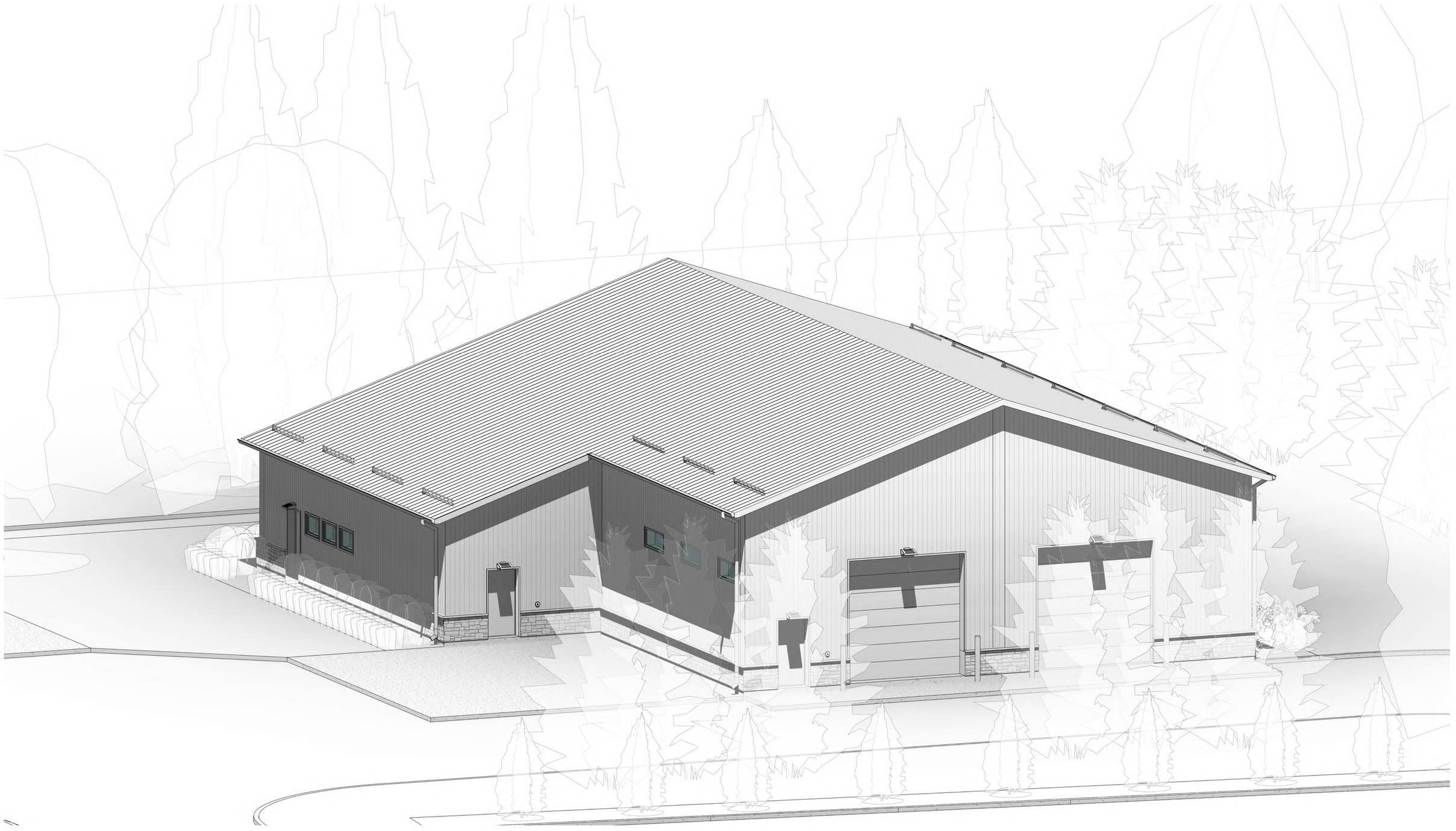


vallee
Consulting Engineers,
Architects & Planners

G. DOUGLAS VALLEE LIMITED

CITY OF BRANTFORD

# GRETZKY GOLF COURSE

## MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

PROJECT No.
23-151

Drawing No.
A000

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DATE LAST PLOTTED 7/3/2025 12:11:22 PM

# DRAWING LIST

ARCHITECTURAL

| | |
|---|---|
| A000 | COVER SHEET |
| A001 | DWG. LIST, ABBR.'S, CONSULTANTS, KEY MAP, SITE MAP, SITE PLAN |
| A002 | OBC MATRIX, AREA PLANS, LIFE SAFETY PLANS |
| A003 | FDTN. / WALL / FLR. / CEILING / ROOF TYPES & TYP. NOTES |
| A004 | STRUCTURAL GENERAL NOTES |
| A200 | FOUNDATION PLAN |
| A201 | LEVEL 1 PLAN, WALL & FLOOR TYPES & DIMENSIONS |
| A203 | ROOF PLAN |
| A300 | EXTERIOR ELEVATIONS, WINDOW SCHEDULE & NOTES |
| A300A | EXTERIOR ELEVATION SHEAR WALLS |
| A301 | BLDG. SECTIONS |
| A400 | WALL SECTION & DETAILS |
| A401 | WALL SECTION & DETAILS |
| A402 | WALL SECTION & DETAILS |
| A403 | WALL SECTION & DETAILS |
| A404 | WALL SECTION & DETAILS |
| A405 | WALL FRAMING DETAILS |
| A600 | LEVEL 1 REFLECTED CEILING PLANS |
| A700 | WASHROOM GUIDELINES |
| A701 | WASHROOM GUIDELINES, ENLARGED WR. PLANS & DETAILS |
| A800 | DOOR SCH. / FRAME / LEAF TYPES, NOTES, OPENING DETAILS |

# ABBREVIATIONS & SHORT FORMS

### GENERAL ABBREVIATIONS

A/F/F & AFF - ABOVE FINISHED FLOOR
AF - ABOVE FINISHED
ADJ. - ADJUSTABLE
ALT. - ALTERNATE
APP. - APPLICATION
ARCH. - ARCHITECTURAL
AODA - ACCESSIBILITY FOR ONTARIANS W/ DISABILITIES ACT
BD - BOARD
BF - BARRIER FREE
BFP - BACK FLOW PREVENTER
B/N/G & BNG - BULL NOSE CORNER
BOL. - BOLLARD
BP - BEARING POCKET
BPP - BEARING PLATE POCKET
BR - BICYCLE RACK
CANT. - CANTILEVERED
CBS - CALL BUTTON STATION
CCJ - COMPARTMENT CONTROL JOINT
CHB - CHALK BOARD
CH.TBL. - CHANGE TABLE
CI - CONTINUOUS INSULATION
CJ - CONTROL JOINT
CM - CONTROL MODULE
CH / CCH - COAT HOOK
CMD - CARBON MONOXIDE DETECTOR
COMP. - COMPRESSIBLE / COMPRESSOR
CONT. - CONTINUOUS
CONN. - CONNECTION
CP - CONTROL PANEL
CU - CONDENSING UNIT
CV - CONTROL VALVE
CV - CENTRAL VAC
CVP - CENTRAL VAC PORT
C/M - COMPLETE WITH
DBL. - DOUBLE
DC - DROPPED CURB
DF - DRINKING FOUNTAIN
DW - DISHWASHER
DWG. - DRAWING
DIST. - DISTANCE
DISP. - DISPLAY CASE
DSR - DESIGNATED SUBSTANCE REPORT
EA - EACH
ECS - EMERGENCY CALL SWITCH
E.F. - EACH FACE
ELEV. - ELEVATION
ENG.'D - ENGINEERED
ENG - ENGINEER
EPB - EMERGENCY PUSH BUTTON
EV. - EXHAUST VENT
EW - EYE WASH STATION
EW - EACH WAY
EX. - EXISTING
EXP. - EXPOSED
FB - FIRE BLOCK
FD - FLOOR DRAIN
FDTN. - FOUNDATION
FEC - FIRE EXTINGUISHER CABINET
FE - FIRE EXTINGUISHER
FDG - FOLD DOWN GRAB BAR
FLEX. - FLEXIBLE
FLR. - FLOOR
FLRING. - FLOORING
FR - REFRIDGERATOR
FRE - FREEZER
F./R/R & FRR - FIRE RESISTANCE RATING
FS - FIRE STOP
FSS - FOLD DOWN SHOWER SEAT
FTG'S - FOOTINGS
F/V - FIELD VERIFY
FN - FOUNDATION WALL
GALV. - GALVANIZED
GAZ. - GAZEBO
GB & GB# - GRAB BAR
GD - GARBAGE DISPOSAL
GEN. - GENERATOR
GL - GRID LINE
HB - HOSE BIB
HD - HAND DRYER
H/D - HEAVY DUTY
HO - HOLD OPEN
HORIZ. - HORIZONTAL
HWH - HOT WATER HEATER
INSUL. - INSULATION
ICB - INTEGRAL COVE BASE
KP - KEY PAD
L - LOCK
M / MIRR. - MIRROR
MANUF. - MANUFACTURED
MAX. - MAXIMUM
MECH. - MECHANICAL
MIN. - MINIMUM
M/O/L & MOL - MINISTRY OF LABOUR
M/O/T & MOT - MINISTRY OF TRANSPORTATION
MS - MOP SINK
MTD. - MOUNTED
MW - MICROWAVE
N/C & NIC - NOT IN CONTRACT
NO. - NUMBER
NTS - NOT TO SCALE
OBC - ONTARIO BUILDING CODE
O/D - OUTSIDE DIAMETER
O/H - OVERHEAD
O/W - ONE WAY
PBR'S. - PERIMETER / PERIMETERS PER.('S)
PB - POWER OPERATOR PUSH BUTTON
PDC - POWER DOOR CONTROL BUTTON
PDO - POWER DOOR OPERATOR
PDS - PROTECTION OF SOFFITS
PTD/D - PAPER TOWEL DISPENSER/DISPOSAL
P./I/P & PIP - POURED IN PLACE
PRE-FIN. - PRE-FINISHED
PROF. ENG. - PROFESSIONAL ENGINEER
P/T - PRESERVATIVE TREATED
RCH - RECESSED CABINET HEATER
REQ.'D - REQUIRED
RCP - REFLECTED CEILING PLAN
REIN. - REINFORCED
REINF.'G - REINFORCING
REF. - REFERENCE
REL. - RELOCATED
RD - ROOF DRAIN
RM. - ROOM
R/O - ROUGH OPENING
RWL - RAIN WATER LEADER
SA - SMOKE ALARM
SC - SAW CUT
SCH.'S - SCHEDULES
SD - SCUPPER DRAIN
SD - SOAP DISPENSER
SH - SOAP HOLDER
SHC - SHOWER CURTAIN & RINGS
SHH - SHOWER HEAD & MIXING VALVE / WAND
SHF - SHELF
SHR - SHOWER ROD
SND - SANITARY NAPKIN DISPOSAL
SNV - SANITARY NAPKIN VENDING DISPENSER
S.O./S - S.O.S - SLAB ON GRADE
SP - SUMP PUMP
SPAD - SPLASH PAD
SPEC. - SPECIFICATION
SPEC.'D - SPECIFIED
SPMDD - STD. PROCTOR MAX. DRY DENSITY
ST. - STOVE
STRUCT. - STRUCTURAL
TB - TACK BOARD
TBD - TO BE DETERMINED
TH. - THERMOSTAT
THERM. - THERMAL
TM - TILTED MIRROR
TOB - TOWEL BAR
TPD - TOILET PAPER DISPENSER
TWF - THRU WALL FLASHING
TYP. - TYPICAL
ULC - UNDERWRITERS LABORATORIES OF CANADA
U/C - UNDER CUT
U/S - UNDER SIDE
U/N/O - UNO - UNLESS NOTED OTHERWISE
VAP. - VAPOUR
VAR. - VARIES
VERT. - VERTICAL
W/ - WITH
WB - WHITE BOARD/MARKER BOARD
WBF - WATER BOTTLE FILL UP STATION
WC - WATER COOLER
WM - WATER METER
WR - WASTE RECEPTACLE
WS - WATER SOFTENER
% - PERCENT
@ - AT
O/C - ON CENTER

### MATERIAL ABBREVIATIONS

AB - ARCHITECTURAL BLOCK
ACT - ACOUSTIC CEILING TILE
ASPH. - ASPHALT
AVMP - ACOUSTIC WALL PANEL
AT - ACOUSTIC TILE
AL - ALUMINUM
AN - ANODIZED
AN(C) - ANODIZED COLOURED
B - BRICK
B&B - BOARD & BATTEN
BPG - BACK PTD. GLASS
CAR - CARPET
CPT - CARPET TILE
CB - CONCRETE BLOCK
CEM - CEMENT BOARD
CT - CERAMIC TILE
CONC - CONCRETE
C(S) - CONC. SEALED
CTF - CORK TILE FLOORING
EM - EXPANDED METAL
EP - EPOXY PAINT & PRIMER
ESF - EPOXY SEALED FLOORING
ET - EPOXY TERRAZZO
F - FIRELITE GLAZING
FG - FIBREGLASS
FT - FLOCKED TILE (CARPETING)
GB / GBD. / GYP.BD. - GYPSUM BOARD
GLB - GLASS BLOCK
GLBL - GLAZED BLOCK
GL - GLAZING / GLASS
GWG - GEORGIAN WIRE GLAZING
GMT - GLASS MOSAIC TILE
HM - HOLLOW METAL
HARDWD. - HARDWOOD
H/D/G - HDG - HOT DIPPED GALV.
IMP - INSULATED METAL PANELS
LGC - LEAD COATED COPPER
LINO - LINOLEUM
LSG - LAMINATED SAFETY GLAZING
LVT - LUXURY VINYL TILE
LVP - LUXURY VINYL PLANK
LXG - LEXAN GLAZING
MAR - MARMOLEUM
MAS - MASONITE
MS - METAL SIDING
MTL - METAL
NAT. - NATURAL
PB - PARTICLE BOARD
PC - PRECAST CONC.
P / PTD. - PAINTED
PF / PRE.FIN. - PREFINISHED
PL - PLASTER
PLAM - PLASTIC LAMINATE
PLYWD. - PLYWOOD
PMP - PREFORMED METAL PANEL
PSP - PIERCED STEEL PLANKING
PT - PORCELAIN TILE
PQF - PARQUET FLOORING
QT - QUARRY TILE
QVT - QUARTZ VINYLTILE
R - RUBBER
RB - RUBBER BASE
RSF - RESILIENT SHEET FLOORING
S - STONE
SAFF - SAFETY FLOORING
SC - SPECIAL COATING
SF - SPORTS FLOORING
SG - LAMINATED SAFETY GLASS
SGL - SPANDREL GLAZING
SHV - SHEET VINYL FLOORING
S.S. - SOLID SURFACE
ST - STUCCO
ST / STL - STEEL
S/S - STAINLESS STEEL
S&V - STAINED & VARNISHED
SWC - SOLID WOOD CORE
T - TEMPERED GLAZING / GLASS
TDG - TEMPERED DOUBLE GLAZING / GLASS
TBB - TILE BACKER BOARD
TECTUM - TECTUM ACOUSTIC PANEL
TERR - TERRAZZO
TURF - ARTIFICIAL TURF
U - POLYURETHANE
V - VINYL
VCGB - VINYL COATED GYPSUM BOARD
VCP - VENEER CORE PLYWOOD
VCT - VINYL COMPOSITE TILE
VPF - VINYL PLANK FLOORING
VR - VENTED RUBBER BASE
WD. - WOOD
WP - WATER PROOFING

### STRUCTURAL ABBREVIATIONS

@ - AT (SPACING C/C)
AB - ANCHOR BOLT
ADDTL - ADDITIONAL
BOT - BOTTOM
BLDG. - BUILDING
BLL - BOTTOM LOWER LEVEL
BP - BEARING PLATE
BBP - BEAM / OWSJ BEARING PLATE
BRG - BEARING
BUL - BOTTOM UPPER LEVEL
C - CHANNEL SECT
C/I/P - CAST IN PLACE
CKR. - CHECKER
C/C - CENTER TO CENTER
℄ - CENTERLINE
CONC. - CONCRETE
CONT. - CONTINUOUS
DL - DEAD LOAD
DIAG. - DIAGONAL
DIA. or Ø - DIAMETER
DIM. - DIMENSION
EE - EACH END
EF - EACH FACE
ELEC - ELECTRICAL
ES - EACH SIDE
ELEV. - ELEVATION
EQ. - EQUAL(LY)
EX. or EXIST - EXISTING
EXT. - EXTERIOR
FF - FRONT FACE
FIN. - FINISHED
FTG. - FOOTING
FLR. - FLOOR
HCGS - HOLLOW-CORE CONCRETE SLAB
H/D/G & HDG - HOT DIPPED GALVANIZED
HDMR - HEAVY-DUTY GALV. MASONRY REINF
HSS - HOLLOW STRUCTURAL SECTION
IF - INSIDE FACE
INT. - INTERIOR
INCL. - INCLUDING
L - STEEL ANGLE
LL - LIVE LOAD
LLH - LONG LEG HORIZONTAL
LLV - LONG LEG VERTICAL
LNG - LONG
m - METER
mm - MILLIMETER
ML - MIDDLE LAYER
MISC. - MISCELLANEOUS
NF - NEAR FACE
NTS - NOT TO SCALE
OF - OUTSIDE FACE
P/T - PRESSURE TREATED
PTD. - PAINTED
℄ - PLATE
REIN. - REINFORCED, REINFORCING or REINFORCEMENT
REQ'D - REQUIRED
REV. - REVISION or REVISED
SC - SAW CUT
SECT - SECTION
SF / S.F. - STEP FOOTING
SMR - STANDARD GALV MASONRY REINF
SOG - S/O/G - SLAB ON GRADE
STD. - STANDARD
STRUCT. - STRUCTURAL
SIM. - SIMILAR
SYM - SYMMETRICAL
SP - SPACED or SPACING
TCX - TOP CHORD EXTENSION
TEMP. - TEMPERATURE
TLL - TOP UPPER LEVEL
TJ - TIE JOIST
T/O - TOP OF
TLL - TOP LOWER LEVEL
TYP - TYPICAL
U/N - UNDERNEATH
U/S - UNDERSIDE
VERT. - VERTICAL
VOS - VERIFY ON SITE
W - ROLLED STEEL BEAM
WB - WOOD BEAM
WD. - WOOD
WWF - WELDED WIDE FLANGE
WWM - WELDED WIRE MESH

### RM. NAMES

AL. - AIR LOCK
CL. - CLOSET
COMM. - COMMUNICATION
CONF. - CONFERENCE
CORR. - CORRIDOR
ELEC. - ELECTRICAL
ELEV. - ELEVATOR
INST. - INSTRUCTOR
LAU. - LAUNDRY
REC. - RECEPTION
RECEIV. - RECEIVING
RM. - ROOM
SHWR. - SHOWER
STOR. - STORAGE
ST. - STATION
VEST. - VESTIBULE
WR. - WASHROOM

# ANNOTATIONS LEGEND

**SHEET VIEW REFERENCE**
1 / A101 — DETAIL REF. NUMBER; DETAIL TITLE / NAME; VIEW NAME; SCALE 1/8" = 1'-0"; SCALE OF DETAIL; DWG. SHEET WHERE DETAIL IS LOCATED

**BUILDING SECTION REFERENCE**
1 / A101 Ref — BLDG. SECTION REF. NUMBER; DETAIL SIMILAR BUT NOT NECESSARILY IDENTICAL; DWG. SHEET WHERE DETAIL IS LOCATED

**WALL SECTION REFERENCE**
1 / A101 Ref — DETAIL REF. NUMBER; DETAIL SIMILAR BUT NOT NECESSARILY IDENTICAL; DWG. SHEET WHERE DETAIL IS LOCATED

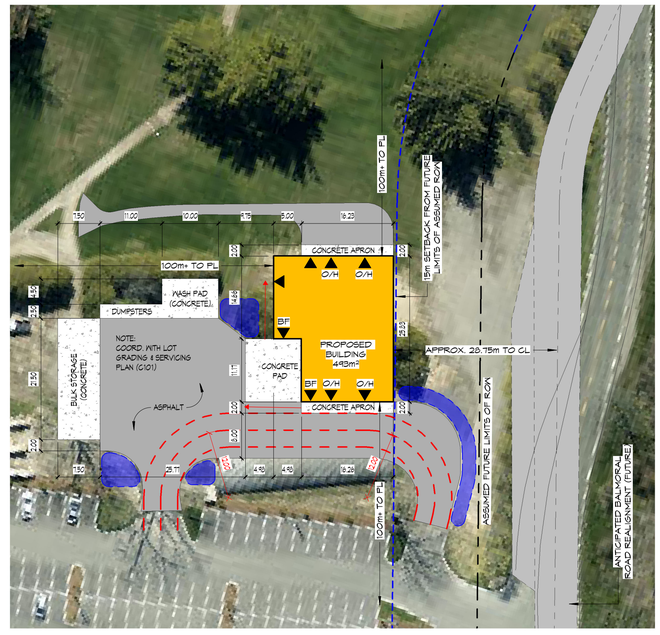
**BUILDING ELEVATION REFERENCE**
1 / A101 Ref — ELEV. REF. NUMBER; DETAIL SIMILAR BUT NOT NECESSARILY IDENTICAL; DWG. SHEET WHERE DETAIL IS LOCATED

**SECTION DETAIL REFERENCE**
1 / A101 Ref — DETAIL REF. NUMBER; DETAIL SIMILAR BUT NOT NECESSARILY IDENTICAL; DWG. SHEET WHERE DETAIL IS LOCATED

LEVEL — A/F/F LEVEL # (ABOVE FINISHED FLOOR) DATUM REFERENCE

GRID LINE & IDENTIFICATION

**INTERIOR ELEV. REFERENCE**
1 Ref / A101 / 1 Ref — DETAIL REF. NUMBER; DWG. SHEET WHERE DETAIL IS LOCATED




1 / A001 SITE PLAN — SCALE 1 : 500

# SITE PLAN LEGEND

- ENTRANCE / EXIT DOOR
- O/H — ENTRANCE / EXIT DOOR (OVERHEAD DOOR W/ OPERATOR)
- PROPERTY LINE
- SETBACKS
- FIRE ROUTE (6m MDE / 12m CENTER RADIUS)
- SNOW STORAGE

**HATCH IDENTIFICATION LEGEND**

- CONC. SIDEWALK / PAD / CROSSWALK / SIDEWALK / LANEWAY / STAIRS / ETC.
- ASPHALT DRIVE AISLE
- NEW BLDG.

# SITE STATISTIC & ZONING REQ.'S

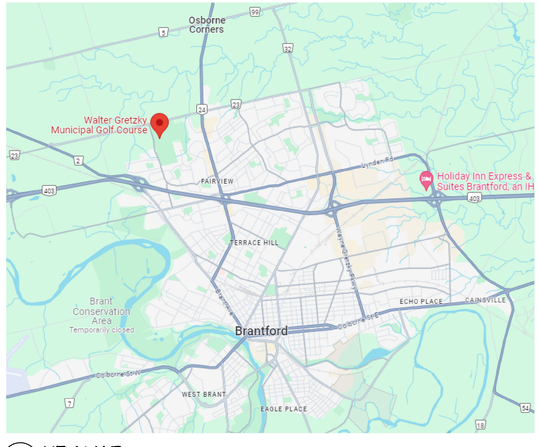
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|---|
| 320 BALMORAL DR., CITY OF BRANTFORD |

| ZONING: |
|---|
| IN ACCORDANCE TO THE CITY OF BRANTFORD, COMPHRESENSIVE BY-LAWS, OFFICE CONSOLIDATION, CITY OF BRANTFORD, ZONING BYLAW 124-2024 |

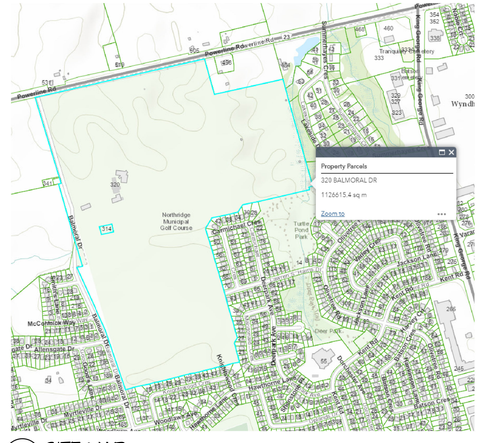
| PROVISION | LAND USE: EXISTING |
|---|---|
| 13.0<br>13.1 | OPEN SPACE ZONE (OS)<br>*Permitted Uses*<br>*.1 Art gallery.*<br>*.2 Campground.*<br>*.3 Cemeteries and accessory mausoleum, crematorium, columbarium.*<br>*.4 Golf courses and golf driving ranges.*<br>*.5 Park.*<br>*.6 Place of assembly.*<br>*.7 Place of entertainment/recreation.*<br>*.8 Retail store (G1 - permitted as an accessory use).*<br>*.9 Restaurant (G1 - permitted as an accessory use).*<br>*.10 Stormwater management facility.* |

| PROVISION | SETBACKS (m - METERS): | OS (Golf Course) | PROVIDED (m) |
|---|---|---|---|
| 13.2.1 (1) | MIN. LOT AREA | NR | - |
| 13.2.1 (2) | MIN. LOT FRONTAGE | NR | - |
| 13.2.1 (3) | MAX. LOT COVERAGE | NR | - |
| 13.2.1 (4) | MAX. BUILDING HEIGHT | 11m | 8.4m |
| 13.2.1 (5) | MIN. FRONT YARD | 15m | MIN. 15m |
| 13.2.1 (6) | MIN. REAR YARD ABUTTING RESIDENTIAL | 15m | MIN. 15m (existing) |
| 13.2.1 (7) | MIN. REAR YARD ABUTTING ANY OTHER ZONE | 12m | MIN. 12m (existing) |
| 13.2.1 (8) | MIN. INTERIOR SIDE YARD ABUTTING RESIDENTIAL | 15m | MIN. 15m (existing) |
| 13.2.1 (9) | MIN. INTERIOR SIDE YARD ABUTTING ANY OTHER ZONE | 12m | MIN. 12m (existing) |
| 13.2.1 (10) | MIN. EXTERIOR SIDE YARD | 15m | MIN. 12m (existing) |
| 13.2.2 a) | OPEN STORAGE SHALL BE PROHIBITED | | |

COORD. W/ ZONING BY-LAW FOR ALL OTHER ZONING REQ.'S




KEY MAP




SITE MAP

## CONSULTANT LIST

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JAKUB RUDY, B.A

MECHANICAL

ARC ENGINEERING INC. solutions ! excellence
ARC ENGINEERING INC.,
1100 S. SERVICE RD. STE.#417
STONEY CREEK, ON L8E 0G5
TEL.: (905) 643-9930

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LANDSCAPING:

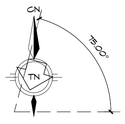
adesso design inc landscape architecture
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218 LOCKE STREET SOUTH,
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TEL.: (905) 526-8876 EXT.203

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MATT MADIGAN, OALA, CSLA
CIBELE DONATO

| NO. | DATE | ISSUANCE |
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| | | |
| 8 | 2025.10.28 | RE-ISSUED FOR PERMIT WITH SPA REV. |
| 7 | 2025.07.03 | ISSUED FOR PERMIT |
| 6 | 2025.06.26 | ISSUED FOR CLIENT REVIEW |
| 5 | 2025.06.09 | ISSUED FOR CLIENT REVIEW |
| 4 | 2025.05.01 | ISSUED FOR CLIENT REVIEW |
| 3 | 2024.09.20 | ISSUED FOR CLIENT REVIEW |
| 2 | 2024.07.05 | ISSUED FOR CLIENT REVIEW |
| 1 | N/A | ISSUED FOR CLIENT REVIEW |
| NO. | DATE | ISSUANCE |

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**NOT FOR CONSTRUCTION**




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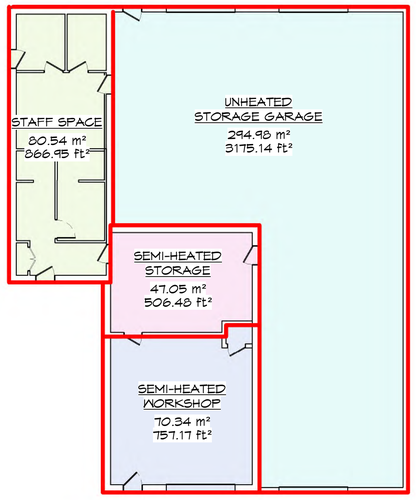
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LICENSED PROFESSIONAL ENGINEER
OCT. 29, 2025
B. D. BUCHWALD
100206810
PROVINCE OF ONTARIO

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

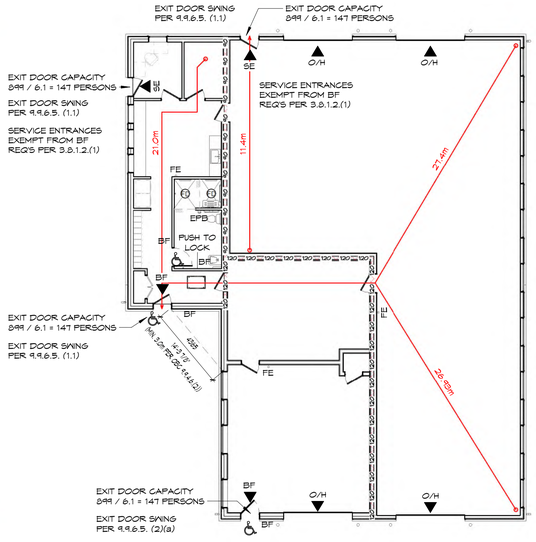
DRAWING TITLE:
DWG. LIST, ABBR.'S, CONSULTANTS, KEY MAP, SITE MAP, SITE PLAN

| CHECKED BY: | DRAWN BY: |
|---|---|
| LHR/BB | BM/KA |
| DRAWING SCALE: As indicated | DRAWING NO.: A001 |
| PROJECT NO.: 23-151 | |

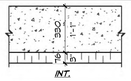
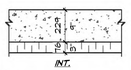
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PROJECT NUMBER & NAME: 23-151 GRETZKY GOLF COURSE
DATE PLOTTED: 10/28/2025 3:45:26 PM



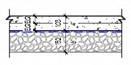
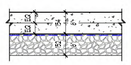
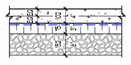
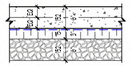

1 A002 LEVEL 1 AREA
SCALE 1 : 150


EXIT DOOR SWING
PER 9.9.6.5. (1.1)
EXIT DOOR CAPACITY
849 / 6.1 = 147 PERSONS
SE
O/H
O/H
EXIT DOOR CAPACITY
849 / 6.1 = 147 PERSONS
EXIT DOOR SWING
PER 9.9.6.5. (1.1)
SERVICE ENTRANCES
EXEMPT FROM BF
REQ'S PER 3.8.1.2.(1)
SERVICE ENTRANCES
EXEMPT FROM BF
REQ'S PER 3.8.1.2.(1)
21.0m
11.4m
24.4m
FE
EPB
PUSH TO
LOCK
BF
BF
BF
EXIT DOOR CAPACITY
849 / 6.1 = 147 PERSONS
EXIT DOOR SWING
PER 9.9.6.5. (1.1)
1m 3.2m 2m 2m 1m 1.4m 3.2m
42.3°
42.3°
42.3°

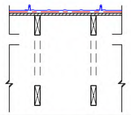
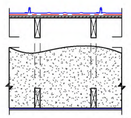
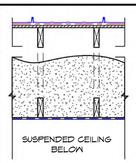
## FDTN. WALL TYPE SCHEDULE

| TYPE: | DESIGN: | DESCRIPTION: |
|---|---|---|
| FW1 |  | EXTERIOR & INT. FDTN. / PARTITION WALL:<br>254mm (10") P1/P REIN. CONC. FDTN. WALL |
| FW1a |  | EXTERIOR FDTN. WALL:<br>BELOW GRADE WALL<br>330mm (13") P1/P REIN. CONC. FDTN. WALL,<br>75mm (3") (R-15) RIGID INSULATION INTERIOR SIDE<br>(DOWN TO TOP OF FTG.'S - 1220mm MIN.) |
| FW2 |  | EXTERIOR FDTN. WALL:<br>BELOW GRADE WALL<br>229mm (9") P1/P REIN. CONC. FDTN. WALL,<br>75mm (3") (R-15) RIGID INSULATION INTERIOR SIDE<br>(DOWN TO TOP OF FTG.'S - 1220mm MIN.) |

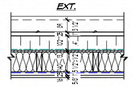
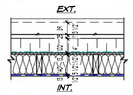
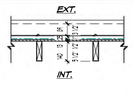
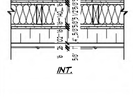
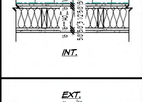
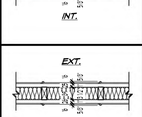
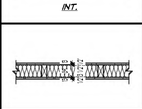
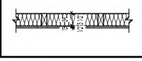
## FLR. TYPE SCHEDULE

| TYPE: | DESIGN: | DESCRIPTION: |
|---|---|---|
| CS1 |  | INTERIOR FLR.<br>FIN. FLR.<br>102mm (4") P1/P REIN. CONC. SLAB<br>(152x152x1.7mm/1.7mm WIRE MESH),<br>15 MIL. VAP. BARRIER,<br>150mm (6") COMPACTED GRANULAR 'A' FILL (100% SPMDD),<br>ENG.'D FILL / UNDISTURBED SOIL |
| CS1a |  | INTERIOR FLR.<br>FIN. FLR.<br>152mm (6") P1/P REIN. CONC. SLAB<br>(152x152x1.7mm/1.7mm WIRE MESH),<br>15 MIL. VAP. BARRIER,<br>150mm (6") COMPACTED GRANULAR 'A' FILL (100% SPMDD),<br>ENG.'D FILL / UNDISTURBED SOIL |
| CS2 |  | INTERIOR FLR.<br>FIN. FLR.<br>100mm (4") P1/P REIN. CONC. SLAB<br>(152x152x1.7mm/1.7mm WIRE MESH),<br>15 MIL. VAP. BARRIER,<br>75mm (3") (R-15) RIGID INSUL.,<br>150mm (6") COMPACTED GRANULAR 'A' FILL (100% SPMDD),<br>ENG.'D FILL / UNDISTURBED SOIL |
| CS2a |  | INTERIOR FLR.<br>FIN. FLR.<br>152mm (6") P1/P REIN. CONC. SLAB<br>(152x152x1.7mm/1.7mm WIRE MESH)<br>15 MIL. VAP. BARRIER,<br>75mm (3") (R-15) RIGID INSUL. 48" @ PERIMETER<br>150mm (6") COMPACTED GRANULAR 'A' FILL (100% SPMDD),<br>ENG.'D FILL / UNDISTURBED SOIL |

## ROOF TYPE SCHEDULE

| TYPE: | DESIGN: | DESCRIPTION: |
|---|---|---|
| R1 |  | OVER STORAGE GARAGE:<br>PRE-FIN. PTD. METAL ROOF,<br>CONT. BREATHABLE ICE & WATER SHIELD,<br>CONT. GALV. EAVE DRIP,<br>16mm (5/8") T&G PLYWD. ROOF SHEATHING SCREWED & GLUED,<br>ENG.'D WD. TRUSS SYSTEM @600mm o/c MAX.<br>ALT: ASPHALT SINGLES TO BE PRICED AS PROVISIONAL |
| R2 |  | OVER SEMI-HEATED WORKSHOP & STORAGE ROOM:<br>PRE-FIN. PTD. METAL ROOF,<br>CONT. BREATHABLE ICE & WATER SHIELD,<br>CONT. GALV. EAVE DRIP,<br>16mm (5/8") T&G PLYWD. ROOF SHEATHING SCREWED & GLUED,<br>ENG.'D WD. TRUSS SYSTEM @600mm o/c MAX.,<br>R-50 BLOWN-IN INSUL.,<br>CONT. 6 MIL. AIR/VAP. BARRIER,<br>19mm (1/2") PRE-FINISHED METAL LINER PANEL<br>INT. FIN.<br>ALT: ASPHALT SINGLES TO BE PRICED AS PROVISIONAL |
| R3 |  <br>SUSPENDED CEILING BELOW | OVER CONDITIONED OFFICE AREA:<br>PRE-FIN. PTD. METAL ROOF,<br>CONT. BREATHABLE ICE & WATER SHIELD,<br>CONT. GALV. EAVE DRIP,<br>16mm (5/8") T&G PLYWD. ROOF SHEATHING SCREWED & GLUED,<br>ENG.'D WD. TRUSS SYSTEM @600mm o/c MAX.,<br>R-50 BLOWN IN INSUL.,<br>CONT. 6 MIL. AIR/VAP. BARRIER,<br>19mm (1/2") GYP. BD. OR PLYWD. SHEATHING,<br>2'x4' SUSPENDED ACOUSTICAL CEILING TILES INSTALLED @ 8'-0" AFF<br>INT. FIN.<br>NOTE: IN UNIVERSAL W/R & SHOWER, PROVIDE 2"x4" FRAMING @ 16" O/C W/ 1/2" GYP. BD., PAINTED, IN LIEU OF ACT @ 8'-0" AFF<br>ALT: ASPHALT SINGLES TO BE PRICED AS PROVISIONAL |

## WALL TYPE SCHEDULE

| TYPE: | DESIGN: | DESCRIPTION: |
|---|---|---|
| W1 |  | EXTERIOR SEMI-CONDITIONED SPACE WALL:<br>90mm (3-1/2") STONE MASONRY VENEER WITH 2-1/4" ILS CAP (TO 30" A.F.F.) OVER 25mm (1") AIR SPACE,<br>16mm (5/8") VERT. PRE-FIN. METAL SIDING OVER 21mm (7/8") HORIZ. HAT CHANNEL ON THERMAL CLIPS (FROM T.O. ILS CAP TO SOFFIT)<br>102mm (4") SEMI-RIGID CONTINUOUS INSUL.,<br>AIR BARRIER,<br>13mm (1/2") PLYWD. SHEATHING,<br>38x140mm (2"x6") WD. STUD @406mm (16") o/c MAX.,<br>140mm (5 1/2") (R-22) BATT INSUL.,<br>6 MIL. VAP. BARRIER,<br>25mm (1") WD. FURRING,<br>16mm (5/8") VERTICAL METAL LINER PANEL |
| W2 |  | EXTERIOR CONDITIONED SPACE WALL:<br>90mm (3-1/2") STONE MASONRY VENEER WITH 2-1/4" ILS CAP (TO 30" A.F.F.) OVER 25mm (1") AIR SPACE,<br>16mm (5/8") VERT. PRE-FIN. METAL SIDING OVER 21mm (7/8") HORIZ. HAT CHANNEL ON THERMAL CLIPS (FROM T.O. ILS CAP TO SOFFIT)<br>16mm (5/8") VERT. PRE-FIN. METAL SIDING,<br>21mm (7/8") HORIZ. HAT CHANNEL ON THERMAL CLIPS,<br>102mm (4") SEMI-RIGID CONTINUOUS INSUL.,<br>AIR BARRIER,<br>13mm (1/2") PLYWD. SHEATHING,<br>38x140mm (2"x6") WD. STUD @406mm (16") o/c MAX.,<br>140mm (5 1/2") (R-22) BATT INSUL.,<br>6 MIL. VAP. BARRIER,<br>12.7mm (1/2") GYP. BD.,<br>INT. FIN. |
| W3 |  | EXTERIOR UNCONDITIONED STORAGE GARAGE WALL:<br>90mm (3-1/2") STONE MASONRY VENEER WITH 2-1/4" ILS CAP (TO 30" A.F.F.) OVER 25mm (1") AIR SPACE,<br>16mm (5/8") VERT. PRE-FIN. METAL SIDING OVER 21mm (7/8") HORIZ. HAT CHANNEL ON THERMAL CLIPS (FROM T.O. ILS CAP TO SOFFIT)<br>16mm (5/8") VERT. PRE-FIN. METAL SIDING,<br>21mm (7/8") HORIZ. HAT CHANNEL ON THERMAL CLIPS,<br>AIR BARRIER,<br>13mm (1/2") PLYWD. SHEATHING,<br>38x140mm (2"x6") WD. STUD @406mm (16") o/c MAX., |
| W4 |  | INTERIOR FIRE SEPARATION (STORAGE GARAGE TO REPAIR GARAGE):<br>(120 min FRR similar to ULC EXUV7 Design U301)<br>16mm (5/8") VERT. METAL LINER PANEL,<br>25mm (1") HORIZ. WD. FURRING,<br>16mm (5/8") (2) LAYERS TYPE-X GYP. BD.,<br>AIR BARRIER,<br>38x140mm (2"x6") WD. STUD @406mm (16") o/c MAX.,<br>140mm (5 1/2") (R-22) BATT INSUL.,<br>6 MIL. VAP BARRIER,<br>16mm (5/8") (2) LAYERS TYPE-X GYP. BD.,<br>102mm (4") SEMI-RIGID CONTINUOUS INSUL.,<br>25mm (1") HORIZ. WD. FURRING,<br>16mm (5/8") VERT. METAL LINER PANEL |
| W4a |  | INTERIOR FIRE SEPARATION (STORAGE GARAGE TO STAFF SPACE):<br>(90 min FRR similar to SB-3 W2a)<br>16mm (5/8") VERT. METAL LINER PANEL,<br>25mm (1") HORIZ. WD. FURRING,<br>102mm (4") SEMI-RIGID CONTINUOUS INSUL.,<br>16mm (5/8") (2) LAYERS TYPE-X GYP. BD.,<br>AIR BARRIER,<br>38x140mm (2"x6") WD. STUD @406mm (16") o/c MAX.,<br>140mm (5 1/2") (R-22) BATT INSUL.,<br>6 MIL. VAP. BARRIER,<br>16mm (5/8") (2) LAYERS TYPE-X GYP. BD. |
| W4d |  | INTERIOR FIRE SEPARATION (REPAIR GARAGE TO STAFF SPACE):<br>(120 min FRR similar to ULC EXUV7 Design U301)<br>16mm (5/8") VERT. METAL LINER PANEL,<br>16mm (5/8") (2) LAYERS TYPE-X GYP. BD.,<br>AIR BARRIER,<br>38x140mm (2"x6") WD. STUD @406mm (16") o/c MAX.,<br>140mm (5 1/2") (R-22) BATT INSUL.,<br>6 MIL. VAP. BARRIER,<br>16mm (5/8") (2) LAYERS TYPE-X GYP. BD. |
| W5 |  | INTERIOR WALL (REPAIR GARAGE TO REPAIR GARAGE STORAGE):<br>16mm (5/8") VERT. METAL LINER PANEL,<br>25mm (1") HORIZ. WD. FURRING,<br>38x89mm (2"x4") WD. STUD @406mm (16") o/c MAX.,<br>89mm (3 1/2") SOUND ATTENUATION BATTS,<br>25mm (1") HORIZ. WD. FURRING,<br>16mm (5/8") VERT. METAL LINER PANEL |
| W6 |  | INTERIOR WALL (PARTITION):<br>INT. FIN.,<br>13mm (1/2") GYP. BD.,<br>38x89mm (2"x4") WD. STUD @406mm (16") o/c MAX.,<br>89mm (3 1/2") SOUND ATTENUATION BATTS,<br>13mm (1/2") GYP. BD.,<br>INT. FIN. |
| W6a |  | INTERIOR WALL (INTERIOR STRAPPING):<br>38x89mm (2"x4") WD. STUD @406mm (16") o/c MAX.,<br>89mm (3 1/2") SOUND ATTENUATION BATTS,<br>13mm (1/2") GYP. BD.,<br>INT. FIN. |

## SB-3 TABLE 2 NOTES - FIRE & SOUND RESISTANCE OF FLR.'S, CEILINGS & ROOFS

NOTE 5: Sound absorptive material includes
(i) fibre processed from rock, slag or glass, and
(ii) loose-fill or spray -applied cellulose fibre.

NOTE 6: The fire-resistance rating and sound transmission class values are based on the spacing of the ceiling supports as noted. (See also Table Note (10)). A narrower spacing will be detrimental to the sound transmission class rating, but not to the fire-resistance rating.

NOTE 7: To obtain the listed rating, the type and spacing of fasteners are as described in and installed in accordance with Subsection 4.24.5. of Division B or CSA A82.31-M1980, "Gypsum Board Application".
(i) fastener distance to board edges and butt ends shall be no less than 38mm, except for fasteners on the butt ends of the base layer in ceilings with two layers (see Figure 2), and
(ii) fasteners are spaced not more than 305mm o.c.

NOTE 8: See Sentence 1.2.1.(2) to NMAH Supplementary Standard SB-2, "Fire Performance Ratings" for the significance of fire-resistance ratings.

NOTE 9: The sound transmission class values given in the Table are for the minimum depth of structural member noted in the description and applicable Table notes. To obtain sound transmission class values for structural members deeper than that minimum, add 1 to the sound transmission class value in the Table for each 110mm increase in structural member depth.

NOTE 10: The sound transmission class values given in the Table are for the minimum depth of structural member noted in the description and applicable Table notes. To obtain sound transmission class values for structural members deeper than that minimum, add 1 to the sound transmission class value in the Table for each 110mm increase in structural member depth.

NOTE 11: The impact insulation class values given are for floor assemblies tested with no finished flooring.

NOTE 12: Wood floor joists are:
(i) wood joists with a minimum member size of 38mm (width) x 235mm (depth), excepth as otherwise noted (See Table Note (15)), or
(ii) wood I-joists with a minimum flange size of 38mm x 38mm, a minimum OSB or plywood web thickness of 9.5mm, and a minimum joist depth of 241mm.

NOTE 13: Except where assemblies with wood I-joists are tested according to CAN/ULC-S101-14, "Fire Endurance Tests of Building Construction and Materials", the fire-resistance rating values apply only to I-joists that have been fabricated with a phenolic-based structural wood adhesive complying with CSA O112.10-08, "Evaluation of Adhesives for Structural Wood Products (Limited Moisture Exposure)". For I-joists with flanges made of laminated veneer lumber (LVL), the fire-resistance rating values apply only where the adhesive used in the LVL fabrication is a phenolic-based structural wood adhesive complying with CSA O112.6-10, "Evaluation of Adhesives for Structrual Wood Products (Exterior Exposure)".

NOTE 15: The fire-resistance rating value within square brackets only applies to assemblies with solid wood joists and is achieved only where absorptive material includes:
(i) fibre processed from rock or slag with a minimum thickness of 40mm and a minimum surface area mass of 2.2kg/m², or
(ii) spray-applied cellulose fibre with a minimum density of 50 kg/m³ and a minimum depth of 40mm on the underside off the subfloor and of 40mm on the sides of the floor joists

NOTE 16: The Fire-resistance rating, sound transmission class and impact insulation class values given are also applicable to assemblies with 38mm (width) x 184mm (depth) solid wood joists.

## TYPICAL NOTES:

### GENERAL NOTES / FRAMING:

- COORD. W/ FLOOR PLANS FOR PARTITION W/THE DIMENSIONS - DIM.'S ARE TO OUTSIDE OF WALL SYSTEMS TYP.
- PROVIDE REINF.'G & LATERAL BRACING @ TOP OF ALL WALLS & AT TOP OF ALL WALLS W/ LARGE OPENINGS IN THEM (WIDTH & HEIGHT)
  1. WD. WALLS TO BE FASTENED TO STRUCT.
- ALL OPENINGS IN INT. & EXT. WALL SYSTEMS TO HAVE RESPECTIVE WALL SYSTEM ABOVE THE OPENING U/N/O
  (PROVIDE REINF.'G, BRACING, LINTELS & LATERAL BRACING WHERE REQ.'D)

### BLOCKING / BRACING / BRIDGING / LATERAL SUPPORT:

- PROVIDE BLOCKING AS REQ.'D FOR INSTALLATION OF WALL / ROOF / FLOOR MOUNTED ITEMS (ND. BLOCKING IN WD. FRAMED SYSTEMS (38mm MIN. THICKNESS)) ALL CONFORMING TO OBC FORCES
- ENSURE BLOCKING IN WALLS / DEMISING WALLS ARE NOT STUD DEPTH (OR TOUCHING GYP. BD. ON ONE SIDE TO THE OTHER SIDE) FOR NOISE / VIBRATION TRANSFER TYP.
- BRACING & LATERAL SUPPORT TO BE INSTALLED IN ALL WALL SYSTEMS WHERE REQ.'D & AS NOTED, OBC 9.23.10.2
- STRAPPING & BRIDGING TO BE INSTALLED IN ALL ENG.'D ROOF JOISTS WHERE REQ.'D AS PER MANUF. DWG.'S & INSTALLATION INSTRUCTIONS

### RESILIENT CHANNEL:

- RESILIENT CHANNELING TO BE INSTALLED ON RM. W/ STC RATING (UNLESS WALL TYPE CALLS FOR BOTH SIDES) (CONFIRM W/ ARCHITECT)
  BAILEY RC PLUS RESILIENT CHANNELING

### WD. FRAMING:

- EXT. & INT. WALL SILL PLATES WD. FRAMING MEMBERS ARE P/T NO.1 OR NO.2 SPF MIN. TYP.
- EXT. & INT. WD. FRAMING MEMBERS ARE NO.1 OR NO.2 SPF MIN. TYP.

### FIRESTOPPING / FIREPROOFING / ACOUSTICAL

- ALL FIRESTOPPING & SMOKE SEAL ALL WALLS REQ.'D TO MAINTAIN A F/R/R, FULL HEIGHT OF ASSEMBLY (COORD. W/ LIFE SAFETY DWG.'S FOR LOCATIONS) (COORD. W/ TYP. FIRESTOPPING / SOUND PROOFING / FRAMING DETAILS)
- ACOUSTICAL CAULK TO BE FIRE RATED @ ALL FIRE RATED ASSEMBLIES TYP.
- ACOUSTICAL CAULK & SOUND SEAL ALL OTHER WALLS THAT DO NOT HAVE F/R/R, FULL HEIGHT OF ASSEMBLY
  (COORD. W/ TYP. FIRESTOPPING / SOUND PROOFING / FRAMING DETAILS)
- ACOUSTICAL CAULK ALL GYP. BD. CEILING PER.'S (CONTROL JT.'), WALL PER.'S BOTH SIDES, U/S ALL SILL PLATES; ALL TO BE A CONT. BEAD TYP.

### GYPSUM BOARD / TILE BACKER BD.:

- ALL GYP. BD. ASSEMBLIES / FIRE SEPARATION ASSEMBLIES (WITH RATINGS) TO BE TYPE 'X' OR 'C' FIRE RATED 12.7mm / 15.9mm GYPSUM BD. (PROVIDE PAPERLESS IN ALL "WET" AREAS)
- ALL GYP. BD. ASSEMBLIES (WITHOUT RATINGS) TO BE 12.7mm GYP. BD. UNLESS NOTED OTHERWISE (PROVIDE PAPERLESS IN ALL "WET" AREAS)
- GYP. BD. WALL / PARTITION JOINTS ARE TO BE TAPED & MUDDED FULL HEIGHT OF ASSEMBLY INCLUDING ABOVE ALL FIN. CEILING SYSTEMS, SANDING IS NOT REQ.'D ABOVE CEILINGS TYP.
- THERE ARE TO BE NO HOLES / VOIDS IN ANY FINISHED / UNFINISHED WALL SYSTEMS INCLUDING AROUND ALL PENETRATIONS, ETC., FULL HEIGHT OF ASSEMBLY, ABOVE OR BELOW FINISHED CEILINGS
- TILE BACKER BD. WALL SUBSTRATE @ ALL SHOWER LOCATIONS

### PRODUCT MANUFACTURERS

INSTALL ALL PRE-MANUF. PRODUCTS AS PER MANUF.'S INSTALL INSTRUCTIONS & FASTENING PATTERNS

### BATT INSUL.

- THERMAL BATT INSUL. & SOUND ATTENUATION: TO BE INSTALLED W/MANUFACTURER RECOMMENDED FASTENERS & FASTENING PATTERNS. THICKNESS AS SHOWN ON WALL TYPES OR OTHERWISE INDICATED ON DWG.'S. R-VALUE LISTED ASSEMBLIES ARE BASED ON THE FOLLOWING PRODUCTS:
- THERMAL – CI. (CONT. INSUL.) - ABOVE GRADE CAVITY WALL LOCATIONS (OVER EXT. SHEATHING, OVER MASONRY OR CONC. SUBSTRATE & ON FRAMED SUBSTRATE SYSTEMS WHERE THERE IS AN AIR SPACE BETWEEN THE INSUL. & EXT. CLADDING):
  ROCKWOOL CAVITYROCK SEMI-RIGID STONE WOOL / MINERAL FIBRE INSUL. W/ 'R' VALUE OF 4.2 PER INCH
- THERMAL – STUD CAVITY WALL LOCATIONS (EXT. METAL / STEEL & WD. FRAMED WALL SYSTEMS, BETWEEN STUD FRAMING):
  ROCKWOOL COMFORTBATT SEMI-RIGID STONE WOOL / MINERAL FIBRE BATT INSUL. W/ FLEXIBLE EDGE

  TYP. THICKNESSES OF 89mm WOOD STUD - R14, 140mm WOOD STUD - R22
- ACOUSTIC SOUND / SOUND ATTENUATION BATT INSUL. (INT. WD. FRAMED WALL SYSTEMS BETWEEN STUD FRAMING & SOUND PROOFING ABOVE CEILINGS):
  ROCKWOOL ACOUSTICAL FIRE BATT (AFB) (ROCKWOOL SAFE 'N' SOUND (ND. STUDS) SEMI-RIGID STONE WOOL / MINERAL FIBRE BATT INSUL.

SB-2, 2.3.5.(2)
When an exterior wall assembly is required to be rated from the interior side only, such wall assemblies shall have an outer membrane consisting of sheathing and exterior cladding with spaces between the studs filled with insulation conforming to CAN/ULC-S702, "Mineral Fibre Thermal Insulation for Buildings", and having a mass of not less than 1.22 kg/m² of wall surface.

### RIGID INSUL.

- THERMAL RIGID INSUL.
- R-VALUE LISTED ASSEMBLIES ARE BASED ON THE FOLLOWING PRODUCTS:
- FIRE STOP & SMOKE SEAL ALL WALLS REQ.'D TO MAINTAIN A F/R/R, FULL HEIGHT OF ASSEMBLY (COORD. W/ LIFE SAFETY DWG.'S FOR LOCATIONS) (COORD. W/ TYP. FIRESTOPPING / SOUND PROOFING / FRAMING DETAILS)
- BELOW GRADE - S/O/G, FROST SLAB, INSUL. SIDEWALKS, DOOR THRESHOLD, EXT. PAD, EXT. RAMP LOCATIONS
  DUPONT DOW STYROFOAM BRAND SM W/ 'R' VALUE OF 5 PER INCH

- *IF THE OWNER / CONTRACTOR INSTALLS DIFFERENT PRODUCTS THAN LISTED, THEY ARE TO CONFIRM THE R-VALUE MEETS THE OBC REQ.'S*

### THRU WALL FLASHING / AIR/VAP. BARRIER / AIR/VAP. BARRIER TRANSITION MEMEBRANE

- ALL TAF (THRU WALL FLASHING) & CMU DAMPROOFING COURSES TO BE HENRY BAKOR BLUESKIN TAF SA (SELF-ADHERING)
- ALL AIR/VAP. BARRIER MEMBRANE & AIR/VAP. BARRIER TRANSITION MEMBRANE TO BE HENRY BAKOR BLUESKIN SA (SELF-ADHERING)

### AIR BARRIER

- ALL AIR BARRIERS TO BE W.R.MEADOWS SEALTIGHT AIR-SHIELD SMP SELF-ADHERED SHEET MEMBRANE VAPOUR PERMEABLE AIR BARRIER
- ALL AIR BARRIER TRANSITION PIECES TO BE W.R.MEADOWS SEALTIGHT AIR-SHIELD SMP SELF-ADHERED SHEET MEMBRANE VAPOUR PERMEABLE AIR BARRIER

### VAPOUR BARRIER

- ALL VAP. BARRIERS ABOVE GRADE TO BE 6MIL. POLY MIN.
- ALL VAP. BARRIER TRANSITION PIECES TO BE 6MIL. POLY MIN.
- ALL VAP. BARRIERS / RETARDERS IN CONTACT W/ THE GROUND / SOIL / UNDER SLABS TO BE 15MIL.
  (STEGO WRAP / W.R.MEADOWS PERMINATOR VAPOUR BARRIER)

### SILL DAMP PROOFING

- ALL METAL & WD. STUD INT. WALL DAMP PROOFING (U/S SILL PLATES) TO INCLUDE A 6 MIL. VAP. BARRIER SEPARATION SHEET TYP. (COORD. W/ WALL DETAILS - WD. / METAL STUD)
- ALL METAL & WD. STUD EXT. WALL DAMP PROOFING (U/S SILL PLATES) TO INCLUDE A COMPRESSIBLE SILL GASKET BASE & 6 MIL. VAP. BARRIER SEPARATION SHEET ABOVE TYP.

### ROOFING BREATHABLE MEMBRANE

- ALL CONT. ROOFING ICE & WATER SHIELD TO BE CONT. BREATHABLE SRP ICE & WATER SHIELD

### PRE-FIN. PTD. METAL ROOFING

- COORD. W/ OWNER FOR PROFILE & COLOUR

### CONC. FLR. SAW CUT JT. FILLER

- CONC. SAW CUT FILLER TO BE W.R.MEADOWS SEALTIGHT REZI-WELD FLEX SEMI-RIGID EPOXY JOINT FILLER

### STRUCTURAL

**COMPRESSIVE STRENGTH, EXPOSURE CLASSIFICATION & REIN. OF CONC.**

- 28 DAY COMPRESSIVE STRENGTH TYP.
- EXPOSURE CLASSIFICATIONS:
  - C-1 REINFORCED WALLS
  - C-2 EXTERIOR SIDEWALKS & GARAGE / CARPORT SLABS
  - F-2 FOUNDATIONS & FTG.'S
  - N INTERIOR FLOOR SLABS, 20MPa, NO AIR
- REIN. SLABS W/ 152x152- MW18.7xMW18.7 FLAT SHEETS WHERE NOTED - COORD. W/ FLR. TYPES
- COORD. W/ CSA A23.1 - TABLE 2

**CONC. COVER OF REIN. REBAR**

- 75mm (3") WHERE EXP'D TO WEATHER,
- 50mm (2") ALL OTHER CONDITIONS

| NO. | DATE | ISSUANCE |
|---|---|---|
| 7 | 2025.07.03 | ISSUED FOR PERMIT |
| 6 | 2025.06.26 | ISSUED FOR CLIENT REVIEW |
| 5 | 2025.06.09 | ISSUED FOR CLIENT REVIEW |
| 4 | 2025.05.07 | ISSUED FOR CLIENT REVIEW |
| 3 | 2024.09.20 | ISSUED FOR CLIENT REVIEW |
| 2 | 2024.07.05 | ISSUED FOR CLIENT REVIEW |
| 1 | N/A | ISSUED FOR CLIENT REVIEW |

| NO. | DATE | ISSUANCE |
|---|---|---|

**ISSUED FOR BUILDING PERMIT ONLY NOT FOR CONSTRUCTION**

DO NOT SCALE DRAWINGS, CALL FOR ANY CLARIFICATIONS THAT ARE REQUIRED, FIELD VERIFY AT ALL BUILT CONDITIONS

ALL DWG.'S ARE TO BE READ IN COLOUR

ORIGINAL PAGE SIZE ARCH 'D' - 24" x 36"

CITY OF BRANTFORD

vallee
Consulting Engineers, Architects & Planners

G. DOUGLAS VALLEE LIMITED
2 TALBOT STREET NORTH
SIMCOE ONTARIO N3Y 3W4
(519) 426-6270

STAMP ARCH.

STAMP STRUCT.

LICENSED PROFESSIONAL ENGINEER
July 8th/2025
B.D.BUCHWALD
100200380
PROVINCE OF ONTARIO

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
FDTN. / WALL / FLR. / CEILING / ROOF TYPES & TYP. NOTES

| CHECKED BY: | DRAWN BY: |
|---|---|
| LHR | BM |
| DRAWING SCALE: 1 : 20 | DRAWING NO.: A003 |
| PROJECT NO.: 23-151 | |

DATE PLOTTED: 7/3/2025 12:11:29 PM PROJECT NUMBER & NAME: 23-151 GRETZKY GOLF COURSE FILE PATH: H:\Projects\2023\23-151 Gretzky Golf Course Maintenance Building\Drawings\Architectural\23-151 G

# GENERAL STRUCTURAL NOTES

1. THIS DESIGN HAS BEEN PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE LATEST EDITION.

2. ALL PRE-ENGINEERED, PREFABRICATED BUILDING SYSTEMS AND COMPONENTS SHALL BE DESIGNED BY P.ENG. (PEO) AND CONFIRMED ON SEALED SHOP DRAWINGS TO BE SUBMITTED TO CONSULTANT FOR REVIEW. THE CONSULTANT SHALL NOT ASSUME RESPONSIBILITY FOR SUCH COMPONENTS OR SYSTEMS THAT ARE DESIGNED BY OTHERS.

3. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS, NO PROVISIONS HAVE BEEN MADE IN THE DESIGN FOR TEMPORARY CONDITIONS OCCURRING DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BRACING AND SHORING REQUIRED FOR THE STRESSES & INSTABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION. THE CONTRACTOR SHALL ACCEPT ALL RESPONSIBILITY FOR ALL SUCH MEASURES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL NECESSARY BRACING, SHORING, SHEET PILING OR STRUCTURES AFFECTED BY THIS WORK.

4. REFER TO PROJECT SPECIFICATIONS FOR FURTHER DETAIL ON ALL ASPECTS OF CONSTRUCTION.

5. DIMENSIONS PROVIDED ON DRAWINGS MUST BE CHECKED AND VERIFIED WITH ALL OTHER DRAWINGS. WHERE DISCREPANCIES ARE DISCOVERED, THESE SHALL BE REPORTED TO THE PROJECT CONSULTANT FOR RESOLUTION PRIOR TO PROCEEDING WITH THE AFFECTED WORK.

6. THESE DRAWINGS ARE TO BE COORDINATED AND READ IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.

7. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS - O.REG.213.

8. WHERE THERE IS A CONFLICT IN THE SPECIFICATIONS AND/OR DRAWINGS THE MORE STRINGENT SHALL APPLY UNLESS APPROVED OTHERWISE IN WRITING BY THE PROJECT ENGINEER.

9. DO NOT SCALE THE DRAWINGS.

# DESIGN LOADS

1. LOCATION

BRANTFORD, ONTARIO

2. ROOF DEAD LOADS

| ITEM | SPECIFIED LOAD (kPa) |
|---|---|
| METAL ROOFING | 0.35 |
| INSULATION | 0.10 |
| WOOD SHEATING | 0.25 |
| WOOD BOX TRUSSES | 0.10 |
| MECH/ELEC. ALLOWANCE | 0.25 |
| CEILING | 0.20 |
| SOLAR PANEL ALLOWANCE | 0.40 |
| TOTAL | 1.50 kPa |

3. LIVE (OCCUPANCY-OBC TABLE 4.1.5.3)

| LOCATION | SPECIFIED LOAD (kPa) |
|---|---|
| ROOF | 1.0 |
| MAIN FLOOR (MAINTENANCE/ OFFICE) | 4.8 |

7.SNOW (OBC CL. 4.1.6)

$S_R$ = 0.4kPa
$S_S$ = 1.3kPa
$I_s$ = 1.00 (NORMAL)
$C_b$ = 0.8
$C_w$ = 1.0
$C_s$ = 1.0
$C_a$ = 1.0 FOR FLAT ROOF
$S = I_s [ S_s (C_b C_w C_s C_a) + S_R ]$ = 1.36 kPa

8.WIND (OBC CL. 4.1.7)

$p = I_w [q (C_e C_g C_p C_t)]$
$q_{1/10}$ = 0.37 kPa
$q_{1/50}$ = 0.48 kPa
$I_w$ = 1.00 (NORMAL)
$C_e$ = 0.90
$C_p C_g$ = VARIES
$C_t$ = 1.0

9.SEISMIC (OBC CL. 4.1.8)

EQUIVALENT STATIC FORCE PROCEDURE

$V = S(T_a) M_v I_E W / (R_d R_o)$, $S(2.0)M_v I_E V/(R_d R_o) \leq V \leq (S/2)(S(0.2)I_E W))/R_d R_o$
$S_a(0.2)$ = 0.302
$S_a(0.5)$ = 0.212
$S_a(1.0)$ = 0.150
$S_a(2.0)$ = 0.074
$S_a(5.0)$ = 0.0192
$S_a(10.0)$ =0.00601
PGA = 0.185
PGV = 0.172
$I_E$ = 1.0 (NORMAL)

LATERAL FORCE RESISTNG SYSTEM (LFRS) : TIMBER MODERATELY DUCTILE FRAMES
$R_d$ = 1.5
$R_o$ = 1.3
$M_v$ = 1.0

SITE CLASS (OBC) : SITE CLASS 'D' (COORD. W/ GEOTECHNICAL REPORT)
SITE SEISMIC DESIGN CATEGORY (IBC) : CATEGORY 'C'

# FOUNDATIONS

1. GEOTECHNICAL REPORT PREPARED BY ENGLOBE (04-02205128.000-GS-R-0001-00) PROVIDED.

2. SOIL BEARING CAPACITY OF $Q_{SLS}$=75kPa $Q_{ULS}$=112kPa REFER TO GEOTECHNICAL REPORT

3. ALL FOUNDATION DESIGNS MAY BE SUBJECT TO CHANGE BASED ON UNFORSEEN SOIL CONDITIONS. ALL FOUNDING SOILS SHALL BE INSPECTED BY GEOTECHNICAL ENGINEER PRIOR TO FOUNDATION INSTALLATION.

4. GEOTECHNICAL ENGINEER / TESTING & INSPECTION AGENCY MUST BE PRESENT DURING EXCAVATION AND ENGINEERED FILL CONSTRUCTION IN ORDER TO VERIFY COMPACTION AND SOIL BEARING CAPACITY.

5. REFER TO GEOTECHNICAL REPORT FOR CONSTRUCTION GUIDANCE REGARDING ENGINEERED FILL AND DEWATERING.

6. ALL DEWATERING TO BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

7. SOIL CONDITIONS, REINFORCING STEEL AND FORMWORK SHALL BE INSPECTED BY THE ENGINEER BEFORE POURING CONCRETE. CONTRACTOR SHALL GIVE ENGINEER A MINIMUM 24 HOURS NOTICE TO CARRY OUT INSPECTION.

8. THE LINE OF SLOPE BETWEEN ADJACENT FOOTING OR EXCAVATIONS SHALL NOT EXCEED A RISE OF 1 IN A RUN OF 10 UNLESS APPROVED BY THE GEOTECHNICAL ENGINEER.

9. DO NOT BACKFILL AGAINST FOUNDATION WALLS UNTIL LATERAL SUPPORTING FLOORS HAVE BEEN CONSTRUCTED, UNLESS BRACING DETAILS ARE SUBMITTED. WHERE POSSIBLE BACKFILL BOTH SIDES OF WALLS SIMULTANEOUSLY FOR BURIED FOUNDATIONS.

10. FOOTINGS SUBJECT TO FROST ACTION SHOULD BE PROVIDED WITH 1200mm OF EARTH COVER OR EQUIVALENT THERMAL INSULATION. A 25mm THICK LAYER OF POLYESTERENE INSULATION IS THERMALLY EQUIVALENT TO 600mm OF SOIL COVER.

# CONCRETE

1. DESIGN & CONSTRUCTION CODES/STANDARDS

| | |
|---|---|
| CAN/CSA A23.1 | CONCRETE MATERIALS & METHODS OF CONCRETE CONSTRUCTION |
| CAN/CSA A23.2 | METHODS OF TEST & STANDARD PRACTICES FOR CONCRETE |
| CAN/CSA A23.3 | DESIGN OF CONCRETE STRUCTURES |
| CAN/CSA A23.4 | PRE-CAST CONCRETE |

2. ALL CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 25 MPa MINIMUM AND EXPOSURE CLASS OF TYPE 'N' UNLESS OTHERWISE SPECIFIED. CONCRETE MIX DESIGNS SHALL BE SUBMITTED FOR REVIEW PRIOR TO CONSTRUCTION.

3. THE CONCRETE EXPOSURE CLASS AND 28-DAY COMPRESSIVE STRENGTH FOR EACH STRUCTURAL ELEMENT SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:

| | EXPOSURE CLASS | 28-DAY COMPRESSIVE STRENGTH | AIR CONTENT |
|---|---|---|---|
| FOOTINGS | 'N' | 25 MPa | -- |
| FOUNDATION WALLS AND COLUMNS (EXTERIOR) | F-2 | 25 MPa | 4-7% |
| FOUNDATION WALLS AND COLUMNS (INTERIOR) | N | 25 MPa | -- |
| SLAB ON GRADE FLOORS (INTERIOR) | N | 25 MPa | -- |
| STRUCTURAL WALLS AND SUSPENDED FLOORS | C-1 | 35 MPa | 5-6% |
| SLAB ON GRADE FLOORS & FROST SLABS (EXTERIOR) | C-2 | 32 MPa | 5-6% |

4. REINFORCEMENT SHALL BE DEFORMED BARS AND CONFORM TO CAN/CSA G30.18, GRADE 400MPa.

5. REINFORCING STEEL SHALL BE DETAILED, BENT, PLACED AND SUPPORTED TO CONFORM TO ACI STANDARDS 315 AND THE MANUAL OF STANDARD PRACTICE PUBLISHED BY THE REINFORCING STEEL INSTITUTE OF ONTARIO.

6. WELDED LAPS AND SPLICES OF REINFORCING STEEL SHALL NOT BE PERMITTED.

7. MINIMUM REINFORCEMENT LAP LENGTHS

| BAR SIZE | MIN. SPLICE LAP LENGTH |
|---|---|
| 10M | 400mm |
| 15M | 600mm |
| 20M | 900mm |
| 25M | 1300mm |

8. ALL REINFORCEMENT LAPS TO BE "CLASS B" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

9. CONCRETE SLABS ON GRADE TO BE REINFORCED WITH WELDED WIRE MESH REINFORCING IN ADDITION TO THE SPECIFIED REINFORCEMENT, UNLESS OTHERWISE NOTED.

10. REINFORCEMENT SPACING SHOWN ON DRAWINGS TO BE A MAXIMUM. ENSURE MINIMUM 1-15M TOP AND BOTTOM CONTINUOUS AT ALL SLAB EDGES BY ADJUSTING BAR LENGTH OR PROVIDING ADDITIONAL TOP/BOTTOM EDGE BARS AS REQUIRED.

11. PROVIDE CHAIRS, SPACER BARS, SUPPORT BARS AND OTHER ACCESSORIES TO SUPPORT REINFORCING IN ACCORDANCE WITH THE LATEST EDITIONS OF CSA A23.1 AND A23.3. CHAIRS TO BE PLASTIC, PLASTIC TIPPED OR CONCRETE. ALL TIE WIRE, CHAIRS AND BAR SUPPORTS USED FOR COATED REINFORCING SHALL BE NON-METALLIC OR PROTECTED WITH AN ACCEPTABLE COATING. CHAIRS SHALL BE SPACED AT 1200mm O.C. MAXIMUM.

12. ALL REINFORCING STEEL FABRICATION AND PLACEMENT DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW BEFORE FABRICATION.

13. CONCRETE COVER FOR REINFORCEMENT SHALL CONFORM TO CSA STANDARD A23.1, AS FOLLOWS, UNLESS OTHERWISE NOTED.

| | EXPOSED TO WEATHER | NOT EXPOSED TO WEATHER |
|---|---|---|
| CAST AGAINST EARTH | 75 mm +/- 12mm (3" +/- 1/2") | 75 mm +/- 12mm (3" +/- 1/2") |
| BEAMS, SLABS, WALLS, AND COLUMNS | 50 mm +/- 12mm (2" +/- 1/2") | 40 mm +/- 12mm (1-1/2" +/- 1/2") |

14. SLAB ON GRADE TO BE PLACED ON COMPACT GRANULAR MATERIAL. COMPACTION TESTS ON FILL MATERIAL TO BE CARRIED OUT PRIOR TO SLAB ON GRADE PLACEMENT.

15. PROVIDE CHAMFERS, REGLETS, RIVETS, REVEALS, RECESSES AND THE LIKE AS SHOWN ON THE ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS.

16. ALL CONCRETE FORMS TO BE WETTED THOROUGHLY BEFORE POURING CONCRETE.

17. MAINTAIN MINIMUM SPECIFIED THICKNESS AT ALL DEPRESSIONS AND CHANGES IN ELEVATIONS. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR EXTENT AND LOCATIONS OF ALL FINISHES AND DEPRESSIONS.

18. DO NOT ADD WATER TO CONCRETE ON SITE UNLESS WRITTEN APPROVAL IS GIVEN BY THE ENGINEER. IF HIGHER SLUMP CONCRETE IS DESIRED, CONCRETE SUPPLIER SHALL DESIGN AND SUPPLY ACCORDINGLY.

19. SLOPE ALL FLOORS AS SHOWN ON ARCHITECTURAL OR MECHANICAL DRAWINGS. FLOOR DRAINS TO SLOPE 1% MIN. IN THE DIRECTION OF ALL FLOOR DRAINS TYP.

20. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR REQUIRED FINISH TO EXPOSED CONCRETE. FLOOR FINISHES SHALL CONFORM TO CSA STANDARD A23.1 CLASS A FINISH UNLESS OTHERWISE NOTED.

21. ALL REQUIRED OPENINGS SHALL BE SLEEVED OR FORMED PRIOR TO PLACING CONCRETE. CORING OR SAW CUTTING FOR OPENINGS AFTER CASTING SHALL NOT BE PERMITTED AS AN ALTERNATE METHOD OF PROVIDING OPENINGS. ALL DRAINS SHALL BE SET PRIOR TO CONCRETE PLACING.

22. FOR OPENINGS GREATER THAN 300mmx300mm (12"X12") REINFORCE AROUND THE OPENING IN ACCORDANCE WITH THE TYPICAL DETAILS UNLESS OTHERWISE NOTED.

23. CURING

REINFORCED CONCRETE ELEMENTS TO BE WET-CURED AS PER ACI 308 AND THE DURATIONS SPECIFIED BELOW UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

CONCRETE SLABS: 7 DAYS MINIMUM
EXPOSED CONCRETE WALLS: 4 DAYS MINIMUM

24. ALL HONEYCOMBING SHALL BE CUT OUT AND FILLED TO THE SATISFACTION OF THE ENGINEER.

25. PROVIDE SAWCUTS WITHIN 24 HOURS OF FINISHING AT LOCATIONS SHOWN ON DRAWINGS. SAWCUT DEPTH TO BE 1/4 OF SLAB THICKNESS & AS SHOWN ON THE STANDARD SLAB ON GRADE CONTROL JOINT SAWCUT DETAILS. SAWCUT AS CLOSE TO COLUMNS OR WALLS AS PRACTICAL. FILL SAWCUTS COMPLETE W/ W.R.MEADOWS REZI-WELD FLEX SEMI-RIGID FLEXIBLE EPOXY JOINT FILLER TYP.

26. SPACING OF SAW-CUT CONTROL JOINTS IN CONCRETE SLABS SHALL NOT EXCEED 4.5m (14'-6") O.C.

27. SUBMIT PROPOSED SAW-CUT CONTROL JOINT LOCATION TO THE ENGINEER FOR APPROVAL UNLESS SHOWN ON DRAWINGS.

28. OPENINGS AND DRIVEN FASTENERS REQUIRED IN THE CONCRETE AFTER THE CONCRETE IS PLACED, SHALL BE APPROVED BY THE ENGINEER BEFORE PROCEEDING.

29. NON-SHRINK GROUT SHALL BE AN APPROVED PREMIXED PROPRIETARY PRODUCT.

30. DRY-PACKED GROUT SHALL BE 1 PART PORTLAND CEMENT TO 1.5 PARTS OF SAND TO 2 PARTS OF 9mm PEA GRAVEL WITH ONLY SUFFICIENT WATER TO DAMPEN THE MIXTURE. COMPRESSIVE STRENGTH SHALL BE 50MPa AT 28 DAYS.

# WOOD

1. DESIGN & CONSTRUCTION CODES/STANDARDS
CAN/CSA O86 ENGINEERING DESIGN IN WOOD

2. MIN. GRADE REQUIREMENTS

3. SAWN LUMBER:

ALL STANDARD SIZE SOLID SAWN WOOD LUMBER SHALL BE A MINIMUM GRADE S.P.F.#2 UNLESS OTHERWISE NOTED.

4. ENGINEERED LUMBER:

ALL ENGINEERED WOOD PRODUCTS MANUFACTURED BY ILEVEL (WEYERHAUSER) AS FOLLOWS:

TIMBERSTRAND LSL: 1.55E GRADE
MICRO.LAM LVL: 2.0E GRADE
PARALLAM PSL: 2.0E GRADE
TRUS JOIST TJI: AS SPECIFIED ON DRAWINGS

5. EQUIVALENT ENGINEERED LUMBER PRODUCTS ONLY TO BE USED IF APPROVED IN WRITING BY THE ENGINEER.

6. ALL WOOD MEMBER SIZES & DIMENSIONS SHALL BE AS INDICATED ON THE DRAWINGS.

7. INSTALLATION SHALL COMPLY WITH MANUFACTURERS GUIDELINES AND REQUIREMENTS.

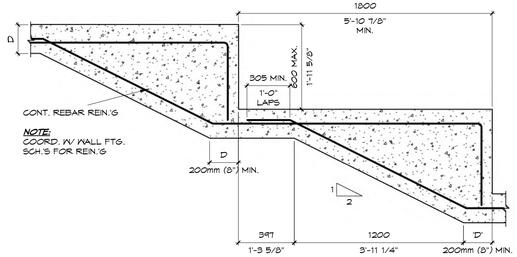
8. PRE-ENGINEERED WOOD ROOF TRUSSES & GIRDERS SHALL BE DESIGNED BY P.ENG. (PEO) AND CONFIRMED ON SEALED SHOP DRAWINGS TO BE SUBMITTED TO CONSULTANT FOR REVIEW. THE CONSULTANT SHALL NOT ASSUME RESPONSIBILITY FOR SUCH COMPONENTS OR SYSTEMS THAT ARE DESIGNED BY OTHERS.

9. ALL ROOF TRUSS CONNECTORS ARE ASSUMED TO BE DESIGNED BY ROOF TRUSS DESIGNER. OTHERWISE, ROOF SHOP DRAWINGS ARE TO BE SUBMITTED TO THE ENGINEER FOR REVIEW AND TRUSS CONNECTOR DESIGN PRIOR TO FABRICATION.

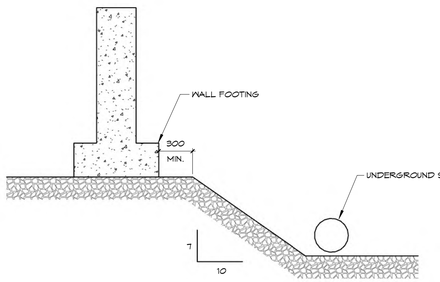
10. LATERAL WOOD BRACING TO BE DESIGNED AND SPECIFIED BY THE ROOF TRUSS DESIGNER AND CONFIRMED BY SHOP DRAWINGS.

11. ALL BUILT-UP ENGINEERED WOOD LINTELS TO BE FASTENED TOGETHER AS PER MANUFACTURER'S SPECIFIATIONS.

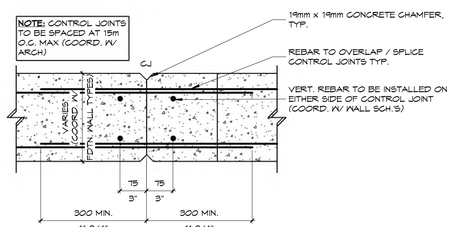
12. ALL MASS TIMBER AND GLULAM TIMBER CONNECTIONS ARE SHOWN ON STRUCTURAL DRAWINGS FOR CONCEPT ONLY. ALL MASS TIMBER AND GLULAM TIMBER CONNECTIONS TO BE DESIGNED BY THE MASS TIMBER FABRICATOR AND SHOWN ON SHOP DRAWINGS SEALED BY A PROFFESSIONAL ENGINEER (PEO). THE CONSULTANT SHALL NOT ASSUME RESPONSIBILITY FOR SUCH COMPONENTS OR SYSTEMS THAT ARE DESIGNED BY OTHERS.



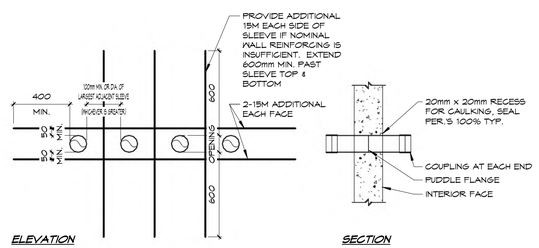

2 / A004 STEP FOOTING DETAIL
SCALE 1 : 20



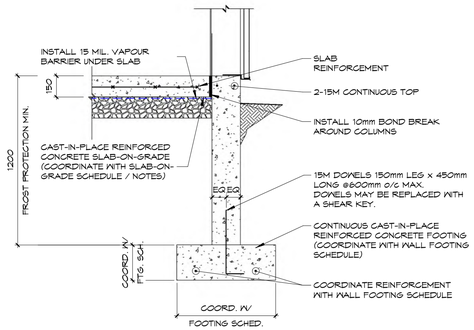

3 / A004 TYPICAL FOOTING BEARING DETAIL AT SERVICE LINES
SCALE 1 : 25



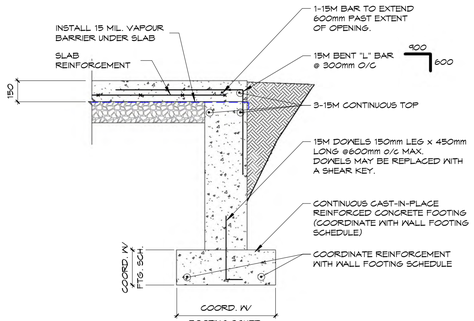

1 / A004 FOUNDATION WALL CONTROL JOINT
SCALE 1 : 8



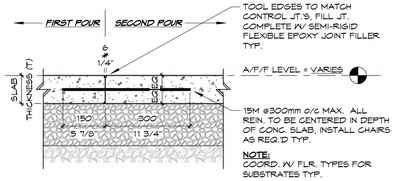

4 / A004 CONDUIT THROUGH WALL SLEEVE DETAIL
SCALE 1 : 20



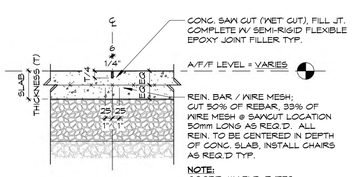

5 / A004 TYPICAL WALL BASE SECTION DETAIL
SCALE 1 : 20




6 / A004 WALL BASE SECTION DETAIL - AT DOOR OPENINGS
SCALE 1 : 20




7 / A004 SLAB-ON-GRADE CONSTRUCTION JOINT
SCALE 1 : 10




5 / A004 SLAB-ON-GRADE CONTROL JOINT
SCALE 1 : 10

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STAMP STRUCT.

LICENSED PROFESSIONAL ENGINEER
July 3rd 2025
B. D. BUCHWALD
100200390
PROVINCE OF ONTARIO

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
STRUCTURAL GENERAL NOTES

| CHECKED BY: | DRAWN BY: |
|---|---|
| LHR | BM |
| DRAWING SCALE: As indicated | DRAWING NO.: A004 |
| PROJECT NO.: 23-151 | |

DATE PLOTTED: 7/3/2025 12:11:31 PM PROJECT NUMBER & NAME: 23-151 GRETZKY GOLF COURSE FILE PATH: H:\Projects\2023\23-151 Gretzky Golf Course Maintenance Building\Drawings\Architectural\A004 GENERAL NOTES.vwx

## SOG SAWCUT / LEGEND - EXTERIOR

S/O/G SAW CUT LINES (SC)

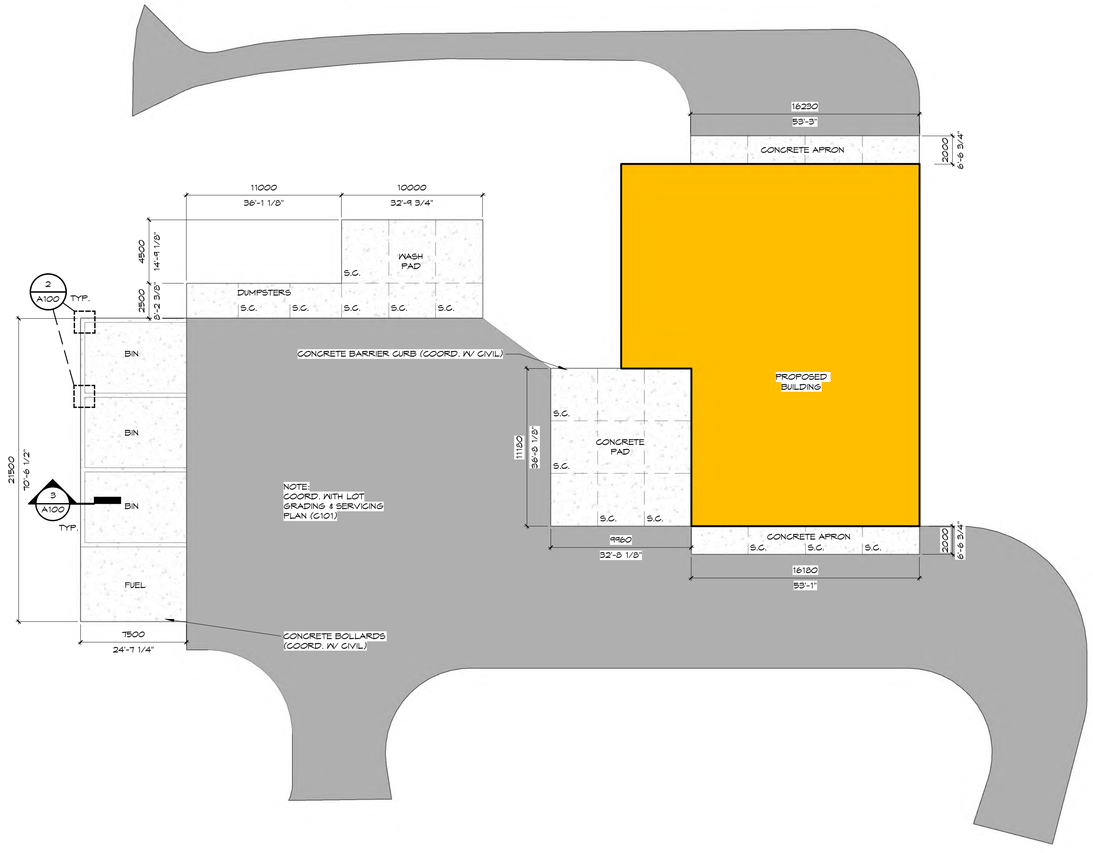
**GENERAL NOTES:**

- REFERENCE - FIN. FLR. ELEV. OF LEVEL 1 IS **0000**

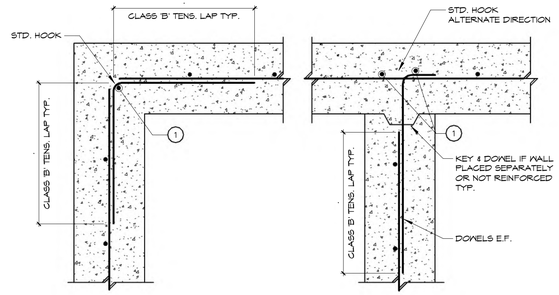
TYP. EXTERIOR S/O/G:
REIN. P/I/P 150mm CONC. SLAB
(C1' CLASS 35MPa W/ AIR)
(10M @ 300 O.C.)
GRANULAR 'A' 200mm THICK COMPACTED TO 100% SPMDD;
GRANULAR 'B' BACKFILL @ ALL HARD SURFACES COMPACTED TO 100% SPMDD;
UNDISTURBED NATIVE SOIL / ENGINEERED FILL - COORDINATE GEOTECHNICAL REPORT

- INSTALL SAWCUT CONTROL JOINTS IN CONC. S/O/G @4500mm MAX. SPACING U.N/O; COORD. W/ TYP. SAW CUT CONTROL JOINT DETAIL; SAW CUTS TO BE PROVIDED @ ALL DOOR OPENINGS
- COORDINATE CONTROL JOINTS AND CONSTRUCTION JOINTS W/ PROVIDED DETAILS, TYP.

**NOTE:** CONTRACTOR TO CONFIRM AND COORDINATE ALL SLAB DIMENSIONS, LOCATIONS, AND LAYOUT WITH ALL DISCIPLINES PRIOR TO CONSTRUCTION.



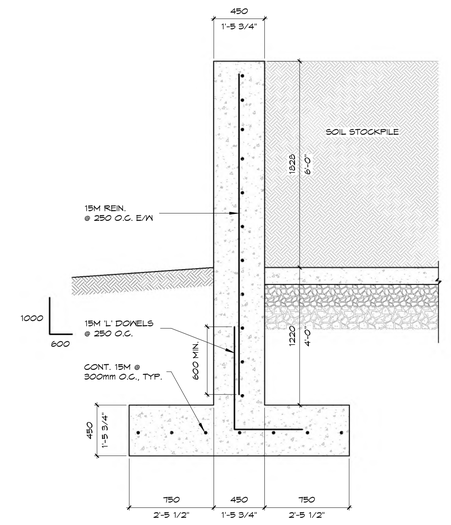

1 / A100 EXTERIOR CONCRETE SLAB-ON-GRADE PLAN
SCALE 1 : 200



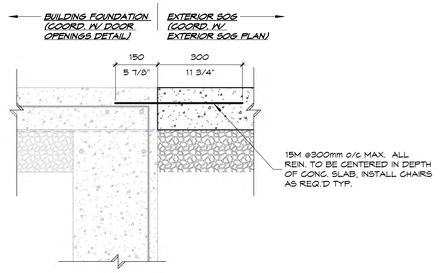

*ONE LAYER OF REINFORCING*

*NOTES:*
1. DENOTES 2 CORNER BARS SAME SIZE AND SPACING AS LARGEST VERTICAL REINFORCING. ELSEWHERE PROVIDE 2-20M CORNER BARS UNLESS NOTED
2. DOWELS TO BE SAME SIZE AND SPACING AS HORIZONTAL REINFORCING
3. PROVIDE STANDARD HOOKS AS SHOWN

2 / A100 CONCRETE WALL REIN. - SOIL BINS
SCALE 1 : 10




3 / A100 SOIL BIN CONCRETE RETAINING WALL SECTION
SCALE 1 : 25




4 / A100 EXTERIOR SOG DETAIL - AT DOOR OPENINGS
SCALE 1 : 10

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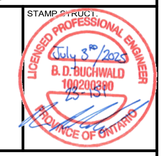
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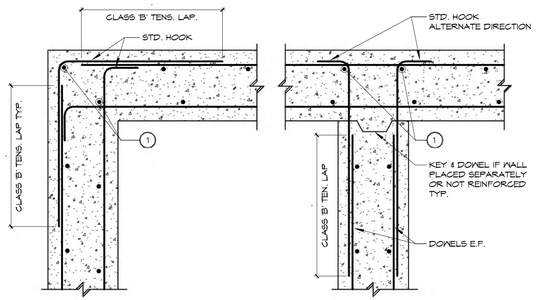



PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
EXTERIOR CONCRETE SLAB-ON-GRADE PLAN

| CHECKED BY: | DRAWN BY: |
|---|---|
| BB | AV |
| DRAWING SCALE: As indicated | DRAWING NO.: A100 |
| PROJECT NO.: 23-151 | |

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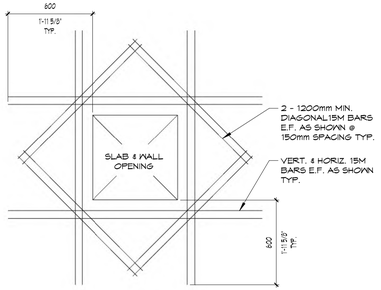

*TWO LAYERS OF REINFORCING*

***NOTES:***

1. DENOTES 2 CORNER BARS SAME SIZE AND SPACING AS LARGEST VERTICAL REINFORCING. ELSEWHERE PROVIDE 2-20M CORNER BARS UNLESS NOTED
2. DOWELS TO BE SAME SIZE AND SPACING AS HORIZONTAL REINFORCING
3. PROVIDE STANDARD HOOKS AS SHOWN

## 2 / A200 CONCRETE WALL REIN. TYP.

SCALE 1 : 10




**NOTE:**
APPLICABLE FOR OPENINGS 300mm OR GREATER IN DIAMETER. DETAIL DOES NOT APPLY TO PRECAST CONCRETE SLABS AND SLABS ON GRADE.

## 3 / A200 REIN. @ OPENINGS IN CONC. WALLS & SLABS

SCALE 1 : 20

## *FOOTING, FOUNDATION LEGEND*

WF# — WALL FOOTING TAG & IDENTIFICATION (COORD. W/ WALL FTG. SCH.)

# — FOUNDATION WALL TAG & IDENTIFICATION (COORD. W/ FDTN. SCH.)

CONC. FDTN. OPENING VOID LOCATION FOR FLR. SLAB TO BE POURED INTO OR FDTN. WALL TOP SURFACE -150 A/F/F

***GENERAL NOTES:***

- REFERENCE - FIN. FLR. ELEV. OF LEVEL 1 IS *0000*
- TOP OF ALL EXT. FTG.'S ARE 1200mm MIN. BELOW FIN. GRADE
- FTG. THICKNESS(ES) SHOWN ARE MIN. ALL SIDES OF FTG.'S ARE TO BE PROPERLY FORMED TO PREVENT OUTWARD FLOW OF CONC. BELOW FORMWORK
- INSTALL SLEEVES IN ALL WALLS FOR STORM & SANITARY LINES
- CORNER & INTERSECTION SPLICE BARS SHALL BE PROVIDED IN CONC. WALLS IN ACCORDANCE W/ MANUAL OF STD. PRACTICE FOR REIN. STEEL. DETAILS TO BE SUBMITTED W/ SHOP DWG.'S (COORD. W/ 2/A200)
- APPROVED GRANULAR FILL UNDER ALL NEW FTG.'S SHALL BE COMPACTED IN 150mm LAYERS TO 100% SPMDD.
- INSTALL CONTROL JOINTS IN CONC. FDTN.'S MORE THAN 25m LONG @ 15m MAX. INTERVALS - CJ ABBR.; COORD. W/ TYP. FDTN. CONTROL JOINT DETAIL (COORD. W/ 1/A004)

## *SOG / SAWCUT LEGEND*

S/O/G SAW CUT LINES (SC) (4.5m (14'-6") O/C MAX.)

***GENERAL NOTES:***

- ALL SLABS ON GRADE SHALL BE AS PER. FLR. TYPES ON: GRANULAR 'A' 150mm THICK COMPACTED TO 100% SPMDD, GRANULAR 'B' BACKFILL @ ALL HARD SURFACES COMPACTED TO 100% SPMDD, ON UNDISTURBED NATIVE SOIL / ENG.'D FILL (COORD. W/ ARCH. FOR UNDER SLAB INSUL. LOCATIONS)
- INSTALL SAWCUT CONTROL JOINTS IN CONC. S/O/G @4500mm MAX. SPACING U/N/O; COORD. W/ TYP. SAW CUT CONTROL JOINT DETAIL; SAW CUTS TO BE PROVIDED @ ALL DOOR OPENINGS
- ALL FTG.'S SHALL BEAR ON UNDISTURBED SOIL OR APPROVED ENG.'D FILL W/ A MIN. SOIL BEARING CAPACITY OF 150kPa. MIN. (COORD. W/ GEOTECHNICAL ENG. / SOILS REPORT
- APPROVED GRANULAR FILL UNDER ALL NEW FTG.'S SHALL BE COMPACTED IN 150mm LAYERS TO 100% SPMDD. TO BE CONFIRMED BY GEO. ENG. / TESTING & INSPECTION COMPANY PRIOR TO POURING FTG.'S

## *CONCRETE WALL REINFORCING SCHEDULE*

| WALL TYPE | WALL TYPE | HORIZONTAL | VERTICAL |
|---|---|---|---|
| FW1 | 250mm (10") CONCRETE WALL | 2-15M CONT. AT TOP & BOTTOM OF WALL | N/A |
| FW1a | 330mm (13") CONCRETE WALL | 2-15M CONT. AT TOP & BOTTOM OF WALL | N/A |
| FW2 | 229mm (9") CONCRETE WALL | 2-15M CONT. AT TOP & BOTTOM OF WALL | N/A |

***NOTES:***

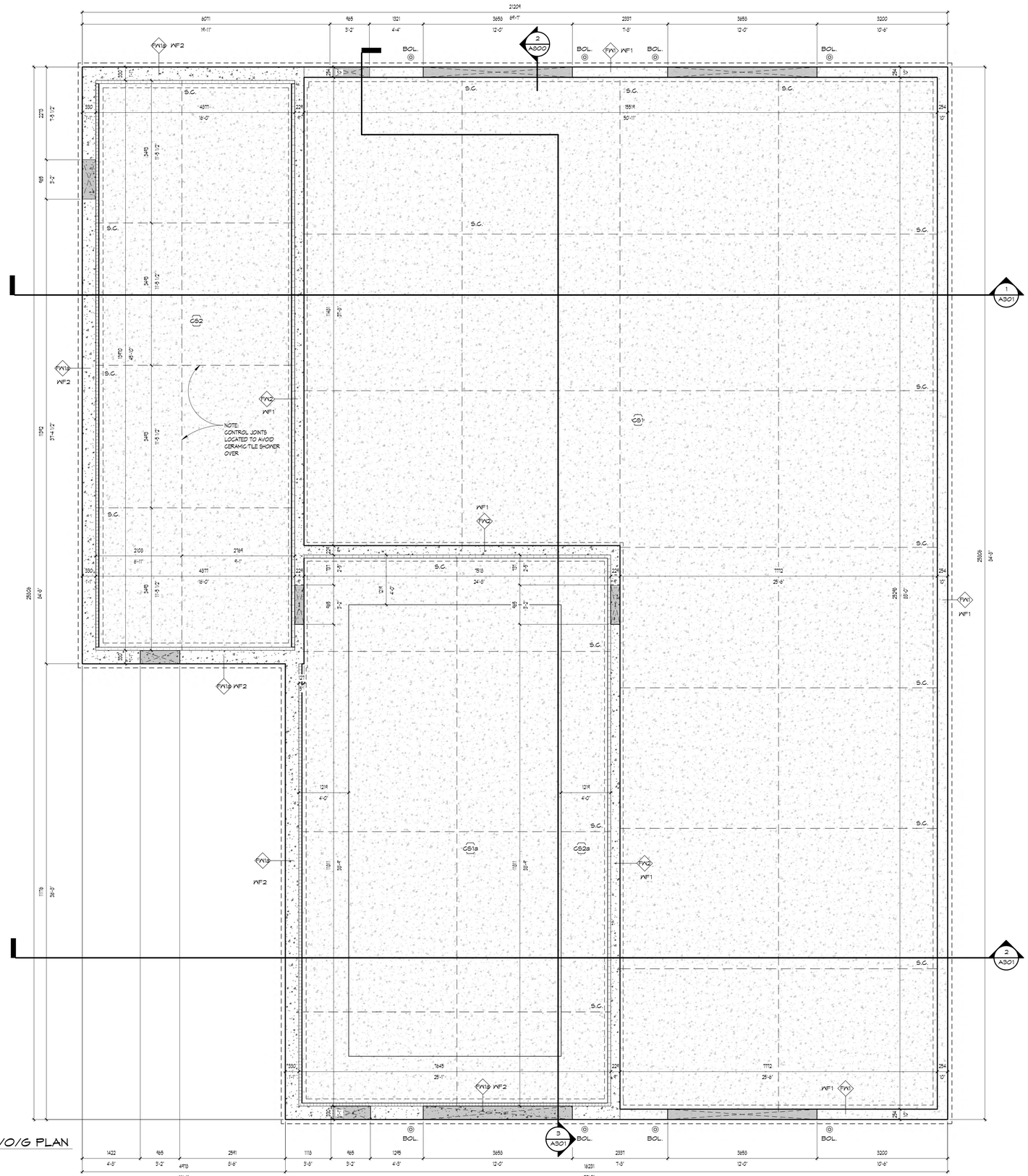
- WHERE THERE IS A CONFLICT IN THE SCHEDULES AND/OR DETAILS THE MORE STRINGENT SHALL APPLY UNLESS APPROVED OTHERWISE IN WRITING BY THE ENGINEER.
- PROVIDE 2-20M EXTRA @ EACH FACE OF EACH OPENING, REBAR TO BE MIN. 750mm PASS EDGE OF OPENING
- 75mm (3") COVER @ EXTERIOR CONDITIONS, 50mm (2") COVER @ INTERIOR CONDITIONS
- REFER TO A003 FOR FOUNDATION WALL INSULATION DETAIL

## *WALL FOOTING SCHEDULE*

| MARK | DESCRIPTION |
|---|---|
| WF1 | 457mm (18") WIDE x 200mm (8") DEEP C/W 2-15M BOTTOM CONTINUOUS |
| WF2 | 610mm (24") WIDE x 200mm (8") DEEP C/W 2-15M BOTTOM CONTINUOUS |

***NOTES:***

- TYP. VERT. DOWELS ARE 15M 150mm (6") LEG @ 450mm (18") LONG. @610mm (24") O/C MAX. U/N/O
- ALL STRIP FTG.'S SHALL BE CENTERED UNDER CONC. FDTN. WALLS & INT. LOADBEARING STUD WALLS. CONTRACTOR SHALL COORD. FTG. & WALL DIM.'S ON PLANS & REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO CONST.
- WHERE REINF. OF THE FDTN. WALLS IS REQ.'D, ALL RE-BAR SHALL BE DOWELED INTO FTG.'S 50mm (2") MIN. EMBEDMENT (600mm (2') LAP LENGTH FOR TIE-IN DOWELS)




## 1 / A200 LEVEL 1 FTG., FDTN., S/O/G PLAN

SCALE 1 : 50

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PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
FOUNDATION PLAN

| CHECKED BY: | DRAWN BY: |
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| LHR/BB | BM/KA |
| DRAWING SCALE: As indicated | DRAWING NO.: A200 |
| PROJECT NO.: 23-151 | |

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## LINTEL SCHEDULE

| MARK | DESCRIPTION | DETAIL | WALL TYPE |
|---|---|---|---|
| L1 | 2-PLY 38mm x 235mm (2"x10") SPF NO. 2 | | 89mm & 140mm (4" & 6") W.D. STUD |
| L2 | 3-PLY 38mm x 235mm (2"x10") SPF NO. 2 | | 140mm (6") W.D. STUD |
| L3 | 2-PLY 44mm x 235mm (2"x10") LVL 2.0E | | 140mm (6") W.D. STUD |

***LINTEL NOTES:***

- STRUCT. LINTEL (L#)
- 2-PLY W.D. LINTELS W/ SPANS LESS THAN 3m (9'-10") REQ. 38mm (1.5") MIN. BEARING LENGTH @ EACH END. SPANS GREATER THAN 3m (9'-10") REQ. 76mm (3") MIN. BEARING LENGTH. INSTALL BUILT UP COLUMNS TO MATCH WALL STUD WIDTH AS REQ.D
- 3-PLY W.D. LINTELS / BEAMS W/ SUPPORTED LENGTHS GREATER THAN 4.2m REQ. MIN. BEARING LENGTH OF 114mm (4.5"). ALL OTHER BEAMS REQ. MIN. BEARING LENGTH OF 76mm (3"). INSTALL BUILT UP COLUMNS TO MATCH WALL STUD WIDTH AS REQ.D
- 4 & 5-PLY W.D. LINTELS / BEAMS W/ SUPPORTED LENGTHS GREATER THAN 3m REQ. BEARING LENGTH OF 114mm (4.5") MIN. ALL OTHER BEAMS REQ. BEARING LENGTH OF 76mm (3") MIN. INSTALL BUILT UP COLUMNS TO MATCH WALL STUD WIDTH AS REQ.D
- WHERE NOTED, LINTELS MUST BEAR UPON ENTIRE WIDTH OF BUILT-UP COLUMNS INDICATED W/ ADDITIONAL TRIMMER STUD FASTENED TO COLUMN AS PER TYP. ROUGH OPENING FRAMING
- ALL LINTELS THAT REQ. SPACERS ARE TO BE SPACED THE SAME AS THE WALL TYPE THEY ARE LOCATED IN. SPACERS ARE TO BE INSTALLED BETWEEN THE PLY'S

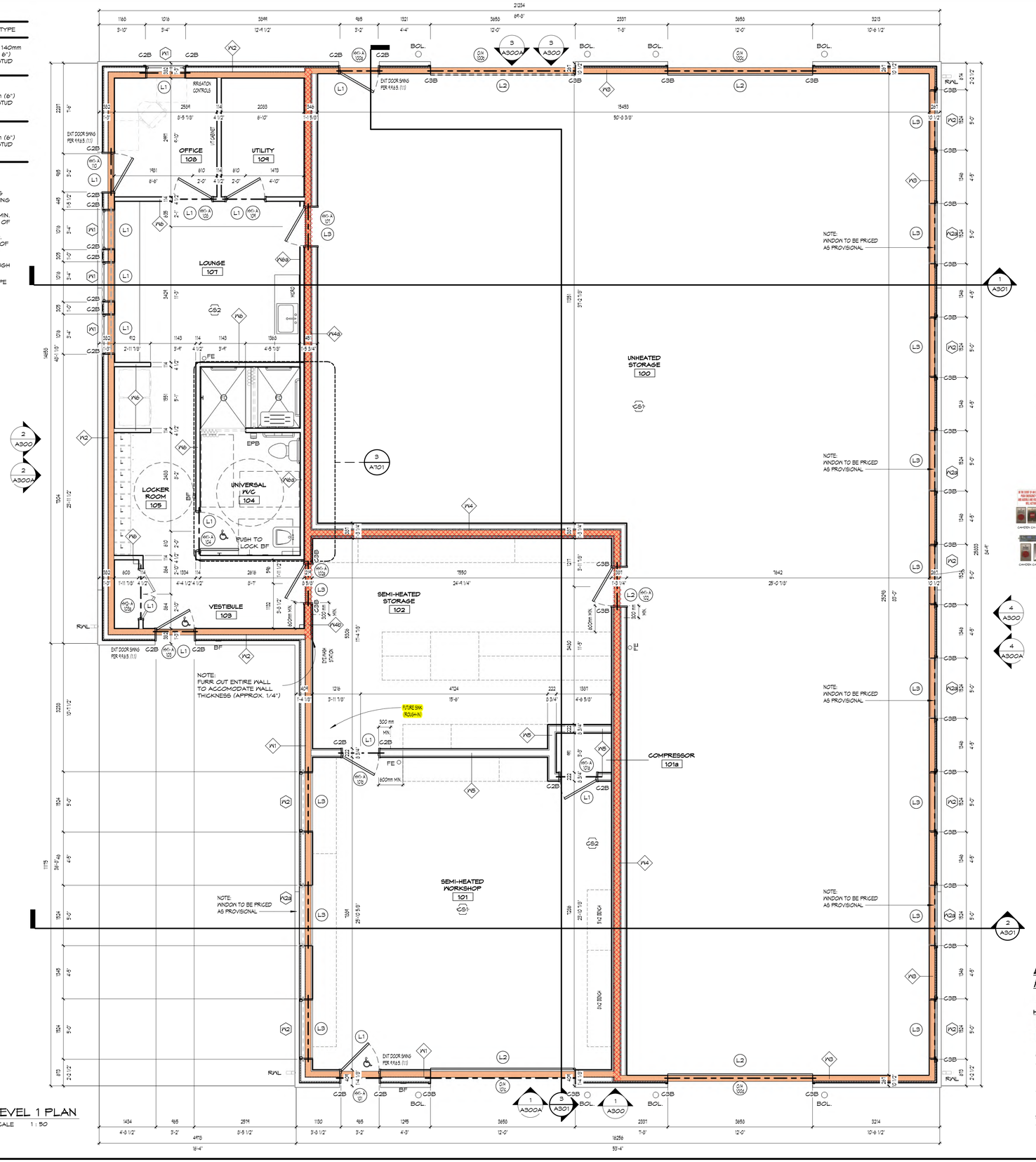
## COLUMN / POST SCHEDULE - WOOD

| MARK | DESCRIPTION |
|---|---|
| C2B | 2-PLY 38x140 (2"x6") JACK + 38X140 KING |
| C3B | 3-PLY 38x140 (2"x6") JACK + 38X140 KING |

***NOTES:***

- C# - BUILT UP COLUMN
- VERIFY ANY GIRDER TRUSS PLY W/ TRUSS MANUF. & INSTALL BUILT UP COLUMNS TO MATCH THE NUMBER OF GIRDER PLYS
- VERIFY ANY ROOF FRAMING POINT LOADS W/ FLR. / ROOF MANUF. & INSTALL BUILT UP COLUMNS TO MATCH THE NUMBER OF FRAMING PLYS
- INSTALL BUILT UP COLUMNS TO MATCH WIDTH OF BEAM OR NUMBER OF PLYS OF BUILT UP BEAM FOR BEARING TRANSFER TO BELOW TYP.
- ALL BUILT UP COLUMNS TO BE TRANSFERED TO FDTN. SYSTEMS. INSTALL BUILT UP COLUMNS IN WALL / FLR. SYSTEM(S) SO LOADS ARE TRANSFERED TO FDTN. SYSTEM BELOW WHETHER SHOWN OR NOT TYP.

REFER TO DRAWINGS A300A FOR WOOD BRACED FRAME LOCATIONS




1 / A201 LEVEL 1 PLAN
SCALE 1 : 50

## LEVEL PLAN LEGEND

- ROOM NAME ### — ROOM TAG, NUMBERING & IDENTIFICAITON (COORD. W/ RM. FIN. SCH.)
- DOOR TAG & IDENTIFICATION (COORD. W/ SCH.'S)
- NEW DOOR
- WALL TAG & IDENTIFICATION
- CURTAIN WALL / WINDOW TAG & IDENTIFICATION
- FLOOR TAG & IDENTIFICATION
- TYP. BF TURNING CIRCLE RADIUS
- L — LOCKERS
- POWER DOOR OPERATOR
- BF — ROUND S/S RECESS / FLUSH MTD. PUSH BUTTON (U/N/O) FOR POWER DOOR OPERATOR - 610mm MIN. FROM THE DOOR SWING TOWARDS THE BUTTON TO 1500mm MAX. (925mm A/F/F TO CENTER OF BUTTON TYP.)
- EPB — EMERGENCY PUSH BUTTON (925mm A/F/F TO CENTER OF BUTTON TYP.) (450mm A/F/F TO CENTER OF BUTTON IN UNIV. WR. TYP.)
- PUSH TO LOCK — PUSH TO LOCK BUTTON (925mm A/F/F TO CENTER OF BUTTON TYP.)
- FE — SURFACE MTD. FIRE EXTINGUISHER
- RWL — RAIN WATER LEADER
- 4/A300 & 4/A300A — LAVATORIES TRIPLE, DOUBLE, SINGLE
- LAVATORY, WALL HUNG, BARRIER FREE
- FLR. — WATER CLOSET

## LEVEL FLR. FRAMING & LINTEL PLAN LEGEND

- STRUCT. LINTEL (L#)

HATCH LEGEND

- FIRE RATED WALL ASSEMBLY
- LOAD BEARING WALL ASSEMBLY

***LEVEL FRAMING & LINTEL NOTES:***

- LEVEL PLANS ASSOCIATED ABOVE / BELOW THE TRUSS SYSTEM ARE TO BE SHOWN ON THE SHOP DRAWINGS FOR COORDINATION OF THE LOCATIONS OF OPENINGS THROUGH THE SYSTEM (IE. MECHANICAL DUCTING, SHAFTS, ETC.)
- ***TRUSSES / JOISTS*** SHOP DRAWINGS MUST BE SEALED BY P.ENG (PEO) AND SUBMITTED TO ARCHITECT & STRUCT. ENG. FOR REVIEW OF ANY POINT LOADING / LOADING ON STRUCT. PRIOR TO CONSTRUCTION

***GENERAL NOTES:***

- SHOP DWG.'S ARE TO BE DIMENSIONED IN METRIC UNITS (IMPERIAL & METRIC BOTH SHOWN IS ACCEPTABLE)
- ALL DIM.'S ARE OUTSIDE OF WALL SYSTEMS

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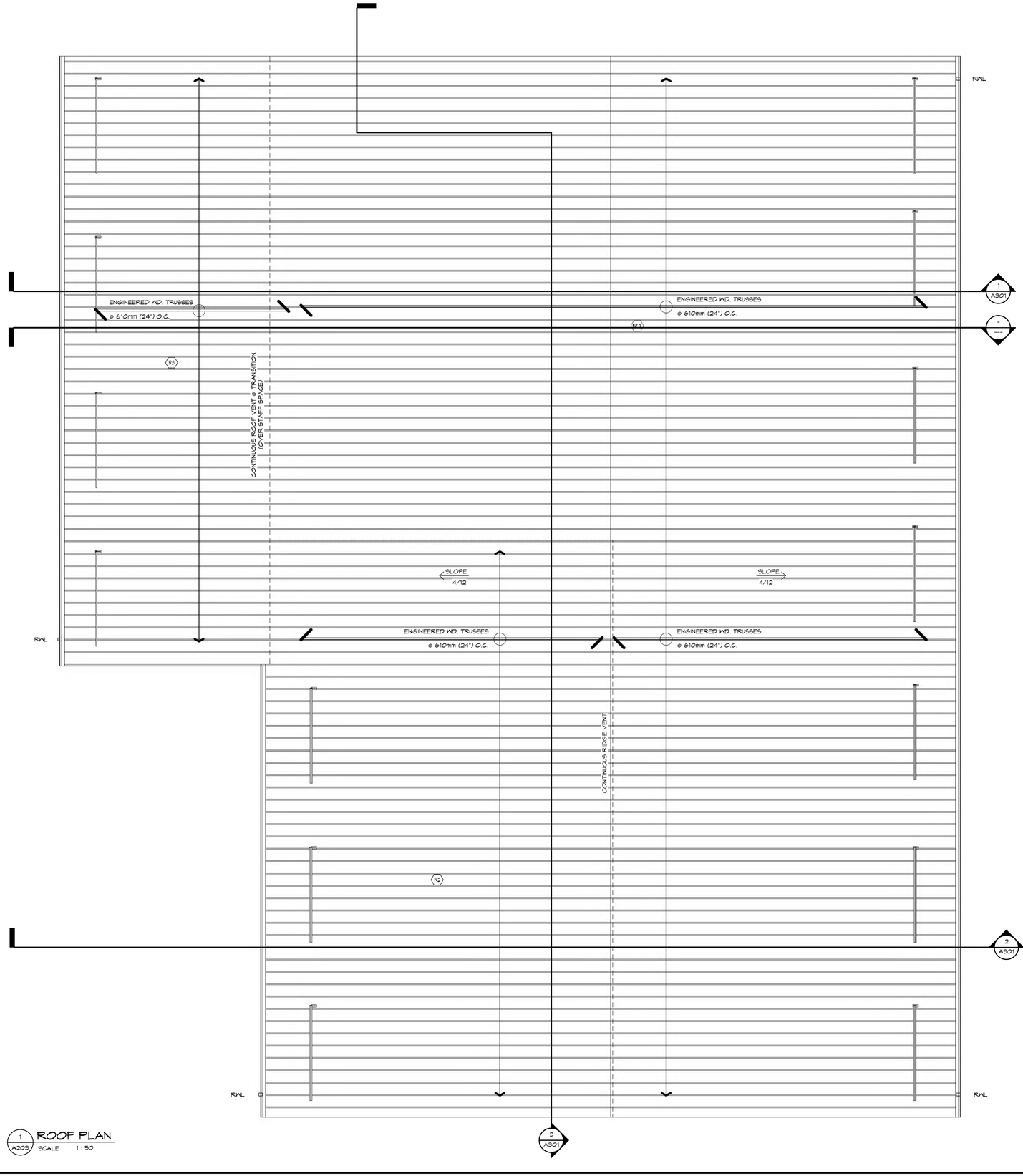
LICENSED PROFESSIONAL ENGINEER — July 3rd 2025 — B.D. BUCHWALD — 100200380 — PROVINCE OF ONTARIO

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
LEVEL 1 PLAN, WALL & FLOOR TYPES & DIMENSIONS

| CHECKED BY: | DRAWN BY: |
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| LHR | BM |
| DRAWING SCALE: As indicated | DRAWING NO.: A201 |
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1 A203 ROOF PLAN
SCALE 1 : 50

## ROOF VENTING LEGEND

**9.32.1.2. Crawl Spaces and Attic or Roof Spaces**
**(1)** Every crawl space and every *attic or roof space* shall be ventilated by natural or mechanical means.

**(Updated January 1, 2025)**
**9.19.1. Venting**
**9.19.1.1. Required Venting**
**(1)** Except where it can be shown to be unnecessary, where insulation is installed between a ceiling and the underside of the roof sheathing, a space shall be provided between the insulation and the sheathing, and vents shall be installed to permit the movement of air from the space to the exterior.

**9.19.1.2. Vent Requirements**
**(1)** Except as provided in Sentence (2), the unobstructed vent area shall be not less than 1/300 of the insulated ceiling area.
**(2)** Where the roof slope is less than 1 in 6 or in roofs that are constructed with roof joists, the unobstructed vent area shall be not less than 1/150 of the insulated ceiling area.
**(3)** Required vents are permitted to be roof type, eave type, gable-end type or any combination of them, and shall be distributed,
(a) uniformly on opposite sides of the *building*,
(b) with not less than 25% of the required openings located at the top of the space, and
(c) with not less than 25% of the required openings located at the bottom of the space.
**(4)** Except where each roof joist space referred to in Sentence (2) is separately vented, roof joist spaces shall be interconnected by installing purlins not less than 38 mm by 38 mm on the top of the roof joists.
**(5)** Vents shall comply with CAN3-A93-M, "Natural Airflow Ventilators for Buildings".

**9.19.1.3. Clearances**
**(1)** Except as provided in Sentence (2), where venting is provided to a roof joist space, not less than 63 mm of space shall be provided between the top of the insulation and the underside of the roof sheathing.
**(2)** Where venting is provided at the junction of sloped roofs and exterior walls and where preformed baffles are used to contain the insulation, the baffles shall,
(a) provide an unobstructed air space between the insulation and the underside of the roof sheathing, that is,
(i) not less than 25 mm in dimension, and
(ii) of sufficient cross area to meet the *attic or roof space* venting requirements of Article 9.19.1.2., and
(b) extend vertically not less than 50 mm above the top of the insulation.
**(3)** Ceiling insulation shall be installed in a manner that will not restrict a free flow of air through roof vents or through any portion of the *attic or roof space*.

## ROOF PLAN LEGEND

R# — ROOF TYPE (COORD. W/ ROOF TYPE SCH.)

SLOPE — DIRECTION OF ROOF DRAINAGE / SLOPES PROVIDE POSITIVE ROOF SLOPES TOWARD ROOF DRAIN. SLOPE TO BE MIN. 1.5-2%

R/AL — RAIN WATER LEADERS & EAVESTROUGHS (GUTTER) & PROVIDE OUT TURNS TO SPILL ONTO GRADE W/ SPLASH PADS

VE — PRE-FIN. PTD. METAL ROOF VENT TO MATCH COLOUR OF NEW ROOF

SNOW GUARDS

HATCH IDENTIFICATION LEGEND

PRE-FIN. PTD. METAL ROOF SYSTEM (COORD. W/ OWNER FOR PROFILE & COLOUR)

GENERAL NOTES:
- SHOP DWG.'S ARE TO BE DIMENSIONED IN METRIC UNITS (IMPERIAL & METRIC BOTH SHOWN IS ACCEPTABLE)
- COORD. W/ MECH. & ELEC. DWG.'S FOR LOCATIONS OF ALL ROOF TOP MECH. & ELEC. EQUIP., EQUIP. SHOWN ON ARCH. ROOF PLAN IS FOR GENERAL REFERENCE ONLY

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ALL DWG.'S ARE TO BE READ IN COLOUR

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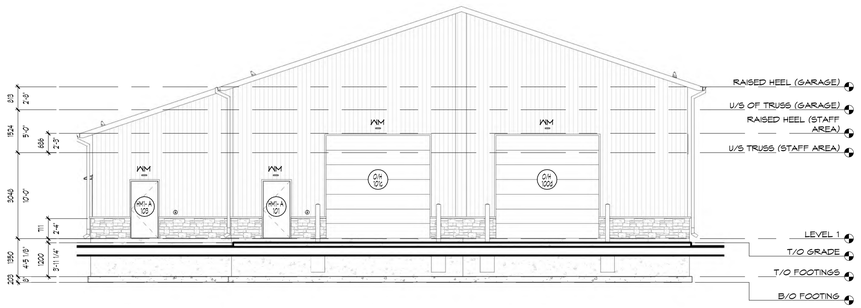
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July 3rd/2025
B. D. BUCHWALD
100200380
PROVINCE OF ONTARIO

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

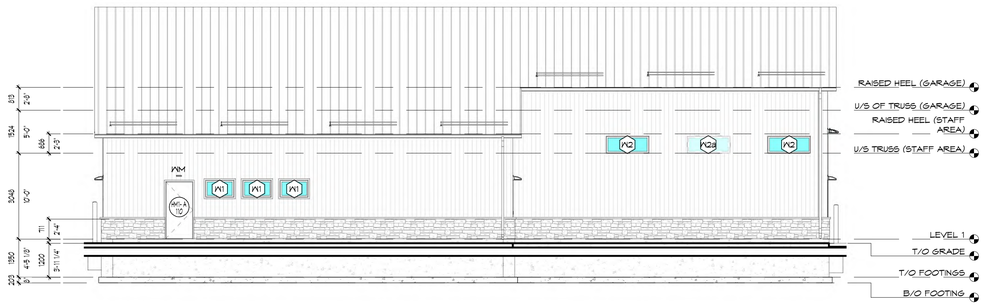
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| PROJECT NO.: 23-151 | |

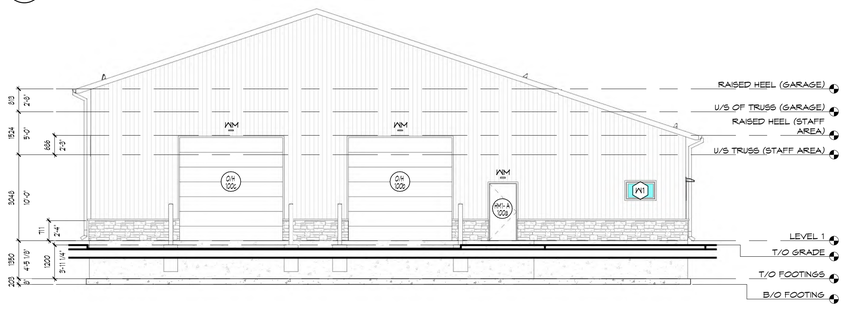
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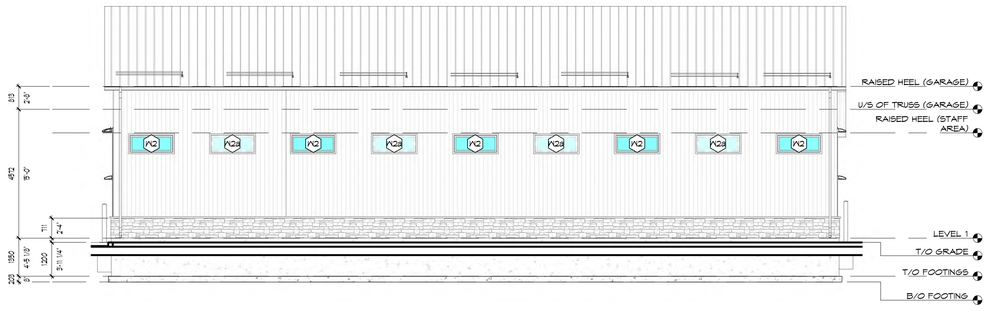

1 A300 NORTH ELEVATION
SCALE 1 : 100




2 A300 EAST ELEVATION
SCALE 1 : 100




3 A300 SOUTH ELEVATION
SCALE 1 : 100




4 A300 WEST ELEVATION
SCALE 1 : 100

## WINDOW SCHEDULE

| LEVEL | TYPE MARK | WIDTH | HEIGHT | SILL HEIGHT | COMMENTS |
|---|---|---|---|---|---|
| LEVEL 1 | XW1 | 1016 | 610 | 1473 | |
| LEVEL 1 | XW1 | 1016 | 610 | 1473 | |
| LEVEL 1 | XW1 | 1016 | 610 | 1473 | |
| LEVEL 1 | XW1 | 1016 | 610 | 1473 | |
| LEVEL 1 | XW2 | 1524 | 610 | 3048 | |
| LEVEL 1 | XW2 | 1524 | 610 | 3048 | |
| LEVEL 1 | XW2 | 1524 | 610 | 3048 | |
| LEVEL 1 | XW2 | 1524 | 610 | 3048 | |
| LEVEL 1 | XW2 | 1524 | 610 | 3048 | |
| LEVEL 1 | XW2 | 1524 | 610 | 3048 | |
| LEVEL 1 | XW2a | 1524 | 610 | 3048 | PROVISIONAL |
| LEVEL 1 | XW2a | 1524 | 610 | 3048 | PROVISIONAL |
| LEVEL 1 | XW2a | 1524 | 610 | 3048 | PROVISIONAL |
| LEVEL 1 | XW2a | 1524 | 610 | 3048 | PROVISIONAL |
| LEVEL 1 | XW2a | 1524 | 610 | 3048 | PROVISIONAL |

## WINDOW NOTES

**COORD.:**

- IT IS THE RESPONSIBILITY OF THE WINDOW & HARDWARE MANUF. / CONTRACTOR & OWNER TO COORD. & EXECUTE THEIR WORK TOGETHER
- COORD. W/ FLR. PLANS, ELEVATIONS & SCHEDULES FOR LOCATIONS & QUANTITY OF CURTAIN WALLS, ENT. STOREFRONT FRAMING & WINDOWS

**FINISH HARDWARE:**

**HARDWARE:**

- ALL FINISH HARDWARE & HARDWARE REQ.'S SHOWN / NOT SHOWN TO BE COORDINATED & VERIFIED W/ THE MANUF. / CONTRACTOR & OWNER

**FRAMING:**

- FRAMING - COORD. W/ OWNER

**GLAZING:**

- GLAZING - COORD. W/ OWNER

**FINISH:**

- FINISH - COORD. W/ OWNER

**SIZINGS:**

- OPENINGS - DIM.'S INDICATED ARE R/O OF STD. SIZING MANUF. U/N/O - VERIFY ALL OPENING DIM.'S & R/O SIZING PRIOR TO FABRICATION & ORDERING.

**ENERGY EFFICIENCY:**

- ENERGY EFFICIENCY OF OPENING INFILLS IN CONDITIONED / SEMI-HEATED SPACES TO MEET OR EXCEED THE OBC MATRIX ENERGY EFFICIENCY REQ.'S

**FIRE RATINGS:**

- COORD. W/ LIFE SAFETY DWG.'S FOR FIRE SEPARATIONS & FIRE RESISTANCE RATINGS FOR EXPOSURE SITUATIONS. FIRE RATED FRAMING & GLAZING TO BE IMPLEMENTED.

2 HR. (120 MIN.) FIRE SEPARATION TO HAVE 1 1/2 HR. (90MIN.) FIRE RATED CLOSURE
1 1/2 HR. (90 MIN.) FIRE SEPARATION TO HAVE 1 HR. (60 MIN.) FIRE RATED CLOSURE
1 HR. (60 MIN.) FIRE SEPARATIONS TO HAVE 3/4 HR. (45 MIN.) FIRE RATED CLOSURE
3/4 (45 MIN.) HR. FIRE SEPARATIONS TO HAVE 3/4 HR. (45 MIN.) FIRE RATED CLOSURE
1/2 HR. (30 MIN.) FIRE SEPARATIONS TO HAVE 20 MIN. FIRE RATED CLOSURE

DOORS & OPENING INFILLS IN EXT. WALLS W/ A FIRE RESISTANCE RATING BUT THAT ARE NOT REQ.'D TO BE PROTECTED OPENINGS ARE NOT REQ.'D TO HAVE A FIRE RESISTANCE RATING TYP.
(COORD. W/ UNPROTECTED OPENING ELEV.'S)

- ALL FIRE RATED CURTAIN WALLS / ENT. STOREFRONT FRAMING & WINDOWS W/ GLAZING "GL" TO HAVE "FIRELITE" GLAZING AS REQ.'D INCLUDING ALL EXPOSURE SITUATIONS UNLESS NM W/ GNG ARE NOTED. ALL NON-RATED GLAZING TO BE TEMPERED U/N/O TYP.

**GLAZING:**

- ALL GLASS AND GLAZING, CONTRACTOR SHALL VERIFY AND PROVIDE THICKNESS TO BE CONFIRMED BY MANUFACTURER FOR THE ASSEMBLY IN WHICH THE GLAZING IS INSTALLED, TO BE SUBMITTED IN SHOP DRAWINGS STAMPED BY A PROFESSIONAL ENGINEER BEFORE ANY MANUFACTURING. GLAZING TAPE TO BE AS PER MANUFACTURER'S WRITTEN RECOMMENDATIONS.
- BASIS OF DESIGN:
  1. VISION GLASS (GL):
     - ALL EXT. GLAZING TO BE 25mm (1") INSUL. DOUBLE GLAZING W/ 12.7mm (1/2") AIR SPACE, 90% ARGON FILLED W/ S/S SPACER
     - ALL EXT. GLAZING TO BE 6mm (1/4") THICK CLEAR (STARPHIRE) TEMPERED GLAZING, SOLARBAN 70XL FILM ON SURFACE 2
     - ALL INT. GLAZING TO BE 6mm (1/4") THICK CLEAR TEMPERED GLAZING

**SHOP DRAWINGS**

IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ENSURE; DOOR(S), SCREEN(S), WINDOW(S), CURTAIN WALL(S), FRAME(S), & THEIR HARDWARE MANUF.'S TRADES COORD. & EXECUTE THEIR WORK TOGETHER & LABEL IDENTIFYING INFO. FOR ALL DOOR(S), SCREENS(S), WINDOW(S), CURTAIN WALL(S), FRAME(S) SCH.'S **TO MATCH THE IDENTIFICATION TAG LABELS & DIMENSIONS** HERE.
(REVISE & RESUBMIT SHOP DWG.'S WILL BE RETURNED IF THIS FORMAT IS NOT FOLLOWED W/ NO REVIEW UNDERTAKEN)

## ELEVATION LEGEND

XM — LIGHT FIXTURE (XM - WALL MTD.)

SNOW GUARDS
ALPINE SNOW GUARD - 315 / ASG4025 & ASG4000S-T2-AL PIPE STYLE

**HATCH IDENTIFICATION LEGEND**

GL — VISION GLAZING (MAY NOT BE LABELLED GL, MAY BE COLOURED LIGHT BLUE)

PRE-FIN. VERT. METAL SIDING (DIFF. COLOURS WILL BE LABELLED)

**GENERAL NOTES:**

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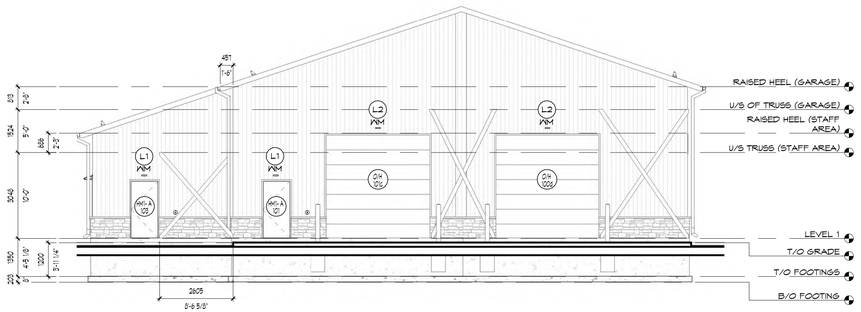
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100200390
PROVINCE OF ONTARIO

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MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

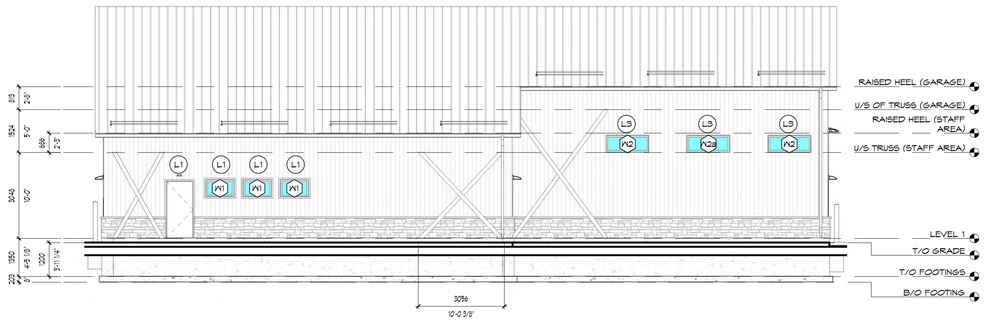
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| PROJECT NO.: 23-151 | |

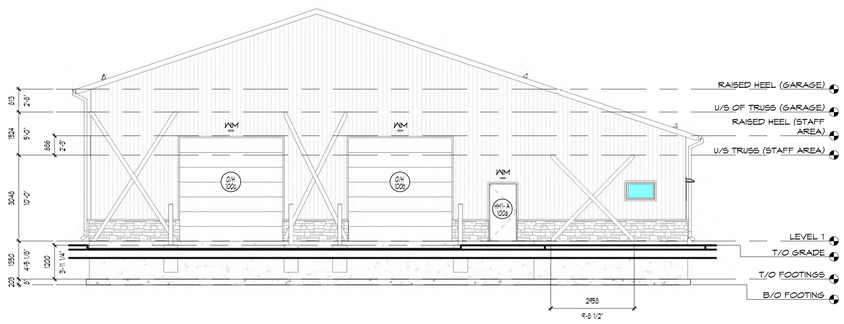
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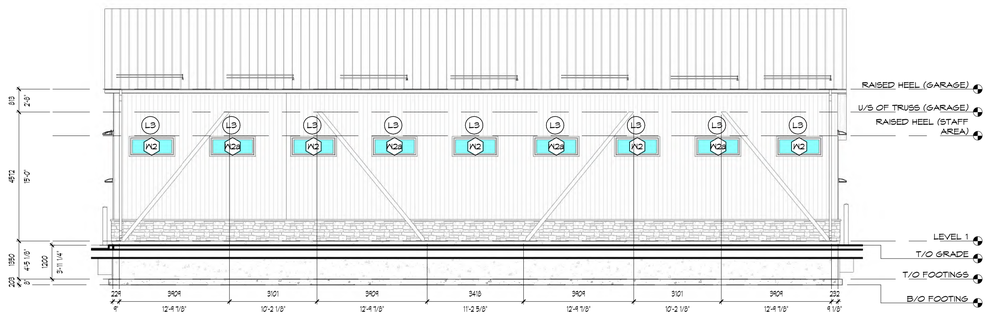

1 A300A **NORTH ELEVATION SHEAR WALLS**
SCALE 1 : 100



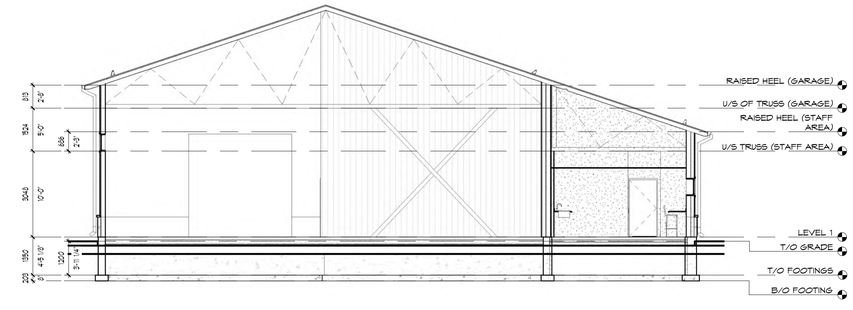

2 A300A **EAST ELEVATION SHEAR WALLS**
SCALE 1 : 100




3 A300A **SOUTH ELEVATION SHEAR WALLS**
SCALE 1 : 100

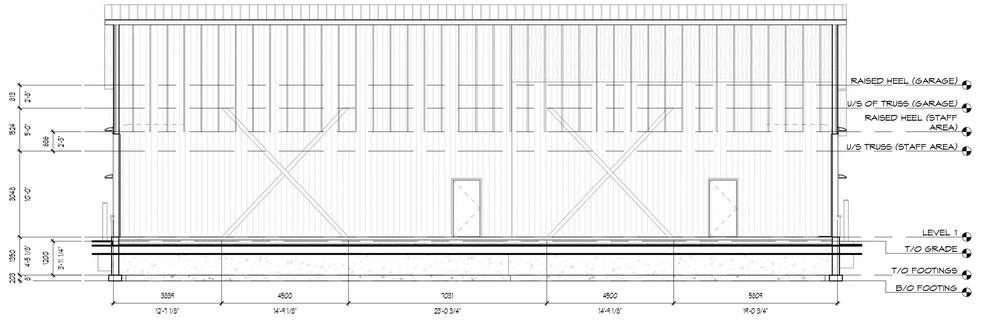



4 A300A **WEST ELEVATION SHEAR WALLS**
SCALE 1 : 100




6 A300A **SOUTH INTERIOR SHEAR WALL ELEVATION**
SCALE 1 : 100

REFER TO DETAIL 7/A405 FOR WOOD BRACING DETAIL




5 A300A **EAST INTERIOR SHEAR WALL ELEVATION**
SCALE 1 : 100

***HATCH IDENTIFICATION LEGEND***

GL — VISION GLAZING (MAY NOT BE LABELLED GL, MAY BE COLOURED LIGHT BLUE)

PRE-FIN. VERT. METAL SIDING (DIFF. COLOURS WILL BE LABELLED)

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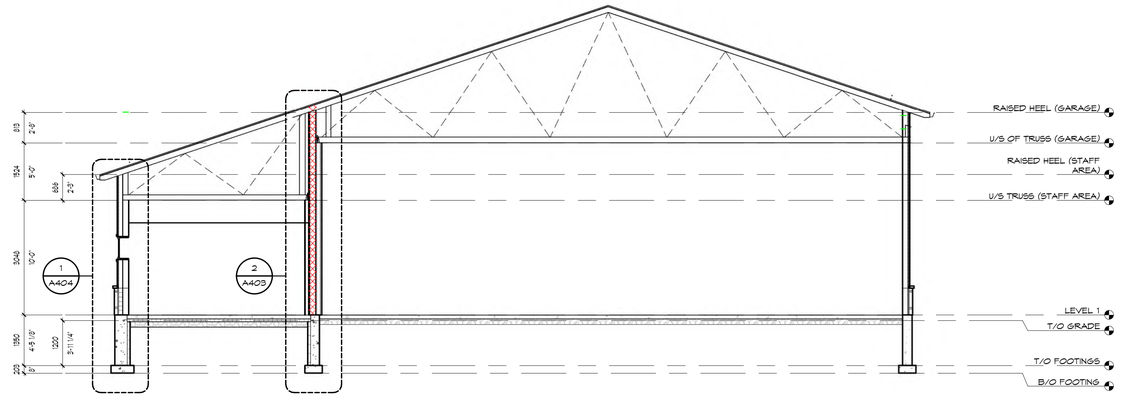
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100200390
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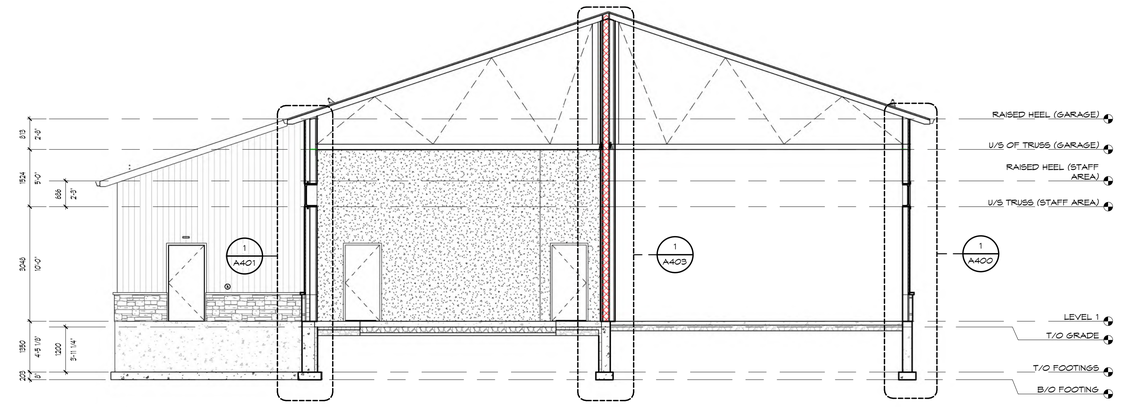
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| PROJECT NO.: 23-151 | |

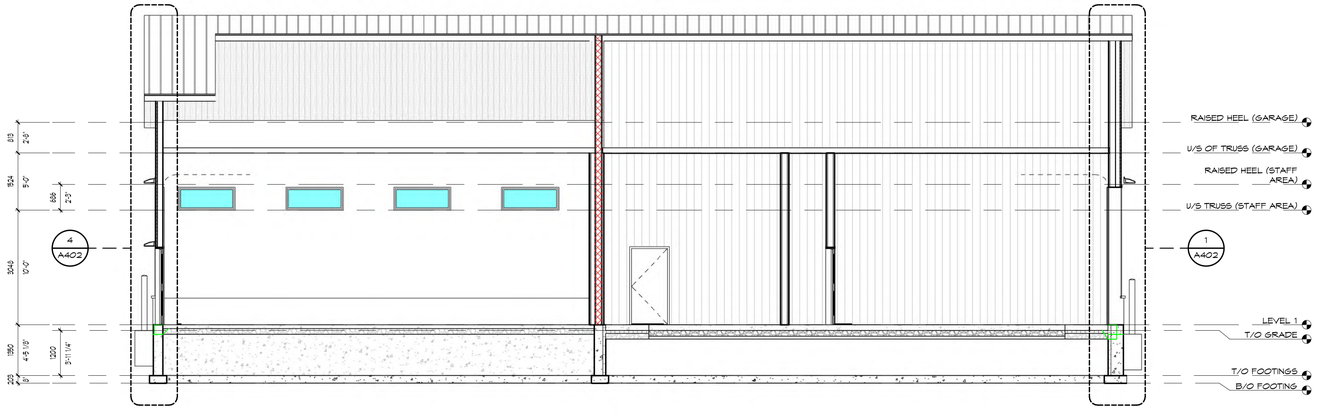
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1 A301 BUILDING SECTION A
SCALE 1 : 75




2 A301 BUILDING SECTION B
SCALE 1 : 75




3 A301 BUILDING SECTION C
SCALE 1 : 75

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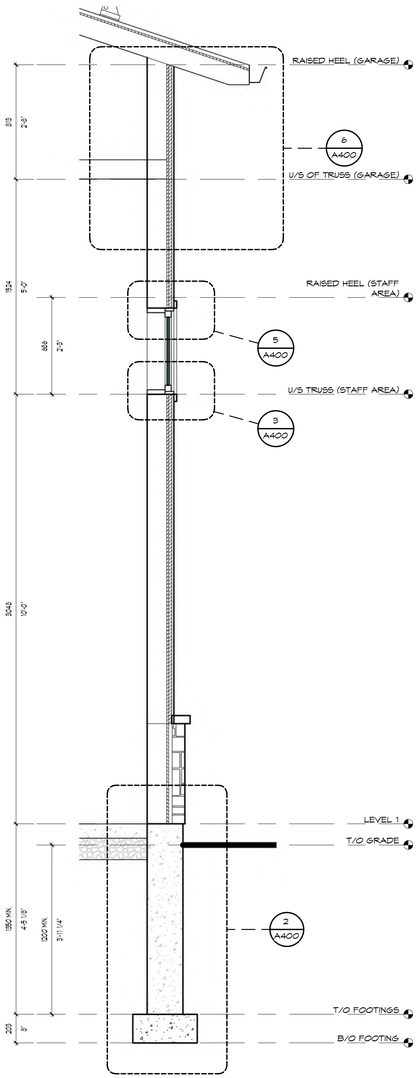
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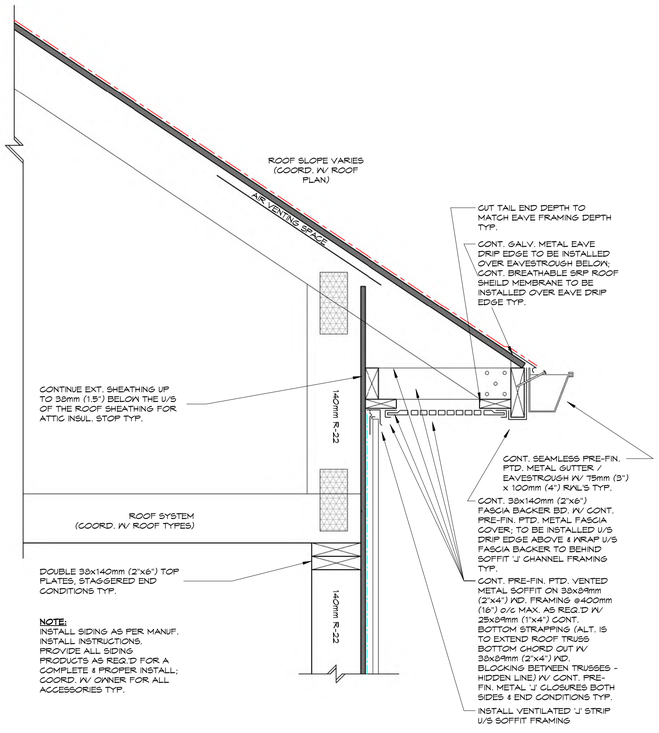
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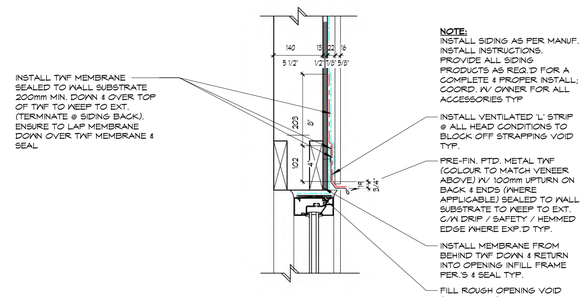
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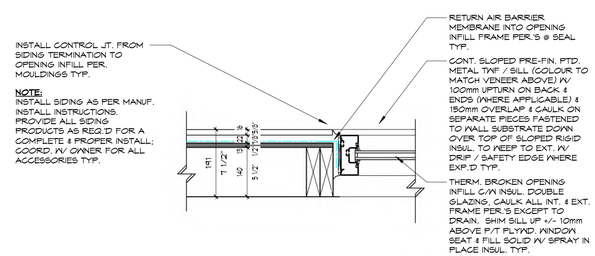

1 A400 TYP. EXT. WALL SECTION @ UNHEATED STORAGE
SCALE 1 : 20



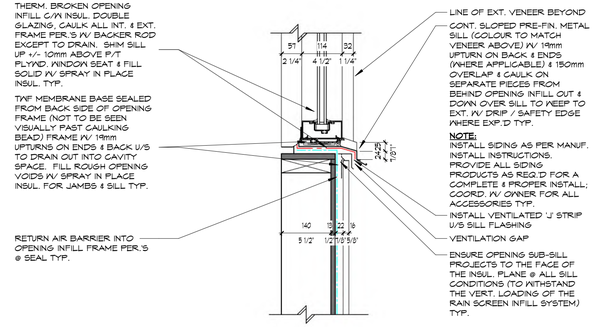

6 A400 EXT. WALL EAVE SECTION DETAIL - TRUSS - RAISED HEEL @ UNHEATED
SCALE 1 : 5



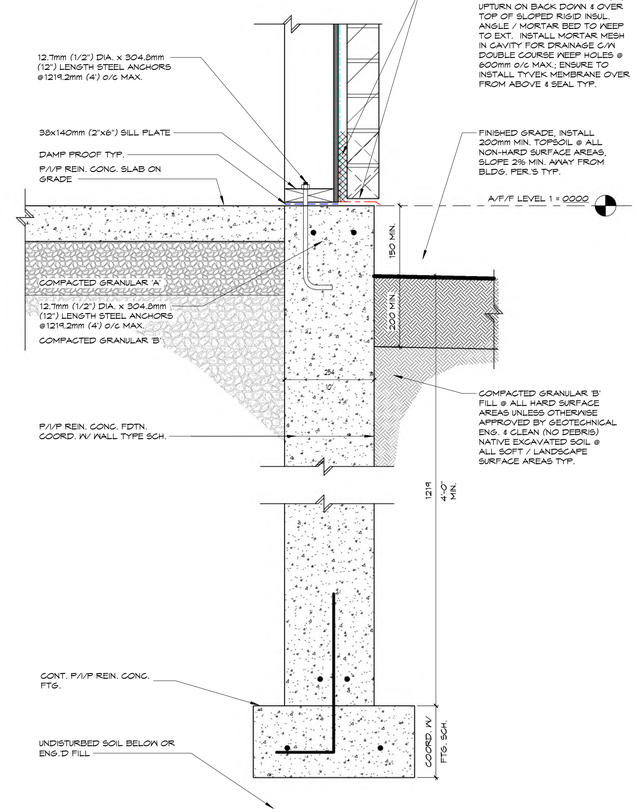

5 A400 EXT. OPENING HEAD SECTION DETAIL @ UNHEATED
SCALE 1 : 5




4 A400 EXT. OPENING JAMB PLAN DETAIL @ UNHEATED
SCALE 1 : 5




3 A400 EXT. OPENING SILL SECTION DETAIL @ UNHEATED
SCALE 1 : 5




2 A400 EXT. WALL BASE SECTION DETAIL @ UNHEATED
SCALE 1 : 5

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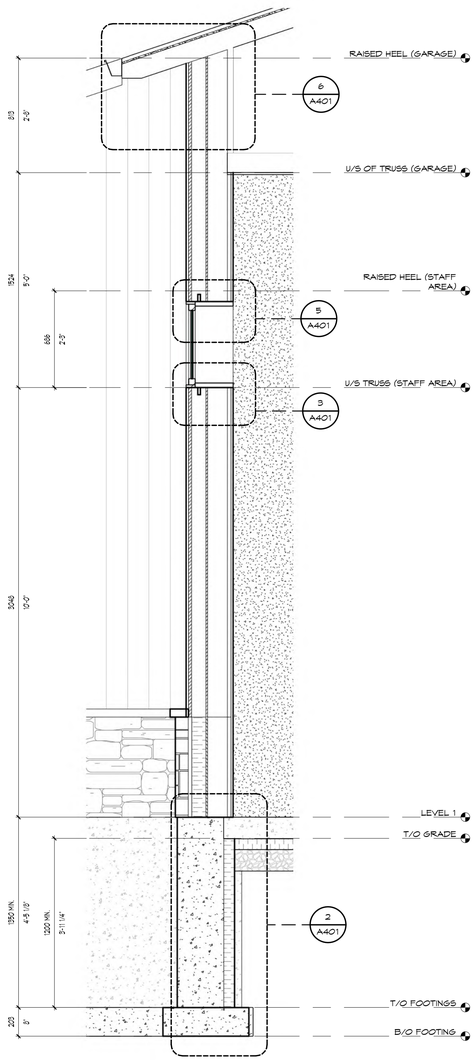
LICENSED PROFESSIONAL ENGINEER
July 8th/2025
B. D. BUCHWALD
100200380
23-151
PROVINCE OF ONTARIO

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
WALL SECTION & DETAILS

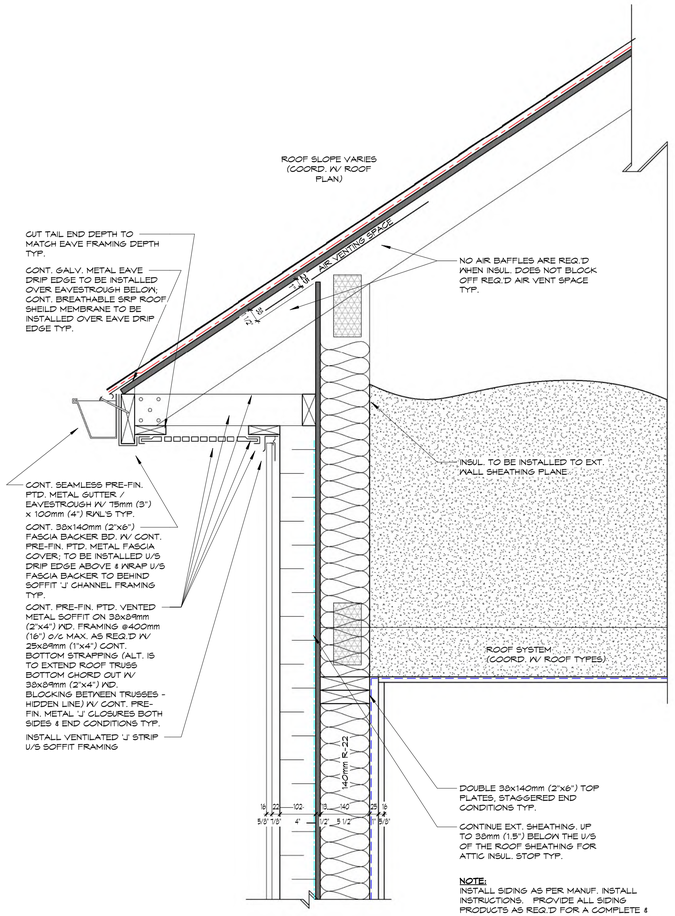
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| PROJECT NO.: 23-151 | |

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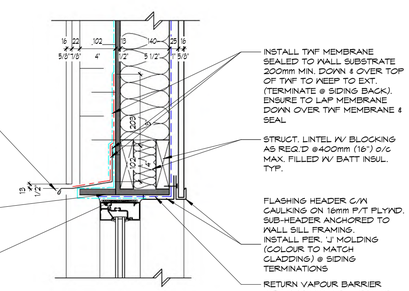

## 1 A401 TYP. EXT. WALL SECTION @ SEMI-HEATED SPACE

SCALE 1 : 20



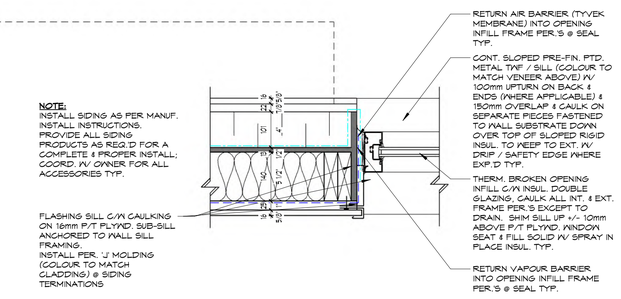

## 6 A401 EXT. WALL EAVE SECTION DETAIL - TRUSS - RAISED HEEL @ SEMI-HEATED SPACE

SCALE 1 : 8



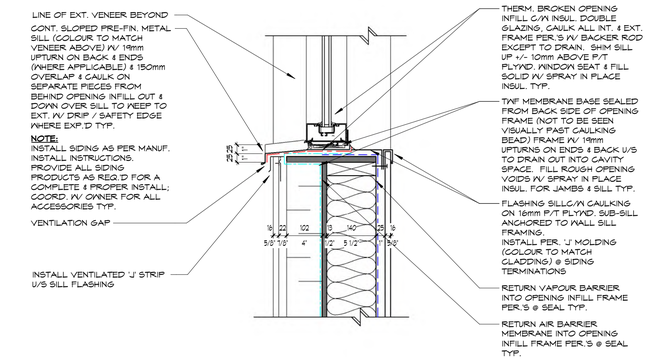

## 5 A401 EXT. OPENING HEAD SECTION DETAIL @ SEMI-HEATED SPACE

SCALE 1 : 8



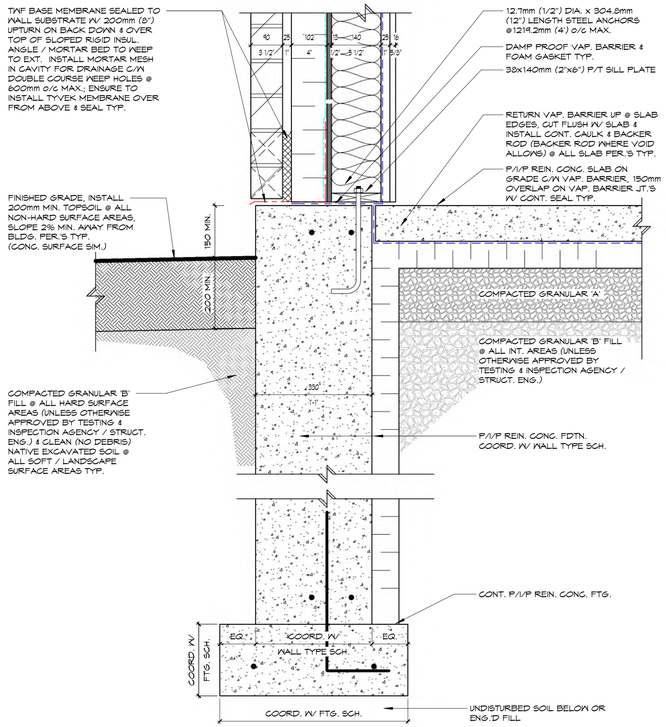

## 4 A401 EXT. OPENING JAMB PLAN DETAIL @ SEMI-HEATED SPACE

SCALE 1 : 8




## 3 A401 EXT. OPENING SILL SECTION DETAIL @ SEMI-HEATED SPACE

SCALE 1 : 8




## 2 A401 EXT. WALL BASE SECTION DETAIL - S/O/G @ SEMI-HEATED SPACE

SCALE 1 : 8

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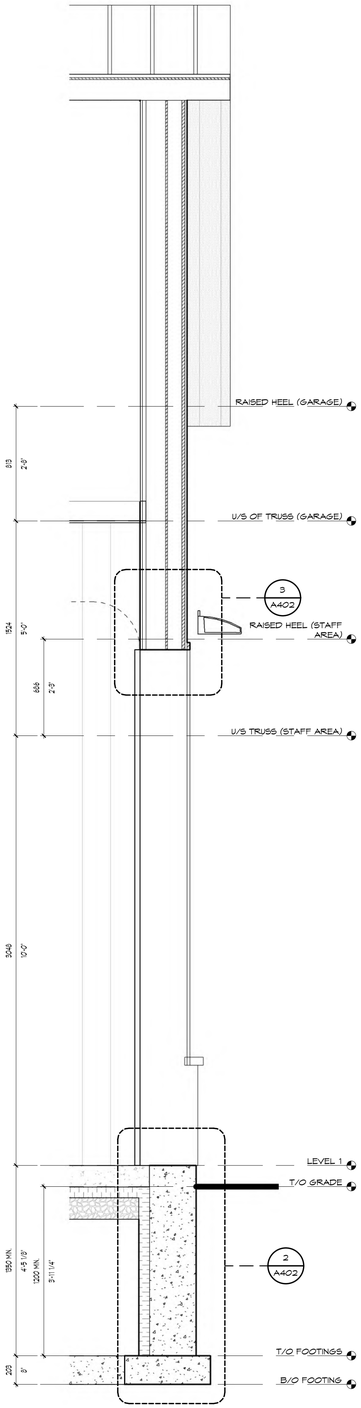
LICENSED PROFESSIONAL ENGINEER
July 3rd 2025
B.D.BUCHWALD
100200380
PROVINCE OF ONTARIO

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
WALL SECTION & DETAILS

| CHECKED BY: | DRAWN BY: |
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| PROJECT NO.: 23-151 | |

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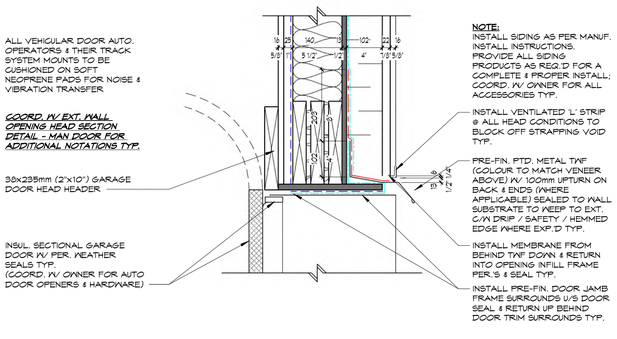

1 A402 WALL SECTION @ VEHICULAR DOOR
SCALE 1 : 20

ALL VEHICULAR DOOR AUTO. OPERATORS & THEIR TRACK SYSTEM MOUNTS TO BE CUSHIONED ON SOFT NEOPRENE PADS FOR NOISE & VIBRATION TRANSFER.

***COORD. W/ EXT. WALL OPENING HEAD SECTION DETAIL - MAN DOOR FOR ADDITIONAL NOTATIONS TYP.***

38x235mm (2"X10") GARAGE DOOR HEAD HEADER

INSUL. SECTIONAL GARAGE DOOR W/ PER. WEATHER SEALS TYP. (COORD. W/ OWNER FOR AUTO DOOR OPENERS & HARDWARE)




**NOTE:**
INSTALL SIDING AS PER MANUF. INSTALL INSTRUCTIONS. PROVIDE ALL SIDING PRODUCTS AS REQ.D FOR A COMPLETE & PROPER INSTALL; COORD. W/ OWNER FOR ALL ACCESSORIES TYP.

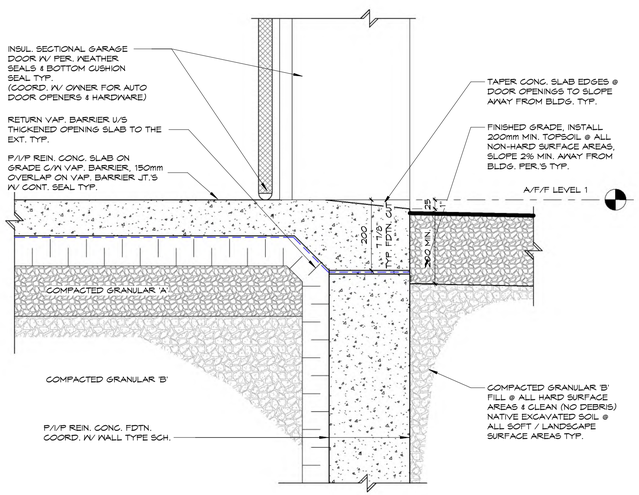
INSTALL VENTILATED 'L' STRIP @ ALL HEAD CONDITIONS TO BLOCK OFF STRAPPING VOID TYP.

PRE-FIN. PTD. METAL TWF (COLOUR TO MATCH VENEER ABOVE) W/ 100mm UPTURN ON BACK & ENDS (WHERE APPLICABLE) SEALED TO WALL SUBSTRATE TO WEEP TO EXT. C/W DRIP / SAFETY / HEMMED EDGE WHERE EXP.'D TYP.

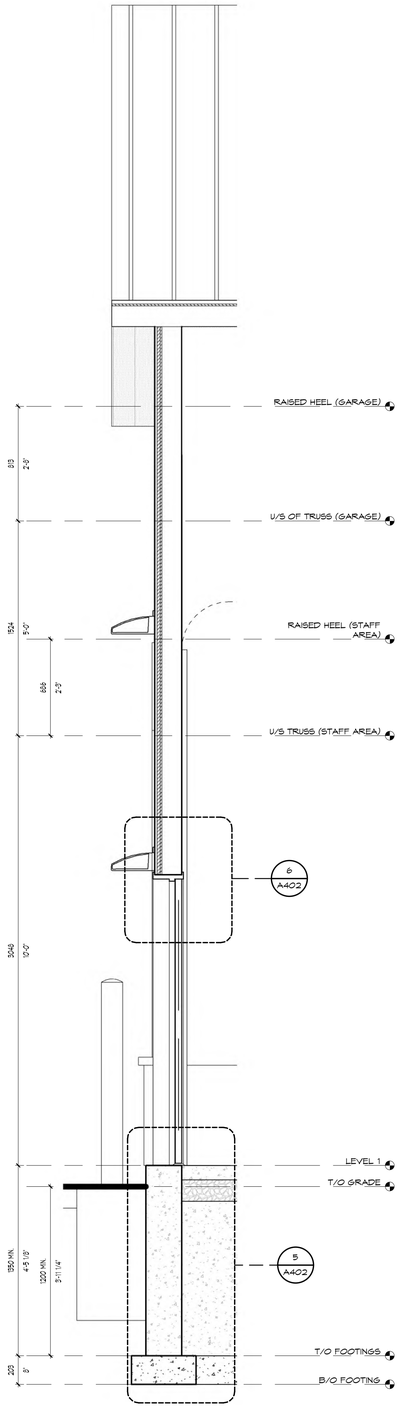
INSTALL MEMBRANE FROM BEHIND TWF DOWN & RETURN INTO OPENING INFILL FRAME PER.'S & SEAL TYP.

INSTALL PRE-FIN. DOOR JAMB FRAME SURROUNDS U/S DOOR SEAL & RETURN UP BEHIND DOOR TRIM SURROUNDS TYP.

3 A402 EXT. DOOR HEAD SECTION DETAIL - VEHICULAR DOOR
SCALE 1 : 5




2 A402 EXT. DOOR SILL SECTION DETAIL - GARAGE - VEHICULAR DOOR
SCALE 1 : 5




4 A402 WALL SECTION @ MANDOOR
SCALE 1 : 20

**NOTE:**
INSTALL SIDING AS PER MANUF. INSTALL INSTRUCTIONS. PROVIDE ALL SIDING PRODUCTS AS REQ.D FOR A COMPLETE & PROPER INSTALL; COORD. W/ OWNER FOR ALL ACCESSORIES TYP.

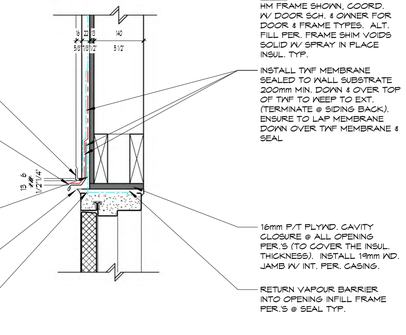
INSTALL VENTILATED 'L' STRIP @ ALL HEAD CONDITIONS TO BLOCK OFF STRAPPING VOID TYP.

PRE-FIN. PTD. METAL TWF (COLOUR TO MATCH VENEER ABOVE) W/ 100mm UPTURN ON BACK & ENDS (WHERE APPLICABLE) SEALED TO WALL SUBSTRATE TO WEEP TO EXT. C/W DRIP / SAFETY / HEMMED EDGE WHERE EXP.'D TYP.

INSTALL MEMBRANE FROM BEHIND TWF DOWN & RETURN INTO OPENING INFILL FRAME PER.'S & SEAL TYP.

SAND & PAINT STRAPPING @ OPENING TRIM SURROUNDS WHERE EXP.'D OR INSTALL MANUF. MOULDING / BACKER TYP.

FILL FRAME VOID SOLID W/ SPRAY IN PLACE INSUL. @ EXT. LOCATIONS TYP.



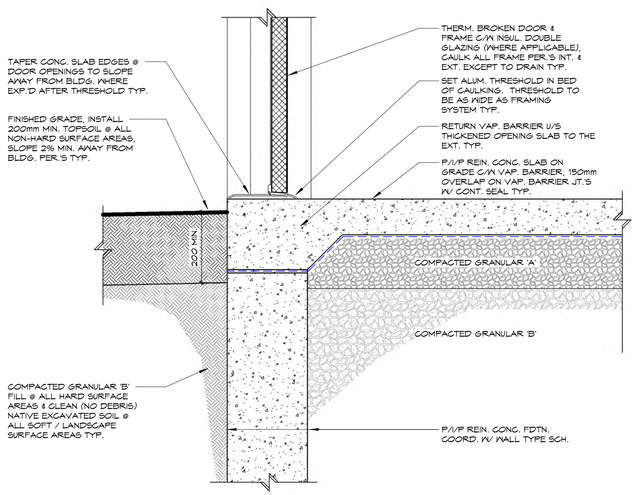

**NOTE:**
HM FRAME SHOWN, COORD. W/ DOOR SCH. & OWNER FOR DOOR & FRAME TYPES. ALT. FILL PER. FRAME SHIM VOIDS SOLID W/ SPRAY IN PLACE INSUL. TYP.

INSTALL TWF MEMBRANE SEALED TO WALL SUBSTRATE 200mm MIN. DOWN & OVER TOP OF TWF TO WEEP TO EXT. (TERMINATE @ SIDING BACK). ENSURE TO LAP MEMBRANE DOWN OVER TWF MEMBRANE & SEAL

16mm P/T FLYWD. CAVITY CLOSURE @ ALL OPENING PER.'S (TO COVER THE INSUL. THICKNESS). INSTALL 19mm WD. JAMB W/ INT. PER. CASING.

RETURN VAPOUR BARRIER INTO OPENING INFILL FRAME PER.'S @ SEAL TYP.

6 A402 EXT. DOOR HEAD SECTION DETAIL - MAN DOOR
SCALE 1 : 5




5 A402 EXT. DOOR SILL SECTION DETAIL - MAN DOOR
SCALE 1 : 5

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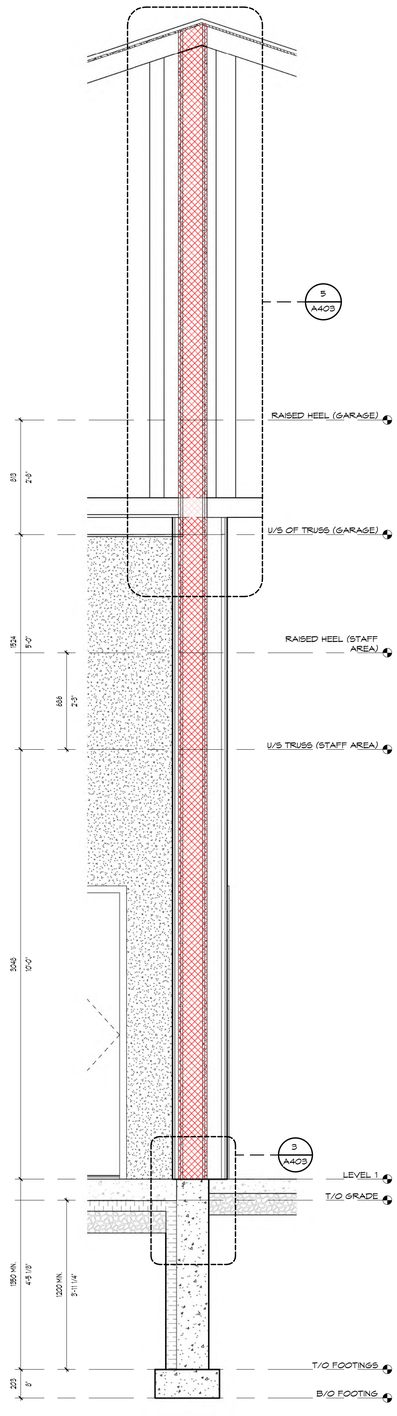
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July 3rd/2025
B.D. BUCHWALD
100200280
PROVINCE OF ONTARIO

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
WALL SECTION & DETAILS

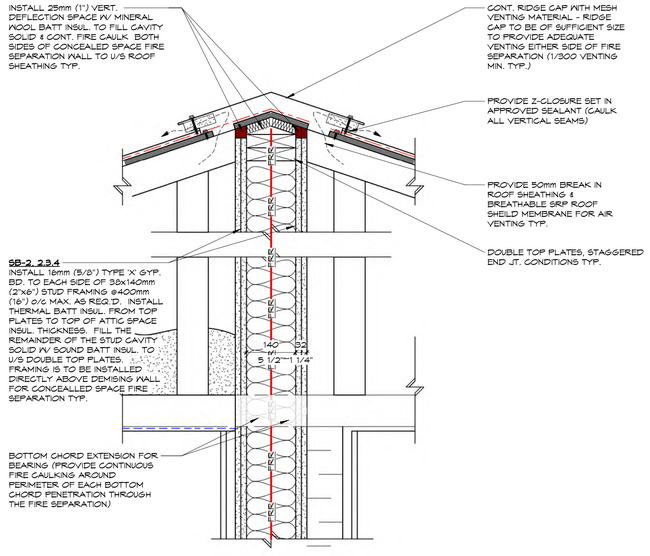
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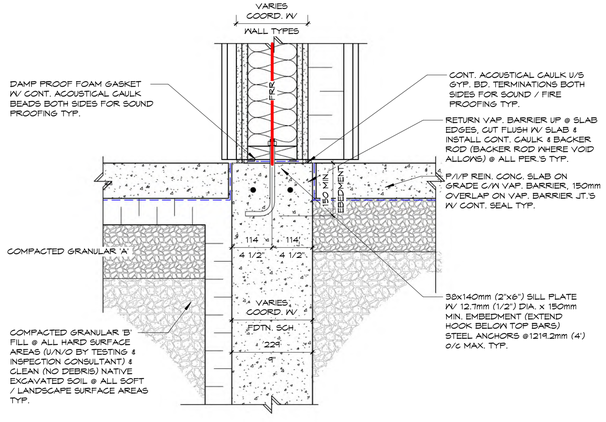

FIRE SEPARATION BETWEEN UNHEATED STORAGE AND WORKSHOP

1 / A403 SCALE 1 : 20



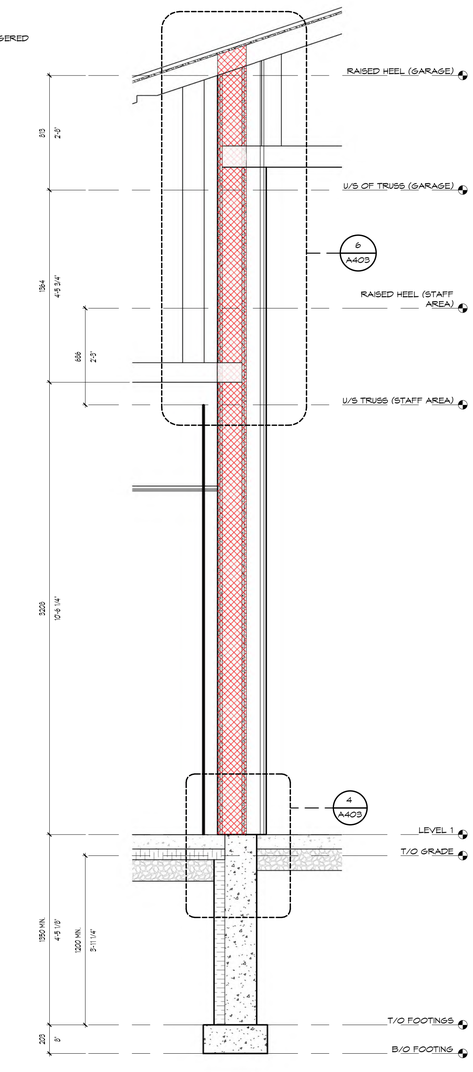

5 / A403 DEMISING WALL ROOF SECTION DETAIL - TRUSSES

SCALE 1 : 5



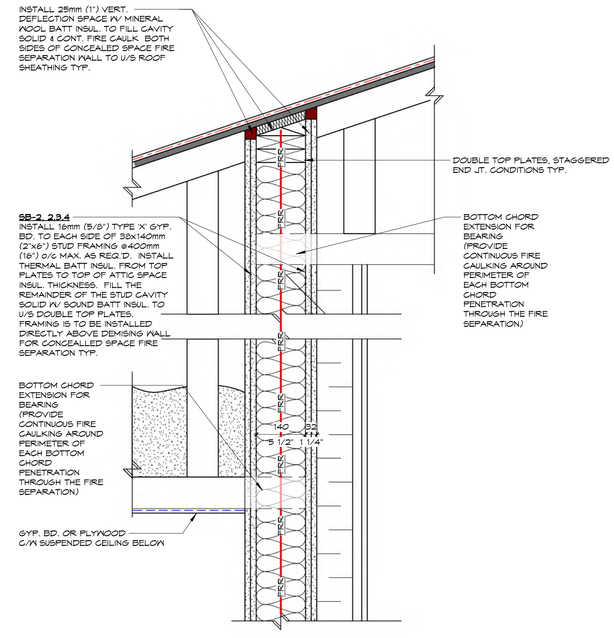

3 / A403 DEMISING WALL SECTION DETAIL - S/O/G

SCALE 1 : 5



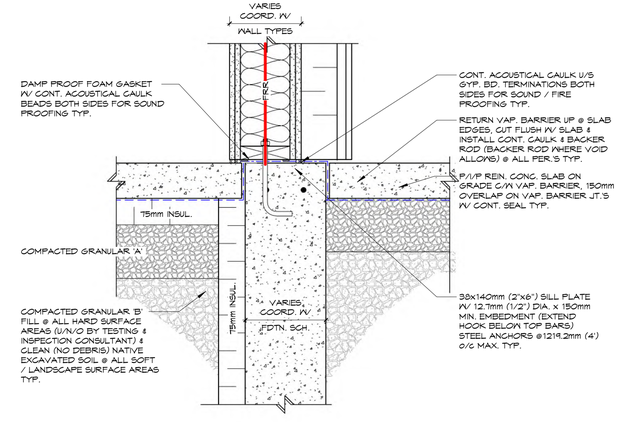

FIRE SEPARATION BETWEEN UNHEATED STORAGE AND HEATED SPACE

2 / A403 SCALE 1 : 20




6 / A403 DEMISING WALL ROOF SECTION DETAIL TRUSSES

SCALE 1 : 5




4 / A403 DEMISING WALL SECTION DETAIL S/O/G

SCALE 1 : 5

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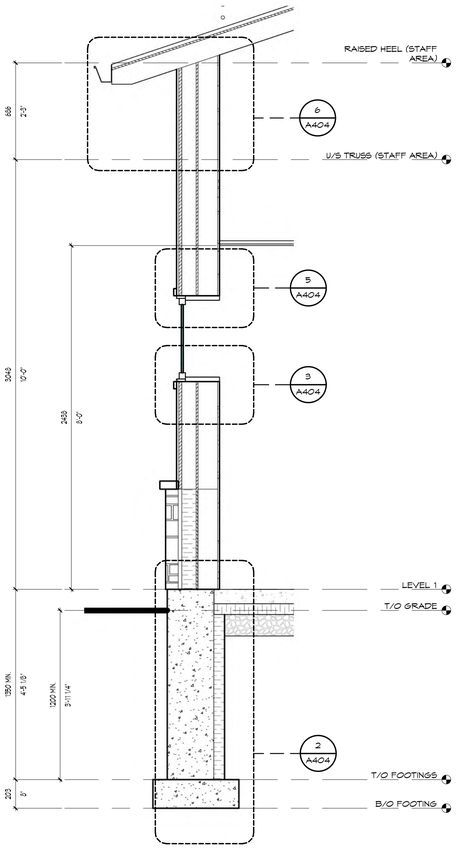
LICENSED PROFESSIONAL ENGINEER
July 3rd 2025
B. D. BUCHWALD
100200390
PROVINCE OF ONTARIO

PROJECT TITLE:
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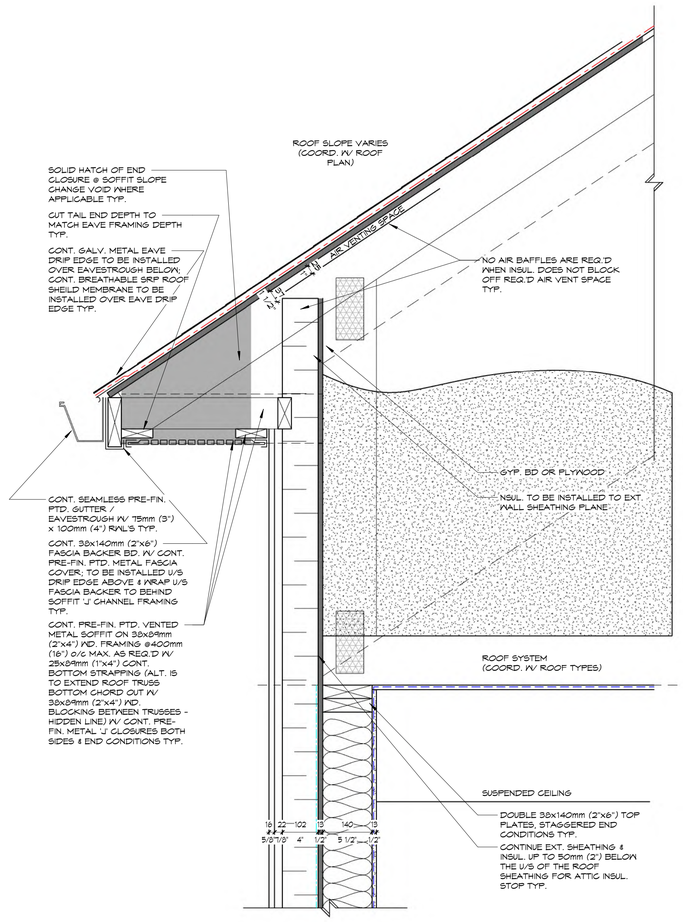
DRAWING TITLE:
WALL SECTION & DETAILS

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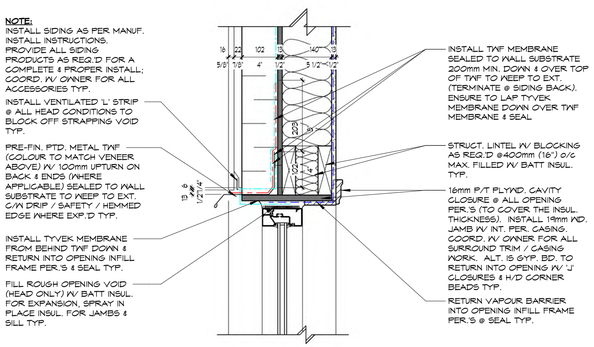
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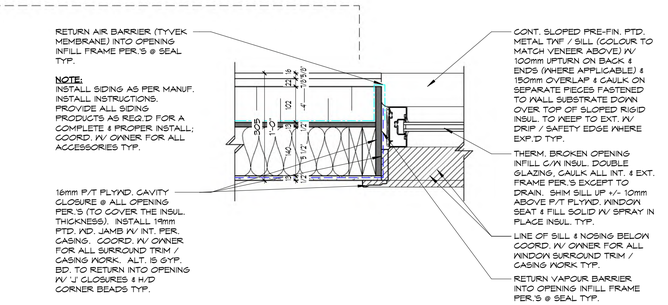

1 A404 FUTURE TYP. EXT. WALL SECTION @ HEATED SPACE
SCALE 1 : 20



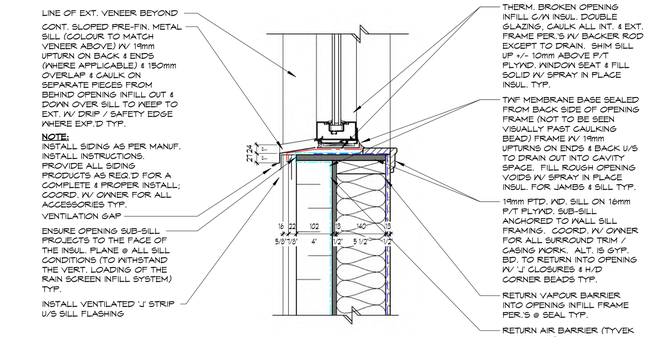

6 A404 EXT. WALL EAVE SECTION DETAIL - TRUSS - RAISED HEEL @ HEATED SPACE
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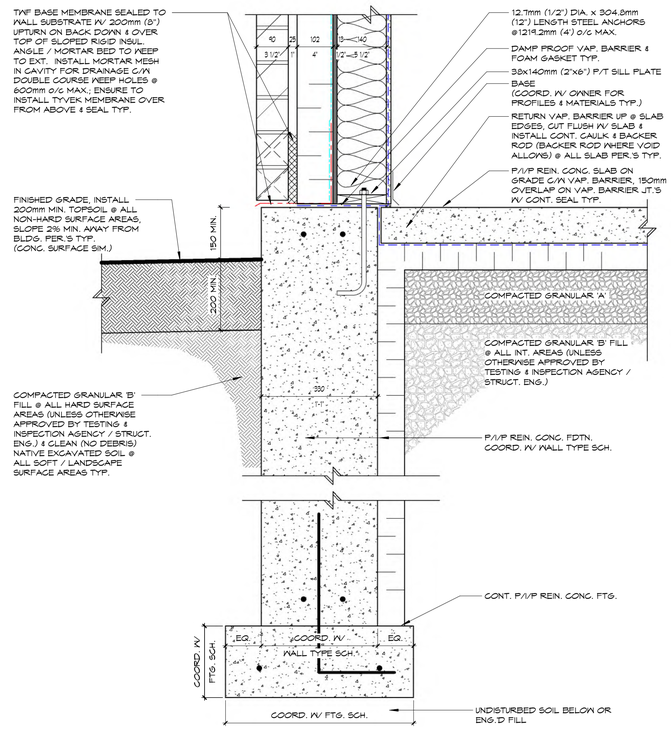

5 A404 EXT. OPENING HEAD SECTION DETAIL @ HEATED SPACE
SCALE 1 : 5




4 A404 EXT. OPENING JAMB PLAN DETAIL @ HEATED SPACE
SCALE 1 : 5




3 A404 EXT. OPENING SILL SECTION DETAIL @ HEATED SPACE
SCALE 1 : 5




2 A404 EXT. WALL BASE SECTION DETAIL - S/O/G @ HEATED SPACE
SCALE 1 : 5

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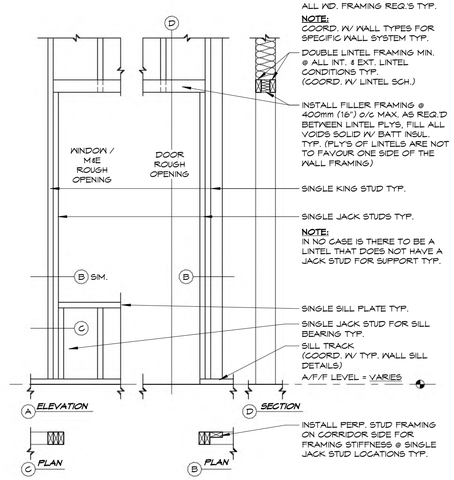
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100201390
PROVINCE OF ONTARIO

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

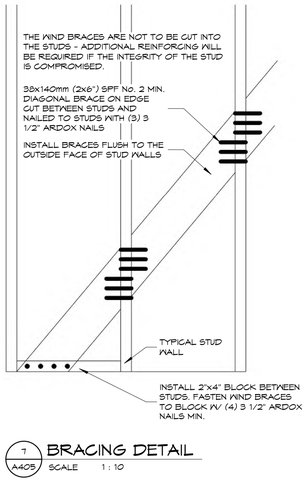
DRAWING TITLE:
WALL SECTION & DETAILS

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| LHR/BB | BM/KA |
| DRAWING SCALE: As indicated | DRAWING NO.: A404 |
| PROJECT NO.: 23-151 | |

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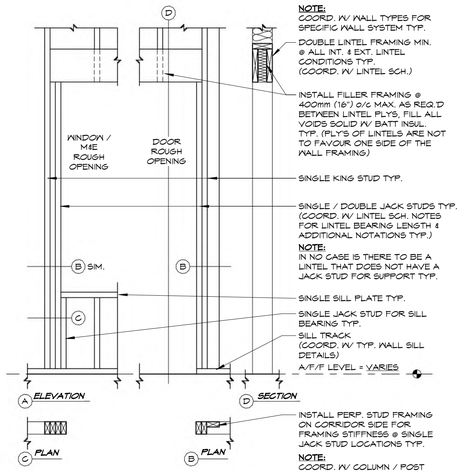

1 / A405 WD. FRAMING - NON-LOADBEARING FRAMING
SCALE 1 : 20




7 / A405 BRACING DETAIL
SCALE 1 : 10

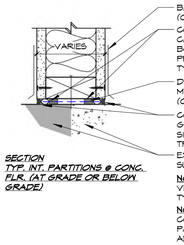



3 / A405 WD. FRAMING - CORNER FRAMING
SCALE 1 : 20



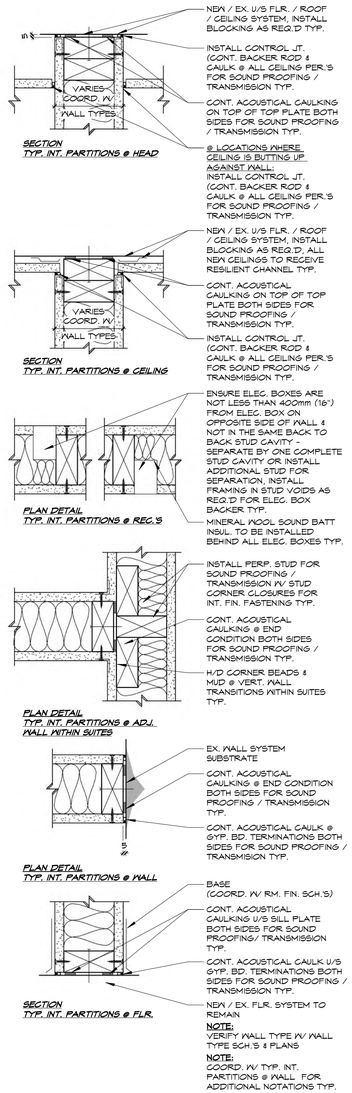

2 / A405 WD. FRAMING - LOADBEARING FRAMING
SCALE 1 : 20

**(Updated January 1, 2020)**
**9.23.2.3. Protection from Dampness**
**(1)** Except as permitted in Sentence (2), wood framing members that are not pressure-treated with a wood preservative and that are supported on concrete in contact with the ground or fill shall be separated from the concrete by not less than 0.05 mm polyethylene film or Type S roll roofing.
**(2)** Dampproofing material referred to in Sentence (1) is not required where the wood member is at least 150 mm above the ground.




SECTION
TYP. INT. PARTITIONS @ CONC. FLR. (AT GRADE OR BELOW GRADE)

4 / A405 WALL DETAILS - WD. STUD - DAMPPROOFING
SCALE 1 : 5




5 / A405 WALL DETAILS - WD. STUD - INT. SUITE PARTITION WALLS
SCALE 1 : 5

6 / A405 WALL DETAILS - WD. STUD - INT. SUITE PARTITION WALLS - F/R/R
SCALE 1 : 5

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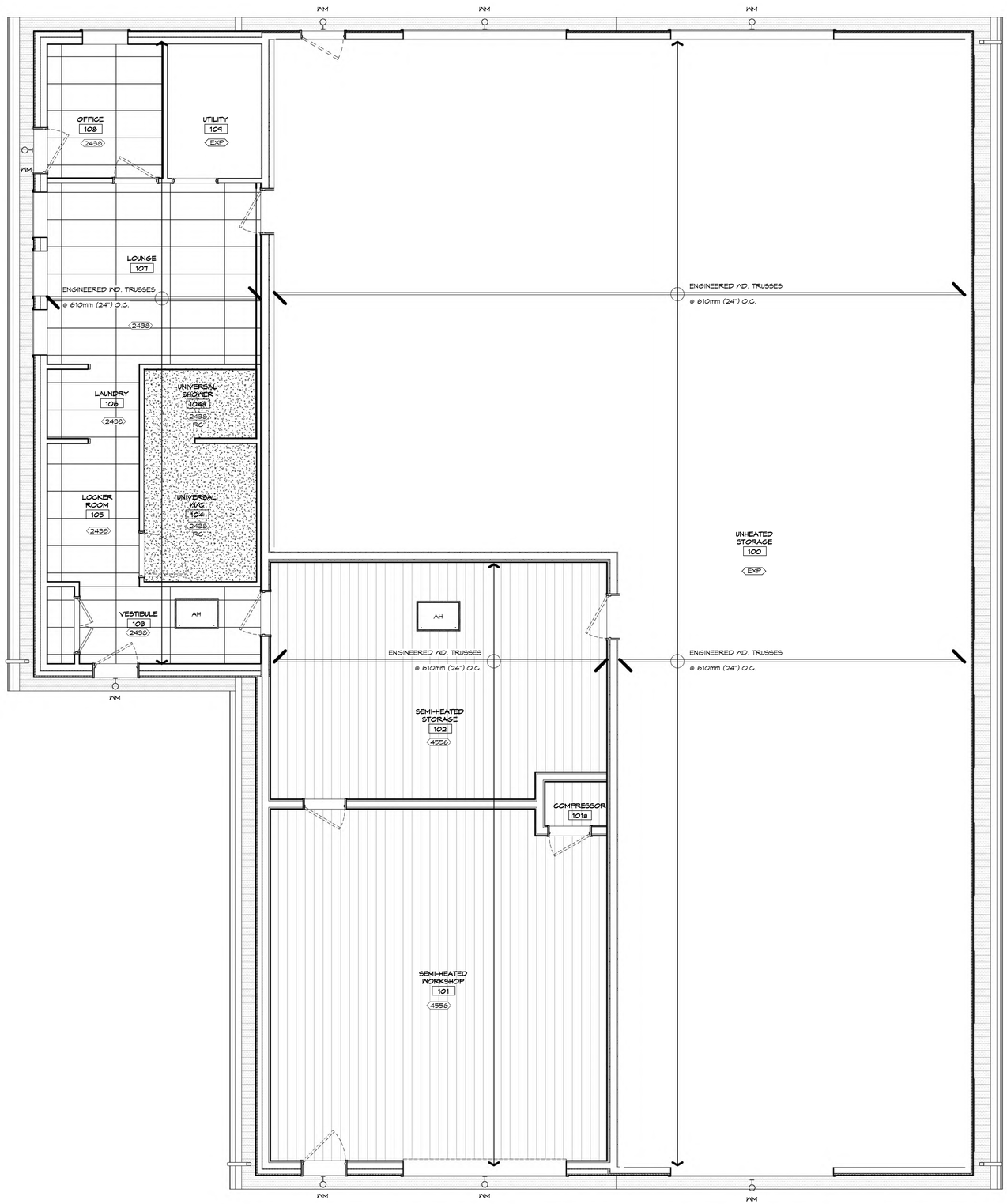
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STAMP STRUCT.
LICENSED PROFESSIONAL ENGINEER
July 3RD/2025
B. D. BUCHWALD
100220380
PROVINCE OF ONTARIO

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
WALL FRAMING DETAILS

CHECKED BY: LHR/BB
DRAWN BY: BM/KA
DRAWING SCALE: As indicated
DRAWING NO.: A405
PROJECT NO.: 23-151

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PROJECT NUMBER & NAME: 23-151 GRETZKY GOLF COURSE




1 A600 LEVEL 1 RCP
SCALE 1 : 50

## ACCESS HATCH LEGEND (ROOF / CEILING / ATTIC)

**(Updated January 1, 2025)**
**9.19.2. Access**
**9.19.2.1. Access**
**(1)** Every *attic or roof space* shall be provided with an access hatch where the *attic or roof space*,
(a) measures not less than,
(i) 10 m² in area,
(ii) 1 000 mm in length or width, and
(iii) 600 mm in height over at least the area described in Subclauses (i) and (ii), or
(b) contains a fuel-fired *appliance*.
**(2)** Except where an *attic or roof space* contains a fuel-fired *appliance*, the hatch required in Sentence (1) shall be not less than 550 mm by 900 mm except that, where the hatch serves a *house* or an individual *dwelling unit* in a *house*, the hatch may be reduced to,
(a) 0.32 m² in area with no dimension less than 345 mm, or
(b) 500 mm by 700 mm.
**(3)** Hatchways to *attic or roof spaces* shall be fitted with doors or covers.

## REFLECTED CEILING LEGEND

| | |
|---|---|
| EXP | EXPOSED CEILING TO STRUCTURE |
| ACCESS TILE | 1220x610 SUSPENDED ACOUSTIC CEILING TILE SYSTEM - ACT1 (ACCESS TILES BELOW MECH. UNITS) |
| XM XM | WALL MOUNTED LIGHT FIXTURES |
| 2700 COMMENT | CEILING HEIGHT & COMMENT (MEASURED FROM A/F/F IN SPECIFIC SPACE NOTED) |
| AH AH | ACCESS HATCH (COORD. W/ ACCESS HATCH LEGEND (ROOF / CEILING / ATTIC) FOR SIZING) NON FIRE RATED, INSULATED, RSI 3.52 / R-20 RIGID INSUL. (SB-12 3.1.1.8.(1)(a)(b)), 6 MIL. AIR/VAP. BARRIER, 19mm PLYWD., 13mm GYP. BD., INT. FIN., CONT. WEATHER SEAL (PROVIDE ELEC. SWITCH FOR SINGLE POLE LIGHT FIXTURE FOR THE CORRESPONDING ATTIC COMPARTMENT SPACE) |
| JST SPANNING | CEILING STRUCTURE SPAN INDICATOR |

### HATCH IDENTIFICATION LEGEND

| | |
|---|---|
| RC | 13mm (1/2") GYP. BD. CEILING SYSTEM ON 12.7mm (1/2") RESILIENT CHANNELLING @406mm (16") O/C MAX. AS REQ'D ON WD. FRAMING, (38x89mm WD. FRAMING @406mm O/C MAX.) AS REQ'D; ALL GYP. BD. FACES TO BE PTD., CAULK ALL PERIMETERS (13mm TILE BACKER BD. @ SHOWER LOCATIONS TYP.) |
| | PRE-FIN. PTD. METAL LINER |
| | PRE-FIN. VENTED METAL SOFFIT W/ CONT. 'J' CLOSURES @ EDGE PER.'S ON WD. FRAMING @400mm (16") O/C MAX. AS REQ'D TYP. |

### GENERAL NOTES:

- SHOP DWG.'S ARE TO BE DIMENSIONED IN METRIC UNITS (IMPERIAL & METRIC BOTH SHOWN IS ACCEPTABLE)
- THE FULL EXTENT OF CEILING COMPONENTS TO INCLUDE BUT NOT BE LIMITED TO THOSE LISTED ABOVE AS LEGEND MAY NOT BE COMPREHENSIVE
- THIS DWG. IS TO BE READ IN CONJUNCTION W/ MECH. & ELEC. DWG.'S FOR ALL ELEC. FIXTURES, MECH. SUPPLY / RETURN DIFFUSERS / GRILLES, ETC. REPORT ANY DISCREPANCIES PRIOR TO ANY WORK. LOCATION OF ITEMS TO BE AS SHOWN ON ARCH. DWG.'S
- ALL EXT. & INT. CEILING & BULKHEAD SYSTEMS TO BE CONSTRUCTED W/ WD. FRAMING TYP., NOT METAL.
- ALL NEW GYP BD. CEILINGS ARE TO RECEIVE 13mm RESILIENT CHANNELLING @400mm O/C MAX. & ANY ASSOCIATED BLOCKING TO ACHIEVE A UNIFORM / FLAT CEILING SURFACE ON NEW & EX. FRAMING SUBSTRATES TYP.

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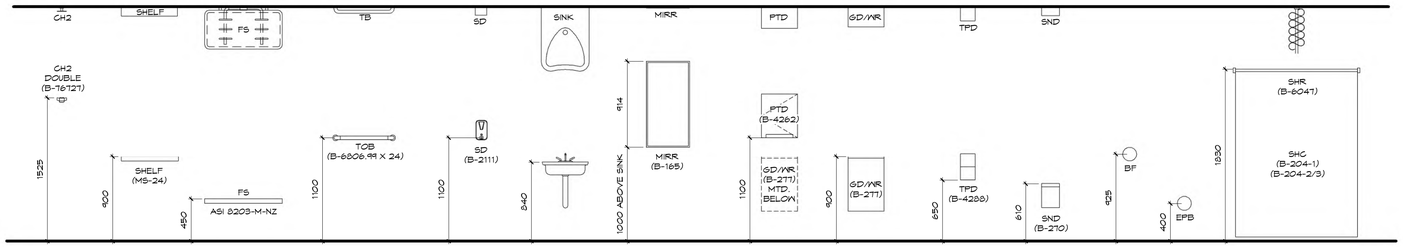
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LICENSED PROFESSIONAL ENGINEER
July 3rd 2025
B. D. BUCHWALD
100200380
23-151
PROVINCE OF ONTARIO

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
LEVEL 1 REFLECTED CEILING PLANS

| CHECKED BY: | DRAWN BY: |
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| LHR/BB | BM/KA |
| DRAWING SCALE: As indicated | DRAWING NO.: A600 |
| PROJECT NO.: 23-151 | |

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TOWEL BARS TO BE 18 GAUGE (1.24mm) S/S TUBING, W/ MANDREL BENDS. KNURLED & PEENED FINISH FOR FULL LENGTH OF THE TUBING TO WITHIN 100mm (4") OF ENDS OF BENDS. SECURE CONCEALED FASTENING GRAB BARS W/ 64mm (2 1/2") NO. 14 SCREWS TO SOLID BACKING, CAPABLE OF SUPPORTING A 500 LB. (225 KG) PULL

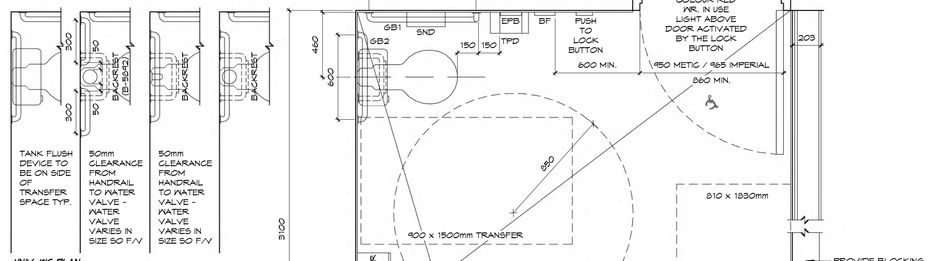
***ACCESSORY MOUNTING HEIGHTS***

- INSTALL ALL PRODUCTS AS PER MANUF. INSTALL INSTRUCTIONS
- ***MANUF. PRODUCTS ARE THE BASIS OF DESIGN - COORD. W/ OWNER FOR ALTERNATES***
- CONTRACTOR SHALL VERIFY ALL FIXTURE & ACCESSORY MOUNTING HEIGHTS FOR ALL SPACES W/ OWNER PRIOR TO CONST. & CONFIRM W/ OBC AS CURRENTLY AMENDED

**(Updated January 1, 2025)**
**3.8.3.12. Universal Washrooms**
**(1)** A universal washroom shall,
(a) be served by a *barrier-free* path of travel,
(b) have a door that,
(i) complies with Article 3.8.3.3.,
(ii) has a graspable latch-operating mechanism that is,
(A)operable using a closed fist and with a force of not more than 22.2 N, and
(B)located between 900 mm and 1 000 mm above the finished floor, and
(iii) is capable of being locked from the inside and released from the outside in case of emergency,
(c) have one lavatory conforming to Sentences 3.8.3.11.(1), (3) and (4),
(d) have one water closet conforming to Article 3.8.3.9. that is located in accordance with Clause 3.8.3.8.(2)(a) or (b),
(e) have grab bars conforming to,
(i) Sentence 3.8.3.8.(3), if the water closet is located in accordance with Clause 3.8.3.8.(2)(a), or
(ii) Sentence 3.8.3.8.(4), if the water closet is located in accordance with Clause 3.8.3.8.(2)(b),
(f) have no internal dimension between walls that is less than 1 700 mm,
(g) have a coat hook that conforms to Clause 3.8.3.8.(1)(e) and a shelf that is located not more than 1 100 mm above the finished floor and projects not more than 100 mm from the wall,
(h) be designed to permit a wheelchair to turn in an open space not less than 1 700 mm in diameter,
(i) be provided with a door equipped with a power door operator,
(j) be provided with a mirror,
(i) installed above a lavatory described in Clause (1)(c), and
(ii) mounted with its bottom edge not more than 1 000 mm above the finished floor or inclined to the vertical to be usable by a person in a wheelchair, and
(k) have lighting controlled by a motion sensor conforming to Sentence 12.2.4.1.(2).
**(2)** A universal washroom shall have,
(a) an emergency call system that consists of audible and visual signal devices inside and outside of the washroom that are activated by a control device inside the washroom, and
(b) an emergency sign that contains the words **IN THE EVENT OF AN EMERGENCY PUSH EMERGENCY BUTTON AND AUDIBLE AND VISUAL SIGNAL WILL ACTIVATE** in letters at least 25 mm high with a 5 mm stroke and that is posted above the emergency button.
**(3)** A clear space not less than 810 mm wide and 1 830 mm long shall be provided in each universal washroom for an adult-size change table.
**(4)** Where the clear space provided for an adult-size change table is adjacent to a wall, reinforcement shall be installed in the wall to permit the future installation of the change table.
**(5)** Where an adult-size change table is installed, it shall,
(a) when fully loaded, have a surface height above the finished floor that can be adjusted from between 450 mm and 500 mm at the low range to between 850 mm and 900 mm at the high range,
(b) be designed to carry a minimum load of 1.33 kN,
(c) have a clear floor space parallel to the long side of the table not less than 760 mm wide and 1 800 mm long, and
(d) in the case of a fold-down table,
(i) be installed so that it does not encroach into a clear transfer space described in Clause 3.8.3.8.(2)(a) or (b), and
(ii) have no operating mechanisms higher than 1 200 mm.
**(6)** A universal washroom need not conform to Sentences (3) and (4) if,
(a) it is located in an individual *suite* that,
(i) is used for an *assembly occupancy*, a *business and personal services occupancy*, a *mercantile occupancy* or an *industrial occupancy*, and
(ii) meets one of the following requirements,
(A)it is located in a *building* that is less than 300 m² in *building area*, or
(B)it is less than 300 m² in area, if located in a *building* that is at least 300 m² in *building area*, or
(b) another universal washroom conforming to this Article is provided on the same floor level within 45 m.

**(Updated January 1, 2025)**
**A-3.8.3.12.(1) & (3) Universal Washroom**
Unobstructed areas in front of the lavatory, in front of the water closet and on one side of the water closet are necessary for manoeuverability of a wheelchair. The door swing may overlap the turning circle within the universal washroom as long as there is sufficient space for a wheelchair user to manoeuver to clear the door and close the door from a front approach position.

The space for an adult size change table may encroach upon the 1700mm turning circle only where the change table is movable and is not permanently fixed or stored within the washroom. In that case the table, such as a hospital gurney is brought into the washroom when needed and removed after use. A permanently fixed table may not be appropriate for certain building occupancies due to operational and maintenance considerations.




***UNIV. WC PLAN***

GRAB BAR (GB1): BOBRICK, MODEL B-6898.99, S/S, SATIN FINISH, PEENED FINISH, L-SHAPED BAR 38mm (1 1/2") DIAMETER, 760mm (30") LONG HORIZ. & 760mm (30") LONG VERT., SNAP FLANGE COVERS, AT SIDE OF WATER CLOSET

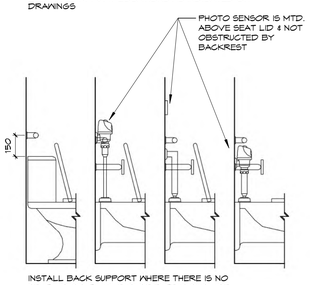
GRAB BAR (GB2): BOBRICK, MODEL B-6806.99 X 24, S/S, SATIN FINISH, PEENED FINISH, 38mm (1 1/2") DIAMETER, 610mm (24") LONG STRAIGHT BAR, SNAP FLANGE COVERS, AT BACK OF WATER CLOSET

FOLD DOWN GRAB BAR: BOBRICK (GAMCO), MODEL 125, S/S, SATIN FINISH, KNURLED FINISH, 32mm (1 ¼") DIAMETER, 760mm (30") LONG HORIZ., BACK PLATE.

GRAB BARS TO BE 18 GAUGE (1.24mm) S/S TUBING, W/ MANDREL BENDS. KNURLED & PEENED FINISH FOR FULL LENGTH OF THE TUBING TO WITHIN 100mm (4") OF ENDS OF BENDS. SECURE CONCEALED FASTENING GRAB BARS W/ 64mm (2 1/2") NO. 14 SCREWS TO SOLID BACKING, CAPABLE OF SUPPORTING A 500 LB. (225 KG) PULL

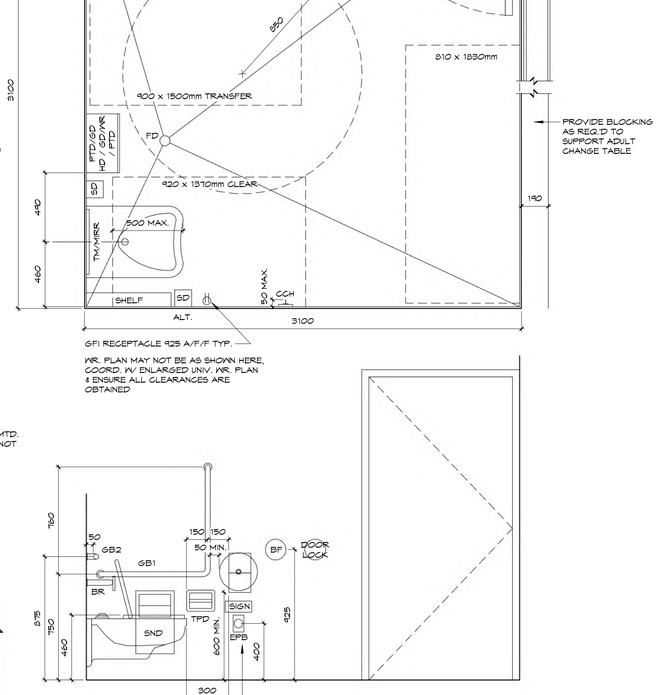
TOILET BACKREST: BOBRICK, B-5842, SURFACE MOUNTED, S/S. PROVIDE ONE AT EACH TOILET LOCATION WHERE TOILETS DO NOT HAVE TOILET SEATS LIDS OR TANKS

DEODORIZER: MODEL 1100 BY FROST. PROVIDE ONE IN EACH WASHRM & AT LOCATIONS AS INDICATED ON DRAWINGS




INSTALL BACK SUPPORT WHERE THERE IS NO SEAT LID OR TANK, ENSURE EXTENSIONS ARE USED TO CLEAR FLUSH VALVES

***BARRIER FREE WC STALL ELEVATION***

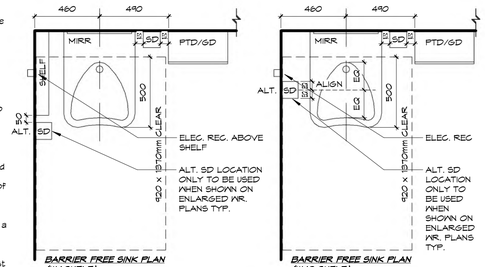






ENSURE THE EPB IS LINKED TO A CENTRALLY MONITORED SWITCHBOARD FOR FACILITIES THAT HAVE THE CAPACITY

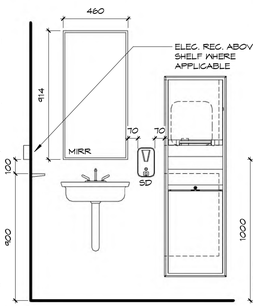
**(Updated January 1, 2025)**
**3.8.3.11. Lavatories, Mirrors and Washroom Accessories**
**(1)** A washroom described in Sentence 3.8.2.3.(2), (3) or (4) shall be provided with a lavatory that shall,
(a) be located so that the distance between the centre line of the lavatory and the side wall is not less than 460 mm,
(b) have a rim height not more than 865 mm above the finished floor,
(c) have a clearance beneath the lavatory not less than,
(i) 920 mm wide,
(ii) 735 mm high at the front edge,
(iii)685 mm high at a point 200 mm back from the front edge, and
(iv)350 mm high over the distance from a point 280 mm to a point 430 mm back from the front edge,
(d) have insulated pipes where they would otherwise present a burn hazard or have water supply temperature limited to a maximum of 43°C,
(e) be equipped with faucets that,
(i) operate automatically or comply with 3.7.4.2.(11)(b)(i) and (ii), and
(ii) are located so that the distance from the centre line of the faucet to the edge of the basin or, where the basin is mounted in a vanity, to the front edge of the vanity, is not more than 485 mm,
(f) have a minimum 1 370 mm deep floor space to allow for a forward approach, of which a maximum of 500 mm can be located under the lavatory,
(g) have a soap dispenser that,
(i) operates automatically or is operable using a closed fist and with a force of not more than 22.2 N, and
(ii) is located not more than 1 100 mm above the finished floor, within 500 mm from the front of the lavatory, and,
(h) have a towel dispenser or other hand drying equipment that is,
(i) located to be accessible to persons in wheelchairs,
(ii) located so that the dispensing height is not more than 1 200 mm above the finished floor,
(iii)operable with one hand, and
(iv)located not more than 610 mm, measured horizontally, from the edge of the lavatory.
**(2)** If mirrors are installed in a washroom described in Sentence 3.8.2.3.(2), (3) or (4), at least one mirror shall be,
(a) installed above a lavatory required by Sentence (1), and
(b) mounted with its bottom edge not more than 1 000 mm above the finished floor or inclined to the vertical to be usable by a person in a wheelchair.
**(3)** If dispensing or hand-operated washroom accessories, other than those located in water closet stalls or enclosures and those described in Clause (1)(g) are provided, they shall be mounted so that,
(a) the dispensing height is not less than 900 mm and not more than 1 200 mm above the finished floor,
(b) the controls or operating mechanisms are mounted not less than 900 mm and not more than 1 200 mm above the finished floor, and
(c) a minimum 1 370 mm deep floor space is provided in front of the controls or operating mechanisms to allow for a front approach.
**(4)** Where a shelf is installed above a lavatory required by Sentence (1), it shall,
(a) be located not more than 200 mm above the top of the lavatory and not more than 1 100 mm above the finished floor, and
(b) project not more than 100 mm from the wall.
**(5)** A washroom described in Sentence 3.8.2.3.(6) shall be provided with a lavatory conforming to Clauses (1)(e), (g) and (h).



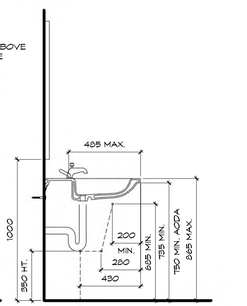

***BARRIER FREE SINK PLAN (W/ SHELF)***




***BARRIER FREE SINK PLAN (W/O SHELF)***




***BARRIER FREE ELEVATION - CORNER***
(ALT. IS THE INDIVIDUAL HAND DRYER, PTD, & GD) (HIDDEN LINES)




***BARRIER SECTION***

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July 3rd 2025
B. D. BUCHWALD
100200380
PROVINCE OF ONTARIO

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
WASHROOM GUIDELINES

| CHECKED BY: | DRAWN BY: |
|---|---|
| LHR/BB | BM/KA |
| DRAWING SCALE: As indicated | DRAWING NO.: A700 |
| PROJECT NO.: 23-151 | |

DATE PLOTTED: 7/3/2025 12:12:13 PM PROJECT NUMBER & NAME: 23-151 GRETZKY GOLF COURSE FILE PATH: H:\Projects\2023\23-151 Gretzky Golf Course Maintenance Building\Drawings\Architectural\23-151 Gretzky Golf Course Maintenance Building_Stone.rvt

**(Updated January 1, 2025)**
**3.8.3.13. Showers and Bathtubs**

*(1)* Except within a *suite* of *residential occupancy*, if showers are provided in a *building*, the number of *barrier-free* showers shall conform to Table 3.8.3.13.

*(2)* A *barrier-free* shower required by Sentence (1) shall,

*(a)* be not less than 1 500 mm wide and 900 mm deep,

*(b)* have a clear floor space at the entrance to the shower not less than 900 mm deep and the same width as the shower, except that fixtures are permitted to project into that space provided they do not restrict access to the shower,

*(c)* have no doors that obstruct the shower controls or the clear floor space described in clause (b),

*(d)* have a slip-resistant floor surface,

*(e)* have a threshold that is level with the adjacent finished floor or a bevelled threshold not more than 13 mm higher than the adjacent finished floor,

*(f)* have a hinged seat, other than a spring-loaded hinged seat, or a fixed seat that shall,

*(i)* be not less than 450 mm wide and 400 mm deep,

*(ii)* be mounted on the same side wall as the vertical grab bar between 460 mm and 480 mm above the finished floor,

*(iii)* be designed to carry a minimum load of 1.3 kN,

*(iv)* be located so that the edge of the seat is within 500 mm of the shower controls, and

*(v)* have a smooth and slip-resistant surface and no rough edges,

*(g)* have two grab bars,

*(i)* that conform to Sentence 3.8.3.8.(7) and do not obstruct the use of the shower controls,

*(ii)* one of which is 1 000 mm long vertically located on the side wall between 50 mm and 80 mm from the adjacent clear floor area, and with the lower end between 600 mm and 650 mm above the finished floor, and

~~*(iii)* one of which is L-shaped, located on the wall opposite the entrance to the shower, with a 1 000 mm long horizontal component mounted between 750 mm and 870 mm above the finished floor and a 750 mm long vertical component mounted between 400 mm and 500 mm from the side wall on which the vertical grab bar described in Subclause *(ii)* is mounted,~~

**APPENDIX A, A-3.8.3.13.(2)(f)(4)(g)**
**Only one grab bar is required, to be installed on the wall next to the seat;**
**A grab bar installed within a barrier-free shower stall on the same wall as the shower controls should have 900mm long horizontal and vertical components**

*(h)* have a pressure-equalizing or thermostatic mixing valve that,

*(i)* is operable using a closed fist and with a force of not more than 22.2 N,

*(ii)* is mounted on the wall opposite the entrance to the shower no more than 1 200 mm above the finished floor, and

*(iii)* is located within reach of the seat,

*(i)* have a hand-held shower head with not less than 1800 mm of flexible hose located so that it,

*(i)* can be reached from a seated position,

*(ii)* can be used in a fixed position at a height of 1 200 mm and 2 030 mm from the finished floor, and

*(iii)* does not obstruct the use of the grab bars, and

*(j)* have fully recessed soap holders that can be reached from the seated position.

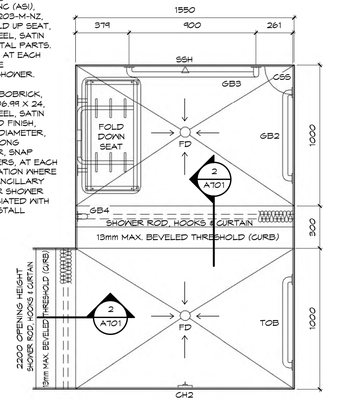
**(2.1)** All other controls installed in a shower described in Sentence (2) shall comply with Subclauses (2)(h)(i) to (iii).

**(3)** Individual showers that are provided for use by patients or residents in *buildings* of Group B, Division 2 or 3 *occupancy* shall conform to Sentence (2).

GRAB & TOWEL BARS TO BE 18 GAUGE (1.24mm) S/S TUBING, W/ MANDREL BENDS. KNURLED & PEENED FINISH FOR FULL LENGTH OF THE TUBING TO WITHIN 100mm (4") OF ENDS OF BENDS. SECURE CONCEALED FASTENING GRAB BARS W/ 64mm (2 1/2") NO. 14 SCREWS TO SOLID BACKING, CAPABLE OF SUPPORTING A 500 LB. (225 KG) PULL

SHOWER SEAT: AMERICAN SPECIALTIES INC (ASI), MODEL NO. 8203-M-NZ, PHENOLIC FOLD UP SEAT, STAINLESS STEEL, SATIN FINISH ALL METAL PARTS. PROVIDE ONE AT EACH BARRIER FREE ACCESSIBLE SHOWER.

TOWEL BAR: BOBRICK, MODEL B-6806.99 X 24, STAINLESS STEEL, SATIN FINISH, PEENED FINISH, 38mm (1 1/2") DIAMETER, 610mm (24") LONG STRAIGHT BAR, SNAP FLANGE COVERS, AT EACH SHOWER LOCATION WHERE THERE IS AN ANCILLARY CLEAR FLOOR SHOWER SPACE ASSOCIATED WITH THE SHOWER STALL



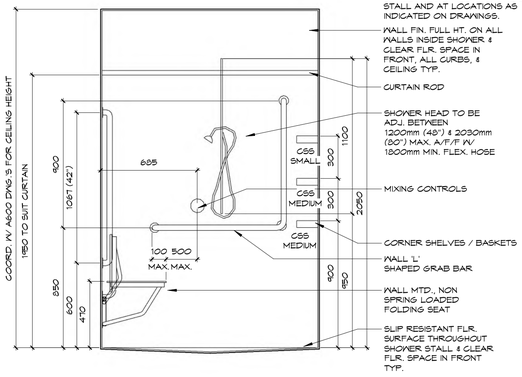

CORNER SHOWER SHELVES: KOHLER, SHOWER BASKETS, SMALL K-1896 AND MEDIUM K-1896. PROVIDE 3 AT EACH SHOWER LOCATION

GRAB BAR (GB2): BOBRICK, MODEL B-6806.99 X 24, STAINLESS STEEL, SATIN FINISH, PEENED FINISH, 38mm (1 1/2") DIAMETER, 610mm (24") LONG STRAIGHT BAR, SNAP FLANGE COVERS.

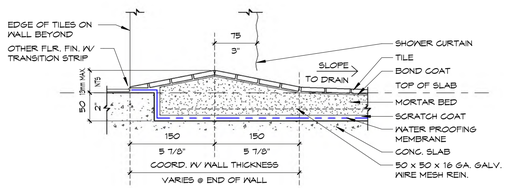
GRAB BAR (GB3): BOBRICK, CUSTOM LENGTH / SIZE, STAINLESS STEEL, SATIN FINISH, PEENED FINISH, L-SHAPED BAR, 38mm (1 1/2") DIAMETER, 900mm (36") LONG HORIZONTAL AND 900mm (36") LONG VERTICAL, SNAP FLANGE COVERS, ON OPPOSITE OF THE ENTRANCE TO THE SHOWER.

SHOWER RINGS AND CURTAIN: BOBRICK, MODEL B-204-1 STAINLESS STEEL HOOKS AND MODEL B-204-2 BATH/SHOWER CURTAIN. PROVIDE AT EACH SHOWER LOCATION AND ANCILLARY CLEAR FLOOR SHOWER SPACE ASSOCIATED WITH THE SHOWER STALL AND AT LOCATIONS AS INDICATED ON DRAWINGS.

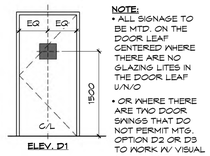
SHOWER ROD: BOBRICK, MODEL B-6047-LENGTH, 18 GAUGE HEAVY DUTY 2" (50mm) DIA. BATH/SHOWER ROD BY LENGTH OF OPENING, COMPLETE WITH CONCEALED STAINLESS STEEL FLANGES. PROVIDE AT EACH SHOWER LOCATION AND ANCILLARY CLEAR FLOOR SHOWER SPACE ASSOCIATED WITH THE SHOWER STALL AND AT LOCATIONS AS INDICATED ON DRAWINGS.




## 1 A701 SHOWER GUIDELINES - BARRIER FREE
SCALE 1 : 20



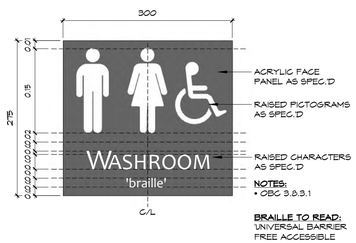

## 2 A701 SHOWER CURB SECTION - BF
SCALE 1 : 5



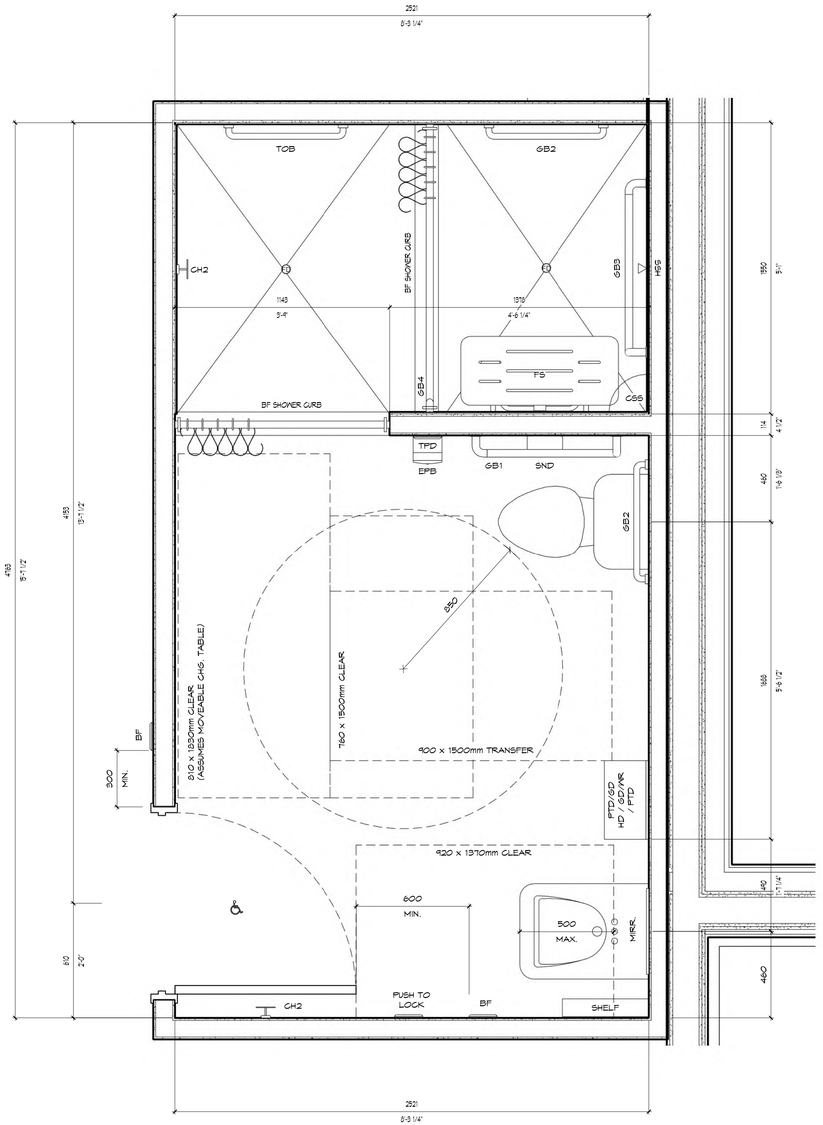

ELEV. D1

**NOTE:**
- ALL SIGNAGE TO BE MTD. ON THE DOOR LEAF CENTERED WHERE THERE ARE NO GLAZING LITES IN THE DOOR LEAF U/N/O
- OR WHERE THERE ARE TWO DOOR SWINGS THAT DO NOT PERMIT MTS. OPTION D2 OR D3 TO WORK W/ VISUAL CLEARANCES

## 4 A701 SIGNAGE MOUNTING ON DOOR - BRAILLE
SCALE 1 : 50




## 5 A701 INTERIOR SIGNAGE - BRAILLE
SCALE 1 : 5




## 3 A701 ENLARGED WASHROOM PLAN
SCALE 1 : 15

### WASHROOM LEGEND

| | |
|---|---|
| | TYP. BF TURNING CIRCLE RADIUS & INDIVIDUAL AREA OF REFUGE LOCATION |
| | POWER DOOR OPENER |
| BF | PUSH BUTTON RECESS / FLUSH MTD. FOR POWER DOOR OPERATOR - 610mm MIN. FROM THE DOOR SWING TOWARDS THE BUTTON TO 1500mm MAX. (925mm A/F/F TO CENTER OF BUTTON TYP.) |
| EPB | EMERGENCY PUSH BUTTON (925mm A/F/F TO CENTER OF BUTTON TYP.) (400mm A/F/F TO CENTER OF BUTTON IN UNIV. WR. TYP.) |
| PUSH TO LOCK | PUSH TO LOCK BUTTON (925mm A/F/F TO CENTER OF BUTTON TYP.) |

***GENERAL NOTES:***
- SHOP DWG.'S ARE TO BE DIMENSIONED IN METRIC UNITS (IMPERIAL & METRIC BOTH SHOWN IS ACCEPTABLE)
- WASHROOMS WITH OUT WALL FIN. (OTHER THAN PAINT) TO HAVE SPECIAL COATING (SC - EPOXY PAINT) APPLIED
- WASHROOMS WITH TILE WALL FIN. TO HAVE TILE BASE. TILE WALL FIN. TO EXTEND TO 200mm MIN. ABOVE FIN. CEILING SYSTEM TYP.

| NO. | DATE | ISSUANCE |
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| 7 | 2025.07.03 | ISSUED FOR PERMIT |
| 6 | 2025.06.26 | ISSUED FOR CLIENT REVIEW |
| 5 | 2025.06.09 | ISSUED FOR CLIENT REVIEW |
| 4 | 2025.05.01 | ISSUED FOR CLIENT REVIEW |
| 3 | 2024.09.20 | ISSUED FOR CLIENT REVIEW |
| 2 | 2024.07.05 | ISSUED FOR CLIENT REVIEW |
| 1 | N/A | ISSUED FOR CLIENT REVIEW |
| NO. | DATE | ISSUANCE |

**ISSUED FOR BUILDING PERMIT ONLY**
**NOT FOR CONSTRUCTION**

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ALL DWG.'S ARE TO BE READ IN COLOUR

ORIGINAL PAGE SIZE ARCH 'D' - 24" x 36"

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STAMP STRUCT.

LICENSED PROFESSIONAL ENGINEER
July 3rd/2025
B. D. BUCHWALD
100200380
25-151
PROVINCE OF ONTARIO

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
WASHROOM GUIDELINES, ENLARGED WR. PLANS & DETAILS

| CHECKED BY: | DRAWN BY: |
|---|---|
| LHR/BB | BM/KA |
| DRAWING SCALE: As indicated | DRAWING NO.: A701 |
| PROJECT NO.: 23-151 | |

DATE PLOTTED: 7/3/2025 12:12:16 PM PROJECT NUMBER & NAME: 23-151 GRETZKY GOLF COURSE FILE PATH: H:\Projects\2023\23-151 Gretzky Golf Course Maintenance Building\Drawings\Architectural\23-151 Gretzky Golf Course Maintenance Building_Stone.rvt

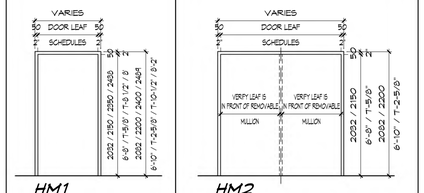
BLANK RM.'S ARE EXTERIOR SPACES TYP.

## DOOR SCHEDULE

| DOOR IDENTIFICATION | DOOR LOCATION FROM RM. | DOOR LOCATION TO RM. | DOOR LEAF SIZE WIDTH | DOOR LEAF SIZE HEIGHT | DOOR LEAF TYPE | DOOR LEAF MATERIAL | DOOR LEAF FINISH | DOOR FRAME TYPE | DOOR FRAME MATERIAL | DOOR FRAME FINISH | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 100a | 100 | | 965 | 2032 | A | HM | P | HM1 | HM | P | |
| 100b | | 100 | 3650 | 3650 | O/H | | | | | | |
| 100c | | 100 | 3650 | 3650 | O/H | | | | | | |
| 100d | 100 | | 3650 | 3650 | O/H | | | | | | |
| 101 | | 101 | 965 | 2032 | A | HM | P | HM1 | HM | P | |
| 101a | 101a | 101 | 914 | 2032 | A | HM | P | HM1 | HM | P | |
| 101b | 101 | 102 | 914 | 2032 | A | HM | P | HM1 | HM | P | |
| 101c | 101 | | 3650 | 3650 | O/H | | | | | | |
| 102 | 100 | 102 | 965 | 2032 | A | HM | P | HM1 | HM | P | 90 MIN. FRR |
| 102a | 103 | 102 | 965 | 2032 | A | HM | P | HM1 | HM | P | 90 MIN. FRR |
| 103 | | 103 | 965 | 2032 | A | HM | P | HM1 | HM | P | |
| 103a | | 103 | 1219 | 2032 | A | HM | P | HM2 | HM | P | |
| 104 | 103 | 104 | 965 | 2032 | A | HM | P | HM1 | HM | P | |
| 107 | 100 | 107 | 965 | 2032 | A | HM | P | HM1 | HM | P | 90 MIN. FRR |
| 108 | 108 | 107 | 965 | 2032 | A | HM | P | HM1 | HM | P | |
| 109 | 109 | 107 | 965 | 2032 | A | HM | P | HM1 | HM | P | |
| 110 | | 108 | 965 | 2032 | A | HM | P | HM1 | HM | P | |

## DOOR FRAME TYPES

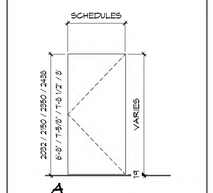
HOLLOW METAL (HM.)

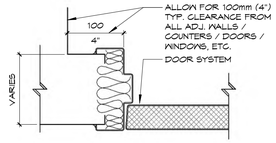



COORD. W/ A402 & A800 FOR STD. SECTION DETAILS

## DOOR LEAF TYPES

HOLLOW METAL (HM), STAINLESS STEEL (S/S), POST FORMED LAMINATE (PLAM.)



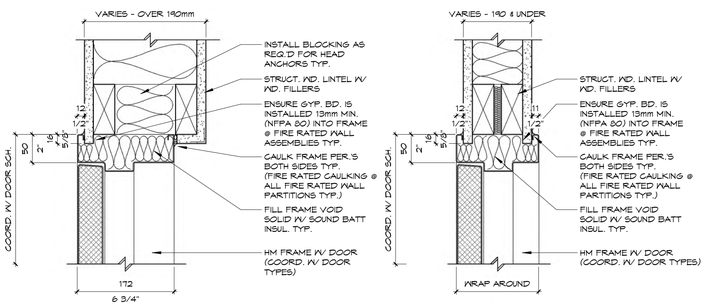




PLAN DETAIL

## DOOR SECTION DETAIL

DOOR FRAME DETAILS - HM. FRAME - STD. ADJ. WALL SPACING

1 / A800 SCALE 1 : 5

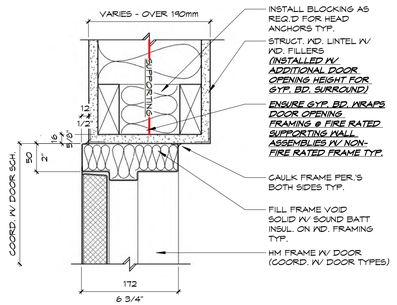


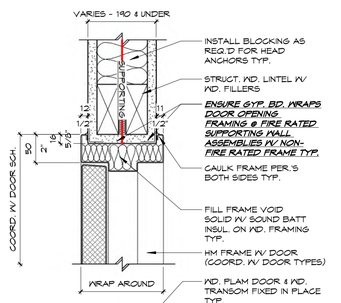




2 / A800 SCALE 1 : 5

HM / WD. DOOR & HM FRAME DETAILS - WD. STUD & GYP. BD.




3 / A800 SCALE 1 : 5

HM / WD. DOOR & HM FRAME (NON-RATED) DETAILS - WD. STUD & GYP. BD. (RATED SUPPORTING ASSEMBLY)

## DOORWAY AND DOORS

**3.8.3.3. Doorways and Doors**

**(1)** Every doorway that is located in a barrier-free path of travel shall have a clear width of not less than 850 mm when the door is in the open position. (See Note A-3.8.3.3.(1))

Appendix A
A-3.8.3.3.(1) Doorway Width
Every doorway that is located in a barrier-free path of travel must have a clear width of not less than 860mm when the door is in the open position and therefore it is important that this dimension be measured correctly. The 860mm clear dimension has been developed from research which shows that this dimension provides access for 95% of wheeled mobility devices.

The clear width of not less than 860mm is measured from the face of the door to the outside edge of the stop on the door frame. It is not sufficient just to measure the inside width of the door frame or the width of the door panel. There should be no projections into the required clear opening width lower than 865mm above the finished floor or ground. Projections into the clear opening width between 865mm and 2030mm above the finished floor or ground should not exceed 100mm.

Other factors, including location of door stops other than on the door frame, and the installation of door closers and exit devices, should be taken into account. The intrusion of a door handle into the space is of lesser importance. It is recognized that there are many types of door frame and door mounts but the overall objective is to maintain a clear width of not less than 860mm.

UNDERLINED STATEMENT ABOVE IS WHY EXIT (PANIC) DEVICES ARE NOT INCORPORATED INTO THE CLEAR WIDTH CALCULATION. ALL EXIT (PANIC) DEVICES & PUSH BARS ARE TO BE 100mm MAX. IN DEPTH TYP. (COORD. W/ HARDWARE SCH. & SUPPLIERS)

ALL CRITICAL BARRIER FREE DIM.'S TO COMPLY W/ OBC & ANY APPLICABLE ACCESSIBILITY BY-LAWS OF THAT SPECIFIC REGION - AODA GOVERNS OBC. O.B.C. BARRIER FREE REQ.'S ARE TO BE REVIEWED & CONFIRMED BY THE GENERAL CONTRACTOR ON SITE THAT ALL DIM.'S & MIN. CLEARANCES ARE PROVIDED. INFORM THE ARCHITECT OF ANY CONFLICTS PRIOR TO INSTALLING WORK & OBTAIN SUPPLEMENTAL INSTRUCTIONS FROM THE ARCHITECT BEFORE PROCEEDING W/ ANY PART OF THE AFFECTED WORK.

**BARRIER-FREE DOORS & DOORWAYS:**
PROVIDE STD. DOOR LEAF OF NOT LESS THAN 965mm (IMPERIAL) / 950mm (METRIC) FOR EXIT / EXTERIOR & INTERIOR DOORS, SMALLER TO BE VERIFIED AT SHOP DWG. STAGE).

UNLESS EQUIPPED W/ A POWER DOOR OPERATOR, A DOOR IN A BARRIER-FREE PATH OF TRAVEL SHALL HAVE A CLEAR SPACE ON THE LATCH SIDE EXTENDING THE HEIGHT OF THE DOORWAY & NOT LESS THAN 650mm BEYOND THE EDGE OF THE DOOR OPENING IF THE DOOR SWINGS TOWARD THE APPROACH SIDE & 350mm BEYOND THE EDGE IF THE DOOR SWINGS AWAY FROM THE APPROACH SIDE.

**POWER DOOR OPERATORS:**
EVERY DOOR THAT PROVIDES A BARRIER-FREE PATH OF TRAVEL THROUGH AN ENTRANCE SHALL BE EQUIPPED W/ A POWER DOOR OPERATOR. WHERE AN ENTRANCE INCORPORATES A VESTIBULE, A DOOR LEADING FROM THE VESTIBULE INTO THE FLOOR AREA SHALL BE EQUIPPED W/ A POWER DOOR OPERATOR.

DOOR OPENING DEVICES THAT ARE THE ONLY MEANS OF OPERATION SHALL BE OF A DESIGN THAT DOES NOT REQUIRE TIGHT GRASPING & TWISTING OF THE WRIST.

## DOOR LEAF & FRAME / SCREEN NOTES

**COORD.:**
- IT IS THE RESPONSIBILITY OF THE DOOR / SCREEN & HARDWARE MANUF. / CONTRACTOR TO COORD. & EXECUTE THEIR WORK TOGETHER.
- COORD. W/ FLR. PLANS, ELEVATIONS & SCHEDULES FOR LOCATIONS, REQ.'D FRAME WIDTH, 170° DOOR SWINGS & QUANTITY OF REQ.'D DOORS, FRAMES & SCREENS
- COORD. W/ LIFE SAFETY / ELEC. DWG.'S FOR EXIT SIGN & ELEC. EQUIP. LOCATIONS

**DOOR HARDWARE:**
- ALL DOOR HARDWARE TO BE INCLUDED IN THE CONTRACT

**HARDWARE:**
- ALL DOOR HARDWARE & HARDWARE REQ.'S SHOWN / NOT SHOWN TO BE COORDINATED & VERIFIED W/ THE MANUF. / CONTRACTOR / OWNER & ARCHITECT
- HARDWARE FINISH - BASE OF DESIGN INTENT BUT LIMITED DUE TO HARDWARE SUPPLIED & OPTIONS AVAILABLE - SATIN CHROMIUM PLATED OVER NICKEL, SATIN ALUMINUM - CLEAR ANNODIZED, SATIN STAINLESS STEEL

**SECURITY:**
- ALL SECURITY DOOR HARDWARE INFO. SHOWN / NOT SHOWN TO BE SUPPLIED BY THE SUPPLIER / MANUF. & COORDINATED W/ THE SUPPLIER / MANUF. / OWNER & CONTRACTOR INCLUDING BUT NOT LIMITED TO; SECURITY KEYPADS (CARD READERS, FOB READERS, KEYPADS), CAMERAS, ALARMS, OPENING CONTACTS, WIRING, CONDUIT, HOOK UPS TO NETWORKS & ANY OTHER HARDWARE REQ.'S. (COORD. W/ ELEC. DWG.'S & SPEC.'S)

**OTHER FRAMING:**
- ALL OTHER DOOR HARDWARE INFO. SHOWN / NOT SHOWN TO BE COORDINATED & VERIFIED W/ THE REVIEWED DOOR HARDWARE SCH. / MANUF. / OWNER / CONTRACTOR & ARCHITECT INCLUDING BUT NOT LIMITED TO MILLWORK & ANY OTHER HARDWARE REQ.'S.

**BF & UNI-SEX, NR.'S:**
- ALL DOORS IN SELF CONTAINED BF UNI-SEX WASHRM.'S ARE TO:
  (b) have a door that is capable of being locked from the inside and released from the outside in case of emergency and that has,
  (i) a graspable latch-operating mechanism located not less than 900 mm and not more than 1 000 mm above the finished floor,
  (ii) if it is an outward swinging door, a door pull not less than 140 mm long located on the inside so that its midpoint is not less than 200 mm and not more than 300 mm from the latch side of the door and not less than 900 mm and not more than 1 100 mm above the finished floor, and
  (iii) if it is an outward swinging door, a door closer, spring hinges or gravity hinges, so that the door closes automatically,

**DOOR STOPS:**
- ALL DOORS TO HAVE DOOR STOPS.
  1. DOOR STOPS ARE TO BE INSTALLED ON THE FLR. WHERE THE DOOR OPENS AGAINST A WALL / PARTITION THAT IS WD. / METAL FRAMED & INSTALLED ON THE WALL @ HANDLE LOCATION THAT IS CONC. BLOCK / CONC.
  2. DOOR STOPS ARE TO BE INSTALLED ON THE TOP OF THE DOOR FRAME WHERE THE DOOR DOES NOT OPEN AGAINST A WALL / PARTITION

**FIRE RATINGS:**
- COORD. W/ LIFE SAFETY DWG.'S FOR FIRE SEPARATIONS & FIRE RESISTANCE RATINGS FOR EXPOSURE SITUATIONS. FIRE RATED FRAMING & GLAZING TO BE IMPLEMENTED
  2 HR. (120 MIN.) FIRE SEPARATION TO HAVE 1 1/2 HR. (90 MIN.) RATED CLOSURE
  1 1/2 HR. (90 MIN.) FIRE SEPARATION TO HAVE 1 HR. (60 MIN.) RATED CLOSURE
  1 HR. (60 MIN.) FIRE SEPARATIONS TO HAVE 3/4 HR. (45 MIN.) RATED CLOSURE
  3/4 (45 MIN.) HR. FIRE SEPARATIONS TO HAVE 3/4 HR. (45 MIN.) RATED CLOSURE
  1/2 HR. (30 MIN.) FIRE SEPARATIONS TO HAVE 20 MIN. RATED CLOSURE

DOORS & OPENING INFILLS IN EXT. WALLS W/ A FIRE RESISTANCE RATING BUT THAT ARE NOT REQ.'D TO BE PROTECTED OPENINGS ARE NOT REQ.'D TO HAVE A FIRE RESISTANCE RATING TYP.
(COORD. W/ UNPROTECTED OPENING ELEV.'S)

- ALL FIRE RATED DOORS & SCREENS W/ GLAZING 'GL' TO HAVE 'FIRELITE' GLAZING AS REQ.'D INCLUDING ALL EXPOSURE SITUATIONS UNLESS HM W/ GNG ARE NOTED. ALL NON-RATED GLAZING TO BE TEMPERED U/N/O TYP.
- ALL FIRE RATED DOORS TO HAVE DOOR CLOSERS

**SOUND / ACOUSTIC RATINGS:**
- SOUND / ACOUSTIC RATINGS (WALL TYPES THAT ARE STC 50 & GREATER TYP.)
  COORD. W/ WALL TYPES FOR SOUND RATINGS (STC) & FLR. PLANS FOR WALL TYPE LOCATIONS. ALL DOORS, DOOR FRAMES, SCREENS & GLAZING THAT REQUIRE SOUND RATINGS TO HAVE SOUND PROOFING, SEALS @ PER.'S, MORTICED RECESSED AUTOMATIC DROP DOWN SILLS, DOUBLE INSUL. GLAZING WHERE APPLICABLE - EXCEPTIONS - EXIT STAIRWELLS, STORAGE RM.'S, ELEV. MACHINE RM.'S
- WD. FRAMES SHIM VOID FILLED SOLID W/ SOUND BATT INSUL., HM FRAMES ON CONC. BLOCK CONST. FILLED SOLID W/ MORTAR (BATT INSUL. W/ KNOCK DOWN FRAMES IN EX. WALLS);
  HM FRAMES ON METAL / WD. FRAME CONST. FILLED SOLID W/ BATT INSUL.

**SIZINGS:**
- OPENINGS - DIM.'S INDICATED U/N/O
  1. DOOR(S):
     A. HM FRAME - DIM.'S INDICATED ARE FOR DOOR LEAF;
  2. O/H VEHICULAR DOOR(S):
     A. DIM.'S INDICATED ARE FOR CLEAR JAMB OPENING
  VERIFY ALL OPENING DIM.'S & R/O W/ WRAP AROUND OR BUTT FRAME APPLICATIONS ON SITE / SHOP DWG.'S PRIOR TO FABRICATION & ORDERING.
  (COORD. W/ TYP. DOOR & SCREEN FRAME DETAILS)
  (SOME DIMENSIONS ON DWG.'S FOR DOORS ARE FOR LINTEL PURPOSES ONLY, NOT TO BE USED FOR ROUGH OPENING FRAMING)

**(Updated January 1, 2025)**
- 3.4.3.5.(4) / 9.9.6.2.(1) - CLEAR HEIGHT OF DOORWAYS SHALL NOT BE LESS THAN 2030mm
- 3.4.3.5.(5) / 9.9.6.2.(2) - NO DOOR CLOSER OR OTHER DEVICE SHALL BE INSTALLED TO REDUCE THE CLEAR HEIGHT OF THE DOORWAY TO LESS THAN 1980mm

**DOOR LEAF UNDERCUTS:**
- ALL DOOR LEAFS TO BE UNDERCUT BY 19mm (3/4") TYP.;
- WASHRM. DOOR LEAFS CAN BE UNDERCUT MAX. 25mm (1"), TO BE COORD'D W/ MECH.;
- ALL FIRE RATED HM DOOR LEAFS TO BE UNDERCUT MAX. 19mm (3/4")
- ALL FIRE RATED WD. DOOR LEAFS TO BE UNDERCUT MAX. 6mm (1/4") & INSTALLED AS PER NFPA 80

**DOOR SILENCERS:**
- ALL INT. DOORS TO HAVE x3 MIN., EXT. DOORS CONT. WEATHERSTRIPPING

**HM OPENING NOTES**

**FRAME PROFILES:**
- ALL HM FRAMES FOR CONC. BLOCK WALLS & GYP. BD. WALLS / PARTITIONS SHALL BE WRAP AROUND TYPE FOR WALL THICKNESS UP TO 190mm (TO BE SNUG / TIGHT FIT ON WALL SYSTEM THAT THEY ARE INSTALLED ON / IN) (UNIV. WR. DOOR IF ON CHANGE TABLE WALL TO BE WRAP AROUND)
  OVER 190mm WALLS TO RECEIVE 1712mm FRAMES.
  (COORD. W/ FLR. PLANS FOR WALL THICKNESS & LOCATIONS)
  (COORD. W/ A800 DWG.'S FOR STD. DETAILS)

**HM DOOR LEAFS:**
- ALL EXT. HM. DOOR LEAFS TO BE FLUSH TYPE, 44mm (1-3/4") THICK, 18 GA., CONT. WELDED (GRIND & FILL SMOOTH WELDED SEAMS), COLD ROLLED, HOLLOW METAL CONST., REIN.'D W/ VERT. INT. STIFFENERS, ALL VOIDS FILLED W/ SEMI-RIGID FIBROUS INSTAL. MIN. DENSITY 24kg/m³ POLYSTYREN / POLYURETHANE, INSTALL TOP & BOTTOM METAL CAPS TACK WELDED IN PLACE TYP.
- ALL INT. HM. DOOR LEAFS TO BE STILE & RAIL TYPE, 44mm (1-3/4") THICK, 18 Ga., WELDED SEAMS 30% OVERALL & 50mm (2") LENGTH WELDS MIN. (GRIND & FILL SMOOTH WELDED SEAMS), FILLED ABOVE & BELOW ALL HINGE LOCATIONS, COLD ROLLED, HOLLOW METAL CONST., HONEYCOMB STRUCT. CORE CONSISTING OF PRE-EXPANDED, RESIN IMPREGNATED SMALL CELL KRAFT PAPER HAVING 19mm (3/4") CELL SIZE TO FILL THICKNESS OF DOOR LEAF.
  - PROVIDE 16 GA. CONT. WELDED (GRIND & FILL SMOOTH WELDED SEAM), REINF.'D W/ VERT. VERT. INTERLOCKING STIFFENERS @ ALL DOOR, WASHROOMS, CHANGE ROOMS & HIGH TRAFFIC AREAS

**HM DOOR FRAMES:**
- ALL EXT. HM. DOOR FRAMES TO BE 16 Ga., CONT. WELDED (GRIND & FILL SMOOTH WELDED SEAMS), COLD ROLLED, HOLLOW METAL CONST., THERMALLY BROKEN (INT. & EXT. FRAME SECTIONS SHALL BE SEPARATED BY A CONT. THERMAL BREAK), CONT. PER. WEATHER STRIPPING, ALUM. THRESHOLD SET IN BED OF CAULKING, DOOR CLOSER. FILL FRAME VOID SOLID W/ SPRAY-IN-PLACE INSUL. W/ WELDED 10mm TEE ANCHOR, SUPPLY 3 ANCHORS FOR EACH JAMB UP TO 2200mm HIGH, SUPPLY 4 ANCHORS IF JAMB EXCEEDS 2200mm. EQUAL TO 'THERMA.FRAME' DOOR FRAMES & SCREENS AS MANUF.'D BY S. N. FLEMING LTD. TYP.
- ALL INT. HM. DOOR FRAMES TO BE 16 Ga., CONT. WELDED (GRIND & FILL SMOOTH WELDED SEAMS), COLD ROLLED, HOLLOW METAL CONST. FILL FRAME VOID FILLED SOLID W/ MORTAR (FULLY GROUTED FRAME) IN CONC. OR CONC. BLOCK FRAMING & SOUND BATT INSUL. ON METAL / WD. FRAMING TYP.

**HIGH TRAFFIC AREAS:**
- ALL HM CORR. TO CORR., EXIT STAIR, WASHRM.'S, CHANGE RM., JANITOR, REFUSE, LOCKERS, BUNKER GEAR, EMS STOCK RM. & HIGH TRAFFIC AREAS (HIGH TRAFFIC AREAS ARE TO BE CONFIRMED BEFORE TENDER CLOSING OR THIS WILL BE AT THE DISCRETION OF THE ARCHITECT), PROVIDE 16 GAUGE CONT. WELDED DOORS & HINGES.

**HM. HINGES:**
- ALL HM, S/S, FIBREGLASS, VINYL, WD., STEEL, PLAM COVERED WOOD DOORS TO HAVE 3 BALLBEARING HINGES. ALL EXTERIOR HM. DOORS TO HAVE 4 HINGES

**GARAGE / SERVICE SHOP:**
- ALL REPAIR GARAGE / SERVICE SHOP TO ADJ. OCCUPANCY MAN DOORS TO BE INSULATED C/N CONT. PER. WEATHER STRIPPING SEALS, ALUM. THRESHOLD, LEVER TYPE OPERATOR & AUTO CLOSER FOR FUME CONTROL

**O/H VEHICULAR:**
- ALL EXT. O/H DOORS TO BE INSULATED (INSUL. IN SOLID PANELS OR DOUBLE INSUL. GLAZING @ VISION LOCATIONS), CONT. PER. WEATHER STRIPPING SEALS, AUTOMATIC OPENER W/ OPEN/CLOSE MOTION SENSORS / MANUAL OPERATOR W/ CHAIN HOIST & CHAIN LOCKING POSITION NOTCH, GALV. ROLLER FRAMES, BOTTOM SEAL & ALL OTHER ASSOCIATED COMPONENTS FOR A COMPLETE & PROPER SYSTEM
- ALL INT. O/H DOORS TO HAVE CONT. PER. WEATHER STRIPPING SEALS, AUTOMATIC OPENER W/ OPEN/CLOSE MOTION SENSORS / MANUAL OPERATOR W/ CHAIN HOIST & CHAIN LOCKING POSITION NOTCH, GALV. ROLLER FRAMES, BOTTOM SEAL & ALL OTHER ASSOCIATED COMPONENTS FOR A COMPLETE & PROPER SYSTEM

**SHOP DRAWINGS**
IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ENSURE; DOOR(S), SCREEN(S), WINDOW(S), CURTAIN WALL(S), FRAME(S), & THEIR HARDWARE MANUF.'S TRADES COORD. & EXECUTE THEIR WORK TOGETHER & LABEL IDENTIFYING INFO. FOR ALL DOOR(S), SCREENS(S), WINDOW(S), CURTAIN WALL(S), FRAME(S) SCH.'S **TO MATCH THE IDENTIFICATION TAG LABELS & DIMENSIONS** HERE.
(REVISE & RESUBMIT SHOP DWG.'S WILL BE RETURNED IF THIS FORMAT IS NOT FOLLOWED W/ NO REVIEW UNDERTAKEN)
- SHOP DWG.'S ARE TO BE DIMENSIONED IN METRIC UNITS (IMPERIAL & METRIC BOTH SHOWN IS ACCEPTABLE)

| NO. | DATE | ISSUANCE |
|---|---|---|
| 7 | 2025.07.03 | ISSUED FOR PERMIT |
| 6 | 2025.06.26 | ISSUED FOR CLIENT REVIEW |
| 5 | 2025.06.09 | ISSUED FOR CLIENT REVIEW |
| 4 | 2025.05.01 | ISSUED FOR CLIENT REVIEW |
| 3 | 2024.09.20 | ISSUED FOR CLIENT REVIEW |
| 2 | 2024.07.05 | ISSUED FOR CLIENT REVIEW |
| 1 | N/A | ISSUED FOR CLIENT REVIEW |

| NO. | DATE | ISSUANCE |
|---|---|---|

**ISSUED FOR BUILDING PERMIT ONLY NOT FOR CONSTRUCTION**

DO NOT SCALE DRAWINGS, CALL FOR ANY CLARIFICATIONS THAT ARE REQUIRED, FIELD VERIFY AT ALL BUILT CONDITIONS

ALL DWG.'S ARE TO BE READ IN COLOUR

ORIGINAL PAGE SIZE ARCH 'D' - 24" x 36"

CITY OF BRANTFORD

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STAMP ARCH.

STAMP STRUCT.

LICENSED PROFESSIONAL ENGINEER
July 3rd 2025
B. D. BUCHWALD
100203380
PROVINCE OF ONTARIO

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
DOOR SCH. / FRAME / LEAF TYPES, NOTES, OPENING DETAILS

| CHECKED BY: | DRAWN BY: |
|---|---|
| LHR/BB | BM/KA |

DRAWING SCALE: As indicated

DRAWING NO.: A800

PROJECT NO.: 23-151

DATE PLOTTED: 7/3/2025 12:12:19 PM PROJECT NUMBER & NAME: 23-151 GRETZKY GOLF COURSE FILE PATH: H:\Projects\2023\23-151 Gretzky Golf Course Maintenance Building\Drawings\Architectural\23-151 Architectural.pln

## LEGEND – GENERAL

| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION |
|---|---|---|---|
| | ISOLATION VALVE | | PIPE UP |
| | GLOBE VALVE | | PIPE DOWN |
| | LOCKABLE FLOW CONTROL VALVE | | CAPPED PIPE |
| | BALL VALVE | | DIRECTION OF FLOW |
| | CHECK VALVE | | PIPE SLEEVE |
| | FLOAT VALVE | | CONTINUOUS PIPE |
| | HOSE-END DRAIN VALVE | M | METER |
| | VALVED AND CAPPED PROVISION | | UNION |
| | GATE VALVE AND FLOW SWITCH | | STRAINER |
| | SHUT-OFF VALVE AND ACCESS PANEL | BFP | BACKFLOW PREVENTER |
| | BUTTERFLY VALVE | WFA | WATER FEEDER ASSEMBLY |
| | LOCKSHIELD VALVE | | FLEXIBLE PIPE CONNECTION |
| | PLUG VALVE | | PUMP |
| | PRESSURE REDUCING VALVE | | PRESSURE GAUGE WITH COCK |
| | FLOW SWITCH | | THERMOMETER |
| | FLOW METER, VENTURI | | STARTER |
| | SOLENOID VALVE | $ | FAN SPEED CONTROLLER |
| | CIRCUIT BALANCING VALVE | STB | SLEEVE THROUGH BEAM |
| | BALANCING VALVE (PLUG) | STW | SLEEVE THROUGH WALL |
| | NEEDLE VALVE | DTF | DOWN THROUGH FLOOR |
| | PRESSURE DIFFERENTIAL VALVE | CTE | CONNECT TO EXISTING |
| | SAFETY RELIEF VALVE | AP | ACCESS PANEL |
| | | AD | ACCESS DOOR |
| | AUTOMATIC CONTROL VALVE | | |
| | 3 WAY BUTTERFLY CONTROL VALVE | | |
| | MOTORIZED BUTTERFLY VALVE | | |
| | VALVE IN RISER | | |
| | BACKWATER VALVE INLINE | | |
| | BACKWATER VALVE WITH ACCESS | | |
| | | | |
| | | | |

## LEGEND – HVAC

| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION |
|---|---|---|---|
| RL | REFRIGERANT LIQUID | | SINGLE LINE RIGID DUCT |
| RD | REFRIGERANT DISCHARGE | | SINGLE LINE DUCT WITH ACOUSTIC LINING |
| RS | REFRIGERANT SUCTION | | SINGLE LINE FLEXIBLE DUCT |
| | SUPPLY OR OUTSIDE AIR DUCT | | DOUBLE LINE FLEXIBLE DUCT |
| | RETURN OR EXHAUST DUCT | | SUPPLY AIR DIFFUSER |
| | SUPPLY DUCT DOWN | | RETURN AIR GRILLE |
| | RETURN DUCT DOWN | 2–150Ø / 51–100 | NUMBER/DIFF NECK SIZE / DIFF TYPE/SUPPLY AIR L/S |
| | ROUND DUCT UP | FD | FIRE DAMPER |
| | ROUND DUCT DOWN | SD | SMOKE DAMPER |
| | DUCT WITH ACOUSTIC LINING | MD | MOTORIZED DAMPER |
| | DOUBLE LINE DUCT | BD | MANUAL BALANCING DAMPER |
| UC | DOOR UNDERCUT | BDD | BACK DRAFT DAMPER |
| DG | DOOR GRILLE | FS | MOTORIZED COMBINATION FIRE AND SMOKE DAMPER |
| OA | OUTDOOR AIR | | FIRE DAMPER (IN RISER) |
| RA | RETURN AIR | | SMOKE & FIRE DAMPER (IN RISER) |
| RF | RELIEF AIR | | BALANCING DAMPER IN (IN RISER) |
| SA | SUPPLY AIR | | MOTORIZED DAMPER (IN RISER) |
| | | T | THERMOSTAT |
| | | H | HUMIDISTAT |

## PLUMBING FIXTURES SIZING TABLE

| FIXTURE DESCRIPTION | DRAIN | VENT | DCW | DHW |
|---|---|---|---|---|
| WATER CLOSET – FLUSH TANK | 80mm 3" | 40mm 1 1/2" | 15mm 1/2" | |
| LAVATORY | 32mm 1 1/4" | 32mm 1 1/4" | 15mm 1/2" | 15mm 1/2" |
| SINK – 1 COMPARTMENT | 40mm 1 1/2" | 32mm 1 1/4" | 15mm 1/2" | 15mm 1/2" |
| SINK – 2 COMPARTMENT | 40mm 1 1/2" | 32mm 1 1/4" | 15mm 1/2" | 15mm 1/2" |
| SERVICE SINK | 80mm 3" | 40mm 1 1/2" | 15mm 1/2" | 15mm 1/2" |
| MOP SINK | 80mm 3" | 40mm 1 1/2" | 15mm 1/2" | 15mm 1/2" |

## IMPERIAL TO METRIC SIZING CONVERSION

| | | | |
|---|---|---|---|
| 1/8" | 3mm | 1 1/4" | 32mm |
| 1/4" | 8mm | 1 1/2" | 40mm |
| 3/8" | 10mm | 2" | 50mm |
| 1/2" | 15mm | 2 1/2" | 65mm |
| 3/4" | 20mm | 3" | 80mm |
| 1" | 25mm | 4" | 100mm |

## LEGEND – PLUMBING & DRAINAGE

| SYMBOL | DESCRIPTION |
|---|---|
| SAN | SANITARY DRAIN – NEW |
| SAN | BURIED SANITARY DRAIN |
| ST | STORM DRAIN |
| ST | BURIED STORM DRAIN |
| PD | PUMPED DRAIN |
| PD | PUMPED DRAIN UNDER FLOOR |
| V | VENT PIPE |
| | DRAIN WITH CLEANOUT |
| | DRAIN WITH CLEANOUT UP TO FLOOR |
| | DRAIN WITH CLEANOUT UP TO FLOOR |
| | RUNNING TRAP WITH CLEANOUT |
| | RUNNING TRAP WITH CLEANOUT |
| | NON-POTABLE WATER |
| | DOMESTIC COLD WATER |
| | DOMESTIC HOT WATER |
| | DOMESTIC HOT WATER RECIRC |
| T | DOMESTIC TEMPERED WATER |
| GW | GREY WATER |
| G | GAS PIPE |
| A | COMPRESSED AIR |
| CD | CONDENSATE DRAIN |
| LS | LIQUID SOAP |
| | PIPE UP |
| | PIPE DOWN |
| | CAPPED PIPE |
| | DIRECTION OF FLOW |
| HB / WH | HOSE BIBB/WALL HYDRANT |
| | SHOWER HEAD |
| | FLOOR DRAIN OR ROOF DRAIN |
| | FLOOR DRAIN (PARKING) |
| | SCUPPER DRAIN |
| CB | CATCHBASIN |
| MH | MANHOLE |
| SS | SOIL STACK |
| WS | WASTE STACK |
| VS | VENT STACK |
| VTR | VENT THROUGH ROOF |
| RWL | RAINWATER LEADER |
| GT | GREASE TRAP |

## ENERGY RECOVERY UNIT SCHEDULE

| TAG | SYSTEM | LOCATION | MODEL # | AIRFLOW | | ESP | | UNIT EFFICIENCY | | | POWER CONSUMPTION | ELECTRICAL | | | WEIGHT | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L/S | CFM | Pa | in. WC | SENSIBLE | WINTER | SUMMER | WATTS | VOLTAGE | MCA | MOCP | KG | LBS | |
| ERV–1 | OUTDOOR AIR | UTILITY–108 | EK120HRX–N | 50 | 105 | 75.0 | 0.3 | 72 | 70 | 62 | 207 | 120/1/60 | 1.94 | 15 | 24 | 53 | |
| ERV–2 | OUTDOOR AIR | | E280–SRG | 99 | 210 | 75.0 | 0.3 | 70 | 68 | 58 | 146 | 120/1/60 | 2.89 | 15 | 28 | 62 | |

NOTES:
1. SPECIFICATIONS BASED ON ALDES
2. ALTERNATES: RENEWAIRE, VENMAR

## SPLIT HEAT PUMP SCHEDULE

| OUTDOOR UNITS | | | | | | | | | | | INDOOR UNITS | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAG | LOCATION | MODEL # | PERFORMANCE | | MIN. OPERATING TEMPERATURE | | ELECTRICAL | | | WEIGHT | | TAG | AREA SERVED | LOCATION | TYPE | MODEL # | AIRFLOW | PERFORMANCE | | ELECTRICAL | | | WEIGHT | | REMARKS |
| | | | COOLING | HEATING | °C | °F | VOLTAGE | MCA | MOCP | KG | LBS | | | | | | L/s | CFM | COOLING MBH | HEATING MBH | VOLTAGE | MCA | MOCP | KG | LBS | |
| | | | MBH | MBH @ –20°C (–4°F) | | | | | | | | | | | | | | | | | | | | | |
| HP–O–1 | BACK OF BUILDING AT GRADE | ARUM036GSS5 | 36.1 | 31.8 | –25.0 | –13 | 208–230/1/60 | 24 | 40 | 136 | 300 | HP–I–1 | OFFICE | UTILITY–109 | MULTI–POSITION AIR HANDLING UNIT | ARNU363NJA4 | 467 | 990 | 36 | 40 | 208–230/1/60 | 2.8 | – | 68 | 150 | – OUTDOOR UNIT COMPLETE WITH 24" PRE–FABRICATED STAND, HAIL GUARD AND AIR GUIDE ACCESSORIES |

NOTES:
1. SPECIFICATIONS BASED ON LG
2. ACCEPTABLE ALTERNATIVES: FUJITSU, YORK

## LOUVRE SCHEDULE

| TAG | SYSTEM | LOCATION | SIZE | MODEL | AIRFLOW | | REMARKS |
|---|---|---|---|---|---|---|---|
| | | | | | L/S | CFM | |
| L–1 | ERV–2 VENTILATION EXHAUST | NORTHWEST | 500x300 | 2420 | 127 | 269 | |
| L–2 | ERV–2 VENTILATION INTAKE | NORTHWEST | 500x300 | 2430 | 127 | 269 | |
| L–3 | ERV–1 VENTILATION EXHAUST | NORTHWEST | 300x300 | 2420 | 55 | 117 | |
| L–4 | ERV–1 VENTILATION INTAKE | NORTHSOUTH | 300x300 | 2430 | 55 | 117 | |

NOTES:
1. SPECIFICATIONS BASED ON VENTEX

## ELECTRIC RADIANT HEATER SCHEDULE

| TAG | LOCATION | MODEL # | STYLE | CAPACITY | VOLTAGE | REMARKS |
|---|---|---|---|---|---|---|
| | | | | W | | |
| ERH–1 | STORAGE AREA | SW18M12 | ELECTRIC | 1800 | 120/1/60 | C/W BUILT–IN THERMOSTAT |
| ERH–2 | STORAGE AREA | SW18M12 | ELECTRIC | 1800 | 120/1/60 | C/W BUILT–IN THERMOSTAT |
| ERH–3 | STORAGE AREA | SW18M12 | ELECTRIC | 1800 | 120/1/60 | C/W BUILT–IN THERMOSTAT |

NOTES:
1. SPECIFICATIONS BASED ON SUPERIOR RADIANT PRODUCTS

## ELECTRIC BASEBOARD HEATER SCHEDULE

| TAG | LOCATION | MODEL # | STYLE | CAPACITY | VOLTAGE | REMARKS |
|---|---|---|---|---|---|---|
| | | | | W | | |
| EBH–1 | WASHROOM | OFM0502 | ELECTRIC | 500 | 120/1/60 | C/W BUILT–IN THERMOSTAT |

NOTES:
1. SPECIFICATIONS BASED ON OUELLET

## DIFFUSER/GRILLE SCHEDULE

| TAG | TYPE | MODEL | REMARKS |
|---|---|---|---|
| S1 | LOUVRED FACE SUPPLY | 520D/S/B12 | SIZE AS INDICATED ON DRAWINGS. |
| S2 | 600mm x 600mm SQUARE PLAQUE DIFFUSER | SPD/31/B12 | NECK SIZE AS INDICATED ON DRAWINGS. |
| S3 | 600mm x 600mm 4 WAY PANEL MOUNTED DIFFUSER | 51400–04–XX–F23–24x24–00–44/B12 | NECK SIZE AS INDICATED ON DRAWINGS. |
| S4 | 300mm x 300mm 4 WAY PANEL MOUNTED DIFFUSER | 51400–04–XX–F23–24x24–00–44/B12 | NECK SIZE AS INDICATED ON DRAWINGS. |
| R1 | LOUVERED FACE RETURN | 530D/S/B12 | SIZE AS INDICATED ON DRAWINGS. |
| R2 | EGGCRATE RETURN GRILLE | 80/F/B12 | SIZE AS INDICATED ON DRAWINGS. |
| E1 | EGGCRATE RETURN GRILLE | 80/F/B12 | NECK SIZE AS INDICATED ON DRAWINGS. |

NOTES:
1. SPECIFICATIONS BASED ON EH PRICE

## DOMESTIC WATER HEATER SCHEDULE

| TAG | LOCATION | MANUFACTURER | MODEL | CAPACITY | | RECOVERY | | ELECTRICAL | | WEIGHT | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | L | USG | LPH | GPH | VOLTAGE | MOCP | KG | LBS | |
| EWH–1 | UTILITY–109 | BRADFORD WHITE | AEROTHERM RE2H80T10 | 303 | 80 | 68.1 | 18.0 | 208/1/60 | 30.0 | 407.8 | 899.0 | NOTES 1, + 2 |

NOTES:
1. ACCEPTABLE ALTERNATES, SUBJECT TO SHOP DRAWING REVIEW – A.O. SMITH.
2. COMPLETE WITH TEMPERATURE AND PRESSURE RELIEF VALVE, DUCTING KIT, AND 4.5KW BACK–UP ELECTRIC HEATING ELEMENTS.

## DRAWING SCHEDULE

| DWG NO | DRAWING TITLE |
|---|---|
| M–100 | DRAWING SCHEDULE, LEGENDS |
| M–101 | DETAILS |
| M–102 | SPECIFICATION |
| M–200 | PLUMBING & DRAINAGE |
| M–300 | HVAC PLAN |

## PLUMBING FIXTURE LIST

| ITEM | DESCRIPTION |
|---|---|
| WC–01 | TOILET – FLOOR MOUNTED WITH FLOOR OUTLET<br>AMERICAN STANDARD 215A104.020 TOILET – CADET® PRO™, TANK TYPE TOILET, FLOOR MOUNTED WITH FLOOR OUTLET, HIGH EFFICIENCY HET 4.8 LPF (1.28 GPF), VITREOUS CHINA, WHITE FINISH, EVERCLEAN® ANTIMICROBIAL SURFACE, ELONGATED BOWL.<br>CENTOCO 820STSS–001 SEAT – OPEN FRONT TOILET SEAT WITH COVER, FOR ELONGATED BOWL, WHITE POLYPROPYLENE PLASTIC, COLOR–MATCHED PLASTIC SELF–SUSTAINING CHECK HINGES WITH ONE SOLID METAL HINGE PIN AND BOLT.<br>MCGUIRE LFBV172 SUPPLY – CONVERTIBLE™ COMMERCIAL TOILET SUPPLY KIT, CONSISTING OF (1) STOP VALVE, (1) RISER, (1) FLANGE, LEAD FREE BRASS BODY, CHROME–PLATED FINISH, CONVERTIBLE LOOSE KEY/TRIANGLE HANDLE, ANGLE STOP, 305 MM (12") C.P. TOILET FLEXIBLE COPPER RISER TUBE (STANDARD), 13 MM (1/2") SWEAT INLET X 10 MM (3/8") O.D. OUTLET. |
| HS–01 | LAVATORY –<br>AMERICAN STANDARD 0355012.020 BASIN – WALL–HUNG LAVATORY, VITREOUS CHINA, WHITE FINISH.<br>CHICAGO FAUCETS 420–T45E2805ABCP FAUCET – MANUAL, SINGLE HANDLE, LAVATORY FAUCET.<br>MCGUIRE 155A FIXTURE DRAIN – STRAIGHT DRAIN, CAST BRASS, CHROME–PLATED FINISH<br>MCGUIRE LFBV170 SUPPLY – CONVERTIBLE™ COMMERCIAL FAUCET SUPPLY KIT, CONSISTING OF (2) STOP VALVES, (2) RISERS, (2) FLANGES (STANDARD), LEAD FREE BRASS BODY, CHROME–PLATED FINISH, CONVERTIBLE LOOSE KEY/TRIANGLE HANDLE, ANGLE STOP, 305 MM (12") C.P. LAVATORY FLEXIBLE COPPER RISER TUBES (STANDARD), 13 MM (1/2") SWEAT INLET X 10 MM (3/8") O.D. OUTLET.<br>MCGUIRE 8872C P–TRAP – HEAVY CAST BRASS, 32 MM (1–1/4") X 32 MM (1–1/4") SIZE, ADJUSTABLE P–TRAP, WITH CLEANOUT PLUG. |
| KS–01 | – COMMERCIAL SINKS<br>FRANKE COMMERCIAL LBS680P–1–1 SINK – COUNTER MOUNTED, SINGLE COMPARTMENT SINK, CONSTRUCTED FROM 18 GAUGE TYPE 304 STAINLESS STEEL, SINGLE HOLE CENTERSET, WITH OVERALL DIMENSION 508 MM (20") LONG, 521 MM (20–1/2") WIDE, 203 MM (8") HIGH.<br>GROHE 32665003 FAUCET – CONCETTO, MANUAL, SINGLE HANDLE, SINK FAUCET.<br>MCGUIRE LFBV170 SUPPLY – CONVERTIBLE™ COMMERCIAL FAUCET SUPPLY KIT, CONSISTING OF (2) STOP VALVES, (2) RISERS, (2) FLANGES (STANDARD), LEAD FREE BRASS BODY, CHROME–PLATED FINISH, CONVERTIBLE LOOSE KEY/TRIANGLE HANDLE, ANGLE STOP, 305 MM (12") C.P. LAVATORY FLEXIBLE COPPER RISER TUBES (STANDARD), 13 MM (1/2") SWEAT INLET X 10 MM (3/8") O.D. OUTLET.<br>MCGUIRE 8912CB P–TRAP – HEAVY CAST BRASS, 38 X 38 MM (1–1/2" X 1–1/2") SIZE, ADJUSTABLE P–TRAP, WITH CLEANOUT PLUG. |
| FD–1 | FLOOR DRAIN – FOR FINISHED AREA APPLICATION – MEDIUM DUTY (MD)<br>– WATTS FD–102NH–C–A5–1 FLOOR DRAIN – EPOXY COATED CAST IRON, FLOOR DRAIN,ADJUSTABLE ROUND 6 MM (1/4") THICK TOP, 51 MM (2") PIPE SIZE, NO–HUB OUTLET, 127 MM (5") DIAMETER NICKEL BRONZE STRAINER, ANCHOR FLANGE, TRAP PRIMER TAPPING, REVERSIBLE MEMBRANE CLAMP, COLLAR WITH PRIMARY AND SECONDARY WEEPHOLES, 52 CM² (8 SQ. IN) FREE AREA, CERTIFICATION AND COMPLIANCES INCLUDE: ASME A112.21.1M COMPLIANT. |
| FD–2 | FLOOR DRAIN – FOR FUNNEL APPLICATION<br>– WATTS FD–102NH–EG–1 FLOOR DRAIN – EPOXY COATED CAST IRON, FLOOR DRAIN,ADJUSTABLE HEEL PROOF NICKEL BRONZE TOP, 51 MM (2") PIPE SIZE, NO–HUB OUTLET, ANCHOR FLANGE, 102 X 229 MM (4" X 9") OVAL NICKEL BRONZE FUNNEL, REVERSIBLE CLAMPING COLLAR WITH PRIMARY AND SECONDARY WEEPHOLES, 26 CM² (4 SQ. IN.) FREE AREA. |

GENERAL NOTES:
1. PERFORM ALL WORK IN ACCORDANCE WITH THE LATEST EDITION OF ALL APPLICABLE CODES, STANDARDS AND BULLETINS, AND TO THE LOCAL AUTHORITIES' REQUIREMENTS.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND CHECK THE EXISTING CONSTRUCTION PRIOR TO AND DURING CONSTRUCTION. ANY CHANGES AND/OR DISCREPANCIES SHALL BE REPORTED AND REVIEWED BY THE ENGINEER AND/OR PROJECT MANAGER PRIOR TO PROCEEDING.
3. THE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND THE DOCUMENTS PERTAINING TO THE WORK OF OTHER TRADES.
4. OBTAIN EXACT DIMENSION FROM SITE MEASUREMENTS. DO NOT SCALE THESE DRAWINGS.
5. PENETRATIONS OF EITHER THE FIRE OR SMOKE BARRIERS SHALL BE SLEEVED/SEALED AGAINST THE PASSAGE OF FLAME AND/OR SMOKE WITH A SUITABLE NON–COMBUSTIBLE MATERIAL EQUAL TO THE CONSTRUCTION PENETRATED.
6. CHECK AND VERIFY THE LOCATIONS OF ALL PIPES, DUCTWORK AND EQUIPMENT WITH THE WORK OF OTHER TRADES TO PREVENT INTERFERENCE. REMOVAL AND RELOCATION OF ANY SUCH WORK INTERFERING WITH THE WORK OF OTHER TRADES IS THE RESPONSIBILITY OF THE MECHANICAL TRADES, UNLESS OTHERWISE APPROVED IN WRITING.
7. PROVIDE ACCESS DOORS AS REQUIRED FOR ALL CONCEALED SERVICEABLE COMPONENTS, LOCATED ABOVE, BEHIND OR BELOW INACCESSIBLE CONSTRUCTION.
8. EXISTING EQUIPMENT AND ASSOCIATED COMPONENTS SHALL BE REMOVED AND DISPOSED IN AN APPROPRIATE MANNER.
9. ALL SYSTEMS ARE SHOWN IN DIAGRAMMATIC FORM. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE NEW SYSTEMS ARE CONFIGURED/INSTALLED WITHIN THE EXISTING AVAILABLE SPACE. MODIFY THE NEW SYSTEMS CONFIGURATION AS REQUIRED TO SUIT.

## GENERAL NOTES

Professional Engineers Ontario
Limited Licensee
Name: S.B. Howard
Number: 100026721
Category: Mechanical: HVAC, Plumbing, Fire Suppression
Limitations:
This licence is subject to the limitations as detailed on the certificate
Association of Professional Engineers of Ontario
2025-07-03

| No. | DESCRIPTION | DATE | BY |
|---|---|---|---|
| | | | |
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| 2 | RE-ISSUED FOR PERMIT | JULY 03, 2025 | S.H. |
| 1 | RE-ISSUED FOR PERMIT | APR. 15, 2025 | J.C |
| 0 | ISSUED FOR PERMIT | OCT. 11, 2024 | J.C |

REVISIONS


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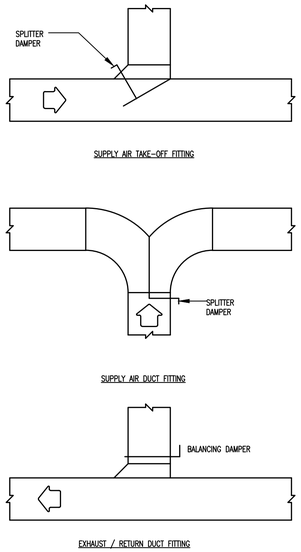

PROJECT:
GRETZKY GOLF COURSE SERVICE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ONTARIO

| START DATE: | DRAWN BY: | DESIGNED BY: |
|---|---|---|
| 2024-07-17 | A.A. | S.H. |

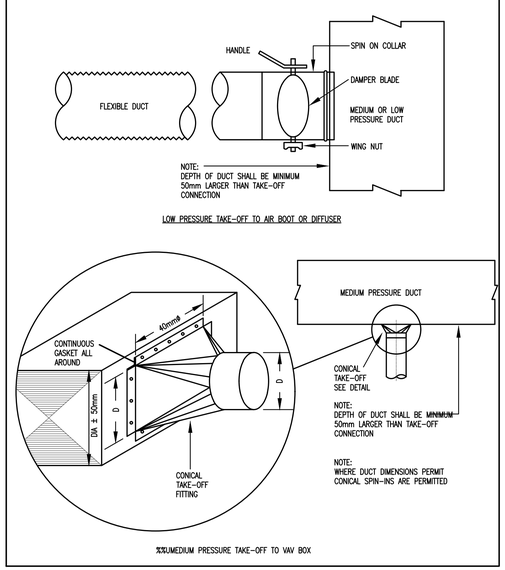
DRAWING TITLE:
LEGENDS AND SCHEDULES

SCALE: N/A
DRAWING No.: M-100
PROJECT: 23-117-110

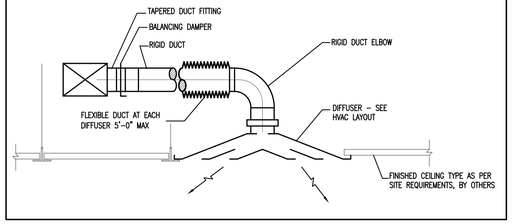
PLOT DATE: July 3, 2025
ORIGINAL SHEET SIZE: ARCH D
30cm 20cm 10cm 0



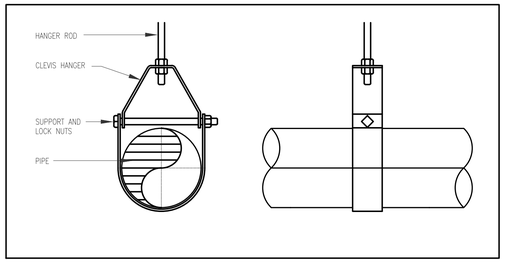

1 M-101 **DUCT FITTINGS**
SCALE: NTS



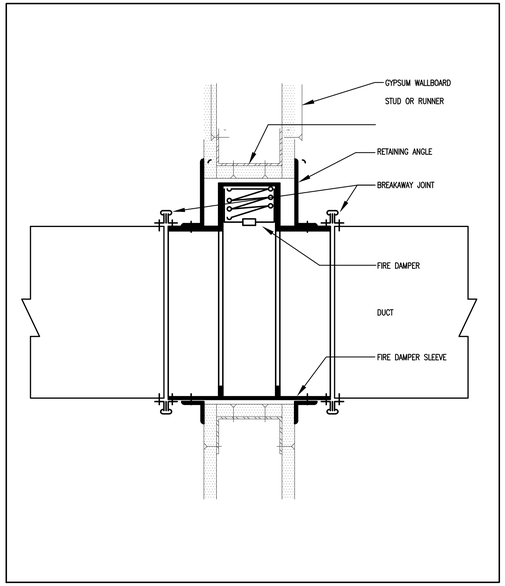

2 M-101 **DUCT TAKE-OFF**
SCALE: NTS




3 M-101 **SQUARE DIFFUSER CONNECTION DETAIL**
SCALE: NTS



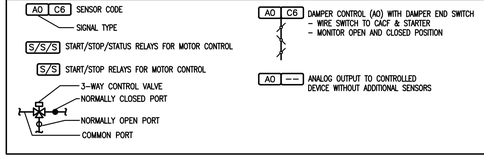

4 M-101 **PIPE HANGER DETAIL**
SCALE: N.T.S.



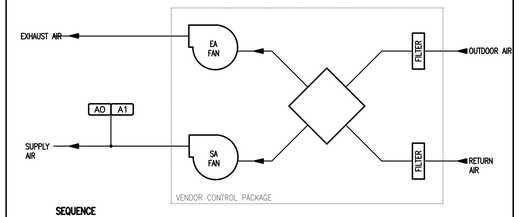

5 M-101 **FIRE DAMPER**
SCALE: NTS

## CONTROL LEGEND

| SENSOR AND INSTRUMENT CODES | | ABBREVIATIONS | |
|---|---|---|---|
| A1 | TEMPERATURE SENSOR, DUCT MOUNTED | ADJ | ADJUSTABLE |
| A2 | TEMPERATURE SENSOR, PIPE MOUNTED | AI | ANALOG INPUT |
| A3 | TEMPERATURE SENSOR, AVERAGING ELEMENT | AO | ANALOG OUTPUT |
| A4 | TEMPERATURE SENSOR, OUTSIDE AIR TYPE | BAS | BUILDING AUTOMATION SYSTEM |
| A5 | TEMPERATURE SENSOR, ROOM TYPE | CACF | CENTRAL ALARM & CONTROL FACILITY |
| A6 | TEMPERATURE SENSOR, LOW LIMIT | CHWS | CHILLED WATER SUPPLY |
| A7 | TEMPERATURE SENSOR, HIGH LIMIT | CHWR | CHILLED WATER RETURN |
| | | CLG | COOLING |
| B1 | HUMIDITY SENSOR, DUCT MOUNTED | CWS | CONDENSER WATER SUPPLY |
| B2 | HUMIDITY SENSOR, ROOM TYPE | CWR | CONDENSER WATER RETURN |
| B3 | HUMIDITY SENSOR, OUTSIDE AIR TYPE | DI | DIGITAL INPUT |
| B5 | HUMIDITY SENSOR, HIGH LIMIT TYPE | DO | DIGITAL OUTPUT |
| | | DP | DIFFERENTIAL PRESSURE |
| C1 | DIFFERENTIAL PRESSURE | DS | DAMPER END SWITCH |
| C2 | PRESSURE SENSOR | EAT | EXHAUST AIR TEMPERATURE |
| C3 | STATIC PRESSURE SENSOR | EF | EXHAUST FAN |
| C4 | PRESSURE SWITCH | EWT | ENTERING WATER TEMPERATURE |
| C5 | WATERFLOW SWITCH | FPVAV | FAN POWERED VAV TERMINAL |
| C6 | DAMPER STATUS SWITCH | FCS | FAN COIL SUPPLY |
| C7 | AIR VOLUME | FCR | FAN COIL RETURN |
| C8 | PULSED OUTPUT FROM POWER METER | FCU | FAN COIL UNIT |
| C9 | PULSED OUTPUT FROM WATER METER | FS | FLOW SENSOR |
| C10 | EMMERSION HEATER ON/OFF | HL | HIGH LIMIT |
| C11 | CURRENT SENSOR | HWS | HEATED WATER SUPPLY |
| C12 | Co2 SENSOR | HWR | HEATED WATER RETURN |
| | | HTG | HEATING |
| C02 | CARBON DIOXIDE SENSOR | LL | LOW LIMIT |
| CO | CARBON MONOXIDE SENSOR | LWT | LEAVING WATER TEMPERATURE |
| | | MAT | MIXED AIR TEMPERATURE |
| D1 | MOTOR CONTROL RELAYS, START/STOP/STATUS TYPE | OARH | OUTSIDE AIR RELATIVE HUMIDITY |
| D2 | CURRENT TRANSFORMERS AND RELAYS | OAT | OUTSIDE AIR TEMPERATURE |
| D3 | MOTOR STATUS CONTACTS | RA | RETURN AIR |
| D4 | DIFFERENTIAL PRESSURE SWITCH | RARH | RETURN AIR RELATIVE HUMIDITY |
| D5 | LEVEL SWITCH, TANK MOUNTED | RAT | RETURN AIR TEMPERATURE |
| D6 | LEVEL SWITCH, FLOAT TYPE | RF | RETURN FAN |
| D7 | DIFFERENTIAL PRESSURE TRANSMITTER | RTT | RUN TIME TOTALIZATION |
| D8 | CURRENT SENSITIVE RELAY | SA | SUPPLY AIR |
| D9 | LEVEL TRANSMITTER | SARH | SUPPLY AIR RELATIVE HUMIDITY |
| | | SAT | SUPPLY AIR TEMPERATURE |
| K1 | WATERFLOW TRANSMITTER, ANNUBAR TYPE | SF | SUPPLY FAN |
| K2 | WATERFLOW TRANSMITTER, TURBINE TYPE | SP | STATIC PRESSURE |
| K3 | AIRFLOW TRANSMITTER, DIGITRON TYPE | ST | SPACE TEMPERATURE |
| K4 | AIRFLOW TRANSMITTER, ANNUBAR AIRBAR | STP | SETPOINT |
| K5 | ENERGY METER, DELTA T AND FLOW | STS | SPACE TEMPERATURE SENSOR |
| K6 | GAS DETECTOR | TUC | TERMINAL UNIT CONTROLLER |
| | | VAV | VARIABLE AIR VOLUME |
| F1 | INTERFACE CONTACT TO CACF | | |
| F2 | VIBRATION DETECTOR | | |
| F3 | INTERFACE CONTACT | | |
| F4 | INTERFACE TO HOOD SUPPRESSION | | |
| G1 | OUTPUT TO VALVE | | |
| G2 | OUTPUT TO DAMPER | | |
| G3 | START/STOP | | |
| G4 | OUTPUT TO VSD | | |
| G5 | FAULT INPUT | | |
| G6 | STATUS | | |
| G7 | VIBRATION CUT-OUT | | |
| G8 | ELECTRICAL POWER CONSUMPTION | | |




CD-1 M-101 **CONTROL LEGEND**

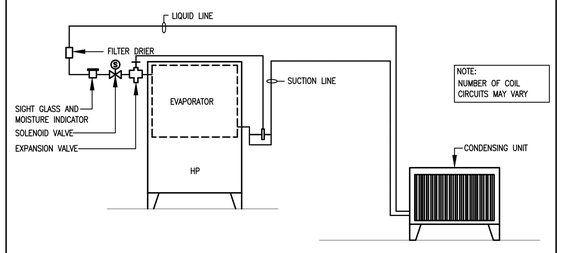



**SEQUENCE**

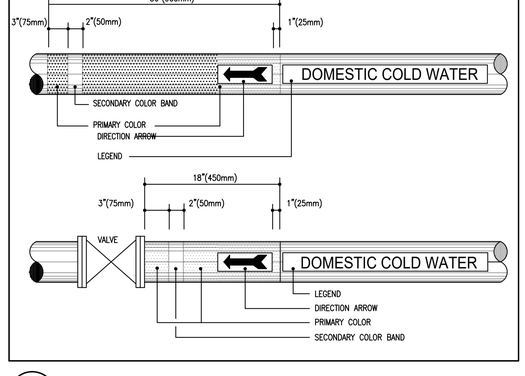
ERV SHALL RECEIVE PERMISSION TO OPERATE BASED ON OCCUPIED/UNOCCUPIED TIMECLOCK. COORDINATE WITH OWNER FOR INITIAL TIMECLOCK SETTINGS.

WHEN ENABLED, ERV SHALL OPERATE CONTINUOUSLY BY VENDOR CONTROL PACKAGE. VENDOR CONTROLS SHALL PROVIDE FROST CONTROL AND INDICATE DIRTY FILTER STATUS.

CD-2 M-101 **ERV SYSTEM**
ERV-1




6 M-101 **REFRIGERANT PIPING SCHEMATIC**
SCALE: NTS




7 M-101 **PIPE IDENTIFICATION DETAIL**
SCALE: N.T.S.

## GENERAL NOTES

Professional Engineers Ontario
Limited Licensee
Name: S.B. Howard
Number: 100026721
Category: Mechanical: HVAC, Plumbing, Fire Suppression
Limitations:
This licence is subject to the limitations as detailed on the certificate
Association of Professional Engineers of Ontario
2025-07-03

| No. | DESCRIPTION | DATE | BY |
|---|---|---|---|
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| 2 | RE-ISSUED FOR PERMIT | JULY 03, 2025 | S.H. |
| 1 | RE-ISSUED FOR PERMIT | APR. 15, 2025 | J.C |
| 0 | ISSUED FOR PERMIT | OCT. 11, 2024 | J.C |

## REVISIONS


ARC ENGINEERING INC.
solutions | excellence
1100 South Service Rd., #417
Stoney Creek ON L8E 0C5
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F • (905) 643-8510
www.arcengineering.ca
contact@arcengineering.ca


PROJECT:

GRETZKY GOLF COURSE
SERVICE BUILDING

320 BALMORAL DRIVE
BRANTFORD, ONTARIO

| START DATE: | DRAWN BY: | DESIGNED BY: |
|---|---|---|
| 2024-07-17 | A.A. | S.H. |

DRAWING TITLE:

DETAILS

| SCALE: | DRAWING No.: |
|---|---|
| N/A | M-101 |
| PROJECT: 23-117-110 | |

PLOT DATE: July 3, 2025

ORIGINAL SHEET SIZE: ARCH D

30cm 20cm 10cm 0

## 1. GENERAL

1.1. The scope of work is to construct a new service building and maintenance office (shell space only) at the Walter Gretzky Municipal Golf Course.

1.2. Perform all mechanical work detailed on these drawings to provide a complete and fully functional operating system to the satisfaction of the owner and mechanical consultant.

1.3. Where there is discrepancy between specified, or scheduled equipment, and information indicated elsewhere on the drawings, the most stringent shall apply.

1.4. Where there is apparent discrepancy of any kind, between any drawings, equipment tables, schedules, specifications, or other bid documents, notify the Consultant, for direction and clarification during the tender period.

1.5. Consideration will not be granted for misunderstanding the intent of the contractual documents, the extent of work to be performed, or the intent required to provide complete and fully operational and controlled systems upon completion installation.

1.6. Specified work described or indicated on drawings does not delegate function to any specified subcontractor or identify absolute contractual limits between mechanical or subcontractors.

1.7. Arrange for milestone inspections. Contact ARC Engineering Tel: (905) 643-8530 E-mail: contact@arcengineering.ca.

1.8. As a minimum, base building standards shall form the basis for this construction. Comply with Landlord's requirements for system shutdown and connection.

1.9. Coordinate all work with base building work. Refer to base building drawings and specifications.

1.10. Codes and bylaws shall be strictly adhered to. Obtain necessary permits, approvals and inspections from the authorities having jurisdiction.

1.11. Permits and fees required by the authorities having jurisdiction shall be obtained and paid for by this contractor. Include all applicable taxes.

1.12. Existing site conditions affecting the work of this trade shall be reviewed prior to tender submission. Contractor shall conduct ongoing reviews during demolition and construction and immediately notify the consultants of any deviations from drawing dimensions/details/schematics. Failure to do so shall not relieve contractor of full contract responsibility.

1.13. Cutting, patching and core drilling required by this trade shall be paid for by this contractor. Provide details of new opening through structural components for engineer's approval. Incur all costs related for structural approval.

1.14. Fire stop shall be ULC listed for the required separation and provided at all pipe and duct penetrations through rated assemblies.

1.15. Premium time costs shall be included for work outside of normal working hours. Comply with construction schedule prepared by Management.

1.16. Flashing and counter flashing for exterior penetrations or water-proofed floors shall be provided under this contract.

1.17. Shop drawings shall be complete with contractors reviewed stamp. Submit four (4) copies and/or one (1) electronic copy of all shop drawings. Allow one (1) week for consultant's review.

1.18. Base bid equipment and suppliers in Base Building Mechanical Specifications shall apply to this contract.

1.19. If the Contractor chooses to submit alternates:

1.19.1. Contractor to submit alternates in addition to base bid products, and show savings by utilizing alternates. Where modifications to the work of Other Trades are required as a result or part of the alternative offered, include the cost of said modifications in the alternative price offered.

1.19.2. Contractor responsible for ensuring alternate equipment meets physical requirements of existing site conditions to remain and proposed design with respect to but not limited to: size, weight, service access clearances, duct connection arrangement, & air intake clearances.

1.19.3. Contractor responsible for ensuring alternate equipment meets functions and performance specifications specified in schedule and/or shown on Drawings.

1.20. Equipment substitutions after award of contract will not be considered without written explanation and consultant's written authorization. The quality and performance characteristics of substituted product shall be equivalent to the specified product. All substitute products shall be approved by consultants. Any additional costs incurred by all trades for substituted equipment installation must be incurred by this contract.

1.21. Control wiring and devices shall be provided under this contract.

1.22. Electrical devices shall be provided for all Division 15 equipment, including lood side wiring, starters, disconnect, etc. Verify and coordinate voltage, phase, and short circuit interrupting capacity with the electrical contractor prior to ordering equipment. Provide conduit and wiring materials and methods in strict accordance with Division 16 requirements.

1.23. Access doors shall be provided for all inaccessible mechanical equipment and services requiring inspection or service. Finish shall suit architect/designers requirements. Access doors shall be recessed as required to suit wall finish (e.g., tile).

1.24. Architect/Designer/Owner approval of air terminal, thermostat, and access door locations must be obtained prior to installation.

1.25. One (1) year written warranty shall be provided for the complete mechanical installation from date of acceptance.

1.26. CAD as-built drawings shall be completed utilizing AutoCAD. Record accurately installed work on white prints transferring to AutoCAD. Submit both copies.

1.27. Operating and maintenance manuals containing approved shop drawings, air and water balancing reports, equipment data sheets, written warranty, operating instructions and maintenance procedures shall be submitted to consultant for review. Manuals shall be separated with dividers in appropriate sections. Make all corrections requested by consultant and resubmit for review.

1.28. Provide, at minimum, one (1) hard copy and one (1) electronic copy of the operating and maintenance manuals referenced in section 1.27 to the building owner.

1.29. Change Notice Quotations shall be submitted complete with cost breakdown of labour and materials. Failure to provide will result in rejection. All Mechanical Change Notices shall be priced in accordance with "MECHANICAL CONTRACTORS ASSOCIATION" (MCA) labour units strictly for labour.

## 2. REFRIGERANT PIPING

2.1. Refrigerant piping design and installation shall conform to the recommendations and requirements of the following:

2.1.1. CSA Standard B52 – Mechanical Refrigeration Code

2.1.2. Ontario Building Code

2.1.3. Air Conditioning and Refrigeration Institute

2.1.4. Air Conditioning equipment manufacturer.

2.2. Select pipe, fittings and components to suit systems test and operating pressure.

2.3. Refrigerant piping shall be factory cleaned and sealed, type ACR seamless copper piping. Use only silver brazed joints.

2.4. Where elbows are required, use only long radius elbows.

2.5. Size refrigerant piping to attain air conditioning equipment manufacturer's listed cooling capacities.

2.6. Keeping piping runs and number of elbows and fittings to a minimum.

2.7. Reduce the effect of piping vibration with the use of flexible metal hose.

2.8. After installation of piping, a minimum test pressure of [2100 kPa] [300 psi] on the high pressure side and [1050 kPa] [150 psi] on the low pressure side shall be placed on the piping system with nitrogen. Pressures shall be maintained without loss for not less than four (4) hours. Repair or replace defective joints.

2.9. After joints have been proven tight under test pressures, achieve a vacuum of not less than [95 kPa] [28" Hg] using a separate vacuum pump. Maintain vacuum without change in pressure for at least twelve (12) hours.

2.10. After charging, recheck all joints with a halide leak detector. Replace any joints found to leak, and repeat the above dehydration testing and charging procedures.

2.11. Replace any refrigerant and oil lost during the warranty period.

## 3. PLUMBING SYSTEM

3.1. EXISTING SANITARY DRAIN locations and invert elevations shall be verified on site prior to commencement of work.

3.2. PIPING MATERIALS:

3.2.1. Domestic hot and cold water piping – type "L" copper with copper fittings use 95/5 tin/antimony solder. Provide type "K" soft copper piping without joints below ground.

3.2.2. Drainage and Vent Piping (60mm [2-1/2"] and smaller):

3.2.2.1. Sanitary piping, above ground – DWV copper pipe with drainage fittings and 50/50 solder joints.

3.2.2.2. Sanitary piping, below ground – Type L copper with 50/50 solder joints.

3.2.2.3. Vent piping, above ground – DWV copper pipe with drainage fittings, 50/50 solder joints.

3.2.2.4. Vent piping, below ground – Type L copper pipe with wrought copper fittings and 50/50 solder joints.

3.2.3. Drainage and Vent Piping (75mm [3"] and larger):

3.2.3.1. Sanitary piping, above ground – CSA class 4000 cast iron soil pipe and fittings, with mechanical joints.

3.2.3.2. Sanitary piping, below ground – CSA class 4000 cast iron soil pipe and fittings, with mechanical joints.

3.2.3.3. Vent piping, above ground – CSA class 4000 cast iron soil pipe and fittings, with mechanical joints.

3.2.3.4. Vent piping, below ground – CSA class 4000 cast iron soil pipe and fittings, with mechanical joints.

3.2.4. Plastic piping conforming to ABS CAN/CSA B181.1 or PVC CAN/CSA B181.2 with drainage fittings and solvent welded joints may be used in lieu of copper or cast iron soil except in return air plenums or where prohibited by code.

3.3. Lead-free Valves: (part numbers listed):

3.3.1. To 1379 kPa [200psi] working pressure, up to 50mm [2 in.] – soldered or threaded

3.3.1.1. Ball Valves – 150S/600 W.O.G. rated brass body to ASTM C49300 (Lead Free Brass), full port, PTFE seats, double "O" ring or teflon packing, forged brass C49300 solid ball, blowout proof stem, lever handle (Soldered – Kitz 859, Threaded – Kitz 858)

3.3.1.2. Check Valves – 125S/200 W.O.G. rated, bronze body to ASTM C89530 (lead free bronze), screwed cap C49300 (lead free brass), integral seat, PTFE disk (Swing "Y" pattern, soldered – Kitz 823T, swing "Y" pattern, threaded – Kitz 822T)

3.4. Butterfly valves are to be molded or cartridge style only.

3.5. Ball valves are to be solid ball style only.

3.6. Provide ball or butterfly valves for all shut-off requirements. Gate valves will not be approved.

3.7. Provide all bronze ball type shut off valves on main and branch lines and isolating valves for each individual plumbing fixture served.

3.8. Plumbing fixtures shall be new, of first quality, in perfect condition and installed in best workmanlike manner. Verify plumbing fixture quantities and locations with Architect's/Designer's drawings. Reuse of domestic water heater is not permitted.

3.9. Hot water heaters shall be as indicated on drawings and in schedule.

3.10. Provide di-electric couplings for connection of dissimilar piping materials.

3.11. Trap seal primer must be provided on all new Floor Drains, Funnel Floor Drains and Hub Drains.

3.12. Exposed piping and fittings within washrooms shall be chrome plated. Provide chrome plated escutcheons on all piping passing through finished surfaces and millwork.

3.13. Stainless steel water hammer arrestors equal to Zurn Shoktrol shall be provided on all lines serving groups of fixtures, quick closing valves and flush valves.

3.14. Provide ULC classified firestopping products by 3M or Hilti which have been tested in accordance with CAN4-S115, install firestopping systems in accordance with the appropriate ULC system number for the products and type of penetration.

3.15. Ensure that fire ratings of floors and walls are maintained, fill spaces between openings and pipes passing through fire separations.

## 4. INSULATION

4.1. Provide all labour, materials, products, equipment and services to supply and install thermal insulation, vapour barriers and finishes for mechanical work as indicated on the drawings and specified in this section of these specifications.

4.2. PIPING INSULATION:

4.2.1. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics and insulating cements.

4.2.2. Insulation materials must be manufactured at facilities certified and registered with an approved Registrar to conform o ISO 9000 quality standard.

4.2.3. All insulation pertaining to Division 15 shall be carried out by one firm specializing in insulation work. Do not mix similar products of multiple manufacturers.

4.2.4. Acceptable insulation manufacturers are Owens Corning Canada, Johns Manville, Manson Insulation Inc. Knauf Fiber Glass and Certainteed.

4.2.5. Provide insulation and covers in strict accordance with authorities governing combustibility and fireproofing of materials and in accordance with manufacturer's recommendations.

4.2.6. Provide non-combustible insulation, jackets and finishes having a Flame Spread/Smoke Developed rating of 25/50 or less.

4.2.7. Provide insulation materials with a minimum thermal conductivity of 0.24BTU.in/(hr. sq.ft°F) at 100°F mean temperature.

4.2.8. On hot piping applications, hold insulation in place with flare type staples (outward clinch).

4.2.9. Apply pipe insulation over 1-1/2" thickness in two layers with joints staggered.

4.2.10. Insulate fittings with fabricated mitered or preformed sections of specified insulation.

4.2.11. Insulate over flanges and mechanical couplings with specified insulation and thickness, sized to suit flange diameters. Fill spaces between insulation and adjoining pipe insulation with similar material.

4.2.12. Insulate valves and inline components with flexible insulation density (3/4 lbs./cu.ft.) compressed not more than 50% of original thickness. Build up to specified thickness with approved asbestos free finishing cement.

4.2.13. Do not insulate terminal unit automatic control valves installed in hot piping.

4.2.14. Under all domestic cold water, provide an insert between support shield and piping for piping 1-1/2" or larger.

4.2.15. Provide the following pipe insulation type as indicated in the pipe insulation table below.

"Type P1" – Owens Corning Fiberglas Pipe Insulation, Johns Manville Micro-Lok Pipe Insulation, Manson Alley-K Pipe Insulation or Knauf Earthwool 1000° Pipe Insulation with factory applied all purpose vapour barrier jacket where scheduled.

"Type P2" – Armacell AC Accoflex fiber-free piping insulation, painted with WB Finish where installed outdoors.

| DUTY | INSULATION TYPE | THICKNESS | VAPOUR BARRIER |
|---|---|---|---|
| DOMESTIC COLD WATER | | | |
| Less than 1" | P-1 | 1/2" | Yes |
| Less than 8" | P-1 | 1" | Yes |
| HORIZONTAL STORM AND SANITARY DRAINAGE | | | |
| all pipe sizes | P-1 | 1" | Yes |
| REFRIGERANT LIQUID PIPE | | | |
| Less than 1" | P-2 | 1" | Yes |
| 1" and above | P-1 | 1" | Yes |
| HEAT TRACED PIPE FOR FREEZE PROTECTION | | | |
| 3" and less | P-1 | 1" | No |
| 4" and above | P-1 | 1-1/2" | No |

4.2.16. Provide Johns Manville Zeston PVC jacketing or Knauf Proto PVC jacketing for all exposed ceiling areas, mechanical rooms, and any locations where piping passes through regularly occupied areas.

4.3. DUCTWORK INSULATION

4.3.1. Provide insulation with a minimum thermal resistance of 0.25 BTU.in/hr. sq.ft °F at 75°F mean temperature.

4.3.2. Apply vapour barrier over insulation on cold temperature ductwork.

4.3.3. Circular silencers and acoustic plenums need not be externally insulated.

4.3.4. Ductwork and casings lined with acoustic insulation 1" or more in thickness need not be externally insulated.

4.3.5. Provide the following ductwork insulation type as indicated in the ductwork insulation table below.

Type D1: Owens Corning 703 Fiberglas Insulation with FRK facing, John Mansville 814 Spin-Glas with FSK Facing, Manson AK Board with FSK facing, or Knauf Earthwool Insulation Board with FSK facing. Density shall be not less than 3lbs./cu.ft. Impale on mechanically fastened pins located at not greater than 12" centers. Secure with speed washers. Butt joints tightly together and seal washers, breaks and joints with self-adhering 4" wide plain aluminum tape, or adhere foil with Childers CP82 or Bakor 230-38 adhesive.

Type D2: Owens Corning SOFTR Duct Wrap FRK, Johns Manville Microlite EQ FSK Duct Wrap, Manson Alley Wrap with FSK facing or Knauf Atmosphere Duct Wrap with FSK facing, 12kg/cubic metre [3/4lb./cu.ft.] density with factory applied reinforced foil facing. Adhere insulation to duct surface with Childers CP82 or Bakelite 230-39 adhesive, which shall be applied in strips 150mm [6"] wide at not greater than 300mm [12"] centres. Butt edges of insulation tightly together, and seal breaks and joints of facing with self-adhering 100mm [4"] wide aluminum tape or adhere foil with Childers CP82 or Bakor 230-38 adhesive.

Type D3: Thermal Ceramics FireMaster FastWrap XL is a flexible high temperature insulation rated to 2192°F (1200°C) that is fully encapsulated in FSP facing. The duct enclosure system shall be listed by UL and /or ULC per ASTM E 2336, CAN/ULC S144 and ISO 6944 for zero clearance to combustibles, and tested per ASTM E84 for a flame/smoke rating less than 25/50. Insulation shall have a nominal thickness of 1-1/2 inches (38 mm) and density of 6 lbs/ft3 (96 kg/m3). Insulation shall have a R-Value of 7.3 at 75°F. Installation shall be in strict accordance to manufacturers published installation instructions, UL or ULC Listings, and shop drawings. Twoloyers of 1/2" FASTWRAP XL shall be used for duct access where specified or as required by code.

| DUTY | INSULATION TYPE | THICKNESS | VAPOUR BARRIER |
|---|---|---|---|
| Panels behind unused portion of louvres | D1 | 2" | Yes |
| Outside air plenums and ducts | D1 | 2" | Yes |
| Outside air supply fans | D1 | 2" | Yes |
| Relief and exhaust air plenums | D1 | 1-1/2" | Yes |
| Final 3m (10') of exhaust duct before exiting building or up to motorized damper if distance exceeds 3m (10') | D1 | 1" | Yes |
| Exposed ductwork | D1 | 1" | Yes |
| Concealed supply air, (including ducts in shafts) to air terminal control units, excluding flexible ducts | D2 | 1" | Yes |
| Concealed supply air ducts from air terminal control unit discharge to air terminals excluding flexible ducts | D2 | 1" | Yes |

4.3.6. Recover insulation and insulation finishes outside the building or exposed to the weather with one [1.5mm] [1/16"] thick layer of Childers Encocel X or Bakor 110-26 fire retardant black mastic vapour barrier coating. Embed a layer of woven glass reinforcing fabric into the wet coating, lapping ends and edges at least [75mm] [3"]. Apply a top coating of [1.5mm] [1/16"] thick Encocel X or Bakor 110-26 over the entire surface of the fabric. Seal the entire covering to achieve a watertight assembly.

4.3.7. In lieu of above recovering of insulation and insulation finishes outside the building, aluminum jacket with aluminum fittings may be substituted (VentureClad Plus or similar product). Band all transverse seams with waterproof mastic tape and caulk all longitudinal seams with silicone caulking. Seal the entire covering to achieve a watertight assembly.

4.3.8. Protect the work of this trade from being defaced by other trades. Make good any damage and leave in perfect condition, ready for final painting.

4.3.9. Apply insulation over clean dry surfaces, firmly butting all sections together.

4.3.10. Recover all exposed insulation and insulation finishes with minimum [0.20kg/squaremetre] [6oz.<-] canvas, and two applications of Childers CP50A-HV2 or Bakor 120-18 white fire resistant coating. An acceptable alternative recovering will be PVC fitting covers and jacketing, installed as per manufacturer's instructions, and conforming to the specified Flame Spread/Smoke Developed Rating.

## 5. DUCTWORK

5.1. Provide all labour, materials, products, equipment and services to supply and install the sheet metal and ductwork systems as indicated on the Drawings and specified in this Section of the Specifications.

5.2. Meet Standards described in the latest Edition of HVAC Duct Construction Standards handbook from Sheet Metal and Air Conditioning Contractors National Association (SMACNA).

5.3. Duct dimensions shown on Drawings are net, inside insulation and acoustic duct lining.

5.4. RIGID DUCTWORK

5.4.1. Fabricate ductwork from galvanized sheet metal with a minimum coating of 1.83 grams/m² (G60 coating) unless other materials are specifically named.

5.4.2. Ductwork shall be smooth on the inside and free of obstructions, vibration and rattle.

5.4.3. Fabricate ductwork, except as described in the next item, according to the following classifications:

Class 1: All ducting subject to positive or negative static pressure of 250 Pa or less with maximum velocities of 13m/s shall be constructed in accordance with SMACNA construction standards for 250 Pa duct.

Class 2: All ducting subject to positive or negative static pressure of more than 250 Pa up to 500 Pa with maximum velocity of 13 m/s shall be constructed in accordance with SMACNA construction standards for 500 Pa duct.

5.4.4. Provide Class 2 pressure duct construction for:

- Ductwork between variable volume air handling units and air terminal control units.
- Ductwork between air flow Venturi's and fans.

5.4.5. Provide duct transformation with expansion fittings having slopes not exceeding 1 to 7 and contraction fittings having slopes not exceeding 1 to 4.

5.4.6. Provide full radius tees, bends, and elbows for changes in direction except where square elbows are required due to space restrictions. Provide DuroDyne double thickness 0.8 mm turning vanes assembled in top and bottom rails in square elbows.

5.4.7. Provide balancing dampers free to move in either direction without binding and rattling. Construct dampers in ductwork from 1.2 mm galvanized sheet metal. Use manual quadrants on small ducts. On dampers longer than 375mm use push rods with DuroDyne Model SRP ball joints. Use two push rods on ducts wider than 600 mm. Provide OBD balancing dampers where shown on the drawings.

5.4.8. Isolate equipment with DuroDyne neoprene 0.8 mm thick flexible connectors with finished fabric width not less than 150mm.

5.4.9. Provide 50mm insulated sheet metal blank off panels behind unused portions of exterior louvers.

5.4.10. Seal all joints in low, medium and high pressure ductwork with Transcontinental MP for low and medium pressure or DuroDyne S2 duct sealer for high pressure. Joints shall be sealed to conform to the following SMACNA standards:

| Seal Class | Sealing Required | Static Pressure Construction Class |
|---|---|---|
| A | All transverse joints, longitudinal seams and duct wall penetrations. | [1000 Pa] [4" w.g. and up] |
| B | All transverse joints and longitudinal seams. | [500-750 Pa] [2" – 3" w.g.<-] |
| C | Transverse joints | Up to [500 Pa] [2" w.g.<-] |

5.4.11. Seal joints in exhaust ducting where fan intake is further than 25 m from furthest intake in accordance with seal Class A

5.5. FLEXIBLE DUCTWORK:

5.5.1. Provide Flexmaster T/L-A, flexible ductwork upstream and downstream of air terminal control units and/or other locations indicated on the Drawings.

5.5.2. Construct ductwork from a tape of soft annealed aluminum sheet, spiral wound into a tube and spiral corrugated to provide strength and flexibility. Provide a triple mechanical lock to form a continuous secure air joint without the use of adhesives for pressures up to 3000 Pa.

5.5.3. Conform to the requirements of NFPA 90 and Underwriters Laboratories classification for round duct to specification UL 181.

5.5.4. Provide flexible ductwork in minimum lengths of 1500 mm and maximum lengths of 3600 mm Class 1 pressure systems. For Class 2 and higher pressure systems restrict minimum and maximum lengths to 1200 mm.

5.6. ACOUSTIC DUCT LINING

5.6.1. Provide 25 mm thick acoustic duct liner where shown on drawings and as follows:

5.6.1.1. Rectangular Duct Liner: Permacote Linacoustic meeting ASTM C 1071 with air surface coated with acrylic coating treated with EPA registered anti-microbial agent proven to resist microbial growth as determined by ASTM G 21 and G 22.

5.6.1.2. Noise Reduction Coefficient: .70 or higher based on "Type A mounting" and tested in accordance to ASTM C 423.

5.6.1.3. Adhesive: meeting ASTM C 916.

5.6.1.4. Fasteners: Duct liner galvanized steel pins, welded or mechanically fastened.

5.6.2. Round Duct Liner: Permacote Spiracoustic, rigid preformed round liner, or Spiracoustic Plus with air surface coated with acrylic coating treated with EPA register anti-microbial agent proven to resist microbial growth as determined by ASTM G 21 and G 22.

5.6.2.1. Noise Reduction Coefficient of .70 as per ASTM C 423. (Type A mounting)

5.7. FIRE RATED DUCTING AND ENCLOSURES

5.7.1. Fabricate and install the ductwork according to the manufacturers written instructions and in accordance with the UL listing. Use hangers, support rods and firestopping in accordance with the UL listing.

5.7.2. All fire dampers shall be Type-B or Type-C, unless otherwise noted. Type-A fire dampers are not acceptable.

5.8. SHEET METAL INSTALLATION

5.8.1. Provide acoustic insulation on supply air ductwork from discharge side of mechanical air volume control boxes and attenuators as follows:

- 3000mm [10ft. – 0in.] for straight duct run box or
- 1500mm [5ft. – 0in.] downstream of 1st elbow or
- 1500mm [5ft. – 0in.] for each branch downstream of 1st tee.
- From fan powered VAV box to last flexible duct connection

5.8.2. Frame and install motorized dampers. Unless shown otherwise, attached each motorized damper module to the channel framing.

5.8.3. Provide frames in ductwork airflow stations.

5.8.4. Make provisions in ductwork and plenums for installation of duct type smoke detectors and other control devices.

5.8.5. Provide neoprene isolation gaskets and nylon bolts at connections required for dissimilar metals.

5.8.6. Seal watertight the bottom and sides of intake and exhaust ducts connected to exterior louvres as follows:

- Intake: from louvre to air handling unit
- Exhaust: from louvre to [2 metres] [6'-6"] upstream of louvre

5.9. ACOUSTIC DUCT LINING INSTALLATION

5.9.1. Seal all leading and trailing edges and repair all rips or tears of acoustic duct liner with a suitable sealing compound similar to Johns-Manville Superseal.

5.9.2. Provide a tapered sheet metal nose piece to hold the leading edge of acoustic duct liner and direct the air over the edge.

5.10. TESTING

5.10.1. Pressure test ductwork in accordance with the outlines and classification described in the SMACNA, HVAC Duct Leakage Test manual.

5.10.2. All supply air ductwork shall be pressure tested.

5.10.3. Random testing of approximately 15% of other ductwork shall be conducted when requested by Consultant.

5.10.4. Failed joints shall be repaired and retested.

5.10.5. Additional testing will be required if random testing reveals failures.

5.10.6. The leakage amount shall not exceed the allotted amount for the pressure class. The test pressures shall be based on the static pressure for each fan.

5.10.7. Repair duct and retest where air leakage exceeds the specified limits.

5.10.8. Make good all audible leakage, whether test is within limit specified or not.

5.10.9. Provide calibrated tester, connection hoses, temporary plugs, etc., as required.

5.11. CLEAN UP

5.11.1. Vacuum clean the inside of all air handling systems, including fans, plenums, ducts, coils and terminal units to ensure that they are free from debris and dust.

## 6. TESTING, ADJUSTING, AND BALANCING

6.1. Balancing contractor shall be qualified by the following:

6.1.1. Associated Air Balance Council (AABC) National Standards for Total System Balancing, NM-1

6.1.2. National Balancing Council (NBC) Certified Air Balancing Specifications and Certified Hydronic Balancing Specifications

6.1.3. National Environmental Balancing Bureau (NEBB) TABES Proceedural Standard for Testing, Adjusting, and Balancing Environmental Systems

6.1.4. Sheet Metal and Air Conditioning Contractors National Association (SMACNA) HVAC TAB HVAC Systems – Testing, Adjusting and Balancing

6.2. Balancing contractor shall be one of:

- Troup Engineering Services Inc.
- Air Audit
- Dynamic

6.3. List selected balancing contractor on tender form. Balancing scope of work shall include water and air side balancing of all equipment, ductwork and terminal devices provided as part of this contract, as well as base building equipment revised by this contract.

6.4. Balance as listed on mechanical drawings.

6.5. Balance to the following tolerances of design values:

6.5.1. HVAC systems: +/- 5%

6.5.2. Measured volumes to be accurate to with 2% of actual volumes.

6.6. Instruments

6.6.1. Prior to balancing, submit to owner representation a list of instruments to be used together with matching serial numbers.

6.6.2. Calibrate instruments in accordance with requirements of most stringent of referenced standard for applicable system.

6.6.3. Calibrate instruments with (3) months of balancing and provide certificate of calibration to owner's representative.

6.7. Submit balancing report in triplicate to the consultant and the owner, indicating terminal design and measured flow rates.

## 7. VALVE TAGS

7.1. Provide 40 mm dia., 1 mm thick lamacoid tags with 10mm high die-stamped black letters, except for fire and sprinkler systems, provide red lamacoid tags with white letters in lieu of brass tags.

7.2. Attach to valves with 100 mm long brass chains.

7.3. Tag all valves except for small valves isolating a single piece of equipment such as a unit heater, fan coil unit, terminal reheat coil and radiation section.

## 8. EQUIPMENT NAMEPLATES

8.1. Identify equipments, starters, and, remote control devices in a manner consistent with the Drawings.

8.2. Use solid black capitalized lettering 100 mm high.

8.3. Where equipment size does not permit stancil identification, use lamacoid labels, engraved white on black, mechanically fastened to the equipment. Minimum lettering size 10 mm.

## GENERAL NOTES

Professional Engineers Ontario

Limited Licensee

Name: S.B. Howard
Number: 100026721
Category: Mechanical: HVAC, Plumbing, Fire Suppression
Limitations:
This licence is subject to the limitations as detailed on the certificate
Association of Professional Engineers of Ontario

Steve Howard 2025-07-03

| No. | DESCRIPTION | DATE | BY |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| 2 | RE-ISSUED FOR PERMIT | JULY 03, 2025 | S.H. |
| 1 | RE-ISSUED FOR PERMIT | APR. 15, 2025 | J.C |
| 0 | ISSUED FOR PERMIT | OCT. 11, 2024 | J.C |

REVISIONS


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Stoney Creek ON L8E 0C5
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contact@arcengineering.ca


PROJECT:

GRETZKY GOLF COURSE
SERVICE BUILDING

320 BALMORAL DRIVE
BRANTFORD, ONTARIO

| START DATE: | DRAWN BY: | DESIGNED BY: |
|---|---|---|
| 2024-07-17 | A.A. | S.H. |

DRAWING TITLE:

SPECIFICATION

SCALE: N/A

DRAWING No.: M-102

PROJECT: 23-117-110

PLOT DATE: July 3, 2025

ORIGINAL SHEET SIZE: ARCH D

30cm 20cm 10cm 0




## GENERAL NOTES

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Limited Licensee
Name: S.B. Howard
Number: 100026721
Category Mechanical: HVAC, Plumbing, Fire Suppression
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23-117-110 03-JULY-2025

| No. | DESCRIPTION | DATE | BY |
|---|---|---|---|
| 2 | RE-ISSUED FOR PERMIT | JULY. 03, 2025 | S.H. |
| 1 | RE-ISSUED FOR PERMIT | APR. 15, 2025 | J.C. |
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PROJECT NAME:

GRETZKY GOLF COURSE SERVICE BUILDING

320 BALMORAL DRIVE
BRANTFORD, ONTARIO

| START DATE: | DRAWN BY: | DESIGNED BY: |
|---|---|---|
| 2024-07-17 | AA | JC |

DRAWING TITLE:

PLUMBING & DRAINAGE

SCALE: 1 : 50

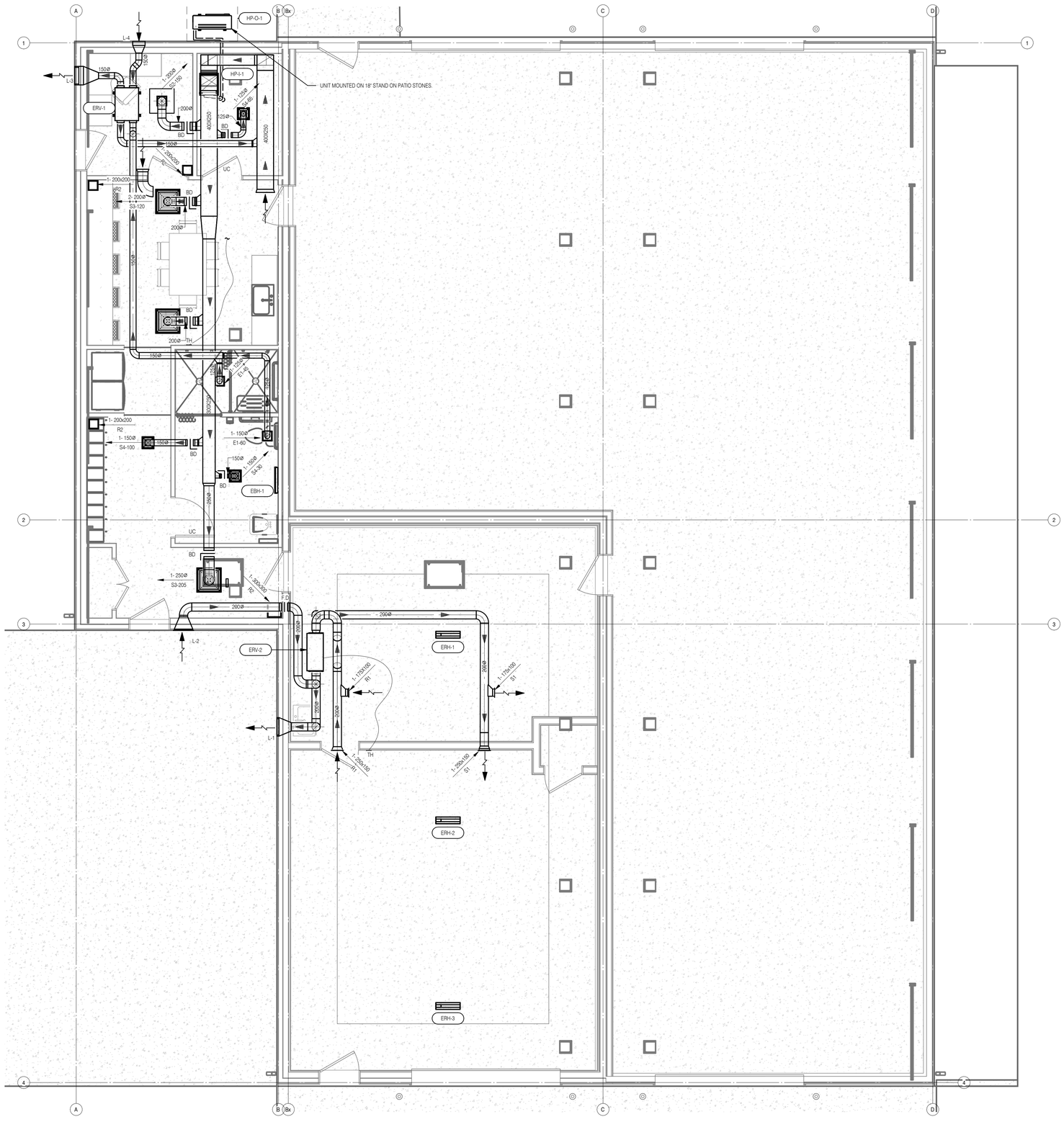
PROJECT #: 23-117-110

DRAWING NUMBER: **M-200**

PLOT DATE: 2025-07-03 4:15:15 PM

ORIGINAL SHEET SIZE: ARCH D

30cm 20cm 10cm 0




PLOT DATE: 2025-07-03 4:15:17 PM

ORIGINAL SHEET SIZE: ARCH D

## GENERAL NOTES

Professional Engineers Ontario

Limited Licensee

Name: S.B. Howard
Number: 100026721
Category Mechanical: HVAC, Plumbing, Fire Suppression
Limitations:
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Association of Professional Engineers of Ontario

23-117-110 03-JULY-2025

| No. | DESCRIPTION | DATE | BY |
|---|---|---|---|
| 2 | RE-ISSUED FOR PERMIT | JULY. 03, 2025 | S.H. |
| 1 | RE-ISSUED FOR PERMIT | APR. 15, 2025 | J.C. |
| 0 | ISSUED FOR PERMIT | OCT. 11, 2024 | J.C. |

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PROJECT NAME:

GRETZKY GOLF COURSE SERVICE BUILDING

320 BALMORAL DRIVE
BRANTFORD, ONTARIO

| START DATE: | DRAWN BY: | DESIGNED BY: |
|---|---|---|
| 2024-07-17 | A.A | J.C |

DRAWING TITLE:

HVAC

SCALE: 1 : 50

PROJECT #: 23-117-110

DRAWING NUMBER: **M-300**

30cm 20cm 10cm 0

## COMMUNICATIONS

| | |
|---|---|
| | TELEPHONE OUTLET - CONDUIT (SEE SPECS)<br>C/W CAT 6 CABLING AND RJ11 OUTLET |
| | COMPUTER OUTLET - CONDUIT (SEE SPECS)<br>C/W CAT 6 CABLING AND RJ45 OUTLET |
| VOIP | VOIP PHONE OUTLET - CONDUIT (SEE SPECS)<br>C/W CAT 6 CABLING AND RJ45 OUTLET |
| | COMBINATION TELEPHONE AND COMPUTER OUTLET CONDUIT (SEE SPECS) C/W 2x CAT 6 CABLING, 1x RJ45 AND 1x RJ11 OUTLETS |
| FAX | SPECIAL TELEPHONE OUTLET FOR FAX AND MODEM. CAT 6 CABLE AND RJ11 OUTLET. RUN SEPARATE LINE TO MAIN TERMINAL BOARD |
| | WIRELESS ACCESS POINT<br>BACKBOX, FACEPLATE, CONDUIT (SEE SPECS)<br>C/W CAT 6 CABLING AND RJ45 OUTLET |
| | COMBINATION TELEPHONE AND COMPUTER OUTLET FOR MODULAR FURNITURE. 2x CAT 6 CABLING, 1x RJ45 AND 1x RJ11 OUTLETS. FISH CABLING THROUGH FURNITURE AND TERMINATE AT DESK. |
| | COMPUTER OUTLET FOR MODULAR FURNITURE. CAT 6 CABLING AND RJ45 OUTLET. FISH CABLING THROUGH FURNITURE AND TERMINATE AT DESK |
| | CABLE TV OUTLET - 3/4" (19mm) CONDUIT C/W RG6 CABLING AND F CONNECTOR |
| | CLOCK |
| | COMMUNICATION DEVICES MOUNTED IN 2 CHANNEL RACEWAY |
| 2 | COMMUNICATION NOTES:<br>NUMBER BESIDE THE OUTLET DENOTES NUMBER OF OUTLETS |

## SECURITY, ACCESS CONTROL, CCTV

| | |
|---|---|
| | AREA TYPE BREAK GLASS DETECTOR |
| | SINGLE-PANE TYPE BREAK GLASS DETECTOR |
| | DOOR CONTACT |
| | ROLL-UP OR OVERHEAD DOOR CONTACT |
| K | ELECTRONIC KEY PAD |
| | MOTION DETECTOR |
| | PHOTO-ELECTRIC BEAM SOURCE |
| | PHOTO-ELECTRIC BEAM REFLECTOR |
| | SECURITY SYSTEM ALARM SIGNAL |
| | VIDEO MONITORING CAMERA |
| | POWER DOOR PUSH BUTTON OPERATOR |
| ADO | AUTOMATIC DOOR OPENER |
| C | CARD READER |
| ES | ELECTRIC STRIKE |
| EPB | EMERGENCY PUSH BUTTON |
| MAG | MAGNETIC LOCK |
| KS | MAGNETIC LOCK KEY SWITCH |
| OCC | OCCUPIED LIGHT<br>CAMDEN LED ANNUNCIATOR CM-AF-500 |
| PTR | PUSH TO RELEASE |
| PTL | PUSH TO LOCK<br>CAMDEN PUSHBUTTON CM-400/8 |
| REX | REQUEST TO EXIT |
| SP | SCRAMBLE PAD |
| W | HANDS FREE SWITCH<br>CAMDEN SUREWAVE CM-324/3 |

## PUBLIC ADDRESS SYSTEM AND INTERCOM

| | |
|---|---|
| | CEILING MOUNTED SPEAKER |
| | WALL MOUNTED SPEAKER |
| M | MICROPHONE |
| | INTERCOM |
| V | VOLUME CONTROL |

## FIRE ALARM

| | |
|---|---|
| $S_P$ | PHOTOELECTRIC TYPE SMOKE DETECTOR |
| $S_R$ | PHOTOELECTRIC TYPE SMOKE DETECTOR WITH A RELAY BASE |
| $S_D$ | PHOTOELECTRIC TYPE SMOKE ALARM, 120VAC WITH BATTERY BACKUP, INTERCONNECTED AS SHOWN |
| $S_{TD}$ | PHOTOELECTRIC TYPE DUCT SMOKE DETECTOR |
| $D_R$ | RATE OF RISE AND 57˚C FIXED TEMPERATURE HEAT DETECTOR |
| $D_F$ | 92˚C FIXED TEMPERATURE HEAT DETECTOR |
| F | MANUAL PULL STATION |
| ESV | ELECTRIC SUPERVISED VALVE |
| FS | FLOW SWITCH |
| PS | PRESSURE SWITCH |
| $B_{SS}$ | FIRE ALARM SIGNALING APPLIANCE - SINGLE STROKE BELL |
| $B_V$ | FIRE ALARM SIGNALING APPLIANCE - VIBRATING |
| $H_H$ | FIRE ALARM SIGNALING APPLIANCE - HORN |
| | FIRE ALARM SIGNALING APPLIANCE - STROBE |
| | FIRE ALARM SIGNALING APPLIANCE - COMBINATION HORN AND STROBE |
| | FIRE ALARM DOOR RELEASE DEVICE |
| S | FIRE ALARM SPEAKER - WALL/COLUMN MOUNT |
| C | FIRE ALARM SPEAKER - CEILING MOUNT |
| | FIRE FIGHTERS HANDSET |
| FAA | FIRE ALARM ANNUNCIATOR PANEL |
| FAC | FIRE ALARM CONTROL PANEL |
| CO | CARBON MONOXIDE DETECTOR |
| SD/FD | SMOKE OR FIRE DAMPER<br>CONNECT TO FIRE ALARM SYSTEM AND POWER |

## LIGHTING FIXTURES

| | |
|---|---|
| | SURFACE OR RECESS MOUNTED LIGHTING FIXTURES. LETTER DENOTES TYPE. |
| | SURFACE OR RECESS MOUNTED LIGHTING FIXTURES ON AN EMERGENCY OR NIGHT LIGHT CIRCUIT. LETTER DENOTES TYPE. |
| | SURFACE OR RECESS MOUNTED LIGHTING FIXTURES. LETTER DENOTES TYPE. |
| | SURFACE OR RECESS MOUNTED LIGHTING FIXTURES ON AN EMERGENCY OR NIGHT LIGHT CIRCUIT. LETTER DENOTES TYPE. |
| | WALL OR COLUMN MOUNTED LIGHTING FIXTURES. LETTER DENOTES TYPE. |
| | WALL OR COLUMN MOUNTED LIGHTING FIXTURES ON AN EMERGENCY OR NIGHT LIGHT CIRCUIT. LETTER DENOTES TYPE. |
| | SURFACE OR SUSPENDED STRIP LIGHTING FIXTURE. LETTER DENOTES TYPE. |
| B-1-2 | LIGHTING CIRCUITING NOTE. B-PANELBOARD I.D., 1-BRANCH CIRCUIT, 2-LOCAL (SWITCH) CIRCUIT. |
| | SWITCH. SINGLE-POLE, SINGLE-THROW |
| | CEILING MOUNTED OCCUPANCY SENSOR. REFER TO SCHEDULE FOR TYPE |
| | WALL MOUNTED OCCUPANCY SENSOR. REFER TO SCHEDULE FOR TYPE |
| B-1-2<br>xx | TYPICAL SWITCH NOTES. CIRCUITING: B-PANEL BOARD I.D., 1-BRANCH CIRCUIT, 2-LOCAL (SWITCH) CIRCUIT. XX-SUBSCRIPT(S): E-EMERGENCY POWER, D-DIMMING,LV-LOW VOLTAGE WALLSTATION P-PILOT LIGHT, 3-THREE WAY, 4-FOUR WAY, VS-VACANCY SENSOR, WP-WEATHERPROOF |

## EMERGENCY LIGHTING AND EXIT SIGNS

| | |
|---|---|
| | SURFACE MOUNTED EMERGENCY LIGHTING FIXTURE |
| | RECESSED EMERGENCY LIGHTING FIXTURE |
| | EXIT/'RUNNING MAN' PICTOGRAM SIGN |
| | EMERGENCY LIGHTING FIXTURE AND BATTERY |
| | EMERGENCY LIGHTING FIXTURE, BATTERY AND EXIT SIGN |
| DC-X | DC - DENOTES A SOURCE OF DC POWER<br>X - DENOTES POWER SOURCE IDENTIFICATION |
| X-2 | DC POWER CIRCUITING NOTE:<br>X - DC POWER SOURCE IDENTIFICATION<br>2 - BRANCH CIRCUIT |

## LEGEND

THIS LEGEND REPRESENTS THE SYMBOLS COMMONLY USED. NOT ALL SYMBOLS MAY APPEAR ON THE DRAWINGS, SHOULD A SYMBOL BE FOUND ON THE DRAWING AND NOT APPEARING ON THE LEGEND, THE CONTRACTOR SHALL SUBMIT A QUESTION TO HAVE THE SYMBOL CLARIFIED IN AN ADDENDUM PRIOR TO SUBMITTING A BID.

## ABBREVIATIONS

| | |
|---|---|
| 20A | DENOTES 5-20R DEVICE |
| AC | ABOVE COUNTER |
| ADO | AUTOMATIC DOOR OPENER |
| AE | APPROVED EQUAL |
| AFF | ABOVE FINISHED FLOOR |
| AN | FIRE ALARM ANNUNCIATOR |
| BED | RECEPTACLE DEDICATED FOR PATIENT BED |
| BH | BASEBOARD HEATER |
| CB | CIRCUIT BREAKER |
| ER | EXISTING TO BE RELOCATED |
| EX | EXISTING TO REMAIN |
| FH | FORCED-AIR HEATER |
| GFI | EQUIPMENT SO NOTED TO BE SUPPLIED WITH A GROUND FAULT CIRCUIT INTERRUPTER |
| HSKP | HOUSEKEEPING |
| JB | JUNCTION BOX |
| PD | POWER DOOR |
| R | RELAY WITH AUXILIARY CONTACTS |
| REL | RELOCATED ITEM IN NEW LOCATION |
| REM | EXISTING TO BE REMOVED IN IT'S ENTIRETY |
| T | TRANSFORMER |
| UH | UNIT HEATER |
| UNO | UNLESS NOTED OTHERWISE |
| W | WALL MOUNT - VERIFY HEIGHT |
| WP | EQUIPMENT SO NOTED TO BE SUPPLIED WITH THE MANUFACTURER'S WEATHER-PROOFING OPTION(S) |

## POWER LAYOUT

| | |
|---|---|
| | DISCONNECT SWITCH (DS) |
| | COMBINATION STARTER (CS) |
| | MAGNETIC STARTER (MG) |
| | MANUAL STARTER (CS) |
| | POWER PANEL |
| | POWER TRANSFORMER |
| | ELECTRIC HEATING EQUIPMENT |
| | EQUIPMENT SUPPLIED BY OTHERS REQUIRING ELECTRICAL POWER CONNECTION<br>REFER TO EQUIPMENT SCHEDULE |
| | EQUIPMENT SUPPLIED BY OTHERS REQUIRING ELECTRICAL POWER CONNECTION<br>REFER TO OWNER EQUIPMENT SCHEDULE |
| | ALL MODES OF OPERATION OF EQUIPMENT SO NOTED TO BE SHUT DOWN BY THE ALARM CONDITION OF THE FIRE ALARM CONTROL PANEL |
| | PUSH BUTTON |
| | PUSH BUTTON STATION |
| T | THERMOSTAT |
| T | TIME CLOCK |
| J | JIFFY POLE |
| | 120V HARDWIRE CONNECTION |
| | 208V, 1Ø HARDWIRE CONNECTION |
| | 208V, 3Ø HARDWIRE CONNECTION |
| | 600V, 3Ø HARDWIRE CONNECTION |
| JB | JUNCTION BOX |
| H | HAND DRYER |
| | FLOOR BOX |

## WIRING DEVICES

| | |
|---|---|
| | SPECIAL RECEPTACLE. REFER TO NOTES OR DESCRIPTION FOR TYPE |
| | 125 VOLT, 2-POLE, 3-WIRE, STRAIGHT BLADE RECEPTACLE. 15 AMP SIMPLEX UNO. |
| | 125 VOLT, 2-POLE, 3-WIRE, STRAIGHT BLADE RECEPTACLE. 15 AMP DUPLEX UNO. |
| | 125 VOLT, 2-POLE, 3-WIRE, STRAIGHT BLADE HALF-SWITCHED RECEPTACLE. 15 AMP DUPLEX CONTROLLED VIA LOCAL SWITCH |
| | 2x 125 VOLT, 2-POLE, 3-WIRE, STRAIGHT BLADE RECEPTACLE. 15 AMP DUPLEX UNO |
| | 125/250 VOLT, 3-POLE, 4-WIRE, STRAIGHT BLADE RECEPTACLE, AMPERAGE AS NOTED |
| | 125 VOLT, 2-POLE, 3-WIRE, STRAIGHT BLADE RECEPTACLE. 15 AMP DUPLEX UNO ON EMERGENCY OR UPS POWER |
| | VERTICAL LINE THROUGH ANY RECEPTACLE SYMBOL INDICATES A NON-STANDARD MOUNTING HEIGHT THAT MUST BE FIELD DETERMINED |
| | 125 VOLT, 2-POLE, 3-WIRE, STRAIGHT BLADE RECEPTACLE. 15 AMP DUPLEX FOR SYSTEMS FURNITURE |
| | 125 VOLT, 2-POLE, 3-WIRE, STRAIGHT BLADE RECEPTACLE. 15 AMP DUPLEX FOR SYSTEMS FURNITURE ON EMERGENCY OR UPS POWER |
| | RECEPTACLES MOUNTED IN 2 CHANNEL RACEWAY |
| B-1<br>xx | TYPICAL RECEPTACLE NOTES:<br>CIRCUITING: B-PANELBOARD I.D., 1-BRANCH CIRCUIT.<br>SUBSCRIPT: XX-CURRENT RATING (IF NOTED). |

## DEMOLITION NOTES

1. THE CONTRACTOR SHALL ARRANGE TO TOUR THE FACILITY WITH MAINTENANCE STAFF PRIOR TO SUBMITTING A BID ON THE PROJECT.
2. DURING THE CONTRACTORS SITE TOUR THEY SHALL BECOME FAMILIAR WITH THE EXISTING BUILDING CONSTRUCTION AND THE LOCATIONS OF THE EXISTING COMMUNICATION CLOSETS, LOCAL POWER PANELS, FIRE ALARM AND OTHER SYSTEMS BEING WORKED ON AS PART OF THIS CONTRACT.
3. THE CONTRACTOR AND MAINTENANCE STAFF SHALL OPEN EXISTING PANELS AND SYSTEMS TO BECOME FAMILIAR WITH THE EXISTING SYSTEMS AND TO DETERMINE THE FULL SCOPE OF WORK REQUIRED TO CARRY OUT THE PROJECT. THE CONTRACTOR SHALL PROVIDE NEW BREAKERS, DATA/VOICE COMPONENTS, FIRE ALARM DEVICES, LIGHTING SYSTEM COMPONENTS, ETC TO FACILITATE A COMPLETE AND FUNCTIONING SYSTEM AT PROJECT COMPLETION.
4. THE CONTRACTOR SHALL MEASURE OFF ANY DISTANCES NOT INDICATED FOR HOME RUNNING NEW SERVICES (POWER, FIRE ALARM, SECURITY ETC) AND INCLUDE MATERIALS AND LABOUR REQUIRED IN THEIR BID PRICE.
5. COORDINATE ALL DEMOLITION WITH GENERAL CONTRACTOR. EVERY EFFORT HAS BEEN MADE TO OUTLINE THE DEMOLITION SCOPE OF WORK, HOWEVER THE DEMOLITION DRAWINGS REPRESENT ONLY THE GENERAL LOCATION AND NUMBER OF FITTINGS, FIXTURES, DEVICES, EQUIPMENT ETC. TO ASSIST IN EVALUATING THE DEMOLITION SCOPE OF WORK. DRAWINGS ARE BASED ON PREVIOUS AS-BUILTS OR FIELD EVALUATIONS.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE DURING THE TENDER PERIOD TO DETERMINE THE EXACT SCOPE OF DEMOLITION WORK, QUANTITIES AND THOROUGHLY UNDERSTAND THE SITE CONDITIONS FOR CARRYING OUT THE SAME. REQUESTS FOR EXTRAS DUE TO FAILURE TO PROPERLY EVALUATE THE CONDITIONS THAT AFFECT DEMOLITION SCOPE OF WORK WILL NOT BE CONSIDERED.
7. THE CONTRACTOR SHALL SUBMIT QUESTIONS IN WRITING 5 DAYS PRIOR TO TENDER CLOSING TO ALLOW FOR QUESTIONS TO BE FORMALLY ANSWERED IN AN ADDENDUM.
8. UNLESS EXISTING CIRCUITS NUMBERS ARE INDICATED ON THE DEMOLITION PLANS, ALL CIRCUITS SHOWN ON THE NEW LAYOUTS ARE NEW CIRCUITS. EXCEPTIONS TO THIS INCLUDE CIRCUITS SHOWN ON THE DEMOLITION PLAN AND AGAIN ON THE NEW LAYOUT. THE CIRCUIT SHOWN BOTH TIMES IS EXISTING AND LOCALIZED IN THE AREA OF WORK. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING FOR ALL NEW CIRCUITS: NEW CONDUIT, WIRING, BREAKERS, SUPPORTS, BACKBOXES, FACEPLATES, RECEPTACLES, ETC FOR A COMPLETE SYSTEM.
9. EXISTING CIRCUITS BEING REUSED WILL BE INDICATED BY A CIRCUIT NUMBER (IE 2A15) OR A GENERIC NUMBER (IE CCT7). CCT 7 INDICATES THAT THE LIGHTING OR DEVICE IS TO BE CONNECTED TO 1 OF 7 EXISTING CIRCUITS IN THE AREA THAT HAS BECOME FREE AFTER DEMOLITION. THE CONTRACTOR SHALL BALANCE LOADS AND SHUFFLE BREAKERS AFTER THE PANEL LOADS HAVE BEEN CONNECTED TO EQUALLY LOAD EACH PHASE.
10. WHERE EXISTING LIGHTING CIRCUITS HAVE BEEN REUSED, CONTRACTOR SHALL VERIFY EXISTING VOLTAGE OF CIRCUITS PRIOR TO SUBMITTING ANY SHOP DRAWINGS OR ORDERING OF FIXTURES, SENSORS, CONTROLS, ETC. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES IN FIXTURE VOLTAGE AND EXISTING CIRCUIT VOLTAGE.

## FIRE ALARM

1. ALL NEW FIRE ALARM DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH CAN/ULC S524.
2. FIRE ALARM DEVICES SHALL BE REVERIFIED IN ACCORDANCE WITH CAN/ULC S537.
3. FIRE ALARM GRAPHIC SHALL BE UPDATED IN ALL LOCATIONS TO REFLECT THE UPDATED LAYOUT OF THE FIRE ALARM SYSTEM.
4. CONNECT ALL ASSOCIATED ALARM, SUPERVISORY ZONE WIRING, AND SIGNAL CIRCUIT WIRING ETC TO FIRE ALARM PANEL.
5. ALL WIRING TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND THE ONTARIO ELECTRICAL SAFETY CODE.
6. WHERE FIRE PROTECTION AND LIFE SAFETY SYSTEMS, AND SYSTEMS WITH FIRE PROTECTION AND LIFE SAFETY FUNCTIONS ARE INTEGRATED WITH EACH OTHER: THE SYSTEMS SHALL BE TESTED AS A WHOLE IN ACCORDANCE WITH CAN/ULC-S1001, "INTEGRATED SYSTEMS TESTING OF FIRE PROTECTION AND LIFE SAFETY SYSTEMS", TO VERIFY THAT THE SYSTEMS HAVE BEEN PROPERLY INTEGRATED.

## SEISMIC NOTES

1. PROVIDE ALL LABOUR AND MATERIALS NECESSARY FOR THE SEISMIC RESTRAINT AND ANCHORAGE FOR ALL ELECTRICAL EQUIPMENT, LIGHT FIXTURES, CONDUITS, RACEWAYS, ETC. TO CONFORM WITH ONTARIO BUILDING CODE (OBC) 4.1.8.17 AND ALL OTHER APPLICABLE REGULATIONS. THE CONTRACTOR SHALL RETAIN AND PAY FOR SPECIALIST SEISMIC ENGINEER TO DESIGN AND INSPECT THE SEISMIC RESTRAINTS OF THE ELECTRICAL SYSTEM COMPONENTS COVERED UNDER DIVISION 26, 27, 28 FOR THIS CONTRACT.
2. PROVIDE SEISMIC RESTRAINTS INCLUDING BOLTS, SLACK CABLE BRACES AND MISCELLANEOUS FRAMING AND CONNECTIONS. EQUIPMENT MANUFACTURER SHALL BE RESPONSIBLE FOR ENSURING THAT THE EQUIPMENT HAS ADEQUATE STRENGTH FOR SEISMIC RESTRAINTS AND ANCHORAGE OF EQUIPMENT FRAMING. FOR TRANSFORMERS PROVIDE VIBRATION ISOLATORS IN SUCH A WAY THAT VIBRATION ISOLATION IS MAINTAINED TOGETHER WITH SEISMIC RESTRAINT. FOR SUSPENDED EQUIPMENT PROVIDE CABLE OR RIGID BRACES TO RESTRAIN EQUIPMENT AGAINST SEISMIC LOADS. FOR LUMINAIRES SUSPENDED IN ACOUSTIC CEILINGS PROVIDE INDEPENDENT SUPPORT FROM STRUCTURE USING CABLES, WIRES OR CHAINS. WHERE DRILLING OF THE STRUCTURE IS REQUIRED FOR ANCHORAGE, THE DRILLING SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER.
3. SUBSTANTIAL COMPLETION WILL NOT BE CONSIDERED WITHOUT THE SUBMISSION OF A SIGNED AND SEALED LETTER OF ASSURANCE OF PROFESSIONAL DESIGN AND COMMITMENT FOR FIELD REVIEW, AS REQUIRED BY THE OBC. THE CONTRACTOR WILL NOT BE ENTITLED TO ANY ADDITIONAL COMPENSATION ARISING FROM THE DIRECTIONS GIVEN BY THE SEISMIC ENGINEER FOR SEISMIC RESTRAINT AND ANCHORAGE OF THE ELECTRICAL SYSTEMS.

## GENERAL NOTES

1. THE ELECTRICAL DRAWINGS REPRESENT A PORTION OF THE CONTRACT. THE CONTRACTOR IS TO FAMILIARIZE THEMSELF WITH ALL OF THE DRAWINGS IN THE PACKAGE AS SOME WORK MAY BE SHOWN ON OTHER DRAWINGS IN THE PACKAGE. CONTRACTOR IS TO DETERMINE FULL EXTENT OF PROJECT PRIOR TO SUBMITTING BID.
2. THE DRAWINGS ARE NOT TO BE SCALED FOR INSTALLATION PURPOSES. ALL MEASUREMENTS ARE TO BE OBTAINED FROM ARCHITECTURAL PLANS, ELEVATIONS, SHOP DRAWINGS OR BE OBTAINED FROM FIELD MEASUREMENTS.
3. CONTRACTOR IS TO REVIEW ARCHITECTURAL DRAWINGS AND PROVIDE ALL NECESSARY PARTS AND ACCESSORIES AND FIRESTOPPING AS REQUIRED TO CONFORM WITH ARCHITECTURAL FIRE RATINGS.
4. CONTRACTOR IS TO REMOVE ALL EXISTING DEAD AND ABANDONED CONDUIT AND WIRING BACK TO SOURCE. WHERE NOT POSSIBLE TO REMOVE EXISTING CONDUIT, CONDUIT IS TO BE LEFT BEHIND AND EXISTING WIRE IS TO BE REMOVED AND REPLACED WITH A PULL ROPE.
5. CONTRACTOR IS TO PROVIDE ELECTRONIC REVIT 'AS-BUILT' DRAWINGS IN .RVT AND PDF FORMAT AT THE COMPLETION OF THE PROJECT. VERSION OF REVIT FILES TO BE CONFIRMED WITH PRIME CONSULTANT AND PROVIDED TO MATCH ACCORDINGLY.
6. UNLESS NOTED OTHERWISE ALL WIRING SHALL BE IN CONDUIT AND CONCEALED IN WALLS AND CEILING SPACES. BX IS PERMITTED IN SPECIAL CIRCUMSTANCES AND SHORT DROPS FROM JUNCTION BOXES TO LIGHT FIXTURES, REFER TO SPECIFICATIONS. CONDUIT RUNS ARE TO BE PARALLEL TO WALL STUDS AND DROP FROM JUNCTION BOXES MOUNTED IN THE CEILING SPACE. HORIZONTAL RUNS IN WALLS WILL ONLY BE ACCEPTED UNDER SPECIAL CIRCUMSTANCES (IE OFFSET TO AVOID STRUCTURAL ABOVE) WITH WRITTEN APPROVAL FROM THE OWNER/CONSULTANT.
7. ALL DATA/COMM WIRING FROM EACH OUTLET IS TO BE PROVIDED IN MIN. 1" (25mm) CONDUITS FROM OUTLET TO THE SOURCE (RACK AND/OR BIX BLOCK). CONTRACTOR CAN GROUP CABLING AND INSTALL A LARGER RUN BACK TO THE SOURCE. WHERE CABLE IS PERMITTED TO RUN FREE-AIR; A CONDUIT SHALL BE INSTALLED FROM THE OUTLET INTO AN ACCESSIBLE CEILING SPACE. PROVIDE BUSHINGS AT TOP OF WALL AND TRANSITION TO J-HOOKS (WITHIN ROOM) OR CABLE TRAY (AT CORRIDOR). CABLE IS NOT PERMITTED TO BE LAYING ON CEILING. COMM WIRING SHALL BE IN CONDUIT FOR ALL EXPOSED AREAS. FREE AIR COMM WIRING TRANSITIONING FROM ACCESSIBLE CEILINGS TO EXPOSED CEILINGS SHALL BE IN CONDUIT THROUGHOUT THE EXPOSED AREA. PROVIDE 12" (300mm) STUBS INTO THE EXPOSED AREAS WITH BUSHINGS. CONDUIT SHALL NOT EXCEED 40% FILL.
8. UNLESS SPECIFICALLY NOTED AS 'CABLING BY OTHERS', THE CONTRACTOR SHALL INCLUDE FOR ALL CABLING TO DEVICES, OUTLETS, ETC AS SHOWN FOR A COMPLETE AND FUNCTIONING SYSTEM(S).
9. CONTRACTOR IS TO MAINTAIN POWER AND COMMUNICATION CIRCUITS IN AREAS OUTSIDE OF THE CONSTRUCTION AREA. PROVIDE TEMPORARY CONNECTIONS AS REQUIRED, COORDINATE WITH OWNER.
10. EQUIPMENT BEING REMOVED AND NOT BEING REUSED REMAIN THE PROPERTY OF THE OWNER AND IS TO BE STORED ON SITE. ANY EQUIPMENT THE OWNER DEEMS NO INTEREST IN IS TO BE DISPOSED OF IN A LAWFUL AND SAFE MANNER BY THIS TRADE.
11. CONTRACTOR IS TO REFER TO ARCHITECTURAL PLANS AND CEILING LAYOUTS TO VERIFY THAT NO INTERFERENCES EXIST PRIOR TO THE INSTALLATION OF FIXTURES AND DEVICES IN WALLS AND CEILINGS.

## DRAWING LIST


| | |
|---|---|
| E000 | GENERAL NOTES, LEGENDS AND DRAWING LIST |
| E001 | SCHEDULES |
| E050 | SPECIFICATIONS |
| E051 | SPECIFICATIONS |
| E100 | SITE PLAN |
| E200 | LEVEL 1 LIGHTING |
| E300 | LEVEL 1 POWER & SYSTEMS PLAN |
| E400 | SINGLE LINE DIAGRAM AND PANEL SCHEDULE |
| E500 | DETAILS |


| NO. | DATE | ISSUANCE |
|---|---|---|
| | | |
| 1 | 2024.12.10 | ISSUED FOR PERMIT |
| NO. | DATE | ISSUANCE |

DO NOT SCALE DRAWINGS, CALL FOR ANY CLARIFICATIONS THAT ARE REQUIRED, FIELD VERIFY AT ALL BUILT CONDITIONS

ALL DWG.'S ARE TO BE READ IN COLOUR

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PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
GENERAL NOTES, LEGENDS AND DRAWING LIST

| CHECKED BY: | DRAWN BY: |
|---|---|
| KS | |
| DRAWING SCALE: NTS | DRAWING NO.: E000 |
| PROJECT NO.: 23-183 | |

DATE PLOTTED: 2024-12-10 2:47:59 PM PROJECT NUMBER & NAME: 23-183 GRETZKY GOLF COURSE FILE PATH: C:\Users\drich_2ckstug\OneDrive\Documents\23-183 Gretzky Golf Course Maintenance_E_V24_Daryl_Nicholls.rvt

## SENSOR NOTES AND SCHEDULE

GENERAL NOTES:

1. ALL DEVICES AND SENSORS ARE TO HAVE SHOP DRAWINGS SUBMITTED TO THE CONSULTANT FOR REVIEW AND COMMENT PRIOR TO ORDERING.
2. ALL SENSORS ARE TO BE IN COMPLIANCE WITH NEMA WD 7-2011. ANY SENSORS NOT IN COMPLIANCE WILL BE REJECTED.
3. PROVIDE ALL SENSORS, POWER PACKS AND RELAY UNITS AS REQUIRED FOR A COMPLETE INSTALLATION. PASSIVE INFRARED SENSOR, ULTRASONIC AND MULTI TECHNOLOGY OCCUPANCY SENSORS SHALL BE AS NOTED BELOW (REFER TO PLANS FOR DEVICE LAYOUT). PART NUMBERS SHOWN ARE GENERAL, FOR DEVICE ONLY.
4. THIS CONTRACTOR SHALL ALLOW FOR ON SITE ADJUSTMENTS OF TIME DELAY, AIMING AND SENSITIVITY.
5. FINAL PLACEMENT OF SENSORS SHALL BE CONFIRNED ON SITE WITH ALL PIPING, DUCTWORK, EQUIPMENT, ETC. PRIOR TO ROUGH-IN, TO ENSURE CLEAR VIEW OF THE ENTRANCE DOOR AND THE OVERALL SPACE. THIS CONTRACTOR TO REFER TO AND FOLLOW MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR PLACEMENT LOCATIONS AND SENSOR COVERAGE.
6. CEILING MOUNTED SENSORS SHALL BE AT AT CEILING LEVEL WHERE CEILING EXISTS. WHERE CEILING IS NOT PRESENT SENSORS TO BE MOUNTED AT HEIGHT OF PARTITIONS. WALL/CORNER MOUNTED SENSORS SHALL BE MOUNTED 8'-0" A.F.F. WALL STATION SENSORS SHALL BE AS PER SPECIFICATIONS AND STANDARD SWITCH LOCATIONS. ALL MOUNTING HEIGHTS ARE TO BE CONFIRMED ON SITE AND ADJUSTED ACCORDINGLY TO ENSURE PROPER COVERAGE.
7. APPROVED ALTERNATE BY: WATTSTOPPER, LUTRON, H-MOSS, SENSORSWITCH. SENSORS BEING SUBWITTED AS EQUALS SHALL MEET SPECIFIED CAPABILITIES, COVERAGE(S), SENSITIVITY ADJUSTMENT, TIME DELAYS, ETC. AS OUTLINED ABOVE AND AS PER SPECIFICATIONS. SHALL AN ALTERNATE FAIL TO MEET INTENT OF DESIGN, CONTRACTOR WILL BE RESPONSIBLE TO PROVIDE ADDITIONAL SENSORS AND OR PARTS TO MEET INTEND OF DESIGN AND FUNCTIONALITY.
8. ELECTRICAL CONTRACTOR SHALL ALLOW FOR TRAINING AND EXPLANATION OF CONTROLLED SYSTEMS TO END USER.
9. ELECTRICAL CONTRACTOR TO ENGAGE THIRD PARTY FOR FUNCTIONAL TESTING OF LIGHTING CONTROL DEVICES AND CONTROL SYSTEM AND PROVIDE CERTIFICATE OF ACCEPTANCE TO ENGINEER UPON COMPLETION PRIOR TO OCCUPANCY.

| ITEM | DESCRIPTION |
|---|---|
| OS-1 | WALL MOUNTED, DUAL-TECH, SINGLE LEVEL SENSOR IN AREAS AS SHOWN. SENSOR TO BE SET FOR VACANCY MODE FOR MANUAL 'ON' VIA BUILT-IN PUSH BUTTON AND AUTOMATIC 'OFF' AFTER PRESET TIME. 180° COVERAGE PATTERN UP TO 1000 SQ.FEET.<br><br>COOPER GREENGATE CAT.# ONW-D-1001-MV-N-W<br>OR APPROVED EQUAL |
| OS-2 | WALL MOUNTED, DUAL-TECH, SINGLE LEVEL SENSOR IN AREAS AS SHOWN. SENSOR TO BE SET FOR VACANCY MODE FOR MANUAL 'ON' VIA BUILT-IN PUSH BUTTON AND AUTOMATIC 'OFF' AFTER PRESET TIME. 180° COVERAGE PATTERN UP TO 1000 SQ.FEET.<br><br>COOPER GREENGATE CAT.# ONW-D-1001-MV-N-W<br>OR APPROVED EQUAL |

## EMERGENCY LIGHTING FIXTURE SCHEDULE

1. CONTRACTOR IS TO INCLUDE FOR ALL ACCESSORIES AS REQUIRED FOR A FULL AND COMPLETE INSTALLATION. PARTS NUMBERS SHOWN ARE GENERALLY FOR FIXTURE ONLY. REFER TO ARCHITECTURAL CEILING SCHEDULE FOR CEILING TYPES.
2. INSTALLATION OF EMERGENCY LIGHTING AND UNIT EQUIPMENT SHALL BE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND ACCORDING TO CODE REQUIREMENTS.
3. EMERGENCY BATTERIES SHALL BE SIZED TO MAINTAIN CONNECTED LOAD FOR MINIMUM 1/2 HOUR.
4. FOR ALL EXIT SIGNS REFER TO FLOOR PLANS FOR SINGLE OR DOUBLE FACE, CEILING RECESSED OR WALL MOUNTED.
5. ALL EMERGENCY LIGHTING AND EQUIPMENT ARE TO HAVE SHOP DRAWINGS SUBWITTED TO THE CONSULTANT PRIOR TO ORDERING FOR APPROVAL. CONTRACTOR MUST INCLUDE SHOP DRAWINGS FOR ALL LAMPS BEING INSTALLED WITH FIXTURES.
6. EQUIPMENT BEING SUBWITTED AS AN APPROVED EQUAL ARE TO BE SUBWITTED TO THE CONSULTANT FOR APPROVAL NO LESS THAN 5 BUSINESS DAYS BEFORE CLOSING. SUBWITTALS SHALL BE CLEARLY LABELLED AND INCLUDE COMPLETE FIXTURE CUTS STATING INCLUDED OPTIONS AND ACCESSORIES. SUBWITTALS NOT MEETING THIS CRITERIA WILL BE REJECTED.
7. THE CONTRACTOR SHALL INCLUDE FOR TWO (2) SPARE EXIT SIGNS TO BE INSTALLED AS DIRECTED BY OWNER/ENGINEER/BUILDING OFFICIAL. UNUSED SPARE SIGNS SHALL BE TURNED OVER TO OWNER IF NOT REQUIRED.
8. PRIOR TO THE INSTALLATION OF EXIT SIGNS, THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO ENSURE THE EXIT SIGN(S) IS NOT OBSTRUCTED (IE BLOCKED BY BULKHEADS, LIGHTS, DUCTS, ETC). THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND REQUEST INSTRUCTION TO COMPLETE THE INSTALLATION SHOULD AN OBSTRUCTION BE PRESENT. THE SIGN IS TO BE CLEARLY VISIBLE FROM A DISTANCE.

| ITEM | DESCRIPTION |
|---|---|
| EXIT SIGN | SELF-POWERED EMERGENCY RUNNING MAN EXIT SIGN C/W DIRECTIONAL PICTOGRAMS FOR ON-SITE DIRECTION SELECTION. 1-1.5W LED 120VAC, 12VDC. REFER TO FLOOR PLANS FOR SINGLE OR DOUBLE FACE, CEILING RECESSED OR WALL MOUNT.<br><br>AIMLITE 'RPALW SERIES RPALW-x-M-WHT-BAT<br>STANPRO 'RWXL' SERIES RWXLUWH-IB<br>LUMACELL 'LA' SERIES LAXWS<br>OR APPROVED EQUAL |
| EMERG. BATTERY UNIT C/W EMERG. HEADS | SURFACE MOUNTED BATTERY UNIT C/W TWIN HEADS AS INDICATED. MOUNTED AT 12' BELOW CEILING OR 10'-0" A.F.F. 2-3W LED PAR18 (2-6W MR16LED), 120VAC, 12VDC. UNIT TO BE C/W AUTO-TEST AND BATTERY DISCONNECT.<br><br>AIMLITE 'EBST' SERIES EBST-12-250-2SM3WLJ-WHT-ATD-BTD<br>STANPRO 'SL' SERIES SLC-12-250-2N3WLJ-WH-AT-BD<br>LUMACELL 'RGS' SERIES RG125-250-2LD10-AT-LD<br>OR APPROVED EQUAL |
| EMERG. REMOTE HEADS | REMOTE EMERGENCY SINGLE AND DOUBLE HEAD AS INDICATED ON PLANS. 3W LED PAR18 (6W MR16LED), 12VDC.<br><br>AIMLITE 'RWSM1-6-12-3WLJ-WHT' & 'RWSM2-6-12-3WLJ-WHT'<br>STANPRO 'N-1-6-12-3WLJ-WHT' & 'N-2-6-12-3WLJ-WHT'<br>LUMACELL 'MQM1LD10' & 'MQM2LD10'<br>OR APPROVED EQUAL |
| COMBO. EXIT/ EMERG. LIGHTS | RUNNING MAN EXIT SIGN C/W PICTOGRAMS FOR ON-SITE DIRECTION SELECTION AS INDICATED AND TWIN HEADS. 1-1.5W LED, 3W LED PAR18 (6W-MR16LED), 120VAC. REFER TO FLOOR PLANS FOR SINGLE OR DOUBLE FACE, CEILING RECESSED OR WALL MOUNT. UNIT TO BE SELF-POWERED & C/W AUTO-TEST.<br><br>AIMLITE CAT.# CARPW1250-x-M-2SM3LJ-WHT-ATD-BTD<br>STANPRO CAT.# PRWXL1050-x-2N3LJ-WH-AT-BD<br>LUMACELL CAT.# LAC-x-W-1250-2LD10-AT<br>OR APPROVED EQUAL |

## LIGHTING FIXTURE NOTES

GENERAL NOTES:

1. CONTRACTOR IS TO INCLUDE FOR ALL ACCESSORIES AS REQUIRED FOR A FULL AND COMPLETE INSTALLATION. PARTS NUMBERS SHOWN ARE GENERALLY FOR FIXTURE ONLY. REFER TO ARCHITECTURAL CEILING SCHEDULE FOR CEILING TYPES AND PROVIDE REQUIRED ACCESSORIES (IE DRYWALL FLANGE KIT, ETC). DISCREPANCIES BETWEEN THE DESCRIPTION AND PART NUMBER SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO SUBWITTING A BID.
2. THE CONTRACTOR IS TO ALLOW FOR NORMAL DELIVERY ON FIXTURES (6-8 WEEKS FROM ACCEPTANCE OF SHOP DRAWINGS). FIXTURES FROM A QUICK SHIP PROGRAM WILL BE NOTED WHERE APPLICABLE. CONTRACTOR IS TO SUBMIT SHOP DRAWINGS FOR FIXTURES AS SOON AS POSSIBLE TO AVOID DELAY OF THE PROJECT. ALTERNATES WILL NOT BE ACCEPTED TO EXPEDITE A SCHEDULE.
3. PENDANT AND LINEAR FIXTURES SHOWN AS END TO END ARE TO BE ORDERED AS CONTINUOUS RUN FIXTURES UNLESS SPECIFICALLY NOTED OTHERWISE. FIXTURES ARE GENERALLY LISTED AS A MODULE TO CLARIFY THE BALLAST AND LAMP REQUIRED FOR EACH MODULE.
4. CONTRACTOR SHALL SUPPLY TO OWNER AND/OR CONSULTANT ANY DOCUMENTATION AS REQUIRED FOR OWNER TO APPLY FOR ENERGY INCENTIVES INCLUDING BUT NOT LIMITED TO BILLS OF SALE, ETC.
5. CONTRACTOR SHALL VERIFY AND INCLUDE FOR MULTIPLE BALLASTS REQUIRED FOR MULTIPLE SWITCHING.
6. ALL FIXTURES ARE TO HAVE SHOP DRAWINGS SUBWITTED TO THE CONSULTANT PRIOR TO ORDERING FOR GENERAL REVIEW. CONTRACTOR MUST INCLUDE SHOP DRAWINGS FOR ALL LAMPS BEING INSTALLED WITH FIXTURES.
7. ALL FIXTURES TO BE 4100K.
8. DIMMERS SHALL BE COMPATIBLE WITH LIGHT FIXTURE AND BE CAPABLE OF 0-100% OPERATION. ELV DIMMERS TO BE PROVIDED FOR ELECTRONIC OR LED FIXTURES. DIMMER SHALL BE BY LUTRON OR APPROVED EQUAL.
9. FIXTURES BEING SUBWITTED AS AN APPROVED EQUAL ARE TO BE SUBWITTED TO THE CONSULTANT FOR APPROVAL NO LESS THAN 5 BUSINESS DAYS BEFORE CLOSING. SUBWITTALS SHALL BE CLEARLY LABELLED AND INCLUDE COMPLETE FIXTURE CUTS STATING INCLUDED OPTIONS, ACCESSORIES AND FIXTURE EFFICIENCY. SUBWITTALS NOT MEETING THIS CRITERIA WILL BE REJECTED. IES FILES FOR FIXTURES MUST HAVE AN IES LAB CERTIFICATION.

| ITEM | DESCRIPTION | MODEL # | LUMENS / COLOUR | VOLTAGE /WATTAGE |
|---|---|---|---|---|
| A | 4' (1219mm) CHAIN SUSPENDED LED STRIP LIGHT STYLE LIGHT FIXTURE. DIE FORMED COLD ROLLED STEEL CONSTRCUTION. WIDE DISTRIBUTION LENS. 0-10V DIMMING DRIVER STANDARD. | BASE OF DESIGN:<br><br>LITHONIA LIGHTING CAT. No.:<br>CLX L48 7000LM SEF WDL WD MVOLT GZ10 40K 80CRI WH<br><br>OR SIMILAR | NOMINAL 7,000 LUMENS / 4100k | 120 V / 46 W |
| B | 4' (1219mm) SURFACE MOUNTED LED STRIP LIGHT STYLE LIGHT FIXTURE. DIE FORMED COLD ROLLED STEEL CONSTRCUTION. FLAT DIFFUSE DISTRIBUTION LENS. 0-10V DIMMING DRIVER STANDARD. | BASE OF DESIGN:<br><br>LITHONIA LIGHTING CAT. No.:<br>CLX L48 5000LM SEF FLD MVOLT GZ10 40K 80CRI WH<br><br>OR SIMILAR | NOMINAL 5,000 LUMENS / 4100k | 120 V / 32 W |
| C | 4' (1219mm) SURFACE MOUNTED LED STRIP LIGHT STYLE LIGHT FIXTURE. DIE FORMED COLD ROLLED STEEL CONSTRCUTION. DROP LENS. 0-10V DIMMING DRIVER STANDARD. | BASE OF DESIGN:<br><br>LITHONIA LIGHTING CAT. No.:<br>ZL1D L48 5000LM FST MVOLT 35K 80CRI WH<br><br>OR SIMILAR | NOMINAL 5,000 LUMENS / 3500k | 120 V / 41 W |
| D | RECESSED MOUNTED 2x4 LED LOW PROFILE TROFFER STYLE CENTER BASKET FIXTURE, SHALLOW EXTRUDED ALUMINUM HOUSING, PRECISION FORMED OPTICAL ASSEMBLY WITH DIRECT OPTICAL DISTRIBUTION, 0-10V DIMMING DRIVER STANDARD | BASE OF DESIGN:<br><br>LITHONIA LIGHTING CAT. No.:<br>2BLT4 48L ADP GZ10 LP835<br><br>OR SIMILAR | NOMINAL 4000 LUMENS / 3500k | 120 V / 38 W |
| E | RECESSED MOUNTED 2x2 LED LOW PROFILE TROFFER STYLE CENTER BASKET FIXTURE, SHALLOW EXTRUDED ALUMINUM HOUSING, PRECISION FORMED OPTICAL ASSEMBLY WITH DIRECT OPTICAL DISTRIBUTION, 0-10V DIMMING DRIVER STANDARD | BASE OF DESIGN:<br><br>LITHONIA LIGHTING CAT. No.:<br>2BLT2 33L ADP GZ10 LP835<br><br>OR SIMILAR | NOMINAL 3000 LUMENS / 3500k | 120 V / 26 W |
| F | RECESSED MOUNTED DOWNLIGHT STYLE, 4" APERTURE LED FIXTUER C/W MEDIUM BEAM REFLECTOR, WHITE POLYMER TRIM RING AND SPECULAR CLEAR FINISH, STANDARD 0-10V DIMMING DRIVER, 3500K. | BASE OF DESIGN:<br><br>LITHONIA LIGHTING CAT. No.: LDN4 35/10 L04 AR LSS TRW MVOLT GZ10<br><br>OR SIMILAR | NOMINAL 1000 LUMENS / 3500k | 120 V / 10 W |
| G | RECESSED MOUNTED LED SHOWER TRIM LED FIXTURE C/W ONE PIECE WHITE POLYMER BAFFLE, RING AND LENS. 4" APERTURE DOWNLIGHT HOUSING, LED LIGHT ENGINE, 120V DRIVER. | BASE OF DESIGN:<br><br>GOTHAM LIGHTING CAT. No.:<br>EVO4SH 35/10 07 DFF SNO MVOLT EZ10<br><br>OR SIMILAR | NOMINAL 750 LUMENS / 3500k | 120 V / 8 W |
| H | WALL MOUNTED, FULL CUT-OFF, DIE-CAST ALUMINUM CONSTRUCTION, MOUNTED AT MAN DOOR (8' AFG TYPICAL). POLYESTER POWDER COAT FINISH | BASE OF DESIGN:<br><br>LITHONIA LIGHTING CAT. No.:<br>WPX1 LED P1 40K MVOLT<br><br>OR SIMILAR | NOMINAL 1500 LUMENS / 4100k | 120 V / 11 W |
| J | WALL MOUNTED, FULL CUT-OFF, LED ARCHITECTURAL AREA LIGHT FIXTURE. 0-10V DIMMING DRIVER STANDARD. DIE-CAST ALUMINUM HOUSING, VISUAL COMFORT OPTICS | BASE OF DESIGN:<br><br>LITHONIA LIGHTING CAT. No.:<br>WDGE2 LED P3 40K 80CRI VW MVOLT<br><br>OR SIMILAR | NOMINAL 3000 LUMENS / 4100k | 120 V / 23 W |

| NO. | DATE | ISSUANCE |
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| 1 | 2024.12.10 | ISSUED FOR PERMIT |
| NO. | DATE | ISSUANCE |

DO NOT SCALE DRAWINGS. CALL FOR ANY CLARIFICATIONS THAT ARE REQUIRED. FIELD VERIFY AT ALL BUILT CONDITIONS

ALL DWG.'S ARE TO BE READ IN COLOUR

ORIGINAL PAGE SIZE ARCH 'D' - 24" x 36"

CITY OF BRANTFORD

Electrical Engineering
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STAMP ARCH.

LICENSED PROFESSIONAL ENGINEER
K. SEGUIN
2024/12/10
PROVINCE OF ONTARIO

STAMP STRUCT.

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
SCHEDULES

CHECKED BY: KS

DRAWN BY:

DRAWING SCALE:

PROJECT NO.: 23-183

DRAWING NO.: E001

DATE PLOTTED: 2024-12-10 2:48:00 PM PROJECT NUMBER & NAME: 23-183 GRETZKY GOLF COURSE FILE PATH: C:\Users\drich_i2ddug\OneDrive\Documents\23-183 Gretzky Golf Course Maintenance_E_V24_Daryl_Nicholls.rvt

1. GENERAL
1. THIS SPECIFICATION SHALL APPLY TO AND GOVERN ALL WORK OF DIVISION 16. THE ELECTRICAL CONTRACTOR SHALL BE A SUBCONTRACTOR TO THE GENERAL CONTRACTOR AND HIS BID SHALL BE TENDERED DIRECTLY TO THE GENERAL CONTRACTOR. THE CONTRACTOR SHALL SUPPLY, INSTALL, WIRE AND CONNECT ALL EQUIPMENT, ACCESSORIES, DEVICES ETC SHOWN UNLESS SPECIFICALLY NOTED OTHERWISE. SHOULD THE CONTRACTOR BE UNSURE, THEY ARE TO SUBMIT A QUESTION 3 WORKING DAYS PRIOR TO TENDER CLOSE TO HAVE AN ADDENDUM ISSUED TO CLARIFY THE DEVICE, EQUIPMENT OR WORK SCOPE IN QUESTION.

2. IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN ALL DRAWINGS AND SPECIFICATIONS PRIOR TO TENDER SUBMITTAL. ELECTRICAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS, ANY DISCREPANCIES BETWEEN THESE SPECIFICATIONS AND THE DRAWINGS THAT CAUSES DOUBT AS TO THE TRUE MEANING OF INTENT OF THE DRAWINGS AND SPECIFICATIONS, A RULING SHALL BE OBTAINED FROM THE ENGINEER PRIOR TO TENDER SUBMITTAL. NO ALLOWANCE WILL BE MADE FOR FAILURE TO DO SO. IF CLARIFICATION CAN NOT BE OBTAINED IN TIME, THE CONTRACTOR SHALL INCLUDE FOR THE COSTLIER INSTALLATION IN THEIR BID.

3. LIABILITY INSURANCE:
1. OBTAIN AND CARRY PROPER INSURANCE TO FULLY PROTECT BOTH THE OWNER AND HIMSELF FROM ANY AND ALL CLAIMS DUE TO ACCIDENTS, MISFORTUNES, ACTS OF GOD, ETC.

4. CODES, PERMITS AND INSPECTION
1. BE RESPONSIBLE FOR AND OBTAIN ALL PERMITS, INSPECTION, ETC., AS REQUIRED BY ALL AUTHORITIES HAVING JURISDICTION OVER THIS WORK AND PAY FOR ALL FEES RELATED TO SAME.
2. DELIVER ALL PERMITS TO THE ENGINEER AS SOON AS THEY BECOME AVAILABLE.

5. CLOSE OUT DOCUMENTS AND AS-BUILT DRAWINGS:
1. THE CONTRACTOR SHALL SUBMIT AN ENQUIRY TO THE ARCHITECT/OWNER TO OBTAIN THE FINAL ROOM NAMES AND NUMBERS TO BE USED IN ALL THE CLOSE OUT DOCUMENTS, REPORTS, FIRE ALARM/NURSE CALL PROGRAMMING, PANEL SCHEDULES ETC. FAILURE TO USE THE FINAL NAMES AND NUMBERS WILL REQUIRE THE CONTRACTOR TO REPLACE DOCUMENTATION/REPROGRAM AS REQUIRED AT THEIR EXPENSE. THEY SHALL KEEP A SEPARATE SET OF WHITE PRINTS ON THE SITE AND NOTE ALL CHANGES AND DEVIATIONS FROM THE ORIGINAL DESIGN. DEVICES ETC NOTED AS 'EX' (EXISTING) AND 'REL' RELOCATED ARE TO HAVE THE CIRCUIT TRACED AND DESIGNATED ON THE DRAWINGS. DEVICES ETC DESIGNATED AS CONNECT TO EXISTING CIRCUIT IN AREA ARE TO HAVE THE CIRCUIT INDICATED ON THE PLANS. PROVIDE AS-BUILT DRAWINGS IN AUTOCAD FORMAT (MIN. RELEASE 2010), PDF FORMAT AND (2) TWO SETS OF THESE PLANS SHOWING ALL AS-BUILT CONDITIONS TO THE OWNER AT THE COMPLETION OF THIS CONTRACT AND BEFORE APPLYING FOR FINAL PAYMENT. (INCLUDE IN-SLAB CONDUIT RUNS). SHOULD NO MARKUPS BE REQUIRED TENDER AND/OR SEALED PLANS BY THE ENGINEER WILL NOT BE ACCEPTED.
2. CLOSE OUT BINDERS SHALL BE PROVIDED WITH ALL TEST RESULTS, WARRANTY LETTERS AND SHOP DRAWINGS. A PDF COPY SHALL BE PROVIDED ALONG WITH THE HARD COPY VERSIONS. PDF VERSION SHALL BE ASSEMBLED VERSIONS WHERE POSSIBLE. SHOULD A DOCUMENT REQUIRE SCANNING, IT SHALL BE PROVIDED IN HIGH RESOLUTION AND BE CLEARLY LEGIBLE. ILLEGIBLE DOCUMENTS WILL NOT BE ACCEPTED.

6. CODES AND STANDARDS: (CURRENT EDITIONS)
1. DO COMPLETE INSTALLATION IN ACCORDANCE WITH C.S.A C22.1 EXCEPT WHERE SPECIFIED OTHERWISE.
2. COMPLY WITH C.S.A. ELECTRICAL BULLETINS IN FORCE AT TIME OF TENDER SUBMISSION, WHILE NOT IDENTIFIED AND SPECIFIED BY NUMBER IN THIS DIVISION, ARE TO BE CONSIDERED AS FORMING PART OF RELATED C.S.A. PART II STANDARD.
3. DO OVERHEAD AND UNDERGROUND SYSTEMS IN ACCORDANCE WITH C.S.A. C22.3 NO. 1 EXCEPT WHERE SPECIFIED OTHERWISE.
4. ABBREVIATIONS FOR ELECTRICAL TERMS: TO C.S.A. Z85.
5. COMPLY ALSO WITH THE FOLLOWING CODES:
1. ONTARIO ELECTRICAL SAFETY CODE
2. NATIONAL BUILDING CODE
3. ONTARIO BUILDING CODE
4. LOCAL HYDRO UTILITY REQUIREMENTS
5. CAN/ULC S524, S537 AND S1001

7. VISITING THE SITE:
1. VISIT THE SITE OF THE PROJECT AND BECOME FAMILIAR WITH THE SITE CONDITIONS. REPORT ANY DEVIATION AND/OR CONFLICTS BETWEEN TENDER DOCUMENTS AND SITE CONDITIONS PRIOR TO SUBMITTING TENDER.

8. LOCATION OF OUTLETS:
1. CHANGE LOCATION OF OUTLETS, EQUIPMENT AT NO EXTRA COST OR CREDIT, PROVIDING DISTANCE DOES NOT EXCEED 10'-0" (3m) AND INFORMATION IS GIVEN BEFORE INSTALLATION.

9. CUTTING AND PATCHING:
1. PROVIDE ALL CUTTING, PATCHING AND PAINTING FOR ELECTRICAL WORK, UNLESS NOTED OTHERWISE.

10. EQUIPMENT AND MATERIAL:
1. ALL EQUIPMENT AND MATERIAL, UNLESS SPECIFICALLY NOTED OTHERWISE, SHALL BE NEW AND WITHOUT BLEMISH OR DEFECT. ALL MATERIAL AND EQUIPMENT SHALL BEAR U.L.C. OR C.S.A. LABELS.

11. WARRANTY:
1. WARRANT ALL WORK AND APPARATUS INSTALLED UNDER THIS CONTRACT FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF SAME BY THE OWNER.

12. MAINTENANCE OF SERVICE:
1. PROVIDE ALL LABOUR AND MATERIALS NECESSARY TO ENSURE THAT POWER, LIGHTING AND ALL OTHER MISCELLANEOUS ELECTRICAL SERVICES ARE MAINTAINED IN FULL OPERATING CONDITION, IN ALL AREAS OF THE EXISTING BUILDING, DURING THE CONSTRUCTION PERIOD. DISCONNECT, MOVE, RELOCATE, AND RECONNECT CONDUIT AND WIRING AS NECESSARY TO ACCOMMODATE THE NEW WORK AND MECHANICAL INSTALLATION.

13. CLEANING
1. DO FINAL CLEANING.
2. AT TIME OF FINAL CLEANING, CLEAN EQUIPMENT SURFACES THAT HAVE BEEN EXPOSED TO CONSTRUCTION DUST AND DIRT.
3. VACUUM INSIDE OF ALL PANEL BOARDS, ETC., ON COMPLETION OF THE PROJECT.

14. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES
1. SUBMIT SHOP DRAWINGS, PRODUCT DATA AND/OR SAMPLES FOR ALL EQUIPMENT, POWER DISTRIBUTION, POWER DEVICES, COMMUNICATIONS DEVICES, RACEWAY, LIGHT FIXTURES, EMERGENCY LIGHTING, ETC. THE DRAWINGS ARE TO BE REVIEWED AND STAMPED BY BOTH THE GENERAL AND ELECTRICAL CONTRACTOR PRIOR TO SUBMITTAL.
2. SHOP DRAWINGS SHALL INCLUDE ALL RELEVANT ACCESSORIES AND LAYOUTS WHERE REQUESTED.
3. SHOP DRAWINGS THAT ARE ILLEGIBLE AND OF POOR QUALITY WILL BE REJECTED.
4. SHOP DRAWINGS WILL BE REVIEWED AND RETURN MARKED 'REVIEWED', 'REVIEWED AS MODIFIED' OR 'REVISE AND RESUBMIT'. THE DRAWING REVIEW DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ITS ACCURACY OR FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.
5. INSTALLATION OF ANY EQUIPMENT SHALL NOT START UNTIL AFTER FINAL REVIEW OF SHOP DRAWINGS BY THE CONSULTANT HAS BEEN OBTAINED.
6. INCOMPLETE OR INCORRECT SHOP DRAWINGS THAT ARE REJECTED, WHICH ADVERSELY CAUSE OR RESULT IN ANY DELAY OF THE DELIVER SCHEDULE OF ANY EQUIPMENT SHALL BE THE CONTRACTORS RESPONSIBILITY.
7. IF INCORRECT SHOP DRAWINGS ARE SUBMITTED AND REJECTED ANY SUBSEQUENT DELIVERY DELAY WILL RESULT IN THE CONTRACTOR PROVIDING TEMPORARY FACILITIES UNTIL SAID EQUIPMENT IS DELIVERED AND INSTALLED AT NO EXTRA COST TO THE OWNER.
8. PROVIDE SPACE FOR SHOP DRAWING REVIEW STAMPS FOR THE CONTRACTOR AND CONSULTANT. THIS SPACE SHALL BE CLEAR OF ALL TECHNICAL INFORMATION AND SHALL NOT BE ON THE BACK OF ANY SHEETS.
9. SUBMIT SHOP DRAWINGS IN DIGITAL (PDF) FORMAT.
10. ONE (1) ORIGINAL COPY IN DIGITAL FORMAT (PDF) WILL BE RETURNED. ALL COPIES REQUIRED BY TRADES, SUPPLIERS OR OTHER CONSULTANTS WILL BE PROVIDED AND/OR PRINTED BY THE CONTRACTOR.
11. FAILURE TO SUBMIT SHOP DRAWINGS WILL NOT RELIEVE THIS CONTRACTOR FROM ENSURING THAT ALL INSTALLED EQUIPMENT MEETS THE INTEND OF DESIGN DOCUMENTS, ALL COSTS ASSOCIATED WITH ANY ISSUES ASSOCIATED WITH ALTERNATE OR NOT SUBMITTED EQUIPMENT WILL THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.
12. SHOP DRAWING SUBMITTAL SHALL BE (BUT NOT LIMITED TO) FOR ANY EQUIPMENT AS LISTED;
1. HIGH VOLTAGE EQUIPMENT
2. SWITCHBOARD, METER CENTERS, PANEL BOARDS
3. FIRE ALARM SYSTEMS
4. LUMINAIRES INCLUDING LAMPS AND BALLASTS
5. LIGHTING CONTROLS
6. EMERGENCY BATTERY UNITS AND FIXTURES
7. ELECTRICAL HEATERS
8. SECURITY SYSTEM
9. MASTER CLOCK AND PROGRAM
10. INTERCOM SYSTEM
11. PUBLIC ADDRESS SYSTEM
12. MILLWORK
13. DEVICES

15. DRAW BREAKDOWNS:
1. THIS CONTRACTOR MUST SUBMIT A BREAKDOWN OF THE TENDER PRICE INTO SEPARATE CLASSIFICATION TO THE SATISFACTION OF THE CONSULTANT AND TOTALING THE TOTAL CONTRACT AMOUNT. EACH ITEM IS TO BE BROKEN INTO MATERIAL AND LABOUR COSTS.
2. PROGRESS DRAWS, WHEN SUBMITTED, ARE TO BE ITEMIZED AGAINST EACH OF THE DRAW BREAKDOWNS AND SHALL BE IN TABLE FORM IDENTIFYING CONTRACT AMOUNT, AMOUNT OF THIS DRAW, TOTAL TO DATE, PERCENTAGE COMPLETE AND BALANCE.
3. BREAKDOWN SHALL FOLLOW, BUT NOT BE LIMITED TO;
1. PERMITS AND FEES
2. MOBILIZATION
3. DEMOLITION
4. DISTRIBUTION EQUIPMENT (IE. SWITCHBOARDS, PANELBOARDS, ETC.)
5. INCOMING FEEDERS AND CONDUITS
6. BRANCH WIRING CONDUITS
7. BRANCH WIRING
8. MECHANICAL EQUIPMENT WIRING
9. FIRE ALARM DEVICES
10. FIRE ALARM WIRING
11. FIRE ALARM VERIFICATION AND CERTIFICATION
12. EXIT AND EMERGENCY LIGHTING
13. LIGHTING
14. LIGHTING CONTROLS
15. VOICE AND COMMUNICATION CONDUITS
16. VOICE AND COMMUNICATION WIRING AND TERMINATIONS
17. ACCESS CONTROL AND SECURITY
18. MISCELLANEOUS AND SPECIALTY EQUIPMENT (IE. PUBLIC ADDRESS, SOUND, ETC.)
4. ABOVE BREAKDOWN MUST BE APPROVED BY THE CONSULTANT PRIOR TO SUBMISSION OF THE FIRST DRAW, MOBILIZATION AMOUNT MAY ONLY BE DRAWN WHEN ALL REQUIRED SHOP DRAWINGS HAVE BEEN REVIEWED BY THE CONSULTANT.

16. REVISIONS TO CONTRACT:
1. PROVIDE ITEMIZED LISTS OF MATERIALS/ASSOCIATED COSTS, LABOUR RATE/LABOUR FOR EACH ITEM, COPY OF MANUFACTURERS INVOICE, IF REQUESTED, FOR EACH ITEM GIVEN CHANGE NOTICE.

17. ROOF AND WALL OPENINGS:
1. LOCATION OF CONDUITS PASSING THROUGH ROOF AND WALLS TO BE COORDINATED WITH DIVISION 15. ALL OPENINGS TO BE MADE WATERTIGHT.

18. SCHEDULE OF CONSTRUCTION:
1. CONSULT GENERAL DIVISION FOR SCHEDULE OF CONSTRUCTION BEFORE COMMENCING WORK AND COORDINATE DETAILS WITH ENGINEER, OWNER AND ALL TRADES DURING CONSTRUCTION.

19. DIRECTORIES AND LABELLING:
1. IDENTIFY ALL ELECTRICAL EQUIPMENT. IDENTIFICATION SHALL CONSIST OF ENGRAVED LAMACOID NAMEPLATES HAVING BLACK BACKGROUND WITH WHITE LETTERS. FASTEN NAMEPLATES TO DEVICE USING SELF-TAPPING, COUNTERSUNK SCREWS. TAPE-TYPE NAMEPLATES WILL NOT BE ACCEPTED.
2. ALL RECEPTACLE COVER PLATES SHALL BE LABELED WITH TAPE-TYPE NAMEPLATES. THE LABEL SHALL INDICATE THE PANEL DESIGNATION AND CIRCUIT NUMBER. (IE A19). TAPE SHALL BE NEATLY TRIMMED ON EACH END AND PLACED PLUMB AND LEVEL ON THE FACE PLATE. LABELS SHALL HAVE A NEAT, CLEAN AND PROFESSIONAL APPEARANCE. LABELS NOT TRIMMED OR POORLY POSITIONED WILL NOT BE ACCEPTED.
3. ALL PANELS WITH CIRCUITS ADDED OR REMOVED SHALL HAVE NEW COMPUTER-GENERATED PANEL SCHEDULES PLACED IN THEM. SCHEDULE SHALL INDICATE PANEL DESIGNATION, WHERE PANEL IS FED FROM, VOLTAGE, PHASE, BRANCH CIRCUIT NUMBERS, BREAKER AMPERAGE AND CIRCUIT DESCRIPTION.

20. GROUNDING:
1. GROUND ALL EQUIPMENT IN ACCORDANCE WITH CODE REQUIREMENTS AND AS INDICATED.
2. GROUNDING CONDUCTORS: COPPER, INSULATED (GREEN); SIZE PER CODE.
3. GROUNDING LUGS, CONNECTORS: APPROVED GROUNDING TYPE.
4. ALL GROUND CONDUCTORS #8AWG OR SMALLER SHALL BE RUN IN EMT.

21. FIREPROOFING:
1. WHERE CABLES PASS THROUGH FLOORS OR FIRE RATED WALLS, PACK SPACE BETWEEN WIRING AND SLEEVE FULL WITH APPROVED RATED FIRE STOPS AND SEAL WITH CAULKING COMPOUND CONFORMING TO CGSB 19-GP-9Ma.

22. MOUNTING HEIGHTS:
1. MOUNTING HEIGHT OF EQUIPMENT IS FROM FINISHED FLOOR TO CENTRELINE OF EQUIPMENT UNLESS SPECIFIED OR INDICATED OTHERWISE.
2. IF MOUNTING HEIGHT OF EQUIPMENT IS NOT SPECIFIED OR INDICATED, VERIFY BEFORE PROCEEDING WITH INSTALLATION
3. INSTALL ELECTRICAL EQUIPMENT AS SPECIFIED IN THE OBC FOR BARRIER FREE DESIGN. IF NOT NOTED, INSTALL AT FOLLOWING CENTERLINE HEIGHTS:
1. LOCAL SWITCHES: 3'-5" (1050mm).
2. WALL RECEPTACLES:
1. GENERAL: 1'-6" (450mm).
2. ABOVE TOP OF CONTINUOUS BASEBOARD HEATER: 10" (250mm).
3. ABOVE TOP OF COUNTERS OR COUNTER SPLASH BACKS: 6" (150mm).
4. MECHANICAL ROOMS: 3'-5" (1050mm).
3. PANELBOARDS: AS REQUIRED BY CODE OR AS INDICATED.
4. TELEPHONE AND INTERPHONE OUTLETS: 1'-6" (450mm).
5. TELEVISION OUTLETS: 1'-6" (450mm).
6. FIRE ALARM PULL STATIONS: 3'-9" (1150mm).

23. LOAD BALANCE:
1. MEASURE PHASE CURRENT TO PANELBOARDS WITH NORMAL LOADS (LIGHTING) OPERATING AT TIME OF ACCEPTANCE. ADJUST BRANCH CIRCUIT CONNECTIONS AS REQUIRED TO OBTAIN BEST BALANCE OF CURRENT BETWEEN PHASES AND RECORD CHANGES.
2. MEASURE PHASE VOLTAGES AT LOADS AND ADJUST TRANSFORMER TAPS TO WITHIN 2% OF RATED VOLTAGE OF EQUIPMENT.
3. SUBMIT, AT COMPLETION OF WORK, REPORT LISTING PHASE AND NEUTRAL CURRENTS ON PANELBOARDS, DRY-CORE TRANSFORMERS AND MOTOR CONTROL CENTRES, OPERATING UNDER NORMAL LOAD. STATE HOUR AND DATE ON WHICH EACH LOAD WAS MEASURED, AND VOLTAGE AT TIME OF TEST.

24. SECURITY DOOR
1. THE CONTRACTOR SHALL INCLUDE FOR ALL WORK (CUTTING, PATCHING, CONDUIT, PULLING CABLE, EQUIPMENT, LICENCES, INSTALLATION, ETC) FOR SECURITY DOORS. MAGNETIC LOCK DOORS SHALL INCLUDE POWER FOR THE CONTROLLER AND CONDUIT/CABLING TO CONNECT TO THE KEY RESET SWITCH. CONFIRM LOCATION AND ROUTING PRIOR TO BID. ALL DOORS SHALL BE FULLY FUNCTIONAL AT COMPLETION OF PROJECT. WHERE SPECIFIED VENDORS ARE INDICATED, THE CONTRACTOR SHALL COORDINATE WITH THIS VENDOR AND INCLUDE FOR ALL WORK NOT IN THE SCOPE OF THE SPECIFIED VENDOR. CONTRACTOR SHALL MAKE ANY ADJUSTMENTS AFTER INSTALLATION AS REQUIRED BY THE OWNER.
2. REFER TO THE FIRE ALARM SECTION FOR VERIFICATION AND TESTING. DOORS SHALL BE INTERLOCKED AS A SYSTEM WITH THE FIRE ALARM AND SHALL BE CONFIRMED PRIOR TO BRINGING CITY OFFICIALS, BUILDING OWNERS AND THE ENGINEER TO SITE TO WITNESS DOORS.

25. CONDUIT AND CABLE INSTALLATION:
1. INSTALL CONDUIT AND SLEEVES PRIOR TO POURING OF CONCRETE. SLEEVES THROUGH CONCRETE: SCHEDULE 40 STEEL PIPE, SIZED FOR FREE PASSAGE OF CONDUIT, AND PROTRUDING 2" (50mm).
2. IF PLASTIC SLEEVES ARE USED IN FIRE RATED WALLS OR FLOORS, REMOVE BEFORE CONDUIT INSTALLATION.
3. INSTALL CABLES, CONDUITS AND FITTINGS TO BE EMBEDDED OR PLASTERED OVER, NEATLY AND CLOSE TO BUILDING STRUCTURE SO FURRING CAN BE KEPT TO MINIMUM.

26. DEFINITIONS:
1. THE FOLLOWING ARE DEFINITIONS OF WORDS FOUND IN THE SPECIFICATION AND ON ASSOCIATED DRAWINGS:
1. 'CONCEALED' - HIDDEN FROM NORMAL SIGHT IN FURRED IN SPACES, SHAFTS, CEILING SPACES, WALLS, UNDERFLOOR AND PARTITIONS.
2. 'EXPOSED' - ALL ELECTRICAL WORK EXPOSED TO BUILDING OCCUPANTS. WIRE AND CABLING SHALL BE IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE.
3. "PROVIDE" (AND ALL TENSES OF "PROVIDE") SUPPLY, INSTALL, WIRE AND CONNECT COMPLETE.
4. "INSTALL" (AND ALL TENSES OF "INSTALL") INSTALL WIRE AND CONNECT COMPLETE, PRODUCTS AND SERVICES SPECIFIED.
5. "SUPPLY" SUPPLY ONLY
6. "OR APPROVED EQUAL" MATERIAL OR EQUIPMENT PROPOSED BY THE CONTRACTOR IN LIEU OF THAT SPECIFIED AS APPROVED BY THE CONSULTANT. MATERIAL OR EQUIPMENT SHALL MEET OR EXCEED THE SAME QUALITY, MATERIAL, EFFICIENCY, ETC AS THE SPECIFIED PRODUCTS.
7. "AS INDICATED" AS SHOWN ON DRAWINGS AND/OR NOTED IN SPECIFICATIONS.

27. MILLWORK
1. THE CONTRACTOR SHALL COORDINATE THE LOCATIONS OF THE ELECTRICAL DEVICES WITH THE MILLWORK DRAWINGS. THE CONTRACTOR SHALL REVIEW THE ARCHITECTURAL DRAWINGS AND SECTIONS OF CONSTRUCTION OF MILLWORK PRIOR TO ROUGH-IN. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
2. MILLWORK DRAWINGS SHALL INDICATE LOCATIONS OF ELECTRICAL OUTLETS, DEVICES ETC.
3. EXTRAS WILL NOT BE CONSIDERED FOR DEVICES INSTALLED IN THE INCORRECT LOCATION AND NOT INDICATED ON THE SHOP DRAWINGS. THE CONTRACTOR SHALL RELOCATE THAT DEVICE AT THEIR EXPENSE TO THE CORRECT LOCATION.

28. PHASING
1. THE CONTRACTOR SHALL REVIEW THE PHASING AS INDICATED ON ALL PLANS. THIS INCLUDES ARCHITECTURAL, MECHANICAL PLANS ETC IN THE ENTIRE DRAWING PACKAGE.
2. THE CONTRACTOR SHALL INCLUDE FOR TEMPORARY CONNECTIONS AS REQUIRED TO FACILITATE THE WORK.
3. THE CONTRACTOR SHALL INCLUDE FOR ALL WEEKEND AND PREMIUM TIME REQUIRED TO FACILITATE THE PHASING AS INDICATED IN THE PLANS PACKAGE.

2. PRODUCTS
1. ELECTRICAL EQUIPMENT
1. EQUIPMENT SHALL HAVE 1.0m (39") CLEARANCE IN FRONT OF SAID EQUIPMENT
2. ELECTRICAL EQUIPMENT RATED AT 1200A AND OVER SHALL HAVE 1.5m (59") CLEARANCE IN FRONT OF SAID EQUIPMENT.
3. ALL EQUIPMENT INSTALLED IN SPRINKLERED AREAS ARE TO BE COMPLETE WITH DRIP SHIELDS.

2. PANEL BOARDS
1. PANEL BOARDS: TO C.S.A. C22.2, NO. 29. LOADCENTRES ARE NOT ACCEPTABLE.
2. PANEL BOARDS ARE TO BE THE PRODUCT OF ONE (1) MANUFACTURER
3. 120/208V 3 PHASE-4 WIRE PANEL BOARDS: BUS AND BREAKERS RATED FOR MINIMUM 10,000A (SYMMETRICAL) INTERRUPTING CAPACITY OR AS INDICATED ON THE DRAWINGS.
4. MAIN BREAKER SHALL OCCUPY A SEPARATE COMPARTMENT FROM BRANCH BREAKERS. PANELS WITH MAIN BREAKERS IN BRANCH BREAKER COMPARTMENT WILL NOT BE ACCEPTED.
5. SEQUENCE PHASE BUSSING WITH ODD NUMBERED BREAKERS ON LEFT AND EVEN ON RIGHT, WITH EACH BREAKER IDENTIFIED BY PERMANENT NUMBER IDENTIFICATION AS TO CIRCUIT NUMBER.
6. PANEL BOARDS: MAINS, NUMBER OF CIRCUITS, AND NUMBER AND SIZE OF BRANCH CIRCUIT BREAKERS AS INDICATED
7. TWO (2) KEYS FOR EACH PANEL BOARD AND KEY PANEL BOARDS ALIKE.
8. COPPER BUS WITH FULL SIZE COPPER MAINS AND NEUTRAL.
9. MAINS FOR BOLT-ON BREAKERS.
10. FINISH TRIM AND DOOR BAKED GRAY ENAMEL. PAINT TUB SAME AS DOOR.
11. COMPLETE CIRCUIT DIRECTORY WITH TYPEWRITTEN LEGEND SHOWING CIRCUIT LABEL, AMPERAGE AND PANEL LOCATION UNDER PLASTIC COVER.
12. EATON CUTLER HAMMER, SQUARE D, SIEMENS CANADA MANUFACTURE.
13. [PROVIDE A COORDINATION STUDY TO CONFIRM BREAKER INTERRUPTING CAPACITY PRIOR TO SUBMITTING SHOP DRAWINGS FOR PANELS.]

3. BREAKERS GENERAL
1. BOLT-ON MOLDED CASE CIRCUIT BREAKER, FULL MODULE (I.E. 1" MINIMUM WIDTH), QUICK-MAKE, QUICK-BREAK TYPE, FOR MANUAL AND AUTOMATIC OPERATION WITH TEMPERATURE COMPENSATION FOR 40DC AMBIENT. (MINI-BREAKERS NOT ACCEPTABLE)
2. MAGNETIC INSTANTANEOUS TRIP ELEMENTS IN CIRCUIT BREAKERS, TO OPERATE ONLY WHEN THE VALUE OF CURRENT REACHES SETTING.

4. DISCONNECT SWITCHES FUSED AND UNFUSED
1. ENCLOSED MANUAL AIR BREAK SWITCHES IN NON-HAZARDOUS LOCATIONS: TO C.S.A. C22.2 NO. 4.
2. FUSE HOLDER ASSEMBLIES TO C.S.A. C22.2 NO. 39.
3. FUSIBLE AND NON-FUSIBLE DISCONNECT SWITCHES AS INDICATED.
4. PROVISION FOR PADLOCKING IN ON/OFF SWITCH POSITION BY THREE LOCKS
5. MECHANICALLY-INTERLOCKED DOOR TO PREVENT OPENING WHEN HANDLE IN 'ON' POSITION
6. QUICK-MAKE, QUICK-BREAK ACTION.
7. ON/OFF SWITCH POSITION INDICATION ON SWITCH ENCLOSURE COVER.
8. C.S.A. ENCLOSURE 1 UNLESS NOTED OTHERWISE.
9. EATON CUTLER HAMMER, SQUARE D, SIEMENS CANADA MANUFACTURE.

5. CONDUCTORS
1. ALL CONDUCTORS SHALL BE COPPER UNLESS INDICATED OTHERWISE.
2. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #8 AND LARGER SHALL BE STRANDED.
3. CONDUCTORS SHALL BE SIZED #12 AWG MINIMUM, EXCEPT FOR CONTROL CIRCUITS WHERE #14 AWG MINIMUM SIZE IS PERMITTED. FEEDER SIZES AS INDICATED.
4. PANEL FEEDER LENGTHS SHALL BE CONTRACTOR VERIFIED FOR LENGTH OF PROPOSED INSTALLATION PATH SO AS NOT TO EXCEED 3% VOLTAGE DROP ON INSTALLATION. FEEDERS EXCEEDING THE LENGTH OF THE ALLOWABLE AMPACITY SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BEGINNING ANY ROUGH-INS.
5. SIZE CONDUCTORS FOR A 2% MAXIMUM VOLTAGE DROP FROM OVERCURRENT DEVICE TO FARTHEST OUTLET.
6. CONDUCTOR INSULATION RATED FOR 600V MINIMUM UNLESS STATED OTHERWISE.
7. CONDUCTOR TYPES:
1. TW75, TWU TO C.S.A. #C22.2 NO. 75
2. RW90, RWU90 (XLPE) TO C.S.A. #C22.2 NO. 38
3. TW75, RW90 (XLPE) - INSIDE BUILDING.
4. TWU, RWU90 (XLPE) - CONDUCTORS DIRECT BURIED OR IN CONDUIT OUTSIDE BUILDING.
5. BX (ARMOURED CABLE) IS ONLY PERMITTED FOR LIGHT FIXTURE DROPS IN ACCOUSTIC CEILINGS (MAX LENGTH 5'-0"), AND MAY BE USED IN HOLLOW PARTITIONS FOR SWITCH [AND/OR RECEPTACLE DROPS] OR SUSPENDED CEILING FOR FIXTURE DROPS ONLY. ANY DROPS SHALL NOT EXCEED 3.0m (10'-0"). AC-90 (BX ARMOURED CABLE) IS NOT TO BE INSTALLED IN OPEN CEILINGS OR ANY OTHER EXPOSED APPLICATION. ALL CABLES ARE TO BE PROPERLY FASTENED TO BUILDING STRUCTURE IN A NEAT AND PROFESSIONAL MANNER. [USE OF AC-90 IN METAL STUD CONSTRUCTION HOLLOW PARTITION IS TO BE LIMITED TO A MAXIMUM OF 3.0m (10'-0").] EXCESSIVE USE OF AC-90, IN THE OPINION OF THE ENGINEER, WILL REQUIRE ELECTRICAL CONTRACTOR TO REPLACE ALL NEW WIRING WITH PROPER CONDUIT AND WIRE AT CONTRACTORS EXPENSE.

6. FASTENINGS AND SUPPORTS
1. SUPPORT EQUIPMENT, CONDUIT OR CABLES USING CLIPS, SPRING-LOADED BOLTS, CABLE CLAMPS DESIGNED AS ACCESSORIES TO BASIC CHANNEL MEMBERS.
2. INSTALL FASTENINGS AND SUPPORTS AS REQUIRED FOR EACH TYPE OF EQUIPMENT CABLES AND CONDUIT AND IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION.

7. CONDUITS
1. RIGID, GALVANIZED STEEL THREADED CONDUIT TO C.S.A. C22.2, NO. 45, SIZE AS INDICATED.
2. ELECTRICAL METALLIC TUBING (EMT) WITH COUPLINGS AND EXPANDED ENDS AS REQUIRED, TO C.S.A. C22.2, NO. 83, SIZE AS INDICATED.
3. RIGID PVC (UNPLASTICIZED) CONDUIT FOR EXPOSED, ABOVE GROUND WORK, TO C.S.A. C22.2, NO. 211.2, SIZE AS INDICATED. FLEXIBLE PVC IS NOT PERMITTED.
4. FLEXIBLE METAL CONDUIT AND LIQUID-TIGHT FLEXIBLE METAL CONDUIT TO C.S.A. C22.2, NO. 56.
5. EMT CONDUIT FITTINGS, IE. CONNECTORS, COUPLINGS, TO C.S.A. C22.2, NO. 18, ZINC-PLATED STEEL/MALLEABLE IRON CONSTRUCTION. ALL CONNECTIONS AND COUPLINGS TO BE SET SCREW TYPE, IE. CONCRETE TIGHT.
6. CONDUIT SIZES SHALL BE A MINIMUM OF 3/4" AND CONFORM TO ELECTRICAL SAFETY CODE. WHERE SIZES ARE INDICATED AND THEY EXCEED CODE, THEY SHALL NOT BE REDUCED.
7. USE RIGID, GALVANIZED STEEL, THREADED CONDUIT WHERE CONDUIT IS SUBJECT TO MECHANICAL INJURY.
8. RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES.
9. USE EMT FOR ALL WIRING FROM OUTLET BOX TO SOURCE.
10. INSTALL NYLON PULL FISH WIRE IN EMPTY CONDUITS AND TERMINATE UNDER SCREW LEAVING 12" SLACK. TAG FISH WIRE IDENTIFYING SYSTEM.
11. DO NOT LOCATE CONDUITS LESS THAN 3" (75 MM) PARALLEL TO STEAM OR HOT WATER LINES WITH A MINIMUM OF 1" (25 MM) AT CROSS-OVERS.
12. IN-SLAB CONDUIT: LOCATE TO SUIT REINFORCING STEEL. INSTALL IN CENTRE 1/2 OF SLAB.
13. PROVIDE AND INSTALL 4-38mm (4 1-1/2") SPARE CONDUITS UP TO CEILING SPACE FROM EACH FLUSH MOUNTED ELECTRICAL PANEL. TERMINATE IN 300mm X 300mm (12'x12') JUNCTION BOXES IN ACCESSIBLE CEILING SPACE.

8. JUNCTION AND PULL BOXES
1. WELDED STEEL CONSTRUCTION WIRE SCREW-ON FLAT COVERS FOR SURFACE MOUNTING.
2. COVERS WITH 1" (25 MM) MINIMUM EXTENSION ALL AROUND, FOR FLUSH-MOUNTED PULL AND JUNCTION BOXES.
3. INSTALL PULL BOXES IN CONDUIT RUNS SO AS NOT TO EXCEED 30 M OF CONDUIT RUN OR THE EQUIVALENT OF TWO (2) 90° BENDS BETWEEN PULL BOXES.

9. OUTLET AND CONDUIT BOXES:
1. ALL LIGHTING FIXTURES, RECEPTACLES AND OTHER WIRING DEVICES FOR ANY CONDUIT SYSTEM SHOWN SHALL BE PROVIDED WITH AN OUTLET BOX.
2. 4" (102 MM) OCTAGON OR SQUARE OUTLET BOXES OR LARGER, COMPLETE WITH FITTINGS FOR LIGHTING FIXTURES AND AS REQUIRED FOR SPECIAL DEVICES.
3. WALL OUTLET BOXES SHALL BE:
1. NO. 1104 SERIES, FLUSH MOUNTED IN DRYWALL PARTITIONS, U.N.O.
2. MBS SERIES MASONRY BOXES (GALVANIZED STEEL) FLUSH MOUNTED IN MASONRY WALLS (BLOCK WALLS).
3. GANG BOXES SHALL BE USED AT LOCATIONS WHERE DEVICES ARE GROUPED. PROVIDE BARRIERS AS REQUIRED.
4. BLANK COVER PLATES FOR BOXES WITHOUT WIRING DEVICES.

10. TRANSFORMERS
1. TRANSFORMERS SHALL BE COMPLETE WITH COPPER WINDINGS AND MEET THE REQUIREMENTS OF CSA B02.2-CURRENT EDITION FOR ENERGY EFFICIENCY.
2. TRANSFORMERS SHALL BE GENERAL PURPOSE, SUITABLE FOR SPRINKLER LOCATION WITH DELTA/WYE CONFIGURATION 600/120/208V, 3PH, 4W SECONDARY C/W THREE (3) COPPER WINDINGS.
3. MOUNT DRY TYPE TRANSFORMER UP TO 75kVA ON WALL WITH ANGLE IRON FRAME SECURELY SUPPORTED FROM STRUCTURE AND VIBRO-ACOUSTIC ISOLATORS, UNO.
4. MOUNT DRY TYPE TRANSFORMER 75kVA AND ABOVE ON 4" CONCRETE PAD C/W VIBRO-ACOU

3. INSTALLATION
   1. INSTALL RACEWAY SYSTEM, INCLUDING OVERHEAD DISTRIBUTION SYSTEM, FISH WIRE, TERMINAL CABINETS, OUTLET BOXES, FLOOR BOXES, PULL BOXES, COVER PLATES, CONDUIT, SLEEVES AND CAPS, SERVICE POLES, MISCELLANEOUS AND POSITIONING MATERIAL TO CONSTITUTE COMPLETE SYSTEM.
   2. ALL SPECIFIED TELEPHONE AND DATA TERMINATION BOXES ARE TO BE FLUSH MOUNTED IN THE WALL 300mm ABOVE THE FLOOR UNLESS OTHERWISE SPECIFIED. THE WALL TERMINATION BOXES ARE TO BE 100mm X 54mm TO ACCOMMODATE 25mm CONDUIT. ALL CONDUIT FROM WALL TERMINATION BOXES IS TO BE 25mm UNLESS OTHERWISE SPECIFIED.
   3. ALL CONDUIT RUNS ARE TO BE CONTINUOUS FROM THE SPECIFIED OUTLET LOCATION TO THE ELECTRICAL ROOM OR TELEPHONE BACKBOARD. ALL JUNCTION AND PULL BOXES ARE TO BE ACCESSIBLE.
   4. ALL EMPTY CONDUIT IS TO HAVE BOTH ENDS OF THE CONDUIT RUN LABELLED AS ITS PURPOSE AND DESTINATION. ALL EMPTY CONDUIT RUNS ARE TO HAVE A PULL CORD INSTALLED THROUGH THEIR ENTIRE RUN WITH BOTH ENDS BEING TIED OFF.
   5. CONDUITS FROM EACH TELEPHONE AND DATA OUTLET TO BE 20mm (3/4") EMT INTO ACCESSIBLE CEILING SPACE OR AS SHOWN ON DRAWINGS.
   6. INSTALL BLANK PLATES FOR ALL UNUSED OUTLETS.

7. SURFACE RACEWAY SYSTEM
   1. PRODUCT DATA
      1. SUBMIT PRODUCT DATA IN ACCORDANCE WITH SECTION 1.14
      2. INDICATE TYPES OF RACEWAYS WITH TERMINOLOGY SIMILAR TO THAT USED IN THIS SECTION.
      3. ALL WIRING IS TO BE FISHED IN WALLS WITH CONDUITS. SURFACE RACEWAY SHALL BE INSTALLED WHERE WALLS ARE NOT FISHABLE (IE. STRUCTURAL CONCRETE) AND MUST BE DONE WITH PERMISSION OF THE OWNER/CONSULTANT UNLESS SPECIFICALLY NOTED AS SURFACE RACEWAY ON THE DRAWINGS.

   2. PRODUCTS
      1. LOW PROFILE RACEWAY
         1. TWO PIECE, STEEL ASSEMBLY
         2. FINISH: IVORY
         3. NECESSARY SWITCH, RECEPTACLE, EXTENSION BOXES, ADAPTERS AND UTILITY FITTINGS REQUIRED FOR COMPLETE INSTALLATION.
         4. HUBBELL 500 [WIREMOLD 500] SERIES OR APPROVED EQUAL
      2. TWO CHANNEL RACEWAY
         1. TWO PIECE, STEEL ASSEMBLY, C/W CENTRE BARRIER.
         2. FINISH: GRAY OR AS INDICATED BY ARCHITECT FROM STANDARD COLOUR CHOICE.
         3. NECESSARY SWITCH, RECEPTACLE, EXTENSION BOXES, ADAPTERS AND UTILITY FITTINGS REQUIRED FOR COMPLETE INSTALLATION.
         4. HUBBELL 4700 SERIES [WIREMOLD D54000] OR APPROVED EQUAL
      3. FITTINGS
         1. ELBOWS, TEES, COUPLINGS AND HANGER FITTINGS: MANUFACTURED AS ACCESSORIES TO RACEWAY SUPPLIED.

   4. INSTALLATION
      1. INSTALL RACEWAYS BEFORE INSTALLATION OF WIRING. INSTALL COVERS FOR RACEWAYS AND FITTINGS AFTER INSTALLATION OR WIRING.
      2. INSTALL CONDUIT FOR RACEWAY IN WALL. NO RACEWAY SHALL BE INSTALLED FROM THE CEILING TO FEED HORIZONTAL RUNS.
      3. INSTALL SUPPORTING BRACKETS, ELBOWS, TEES, CONNECTORS, FITTINGS, BUSHINGS, ADAPTORS AS REQUIRED.
      4. KEEP NUMBER OF ELBOWS, OFFSETS, CONNECTIONS TO MINIMUM.
      5. USE WIRING WITH MECHANICAL PROTECTION IN CHANNEL RACEWAYS.
      6. INSTALL BARRIERS IN RACEWAYS WHERE DIFFERENT VOLTAGE SYSTEMS ARE INDICATED.

8. EXISTING FIRE ALARM SYSTEM
   1. GENERAL
      1. THE EXISTING FIRE ALARM SYSTEM IS OF XXXXX MANUFACTURE TYPE XXXXX.
      2. PROVIDE NEW FIRE ALARM SYSTEM OF XXXXX MANUFACTURE TYPE XXXXX. NEW SYSTEM AND DEVICES SHALL BE ULC LISTED, LABELED AND SUPPLIED BY SINGLE MANUFACTURER THROUGHOUT THE PROJECT.
      3. ALL FIRE DETECTION AND SIGNALING DEVICES SHALL BE CONNECTED TO ZONES AS INDICATED ON PLANS.
      4. SUPPLY AND INSTALL ADDITIONAL THERMAL DETECTORS, MANUAL PULL STATIONS, FIRE BELLS AND SMOKE DETECTORS, ALL AS SHOWN ON DRAWINGS.
      5. WIRE NEW AND RELOCATED DEVICES INTO FIRE ALARM ZONE IN THIS AREA.
      6. ALL NEW WIRING FOR ALARM SYSTEM SHALL BE MINIMUM #14 RW90 RUN IN CONCEALED CONDUIT.
      7. ELECTRICAL CONTRACTOR IS TO ENGAGE AN APPROVED TESTING COMPANY TO VERIFY THAT ALL NEW AND EXISTING FIRE ALARM DEVICES WITHIN SCOPE OF WORK AREA HAVE BEEN WIRED AND ARE OPERATING PROPERLY. PROVIDE A CERTIFICATE OF VERIFICATION AND TEST REPORT. ELECTRICAL CONTRACTOR TO PROVIDE ASSISTANCE TO TESTING COMPANY AS REQUIRED BY THEM. INCLUDE ALL COSTS IN TENDER PRICE.
      8. SYSTEM TO BE INSTALLED IN ACCORDANCE WITH CAN/ULC S-524 (CURRENT EDITION) AND OFC-410(M).
      9. TESTS AND VERIFICATION TO BE PERFORMED IN ACCORDANCE WITH CAN/ULC-S537 (CURRENT EDITION).
      10. WHERE FIRE PROTECTION AND LIFE SAFETY SYSTEMS, AND SYSTEMS WITH FIRE PROTECTION AND LIFE SAFETY FUNCTIONS ARE INTEGRATED WITH EACH OTHER; THE SYSTEMS SHALL BE TESTED AS A WHOLE IN ACCORDANCE WITH CAN/ULC-S1001, "INTEGRATED SYSTEMS TESTING OF FIRE PROTECTION AND LIFE SAFETY SYSTEMS", TO VERIFY THAT THE SYSTEMS HAVE BEEN PROPERLY INTEGRATED.
      11. PROVIDE 3/4"∅ CONDUIT DIRECTLY TO TELEPHONE BACKBOARD FOR TELEPHONE LINE AND CONNECTION BY MONITOR COMPANY.
      12. PROVIDE 4#14 WIRES TO EACH ELEVATOR CONTROLLER FROM MAIN FIRE CONTROL PANEL FOR ELEVATOR RECALL.
      13. SMOKE DETECTORS IN FRONT OF ELEVATOR DOORS SHALL BE C/W NORMALLY CLOSED CONTACTS THE OPEN UPON ACTIVATION.
      14. PROVIDE AND INSTALL LAMACOID GRAPHICS BESIDE MAIN CONTROL PANEL AND ANNUNCIATOR PANEL.
      15. PROVIDE OPERATION AND MAINTENANCE DATA FOR FIRE ALARM SYSTEM.
      16. ARRANGE AND PAY FOR ON-SITE LECTURES AND DEMONSTRATIONS BY FIRE ALARM EQUIPMENT MANUFACTURER TO TRAIN OPERATIONAL PERSONNEL IN USE AND MAINTENANCE OF FIRE ALARM SYSTEM.
      17. INCLUDE FOR ALL COSTS INVOLVED FROM BOTH MANUFACTURERS AND THE ELECTRICAL CONTRACTOR'S WORK IN TOTAL TENDER PRICE FROM THE ELECTRICAL CONTRACTOR.
      18. THE CONTRACTOR SHALL ENSURE THE VERIFICATION OF THE FIRE ALARM INCLUDES ANY SECURITY DOORS. THE CONTRACTOR AND FIRE ALARM COMPANY SHALL TEST THE DOORS TO ENSURE THEY CLOSE AND/OR UNLOCK ON LOCAL CONTROL AND ON FACILITY WIDE. THE DOORS ARE TO BE TESTED AS A COMPLETE SYSTEM WITH THE SECURITY AND FIRE ALARM DEVICES.
      19. [VERIFY FIRE ALARM SYSTEM OF THE ENTIRE BUILDING AND PROVIDE A CERTIFICATE OF VERIFICATION AND TEST REPORT.]

9. EMERGENCY LIGHTING SYSTEM:
   1. GENERAL
      1. SUPPLY AND INSTALL SEPARATE 12 VOLT DC LIGHTING SYSTEMS AS SHOWN ON THE PLANS AND AS DESCRIBED HEREIN.
      2. WIRE 347 VOLT NORMAL POWER TO ALL EMERGENCY LIGHT FIXTURES AND ALL "EXIT" FIXTURES AS SHOWN ON THE PLANS.
      3. THE BATTERY UNIT SHALL MEET THE REQUIREMENTS OF CSA STANDARD C22.2, NO. 141 - UNIT EQUIPMENT FOR EMERGENCY LIGHTING.
      4. THE EMERGENCY UNITS SHALL BE CAPABLE OF SUPPLYING THE WATTAGE AS INDICATED, FOR AT LEAST THIRTY (30) MINUTES TO 91% END VOLTAGE; AND FOR NINETY (90) MINUTES TO AUTOMATIC CUT-OFF.
      5. CHARGER AND CONTROLS SHALL CONSIST OF THE FOLLOWING STANDARD FEATURES:
         1. SOLID STATE AUTOMATIC-TYPE CHARTER.
         2. PRESS TO TEST SWITCH.
         3. "ON" AND "HIGH CHARGE" PILOT LIGHTS.
         4. READY DISCONNECT SWITCH AND LIGHT.
         5. FUSED PROTECTION.
         6. AUTOMATIC TEST FEATURE COMPLETE WITH ALARM.
         7. REMOTE TEST FEATURE.
         8. SUPPLY VOLTAGE: 120/347 VAC.
         9. OUTPUT VOLTAGE: 12 VDC, SELF-POWERED
         10. SEALED, MAINTENANCE FREE.
         11. LED HEADS WHERE SPECIFIED AS A BATTERY UNIT WITH HEADS.
      6. EACH BATTERY SHALL OPERATE AT LEAST TEN (10) YEARS ENTIRELY UNATTENDED. THE BATTERY SHALL BE SEALED LEAD, LONG-LIFE TYPE.
      7. MOUNTING HEIGHTS OF ALL BATTERY UNITS TO BE 2130 MM (7'). INSTALL UNIT AS INDICATED ON DRAWINGS.
      8. WARRANTY: ALL EQUIPMENT IS TO BE WARRANTED FOR A PERIOD OF TWO (2) YEARS FROM THE DATE OF FINAL ACCEPTANCE. FOR BATTERIES, THE WARRANTY IS EXTENDED TO 120 MONTHS, WITH A NO-CHARGE REPLACEMENT DURING THE FIRST 5 YEARS AND A PRO-RATE CHARGE ON THE SECOND 5 YEARS.
      9. WIRING: WIRING TO THE EMERGENCY LIGHTS AND EXIT FIXTURES SHALL BE RW90 MINIMUM # 10 GAUGE FOR EACH CIRCUIT AND RUN IN CONDUIT. WIRING SIZES IN ACCORDANCE WITH MANUFACTURERS COMMENDATIONS FOR DISTANCES REQUIRED.
      10. REMOTE EMERGENCY LIGHTING FIXTURES: SUPPLY AND INSTALL EXIT LIGHTING FIXTURES, TYPE 'X', AND LAMPS AS SPECIFIED IN LIGHT FIXTURE SCHEDULE AND SHOWN ON DRAWINGS.
      11. WIRE ALL SYSTEMS USING CONCEALED #10 AWG WIRING RUN IN EMT OR ARMOURED CABLE.

   2. TESTING AND VERIFICATION:
      1. WHEN THE INSTALLATION OF THE BATTERY UNITS, AND ALL ASSOCIATED REMOTE EMERGENCY LIGHTS HAVE BEEN COMPLETED, RETAIN THE SERVICES OF A QUALIFIED REPRESENTATIVE OF THE EQUIPMENT MANUFACTURER TO TEST THE COMPLETION AND OPERATION OF THE SYSTEM.
      2. FOLLOWING COMPLETION OF THE TEST, OBTAIN A LETTER FROM THE MANUFACTURER/SUPPLIER, STATING THAT THE NEW BATTERY UNIT AND ASSOCIATED LIGHTS HAVE BEEN COMPLETELY CHECKED AND ARE OPERATING SATISFACTORILY.
      3. A COPY OF THIS LETTER IS TO BE FORWARDED TO THE CONSULTING ENGINEER AND ONE COPY TO THE ARCHITECT.

10. EXIT LIGHTS:
    1. PRODUCTS
       1. AS SHOWN ON DRAWINGS.
       2. ALL EQUIPMENT IS TO BE WARRANTED FOR A PERIOD OF TWO (2) YEAR FROM DATE OF FINAL ACCEPTANCE.
       3. EXIT LIGHT TO BE SUITABLE FOR 120V/347 AC AND 12V DC.

    2. INSTALLATION
       1. INSTALL EXIT LIGHTS.
       2. CONNECT FIXTURES TO EXIT LIGHT CIRCUITS.
       3. CONNECT EMERGENCY LAMP SOCKETS TO EMERGENCY CIRCUITS.
       4. ENSURE THAT EXIT LIGHT CIRCUIT BREAKER IS LOCKED IN ON POSITION.

11. OVER FLOOR RACEWAY
    1. SHOP DRAWING PRODUCT DATA
       1. PROVIDE SHOP DRAWINGS IN ACCORDANCE WITH SECTION 1.14.
       2. SHOP DRAWINGS TO CLEARLY INDICATE ALL MATERIAL SUPPLIED BY THIS SECTION, INSTALLATION INSTRUCTIONS AND ALL DIMENSIONS.
    2. PRODUCTS
       1. CONNETRAC RACEWAY SYSTEMS. SYSTEM SHALL BE COMPLETE WILL ALL ACCESSORIES FOR A COMPLETE INSTALLATION. CONTRACTOR SHALL UTIZE THE MANUFACTURE POWER CABLE FOR USE WITH THE SYSTEM.
       2. THE CONTRACTOR SHALL PROVIDE LAYOUTS FOR VARIOUS RUN TYPES TO VERIFY PRODUCTS AND ACCESSORIES BEING USED ALONG WITH PROPOSED LAYOUTS. DATA CABLE COUNTS SHALL BE INCLUDED TO VERIFY CABLE FILL WITHIN THE RACEWAY HAS NOT BEEN EXCEEDED.
    3. INSTALLATION
       1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
       2. PROVIDE FURNITURE MONUMENTS TO TRANSITION FROM FURNITURE WHIP TO CONNECTRAC CABLE. FURNITURE WHIPS ARE TO BE SHORTENED TO LIMIT COILED CABLING ON THE FLOOR. CABLING SHALL BE NEAT AND TIDY.
       3. COMMUNICATIONS CABLING SHALL BE TRANSISTIONED TO SEALTIGHT CONDUIT AND CONNECTED TO THE FURNITURE.
       4. SLOPED FLOOR ACCESSORIES SHALL BE PROVIDED AND INSTALLED TO SUIT ARCHITECTS LAYOUT.
       5. BOARDROOM TABLES ARE TO HAVE POWER CIRCUITS ONLY. PROVIDE RACEWAY AND MANFACTURE POWER CABLE. RACEWAY SHALL RUN BETWEEN THE WALL AND A TABLE LEG. COORDINATE WORK ON SITE WITH TENNANTS FURNITURE SUPPLIER. TERMINATE WIRING IN JUNCTION BOX AND CONNECT TABLE MONUMENT PROVIDED BY OTHERS.

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LICENSED PROFESSIONAL ENGINEER
K. SEGUIN
Dec/10/24
PROVINCE OF ONTARIO

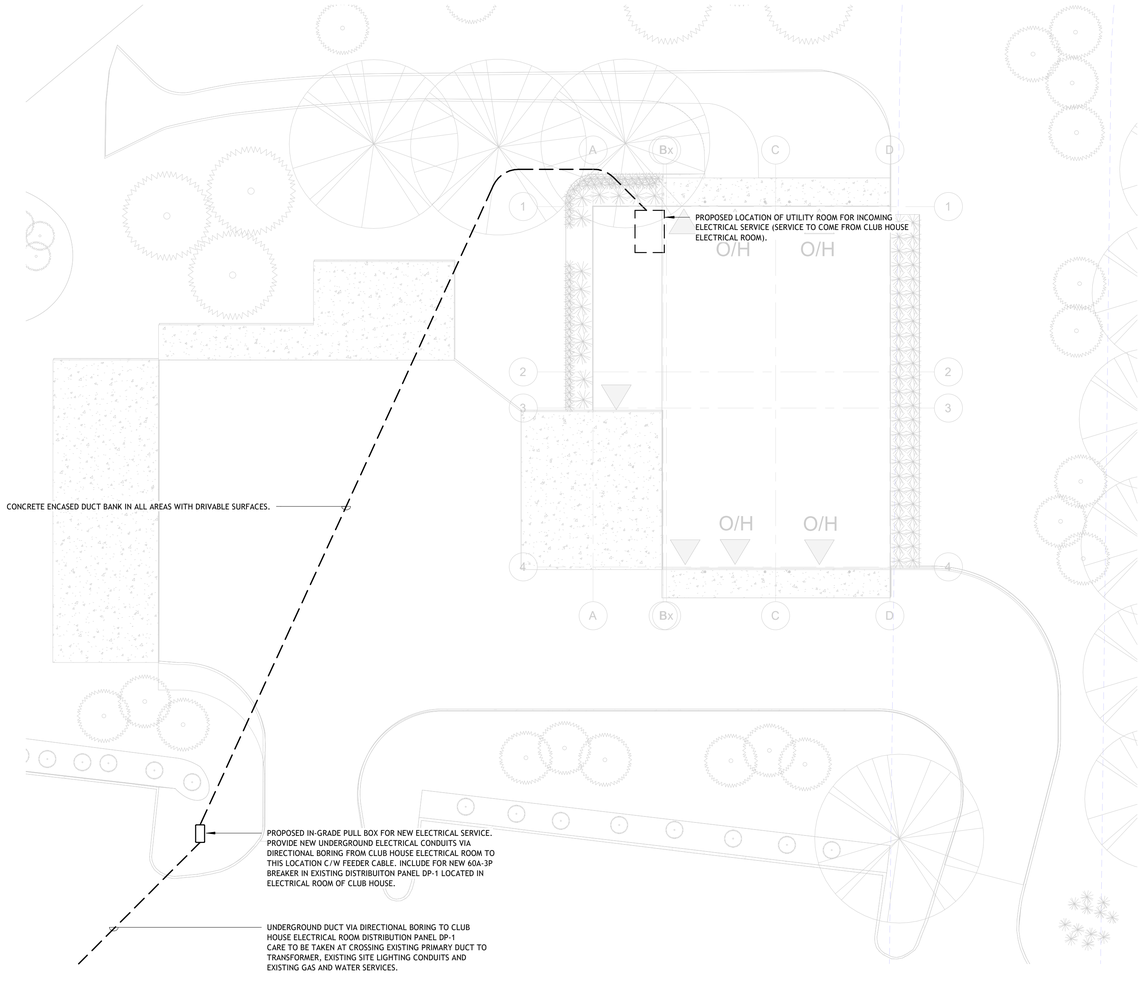
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PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
SPECIFICATIONS

| CHECKED BY: | DRAWN BY: |
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| KS | |
| DRAWING SCALE: NTS | DRAWING NO.: E051 |
| PROJECT NO.: 23-183 | |

DATE PLOTTED: 2024-12-10 2:48:00 PM PROJECT NUMBER & NAME: 23-183 GRETZKY GOLF COURSE FILE PATH: C:\Users\drich_j2ddug\OneDrive\Documents\23-183 Gretzky Golf Course Maintenance_E_1024_Daryl_Nicholls.rvt




SITE PLAN 1 / E100
1 : 200

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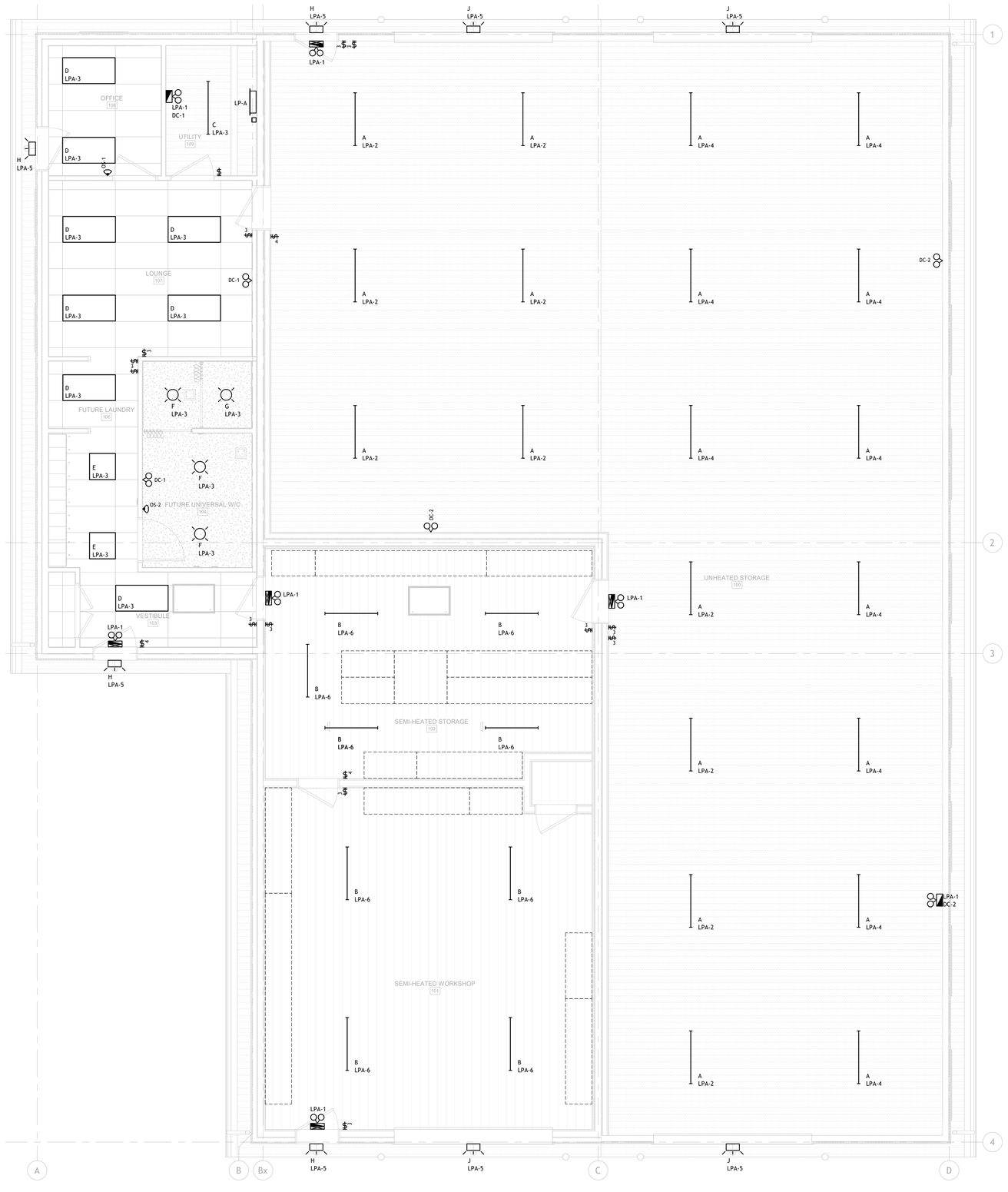
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PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
SITE PLAN

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| Checker | Author |
| DRAWING SCALE: 1 : 200 | DRAWING NO.: E100 |
| PROJECT NO.: 23-183 | |

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LEVEL 1 - LIGHTING (1 / E200)
1 : 50

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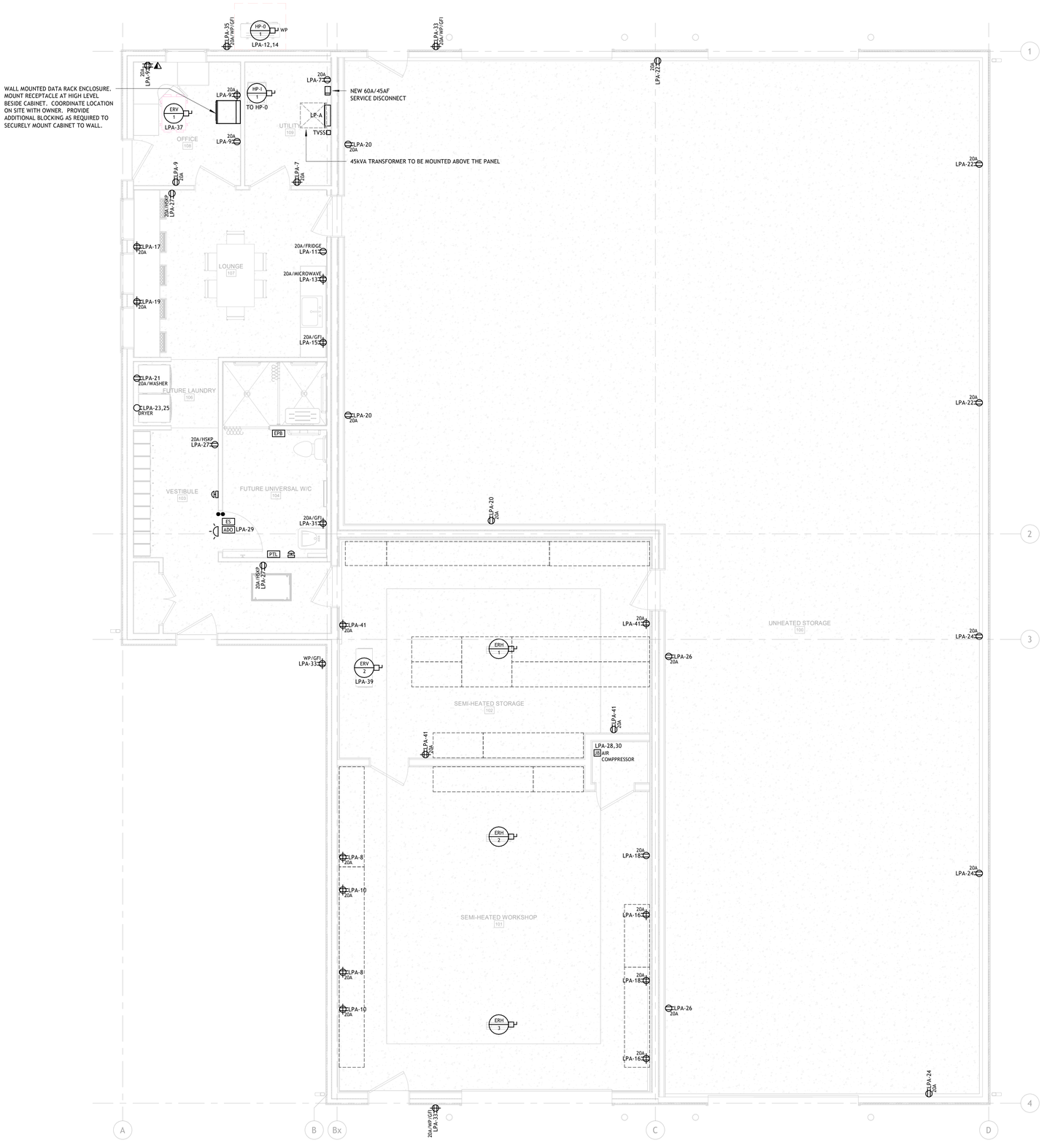
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MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
LEVEL 1 LIGHTING

| CHECKED BY: | DRAWN BY: |
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| KS | |
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| PROJECT NO.: 23-183 | |

DATE PLOTTED: 2024-12-10 2:48:02 PM PROJECT NUMBER & NAME: 23-183 GRETZKY GOLF COURSE FILE PATH: C:\Users\drisch_2z\dug\OneDrive\Documents\23-183 Gretzky Golf Course Maintenance_E_V24_Daryl_Nicholls.rvt




LEVEL 1 - POWER AND SYSTEMS 1 / E300
1 : 50

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LICENSED PROFESSIONAL ENGINEER
K. SEGUIN
Dec/10/24
PROVINCE OF ONTARIO

STAMP STRUCT.

PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
LEVEL 1 POWER & SYSTEMS PLAN

| CHECKED BY: | DRAWN BY: |
|---|---|
| KS | |
| DRAWING SCALE: 1 : 50 | DRAWING NO.: E300 |
| PROJECT NO.: 23-183 | |

DATE PLOTTED: 2024-12-10 2:48:03 PM PROJECT NUMBER & NAME: 23-183 GRETZKY GOLF COURSE FILE PATH: C:\Users\dnich_i2d\dug\OneDrive\Documents\23-183 Gretzky Golf Course Maintenance_E_V24_Daryl_Nicholls.rvt

DATE PLOTTED: 2024-12-10 2:48:03 PM PROJECT NUMBER & NAME: 23-183 GRETZKY GOLF COURSE FILE PATH: C:\Users\dmich_i2o4ug\OneDrive\Documents\23-183 Gretzky Golf Course Maintenance_E_V24_Daryl_Nicholls.rvt

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| NO. | DATE | ISSUANCE |
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# NEW BRANCH PANEL: LP-A

**Volts:** 120/208 Wye
**Phases:** 3
**Wires:** 4
**Mains Rating:** 225 A

**AIC Rating**
**Mains Type:** Copper
**Enclosure:** Type 2

**Supply From:**

Main Breaker: 60 A

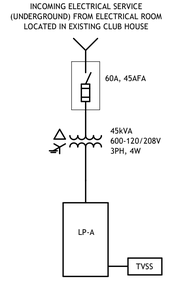
| CKT | Circuit Description | Trip | Poles | A | | B | | C | | Poles | Trip | Circuit Description | CKT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LPA-1 | EMERGENCY LIGHTING (LOCK) | 15 A | 1 | 480 W | 460 W | | | | | 1 | 20 A | LIGHTING | LPA-2 |
| LPA-3 | LIGHTING | 20 A | 1 | | | 394 W | 460 W | | | 1 | 20 A | LIGHTING | LPA-4 |
| LPA-5 | LIGHTING | 20 A | 1 | | | | | 136 W | 288 W | 1 | 20 A | LIGHTING | LPA-6 |
| LPA-7 | RECEPTACLE | 20 A | 1 | 400 W | 400 W | | | | | 1 | 20 A | RECEPTACLE | LPA-8 |
| LPA-9 | RECEPTACLE | 20 A | 1 | | | 1000 W | 400 W | | | 1 | 20 A | RECEPTACLE | LPA-10 |
| LPA-11 | FRIDGE | 20 A | 1 | | | | | 200 W | 2496 W | 2 | 40 A | HEAT PUMP | LPA-12 |
| LPA-13 | MICROWAVE | 20 A | 1 | 1000 W | 2496 W | | | | | | | | LPA-14 |
| LPA-15 | COUNTER RECEPTACLE | 20 A | 1 | | | 200 W | 400 W | | | 1 | 20 A | RECEPTACLE | LPA-16 |
| LPA-17 | COUNTER RECEPTACLE | 20 A | 1 | | | | | 200 W | 400 W | 1 | 20 A | RECEPTACLE | LPA-18 |
| LPA-19 | COUNTER RECEPTACLE | 20 A | 1 | 200 W | 600 W | | | | | 1 | 20 A | RECEPTACLE | LPA-20 |
| LPA-21 | WASHER | 20 A | 1 | | | 700 W | 600 W | | | 1 | 20 A | RECEPTACLE | LPA-22 |
| LPA-23 | DRYER | 30 A | 2 | | | | | 100 W | 600 W | 1 | 20 A | RECEPTACLE | LPA-24 |
| LPA-25 | | | | 100 W | 400 W | | | | | 1 | 20 A | RECEPTACLE | LPA-26 |
| LPA-27 | HOUSEKEEPING RECEPTACLES | 20 A | 1 | | | 300 W | 0 W | | | 2 | 15 A | AIR COMPRESSOR | LPA-28 |
| LPA-29 | AUTOMATIC DOOR | 15 A | 1 | | | | | 500 W | 0 W | | | | LPA-30 |
| LPA-31 | WASHROOM RECEPTACLE | 20 A | 1 | 200 W | 0 W | | | | | 1 | 20 A | SPARE | LPA-32 |
| LPA-33 | EXTERIOR RECEPTACLES | 20 A | 1 | | | 600 W | 0 W | | | 1 | 20 A | SPARE | LPA-34 |
| LPA-35 | EXTERIOR RECEPTACLE | 20 A | 1 | | | | | 200 W | 0 W | 1 | 20 A | SPARE | LPA-36 |
| LPA-37 | ERV-1 | 15 A | 1 | 233 W | 0 W | | | | | 1 | 20 A | SPARE | LPA-38 |
| LPA-39 | ERV-2 | 15 A | 1 | | | 347 W | 0 W | | | 1 | 20 A | SPARE | LPA-40 |
| LPA-41 | RECEPTACLE | 20 A | 1 | | | | | 800 W | 0 W | 1 | 20 A | SPARE | LPA-42 |
| LPA-43 | SPARE | 15 A | 1 | 0 W | 0 W | | | | | 1 | 20 A | SPARE | LPA-44 |
| LPA-45 | SPARE | 15 A | 1 | | | 0 W | 0 W | | | 1 | 20 A | SPARE | LPA-46 |
| LPA-47 | SPARE | 15 A | 1 | | | | | 0 W | 0 W | 1 | 20 A | SPARE | LPA-48 |
| LPA-49 | SPARE | 15 A | 1 | 0 W | 0 W | | | | | 1 | 20 A | SPARE | LPA-50 |
| LPA-51 | SPARE | 15 A | 1 | | | 0 W | 0 W | | | 1 | 20 A | SPARE | LPA-52 |
| LPA-53 | SPARE | 15 A | 1 | | | | | 0 W | 0 W | 1 | 20 A | SPARE | LPA-54 |
| LPA-55 | SPARE | 20 A | 1 | 0 W | 0 W | | | | | 3 | 30 A | TVSS | LPA-56 |
| LPA-57 | SPARE | 20 A | 1 | | | 0 W | 0 W | | | | | | LPA-58 |
| LPA-59 | SPARE | 20 A | 1 | | | | | 0 W | 0 W | | | | LPA-60 |
| | | | **Total Load:** | 6525 W | | 4964 W | | 5639 W | | 17128 W | | | |
| | | | **Total Amps:** | 55 A | | 41 A | | 48 A | | | | | |

**Panel Location:**

**Mounting:** Surface

Main Breaker Location: Seperate compartment from branch breakers.

**Notes:**




DETAIL NOTES:
A. PROVIDE NEW DISCONNECT, TRANSFORMER AND PANEL FOR BUILDING SERVICE
B. PANEL SHALL BE COMPLETE WITH A SURGE SUPRESSOR

SINGLE LINE DIAGRAM 1/E400
NTS

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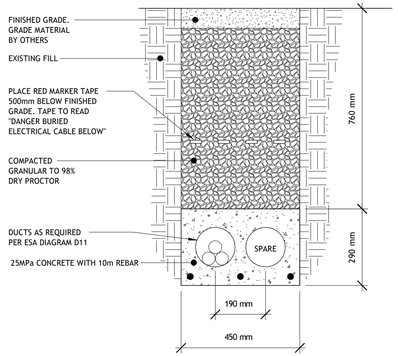
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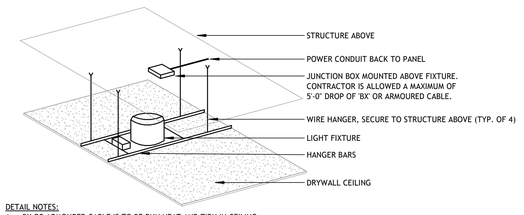
PROJECT TITLE:
GRETZKY GOLF COURSE
MAINTENANCE BUILDING
320 BALMORAL DRIVE
BRANTFORD, ON N3V 1E6

DRAWING TITLE:
SINGLE LINE DIAGRAM AND PANEL SCHEDULE

CHECKED BY: Checker
DRAWN BY:
DRAWING SCALE: NTS
DRAWING NO.: E400
PROJECT NO.: 23-183




DUCT BANK DETAIL 5
N.T.S. E500

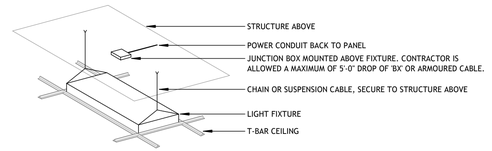



DETAIL NOTES:

A. BX OR ARMOURED CABLE IS TO BE RUN NEAT AND TIDY IN CEILING SPACE. PROVIDE CABLE TIES TO AFFIX TO SUSPENSION CHAINS. CLIP ENDS OF TIES.

B. JUNCTION BOXES ARE TO BE LOCATED CLOSE TO FIXTURES. PROVIDE P-TOUCH TYPE LABEL ON COVER PLATE WITH CIRCUIT NUMBER.

RECESSED DOWNLIGHT IN DRYWALL 4
NTS E500

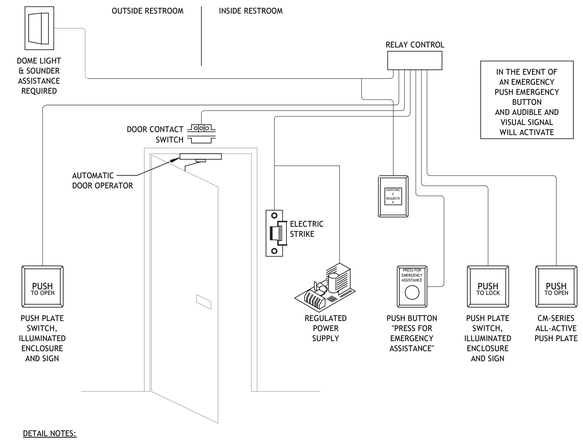



DETAIL NOTES:

A. BX OR ARMOURED CABLE IS TO BE RUN NEAT AND TIDY IN CEILING SPACE. PROVIDE CABLE TIES TO AFFIX TO SUSPENSION CHAINS. CLIP ENDS OF TIES.

B. JUNCTION BOXES ARE TO BE LOCATED CLOSE TO FIXTURES. PROVIDE P-TOUCH TYPE LABEL ON COVER PLATE WITH CIRCUIT NUMBER.

RECESSED FIXTURE IN T-BAR 3
NTS E500




DETAIL NOTES:

A. UNIVERSAL WASHROOM SHALL BE EQUIPPED WITH AN AUTOMATIC DOOR OPENER. THE OPENER SHALL ALSO INCLUDE A "PUSH TO LOCK" BUTTON ON THE INSIDE. ONCE ENGAGED, THIS WILL DISABLE THE EXTERIOR DOOR OPERATOR BUTTON. THE EXTERIOR OCCUPIED LIGHT WILL ILLUMINATE. WHEN THE PATRON HAS FINISHED USING THE WASHROOM, THEY SHALL PRESS THE DOOR OPERATOR BUTTON AND THE "PUSH TO LOCK" WILL DISENGAGE AND THE DOOR OPERATOR WILL OPEN THE DOOR AND TURN OFF THE OCCUPIED LIGHT.

B. THE JUNCTION BOX SHALL BE MOUNTED AT HIGH LEVEL ON THE INSIDE OF THE ROOM.

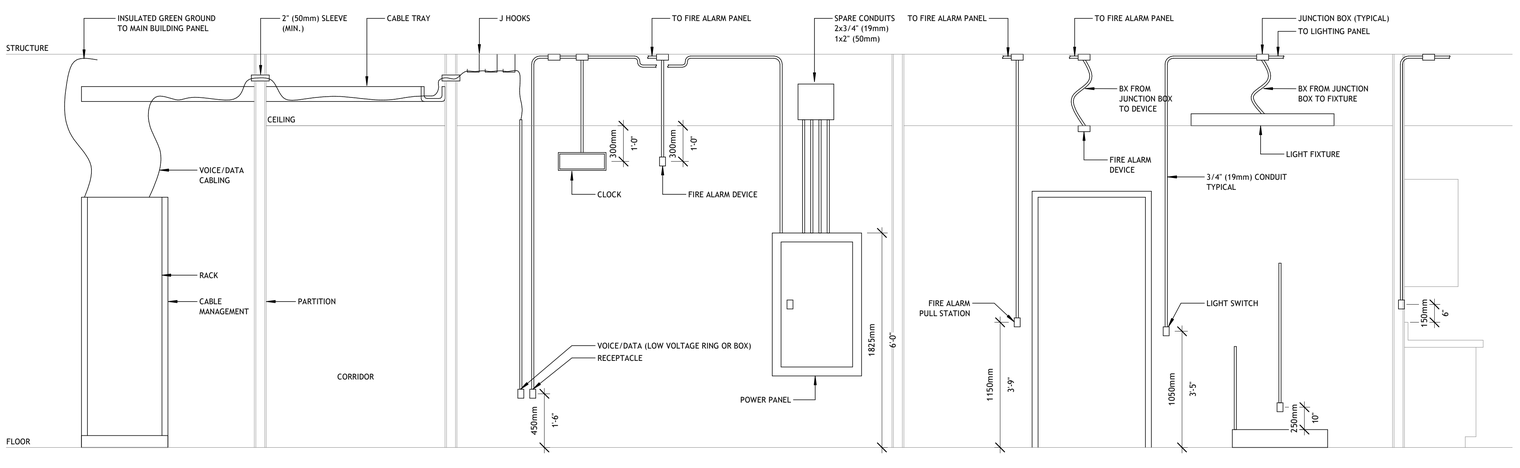
C. ALL CONDUITS SHALL BE A MINIMUM OF 3/4". PROVIDE PULL ROPES FOR LOW VOLTAGE WIRING BY OTHERS. CONDUITS ARE TO BE CONCEALED IN WALL. SURFACE DEVICES AND CONDUIT IS NOT PERMITTED.

D. COORDINATE THE LOCATION OF ALL DEVICES PRIOR TO ROUGH-IN WITH DOOR HARDWARE SUPPLIER/INSTALLER.

E. COORDINATE WORK WITH HARDWARE SUPPLIER AND PROVIDE ANY MATERIALS NOT INCLUDED IN THEIR QUOTE TO FACILITATE A COMPLETE SYSTEM.

F. TEST AND ADJUST THE OPERATION OF THE DOOR TO THE OWNERS SATISFACTION. PROVIDE TRAINING AS REQUIRED TO OWNERS MAINTENANCE STAFF ON DOOR OPERATION, MAINTENANCE AND ADJUSTMENT.

UNIVERSAL WASHROOM DETAIL 2
N.T.S. E500




DETAIL NOTES:

A. DETAIL IS APPLICABLE FOR DEVICES SHOWN ON PLANS. ALL THE DEVICES INDICATED IN THE DETAIL MAY NOT OCCUR ON THE PLANS.

B. ALL CONDUITS SHALL HAVE BUSHINGS INSTALLED TO PREVENT CHAFFING OF WIRE(S).

C. ALL CONDUITS ARE TO GO DIRECTLY FROM THE OUTLET BOX UP THE WALL INTO THE CEILING SPACE. NO HORIZONTAL RUNS OF CONDUIT, OR GROUPING OF CONDUITS WITH OTHER SERVICES IN CLOSE PROXIMITY.

D. CONDUITS ARE TO HAVE PULL ROPES INSTALLED AND LEFT BEHIND TO ALLOW THE PULLING OF ADDITIONAL SERVICES IN THE FUTURE.

E. ALL BREACHES IN WALLS ARE TO BE FIRESTOPPED TO MAINTAIN THE FIRE SEPARATIONS.

F. PROVIDE SUPPORTS FOR ALL CEILING MOUNTED ELEMENTS (IE CHAIN HANGERS FOR FIXTURES ETC.) DEVICES SHALL NOT BE SUPPORTED BY A CEILING TILE.

TYPICAL MOUNTING HEIGHTS/INSTALLATION DETAIL 1
N.T.S. E500

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BRANTFORD, ON N3V 1E6

DRAWING TITLE:
DETAILS

| CHECKED BY: | DRAWN BY: |
|---|---|
| KS | |
| DRAWING SCALE: As indicated | DRAWING NO.: E500 |
| PROJECT NO.: 23-183 | |

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