UPPER LAKE LOUISE
TRANSIT SHELTER
PARKS CANADA

ARCHITECTURAL
DRAWING LIST

STRUCTURAL
DRAWING LIST

ELECTRICAL
DRAWING LIST

BANFF NATIONAL PARK

NORR JOB NO: NCCA20-0035
PARKS CANADA JOB NUMBER: NOT ASSIGNED

BP# BNP 20-1036

ISSUED FOR CONSTRUCTION

(SEPTEMBER 11, 2020)

ARCHITECTURAL
NORR ARCHITECTS ENGINEERS PLANNERS
SUITE 2300, 411 - 1st STREET S.E.
CALGARY, ALBERTA T2G 4Y5

PHONE: 403.264.4000
FAX: 403.269.7215

STRUCTURAL
NORR ARCHITECTS ENGINEERS PLANNERS
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ELECTRICAL
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CALGARY, ALBERTA T2G 4Y5

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FAX: 403.269.7215

GENERAL NOTES:

1. ALL DRAWINGS, INCLUDING ENGINEERING DOCUMENTS, SHOULD BE READ IN CONJUNCTION WITH ONE ANOTHER, AS WELL AS THE SPECIFICATIONS AND INSTRUMENTS OF THE CONTRACT DOCUMENT PACKAGE.
2. ALL CONSTRUCTION TO COMPLY WITH NATIONAL AND ALBERTA BUILDING CODE REGULATIONS, RULES AND BY-LAWS SET BY THE AUTHORITY HAVING JURISDICTION.
3. VERIFY ALL CONDITIONS AND DIMENSIONS ON SITE PRIOR TO FABRICATION PROMPTLY NOTIFY THE ARCHITECT OF ANY ERRORS OR OMISSIONS.
4. DIMENSIONS ARE TAKEN TO GRID LINES; TO FACE OF STUD AT INTERIOR STUD WALLS; TO OUTSIDE FACE OF SHEATHING AT EXTERIOR WALLS; TO FACE OF CONCRETE AND/OR BLOCK WALLS; AND TO FACE OF CONCRETE SLAB.
5. THE GENERAL CONTRACTOR IS TO ARRANGE FOR AND COORDINATE ALL INCOMING AND OUTGOING MECHANICAL AND ELECTRICAL SERVICES FOR THIS PROJECT, EXCEPT WHEN NOTED OTHERWISE.
6. THE GENERAL CONTRACTOR IS TO COORDINATE ALL ACTIVITIES AS REQUIRED TO ENSURE EFFICIENT, CORRECT, AND ORDERLY INSTALLATION OF EACH PART OF THE WORK TO AVOID CONFLICT IN THE TRADE WORK AND SCHEDULE.
7. REFER TO STRUCTURAL DRAWINGS FOR COLUMN SHAPES, SIZES, LOCATIONS, AND REINFORCEMENT, EXCEPT WHEN NOTED OTHERWISE.
8. ALL DOORS AND WINDOWS REFERENCED ON THE PLANS AND SCHEDULES ARE SHOWN NOMINAL SIZE. CONFIRM AND VERIFY ALL ROUGH OPENING SIZE REQUIREMENTS WITH THE SELECTED PRODUCT MANUFACTURER AND SITE CONDITIONS PRIOR TO INSTALLATION.
9. PROVIDE AND INSTALL SOLID BLOCKING AND BACKING WITHIN WALLS FOR ALL ELECTRICAL FIXTURES AND EQUIPMENT, ETC. AS REQUIRED FOR PROPER ANCHORING. REFER TO SPECIFICATIONS FOR BACKING REQUIREMENTS AT ELECTRICAL PANELS.
10. ALL CONSTRUCTION TO COMPLY WITH INDUSTRY TRADE STANDARDS, AS WELL AS MANUFACTURERS' RECOMMENDATIONS, TO THE EXTENT THAT THOSE INSTRUCTIONS AND RECOMMENDATIONS ARE MORE EXPLICIT OR STRINGENT THEN THE REQUIREMENTS CONTAINED IN THESE CONTRACT DOCUMENTS.
11. CONFIRM ALL ROUGH OPENING SIZES AND CONNECTION REQUIREMENTS FOR MECHANICAL, ELECTRICAL AND OWNER SUPPLIED EQUIPMENT. ADJUST ROUGH OPENING SIZES TO SUIT.
12. INSTALL OWNER SUPPLIED APPLIANCES AS DIRECTED, CENTERED, LEVEL, AND TRUE.

STRUCTURAL:

READ THESE DRAWINGS IN CONJUNCTION WITH STRUCTURAL ENGINEER'S DRAWINGS. WHERE STRUCTURAL DRAWINGS CONFLICT WITH THE REQUIREMENTS OF THE NATIONAL BUILDING CODE, THE STRUCTURAL ENGINEER SHALL BE CONSULTED FOR DIRECTION. NO CHANGE TO THE STRUCTURAL DESIGN SHALL BE IMPLEMENTED WITHOUT WRITTEN INSTRUCTIONS FROM THE STRUCTURAL ENGINEER

ELECTRICAL:

READ THESE DRAWINGS IN CONJUNCTION WITH ELECTRICAL ENGINEER'S DRAWINGS. WHERE ELECTRICAL DRAWINGS CONFLICT WITH THE REQUIREMENTS OF THE NATIONAL BUILDING CODE, THE ELECTRICAL ENGINEER SHALL BE CONSULTED FOR DIRECTION. NO CHANGE TO THE ELECTRICAL DESIGN SHALL BE IMPLEMENTED WITHOUT WRITTEN INSTRUCTIONS FROM THE ELECTRICAL ENGINEER

SYMBOL LEGEND:

F## — DENOTES CONSTRUCTION TYPE (SEE CONSTRUCTION ASSEMBLIES LIST)

- CONCRETE
- GYPSUM BOARD
- RIGID INSULATION
- OSB/PLYWOOD BOARD
- BATT INSULATION
- BLOWN INSULATION

ARCHITECTURAL ABBREVIATIONS

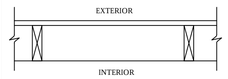
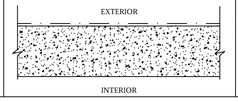
AFF	ABOVE FINISH FLOOR
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
BLDG	BUILDING
CPT	CARPET
CJ	CONTROL JOINT
℄	CENTERLINE
CL	CLOSET
CLG	CEILING
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
COORD	COORDINATE
CORR	CORRIDOR
C/W	COMPLETE WITH
D	DEPTH/DEEP
DN	DOWN
D/W	DISHWASHER
DWG	DRAWING
EA	EACH
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
F	FRIDGE
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FG	FIBREGLASS
FLR	FLOOR
F.R.R.	FIRE RESISTANCE RATING
GALV	GALVANIZED
GL	GLASS
GWB	GYPSUM WALL BOARD
HT	HEIGHT
INSUL	INSULATION
L	LONG
MAX	MAXIMUM
MC	MEDICINE CABINET
MECH	MECHANICAL
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MTD	MOUNTED
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OH	OVERHEAD
PL	PROPERTY LINE
PTD	PAINTED
PVC	POLYVINYL CHLORIDE
R	RADIUS OR REVERSE
R/H	RANGE AND HOOD FAN
RD	ROOF DRAIN
REQD	REQUIRED
REV	REVISION
RO	ROUGH OPENING
S	SINK
SIM	SIMILAR
SPEC	SPECIFICATION
ST	STEEL
STD	STANDARD
STRUCT	STRUCTURAL
T/O	TOP OF
T/G	TONGUE & GROOVE
TYP	TYPICAL
U/S	UNDERSIDE
VB	VAPOUR BARRIER
VEST	VESTIBULE
W	WIDTH
WIC	WALK IN CLOSET
W/ OR /W	WITH
W/D	WASHER AND DRYER
W/O	WALL OVEN

EXTERIOR & FOUNDATION WALL ASSEMBLIES:

- REFER TO ELEVATIONS FOR EXTERIOR FINISH MATERIALS.

WALL & PARTITION NOTES:

A. ALL INTERIOR WALLS EXTEND TO U/S OF STRUCTURE, UNLESS OTHERWISE NOTED.
B. FOR STUD SPACING, LINTEL SIZE, JOIST SPACING AND OTHER RELATED INFORMATION, REFER TO STRUCTURAL DRAWINGS
C. MECHANICAL LINES TO BE INSULATED - IN CONDITIONED SPACES. SEE ALSO MECHANICAL SPECIFICATIONS.
D. WHERE A WALL IS MADE UP OF DIFFERENT PARTITION TYPES, PROVIDE RESILIENT CHANNEL (IF REQUIRED) AND ADDITIONAL LAYER OF GYPSUM BOARD (IF REQUIRED), SO THAT FINISHED FACE IS SMOOTH, ALIGNED, AND CONTINUOUS.
E. GENERALLY DIMENSIONS ARE TAKEN TO FACE OF WALL FRAMING OR CONCRETE UNLESS SPECIFICALLY NOTED OTHERWISE.
F. PROVIDE SILL GASKET UNDER BOTTOM OF WALL PLATE FOR EXTERIOR WALLS AND PARTY WALL AT CONCRETE FOUNDATION.

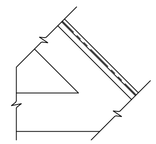
NO.	ILLUSTRATION	ASSEMBLY
W1a		FEATURE WALL • EXTERIOR T&G 1"x6" CEDAR WOOD BOARD PANELS • 38 x 140mm TREATED WOOD STUDS 610mm O/C
W1b		FEATURE WALL • EXTERIOR T&G 1"x6" CEDAR WOOD BOARD PANELS • 38 x 184mm TREATED WOOD STUDS 610mm O/C
W2		TYPICAL CURB • CONCRETE FOUNDATION WALL/CURB (REFER TO STRUCTURAL)
W3		PERIMETER RETAINING WALL • DAMPROOF MEMBRANE BELOW GRADE (TO BE CONFIRMED WITH GEOTECHNICAL ENGINEER ARRANGED BY CONTRACTOR) • CONCRETE FOUNDATION WALL (REFER TO STRUCTURAL)

ROOF ASSEMBLIES:

PROVIDE PREFINISHED GALVANIZED METAL FLASHING OVER WATERPROOFING MEMBRANE (8" VERTICAL RETURN UP WALLS & 60mm OVERLAP ROOFING FELT)

PROVIDE "GRACE-ICE AND WATER SHIELD" OR EQUIVALENT AS EAVE PROTECTION AND VALLEY PROTECTION AS PER NBC AND ABC, 9.26.5.

NOTE: - ALL ROOFING TO MEET REQUIREMENTS OF ARCA.

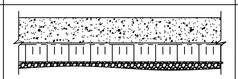
NO.	ILLUSTRATION	ASSEMBLY
R1		SLOPED ROOF ASSEMBLY - UNINSULATED - FIR CEILING • STANDING SEAM METAL ROOF SHEET • ROOFING FELT • 64mm T&G WOOD DECKING • HEAVY TIMBER ROOF TRUSSES, REFER TO STRUCT.

FLOOR ASSEMBLIES:

FINE BROOM FINISH FLOOR

ALL SUB-GRADE MATERIAL UNDER CONCRETE FLAT WORK SHALL BE COMPACTED TO AS RECOMMENDED BY GEOTECHNICAL ENGINEER ARRANGED BY CONTRACTOR AND TESTED FOR VERIFICATION OF ACHIEVING THOSE COMPACTION REQUIREMENTS.

ALL SUSPENDED SLABS TO RECEIVE TRAFFIC COATING.

NO.	ILLUSTRATION	ASSEMBLY
F1		SLAB ON GRADE -REINFORCED CONCRETE SLAB (REFER TO STRUCTURAL) -10 MIL POLY VAPOUR RETARDER, ALL SEAMS SEALED -100 mm RIGID INSULATION -COMPACTED GRANULAR BASE AND SUB BASE (REFER TO GEOTECHNICAL ENGINEER ARRANGED BY CONTRACTOR)

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

BRUCE McKENZIE — REGISTERED ARCHITECT — ALBERTA — SEPTEMBER 11 2020

UPPER LAKE LOUISE
TRANSIT SHELTER
NCCA20-0035-00
UPPER LAKE LOUISE
DAY USE AREA
–
PARKS CANADA
YOHO & KOOTENAY
FIELD UNIT P.O. BOX 208
LAKE Llouise AB, T0L 1E0
ISSUED FOR
CONSTRUCTION

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NORR ARCHITECTS ENGINEERS PLANNERS
A Partnership of Limited Companies
Puoo McKenzie Architects (Alberta) Inc. Puoo McKenzie Holdings Inc.
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Revision	Description	Date
5		
4	ISSUED FOR CONSTRUCTION	2020/09/11
3	ISSUED FOR TENDER	2020/07/31
2	ISSUED FOR 99% REVIEW	2020/07/10
1	ISSUED FOR 66% REVIEW	2020/06/25
0	Design Completion	2020/03/25

Client / client

Project title / Projet

UPPER LAKE LOUISE TRANSIT SHELTER

Designed by / Conçu par
L.NOBARI

Drawn by / Dessiné par
A.GODEK

Approved by / Approuvé par
B.MCKENZIE

PWGSC Project Manager / Administrateur de Projets TPSGC
K.VERHOEVEN

Drawing title / Titre du dessin

CONSTRUCTION NOTES

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	A0-1 OF	0

PROJECT NAME: UPPER LAKE LOUISE TRANSIT SHELTER
PROJECT NO.: NCCA20-0035
PREPARED BY: ANASTASIA GODEK

PART ONE: NATIONAL BUILDING CODE 2015 REVIEW - *PART 9*

REFERENCE & NOTE	REQUIRED	CODE ARTICLE	COMPLIANCE
CODE CLAUSE	**BUILDING CODE REVIEW:**		
	REVIEW BASED ON 2015 NATIONAL BUILDING CODE - THE FOLLOWING NOTES PROVIDE INFORMATION HIGHLIGHTING BUILDING DESIGN CRITERIA. IT IS NOT INTENDED TO DESCRIBE ALL DESIGN & CONSTRUCTION REQUIREMENT. ALL CONSTRUCTION SHALL CONFIRM TO ALL APPLICABLE SECTIONS OF THE BUILDING CODE.		
DIV. A - 1.3.3.3 (1)	- CONSTRUCTED UNDER PART "9" OF BUILDING CODE		
A-9.1.1.1.(1)	- APPLICATION OF PART 9 TO SEASONALLY AND INTERMITTENTLY OCCUPIED BUILDINGS - THERMAL INSULATION: NO SPACE HEATING APPLIANCES BEING INSTALLED - AIR BARRIER AND VAPOUR BARRIERS: DWELLING WITH NO HEATING SYSTEM EXEMPT FROM REQUIREMENT		
	- PLUMBING AND ELECTRICAL FACILITIES: PLUMBING REQUIRED ONLY WHERE A PIPED WATER SUPPLY IS AVAILABLE, AND ELECTRICAL FACILITIES ONLY WHERE ELECTRICAL SERVICES ARE AVAILABLE.		
	GENERAL INFORMATION		
DIV. A - 1.3.3.3 (1)	BUILDING AREA: *132m²* BUILDING HEIGHT: 1 STOREY ABOVE GRADE		
9.1.1.	APPLICATION 1) THE APPLICATION OF THIS PART SHALL BE AS DESCRIBED IN SUBSECTION 1.3.3. OPF DIVISION A. (See note A-9.1.1.1.(1) REGARDING APPLICATION TO SEASONALLY AND INTERMITTENLY OCCUPIED BUILDINGS.)		9.1.1. COMPLIANT
3.8.2	BARRIER-FREE DESIGN		
3.8.2.1	GENERAL EXCEPTIONS C) BUILDINGS THAT ARE NOT INTENDED TO BE OCCUPIED ON A DAILY OR FULL-TIME BASIS, INCLUDING AUOTMATIC TELEPHONE EXCHANGES, PUMPHOUSES AND SUBSTATIONS.		3.8.2.1 COMPLIANT
9.9.	MEANS OF EGRESS		
9.9.1.	GENERAL		
9.9.1.3.	OCCUPANT LOAD 1) EXCEPT FOR DWELLING UNITS, THE OCCUPANT LOAD OF A FLOOR AREA OR PART OF A FLOOR AREA SHALL BE THE NUMBER OF PERSONS FOR WHICH SUCH AREAS ARE DESIGNED, BUT NOT FEWER THAN THAT DETERMINED FROM TABLE 3.1.17.1., UNLESS IT CAN BE SHOWN THAT THE AREA WILL BE OCCUPIED BY FEWER PERSONS.		9.9.1.3. COMPLIANT
9.9.3.	DIMENSIONS OF MEANS OF EGRESS		
9.9.3.1.	APPLICATION 1) THIS SUBSECTION APPLIES TO EVERY MEANS OF EGRESS EXCEPT a) EXITS THAT SERVE NOT MORE THAN ONE DWELLING UNIT OR A HOUSE WITH A SECONDARY SUITE INCLUDING THEIR Common SPACES, AND b) ACCESS TO EXITS WITHIN DWELLING UNITS AND WITHIN HOUSES WITH A SECONDARY SUITE INCLUDING THEIR COMMON SPACES.		9.9.3.1.
9.9.3.2.	EXIT WIDTH 1) EXCEPT FOR DOORS AND CORRIDORS, THE WIDTH OF EVERY EXIT FACILITY SHALL BE NOT LESS THAN 900 mm.		9.9.3.2. COMPLIANT
9.9.6.	DOORS IN A MEANS OF EGRESS		
9.9.6.2.	CLEAR OPENING HEIGHT AT DOORWAYS 1) EXCEPT AS PROVIDED IN SENTENCES (2) AND (3), THE CLEAR OPENING HEIGHT OF DOORWAYS SHALL BE NOT LESS THAN 2 030 mm HIGH AT a) EXIT DOORS, b) DOORS THAT OPEN INTO OR ARE LOCATED WITHIN A PUBLIC CORRIDOR, AND c) DOORS THAT OPEN INTO OR ARE LOCATED WITHIN ANOTHER FACILITY THAT PROVIDES ACCESS TO EXIT FROM A SUITE.		9.9.3.2. COMPLIANT
9.9.6.3.	CLEAR OPENING WIDTH AT DOORWAYS 1) EXCEPT AS PROVIDED IN SENTENCE (4), THE CLEAR OPENING WIDTH OF DOORWAYS SHALL COMPLY WITH SENTENCE (2) AT a) EXIT DOORS, 2) DOORWAYS DESCRIBED IN SENTENCE (1) SHALL BE a) NOT LESS THAN 800 mm WIDE WHERE THERE IS ONLY ONE DOOR LEAF,		9.9.6.3. COMPLIANT
9.9.8	EXITS FROM FLOOR AREAS		
9.9.8.2	NUMBER OF REQUIRED EXITS 2) A SINGLE EXIT IS PERMITTED FROM EACH STOREY BUILDINGS OF 1 AND 2 STOREYS IN BUILDING HEIGHT PROVIDED THE FLOOR AREA AND TRAVEL DISTANCE REQUIREMENTS CONFORM TO THOSE REQUIRED IN ARTICLE 9.9.7.4 AND THE TOTAL OCCUPANT LOAD SERVED BY AN EXIT FACILITY DOES NOT EXCEEED 60 PERSONS.		9.9.8.2 COMPLIANT
9.9.11.	SIGNS		
9.9.11.1.	APPLICATION 1) THIS SUBSECTION APPLIES TO ALL EXITS EXCEPT THOSE SERVING NOT MORE THAN ONE DWELLING UNIT OR A HOUSE WITH A SECONDARY SUITE.		9.9.11.1. COMPLIANT
9.9.11.2.	VISIBILITY OF EXITS 1) EXITS SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE OR THEIR LOCATIONS SHALL BE CLEARLY INDICATED.		9.9.11.2 COMPLIANT
	2) WHERE AN EXIT DOOR LEADING DIRECTLY TO THE OUTSIDE IS SUBJECT TO BEING OBSTRUCTED BY PARKED VEHICLES OR STORAGE BECAUSE OF ITS LOCATION, A VISIBLE SIGN OR A PHYSICAL BARRIER PROHIBITING SUCH OBSTRUCTIONS SHALL BE INSTALLED ON THE EXTERIOR SIDE OF THE DOOR.		
	MINIMUM EGRESS WIDTH - OUTSIDE OF DWELLING UNIT		
9.5.5.1.	DOORWAY 760mm		9.5.5.1. COMPLIANT
9.9.3.2.	EXIT WIDTH 900mm		9.9.3.2.COMPLIANT
	HEADROOM CLEARANCE		
9.9.3.4	MIN. CLEARANCE HEIGHT 2100mm		9.9.3.4 COMPLIANT
9.9.6.2.	DOORWAYS 2030mm		9.9.6.2. COMPPLIANT
9.9.7.	ACCESS TO EXITS		
9.9.7.4 (1)	EXCEPT FOR DWELLING UNITS, AT LEAST 2 EGRESS DOORS SHALL BE PROVIDED WHEN THE AREA OF A ROOM OR SUITE, OR THE DISTANCE MEASURED FROM ANY POINT WITHIN THE ROOM OR SUITE TO THE NEAREST EGRESS DOOR, EXCEEDS THE VALUES IN TABLE 9.9.7.4.		9.9.7.4 (1)
TABLE 9.9.7.4.	- OCCUPANCY OF FLOOR AREA - GROUP D - MAX. AREA OF FLOOR AREA = 200m2 (ACTUAL AREA = 132m2) - MAX. DISTANCE TO EGRESS DOOR = 15m (ACTUAL DISTANCE = 11m)		COMPLIANT
9.10.2.	MAJOR OCCUPANCY CLASSIFICATION		
9.10.2.1.	GROUP/DIV. D BUSINESS AND PERSONAL SERVICES		
TABLE 3.1.17.1	OCCUPANT LOAD STANDING SPACES : 0.4 m2/PERSON OCCUPANCY LOAD : 330		COMPLIANT
9.10.14/9.10.15	SPATIAL SEPARATION & EXPOSURE PROTECTION		

ONE CHART PER BLDG.

BUILDING	FACE|OCCUPANCY	LIMIT DISTANCE	AREA (sq.m.)	% OPENING ALLOWED	% OPENING PROVIDED	MIN. WALL F.R.R.(min.)	CONSTRUCTION TYPE	CLADDING TYPE REQUIRED*
	FRONT|D	>8.0m	115m²	100.00%	92%(106m²)	0.0HR	COMB./NON-COMB.	COMB./NON-COMB.
	BACK|D	>8.0m	11m²	100.00%	27%(3m²)	0.0HR	COMB./NON-COMB.	COMB./NON-COMB.
	SIDE A|D	>8.0m	23m²	100.00%	17%(4m²)	0.0HR	COMB./NON-COMB.	COMB./NON-COMB.
	SIDE B|D	>8.0m	51m²	100.00%	24%(12m²)	0.0HR	COMB./NON-COMB.	COMB./NON-COMB.

COMPLIANT

9.10.14.3	LIMITING DISTANCE AND FIRE DEPARTMENT RESPONSE A LIMITED DISTANCE EQUAL TO HALF THE ACTUAL LIMITED DISTANCE SHALL BE USED AS INPUT TO THE REQUIREMENTS OF THIS SUBSECTION, WHERE a) THE TIME FROM RECEIPT OF NOTIFICATION OF A FIRE BY THE FIRE DEPARTMENT UNITL THE FIRST FIRE DEPARTMENT VEHICLE ARRIVES AT THE BUILDING EXCEEDS 10min IN 10% OF MORE OF ALL CALLS TO THE BUILDING; AND b) ANY STOREY IN THE BUILDING IS NOT SPRINKLERED.	9.10.14.3 COMPLIANT
9.13.4.2	PROTECTION FROM SOIL GAS INGRESS 3) WHERE BUILDINGS ARE USED FOR OCCUPANCIES OTHER THAN THOSE DESCRIBED IN SENTENCE (2), PROTECTION FROM RADON INGRESS AND THE MEANS TO ADDRESS HIGH RADON CONCENTRATIONS IN THE FUTURE SHALL CONFORM TO a) ARTICLE 9.13.4.3; OR b) PARTS 5 AND 6 (SEE ARTICLE 5.4.1.1. AND 6.2.1.1).	9.13.4.2 COMPLIANT
9.36.1.3.(5)	ENERGY EFFICIENCY BUILDING THAT ARE NOT REQUIRED TO BE CONDITIONED SPACES ARE EXEMPTED FROM THE REQUIREMENT PER A-9.36.1.3.(5) FOR SEASONALLY HEATED BUILDINGS.	9.36. COMPLIANT

Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

BRUCE McKENZIE REGISTERED ARCHITECT ALBERTA
SEPTEMBER 11 2020

UPPER LAKE LOUISE TRANSIT SHELTER
NCCA20-0035-00
UPPER LAKE LOUUSE DAY USE AREA
–
PARKS CANADA
YOHO & KOOTENAY
FIELD UNIT P.O. BOX 208
LAKE LOUISE AB, T0L 1E0
ISSUED FOR
CONSTRUCTION

NORR

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Calgary, AB Canada T2G 4Y5
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NORR ARCHITECTS ENGINEERS PLANNERS
A Partnership of Limited Companies
Peter McKenzie Architects (Alberta) Inc. Peter McKenzie Holdings Inc.
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Bruce G. McKenzie, Architect, AAA, M.Arch, MAIBC
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Adrian Tedesla, P.Eng., APEGA
Chris Pal, P.Eng., APEGA

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0	Design Completion	2020/03/25

Client / client

Project title / Projet

UPPER LAKE LOUISE TRANSIT SHELTER

Designed by / Conçu par
L.NOBARI

Drawn by / Dessiné par
A.GODEK

Approved by / Approuvé par
B.MCKENZIE

PWGSC Project Manager / Administrateur de Projets TPSGC
K.VERHOEVEN

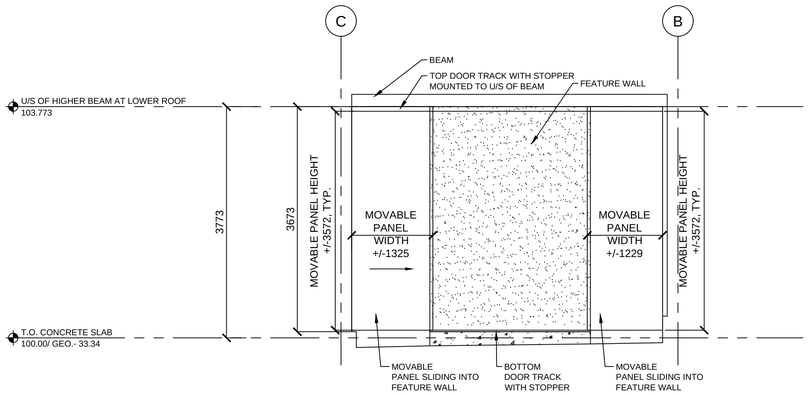
Drawing title / Titre du dessin

BUILDING CODE ANALYSIS

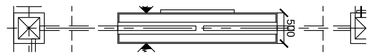
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	**A0-2** OF	**0**

PWGSC – A1 – 841X594

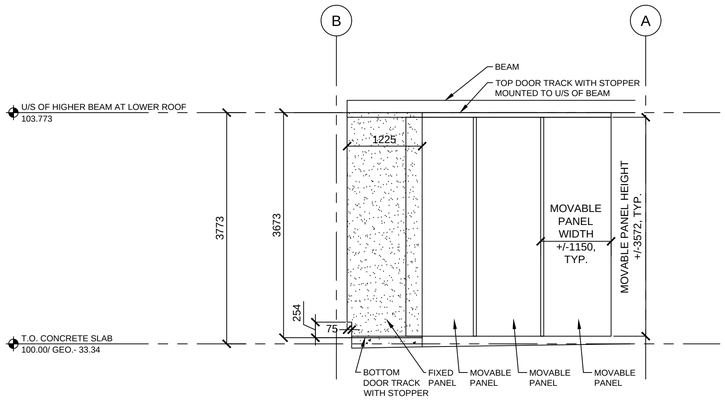
0 10 20 30 40 50 60 70 80 90 100mm



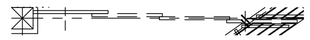
2a DOOR #2 ELEVATION
SCALE 1:50



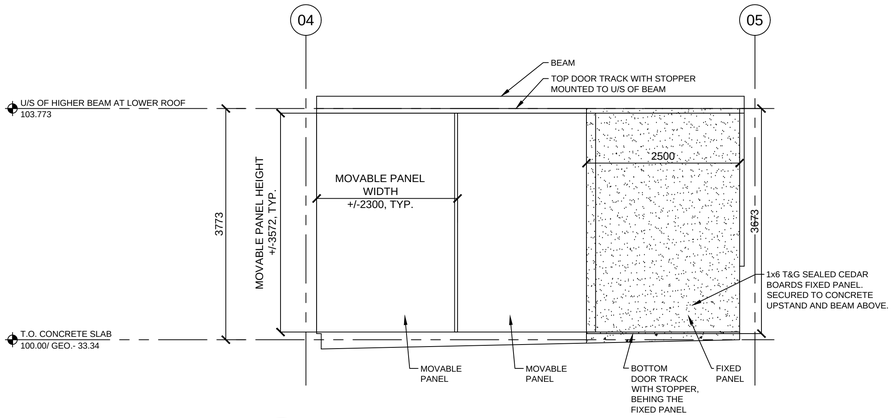
2b DOOR #2 PLAN
SCALE 1:50



3a DOOR #3 ELEVATION
SCALE 1:50



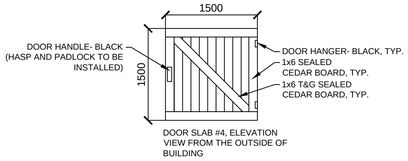
3b DOOR #3 PLAN
SCALE 1:50

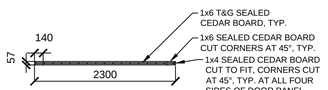


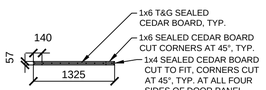
1a DOOR #1 ELEVATION
SCALE 1:50

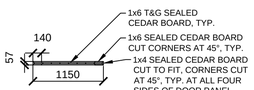
1b DOOR #1 PLAN
SCALE 1:50

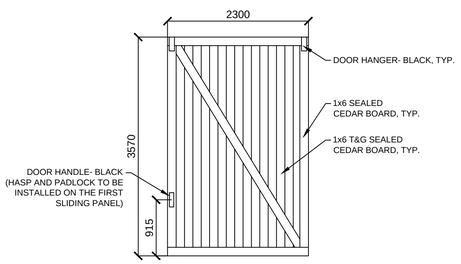
4a DOOR #4 ELEVATION
SCALE 1:50

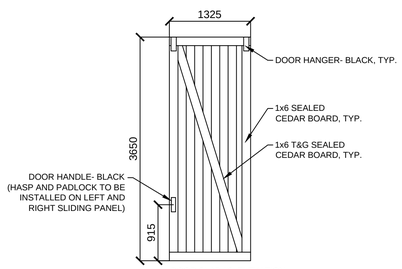


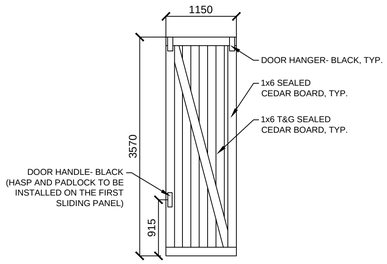












PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

BRUCE McKENZIE REGISTERED ARCHITECT ALBERTA
SEPTEMBER 11, 2020

UPPER LAKE LOUISE TRANSIT SHELTER
NCCA20-0035-00
UPPER LAKE LOUISE DAY USE AREA
–
PARKS CANADA
YOHO & KOOTENAY FIELD UNIT P.O. BOX 208
LAKE LOUISE AB, T0L 1E0
ISSUED FOR
CONSTRUCTION

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Adrian Todesla, P.Eng., APEGA
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1	ISSUED FOR 66% REVIEW	2020/06/25
0	Design Completion	2020/03/25
Revision	Description	Date

Client / client

Project title / Projet

UPPER LAKE LOUISE TRANSIT SHELTER

Designed by / Conçu par
L.NOBARI

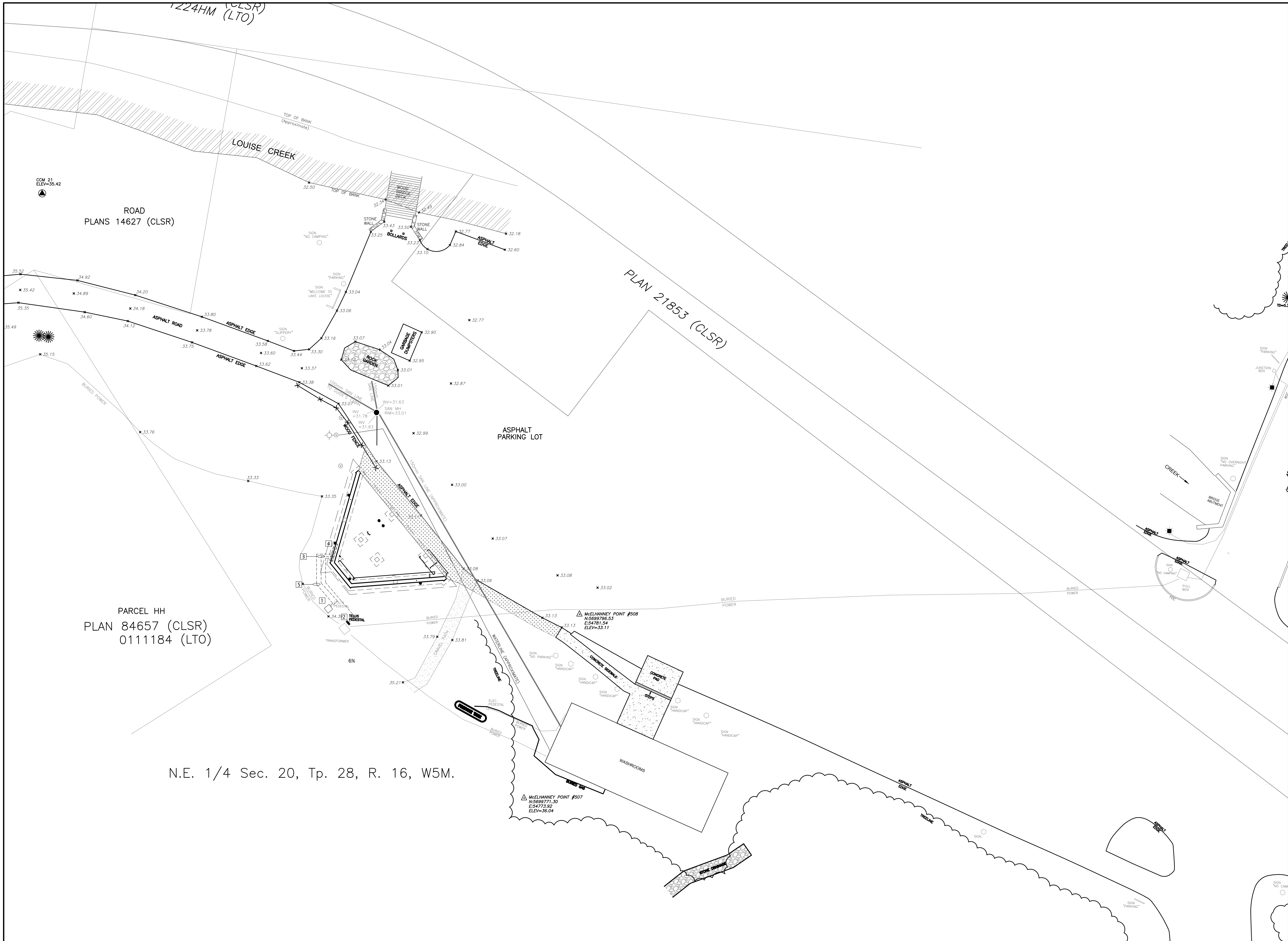
Drawn by / Dessiné par
A.GODEK

Approved by / Approuvé par
B.MCKENZIE

PWGSC Project Manager / Administrateur de Projets TPSGC
K.VERHOEVEN

Drawing title / Titre du dessin
DOOR SCHEDULE

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	**A0-3** OF	**0**



ELECTRICAL REFERRAL NOTES:

1. EXISTING 240V, 200A SITE PANEL S-12412
2. EXISTING TELUS PEDESTAL
3. FOR CONDUIT AND FEEDER SIZE REFER TO SINGLE LINE DIAGRAM DETAIL 1 ON SHEET E1-1
4. APPROXIMATE LOCATION OF ELECTRICAL EQUIPMENT FEEDING TRANSIT SHELTER
5. 2 SPARE RUNS OF 50mm CONDUIT C/W PULL STRING FOR FUTURE USE.

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BRUCE McKENZIE
REGISTERED ARCHITECT
ALBERTA
SEPTEMBER 11 2020

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NCCA20-0035-00
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YOHO & KOOTENAY FIELD UNIT P.O. BOX 208
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ISSUED FOR
CONSTRUCTION

PROFESSIONAL ENGINEER
DOUGLAS HIDER
ALBERTA
ALBERTA PERMIT TO PRACTICE NUMBER–11944
2020-09-10

This drawing has been prepared solely for the use of the CLIENT and there are no representations of any kind made by NORR Architects Engineers Planners to any party with whom NORR Architects Engineers Planners has not entered into a contract.

This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer.

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Client / client

Parks Canada / Parcs Canada

Project title / Projet

UPPER LAKE LOUISE TRANSIT SHELTER

Designed by / Conçu par: L.NOBARI
Drawn by / Dessiné par: A.GODEK
Approved by / Approuvé par: B.MCKENZIE
PWGSC Project Manager / Administrateur de Projets TPSGC: K.VERHOEVEN

Drawing title / Titre du dessin

CONCEPTUAL SITE PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	A1-1 OF	0

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

ASPHALT ROAD

ASPHALT EDGE

ASPHALT EDGE

SIGN "SLIPPERY"

GARBAGE DUMPSTERS

ROCK GARDEN

100mm SAN LINE TO GUIDE'S CABIN

150mm SAN LINE

INV=31.63
SAN MH
RIM=33.01

INV =31.78

INV =31.63

APPROXIMATE SCOPE OF WORK AREA, TEMPORARY HOARDING REQUIRED. REFER TO SPECIFICATIONS. SINGLE MAN GATE AND VEHICLE DELIVERY GATE LOCATION IN THE HOARDING AREA T.B.D. BY CONTRACTOR.

WOOD FENCE

WOOD FENCE SECTIONS TO BE REMOVED

PRELIMINARY SNOW MELT AREA, APPROX. 5m IN DIAMETER AND .5m DEPRESSION

ASPHALT PARKING LOT

150mm SAN LINE (APPROXIMATE)

3% SLOPE

NEW CONCRETE SIDEWALK FLUSH WITH EXISTING ASPHALT, TYP.

1671

2700

1.5% SLOPE

ASPHALT EDGE

3651

GRASS SWALE, MIN. 2% SLOPE

1.5% SLOPE

NEW CONCRETE SIDEWALK, FLUSH WITH EXISTING ASPHALT, TYP.

T.O.S.- 33.21

T.O.W.- 34.41

4.8% SLOPE

4691

1911

3110

BURIED POWER

UTILTY PEDESTAL

ROOF OUTLINE

GRASS SWALE MIN. 2% SLOPE

NEW CONCRETE SIDEWALK, WIDTH TO MATCH WITH EXISTING

TELUS PEDESTAL

PRELIMINARY SNOW MELT AREA, APPROX. 5m IN DIAMETER AND .5m DEPRESSION

BURIED POWER

McELHANNEY POINT #508
N:5699796.53
E:54781.54
ELEV=33.11

EXISTING SIDEWALK

TRANSFORMER

6% EX. SLOPE

19% EX. SLOPE

GRAVEL PATH

WATERLINE (APPROXIMATE)

TREELINE

SIGN "NO PARKING"

SIGN "HANDICAP"

SIGN "HANDICAP"

SIGN "HANDICAP"

CONCRETE SIDEWALK

CONC PAD

STEPS

ELEC. PEDESTAL

PROPANE TANK

L HH
57 (CLSR)
1184 (LTO)

33.80 33.78 33.75 33.06 33.16 33.58 33.44 33.30 33.60 33.62 33.37 33.38 33.07 33.04 32.90 32.95 33.01 33.01 32.77 32.87 33.07 33.76 32.99 33.13 33.13 33.21 33.11 33.11 33.11 33.33 33.35 33.08 33.06 33.08 33.02 34.39 33.13 33.79 33.81 33.00 35.21

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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Région de l'ouest

BRUCE McKENZIE REGISTERED ARCHITECT ALBERTA
SEPTEMBER 11 2020

UPPER LAKE LOUISE
TRANSIT SHELTER
NCCA20-0035-00
UPPER LAKE LOUUSE
DAY USE AREA
–
PARKS CANADA
YOHO & KOOTENAY
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Client / client

Project title / Projet

UPPER LAKE LOUISE TRANSIT SHELTER

Designed by / Conçu par: **L.NOBARI**

Drawn by / Dessiné par: **A.GODEK**

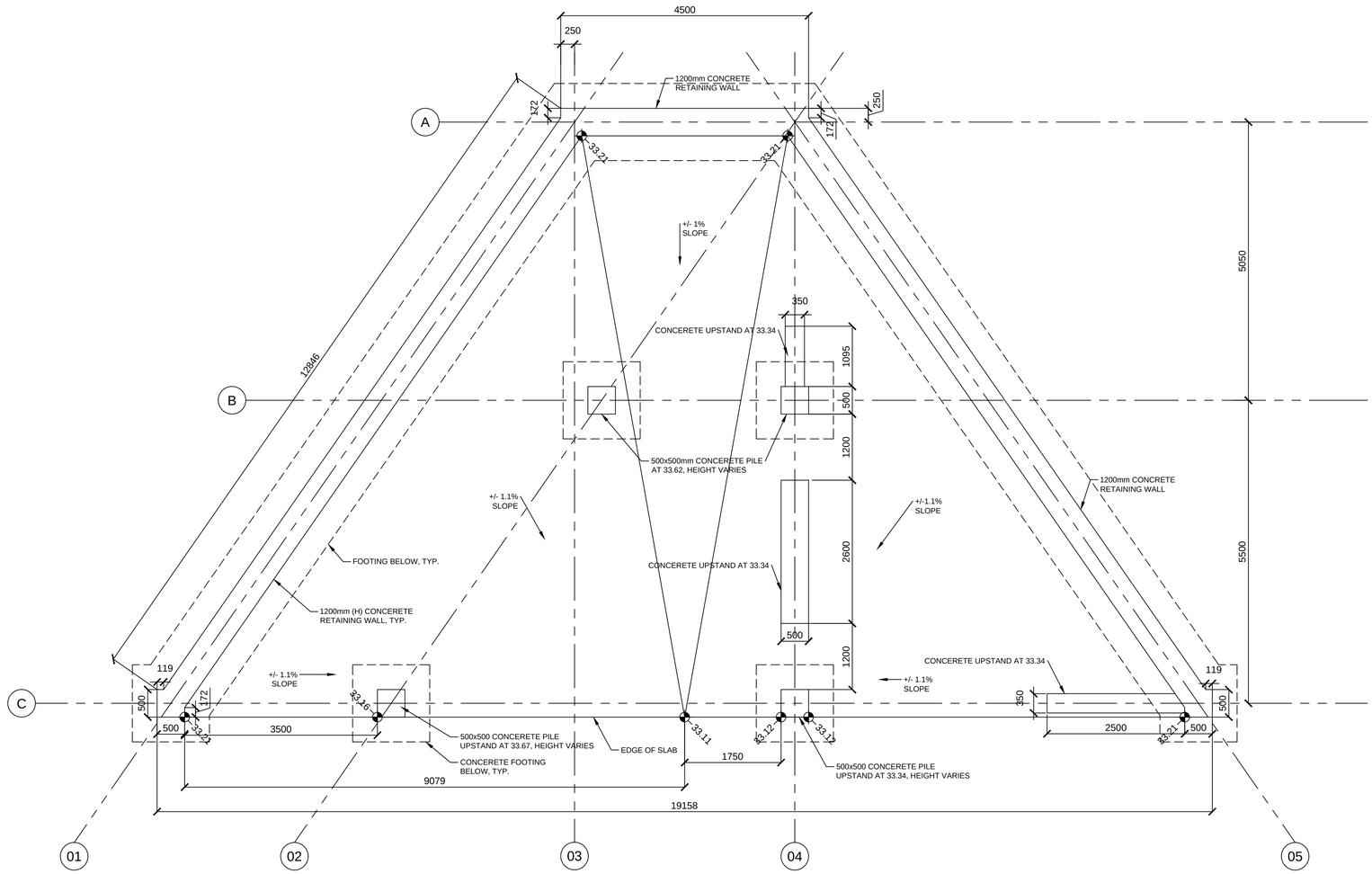
Approved by / Approuvé par: **B.MCKENZIE**

PWGSC Project Manager / Administrateur de Projets TPSGC: **K.VERHOEVEN**

Drawing title / Titre du dessin

DETAILED SITE PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	A1-2 OF	0



1 SLAB/FOUNDATION PLAN

SCALE 1:50

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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Western Region
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BRUCE McKENZIE
REGISTERED
ARCHITECT
ALBERTA
SEPTEMBER 11
2020

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NCCA20-0035-00
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Parks Canada / Parcs Canada

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UPPER LAKE LOUISE TRANSIT SHELTER

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Drawn by / Dessiné par
A.GODEK

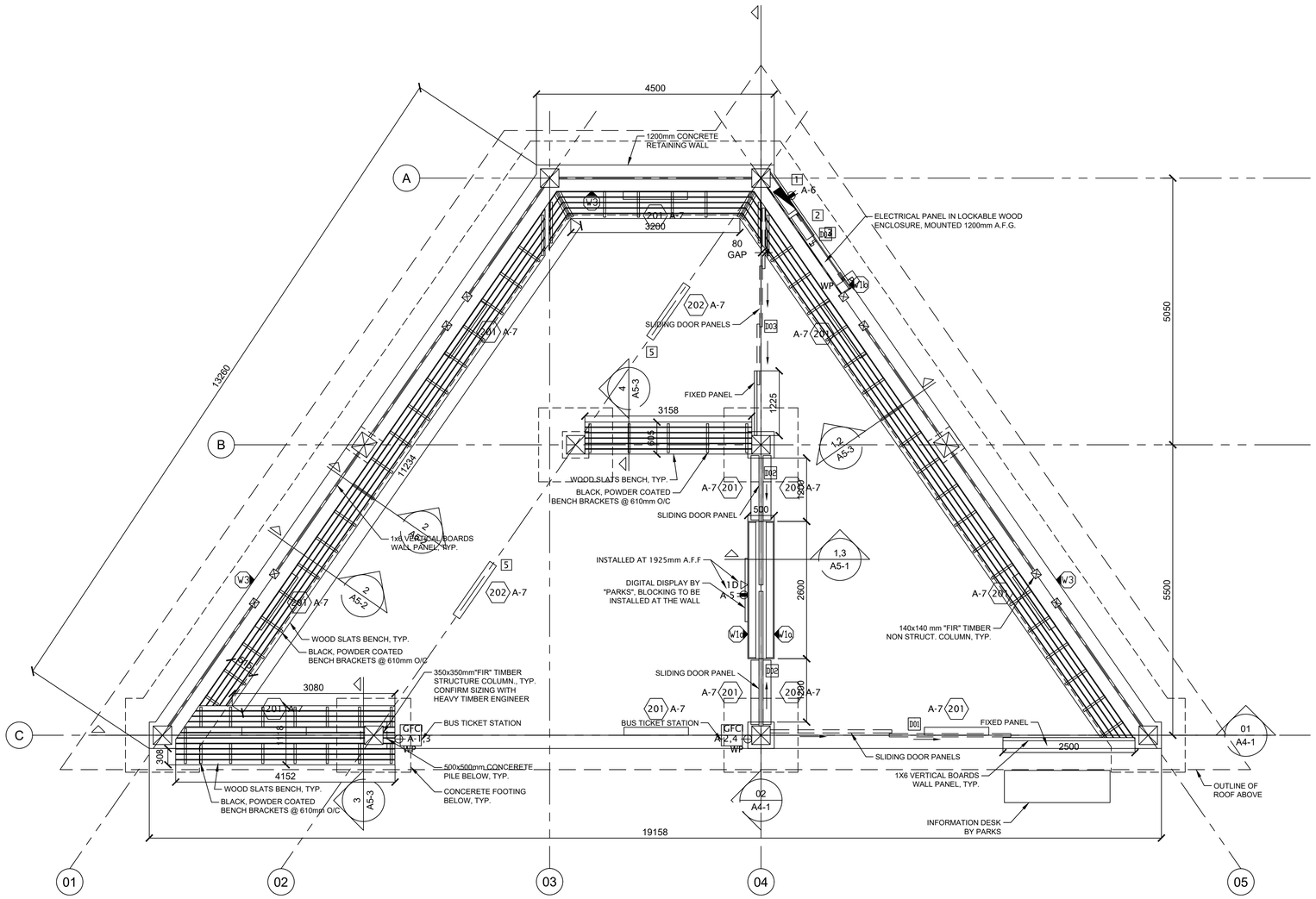
Approved by / Approuvé par
B.MCKENZIE

PWGSC Project Manager / Administrateur de Projets TPSGC
K.VERHOEVEN

Drawing title / Titre du dessin

SLAB PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	**A2-1** OF	**0**



1 FLOOR PLAN
SCALE 1:50

REFERRAL NOTES:

1. PP-A, 60A DISTRIBUTION PANEL NEMA TYPE 4 RATED.
2. TELUS D-MARK PANEL.
3. HOA SWITCH FOR LIGHTING CONTROLS REFER TO DETAIL 3 ON SHEET E1-1.
4. FOR WOOD ENCLOSURE REFER TO SHEET A5-2 DETAILS 4 & 5.
5. FIXTURES ARE SURFACE MOUNTED THE UNDER BEAM

GENERAL NOTES:

A. INTENT IS TO MOCK UP THE LIGHTING ONCE ROOF IS PARTIALLY INSTALLED. FOR THE PURPOSES OF PRICING THE ELECTRICAL CONTRACTOR SHALL ACCOUNT FOR LIGHTING QUANTITIES, CIRCUITING AND CONTROLS AS INDICATED ON PLANS AND ALLOW TIME FOR INSTALLATION OF FIXTURES AND INSTALLATION OF THE MOCK UP. ONCE THE ROOF HAS BEEN INSTALLED A PORTION OF THE LIGHTING WILL BE INSTALLED AND TESTED. ONCE APPROPRIATE INSTALLATION AND METHODOLOGY HAS BEEN DETERMINED THROUGH THIS MOCK UP THEN THE REST OF THE LIGHTING WILL BE INSTALLED.

B. REFER TO DRAWING E1-1 FOR PANEL SCHEDULE.

C. REFER TO DRAWING E1-1 FOR LUMINAIRE SCHEDULE

D. LIGHTING IS TO BE CONTROLLED BY LIGHTING CONTROL SYSTEMS

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Région de l'ouest

BRUCE McKENZIE REGISTERED PROFESSIONAL ENGINEER ALBERTA
SEPTEMBER 11 2020

UPPER LAKE LOUISE
TRANSIT SHELTER
NCCA20-0035-00
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DAY USE AREA
–
PARKS CANADA
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PROFESSIONAL ENGINEER PROVINCE OF ALBERTA
ALBERTA PERMIT TO PRACTICE NUMBER–11944

2020-09-10

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UPPER LAKE LOUISE TRANSIT SHELTER

Designed by / Conçu par: **L.NOBARI**
Drawn by / Dessiné par: **A.GODEK**
Approved by / Approuvé par: **B.MCKENZIE**
PWGSC Project Manager / Administrateur de Projets TPSGC: **K.VERHOEVEN**
Drawing title / Titre du dessin:

MAIN FLOOR PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	A2-2 OF	0

PWGSC – A1 – 841X594

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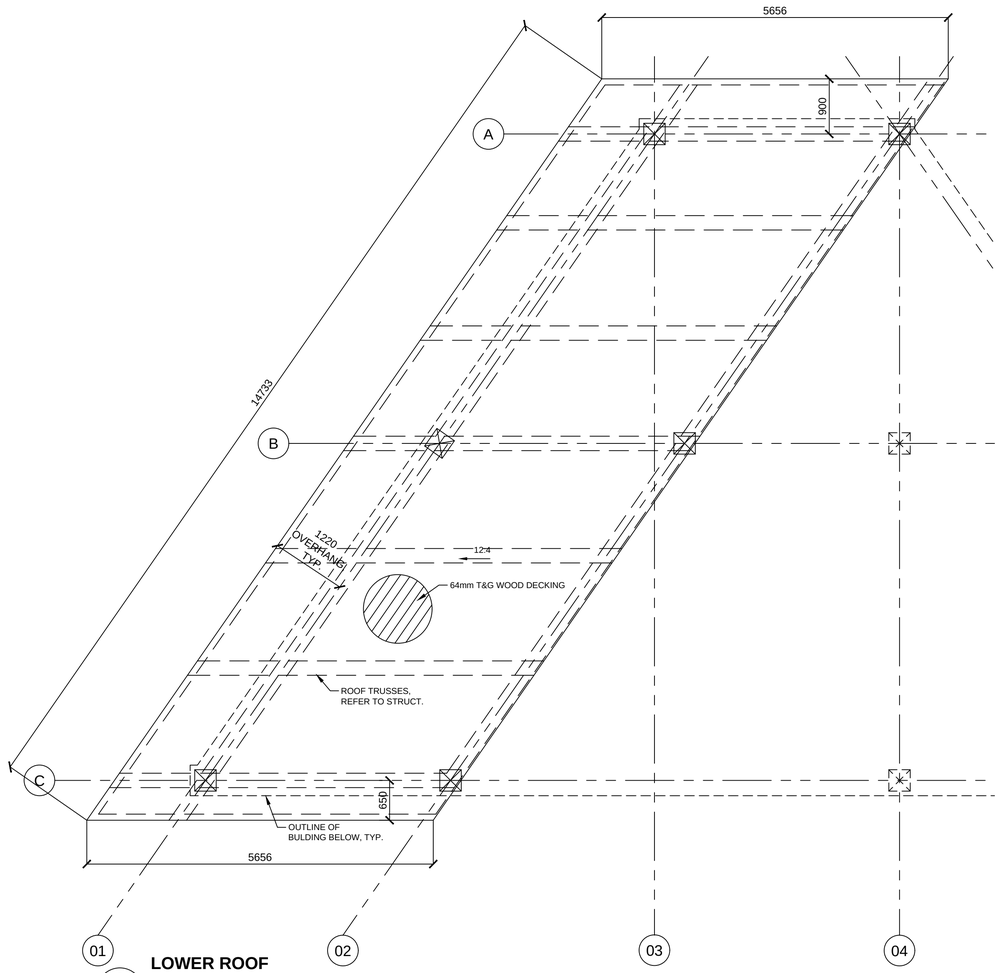
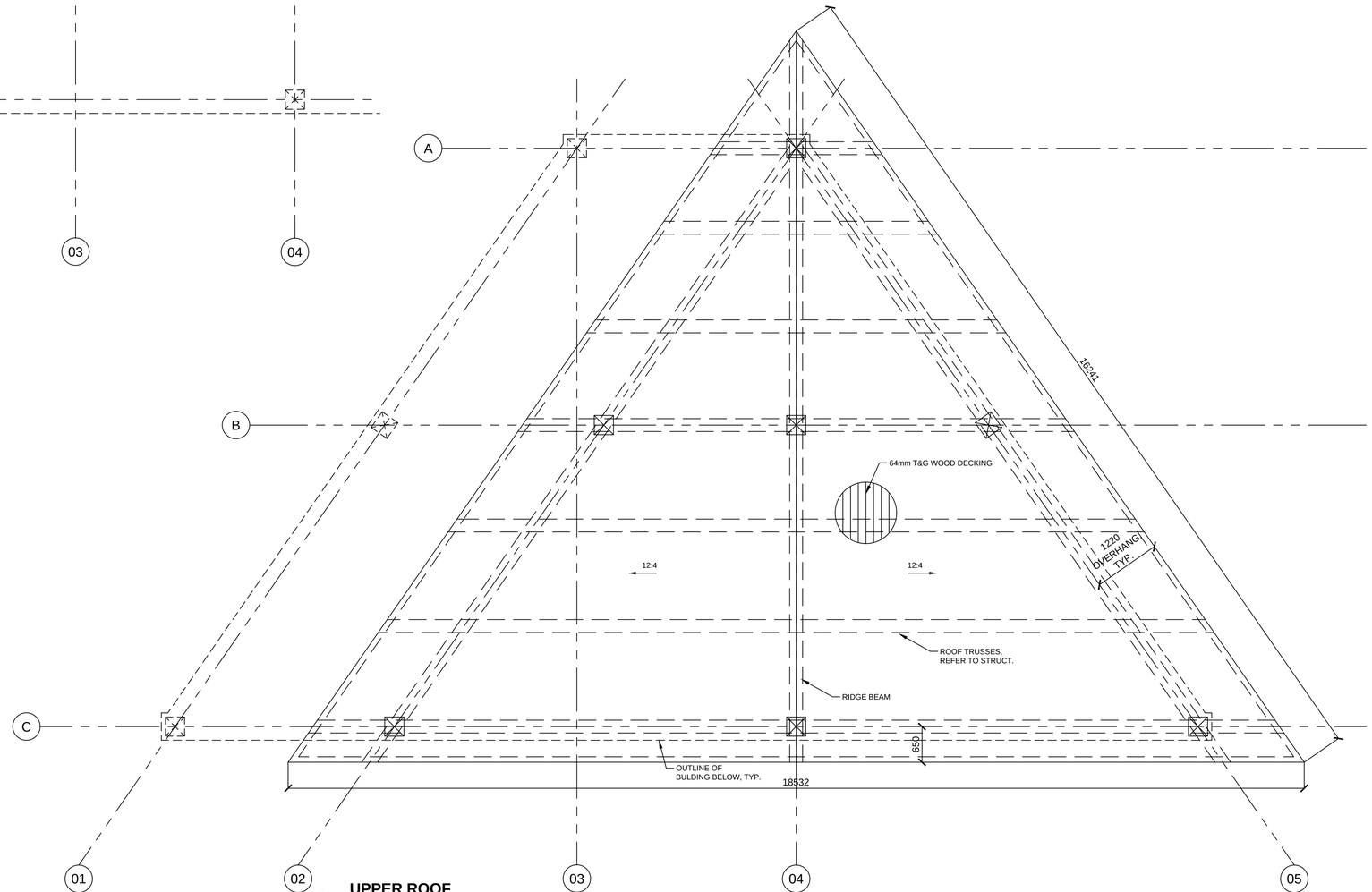


2 LOWER ROOF ROOF STRUCTURE PLAN

SCALE 1:50



1 UPPER ROOF ROOF STRUCTURE PLAN

SCALE 1:50

0 10 20 30 40 50 60 70 80 90 100mm

PWGSC – A1 – 841X594

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BRUCE McKENZIE REGISTERED ARCHITECT ALBERTA
SEPTEMBER 11, 2020

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Parks Canada / Parcs Canada

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Drawn by / Dessiné par
A.GODEK

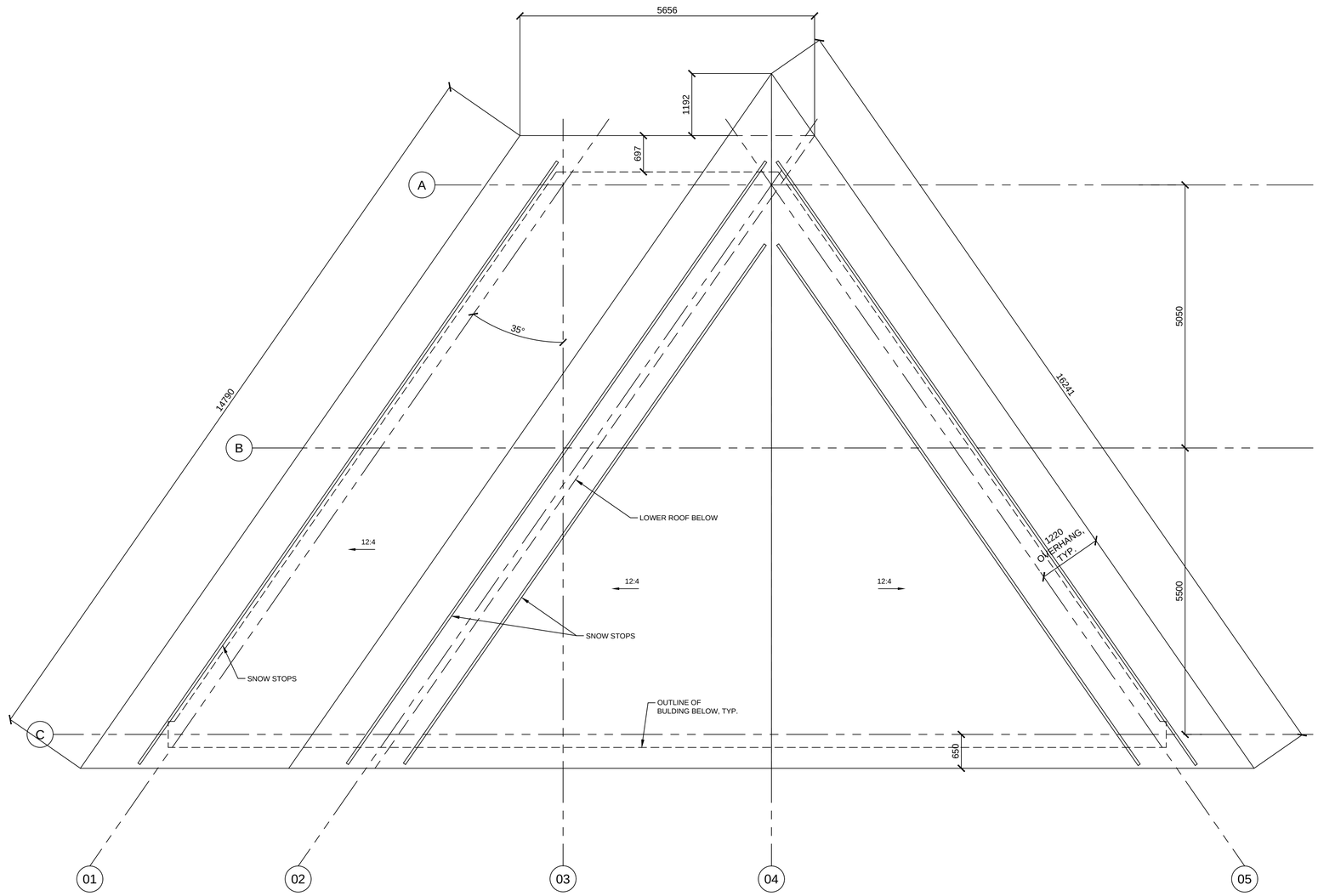
Approved by / Approuvé par
B.MCKENZIE

PWGSC Project Manager / Administrateur de Projets TPSGC
K.VERHOEVEN

Drawing title / Titre du dessin

ROOF STRUCTURE PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	**A2-3** OF	**0**



1 ROOF PLAN
SCALE 1:50

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SEPTEMBER 11, 2020
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ROOF PLAN

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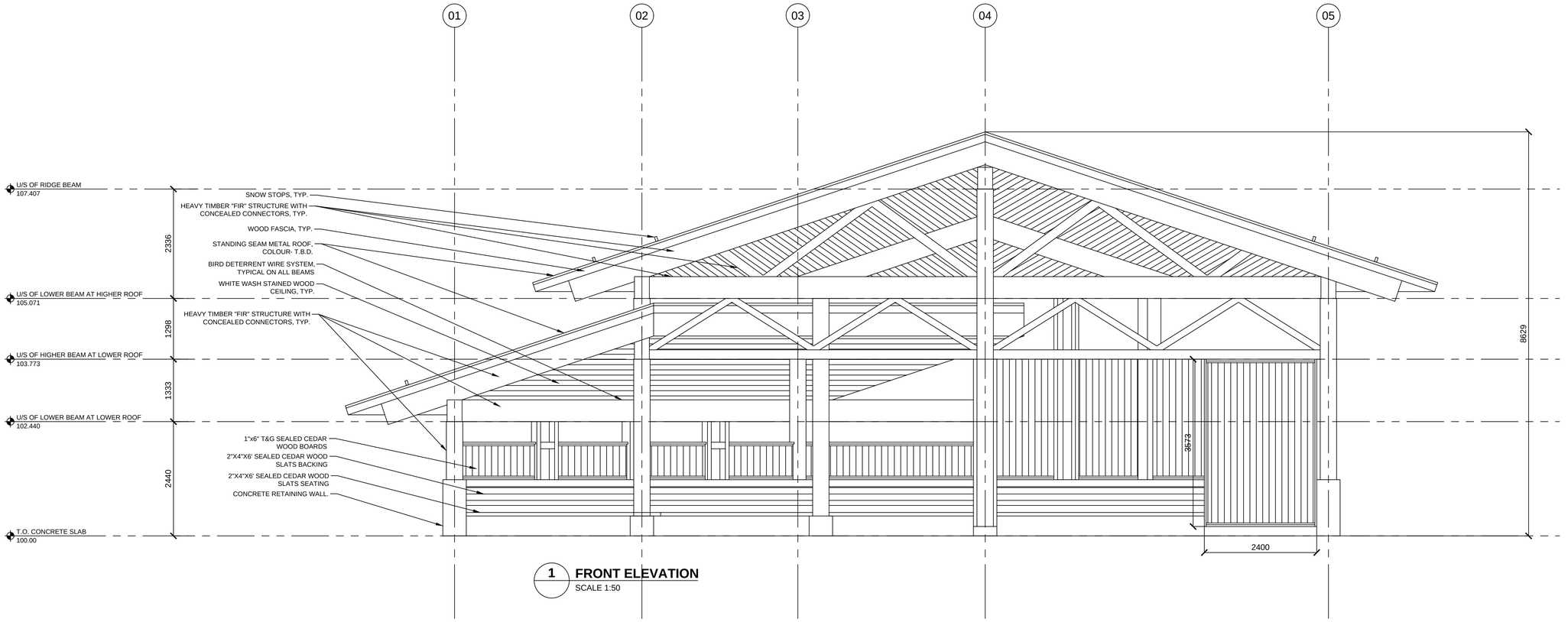
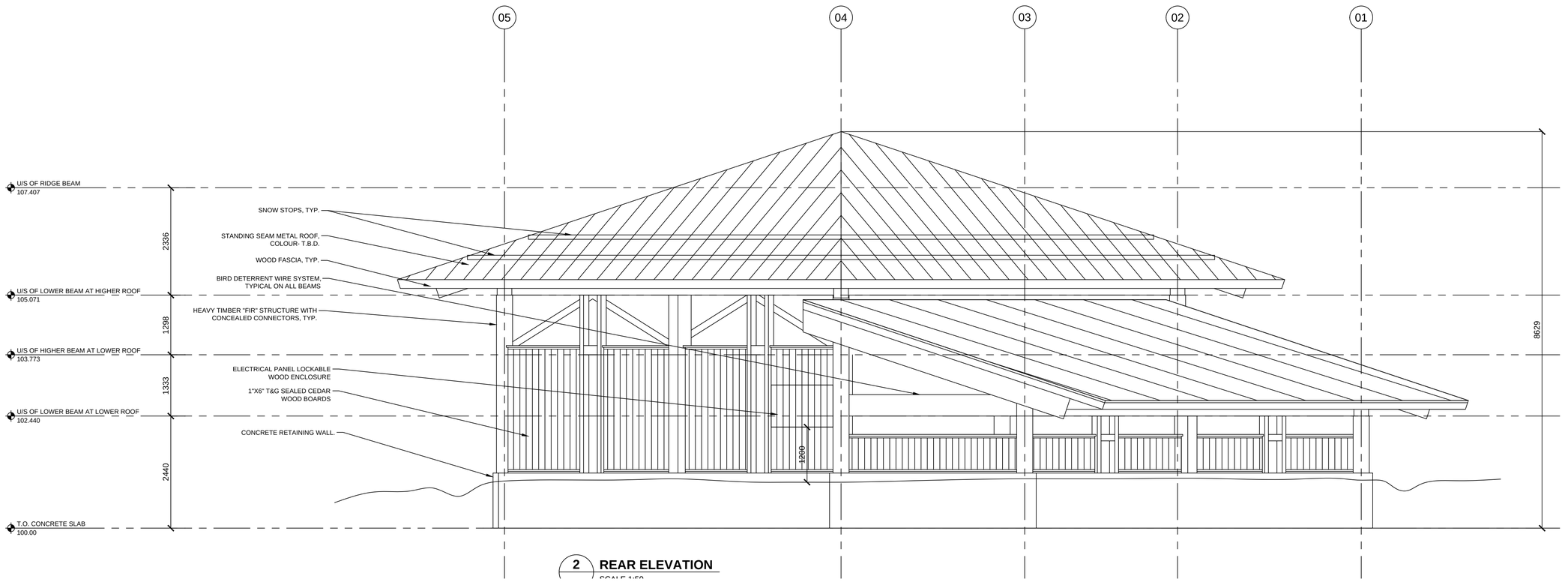


1 FRONT ELEVATION
SCALE 1:50



2 REAR ELEVATION
SCALE 1:50

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

BRUCE McKENZIE
REGISTERED ARCHITECT
SEPTEMBER 11, 2020
ALBERTA

UPPER LAKE LOUISE
TRANSIT SHELTER
NCCA20-0035-00
UPPER LAKE LOUUSE
DAY USE AREA
–
PARKS CANADA
YOHO & KOOTENAY
FIELD UNIT P.O. BOX 208
LAKE LOUISE AB, T0L 1E0
ISSUED FOR
CONSTRUCTION

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A. Silvio Baldassarra, Architect, AAA, B.Arch, MAIBC
Adrian Tedesla, P.Eng., APEGA
Chris Pal, P.Eng., APEGA

Revision	Description	Date
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3	ISSUED FOR TENDER	2020/07/31
2	ISSUED FOR 99% REVIEW	2020/07/10
1	ISSUED FOR 66% REVIEW	2020/06/25
0	Design Completion	2020/03/25

Client / client

Parks Canada / Parcs Canada

Project title / Projet

UPPER LAKE LOUISE TRANSIT SHELTER

Designed by / Conçu par
L.NOBARI

Drawn by / Dessiné par
A.GODEK

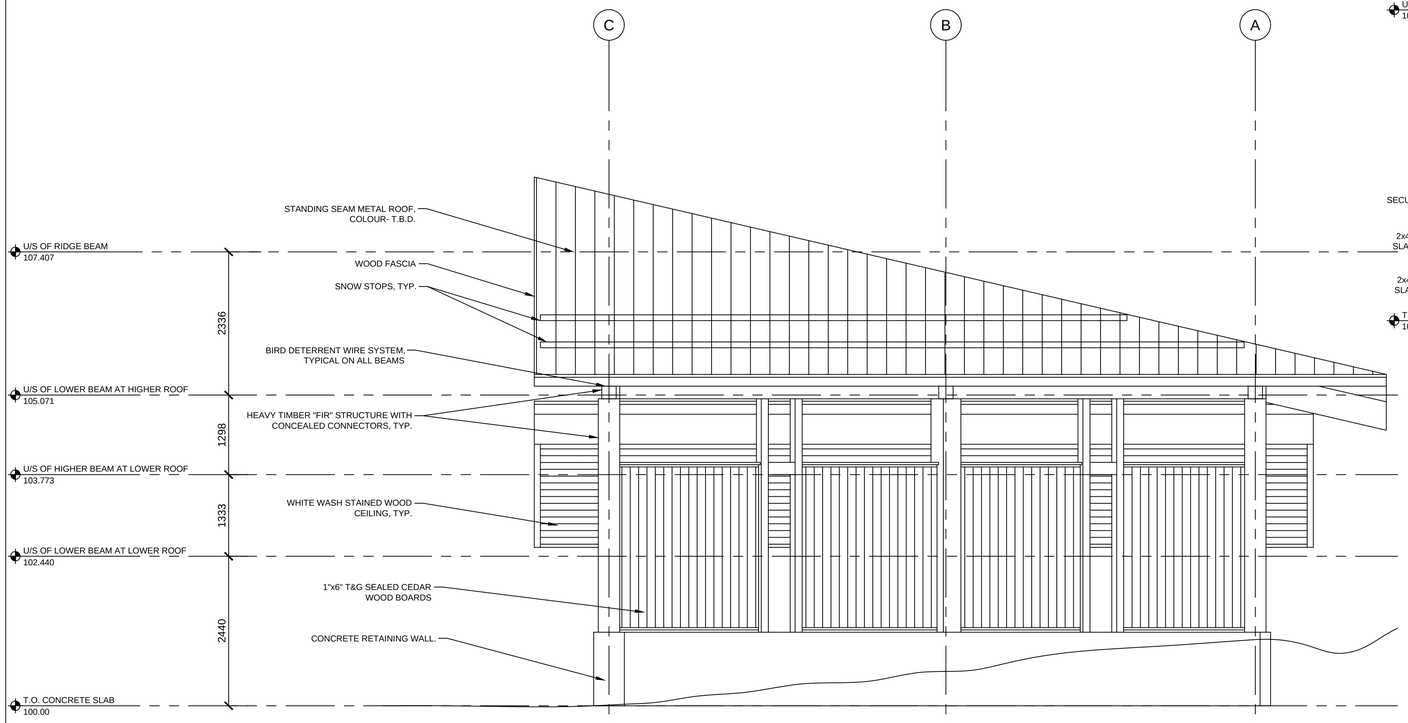
Approved by / Approuvé par
B.MCKENZIE

PWGSC Project Manager / Administrateur de Projets TPSGC
K.VERHOEVEN

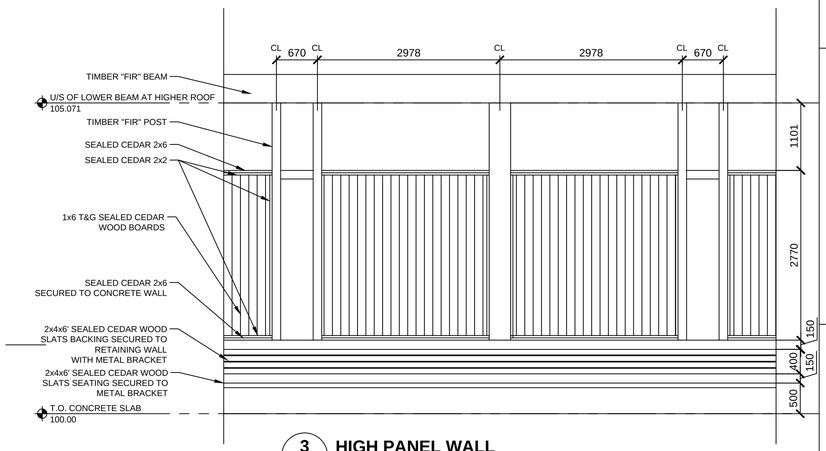
Drawing title / Titre du dessin

NORTH ELEVATION
SOUTH ELEVATION

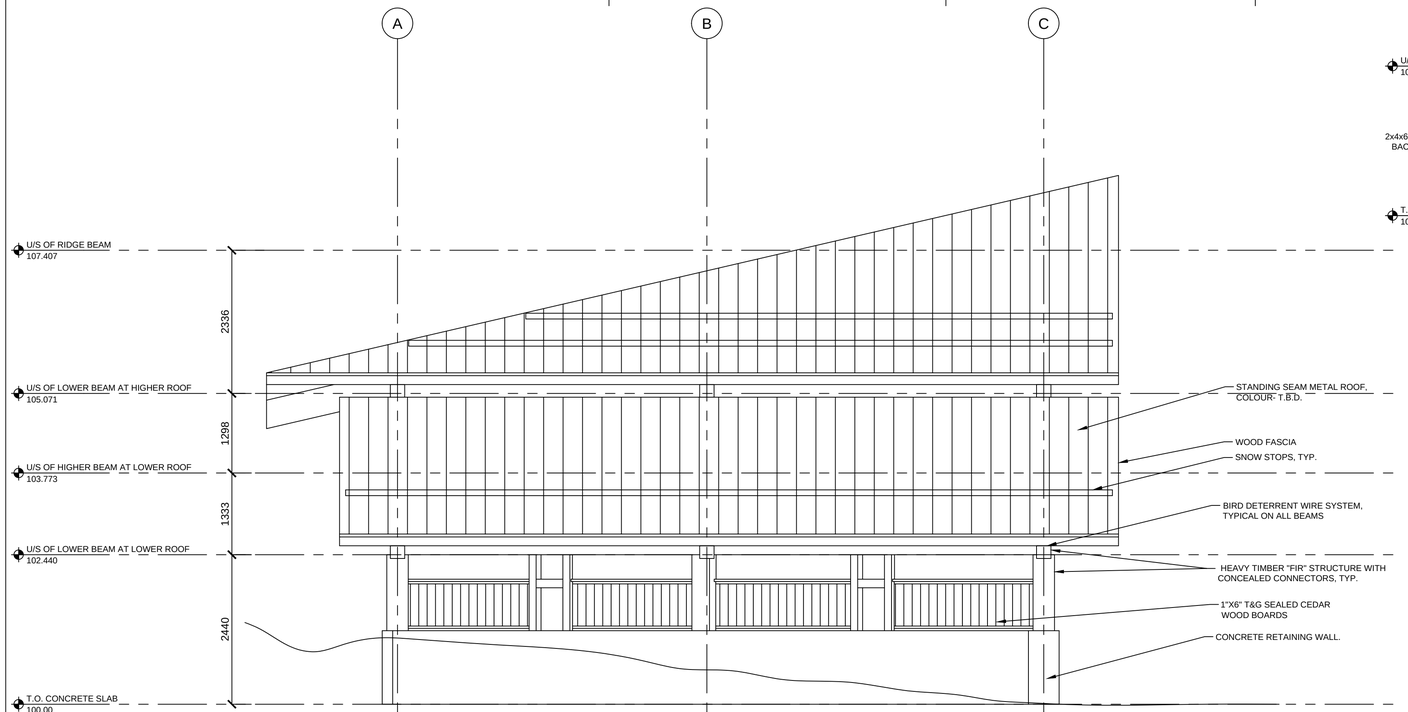
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	**A3-1** OF	**0**



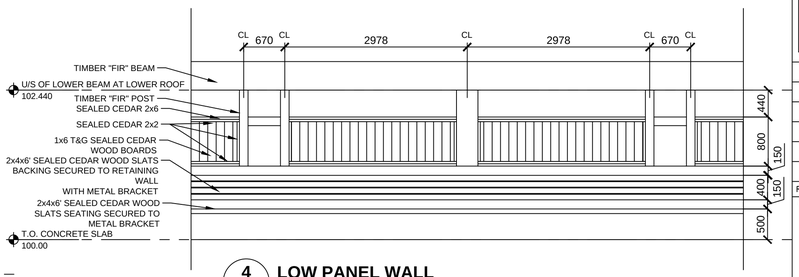
1 RIGHT ELEVATION
SCALE 1:50



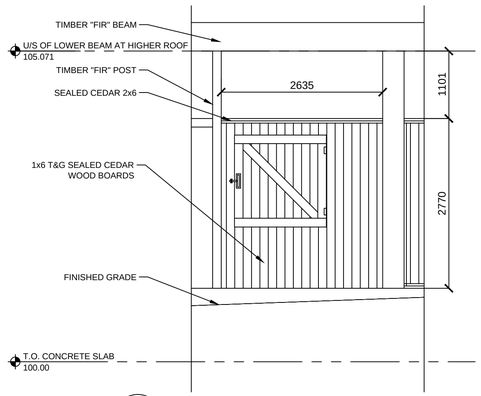
3 HIGH PANEL WALL
SCALE 1:50



2 LEFT ELEVATION
SCALE 1:50



4 LOW PANEL WALL
SCALE 1:50



5 ELECTRICAL PANEL ENCLOSURE
SCALE 1:50

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

BRUCE McKENZIE REGISTERED ARCHITECT ALBERTA
SEPTEMBER 11 2020

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Client client

Parks Canada Parcs Canada

Project title Projet

UPPER LAKE LOUISE TRANSIT SHELTER

Designed by / Conçu par
L.NOBARI

Drawn by / Dessiné par
A.GODEK

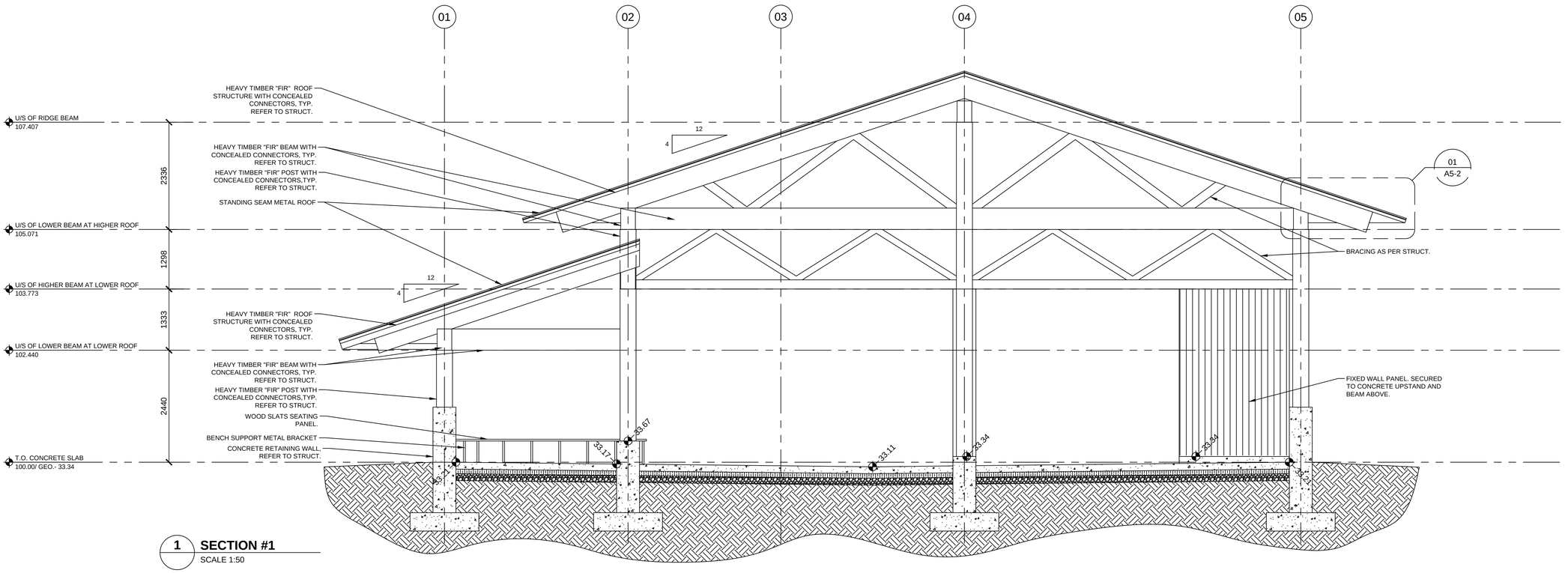
Approved by / Approuvé par
B.MCKENZIE

PWGSC Project Manager / Administrateur de Projets TPSGC
K.VERHOEVEN

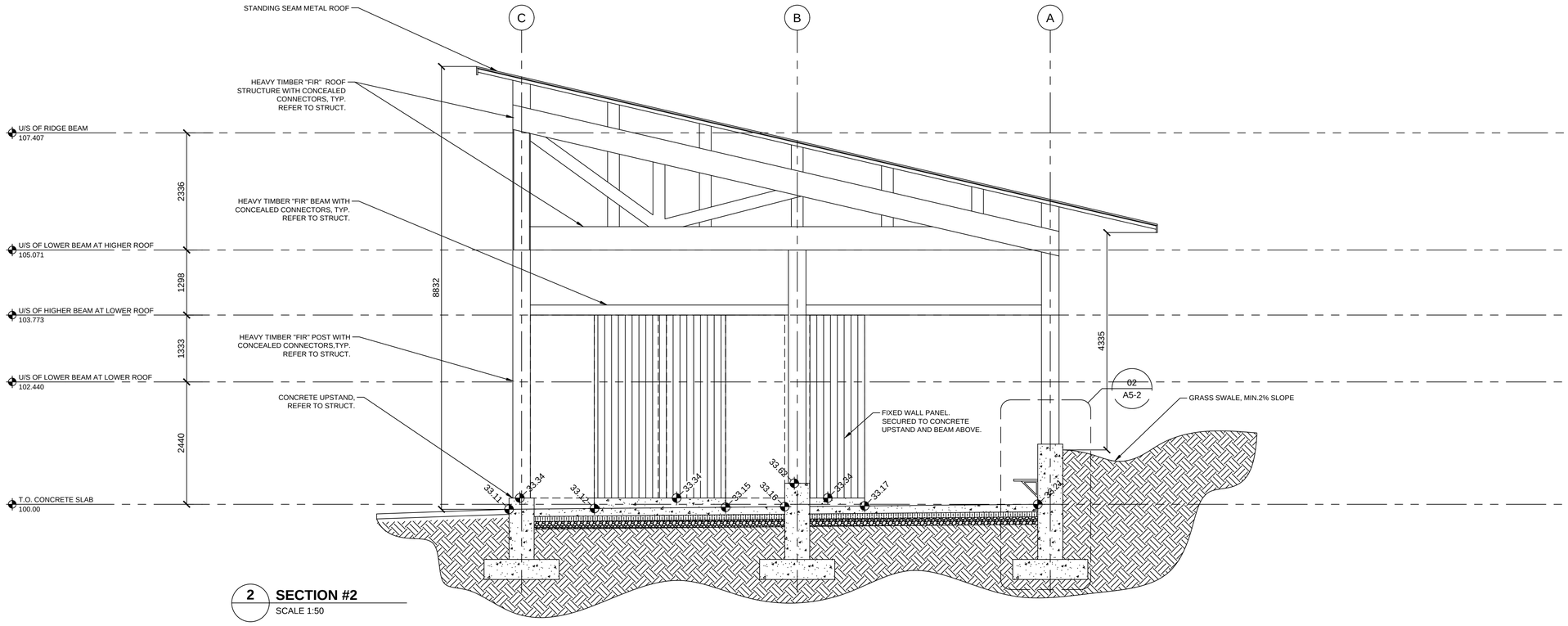
Drawing title / Titre du dessin

EAST ELEVATION
WEST ELEVATION

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	**A3-2** OF	**0**



1 SECTION #1
SCALE 1:50



2 SECTION #2
SCALE 1:50

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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Parks Canada / Parcs Canada

Project title / Projet

UPPER LAKE LOUISE TRANSIT SHELTER

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Drawn by / Dessiné par
A.GODEK

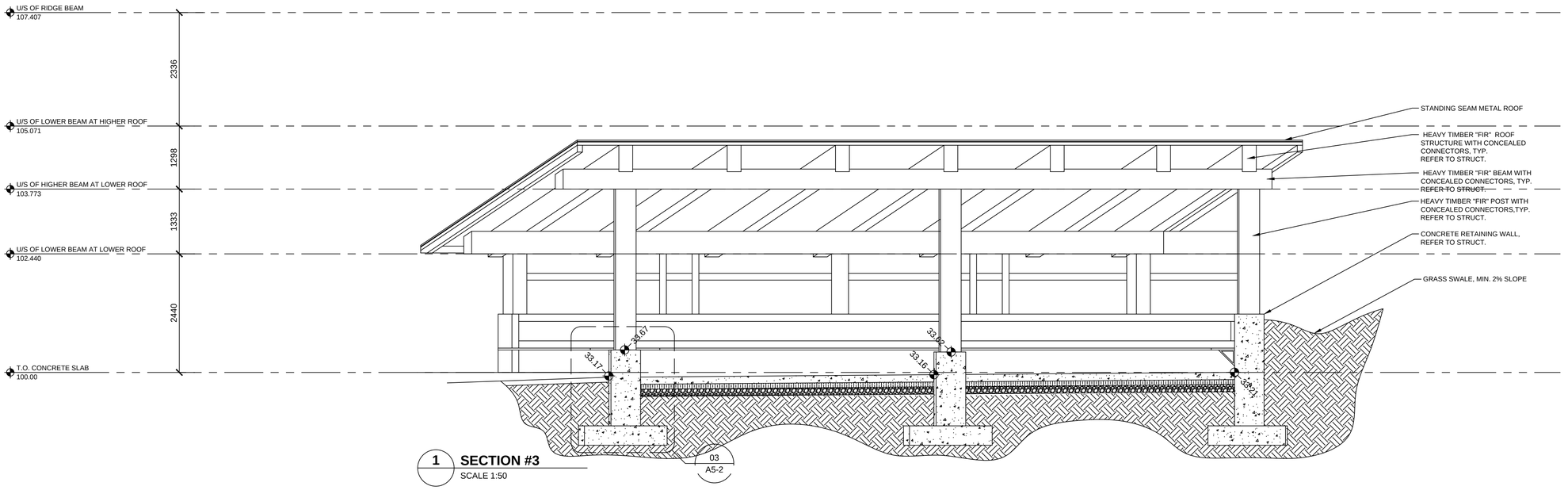
Approved by / Approuvé par
B.MCKENZIE

PWGSC Project Manager / Administrateur de Projets TPSGC
K.VERHOEVEN

Drawing title / Titre du dessin

BUILDING SECTIONS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	**A4-1** OF	**0**



1 SECTION #3
SCALE 1:50

PWGSC – A1 – 841X594

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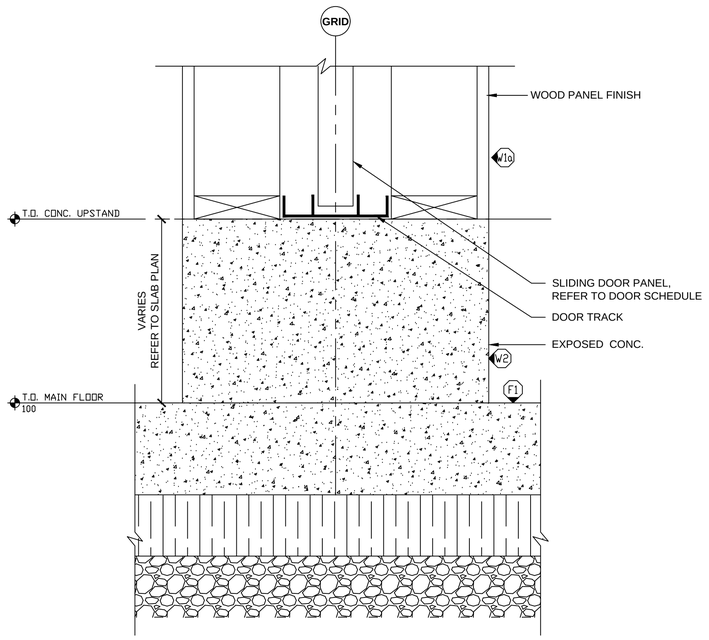
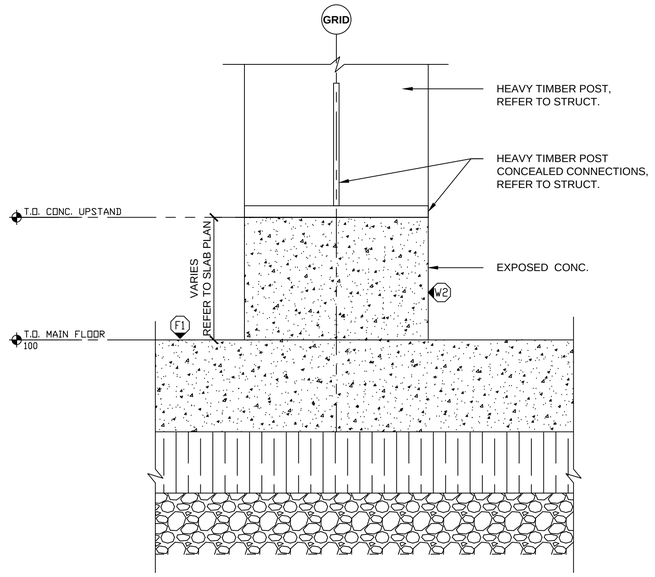
NCCA20-0035	**A4-2** OF	**0**



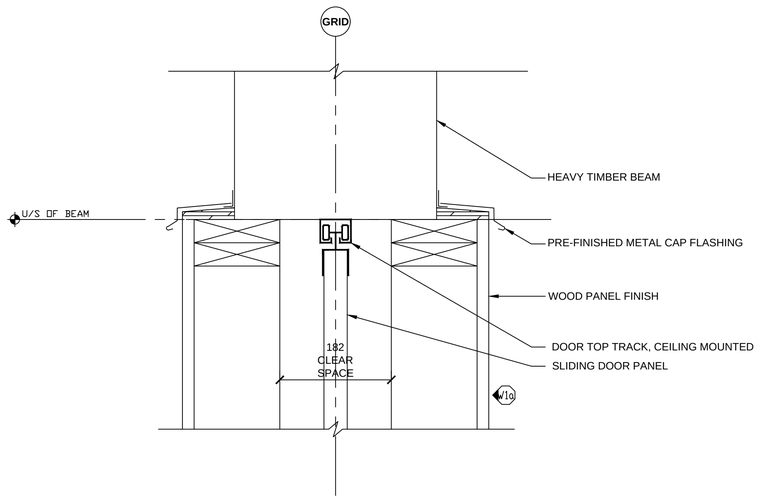
1 UPSTAND AT FEATURE WALL

1:5



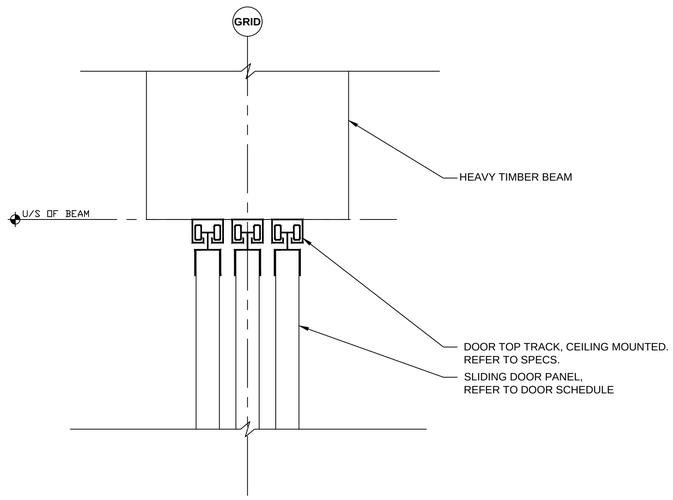
2 POST TO PILE TYP. DETAIL

1:5



3 FEATURE WALL AT BEAM

1:5



4 SLIDING DOOR TOP TRACK, TYP.

1:5

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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Travaux publics et Services gouvernementaux Canada

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BRUCE McKENZIE REGISTERED ARCHITECT ALBERTA
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Parks Canada / Parcs Canada

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UPPER LAKE LOUISE TRANSIT SHELTER

Designed by / Conçu par
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Drawn by / Dessiné par
A.GODEK

Approved by / Approuvé par
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PWGSC Project Manager / Administrateur de Projets TPSGC
K.VERHOEVEN

Drawing title / Titre du dessin

DETAILS

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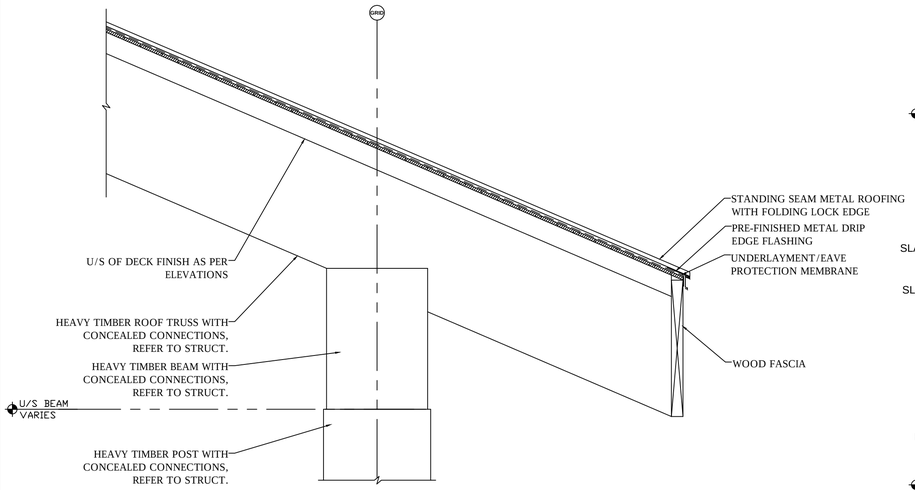
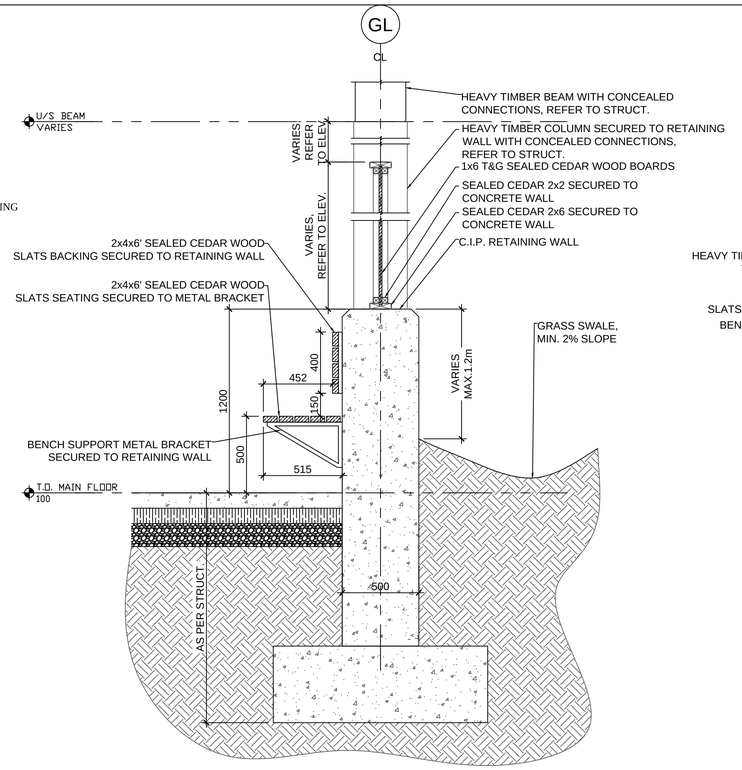
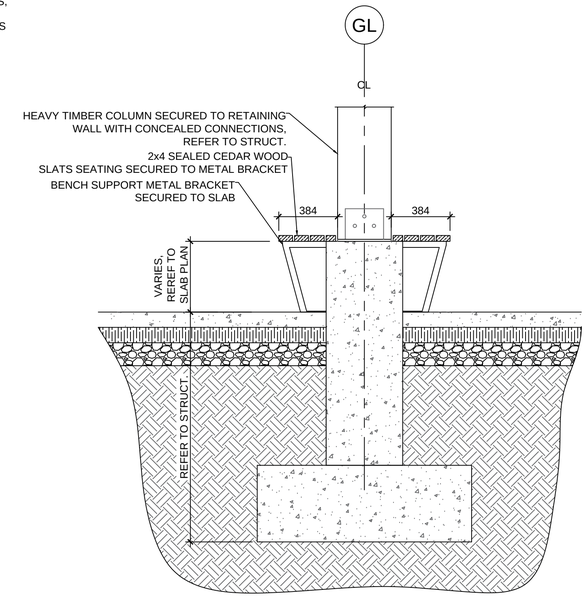
NCCA20-0035	**A5-1** OF	**0**



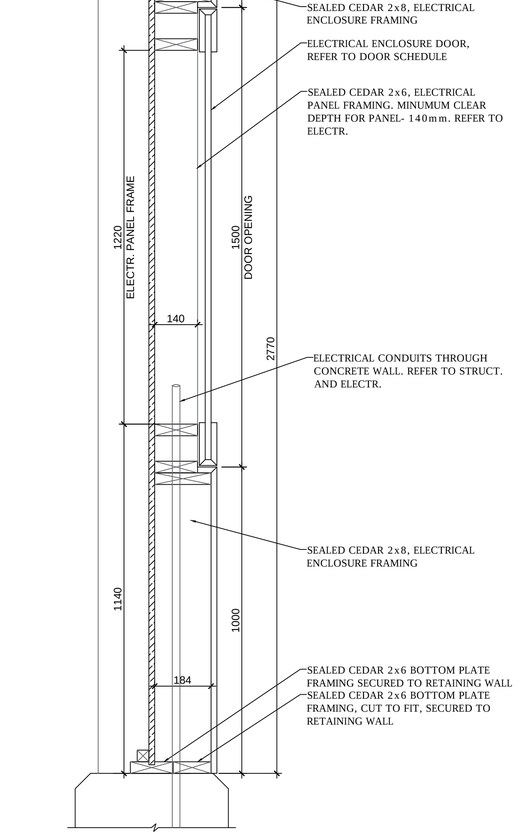
1 ROOF DETAIL, TYP.
1:10



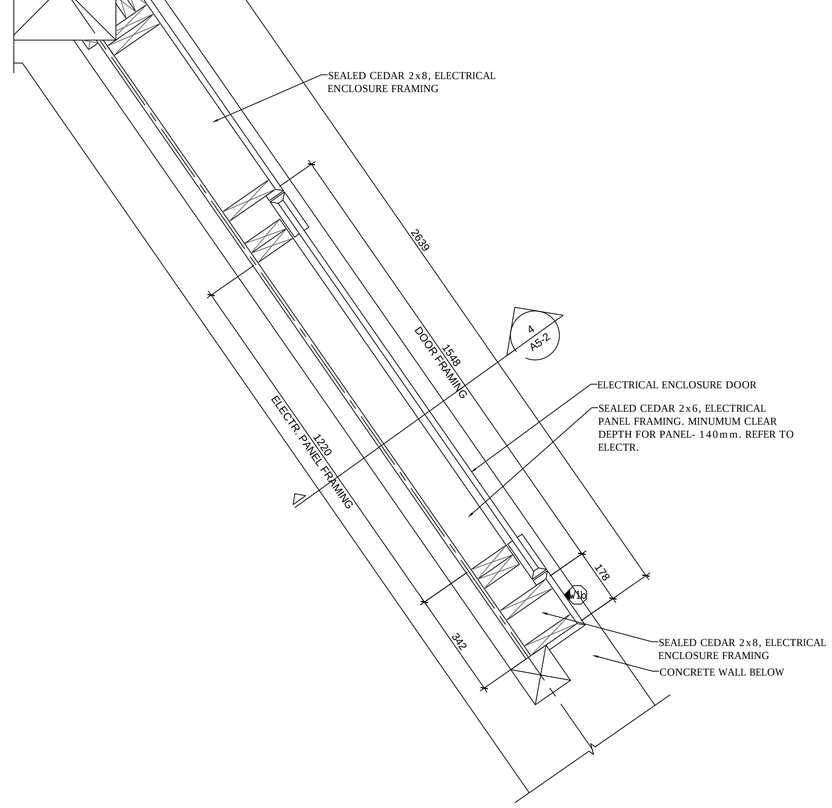
2 BENCH AT RETAINING WALL, TYP.
1:20



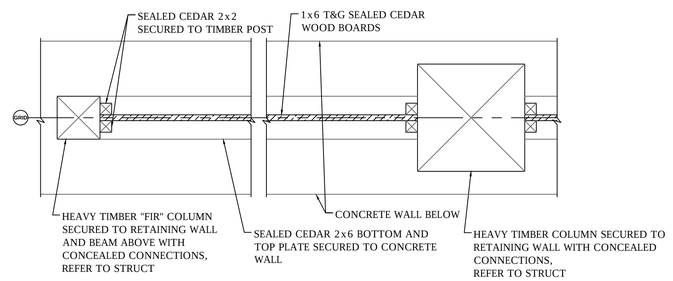
3 BENCH AT PILE AND POST
1:20



4 ELECTRICAL ENCLOSURE SECTION DETAIL
1:10



5 ELECTRICAL ENCLOSURE PLAN DETAIL
1:10



6 EXTERIOR PANEL PLAN DETAIL
1:10

0 10 20 30 40 50 60 70 80 90 100mm

PWGSC – A1 – 841X594

Public Works and Government Services Canada
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BRUCE McKENZIE REGISTERED ARCHITECT SEPTEMBER 11 2020 ALBERTA

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Client / client

Parks Canada / Parcs Canada

Project title / Projet

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Designed by / Conçu par	**L.NOBARI**
Drawn by / Dessiné par	**A.GODEK**
Approved by / Approuvé par	**B.MCKENZIE**
PWGSC Project Manager / Administrateur de Projets TPSGC	**K.VERHOEVEN**

Drawing title / Titre du dessin

DETAILS

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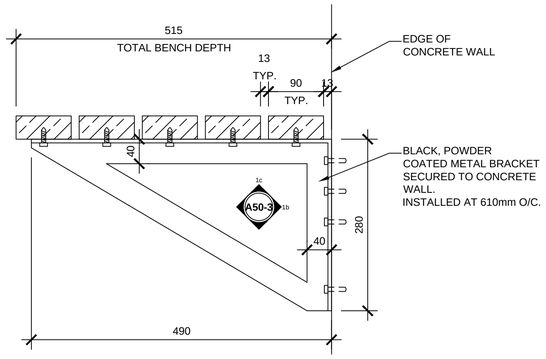
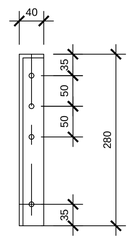
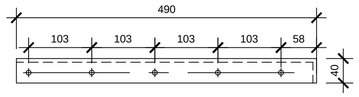


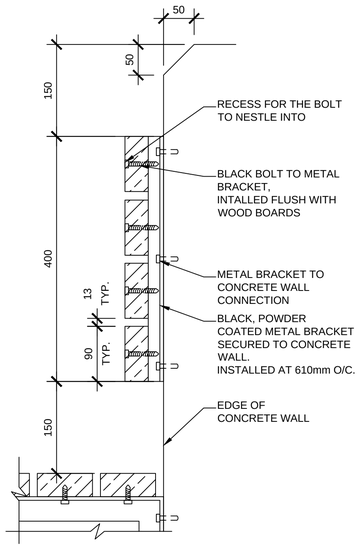
1a **WALL MOUNTED BRACKET ELEVATION, TYP.**
1:5



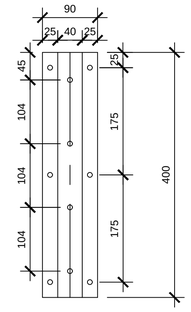
1b **WALL MOUNTED BRACKET BACK ELEVATION, TYP.**
1:5



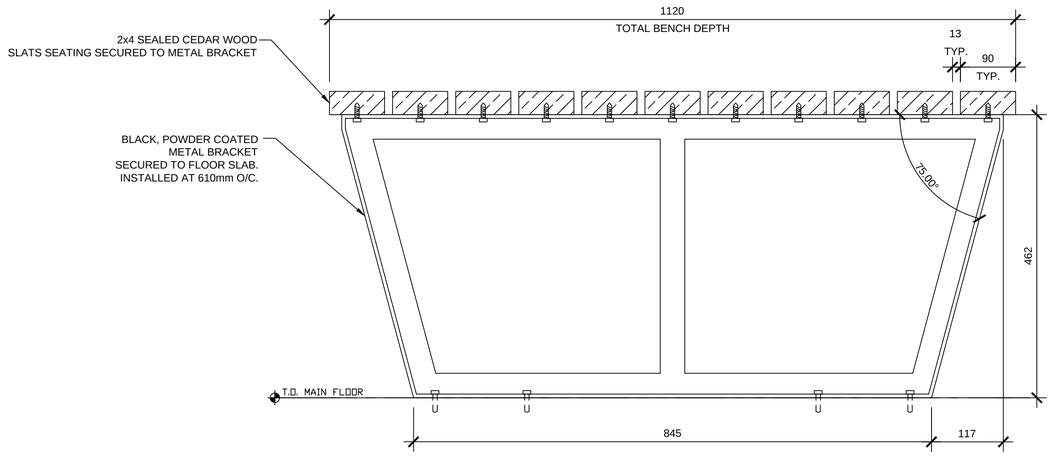
1c **WALL MOUNTED BRACKET TOP VIEW, TYP.**
1:5



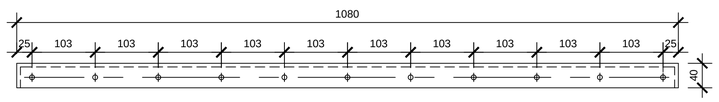
2a **BENCH BACKING**
WALL MOUNTED BRACKET ELEVATION, TYP.
1:5



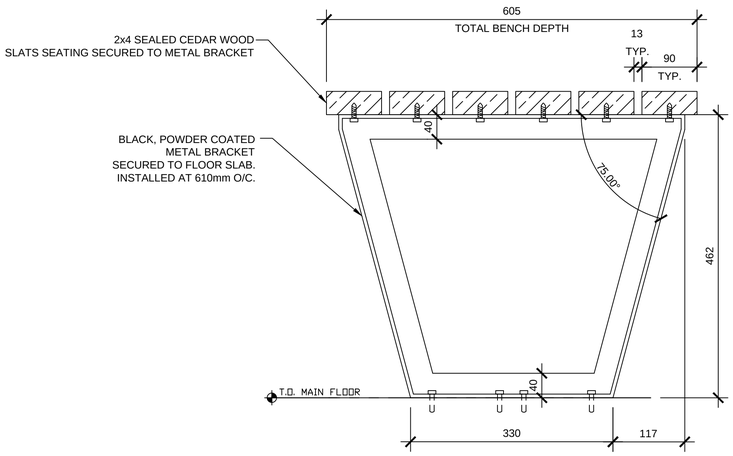
2b **WALL MOUNTED BRACKET FRONT ELEVATION, TYP.**
1:5



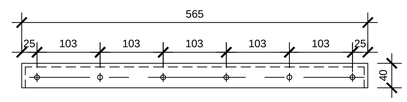
3a **FLOOR MOUNTED LARGE BRACKET ELEVATION, TYP.**
1:5



3b **FLOOR MOUNTED LARGE BRACKET TOP VIEW, TYP.**
1:5



4a **FLOOR MOUNTED SMALL BRACKET ELEVATION, TYP.**
1:5



4b **FLOOR MOUNTED SMALL BRACKET TOP VIEW, TYP.**
1:5

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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DAY USE AREA
–
PARKS CANADA
YOHO & KOOTENAY
FIELD UNIT P.O. BOX 208
LAKE LOUISE AB, T0L 1E0
ISSUED FOR
CONSTRUCTION

BRUCE McKENZIE REGISTERED ARCHITECT ALBERTA
SEPTEMBER 11, 2020

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NORR ARCHITECTS ENGINEERS PLANNERS
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Revision	Description	Date
5		
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0	Design Completion	2020/03/25

Client / client

Parks Canada / Parcs Canada

Project title / Projet

UPPER LAKE LOUISE TRANSIT SHELTER

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Drawing title / Titre du dessin

DETAILS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	**A5-3** OF	**0**

1. GENERAL NOTES

1. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH TYPICAL DETAILS AND ALL OTHER CONTRACT DOCUMENTS. DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY DOCUMENTS.

2. WHERE DOCUMENTS ARE REFERENCED IN THE GENERAL AND DESIGN NOTES, THEY SHALL BE THE LATEST EDITIONS, UNLESS OTHERWISE NOTED OR SHOWN.

3. BEFORE PROCEEDING WITH WORK, CHECK ALL THE DIMENSIONS SHOWN ON STRUCTURAL DRAWINGS AGAINST ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND EXISTING SITE CONDITIONS. REPORT INCONSISTENCIES TO CONSULTANT BEFORE PROCEEDING WITH THE WORK.

4. DO NOT EXCEED DURING CONSTRUCTION, DESIGN LIVE LOADS SHOWN ON PLANS, REDUCE LOADS AS NECESSARY UNTIL MATERIALS REACH DESIGN STRENGTH.

5. DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. ELEVATIONS ARE IN METRES UNLESS NOTED OTHERWISE.

6. SCALES NOTED ON DRAWINGS ARE FOR GENERAL INFORMATION ONLY. DO NOT SCALE DRAWINGS.

7. TYPICAL STRUCTURAL DETAILS SHOWN IN DRAWING SERIES S02 SHALL GOVERN THE WORK. IF DETAILS DIFFER ON OTHER DRAWINGS, THE MOST STRINGENT GOVERNS.

8. SEE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
   a. SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS, EXCEPT AS NOTED. WHERE NOMINAL DIMENSIONS ARE SHOWN, MAKE NECESSARY PROVISIONS FOR ROUGH OPENINGS TO ALLOW PROPER INSTALLATION OF ALL BUILDING SYSTEMS.
   b. SIZE AND LOCATION OF ALL INTERIOR AND EXTERIOR NON-LOAD BEARING PARTITIONS. MAKE NECESSARY PROVISIONS TO ALLOW FOR DEFLECTION OF THE STRUCTURE WITHOUT LOADING ANY NON-LOAD BEARING PARTITIONS.
   c. SIZE AND LOCATION OF ALL CONCRETE CURBS, FLOOR DRAINS SLOPES, INSERTS, ETC. EXCEPT AS SHOWN.
   d. TRENCHES, PITS, AND SUMPS.
   e. ROOF, WALL AND FLOOR FINISHES.
   f. WATERPROOFING AND DAMP PROOFING.
   g. ELEVATIONS AND DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS. NOTE THAT STRUCTURAL DRAWINGS DO NOT INTEND TO DUPLICATE DIMENSIONS SHOWN ON OTHER CONTRACT DOCUMENTS.

10. SEE ELECTRICAL DRAWINGS FOR THE FOLLOWING:
    a. PIPE AND DUCT RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS ETC. EXCEPT AS SHOWN OR NOTED.
    b. ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS.
    c. CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES.

11. ALL ARCHITECTURAL, ELECTRICAL LOADS IMPOSED ON THE STRUCTURE THAT EXCEED 30kg SHALL BE SUBMITTED FOR REVIEW BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION UNLESS SPECIFICALLY DETAILED OR NOTED ON THE STRUCTURAL DRAWINGS.

12. DRAWINGS AND DETAILS ARE INTENDED TO SHOW THE END RESULT OF DESIGN. MODIFICATIONS TO THE DESIGN NECESSARY TO SUIT MEANS AND METHODS OF CONSTRUCTION, SITE DIMENSIONS OR CONDITIONS SHALL BE SUBMITTED TO CONSULTANT FOR APPROVAL BEFORE PROCEEDING.

13. IN THE CASE OF DISCREPANCIES BETWEEN THE GENERAL NOTES, SPECIFICATIONS, PLANS/DETAILS OR REFERENCE STANDARDS THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.

14. MISCELLANEOUS METAL FABRICATORS SHALL:
    a. PROVIDE SHOP DRAWINGS TO THE CONSULTANT PRIOR TO FABRICATION, STAMPED, SIGNED AND DATED BY A PROFESSIONAL ENGINEER.
    b. DESIGN ALL GUARDS AND HANDRAILS TO MEET LATERAL LOADS DESCRIBED IN NBC 4.1.5.14, 4.1.5.15 AND 4.1.5.16.

2. CONSTRUCTION

1. THE CONTRACTOR SHALL PROPOSE A FULL METHODOLOGY FOR EXECUTING THE WORK DETAILED IN THE CONTRACT DOCUMENTS.

2. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS, NO PROVISIONS HAVE BEEN MADE IN THE DESIGN FOR CONDITIONS OCCURRING DURING CONSTRUCTION.
   a. THE CONTRACTOR SHALL DEMONSTRATE THE STABILITY AND SAFETY OF ALL ELEMENTS OF THE BUILDING DURING EVERY STAGE OF CONSTRUCTION.
   b. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BRACING AND SHORING REQUIRED FOR ALL STRESSES AND INSTABILITY OCCURRING DURING CONSTRUCTION. THE CONTRACTOR SHALL ACCEPT FULL RESPONSIBILITY FOR ALL SUCH MEASURES.
   c. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BRACING, SHORING, SHEET PILING OR OTHER TEMPORARY SUPPORTS TO SAFEGUARD ALL EXISTING OR ADJACENCY AFFECTED BY THIS WORK.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE WORK. THE CONSULTANT HAS NO OVERALL SUPERVISION AUTHORITY AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM ACTIONS OF ANY TRADE CONTRACTOR. THE CONSULTANT HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES OF THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS ON THE PROJECT SITE.

4. THE CONTRACTOR SHALL DETERMINE THE LOCATIONS OF ALL ADJACENT UNDERGROUND UTILITIES PRIOR TO EARTHWORK, FOUNDATIONS SHORING AND EXCAVATION. ANY UTILITY INFORMATION SHOWN ON THE DRAWINGS AND DETAILS IS APPROXIMATE AND NOT NECESSARILY COMPLETE.

5. THE PROPOSED SCHEDULE OF WORK IS TO BE COORDINATED WITH ALL SUB-TRADES, THE CONSULTANT AND OWNER.

3. SHOP DRAWINGS

1. FOR ALL STRUCTURAL COMPONENTS SHOWN ON THE STRUCTURAL DRAWINGS, SUBMIT COPIES OF SHOP DRAWINGS AS DIRECTED, FOR REVIEW BY THE CONSULTANT.

2. SHOP DRAWINGS SHALL SHOW COMPLETE INFORMATION FOR THE FABRICATION AND ERECTION OF THE STRUCTURAL COMPONENTS.

3. CONCRETE REINFORCEMENT SHOP DRAWINGS SHALL CLEARLY SHOW BAR LENGTHS, BENDS, LOCATIONS OF BARS, METHOD OF SUPPORT, DETAILS OF PLACEMENT, COORDINATION WITH FORMWORK, EMBEDMENT, AND CONCRETE VIBRATION. PROVIDE AT MINIMUM, WALL AND COLUMN ELEVATIONS, WALL AND BEAM SECTIONS, MATERIAL SCHEDULES, BAR LAP SCHEDULES AND LOCATIONS.

4. REVIEW OF SHOP DRAWINGS BY THE STRUCTURAL CONSULTANT IS ON A SAMPLING BASIS AND SOLELY TO ASSESS THAT THE SUBMITTED SHOP DRAWINGS REFLECT THE INTENT OF THE STRUCTURAL DESIGN. INTENDED OR PROPOSED DEVIATIONS FROM THE DESIGN INTENT MUST NOT BE SUBMITTED ON SHOP DRAWINGS.

5. REVIEW BY THE CONSULTANT SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR ENSURING THAT THE WORK IS COMPLETE, ACCURATE AND IN CONFORMITY WITH ALL CONTRACT DOCUMENTS.

6. SHOP DRAWINGS FOR STRUCTURAL COMPONENTS DESIGNED BY THE FABRICATOR/CONTRACTOR'S ENGINEER MUST BE SEALED, SIGNED AND DATED BY AN EXPERIENCED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF ALBERTA.

4. CAST IN PLACE CONCRETE

1. CONCRETE: CONFORM WITH CAN-CSA A23.1 REQUIREMENTS AND THOSE SHOWN IN THE CONCRETE MIX SCHEDULE BELOW, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

CONCRETE MIX SCHEDULE

LOCATION			MIN. COMPRESSIVE STRENGTH AT 28 DAYS (MPa)	EXPOSURE CLASS	CONCRETE TYPE	AIR CONTENT (%)
CONCRETE EXPOSED TO DEICING CHEMICALS WITH OR WITHOUT FREEZING AND THAWING	FOOTINGS	FOUNDATION WALL FOOTINGS	35	C1	GU	5-8
		PAD FOOTINGS	35	C1	GU	5-8
	WALLS	FOUNDATION WALLS	35	C1	GU	5-8
	COLUMNS	PEDESTALS	35	C1	GU	5-8
	SLABS AND BEAMS	SLAB ON GRADE (EXPOSED TO FREEZING AND THAWING)	32	C2	GU	5-8
	OTHER ELEMENTS	SIDEWALKS, CURBS, PAVING SLABS	32	C2	GU	5-8
		NON-STRUCTURAL TOPPINGS (EXPOSED TO FREEZING AND THAWING)	32	C2	GU	5-8

2. DESIGN CONCRETE MIXES TO SUIT REINFORCEMENT DETAILS SHOWN ON THE PLACEMENT DRAWINGS. PROVIDE SMALLER AGGREGATES OR SELF CONSOLIDATING CONCRETE IN AREAS OF HIGHER REINFORCEMENT DENSITY.

3. SUBMIT MIX DESIGNS FOR EACH CLASS OF CONCRETE TO BE USED ON THE PROJECT.

4. ALL CONCRETE SHALL BE NORMAL DENSITY, UNLESS NOTED OTHERWISE.

5. ADMIXTURES THAT CONTAIN CHLORIDES SHALL NOT BE USED.

6. EXTERIOR CONCRETE AND INTERIOR CONCRETE SUBJECT TO FREEZE/THAW CYCLES, SALT, ETC, INCLUDING WALLS SHALL BE AIR ENTRAINED.

7. REFER TO CAN CSA A23.1&2 AND CONCRETE SPECIFICATIONS SECTION 03.30.00 FOR THE HOT AND COLD WEATHER CONCRETE PLACEMENT PROCEDURES.

8. REFER TO THE CONCRETE TYPICAL DETAILS FOR THE FOLLOWING INFORMATION:
   a. CONCRETE COVER TO REINFORCING.
   b. CONCRETE COVER FOR FIRE RATINGS.
   c. TENSION DEVELOPMENT LENGTH AND LAP SPLICES.
   d. COMPRESSION DEVELOPMENT LENGTH AND LAP SPLICES.

9. FOR ALL STRUCTURAL MEMBERS PROVIDE COVER FOR A MINIMUM 2 HOUR FIRE RATING UNLESS NOTED OTHERWISE IN ARCHITECTURAL DRAWINGS.

10. REINFORCED CONCRETE WALLS EXPOSED TO FIRE ON BOTH SIDES SIMULTANEOUSLY SHALL HAVE THE MINIMUM COVER REQUIREMENTS FOR COLUMNS.

11. DOWELS TO EXISTING CONCRETE SHALL USE DOWELING SYSTEM THAT IS ABLE TO PROVIDE ENOUGH RESISTANCE TO PROVIDED LOADS. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. OBTAIN CONSULTANT'S APPROVAL PRIOR TO DRILLING/DOWELING ANY REINFORCEMENT.

12. DOWELS FROM WALLS TO SLABS SHALL HAVE A MINIMUM EMBEDMENT OF 600 mm INTO WALLS AND SLABS UNLESS OTHERWISE NOTED OR SHOWN.

13. PROVIDE DOWELS TO WALLS AND COLUMNS SIMILAR IN NUMBER, SIZE AND SPACING TO THE VERTICAL STEEL IN THE WALL OR COLUMN ABOVE UNLESS OTHERWISE NOTED OR SHOWN.

14. CONSTRUCTION JOINTS SHALL BE DOWELED, KEYED AND THOROUGHLY CLEANED. ALL CONSTRUCTION JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TYPICAL CONSTRUCTION JOINT DETAILS AND ANY CORRESPONDING NOTES BELOW:
   a. HORIZONTAL CONSTRUCTION JOINTS SHALL NOT BE MADE IN WALLS OR COLUMNS WITHOUT PRIOR APPROVAL FROM THE CONSULTANT.
   b. REFER TO SPECIFICATIONS FOR POUR LENGTH LIMITATIONS.

17. CONTRACTOR TO SUBMIT PROPOSED LOCATIONS OF CONSTRUCTION JOINTS FOR APPROVAL PRIOR TO START OF WORK.

18. PROVIDE WATERSTOPS AT ALL CONSTRUCTION JOINTS IN ELEMENTS RETAINING EARTH OR EXPOSED TO WEATHER.

19. OPENINGS, SLEEVES, EMBEDDED DUCTS:

   a. COORDINATE AND INSTALL ALL REQUIRED EMBEDDED ITEMS, INSETS SLEEVES, POCKETS, ETC. AS REQUIRED PRIOR TO PLACEMENT OF CONCRETE.
   b. ELECTRICAL CONDUITS SHALL NOT PASS THROUGH A PEDESTAL OR IN THE VICINITY OF A PEDESTAL AS SHOWN ON THE TYPICAL DETAILS.
   c. PIPE OR DUCT PENETRATIONS EXCEEDING ONE QUARTER OF THE WALL THICKNESS ARE NOT PERMITTED UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS.
   d. NO ALUMINUM CONDUIT OR OTHER SUCH PRODUCTS WITH MATERIAL DETRIMENTAL TO THE LONGEVITY OF THE CONCRETE SHALL BE EMBEDDED IN THE STRUCTURE.

20. CONCRETE CAST ON SLOPED SURFACES SHALL BEGIN AT THE LOWEST ELEVATION AND CONTINUE MONOLITHICALLY TOWARD THE HIGHER ELEVATION UNTIL THE INTENDED CAST IS COMPLETED.

21. PROVIDE 19 mm x 19 mm CHAMFER STRIP AT ALL EXPOSED CORNERS OF CONCRETE WALLS, INCLUDING EXPOSED CORNERS OF CONCRETE PIERS UNLESS NOTED OTHERWISE ON ARCHITECTURAL DRAWINGS.

22. IN CASES WHERE CONCRETE FINISHES ARE GROUND OR POLISHED ENSURE THAT ADEQUATE COVER IS ACHIEVED IN THE FINAL CONDITION.

23. THE CONCRETE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POUR SEQUENCES AND CONSTRUCTION PROCEDURES FOR ALL CONCRETE WORK TO ACCOUNT FOR TEMPERATURE DIFFERENTIALS AND SHRINKAGE OCCURRING DURING THE CONSTRUCTION PHASE.

24. THE USE OF CHLORIDES SUCH AS DEICING SALTS IS PROHIBITED FOR MELTING ICE PRIOR TO PLACEMENT OF CONCRETE.

25. MINIMUM ELAPSED TIME BETWEEN ADJACENT CONCRETE PLACEMENTS SHALL BE 48 HOURS.

26. JOINTS BETWEEN THE STRUCTURAL (AND ARCHITECTURAL) MEMBERS SHALL BE PROPERLY PREPARED AND FILLED WITH JOINT SEALANT UNLESS NOTED OTHERWISE. ALL JOINT EDGES, INCLUDING TOP AND BOTTOM SURFACES AND VERTICAL AND HORIZONTAL SURFACES SHALL BE FORMED OR TOOLED AS REQUIRED. JOINT SEALANT SHALL BE APPLIED ONLY TO THE TOP, VERTICAL, AND HORIZONTAL SURFACES UNLESS NOTED OTHERWISE ON THE DRAWINGS.

27. JOINTS TO BE PREPARED AND FILLED WITH JOINT SEALANT SHALL INCLUDE, BUT ARE NOT LIMITED TO, CONSTRUCTION JOINTS, CONTROL JOINTS, ISOLATION JOINTS, AND ALL INTERFACE JOINTS BETWEEN SIMILAR AND DISSIMILAR MEMBERS. SPECIFIC LOCATIONS MAY BE INDICATED ON THE DRAWINGS, OR MAY BE REQUIRED BY APPROVED SHOP DRAWINGS, OR MAY OCCUR DUE TO THE CONSTRUCTION SEQUENCE SELECTED BY THE CONTRACTOR.

28. PRIOR TO PLACING CONCRETE ADJACENT TO EXISTING CONCRETE WITHOUT A CONSTRUCTION JOINT, THOROUGHLY CLEAN, DE-GREASE AND MECHANICALLY ROUGHEN EXISTING CONCRETE SURFACES. APPLY EPOXY BONDING AGENT PRIOR TO PLACING FRESH CONCRETE. FOLLOW ALL MANUFACTURER'S INSTRUCTIONS FOR SURFACE PREPARATION, MIXING AND APPLICATION.

29. TOOL SLAB JOINTS AT THE TIME OF FINISHING. SAW CUTTING IS NOT ALLOWED UNLESS APPROVED BY THE ENGINEER.

5. SOILS, BACKFILLING, AND COMPACTION

1. THE CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF ALBERTA TO INSPECT, VERIFY ALL SOIL PARAMETERS AND DESIGN VALUES, BACKFILLING, AND ALL OTHER MATTERS RELATED TO GEOTECHNICAL WORK.

2. THE GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR SHALL INSPECT THE CONDITION AND ASSURE THE ADEQUACY OF ALL EXCAVATIONS, SUB-GRADES, FILLS, AND BACKFILLS BEFORE PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS AND WALLS.

3. BACKFILL MATERIAL SHALL CONSIST OF CLEAN, WELL GRADED GRANULAR SOILS FREE OF ORGANIC MATERIAL, SILT AND CLAY AS SPECIFIED IN THE EARTH WORKS SPECIFICATION SECTION.

4. BACKFILLING SHALL BE CARRIED OUT IN MAXIMUM LIFTS OF 300 mm OF LOOSE FILL, EACH COMPACTED THE STANDARD PROCTOR MAXIMUM DRY DENSITY INDICATED IN THE SPECIFICATIONS.

5. USE LIGHT, HAND-OPERATED COMPACTING EQUIPMENT TO COMPACT BACKFILL ADJACENT TO FOUNDATION WALLS OR RETAINING WALLS.

6. EXCAVATED MATERIAL SHALL BE LEGALLY DISPOSED OF, STORED AT THE SITE, OR USED FOR BACKFILLING OPERATIONS AS REQUIRED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERS RECOMMENDATIONS AND PROJECT SPECIFICATIONS.

6. FOUNDATIONS

1. REFER TO ALL NOTES UNDER FOUNDATION PLANS.

2. FOUND ALL FOOTINGS IN NATURALLY CONSOLIDATED UNDISTURBED SOIL OR COMPACTED ENGINEERED FILL CAPABLE OF SAFELY SUSTAINING A ALLOWABLE BEARING PRESSURE OF 100 kPa. IF THESE CONDITIONS DO NOT PREVAIL AT THE ELEVATIONS SHOWN, EXCAVATE DOWN TO THE UNDISTURBED SOIL AND REPLACE WITH ENGINEERED FILL (REFER TO TYPICAL DETAILS).

3. WHERE STRUCTURAL ELEMENTS, FOOTINGS, PITS, PIERS, ETC. BEAR ON SHALE, PROTECT THE BEARING SURFACE WITH A 65 mm MUD SLAB. OBTAIN GEOTECHNICAL CONSULTANT'S APPROVAL PRIOR TO MUD SLAB PLACEMENT.

4. CONTRACTOR SHALL CARRY OUT EXCAVATION, DEWATERING, BACKFILLING AND FOUNDATION CONSTRUCTION IN ACCORDANCE WITH RECOMMENDATIONS OF GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR.

5. SIDES OF FOUNDATIONS SHALL BE FORMED UNLESS CONDITIONS PERMIT EARTH FORMING. FOUNDATIONS POURED AGAINST EARTH REQUIRE THE FOLLOWING PRECAUTIONS BE ADHERED TO:
   a. PROVIDE APPROPRIATE CONCRETE COVER.
   b. SLOPE SIDES OF EXCAVATIONS AS APPROVED BY GEOTECHNICAL ENGINEER.
   c. CLEAN UP SLOUGHING BEFORE AND DURING CONCRETE PLACEMENT.

6. CARRY EXTERIOR FOOTINGS DOWN 1400 mm MINIMUM BELOW FINISHED GRADE OR FOUND THEM ON NON-FROST SUSCEPTIBLE UNDISTURBED SOIL. PROTECT FOOTINGS EXPOSED TO FROST DURING CONSTRUCTION WITH EARTH EQUIVALENT TO PREVENT FREEZING OF SOIL UNDER FOOTINGS.

7. WHERE FOOTING STEPS ARE NECESSARY, THEY SHALL BE NO STEEPER THAN ONE VERTICAL TO TWO HORIZONTAL UNLESS NOTED OTHERWISE.

8. FOOTING SHALL BE CENTERED UNDER COLUMNS AND WALLS UNLESS SPECIFICALLY DETAILED OTHERWISE ON THE DRAWINGS.

9. DOWELS SHALL BE PLACED BEFORE CONCRETE IS CAST. "WET-STICKING" DOWELS IS NOT PERMITTED UNLESS APPROVED BY THE ENGINEER. TEMPLATES SHALL BE USED TO ENSURE CORRECT PLACEMENT OF DOWELS.

10. NO FOOTINGS OR SLABS SHALL BE PLACED ON OR AGAINST SUB-GRADE CONTAINING FREE WATER, FROST OR ICE. SHOULD WATER OR FROST, HOWEVER SLIGHT ENTER A FOOTING EXCAVATION AFTER SUB-GRADE APPROVAL, THE SUB-GRADE SHALL BE RE-INSPECTED BY THE GEOTECHNICAL ENGINEER AFTER REMOVAL OF THE WATER OR FROST.

11. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUB-GRADE BEFORE AND AFTER CASTING CONCRETE UNTIL THE FULL BUILDING ENCLOSURE IS COMPLETED.

12. FOUNDATION INSULATION SHALL CONSIST OF EXTRUDED POLYSTYRENE WITH A MINIMUM COMPRESSIVE STRENGTH OF 0.275 MPa UNLESS OTHERWISE NOTED.

13. DO NOT EXCEED A RISE OF 1 IN A RUN OF 2 IN THE LINE OF SLOPE BETWEEN ADJACENT EXCAVATIONS. MAXIMUM STEP 600 mm APPROXIMATELY UNLESS NOTED OTHERWISE.

14. INSULATION IS SHOWN WHERE REQUIRED FOR PROTECTION OF THE FOUNDATIONS FROM DAMAGE DUE TO FROST ACTION ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR FOUNDATION INSULATION NOT SHOWN ON THE STRUCTURAL DRAWINGS.

15. FOUNDING ELEVATIONS/HEIGHT OF RETAINING WALLS SHOWN ON STRUCTURAL DRAWINGS ARE BASED ON SURVEY INFORMATION PROVIDED BY A THIRD PARTY SURVEYOR. THOROUGHLY REVIEW THE SITE AND CONFIRM ALL GRADES PRIOR TO EXECUTING THE WORK. REPORT ANY INCONSISTENCIES TO THE CONSULTANT.

7. SLAB ON GRADE

1. UNDER SLAB FILL SHALL CONSIST OF A MINIMUM OF 300 mm OF COMPACTED GRANULAR MATERIAL AS STATED IN THE SPECIFICATIONS.

2. PLACE SLABS-ON-GRADE ON MATERIAL CAPABLE OF SUSTAINING 25 kPa SURCHARGE WITHOUT SETTLEMENT RELATIVE TO THE BUILDING FOUNDATIONS.

9. REINFORCING STEEL

1. REINFORCING STEEL SHALL BE DEFORMED BAR CONFORMING TO CSA STANDARD G30.18-09 (R2014), GRADE 400R, UNLESS OTHERWISE NOTED. REINFORCING STAINLESS STEEL BARS SHALL BE GRADE 420. BAR MARKS WITH PREFIX 'S' DENOTE STAINLESS STEEL BARS. BAR MARKS WITH PREFIX 'C' DENOTED EPOXY-COATED STEEL BARS.

2. REFER TO TYPICAL DETAILS FOR MINIMUM COVER TO REINFORCEMENT.

3. REINFORCING BAR AREAS ARE 100, 200, 300, AND 500 mm² FOR BAR DESIGNATIONS 10, 15, 20, AND 25 RESPECTIVELY.

4. WELDED WIRE FABRIC SHALL HAVE A MINIMUM YIELD STRENGTH OF 450 MPa AND SHALL CONFORM TO CSA STANDARD G30.5. SUPPLY IN FLAT SHEET ONLY.

5. REINFORCING STEEL IS TO BE DETAILED, BENT AND PLACED IN ACCORDANCE WITH R.S.I.C. REINFORCING STEEL MANUAL OF STANDARD PRACTICE. SUBMIT SHOP DRAWINGS INDICATING ALL DETAILS OF REINFORCING STEEL PLACEMENT.

6. ALL REINFORCEMENT SHALL BE SECURELY HELD IN PROPER POSITION WHILE POURING CONCRETE. CONTRACTOR SHALL PROVIDE CHAIRS, SPACER BARS, SUPPORT BARS AND OTHER ACCESSORIES TO SUPPORT REINFORCING. ALL THE WIRE, CHAIRS AND BAR SUPPORTS FOR FOUNDATIONS AND FOR EXPOSED CONCRETE SHALL BE NON-METALLIC OR COATED.

7. CONTRACTOR AND REBAR DETAILER SHALL NOT USE ANY OF THE STRUCTURAL REINFORCEMENT SHOWN ON PLANS AS ACCESSORY/SUPPORT BARS. SUPPORT BARS MUST BE PROVIDED TO MAINTAIN LOCATION OF STRUCTURAL REINFORCEMENT AS INDICATED ON PLANS.

8. TACK WELDING OF REINFORCEMENT IS NOT PERMITTED. WELDED SPLICES IN REINFORCING BARS WILL ONLY BE PERMITTED IF EXPLICITLY SHOWN ON THE STRUCTURAL DRAWINGS OR IF WRITTEN APPROVAL IS GIVEN BY THE CONSULTANT.

9. PROVIDE CLASS 'B' TENSION LAP SPLICES U.N.O. ALL SPLICE LOCATIONS SHALL BE TO THE APPROVAL OF THE CONSULTANT.

10. APPROVED REBAR MECHANICAL COUPLERS MAY BE USED AT THE CONTRACTOR'S OPTION TO AID PLACEMENT OF DOWELS THROUGH FORMS. MECHANICAL SPLICES SHALL DEVELOP 125% OF THE TENSILE STRENGTH OF THE REBAR.

11. LAP SPLICES IN WELDED WIRE MESH SHALL NOT BE LESS THAN 200 mm, AS MEASURED BETWEEN THE OUTERMOST CROSS-WIRES OF EACH FABRIC SHEET.

12. STRUCTURAL BOLTS, NUTS AND WASHERS: CONFORM TO ASTM A325M.

12. TIMBER CONSTRUCTION

1. ALL WOOD FRAMING SHALL CONFORM TO THE MINIMUM STANDARDS BELOW UNLESS NOTED OTHERWISE ON THE ENGINEERING DRAWINGS.

WOOD MEMBER MATERIAL GRADES

MEMBER	MATERIAL GRADE
JOISTS (2x8 AND SMALLER)	SPRUCE-PINE-FIR NO. 2 OR BETTER
BEAMS AND STRINGERS (2x10 AND LARGER)	SPRUCE-PINE-FIR NO. 2 OR BETTER
POSTS AND TIMBERS	SPRUCE-PINE-FIR NO. 2 OR BETTER
STUDS, PLATES & MISC. FRAMING	SPRUCE-PINE-FIR NO. 2 OR BETTER
TOP AND BOTTOM PLATES AT BEARING WALLS	SPRUCE-PINE-FIR NO. 2 OR BETTER
2x4 STUDS	SPRUCE-PINE-FIR NO. 2 OR BETTER
2x6 STUDS AND LARGER	SPRUCE-PINE-FIR NO. 2 OR BETTER
HEAVY TIMBER	DOUGLAS FIR-L STRUCTURAL GRADE
PLYWOOD SHEATHING	GRADE C-D
OSB SHEATHING	STRUCTURAL 1

2. THE USE OF STUD GRADE MATERIAL TO SUBSTITUTE ANY OF THE GRADES NOTED ABOVE MUST BE REVIEWED AND APPROVED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

3. NAILS, SPIKES, AND STAPLES TO CONFORM TO CSA STANDARD B111.

4. ALL NAILS FOR STRUCTURAL WORK SHALL BE COMMON WIRE NAILS UNLESS NOTED OTHERWISE.

5. BEAMS (EXCEPT LINTELS) SHALL HAVE A MINIMUM BEARING LENGTH OF NO LESS THAN 89 mm UNLESS OTHERWISE REQUIRED BY NBCC 2015 (REFER TO NOTES TO TABLES A-8 TO A-11). FLOOR JOISTS SHALL HAVE A MINIMUM BEARING LENGTH OF NO LESS THAN 38 mm UNLESS OTHERWISE NOTED.

6. PROVIDE DOUBLE JOISTS AROUND ALL OPENINGS IN FLOOR OR ROOFS UNLESS NOTED OTHERWISE.

7. PLYWOOD ROOF SHALL BE LAID UP WITH THE GRAIN PERPENDICULAR TO SUPPORTS AND NAILED WITH 75 NAILS AT 150 mm o/c TO FRAMED PANEL EDGES AND OVER STUD WALLS AS SHOWN ON PLANS AND AT 300 mm o/c TO INTERMEDIATE SUPPORTS UNLESS NOTED OTHERWISE.

8. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED TONGUE-AND-GROOVE JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING. TOENAIL BLOCKING TO SUPPORTS WITH (NAILS) AT 300 mm o/c UNLESS NOTED OTHERWISE.

9. AT BLOCKED FLOOR DIAPHRAGMS PROVIDE FLAT 2x4 BLOCKING AT ALL UNFRAMED PLYWOOD PANEL EDGES AND NAIL WITH EDGE NAILING SPECIFIED.

10. PROVIDE MINIMUM BEARING OF 50 mm (2") FOR ALL TIMBER PLANK DECKING.

11. SAWN LUMBER SHALL NOT BE NOTCHED OR DRILLED IN THE FIELD WITHOUT THE PERMISSION OF THE CONSULTANT.

Public Works and Government Services Canada
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REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

PROFESSIONAL ENGINEER — PERMIT TO PRACTICE ABBASS ELSHAFEY — ALBERTA
A. Elshafey
APEGA PERMIT TO PRACTICE NO. 11944
September 10/2020

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Revision	Description	Date
5		
4	ISSUED FOR CONSTRUCTION	2020/09/11
3	ISSUED FOR TENDER	2020/07/31
2	ISSUED FOR 99% REVIEW	2020/07/10
1	ISSUED FOR 66% REVIEW	2020/06/25
0	Design Completion	2020/03/25

Client / client

Parks Canada Parcs Canada

Project title / Projet

UPPER LAKE LOUISE TRANSIT SHELTER

Designed by / Conçu par	N. Chalishajar
Drawn by / Dessiné par	R. Wong
Approved by / Approuvé par	A. Elshafey
PWGSC Project Manager / Administrateur de Projets TPSGC	K.VERHOEVEN

Drawing title / Titre du dessin

GENERAL NOTES

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	S1-01 OF	0

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

12. WOOD IS NOT PERMITTED TO BEAR DIRECTLY ON MASONRY OR CONCRETE WITHOUT PROTECTION. PROVIDE EITHER PRESSURE TREATED WOOD OR POLYETHYLENE SHEET BETWEEN THE WOOD AND MASONRY OR CONCRETE.

13. ALTERATIONS AND/OR CONNECTIONS TO EXISTING CONSTRUCTION ARE NOT PERMITTED UNLESS NOTED OTHERWISE.

14. OPENINGS AND HOLES:

    a. PREPARE LAYOUTS OF ALL NEW HOLES AND OPENINGS THROUGH EXISTING WORK FOR REVIEW BY THE CONSULTANT.
    b. CORE DRILL NEW HOLES FOR PIPES TO A DIAMETER NOT LARGER THAN THE OUTSIDE PIPE DIAMETER PLUS 25 mm (1").
    c. WHERE OPENINGS ARE TO BE CUT, ALWAYS PRE-DRILL THE CORNERS USING A 100 mm (4") DIAMETER CORE DRILL OR DRILL A SERIES OF HOLES TO PREVENT OVERCUTTING AT THE CORNERS.

15. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD.

16. ALL FASTENERS (HANGERS, CLIPS, SCREWS, BOLTS, WASHERS, ETC.) IN CONTACT WITH PRESSURE TREATED OR FIRE TREATED WOOD TO BE STAINLESS STEEL OR HOT DIP GALVANIZED. DO NOT MIX STAINLESS STEEL AND HOT DIP GALVANIZED IN THE SAME CONNECTION.

17. ALL SHIMS SHALL BE SEASONED AND DRIED AND OF THE SAME GRADE (MINIMUM) AS THE MEMBERS CONNECTED.

18. 25 mm DIAMETER HOLES MAY BE DRILLED IN THE CENTER 1/3 OF JOISTS, BUT ALL OTHER HOLES MUST BE APPROVED PRIOR TO DRILLING.

19. DIAPHRAGMS:
    THE ROOF SHEATHING AND SUPPORTING MEMBERS HAVE BEEN DESIGNED AS A DIAPHRAGM. UNLESS OTHERWISE NOTED, DIAPHRAGM CONNECTION REQUIREMENTS FOR FLOOR/ROOF SHEATHING ARE:
    A. UNBLOCKED DIAPHRAGMS:
    a. FASTENERS: 3.7 mm DIAMETER x 75 mm LONG COMMON NAILS.
    b. SPACING: 100 mm o/c AT DIAPHRAGM BOUNDARIES; 100 mm o/c AT SUPPORTED PANEL EDGES; 200 mm o/c ALONG INTERMEDIATE FRAMING MEMBERS.
    B. BLOCKED DIAPHRAGMS (BLOCKING MUST BE PROVIDED AT ALL PANEL EDGES):
    a. FASTENERS: 3.7 mm DIAMETER x 75 mm LONG COMMON NAILS.
    b. SPACING: 75 mm o/c AT DIAPHRAGM BOUNDARIES; 100 mm o/c AT CONTINUOUS PANEL EDGES PARALLEL TO LOAD; 150 mm o/c ALONG INTERMEDIATE FRAMING MEMBERS.
    c. ALL ROOF SHEATHING COMES WITH "H" CLIPS U.N.O. ABOVE.
    C. ALL PANEL EDGES SHALL BE BACKED BY BLOCKING AT ALL JOINTS THAT ARE PERPENDICULAR TO THE FLOOR JOISTS.

20. MANUFACTURED WOOD JOISTS, BEAMS AND TRUSSES:

    a. ALL MANUFACTURED WOOD JOISTS AND TRUSSES AND THEIR CONNECTIONS TO THE CORRESPONDING STRUCTURE BELOW SHALL BE DESIGNED BY SUPPLIER AND THE SHOP DRAWINGS TO BE PROVIDED TO THE STRUCTURAL CONSULTANT FOR REVIEW PRIOR TO FABRICATION, UNLESS NOTED OTHERWISE. SHOP DRAWINGS MUST HAVE A PROFESSIONAL ENGINEER'S SEAL ON ALL PAGES. THIS ENGINEER MUST BE LICENSED IN THE PROVINCE OF JURISDICTION, AND SHALL BE RESPONSIBLE FOR SUPERVISION OF JOISTS / TRUSSES FABRICATION AND INSTALLATION (COMPLETE FLOOR / ROOF SYSTEM INCLUDING JOISTS / TRUSSES, HANGERS, BRACING, ETC. TO BE DESIGNED BY SUPPLIER.)
    b. TOP MOUNT HANGERS ARE NOT PERMITTED FOR USE ON THIS PROJECT. CONTRACTOR TO PROVIDE FACE MOUNT HANGERS AT ALL CONNECTIONS UNLESS NOTED OTHERWISE.
    c. JOIST / TRUSS SUPPLIER SHALL BE RESPONSIBLE FOR ALL FRAMING FOR ADDITIONAL LOADS AND OPENINGS AS REQUIRED. COORDINATE WITH ARCHITECTURAL, AND ELECTRICAL FOR SIZE & LOCATIONS OF ALL OPENINGS.
    d. ACCESSORIES: ALL ACCESSORIES REQUIRED FOR ERECTION INCLUDING BRACING, BRIDGING, BLOCKING, METAL BEARING HARDWARE AND CROSS BRACING MUST BE DESIGNED AND SUPPLIED BY JOIST / TRUSS SUPPLIER.
    e. LIVE LOAD DEFLECTION L/360 FOR ROOF TRUSSES. CANTILEVER JOISTS LIVE LOAD DEFLECTION 2L/480.
    f. LUMBER: MACHINE STRESS RATED OR LAMINATED VENEER. MOISTURE CONTENT 19% AT TIME OF MANUFACTURE.
    g. JOIST / TRUSS SUPPLIER'S ENGINEER TO PROVIDE A CERTIFICATE INDICATING THAT THE FLOOR / ROOF SYSTEM IS FABRICATED AND INSTALLED IN ACCORDANCE WITH THE DESIGN.
    h. JOIST SUPPLIER SHALL BE RESPONSIBLE FOR THE DESIGN OF CONNECTIONS TO TIMBER WALLS AND OTHER MISCELLANEOUS DETAILS.
    i. ALL MANUFACTURED JOIST PRODUCTS AND THEIR CONNECTIONS TO THE SUPPORTING STRUCTURE SHALL BE DESIGNED BY THE SUPPLIER TO RESIST WIND UPLIFT LOADS IN CONFORMANCE WITH THE NATIONAL BUILDING CODE OF CANADA AND ALBERTA BUILDING CODE, UNLESS MORE STRINGENT REQUIREMENTS ARE NOTED ON THE DRAWINGS.
    j. JOIST/TRUSS SUPPLIER'S ENGINEER IS TO ACCOUNT FOR ANY STRUCTURAL IMPLICATIONS ASSOCIATED WITH "NON LOAD BEARING" WALLS CONSTRUCTED TIGHT TO THE UNDERSIDE OF THE TRUSSES.

21. SAWN LUMBER SHALL NOT BE NOTCHED OR DRILLED IN THE FIELD WITHOUT THE PERMISSION OF THE CONSULTANT.

22. ALL LUMBER EXPOSED TO WEATHER OR IN CONTACT WITH MASONRY OR CONCRETE EXPOSED TO WEATHER SHALL BE PRESSURE TREATED AND UNINCISED UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS. INTERIOR MEMBERS BEARING ON EXTERIOR CONCRETE OR MASONRY WALLS EXPOSED TO WEATHER SHALL BE TREATED WITH 3 COATS OF WOOD PRESERVATIVE ALL AROUND. USE EITHER MICRONIZED OR SOLUBLE COPPER BASED WOOD PRESERVATIVE.

13. TESTING AND INSPECTION

THE CONTRACTOR SHALL ARRANGE FOR THE FOLLOWING ITEMS TO BE INSPECTED OR TESTED BY AN INDEPENDENT THIRD-PARTY INSPECTION/TESTING AGENCY ACCEPTABLE TO THE OWNER AND THE CONSULTANT. THE ITEMS TO BE TESTED SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING.

1. GEOTECHNICAL:
   PERFORM ALL TESTING AND INSPECTION (COMPACTION, BEARING CAPACITY, SUB GRADE PREPARATION ETC.) AS PER THE REQUIREMENTS OF THE DRAWINGS AND RECOMMENDATIONS BY GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR

2. CONCRETE:
   CONCRETE TO BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF CSA A23.1 AND A23.2, INCLUDING THE REQUIREMENTS FOR AIR, SLUMP AND AGE PRIOR TO BEING USED. CONTRACTOR TO MAINTAIN RECORDS OF POUR DATES, TESTING PERFORMED, CLASS OF CONCRETE USED AND TEST RESULTS FOR ALL ITEMS POURED. RESULTS OF CYLINDER STRENGTH TESTING TO BE SENT TO OWNER AND CONSULTANT. ALL MIX DESIGNS TO BE REVIEWED AND CERTIFIED BY TESTING AGENCY.

3. REINFORCING STEEL:
   CONTRACTOR SHALL ADVISE CONSULTANT OF PLACEMENT OF ALL REINFORCING STEEL FOR REINFORCED CONCRETE, AT LEAST 24 HOURS PRIOR TO PLANNED TIME OF GROUT OR CONCRETE PLACEMENT.

DESIGN NOTES

1. DESIGN

1. THE STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE:
   a. NATIONAL BUILDING CODE OF CANADA (2015)
   b. CSA - A438-00 "CONCRETE CONSTRUCTION FOR HOUSING AND SMALL BUILDINGS"

2. ALL REINFORCED CONCRETE ELEMENTS HAVE BEEN DESIGNED AND OR SHALL BE CONSTRUCTED IN ACCORDANCE WITH:
   a. CSA - A23.3 "DESIGN OF CONCRETE STRUCTURES"
   b. CSA - A23.1 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION"
   c. CSA - A23.2 "TEST METHODS AND STANDARD PRACTICES FOR CONCRETE"

3. ALL CONCRETE FORMWORK AND OR FALSEWORK SHALL CONFORM WITH:
   a. CSA - 269.1 "FALSEWORK FOR CONSTRUCTION PURPOSES"
   b. CSA - S269.2-M "ACCESS SCAFFOLDING FOR CONSTRUCTION PURPOSES"
   c. CSA - S269.3-M "CONCRETE FORMWORK"

4. ALL STRUCTURAL WOOD ELEMENTS HAVE BEEN DESIGNED AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH:
   a. CSA - O86 " ENGINEERING DESIGN IN WOOD"
   b. CSA - O325 "CONSTRUCTION SHEATHING"
   c. CSA - O122 "STRUCTURAL GLUED-LAMINATED TIMBER"
   d. CSA - O80.1 "PRESERVATIVE TREATMENT OF WOOD"
   e. CSA - S406 "SPECIFICATION OF PERMANENT WOOD FOUNDATIONS FOR HOUSING AND SMALL BUILDINGS"

5. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR LOCATIONS OF REQUIRED FIRE RESISTANCE AND RATINGS.

6. UNIT FLOOR AND ROOF LOADINGS, SOIL BEARING PRESSURES AND FOUNDATION LOADS GIVEN ON DRAWINGS ARE UNFACTORED. MEMBER FORCES GIVEN ON DRAWINGS ARE FACTORED.

2. LATERAL LOADS ON STRUCTURAL FRAME

THE STRUCTURE HAS BEEN DESIGNED TO RESIST THE LEAST FAVORABLE EFFECTS OF THE WIND AND EARTHQUAKE LOADS. THE DESIGN PARAMETERS FOR THESE LOADS ARE AS NOTED BELOW:

- LOCATION: LAKE LOUISE, ALBERTA
- DESIGN LIFESPAN: 50 YEARS

1. WIND LOADS:

   WIND LOAD
   Q = Iw [q (Ce x Cp x Cg)]

   FACTORS
   Iw = 1.0 ULS, 0.75 SLS
   q = 0.33 kPa
   Ce = 0.9

   LOAD CASE A: WIND GENERALLY PERPENDICULAR TO RIDGE:

	C_pC_g	ULS Q (kPa)	SLS Q (kPa)
1	0.97	0.28	0.21
1E	1.46	0.42	0.32
4	-0.77	-0.22	-0.17
4E	-1.16	-0.33	-0.25

   INTERNAL PRESSURE CATEGORY: CATEGORY 3, Cpi= -0.7 TO 0.7

2. EARTHQUAKE LOADS:

   - DESIGN GROUND MOTION VALUES:
     Sa (0.2) = 0.279 Sa (1.0) = 0.099 Sa (5.0) = 0.0170 PGA = 0.128
     Sa (0.5) = 0.184 Sa (2.0) = 0.046 Sa (10.0) = 0.0053 PGV = 0.100
   - SITE CLASSIFICATION FOR SEISMIC SITE RESPONSE:
     CLASS = C (ASSUMED)
   - ACCELERATION AND VELOCITY SITE COEFFICIENTS:
     Fa = 1.19 (ASSUMED) Fv = 1.50 (ASSUMED)
   - TYPES OF SEISMIC FORCE RESISTING SYSTEM:
     Rd = 1.5 Ro = 1.5
   - BASE SHEAR:
     $V = \frac{S \times Ta \times Mu \times Ie \times W}{Rd \times Ro}$

3. THE LATERAL FORCES DUE TO WIND OR EARTHQUAKE ARE RESISTED BY TRUSS FRAME & MOMENT CONNECTION FRAMING.

3. DEAD LOADS (SERVICE)

1. DEAD LOADS ARE LOADS GENERATED BY THE SELF-WEIGHT OF THE STRUCTURE.

2. SUPERIMPOSED DEAD LOADS ARE LOADS GENERATED BY THE WEIGHT OF ELECTRICAL SYSTEMS, TOPPINGS, PARTITIONS, AND MISCELLANEOUS LOADINGS.

3. REFER TO NOTES ON PLANS FOR ALL LOADS APPLIED TO THE STRUCTURE.

4. ROOF LIVE LOADS

1. THE ROOF AREAS HAVE BEEN DESIGNED TO RESIST THE LEAST FAVOURABLE EFFECTS OF THE SNOW, RAIN, AND WIND LOADINGS. THE DESIGN PARAMETERS FOR THESE LOADS ARE NOTED BELOW.

2. SNOW LOAD:
   a. THE FOLLOWING SNOW LOAD HAS BEEN CONSIDERED IN THE DESIGN OF THE ROOF AREAS.

   SNOW LOAD
   S = Is [Ss (Cb x Cw x Cs x Ca) + Sr]
   S = 4.05 kPa (SLS)
   S = 4.5 kPa (ULS)

   FACTORS
   Is = 1.0 ULS, 0.9 SLS
   Ss = 5.5 kPa
   Sr = 0.1 kPa
   Cb = 0.8
   Cw = 1.0
   Cs = 1.0
   Ca = 1.0

   b. ADDITIONAL SNOW ACCUMULATION ADJACENT TO HIGHER WALLS, ROOFS, AND MECHANICAL UNITS IS INDICATED ON PLANS.

3. RAIN LOAD:
   a. THE DESIGN OF THE ROOF STRUCTURE IS BASED ON THE ASSUMPTION THAT THE FLOW CONTROL ROOF DRAINS SATISFY ALL REQUIREMENTS OF THE NATIONAL PLUMBING CODE OF CANADA, 2015 EDITION.
   b. THE TOTAL RAIN LOAD APPLIED OVER THE HORIZONTAL PROJECTION OF THE SURFACE SHALL BE THE LESSER OF EITHER THE ONE-DAY RAINFALL OR A DEPTH OF RAINWATER EQUAL TO 30 mm ABOVE THE LEVEL OF THE SCUPPERS
      ONE-DAY RAINFALL = 55 mm (I_{50} yr)
      DESIGN RAIN LOAD = 55 mm
   c. THE ACTUAL DISTRIBUTION OF THIS LOAD HAS BEEN ADJUSTED TO ACCOUNT FOR THE ACTUAL ROOF SLOPES AND PROFILE.

4. WIND UPLIFT ON ROOFS:
   a. ROOF ELEMENTS (TRUSSES, BEAMS, ETC) AND THEIR CONNECTIONS TO THE STRUCTURE ARE TO BE DESIGNED FOR THE UPWARD SUCTION DUE TO WIND. THE UNFACTORED NET UPWARD DESIGN PRESSURES ARE SHOWN ON DETAIL 02/S2-02.

5. LIVE AND OTHER LOADS:
   a. SEE NOTES ON FLOOR PLANS. ALL VALUES GIVEN ARE UNFACTORED LOADS UNLESS OTHERWISE SHOWN ON PLAN.

5. **GEOTECHNICAL INFORMATION**

1. SOIL REPORT WAS NOT AVAILABLE AT THE TIME OF DESIGN.
2. FOUNDATIONS HAVE BEEN DESIGNED FOR ALLOWABLE BEARING CAPACITY OF 100kPa. GENERAL CONTRACTOR TO RETAIN A GEOTECHNICAL ENGINEER TO CONFIRM SOIL CONDITIONS ON SITE.

6. **LATERAL LOADS ON FOUNDATION WALLS**

1. WALLS RETAINING EARTH ARE DESIGNED TO WITHSTAND A HORIZONTAL PRESSURE 'P' [kPa] AT ANY DEPTH 'h' [m] GIVEN BY THE EQUATION:
   P = K (g x h + q)

   WHERE THE: SOIL PRESSURE COEFFICIENT K = 0.55
   UNIT WEIGHT OF SOIL g = 20.0 kN/m^2
   SURCHARGE q = 12.0 kPa

2. THE WALLS HAVE BEEN DESIGNED ASSUMING FREE DRAINING BACKFILL WHICH DOES NOT PERMIT THE BUILD-UP OF HYDROSTATIC PRESSURE. REFER ALSO TO TYPICAL DETAILS.

7. SERVICEABILITY CRITERIA

1. THE STRUCTURE HAS BEEN DESIGNED TO LIMIT THE MAXIMUM INTERSTORY DRIFT UNDER I_{10} AVERAGE HOURLY WIND PRESSURE TO H/500, WHERE 'H' IS THE FLOOR TO FLOOR HEIGHT BETWEEN TWO ADJACENT FLOORS. UNDER SEISMIC LOAD, THE INTERSTORY DRIFT HAS BEEN LIMITED TO Hs/40, WHERE 'Hs' IS THE HEIGHT OF THE STOREY.

2. NON-STRUCTURAL ELEMENTS SUCH AS CLADDING, MECHANICAL, AND ELECTRICAL SYSTEMS AND THEIR SUPPORTS, AND THE LIKE, MUST BE DESIGNED AND DETAILED TO ACCOMMODATE THE ANTICIPATED MOVEMENTS NOTED ABOVE.

8. PROVISIONS FOR FUTURE EXTENSIONS

1. THE STRUCTURE HAS NOT BEEN DESIGNED FOR ANY FUTURE EXTENSIONS.

Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

PROFESSIONAL ENGINEER ALBERTA — AHMED ABBASS ELSHAFEY — A. Elshafey

APEGA PERMIT TO PRACTICE NO. 11944
September 10/2020

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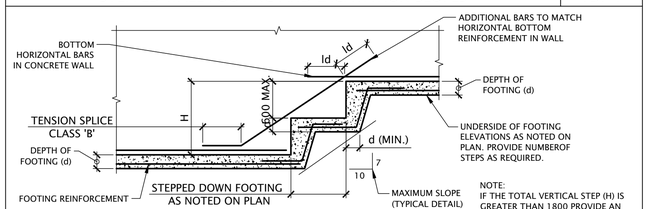
STRUCTURAL ABBREVIATIONS — TD-1

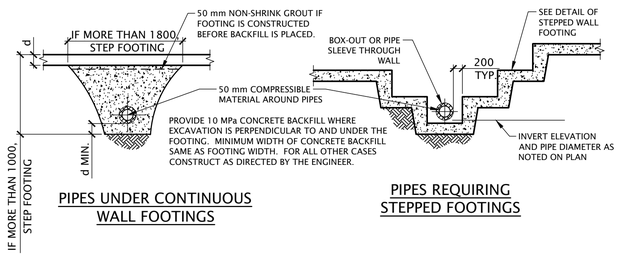
AB	ANCHOR BOLT	MAX	MAXIMUM
ADJ	ADJUSTABLE	MC	MOMENT CONNECTION
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL	MECH	MECHANICAL
		MEW	MIDDLE EACH WAY
ALT	ALTERNATE	MEZZ	MEZZANINE
ARCH	ARCHITECTURAL	MID	MIDDLE
AIFB	ASPHALT IMPREGNATED FIBREBOARD	MISC	MISCELLANEOUS
		MIN	MINIMUM
B, BOT	BOTTOM	ML	MIDDLE LAYER
BC	ELEV. BOT. OF CAISSON	m	METRE
BET	BETWEEN	mm	MILLIMETRE
BEW	BOTTOM EACH WAY	mm^2	SQUARE MILLIMETRE
BLDG	BUILDING	MPa	MEGAPASCAL
BLL	BOTTOM LOWER LAYER		
BM	BEAM	NBC	NATIONAL BUILDING CODE OF CANADA
BM	BENDING MOMENT BAR	NCB	NO COLUMN BELOW
BPL	BEARING/BASE PLATE	NF	NEAR FACE
BRG	BEARING	NIC	NOT IN CONTACT
BSMT	BASEMENT	NTS	NOT TO SCALE
BUL	BOTTOM UPPER LAYER		
		o/c	ON CENTRE
C	CHANNEL	o/o	OUT TO OUT
c/c	CENTRE TO CENTRE	OPNG	OPENING
c/w	COMPLETE/CONNECT WITH	OPP	OPPOSITE
CA	COLUMN ABOVE	OSB	ORIENTED STRAND BOARD
CB	COLUMN BELOW	OWSJ	OPEN WEB STEEL JOIST
CANT	CANTILEVER		
CF	CONCRETE FIREPROOFED	PC	PRECAST
CJ	CONTROL JOINT	Pf, Cf, Tf, Mf, Vf	FACTORED LOADS
CL	CLEAR	P, C, T, M, V	UNFACTORED LOADS
℄	CENTRE LINE	PL	PLATE
COMP	COMPOSITE	PROJ	PROJECTION
COL	COLUMN	P/T	POST TENSIONED, PRESSURE TREATED
CONC	CONCRETE	PVC	POLYVINYL CHLORIDE
CONST JT	CONSTRUCTION JOINT		
CONT	CONTINUOUS	R	REACTION, RADIUS
		REF	REFERENCE
DET	DETAIL	REM	REMAINDER
D.FIR	DOUGLAS FIR	REQ'D	REQUIRED
DIA, Ø	DIAMETER	REV	REVISION
DIM	DIMENSION	RE	RIGHT END
DIAG	DIAGONAL	REINF	REINFORCEMENT
DL	DEAD LOAD	R/W	REINFORCE WITH
DO, "	DITTO		
DP	DEEP	S	STANDARD BEAM
DWG	DRAWING	SS	SINGLE STIRRUP
DWL	DOWEL	SDF	STEP DOWN FOOTING
DN	DOWN	SECT	SECTION
DS	DOUBLE STIRRUPS	SF	SPRAY FIREPROOFED
		SIM	SIMILAR
EA	EACH	SLA	SNOW LOAD ACCUMULATION
EC	EPOXY COATED	SL	SNOW LOAD
EE	EACH END	SLS	SERVICEABILITY LIMIT STATE
EF	EACH FACE	SOG	SLAB ON GRADE
EJ, EXP JT	EXPANSION JOINT	SP	SPADREL, SPRUCE
EL, ELEV	ELEVATION	SPEC	SPECIFICATION
ELEC, ELECT	ELECTRICAL	SPF	SPRUCE-PINE-FIR
EMBED	EMBEDMENT	STD	STANDARD
EQ	EQUAL	STRUCT	STRUCTURAL
ES	EACH SIDE	STIFF	STIFFENER
EW	EACH WAY	SQ	SQUARE
EX, EXIST	EXISTING	ST	STRAIGHT
EXT	EXTERIOR	STIR	STIRRUP
FIN	FINISHED	t, THK	THICKNESS
FL	FLOOR	T	TOP
FTG	FOOTING	T&B	TOP AND BOTTOM
FMC	FULL MOMENT CONNECTION	TC	ELEV TOP OF CAISSON
fy	YIELD STRENGTH	TEMP	TEMPERATURE
f'c	COMPRESSIVE STRENGTH OF CONC	TEW	TOP EACH WAY
FF	FAR FACE	TJ	TIE JOIST
		TLE	TOP LEFT END
GALV	GALVANIZED	TLL	TOP LOWER LAYER
GA	GAUGE	TRE	TOP RIGHT END
GL	GRIDLINE	TUL	TOP UPPER LAYER
		TYP	TYPICAL
HE	HOOK EACH END	T/O	TOP OF
HH	HOOK - HOOK (HOOK EACH END)	TOS	TOP OF SLAB
HIF	HORIZONTAL INSIDE FACE	TSB	TENSION SPLICE CLASS 'B'
HOF	HORIZONTAL OUTSIDE FACE		
HOR. HORIZ	HORIZONTAL	USF	UNDERSIDE OF FOOTING
HEF	HORIZONTAL EACH FACE	U/S	UNDERSIDE
HSS	HOLLOW STRUCTURAL SECTION	U/N	UNLESS NOTED
HP	HIGH POINT	UNO	UNLESS NOTED OTHERWISE
		UL	UPPER LAYER
INT	INTERIOR	ULS	ULTIMATE LIMIT STATE
ID	INSIDE DIAMETER	UPT	UPTURNED
k	KILO	VBF	VERTICAL BRACED FRAME
kN	KILONEWTON	VEF	VERTICAL EACH FACE
kPa	KILOPASCAL	VERT	VERTICAL
		VOF	VERTICAL OUTSIDE FACE
Ld	DEVELOPMENT LENGTH	VIF	VERTICAL INSIDE FACE
LE	LEFT END	VSC	VERTICALLY SLOTTED CONNECTION
LG	LONG/LENGTH		
LL	LIVE LOAD	W	WIDE FLANGE BEAM
LLH	LONG LEG HORIZONTAL	WP	WALL PLATE, WORKING POINT
LLV	LONG LEG VERTICAL	WT	STRUCTURAL TEE
L	SINGLE ANGLE	WWF	WELDED WIRE FABRIC
⊥⊥	DOUBLE ANGLE	WWF	WELDED WIDE FLANGE
LP	LOW POINT		

STEPPED WALL FOOTING AND EXCAVATION SLOPES — TDF-1



NOTE:
IF THE TOTAL VERTICAL STEP (H) IS GREATER THAN 1800 PROVIDE AN INTERMEDIATE SECTION OF HORIZONTAL FOOTING A MINIMUM OF 1200 LONG BETWEEN ADJACENT STEPS.

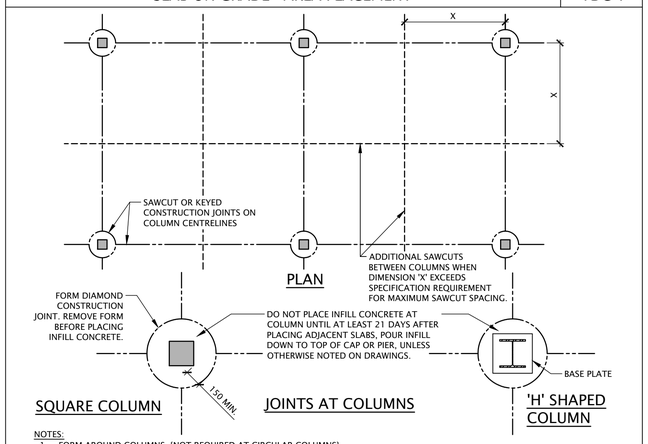
STEPPED WALL FOOTING



PIPES UNDER CONTINUOUS WALL FOOTINGS

PIPES REQUIRING STEPPED FOOTINGS

SLAB ON GRADE - AREA PLACEMENT — TDC-1



PLAN

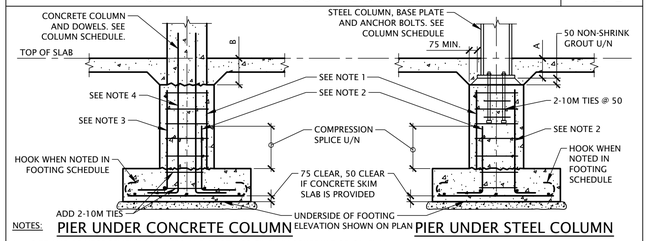
SQUARE COLUMN

JOINTS AT COLUMNS

'H' SHAPED COLUMN

NOTES:
1. FORM AROUND COLUMNS. (NOT REQUIRED AT CIRCULAR COLUMNS)
2. "X" ≤ 30 TIMES SLAB THICKNESS, EXCEPT WHERE CONCRETE IS PROPORTIONED FOR MAXIMUM BULK DENSITY IN ACCORDANCE WITH SPECIFICATION "X" ≤ 40 TIMES SLAB THICKNESS UNLESS NOTED OTHERWISE.
3. PLACE SLAB AREA NO LARGER THAN WHAT CAN BE FINISHED IN ONE DAY.
4. SAWCUT CONTROL JOINTS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS.
5. LIMIT RATIO OF LENGTH TO WIDTH OF ANY SAWCUT PANEL TO 1.5 MAXIMUM.
6. REFER TO TYPICAL SLAB ON GRADE JOINT DETAIL FOR REQUIRED DEPTH OF SLAB SAWCUT.
7. FILL SAWCUT JOINTS IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS.

COLUMN AND WALL FOOTING DETAILS — TDF-2



NOTES:

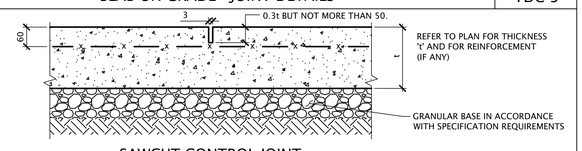
PIER UNDER CONCRETE COLUMN

PIER UNDER STEEL COLUMN

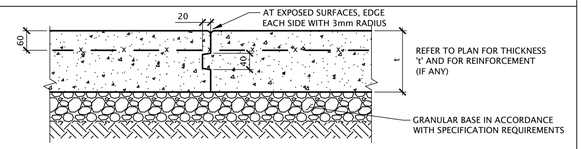
1. SIZE AND REINFORCEMENT FOR PIERS AND FOOTINGS GIVEN IN SCHEDULE OR ON PLAN.
2. FOR PIERS 1800 HIGH OR MORE, PROVIDE DOWELS FROM FOOTING TO PIER, TO MATCH PIER REINFORCEMENT. EXTEND DOWELS TO BOTTOM OF FOOTING AND HOOK.
3. FOR PIERS LESS THAN 1800 HIGH, EXTEND PIER REINFORCEMENT TO THE BOTTOM OF FOOTING AND HOOK.
4. WHERE THERE IS NO PIER, CONSIDER THE CONCRETE COLUMN AS A PIER GREATER THAN 1800 HIGH. REFER TO NOTE 2.
5. WHERE COLUMN BAR SPLICE LENGTH IS GREATER THAN PIER HEIGHT, EXTEND COLUMN DOWELS TO BOTTOM OF FOOTING AND HOOK.
6. FOR SPLICE LENGTHS, SEE CONCRETE COLUMN TYPICAL DETAILS.
7. WHERE NO PIER REINFORCING IS NOTED, PROVIDE VERTICAL STEEL OF 0.5% OR 4-15 DOWELS (WHICHEVER IS GREATER) FROM FOOTING INTO PIER.
8. A - DISTANCE TO UNDERSIDE OF BASE PLATE GIVEN IN COLUMN SCHEDULE OR ON PLAN.
   B - DISTANCE TO TOP OF PIER GIVEN IN CONCRETE COLUMN SCHEDULE.

FOOTING UNDER REINFORCED CONCRETE WALL

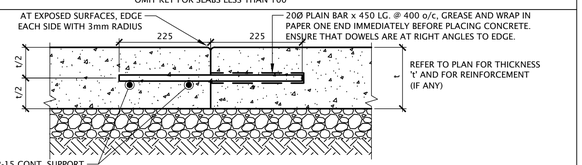
SLAB ON GRADE - JOINT DETAILS — TDC-3



SAWCUT CONTROL JOINT



KEYED CONSTRUCTION JOINT
OMIT KEY FOR SLABS LESS THAN 100



DOWELED CONSTRUCTION JOINT
FOR SLAB GREATER THAN 100

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PROFESSIONAL ENGINEER — ALBERT ABBASS ELSHAFEY — A. Elshafey — PERMIT TO PRACTICE — RRR RR

APEGA PERMIT TO PRACTICE NO.
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September 10/2020

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1	ISSUED FOR 66% REVIEW	2020/06/25
0	Design Completion	2020/03/25

Client — client

Parks Canada — Parcs Canada

Project title — Projet

UPPER LAKE LOUISE TRANSIT SHELTER

Designed by — Conçu par
N. Chalishajar

Drawn by — Dessiné par
R. Wong

Approved by — Approuvé par
A. Elshafey

PWGSC Project Manager — Administrateur de Projets TPSGC
K.VERHOEVEN

Drawing title — Titre du dessin

TYPICAL DETAILS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	S1-03 OF	0

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

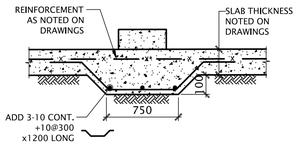
TEMPERATURE REINFORCEMENT FOR CONCRETE SLABS, COVER SLABS, AND TOPPINGS — TDC-14

	CONCRETE THICKNESS (mm)	REINFORCEMENT
TOPPINGS & COVER SLAB	50	152 x 152 - MW13.3 x MW13.3
	65	152 x 152 - MW18.7 x MW18.7
	75	152 x 152 - MW25.8 x MW25.8
	90	152 x 152 - MW25.8 x MW25.8
	100	102 x 102 - MW13.3 x MW13.3
SLABS	100	10@500
	110	10@450
	120	10@400
	130	10@350
	140	10@350
	150	10@300
	160	10@300
	170	10@250
	180	10@250
	190	10@250
	200	10@250
	210	10@200
	220	10@200
	230	10@200
	240	10@200
	250	10@200
	260	15@350
	270	15@350
	280	15@350
	290	15@300
	300	15@300

NOTES:

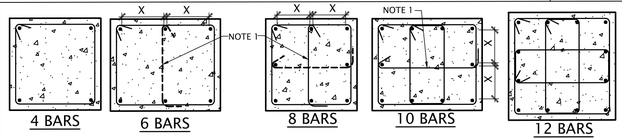
1. UNLESS OTHERWISE NOTED PROVIDE TEMPERATURE REINFORCEMENT IN CONCRETE SLABS, COVER SLABS AND TOPPINGS AS SHOWN IN THIS TABLE.
2. UNLESS OTHERWISE NOTED, PLACE TEMPERATURE REINFORCEMENT PERPENDICULAR TO MAIN REINFORCEMENT IN ONE WAY SLABS, WHERE MAIN REINFORCEMENT CONSISTS OF TOP AND BOTTOM BARS, PLACE TEMPERATURE REINFORCEMENT ALTERNATELY AT TOP AND BOTTOM.
3. UNLESS OTHERWISE NOTED, PROVIDE WELDED WIRE FABRIC IN FLAT SHEETS.
4. PROVIDE REINFORCEMENT FOR CONCRETE TOPPING WHICH IS PLACED OVER A SLIP SHEET OR MEMBRANE. TEMPERATURE REINFORCEMENT IS NOT REQUIRED WHERE CONCRETE TOPPINGS ARE PLACED AND BONDED DIRECTLY ON CONCRETE SLABS.
5. UNLESS OTHERWISE NOTED, PLACE WELDED WIRE FABRIC WITH 25 mm TOP COVER. LAP REBARS WITH CLASS 'B' LAP SPLICE. LAP END OF WELDED WIRE FABRIC SUCH THAT THE OVERLAP MEASURED BETWEEN THE OUTERMOST CORSS-WIRES OF EACH FABRIC SHEET SHALL NOT BE LESS THAN ONE SPACING OF CROSS-WIRE PLUS 50 mm.
6. UNLESS OTHERWISE NOTED, PROVIDE EDGE OF ALL SLABS WITH 2-15 CONTINUOUS.
7. IN UNHEATED AREAS, INCREASE REINFORCEMENT BY 25%.

SLAB ON GRADE DETAILS - ADDITIONAL REINFORCEMENT — TDC-5

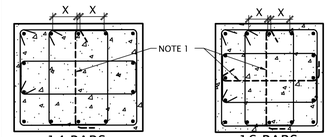


TYPICAL THICKENING UNDER CONCRETE CURB

ARRANGEMENT OF COLUMN VERTICALS AND TIES — TDC-27



4 BARS | 6 BARS | 8 BARS | 10 BARS | 12 BARS

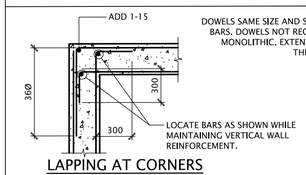


14 BARS | 16 BARS

NOTES:

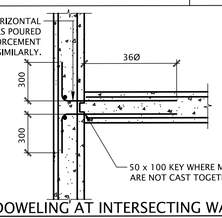
1. TIE VERTICALS WITH TIES SHOWN DASHED WHEN DISTANCE X IS GREATER THAN 150.
2. PROVIDE FULL TIES FOR EVERY OTHER VERTICAL BAR.
3. CLEAR DISTANCE BETWEEN VERTICAL BARS SHALL NOT BE LESS THAN:
   - 1.4 x VERTICAL BAR DIAMETER
   - 1.4 x THE MAXIMUM SIZE OF THE COARSE AGGREGATE
   - 30 mm
4. SEE COLUMN SCHEDULE FOR ARRANGEMENTS NOT SHOWN ON THIS DRAWING.
5. ALTERNATIVE TIE ARRANGEMENTS MAY BE ACCEPTABLE SUBJECT TO REVIEW BY ENGINEER.
6. PROVIDE 10M TIES UNLESS OTHERWISE NOTED
7. VERTICAL BAR ARRANGEMENT AS SHOWN ABOVE UNLESS OTHERWISE SHOWN ON COLUMN SCHEDULES.
8. ALTERNATE POSITION OF HOOKS WHEN PLACING SUCCESSIVE SETS OF TIES.

WALL REINFORCEMENT DETAILS — TDC-29



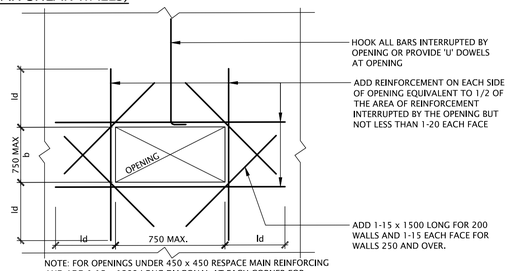
LAPPING AT CORNERS

DOWELS SAME SIZE AND SPACING AS HORIZONTAL BARS. DOWELS NOT REQUIRED IF WALLS POURED MONOLITHIC. EXTEND WALL REINFORCEMENT THRU AND BEND SIMILARLY.



REINFORCEMENT ARRANGEMENT FOR WALLS (OTHER THAN SHEAR WALLS)

DOWELING AT INTERSECTING WALLS

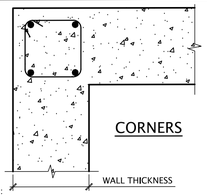


NOTE: FOR OPENINGS UNDER 450 x 450 RESPACE MAIN REINFORCING AND ADD 1-15 x 1200 LONG DIAGONAL AT EACH CORNER FOR EVERY 200 OF WALL THICKNESS OR PORTION THEREOF.

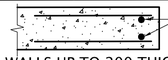
OPENING IN WALL

MINIMUM CONCRETE WALL REINFORCEMENT U/N — TDC-33

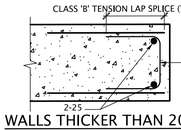
MARK	VERT BARS EA FACE As=.0015Ag	HORZ EA FACE HEATED AREAS As=.002Ag	HORZ EA FACE UNHEATED AREAS As=.003Ag	REMARK
W150A	10@450	10@325		1 LAYER
W200A	10@325	10@500		1 LAYER
W200	10@500	10@500	10@325	
W250	10@500	10@400	15@500	
W300	10@450	10@325	15@450	
W350	10@375	10@275	15@375	
W400	10@325	15@500	15@325	
W450	10@300	15@450	15@300	
W500	10@250	15@400		
W550	10@250	15@350		
W600	15@450	15@325		
W650	15@400	15@300		
W700	15@375	15@275		
W750	15@350	15@250		



CORNERS



WALLS UP TO 200 THICK



WALLS THICKER THAN 200

NOTES:

1. IN ALL WALLS PROVIDE AT LEAST THE REINFORCEMENT SHOWN IN THE SCHEDULE ABOVE TOGETHER WITH REINFORCEMENT NOTED TO BE ADDED.
2. WALL MARKS DENOTE THICKNESS OF WALLS AND CORRESPONDING REINFORCEMENT.
3. SEE ALSO RELATED DETAILS AND NOTES ON DRAWINGS.
4. AT ENDS OF WALLS CONFORM TO DETAILS SHOWN ABOVE UNLESS OTHERWISE NOTED ON DRAWINGS.

CONCRETE COVER TO REINFORCING STEEL — TDC-34

	MINIMUM COVER CSA-A23.1	MINIMUM COVER CSA-S413 (SEE NOTE #4)	MINIMUM COVER FOR FIRE-RESISTANCE RATING 1.5 h	2 h	3 h	4 h
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	75		75	75	75	75
CONCRETE CAST AGAINST FORMS, BUT EXPOSED TO EARTH OR WEATHER:						
15 BARS, 16Ø WIRE, AND SMALLER, STIRRUPS, TIES, AND SPIRAL.....	40		40	40	40	40
COLUMN PRINCIPAL REINFORCEMENT.....	50		50	50	65	75
20 TO 55 BARS, AND ALL OTHER BARS.....	50		50	50	50	50
CONCRETE NOT EXPOSED TO WEATHER, OR NOT IN CONTACT WITH GROUND:						
35 BARS AND SMALLER FOR SLABS AND WALLS SEE NOTE #3	20	TOP 40 BOT. 30	20	25	35	40
FOR JOISTS	20		25	25	40	50
BEAM PRINCIPAL REINFORCEMENT	40		40	40	40	50
COLUMN PRINCIPAL REINFORCEMENT.....	40		50	50	65	75
STIRRUPS, TIES, SPIRALS, AND ALL OTHER BARS	40		40	40	40	40

NOTES:

1. FOR CAST-IN-PLACE (NON-PRESTRESSED) CONCRETE, PROVIDE MINIMUM CONCRETE COVER TO REINFORCEMENT ACCORDING TO CSA-A23.1 UNLESS OTHERWISE NOTED ON DRAWINGS.
2. WHERE THE FIRE-RESISTANCE RATING OF A COLUMN EXCEEDS 2 HOURS, ADD WELDED WIRE MESH, MINIMUM 102 x 102 - MW3.2 x MW3.2, MIDWAY IN CONCRETE COVER.
3. FOR SHORT WALLS WHERE INDICATED ON THE DRAWING, PROVIDE COVER SAME AS FOR COLUMNS.
4. FOR PARKING STRUCTURES PROVIDE MINIMUM CONCRETE COVER TO REINFORCEMENT ACCORDING TO CSA-S413. COVER TO BOTTOM REINFORCEMENT IN THE MAIN FLOOR SLAB EXPOSED TO DEICING MUST MEET REQUIREMENTS OF CSA-S413.

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Région de l'ouest

PROFESSIONAL ENGINEER — PERMIT TO PRACTICE ALBERTA — AHMED ABBASS ELSHAFEY

APEGA PERMIT TO PRACTICE NO. 11944
September 10/2020

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Client / client

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Project title / Projet

UPPER LAKE LOUISE TRANSIT SHELTER

Designed by / Conçu par: N. Chalishajar
Drawn by / Dessiné par: R. Wong
Approved by / Approuvé par: A. Elshafey
PWGSC Project Manager / Administrateur de Projets TPSGC: K.VERHOEVEN

Drawing title / Titre du dessin:

TYPICAL DETAILS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	S1-04 OF	0

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

MINIMUM DEVELOPMENT AND LAP SPLICE LENGTHS IN COMPRESSION — TDC-35

BAR SIZE	Fy MPa	DEVELOPMENT LENGTHS (ℓdc)			LAP SPLICE
		f'c = 20 MPa	f'c = 25 MPa	f'c = 30 MPa	f'c = 30 MPa
10	400	240	220	200	300
10	500	300	270	250	430
15	400	340	310	280	440
15	500	430	380	350	640
20	400	420	370	340	590
20	500	520	470	430	850
25	400	540	480	440	730
25	500	680	600	550	1070
30	400	640	570	530	880
30	500	800	720	660	1280
35	400	770	690	630	1030
35	500	960	860	790	1490
45	400	940	840	770	
45	500	1170	1050	960	
55	400	1210	1080	990	
55	500	1510	1350	1240	

NOTES:

1. VALUES GIVEN ARE FOR NORMAL WEIGHT CONCRETE AND DEFORMED BARS ONLY AND ARE TO BE MODIFIED ACCORDING TO THE FOLLOWING APPLICABLE FACTORS.
2. LAP SPLICES ARE NOT PERMITTED FOR BAR SIZES 45 AND 55.
3. 'ℓdc' DENOTES MINIMUM DEVELOPMENT LENGTH FOR EMBEDMENT OF DOWELS IN COMPRESSION.
4. INCREASE LAP SPLICE LENGTHS FOR f'c LESS THAN 20 MPa BY A FACTOR OF 1.33.
5. MINIMUM LAP SPLICE AND DEVELOPMENT LENGTHS MAY BE REDUCED UNDER THE FOLLOWING SPECIAL CONDITIONS BY THE FACTORS SHOWN:
   a) EXCESS AREA OF STEEL .....(AS REQUIRED/AS PROVIDED)
      USE 1.0 UNLESS NOTED OTHERWISE.
   b) BARS ENCLOSED WITH A SPIRAL WHICH HAS A MINIMUM WIRE DIA. OF 6 AND 100 MAXIMUM PITCH 0.75
6. AFTER APPLYING ALL APPLICABLE FACTORS OF NOTES 4 AND 5, THE LAP SPLICE LENGTHS SHALL NOT BE MADE LESS THAN 300 AND THE DEVELOPMENT LENGTHS SHALL NOT BE MADE LESS THAN 200.

TENSION DEVELOPMENT LENGTH AND TENSION LAP SPLICES (Fy = 400 MPa) — TDC-36

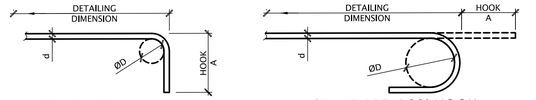
CONCRETE	25 MPa		30 MPa		35 MPa		40 MPa		45 MPa		50 MPa		CONCRETE
SPLICE / BAR	CLASS A Ld	CLASS B	CLASS A Ld	CLASS B	CLASS A Ld	CLASS B	CLASS A Ld	CLASS B	CLASS A Ld	CLASS B	CLASS A Ld	CLASS B	SPLICE / BAR
TABLE 1: UNCOATED, OTHER THAN TOP BARS													
10	300	380	300	350	300	320	300	300	300	280	300	300	10
15	440	570	400	520	370	480	350	450	330	420	310	400	15
20	580	750	530	690	490	640	460	600	430	560	410	530	20
25	900	1170	830	1070	760	990	720	930	670	880	640	830	25
30	1080	1410	990	1290	920	1190	860	1110	810	1050	770	1000	30
35	1260	1640	1150	1500	1070	1390	1000	1300	940	1220	890	1160	35
TABLE 2: UNCOATED, TOP BARS													
10	380	490	350	450	320	420	300	390	280	370	300	350	10
15	570	730	520	670	480	620	450	580	420	550	400	520	15
20	750	980	690	890	640	830	600	770	560	730	530	690	20
25	1170	1530	1070	1390	990	1290	930	1210	880	1140	830	1080	25
30	1410	1830	1290	1670	1190	1550	1110	1450	1050	1360	1000	1290	30
35	1640	2130	1500	1950	1390	1800	1300	1690	1220	1590	1160	1510	35
TABLE 3: EPOXY-COATED BARS, OTHER THAN TOP BARS													
10	440	570	400	520	370	480	350	450	330	420	310	400	10
15	650	850	600	770	550	720	520	670	490	630	460	600	15
20	870	1130	790	1030	730	950	690	890	650	840	610	800	20
25	1350	1760	1240	1610	1140	1490	1070	1390	1010	1310	960	1240	25
30	1620	2110	1480	1930	1370	1780	1280	1670	1210	1570	1150	1490	30
35	1890	2460	1730	2250	1600	2080	1500	1950	1410	1840	1340	1740	35
TABLE 4: EPOXY-COATED TOP BARS													
10	490	640	450	590	420	540	390	510	370	480	350	450	10
15	740	960	670	880	620	810	580	760	550	720	520	680	15
20	980	1280	900	1170	830	1080	780	1010	730	950	700	900	20
25	1530	1990	1400	1820	1300	1690	1210	1580	1140	1490	1090	1410	25
30	1840	2390	1680	2180	1560	2020	1460	1890	1370	1780	1300	1690	30
35	2150	2790	1960	2550	1810	2360	1700	2210	1600	2080	1520	1970	35

NOTES:

1. USE FOLLOWING TENSION LAP SPLICE LENGTHS UNLESS NOTED OTHERWISE ON DRAWINGS.
2. TENSION DEVELOPMENT LENGTHS, ℓd, DENOTED AS TENSION LAP SPLICE CLASS A.
3. FOR COLUMNS, USE COLUMN TENSION SPLICE TYPICAL DETAIL.
4. TOP BARS ARE BARS WITH MORE THAN 300 OF CONCRETE CAST BELOW SPLICE.
5. CLEAR COVER NOT LESS THAN d_b, CLEAR SPACING NOT LESS THAN $2d_b$.
6. FOR STRUCTURAL LOW-DENSITY CONCRETE, INCREASE SPLICE LENGTHS BY 30%.
7. FOR STRUCTURAL SEMI-LOW-DENSITY CONCRETE, INCREASE SPLICE LENGTHS BY 20%.

REINFORCING STEEL BAR AND STANDARD HOOK DIMENSIONS FOR DEFORMED BARS (Fy = 460 MPa) — TDC-39R

BAR SIZE	MASS kg/m	DIA. d	AREA mm2	400R OR 500R			400W OR 500W			STIRRUP AND TIE HOOKS (135°)	
				BEND D	A 90°	A 180°	BEND D	A 90°	A 180°	D	A
10M	0.785	11.3	100	70	175	280	60	170	250	30	85
15M	1.570	16.0	200	100	245	380	90	240	350	40	90
20M	2.355	19.5	300	120	295	455	100	285	395	50	110
25M	3.925	25.2	500	150	380	575	150	380	575	65	145
30M	5.495	29.9	700	250	485	905	200	460	750		
35M	7.850	35.7	1000	300	580	1090	250	555	930		
45M	11.775	43.7	1500	450	750	1590	400	725	1435		
55M	19.625	56.4	2500	600	980	2115	550	955	1955		

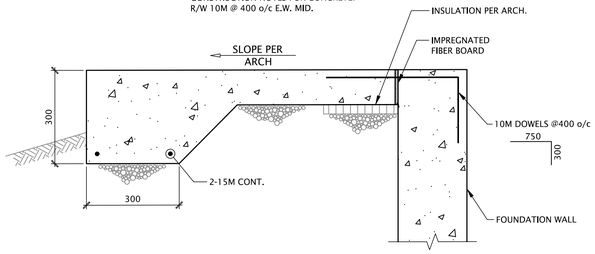


STANDARD 90° HOOK

STANDARD 180° HOOK

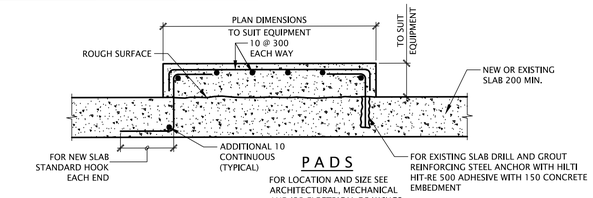
TYPICAL SIDEWALK — TDC-50

NOTE:
100 CONCRETE SLAB ON GRADE OMIT POLY V.B & PROVIDE DOWELS & THICKENING AT EDGES AS SHOWN. REFER TO CONSTRUCTION NOTES FOR CONCRETE. R/W 10M @ 400 o/c E.W. MID.

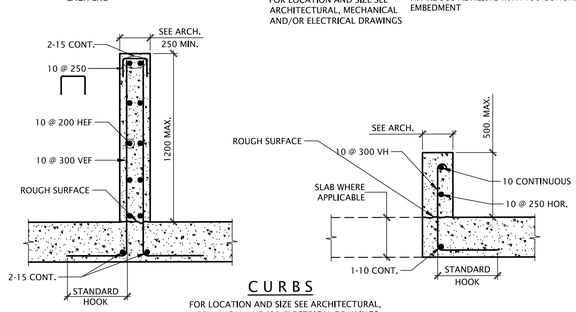


SIDEWALK DETAIL
(REFER TO ARCH FOR EXACT SIZE AND LOCATION)

PAD AND CURB DETAILS — TDC-18



PADS
FOR LOCATION AND SIZE SEE ARCHITECTURAL, MECHANICAL AND/OR ELECTRICAL DRAWINGS



CURBS
FOR LOCATION AND SIZE SEE ARCHITECTURAL, MECHANICAL AND/OR ELECTRICAL DRAWINGS

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PROFESSIONAL ENGINEER ALBERTA — AHMED ABBASS ELSHAFEY — A. Elshafey

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September 10/2020

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Adrian Todella, P.Eng., APEGA
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2	ISSUED FOR 99% REVIEW	2020/07/10
1	ISSUED FOR 66% REVIEW	2020/06/25
0	Design Completion	2020/03/25

Client / client

Parks Canada / Parcs Canada

Project title / Projet

UPPER LAKE LOUISE TRANSIT SHELTER

Designed by / Conçu par: N. Chalishajar
Drawn by / Dessiné par: R. Wong
Approved by / Approuvé par: A. Elshafey
PWGSC Project Manager / Administrateur de Projets TPSGC: K.VERHOEVEN

Drawing title / Titre du dessin

TYPICAL DETAILS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	S1-05 OF	0

PWGSC – A1 – 841X594

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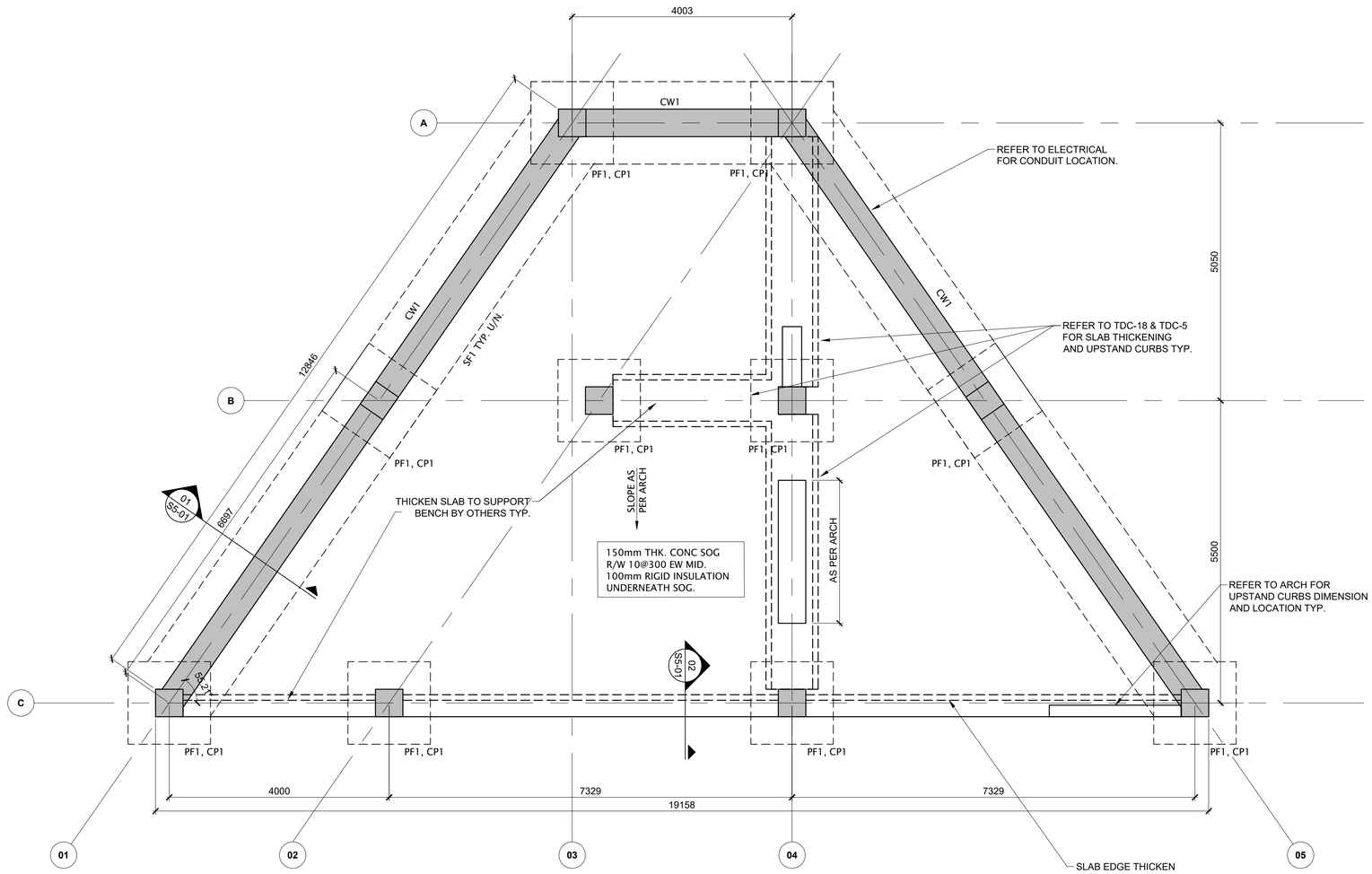

01 S2-01 FOUNDATION AND MAIN FLOOR PLAN

1:50

PLAN NOTES:

1. REFER TO ARCH DRAWINGS FOR EXACT ELEVATIONS AND SLOPE.
2. POST AS SHOWN IS CONCEPTUAL ONLY, REFER TO SCHEDULES FOR SIZES.
3. PROVIDE ADDITIONAL REINFORCEMENT AT FLOOR OPENINGS.

PAD AND STRIP FOOTING SCHEDULE

MARK	SIZE	REINFORCEMENT
SF1	1500 X 400 DEEP	6-15M CONT. W/ TRANSVERSE 15M BOT. @200 H.H.
PF1	1500 X 1500 X 400 DEEP	6-20M BOT. EACH WAY

SOIL REPORT WAS NOT AVAILABLE AT TIME OF DESIGN. FOUNDATION HAS BEEN DESIGNED ASSUMING ALLOWABLE BEARING PRESSURE OF 100 KPA. CONTRACTOR TO RETAIN HIS OWN GEOTECHNICAL ENGINEER TO CONFIRM SOIL CONDITION ON SITE PRIOR TO CONSTRUCTION

CONCRETE WALL SCHEDULE

MARK	THICKNESS	REINFORCEMENT
CW1	500	20M @200 V.O.F. 15M @200 V.I.F. 15M @300 H.E.F. 15M @400 U BARS

CONCRETE PEDESTAL SCHEDULE

MARK	SIZE	REINFORCEMENT
CP1	500 X 500	8-20M VERT. W/ 15M TIES @200

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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AHMED ABBASS ELSHAFEY
A. Elshafey

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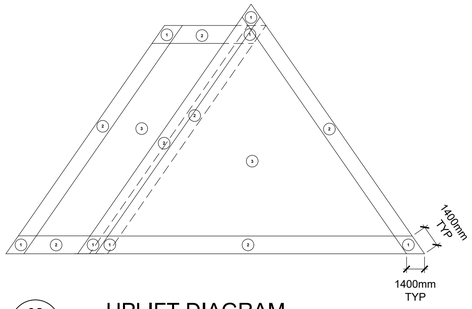
Drawn by / Dessiné par
R. Wong

Approved by / Approuvé par
A. Elshafey

PWGSC Project Manager / Administrateur de Projets TPSGC
K.VERHOEVEN

Drawing title / Titre du dessin
FOUNDATION PLAN

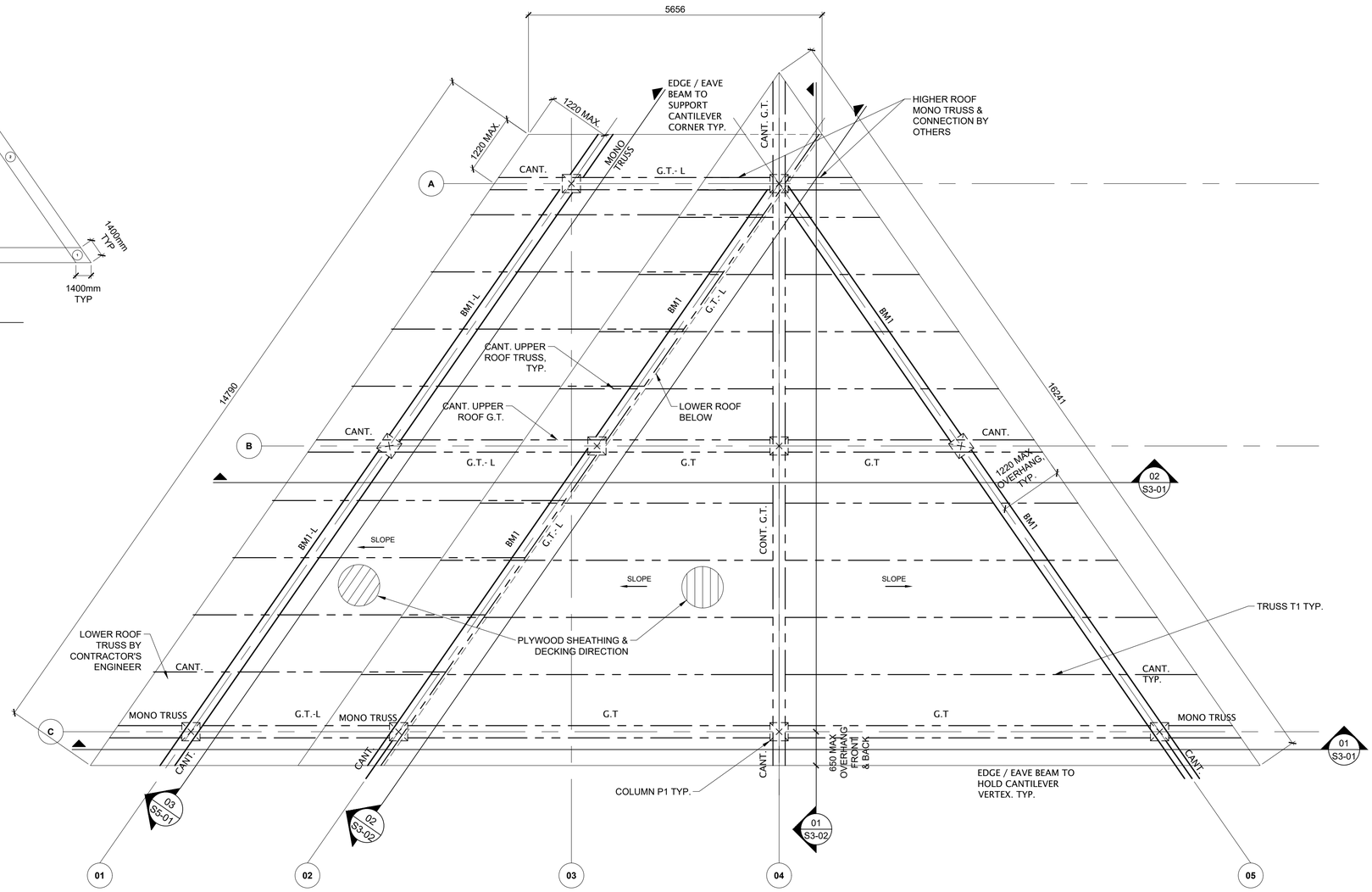
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	S2-01 OF	0



02
S2-02

UPLIFT DIAGRAM

ZONE	NET WIND UPLIFT (kPa)
1	2.5
2	1.66
3	0.9



01
S2-02

ROOF FRAMING PLAN

1:50

ROOF DESIGN LOADS:

DL = 1.00 kPa
SL = 4.50 kPa + SNOW ACCUMULATION

PLAN NOTES:

1. REFER TO ARCH DRAWINGS FOR EXACT ELEVATIONS AND SLOPE.
2. POST AS SHOWN IS CONCEPTUAL ONLY, REFER TO SCHEDULES FOR SIZES.
3. PROVIDE FRAMING/ADDITIONAL REINFORCEMENT AT OPENINGS THROUGH ROOF.
4. NORTH ARROW PER SITE PLAN & ARCH DRAWINGS.

ENGINEERED WOOD BEAM SCHEDULE

MARK	MEMBER SIZE	No. OF PLYS.	GRADE	COMMENTS
BM1	315x456 (12 $\frac{1}{4}$" x18")	1	D.FIR-L, 20F-E	GLULAM-E

NOTES:

1. ALL FLOOR BEAMS ARE FLUSH BEAMS, DROPPED BEAMS ARE IDENTIFIED BY "D" DESIGNATION (IE B#-D)
2. HANGERS TO BE PROVIDED BY JOIST/BEAM SUPPLIER.
3. ALL EXTERIOR BEAMS EXPOSED TO WEATHER TO BE PRESSURE TREATED.
4. BEAM TO COLUMN CONCEAL CONNECTION BY SUPPLIER.
5. CONNECTIONS EXPOSED TO EXTERIOR CONDITIONS TO BE HOT DIP GALVANIZED/BOLTS TO BE STAINLESS STEEL
6. BM#-L DENOTES LOWER ROOF BEAM

TIMBER POST SCHEDULE

MARK	MEMBER SIZE	No. OF PLYS.	LUMBER GRADE	COMMENTS
P1	350x350 (14" x 14")	1	D.FIR-L SS	PRESSURE TREATED

NOTES:

1. MASS TIMBER POST TO ENGINEER BEAM CONNECTION TO FOLLOW MANUFACTURES RECOMMENDATION.
2. MASS TIMBER POST TO CONCRETE PEDESTAL CONCEALED CONNECTION BY MASS TIMBER SUPPLIER'S ENGINEER

JOIST/TRUSS SCHEDULE

T1	PRE-ENGINEERED ROOF TRUSSES @ 6'-0" (1800 mm) o/c (MAX.)
G.T.	PRE-ENGINEERED GIRDER TRUSS

NOTES:

1. JOIST/TRUSS/BEAM SUPPLIER TO PROVIDE STIFFENERS, JOIST BLOCKING AND OTHER ACCESSORIES AS REQUIRED.
2. JOIST/TRUSS LAYOUT SHOWN ON THE PLANS ARE SUGGESTED ONLY. JOIST/TRUSS SUPPLIER TO SUBMIT SHOP DRAWINGS WITH ENGINEER'S SEAL FOR REVIEW.
3. SEE GENERAL NOTES ON DRAWING S01DRAWING SERIES.
4. G.T.-L DENOTES LOWER ROOF GIRDER TRUSS

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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AHMED ABBASS ELSHAFEY
A. Elshafey

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Drawn by / Dessiné par
R. Wong

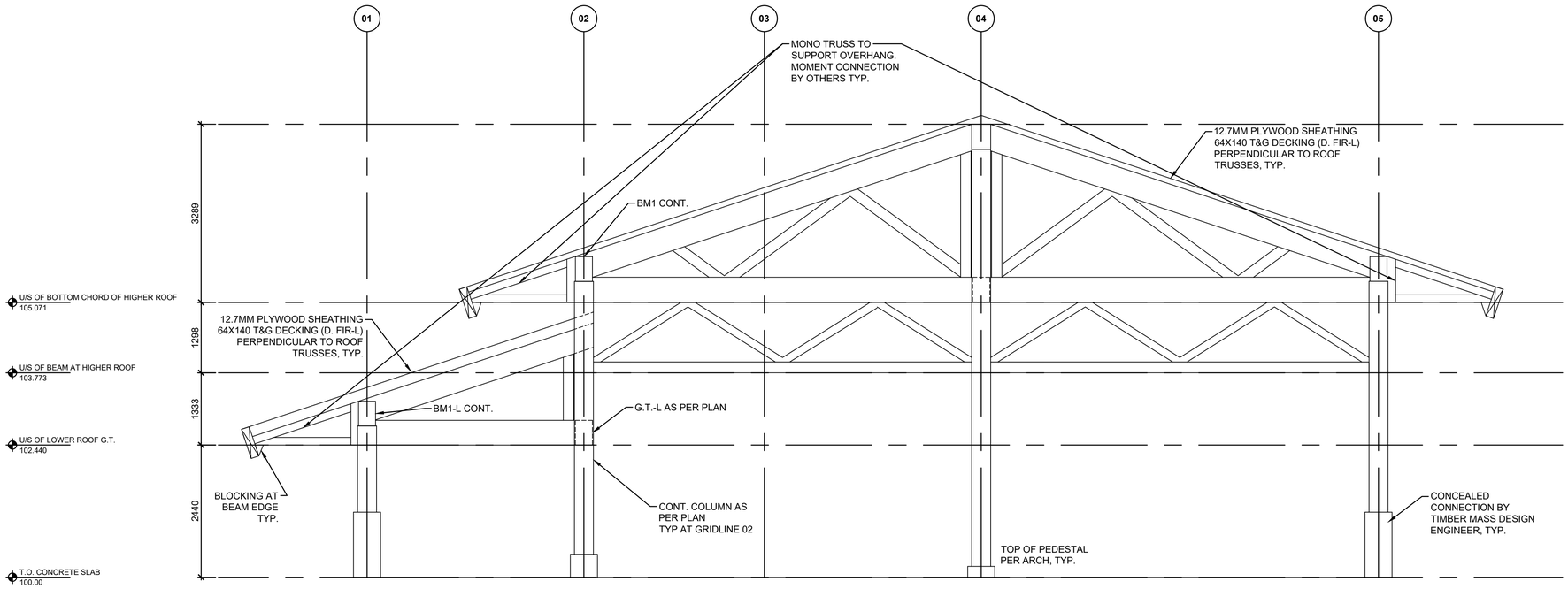
Approved by / Approuvé par
A. Elshafey

PWGSC Project Manager / Administrateur de Projets TPSGC
K.VERHOEVEN

Drawing title / Titre du dessin

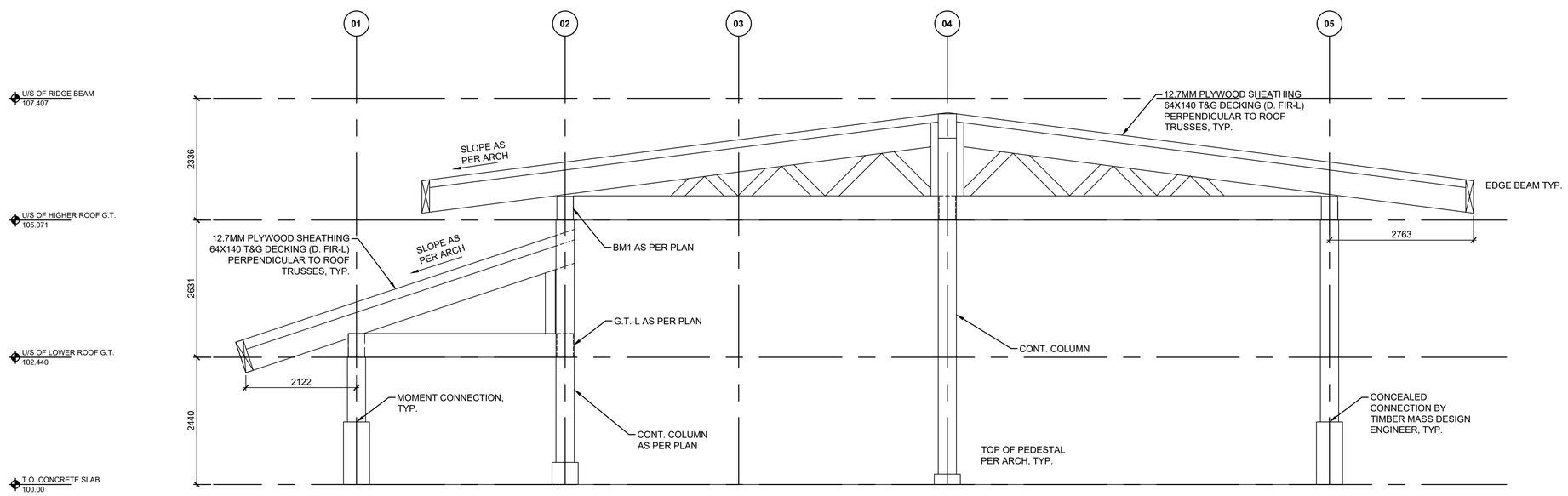
ROOF PLAN

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	S2-02 OF	0



01 S3-01 ELEVATION SECTION

1:50



02 S3-01 ELEVATION SECTION

1:50

PWGSC – A1 – 841X594

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Drawing title / Titre du dessin

ELEVATION

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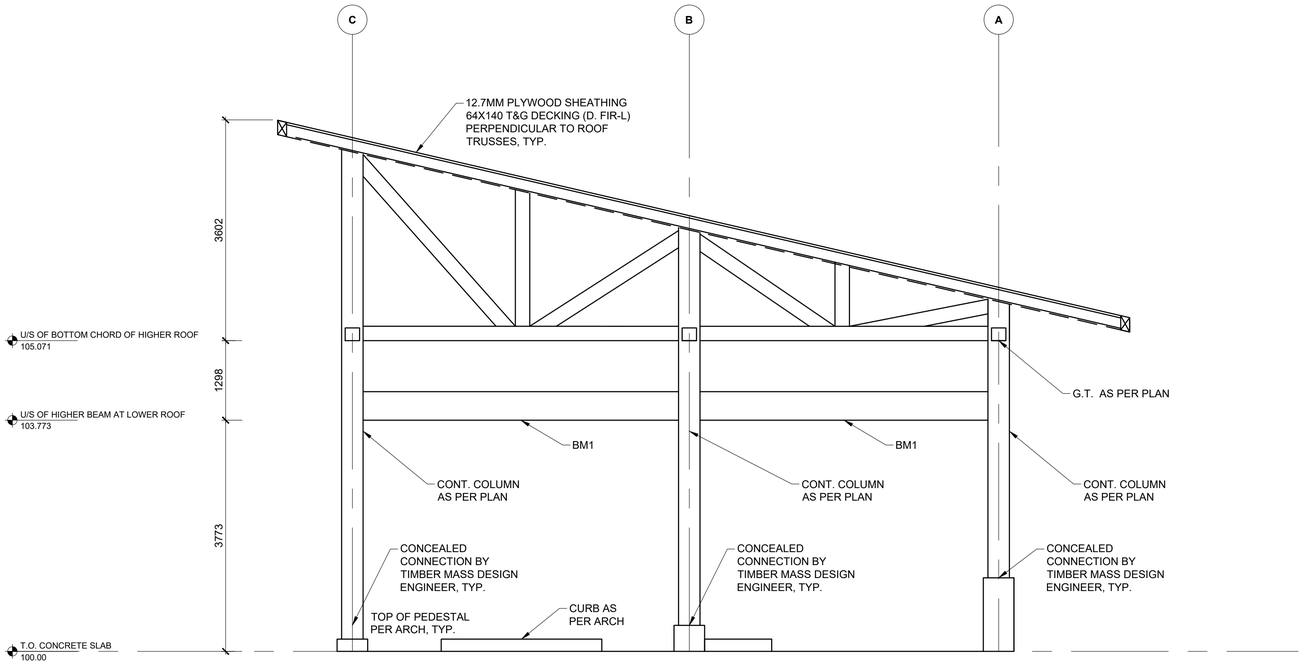
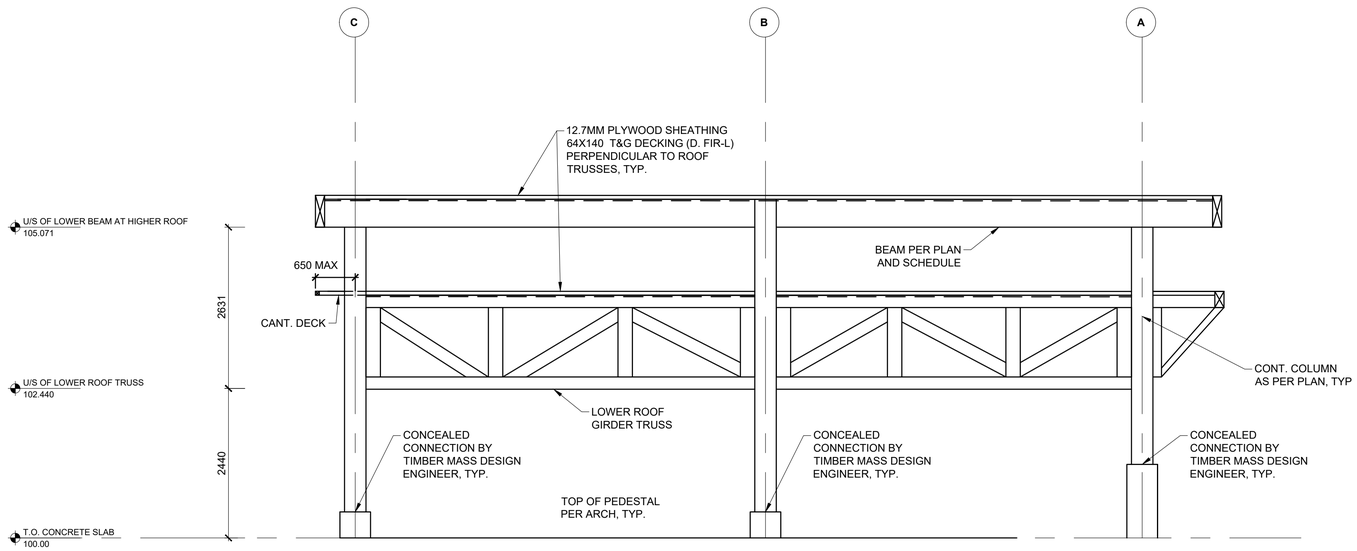


01 S3-02 ELEVATION SECTION (G.L. 04)

1:50



02 S3-02 ELEVATION SECTION (G.L. 02)

1:50

PWGSC – A1 – 841X594

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ELEVATION

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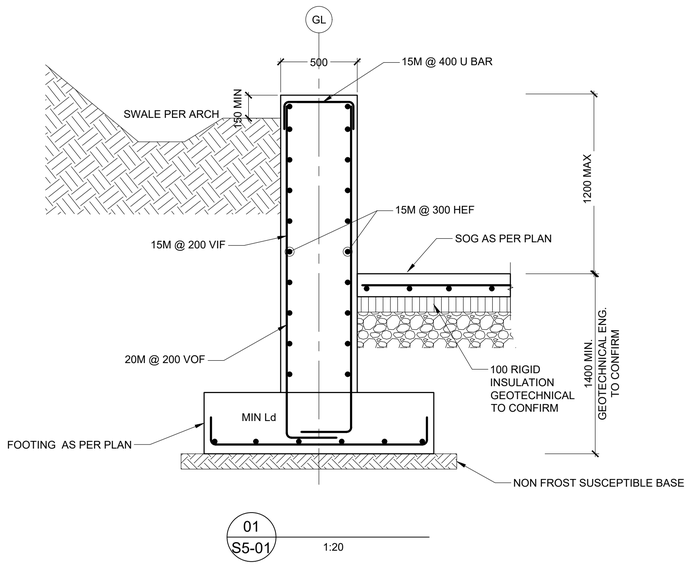
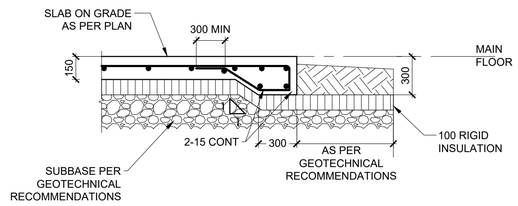
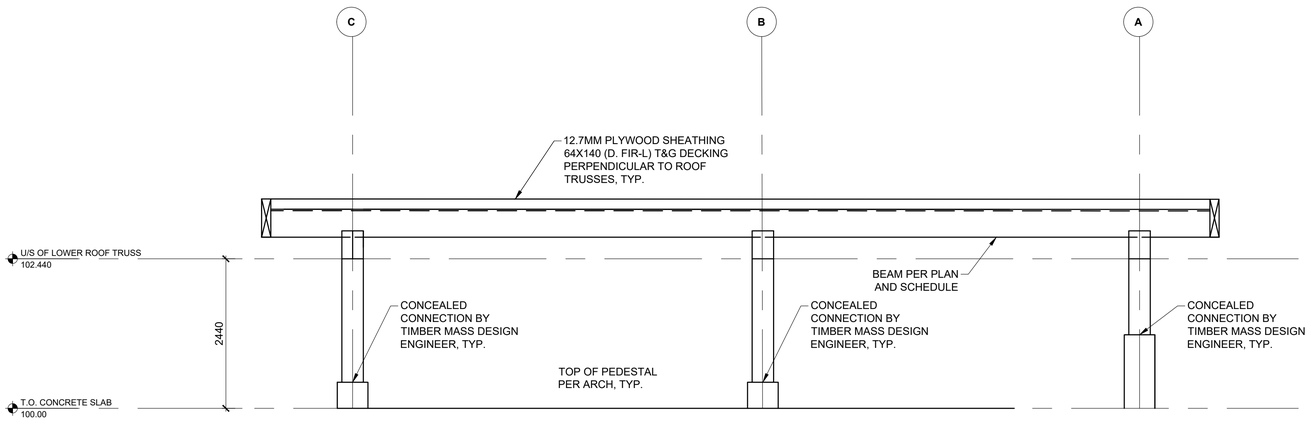
NCCA20-0035	S3-02 OF	0



01
S5-01
1:20



02
S5-01
1:20



03
S5-01

ELEVATION SECTION (G.L. 01)

1:50

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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K.VERHOEVEN

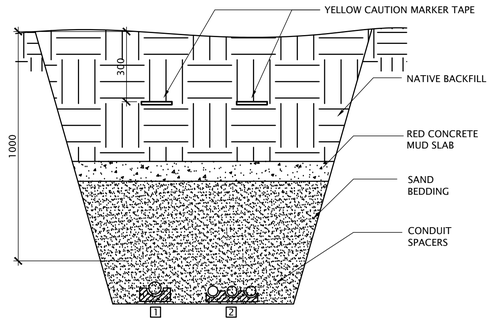
Drawing title / Titre du dessin

SECTIONS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	S5-01 OF	0

LEGEND OF SYMBOLS

LIGHTING	
	STRIP LUMINAIRE
	SWITCH - SINGLE, TWO, AND THREE GANG
P	PHOTOCELL
POWER	
	SINGLE/SPECIAL PURPOSE RECEPTACLE
	DUPLEX RECEPTACLE
	GROUND FAULT RECEPTACLE
J	CEILING MOUNTED JUNCTION/SLAB BOX
J	FLOOR MOUNTED JUNCTION/SLAB BOX
	WALL MOUNTED JUNCTION BOX
	ELECTRICAL PANELBOARD - SURFACE MOUNTED
	SINGLE PHASE DIRECT CONNECTION
	THREE PHASE DIRECT CONNECTION
XXX	MOTOR IDENTIFICATION TAG (REFER TO MECHANICAL SCHEDULE)
	WIRELESS ACCESS POINT (WAP)
COMMUNICATION SYSTEMS	
	DATA OUTLET



GENERAL NOTES:

A) THIS DETAIL IS TYPICAL FOR ALL BUILDINGS, COORDINATE ROUTING AND CONDUIT COUNTS WITH SITE PLAN, DETAILS AND SINGLE LINE DIAGRAM.

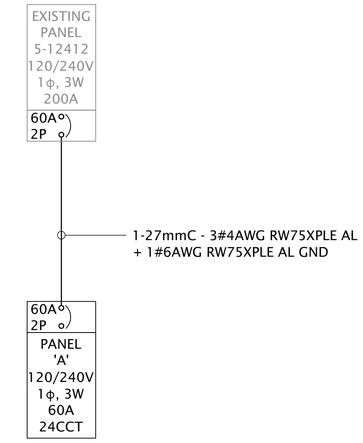
B) MUD SLAB NOT REQUIRED FOR CONDUITS INSTALLED BELOW BUILDING OR GRASS.

C) POWER CONDUITS ARE TO BE ARRANGED IN TRENCH PER DIAGRAM D11 IN CANADIAN ELECTRICAL CODE.

REFERRAL NOTES:

1 POWER CONDUIT SIZE AND COUNT AS INDICATED ON SINGLE LINE DIAGRAM.
2 CONTROL CONDUITS AS INDICATED ON SITE PLAN.

2 E1-1 ELECTRICAL DUCT BANK DETAIL
N.T.S.

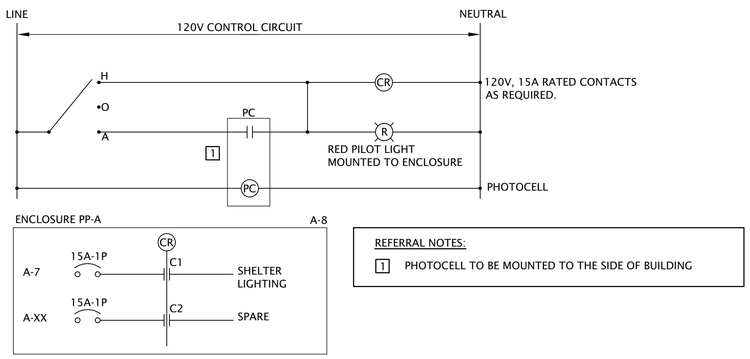


1 E1-1 ELECTRICAL SINGLE LINE DIAGRAM
N.T.S.

LUMINAIRE SCHEDULE

TYPE	Image	DESCRIPTION	Lamps TYPE	WATTS	NO.	VOLTS	MANUFACTURER	MOUNTING	REMARKS
201		LINEAR UP AND DOWN LIGHTING	LED	15	1	120	LUMENWERX HEX LED CAT# HEX2WASYA-HLO-LED-80-500-35-120-D1-1-B	WALL	FIXTURE TO BE INSTALLED CENTERED ON THE SIDE OF BEAM
202		LINEAR DOWN LIGHTING	LED	20	1	120	LUMENWERX VIA 4 LED CAT# VIAS-HLO-0.5D-LED-80-500-35-4FT-12-D1-1-B	SURFACE	FIXTURE IS INSTALLED UNDER BEAM
							LUMENWERX		

NOTES:



REFERRAL NOTES:

1 PHOTOCELL TO BE MOUNTED TO THE SIDE OF BUILDING

3 E1-1 LIGHTING CONTROL DIAGRAM
N.T.S.

Cct NO.	*	Load Description	Volt-Amperes A	Volt-Amperes B	Breaker Pole	Breaker A	Breaker A	Breaker Pole	Volt-Amperes A	Volt-Amperes B	Load Description	*	Cct No.
1			50		2	15	15	2	50				2
3		TICKETING MACHINE		50						50	TICKETING MACHINE		4
5		DISPLAY RECEPTACLE	500		1	15	15	1	100		SERVICE RECEPTACLE		6
7		GENERAL LIGHTING			1	15	15	1		50	LIGHTING CONTROL RELAY		8
9													10
11													12
13													14
15													16
17													18
19													20
21													22
23		SPARE			1	15	15	1			SPARE		24
		Odd Circuit Number Subtotals	550	50	Features:				150	100	Even Circuit Number Subtotals		

Bus and Lugs Rating (A):	SLD	Total Phase A Load:	0.7	Remarks:
Main Circuit Breaker Rating (A):		Total Phase B Load:	0.2	
Phase:	1	Total Connected Load:	0.9	
Wires:	3	Demand Factor:	100	Project Title: UOOER LAKE LOUISE TRANSIT SHELTER
Line to Line Voltage (V):	240	Demand Load:	0.9	Project Number: NCCA20-0035
Line to Neutral Voltage (V):	120	Future Load:	0.0	Plan Drawing Number: E1-1
Number of Poles:	24	Total Demand Load:	0.9	Date: 2020-07-08 Revision: 1
Mounting:		Total Demand Current:	3.5	PANEL 'A'

NORR 221-10th Avenue SE Suite 100, Calgary AB Canada T2G 0V9

Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest

PRELIMINARY
NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER ALBERTA
ALBERTA PERMIT TO PRACTICE NUMBER—11944

2020-09-10

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2300, 411 - 1st Street SE,
Calgary, AB Canada T2G 4Y5
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Adrian Todella, P.Eng., APEGA
Chris Pal, P.Eng., APEGA

Revision	Description	Date
5		
4	ISSUED FOR CONSTRUCTION	2020-09-10
3	ISSUED FOR TENDER	2020-07-31
2	ISSUED FOR 99% REVIEW	2020-07-10
1	ISSUED FOR 66% REVIEW	2020/06/25
0	Design Completion	2020/03/25

Client / client

Parks Canada / Parcs Canada

Project title / Projet

UPPER LAKE LOUISE TRANSIT SHELTER

Designed by / Conçu par: F.HAK
Drawn by / Dessiné par: F.HAK
Approved by / Approuvé par: D.HIDER
PWGSC Project Manager / Administrateur de Projets TPSGC: K.VERHOEVEN

Drawing title / Titre du dessin

ELECTRICAL DETAILS AND SCHEDULES

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
NCCA20-0035	E1-1 OF	0

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm