SEISMIC SYSTEM/LOADING DATA:

MAIN BUILDING (OFFICE ADDITION)

SEISMIC FORCE RESISTING SYSTEM (SFRS)

SFRS: SYSTEM & CONNECTIONS: (2012 OBC CLAUSE 4.1.8.9/4.1.8.10)
LATERAL LOAD RESISTING SYSTEM: CONVENTIONAL CONSTRUCTION (STEEL BRACED FRAMES)
Rd = 1.5
Ro = 1.3
CSA STANDARD: CAN/CSA S16-09
APPLICABLE CLAUSE(S): 27.11

SFRS: DIAPHRAGMS & CONNECTIONS: (2012 OBC CLAUSE 4.1.8.15)
CSA STANDARD: CAN/CSA S16-09
APPLICABLE CLAUSE(S): 27.11.1 (b)

SFRS: SYSTEM FOUNDATIONS: (2012 OBC CLAUSE 4.1.8.16)
CSA STANDARD: CAN/CSA A23.3-04 ☐ FOR ANCHORED FOOTINGS
APPLICABLE CLAUSE(S): 21.11.1.2(e) ☒ FOR UNANCHORED FOOTINGS
CONFIRMATION: FOUNDATIONS HAVE BEEN DESIGNED TO RESIST THE LATERAL LOAD CAPACITY OF THE SFRS INCLUDING ALL APPLICABLE AMPLIFICATION FACTORS

SEISMIC IMPORTANCE FACTOR: (2012 OBC CLAUSE 4.1.8.5)
Ie = 1.0

PROJECT CITY: (OTTAWA, CITY HALL)

SITE CLASS: THE NOTED SITE CLASSIFICATION FOR SEISMIC SITE RESPONSE AND SHEAR WAVE VELOCITY PARAMETERS INDICATED ARE AS REPORTED IN THE GEOTECHNICAL REPORT # 62788.04 BY GEMTEC CONSULTING ENGINEERS AND SCIENTISTS LIMITED REFER TO THE NOTED GEOTECHNICAL REPORT FOR V's, N60, AND/OR Su VALUES USED TO DETERMINE SITE CLASSIFICATION.
☐ A ☐ B ☒ C ☐ D ☐ E ☐ F (SITE SPECIFIC SPECTRUM: OTTAWA, CITY HALL)

PGA: 0.320

RESPONSE SPECTRUM DATA:

5% DAMPED SPECTRAL RESPONSE ACCELERATION VALUES: (2012 OBC SUPPLEMENT STANDARD SB-1)

Sa (0.2) = 0.640
Sa (0.5) = 0.310
Sa (1.0) = 0.140
Sa (2.0) = 0.046

DESIGN SPECTRAL RESPONSE ACCELERATION VALUES (DSRAV): (2012 OBC CLAUSE 4.1.8.4)

☒ CLASS C: (Fa=1.0/Fv=1.0)

S (0) = 0.640
S (0.2) = 0.640
S (0.5) = 0.310
S (1.0) = 0.140
S (2.0) = 0.046
S (4.0) = 0.023

SYSTEM RESTRICTION VALUE: IeFaSa(0.2) = 0.640 ≥ 0.35 ☒ YES ☐ NO

PERIOD DATA:

STATIC PERIOD: (2012 OBC CLAUSE 4.1.8.11(3))
Ta (STATIC) NS = 0.101 sec
Ta (STATIC) EW = 0.101 sec

MODAL PERIOD: (2012 OBC CLAUSE 4.1.8.11(3) AND 4.1.8.3(8))
Ta (MODAL) NS = N/A
Ta (MODAL) EW = N/A

DESIGN PERIODS/MODE & MOMENT FACTORS: (2012 OBC CLAUSE (4.1.8.11(5))
Sa(0.2) = 13.91 ≥ 8.0 ☒ YES
Sa(2.0) ☐ NO

Ta (DESIGN) NS = 0.101 sec MV = 1.00 J = 1.00
Ta (DESIGN) EW = 0.101 sec MV = 1.00 J = 1.00

DESIGN FUNDAMENTAL PERIOD BASED DSRAV:
S(Ta) NS = 0.640
S(Ta) EW = 0.640

IRREGULARITY REVIEW (2012 OBC CLAUSE 4.1.8.6)

1.	VERTICAL STIFFNESS:	☐ YES	☒ NO
2.	WEIGHT:	☐ YES	☒ NO
3.	VERTICAL GEOMETRIC:	☐ YES	☒ NO
4.	IN PLANE DISCONTINUITY:	☐ YES	☒ NO
5.	OUT OF PLANE:	☐ YES	☒ NO
6.	WEAK STOREY:	☐ YES	☒ NO
7.	TORSIONAL:	☐ YES	☒ NO
	B NS = 1.5		
	B EW = 1.4		
8.	NON-ORTHAGONAL:	☐ YES	☒ NO

CONCLUSION: BUILDING IS ☒ REGULAR ☐ IRREGULAR
DYNAMIC ANALYSIS: ☐ REQUIRED ☒ NOT REQUIRED
DYNAMIC PROCEDURE METHOD: ☐ MODAL RESPONSE SPECTRUM ☐ NUMERICAL INTEGRATION TIME HISTORY ☒ N/A

TORSIONAL ECCENTRICITY: ☒ ± 0.10 Dnx (4.1.8.11(10a), B ≤ 1.7 EQUIV. STATIC FORCE PROCEDURE)
☐ ± 0.10 Dnx (4.1.8.12(4a), B ≥ 1.7)
☐ ± 0.05 Dnx (4.1.8.12(4b), B < 1.7, 3-D DYNAMIC ANALYSIS)

STRUCTURAL SEPARATION: ☒ THE NEW AND EXISTING STRUCTURES HAVE BEEN SEPARATED IN ACCORDANCE WITH 4.1.8.14(1) OF THE 2012 O.B.C.
☐ N/A

BASE SHEARS/MOMENTS: (2012 OBC CLAUSE 4.1.8.11)
Vstatic = S(Ta)MvIeW/(RdRo) = 675 kN W = 2060 kN

STATIC MAXIMUM/MINIMUM VALUES:

NORTH-SOUTH: (↕)
Vmin = S(2.0)MvIeW/(RdRo) = 50 kN W = 2060 kN
Vmax = 2/3 S(0.2)IeW/(RdRo) = 450 kN W = 2060 kN

EAST-WEST: (↔)
Vmin = S(2.0)MvIeW/(RdRo) = 50 kN W = 2060 kN
Vmax = 2/3 S(0.2)IeW/(RdRo) = 450 kN W = 2060 kN

SEISMIC LOADS		
STATIC LOADS	DYNAMIC LOADS	DESIGN LOADS
NORTH-SOUTH: (↕)		
Vstns = 450 kN W = 2060 kN Mstns = 1810 kNm		Vdns = 450 kN Mdns = 1810 kNm
EAST-WEST: (↔)		
Vstew = 450 kN W = 2060 kN Mstew = 1810 kNm		Vdew = 450 kN Mdew = 1810 kNm

NOTES:

1) DYNAMIC LOAD SCALING FACTOR
S.F. = g · Ie/RdRo = 0.513 g

2) DESIGN LOAD SHEAR VALUES ARE BASED ON THE EVALUATION OF Vst AND Vd IN ACCORDANCE WITH 4.1.8.12 (5),(6),(7),(8), AND (9) OF THE 2012 OBC. LOADS INDICATED SHOW THE DESIGN BASE SHEAR AND CORRESPONDING OVERTURNING MOMENT.

GENERAL NOTES

1. ANY DEVIATION FROM THE CONDITIONS SHOWN ON THESE DRAWINGS MUST BE REPORTED TO THE ENGINEER.
2. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF PART 4 OF THE O.B.C. (2012 EDITION) ONTARIO REGULATION 332/12 (AS AMENDED)
3. STANDARDS
-CSA STANDARD A23.3-04 DESIGN OF CONCRETE STRUCTURES
-CAN/CSA-S16-09 LIMIT STATES DESIGNS OF STEEL STRUCTURES
-CSA STANDARD S304.1-04 DESIGN OF MASONRY STRUCTURES
4. ANY MODIFICATIONS TO EXISTING STRUCTURES ARE TO BE LIMITED TO WORK NOTED ON THESE DRAWINGS. ANY ADDITIONAL OR PROPOSED MODIFICATIONS TO EXISTING STRUCTURES MUST BE APPROVED BY THE ENGINEER
5. FOUNDATIONS
.1 ALL FOOTINGS ARE TO BEAR ON THE NATIVE, UNDISTURBED GLACIAL TILL OR ON ENGINEERED FILL.
.2 BEARING CAPACITY USED IN THE FOOTING DESIGN IS ASSUMED TO BE SLS = 150 kPa / ULS = 300 kPa
.3 BEARING SURFACE IS TO BE INSPECTED BY GEOTECHNICAL ENGINEER PRIOR TO PLACING CONCRETE.
.4 FOR FURTHER INFORMATION SEE GEOTECHNICAL REPORT No. 62788.04 PREPARED BY GEMTEC CONSULTING ENGINEERS AND SCIENTISTS LIMITED
.5 STEP FOOTINGS WHERE INDICATED ON PLAN AT THE RATE OF 2 HORIZONTAL TO 1 VERTICAL.
6. SLABS ON GRADE
.1 SLABS ON GRADE TO BE UNREINFORCED UNLESS NOTED.
.2 FOR COMPOSITION & COMPACTION OF FILL SUPPORTING SLABS ON GRADE SEE GEOTECHNICAL REPORT.
.3 PROVIDE 12 mm ASPHALT IMPREGNATED FIBREBOARD BETWEEN SLABS ON GRADE & FOUNDATION WALLS OR COLUMNS.
.4 SAWCUT SLAB ON GRADE TO (1/4 x SLAB DEPTH) 8 HOURS AFTER CONCRETE PLACEMENT.
.5 SPACE SAWCUTS ON A 4500 mm x 4500 mm MAXIMUM GRID. AVOID LONG & NARROW SAWCUT PATTERNS. LOCATE SAWCUTS ALONG COLUMN LINES WHERE POSSIBLE. CONTRACTOR IS TO PROVIDE THE ENGINEER WITH DOCUMENTATION SHOWING PROPOSED SAWCUT LOCATIONS FOR APPROVAL UNLESS SAWCUTS LOCATIONS ARE OTHERWISE INDICATED ON THESE DRAWINGS.
7. MATERIALS
.1 CONCRETE STRENGTH AT 28 DAYS TO BE AS NOTED ON THESE DRAWINGS AND SPECIFICATIONS.
.2 REINFORCING STEEL TO BE DEFORMED GRADE 400R WITH Fy= 400 MPa.
.3 HOLLOW STRUCTURAL STEEL SECTIONS TO BE ASTM A500 GRADE C OR G40.21 350W CLASS C.
.4 ALL 'W' & 'WF' SHAPE STEEL SECTIONS TO BE GRADE G40.21 350W WITH Fy= 350 MPa.
.5 ALL OTHER STRUCTURAL STEEL TO BE GRADE G40.21 300W WITH Fy= 300 MPa UNLESS NOTED OTHERWISE.
.6 ALL STRUCTURAL STEEL TO RECEIVE 1 SHOP APPLIED COAT OF PRIMER UNLESS NOTED.
.7 ALL STRUCTURAL STEEL EXPOSED TO EXTERIOR IS TO BE HOT DIP GALVANIZED UNLESS NOTED.
.8 ANCHOR BOLTS TO BE A307.
.9 ALL OTHER BOLTS TO BE A325.
.10 A325 BOLTS EXPOSED TO EXTERIOR ARE TO BE STAINLESS STEEL
.11 A307 BOLTS EXPOSED TO EXTERIOR ARE TO BE GALVANIZED.
.12 CONCRETE BLOCK TO BE H/15/A/M
.13 CONCRETE BLOCK MASONRY MORTAR TO BE 8.5 MPa TYPE 'S' U/N.
.14 CONCRETE BLOCK MASONRY GROUT TO BE 12 MPa 'HIGH SLUMP' (200-250 mm SLUMP)
8. CONCRETE COVER

.1 FOOTINGS	75 mm	BOTTOM
	50 mm	SIDES
.2 WALLS	40 mm	UNLESS NOTED OTHERWISE
.3 GRADE BEAMS	75 mm	BOTTOM-50 mm SIDE & TOP

9. REINFORCING STEEL DESIGNATION
8-20M x 1500 T/B
8 = NUMBER OF BARS
20M = SIZE OF BARS
1500 = LENGTH OF BARS
T = BAR LOCATION - TOP
B = BAR LOCATION - BOT
LENGTH OF BARS DOES NOT INCLUDE HOOKS OR BENDS
10. DOWELS
DOWELS TO FOOTINGS TO BE OF SAME DIAMETER AS THE LOWEST LIFT OF VERTICAL REINFORCING IN COLUMNS, PIERS OR WALLS.
11. REINFORCING STEEL SPLICES
REINFORCING STEEL SPLICES TO BE AS NOTED IN REINFORCING BAR LAP LENGTH TABLE ON S01 U/N.
12. OPENINGS
.1 AT OPENINGS IN WALLS PROVIDE 2-20M T & B OF OPENING EXTENDING 600 mm MIN. BEYOND CORNERS OF OPENINGS.
.2 FOR ADDITIONAL OPENINGS 300 x 300 OR SMALLER SEE ARCHITECTURAL & MECHANICAL DRAWINGS.
.3 REPORT ANY OPENINGS LARGER THAN 300 x 300 NOT SHOWN ON THESE DRAWINGS TO THE ENGINEER.
13. LOADS
ALL LOADS & FORCES INDICATED ON THESE DRAWINGS ARE UNFACTORED WORKING LOADS UNLESS NOTED.
14. CONCRETE BLOCK MASONRY
.1 ALL LOAD BEARING & NON-LOAD BEARING IN EXTERIOR WALLS (U/N)
.1 140 mm CONCRETE BLOCK:
VERT: 1-15M @ 800 o/c
HORIZ: SL2 @ 200 o/c OR HL2 @ 400 o/c
.2 190 mm CONCRETE BLOCK
VERT: 1-15M @ 800 o/c
HORIZ: HL2 @ 200 o/c
.3 240 mm CONCRETE BLOCK
VERT: 1-20M @ 800 o/c
HORIZ: HL2 @ 200 o/c
.2 NON-LOAD BEARING INTERIOR WALLS (U/N)
.1 140 mm CONCRETE BLOCK:
VERT: 1-15M @ 800 o/c
HORIZ: SL2 @ 200 o/c
.2 190 mm CONCRETE BLOCK
VERT: 1-15M @ 1200 o/c
HORIZ: HL2 @ 400 o/c
LEGEND
S-STANDARD 9 GAUGE LONGITUDINAL & CROSS WIRES
H-HEAVY 5 mm LONGITUDINAL WIRES
9 GAUGE CROSS WIRES
L-LADDER TYPE REINFORCEMENT
T-TRUSS TYPE REINFORCEMENT
2-2 LONGITUDINAL WIRES
.3 SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR TYING MASONRY TO BACK UP WALLS.
.4 SPECIAL WALLS - SEE NOTES ON PLANS FOR ADDITIONAL REINFORCING AND GROUTING OTHER THAN INDICATED ABOVE
.5 REINFORCE CELLS @ END OF WALLS AT INTERSECTING WALLS & BESIDE OPENINGS.
.6 GROUT MASONRY SOLID BELOW BEARING BASE PLATES FOR 500mm MIN.
.7 PROVIDE A CONCRETE BOND BEAM COURSE c/w 1-20M CONT. USING LOW WEB BLOCKS AT THE TOP OF WALLS AND AT EACH FLOOR LEVEL U/N. GROUT COURSE SOLID.
.8 PROVIDE 1-20M CORNER BAR (925 BEND x 925 BEND) AT AT CONCRETE BOND BEAM COURSES @ BLOCK WALL INTERSECTIONS.
.9 PROVIDE "CLEAN OUTS" AT BOTTOM OF CELLS TO BE GROUTED TO ENSURE PROPER LAP LENGTH AND THAT CELL IS FILLED SOLIDLY. MAXIMUM GROUT LIFT IS 3 meters. GROUT TO HAVE 250mm SLUMP
.10 EMBEDMENT OF MASONRY DOWELS IN CONCRETE STRUCTURE BELOW CONCRETE BLOCK WALLS TO BE AS FOLLOWS:
15M DOWELS = 600 mm EMBEDMENT - 1300 Lg. DOWEL
20M DOWELS = 800 mm EMBEDMENT - 1700 Lg. DOWEL
.11 BLOCK CONTROL JOINT SPACED AT 9000 mm MAXIMUM VENEER CONTROL JOINT SPACED AT 12000 mm MAXIMUM COORDINATE LOCATION OF JOINTS WITH ARCHITECT & ENGINEER
16. LEGEND

B	=	BOTTOM
B1	=	BOTTOM LOWER LAYER
B2	=	BOTTOM UPPER LAYER
BLL	=	BOTTOM LOWER LAYER
BBP1	=	BEAM (OR OWSJ) BEARING PLATE NUMBER
BP1	=	BASE PLATE NUMBER
BUL	=	BOTTOM UPPER LAYER
C1	=	CONCRETE COLUMN NUMBER
CJ	=	CONCRETE BLOCK WALL CONTROL JOINT
CONT	=	CONTINUOUS
DP	=	DEPTH
DWL	=	DOWELS
EE	=	EACH END
EF	=	EACH FACE
EL	=	ELEVATION
ES	=	EACH SIDE
EW	=	EACH WAY
F1	=	PAD FOOTING NUMBER
H	=	HORIZONTAL
(H)	=	HOOKED BAR
MP1	=	MASONRY PIER NUMBER
O/C	=	ON CENTER
P1	=	PIER NUMBER
SC1	=	STEEL COLUMN NUMBER
T	=	TOP
T1	=	TOP UPPER LAYER
T2	=	TOP LOWER LAYER
TLL	=	TOP LOWER LAYER
TUL	=	TOP UPPER LAYER
U/N	=	UNLESS NOTED OTHERWISE
V	=	VERTICAL
WF1	=	WALL FOOTING NUMBER

SEISMIC COMMENTARY

OFFICE AREA REDUCTION AND RENOVATION

THE EXISTING BUILDING AT THE NEW OFFICE ADDITION IS BEING TRUNCATED TO ALLOW FOR THE CONSTRUCTION OF THE NEW STRUCTURE. THE EXISTING STRUCTURE IS DECK ON STEEL JOISTS/ BEAMS, SUPPORTED ON EITHER LOAD BEARING MASONRY OR STRUCTURAL STEEL.

PART OF THE PROPOSED RENOVATIONS REQUIRES THE REMOVAL OF THE EXTERIOR LOAD BEARING BLOCK WALL. TO COMPENSATE FOR THE LOSS OF THIS WALL, NEW BRACE FRAMES ARE BEING INSTALLED AND DESIGNED TO RESIST THE LOAD IMPOSED BY THE EXISTING STRUCTURE. THESE NEW BRACES WILL BE SEISMICALLY ISOLATED FROM THE NEW STRUCTURE, AVOIDING ANY INTERACTION BETWEEN THE TWO BUILDINGS AND REQUIRING THE NEW BRACES TO ONLY COMPENSATE FOR THE WALL WHICH WAS REMOVED. ADDITIONALLY WITH THE REMOVAL OF A SECTION OF THE EXISTING STRUCTURE THE SEISMIC DEMAND WILL BE REDUCED ON THE EXISTING STRUCTURE, AND STEEL BRACES WILL ADD AN ELEMENT OF DUCTILITY.

WITH THE INTRODUCTION OF DUCTILITY TO THE SYSTEM, THE REDUCTION OF SEISMIC DEMAND AND NEW BRACES THERE IS NO REDUCTION IN PERFORMANCE TO THE EXISTING STRUCTURE, AND A MODEST IMPROVEMENT WOULD BE EXPECTED.

SERVICE BAY ADDITION

THE NEW SERVICE BAY ADDITION IS BEING CONNECTED TO THE EXISTING STRUCTURE WHICH IS OF LOAD BEARING MASONRY CONSTRUCTION. THE EXISTING EXTERIOR WALL HAS SEVERAL OPENINGS IN IT WHICH ARE BEING IN FILLED AND WILL INCREASE THE SHEAR AND MOMENT RESISTANCE OF THE EXISTING CONDITION. ADDITIONALLY THE NEW ADDITION WALLS HAVE BEEN DESIGNED TO RESIST 100% OF THE NEW SHEAR FORCE SO AS TO BE SELF SUPPORTING WITHOUT NEEDING CAPACITY FROM THE EXISTING WALL.

WIND UPLIFT (REF FIG I-9 NBC 2010 STRUCTURAL COMMENTARY I)

PNET = 1.4 (pe-pi) - 0.9 D
Pe = Iw q Ce Cp Cg
Pi = Iw q Ce Cpi Cgi
z = 1.2 m

Pf = 1.4 Pw NET - 0.9 Pd
Pw NET = Pe - Pi
Pw NET INTERIOR = 0.91 kPa
Pw NET PERIMETER = 1.14 kPa

DESIGN SNOW LOAD PARAMETERS
OTTAWA, ONTARIO, CANADA
S= Is [Ss(CbCwCsCa)+Sr]
Ss = 2.4 kPa
Sr = 0.4 kPa
Is = 1.0
S= 1.0 [2.4(0.8x1.0x1.0x1.0)+0.4]
S= 2.32 kPa

WIND

(2012 OBC 4.1.7, 2010 NBC COMMENTARY FIGURE I-7 TO I-9)
P= Iw q Ce Cp Cg
q = 0.41 kPa
Iw (uls) = 1.0 Iw (sls) = 0.75
Ce = VARIES FROM 0.9 TO 1.1
CpCg = 1.3 OR 1.95

	N.S (↕)	E.W (↔)	UNITS
VBASE	24	74	KN
MBASE	94	295	KN.m

NORTH FOR THE PURPOSES OF THIS DATA IS AT THE TOP SIDE OF ALL PLANS IN THIS SET OF DRAWINGS

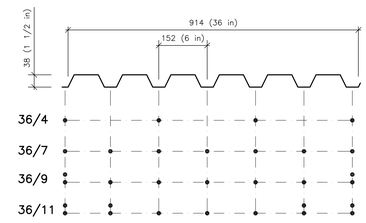
DESIGN & DETAILING CRITERIA FOR SUPPLIERS

1. CURTAIN WALLS
SUPPORTS FOR CURTAIN WALLS ARE TO BE DESIGNED AND DETAILED BY CURTAIN WALL SUPPLIER. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL SUPPORTS ARE TO BE INSPECTED DURING CONSTRUCTION BY THE SUPPORT DESIGN ENGINEER.
2. STRUCTURAL STEEL CONNECTIONS
STRUCTURAL STEEL CONNECTIONS ARE TO BE DESIGNED AND DETAILED BY STRUCTURAL STEEL SUPPLIER. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED 'FOR CONNECTIONS ONLY' BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. INSPECTION OF WELDS, CONNECTIONS & INSTALLATION IS TO BE UNDERTAKEN BY A 3RD PARTY, CERTIFIED INSPECTION SERVICE.
3. COLD FORMED STEEL STUDS & JOISTS
STEEL STUDS & JOISTS ARE TO BE DESIGNED AND DETAILED BY STEEL STUDS & JOISTS SUPPLIER. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL STEEL STUD & JOIST WORK IS TO BE INSPECTED DURING CONSTRUCTION BY THE STEEL STUD & JOIST DESIGN ENGINEER.
4. MISCELLANEOUS METALS & STEEL STAIRS
MISC METALS & STEEL STAIRS ARE TO BE DESIGNED AND DETAILED BY MISC METALS & STEEL STAIRS SUPPLIER. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL MISC METAL & STEEL STAIR WORK IS TO BE INSPECTED DURING CONSTRUCTION BY THE MISC METALS & STEEL STAIRS DESIGN ENGINEER.
5. GUARDS & HANDRAILS
GUARDS & HANDRAILS ARE TO BE DESIGNED AND DETAILED BY STEEL SUPPLIER IN ACCORDANCE WITH THE CURRENT BUILDING CODE REQUIREMENTS. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL GUARDS & HANDRAIL WORK IS TO BE INSPECTED DURING CONSTRUCTION BY THE GUARD & HANDRAIL DESIGN ENGINEER.
6. SEISMIC RESTRAINT OF MECH'L EQUIPMENT & PIPING
SEISMIC RESTRAINT OF MECH'L EQUIPMENT & PIPING TO BE DETAILED BY MECH'L EQUIPMENT & PIPING SUPPLIER OR CONTRACTOR. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL SEISMIC RESTRAINT INSTALLATIONS ARE TO BE INSPECTED DURING CONSTRUCTION BY THE DESIGN ENGINEER OF RECORD
7. SEISMIC RESTRAINT OF SUSPENDED CEILINGS
SEISMIC RESTRAINT OF SUSPENDED CEILINGS TO BE DETAILED BY CEILING SUPPLIER OR CONTRACTOR. SHOP DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. ALL SEISMIC RESTRAINT INSTALLATIONS ARE TO BE INSPECTED DURING CONSTRUCTION BY THE DESIGN ENGINEER OF RECORD
8. CONCRETE BLOCK MASONRY WALLS-CONSTRUCTION BRACING
ALL LOAD BEARING CONCRETE BLOCK MASONRY WALLS ARE TO BE LATERALLY BRACED DURING CONSTRUCTION UNTIL STRUCTURE AND DIAPHRAGM IS CONSTRUCTED ON WALL. ALL NON LOAD BEARING CONCRETE BLOCK MASONRY WALLS ARE TO BE LATERALLY BRACED DURING CONSTRUCTION UNTIL PERMANENT LATERAL BRACING IS INSTALLED AS PER TYPICAL DETAILS AND OR SECTIONS.
LATERAL CONSTRUCTION BRACING DRAWINGS ARE TO BE SUBMITTED TO DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO.
9. TEMPORARY SHORING (FOR DEMOLITION AND/OR CONSTRUCTION)
TEMPORARY SHORING FOR THE PURPOSES OF DEMOLITION AND/OR CONSTRUCTION IS TO BE DESIGNED & DETAILED BY A PROFESSIONAL ENGINEER LICENSED IN ONTARIO. SHOP DRAWINGS ARE TO BE SUBMITTED TO THE DESIGN TEAM FOR REVIEW. SHOP DRAWINGS ARE TO BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO. PERMIT REVIEW OF TEMPORARY SHORING BY CUNLIFFE & ASSOCIATES PRIOR TO COMMENCEMENT OF CONSTRUCTION AND/OR DEMOLITION AND ALSO PRIOR TO REMOVAL OF TEMPORARY SHORING.

NOTE:
INSPECTION REPORTS CREATED AS A RESULT OF THE ABOVE NOTED WORK MUST BE SUBMITTED TO THE CONSTRUCTION MANAGER. CONSTRUCTION MANAGER IS TO PROVIDE COPIES TO THE CONSULTANTS.

HILTI PRODUCT INSTALLATION REQUIREMENTS:
THE CONTRACTOR THAT WILL BE INSTALLING ANY HILTI PRODUCT SHALL BE TRAINED & CERTIFIED BY HILTI CANADA'S REPRESENTATIVE ON THE ACCEPTABLE INSTALLATION PROCEDURES FOR THE SPECIFIC HILTI PRODUCT BEING USED. THE CONTRACTOR IS TO PRESENT PROOF OF THIS TRAINING UPON REQUEST OF DEPARTMENTAL REPRESENTATIVE.

DRAWING LIST



TYPICAL FASTENER PATTERNS @ SUPPORT FOR 38 THK STEEL DECK

STEEL DECK NOTES: LOW ROOF DECK (SEE PLAN ALSO)
1. 38 x 0.91 OVERLAPPING (CANAM OR EQUIVALENT)
2. HILTI SLC01 FASTENERS IN SIDE LAPS @ 150 o/c
3. 36/9 FASTENER PATTERN (SEE ABOVE)
4. HILTI X-HSN24 FASTENERS TO SUPPORTING MEMBERS
5. FASTENER SPACING AROUND PERIMETER & OPENINGS TO BE 150 o/c
6. DECK BE 3 SPAN MINIMUM
7. STEEL DECK IS NOT TO BE USED FOR SUPPORT OF ARCH'L, MECH'L OR ELECT'L ITEMS. USE STEEL STRUCTURE FOR SUPPORT.

STEEL DECK NOTES: HIGH ROOF DECK (SEE PLAN ALSO)
1. 38 x 0.91 OVERLAPPING (CANAM OR EQUIVALENT)
2. HILTI SLC01 FASTENERS IN SIDE LAPS @ 150 o/c
3. 36/7 FASTENER PATTERN (SEE ABOVE)
4. HILTI X-HSN24 FASTENERS TO SUPPORTING MEMBERS
5. FASTENER SPACING AROUND PERIMETER & OPENINGS TO BE 150 o/c
6. DECK BE 3 SPAN MINIMUM
7. STEEL DECK IS NOT TO BE USED FOR SUPPORT OF ARCH'L, MECH'L OR ELECT'L ITEMS. USE STEEL STRUCTURE FOR SUPPORT.

STEEL DECK NOTES: SERVICE BAY ROOF DECK (SEE PLAN ALSO)
1. 38 x 1.21 OVERLAPPING (CANAM OR EQUIVALENT)
2. HILTI SLC01 FASTENERS IN SIDE LAPS @ 150 o/c
3. 36/9 FASTENER PATTERN (SEE ABOVE)
4. HILTI X-HSN24 FASTENERS TO SUPPORTING MEMBERS
5. FASTENER SPACING AROUND PERIMETER & OPENINGS TO BE 150 o/c
6. DECK BE 3 SPAN MINIMUM
7. STEEL DECK IS NOT TO BE USED FOR SUPPORT OF ARCH'L, MECH'L OR ELECT'L ITEMS. USE STEEL STRUCTURE FOR SUPPORT.

THE INSTALLER THAT WILL BE USING THE TOOLS TO ATTACH THE DECK FASTENERS SHALL BE TRAINED & CERTIFIED BY FASTENER MANUFACTURER'S REPRESENTATIVE ON THE GENERAL USE OF POWDER ACTUATED TECHNOLOGY AND FASTENING GUIDELINES FOR THE ATTACHMENT OF STEEL DECK.

REINFORCING BAR LAP LENGTH TABLE

CONCRETE STRENGTH (MPa)	REINFORCING BAR LAP LENGTH (mm)				
	10M	15M	20M	25M	30M
20	475	700	850	1325	1575
25	425	600	750	1200	1400
30	400	550	675	1100	1275
35	375	525	625	1000	1200
40	350	475	600	950	1125

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

CONCRETE BLOCK MASONRY WALLS
REINFORCING BAR LAP LENGTH TABLE

REINFORCING BAR LAP LENGTH (mm)					
HJR	10M	15M	20M	25M	30M
300	525	750	925	1450	1725

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

SURGENOR TRUCK GROUP

No.	REVISION	DATE
3	ISSUE FOR TENDER	JAN 17/19
2	ISSUE FOR BUILDING PERMIT	DEC 04/18
1	ISSUE FOR REVIEW	NOV 28/18

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4. DO NOT SCALE DRAWINGS.

PROJECT
SURGENOR TRUCK CENTRE RENOVATION

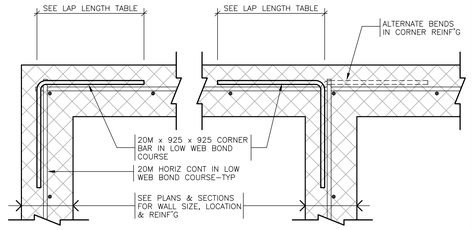
ARCHITECT
PYE & RICHARDS ARCHITECTS INC.

DRAWING
GENERAL NOTES

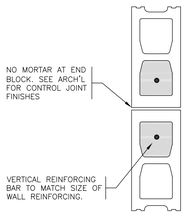
CUNLIFFE & ASSOCIATES
CONSULTING STRUCTURAL ENGINEERS
102-1737 WOODWARD DR. OTTAWA ON. K2C 0P9
TEL (613) 728-7242 FAX (613) 728-1461
Email <cunliffe@cunliffe.ca>

ENGINEER'S SEAL
LICENSED PROFESSIONAL ENGINEER 01/17/2019 R. I. CUNLIFFE PROVINCE OF ONTARIO

SCALE: NOT TO SCALE
DRAWN: G.N.
REVIEWED: R.I.C.
PROJECT NO.: 17-179
SHEET No.: S01
REVISION NO.: 3



PLAN DETAIL–BLOCK WALL INTERSECTION REINFORCEMENT



CONTROL JOINT LOCATIONS/REQUIREMENTS:

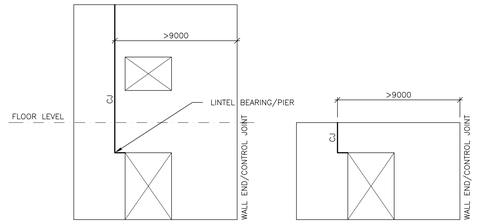
1. AT ABRUPT CHANGES IN WALL HEIGHTS
2. ABOVE JOINTS IN FOUNDATION (ie BETWEEN FOUNDATION SUPPORTED AND SLAB SUPPORTED BLOCK)
3. ABOVE OPENINGS (SEE ADDITIONAL ELEVATIONS)
4. AT INTERSECTING WALLS
5. ALIGN CONTROL JOINTS BETWEEN FLOORS
6. ADDITIONAL JOINTS MAY BE SHOWN ON PLAN AND ARE ADDITIONAL TO THE REQUIREMENTS LISTED ABOVE
7. AT MAXIMUM OF 9000 mm TYPICAL ALONG LENGTH OF WALL

NOTE:

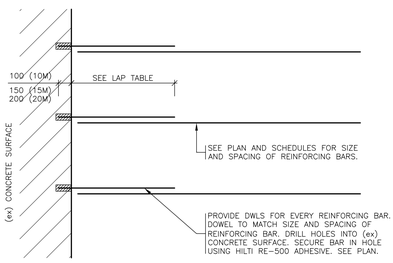
– MASONRY CONTRACTOR TO SUBMIT CONTROL JOINT LAYOUT TO ENGINEER APPROVAL PRIOR TO COMMENCING WORK.
– CONTROL JOINTS ARE NOT TO BE LOCATED BELOW BEARING POINTS.

BOND BEAM UNDER BEARING TO BE CONTINUOUS THROUGH CONTROL JOINT

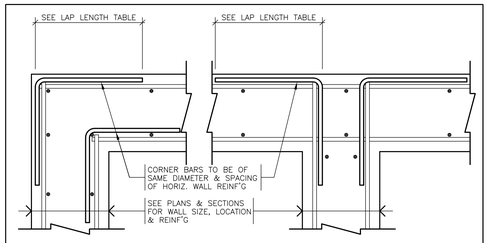
TYPICAL CONCRETE BLOCK CONTROL JOINT DETAIL



SAMPLE ELEVATIONS CONDITIONS

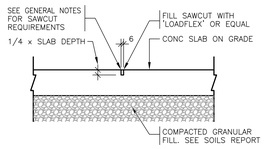


TYPICAL DETAIL FOR DOWELING INTO EXISTING CONCRETE FOUNDATIONS

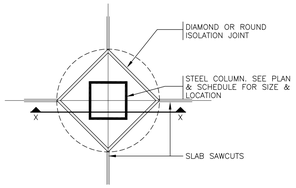


TYPICAL WALL INTERSECTION REINFORCEMENT

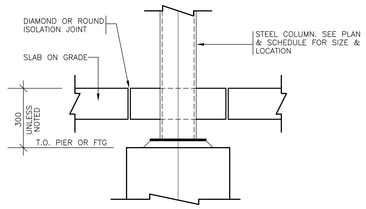
CONCRETE WALLS WITH 2 SHEETS OF REINFORCING (WALL THICKNESS GREATER THAN 215 mm) NOT APPLICABLE TO SHEARWALLS. SEE SHEARWALL ELEVATION DRAWINGS



TYPICAL SAWCUT IN SLAB ON GRADE DETAIL

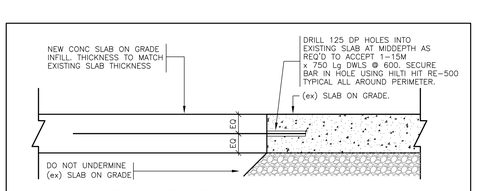


PLAN

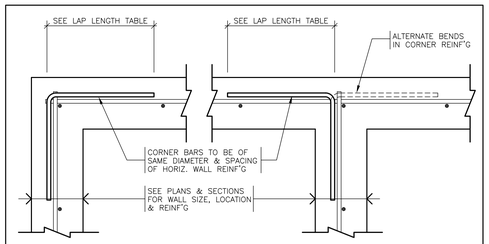


SECTION X–X

PLAN & SECTION AT COLUMN ISOLATION JOINTS IN SLABS ON GRADE

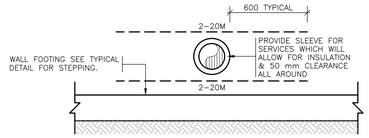


TYP. DETAIL– EXISTING SLAB ON GRADE INFILL



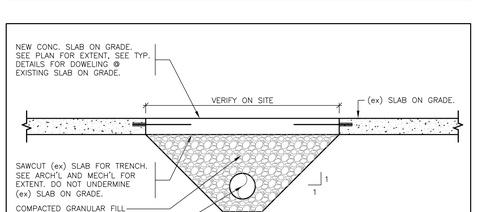
TYPICAL WALL INTERSECTION REINFORCEMENT

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



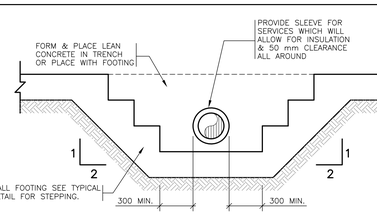
DETAIL–FOUNDATION AT SAN & STORM ENTRY

SEE PLANS AND MECHANICAL FOR LOCATION



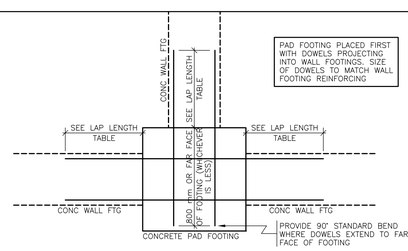
TYPICAL DETAIL AT NEW PIPE LOCATIONS

COORDINATE LOCATIONS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS

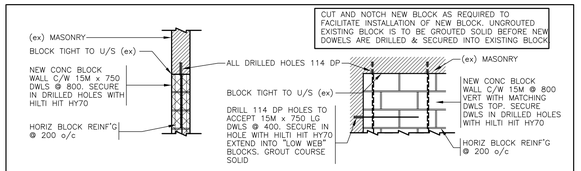


DETAIL–FOUNDATION AT UNDERGROUND SERVICE ENTRY

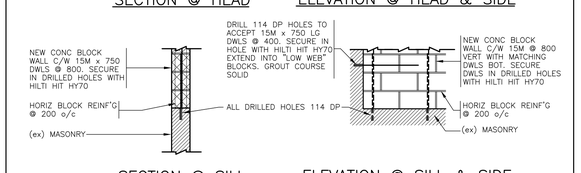
SEE PLANS AND MECHANICAL FOR LOCATION



PLAN DETAIL AT INTERSECTION OF PAD FOOTING & WALL FOOTINGS



SECTION @ HEAD ELEVATION @ HEAD & SIDE

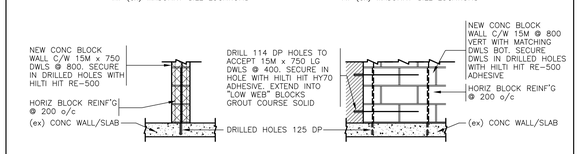


SECTION @ SILL

AT (ex) MASONRY SILL LOCATIONS

ELEVATION @ SILL & SIDE

AT (ex) MASONRY SILL LOCATIONS



SECTION @ SILL

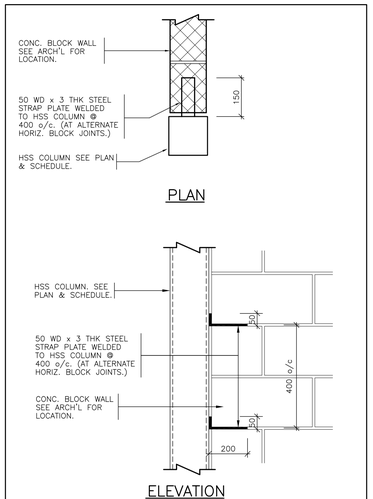
AT (ex) CONCRETE SLAB SILL LOCATIONS

ELEVATION @ SILL & SIDE

AT (ex) CONCRETE SLAB SILL LOCATIONS

DETAILS FOR INFILLING (ex) OPENINGS IN BLOCK WALLS

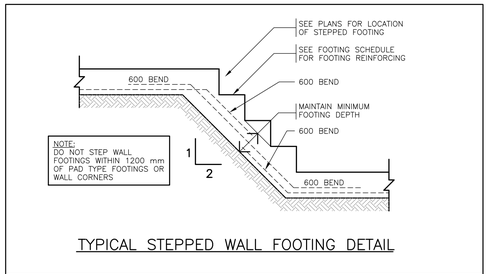
SEE DWG S100 & ARCH'L DWGS FOR LOCATIONS OF OPENINGS TO BE INFILLED



TYP. DETAIL @ BLOCK & COLUMN INTERSECTION

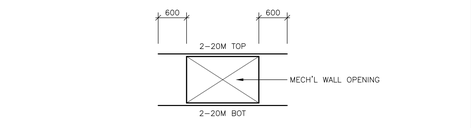
A S100 DETAIL

N.T.S.



TYPICAL WALL CONSTRUCTION JOINT DETAIL

MAXIMUM SPACING OF CONSTRUCTION JOINTS TO BE 20 meters



TYPICAL DETAIL AT CONCRETE WALL OPENING U/N

TYPICAL STEPPED WALL FOOTING DETAIL

SURGENOR TRUCK GROUP

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PROJECT
SURGENOR TRUCK CENTRE RENOVATION

ARCHITECT
PYE & RICHARDS ARCHITECTS INC.

DRAWING
TYPICAL DETAILS

CUNLIFFE & ASSOCIATES
CONSULTING STRUCTURAL ENGINEERS
102–1737 WOODWARD DR. OTTAWA ON. K2C 0P9
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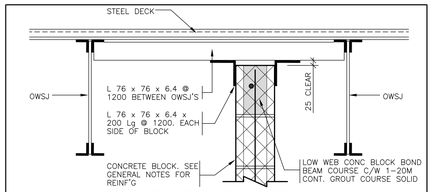
ENGINEER'S SEAL

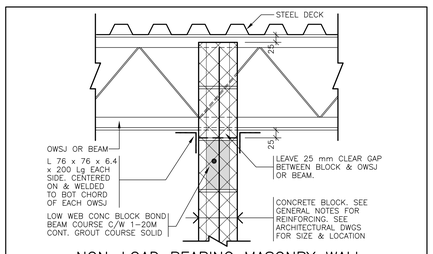
LICENSED PROFESSIONAL ENGINEER
01/17/2019
R. I. CUNLIFFE
PROVINCE OF ONTARIO

SCALE: NOT TO SCALE

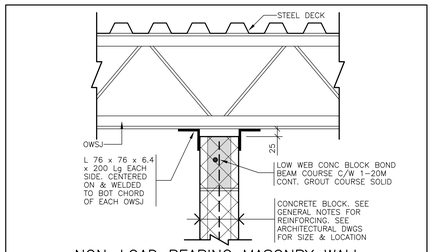
DRAWN: G.N.
REVIEWED: R.I.C.
PROJECT NO.: 17–179
REVISION NO.: 3
SHEET No.: S02



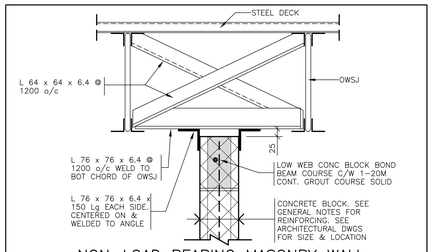
NON-LOAD BEARING MASONRY WALL
LATERAL SUPPORT DETAIL PARALLEL TO OWSJ



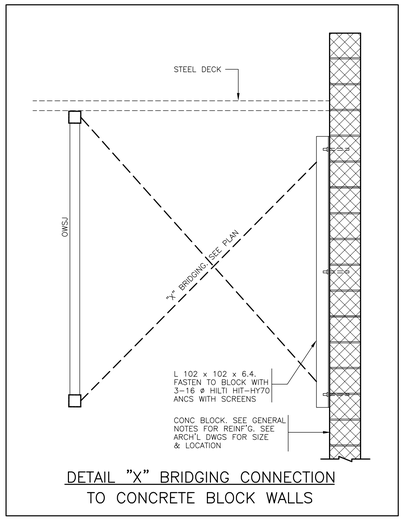
NON-LOAD BEARING MASONRY WALL
LATERAL SUPPORT DETAIL PERPENDICULAR TO OWSJ



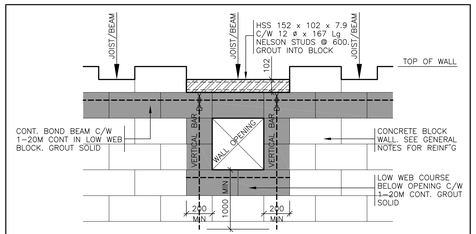
NON-LOAD BEARING MASONRY WALL
LATERAL SUPPORT DETAIL PERPENDICULAR TO OWSJ



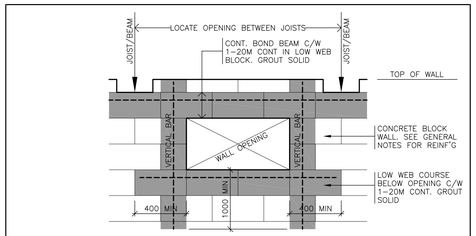
NON-LOAD BEARING MASONRY WALL
LATERAL SUPPORT DETAIL PARALLEL TO OWSJ



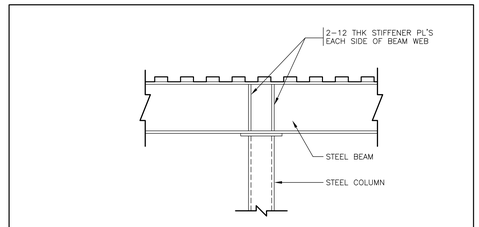
DETAIL "X" BRIDGING CONNECTION
TO CONCRETE BLOCK WALLS



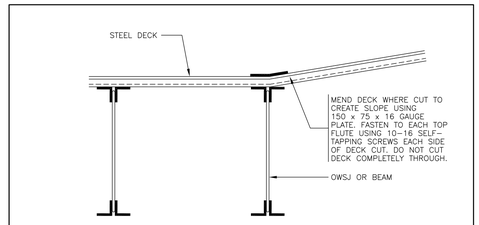
ELEVATION-MECHANICAL OPENING THRU LOAD BEARING
CONCRETE BLOCK MASONRY (LOCATED BELOW JOISTS)



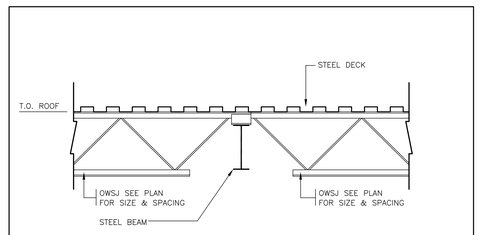
ELEVATION-MECHANICAL OPENING THRU LOAD BEARING
CONCRETE BLOCK MASONRY (LOCATED BETWEEN JOISTS)



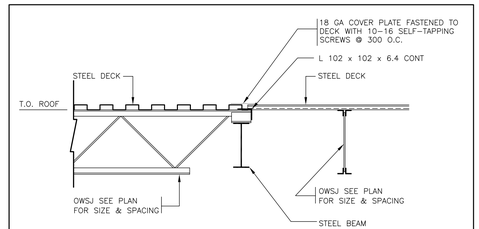
CANTILEVERED OR MULTI-SPAN BEAM DETAIL



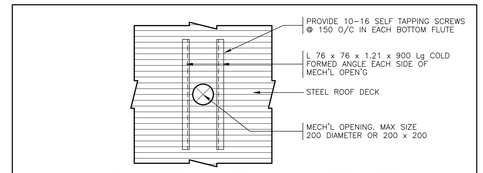
DETAIL-MENDING DECK AT CUT LINES



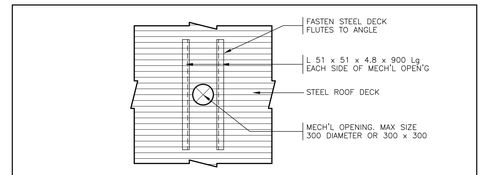
TYPICAL SECTION-STEEL BEAM BELOW ROOF



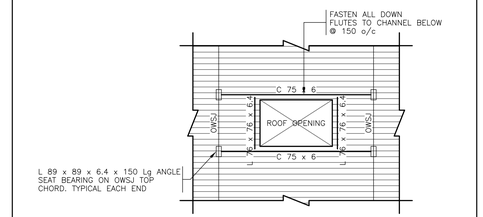
TYPICAL SECTION-STEEL BEAM BELOW ROOF



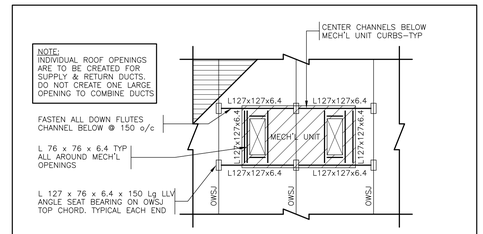
PLAN DETAIL-MECHANICAL OPENINGS
FOR OPENINGS LESS THAN 200 mm ø OR 200x200



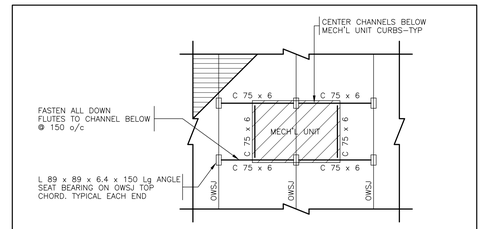
PLAN DETAIL-MECHANICAL OPENINGS



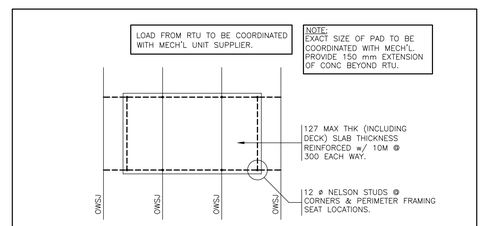
TYPICAL DETAIL- ADDITIONAL
FRAMING AT ROOF OPENINGS



TYPICAL DETAIL- ADDITIONAL
FRAMING AT ROOFTOP MECH'L UNITS
(WITH UNIT OPENINGS THROUGH ROOF)



TYPICAL DETAIL- ADDITIONAL
FRAMING AT ROOFTOP MECH'L UNITS
(NO UNIT OPENINGS THROUGH ROOF)



TYPICAL SCHEMATIC DETAIL- CONCRETE PAD
BELOW ROOFTOP MECH'L UNITS

SURGENOR TRUCK GROUP

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No.	REVISION	DATE

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PROJECT
SURGENOR TRUCK CENTRE RENOVATION

ARCHITECT
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DRAWING
TYPICAL DETAILS

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ENGINEER'S SEAL

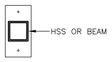
LICENSED PROFESSIONAL ENGINEER
01/17/2019
R. I. CUNLIFFE
PROVINCE OF ONTARIO

SCALE: NOT TO SCALE
DRAWN: G.N.
REVIEWED: R.I.C.
PROJECT NO.: 17-179
SHEET No.: S03
REVISION NO.: 3

BEAM BEARING PLATE SCHEDULE

MARK	SIZE	ANCHORS
BBP1	380 x 180 x 16 THK PLATE	2–15M x 400 Lg WELDABLE REBAR
BBP2	350 x 125 x 16 THK PLATE	2–15M x 400 Lg WELDABLE REBAR
BBP3	180 x 12 THK CONT. PLATE	1–15M x 400 Lg WELDABLE REBAR @ 400 O/C
BBP4	400 x 200 x 16 THK PLATE	2–16ø HILTI HIT–HY70 ANCS.

NOTES:
1. BEAMS SUPPORTED ON BEAM BEARING BASE PLATES TO EXTEND ONTO PLATE A MINIMUM OF 80% OF LENGTH OF PLATE, IN DIRECTION OF BEAM UNLESS NOTED OTHERWISE ON PLAN.
2. ANCHORS ARE TO BE CENTERED ON PLATE & SPACED AT 200 o/c TO ALIGN WITH CORE VOIDS IN BLOCK UNLESS OTHERWISE NOTED
3. ENSURE BEAM POCKETS IN MASONRY WALLS ARE BUILT–IN WITH MASONRY OR GROUTED SOLID.
4. ENSURE WALLS ARE GROUTED AT LEAST 3 COURSES BELOW BEAM BEARING PLATES.



BBP4

STEEL COLUMN SCHEDULE

MARK	SIZE
SC1	HSS 152 x 152 x 6.4
SC2	HSS 152 x 152 x 8.0
SC3	HOT DIP GALVANIZED HSS 203 x 203 x 13.0
SC4	HSS 102 x 102 x 6.4

NOTES:
1. ALL HSS SECTIONS TO BE ASTM A500 (GRADE C) OR G40.21M350W (CLASS C).
2. SEE GENERAL NOTES ALSO.

FOOTING SCHEDULE

MARK	SIZE	REINF'G
F1	1650 x 1850 x 250 THK	6–15M x 1550 BLL & TUL (H) 5–15M x 1750 BUL & TLL (H)
F2	1250 x 1250 x 250 THK	4–15M x 1150 BEW (H)
F3	1500 x 1500 x 250 THK	4–15M x 1400 TOP & BOT EW (H)
F4	1800 x 1800 x 250 THK	5–15M x 1700 TOP & BOT EW (H)
F5	3800 x 8700 x 300 THK	29–20M x 3700 BLL & TUL (H) 11–20M x 8600 BUL & TLL (H)
F6	2100 x 2100 x 250 THK	8–15M x 2000 TOP & BOT EW (H)
WF1	750 x 250 THK	3–15M BOTTOM CONT.

NOTES:
1. SEE GENERAL NOTES ALSO.
2. ALL FOOTINGS TO BE CENTERED UNDER PIERS, COLUMNS OR WALLS UNLESS NOTED.
3. WALL FOOTINGS TO EXTEND BEYOND ENDS OF WALLS A DISTANCE EQUAL TO THE SIDE PROJECTIONS.
4. SEE PLANS FOR CONCRETE COMPRESSIVE STRENGTHS.

CONCRETE BLOCK MASONRY CONTROL JOINTS

SPACING OF CONCRETE BLOCK CONTROL JOINTS SHOULD BE AS FOLLOWS:

- 9 METERS MAXIMUM ON CENTER FOR EXTERIOR WALLS
- 11.4 METERS MAXIMUM ON CENTER FOR INTERIOR WALLS
- NOT BELOW A JOIST/BEAM/CHANNEL BEARING POINT (FOR LOAD BEARING WALLS)
- NOT OVER (OR IMMEDIATELY BESIDE) A WALL OPENING
- NO CLOSER THAN 800 MM TO A WALL OPENING
- CONTROL JOINTS ARE NOT TO INTERRUPT CONCRETE BOND BEAM COURSES

LOAD BEARING MASONRY LINTEL SCHEDULE

MARK	SIZE	REINF'G	BEARING
ML1	990 DP	1–20M BOT CONT 1–15M TOP & MID CONT	200 mm
ML2	590 DP	1–15M BOT CONT	200 mm

NOTES:
1. ALL MASONRY LINTELS ARE TO BE GROUTED SOLID
2. GROUT WALL ENDS SOLID BELOW LINTEL FOR WIDTH OF BEARING INDICATED ABOVE.
3. SEE GENERAL NOTES FOR MASONRY REINFORCEMENT. PROVIDE 1–20M VERT IN EACH GROUTED CORE AT WALL ENDS EACH SIDE OF LINTEL OPENING UNLESS NOTED OTHERWISE ON PLANS.
4. USE LOW WEB BLOCKS FOR ALL LINTEL COURSES
5. DO NOT INTERRUPT TYPICAL WALL REINFORCEMENT AT LINTELS.
6. PROVIDE WALL REINF'G IN ADDITION TO LINTEL REINF'G

MASONRY SHEARWALL SCHEDULE

MARK	THICKNESS/ GROUTING	REINFORCING		
		VERT.	HORIZ.	HORIZ. BEAM
SW1	240mm GROUTED SOLID	1–15M @ 200 O/C	HL2 @ 200 O/C	1–10M @ 600 O/C C/W BENDS E.E.

NOTE:
1. PROVIDE ADDITIONAL REINFORCING AS FOLLOWS: 1–20M VERT. @ ES OPENINGS, CORNERS & INTERSECTIONS FULLY GROUTED
2. ALL MASONRY WALLS TO BE FULLY GROUTED BELOW GRADE.
3. ALL BLOCK WALL SECTIONS EQUAL TO OR LESS THAN 800 mm IN LENGTH TO BE FULLY GROUTED AND REINFORCED WITH 20M VERTICAL @ 200 o/c & HL2 @ 200 o/c
4. SEE GENERAL NOTES ALSO.

LEGEND
H– HEAVY 5 mm LONGITUDINAL WIRES
9 GAUGE CROSS WIRES
L– LADDER TYPE REINFORCEMENT
2– 2 LONGITUDINAL WIRES

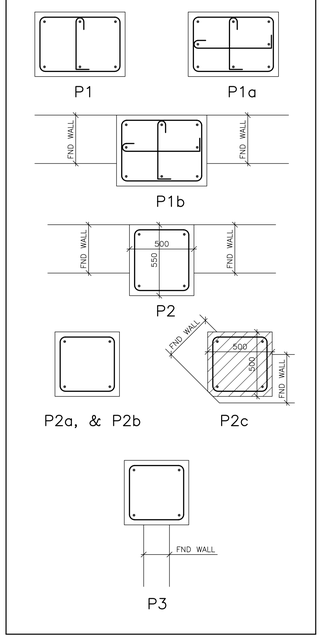
5. SEE GENERAL NOTES FOR REINFORCING FOR ALL OTHER LOAD BEARING MASONRY WALLS NOT IDENTIFIED AS "SW" ON PLAN.

PIER SCHEDULE

MARK	SIZE	REINF'G
P1	500 x 700	6–20M VERT + 2–10M TIES @ 300 + 6–20M DWLS
P1a	500 x 700	8–25M VERT + 3–10M TIES @ 300 + 8–25M DWLS
P1b	550 x 700	8–25M VERT + 3–10M TIES @ 300 + 8–25M DWLS
P2	550 x 500	4–25M VERT + 1–10M TIE @ 300 + 4–25M DWLS
P2a	500 x 500	4–25M VERT + 1–10M TIE @ 300 + 4–25M DWLS
P2b	550 x 550	4–25M VERT + 1–10M TIE @ 300 + 4–25M DWLS
P2c	500 x 500	4–25M VERT + 1–10M TIE @ 300 + 4–25M DWLS
P3	500 x 500	PIER TO MATCH GROUND FLOOR. SEE ARCH'L. 4–25M VERT + 1–10M TIE @ 300 + 4–25M DWLS

NOTES:
1. PROVIDE DWLS INTO FTG TO MATCH VERT. PIER REINF'G
2. PROVIDE 3 SETS OF TIES SPACED @ 75 o/c AT TOP OF PIERS.
3. HORIZ FND WALL REINF'G TO EXTEND THRU CONCRETE PIER.
4. TOP OF PIER TO BE 300 BELOW TOP OF SLAB TYP. U/N
5. SEE PLANS FOR CONCRETE COMPRESSIVE STRENGTHS.

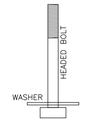
PIER DETAILS



BASEPLATE SCHEDULE

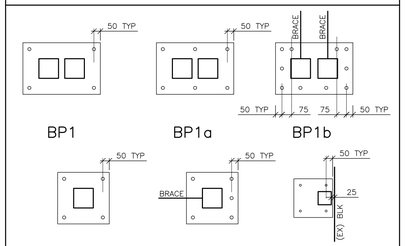
MARK	SIZE	ANCHORS
BP1	400 x 600 x 25 THK PLATE	4–M20 ø HEADED ANCHORS 400 EMBEDMENT
BP1a	400 x 600 x 25 THK PLATE	6–M24 ø HEADED ANCHORS 625 EMBEDMENT
BP1b	400 x 600 x 28 THK PLATE	10–M27 ø HEADED ANCHORS 625 EMBEDMENT
BP2	400 x 400 x 19 THK PLATE	4–M20 ø HEADED ANCHORS 400 EMBEDMENT
BP3	400 x 400 x 25 THK PLATE	4–M24 ø HEADED ANCHORS 625 EMBEDMENT
BP3a	HOT DIP GALVANIZED 400 x 400 x 25 THK PLATE	4–M24 ø STAINLESS STEEL HEADED ANCS 625 EMBEDMENT
BP4	400 x 400 x 25 THK PLATE	5–M24 ø HEADED ANCHORS 625 EMBEDMENT
BP5	300 x 300 x 19 THK PLATE	4–M20 ø HEADED ANCHORS 400 EMBEDMENT

NOTES:
1. PROVIDE 25MM NON SHRINK GROUT OR DRYPACK BELOW BASEPLATES EXTENDING 25MM BEYOND PERIMETER OF PLATE AND FOR FULL AREA BELOW PLATE. (NOT APPLICABLE TO CAST–IN PLATES)
2. PROVIDE 50 MM ANCHOR BOLT PROJECTION ABOVE PLATE.
3. ALL ANCHOR BOLTS TO BE A307 u/n
4. ALL ANCHOR BOLTS TO BE HEADED.
5. ALL COLUMNS TO BE CENTERED ON BASEPLATES U/N
6. USE STEEL TEMPLATES AND PRECISE SURVEYING TECHNIQUES TO ACCURATELY LOCATE BASE PLATE & ANCHOR BOLTS.
7. PROVIDE 50 ø x 5 THK WASHERS FOR ANCHORS UP TO 25 ø.



HEADED ANCHOR DETAIL

BASEPLATE DETAILS



MASONRY LINTEL SCHEDULE FOR LOAD BEARING WALLS WHERE LINTEL IS NOT SHOWN ON PLAN (ie. MECH'L WALL OPENINGS)

190 WD REINF'D CONC BLOCK

SPAN	MASONRY LINTEL
0 – 400 mm	GROUT 200 mm ALL AROUND OPENING
400 – 1000 mm	400 DP 1–15M BOT CONT
1001 – 1500	600 DP 1–20M TOP & BOT CONT
1501 – 2000	800 DP 1–20M TOP & BOT CONT

NOTE:
1. ALL MASONRY LINTELS ARE TO BE GROUTED SOLID
2. GROUT WALL ENDS SOLID BELOW LINTEL FOR WIDTH OF 200 mm LINTEL BEARING
3. SEE GENERAL NOTES FOR MASONRY REINFORCEMENT. PROVIDE 1–20M VERT IN EACH GROUTED CORE AT WALL ENDS EACH SIDE OF LINTEL OPENING UNLESS NOTED OTHERWISE ON PLANS.
4. USE LOW WEB BLOCKS FOR LINTEL COURSES CONTAINING HORIZONTAL REBAR

NON–LOAD BEARING WALL MASONRY LINTEL SCHEDULE

140 OR 190 WD REINF'D CONC BLOCK

SPAN	SIZE & REINF'G
0 – 1000 mm	200 DP 1–15M BOT CONT
1001 – 1900	400 DP 1–20M BOT CONT
1901 – 2500	600 DP 1–20M TOP & BOT CONT
2501 – 3200	800 DP 1–20M TOP & BOT CONT

NOTE:
1. ALL MASONRY LINTELS ARE TO BE GROUTED SOLID
2. GROUT WALL ENDS SOLID BELOW LINTEL FOR WIDTH OF 200 mm LINTEL BEARING
3. SEE GENERAL NOTES FOR MASONRY REINFORCEMENT. PROVIDE 1–20M VERT IN EACH GROUTED CORE AT WALL ENDS EACH SIDE OF LINTEL OPENING UNLESS NOTED OTHERWISE ON PLANS.
4. USE LOW WEB BLOCKS FOR LINTEL COURSES CONTAINING HORIZONTAL REBAR

MASONRY VENEER LOOSE LINTEL SCHEDULE

SPAN	SIZE	BEARING EE
0 – 1200 mm	L 89 x 89 x 7.9	100 mm
1201 TO 1800	L 102 x 89 x 7.9 LLV	100 mm
1801 – 2400	L 127 x 89 x 7.9 LLV	100 mm
2401 – 3000	L 152 x 102 x 7.9 LLV	150 mm
3001 – 3400	L 152 x 102 x 9.5 LLV	175 mm
3401 – 3800	L 178 x 102 x 9.5 LLV	200 mm

ALL LINTELS TO BE HOT DIP GALVANIZED

SURGENOR TRUCK GROUP

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4. DO NOT SCALE DRAWINGS.

PROJECT
SURGENOR TRUCK CENTRE RENOVATION

ARCHITECT
PYE & RICHARDS ARCHITECTS INC.

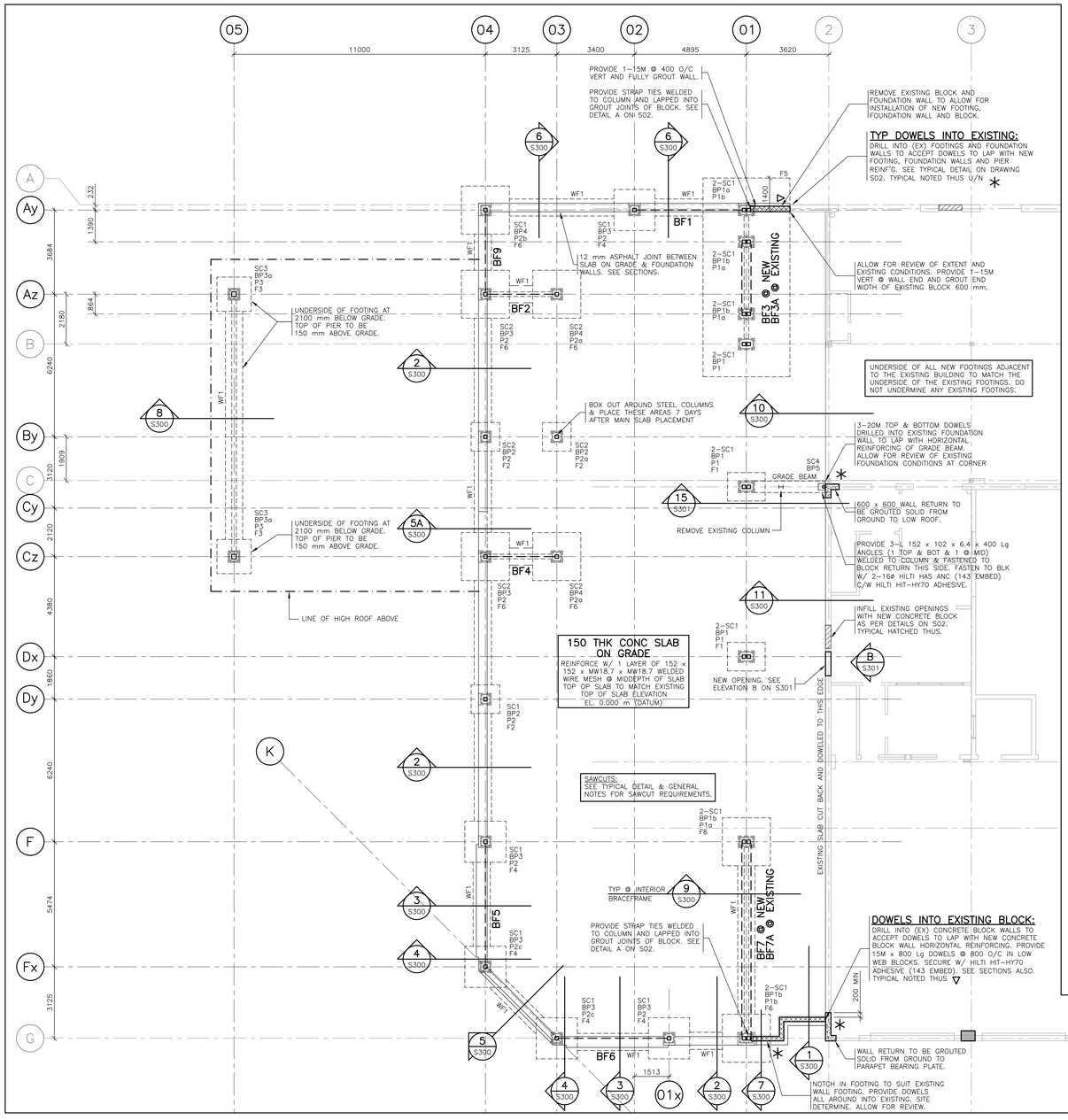
DRAWING
SCHEDULES

CUNLIFFE & ASSOCIATES
CONSULTING STRUCTURAL ENGINEERS
102–1737 WOODWARD DR. OTTAWA ON. K2C 0P9
TEL (613) 729–7242 FAX (613) 728–1461
Email <cunliffe@cunliffe.ca>

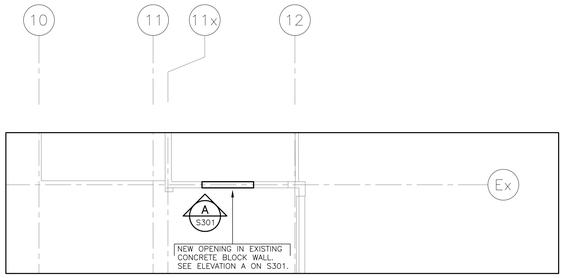
ENGINEER'S SEAL

LICENSED PROFESSIONAL ENGINEER
01/17/2019
R. I. CUNLIFFE
PROVINCE OF ONTARIO

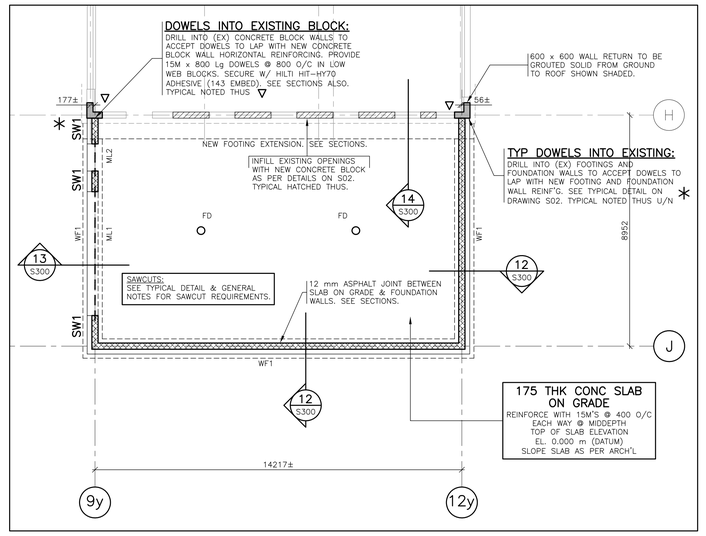
SCALE: NOT TO SCALE
DRAWN: G.N.
REVIEWED: R.I.C.
PROJECT NO.: 17–179
REVISION NO.: 3
SHEET No.: S04



GROUND FLOOR PLAN–OFFICES ADDITION



GROUND FLOOR PLAN–SHOP AREA



GROUND FLOOR PLAN–SERVICE BAY ADDITION

CONCRETE COMPRESSIVE STRENGTHS:

PERIMETER FOUNDATION WALLS/PIERS = 25 MPa TYPE F2
INTERIOR FOUNDATION WALLS/PIERS = 25 MPa TYPE N
EXTERIOR CONCRETE = 35 MPa CLASS C1
FOOTINGS = 25 MPa TYPE N
SLAB ON GRADE (OFFICES) = 25 MPa TYPE N
SLAB ON GRADE (SERVICE BAY) = 35 MPa CLASS C1 W/ CORROSION INHIBITOR
FOUNDATION WALLS (SERVICE BAY) = 30 MPa TYPE F1

NOTE:
ALL TEMPORARY SHORING REQUIRED FOR THE EXISTING STRUCTURE TO BE DESIGNED AND DETAILED BY A PROFESSIONAL ENGINEER LICENSED IN ONTARIO.

REFER TO MECHANICAL, ELECTRICAL, AND ARCHITECTURAL DRAWINGS FOR ALL OPENINGS PASSING THRU ALL LOAD BEARING AND NON LOAD BEARING MASONRY WALLS. REFER TO MASONRY LINTEL SCHEDULES ON DRAWING S04 FOR LINTEL SIZE, DETAILS AND REINF'G. LINTELS MUST BE PROVIDED AT ALL OPENINGS INCLUDING RECESSED POCKETS IN WALLS.

REFER TO MASONRY SHEARWALL SCHEDULE FOR REINFORCING FOR WALLS IDENTIFIED AS "SW#". REFER TO GENERAL NOTES FOR REINFORCING FOR ALL OTHER LOAD BEARING MASONRY SHEARWALLS. SEE SECTIONS ALSO.

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SURGENOR TRUCK CENTRE RENOVATION

ARCHITECT
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DRAWING
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ENGINEER'S SEAL

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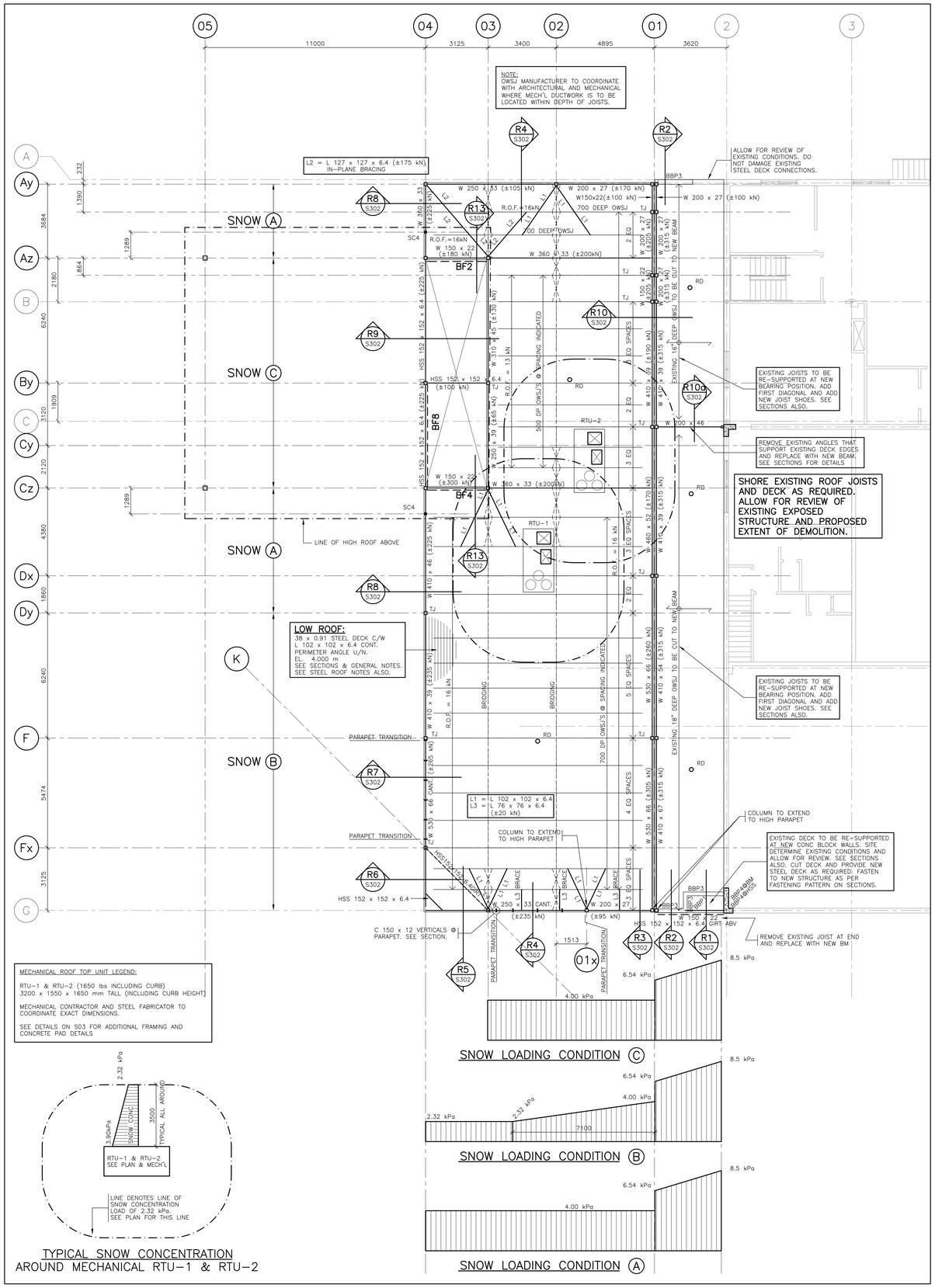
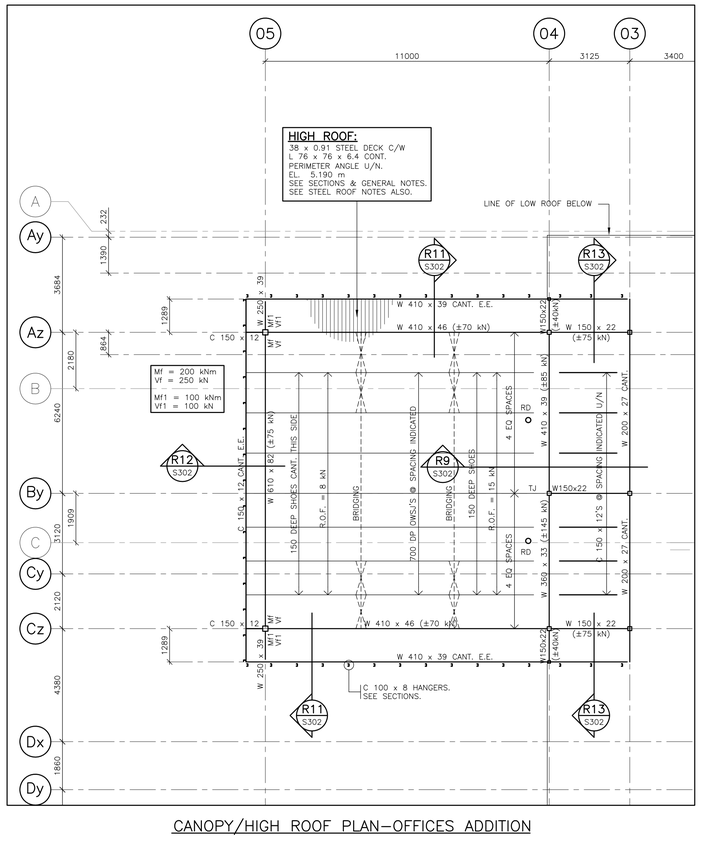
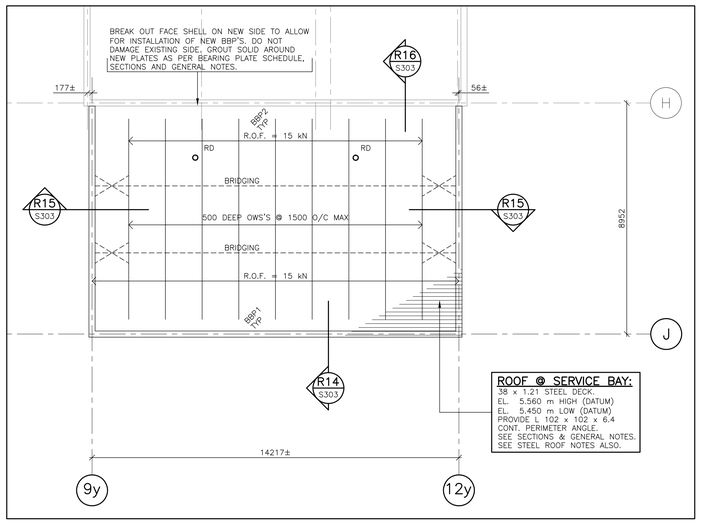
SCALE	
1:100 U/N	
DRAWN G.N.	REVIEWED R.I.C.
PROJECT NO. 17-179	SHEET No. S100
REVISION NO. 3	



LOW ROOF PLAN–OFFICES ADDITION



CANOPY/HIGH ROOF PLAN–OFFICES ADDITION



ROOF PLAN–SERVICE BAY ADDITION

DESIGN LOADS:

HIGH ROOF/CANOPY	
ROOF'G & INSUL.	0.65 kPa
BOARD	0.10
STEEL DECK	0.15
STRUCTURE	0.25
CEILING/MISC.	0.15
MECH./ELEC.	0.20
DEAD LOAD	1.50 kPa
SNOW LOAD	2.32 kPa (OR SNOW CONC)
TOTAL LOAD	3.82 kPa (OR DL + SNOW CONC)

MAIN/LOW ROOF	
ROOF'G & INSUL.	0.65 kPa
BOARD	0.10
STEEL DECK	0.15
STRUCTURE	0.25
CEILING/MISC.	0.15
MECH./ELEC.	0.35
DEAD LOAD	1.65 kPa
SNOW LOAD	2.32 kPa (OR SNOW CONC)
TOTAL LOAD	3.97 kPa (OR DL + SNOW CONC)

TYPICAL STEEL ROOF – SERVICE BAY	
ROOF'G & INSUL.	0.65 kPa
BOARD	0.10
STEEL DECK	0.15
STRUCTURE	0.25
MECH./ELEC.	0.50 (APPLIED TO TOP OR BOT CHORD)
DEAD LOAD	1.65 kPa
SNOW LOAD	2.32 kPa (OR SNOW CONC)
TOTAL LOAD	3.97 kPa (OR DL + SNOW CONC)

ROOF BELOW RTU'S	
89 mm CONC ABV 38 DECK	2.45 kPa
ROOF'G & INSUL.	0.60 kPa
STEEL DECK	0.10
STRUCTURE	0.25
MECH'L	3.00
ELEC. & MISC.	0.20
DEAD LOAD	6.60 kPa
SNOW LOAD	2.32 kPa
TOTAL LOAD	8.92 kPa

NOTE: (AXIAL COLLECTOR LOADS NOTED ON PLANS AS ±#kN)

DESIGN AXIAL COLLECTOR LOADS AND ROLL OVER FORCES (ROF) NOTED ON PLAN HAVE BEEN MULTIPLIED BY Rd=1.5

NOTE:
ALL TEMPORARY SHORING REQUIRED FOR THE EXISTING STRUCTURE TO BE DESIGNED AND DETAILED BY A PROFESSIONAL ENGINEER LICENSED IN ONTARIO.

1. SEE DRAWING S01 FOR GENERAL NOTES
2. SEE DRAWING S04 FOR SCHEDULES
3. SEE DRAWING S03 FOR TYPICAL DETAILS
4. OWSJ'S
   - .1 REFER TO ARCHITECTURAL DRAWINGS FOR SUPPLEMENTARY INFORMATION AND ALLOW FOR ARCHITECTURAL REVIEW PRIOR TO FABRICATION.
   - .2 OWSJ'S ARE TO BE DESIGNED FOR A MAXIMUM DEFLECTION DUE TO LIVE LOADS OF L/360 (ROOF) OR 25 mm
   - .3 SEE PLAN FOR ADDITIONAL LIVE LOAD DEFLECTION LIMITATIONS
   - .4 OWSJ SHOE DEPTH: 100 mm DP U/N.
   - .5 PRIMER APPLIED TO STRUCTURAL STEEL IS TO BE COMPATIBLE WITH SPRAY–ON FIRE PROTECTION.
   - .6 ENSURE THAT WELDING PROCEDURES DO NOT DAMAGE OWSJ'S.
   - .7 ALLOW FOR COORDINATION WITH MECHANICAL AND PLUMBING/FIRE PROTECTION CONTRACTOR INCLUDING HANGING PIPE LOADS ATTACHED TO OWSJ BOTTOM CHORD.
   - .8 OWSJ DESIGNER TO ENSURE THE SHOE AND TOP CHORD ARE SUFFICIENT TO TRANSFER THE STEEL DECK IN–PLANE SHEAR CAPACITY (ROLL OVER RESISTANCE) TO THE SUPPORT MEMBER.
   - .9 NOTE THAT THE SNOW LOADS INDICATED MAY BE REDUCED BY THE RATIO 0.9/1.0 IN ACCORDANCE WITH OBC 4.1.6.2. (FOR CALCULATION OF DEFLECTIONS)
5. OWSJ LEGEND
   TJ = TIE JOIST
   ROF = ROLL OVER FORCE
6. OWSJ TOP & BOTTOM CHORD BRIDGING
   - .1 OWSJ MANUFACTURER TO PROVIDE ADDITIONAL BRIDGING AS REQ'D BY WIND SUCTION ANALYSIS OR TO FACILITATE ERECTION
   - .2 BRIDGING IS TO BE EQUALLY SPACED OVER LENGTH OF OPEN WEB STEEL JOISTS.
   - .3 PROVIDE DIAGONAL BRIDGING AT BEAMS & AT END SPACES. CONNECT BRIDGING TO BLOCK WALL.
   - .4 OWSJ MANUFACTURER IS TO SPECIFY SIZE OF BRIDGING ANGLES BUT MINIMUM SIZE TO BE L 35x35x3
   - .5 BRIDGING IS TO BE NEATLY ERECTED IN ROOMS WITHOUT CEILINGS.
   - .6 THE BRIDGING LINES INDICATED ON THE PLAN DRAWINGS SHALL BE CONSIDERED A MINIMUM.
7. STEEL BEAMS
   - .1 STEEL BEAMS WHICH ARE W410 OR DEEPER AND ARE TO RECEIVE FIRE PROTECTION ARE TO BE ADDRESSED IN ON OF THE FOLLOWING MANNERS:
     1. NO PRIME PAINT ON WEBS
     2. SPECIAL PRIMER APPROVED FOR USE WITH FIRE PROTECTION.
     3. METAL LATHE AFFIXED TO THE WEBS TO HOLD THE FIRE PROTECTION.
     4. COORDINATE REQUIREMENTS WITH FIRE PROTECTION SUPPLIER.
   - .2 PROVIDE 2–12mm STIFFENER PLATES EACH SIDE OF ALL BEAM WEBS WHICH ARE CONTINUOUS OVER SUPPORTS (ie COLUMNS) SEE TYPICAL DETAILS.
8. MECHANICAL OPENINGS & FRAMING
   - .1 SEE TYPICAL DETAILS FOR MECH'L UNIT SUPPORT & MECH'L OPENING FRAMING UNLESS NOTED
   - .2 WHEREVER POSSIBLE MECHANICAL PIPING MUST BE SUPPORTED FROM OWSJ TOP CHORD. DO NOT SUPPORT FROM OWSJ BOTTOM CHORD UNLESS SPECIFICALLY APPROVED BY OWSJ MANUFACTURER. DO NOT HANG FROM STEEL DECK. SUPPORT AT OR NEAR OWSJ TOP CHORD PANEL POINT IS PREFERRED. OWSJ MANUFACTURER IS TO COMMENT ON PERMISSIBILITY OF LOCATING PIPING SUPPORTS BETWEEN TOP CHORD PANEL POINTS.
   - .3 MECHANICAL OPENINGS SHOWN ON THIS DRAWING ARE TO BE CONFIRMED WITH THE MECHANICAL DRAWINGS FOR BOTH SIZE & LOCATION. REFER TO TYPICAL DETAILS FOR ADDITIONAL OPENING FRAMING UNLESS NOTED. REFER TO ARCH'L AND MECHANICAL DRAWINGS FOR ADDITIONAL OPENINGS.
   - .4 MECHANICAL CONTRACTOR TO COORDINATE ALL MECH'L LOADING WITH OWSJ SUPPLIER.

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SURGENOR TRUCK GROUP

PROJECT: SURGENOR TRUCK CENTRE RENOVATION

ARCHITECT: PYE & RICHARDS ARCHITECTS INC.

DRAWING: PLANS

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ENGINEER'S SEAL

LICENSED PROFESSIONAL ENGINEER
01/17/2019
R. I. CUNLIFFE
PROVINCE OF ONTARIO

SCALE: 1:100 U/N

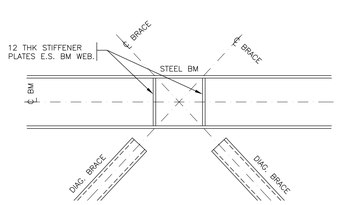
DRAWN: G.N. | REVIEWED: R.I.C.

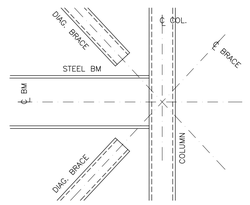
PROJECT NO.: 17–179

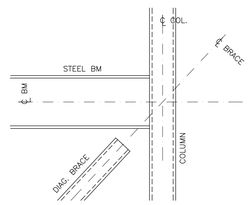
REVISION NO.: 3

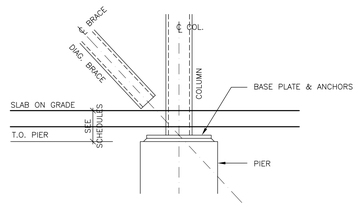
SHEET No.: S101

NOTE:
COMPRESSION OR TENSION FACTORED LOADS HAVE BEEN MULTIPLIED BY Rd=1.5

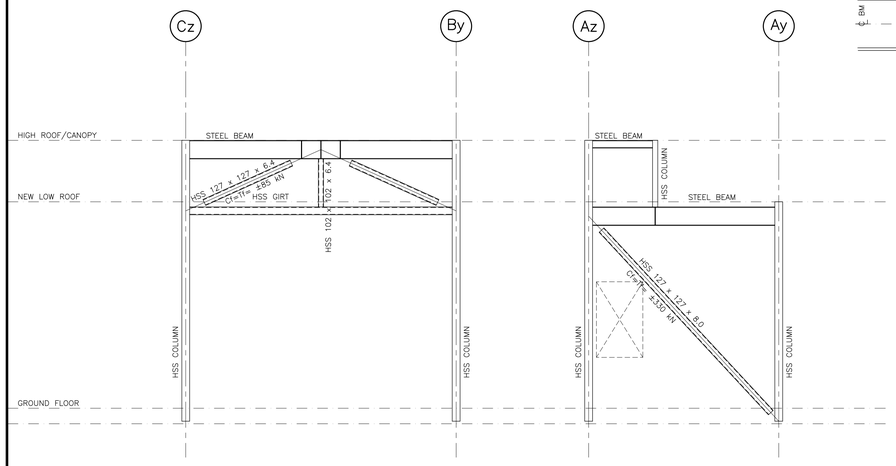






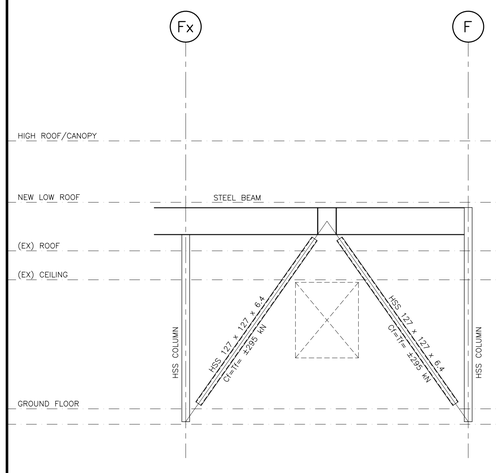


TYPICAL DETAILS @ DIAGONAL BRACE INTERSECTIONS



BF–8

BF–9



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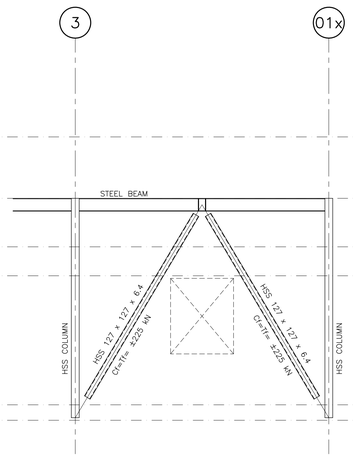

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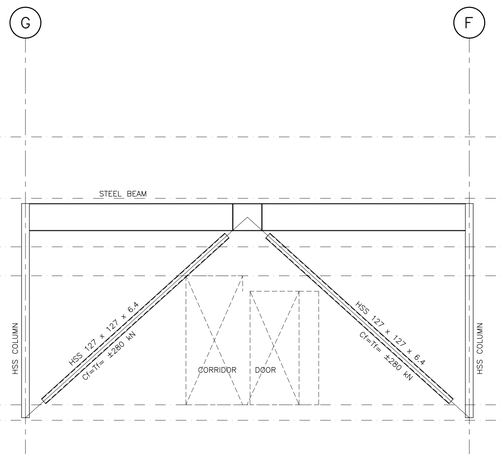

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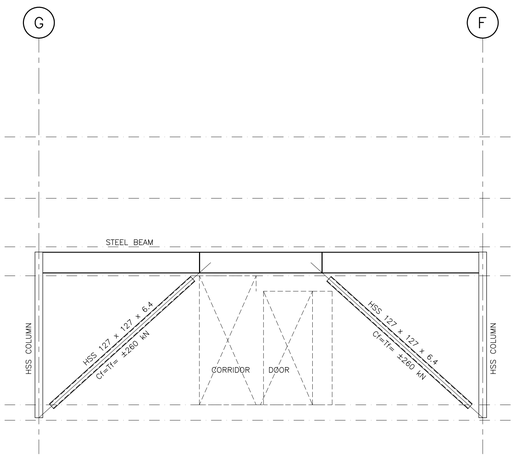

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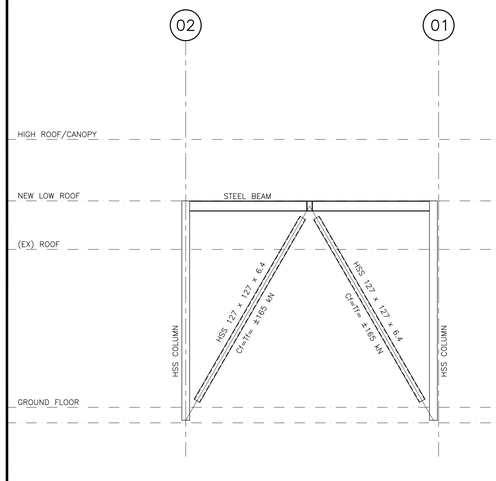

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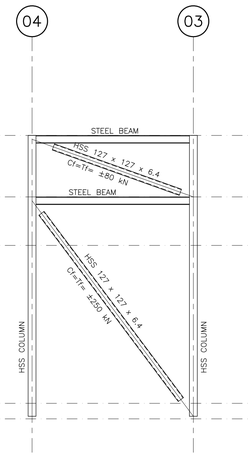

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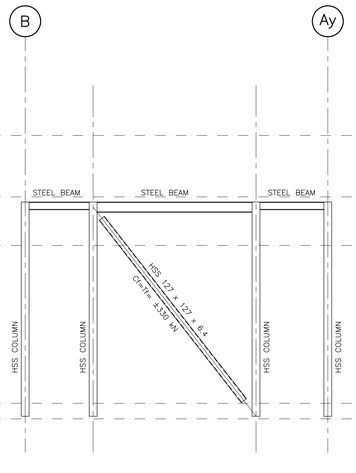

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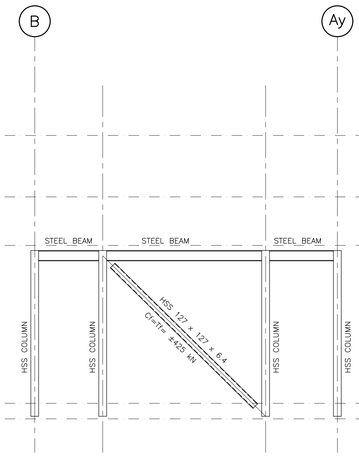

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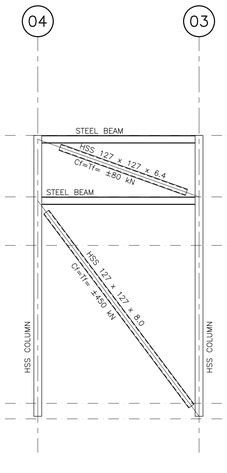

BF–4

SURGENOR TRUCK GROUP

3	ISSUE FOR TENDER	JAN 17/19
2	ISSUE FOR BUILDING PERMIT	DEC 04/18
1	ISSUE FOR REVIEW	NOV 28/18

No.	REVISION	DATE

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4. DO NOT SCALE DRAWINGS.

PROJECT
SURGENOR TRUCK CENTRE RENOVATION

ARCHITECT
PYE & RICHARDS ARCHITECTS INC.

DRAWING
BRACEFRAME ELEVATIONS

CUNLIFFE & ASSOCIATES
CONSULTING STRUCTURAL ENGINEERS
102–1737 WOODWARD DR. OTTAWA ON. K2C 0P9
TEL (613) 729-7242 FAX (613) 728-1461
Email <cunliffe@cunliffe.ca>

ENGINEER'S SEAL

LICENSED PROFESSIONAL ENGINEER
01/17/2019
R. I. CUNLIFFE
PROVINCE OF ONTARIO

SCALE 1 : 50

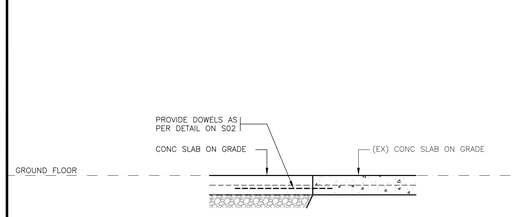
DRAWN G.N.

REVIEWED R.I.C.

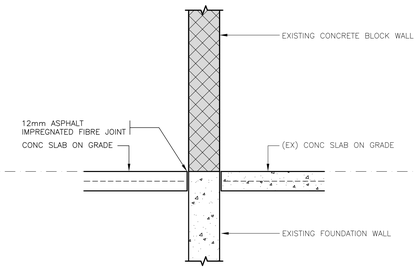
PROJECT NO. 17–179

SHEET No. S200

REVISION NO. 3



10 S100 SECTION
1 : 20



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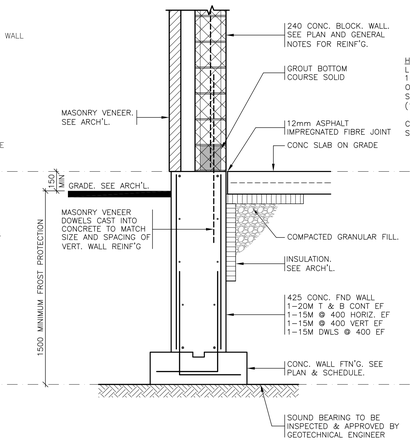

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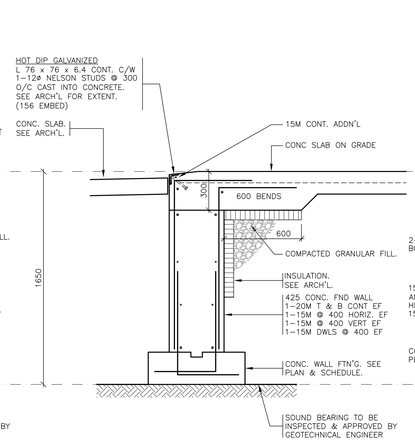

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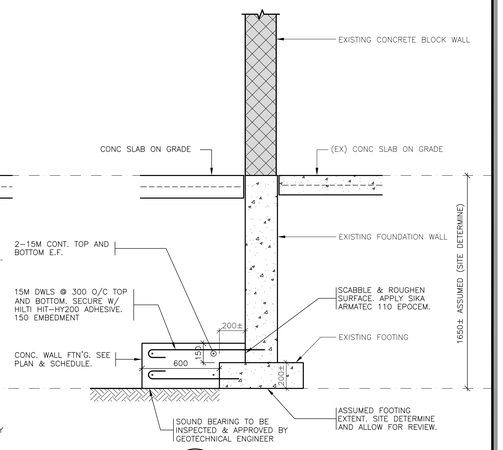

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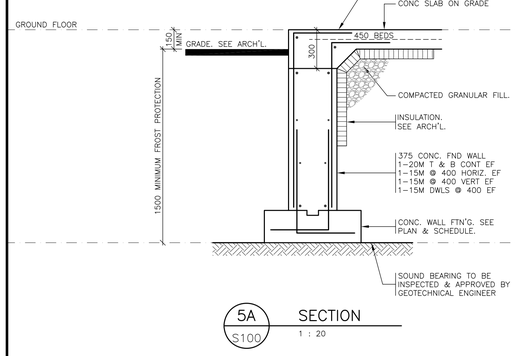

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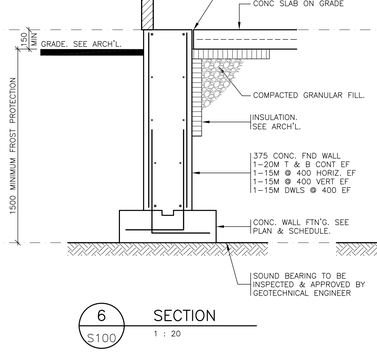

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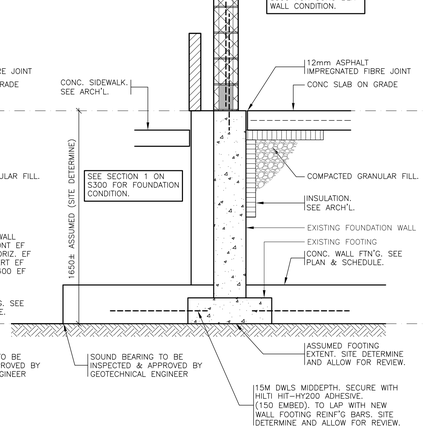

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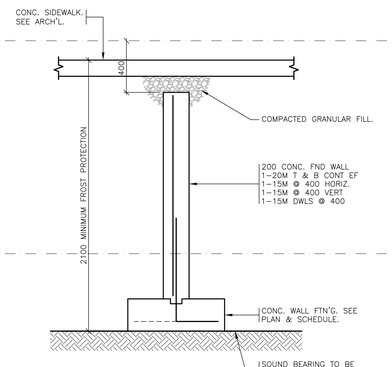

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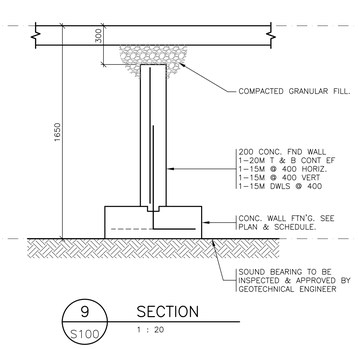

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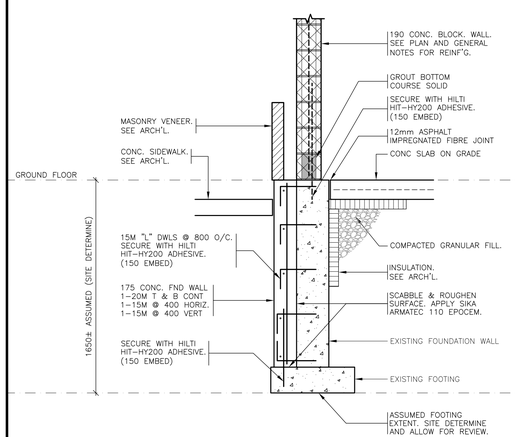

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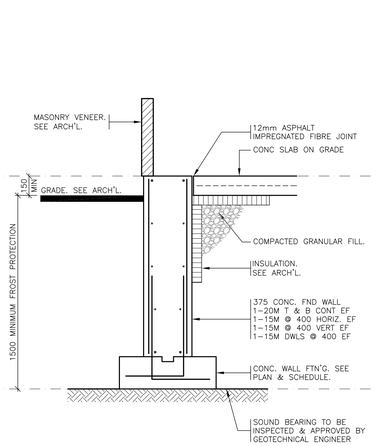

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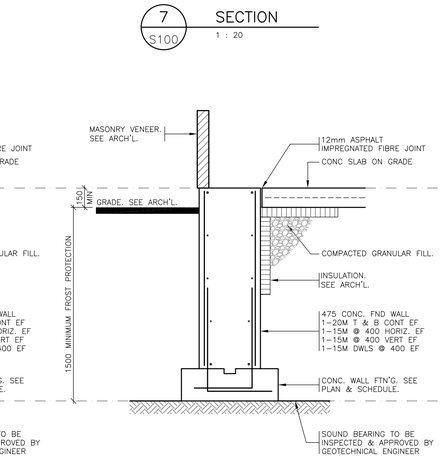

3 S100 SECTION
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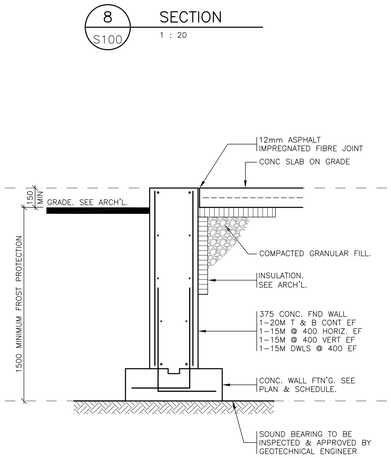

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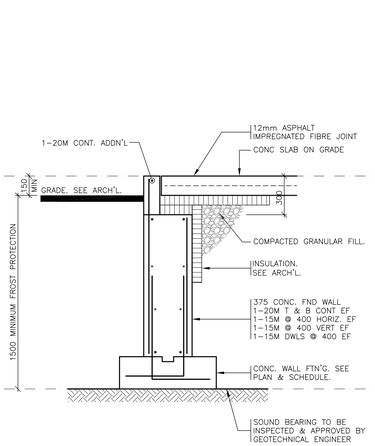

5 S100 SECTION
1 : 20

SURGENOR TRUCK GROUP

3	ISSUE FOR TENDER	JAN 17/19
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PROJECT
SURGENOR TRUCK CENTRE RENOVATION

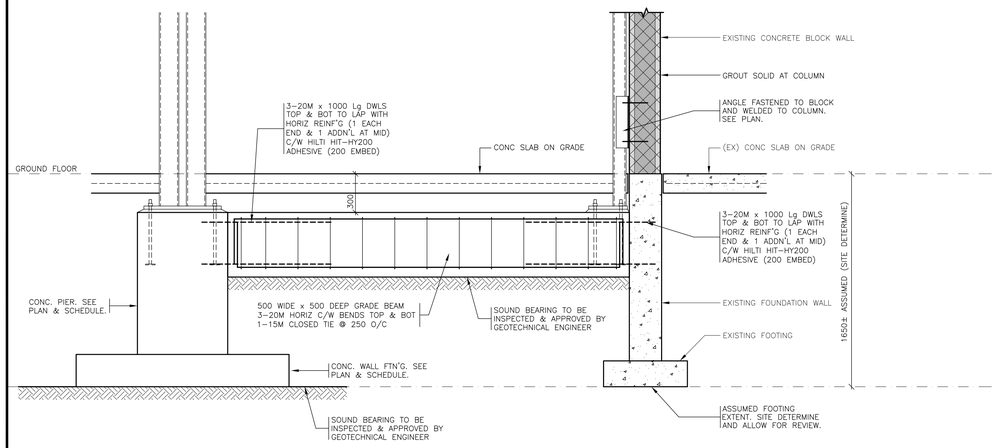
ARCHITECT
PYE & RICHARDS ARCHITECTS INC.

DRAWING
SECTIONS

CUNLIFFE & ASSOCIATES
CONSULTING STRUCTURAL ENGINEERS
102-1737 WOODWARD DR. OTTAWA ON. K2C 0P9
TEL (613) 729-7742 FAX (613) 728-1461
Email <cunliffe@cunliffe.ca>

ENGINEER'S SEAL
LICENSED PROFESSIONAL ENGINEER
01/17/2019
P. I. CUNLIFFE
PROVINCE OF ONTARIO

SCALE: AS NOTED
DRAWN: G.N.
REVIEWED: R.I.C.
PROJECT NO.: 17-179
REVISION NO.: 3
SHEET No.: S300



15 / S100 SECTION

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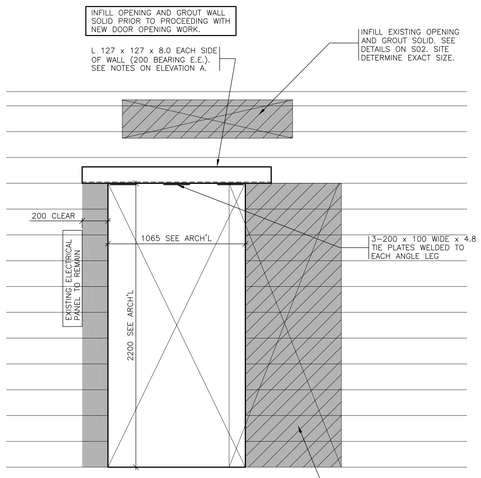
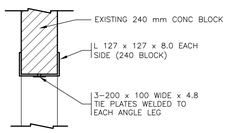
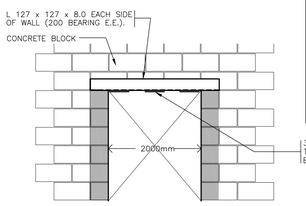


B / S100 ELEVATION

N.T.S.



DETAIL–NEW DOOR OPENING THRU EXISTING CONC BLOCK WALL



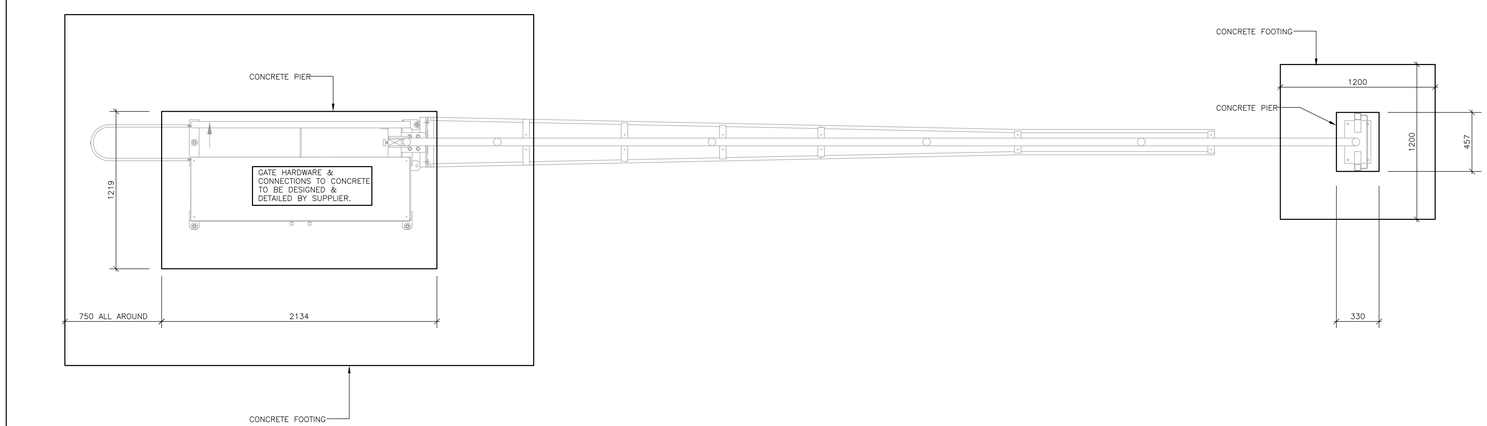
SEQUENCE OF OPERATIONS
1. SAWCUT MORTAR JOINT x 1/2 WIDTH OF BLOCK WALL ON 1 SIDE OF WALL TO FACILITATE INSERTION OF NEW LINTEL ANGLE.
2. GRIND CORNER OF BLOCK TO PERMIT TIGHT FIT OF VERTICAL ANGLE LEG AGAINST BLOCK.
3. REPEAT PROCEDURE ON OPPOSITE SIDE OF WALL.
4. SAWCUT VERTICALLY EACH SIDE OF NEW OPENING & REMOVE BLOCK
5. GROUT VERTICAL CORES SOLID SHOWN SHADED & INSTALL TIE PLATES

ELEVATION–NEW DOOR OPENING THRU EXISTING CONC BLOCK WALL

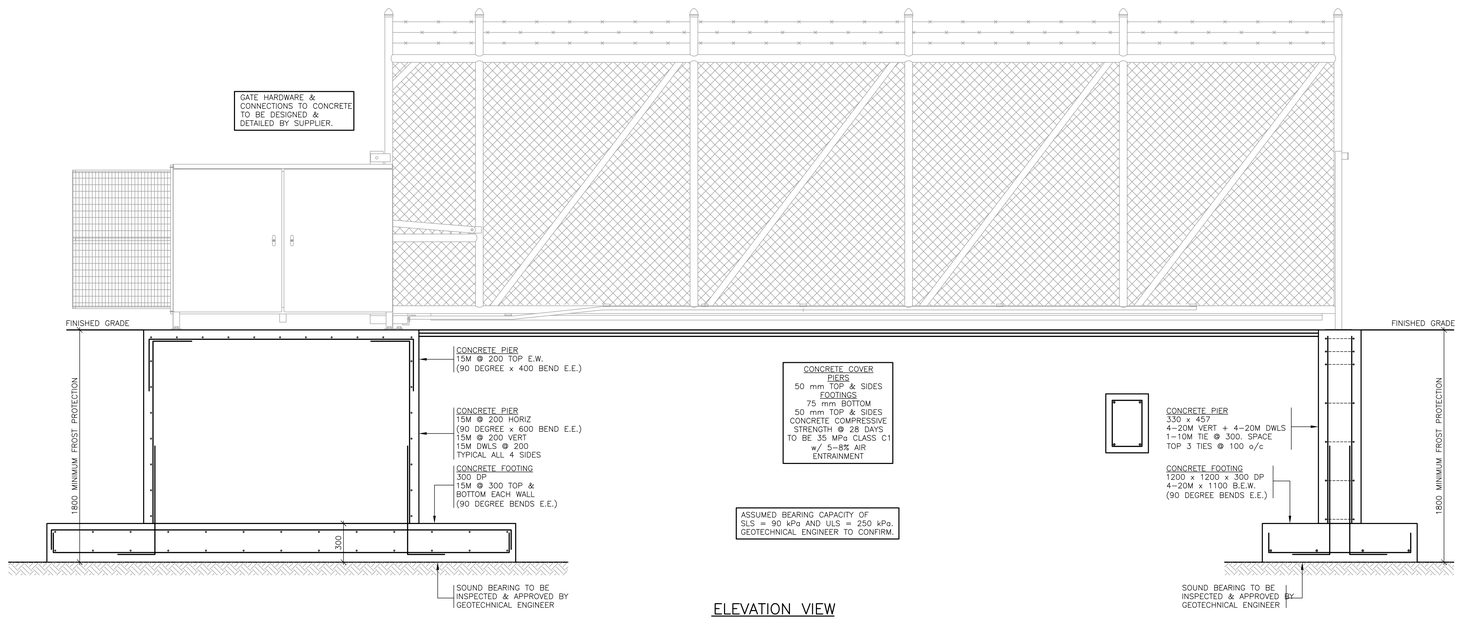
SEE ARCH. FOR EXACT LOCATION & SIZE OF OPENINGS

A / S100 ELEVATION

N.T.S.



PLAN VIEW



ELEVATION VIEW

VERTICAL PIVOT GATE FOUNDATIONS

SCALE 1: 20

SURGENOR TRUCK GROUP

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ENGINEER'S SEAL

LICENSED PROFESSIONAL ENGINEER
01/17/2019
R. I. CUNLIFFE
PROVINCE OF ONTARIO

SCALE AS NOTED

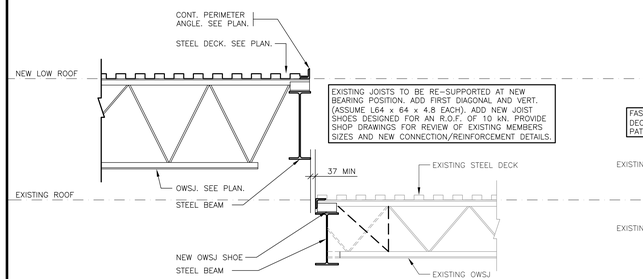
DRAWN G.N.

REVIEWED R.I.C.

PROJECT NO. 17–179

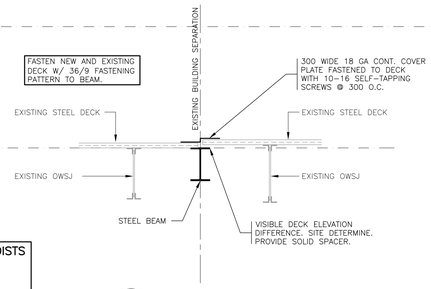
SHEET No. S301

REVISION NO. 3

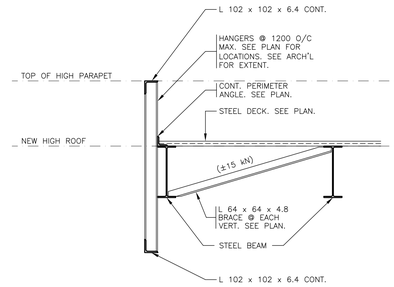


R10 S101 SECTION 1 : 20

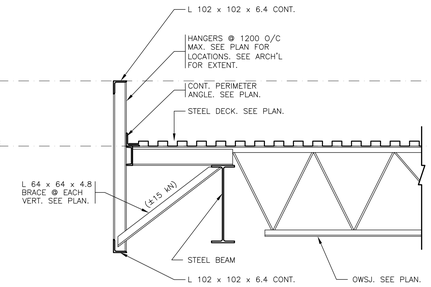
SHORE EXISTING ROOF JOISTS AND DECK AS REQUIRED. ALLOW FOR REVIEW OF EXISTING EXPOSED STRUCTURE AND PROPOSED EXTENT OF DEMOLITION.



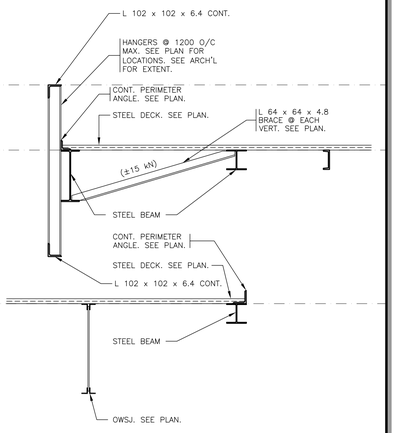
R10a S101 SECTION 1 : 20



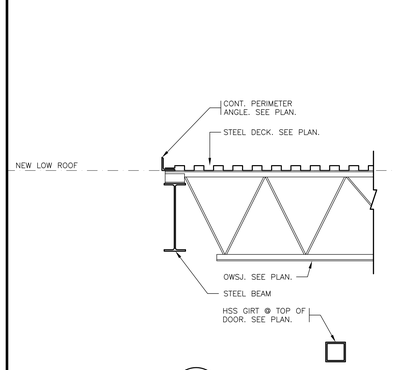
R11 S101 SECTION 1 : 20



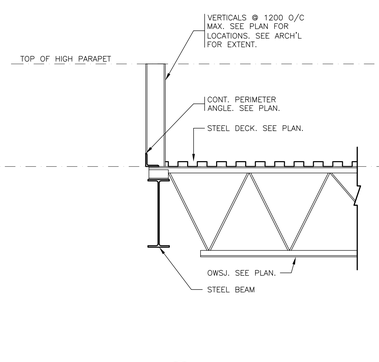
R12 S101 SECTION 1 : 20



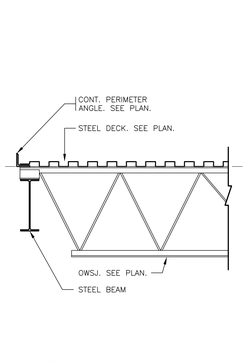
R13 S101 SECTION 1 : 20



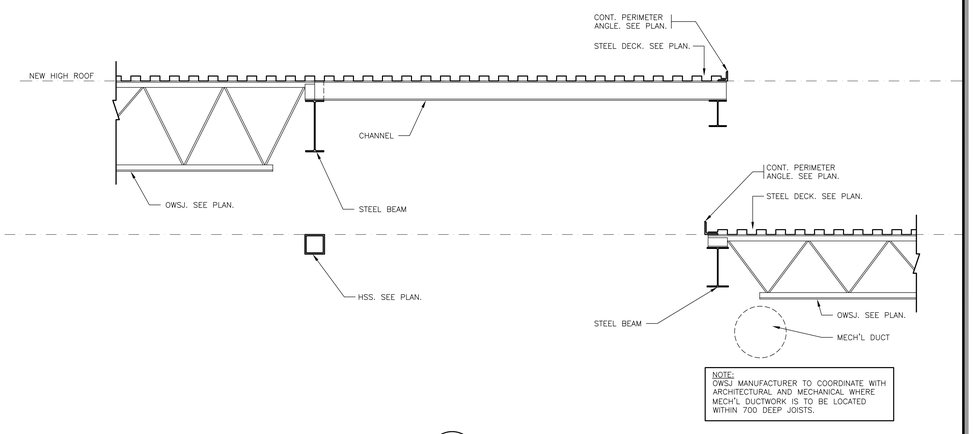
R6 S101 SECTION 1 : 20



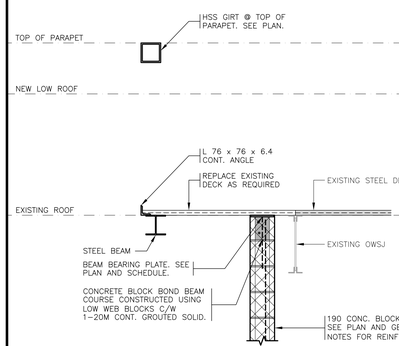
R7 S101 SECTION 1 : 20



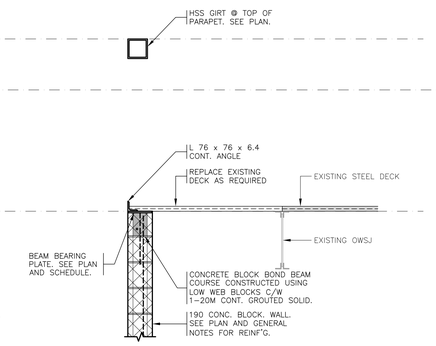
R8 S101 SECTION 1 : 20



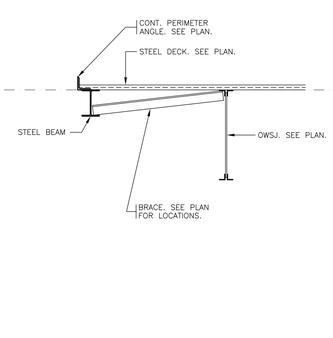
R9 S101 SECTION 1 : 20



R1 S101 SECTION 1 : 20



R2 S101 SECTION 1 : 20



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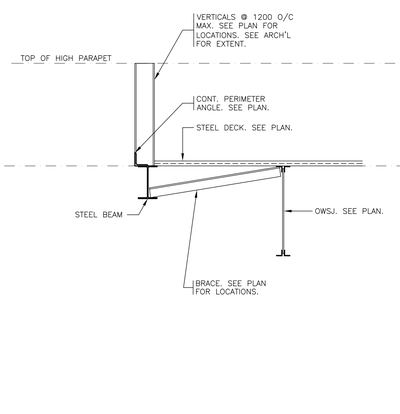
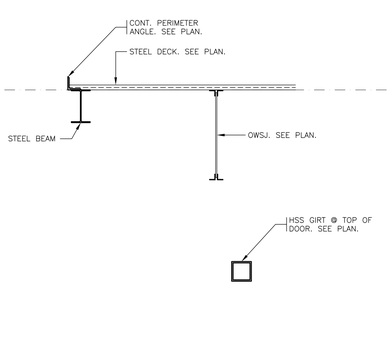


R4 S101 SECTION 1 : 20



R5 S101 SECTION 1 : 20

SURGENOR TRUCK GROUP

No.	REVISION	DATE
3	ISSUE FOR TENDER	JAN 17/19
2	ISSUE FOR BUILDING PERMIT	DEC 04/18
1	ISSUE FOR REVIEW	NOV 28/18

1. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND VERIFYING ALL DIMENSIONS. ANY DISCREPANCY SHALL BE REPORTED TO THE ENGINEER.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL MATERIAL RELEVANT TO THE PROJECT.
3. ADDITIONAL DRAWINGS MAY BE ISSUED FOR CLARIFICATION TO ASSIST PROPER EXECUTION OF WORK. SUCH DRAWINGS WILL HAVE THE SAME MEANING AND INTENT AS IF THEY WERE INCLUDED WITH THE DRAWINGS IN THE CONTRACT DOCUMENTS.
4. DO NOT SCALE DRAWINGS.

PROJECT
SURGENOR TRUCK CENTRE RENOVATION

ARCHITECT
PYE & RICHARDS ARCHITECTS INC.

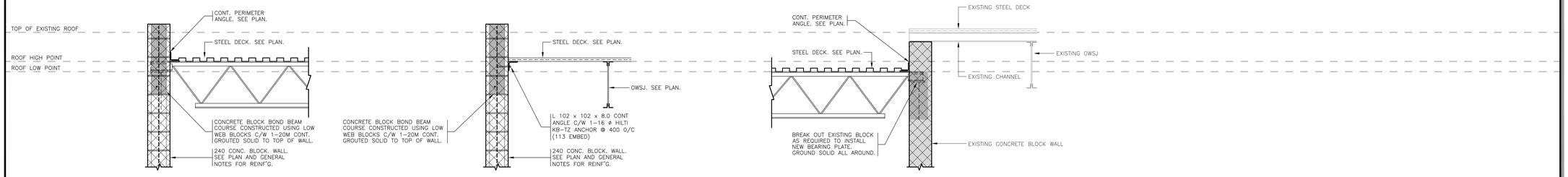
DRAWING
SECTIONS

CUNLIFFE & ASSOCIATES
CONSULTING STRUCTURAL ENGINEERS
102-1737 WOODWARD DR. OTTAWA ON. K2C 0P9
TEL (613) 729-7742 FAX (613) 728-1461
Email <cunliffe@cunliffe.ca>

ENGINEER'S SEAL

LICENSED PROFESSIONAL ENGINEER
01/17/2019
P. I. CUNLIFFE
PROVINCE OF ONTARIO

SCALE: AS NOTED
DRAWN: G.N.
REVIEWED: R.I.C.
PROJECT NO.: 17-179
REVISION NO.: 3
SHEET No.: S302



R14 / S101 SECTION
1 : 20

R15 / S101 SECTION
1 : 20

R16 / S101 SECTION
1 : 20

SURGENOR TRUCK GROUP

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