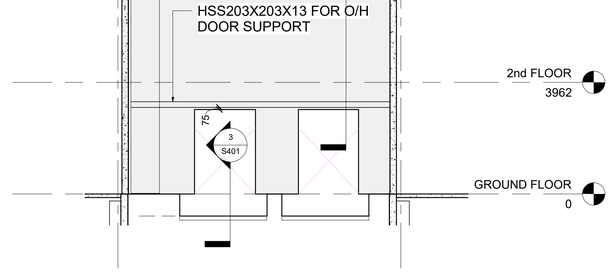
2 S301 ELEVATION ON GRID A (EAST)

1 : 100



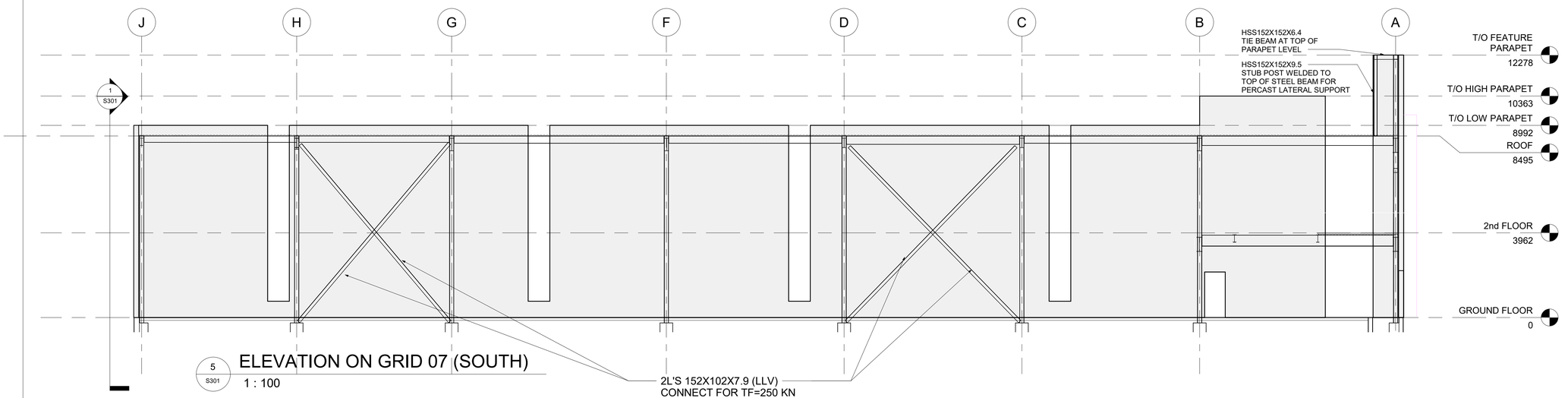
4 S301 PART ELEVATION ON GRID 01 (NORTH)

1 : 100



3 S301 PART ELEVATION LOADING DOCK (NORTH)

1 : 100



5 S301 ELEVATION ON GRID 07 (SOUTH)

1 : 100

Consultant:

ARCHITECT:

SAPLYS ARCHITECTS INC.
60 ST. CLAIR AVE E., SUITE 806
TORONTO, ONTARIO M4T 1N5
P: 905.510.0595

No.	Description	Date
2	ISSUED FOR BUILDING PERMIT	JUNE 27,25
1	ISSUED FOR 50% PROGRESS	MAY 30,24

Issues / Revision

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AMR ENGINEERING LTD.
STRUCTURAL ENGINEERS
920 Alness Street, Suite 205,
Toronto, ON M3J 2H7
(416) 551 - 1611

Project North

Stamp:

LICENSED PROFESSIONAL ENGINEER
06-27-25
D. KOTOBELLI
100159847
PROVINCE OF ONTARIO

Project :

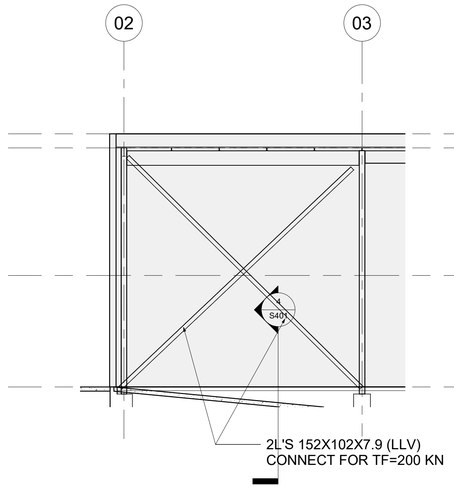
WAREHOUSE AND OFFICE HEADQUARTERS

45 BLOWERS CRES
AJAX, ON L1Z ON4

Drawing Title:

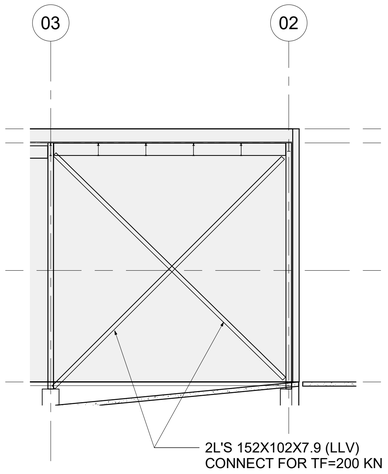
ELEVATIONS

Date: 30-05-2024	Drawing No. S301
Scale: As Noted	
Drawn By: Author	
Checked By: Checker	Job No: 2280



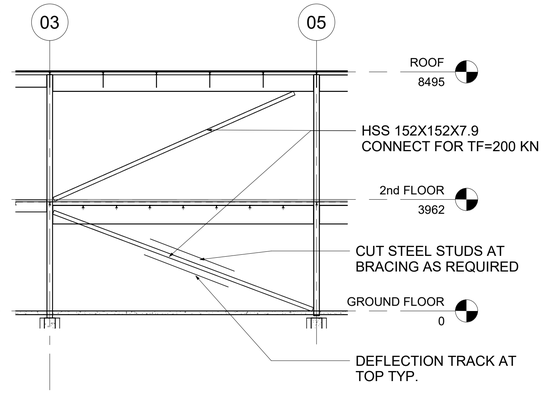
1 / S302 ELEVATION ON GRID F

1 : 100



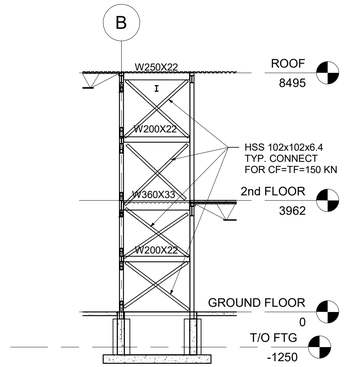
2 / S302 ELEVATION ON GRID G

1 : 100



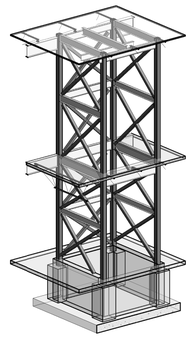
3 / S302 PART ELEVATION ON GRID B

1 : 100



4 / S302 ELEVATOR BRACING (TYP. 3 SIDES)

1 : 100



5 / S302 3D VIEW ELEVATOR

Consultant:

ARCHITECT:

SAPLYS ARCHITECTS INC.
60 ST. CLAIR AVE E., SUITE 806
TORONTO, ONTARIO M4T 1N5
P: 905.510.0595

No.	Description	Date
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PROVINCE OF ONTARIO

Project :

WAREHOUSE AND OFFICE HEADQUARTERS

45 BLOWERS CRES
AJAX, ON L1Z ON4

Drawing Title:

ELEVATIONS

Date: 30-05-2024

Scale: As Noted

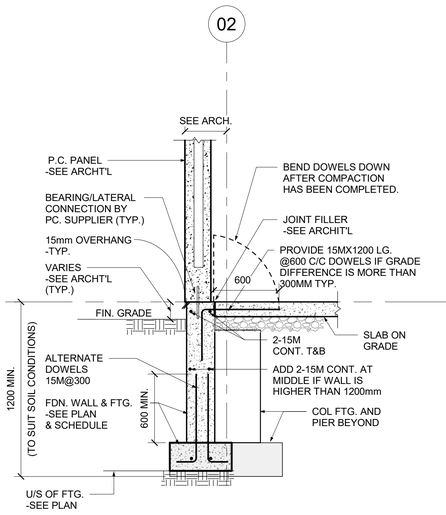
Drawn By: Author

Checked By: Checker

Drawing No.

S302

Job No: 2280



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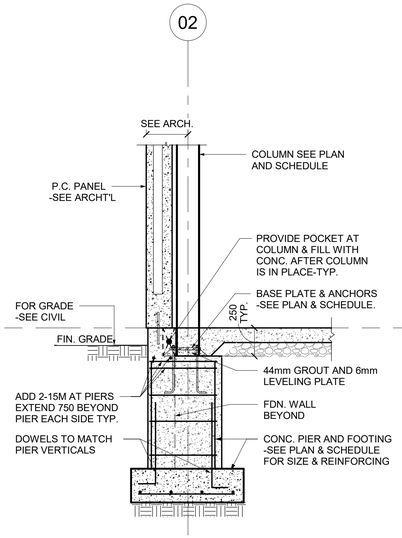
1 : 25



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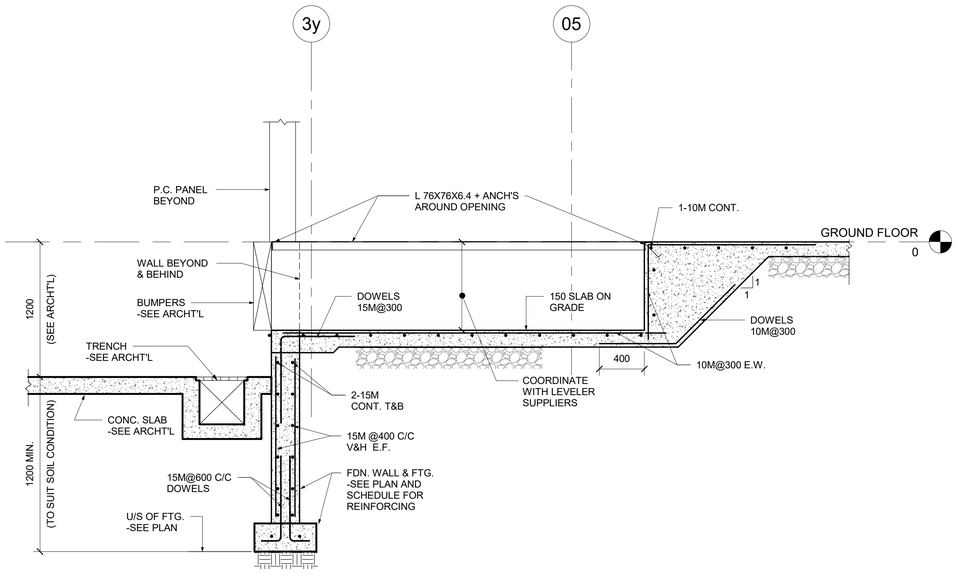

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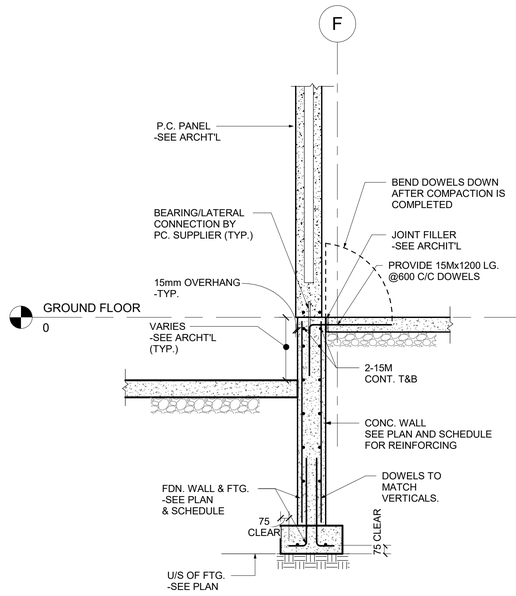

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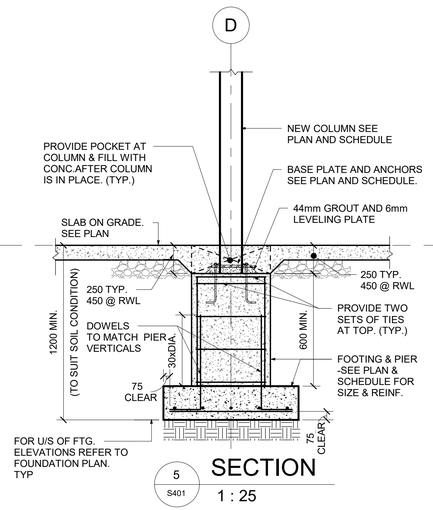

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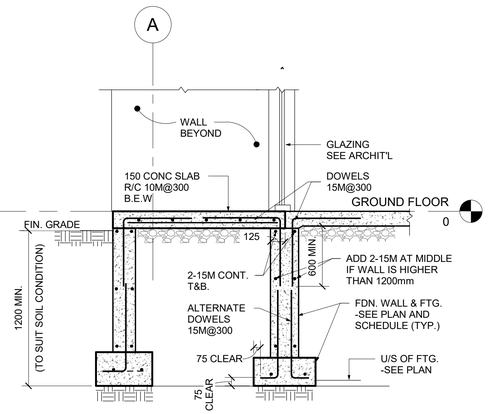

6 S401 SECTION
1 : 25

Consultant:

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No.	Description	Date
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06-27-25
D. KOTOBELLI
100159847
PROVINCE OF ONTARIO

Project :

WAREHOUSE AND OFFICE HEADQUARTERS

45 BLOWERS CRES
AJAX, ON L1Z ON4

Drawing Title:

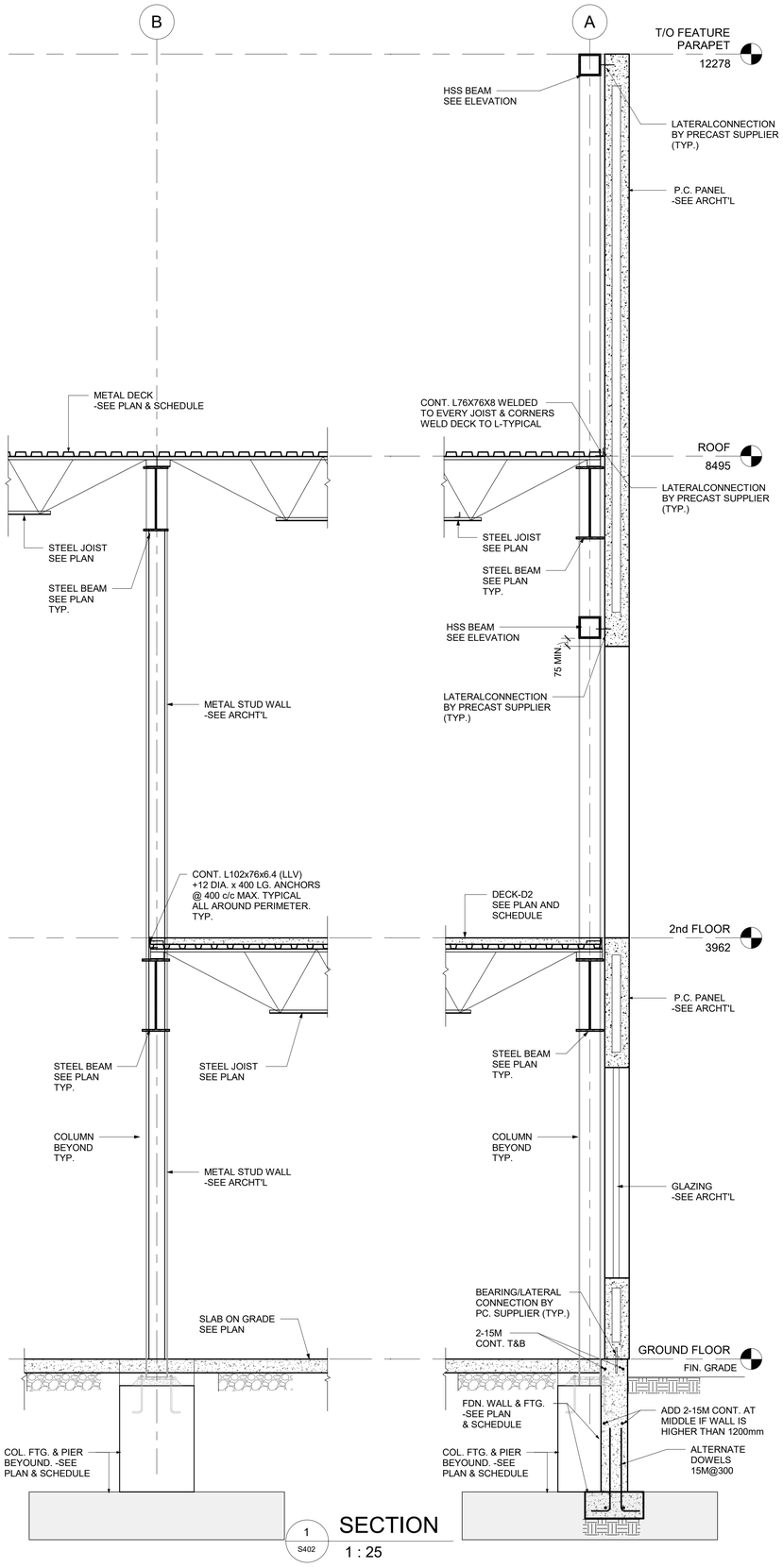
SECTIONS

Date: 06/08/21
Scale: As Noted
Drawn By: Author
Checked By: Checker

Drawing No.

S401

Job No: 2280



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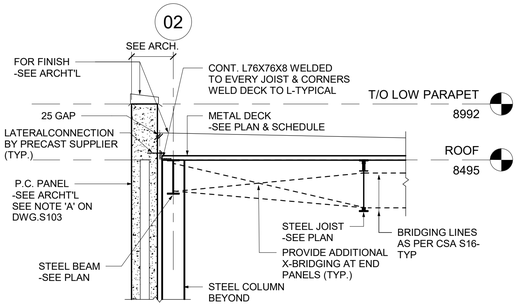

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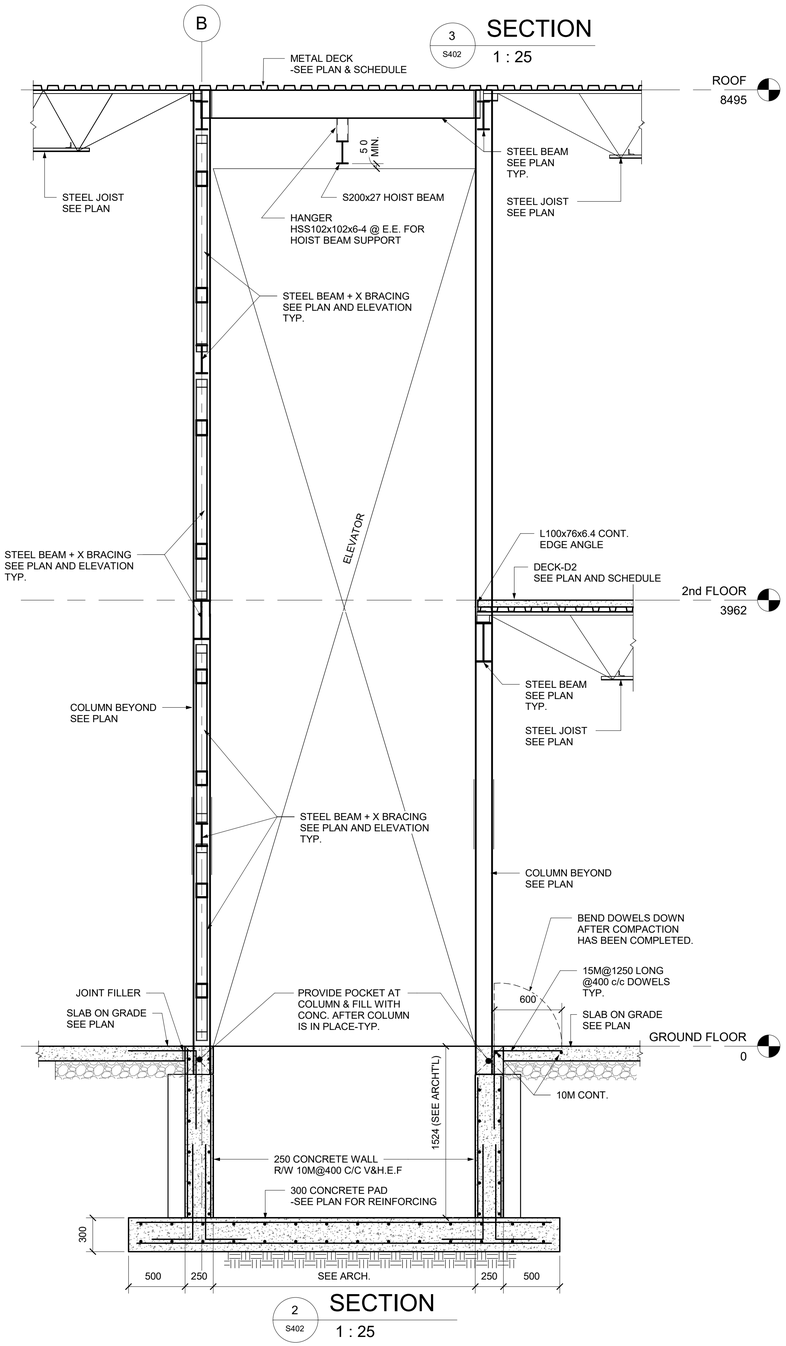
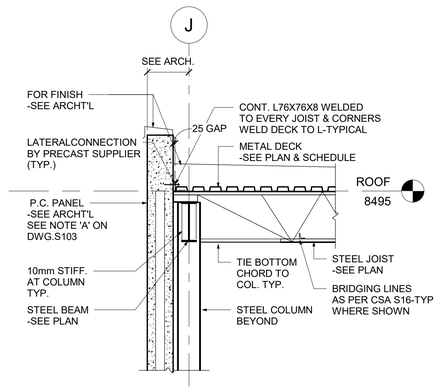


2 S402 SECTION 1 : 25



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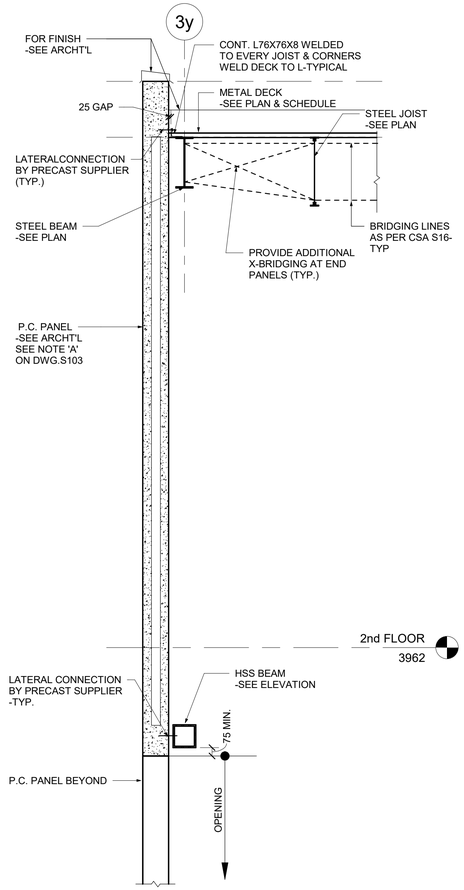

5 S402 SECTION 1 : 25

Consultant:

ARCHITECT:

SAPLYS ARCHITECTS INC.
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TORONTO, ONTARIO M4T 1N5
P: 905.510.0595

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06-27-25
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100159847
PROVINCE OF ONTARIO

Project :

WAREHOUSE AND OFFICE HEADQUARTERS

45 BLOWERS CRES
AJAX, ON L1Z ON4

Drawing Title:

SECTIONS

Date: 06/01/24	Drawing No. S402
Scale: As Noted	
Drawn By: Author	
Checked By: Checker	Job No: 2280

LIST OF STRUCTURAL DRAWINGS

DESIGN CODE

1. THE COMPLETED BASE BUILDING STRUCTURE SHOWN ON THE STRUCTURAL DRAWINGS HAS BEEN DESIGNED IN SUBSTANTIAL ACCORDANCE WITH THE AMENDED ONTARIO BUILDING CODE 2012 WHICH IS BASED ON THE NATIONAL BUILDING CODE OF CANADA 2015.

GENERAL NOTES

1. THE USE OF THESE DRAWINGS IS LIMITED TO THAT IDENTIFIED IN THE REVISIONS COLUMN.
2. THE INFORMATION ON THESE DRAWINGS SHALL NOT BE USED FOR ANY OTHER PROJECT OR WORKS. THE INFORMATION ON THESE DRAWINGS APPLIES SOLELY TO THIS PROJECT.
3. THE DRAWINGS DO NOT SHOW COMPONENTS THAT MAY BE NECESSARY FOR CONSTRUCTION SAFETY. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SAFETY IN AND ABOUT THE JOB SITE DURING CONSTRUCTION, AND THE DESIGN AND ERECTION OF ALL TEMPORARY STRUCTURES, FORMWORK, FALSE WORK, SHORING, ETC. REQUIRED TO COMPLETE THE WORK.
4. "NON-STRUCTURAL" OR "SECONDARY STRUCTURAL" ELEMENTS ARE NOT PART OF THE STRUCTURAL DESIGN SHOWN ON THESE DRAWINGS. SUCH ELEMENTS ARE DESIGNED, DETAILED AND REVIEWED IN THE FIELD BY OTHERS. THEY APPEAR ON DRAWINGS OTHER THAN THESE DRAWINGS OF AMR ENGINEERING LIMITED. WHERE STRUCTURAL ENGINEERING RESPONSIBILITY IS REQUIRED FOR THESE ELEMENTS, THIS SHALL BE PROVIDED BY SPECIALTY STRUCTURAL ENGINEERS, WHO SHALL ALSO PROVIDE ANY LETTERS REQUIRED BY BUILDING PERMIT AUTHORITIES.
5. SHOP DRAWINGS FOR NON-STRUCTURAL ELEMENTS WHICH MAY AFFECT THE PRIMARY STRUCTURAL SYSTEM SHALL BE SUBMITTED TO AMR ENGINEERING LIMITED. THESE DRAWINGS WILL BE REVIEWED ONLY FOR THE EFFECT OF THE ELEMENT ON THE PRIMARY STRUCTURAL SYSTEM.

DESIGN CRITERIA

1. FLOOR AND ROOF PLAN LOADING IS SHOWN ON PLANS.

   CONTRACTOR CONSTRUCTION LOADS MUST NOT EXCEED THE SPECIFIED DESIGN LOADS. DESIGN LOADS MAY ONLY BE APPLIED AFTER CONCRETE REACHES IT'S DESIGN STRENGTH.

2. SPECIFIED CONCENTRATED LOADS ARE AS FOLLOWS U.N.O.

   A. ROOFS ---------- 1.8 kN
   B. FLOORS ---------- 4.5 kN

3. CLIMATIC DATA:

3a. EARTHQUAKE DESIGN PARAMETERS (AJAX, ONTARIO)

Sa (0.2) = 0.21 Sa (5.0) = 0.0071 SITE CLASSIFICATION: SITE CLASS "C"
Sa (0.5) = 0.114 Sa (10.0) = 0.0028 Ie = 1.0 Fa = 1.0
Sa (1.0) = 0.06 PGA = 0.134 Rd = 1.5 Fv = 1.0
Sa (2.0) = 0.029 PGV = 0.091 Ro = 1.3 IeFaSa(0.2) = 0.21

ALL NON-STRUCTURAL COMPONENTS AND EQUIPMENT ARE TO BE LATERALLY RESTRAINED FOR SEISMIC LOADING IN ACCORDANCE WITH OBC2012 ARTICLE 4.1.8.18. CONTRACTOR TO SUBMIT SHOP DRAWINGS STAMPED BY P.ENG. LICENSED IN ONTARIO, FOR THE SUPPORT OF ALL NON STRUCTURAL BUILDING COMPONENTS AND EQUIPMENT.

3b. WIND DESIGN PARAMETERS:

Ce, Cg, and Cp ARE BASED ON OBC CL 4.1.7. Ct=1.0
WIND DESIGN CATEGORY - 2; TERRAIN - OPEN
$q(1_{50})$ = 0.48 kPa. Iw = 1.0 ULS. 0.75 SLS

WIND UPLIFT LOADS ON STEEL ROOFS SHALL BE 0.5 kPa. NET UNLESS OTHERWISE ON PLAN.

3c. SNOW AND RAIN DESIGN PARAMETERS:

BASIC ROOF SNOW LOAD: S=1.00 KPa
FACTORS Cb=0.8, Cw=1.0, Cs=1.0, Ca=1.0 Ct=1.0
SNOW LOADING (1_{50}) DESIGN DATA: Ss=1.20 KPa; Iw = 1.0 ULS, 0.90 SLS
RAIN LOADING (1_{50}) DESIGN DATA: Sr=0.40 KPa
24 HOUR RAIN: 92mm

ADDITIONAL SNOW ACCUMULATION AROUND MECHANICAL UNIT AND ADJACENT HIGHER ROOFS AS REQUIRED/INDICATED ON THE DRAWINGS.

NON-STRUCTURAL ELEMENTS

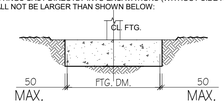
1. "NON-STRUCTURAL" OR "SECONDARY STRUCTURAL" ELEMENTS ARE NOT PART OF THE STRUCTURAL DESIGN SHOWN ON THESE DRAWINGS. SUCH ELEMENTS ARE DESIGNED, DETAILED AND REVIEWED IN THE FIELD BY OTHERS. THEY APPEAR ON DRAWINGS OTHER THAN THESE DRAWINGS OF AMR ENGINEERING LIMITED. WHERE STRUCTURAL ENGINEERING RESPONSIBILITY IS REQUIRED FOR THESE ELEMENTS, THIS SHALL BE PROVIDED BY SPECIALTY STRUCTURAL ENGINEERS, WHO SHALL ALSO PROVIDE ANY LETTERS REQUIRED BY BUILDING PERMIT AUTHORITIES.
2. EXAMPLES OF NON-STRUCTURAL ELEMENTS INCLUDE, BUT ARE NOT LIMITED TO:
   A. ARCHITECTURAL COMPONENTS SUCH AS GUARDRAILS, HANDRAILS, FLAG POSTS, CANOPIES, CEILINGS, MILLWORK, ETC.
   B. LANDSCAPE ELEMENTS SUCH AS BENCHES, LIGHT POSTS, PLANTERS, ETC.
   C. CLADDING, GLAZING, WINDOW MULLIONS, INTERIOR STUD WALLS AND EXTERIOR STUD WALLS.
   D. ARCHITECTURAL PRECAST, PRECAST CLADDING.
   E. MECHANICAL AND ELECTRICAL EQUIPMENT.
   F. WINDOW WASHING EQUIPMENT AND ITS ATTACHMENTS.
   G. ESCALATORS, ELEVATORS, AND CONVEYING SYSTEMS.
   H. BRICK OR BLOCK VENEERS AND THEIR ATTACHMENTS.
   I. NON-LOAD BEARING MASONRY.
   J. NON-STRUCTURAL CONCRETE TOPPINGS.
3. SHOP DRAWINGS FOR NON-STRUCTURAL ELEMENTS WHICH MAY AFFECT THE PRIMARY STRUCTURAL SYSTEM SHALL BE SUBMITTED TO AMR ENGINEERING LIMITED. THESE DRAWINGS WILL BE REVIEWED ONLY FOR THE EFFECT OF THE ELEMENT ON THE PRIMARY STRUCTURAL SYSTEM.
4. THE DESIGN WIND LOAD TO BE USED FOR INTERIOR STUDS AND PARTITIONS IS 0.25 kPa (UNFACTORED) UNLESS NOTED OTHERWISE.

FOUNDATIONS

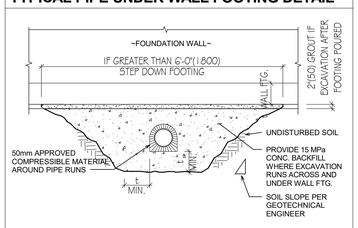
1. IN ACCORDANCE WITH SOIL REPORT #310414 PREPARED BY PINCHIN LTD. DATED JUNE 17, 2022, FOOTINGS HAVE BEEN DESIGNED FOR THE FOLLOWING BEARING RESISTANCES:

   A. STRIP FOOTINGS: ULS: 300 KPa, SLS: 200 KPa
   B. SPREAD FOOTINGS: ULS: 300 KPa, SLS: 200 KPa

2. BEARING SURFACES MUST BE APPROVED BY THE SOILS ENGINEER IMMEDIATELY BEFORE FOOTING CONCRETE IS PLACED. AMR IS NOT RESPONSIBLE FOR CONFIRMING BEARING CAPACITIES OF SOILS.
3. UNLESS OTHERWISE SHOWN, CENTER FOOTINGS UNDER COLUMNS AND WALLS.
4. DOWELS SHALL BE PLACED BEFORE CONCRETE IS PLACED. TEMPLATES SHALL BE USED TO ENSURE CORRECT PLACEMENT OF DOWELS.
5. PROVIDE 50 mm GROUND SEAL/ SKIM COAT, MUD SLAB UNDER FOOTINGS AS REQUIRED BY SOIL CONDITIONS.
6. FOR GROUND ELEVATIONS AND DRAINAGE SLOPES, SEE ARCHITECT'S DRAWINGS.
7. VARY FOOTING ELEVATIONS WHERE REQUIRED IN ACCORDANCE WITH DETAIL FOR "TYPICAL STEPPED FOOTING"(S.D.F.), SHOWN ON STRUCTURAL DRAWINGS.
8. FOOTINGS MAY HAVE TO BE LOWERED LOCALLY TO ACCOMMODATE MECHANICAL OR ELECTRICAL SERVICES. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ELEVATIONS OF SAME. FOOTINGS ARE NOT TO BE UNDERMINED BY EXCAVATIONS FOR SERVICES, PITS, ETC.
9. FOOTING ELEVATIONS, IF SHOWN, ARE FOR PRICE ESTIMATING PURPOSES ONLY, ARE NOT FINAL, AND MAY VARY ACCORDING TO SITE CONDITIONS OR AS REQUIRED BY SERVICES. ALL FOOTINGS MUST BE TAKEN TO A BEARING LAYER APPROVED BY SOILS ENGINEER.
10. BEARING SURFACES MUST BE PROTECTED FROM FREEZING BEFORE AND AFTER FOOTINGS ARE POURED.
11. SUB-BASE DESIGN OF SOIL UNDER THE SLAB ON GRADE SHALL BE IN ACCORDANCE WITH THE SOIL REPORT.
12. CONCRETE PLACED UNDER WATER SHALL CONFORM TO CAN/CSA-A23.1.
13. WHERE A FOUNDATION WALL RETAINS SOIL ON EACH SIDE, PLACE BACKFILL ON BOTH SIDES SIMULTANEOUSLY.
14. FOUNDATION WALLS RETAINING EARTH BETWEEN SLABS AT DIFFERENT LEVELS SHALL BE SHORED UNTIL THE SLAB AT HIGHER LEVEL IS IN PLACE AND HAS REACHED ITS REQUIRED STRENGTH.
15. DESIGN AND FIELD REVIEW OF EXCAVATION SHORING AND BACKFILL IS NOT DONE BY AMR.
16. FOOTINGS CAST DIRECTLY INTO EXCAVATIONS (WITHOUT SIDE FORMS) SHALL NOT BE LARGER THAN SHOWN BELOW:

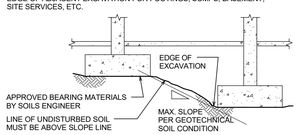


TYPICAL PIPE UNDER WALL FOOTING DETAIL

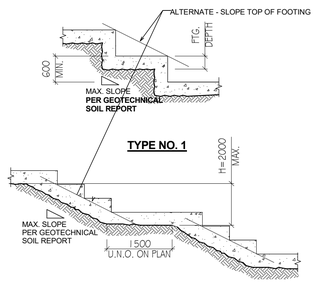


TYPICAL FOOTING ADJACENT TO EXCAVATION

EDGE OF ADJACENT EXCAVATION FOR FOOTINGS, SUMPS, BASEMENT, SITE SERVICES, ETC.



TYPICAL STEPPED FOOTINGS *ON SOIL* (WALLS)



NOTE: IF TOTAL STEPPING 'H' EXCEEDED PROVIDE INTERMEDIATE FLAT HORIZONTAL SECTION BETWEEN SLOPED FOOTINGS U.N.O. ON PLAN

CONCRETE

1. CONCRETE IS SPECIFIED AS PER THE "PERFORMANCE" ALTERNATE AS OUTLINED IN TABLE 5 OF CAN/CSA-A23.
2. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR WORKING WITH THE CONCRETE SUPPLIER TO ENSURE THAT THE PLASTIC AND HARDENED MIX PROPERTIES MEET SITE REQUIREMENTS FOR PLACING, FINISHING, AND THE OWNERS' SPECIFIED PERFORMANCE REQUIREMENTS. THE GENERAL CONTRACTOR SHALL MEET THE DOCUMENTATION AND QUALITY CONTROL REQUIREMENTS OUTLINED UNDER THE "PERFORMANCE" ALTERNATE OF TABLE 5 OF CAN/CSA-A23.
3. THE SUPPLIER SHALL MEET ALL CERTIFICATION AND DOCUMENTATION REQUIREMENTS AS OUTLINED UNDER THE "PERFORMANCE" ALTERNATE OF TABLE 5 OF CAN/CSA-A23.
4. THE CONCRETE SUPPLIER SHALL BE CERTIFIED BY THE READY MIXED CONCRETE ASSOCIATION OF ONTARIO.
5. PORTLAND CEMENT SHALL BE TYPE GU UNLESS NOTED OTHERWISE.
6. CONCRETE SHALL HAVE A UNIT WEIGHT OF 23±1 kN/m³ (145±5 PCF) UNLESS NOTED OTHERWISE.
7. CONCRETE PROPERTIES:

STRUCTURAL CONCRETE REQUIREMENTS				
	MIN. 28 DAY STRENGTH	EXPOSURE CLASS	AIR CONTENT	W/C RATIO
FOOTINGS	25 MPA	N	N.A.	N.A.
FOUNDATION WALLS	25 MPA	F-2	4-7%	0.55
INTERIOR				
SLAB ON GRADE	25 MPA	N	N.A.	0.45
COLUMNS	25 MPA	C-1	N.A.	0.55
INTERIOR FOUNDATION WALLS	25 MPA	N.	N/A	N/A
EXTERIOR				
SLAB ON GRADE	32 MPA	C-2	5-8%	0.45
FOUNDATION WALLS	25 MPA	F-2	4-7%	0.55
SIDE WALK / PAVEMT	32 MPA	C-2	5-8%	0.45
SLABS / BEAMS / COL. / WALLS	25 MPA	C-1	5-8%	0.45

NOTES:
1. THE ABOVE REPRESENT MINIMUM REQUIREMENTS.
2. HIGHER GRADES OF CONCRETE WILL BE NOTED ON STRUCTURAL DRAWING WHERE REQUIRED.

8. SLUMP AND AGGREGATE SIZE TO BE DETERMINED BY THE GENERAL CONTRACTOR AND SUPPLIER TO MEET PLACEMENT, AND FINISHING REQUIREMENTS WITHOUT SEGREGATION WHILE MEETING ALL OWNER SPECIFICATIONS.
9. MAXIMUM WATER/CEMENT RATIO AND AIR CONTENT TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN TABLE 2, 4 AND 20 OF CAN/CSA-A23.
10. DO NOT USE CALCIUM CHLORIDE OR OTHER CHLORIDE PRODUCTS IN CONCRETE.
11. FOR CONCRETE TOPPING USE PEA SIZE AGGREGATE (MAX. 10mm DIAMETER).
12. CURING OF CONCRETE TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN CLAUSE 7.4.1.7 AS WELL AS TABLES 2 AND 20 OF CAN/CSA-A23.
13. CONCRETE REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS:

    A. CAN/CSA-G30.18R - GRADE 400 MPa - 10M AND LARGER (U.N.O.)
    B. CSA STANDARD G30.5 - GRADE 400 MPa - WELDED WIRE REINFORCEMENT
    C. CAN/CSA-G30.18W - GRADE 400 MPa - ALL REINFORCING THAT WILL BE WELDED OR IS PART OF THE SEISMIC RESISTING ELEMENTS: REINFORCING FOR SHEAR WALLS, HEADERS AND ZONES (INCLUDING ZONE TIES AND HEADER TIES/STIRRUPS) AND MOMENT FRAME COLUMNS AND BEAMS (INCLUDING COLUMN TIES AND BEAM STIRRUPS)
    D. CSA STANDARD G279 - PRESTRESSING STRANDS
    E. EPOXY REINFORCING - ASTM A775M AND ASTM D3963

14. TENSION AND COMPRESSION EMBEDMENT AND SPLICE LENGTHS SHALL CONFORM TO CAN/CSA-A23.3.
15. DO NOT SUBSTITUTE DEFORMED WIRE FOR REINFORCING BARS WITHOUT PRIOR APPROVAL OF THE AMR.
16. SUPPORT REINFORCING WITH CHAIRS, ACCESSORIES, OR REINFORCING BARS AS REQUIRED. BARS USED AS SUPPORT BARS SHALL BE CONSIDERED AS ACCESSORIES.
17. PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN CONCRETE COVER AS SPECIFIED. ALL SUPPORTS AND BARS MUST BE TIED TOGETHER TO MAINTAIN REINFORCING STEEL SECURELY IN PLACE DURING CONCRETE PLACEMENT.

CONCRETE COVER TO REINFORCEMENT		
FOOTINGS	TOP	50 MM
	BOTTOM	75 MM
	SIDES	75 MM
FOUNDATION WALLS	INSIDE SIDE	30 MM
	SOIL SIDE	40 MM
COLUMNS	SIDES	40 MM
SLABS / BEAMS	UNDERSIDE (NOT EXPOSED)	25 MM
	UNDERSIDE (EXPOSED)	40 MM

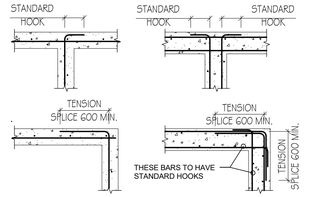
16. DETAIL REINFORCING IN ACCORDANCE WITH REINFORCING STEEL MANUAL OF STANDARD PRACTICE RSIC IAAC.
17. SUBMIT SHOP DRAWINGS FOR CONCRETE REINFORCEMENT, BAR SUPPORT AND ACCESSORIES FOR REVIEW BY AMR PRIOR TO PLACEMENT OF REBAR. CLEARLY INDICATE BAR SIZES, GRADES, SPACING, LOCATION AND QUANTITIES OF REINFORCING MESH, BAR SUPPORTS AND ACCESSORIES AND IDENTIFYING CODE MARKS TO PERMIT CORRECT PLACEMENT WITHOUT REFERENCE TO STRUCTURAL DRAWINGS.
    PLACING DRAWINGS AND BAR LISTS WILL BE REVIEWED FOR NUMBER AND SIZE OF BARS ONLY AND THIS REVIEW SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR CARRYING OUT THE WORK IN ACCORDANCE WITH THE DRAWINGS.
    SUBSTITUTION OF IMPERIAL REINFORCING SIZES AND GRADES WILL ONLY BE ACCEPTED IF PLACING DRAWINGS SHOWING IMPERIAL SIZES ARE SUBMITTED TO THE CONSULTANT FOR REVIEW. APPROVAL MUST BE OBTAINED BEFORE ANY WORK IS COMMENCED.

EXCAVATIONS AND EARTHWORK

1. ALL EXCAVATION WORK TO BE CARRIED OUT IN CONFORMANCE WITH SOILS REPORT NO: # 310414 PREPARED BY PINCHIN LTD. DATED JUNE 17, 2022.
2. BEFORE COMMENCING WORK, CONTRACTOR SHALL ESTABLISH THE LOCATION OF ALL BURIED SERVICES ON THE SITE AND ARRANGE WITH APPROPRIATE AUTHORITY FOR RELOCATION OF BURIED SERVICES.
3. SHORE AND BRACE EXCAVATIONS, PROTECT SLOPES AND BANKS AND PERFORM ALL WORK IN ACCORDANCE WITH PROVINCIAL AND MUNICIPAL REGULATIONS.
4. PROTECT EXCAVATIONS FROM FREEZING, KEEP EXCAVATIONS CLEAN, FREE OF STANDING WATER AND LOOSE SOIL.
5. BACKFILL MATERIAL AND SPACES TO BE REVIEWED AND APPROVED BY SOIL CONSULTANT. REMOVE SNOW, ICE, CONSTRUCTION DEBRIS, ORGANIC SOIL AND STANDING WATER FROM SPACES TO BE FILLED. MAINTAIN EVEN LEVELS OF BACKFILL AROUND STRUCTURES AS WORK PROGRESSES, TO EQUALIZE EARTH PRESSURES.
6. TESTING OF COMPACTION TO BE CARRIED OUT BY TESTING LABORATORY DESIGNATED BY THE SOIL CONSULTANT.

CONCRETE WALLS

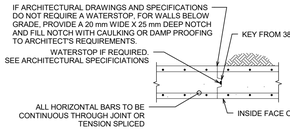
1. DETAILS OF HORIZONTAL REINFORCEMENT AT CORNERS



2. PLACE HORIZONTAL REINFORCEMENT IN OUTTER LAYERS OF THE CURTAINS AND VERTICALS AS 2ND INSIDE LAYER (BEHIND HORIZONTALS).
3. ALL WALL REINFORCING SHALL BE CONTINUOUS, WITH HOOKS OR CORNER BARS USED AT ALL WALL JUNCTIONS. EXTEND HOOKS TO FAR FACE OF WALL. CORNER BARS TO BE LOCATED ON OUTSIDE FACE OR CENTRE OF WALL.
4. ENDS OF ALL WALLS SHALL HAVE 2-15M VERTICAL LAPPED 600 UNLESS OTHERWISE NOTED ON DRAWINGS.
5. ADD 2-15M PARALLEL TO ALL EDGES AND EXTENDING 625 BEYOND CORNERS AT OPENINGS IN WALLS.

WALL CONSTRUCTION JOINT

(CONSTRUCTION JOINT CAN REPLACE CONTROL JOINT)

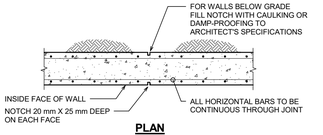


PLAN

WALL CONTROL JOINT

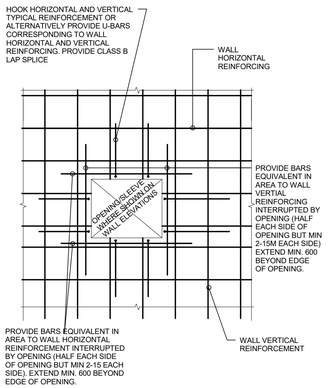
UNLESS NOTED OTHERWISE FOR EXTERIOR WALLS BELOW GRADE AND EXTERIOR WALLS EXPOSED TO WEATHER ABOVE GRADE.

SPACE AT 6000 mm CENTERS MAXIMUM UNLESS OTHERWISE NOTED ON PLAN.



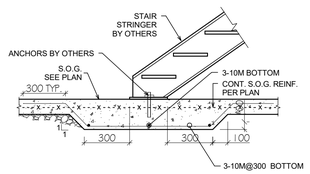
PLAN

TYPICAL ADDITIONAL REINFORCEMENT FOR WALL OPENINGS UP TO 750mm x 750mm SIZE



NOTE: FOR LARGER OPENINGS SEE REINFORCEMENT ON WALL ELEVATIONS.

THICKENING SLAB ON GRADE AT STAIRS



EMBEDMENT / DEVELOPMENT LENGTHS AND SPLICE LENGTHS

BASED ON CAN/CSA-A23.3-04

WHERE EMBEDMENT OR SPLICES ARE DIMENSIONED ON THE DRAWINGS, SUCH DIMENSION SHALL APPLY.

WHERE THE DRAWINGS INDICATE A COMPRESSION EMBEDMENT, IT IS A COMPRESSION EMBEDMENT LENGTH AND IT SHALL BE AS NOTED BELOW.

WHERE THE DRAWINGS INDICATE A TENSION EMBEDMENT, IT IS A TENSION EMBEDMENT LENGTH AND SHALL BE AS NOTED BELOW.

WHERE NO EMBEDMENT OR EMBEDMENT TYPE IS CALLED FOR ON THESE DRAWINGS, IT SHALL BE A TENSION EMBEDMENT, EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION EMBEDMENT.

WHERE NO SPLICE OR SPLICE TYPE IS CALLED FOR ON THESE DRAWINGS, IT SHALL BE A TENSION SPLICE, EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION SPLICE.

IN TABLES BELOW, EMBEDMENT LENGTHS ARE SHOWN WITHOUT BRACKETS, AND SPLICE LENGTHS ARE SHOWN IN BRACKETS.

ALL LENGTHS ARE FOR Fy = 400 MPa REBAR.

ALL TENSION SPLICE LENGTHS ARE CLASS "B" (1.3 fd).

COMPRESSION EMBEDMENT AND SPLICE LENGTHS

- COMPRESSION EMBEDMENT REFERS TO THE LENGTH REQUIRED TO PROVIDE THE "COMPRESSION DEVELOPMENT LENGTH" AS DEFINED IN CAN/CSA-A23.3-04 CLAUSE 12.3.2
- SPLICE LENGTH REFERS TO THE MINIMUM LAP LENGTH REQUIRED FOR A COMPRESSION SPLICE AS DEFINED IN CAN/CSA-A23.3-04 CLAUSE 12.16.1.

CONCRETE STRENGTH	FUNCTION	REBAR DESIGNATION					
		10M	15M	20M	25M	30M	35M
20 MPa	EMBEDMENT	215	325	430	540	645	755
	(SPLICE)	(300)	(440)	(585)	(730)	(880)	(1025)
25 MPa	EMBEDMENT	200	290	385	480	580	675
	(SPLICE)	(300)	(440)	(585)	(730)	(880)	(1025)
30 MPa & GREATER	EMBEDMENT	200	265	355	440	530	620
	(SPLICE)	(300)	(440)	(585)	(730)	(880)	(1025)

TENSION EMBEDMENT AND SPLICE LENGTHS

- TENSION EMBEDMENT REFERS TO THE LENGTH REQUIRED TO PROVIDE A "TENSION DEVELOPMENT LENGTH" AS DEFINED IN CAN/CSA-A23.3-04 CLAUSE 12.2.3.
- SPLICE LENGTH REFERS TO THE MINIMUM LAP LENGTH REQUIRED FOR A CLASS "B" TENSION SPLICE (1.3d) AS PER CAN/CSA-A23.3-04 CLAUSE 12.15.

CASE 1 CONDITIONS

TENSION EMBEDMENT AND SPLICE LENGTHS CONFORMING TO CAN/CSA-A23.3-04 TABLE 12.1 ($0.45\ k_1k_2k_3k_4f_d\ d_b/\sqrt{f'_c}$) ARE TO BE AS PER THE FOLLOWING TABLE FOR:

- COLUMNS.
- BEAM AND GIRDER TOP AND BOTTOM BARS.
- SLAB BAND TOP BARS.
- TWO WAY SLAB TOP AND BOTTOM BARS.
- ONE WAY SLAB BOTTOM BARS.
- WALL HORIZONTAL AND VERTICAL DISTRIBUTED REINFORCING.
- SEE ALSO NOTES ON TOP BARS AND EPOXY COATED REINFORCEMENT.
- MEMBERS WHICH DO NOT SATISFY THE ABOVE CONDITIONS SHALL HAVE TENSION EMBEDMENTS AND SPLICES AS PER CASE 2 TABLE BELOW.

CONCRETE STRENGTH	FUNCTION	REBAR DESIGNATION					
		10M	15M	20M	25M	30M	35M
20 MPa	EMBEDMENT	325	485	645	1010	1210	1410
	(SPLICE)	(420)	(630)	(840)	(1310)	(1570)	(1835)
25 MPa	EMBEDMENT	300	435	580	900	1080	1260
	(SPLICE)	(390)	(565)	(750)	(1170)	(1405)	(1640)
30 MPa	EMBEDMENT	300	395	530	825	990	1155
	(SPLICE)	(390)	(515)	(685)	(1070)	(1285)	(1500)
35 MPa	EMBEDMENT	300	370	490	765	915	1065
	(SPLICE)	(390)	(475)	(635)	(990)	(1190)	(1385)
40 MPa	EMBEDMENT	300	345	460	715	855	1000
	(SPLICE)	(390)	(445)	(595)	(925)	(1110)	(1295)
45 MPa	EMBEDMENT	300	325	430	675	805	940
	(SPLICE)	(390)	(420)	(560)	(875)	(1050)	(1225)
50 MPa	EMBEDMENT	300	310	410	640	765	895
	(SPLICE)	(390)	(400)	(530)	(830)	(995)	(1160)
55 MPa	EMBEDMENT	300	300	390	610	730	850
	(SPLICE)	(390)	(390)	(505)	(790)	(950)	(1105)
60 MPa	EMBEDMENT	300	300	375	585	700	815
	(SPLICE)	(390)	(390)	(485)	(760)	(910)	(1060)
65 MPa & GREATER	EMBEDMENT	300	300	360	565	675	790
	(SPLICE)	(390)	(390)	(470)	(735)	(880)	(1025)

NOTE: "TOP BAR" VALUES ARE 1.3 TIMES THE ABOVE LENGTHS.
"TOP BAR" APPLIES TO HORIZONTAL REINFORCEMENT CAST WITH 300 mm OR MORE OF CONCRETE BELOW THE BAR.

NOTE: EPOXY COATED REINFORCEMENT
INCREASE THESE TABLE LENGTHS BY 1.5 FOR EPOXY COATED REINFORCEMENT. INCREASE THESE TABLE LENGTHS BY 1.7 FOR EPOXY COATED TOP REINFORCEMENT.

CASE 2 CONDITIONS

TENSION EMBEDMENT AND SPLICE LENGTHS CONFORMING TO CAN/CSA-A23.3-04 TABLE 12.1 ($0.6\ k_1k_2k_3k_4f_d\ d_b/\sqrt{f'_c}$) ARE TO BE AS PER THE FOLLOWING TABLE FOR MEMBERS NOT SATISFYING CASE 1 CONDITIONS AS SET OUT ABOVE. FOR EXAMPLE:

- ONE WAY SLAB TOP BARS (SEE TOP BAR NOTE).
- SLAB BAND BOTTOM BARS.
- BARS (EXCLUDING THE SPLICE) SPACED CLOSER TOGETHER THAN 2 BAR DIAMETERS.
- STIRRUPS IN BEAMS, GIRDERS AND TRANSFER SLABS.
- SEE ALSO NOTES ON TOP BARS AND EPOXY COATED REINFORCEMENT.

CONCRETE STRENGTH	FUNCTION	REBAR DESIGNATION					
		10M	15M	20M	25M	30M	35M
20 MPa	EMBEDMENT	430	645	860	1345	1610	1880
	(SPLICE)	(560)	(840)	(1120)	(1745)	(2095)	(2445)
25 MPa	EMBEDMENT	385	580	770	1200	1440	1680
	(SPLICE)	(500)	(750)	(1000)	(1560)	(1875)	(2185)
30 MPa	EMBEDMENT	355	530	705	1100	1315	1535
	(SPLICE)	(460)	(685)	(915)	(1425)	(1710)	(1995)
35 MPa	EMBEDMENT	325	490	650	1015	1220	1420
	(SPLICE)	(425)	(635)	(845)	(1320)	(1585)	(1850)
40 MPa	EMBEDMENT	305	460	610	950	1140	1330
	(SPLICE)	(395)	(595)	(790)	(1235)	(1480)	(1730)
45 MPa	EMBEDMENT	300	430	575	895	1075	1255
	(SPLICE)	(390)	(560)	(745)	(1165)	(1400)	(1630)
50 MPa	EMBEDMENT	300	410	545	850	1020	1190
	(SPLICE)	(390)	(530)	(710)	(1105)	(1325)	(1545)
55 MPa	EMBEDMENT	300	390	520	810	975	1135
	(SPLICE)	(390)	(505)	(675)	(1055)	(1265)	(1475)
60 MPa	EMBEDMENT	300	375	500	775	930	1085
	(SPLICE)	(390)	(485)	(645)	(1010)	(1210)	(1410)
65 MPa & GREATER	EMBEDMENT	300	360	480	750	900	1050
	(SPLICE)	(390)	(470)	(625)	(975)	(1170)	(1365)

NOTE: "TOP BAR" VALUES ARE 1.3 TIMES THE ABOVE LENGTHS.
"TOP BAR" APPLIES TO HORIZONTAL REINFORCEMENT CAST WIT

STRUCTURAL STEEL

1. STRUCTURAL STEEL SECTIONS SHALL BE NEW AND CONFORM TO THE FOLLOWING:

2.
   - A. WIDE FLANGE BEAMS AND WWF SECTIONS --- CSA G40.21 350W
   - B. MISCELLANEOUS ROLLED SECTIONS (EXCEPT WIDE FLANGES) ---------- CSA G40.21 300W
   - C. HOLLOW STRUCTURAL SECTIONS (CLASS C U.N.O.) ---------- CSA G40.21 350W
   - D. ROLLED PLATES ---------- CSA G40.21 300W
   - E. BOLTS (SEE PLANS AND DETAILS) ---------- ASTM A325 OR ASTM A490
   - F. STRUCTURAL STEEL ANCHOR RODS (U.N.O.) -- ASTM F1554 GRADE 36 MINIMUM
   - G. REINFORCING BAR ANCHOR BOLTS ---------- CAN/CSA-G30.18R, GRADE 400

3. ALL CONNECTIONS TO BE DESIGNED BY FABRICATOR UNLESS NOTED OTHERWISE. ALL BEAM CONNECTIONS TO BE STANDARD FRAME BEAM CONNECTIONS OR EQUIVALENT, UNLESS NOTED OTHERWISE. SUBMIT A LETTER OF CERTIFICATION BY P.ENG RESPONSIBLE FOR DESIGN OF CONNECTIONS.

4. SHOP DRAWINGS SHALL BE PREPARED UNDER THE DIRECTION OF A SPECIALTY STRUCTURAL ENGINEER. FOR THOSE CONNECTIONS AND COMPONENTS DESIGNED BY THE FABRICATOR. THIS ENGINEER OR THEIR REPRESENTATIVE SHALL VISIT THE SITE TO REVIEW IN PLACE THE CONNECTIONS AND COMPONENTS DESIGNED BY THIS ENGINEER TO SATISFY THEMSELVES THAT THESE CONNECTIONS AND COMPONENTS COMPLY WITH THEIR DESIGN ON THE SHOP DRAWINGS. THIS ENGINEER SHALL PROVIDE A LETTER TO AMR TO THIS EFFECT. THIS ENGINEER SHALL ALSO PROVIDE SEALED SKETCHES FOR ALL FIELD MODIFICATIONS MADE TO THEIR DESIGN.

5. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO START OF STEEL FABRICATION.

6. FABRICATION, ERECTION, STRUCTURAL DESIGN, AND DETAILING OF ALL STEEL SHALL BE IN ACCORDANCE WITH CAN/CSA-S16.

7. FILLET WELDS SHALL BE 5 mm MINIMUM U.N.O.

8. BOLTS SHALL BE A325 19 mm Ø MINIMUM U.N.O.

9. BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF TWO BOLTS IN EACH MEMBER U.N.O.

10. UNLESS NOTED OTHERWISE, COLUMN CAP PLATES SHALL BE 16 mm THICK AND COLUMN BASE PLATES SHALL BE 20 mm MINIMUM THICK.

11. PROVIDE 6 mm CAP PLATES FOR ALL HSS MEMBERS U.N.O.

12. CONNECTION DETAILS SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE ALTERED BY THE CONTRACTOR WITHOUT WRITTEN APPROVAL FROM AMR ENGINEERING LIMITED.

13. UNLESS NOTED OTHERWISE ON THE PLANS, REFER TO THE DETAILS IN THE GENERAL NOTES FOR FRAMING FOR SUPPORT OF ROOF TOP MECHANICAL EQUIPMENT.

14. STEEL TO BE EXPOSED IN FINISHED WORK SHALL BE CLEANED, PREPARED, PRIMED AND PAINTED IN ACCORDANCE WITH CSA STANDARD S16 AND THE ARCHITECTURAL DRAWINGS AND PAINTING SPECIFICATION.

15. DESIGN DRAWINGS INCLUDE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. SEE ALSO ARCHITECTURAL DRAWINGS FOR ROOF AND FLOOR ELEVATIONS, ROOF SLOPES, EDGE DETAILS, AND ADDITIONAL DIMENSIONS AND DETAILS. WHERE ELEVATIONS, ROOF SLOPES, ETC., ARE SHOWN ON THE STRUCTURAL DRAWINGS, THEY MUST BE CONFIRMED WITH THE ARCHITECTURAL DRAWINGS.

16. UNLESS NOTED OTHERWISE, DO NOT OVERSIZE HOLES IN STEEL TO FIT ANY ANCHOR LOCATIONS. FOR COLUMN BASE PLATE HOLES, UNLESS NOTED OTHERWISE ON DRAWINGS, FOLLOW STANDARD PRACTICE WHICH IS TO USE SLIGHTLY OVERSIZED HOLES. USE 6 mm OVERSIZED HOLE DIAMETER FOR COLUMN ANCHOR RODS UP TO AND INCLUDING 27 mm DIAMETER, AND 12 mm OVERSIZED HOLE DIAMETER FOR COLUMN ANCHOR RODS GREATER THAN 27 mm DIAMETER.

17. TOUCH UP ALL FIELD WELDS. ALL STEEL SHALL BE PAINTED WITH 1 ZINC RICH SHOP COAT AND FIELD TOUCH UP AS PER CGSB-1.40-M89. ALL EXTERIOR STEEL EXPOSED TO ELEMENTS SHALL BE HOT DIPPED GALVANIZED AS PER REQUIREMENTS OF CSAG164-18.

18. NON-SHRINK GROUT SHALL BE M-BED STANDARD BY SIKA CANADA INC. OR APPROVED EQUAL.

STEEL DECK

1. STEEL DECKING SHALL CONFORM TO CAN/CSA-S136.

2. STEEL DECKING SHALL CONFORM TO CSSBI SPECIFICATION 10M MINIMUM GRADE 230 ZINC COATED STRUCTURAL QUALITY STEEL FOR ROOF AND FLOOR DECK. BASE STEEL NOMINAL THICKNESSES INDICATED ON THE DRAWINGS ARE MINIMUM REQUIREMENTS ONLY.

3. INTERIOR EXPOSURE DECK SHALL BE ZINC COATED WIPE COAT ZF075 FOR FLOORS AND FOR ROOFS. EXTERIOR EXPOSURE DECK SHALL BE Z275 ZINC COATED UNLESS NOTED OTHERWISE.

4. STEEL DECKING SHALL BE INSTALLED SUCH THAT SHEETS ARE SET FOR A MINIMUM OF THREE SPANS CONTINUOUS UNLESS NOTED OTHERWISE. LAPS OF DECKING SHALL BE LIMITED OR DETAILED TO PREVENT UNDUE VERTICAL DEFORMATIONS AT THE END OF THE DECK DUE TO END ROTATIONS.

5. SEE DRAWINGS & NOTES FOR DECK THICKNESSES OR DESIGN LOADS.

6. WHERE DECK IS CALLED UP ON THE DRAWINGS, ALTERNATES MUST BE THE SAME DEPTH, BE EQUIVALENT FOR DEFLECTIONS, VERTICAL LOAD, AND SHEAR CAPACITY, AND BE PRE-APPROVED.

7. SUBMIT SHOP DRAWINGS INDICATING THE DECK SPANS, THICKNESSES, PROFILES, AND DETAILS. WHERE THE DECK THICKNESSES AND CONNECTIONS ARE NOT SHOWN ON THE DRAWINGS, THE FABRICATOR SHALL DESIGN THE DECK AND CONNECTIONS FOR THE VERTICAL LOADS AND THE SHEAR/DIAPHRAGM LOADS NOTED ON THE DRAWINGS AND HAVE THE SHOP DRAWINGS SEALED BY THE CONTRACTOR'S SPECIALTY STRUCTURAL ENGINEER.

8. FASTENINGS - MINIMUM REQUIREMENTS UNLESS NOTED OTHERWISE ON DRAWINGS:
   - A. SIDE LAPS MECHANICALLY FASTENED (CLINCHED) AT NOT MORE THAN 600 mm O/C.
   - B. 20 mm Ø FUSION WELDS AT DECK SUPPORTS SHALL BE AT 300 mm O/C ALONG SIDE EDGES AND AT EVERY OTHER FLUTE.

9. REMOVE WATER BETWEEN THE DECK AND SUPPORTING STEEL BEFORE WELDING DECK.

10. IF NOT SHOWN OTHERWISE, ALL EDGES OF STEEL DECKING SHALL BE SUPPORTED ON CONTINUOUS ANGLE L76x76x6.4.

11. SEE ALSO MECHANICAL, ELECTRICAL AND ARCHITECTURAL DRAWINGS FOR ALL OPENINGS IN DECK.

12. STEEL DECK TO BE DESIGNED FOR A MINIMUM DIAPHRAGM SHEAR OF 4.0 kN/m, U.N.O.

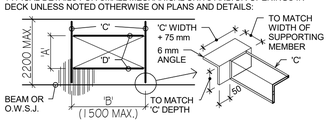
13. TOUCH UP ALL FIELD WELDS WITH ZINC RICH PAINT.

TYPICAL FRAMING AROUND OPENINGS IN STEEL DECK WITHOUT CONCRETE TOPPING - U.N.O.

1. SEE ALSO MECHANICAL, ELECTRICAL AND ARCHITECTURAL DRAWINGS FOR ALL OPENINGS IN DECK.

2. U.N.O. REINFORCE OPENINGS WITHOUT MECHANICAL UNITS BETWEEN 150 mm TO 450 mm MAXIMUM DIMENSION WITH L76x76x6.4 X 1200 mm LONG. WELD TO EVERY FLUTE.

3. TYPICAL DETAILS FOR SMALL MECHANICAL UNITS AND/OR OPENINGS IN DECK UNLESS NOTED OTHERWISE ON PLANS AND DETAILS:



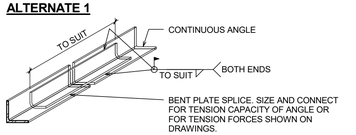
CONNECT ANGLES FOR MAXIMUM FACTORED VERTICAL LOAD OF 6 kN.

MECH. UNIT OR OPENING SIZE 'A' x 'B'	ANGLE 'C'	ANGLE 'D'	MECHANICAL UNIT WEIGHT (SPECIFIED)
150 X 150 TO 450 X 450	L76x76x6.4	L76x76x4.8	0.25 kN TO 1.0 kN
450 X 450 TO 1500 X 1500	L102x102x6.4	L76x76x4.8	NO UNIT
450 X 450 TO 1500 X 900	L102x102x6.4	L76x76x6.4	LESS THAN OR EQUAL TO 2 kN (1500 mm MAX. HIGH)
450 X 900 TO 1500 X 1500	L102x102x6.4	L102x102x6.4	LESS THAN OR EQUAL TO 2 kN (1500 mm MAX. HIGH)

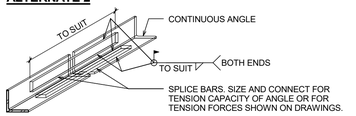
4. WHERE AN OPENING IN DECK IS UNDER A MECHANICAL UNIT AND IS SMALLER THAN THE FRAMING REQUIRED TO SUPPORT THE MECHANICAL UNIT, REINFORCE THE OPENING WITH L76x76x4.8 ON ALL FOUR SIDES SPANNING BETWEEN THE MECHANICAL UNIT SUPPORT MEMBERS. SEE NOTE 3, PLANS AND DETAILS FOR MECHANICAL UNIT SUPPORT FRAMING.

TYPICAL TENSION SPLICE FOR ANGLES

ALTERNATE 1



ALTERNATE 2

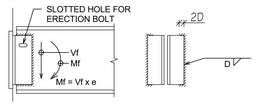


MINIMUM BEND RADIUS FOR STEEL PLATES

"T" (PLATE THICKNESS)	"R" (MINIMUM INSIDE RADIUS)
0 mm TO 6 mm	3 x "T"
6 mm TO 12 mm	4 x "T"

STEEL BEAMS AND GIRDERS

1. UNLESS NOTED, BEAM AND GIRDER CONNECTIONS TO EMBEDDED PLATES SHALL BE DOUBLE ANGLE FRAMING CONNECTIONS WELDED TO THE BEAM WEB THUS:

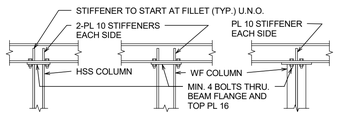


2. UNLESS NOTED OTHERWISE ALL CONNECTIONS FOR BEAMS AND GIRDERS SHALL BE DESIGNED FOR A SHEAR BASED ON THE MEMBER'S FULL MOMENT RESISTANCE CAPACITY RELATED TO A UNIFORM LOAD ON A SIMPLE SUPPORTED SPAN.

3. STEEL BEAM CAMBERS SHOWN THUS (75) MEAN CAMBER BEAMS 75 mm AT CENTRE.

4. TOP FLANGES OF BEAMS TO BE FREE OF ALL PAINT, DIRT, HEAVY RUST, MILL SCALE, SAND AND OTHER MATERIALS WHICH WILL INTERFERE WITH WELDING OF STUD SHEAR CONNECTIONS AND STEEL DECK TO BEAMS.

5. UNLESS NOTED OTHERWISE WHERE BEAMS SIT OVER COLUMNS, PROVIDE FULL HEIGHT, FULL WIDTH PL 10 STIFFENERS EACH SIDE OVER COLUMN.



EXTERIOR WIND STEEL STUD NOTES

1. SUBMIT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW BEFORE FABRICATION IS STARTED. ASSUME RESPONSABILITY FOR THE ACCURACY OF THE WORK AND BE AWARE THAT REVIEW OF SHOP DRAWINGS IS ONLY TO ENSURE THAT THE CONTRACT DRAWINGS ARE BEING CORRECTLY INTERPRETED.

2. SHOP DRAWINGS SHALL BEAR THE SEAL OF PROFFESIONAL ENGINEER OF ONTARIO RESPONSIBLE FOR DESIGN OF METAL STUDS.

3. DESIGN STEEL STUDS FOR ANTICIPATED WIND LOADS LIVE AND DEAD LOADS IN ACCORDANCE WITH ONTARIO BUILDING CODE. REFER TO ARCHITECTURAL DRAWINGS FOR WALL CONSTRUCTION/TYPES. DEAD LOADS IN ACCORDANCE WITH ONTARIO BUILDING CODE.

4. CONFORM TO THE REQUIREMENTS OF FIRE RATED ASSEMBLIES.

5. DESIGN AND INSTALL BRIDGING TO PREVENT MEMBER ROTATION AND MEMBER TRANSLATION PERPENDICULAR TO THE MINOR AXIS.

6. MAXIMUM DEFLECTION UNDER SPECIFIED LOADS SHALL NOT EXCEED THE FOLLOWING:
   - (a) WALL STUDS SUPPORTING MASONRY VENEER = SPAN/480
   - (b) WALL STUDS SUPPORTING OTHER FINISHES = SPAN/360
   - (c) LINTEL MEMBERS = SPAN/480

7. SPACING OF WALL STUDS & JOISTS SHALL NOT EXCEED 16" UNLESS NOTED OTHERWISE ON PLANS AND/OR SECTIONS.

8. STEEL STUDS SHALL BE ROLL FORMED FROM ZINC COATED STEEL SHEETS CONFORMING TO ASTM-A446-83 GRADE 'A' WITH ZINC COATING ON EACH SIDE. ZINC COATING DESIGNATION SHALL BE Z275.

9. STEEL STUDS SHALL BE AS MANUFACTURED BY BAILEY METAL PRODUCT LIMITED OR AN APPROVED EQUAL WITH A MINIMUM METAL THICKNESS BEFORE GALVANIZING SHALL BE 1.27 mm (18 GAUGE). USE HEAVIER GAUGE AS REQUIRED BY DESIGN.

10. FASTENERS SHALL BE CORROSION RESISTANCE PAN HEAD SELF DRILLING SELF TAPPING SCREWS.

11. ERECT METAL STUDS TO TOLERANCE OF 1:1000.

12. FRAME ALL OPENINGS IN STUD WALLS, BY USE OF ADDITIONAL FRAMING MEMBERS AND BRACING, TO CARRY ALL APPLICABLE LOADS ADEQUATELY.

13. SPLICES IN STEEL STUDS WILL NOT BE PERMITTED.

STEEL DECK NOTES (WITH CONCRETE TOPPING)

1. STEEL DECK TO BE AS NOTED ON DRAWINGS. UNLESS NOTED OTHERWISE ALL DECK RECEIVING CONCRETE TOPPING TO BE COMPOSITE DECK.

2. IT IS INTENDED THAT ALL STEEL DECK BE UNSHORED DURING CONSTRUCTION U.N.O.

3. THE STEEL DECK THICKNESS SHALL BE AS REQUIRED TO CARRY THE WET CONCRETE WITHOUT SHORING AND TO MEET THE LOADING REQUIREMENTS LISTED BELOW, AND WILL DEPEND ON THE ACTUAL PROFILE AND LAYOUT OF DECK USED. TOPPING THICKNESS ON THE DRAWINGS ARE MEASURED FROM THE TOP OF DECK FLUTE (SEE "CONCRETE TOPPING ON STEEL DECK" NOTES).

4. DESIGN FLOOR LOADS (SPECIFIED OR UNFACTORED):

   CONSTRUCTION DEAD LOAD = WEIGHT OF WET CONCRETE

   CONSTRUCTION LIVE LOAD = 1 kPa

   SUPERIMPOSED DEAD LOAD = AS INDICATED ON DRAWINGS

   SERVICE LIVE LOAD = AS INDICATED ON DRAWINGS

5. ALL DECK TO BE THREE SPAN MINIMUM WHERE POSSIBLE.

6. THE STEEL DECK PROFILES SHALL BE AS REQUIRED TO ACHIEVE FIRE SEPARATIONS AS SPECIFIED ON THE ARCHITECTURAL DRAWINGS. IN ADDITION, ALL COMPOSITE FLOOR DECK PROFILES SHALL HAVE AN AVERAGE BOTTOM FLUTE WIDTH AT LEAST 2 X DECK DEPTH WHERE USED ON COMPOSITE BEAMS WITH SHEAR STUDS.

7. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH SUBTRADES FOR PROVIDING STEEL DECK AS INDICATED ON THE DRAWINGS, AND ALL NECESSARY FORMING AT THE DECK EDGES FOR THE FULL DECK AND CONCRETE DEPTH TO PREVENT LEAKING OF THE CONCRETE TOPPING. THIS INCLUDES BUT IS NOT LIMITED TO ALL SLAB EDGES AT THE BUILDING EDGE AND ALL SLAB OPENINGS FRAMED BY STRUCTURAL STEEL, INCLUDING ELEVATOR SHAFTS AND STAIRWELLS AND AROUND THE WEBS AND FLANGES OF ALL COLUMNS.

8. BEAMS NOTED AS COMPOSITE ON THE DRAWINGS REQUIRE STUD SHEAR CONNECTIONS, SEE ALSO SHEAR CONNECTOR NOTES. SEE ALSO PLANS, SECTIONS, DETAILS AND SCHEDULES FOR STUDS SHOWN ON BEAMS/GIRDERS/DRAG-STRUTS ETC. OTHER THAN COMPOSITE BEAMS. THE CONTRACTOR SHALL CO-ORDINATE THE DESIGN, SUPPLY, AND INSTALLATION OF ALL STUDS.

9. FASTENINGS - MINIMUM REQUIREMENTS UNLESS NOTED OTHERWISE ON DRAWINGS:
   - A. SIDE LAPS MECHANICALLY FASTENED (CLINCHED) AT NOT MORE THAN 600 mm O/C.
   - B. 20 mm Ø FUSION WELDS AT DECK SUPPORTS SHALL BE AT 300 mm O/C ALONG SIDE EDGES AND AT EVERY OTHER FLUTE.

10. SEE ALSO MECHANICAL AND ARCHITECTURAL DRAWINGS FOR OPENINGS, HOLES ETC. IN DECKING.

11. SUBMIT SHOP DRAWINGS SEALED BY A SPECIALTY STRUCTURAL ENGINEER FOR DESIGN OF DECK AND SHEAR STUDS.

OPEN WEB STEEL JOISTS

1. OPEN WEB STEEL JOISTS (O.W.S.J.) SHALL CONFORM TO CAN/CSA-S16.

2. DESIGN OF O.W.S.J. SHALL CONFORM TO CLAUSE 16 OF CAN/CSA-S16 (LIMIT STATES DESIGN OF STEEL STRUCTURES) AND CAN/CSA-S136 (DESIGN OF LIGHT GAUGE STEEL STRUCTURAL MEMBERS), BASED ON THE LOADINGS INDICATED ON THE DRAWINGS AND LISTED BELOW.

3. O.W.S.J. SHALL BE DESIGNED FOR THE LOADS SHOWN ON THE DRAWINGS.

4. IN ADDITION TO THE POINT LOADS CALLED FOR ON THE DRAWINGS AND IN THE GOVERNING BUILDING CODE, DESIGN O.W.S.J. FOR A 1.8 kN FACTORED ADDITIONAL POINT LOAD AT ANY LOCATION ON TOP CHORD AND BOTTOM CHORD (INCLUDING THE EFFECTS OF LOCAL BENDING) CONCURRENT WITH OTHER DESIGN LOADS. OVER MECHANICAL AREAS THE DESIGN LOADS SHALL BE 4.5 kN FACTORED. THE ADDITIONAL POINT LOADS ON EACH CHORD NEED NOT BE APPLIED CONCURRENTLY WITH EACH OTHER.

5. UNLESS NOTED OTHERWISE LIVE LOAD DEFLECTION SHALL NOT EXCEED 1/360 OF THE SPAN.

6. CAMBER ALL O.W.S.J. FOR DEAD LOAD PLUS 1/2 LIVE LOAD UNLESS OTHERWISE NOTED. PROVIDE A MINIMUM CAMBER OF 12 mm.

7. DESIGN AND PROVIDE O.W.S.J. BRIDGING IN ACCORDANCE WITH CAN/CSA-S16 UNLESS OTHERWISE INDICATED ON THE DRAWINGS. REFER TO THE DRAWINGS FOR AREAS OF NON-TYPICAL O.W.S.J. BRIDGING AND BRACING.

8. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO START OF O.W.S.J. FABRICATION. SHOP DRAWINGS SHALL BEAR THE SEAL OF THE SPECIALTY STRUCTURAL ENGINEER WHO IS RESPONSIBLE FOR THE DESIGN OF THE O.W.S.J. REFER TO THE SPECIFICATIONS.

9. ALL O.W.S.J. TO HAVE BUILDING SERVICES PASS THROUGH THEM. WEB MEMBERS OF ADJACENT O.W.S.J. TO LINE UP TO ACCOMMODATE CONTINUOUS PENETRATION OF SERVICES.

10. WELDING SHALL CONFORM TO CSA W59.

11. O.W.S.J. TO BE PAINTED SHALL BE CLEANED AND SHALL RECEIVE ONE COAT OF SHOP PRIMER IN ACCORDANCE WITH CAN/CSA-S16.

12. O.W.S.J. TO BE EXPOSED IN FINISHED WORK SHALL BE PAINTED WITH SHOP PRIMER MEETING THE REQUIREMENTS OF CAN/CSA-S16. CLEANING, PREPARATION OF STEEL AND THE PAINT PRODUCT SHALL BE COMPATIBLE WITH REQUIREMENTS OF FINISHED PAINTING AS SPECIFIED IN ARCHITECTURAL FINISHES. REFER TO THE SPECIFICATIONS.

13. BOTTOM CHORD EXTENSIONS (B.C.E.) ARE EXTENSIONS OF THE BOTTOM CHORD WHICH TRANSMIT AN AXIAL FORCE TO EITHER A COLUMN, BEAM BOTTOM FLANGE, JOIST GIRDER BOTTOM CHORD OR WALL. THE EXTENSION MAY BE EITHER FLAT OR SLOPED. SEE PLANS, SCHEDULES, AND DETAILS FOR AXIAL FORCES.

14. JOIST BEARING PLATES TO BE DESIGNED BY THE JOIST SUPPLIER AND SUBMITTED WITH THE JOIST SHOP DRAWING FOR OUR REVIEW. BEARING NOT TO EXCEED 100 PSI.

15. DESIGN JOIST SHOES FOR ROLLING SHEAR = 6KN U.N.O.

MISC. METALS AND STEEL STAIRS

1. PROVIDE SHOP DRAWINGS PRIOR TO FABRICATION STAMPED, SIGNED AND DATE BY P.ENG.

2. ALL GUARDS TO BE DESIGNED TO MEET LATERAL LOAD DESCRIBED IN OBC 2012.

3. ALL HANDRAILS TO BE DESIGNED TO MEET LATERAL LOAD DESCRIBED IN OBC 2012.

4. ALL STAIRS TO BE DESIGNED TO SUPPORT A MINIMUM LIVE LOAD OF 4.8KPa

LINTELS (NON LOAD BEARING BLOCK WALL)

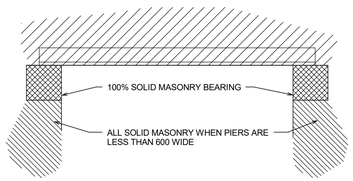
OVER ALL OPENINGS IN MASONRY WALLS PROVIDE THE FOLLOWING LINTELS, UNLESS OTHERWISE SHOWN.

BLOCK WYTHES

STEEL LINTELS

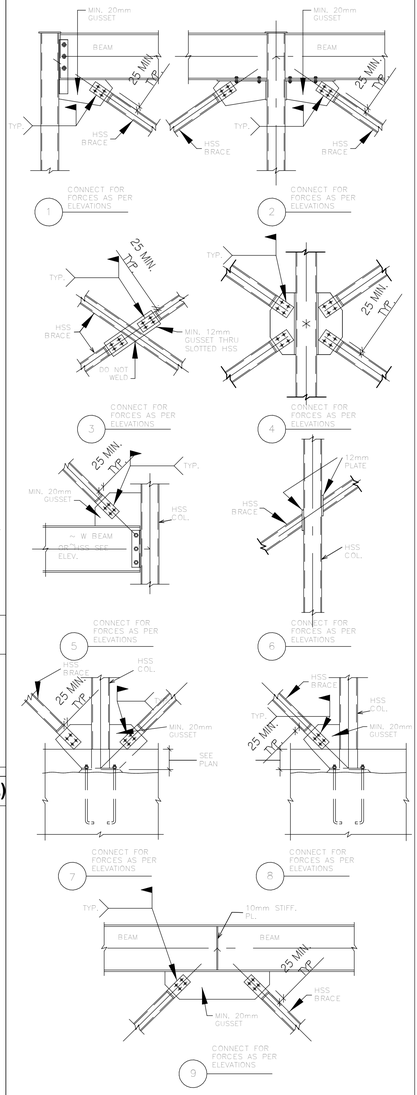
CLEAR SPAN mm (ft-in)	140 (6") WALL	190 (8") WALL	240 (10") WALL	290 (12") WALL
UP TO 1200 (4'-0)	2 - L64x64x6.4	2 - L89x89x7.9	L89x89x7.9 + L127x 89 x 7.9 LLV	3 - L89x89x7.9
1201 TO 1800 (4'-0 TO 6'-0)	2 - L89x64x6.4 LLV	2 - L127x89x7.9 LLV	L127x89x7.9 LLV + L127x127x7.9	3 - L127x89x7.9 LLV
1801 TO 2400 (6'-0 TO 8'-0)	2 - L89x64x7.9 LLV	2 - L127x89x9.5 LLV	L127x89x9.5 LLV + L127x127x9.5	3 - L127x89x9.5 LLV
2401 TO 3000 (8'-0 TO 10'-0)	2 - L89x64x9.5 LLV	2 - L152x89x9.5 LLV	L152x89x9.5 LLV + L127x127x9.5	3 - L152x89x9.5 LLV

- WELD BACK TO BACK ANGLES TOGETHER TOP AND BOTTOM WITH 5mm (3/16") FILLET 50mm (2") LONG AT 450mm (18") MAXIMUM CENTERS.
- MINIMUM BEARING FOR STEEL LINTELS SHALL BE 150mm (6") AND BLOCK LINTELS SHALL BE 200mm (8").
- FOR WALLS OVER 300mm (12") THICK ADD ONE ANGLE FOR EACH ADDITIONAL 100mm (4") OF WALL THICKNESS OR PORTION THEREOF.
- FOR LINTELS ABUTTING STEEL COLUMNS, CONC WALL OR COLUMNS PROVIDE L 90x90x10 SHELF ANGLE.
- FILL VOIDS OF LINTEL BLOCK WITH 12.5 MPa GROUT MIN.
- USE MASONRY LINTELS IN ALL FIRE RATED MASONRY WALLS - SEE ARCH DWG. FOR WALL RATINGS.
- FOR 140 BLOCK USE BLOCK LINTELS.
- ALL STEEL LINTELS AND SHELF ANGLES IN THE EXTERIOR MASONRY SHALL BE HOT DIP GALVANIZED.



LINTEL BEARING ON MASONRY

TYPICAL BRACE CONNECTION DETAILS



Consultant:

ARCHITECT:

SAPLYS ARCHITECTS INC.

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P: 905.510.0595

No.	Description	Date
2	ISSUED FOR BUILDING PERMIT	JUNE 27,25
1	ISSUED FOR 50% PROGRESS	MAY 30,24

Issues / Revision

CONFIRM ALL GRIDS, DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS. DO NOT SCALE DRAWINGS.

CONTACT ARCHITECT AND ENGINEER FOR ANY DISCREPANCIES.

ONLY LATEST APPROVED DRAWINGS TO BE USED FOR CONSTRUCTION.

AMR ENGINEERING LTD.
STRUCTURAL ENGINEERS
920 Alness Street, Suite 205,
Toronto, ON M3J 2H7
(416) 551 - 1611

Project North

Stamp:

LICENSED PROFESSIONAL ENGINEER
06-27-25
D. KOTOBELLI
100159847
PROVINCE OF ONTARIO

Project :

WAREHOUSE AND OFFICE HEADQUARTERS

45 BLOWERS CRES
AJAX, ON L1Z ON4

Drawing Title:

GENERAL NOTES & TYPICAL DETAILS

Date: 30-05-2024

Drawing No.

S502

Scale: As Noted

Drawn By: Author

Checked By: Checker

Job No: 2280