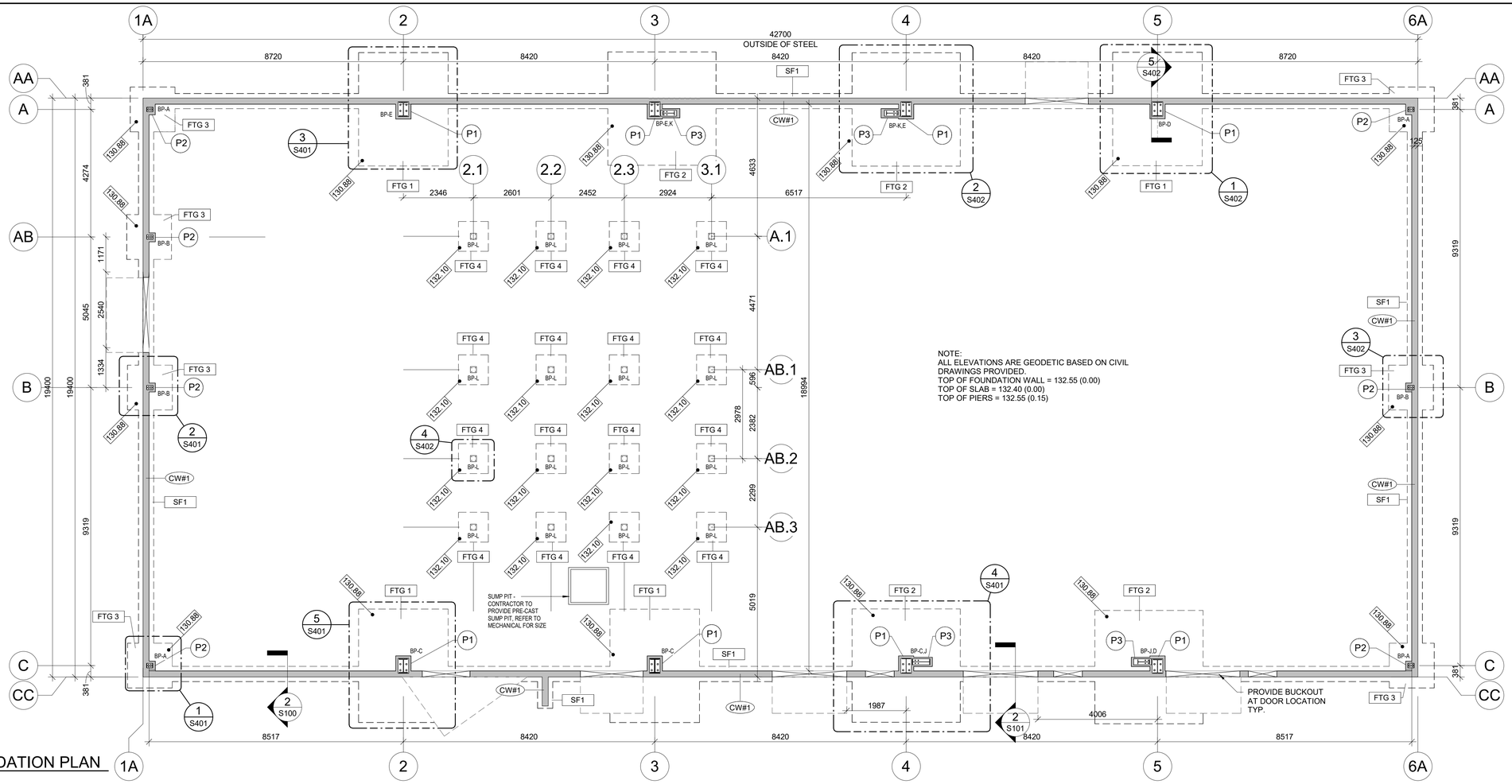


1 S100 **FOUNDATION PLAN** 1 : 75

STRIP FOOTING SCHEDULE

MARK	SIZE		REINFORCING	DOWELS	REMARKS
	WIDTH	THICKNESS			
SF1	508	203	(2)-15M CONT.	15M DOWELS 600 VERT. x 250 HORIZ. @ 300 O.C STAGGERED.	TYPICAL WALL STRIP FOOTING

FOUNDATION WALL SCHEDULE

MARK	WALL WIDTH	REINFORCING
CW#1	203	15M CONTINUOUS TOP & BOTTOM

PIER SCHEDULE

MARK	SIZE	REINFORCING	STIRRUPS	COUNT
P1	510x660	(10)-20M VERTICAL	10M TIES @ 300 O.C. + (2) 10M TIES @ TOP (50mm) + (1) 75mm LOWER OF TOP	8
P2	355x410	(4)-20M VERTICAL	10M TIES @ 300 O.C. + 2-10M TIES @ TOP	7
P3	750x310	(6)-20M VERTICAL	10M TIES @ 300 O.C. + 2-10M TIES @ TOP	4

PAD FOOTING SCHEDULE

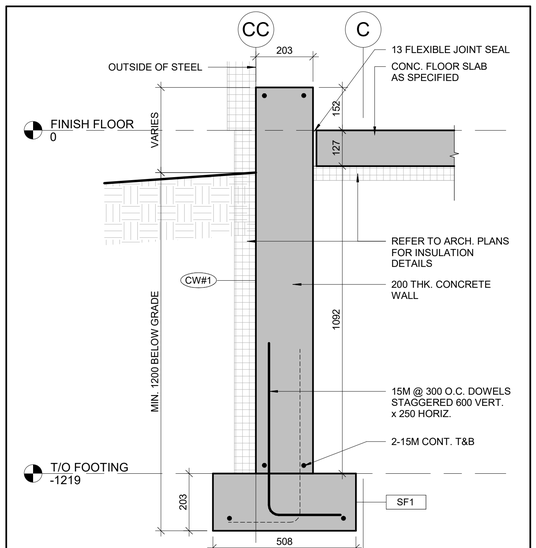
MARK	SIZE			REINFORCING	DOWELS	COUNT
	LENGTH	WIDTH	THICKNESS			
FTG 1	3800	3000	600	(14)-20M LONG BLL, (20)-20M SHORT BUL	20M DOWELS 1050 VERT x 710 HORIZ. TO MATCH PIER VERT,	4
FTG 2	3800	3625	600	(14)-20M LONG BLL, (20)-20M SHORT BUL	20M DOWELS 1050 VERT x 710 HORIZ. TO MATCH PIER VERT,	4
FTG 3	1500	1500	400	(6)-20M EACHWAY BOTTOM	20M DOWELS 1050 VERT x 710 HORIZ. TO MATCH PIER VERT,	7
FTG 4	1000	1000	250	(3)-20M EACHWAY BOTTOM	REFER TO DETAIL	16

FOUNDATION PLAN NOTES

1. FOUNDATIONS HAVE BEEN DESIGNED FOR AN ALLOWABLE SAFE BEARING PRESSURE OF 150 kPa S.L.S. AND A FACTORED CAPACITY OF 225 kPa U.L.S. CONTRACTOR TO ENSURE SOIL IS CAPABLE OF SUPPORTING DESIGN LOADS (GEOTECHNICAL ENGINEER TO CONFIRM SITE CONDITIONS).
2. BOTTOM OF FOOTINGS AT EXTERIOR OF BUILDING TO BE A MINIMUM OF 1220mm (4'-0") BELOW FINISHED GRADE ELEVATION.
3. COORDINATE FOUNDATION WALL CONTROL JOINTS WITH ARCHITECTURAL DRAWINGS.
4. CONFIRM IF EXISTING EXCAVATED MATERIAL IS SUITABLE FOR BACKFILLING PURPOSES WITH THE GEOTECHNICAL CONSULTANT PRIOR TO CONSTRUCTION. PROVIDE IMPORTED GRANULAR BACKFILL MATERIAL TO THE SATISFACTION OF THE GEOTECHNICAL CONSULTANT.
5. COORDINATE THE SIZE AND LOCATION OF ALL SERVICE OPENINGS THROUGH FOUNDATION WALLS WITH MECHANICAL AND ELECTRICAL DRAWINGS.
6. FOR ADDITIONAL INFORMATION ON FOOTINGS, PIERS AND FOUNDATIONS, SEE SCHEDULES.
7. FINISHED FLOOR LEVEL IS BASED ON GEODETIC ELEVATION OF 132.40 PER CIVIL DRAWINGS PREPARED BY MTE. TOP OF FOOTING ELEVATIONS ARE DENOTED AS XXX.XX ⟵● RELATED TO GEODETIC SITE PLAN ELEVATIONS. MINIMUM UNDERSIDE OF FOOTING IS 4'-0" (1.22m) BELOW FINISHED GRADE.
8. REMOVE ALL UNSUITABLE FILL AND ORGANIC MATERIAL FROM CONSTRUCTION AREA AND REPLACE WITH MATERIAL AS APPROVED BY SOIL ENGINEER.
9. ALL BACKFILL SHALL BE PLACED SIMULTANEOUSLY AGAINST BOTH SIDES OF FOUNDATION WALLS. AT NO TIME SHALL THE DIFFERENCE IN ELEVATION BE GREATER THAN 2'-0".
10. ALL TOP OF PIERS TO BE 150mm ABOVE FFL.

FOUNDATION PLAN LEGEND

P#	DENOTES PIER. SEE SCHEDULE
CW#	DENOTES CONCRETE WALL. SEE SCHEDULE
SF#	DENOTES STRIP FOOTING. SEE SCHEDULE
FTG#	DENOTES PIER FOOTING. SEE SCHEDULE
XXX.XX	DENOTES TOP OF FOOTING ELEVATION



2 S100 **TYP. FOUNDATION WALL DETAIL** 1 : 10

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100228719
2024-11-01
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3359 MISSISSAUGA ROAD
MISSISSAUGA, ONTARIO.
L5L 1C6

project name & address

UTM - NEW BUILD
3265 PRINCIPAL'S ROAD,
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sheet title

FOUNDATION PLAN

scale
As indicated

drawn by
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checked by
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date
2024NOV01

sheet no.
S100

sheet size
D (24x36)

project number
24-036

rev.
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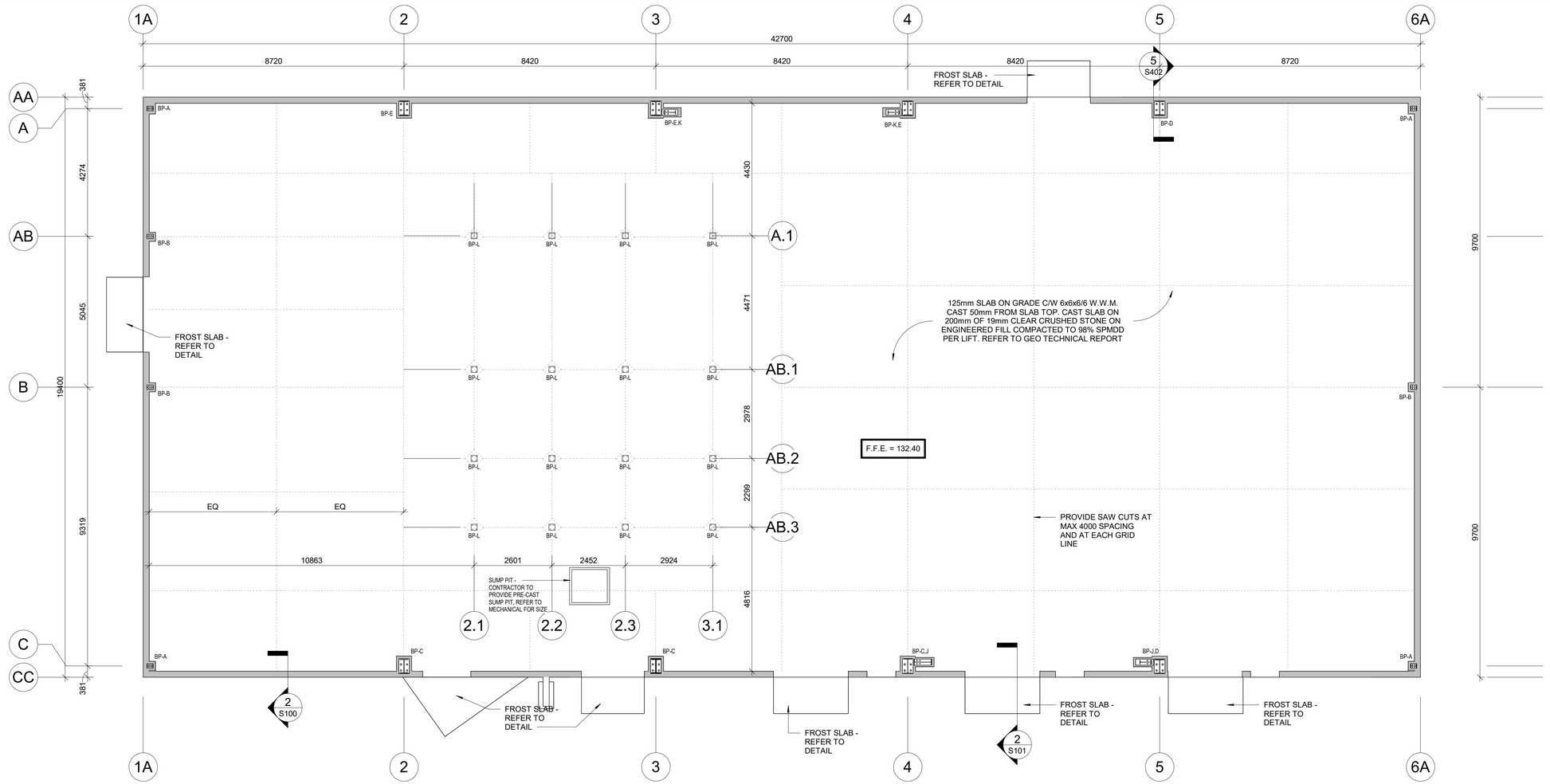
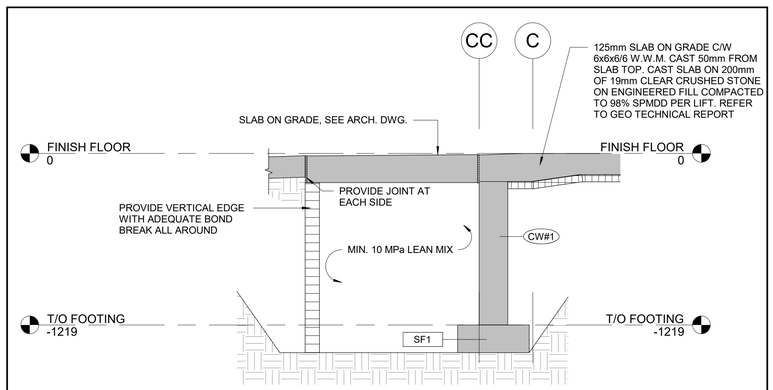


1 S101 SLAB PLAN
1 : 75

SLAB PLAN NOTES

1. TOP OF MAIN FLOOR SLAB-ON-GRADE IS 132.40
2. TYPICAL SLAB ON GRADE CONSTRUCTION: 125mm SLAB ON GRADE C/W 6x6x6/6 W.W.M. CAST 50mm FROM SLAB TOP. CAST SLAB ON 200mm OF 19mm CLEAR CRUSHED STONE ON ENGINEERED FILL COMPACTED TO 98% SPMDD PER LIFT. REFER TO GEO TECHNICAL REPORT
3. REFER TO TABLE ON DRAWING S600 FOR CONCRETE MIX DESIGN REQUIREMENTS.
4. DEPRESS TOP OF CONCRETE FOUNDATION WALLS 8" BELOW T/O SLAB AT ALL DOOR OPENINGS.
5. CENTRE ALL CONCRETE PIERS UNDER STEEL COLUMN BASE PLATES UNLESS OTHERWISE NOTED.
6. PROVIDE EPOXY COATED REINFORCING BARS AT ALL HORIZONTAL EXTERIOR CONCRETE SURFACES.
7. SEE TYPICAL DETAILS FOR CONTROL JOINT PLACEMENT IN CONCRETE SLAB-ON-GRADE. FINAL LOCATIONS OF CONTROL JOINTS MUST BE COORDINATED BETWEEN THE CONCRETE CONTRACTOR AND THE FLOOR FINISHING CONTRACTOR THROUGH THE PROJECT MANAGER.



2 S101 FROST SLAB DETAIL
1 : 20

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SLAB PLAN

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2024NOV01

sheet no.
S101

sheet size
D (24x36)

project number
24-036

rev.
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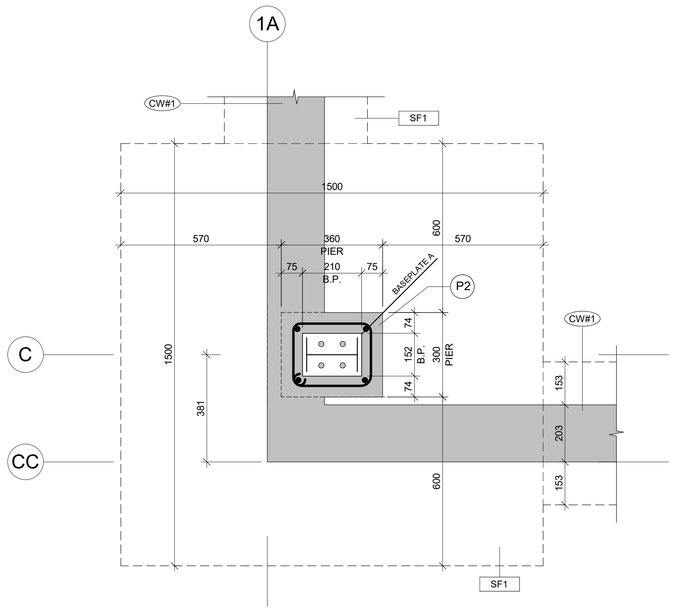
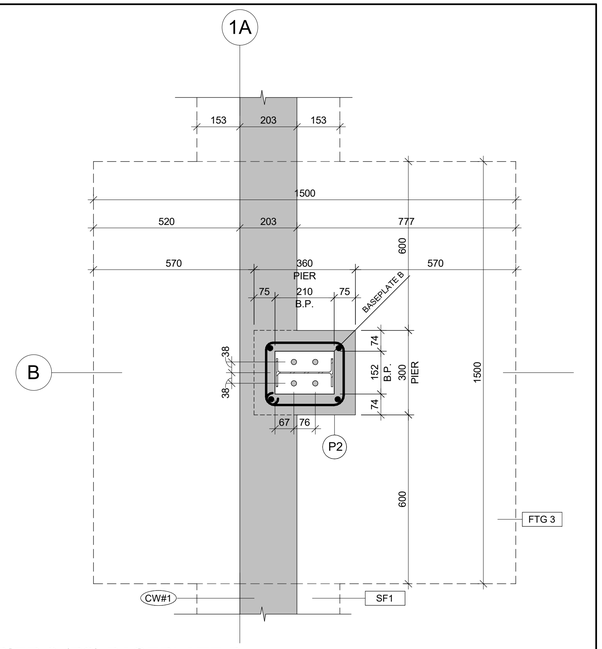
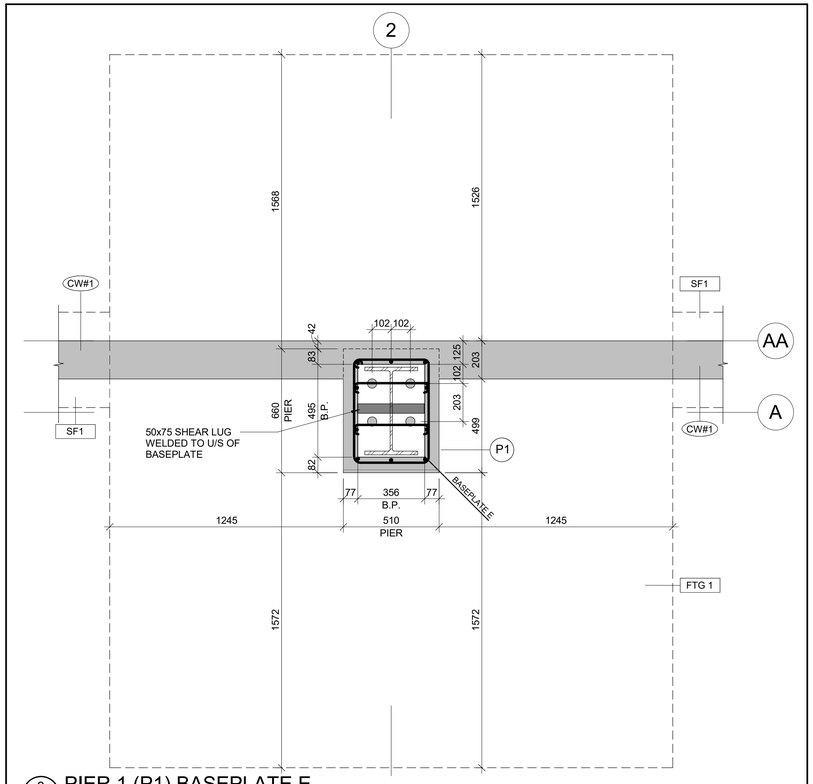


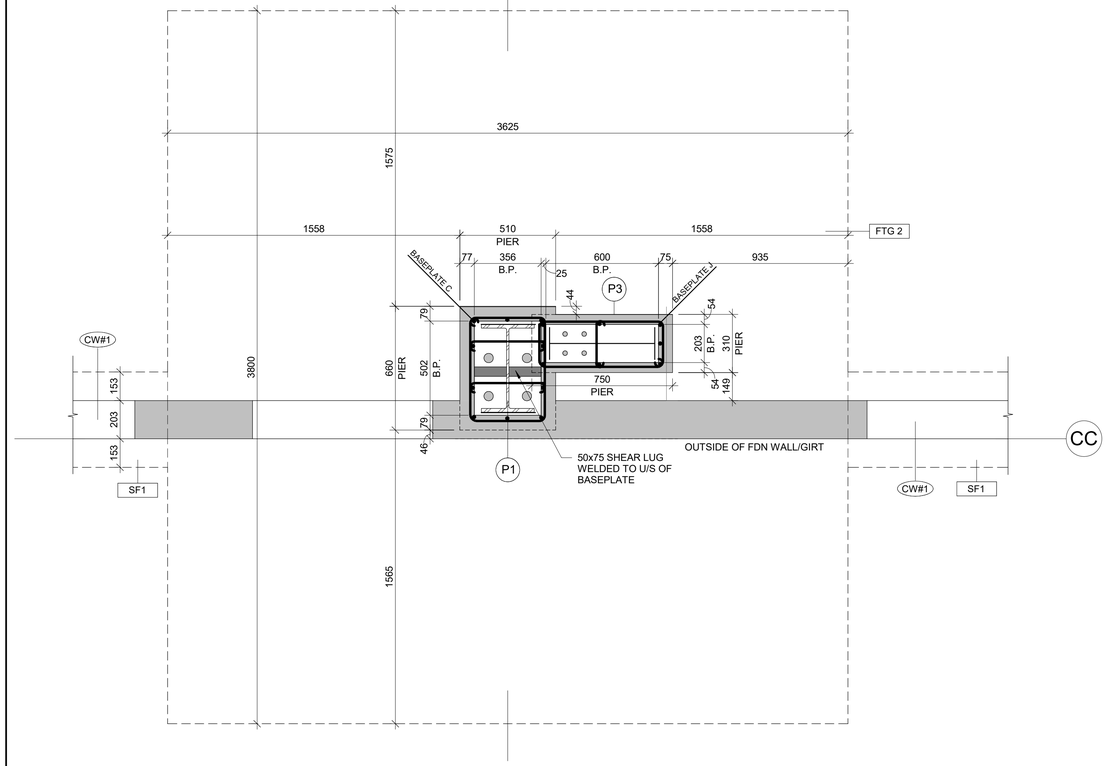
1 S401 PIER 2 (P2) BASEPLATE A
1 : 10



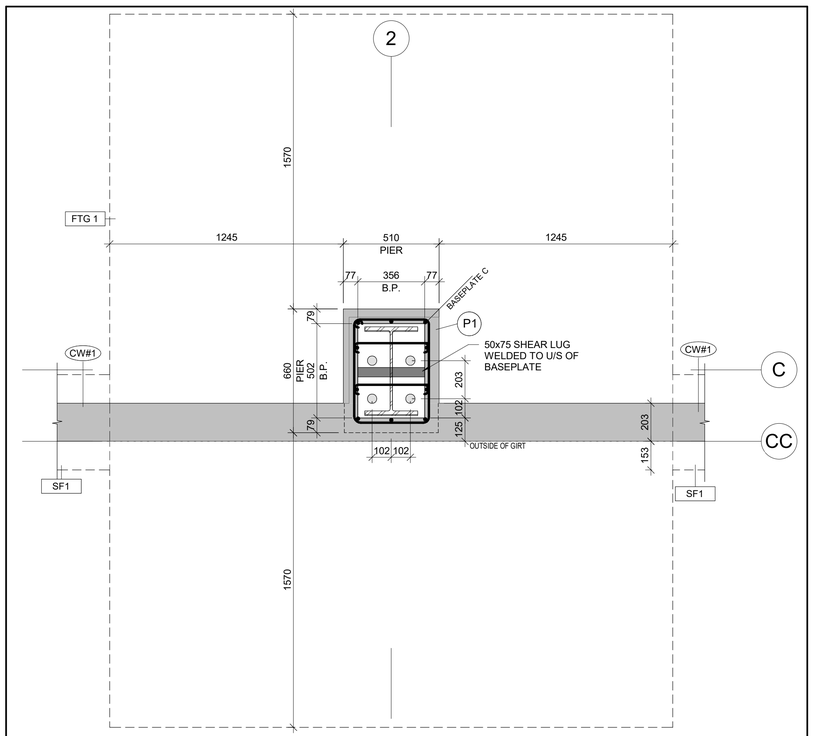
2 S401 PIER 2 (P2) BASEPLATE B
1 : 10



3 S401 PIER 1 (P1) BASEPLATE E
1 : 15



4 S401 PIER 1,3 (P1,P3) BASEPLATE C/J
1 : 15



5 S401 PIER 1 (P1) BASEPLATE C
1 : 15

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2024NOV01

sheet no.
S401

sheet size
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project number
24-036

rev.
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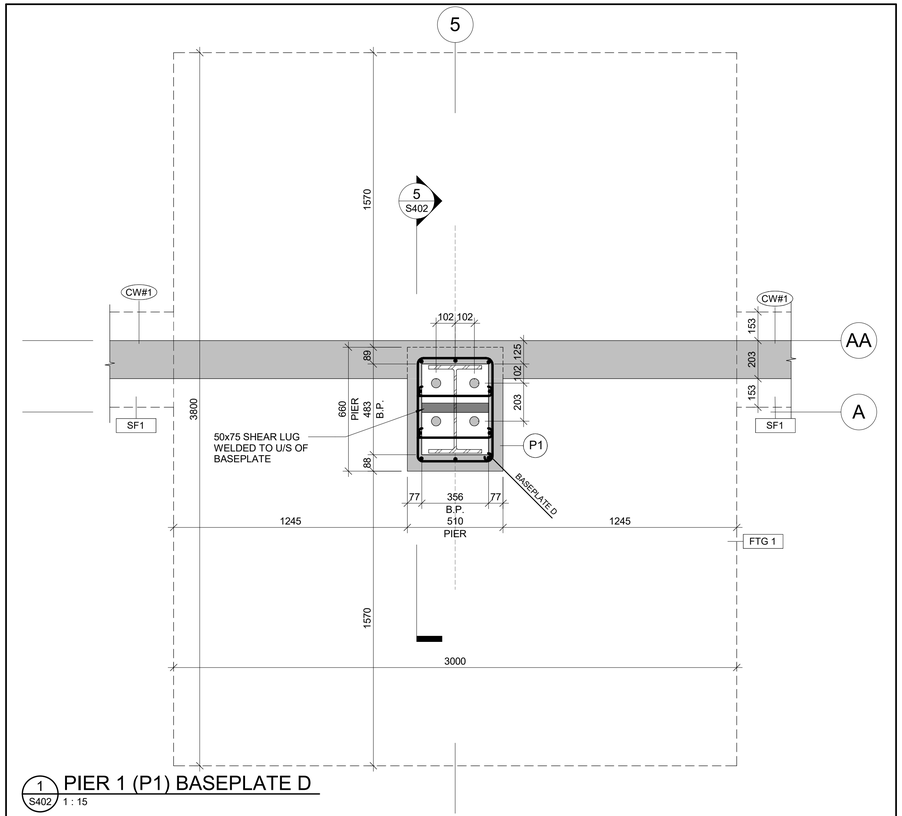
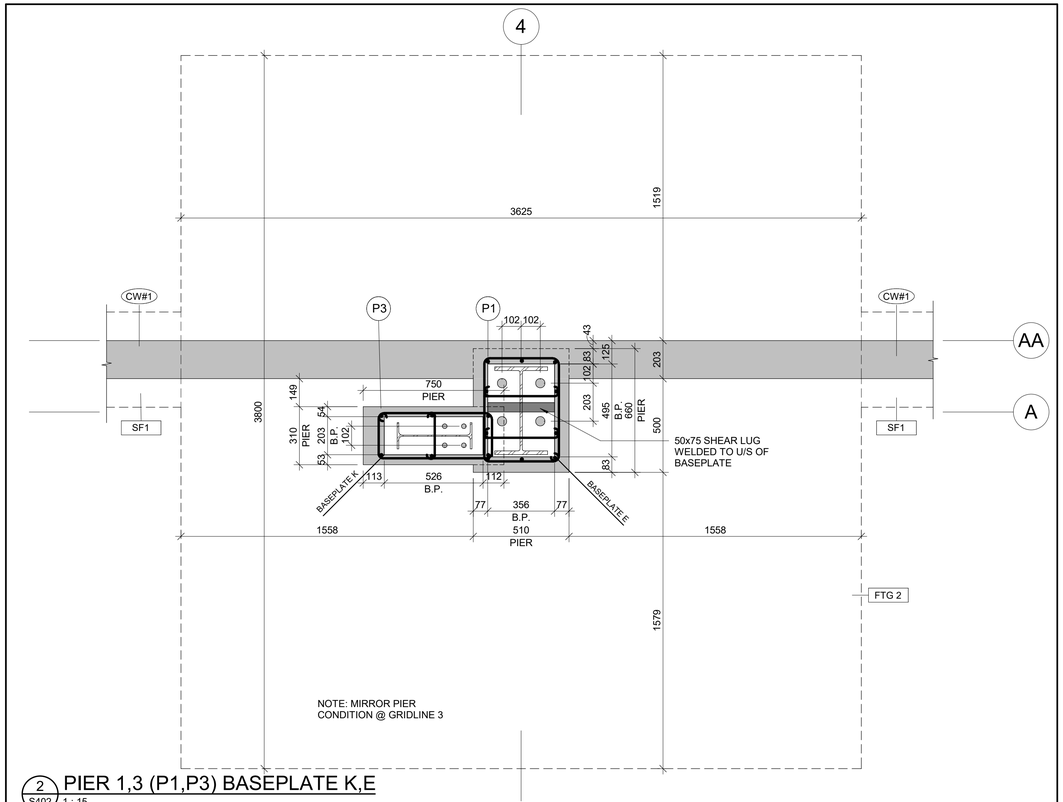


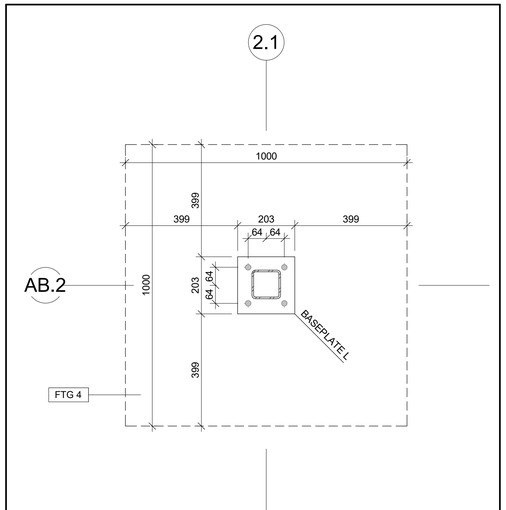
1 S402 PIER 1 (P1) BASEPLATE D

1 : 15



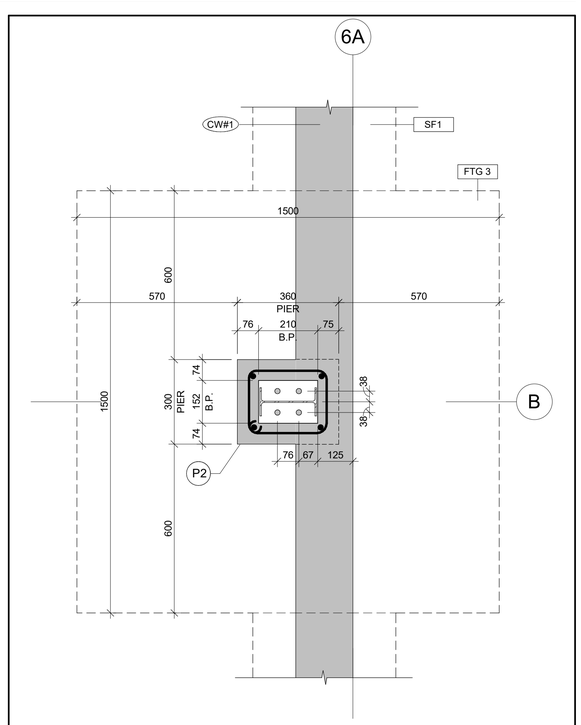
2 S402 PIER 1,3 (P1,P3) BASEPLATE K,E

1 : 15



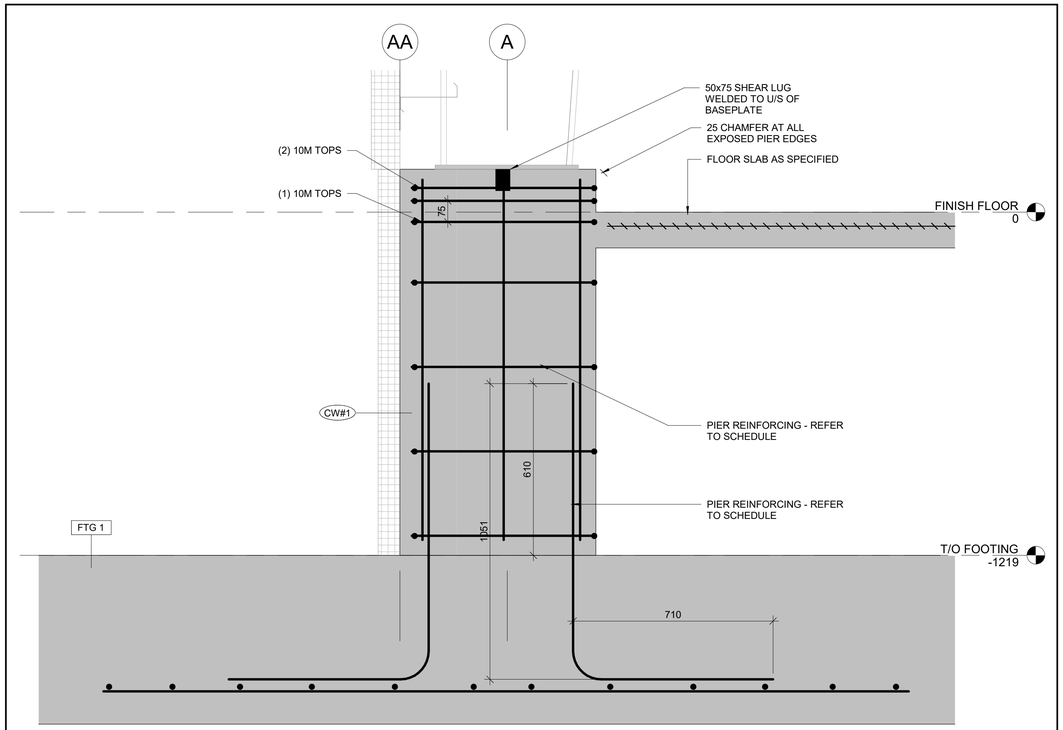
4 S402 INTERIOR FOOTING (FTG 5) BASEPLATE L

1 : 10



3 S402 PIER (P2) BASEPLATE B

1 : 10



5 S402 SECTION @ PIER

1 : 10

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project number
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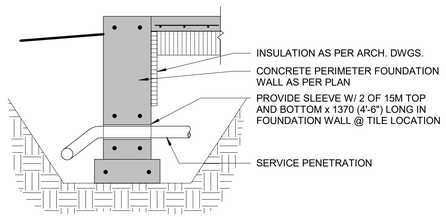

1 S500 TYP. FOUNDATION PENETRATION DETAIL
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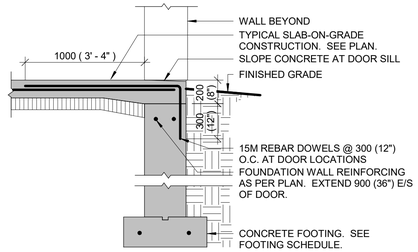
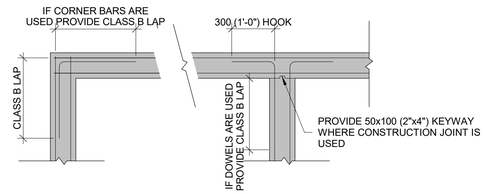
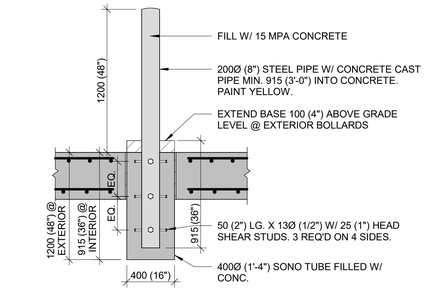


2 S500 TYP. FOUNDATION DETAIL @ EXT. DOORS
N.T.S.



3 S500 TYP. CONC. WALL - HORIZONTAL CORNER REINF.
N.T.S.



14 S500 TYP. BOLLARD DETAIL
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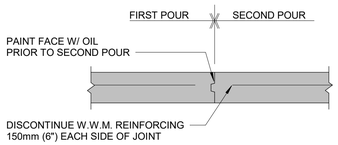
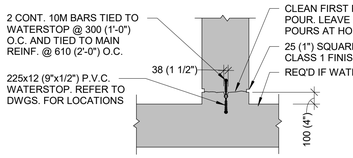
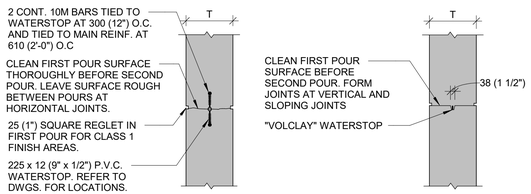
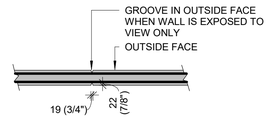


4 S500 TYP. SLAB CONSTRUCTION JOINT DETAIL
N.T.S.

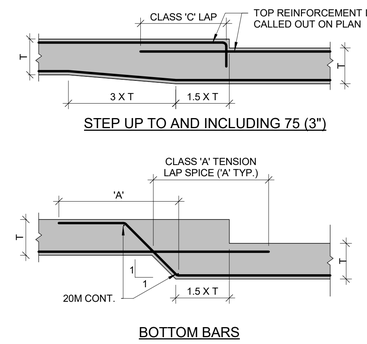






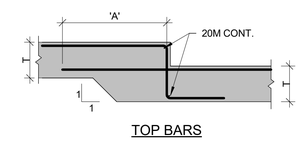
CONTROL JOINTS DENOTED ON PLAN AS W.C.J.

6 S500 TYP. WALL CONTROL JOINT
N.T.S.



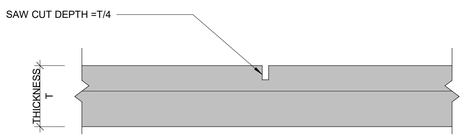
STEP UP TO AND INCLUDING 75 (3")

BOTTOM BARS

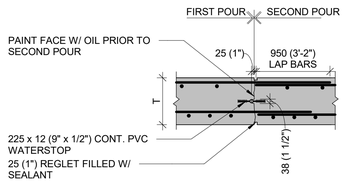


TOP BARS

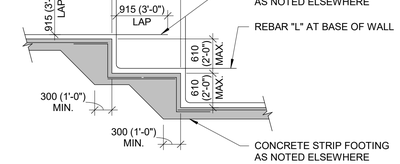
STEPS OVER 75 (3") UP TO AND INCLUDING 'T-50'



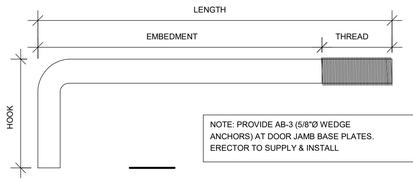
8 S500 TYP. SAW-CUT SLAB DETAIL
N.T.S.



5 S500 TYP. CONSTRUCTION JOINT DETAILS
N.T.S.

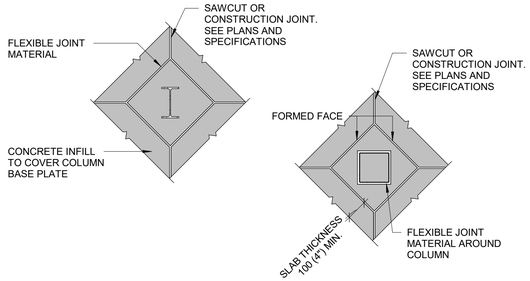


9 S500 TYP. STEP FOOTING DETAIL
N.T.S.

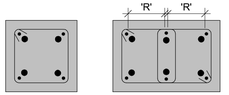


MARK #	DIA.	HOOK	EMBEDMENT	THREAD	LENGTH	TYPE	GROUT
BP A,B,F,G,L	19 Ø	75	405	100	510	ANCHOR	50
BP K,J	25 Ø	100	510	100	610	ANCHOR	50
BP C,D,E	51 Ø	200	1016	150	1116	ANCHOR	100

10 S500 ANCHOR BOLT DETAIL
1 : 32



12 S500 TYP. SLAB JOINT
N.T.S.



NOTES :

1. DOWELS (IF USED) NOTED THUS " ● "
2. PIER VERTICALS NOTED THUS " • "
3. IF 'R' IS GREATER THAN 150 (6"), PROVIDE ADDITIONAL TIES SHOWN THUS AT SAME SPACING AS REGULAR TIES
4. ALL TIES TO HAVE 135° HOOKS AND TIES ARE TO BE ROTATED AROUND PIER SO THAT HOOKED CORNERS AT ADJACENT TIES ARE NOT ALIGNED

13 S500 TYP. PIER SECTION
N.T.S.

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LOADS

MISSISAUGA, ONTARIO
Ss= 1.1 kPa
Sr= 0.4 kPa
q1/50= 0.47 kPa

ROOF SNOW LOAD	REFER TO U-BUILD
ROOF LIVE LOAD	REFER TO U-BUILD
ROOF DEAD LOAD	REFER TO U-BUILD
FLOOR LIVE LOAD	REFER TO U-BUILD

GENERAL CONCRETE NOTES:

1. CONCRETE MIX:
   FOUNDATION WALLS, EXTERIOR FOOTINGS, PIERS:
   CLASS F-2 EXPOSURE, 25MPa STRENGTH AT 28 DAYS
   EXTERIOR SIDEWALKS, CURBS:
   CLASS C-2 EXPOSURE, 32MPa STRENGTH AT 28 DAYS
   SLAB-ON-GRADE, FOOTINGS:
   CLASS N, 25MPa STRENGTH AT 28 DAYS
2. CONCRETE WHICH IS EXPOSED TO FREEZE THAW CYCLES TO HAVE MINIMUM 6% +/- 1% AIR ENTRAINMENT.
3. MAXIMUM CONCRETE SLUMP SHALL BE 76mm +/-19mm (3" +/- 3/4") UNLESS NOTED.
4. ALL REINFORCING SHALL BE G30.18 GRADE (Fy = 400 MPa)INCLUDING ALL TIES AND STIRRUPS USE ONLY CANADIAN MANUFACTURED STEEL. UNDER NO CIRCUMSTANCES MAY REINFORCING STEEL BE CUT ON SITE. WHEN INTERFERENCES OCCUR, OBTAIN WRITTEN INSTRUCTION FROM THE ENGINEER.
5. REINFORCING DETAILING SHALL CONFORM TO CSA A23.3-14 REQUIREMENTS. SUBMIT SHOP DRAWINGS FOR REINFORCING STEEL DETAILING TO THE ENGINEER FOR APPROVAL.
6. MINIMUM COVER TO REINFORCING: SEE TABLE INDICATING MIN. COVER REQUIRED.
7. ALL CONCRETE MATERIALS, PROCEDURES, TOLERANCES AND WORKMANSHIP SHALL CONFORM WITH THE LATEST ISSUE CSA A23.1-14 AND CSA A23.2-14. A COPY OF THIS STANDARD SHALL BE AVAILABLE ON SITE. CONCRETE FINISHES MUST BE SUITABLE TO RECEIVE APPLIED FINISHES AS SHOWN ON ARCHITECTURAL DRAWINGS.
8. MEASURES MUST BE TAKEN TO ENSURE PROPER CURING OF CONCRETE. REFER TO SECTION 21 OF CSA A23.1-14 FOR WINTER CONSTRUCTION SEE SPECIFICATION ON WINTER CONCRETING.
9. INFORM ENGINEER MINIMUM 24 HOURS PRIOR TO EACH POUR, FOR THE REVIEW OF THE REINFORCING.
10. A CONCRETE POUR MAY COMMENCE AFTER ALL REINFORCING STEEL REQUIRED FOR THE POUR IS PLACED AND SECURELY TIED IN ITS PROPER POSITION AND APPROVED BY THE ENGINEER OR HIS REPRESENTATIVE, IN WRITING.
11. NO OPENING SHALL BE MADE IN WALLS, UNLESS SHOWN ON STRUCTURAL DRAWINGS. DO NOT PLACE ANY SLEEVES OR DUCT OPENING IN SLABS LESS THAN 305mm (12") FROM COLUMN UNLESS INDICATED OTHERWISE. A MAXIMUM OF 4 SLEEVES MAY BE PLACED IN THE AREA BETWEEN 305mm (1'-0") AND 915mm (3'-0") AWAY FROM THE COLUMN FACE UNLESS INDICATED.
12. NO CONSTRUCTION JOINTS ARE TO BE MADE UNLESS SHOWN ON DRAWINGS OR APPROVED BY ENGINEER. PROVIDE 10M BARS AT 400mm (16") O.C. TOP x 1220mm (4'-0") LONG ACROSS ALL CONSTRUCTION JOINTS IN SLABS.
13. PLACE MIN. 12.5mm (1/2") WATERPROOF FIBREBOARD OR APPROVED EQUAL BETWEEN EXISTING BUILDING AND NEW CONSTRUCTION.
14. CONCRETE TESTS SHALL BE MADE BY AN INDEPENDENT TESTING COMPANY. THE TEST SHALL CONSIST OF 3 CYLINDERS FOR EACH 70 CU. M. OF CONCRETE AND EACH CLASS OF CONCRETE POURED ON ANY DAY. ONE CYLINDER SHALL BE TESTED AT 7 DAYS AND 2 AT 28 DAYS. MAKE ONE SLUMP TEST ON SITE FOR EACH SET OF CYLINDERS. MAKE A MINIMUM OF ONE TEST FOR EACH CONCRETE POUR. PROVIDE ENGINEER WITH ONE COPY OF EACH TEST REPORT AS THEY ARE ISSUED. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR THE ORDERING AND ORGANIZATION OF TESTS, AS SPECIFIED.
15. CONCRETE THAT HAS BEEN IN THE READY MIX TRUCK LONGER THAN 1 1/2 HOURS SHALL BE REJECTED.
16. NO WATER IS TO BE ADDED TO THE CONCRETE ON THE SITE, OR TO THE CONCRETE IN THE TRUCK UNDER ANY CIRCUMSTANCES.
17. SLAB ON GRADE TO BE SAW CUT IN PANELS NOT EXCEEDING 30 TIMES THE SLAB THICKNESS IN ANY DIRECTION. SAW CUTS TO BE 4mm (1/8") x 1/4 OF THE SLAB THICKNESS. SAW CUTTING SHALL BE DONE WITHIN 16 HOURS OF THE PLACEMENT OF CONCRETE.

GENERAL STRUCTURAL STEEL NOTES:

1. ALL CONSTRUCTION, ERECTION, TOLERANCES, WELDING AND DESIGN, ETC. SHALL CONFORM TO THE REQUIREMENTS OF CSA S16-14.
2. STRUCTURAL WELDING ON THIS PROJECT SHALL BE UNDERTAKEN BY FIRMS CERTIFIED BY THE CANADIAN WELDING BUREAU TO CSA W47.1-09(R2014), DIVISIONS 1 OR 2.1. DECK WELDING SHALL BE UNDERTAKEN BY FIRMS CERTIFIED TO CSA W47.1-09(R2014) FOR ARC SPOT WELDING. CONTRACTOR TO PROVIDE PROOF OF CERTIFICATION PRIOR TO COMMENCING WORK.
3. STRUCTURAL WELDING TO CONFORM TO CSA W59-2018; ELECTRODE GRADE TO BE E48xx / TENSILE STRENGTH 490 MPa MINIMUM.
4. STRUCTURAL STEEL SHAPES AND PLATE SHALL BE G.40.21 350W GRADE, UNLESS OTHERWISE NOTED.
5. ALL STRUCTURAL BOLTS SHALL BE ASTM A325M UNLESS OTHERWISE NOTED. ANCHOR BOLTS TO BE ASTM A36 OR G40.21 300W UNLESS OTHERWISE NOTED.
6. USE CGSB 1-GP 40D PRIMER COAT (FIELD TOUCH-UP) (OR 1-CPMA-73) TO ALL SURFACES WITH THE EXCEPTION OF THOSE SURFACES TO BE WELDED OR ENCASED IN CONCRETE.
7. ALL PLATES, ANCHOR BOLTS, ANCHORS, ETC., SHOWN EMBEDDED IN CONCRETE SHALL BE SUPPLIED BY THE STEEL CONTRACTOR AND PLACED BY OTHERS TO DRAWINGS SUPPLIED BY THE STEEL CONTRACTOR. THE LINE OF THE ANCHOR BOLTS SHALL BE PARALLEL WITH THE TIE JOISTS OF THE STRUCTURE IMMEDIATELY ABOVE.
8. CONNECTIONS BETWEEN STRUCTURAL MEMBERS SHALL NOT INTERFERE WITH ARCHITECTURAL FINISHES.
9. INFORM ENGINEER AND/OR SITE INSPECTOR, IMMEDIATELY OF ANY MEMBERS THAT DO NOT FIT, REQUIRE FORCE TO CONNECT, OR DEVIATE FROM CSA TOLERANCES.
10. THE CONTRACTOR MAY SUBSTITUTE MATERIAL AND MEMBERS, SUBJECT TO PRIOR APPROVAL OF THE ENGINEER. CALCULATIONS MUST BE PROVIDED TO JUSTIFY THE SUBSTITUTION.
11. PROPOSED ERECTION PROCEDURES AND DRAWINGS SHALL BE APPROVED BY THE ENGINEER.
12. STEEL FABRICATOR TO SUBMIT COPIES OF SHOP DRAWINGS INCLUDING CONNECTION DETAILS, BRACING & LOCATION OF ALL SPLICES FOR THE ENGINEER TO REVIEW PRIOR TO COMMENCEMENT OF FABRICATION. ALL SHOP DRAWINGS TO BE SEALED AND SIGNED BY A P.ENG. REGISTERED IN THE PROVINCE OF ONTARIO.
13. ATTACHMENTS FOR MECHANICAL, ELECTRICAL AND OTHER SERVICES SHALL BE MADE BY USING APPROVED CLAMPING DEVICES OR 'U' BOLT TYPE CONNECTORS. NO DRILLING OR CUTTING SHALL BE DONE UNLESS APPROVED BY THE PROJECT ENGINEER.
14. ANCHOR BOLTS CAST IN CONCRETE TO HAVE MINIMUM 200mm (8") EMBEDMENT DEPTH UNLESS NOTED OTHERWISE.
15. INSPECTION OF STRUCTURAL STEEL FABRICATION AND ERECTION, INCLUDING ARRANGEMENT, WELDS, BOLT TENSION, PLUMB, ETC., IS TO BE PERFORMED BY OTHERS, AS CERTIFIED BY THE CANADIAN WELDING BUREAU AND CISC.

MINIMUM REQUIREMENTS FOR COLD WEATHER CONCRETE

THESE REQUIREMENTS ARE APPLICABLE WHEN THE AIR TEMPERATURE FALLS BELOW 5°C WITHIN 24hr OF PLACING.

1. CONCRETE, WHEN PLACED IN THE FORMS, SHALL HAVE A MINIMUM AND MAXIMUM TEMPERATURE REFER TO CSA A23.1-14 TABLE No. 14 FOR THE PERMISSIBLE CONCRETE TEMPERATURE AT PLACING. CONCRETE DELIVERED TO THE SITE BELOW THE MINIMUM INDICATED IN TABLE No. 14 MUST BE REJECTED BY THE JOB SUPERINTENDENT OR HIS REPRESENTATIVE.
2. THE ENCLOSURE SURROUNDING THE WALLS AND PILASTERS SHALL BE MAINTAINED AT 25°C TO 27°C CONTINUOUSLY FOR A MINIMUM OF 3 DAYS. THIS TEMPERATURE MUST BE CHECKED AT 2 HOUR INTERVALS, BY MEANS OF A THERMOMETER PLACED AT THE CEILING OF THE ENCLOSURE. KEEP THE CONCRETE FROM FREEZING FOR A MINIMUM OF 7 DAYS AFTER PLACING BY MAINTAINING A TEMPERATURE OF 10°C IN THE ENCLOSURE.
3. USE COMPRESSED AIR TO CLEAR THE ICE OR SNOW FROM FORMS OR STEEL. DO NOT USE CALCIUM CHLORIDE FOR CLEARING ICE AND SNOW.
4. CHECK THE WEATHER FORECAST DAILY IN ORDER TO ANTICIPATE HEATING AND PROTECTION REQUIREMENTS.
5. A MAXIMUM OF 2% CALCIUM CHLORIDE MAY BE ADDED TO THE CONCRETE IN THE PLANT.

SHOP DRAWING SUBMISSIONS

1. THE CONTRACTOR, BEFORE CONSTRUCTION, MUST SUBMIT THE FOLLOWING SHOP DRAWINGS STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN ONTARIO:
   A. STRUCTURAL STEEL
2. THE CONTRACTOR, BEFORE CONSTRUCTION, MUST SUBMIT THE FOLLOWING SHOP DRAWINGS WHICH ARE NOT REQUIRED TO BE STAMPED & SIGNED BY A PROFESSIONAL ENGINEER:
   A. CONCRETE REINFORCING
   B. ANCHOR BOLT SETTING PLAN

GENERAL NOTES & SPECIFICATIONS

1. ALL DESIGN AND WORKMANSHIP ON THIS PROJECT SHALL MEET THE REQUIREMENTS OF THE ONTARIO BUILDING CODE.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS (INCLUDING LATEST AMENDMENTS) AND OTHER LOCAL AUTHORITIES HAVING JURISDICTION.
3. ALL DIMENSIONS SHALL BE VERIFIED ON THE JOB. READ THE STRUCTURAL DRAWINGS AND SPECIFICATIONS WITH THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS. REPORT ANY DISCREPANCIES TO THE ENGINEER PROMPTLY AND BEFORE CONSTRUCTION.
4. DO NOT SCALE DRAWINGS AND USE ONLY THOSE DRAWINGS MARKED "ISSUED FOR CONSTRUCTION". REMOVE EXISTING DRAWINGS FROM SITE, ON RECEIPT OF NEW REVISIONS.
5. ALL SHOP DRAWINGS TO BE SUBMITTED FOR REVIEW.

GENERAL FOUNDATION NOTES:

1. REMOVE ALL UNSUITABLE FILL AND ORGANIC MATERIAL FROM CONSTRUCTION AREA AND REPLACE WITH MATERIAL AS APPROVED BY SOILS ENGINEER.
2. SOIL BEARING CAPACITY MUST BE VERIFIED ON SITE BY A SOILS ENGINEER, IN WRITING, PRIOR TO ANY CONCRETE PLACEMENT.
3. ALL FOOTINGS MUST BE A MINIMUM OF 1220mm (4'-0") BELOW EXTERIOR FINISHED GRADE FOR FROST PROTECTION.
4. ALL BACKFILL SHALL BE PLACED SIMULTANEOUSLY AGAINST BOTH SIDES OF FOUNDATION WALLS. AT NO TIME SHALL THE DIFFERENCE IN ELEVATION BE GREATER THAN 610mm (2'-0").
5. SLAB ON GRADE SHALL BE AS PER THE APPROVED DRAWINGS AND PLACED ON 6" OF GRANULAR 'A' FILL AND COMPACTED TO 98% STANDARD PROCTOR DENSITY. ALL OTHER UNDER FLOOR FILL SHALL BE GRANULAR 'B' PLACED IN 12" MAXIMUM LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
6. STEPPED FOOTINGS SHALL HAVE A MAXIMUM SLOPE OF 7 VERTICAL TO 10 HORIZONTAL UNLESS NOTED.
7. PROTECT SOIL SUPPORTING FOOTINGS FROM FREEZING BEFORE AND AFTER CONCRETE IS POURED.
8. DO NOT BACKFILL BASEMENT WALL UNTIL THE MAIN FLOOR AND BASEMENT FLOOR ARE IN PLACE.

MINIMM SPECIFIED CLEAR CONCRETE COVER FOR REINFORCEMENT IN CAST-IN-PLACE CONCRETE (UNO)

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	75mm	3"
EXPOSED TO EARTH OR WEATHER: No. 20 THROUGH No. 55 BARS No. 15 BARS, 16mm WIRE, AND SMALLER	 50mm 40mm	 2" 1 1/2"
NOT EXPOSED TO WEATHER OR NOT IN CONTACT W/ GROUND: SLABS, WALLS, AND JOISTS: No. 45 AND No. 55 BARS No. 35 AND SMALLER	 40mm 20mm	 1 1/2" 3/4"

BASIC DEVELOPMENT LENGTH FOR BARS IN TENSION (UNO)

BAR No.	fc' = 25MPa fy' = 400MPa	fc' = 30MPa fy' = 400MPa
10	11"	11"
15	15"	15"
20	18"	18"
25	30"	28"
30	42"	39"
35	60"	55"
45	82"	75"
55	108"	98"

ARTAS ENGINEERING & DESIGN INC.
INTEGRITY AT THE CORE
413 Hibernia Street, Unit 3, Stratford Ontario, N5A 5W2
p: 519-495-5976 | e: info@artaseng.ca

engineer of record seal

The engineer of record has reviewed and takes responsibility for this design, has the qualifications and meets the requirements set out in the Ontario Building Code to be an engineer.

true north | construction north

REV	DATE	DESCRIPTION	DRAWN	APPD
0	2024NOV01	ISSUED FOR PERMIT	CH	AL

NOT FOR CONSTRUCTION

client

UNIVERSITY OF TORONTO - MISSISSAUGA
3359 MISSISSAUGA ROAD
MISSISSAUGA, ONTARIO.
L5L 1C6

project name & address

UTM - NEW BUILD
3265 PRINCIPAL'S ROAD,
MISSUSSAUGA, ONTARIO.

sheet title

STRUCTURAL NOTES & SCHEDULES

scale
As indicated

drawn by
CH

checked by
AL

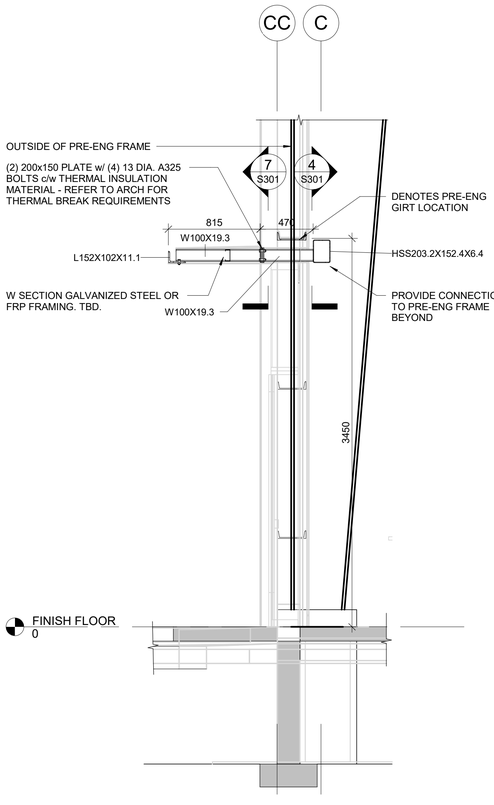
date
2024NOV01

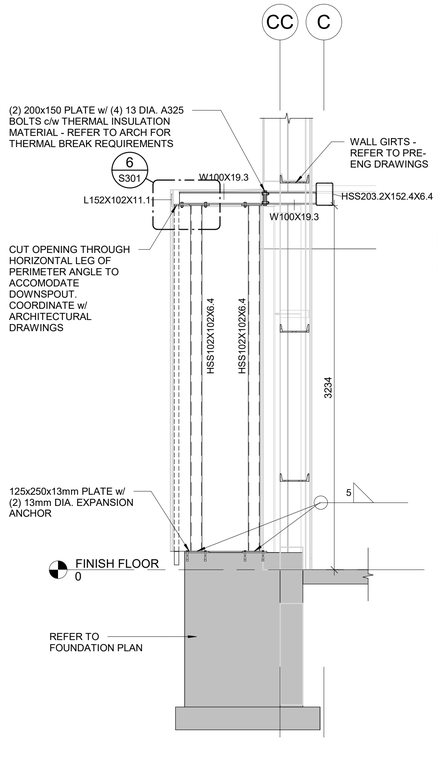
sheet no.
S600

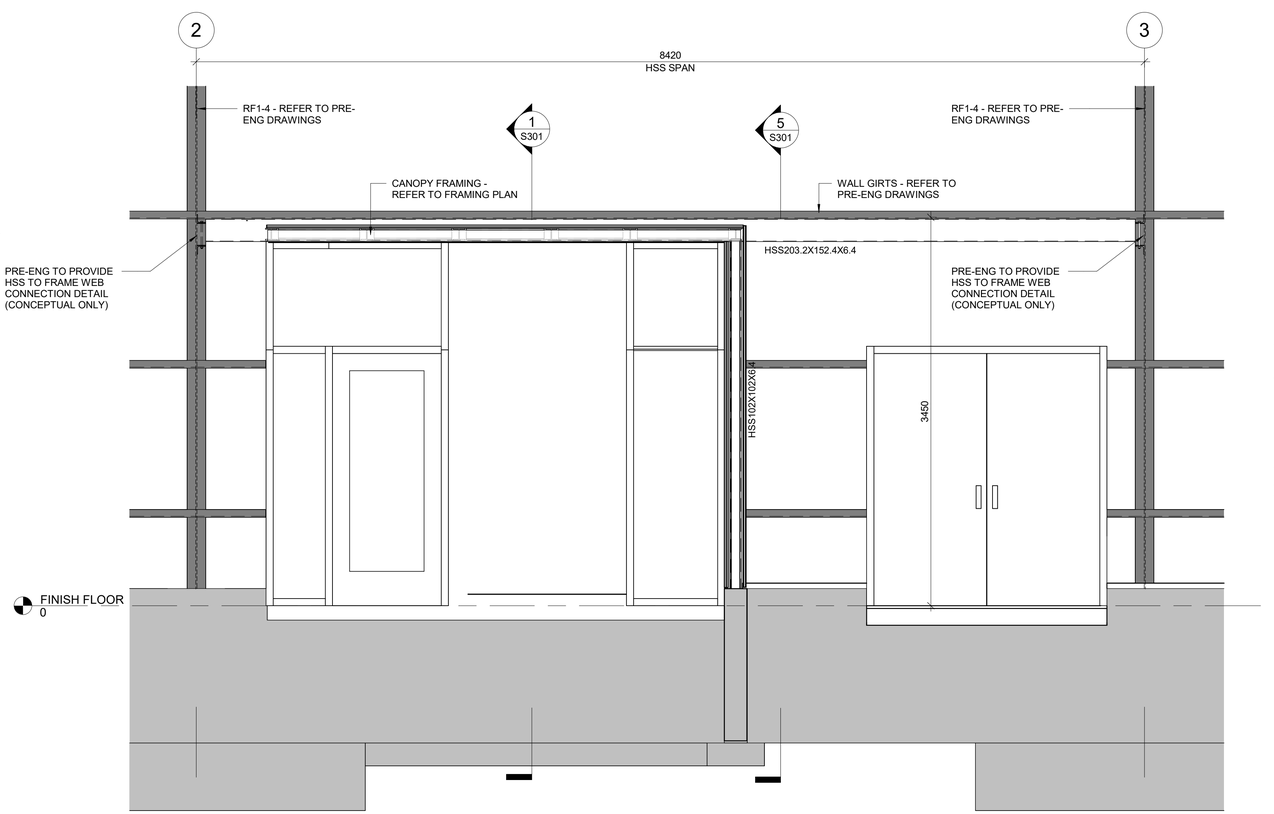
sheet size
D (24x36)

project number
24-036

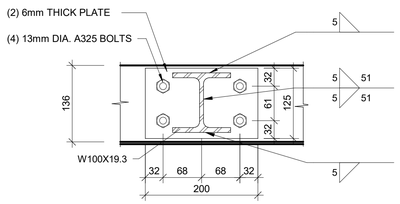
rev.
0



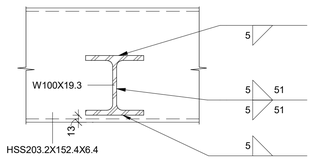




1 S301 CANOPY FRAMING SECTION
1 : 25

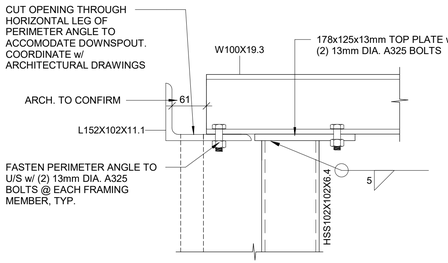


7 S301 TYP. PLATE DETAIL
1 : 5



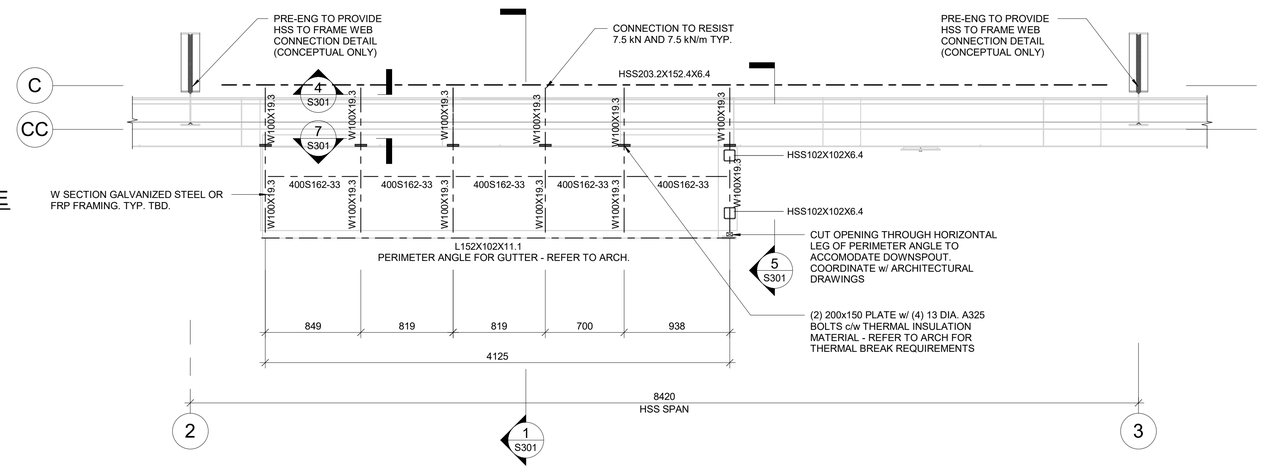
4 S301 TYP. CONNECTION TO HSS
1 : 5

5 S301 CANOPY FRAMING SECTION @ WALL
1 : 25



6 S301 DETAIL @ COL. & PERIMETER ANGLE
1 : 5

2 S301 CANOPY FRAMING ELEVATION
1 : 25



3 S301 CANOPY FRAMING PLAN
1 : 25

PRELIMINARY
NOT FOR CONSTRUCTION

ARTAS ENGINEERING & DESIGN INC.
INTEGRITY AT THE CORE
413 Hibernia Street, Unit 3, Stratford Ontario, N5A 5W2
p: 519-495-5976 | e: info@artaseng.ca

engineer of record seal

The engineer of record has reviewed and takes responsibility for this design, has the qualifications and meets the requirements set out in the Ontario Building Code to be an engineer.

true north | construction north

REV	DATE	DESCRIPTION	DRAWN	APPD
A	2024NOV07	ISSUED FOR CLIENT REVIEW	CH	AL

client

UNIVERSITY OF TORONTO - MISSISSAUGA
3359 MISSISSAUGA ROAD
MISSISSAUGA, ONTARIO.
L5L 1C6

project name & address

UTM - NEW BUILD
3265 PRINCIPAL'S ROAD,
MISSUSSAUGA, ONTARIO.

sheet title

CANOPY FRAMING DETAILS

scale
As indicated

drawn by
CH

checked by
AL

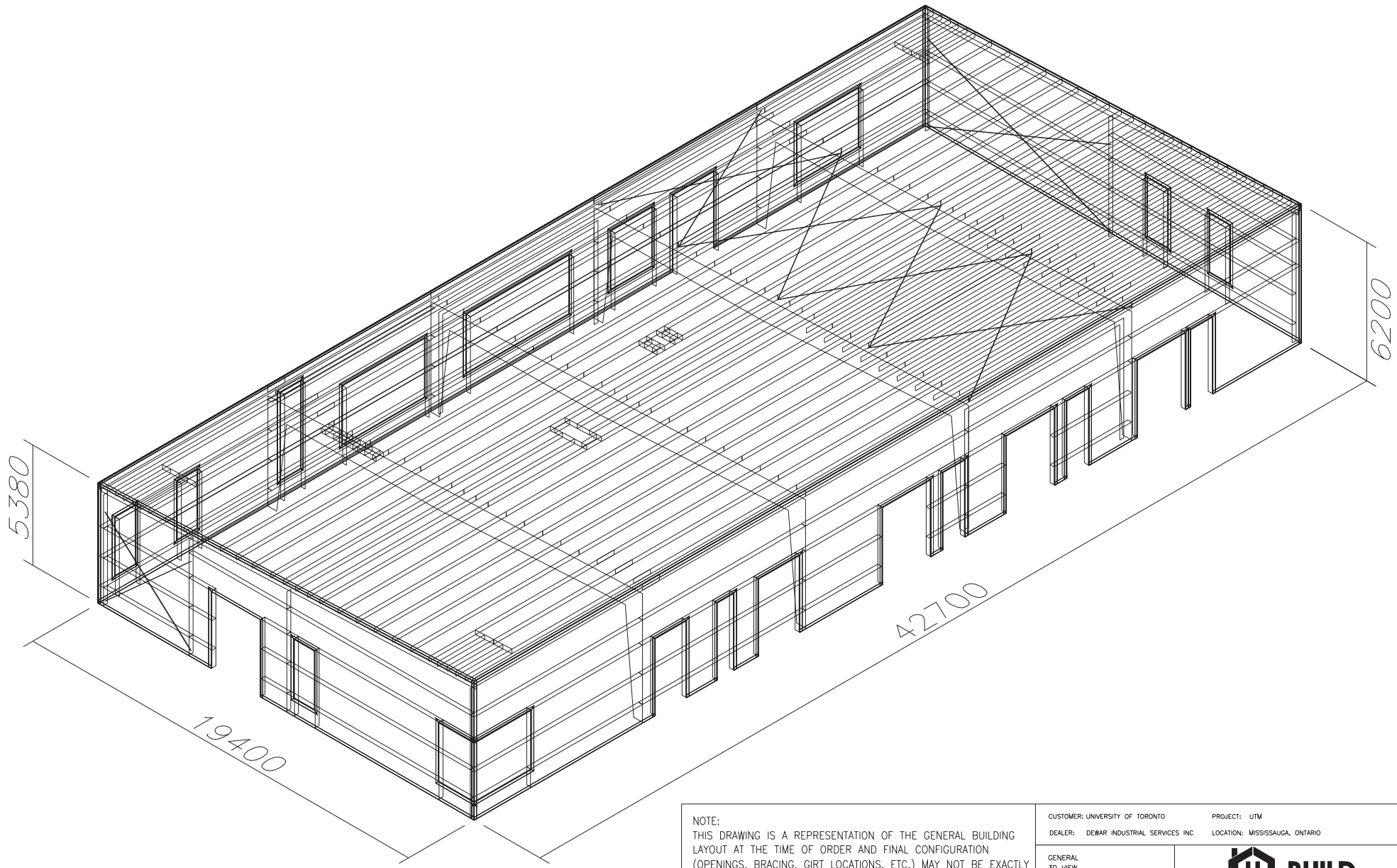
date
2024NOV07

sheet no.
S301

sheet size
D (24x36)

project number
24-079

rev.
A



NOTE:
THIS DRAWING IS A REPRESENTATION OF THE GENERAL BUILDING LAYOUT AT THE TIME OF ORDER AND FINAL CONFIGURATION (OPENINGS, BRACING, GIRT LOCATIONS, ETC.) MAY NOT BE EXACTLY AS SHOWN. SEE THE ELEVATION AND PLAN DRAWINGS FOR THE FINAL CONSTRUCTION CONFIGURATION.

CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM

DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO

GENERAL
3D VIEW

SCALE: N.T.S.

S.O. # 900662

U-BUILD STEEL BUILDINGS

120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368

DRAWING SCHEDULE

DWG #	DRAWING TITLE	REVISIONS							
		ISSUE	YY/MM/DD	ISSUE	YY/MM/DD	ISSUE	YY/MM/DD	ISSUE	YY/MM/DD
1	DRAWING SCHEDULE	A	24/10/04						
1A	GENERAL INFORMATION SHEET AND CONFORMANCE	0	24/10/04						
1B	GENERAL INFORMATION SHEET	0	24/10/04						
1C	GENERAL INFORMATION SHEET	0	24/10/04						
2	ANCHOR ROD PLAN	0	24/10/04						
2A	ANCHOR ROD DETAILS	0	24/10/04						
3	ANCHOR ROD REACTIONS	0	24/10/04						
3A	ROOF LOADS	0	24/10/04						
4	RIGID FRAME ELEVATION	A	24/10/04						
4A	RIGID FRAME ELEVATION	A	24/10/04						
4B	WIND BENT ELEVATION	A	24/10/04						
5	ROOF FRAMING	A	24/10/04						
6	ENDWALL FRAMING	A	24/10/04						
7	ENDWALL FRAMING	A	24/10/04						
8	SIDEWALL FRAMING	A	24/10/04						
9	SIDEWALL FRAMING	A	24/10/04						
10	FLOOR FRAMING & JOISTS	A	24/10/04						

PERMIT DRAWINGS TRANSMITTAL

S.O. # 900662

ATTENTION:	BRADEN DIETZE
PHONE:	905-683-5102
EMAIL:	braden.dietze@dewar.ca

PREPARED BY:	.
ORIGINATOR:	TV

CUSTOMER SERVICE REP.:	JESSICA WOOD
PHONE:	204-728-1188
EMAIL:	jessica.wood@ubuildsb.com

DRAWING SET:	
FOR INFORMATION:	
FOR REVIEW:	
FOR PERMIT:	X
FOR CONSTRUCTION:	
PLEASE RESPOND:	X

SENT BY:	
EMAIL	X
PDF	X
AUTOCAD DWG	
REGULAR MAIL	
EXPRESS POST	
PUROLATOR	
OTHER:	

URGENT: AUTHORIZATION TO MANUFACTURE REQUIRED

This drawing represents the manufacturer's interpretation of the contract's requirements for this project. Please perform a thorough review of all items shown.

Manufacturing WILL NOT proceed without your authorization.

Failure to sign and return this confirmation within 48 hours will result in rescheduling of your project.

The project status will be changed to Customer HOLD with potential repricing of the project once the hold status is removed.

Authorization to Manufacture – No Changes

Customer Signature: _____ Date: _____

cwbregistration CWB CERTIFIED CSA A660

ISO 9001:2015 CWB cwbregistration REGISTERED

NOTE:

LETTER ISSUES ARE INFORMATION DRAWINGS.

NUMBER ISSUES ARE CONSTRUCTION DRAWINGS.

ISSUE	DESCRIPTION	CHECKED	YY/MM/DD
A	ISSUED FOR PERMIT PURPOSES ONLY	TV	24/10/04

CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM

DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO

SHEET 1

ISSUE A

DRAWING SCHEDULE

SCALE: N.T.S. S.O. # 900662

U-BUILD STEEL BUILDINGS

120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368

CERTIFICATE OF DESIGN AND MANUFACTURING CONFORMANCE

This Certificate is to affirm that all components of the Steel Building System described below, to be supplied by the building manufacturer certified in accordance with CSA A660, have been or will be designed and fabricated **in accordance with the following Standards to carry the loads and load combinations specified.**

1. DESCRIPTION

Manufacturer's Certificate No. under CSA A660	BEHLEO
Sales Order Number	900662
Building Size	19400mm x 42700mm x 5380mm
Building Type	RIGID FRAME
Intended Use and Occupancy	INSTITUTIONAL
Importance Category (NBC Sentence 4.1.2.1.(3))	II – NORMAL
Site Location	MISSISSAUGA, ONTARIO
Applicable Building Code	ONBC 19
Builder's Name and Address	DEWAR INDUSTRIAL SERVICES INC OSHAWA, ONTARIO
Owner's Name and Address	UNIVERSITY OF TORONTO MISSISSAUGA, ONTARIO

Engineer's Initials

2. DESIGN STANDARDS — TV

Applicable Building Code, Part 4: Structural Design
CSA S16, Limit States Design of Steel Structures
CSA S136, North American Specification for the Design of Cold Formed Steel Structural Members
Other (specify) 2012 ONTARIO BUILDING CODE with 2019 Amendments dated: 2019
N/A dated: N/A

3. MANUFACTURING STANDARDS

(a) Fabrication has been, or will be, in accordance with CSA S16 and CSA S136, as applicable. — TV
(b) Welding has been, or will be, performed in accordance with CSA W59 and CSA S136, as applicable. — TV
(c) Building manufacturer has been certified in accordance with CSA W47.1, for Division 1, and/or CSA W55.3 if applicable. — TV
(d) Welders have been qualified in accordance with CSA W47.1 — TV

4. PURLIN STABILITY — TV

Purlin braces are provided in accordance with CSA S136, Clause C2 and Appendix B Clause C2.2.3.
In particular, for a standing seam roof supported on movable clips, braces providing lateral support to both top and bottom purlin flanges have been or will be provided. The number of rows is determined by analysis but in no case is less than 1 for spans up to 7 m (23 ft), inclusive or less than 2 for spans greater than 7 m (23 ft).

5. LOADS

(a) Snow and Rain Load — TV
1-in-50 year ground snow load, Ss, 1.1 (kPa)
1-in-50 year associated rain load, Sr, 0.4 (kPa)
Basic roof snow load factor, Cb, 0.8000
Wind exposure factor, Cw, 1.00
Importance Factor, Is, ULS 1.00 SLS 0.90
Roof snow load, S, 1.28 (kPa)
Drift load considered (Applicable Building Code Sub-section 4.1.6.2.8) refer to drawing of specific building
Specified rain load (Applicable Building Code, Clause 4.1.6.4) 113 (mm/hr)

(b) Full and Partial Snow Load — TV
(i) Applied on any one and any two adjacent spans of continuous purlins.
(ii) Applied on any one and any two adjacent spans of modular rigid frames with continuous roof beams.

(c) Wind Load — TV
1-in-50 year reference velocity pressure 0.44 (kPa)
Importance Factor, Iw, ULS 1.00 SLS 0.75
Exposure Factor, Ce= 0.903 ; 0: Open Terrain

(d) Wind Load Application — TV
(i) Applied as per Applicable Building Code Part 4, Section 4.1.7.
(ii) Pressure coefficients as per Applicable Building Code Clause 4.1.7.6 and Figures 4.1.7.6A – 4.1.7.6H
(iii) Building internal pressure Applicable Building Code Clause 4.1.7.7: Cpi= 0.70 to −0.70 ; Cgi= 2.00

(e) Crane Loads (where applicable) — N/A
Type N/A
Capacity N/A (kN)
Wheel base N/A (mm)
Maximum static, vertical wheel load N/A (kN)
Vertical impact factor N/A (%)
Lateral factor N/A (%) lateral wheel load N/A (kN)
Longitudinal factor N/A (%) maximum longitudinal load N/A (kN/side)

(f) Mezzanine Live Load 3.6 (kPa) — N/A

(g) Seismic Load — TV
Applied as per Applicable Building Code, Part 4, Section 4.1.8
So(0.2) 0.219 So(0.5) 0.115 So(1.0) 0.058 So(2.0) 0.028 So(5.0) 0.0068 So(10.0) 0.0027
Fa 1.22 Fv 1.53 Ie (ULS) 1.00 PGA 0.141
Soil Site Classification D

(h) Other Live Loads (specify) MECHANICAL SCREEN WIND LOADS, FUTURE SOLAR PANEL SNOW DRIFT – SEE SHEET 3A — TV
N/A

(j) Dead Loads — TV
Dead load of building components is incorporated in the design.
Collateral load (mechanical, electrical, ceiling, sprinklers, etc.) 0.24 (kPa)
Mezzanine 2.35 (conc/deck/structure) + 0.5 (suspended collateral) (kPa)
Other (specify) ROOF MECH UNITS, FUTURE SOLAR PANELS, SUSPENDED PIPE GRID – SEE SHEET 3A
N/A

(k) Load Combinations — TV
Applied in accordance with Applicable Building Code, Part 4, Section 4.1

6. GENERAL REVIEW DURING CONSTRUCTION

The building manufacturer does not provide general review during construction for regulatory purposes.

7. CERTIFICATION BY ENGINEER

I TREVOR VEITCH , a Professional Engineer registered or licensed to practice in the Province or Territory of ONTARIO , hereby certify that I have reviewed the design and manufacturing process for the Steel Building System described. I certify that the foregoing statements are true.

Title SENIOR DESIGN ENGINEER
Affiliation U-BUILD STEEL BUILDINGS

NOTE:
LETTER ISSUES ARE INFORMATION DRAWINGS.
NUMBER ISSUES ARE CONSTRUCTION DRAWINGS.

LICENSED PROFESSIONAL ENGINEER
T. K. M. VEITCH
100626920
2024-10-04
PROVINCE OF ONTARIO

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ISSUE	DESCRIPTION	CHECKED	YY/MM/DD
0	FOR CONSTRUCTION	TV	24/10/04

CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM
DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO
SHEET 1A
ISSUE 0

GENERAL INFORMATION SHEET AND CONFORMANCE

SCALE: N.T.S. S.O. # 900662

U-BUILD STEEL BUILDINGS
120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368

GENERAL INFORMATION SHEET

ANCHOR RODS

ANCHOR ROD DIAMETERS ARE DETERMINED BASED ON SHEAR AND TENSION ONLY IN ACCORDANCE WITH CSA S16 USING ASTM F1554 GRADE 36 ALLOWING FOR MAXIMUM GROUT THICKNESS OF 2" (50mm).
ANCHOR ROD LENGTHS AND LOAD TRANSFER TO THE FOUNDATION ARE TO BE DETERMINED BY OTHERS.

THE ANCHOR RODS HAVE NOT BEEN REVIEWED FOR THE FOLLOWING S16 CLAUSES:

A) 25.3.2.2 PULL-OUT
B) 25.3.3.1 SHEAR TRANSFER MECHANISMS
C) 25.3.3.2 ANCHOR RODS IN BEARING
D) 25.3.5 ANCHOR RODS IN TENSION AND BENDING

FOUNDATION MUST BE LEVEL, SQUARE AND SMOOTH. ANCHOR RODS MUST BE ACCURATELY PLACED AS SHOWN ON THE DRAWINGS.

ALL DIMENSIONS SHOWN ARE TO THE BUILDING GIRT LINE UNLESS NOTED.

FINISHED FLOOR ELEVATIONS AND UNDERSIDE OF BASE PLATE IS 100'-0" (1000.000 m) UNLESS NOTED.

CLADDING/ LINER NOTES:

WALL SHEETS ARE AN INTEGRAL PART OF THE STRUCTURAL SYSTEM. REMOVAL OR ALTERATION WITHOUT PRIOR AUTHORIZATION IS PROHIBITED.

CLADDING NOT BY THE MANUFACTURER:

THE BUILDING MANUFACTURER IS NOT RESPONSIBLE FOR THE DESIGN OF EXTERIOR WALL CLADDING THAT IS NOT SUPPLIED BY THE BUILDING MANUFACTURER.

DETERMINATION OF THE SUITABILITY OF THE BUILDING MANUFACTURER SUPPLIED COMPONENTS TO SUPPORT EXTERIOR WALL CLADDING SUPPLIED BY OTHERS IS NOT BY THE BUILDING MANUFACTURER.

THE BUILDER IS RESPONSIBLE TO PROVIDE THE BUILDING MANUFACTURER ANY SPECIAL REQUIREMENTS SUCH AS GIRT SPACING, GIRT/COLUMN DEFLECTION LIMITATIONS, MINIMUM SUPPORT MATERIAL THICKNESS, ETC., THAT ARE NECESSARY TO FACILITATE SUPPORT OF THE CLADDING SUPPLIED BY OTHERS.

CLEAR SPAN CAMBER:

CLEAR SPANS GREATER THAN 80' (24.384m) BUT LESS THAN 130' (39.624m) ARE DESIGNED AND DETAILED FOR APPROXIMATELY 1.0 DEAD LOAD + 0.25 LIVE LOAD DEFLECTION.

CLEAR SPANS GREATER THAN 130' (39.624m) ARE DESIGNED AND DETAILED FOR APPROXIMATELY 1.0 DEAD LOAD + 0.5 LIVE LOAD DEFLECTION.

ERECTION

THE ERECTOR MUST PROVIDE SAFE WORKING CONDITIONS AND PRACTICES CONFORMING TO ALL SAFETY REGULATIONS. ALL LIFTING DEVICES ARE TO BE SPECIFICALLY DESIGNED TO LIFT THE VARIOUS BUILDING COMPONENTS. SLINGS AND SPREADER BARS ARE TO BE USED TO PREVENT PERMANENT DEFORMATION OF ALL STRUCTURAL COMPONENTS.

ERECTION SHOULD START AT A BRACED BAY. ERECT AND TEMPORARILY SUPPORT FRAMES. USE TEMPORARY BRACING AS REQUIRED TO ENSURE STABILITY OF THE FRAMES. INSTALL PURLINS AND GIRTS & PERMANENT ROOF & WALL BRACING. PLUMB COLUMNS AND SQUARE FRAMES IN ACCORDANCE WITH CSA S16. INSTALL FLANGE BRACES TO PURLINS AND GIRTS PRIOR TO INSTALLING CLADDING.

INSTALL ROOF AND WALL CLADDING, FASTENERS, AND SEALANTS AS SPECIFIED IN THE ERECTION DRAWING AND TECHNICAL MANUAL.

DO NOT USE PANELS FOR WALKING PLATFORMS. TEMPORARY LOADS ON ROOF PANELS SHOULD BE DIRECTLY OVER PURLINS.

ENSURE GIRTS AND PURLINS REMAIN PARALLEL.

ERECTION TOLERANCES SHALL BE IN ACCORDANCE WITH CSA S16 AND IN NO CASE SHALL THE VARIANCE IN PLUMB, LEVEL OR ALIGNMENT EXCEED 1/500.

FIELD SLOT GIRTS AT CENTER OF WEB TO ALLOW DIAGONAL BRACING TO PASS THOUGH IF REQUIRED MAXIMUM SLOT SHALL BE 1-3/4"x4" LONG (44mmx102mm).

HOLES REQUIRED IN GIRTS OR EAVE STRUTS FOR FRAMED OPENINGS, DOOR OR WINDOW POST CONNECTIONS TO BE BY ERECTOR.

MAN DOOR AND WINDOW FRAMED OPENING JAMBS TO BE FIELD ANCHORED TO CONCRETE WITH 1/2" DIA. "HILTI KWIK-BOLTS" OR SIMILAR.

BASE ANGLE OR CHANNEL TO BE FASTENED WITH RAMSET OR SIMILAR AT 24" O.C.

EXISTING STRUCTURES (INCLUDING BUILDINGS):

ANY STRUCTURE WITHIN A 20 FT. (6.00mm) RADIUS OF THE NEW STRUCTURE MUST BE REPORTED TO THE BUILDING MANUFACTURER. THE IMPACT OF LOADS FROM SNOW DRIFTING, WIND EFFECTS, AND SEISMIC SEPARATION MUST BE TAKEN INTO ACCOUNT FOR BOTH THE NEW AND EXISTING STRUCTURES. THE OWNER/BUILDER MUST HIRE A PROFESSIONAL ENGINEER TO EXAMINE AND CONFIRM THAT THE EXISTING STRUCTURE CAN RESIST ALL LOAD EFFECTS FROM THE NEW STRUCTURE.

ADEQUATE STRUCTURAL SEPARATION FOR SEISMIC DEFLECTION IS REQUIRED BETWEEN THE NEW STRUCTURE AND ANY EXISTING STRUCTURES IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE CLAUSE 4.1.8.14.

DETERMINATION OF THE ADEQUACY OF EXISTING STRUCTURES TO SUPPORT ANY LOADS IMPOSED BY THE NEW STRUCTURE IS NOT BY THE MANUFACTURER.

EXPANDABLE ENDWALLS:

EXPANDABLE ENDWALLS SHALL ONLY BE EXPANDABLE FOR 1 BAY WITH A MAXIMUM LENGTH EQUAL TO THE ADJACENT BAY.

EXPANDABLE ENDWALLS ARE ONLY VALID FOR THE BUILDING CODE YEAR OF THE ORIGINAL BUILDING AND IS BASED ON THE DESIGN CRITERIA INDICATED IN THESE DRAWINGS.

FIELD LOCATED OPENINGS:

FIELD LOCATED WALK DOORS THAT CUT GIRTS MUST BE INSTALLED IN THE BAY AND APPROXIMATE LOCATION AS SHOWN ON THE DRAWINGS. THE BUILDING MANUFACTURER MUST BE NOTIFIED IF THE FINAL DOOR LOCATION IS SIGNIFICANTLY DIFFERENT THAN WHAT IS SHOWN ON THE DRAWINGS.

FIELD LOCATED ELEVATED OPENINGS THAT CUT GIRTS MUST BE INSTALLED IN THE BAY AND AT THE ELEVATION SHOWN IN THE DRAWINGS. THE BUILDING MANUFACTURER MUST BE NOTIFIED IF THE FINAL OPENING LOCATION IS SIGNIFICANTLY DIFFERENT THAN WHAT IS SHOWN ON THE DRAWINGS.

FIELD LOCATED OPENINGS THAT DO NOT CUT GIRTS CAN BE MOVED AS NEEDED.

FIELD LOCATED WALK DOORS THAT DO NOT CUT GIRTS CAN BE MOVED AS NEEDED.

FIELD MODIFICATIONS:

ANY FIELD MODIFICATION OF BUILDING STRUCTURAL MEMBERS WITHOUT PRIOR WRITTEN CONSENT OF THE MANUFACTURER WILL VOID THE CERTIFICATION AND WARRANTY.

FIELD WORK SUCH AS SHIMMING, CUTTING, COPING, AND DRILLING FOR THE FINAL ASSEMBLY ARE DEEMED PART OF THE CONSTRUCTION PROCESS. THE FIELD WORK AND THE FIELD WELDING DEPICTED IN THESE DRAWINGS (IF ANY) IS ENCOMPASSED IN THE ERECTOR'S SCOPE OF WORK.

FIELD WELDING:

ALL WELDING MUST BE DONE IN ACCORDANCE WITH CSA-W47.1 AND CSA-W59 USING E49XX ELECTRODES.

ALL WELDING MUST BE UNDERTAKEN BY WELDERS AND COMPANIES CERTIFIED TO PERFORM THE WORK REQUIRED IN ACCORDANCE WITH CSA-W47.1

SURFACES TO BE WELDED MUST BE FREE OF LOOSE OR THICK SCALE, SLAG, LOOSE RUST, PAINT, GREASE, MOISTURE OR ANY OTHER FOREIGN MATERIAL.

GENERAL

THIS DRAWING, INCLUDING INFORMATION HEREIN, REMAINS THE PROPERTY OF THE MANUFACTURER. IT IS PROVIDED SOLELY FOR ERECTING THE BUILDING DESCRIBED IN THE SALES ORDER AND SHALL NOT BE MODIFIED, REPRODUCED OR USED FOR ANY OTHER PURPOSE WITHOUT PRIOR WRITTEN APPROVAL OF THE MANUFACTURER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE, GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN CONFORMANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION INCLUDING THE PROPER USE OF TEMPORARY BRACING. THE MANUFACTURER IS NOT RESPONSIBLE FOR ERRORS, OMISSIONS OR DAMAGES INCURRED IN THE ERECTION OF THE COMPONENTS SHOWN ON THIS DRAWING, NOR FOR THE INSPECTION OF ERECTED COMPONENTS TO DETERMINE SAME.

THIS CERTIFICATION AND ENGINEERING SEAL APPLIES ONLY TO PRODUCTS DESIGNED AND FABRICATED BY THE MANUFACTURER FOR THE LOADING CONDITIONS DESIGNATED ON THESE DRAWINGS. CONCRETE FOUNDATIONS, STEEL COMPONENTS BY OTHERS AND ERECTION SUPERVISION ARE NOT THE RESPONSIBILITIES OF THE MANUFACTURER OR THE CERTIFYING ENGINEER.

THE CERTIFYING ENGINEER IS NOT THE PROJECT ENGINEER OR THE COORDINATING PROFESSIONAL FOR THE ENTIRE PROJECT. SEALED ENGINEERING DESIGN DATA AND DRAWINGS ARE SPECIFICALLY FOR MATERIALS SUPPLIED BY THE MANUFACTURER AND HAVE BEEN SUPPLIED FOR USE BY OTHERS TO SECURE PERMITS, APPROVALS, TO LIAISE WITH OTHER TRADES AND FOR BUILDING ERECTION. THE BUILDER MUST CONSIDER AND COORDINATE ALL ISSUES CONCERNING ANY MATERIALS NOT PROVIDED BY THE MANUFACTURER.

BUILDING COMPONENTS NOT SUPPLIED BY THE MANUFACTURER ARE NOT SHOWN ON THE DRAWINGS. THE MANUFACTURER IS NOT RESPONSIBLE FOR DESIGN OR DETAILING OF THESE COMPONENTS, AND IT IS THEREFORE INAPPROPRIATE FOR THEM TO BE SHOWN ON THESE DRAWINGS.

INDEPENDENT MEZZANINES:

THE DESIGN OF INDEPENDENT MEZZANINES REQUIRES THE EXPERTISE OF A PROFESSIONAL ENGINEER. THE INDEPENDENT MEZZANINE MUST HAVE ADEQUATE SEPARATION FROM THE BUILDING TO PREVENT STRUCTURAL HARM RESULTING FROM DIFFERENTIAL MOVEMENT OR UNINTENTIONAL LOAD APPLICATION TO THE STRUCTURE. THE MANUFACTURER AND CERTIFYING ENGINEER DISCLAIMS ANY LIABILITY FOR THE DESIGN OF THE INDEPENDENT MEZZANINE.

MATERIAL SPECIFICATIONS

MATERIAL	SPECIFICATION	GRADE	COATING
ROLLED 'S SECTIONS	CSA G40.21	44W (300W)	
ROLLED W, L, & C SECTIONS	CSA G40.21	50W (350W)	
HSS SECTIONS	CSA G40.21 CLASS C	50W (350W)	
PIPE SECTIONS	ASTM A53	GRADE B	
PLATE(FLANGES & WEBS)	G40.21/ASTM A529, A570, A572	50W (350W)	
GIRTS & PURLINS	ASTM A653 HSLA-F SQ	55 CL 1	Z275 ZINC
COLD FORMED L	ASTM A653	33	
BOLTS LARGER THAN 1/2"ø	ASTM F3125	A325 or A490	
1/2"ø BOLTS	SAE	8.2	ELECTROPLATE ZINC
SHOP PRIMER	CGSB 1-GP-40M		
DIAGONAL BRACE ROD	CSA G40.21	44W (300W)	
DIAGONAL BRACE CABLE	ASTM A475	EXTRA HIGH STRENGTH	
SEALANTS	CGSB 19-GP-14M		
STANDING SEAM CLADDING	ASTM A792 SQ	50	AZ165 AL. ZINC
GALVALUME CLADDING	ASTM A792 SQ	80 & 33	AZ150 AL. ZINC
GALVANIZED CLADDING	ASTM A653 SQ	80 & 33	Z275 ZINC
PAINTED CLADDING	ASTM A792 SQ	80 & 33	AZ150 AL. ZINC

MATERIAL STORAGE:

GALVANIZED, ALUMINIZED, AND COLORED MATERIALS ARE SUBJECT TO CORROSION AND DISCOLORATION IF THEY ARE IMPROPERLY STORED. SHORT TERM JOB SITE STORAGE OF PURLINS, ROOF AND WALL COVERING MAY BE TOLERATED, PROVIDED CARE IS TAKEN TO KEEP THESE MATERIALS DRY AT ALL TIMES. WHEN MATERIALS ARE TO BE STORED OUTDOORS, THEY SHOULD BE PLACED AT AN ANGLE SUFFICIENT TO PROMOTE GOOD DRAINAGE. IN ADDITION, SEVERAL INCHES OF CLEARANCE MUST BE PROVIDED BETWEEN THE LOWER END AND THE GROUND TO ALLOW VENTILATION. LONG PANELS SHOULD BE BLOCKED IN THE CENTER TO PREVENT CENTER SAG AND RESULTANT WATER ACCUMULATION.

THE MANUFACTURER WILL NOT BE HELD RESPONSIBLE FOR MATERIALS WHICH ARE IMPROPERLY PROTECTED AFTER DELIVERY.

MEMBER SECTION DESIGNATION

BUILT-UP SECTIONS CAN BE USED IN LIEU OF STANDARD MILL SECTIONS ON ANY PROJECT. LIGHT GAUGE COMPONENTS, BUILT-UP SECTIONS, HSS SQUARE TUBE, AND ROUND PIPE HAVE A STANDARD DESIGNATION THAT IS USED BY THE MANUFACTURER. THE DESIGNATION DESCRIBES EACH COMPONENT IN THE FOLLOWING MANNER;

BUILT-UP MEMBER - WAABCD	EXAMPLE - W14563
AA - REFERS TO OVERALL DEPTH (IN)	14" DEEP MEMBER
B - REFERS TO FLANGE WIDTH (IN)	5" WIDE FLANGE
C - REFERS TO FLANGE THICKNESS IN 16TH (IN)	6/16" OR 3/8" FLANGE
D - REFERS TO WEB THICKNESS IN 16TH (IN)	3/16" THICK WEB
HSS SQUARE TUBE - TAAxD	**EXAMPLE - T06x4**
AA - REFERS TO OVERALL DEPTH (IN)	6" SQUARE MEMBER
D - REFERS TO WALL THICKNESS IN 16TH (IN)	4/16" OR 1/4" THICK WALL
HSS ROUND PIPE - PAAxE	**EXAMPLE - P06x19**
AA - REFERS TO OVERALL DIAMETER (IN)	6" DIAMETER MEMBER
E - REFERS TO WEIGHT OF MEMBER PER FT (#/FT)	MEMBER WEIGHS 19 #/FT

LIGHT GAUGE COMPONENTS XYAA (-DBL)	8Z16	10C14	118Z14
X - REFERS TO COMPONENT DEPTH (IN)	8" DEEP	10" DEEP	11 1/2" DEEP
Y - REFERS TO COMPONENT SHAPE	ZEE SHAPE	CEE SHAPE	ZEE SHAPE
AA - REFERS TO COMPONENT THICKNESS (GA)	16 GAUGE	14 GAUGE	14 GAUGE
DBL - REFERS TO DOUBLE MEMBER REQUIRED - TWO ARE NESTED IN THE FIELD			

OIL CANNING, ROOF RUMBLE AND DIMPLING:

OIL CANNING IS A COMMON OCCURRENCE OF COLD-FORMED STEEL PANELS. VARIOUS FACTORS INCLUDING RAW MATERIAL STRESS, FABRICATION TECHNIQUES USED, INSTALLATION PROCEDURES FOLLOWED, AND THE THERMAL FORCES CAN CONTRIBUTE TO OIL CANNING.

ROOF RUMBLE IS A TERM USED TO DESCRIBE THE EFFECT OF WIND GUSTS EXERTING AN UPWARD FORCE ON ROOF PANELS, CAUSING THEM TO LIFT AND THEN RETURN TO THEIR ORIGINAL POSITION. THIS OCCURRENCE IS COMMON IN ALL TYPES OF PANELS, BUT IT IS PARTICULARLY NOTICEABLE IN STANDING SEAM PANELS. THE NOISE PRODUCED BY ROOF RUMBLE CAN BE MITIGATED BY INSTALLING A LAYER OF BLANKET INSULATION BETWEEN THE PANELS AND ANY RIGID SUPPORTING SURFACE, SUCH AS STEEL SECONDARY MEMBERS OR SUBSTRATES LIKE PLYWOOD, STEEL DECKING, OR RIGID BOARD INSULATION. IT IS ADVISABLE TO USE A BLANKET INSULATION OF AT LEAST 2" (50mm) THICK OVER STEEL SECONDARY MEMBERS AND SUBSTRATES.

PANELS THAT ARE THROUGH FASTENED ARE LIKELY TO SHOW SOME DIMPLING UPON INSTALLATION, MORE SO WHEN INSULATION IS INSTALLED BETWEEN THE PANELS AND SECONDARY SUPPORT MEMBERS. THIS DIMPLING CAN BE MITIGATED BY METICULOUS INSTALLATION AND BY ENSURING THAT FASTENERS ARE NOT OVERDRIVEN.

OIL CANNING, ROOF RUMBLE, AND DIMPLING DO NOT COMPROMISE THE STRUCTURAL STABILITY OR THE WEATHERPROOF NATURE OF THE PANELS. THEREFORE, THESE CONDITIONS SHOULD NOT BE CONSIDERED AS VALID REASONS FOR PANEL REJECTION.

OVERHEAD DOORS:

INSTALLATION OF DOOR TRACK MUST SUIT FLANGE BRACES.

FLANGE BRACES SHALL NOT BE OMITTED OR CUT.

PARTITION WALL NOTE:

FIELD INSTALLATION OF PARTITION WALL TO UNDERSIDE OF ANY ROOF FRAMING MEMBERS MUST ALLOW FOR VERTICAL BUILDING DEFLECTION. CONTACT THE MANUFACTURER FOR REQUIRED CLEARANCES.

ROOF PLAN NOTES:

UNLESS NOTED, USE 1/2" DIA. BOLTS FOR PURLIN LAP. PURLIN TO FRAME, FLANGE BRACE TO FRAME, AND FLANGE BRACE TO PURLIN CONNECTIONS.

WIND, FLANGE AND PURLIN BRACING ARE AN INTEGRAL PART OF THE ROOF STRUCTURAL SYSTEM AND SHOULD BE PROPERLY INSTALLED PRIOR TO ERECTION OF WALL AND ROOF SHEETS. REMOVAL OR ALTERATION OF ROOF BRACING WITHOUT PRIOR AUTHORIZATION IS PROHIBITED.

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T. K. M. VEITCH
100626920
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DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO
SHEET: 1B
ISSUE: 0

GENERAL INFORMATION SHEET

SCALE: N.T.S. S.O. # 900662

U-BUILD STEEL BUILDINGS
120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368

SHOP PRIMER:

THE MANUFACTURER'S STANDARD PRIMER PROVIDES TEMPORARY PROTECTION AGAINST RUST DURING TRANSPORTATION AND WHILE THE BUILDING IS BEING ERECTED AND IS NOT DESIGNED FOR LONG TERM EXPOSURE TO THE ELEMENTS. IT IS THE ERECTORS RESPONSIBILITY TO PROTECT THE STEEL IF IT IS TO BE STORED ON SITE FOR ANY LENGTH OF TIME. PRIMARY STEEL SHOULD BE COVERED AND SAFELY STACKED IN AN UP-RIGHT POSITION. WATER THAT IS ALLOWED TO POND ON FLANGES OR WEBS CAN CAUSE THE PRIMER TO LIFT AND FLAKE-OFF THE STEEL OVER TIME. THE MANUFACTURER WILL NOT BE HELD RESPONSIBLE FOR PAINT DAMAGE BY POUNDING WATER. IT IS THE ERECTORS RESPONSIBILITY TO TOUCH-UP SHOP PRIMER THAT HAS BEEN DAMAGED DURING ERECTION

SSR NOTE:

PURLIN BLOCKING IS REQUIRED BETWEEN PURLINS AT LOCATIONS INDICATED ON ROOF PLAN. REFER TO STANDARD DETAIL SHEETS SD21 & SD21A

THE DESIGN OF THE STANDING SEAM JOINT DETAIL INCORPORATES AN INTERLOCKING MECHANISM TO SIMPLIFY THE INSTALLATION PROCESS. NONETHELESS, IT IS CRUCIAL TO ENSURE THAT THE STANDING SEAM PANELS ARE NOT ONLY AFFIXED TO THE SECONDARY STRUCTURAL COMPONENTS BUT ALSO CORRECTLY SEAMED BEFORE LEAVING THE CONSTRUCTION SITE EACH DAY.

STRUCTURAL BOLTS

BOLTS IN CONNECTIONS NOT SUBJECT TO TENSION LOADS, OR WHERE LOOSENING DUE TO VIBRATION OR LOAD FLUCTUATIONS ARE NOT DESIGN CONSIDERATIONS NEED ONLY BE SNUG TIGHTENED, WHICH IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN ALL PLIES IN A JOINT ARE IN FIRM CONTACT.

BOLTS IN CONNECTIONS SUBJECT TO TENSION LOADS REQUIRE PRETENSIONING TO MINIMUM TENSION.
-VALUES AS SHOWN IN THE TABLE BELOW-

TABLE A		BOLT TENSION			
SIZE		A325		A490	
in	mm	kips	kN	kips	kN
1/2	13	12	53	15	67
5/8	16	19	85	24	107
3/4	19	28	125	35	157
7/8	22	39	174	49	218
1.0	25	51	227	64	285
1 1/8	29	64	285	80	356
1 1/4	32	81	360	102	454
1 3/8	35	97	431	121	538
1 1/2	38	118	525	148	658

STRUCTURAL BOLTS SHALL BE PRETENSIONED USING TURN-OF-NUT METHOD AS SPECIFIED IN S16. IN TURN-OF-NUT METHOD ALL BOLTS SHALL BE BROUGHT TO A "SNUG-TIGHT" CONDITION ENSURING THAT ALL PLIES ARE IN FIRM CONTACT WITH EACH OTHER. "SNUG-TIGHT" CONDITION IS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A PERSON USING A SPUD WRENCH. WHEN ALL BOLTS ARE "SNUG-TIGHT" EACH BOLT SHALL THEN BE TIGHTENED ADDITIONALLY BY THE APPLICABLE NUT ROTATION GIVEN IN TABLE B. TIGHTENING SHOULD PROGRESS SYSTEMATICALLY FROM THE MOST RIGID PART OF THE CONNECTION TO THE FREE EDGES.

DURING THE OPERATION THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH UNLESS BOTH THE BOLT AND NUT ARE MATCH MARKED TO ENABLE RELATIVE ROTATION TO BE DETERMINED.

NUT ROTATION FROM "SNUG-TIGHT" CONDITION:

TABLE B

DISPOSITION OF OUTER FACES OF BOLTED PARTS	BOLT LENGTH (MEASURED FROM UNDERSIDE OF THE HEAD TO THE EXTREME END OF POINT)	TURN
BOTH FACES NORMAL TO BOLT AXIS OR ONE FACE NORMAL TO AXIS AND OTHER FACE SLOPED 1:20 MAX. (BEVELLED WASHERS NOT USED)	UP TO AND INCLUDING 4 DIAMETERS	1/3
	OVER 4 DIAMETERS AND NOT EXCEEDING 8 DIAMETERS OR 8 INCHES (200mm)	1/2
	EXCEEDING 8 DIAMETERS OR 8 INCHES (200mm)	2/3
BOTH FACES SLOPED 1:20 MAX. FROM NORMAL TO BOLT AXIS (BEVELLED WASHERS NOT USED)	ALL BOLT LENGTHS	3/4

NOTE: NUT ROTATION IS RELATIVE TO BOLT REGARDLESS OF WHETHER THE NUT OR BOLT IS BEING TURNED. TOLERANCE ON ROTATION: 30° OVER OR UNDER

STRUCTURAL BOLTS CONTINUED:

BOLTS TIGHTENED BY TURN-OF-NUT METHOD SHOULD HAVE THE OUTER FACE OF THE NUT MARKED WITH THE PROTRUDING BOLT POINT BEFORE FINAL TIGHTENING. MARKING PERMITS VISUAL INSPECTION THAT ACTUAL NUT ROTATION HAS BEEN ACHIEVED. SUCH MARKS CAN BE MADE USING A CRAYON OR DAB OF PAINT AFTER BOLTS HAVE BEEN BROUGHT UP SNUG TIGHT.

INSPECTION OF THE SIDES OF BOLTS OR NUT SNUG-TIGHTENED USING AN IMPACT WRENCH WILL APPEAR SLIGHTLY PEENED AS A RESULT OF THE TIGHTENING PROCESS. NO FURTHER INSPECTION IS NECESSARY FOR BOLTS IN "BEARING-TYPE" CONNECTIONS AS PERFORMANCE IS INDEPENDENT OF INITIAL PRETENSION.

TORQUE IS NOT A RELIABLE MEANS TO PRETENSION BOLTS. IN CASES OF DISPUTE AS TO INSTALLED BOLT TENSION AN ARBITRATION METHOD IS PROVIDED IN CSA S16. THIS PROVIDES A MEANS TO CALIBRATE A TORQUE WRENCH WITH A DIRECT TENSION INDICATOR.

TOUCH-UP PAINT APPLICATION

FOR APPLYING TOUCH-UP PAINT TO CLADDING AND TRIMS, REFER TO THE MANUFACTURER TOUCH-UP PAINT APPLICATION INSTRUCTIONS.

WALL ELEVATION NOTES:

WIND AND FLANGE BRACING IS AN INTEGRAL PART OF THE WALL SYSTEM AND SHOULD BE PROPERLY INSTALLED PRIOR TO ERECTION OF WALL AND ROOF SHEETS, REMOVAL OR ALTERATION OF WALL BRACING WITHOUT PRIOR AUTHORIZATION IS PROHIBITED.

USE 1/2" DIA. BOLTS FOR PURLIN TO FRAME, GIRT TO FRAME, AND GIRT TO CLIP CONNECTIONS UNLESS NOTED.

DEFLECTION LIMITS

LOCATION	DEFLECTION	LOCATION	DEFLECTION
Endwall Column	L/360	Frame Vertical	L/360
Endwall Rafter (live/snow)	L/490	Longitudinal Bent/Portal (wind)	H/500
Endwall Rafter (wind)	L/490	Longitudinal Bent/Portal (seismic)	H/40
Girt (wind)	L/360	Partition Column	N/A
Purlin (live/snow)	L/360	Partition Girt	N/A
Purlin (wind)	L/360	Partition Panel	N/A
Wall Panel	N/A	Runway Horizontal	N/A
Roof Panel (live/snow)	N/A	Runway Vertical	N/A
Roof Panel (wind)	N/A	Runway Aux. Beam	N/A
Mezzanine Framing (live)	See Note	Extension Beam (wind)	N/A
Mezzanine Framing (dead + live)	See Note	Extension Beam (live/snow)	N/A
Frame Horizontal	H/500	Extension Purlin (wind)	N/A
Frame Horizontal (crane)	N/A	Extension Purlin (live/snow)	N/A
Frame Horizontal (seismic)	H/40		

Note: Mezzanine framing members supplied as per sizes specified on project Structural drawings supplied Blackwell Structural Engineers, refer Blackwell for mezzanine framing deflection limits.

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SHEET: 1C
ISSUE: 0

GENERAL INFORMATION SHEET

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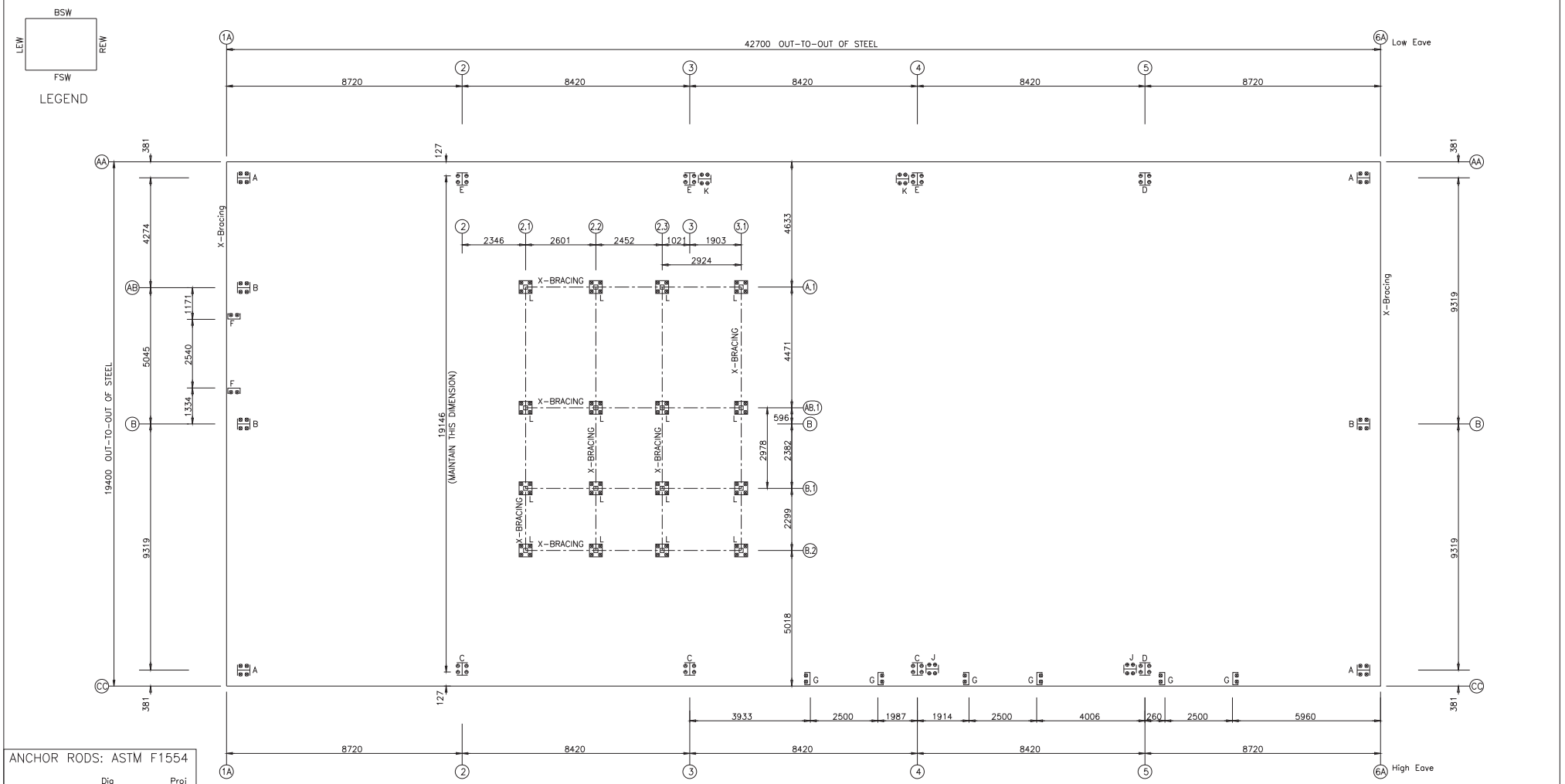
SCALE: N.T.S. S.O. # 900662

120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368



ANCHOR ROD PLACEMENT
NOTE: Main Floor Elevation @ 0.000m (U.N.)

ANCHOR RODS: ASTM F1554

	Qty	Locate	Dia (mm)	Grade	Proj (mm)
⊠	16	Jamb	19	36	64
⊠	28	Endwall	19	36	64
⊕	32	Frame	50.8	36	108
⊕	16	WindBent	25.4	36	76
⊠	64	MezzColm	19	36	64

NOTE:
ANCHOR ROD PROJECTION INDICATED IS MEASURED FROM UNDERSIDE OF BASE PLATE.
MAKE THE NECESSARY ADJUSTMENTS TO ALLOW FOR GROUT.
ANCHOR RODS NOT BY THE BUILDING MANUFACTURER

ANCHOR ROD PLACEMENT

ANCHOR ROD TOLERANCES

1. ANCHOR RODS SHALL BE SET IN ACCORDANCE WITH THE ERECTION DIAGRAMS, THEY MUST NOT VARY FROM THE DIMENSIONS SHOWN ON THE ERECTION DIAGRAMS BY MORE THAN THE FOLLOWING:
   (A) 1/8" (3mm) CENTRE TO CENTRE OF ANY TWO RODS WITHIN AN ANCHOR ROD GROUP, WHERE AN ANCHOR ROD GROUP IS DEFINED AS THE SET OF ANCHOR RODS WHICH RECEIVES A SINGLE FABRICATED STEEL SHIPPING PIECE;
   (B) 1/4" (6mm) CENTRE TO CENTRE OF ADJACENT ANCHOR ROD GROUPS;
   (C) MAXIMUM ACCUMULATION OF 1/4" (6mm) PER 100' (30480mm) ALONG THE ESTABLISHED COLUMN LINE OF MULTIPLE ANCHOR ROD GROUPS, BUT NOT TO EXCEED A TOTAL OF 1" (25mm). THE ESTABLISHED COLUMN LINE IS THE ACTUAL FIELD LINE MOST REPRESENTATIVE OF THE CENTRES OF THE AS-BUILD ANCHOR ROD GROUPS ALONG A LINE OF COLUMNS;
   (D) 1/4" (6mm) FROM THE CENTRE OF ANY ANCHOR ROD GROUP TO THE ESTABLISHED COLUMN LINE THROUGH THAT GROUP.
   THE TOLERANCES OF PARAGRAPHS B, C, AND D ALSO APPLY TO OFFSET DIMENSIONS, SHOWN ON THE CONSTRUCTION DRAWINGS, MEASURED PARALLEL AND PERPENDICULAR TO THE NEAREST ESTABLISHED COLUMN LINE FOR INDIVIDUAL COLUMNS SHOWN ON THE DRAWINGS TO BE OFFSET FROM ESTABLISHED COLUMN LINES.
2. UNLESS SHOWN OTHERWISE, ANCHOR RODS SHALL BE SET PERPENDICULAR TO THE THEORETICAL BEARING SURFACE, THREADS SHALL BE PROTECTED AND FREE OF CONCRETE AND NUTS SHOULD RUN FREELY ON THE THREADS. SHEAR POCKETS SHALL BE CLEANED OF DEBRIS, FORMWORK, ICE AND SNOW PRIOR TO STEEL ERECTION.

LICENSED PROFESSIONAL ENGINEER
T. K. M. VEITCH
100626920
2024-10-04
PROVINCE OF ONTARIO

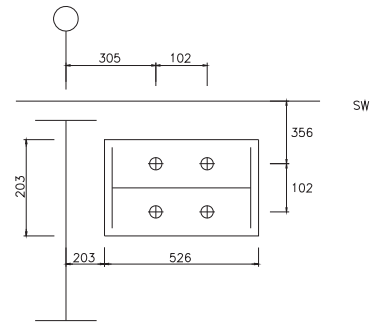
THIS PROFESSIONAL ENGINEERING SEAL APPLIES ONLY TO THE DESIGN OF THE PRODUCTS SUPPLIED BY THE BUILDING MANUFACTURER, IN ACCORDANCE WITH PART 4 OF THE APPLICABLE BUILDING CODE.

ISSUE	DESCRIPTION	CHECKED BY	YY/MM/DD
0	FOR CONSTRUCTION	TV	24/10/04

CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM
DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO
SHEET 2
ISSUE 0
ANCHOR ROD PLACEMENT
SCALE: N.T.S.
S.O. # 900662

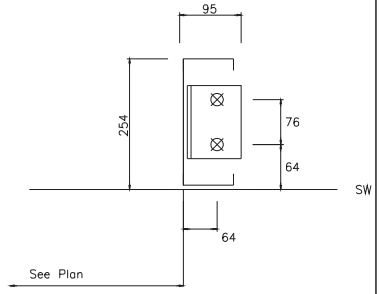
U-BUILD STEEL BUILDINGS
120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368

Dia= 25



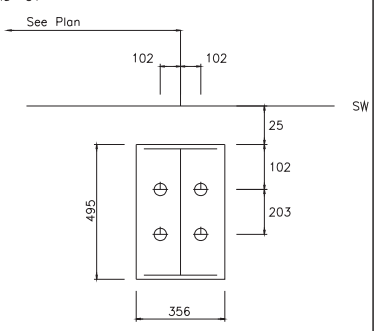
DETAIL K Base EL. 0.000m

Dia= 19



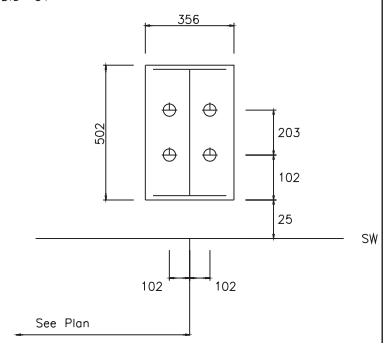
DETAIL G Base EL. 0.000m

Dia= 51



DETAIL E Base EL. 0.000m

Dia= 51



DETAIL C Base EL. 0.000m

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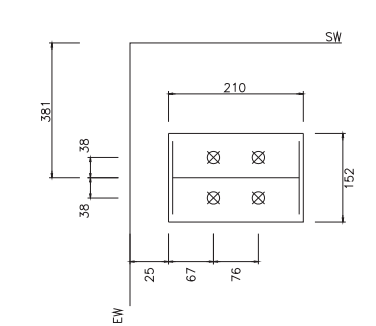
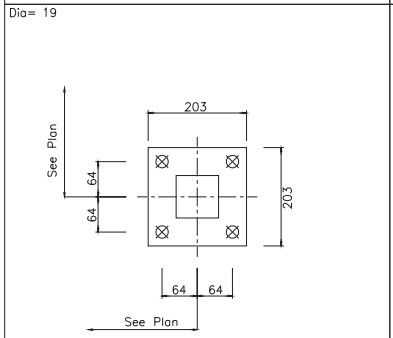


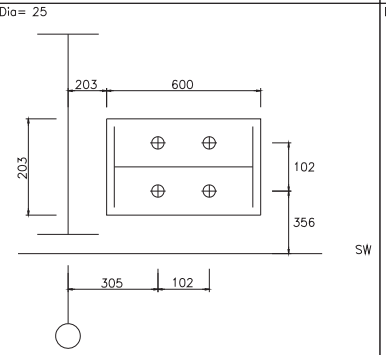
DETAIL A Base EL. 0.000m

Dia= 19



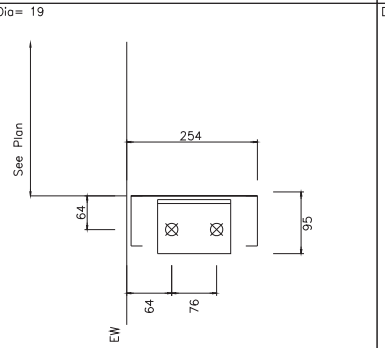
DETAIL L Base EL. −0.200m

Dia= 25



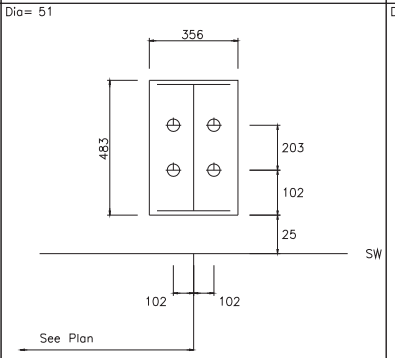
DETAIL J Base EL. 0.000m

Dia= 19



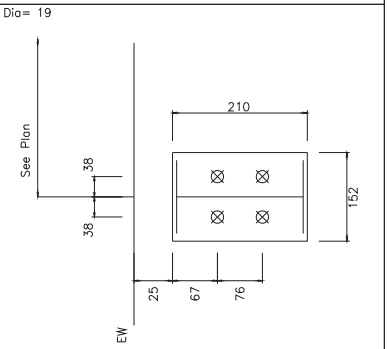
DETAIL F Base EL. 0.000m

Dia= 51



DETAIL D Base EL. 0.000m

Dia= 19



DETAIL B Base EL. 0.000m

NOTE:
ANCHOR ROD PROJECTION INDICATED IS MEASURED FROM UNDERSIDE OF BASE PLATE.
MAKE THE NECESSARY ADJUSTMENTS TO ALLOW FOR GROUT.
ANCHOR RODS NOT BY THE BUILDING MANUFACTURER

ANCHOR ROD PLACEMENT

ANCHOR ROD TOLERANCES

1. ANCHOR RODS SHALL BE SET IN ACCORDANCE WITH THE ERECTION DIAGRAMS. THEY MUST NOT VARY FROM THE DIMENSIONS SHOWN ON THE ERECTION DIAGRAMS BY MORE THAN THE FOLLOWING:
   (A) 1/8" (3mm) CENTRE TO CENTRE OF ANY TWO RODS WITHIN AN ANCHOR ROD GROUP, WHERE AN ANCHOR ROD GROUP IS DEFINED AS THE SET OF ANCHOR RODS WHICH RECEIVES A SINGLE FABRICATED STEEL SHIPPING PIECE;
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ISSUE	DESCRIPTION	CHECKED BY	YY/MM/DD
0	FOR CONSTRUCTION	TV	24/10/04

CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM
DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO
SHEET 2A
ISSUE 0

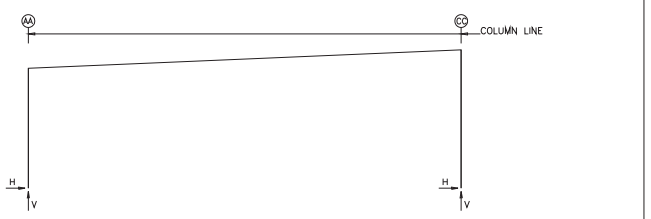
ANCHOR ROD DETAILS

U-BUILD STEEL BUILDINGS

SCALE: N.T.S. S.O. # 900662

120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368

FRAME LINES: 2 3 4 5



RIGID FRAME: ANCHOR BOLTS & BASE PLATES

Frm Line	Col Line	Anc. Rod Qty	Anc. Rod Dia	Base Plate (mm) Width	Base Plate (mm) Length	Base Plate (mm) Thick	Grout (mm)
2*	AA	4	51	356	495	16	0
2*	CC	4	51	356	502	13	0

2* Frame lines: 2 3 4

RIGID FRAME: ANCHOR BOLTS & BASE PLATES

Frm Line	Col Line	Anc. Rod Qty	Anc. Rod Dia	Base Plate (mm) Width	Base Plate (mm) Length	Base Plate (mm) Thick	Grout (mm)
5	AA	4	51	356	483	13	0
5	CC	4	51	356	483	13	0

ENDWALL COLUMN: ANCHOR BOLTS & BASE PLATES

Frm Line	Col Line	Anc. Rod Qty	Anc. Rod Dia	Base Plate (mm) Width	Base Plate (mm) Length	Base Plate (mm) Thick	Grout (mm)
1A	AA	4	19	152	210	13	0
1A	AB	4	19	152	210	13	0
1A	B	4	19	152	210	13	0
1A	CC	4	19	152	210	13	0
6A	CC	4	19	152	210	13	0
6A	B	4	19	152	210	13	0
6A	AA	4	19	152	210	13	0

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RIGID FRAME: SPECIFIED COLUMN REACTIONS (kN)

Frame Line	Column Line	Dead Horz	Dead Vert	Collateral Horz	Collateral Vert	Live Horz	Live Vert	Snow Horz	Snow Vert	Snow_Drift Horz	Snow_Drift Vert	Wind_Left1 Horz	Wind_Left1 Vert
2*	AA	28.6	58.5	20.9	30.4	44.6	82.7	57.1	105.9	140.8	217.3	-65.8	-103.2
2*	CC	-28.6	63.0	-20.9	37.4	-44.6	83.7	-57.1	107.1	-141.0	269.3	12.8	-75.5

Frame Line	Column Line	Wind_Right1 Horz	Wind_Right1 Vert	Wind_Left2 Horz	Wind_Left2 Vert	Wind_Right2 Horz	Wind_Right2 Vert	Wind_Long1 Horz	Wind_Long1 Vert	Wind_Long2 Horz	Wind_Long2 Vert	Seismic_Left Horz	Seismic_Left Vert
2*	AA	3.6	-53.5	-37.3	-10.7	32.1	39.0	-30.1	-88.8	-30.1	-88.8	-20.7	-9.8
2*	CC	55.4	-85.5	-15.6	17.3	27.0	7.3	31.4	-89.9	31.4	-89.9	-17.0	9.8

Frame Line	Column Line	Seismic_Right Horz	Seismic_Right Vert	F1UNB_SL_L Horz	F1UNB_SL_L Vert	F1UNB_SL_R Horz	F1UNB_SL_R Vert
2*	AA	20.7	9.8	42.9	93.2	42.8	65.7
2*	CC	17.0	-9.8	-42.9	66.6	-42.8	94.1

Frame Line	Column Line	Dead Horz	Dead Vert	Collateral Horz	Collateral Vert	Live Horz	Live Vert	Snow Horz	Snow Vert	Snow_Drift Horz	Snow_Drift Vert	Wind_Left1 Horz	Wind_Left1 Vert
5	AA	27.1	51.6	30.2	42.1	45.7	83.0	58.4	106.3	11.3	20.5	-50.2	-92.3
5	CC	-27.1	56.4	-30.2	68.3	-45.7	83.4	-58.4	106.8	-11.3	20.6	28.4	-86.4

Frame Line	Column Line	Wind_Right1 Horz	Wind_Right1 Vert	Wind_Left2 Horz	Wind_Left2 Vert	Wind_Right2 Horz	Wind_Right2 Vert	Wind_Long1 Horz	Wind_Long1 Vert	Wind_Long2 Horz	Wind_Long2 Vert	Seismic_Left Horz	Seismic_Left Vert
5	AA	-13.9	-65.0	-20.6	0.6	15.6	27.9	-31.2	-89.1	-31.2	-89.1	-17.8	-8.5
5	CC	41.8	-74.0	-1.1	6.1	12.3	18.5	32.5	-89.6	32.5	-89.6	-15.0	8.5

Frame Line	Column Line	Seismic_Right Horz	Seismic_Right Vert	F2UNB_SL_L Horz	F2UNB_SL_L Vert	F2UNB_SL_R Horz	F2UNB_SL_R Vert
5	AA	17.8	8.5	43.9	93.4	43.8	66.0
5	CC	15.0	-8.5	-43.9	66.4	-43.8	93.8

2* Frame lines: 2 3 4

ENDWALL COLUMN: SPECIFIED COLUMN REACTIONS (kN)

Frm Line	Col Line	Dead Vert	Collat Vert	Live Vert	Snow Vert	Snow Drift Vert	Wind Left1 Vert	Wind Right1 Vert	Wind Left2 Vert	Wind Right2 Vert	Wind Press Horz	Wind Suct Horz	Wind Long1 Vert
1A	AA	7.5	2.6	10.9	13.9	0.8	-14.8	-10.3	-2.1	2.3	-4.9	4.9	-15.0
1A	AB	13.4	5.1	20.9	26.8	1.6	-28.6	-20.0	-5.3	3.3	-9.9	8.9	-28.3
1A	B	20.0	7.7	32.0	41.0	2.4	-43.4	-30.6	-7.7	5.1	-15.8	14.3	-43.4
1A	CC	14.2	5.3	22.1	28.3	1.7	-29.4	-21.1	-5.4	2.9	-11.3	10.7	-29.4

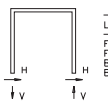
Frm Line	Col Line	Wind Long2 Horz	Wind Long2 Vert	Seis Left Horz	Seis Left Vert	Seis Right Horz	Seis Right Vert	Seis Long Horz	Seis Long Vert	E1UNB_SL_L Horz	E1UNB_SL_L Vert	E1UNB_SL_R Horz	E1UNB_SL_R Vert	E1PAT_SL_1 Horz	E1PAT_SL_1 Vert	E1PAT_SL_2 Horz	E1PAT_SL_2 Vert
1A	AA	-10.8	0.1	0.5	0.1	0.0	13.9	0.0	7.0	0.0	7.0	0.0	0.0				
1A	AB	-20.0	-0.4	-0.1	0.3	0.0	26.8	0.0	13.4	0.0	6.3	0.0	7.2				
1A	B	-30.6	0.2	-0.2	0.4	0.0	27.7	0.0	33.9	0.0	0.0	0.0	7.2				
1A	CC	-20.6	0.1	-0.1	0.3	0.0	14.2	0.0	28.3	0.0	0.0	0.0	0.0				

Frm Line	Col Line	E1PAT_SL_3 Horz	E1PAT_SL_3 Vert	E1PAT_SL_4 Horz	E1PAT_SL_4 Vert	E1PAT_SL_5 Horz	E1PAT_SL_5 Vert
1A	AA	0.0	0.0	7.0	0.0	0.0	
1A	AB	0.0	0.0	13.4	0.0	7.2	
1A	B	0.0	13.4	0.0	7.2	0.0	20.5
1A	CC	0.0	14.2	0.0	0.0	0.0	14.2

Frm Line	Col Line	Dead Vert	Collat Vert	Live Vert	Snow Vert	Snow Drift Vert	Wind Left1 Vert	Wind Right1 Vert	Wind Left2 Vert	Wind Right2 Vert	Wind Press Horz	Wind Suct Horz	Wind Long1 Vert
6A	CC	17.2	35.3	22.1	28.3	7.4	-21.1	-29.4	2.9	-5.4	-11.1	10.6	-29.4
6A	B	29.3	43.4	41.8	53.5	13.9	-40.0	-56.9	6.7	-10.3	-19.5	17.7	-56.6
6A	AA	15.4	10.6	22.0	28.2	7.3	-21.0	-29.9	4.1	-4.8	-9.4	9.0	-30.1

Frm Line	Col Line	Wind Long2 Horz	Wind Long2 Vert	Seis Left Horz	Seis Left Vert	Seis Right Horz	Seis Right Vert	Seis Long Horz	Seis Long Vert	E2UNB_SL_L Horz	E2UNB_SL_L Vert	E2UNB_SL_R Horz	E2UNB_SL_R Vert	E2PAT_SL_1 Horz	E2PAT_SL_1 Vert	E2PAT_SL_2 Horz	E2PAT_SL_2 Vert
6A	CC	-20.6	-0.2	0.2	0.3	0.0	28.3	0.0	14.2	0.0	14.2	0.0	0.0				
6A	B	-40.0	-0.5	-0.5	0.5	0.0	40.1	0.0	40.2	0.0	13.4	0.0	13.4				
6A	AA	-21.4	0.7	0.2	0.2	0.0	14.1	0.0	28.2	0.0	0.0	0.0	14.1				

WIND BENT REACTIONS



Wall Loc	Wall Line	Col Line	± Reactions Wind(kN) Horz	Wind(kN) Vert	Seismic(kN) Horz	Seismic(kN) Vert	Bolt(mm) Qty	Bolt(mm) Dia	Base_Plate(mm) Width	Base_Plate(mm) Length	Base_Plate(mm) Thick	Grout (mm)
F_SW	CC	4	19.3	27.3	55.0	77.6	4	25	203	600	13	0
F_SW	CC	5	19.3	27.3	55.0	77.6	4	25	203	600	13	0
B_SW	AA	4	14.4	17.4	54.6	65.8	4	25	203	526	13	0
B_SW	AA	3	14.4	17.4	54.6	65.8	4	25	203	526	13	0

GENERAL NOTES

1. THE BUILDING MANUFACTURER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR FOUNDATION DESIGN OR CONSTRUCTION.
2. ANCHOR RODS NOT BY THE BUILDING MANUFACTURER.
3. ALL REACTIONS ARE IN KIPS AND FT-KIPS (kN AND kN-m IF METRIC).
4. POSITIVE REACTIONS ARE AS SHOWN IN THE SKETCH. FOUNDATION LOADS ARE IN OPPOSITE DIRECTIONS.
5. BRACING REACTIONS ARE IN THE PLANE OF THE BRACE WITH THE H POINTING AWAY FROM THE BRACED BAY. THE VERTICAL REACTION IS DOWNWARD.
6. LOAD COMBINATIONS ARE TO BE APPLIED AS PER THE APPLICABLE BUILDING CODE FOR FOUNDATION DESIGN.
7. ALL SPECIFIED LOADS AND BRACING REACTIONS INCLUDE THE IMPORTANCE FACTOR FOR STRENGTH ONLY.
8. BRACING REACTIONS MAY REVERSE.
9. BRACING REACTIONS ARE NOT COMBINED WITH SPECIFIED REACTIONS.
10. SEISMIC DESIGN IS BASED ON CONVENTIONAL STEEL CONSTRUCTION SFRS WHERE Rd=1.5 AND Ro=1.3 U/N
11. MINIMUM HORIZONTAL WIND LOAD ON PARTITION WALLS SUPPLIED BY THE BUILDING MANUFACTURER IS 5.0 psf
12. ASSUMED CONCRETE STRENGTH = 2.9 Ksi
13. DOORS AND WINDOWS MUST BE DESIGNED TO WITHSTAND APPROPRIATE WIND LOADS WITHOUT FAILURE.

SPECIFIED LOAD DEFINITIONS

DEAD	– Self weight of the building system.
COLLATERAL	– Mechanical, electrical, ceilings, sprinklers, etc.
LIVE	– Roof Live load due to intended use and occupancy.
SNOW	– Snow load.
DRIFT	– Snow Drift surcharge.
FLOOR	– Mezzanine Live load.
WIND_LEFT1	– Wind from left to right, with positive internal pressure.
WIND_RIGHT1	– Wind from right to left, with positive internal pressure.
WIND_LEFT2	– Wind from left to right, with negative internal pressure.
WIND_RIGHT2	– Wind from right to left, with negative internal pressure.
SEISMIC_LEFT	– Seismic force from left to right.
SEISMIC_RIGHT	– Seismic force from right to left.
UNB_LL	– Unbalanced Live Load.
UNB_SL	– Unbalanced Snow Load.
PAT_SL	– Pattern Snow Load.
CRANE	– Crane loads.
WIND_LONG	– Longitudinal Wind load.
SEISMIC_LONG	– Longitudinal Seismic load.
WIND_PRESS	– Wind Pressure.
WIND_SUCT	– Wind Suction.
TEMP	– Temperature Change load.

FLOOR COLUMN REACTIONS

Frame Line	Col Line	Dead Vert (kN)	Coll Vert (kN)	Live Vert (kN)	Anc. Rod Qty	Anc. Rod Dia	Base Plate (mm) Width	Base Plate (mm) Length	Base Plate (mm) Thick	Base Elev.	Grout (mm)
2.1	A.1	10.3	5.8	15.7	4	19	203	203	16	-0.200m	50
2.1	AB.1	11.0	4.8	16.9	4	19	203	203	16	-0.200m	50
2.1	B.1	8.1	3.7	12.4	4	19	203	203	16	-0.200m	50
2.1	B.2	3.4	2.5	5.2	4	19	203	203	16	-0.200m	50
2.2	A.1	19.9	6.5	30.5	4	19	203	203	16	-0.200m	50
2.2	AB.1	21.4	4.1	32.9	4	19	203	203	16	-0.200m	50
2.2	B.1	15.4	3.0	23.5	4	19	203	203	16	-0.200m	50
2.2	B.2	9.0	4.5	13.8	4	19	203	203	16	-0.200m	50
2.3	A.1	21.2	6.9	32.4	4	19	203	203	13	-0.200m	50
2.3	AB.1	22.8	4.4	34.9	4	19	203	203	16	-0.200m	50
2.3	B.1	16.1	2.9	24.7	4	19	203	203	16	-0.200m	50
2.3	B.2	11.9	5.0	18.2	4	19	203	203	13	-0.200m	50
3.1	A.1	11.5	6.2	17.6	4	19	203	203	16	-0.200m	50
3.1	AB.1	12.4	5.0	19.0	4	19	203	203	16	-0.200m	50
3.1	B.1	8.8	3.4	13.4	4	19	203	203	13	-0.200m	50
3.1	B.2	6.5	4.1	9.9	4	19	203	203	13	-0.200m	50

BUILDING BRACING REACTIONS

Wall Loc	Wall Line	Col Line	± Reactions(kN) Wind Horz	Wind Vert	Seismic Horz	Seismic Vert
L_EW	1A	AA,AB	12.5	13.9	12.2	13.5
F_SW	CC	Wind bent in bay				
R_EW	6A	B,AA	12.5	6.4	22.2	11.3
B_SW	AA	Wind bent in bay				

FLOOR BRACING REACTIONS

Loc	Location Start	Location End	± Reactions(kN) Seismic Horz	Seismic Vert
2.1	B.1	B.2	9.2	10.6
2.2	AB.1	B.1	16.8	15.0
2.3	AB.1	B.1	17.9	15.9
3.1	A.1	A.2	10.2	6.1
A.1	2.1	2.2	15.5	15.8
AB.1	2.1	2.2	22.8	23.2
B.2	2.1	2.2	15.7	16.0

LICENCED PROFESSIONAL ENGINEER
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2024-10-04
PROVINCE OF ONTARIO

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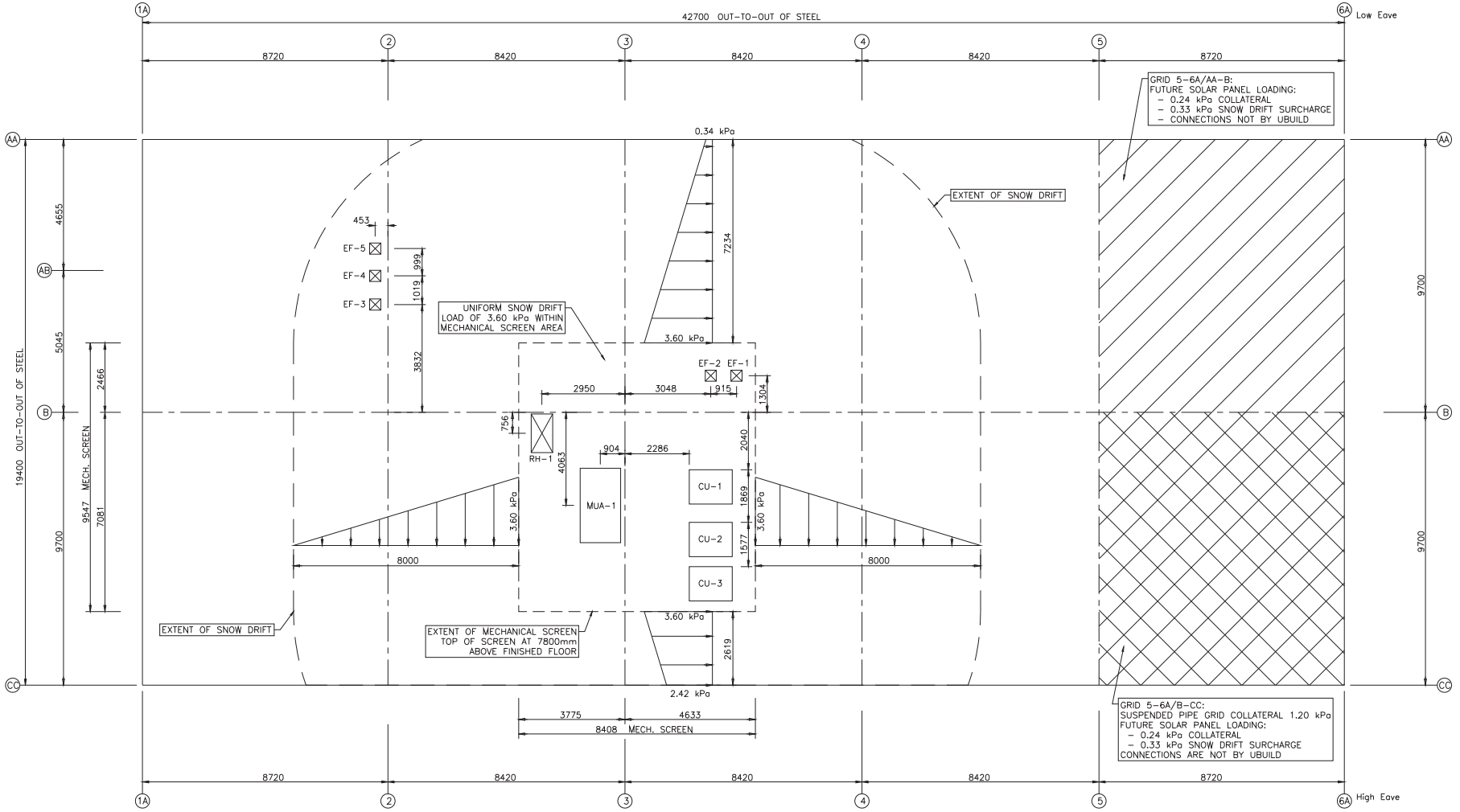
ISSUE	DESCRIPTION	CHECKED BY	YY/MM/DD
0	FOR CONSTRUCTION	TV	24/10/04

CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM
DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO
SHEET 3
ISSUE 0
ANCHOR ROD REACTIONS
SCALE: N.T.S. S.O. # 900662

U-BUILD STEEL BUILDINGS
120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368



ROOF LOADS

NOTES:
1. SNOW DRIFT LOADS SHOWN ARE DRIFT SURCHARGE LOADS ONLY
2. MECHANICAL SCREEN WIND LOADS = 0.84 kPa (UNFACTORED, PERPENDICULAR TO SCREEN)
   - MECHANICAL SCREEN AND CONNECTIONS TO BUILDING ARE NOT BY UBUILD
3. ROOF UNIT LOCATION & SNOW DRIFT DIMENSIONS ARE HORIZONTAL PROJECTED DIMENSIONS.
4. ROOF UNITS (NOT BY UBUILD):
   - MUA-1 @ 16.5 kN
   - CU-1 & CU-2 @ 3.16 kN EACH
   - CU-3 @ 1.11 kN
   - EF1 TO EF-5 (5 UNITS) @ 0.67 kN EACH
   - RH-1 (ROOF HATCH) @ 0.67 kN
   - SEE SHEET 5 FOR ROOF FRAMED OPENINGS
     (FRAMED OPENINGS NOT INCLUDED FOR CU-1, CU-2 & CU-3)

GENERAL NOTES:
1. LETTER ISSUES ARE INFORMATION DRAWINGS.
2. NUMBER ISSUES ARE CONSTRUCTION DRAWINGS.

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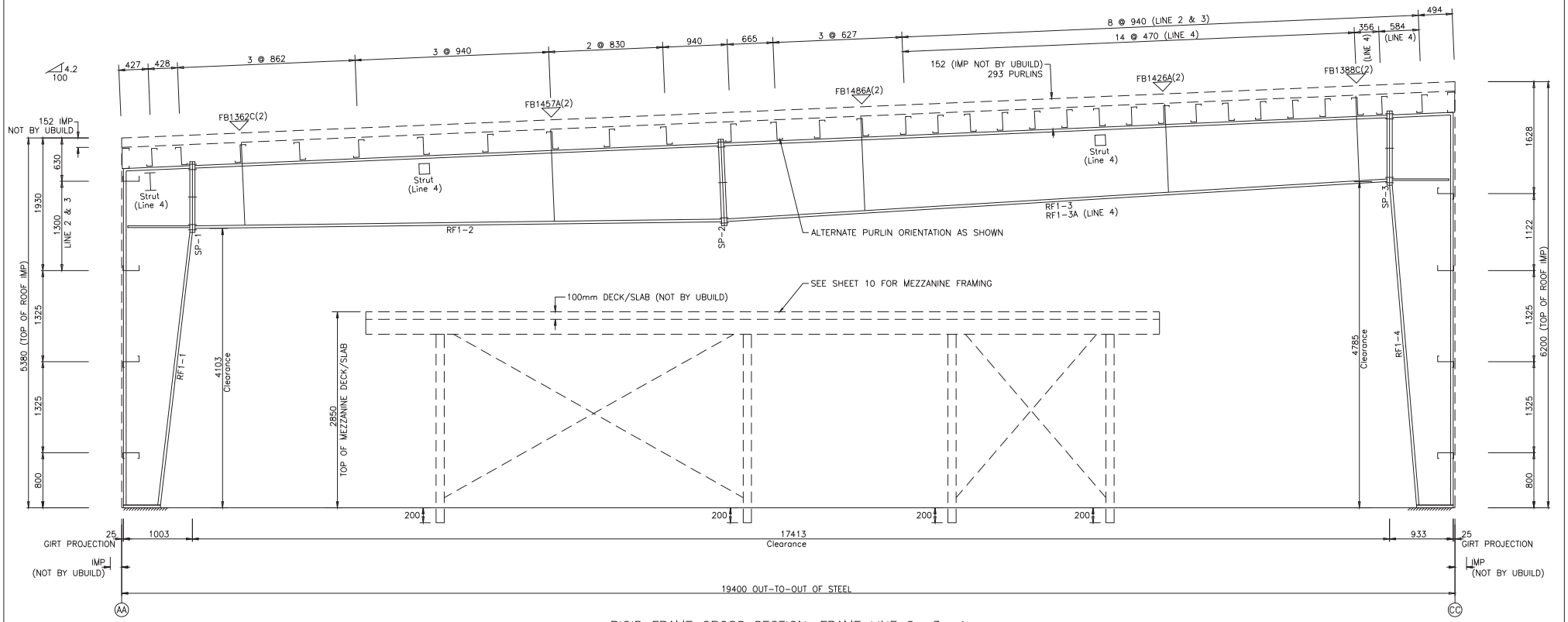
CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM
DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO
SHEET 3A
ISSUE 0
ROOF LOADS
SCALE: N.T.S.
S.O. # 900662

U-BUILD STEEL BUILDINGS
120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368

SPLICE PLATE & BOLT TABLE									
Mark	Qty Top	Bot	Int	Type	Dia	Length	Width	Thick	Length
SP-1	4	4	2	A325	1 1/4"	95	254	25	1080
SP-2	4	4	2	A325	1 1/4"	95	254	25	1308
SP-3	4	4	2	A325	1 1/2"	114	305	32	1162

FLANGE BRACES: FBxx (1 or 2)
xx=length(mm)
(1) One Side; (2) Two Sides
C – L3x3x10
A – L2x2x10

MEMBER TABLE							
Mark	Weight	Length	Web Depth Start/End	Web Plate Thick	Web Plate Length	Outside Flange W x Thk x Length	Inside Flange W x Thk x Length
RF1-1	783	4936	457/ 946	9.5	3833	254 x 19 x 4901	254 x 19 x 4015
			946/ 965	12.7	1110	254 x 19 x 1010	
RF1-2	1197	7691	838/ 885	9.5	1580	254 x 19 x 7640	254 x 19 x 7680
			885/1066	7.9	6096		
RF1-3	1569	9724	1066/ 954	7.9	6096	254 x 19 x 9666	254 x 19 x 9629
			954/ 889	9.5	3570		
RF1-3A	1569	9724	1066/ 954	7.9	6096	254 x 19 x 9666	254 x 19 x 9629
			954/ 889	9.5	3570		
RF1-4	1047	5754	889/ 875	12.7	1217	304.8 x 19 x 933	304.8 x 25.4 x 4675
			875/ 457	9.5	4505	304.8 x 19 x 5721	



RIGID FRAME CROSS SECTION: FRAME LINE 2 3 4

GENERAL NOTES:
1. LETTER ISSUES ARE INFORMATION DRAWINGS.
2. NUMBER ISSUES ARE CONSTRUCTION DRAWINGS.
3. RIGID FRAME COLOR: GREY PRIMER

LICENSED PROFESSIONAL ENGINEER
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2024-10-04
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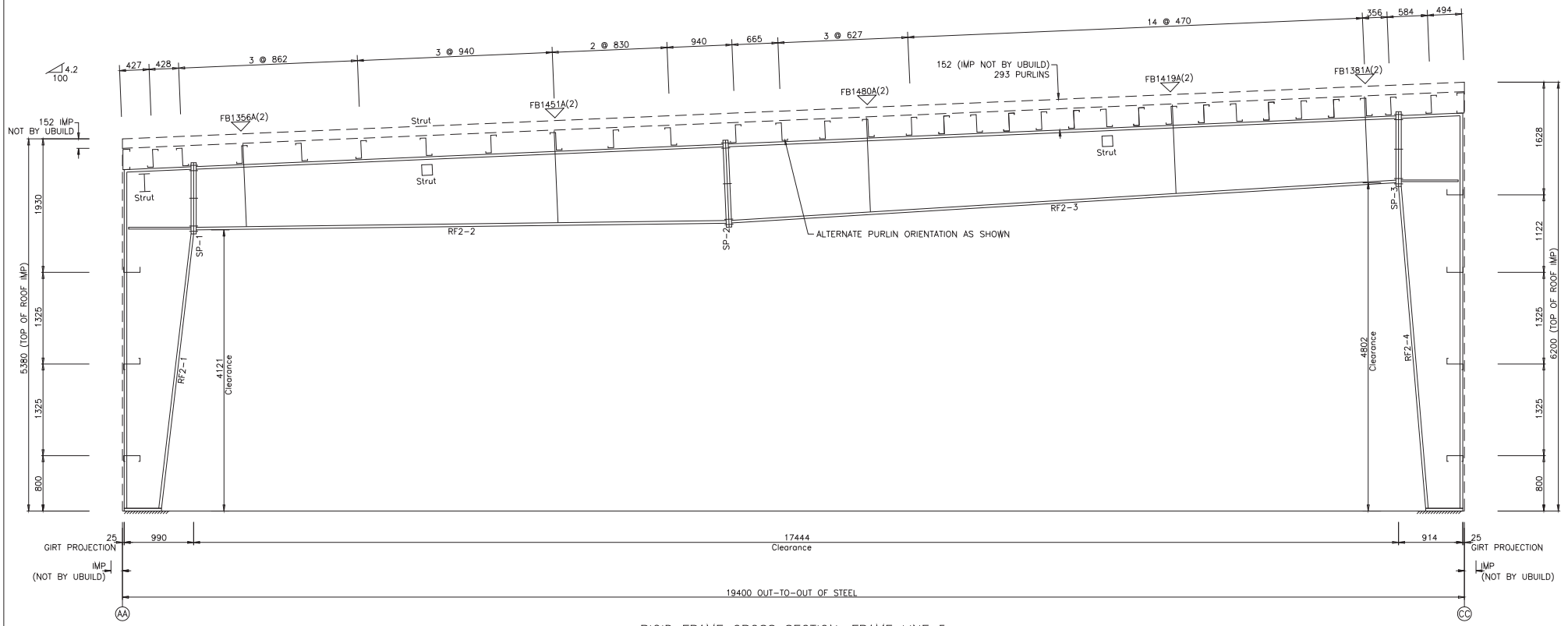
CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM
DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO
SHEET 4
ISSUE A
RIGID FRAME ELEVATION
SCALE: N.T.S.
S.O. # 900662

U-BUILD STEEL BUILDINGS
120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368

SPLICE PLATE & BOLT TABLE									
Mark	Qty Top	Bot	Int	Type	Dia	Length	Width	Thick	Length
SP-1	4	4	2	A325	1"	76	203	19	1032
SP-2	4	4	2	A325	3/4"	64	203	16	1248
SP-3	4	4	2	A325	1"	76	254	19	1086

▽FLANGE BRACES: FBxx (1 or 2)
xx=length(mm)
(1) One Side; (2) Two Sides
A – L2x2x10

MEMBER TABLE							
Mark	Weight	Length	Web Depth Start/End	Web Plate Thick	Web Plate Length	Outside Flange W x Thk x Length	Inside Flange W x Thk x Length
RF2-1	453	4936	457/ 946	6.4	3868	203.2 x 9.5 x 4914	203.2 x 15.9 x 4051
RF2-2	701	7707	838/ 886	7.9	1612	203.2 x 9.5 x 7672	203.2 x 9.5 x 7711
			886/1066	6.4	6096		
RF2-3	951	9744	1067/ 955	6.4	6096	203.2 x 9.5 x 9708	203.2 x 9.5 x 6097
			955/ 889	7.9	3612		203.2 x 12.7 x 3574
RF2-4	627	5757	889/ 875	9.5	1178	254 x 12.7 x 927	254 x 12.7 x 4724
			876/ 457	7.9	4553	254 x 12.7 x 5731	



RIGID FRAME CROSS SECTION: FRAME LINE 5

GENERAL NOTES:
1. LETTER ISSUES ARE INFORMATION DRAWINGS.
2. NUMBER ISSUES ARE CONSTRUCTION DRAWINGS.
3. RIGID FRAME COLOR: GREY PRIMER

LICENSED PROFESSIONAL ENGINEER
T. K. M. VEITCH
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2024-10-04
PROVINCE OF ONTARIO

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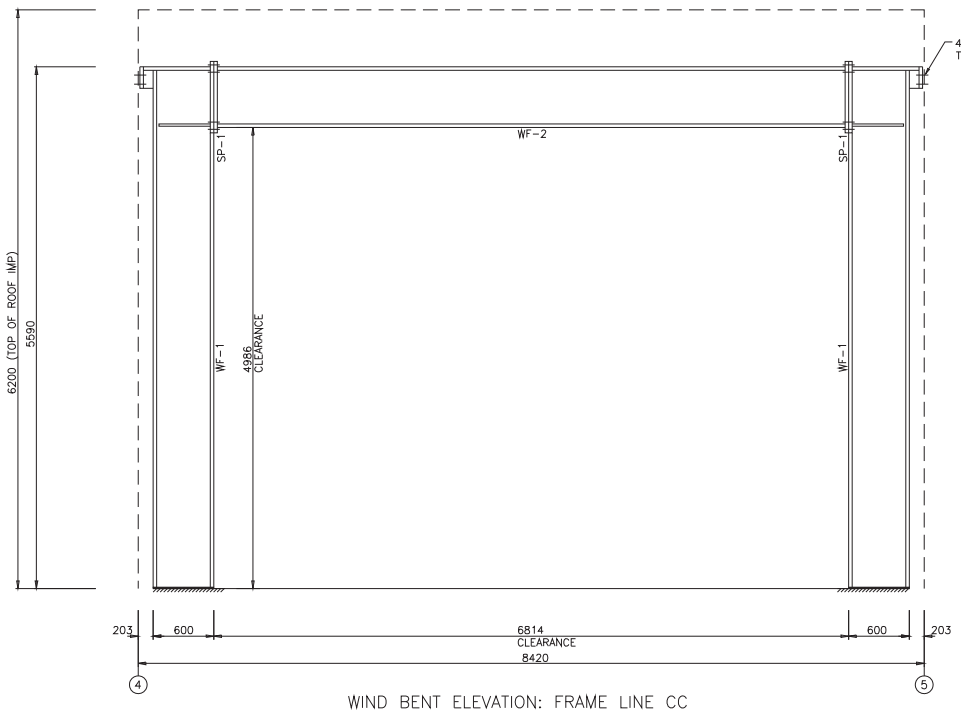
CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM
DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO
SHEET 4A
ISSUE A
RIGID FRAME ELEVATION
SCALE: N.T.S.
S.O. # 900662

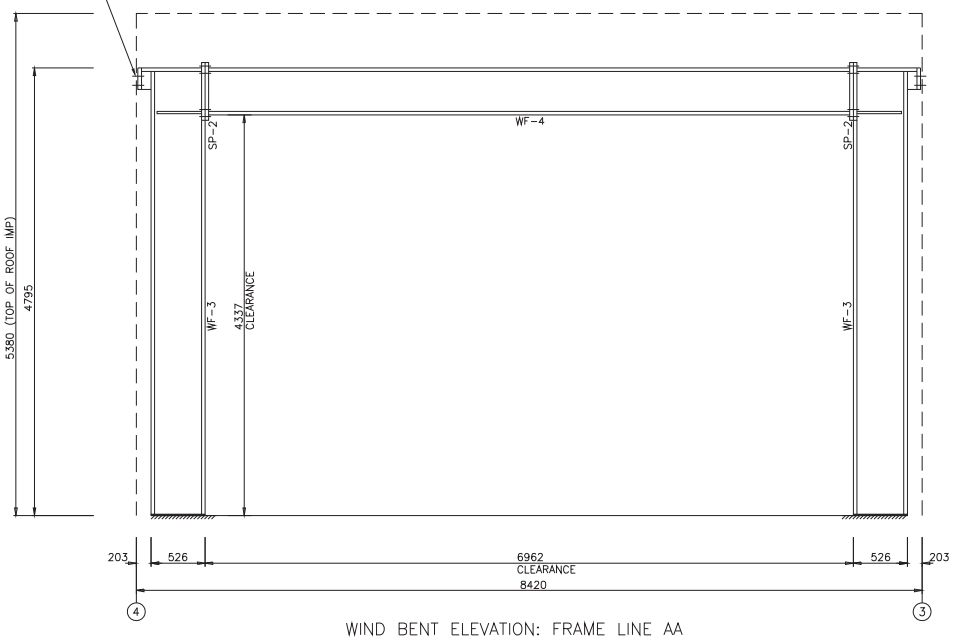
U-BUILD STEEL BUILDINGS
120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368

SPLICE PLATES & BOLTS								
Splice Mark	Quan Top/	Bot	Bolt Type	Bolt Dia	Bolt Length	Plate Size Width	Thick	Length
SP- 1	4	4	A325	3/4"	64	203	16	762
SP- 2	4	4	A325	3/4"	64	203	16	613

MEMBER SIZE TABLE			
MARK	MEMBER	LENGTH	WEIGHT
WF-2	W24x62	6808	664
WF-1	W24x55	5590	512
WF-4	W18x55	6953	598
WF-3	W21x44	4795	365



WIND BENT ELEVATION: FRAME LINE CC



WIND BENT ELEVATION: FRAME LINE AA

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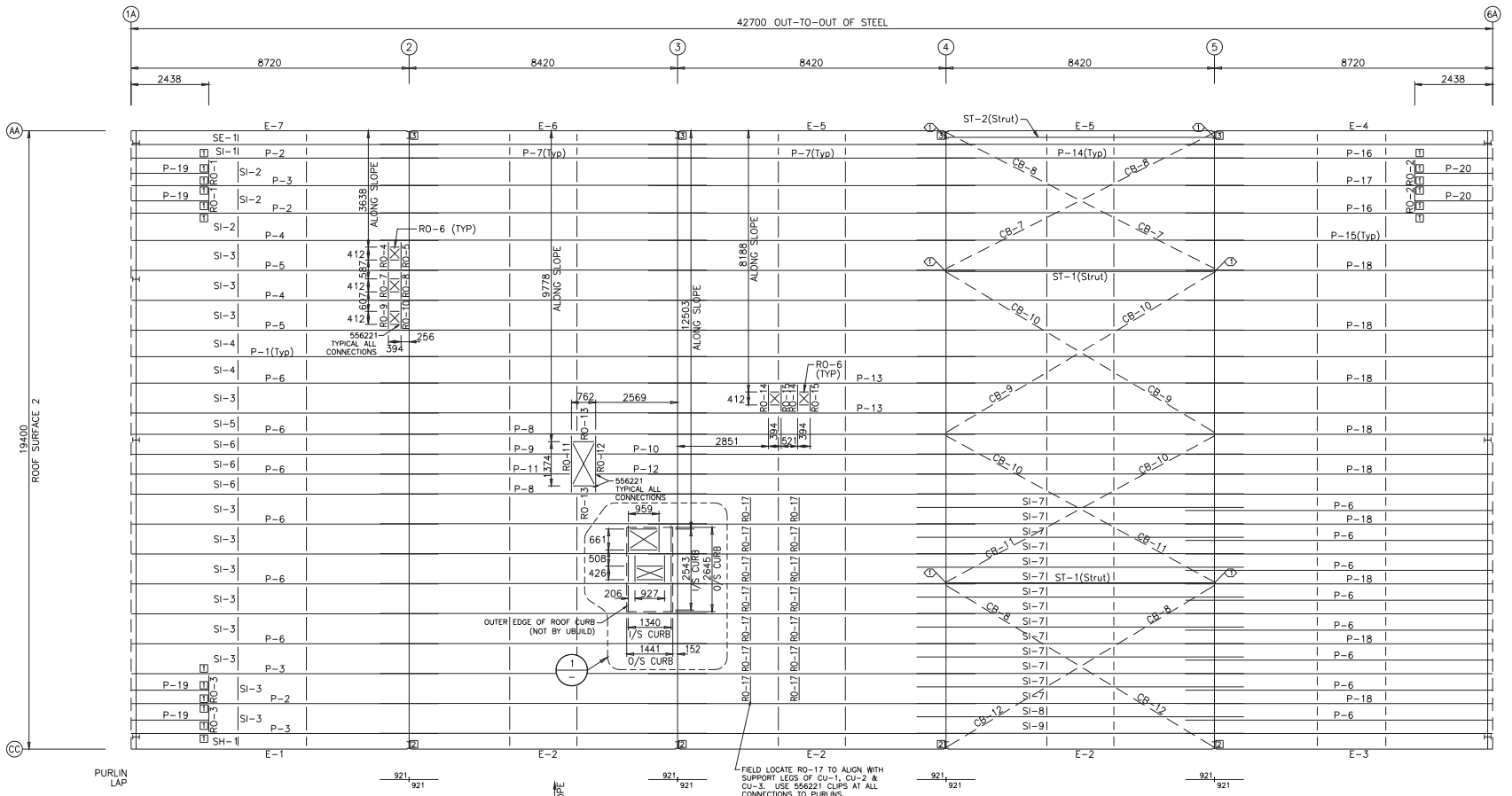
DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO

SHEET 4B
ISSUE A

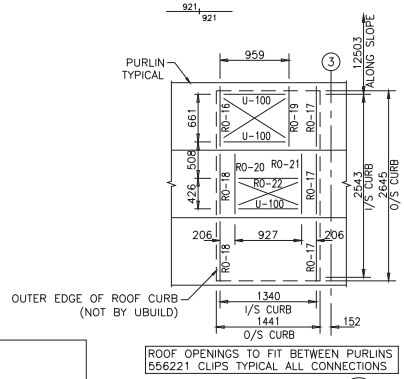
WIND BENT ELEVATION

SCALE: N.T.S. S.O. # 900662

U-BUILD STEEL BUILDINGS
120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368



ROOF FRAMING PLAN



ROOF OPENINGS TO FIT BETWEEN PURLINS
556221 CLIPS TYPICAL ALL CONNECTIONS

DETAIL 1 / — MUA-1 SUPPORT FRAMING

IMP ROOF PANEL (152 THICK) IS NOT BY UBUILD.
SUPPORT ANGLES AT IMP ROOF PANEL ENDLAP SPLICES ARE NOT BY UBUILD.
DESIGN VERIFICATION OF IMP & ASSOCIATED CONNECTIONS IS NOT BY UBUILD.
IMP ROOF SYSTEM MUST BE DESIGNED (BY OTHERS) TO SUIT PURLIN LAYOUT SHOWN
(SEE SHEETS 4 & 4A FOR PURLIN SPACING)

*** IMPORTANT PURLIN BLOCKING NOTE ***

1. PURLIN STABILIZER BLOCKING REQUIRED AS SHOWN ON PLAN. INSTALL USING 3/8"ø SCREW BOLTS.
2. REFER TO STANDARD DETAIL SHEETS SD21, SD21A, SD22 AND/OR SD22A FOR STABILIZER BLOCKING DETAILS.

GENERAL NOTES:

1. LETTER ISSUES ARE INFORMATION DRAWINGS.
2. NUMBER ISSUES ARE CONSTRUCTION DRAWINGS.
3. SEE STANDARD DETAIL BOOKLET FOR PURLIN BLOCK, PURLIN STABILIZERS, RIDGE BLOCK, TRIM, AND FASTENERS.

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2024-10-04
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CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM
DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO
SHEET 5
ISSUE A
ROOF FRAMING
SCALE: N.T.S.
S.O. # 900662

U-BUILD STEEL BUILDINGS
120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368

BOLT TABLE: FRAME LINE

LOCATION	QUAN	TYPE	DIA	LEN
1	4	A325	3/4"	44

CONNECTION PLATES
ROOF PLAN

☐ ID	MARK/PART
1	556121
2	556524
3	556518

MEMBER TABLE
ROOF PLAN

MARK	PART	LENGTH
RO-1	118C14	684
RO-2	118C14	684
RO-3	118C14	762
RO-4	118C14	737
RO-5	118C14	737
RO-6	118C14	381
RO-7	118C14	737
RO-8	118C14	737
RO-9	118C14	737
RO-10	118C14	737
RO-11	118C14	1678
RO-12	118C14	1678
RO-13	118C14	749
RO-14	118C14	737
RO-15	118C14	737
RO-16	118C14	737
RO-17	118C14	737
RO-18	118C14	737
RO-19	118C14	737
RO-20	118C14	737
RO-21	118C14	737
RO-22	118C14	914
U-100	140A CAP	3048
P-1	118Z12	9635
P-2	118Z12	9635
P-3	118Z12	9635
P-4	118Z12	9635
P-5	118Z12	9635
P-6	118Z12	9635
P-7	118Z10	10262
P-8	118Z10	10262
P-9	118Z10	5921
P-10	118Z10	3401
P-11	118Z10	5921
P-12	118Z10	3401
P-13	118Z10	10262
P-14	118Z12	10262
P-15	118Z10	9635
P-16	118Z10	9635
P-17	118Z10	9635
P-18	118Z10	9635
P-19	118Z12	2343
P-20	118Z12	2343
E-1	118E10	8711
E-2	118E10	8414
E-3	118E10	8711
E-4	118E10	8711
E-5	118E10	8414
E-6	118E10	8414
E-7	118E10	8711
ST-1	HSS5x5x1/4	8410
ST-2	W8x31	8410
CB-7	RD1000	3531
CB-8	RD1000	6096
CB-9	RD0750	3861
CB-10	RD0750	6096
CB-11	RD0750	3658
CB-12	RD1000	3886
SI-1	9ZS16	423
SI-2	9ZS16	857
SI-3	9ZS16	935
SI-4	9ZS16	826
SI-5	9ZS16	660
SI-6	9ZS16	622
SI-7	9ZS16	465
SI-8	9ZS16	351
SI-9	9ZS16	579
SE-1	9ZE16	414
SH-1	9ZS16	462

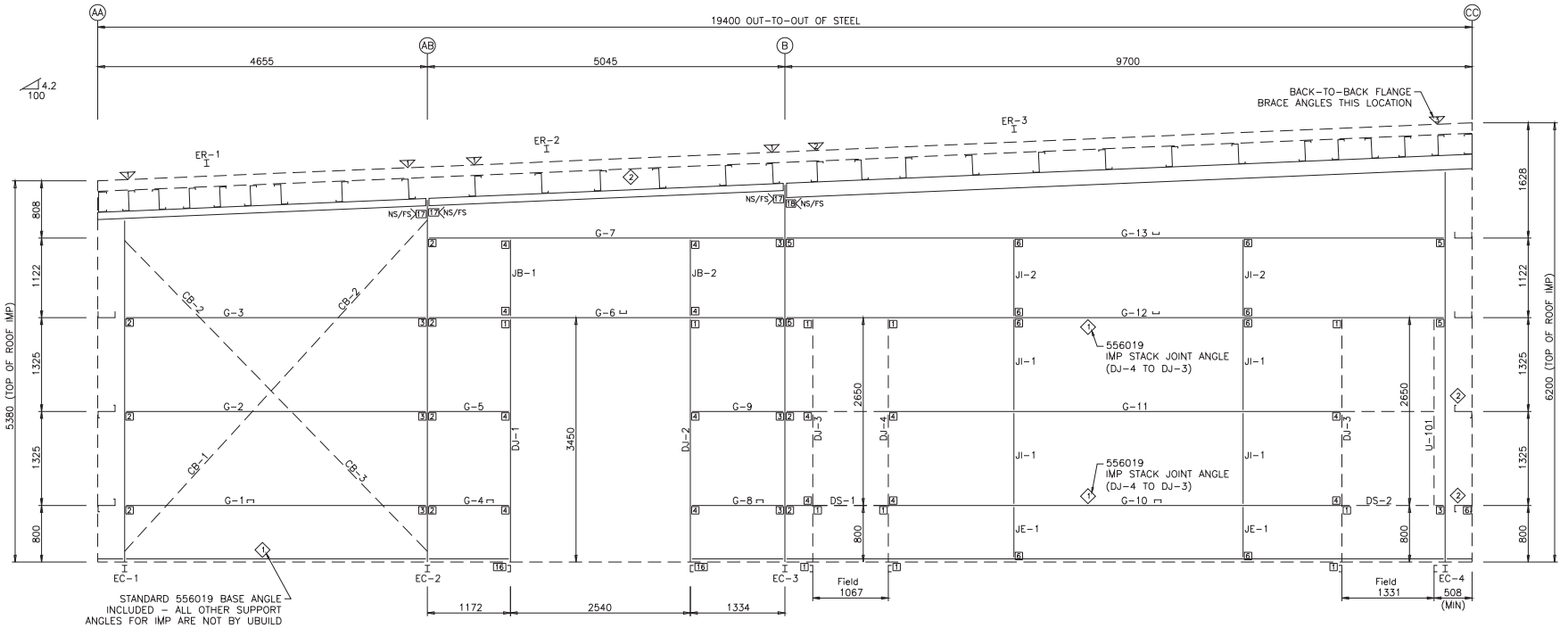
BOLT TABLE: FRAME LINE 1A				
LOCATION	QUAN	TYPE	DIA	LEN
ER-1/ER-2/EC-2	8	A325	3/4"	57
ER-2/ER-3/EC-3	10	A325	3/4"	57
	4	A325	3/4"	44
Cor_Column/Raf	4	A325	3/4"	44

FLANGE BRACE TABLE FRAME LINE 1A				
▽ ID	MARK	PART	CLIP	LENGTH
1	FB20.9	L2x2x10	--	530
2	FB26.6	L2x2x10	--	676
3	FB20.6	LL2x2x10	556138	524

ANGLE TABLE FRAME LINE 1A		
◇ID	PART	LENGTH
1	556019	3048
2	556020	4877

CONNECTION PLATES FRAME LINE 1A	
□ ID	MARK/PART
1	556121
2	556053
3	556054
4	556111
5	556100
6	556048
16	556037
17	556102
18	556104

MEMBER TABLE FRAME LINE 1A		
MARK	PART	LENGTH
EC-1	W8x18	4673
EC-2	W8x18	5157
EC-3	W8x18	5370
EC-4	W8x18	5266
ER-1	W10x22	4656
ER-2	W10x22	5054
ER-3	W18x40	9725
DJ-1	10C14	3361
DJ-2	10C14	3361
DJ-3	10C14	3361
DJ-4	10C14	3361
U-101	14GA CAP	3450
DS-1	10C14	1067
DS-2	10C14	1328
G-1	10C14	4014
G-2	10Z13	4014
G-3	10C13	4014
G-4	10C14	953
G-5	10Z14	953
G-6	10C14	4785
G-7	10Z12	4785
G-8	10C14	1114
G-9	10Z14	1114
G-10	10C14	9059
G-11	10Z13	9059
G-12	C10x25	9059
G-13	C10x15.3	9059
CB-1	RD0625	6045
CB-2	RD0625	610
CB-3	RD0625	5690
JB-1	10C14	944
JB-2	10C14	944
JI-1	6ZS16T	1325
JI-2	6ZS16T	1122
JE-1	6ZS16	800



LEFT ENDWALL ELEVATION: FRAME LINE 1A

IMP WALL PANEL IS NOT BY UBUILD.
DESIGN VERIFICATION OF IMP & ASSOCIATED CONNECTIONS IS NOT BY UBUILD.
IMP WALL SYSTEM MUST BE DESIGNED (BY OTHERS) TO SUIT GIRT LAYOUT SHOWN.

GENERAL NOTES:

1. LETTER ISSUES ARE INFORMATION DRAWINGS.
2. NUMBER ISSUES ARE CONSTRUCTION DRAWINGS.
3. SEE STANDARD DETAIL BOOKLET FOR TRIM, FASTENER AND SAG ANGLE DETAILS.
4. FIELD CUT TOP OF PANELS AS REQUIRED FOR SLOPES OF 2:12 AND GREATER.
5. USE 1" (25) TEK SCREWS (GALV.) TO TEMPORARILY FASTEN TRIMS AS REQUIRED.

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CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM
DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO
SHEET 6
ISSUE A

ENDWALL FRAMING

U-BUILD STEEL BUILDINGS

SCALE: N.T.S. S.O. # 900662

120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368

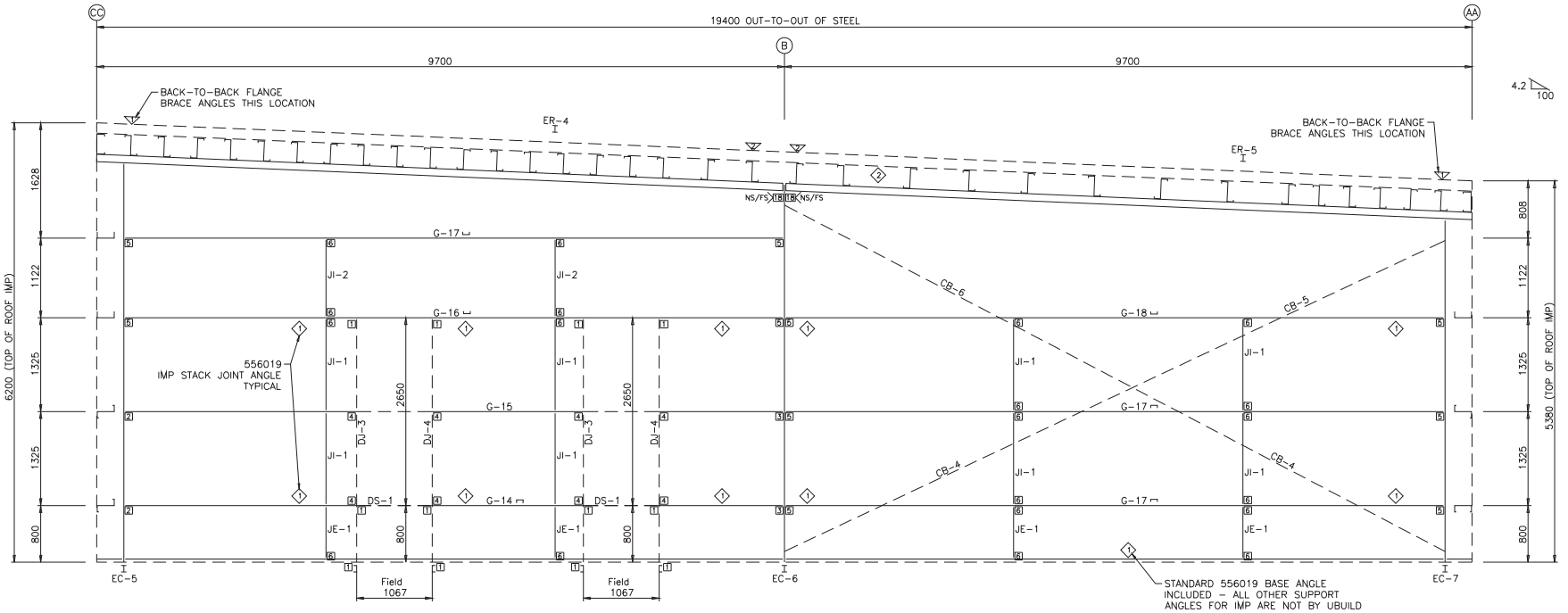
BOLT TABLE: FRAME LINE 6A				
LOCATION	QUAN	TYPE	DIA	LEN
ER-4/ER-5/EC-6	16	A325	3/4"	44
Cor_Column/Raf	4	A325	3/4"	44

FLANGE BRACE TABLE FRAME LINE 6A				
▽ ID	MARK	PART	CLIP	LENGTH
1	FB23.1	LL2x2x10	556138	588
2	FB29.1	L2x2x10	--	740

ANGLE TABLE FRAME LINE 6A		
◇ID	PART	LENGTH
1	556019	3048
2	556020	4877

CONNECTION PLATES FRAME LINE 6A	
□ ID	MARK/PART
1	556121
2	556053
3	556054
4	556111
5	556100
6	556048
18	556104

MEMBER TABLE FRAME LINE 6A		
MARK	PART	LENGTH
EC-5	W8x18	5184
EC-6	W8x18	5370
EC-7	W8x18	4406
ER-4	W21x57	9728
ER-5	W21x44	9706
DJ-3	10C14	3361
DJ-4	10C14	3361
DS-1	10C14	1067
G-14	10C14	9059
G-15	10Z14	9059
G-16	C10x30	9059
G-17	C10x15.3	9059
G-18	C10x20	9059
CB-4	RD0625	6096
CB-5	RD0625	4293
CB-6	RD0625	4724
JI-1	6ZS16T	1325
JI-2	6ZS16T	1122
JE-1	6ZS16	800



RIGHT ENDWALL ELEVATION: FRAME LINE 6A

IMP WALL PANEL IS NOT BY UBUILD.
DESIGN VERIFICATION OF IMP & ASSOCIATED CONNECTIONS IS NOT BY UBUILD.
IMP WALL SYSTEM MUST BE DESIGNED (BY OTHERS) TO SUIT GIRT LAYOUT SHOWN.

GENERAL NOTES:

1. LETTER ISSUES ARE INFORMATION DRAWINGS.
2. NUMBER ISSUES ARE CONSTRUCTION DRAWINGS.
3. SEE STANDARD DETAIL BOOKLET FOR TRIM, FASTENER AND SAG ANGLE DETAILS.
4. FIELD CUT TOP OF PANELS AS REQUIRED FOR SLOPES OF 2:12 AND GREATER.
5. USE 1" (25) TEK SCREWS (GALV.) TO TEMPORARILY FASTEN TRIMS AS REQUIRED.

LICENSED PROFESSIONAL ENGINEER
T. K. M. VEITCH
100626920
2024-10-04
PROVINCE OF ONTARIO

THIS PROFESSIONAL ENGINEERING SEAL APPLIES ONLY TO THE DESIGN OF THE PRODUCTS SUPPLIED BY THE BUILDING MANUFACTURER, IN ACCORDANCE WITH PART 4 OF THE APPLICABLE BUILDING CODE.

ISSUE	DESCRIPTION	CHECKED BY	YY/MM/DD
A	ISSUED FOR PERMIT PURPOSES ONLY	TV	24/10/04

CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM
DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO
SHEET 7
ISSUE A

ENDWALL FRAMING

U-BUILD STEEL BUILDINGS

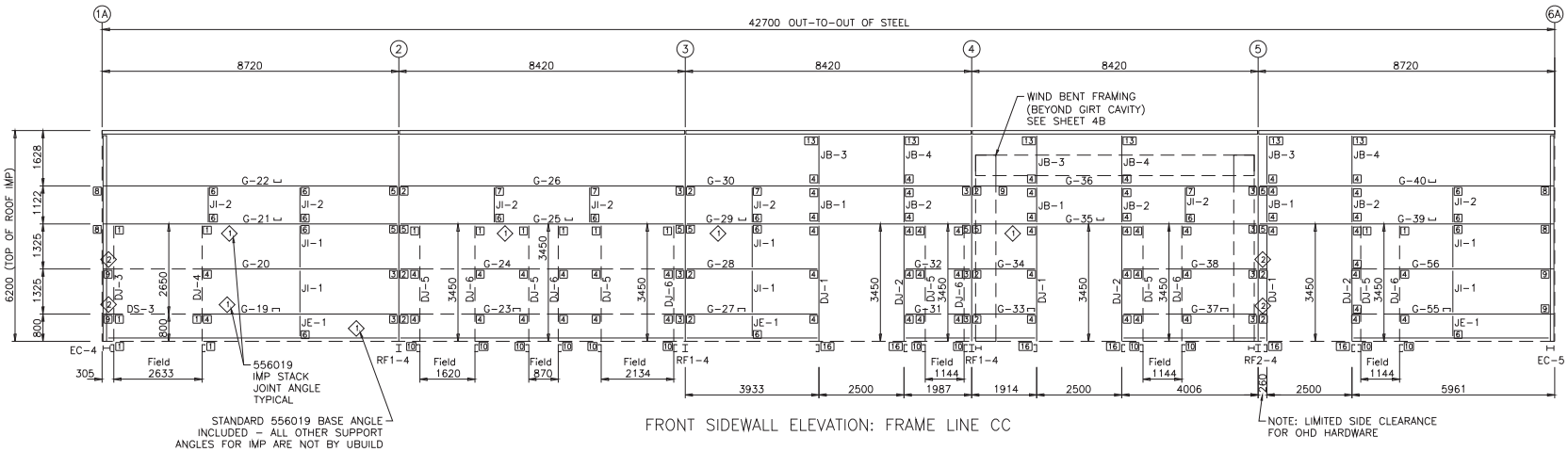
SCALE: N.T.S. S.O. # 900662

120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368

CONNECTION PLATES FRAME LINE CC	
□ ID	MARK/PART
1	556121
2	556063
3	556054
4	556111
5	556100
6	556048
7	556025
8	CC100
9	556145
10	556079
13	556052
16	556037

ANGLE TABLE FRAME LINE CC		
◇ID	PART	LENGTH
1	556019	3048
2	556020	4877

MEMBER TABLE FRAME LINE CC		
MARK	PART	LENGTH
DJ-1	10C14	3361
DJ-2	10C14	3361
DJ-4	10C14	3361
DJ-6	10C14	3361
DJ-7	10C14	3361
DS-3	10C14	2633
G-19	10C14	8558
G-20	10Z14	8558
G-21	C10x20	8558
G-22	C10x15.3	8558
G-23	10C14	8109
G-24	10Z14	8109
G-25	C10x15.3	8109
G-26	10Z10	8109
G-27	10C14	3689
G-28	10Z14	3689
G-29	C10x15.3	8109
G-30	10Z10	8109
G-31	10C14	1768
G-32	10Z14	1768
G-33	10C14	1670
G-34	10Z14	1670
G-35	C10x15.3	8134
G-36	10Z10	8134
G-37	10C14	3787
G-38	10Z14	3787
G-39	C10x20	8584
G-40	C10x15.3	8584
G-XX	10C14	5866
G-XX	10Z14	5866
JB-1	10C14	944
JB-2	10C14	944
JB-3	10C14	1203
JB-4	10C14	1203
JI-1	6ZS16T	1325
JI-2	6ZS16T	1122
JE-1	6ZS16	800



FRONT SIDEWALL ELEVATION: FRAME LINE CC

IMP WALL PANEL IS NOT BY UBUILD.
DESIGN VERIFICATION OF IMP & ASSOCIATED CONNECTIONS IS NOT BY UBUILD.
IMP WALL SYSTEM MUST BE DESIGNED (BY OTHERS) TO SUIT GIRT LAYOUT SHOWN.

GENERAL NOTES:
1. LETTER ISSUES ARE INFORMATION DRAWINGS.
2. NUMBER ISSUES ARE CONSTRUCTION DRAWINGS.
3. SEE STANDARD DETAIL BOOKLET FOR TRIM, FASTENER AND SAG ANGLE DETAILS.
4. USE 1" (25) TEK SCREWS (GALV.) TO TEMPORARILY FASTEN TRIMS AS REQUIRED.

LICENSED PROFESSIONAL ENGINEER
T. K. M. VEITCH
100626920
2024-10-04
PROVINCE OF ONTARIO

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ISSUE	DESCRIPTION	CHECKED BY	YY/MM/DD
A	ISSUED FOR PERMIT PURPOSES ONLY	TV	24/10/04

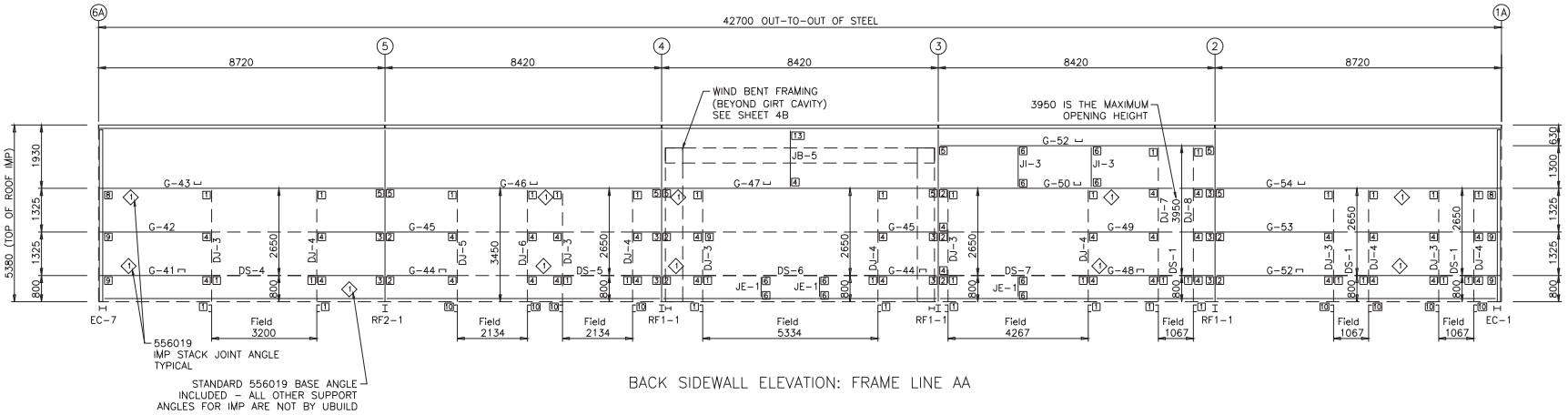
CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM
DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO
SHEET 8
ISSUE A
SIDEWALL FRAMING
SCALE: N.T.S.
S.O. # 900662

U-BUILD STEEL BUILDINGS
120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368

CONNECTION PLATES FRAME LINE AA	
☐ ID	MARK/PART
1	556121
2	556053
3	556054
4	556111
5	556100
6	556048
8	CC100
9	556145
10	556079
13	556052

ANGLE TABLE FRAME LINE AA		
◇ID	PART	LENGTH
1	556019	3048

MEMBER TABLE FRAME LINE AA		
MARK	PART	LENGTH
DJ-3	10C14	3361
DJ-4	10C14	3361
DJ-5	10C14	3361
DJ-6	10C14	3361
DJ-7	10C14	4661
DJ-8	10C14	4661
DS-1	10C14	1067
DS-4	10C14	3200
DS-5	10C14	2134
DS-6	10C14	5334
DS-7	10C14	4267
G-41	10C14	8584
G-42	10Z14	8584
G-43	C10x20	8584
G-44	10C14	8160
G-45	10Z14	8160
G-46	C10x20	8160
G-47	C10x15.3	8160
G-48	10C14	8160
G-49	10Z14	8160
G-50	10C10	8160
G-51	C10x15.3	8160
G-52	10C14	8584
G-53	10Z14	8584
G-54	C10x20	8584
JB-5	10C14	1384
JI-1	6ZS16T	1325
JE-1	6ZS16	800
JI-3	6ZS16T	1300



BACK SIDEWALL ELEVATION: FRAME LINE AA

IMP WALL PANEL IS NOT BY UBUILD.
DESIGN VERIFICATION OF IMP & ASSOCIATED CONNECTIONS IS NOT BY UBUILD.
IMP WALL SYSTEM MUST BE DESIGNED (BY OTHERS) TO SUIT GIRT LAYOUT SHOWN.

GENERAL NOTES:
1. LETTER ISSUES ARE INFORMATION DRAWINGS.
2. NUMBER ISSUES ARE CONSTRUCTION DRAWINGS.
3. SEE STANDARD DETAIL BOOKLET FOR TRIM, FASTENER AND SAG ANGLE DETAILS.
4. USE 1" (25) TEK SCREWS (GALV.) TO TEMPORARILY FASTEN TRIMS AS REQUIRED.

LICENSED PROFESSIONAL ENGINEER
T. K. M. VEITCH
100626920
2024-10-04
PROVINCE OF ONTARIO

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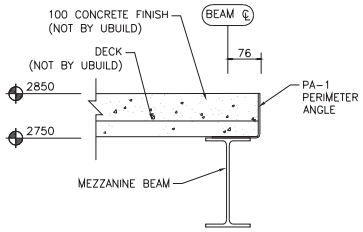
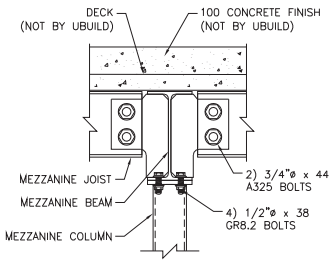
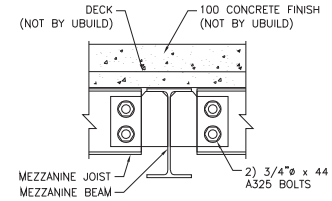
CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM
DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO
SHEET 9
ISSUE A
SIDEWALL FRAMING
SCALE: N.T.S.
S.O. # 900662
U-BUILD STEEL BUILDINGS
120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368



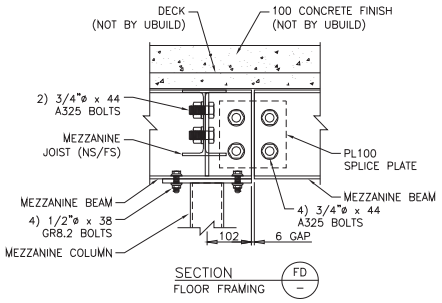
SECTION FA
FLOOR FRAMING
PERIMETER



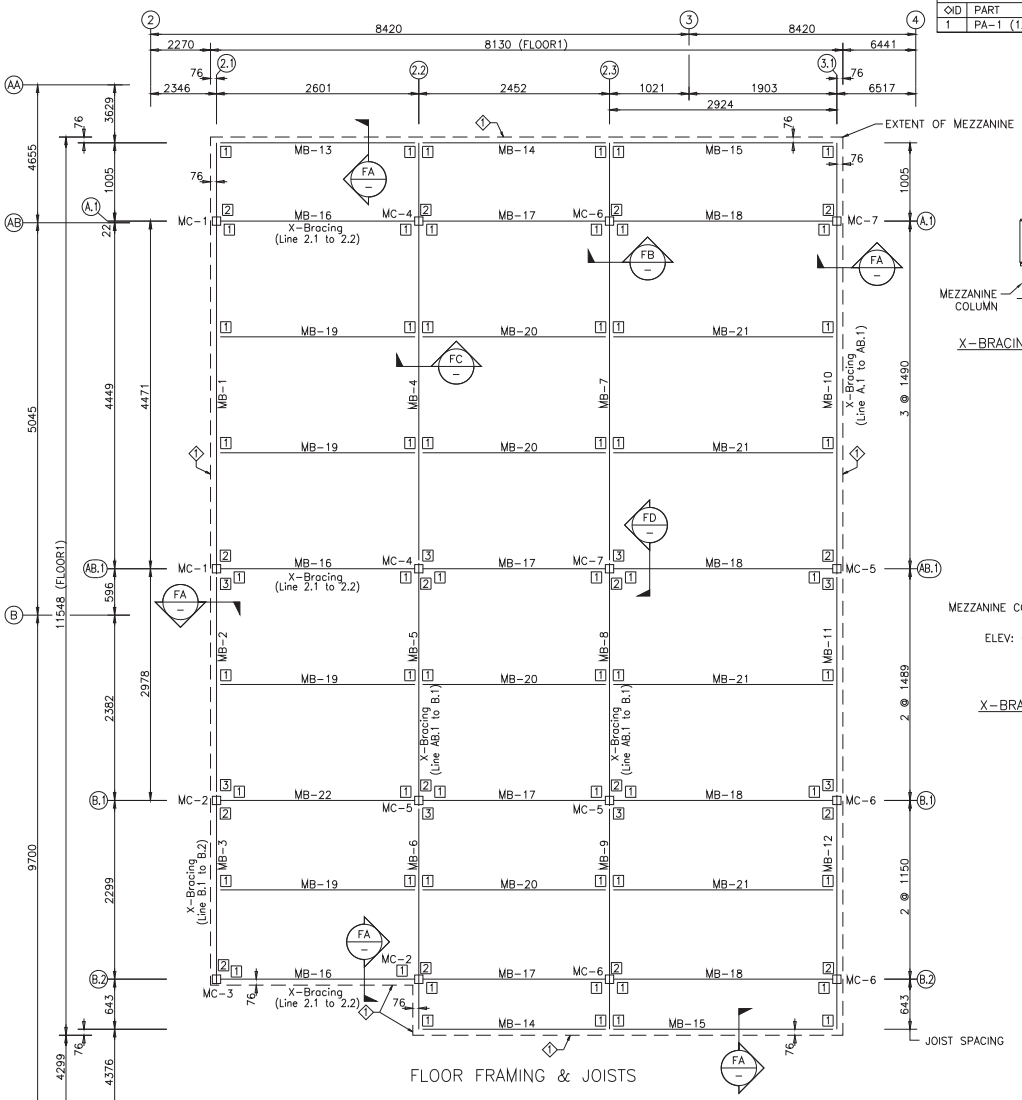
SECTION FB
FLOOR FRAMING



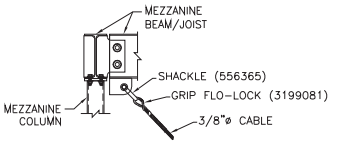
SECTION FC
FLOOR FRAMING



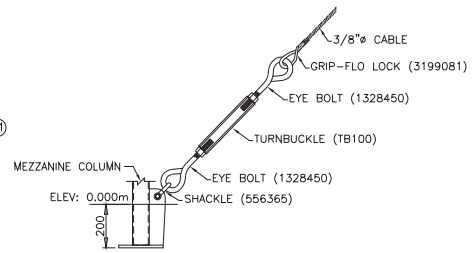
SECTION FD
FLOOR FRAMING



FLOOR FRAMING & JOISTS



X-BRACING CONNECTION AT BEAMS



X-BRACING CONNECTION AT BASE

ANGLE TABLE		
◇ID	PART	LENGTH
1	PA-1 (12GA)	3759

CONNECTION TABLE						
□ ID	TYPE	PART	QTY	DIA	TYPE	LENGTH
1	SHEAR TAB	N/A	2	3/4"	A325	44
2	CAP PLATE	N/A	4	1/2"	GR8.2	38
3	SHEAR TAB SPLICE	PL100	4	3/4"	A325	44

MEMBER TABLE		
MARK	PART	LENGTH
MB-1	W8x13	5628
MB-2	W8x13	2762
MB-3	W8x13	2452
MB-4	W8x13	5418
MB-5	W8x13	3181
MB-6	W8x13	2885
MB-7	W8x13	5418
MB-8	W8x13	3181
MB-9	W8x13	2885
MB-10	W8x13	5628
MB-11	W8x13	2762
MB-12	W8x13	3095
MB-13	W6x9	2474
MB-14	W6x9	2325
MB-15	W6x9	2797
MB-16	W8x13	2474
MB-17	W6x9	2325
MB-18	W6x9	2797
MB-19	W6x9	2474
MB-20	W6x9	2325
MB-21	W6x9	2797
MB-22	W6x9	2474
MC-1	HSS3x3x1/4	2734
MC-2	HSS3x3x1/4	2734
MC-3	HSS3x3x1/4	2734
MC-4	HSS3x3x1/4	2734
MC-5	HSS3x3x1/4	2734
MC-6	HSS3x3x1/4	2734
MC-7	HSS3x3x1/4	2734

ALL X-BRACING IS 3/8"ø CABLE

SPECIFIED DESIGN LOADS	
USE / OCCUPANCY:	STORAGE
DEAD LOAD:	2.35 kPa
COLLATERAL LOAD:	0.50 kPa
PARTITION COLLATERAL LOAD:	
PERIMETER BEAMS ONLY:	0.73 kN/m
LIVE LOAD:	3.60 kPa
CONSTRUCTION LIVE LOAD:	1.00 kPa

MEZZANINE NOTES:

1. ELEVATION (mm) = 2850 (TOP OF CONCRETE SLAB)
2. FLOOR THICKNESS (mm) = 100
3. FLOOR JOISTS ARE SPACED AT 1490mm O/C MAXIMUM
4. DESIGN AND SUPPLY OF MEZZANINE DECKING IS NOT BY UBUILD. DECKING FASTENERS AND CONCRETE REINFORCEMENT ARE NOT BY UBUILD.
5. FASTEN DECK TO ALL BEAMS AT 305 O/C MAXIMUM
6. DESIGN AND SUPPLY OF ALL MISC. STEEL (STAIRS, HANDRAILS, ETC.) IS NOT BY UBUILD.
7. MEMBER SIZES AS PER PROJECT STRUCTURAL DRAWINGS PROVIDED BY BLACKWELL STRUCTURAL ENGINEERS.
8. FLOOR DESIGN DOES NOT INCLUDE IMPACT OF VIBRATION ANALYSIS – TO BE PERFORMED BY OTHERS (IF REQUIRED).
9. PARTITION WALL COLLATERAL LOAD ALLOWANCE INCLUDED AT PERIMETER BEAMS ONLY. PARTITION WALL COLLATERAL LOAD ALLOWANCE NOT INCLUDED WITHIN FLOOR AREA OF MEZZANINE.

GENERAL NOTES:

1. LETTER ISSUES ARE INFORMATION DRAWINGS.
2. NUMBER ISSUES ARE CONSTRUCTION DRAWINGS.

LICENSED PROFESSIONAL ENGINEER
T. K. M. VEITCH
100626920
2024-10-04
PROVINCE OF ONTARIO

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CUSTOMER: UNIVERSITY OF TORONTO PROJECT: UTM
DEALER: DEWAR INDUSTRIAL SERVICES INC LOCATION: MISSISSAUGA, ONTARIO

SHEET 10
ISSUE A

FLOOR FRAMING & JOISTS

U-BUILD STEEL BUILDINGS

SCALE: N.T.S. S.O. # 900662

120 EASTVIEW DRIVE, WINKLER, MANITOBA, R6W 0K3, 204-325-4368