A1 SIZE - 594mm x 841mm

GENERAL NOTES

1. READ THE STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER PERTINENT CONTRACT DOCUMENTS.
2. ALL DIMENSIONS ARE IN METRIC UNITS UNLESS NOTED. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS AGAINST THE CIVIL, BUILDING, PROCESS, MECHANICAL, AND ELECTRICAL DRAWINGS THE EXISTING SITE CONDITIONS BEFORE BEGINNING CONSTRUCTION AND REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE DRAWINGS.
3. THE DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA 2020 WITH MANITOBA AMENDMENTS, IT'S SUPPLEMENTS AND THE LATEST EDITIONS OF REFERENCED CODES AND STANDARDS THEREIN, UNLESS NOTED OTHERWISE. BUILDING IMPORTANCE CATEGORY: POST-DISASTER.
4. REFER TO THE BUILDING, PROCESS, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS AND DIMENSIONS OF OPENINGS, SLEEVES AND OTHER BUILDING COMPONENTS NOT SHOWN ON THE STRUCTURAL DRAWINGS. REPORT DISCREPANCIES AND OBTAIN ENGINEER'S PRIOR APPROVAL BEFORE INSTALLING SLEEVES AND OPENINGS THAT ARE NOT INDICATED ON THE STRUCTURAL DRAWINGS BEFORE PROCEEDING WITH CONSTRUCTION.
5. REFER TO BUILDING, PROCESS, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION OF PITS, BASES, DRAINS, TRENCHES, SUMPS, HOUSEKEEPING PADS, DEPRESSIONS, GROOVES, CURBS, CHAMFERS AND SLOPES NOT SHOWN ON THE STRUCTURAL DRAWINGS.
6. CONTRACTOR TO CONFIRM WITH EQUIPMENT SUPPLIERS DIMENSIONS AND ALL OTHER CRITICAL DETAILS PRIOR TO CONSTRUCTION AND INSTALLATION. REPORT DISCREPANCIES AND OBTAIN APPROVAL PRIOR TO CONSTRUCTION.
7. NOTIFY THE ENGINEER 48 HOURS IN ADVANCE FOR SITE REVIEW.
8. DRAWINGS SHOW COMPLETED STRUCTURES ONLY. PROVIDE TEMPORARY BRACING FOR CONSTRUCTION LOADING CONDITIONS AND STABILITY OF THE STRUCTURE DURING CONSTRUCTION. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN LOADS SHOWN ON DRAWINGS.
9. CONSTRUCTION METHODS REQUIRING TEMPORARY SHORING, OR BRACING, SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. THE CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER, REGISTERED IN THE PROVINCE OF MANITOBA, TO PROVIDE ENGINEERING DESIGN AND TAKE RESPONSIBILITY FOR ANY SHORING AND BRACING OR OTHER WORK REQUIRING ENGINEERING DESIGNS TO COMPLETE THE CONSTRUCTION.
10. VERIFY LOCATION OF UNDERGROUND SERVICES AND BE RESPONSIBLE FOR DISRUPTIONS.
12. ALL SHOP DRAWING SUBMITTALS TO BE METRIC (MILLIMETERS) UNLESS NOTED.

EXCAVATION & BACKFILL

1. EXCAVATE TO LINES AND LEVELS NECESSARY TO PROPERLY COMPLETE THE WORK. CONTROL EXCAVATION TO ENSURE BOTTOM OF EXCAVATION DOES NOT SOFTEN DUE TO EXCESS MOISTURE. REFERENCE THE GEOTECHNICAL REPORT FOR FURTHER INFORMATION.
2. ALL BACKFILL SHALL BE COMPACTED USING MECHANICAL EQUIPMENT. ON THE EXTERIOR OF THE STRUCTURES, THE BACKFILLING SHALL BE PLACED WITH SUFFICIENT ALLOWANCE FOR SETTLEMENT AND IN GENERAL, ITS TOP SURFACE SHALL BE NEATLY GRADED.
3. MAINTAIN OPTIMUM MOISTURE CONTENT TO PERMIT COMPACTION TO ATTAIN SPECIFIED DENSITIES. PROTECT BACKFILLED GRADE, DURING AND AFTER COMPLETION OF BACKFILL OPERATION, FROM SOFTENING DUE TO EXCESS MOISTURE.
4. BACKFILL TO GRADES INDICATED IN LAYERS NOT EXCEEDING 150mm UNCOMPACTED, UNLESS NOTED OTHERWISE.
5. CONTRACTOR TO SUBMIT EXCAVATION SHOP DRAWING SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.

DESIGN LOADS

1. THE STRUCTURE IS DESIGNED TO MEET THE REQUIREMENTS OF THE 2023 MANITOBA BUILDING CODE.
2. WIND LOADS - THE BUILDING STRUCTURE IS DESIGNED TO RESIST THE HORIZONTAL LOADS RESULTING FROM A 1/50 AVERAGE HOURLY WIND PRESSURE BASED ON A q=0.45 kPa WITH AN IMPORTANCE CATEGORY OF "POST DISASTER".
3. SNOW LOADS: THE ROOF AREA ARE DESIGNED BASED ON:
   GROUND SNOW LOAD = 1.9 kPa
   RAIN LOAD = 0.2 kPa
4. FLOOR LOADS - REFER TO STRUCTURAL DRAWINGS.
5. SEISMIC LOADS: IMPORTANCE FACTOR:
   Ie = 1.5(ULS)
   SITE CLASSIFICATION:
   E
   SPECTRAL ACCELERATION:
   Sa(0.2) = 0.133
   Sa(0.5) = 0.106
   Sa(1.0) = 0.0548
   Sa(2.0) = 0.0215
   Sa(5.0) = 0.00432
   Sa(10.0) = 0.00126
   PEAK GROUND ACCELERATION:
   PGA = 0.0677
   PEAK GROUND VELOCITY:
   PGV = 0.0542
   ACCELERATION SITE COEFFICIENT:
   Fa = 1.663
   VELOCITY SITE COEFFICIENT:
   Fv = 2.673
   SEISMIC FORCE RESISTING SYSTEM:
   MASONRY SHEAR WALLS:
   Rd = 1.5
   Ro = 1.5

MISCELLANEOUS METALS

1. THE STEEL ERECTOR SHALL BE RESPONSIBLE FOR SUPPLYING AND ERECTING ALL TEMPORARY WORKS REQUIRED FOR THE STRUCTURE DURING ERECTION.
2. WELD TO CSA W59 BY FABRICATORS QUALIFIED TO CSA W47.1, IN DIVISION 2.
3. ISOLATE MISC. METALS FROM FOLLOWING COMPONENTS BY MEANS OF 2 COATS OF AKALI RESISTANT BITUMINOUS PAINT:
   .1 DISSIMILAR METALS EXCEPT STAINLESS STEEL, GALVANIZED STEEL, ZINC, OR WHITE BRONZE OF SMALL AREA.
   .2 CONCRETE, MORTAR AND MASONRY.
4. STEEL PLATES: CONFORMING TO CSA G40.21; TYPE W WITH A MINIMUM YIELD STRENGTH OF 300 MPa.
5. HP SHAPES: CONFORMING TO CSA G40.21; MINIMUM YIELD STRENGTH OF 350 MPa.
6. ANCHOR RODS: CONFORMING TO ASTM F1554.
7. WELDING MATERIALS: CONFORMING TO CSA W59.
8. WELDING OF ALL LOAD CARRYING ASSEMBLIES IS TO BE PERFORMED BY A FIRM CERTIFIED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA W47.1 IN DIVISION 2.
9. SUPPLY ALL COMPONENTS REQUIRED FOR PROPER ANCHORAGE OF STEEL FABRICATIONS. FABRICATE ANCHORAGE AND RELATED COMPONENTS OF SAME MATERIAL AND FINISH AS STEEL FABRICATIONS, UNLESS OTHERWISE SPECIFIED OR SHOWN.
10. NELSON STUDS: H4L HEADED STUDS BY NELSON STUD, A DONCASTER GROUP LIMITED COMPANY OR APPROVED EQUAL.

FOUNDATION

1. GEOTECHNICAL REPORT IS AVAILABLE AS REFERENCED IN THE CONTRACT SPECIFICATIONS.
2. PREVENT SUBGRADE FROM FREEZING AFTER CASTING CONCRETE WORKS UNTIL CONSTRUCTION IS COMPLETE AND STRUCTURES ARE IN SERVICE.

CONCRETE

1. PROVIDE CONCRETE AND PERFORM WORK TO CSA A23.1. SUPPLY CONCRETE TO ALTERNATIVE (1) PERFORMANCE. THE CONTRACTOR SHALL HAVE A COPY OF THIS STANDARD ON SITE AT ALL TIMES.
2. TEST CONCRETE IN ACCORDANCE WITH CSA A23.2.

CONCRETE REINFORCEMENT

1. DEFORMED BARS CONFORMING TO CSA G30.18 GRADE 400. LAP SPLICES SHALL BE CLASS B TENSION LAP TYPE AS NOTED IN THE BELOW TABLE, UNLESS NOTED OTHERWISE.
2. WELDABLE REINFORCING BARS SHALL CONFORM TO CSA G30.18 GRADE 400W. WELDING OF REINFORCING SHALL CONFORM TO CSA W186.
3. REINFORCING WORK SHALL BE IN ACCORDANCE WITH CSA A23.1 AND CSA A23.3.
4. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST EDITION OF THE REINFORCING STEEL INSTITUTE OF CANADA DETAILING MANUAL.
5. 90° HOOKS AND 180° HOOKS WHERE SHOWN SHALL BE DETAILED AS STANDARD HOOKS UNLESS NOTED OTHERWISE.
6. CONCRETE COVER TO REINFORCING STEEL SHALL CONFORM TO THE MOST STRINGENT REQUIREMENT LISTED BELOW UNLESS NOTED OTHERWISE.
7. SUBMIT SHOP DRAWINGS WHICH CLEARLY INDICATE BAR SIZES, GRADE, SPACING, HOOKS, BENDS AND SUPPORTING DEVICES, ETC, FOR REVIEW TO THE CONSULTANT ENGINEER PRIOR TO FABRICATION OF THE REINFORCING STEEL.

CONCRETE COVER

SCUM BUILDING - ITEM	COVERAGE (mm)
BOTTOM OF SLABS ON GRADE	75
TOPS OF SLAB ON GRADE	50
FORMED SURFACES NOT EXPOSED TO GROUND, WATER, OR NOT LISTED ABOVE	50
HOUSEKEEPING PADS	50
WALL, BEAM, COLUMN (OUTSIDE FACE OF TIES)	50
PILE, PILE CAPES (OUTSIDE FACE OF TIES)	75

REINFORCING BAR DEVELOPMENT PER CSA 23.1

f'c = 35 MPa fy = 400 MPa

BAR SIZE	BAR DEVELOPMENT	COMPRESSION DEVELOPMENT	STANDARD HOOK DEVELOPMENT
10M	320mm	200mm	150mm
15M	480mm	280mm	180mm
20M	640mm	340mm	240mm
25M	990mm	440mm	300mm

REINFORCING BAR SPLICES PER CSA 23.1

f'c = 35 MPa fy = 400 MPa

BAR SIZE	CLASS 'B' SPLICE
10M	420mm
15M	620mm
20M	830mm
25M	1290mm

CONCRETE ACCESSORIES

1. GROUT: NON-SHRINK, NON-METALLIC GROUT WITH MINIMUM STRENGTH AT THREE DAYS OF 20 MPa AND MINIMUM STRENGTH AT 28 DAYS OF 50 MPa.
2. EXPANSION ANCHORS: OF DIAMETER & PENETRATION SHOWN. CAPACITIES ARE BASED ON HILTI CANADA ANCHOR SYSTEMS. SUBMIT ANCHOR LOAD RESISTANCE DATA FROM INDEPENDENT TESTING FIRM FOR REVIEW BY CONTRACT ADMINISTRATOR MINIMUM 2 WEEKS PRIOR TO INTENDED USE.
3. EPOXY ANCHORS: OF DIAMETER & PENETRATION SHOWN. SHEAR AND TENSION CAPACITIES ARE BASED ON HILTI HIT HY-200 + HIT-HAS SUPER HARDWARE. SUBMIT ANCHOR LOAD RESISTANCE DATA FROM INDEPENDENT TESTING FIRM FOR REVIEW BY ENGINEER MINIMUM 2 WEEKS PRIOR TO INTENDED USE.

CONCRETE MIX TYPES

MIX TYPE	INTENDED APPLICATION	MINIMUM COMPRESSIVE STRENGTH (MPa)	CLASS OF EXPOSURE
1	NON-STRUCTURAL CONCRETE FOR EXTERIOR WORKS - SLAB OR SLAB ON GRADE, BOLLARD INFILL	32 (28-DAY)	C-2
2	STRUCTURAL CONCRETE FOR EXTERIOR WORKS	35 (56-DAY)	C-1
3	STRUCTURAL OR NON-STRUCTURAL CONCRETE INTERIOR WORKS - SLAB, CURB, HOUSEKEEPING PADS, BEAMS	35 (28-DAY)	N
4	LEAN MIX	15 (28-DAY)	N
5	GROUT FOR CONCRETE USED IN MASONRY INFILL	20 (28-DAY)	N
6	PILES, PILE CAPS, WALL, COLUMNS, GRADE BEAMS	35 (56-DAY)	S-1
7	CONCRETE TOPPING	25 (28-DAY)	N
8	NEW CONCRETE WITHIN EXISTING TREATMENT PLANT AREAS	35 (56-DAY)	A-1

MASONRY

1. MASONRY WORK SHALL BE IN ACCORDANCE WITH CSA S304.1 AND CSA A371.
2. CELLS CONTAINING REINFORCING SHALL BE COMPLETELY FILLED WITH GROUT IN LIFTS NOT EXCEEDING 2 METERS. CONSOLIDATE WITH GROUT BY VIBRATING DURING POURING.
3. PROVIDE CLEAN-OUT HOLES IN THE BOTTOM COURSE OR ALL CELLS TO BE FILLED WITH GROUT. REMOVE ALL OVERHANGING MORTAR AND DEBRIS FROM INSIDE CELLS PRIOR TO GROUTING.
4. UNLESS INDICATED OTHERWISE, ALL MASONRY SHALL BE LAID IN RUNNING BOND. BOND ALL CORNERS AND INTERSECTIONS OF ALL LOAD BEARING WALLS, PROVIDE CONTROL JOINTS AT INTERSECTIONS OF NON-LOAD BEARING WALLS AND LOAD BEARING WALLS.
5. PROVIDE CONTROL JOINT ON ONE SIDE OF ALL OPENINGS LESS THAN 2.0m IN WIDTH, ON BOTH SIDES OF OPENINGS LARGER THAN 2.0m IN WIDTH, MAXIMUM 3.0m FROM CORNERS AND MAXIMUM 6.0m o/c.
6. MATERIALS SHALL CONFORM TO THE FOLLOWING:

CONCRETE MASONRY UNITS:	CSA A165 SERIES, H/20/C/M 20 MPa MINIMUM COMPRESSIVE STRENGTH
MORTAR:	CSA 179, TYPE S (MINIMUM 28 DAY COMPRESSIVE STRENGTH OF MORTAR CUBES SHALL BE 8.5 MPA IN ACCORDANCE WITH CSA A179 TABLE 6)
GROUT:	CSA 179, COARSE (MINIMUM 28 DAY COMPRESSIVE STRENGTH OF GROUT CYLINDERS CAST IN NON-ABSORBENT MOULDS SHALL BE 12.5 MPa IN ACCORDANCE WITH CSA A179 TABLE 7)
REINFORCING STEEL:	CSA G30.18, GRADE 400, PLAIN FINISH, DEFORMED BARS
JOINT REINFORCING:	ASTM A370, CONTINUOUS WELDED LADDER REINFORCING

7. CONTRACTOR SHALL PROVIDE ALL REQUIRED TEMPORARY WALL BRACING DURING REQUIRED TO ERECT AND HOLD THE MASONRY WALLS IN PROPER ALIGNMENT UNTIL ALL STRUCTURAL WORK AND CONNECTIONS HAVE BEEN COMPLETED.
8. HEAT MATERIALS AND PROTECT WORK IN ACCORDANCE WITH CSA-S304 WHEN AMBIENT TEMPERATURE IS BELOW 5° C.
9. PROVIDE SOLID BLOCK OR CONCRETE FILLED BLOCK UNDER ALL CONCENTRATED LOADS BEARING ON MASONRY.
10. PROVIDE CONCRETE FILLED CORES AT ALL LOCATIONS WHERE METAL FABRICATIONS OR OTHER EQUIPMENT, UTILITIES, ETC., ARE FASTENED TO BLOCK WALLS.
11. PROVIDE DOWELS FROM CONCRETE BEAMS, WALL AND FLOORS TO MATCH MASONRY WALL REINFORCING UNLESS NOTED OTHERWISE.
12. PROVIDE BOND BEAMS AT TOP OF WALL AND EVERY 2400mm (MAX) VERTICAL SPACING UNLESS NOTED OTHERWISE.
13. TRUSS TYPE JOINT REINFORCING AT EVERY SECOND COURSE.

ALUMINUM CONNECTION DISCLAIMER

ALL ALUMINUM CONNECTIONS SHOWN ARE FOR DIAGRAMMATIC PURPOSES ONLY. ALUMINUM FABRICATOR MUST DESIGN CONNECTIONS TO SUIT LOADS SHOWN ON DRAWINGS.

STEEL CONNECTION DISCLAIMER

ALL STEEL CONNECTIONS SHOWN ARE FOR DIAGRAMMATIC PURPOSES ONLY.
STEEL FABRICATOR MUST DESIGN CONNECTIONS TO SUIT LOADS SHOWN ON DRAWINGS.

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
AECOM Canada ULC
No. 4671

TENDER NO. 30-2025

NO.	REVISIONS	DATE	DESIGN	CHECK
00	ISSUED FOR TENDER	2025-02-26	CT	MB

AECOM

DESIGNED BY: MB | CHECKED BY: CK
DRAWN BY: BF | APPROVED BY: NW
SCALE: As indicated | RELEASED FOR CONSTRUCTION BY:
DATE: 2023-07-24 | DATE:
CONSULTANT NO.: U2-S001

ENGINEER'S SEAL
PROVINCE OF MANITOBA
M.R. BROTHERSTON
Member
25515
REGISTERED PROFESSIONAL ENGINEER
2025-02-27

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NORTH END SEWAGE TREATMENT PLANT
NEWPCC UV UPGRADES
STRUCTURAL
NEW UV STORAGE ROOM
GENERAL NOTES

CITY DRAWING NUMBER | SHEET | REV. 00 | SIZE A1

LAST SAVE: 2025-02-26 7:56:29 AM
PATH: Autodesk Docs://City of Winnipeg - NEWPCC Upgrades 2023/SMOD-U1101.rvt

A1 SIZE - 594mm x 841mm

STRUCTURAL STEEL

1. FABRICATION, ERECTION AND WORKMANSHIP SHALL CONFORM TO CAN/CSA S16 LATEST EDITION
2. ALL STRUCTURAL STEEL "W" SHAPES SHALL CONFORM TO CSA G40.21, GRADE 350W.
3. ALL HOLLOW STRUCTURAL STEEL SECTIONS SHALL CONFORM TO CSA G40.21, GRADE 350W - CLASS C
4. ALL WELDING SHALL CONFORM TO CSA S16 AND LATEST VERSION OF W59 AND SHALL BE PERFORMED BY A WELDER QUALIFIED UNDER THE LATEST VERSION OF CSA W47.
5. ALL SHOP CONNECTIONS SHALL BE WELDED. ALL FIELD CONNECTIONS SHALL BE WELDED OR BOLTED USING HIGH TENSILE BOLTS. BEARING TYPE CONNECTIONS SHALL BE C.I.S.C DOUBLE ANGLE BEAM CONNECTIONS OR SHEAR PLATES USING A325 BOLTS AND E49XX FILLET WELDS, MINIMUM SIZE OF BOLTS - 20MM DIAMETER.
6. THE CONNECTIONS SHALL BE CAPABLE OF SUPPORTING 50% OF THE TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD FOR BEAMS LATERALLY SUPPORTED EXCEPT WHERE SPECIFICALLY NOTED OR DETAILED, IN ADDITION TO THE TRANSFER OF FACTORED MOMENTS, WHERE SHOWN ON HE DRAWINGS.
7. SPLICING OF MEMBERS NOT PERMITTED UNLESS OTHERWISE NOTED.
8. BRACING CONNECTIONS SHALL BE DESIGNED FOR 50% OF MEMBER TENSILE STRENGTH UNLESS MEMBER FORCE IS INDICATED ON DRAWINGS.
9. ALL BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF TWO (2) A325 BOLTS IN EACH CONNECTED PIECE AND BE DESIGNED WITH BEARING TYPE CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANE, UNLESS NOTED OTHERWISE.
10. PROVIDE AND TAKE RESPONSIBILITY FOR ALL TEMPORARY BRACING AND SHORING REQUIRED TO PROVIDE STABILITY FOR THE STRUCTURE AS A HOLE. THESE SHALL REMAIN IN PLACE UNTIL FLOOR SLABS ARE WELL CURED, STEEL ROOF DECK IS FULLY WELDED AND/OR PERMANENT RACING IS INSTALLED.
11. WELDING ELECTRODES SHALL BE E49XX
12. SURFACES TO BE WELDED SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATTER INCLUDING PAINT FILM.
13. ALL HSS SECTIONS MUST HAVE OPEN ENDS CAPPED OR WELDED SOLID ALL AROUND AT CONNECTION POINT.
14. ALL COLUMN ENDS SHALL BE SAWCUT AND WELDED TO BASE PLATES.
15. PROVIDE WELDED STIFFENER PLATES ON BOTH SIDES, UNLESS NOTED, OF THE WEB OF BEAMS AT POINTS OF CONCENTRATED LOAD INCLUDING BEAMS SUPPORTING COLUMNS OR RUNNING OVER TOP OF COLUMNS. MINIMUM STIFFENER PLATE THICKNESS SHALL BE 10MM OR FLANGE THICKNESS OF COLUMNS ABOVE OR BELOW, WHICHEVER IS GREATER. MINIMUM SIZE OF WELD SHALL BE 5MM DOUBLE FILLET WELD, OR SHALL BE SUFFICIENT TO DEVELOP THE FULL STRENGTH OF THE STIFFENER, WHICHEVER IS GREATER.
16. WHERE BEAMS ARE CONTINUOUS OVER SUPPORTS, NO HOLES PERMITTED IN TOP FLANGE. PROVIDE 2-10MM THICK WELDED WEB STIFFENER PLATE'S (OR SIZE AS DESCRIBED ABOVE) EACH SIDE OF BEAM, ALIGNED WITH COLUMN WALLS.
17. ALL COLUMNS TO HAVE CLOSURE PLATES, TEES ANGLES OR OUTRIGGERS AT FLOOR AND ROOF LEVELS TO SUPPORT STEEL DECK WHERE REQUIRED AND TO PREVENT CONCRETE LOSS (ELEVATED FLOORS).
19. GUSSET PLATES FOR DIAGONAL BRACING SHALL BE CONNECTED TO ALL INTERSECTING MEMBERS UNLESS NOTED OTHERWISE, AND BE IN LINE WITH CENTRELINE OF MEMBERS.
20. IN ADDITION TO STRENGTH WELDS, STRUCTURAL STEEL EXPOSED TO WEATHER SHALL HAVE CONTINUOUS SEAL WELDS AT ALL JOINTS INCLUDING ALL CONNECTION MATERIAL).
21. THERE SHALL BE NO CUTTING OF STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT PRIOR WRITTEN APPROVAL OF THE PROFESSIONAL OF RECORD.
22. FOR PRIME PAINTING / PAINTING OF STRUCTURAL STEEL, REFER TO SPECS. TOUCH-UP DAMAGED AREAS IN FIELD WITH SAME SYSTEM.
23. SUBMIT SHOP DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA SHOWING ALL DESIGN AND FABRICATION DETAILS OF CONNECTIONS FOR REVIEW PRIOR TO FABRICATION.

OPEN WEB STEEL JOISTS

1. DESIGN, FABRICATE AND INSTALL OPEN WEB STEEL JOISTS IN ACCORDANCE WITH CSA S16 AND THE CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL.
2. WELDING SHALL BE IN ACCORDANCE WITH CSA W59. FABRICATOR TO BE CERTIFIED UNDER DIVISION 1 OR 2.1 OF CSA W47.1 FOR FUSION WELDING OF STEEL STRUCTURES, AND/OR CSA W55.3 FOR RESISTANCE WELDING OF STRUCTURAL COMPONENTS.
3. COORDINATE BRIDGING TYPE AND LOCATIONS WITH THE CONTRACTOR TO ENSURE FITMENT OF ALL DUCT AND PIPE RUNS, AND OTHER SERVICES PASSING THROUGH THE JOISTS.
5. PROVIDE TEMPORARY BRACING AS REQUIRED DURING CONSTRUCTION.
6. DESIGN JOISTS, BRIDGING, AND ANCHORAGES IN ACCORDANCE WITH CSA S16 FOR THE DESIGN LOADS LISTED ON PLAN.
7. LIMIT JOIST DEFLECTIONS DUE TO SPECIFIED LIVE LOADS TO L/600.
8. DESIGN, DETAIL AND FABRICATE BEARING SHOES TO SEAT AT CENTRE OF STEEL SUPPORTS EXCEPT WHERE JOISTS ARE FROM ONE SIDE IN WHICH CASE THE BEARING SHOE SHALL BE WITHIN THE MIDDLE THIRD OF THE BEAM FLANGE.
9. DESIGN AND DETAIL CONNECTIONS AND BEARINGS NOT SHOWN ON THE DRAWINGS FOR FORCES SHOWN ON THE PLANS.
10. DESIGN AND PROVIDE BOTTOM CHORD EXTENSION FOR FASTENING TO COLUMNS AS NECESSARY FOR ERECTION AND WHERE NOTED.
11. HANDLE JOISTS WITH CARE TO AVOID DAMAGE. DO NOT USE JOISTS WITH DEFORMED MEMBERS.
12. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL SHOW LAYOUT, MARKING AND SPACING DETAILS, MATERIALS, UNIFORM AND CONCENTRATED DESIGN LOADS, BRIDGING AND ACCESSORIES. SHOP DRAWINGS SHALL BE SEALED BY A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.
13. THE CONTRACTOR'S PROFESSIONAL ENGINEER SHALL CARRY OUT SITE REVIEW OF INSTALLED COMPONENTS AND ISSUE A LETTER OF SUPERVISION STATING THAT THE WORK COMPLIES WITH THE CONTRACT REQUIREMENTS.

METAL DECKING

1. METAL DECKING WORK SHALL BE IN ACCORDANCE WITH CSA S136 AND CSSBI 10M.
2. DESIGN STEEL DECK TO:
   - A. SUSTAIN WORST FACTORED LOADING COMBINATION.
   - B. LIMIT VERTICAL DEFLECTION TO MEET CRITERIA AS PER TABLE D1 OF CAN/CSA S16.
   - C. ACT AS FLOOR OR ROOF DIAPHRAGM WITH MINIMUM SHEAR STRENGTH AND STIFFNESS AS NOTED ON THE PLANS.
   - D. SUSTAIN CONSTRUCTION LOADS INCLUDING WEIGHT OF WET CONCRETE WITHOUT UNDUE DEFLECTION.
3. WELDING SHALL BE IN ACCORDANCE WITH CSA W59. FABRICATOR TO BE CERTIFIED UNDER DIVISION 1 OR 2.1 OF CSA W47.1 FOR FUSION WELDING OF STEEL STRUCTURES, AND/OR CSA W55.3 FOR RESISTANCE WELDING OF STRUCTURAL COMPONENTS.
4. REINFORCE DECK OPENINGS SMALLER THAN 450 mm IN LENGTH AND WIDTH AS RECOMMENDED BY DECK SUPPLIER.
5. MATERIALS SHALL CONFORM TO THE FOLLOWING:
   ZINC-IRON ALLOY (Z) COATED STEEL SHEET: ASTM A653M, STRUCTURAL QUALITY GRADE 230, WITH Z275 COATING.
6. METAL DECKING SHALL CONFORM TO THE FOLLOWING:
   ROOF DECK: 38 mm DEEP PROFILE, MINIMUM 0.91 mm BASE STEEL THICKNESS,
   ACOUSTICAL DECK. CANAM P3615 OR APPROVED EQUIVALENT.
   MINIMUM 3 SPANS CONTINUOUS
7. CONNECTIONS SHALL BE IN ACCORDANCE WITH CSSBI RECOMMENDATIONS:
   ALL SUPPORTING STEEL: 19 mm PUDDLE WELDS AT 300 o/c (36/4 SUPPORT PATTERN)
   AROUND PERIMETER: 19 mm PUDDLE WELDS AT 300 o/c
   SIDE LAPS: BUTTON PUNCH AT 600 mm o/c
8. INSTALL DECKING IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS:
   - A. DECKING CONTINUOUS OVER MINIMUM THREE SPANS WHERE VER STRUCTURAL FRAMING PERMITS.
   - B. ENSURE MINIMUM BEARING EQUAL TO DECK DEPTH, LAP JOINTS 6 MM AT STRUCTURAL SUPPORTS.
   - C. INSTALL CLOSURES AND FLASHINGS AT SLAB EDGES, WALLS, COLUMNS AND OPENINGS FOR COMPOSITE DECK.
9. SUBMIT SHOP DRAWINGS SHOWING ALL DETAILS, MATERIAL SPECIFICATIONS AND DESIGN LOADS. DETAILS TO INCLUDE ANCHORAGE DETAIL, REINFORCING TO OPENINGS, ACCESSORIES AND ATTACHMENTS. SHOP DRAWINGS SHALL BE SEALED BY A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.

STRUCTURAL STANDARD ABBREVIATIONS:

ACOUSTIC	ACST	HANGER	HGR
ADDITIONAL	ADD'L	HEIGHT	HT
ADHESIVE	ADH	HEXAGON	HEX
ADJUSTABLE	ADJ	HOLLOW STRUCTURAL STEEL	HSS
AGGREGATE	AGGR	HORIZONTAL	HORIZ
AIR HANDLING UNIT	A.H.U.	INCLUSIVE	INCL
AIR VAPOUR BARRIER	A.V.B.	INSIDE DIAMETER	I.D.
ALTERNATE	ALTER	INSIDE FACE	I.F.
ALUMINUM	ALUM	INTERIOR	INT
ANCHOR BOLT	A. BOLT	INVERT ELEVATION	INVT EL
APARTMENT	APT	JUNCTION	JCT
APPROXIMATE	APPROX	KILONEWTON	kN
BUILDING	BUILDING	KNOCK DOWN	K.D.
AT	@	LIVE LOAD	L.L.
AVERAGE	AVG	LONG	LG.
BEARING	BRG	LONG LEG HORIZONTAL	L.L.H.
BENCH MARK	B.M.	LONG LEG VERTICAL	L.L.V.
BETWEEN	BET	LOUVER	LVR
BOARD	BD	MAKE UP AIR UNIT	MAU
BOTH SIDES	B.S.	MANUFACTURE	MFG
BOTH WAYS	B.W.	MARK	MK
BOTTOM	BOT	MASONRY OPENING	M.O.
BOTTOM LOWER LAYER	BLL	MATERIAL	MATL
BOTTOM UPPER LAYER	BUL	MAXIMUM	MAX
BUILDING	BLDG	MECHANICAL	MECH
BY (BETWEEN DIMS)	x (lower case)	METER	m (lower case)
CAST IN PLACE	C.I.P.	MILLIMETER	mm (lower case)
CAST IRON	C.I.	MINIMUM	MIN
CATCH BASIN	C.B.	MISCELLANEOUS	MISC
CEMENT BOARD	C.BD.	NEAR FACE	N.F.
CENTERLINE	C	NEAR SIDE	N.S.
CENTER TO CENTER	C/C	NORTH	N
CIRCULAR	CIRC	NOT APPLICABLE	N/A
CLEAN OUT	C.O.	NOT IN CONTRACT	N.I.C.
CLEAR SPAN	CL. SPAN	NOT TO SCALE	N.T.S.
COLUMN	COL	NUMBER	No.
COMPLETE WITH	c/w	ON CENTER	o/c (lower case)
CONCRETE	CONC	OPENING	OPG
CONCRETE MASONRY UNIT	CMU	OPEN WEB STEEL JOIST	O.W.S.J.
CONCRETE PIPE	C.P.	OPPOSITE	OPP
CONSTRUCTION	CONSTR	ORIGINAL	ORIG
CONSTRUCTION JOINT	C.J.	OUTSIDE DIAMETER	O.D.
CONTINUOUS	CONT	OUTSIDE FACE	O.F.
CORRUGATED METAL PIPE	C.M.P.	OUT TO OUT	O\O
COUNTERSUNK	CSK	OVERHEAD	O/H
DEAD LOAD	D.L.	PERPENDICULAR	PERP
DEGREE	°	PLATE	PL
DIAMETER	DIA	POUNDS PER LINEAR FOOT	PLF
DIMENSION	DIM	POUNDS PER SQUARE FOOT	PSF
DOWN	DN	PLYWOOD	PLYWD
DOWEL	DWL	PRE-CAST	P/C
DRAWING	DWG	PREFABRICATED	PREFAB
EACH FACE	E.F.	PREFINISHED	PREFIN
EACH WAY	E.W.	PRELIMINARY	PRELIM
EAST	E	PROJECTION	PROJ
ELECTRICAL	ELECT	QUANTITY	QTY
ELEVATION	EL	RADIUS	R
ELEVATOR	ELEV	REFERENCE	REF
EQUAL	EQ.	REINFORCE WITH	R/W
EQUAL SPACE	EQ SP	REINFORCING	REINF
EXCAVATION	EXC	REQUIRED	REQ'D
EXISTING	EXIST	RETAINING WALL	R.W.
EXPANSION	EXP	REVISION	REV
EXPANSION JOINT	E.J.	ROOF DRAIN	R.D.
EXTERIOR	EXT	ROUGH OPENING	R.O.
FACE TO FACE	F/F	SCHEDULE	SCHED
FACE OF CONCRETE	F.O.C.	SECTION	SECT
FAR SIDE	F.S.	SELF ADHESIVE	S.A.
FIBREBOARD	FBRBD	SHEATHING	SHTG
FINISH	FIN	SHEET	SHT
FLOOR DRAIN	F.D.	SIMILAR	SIM
FOUNDATION	FDN	SKETCH	SK
FOOTING	FTG	SOUTH	S
GALVANIZE	GALV	SPECIFICATION	SPEC
GALVANIZED IRON	G.I.	SQUARE FEET	SQ. FT.
GAUGE	GA	STAINLESS STEEL	S.S.
GRANULAR	GRAN	STANDARD	STD
GRANULAR BASE	G.B.	STIFFENER	STIFF
GRANULAR BACK FILL	GBFL	STIRRUP	STIRR
GRID LINE	G.L.	STRUCTURAL	STRUCT
GUARD RAIL	G.R.	SYMMETRICAL	SYM
		TANGENT	TAN
		TEMPORARY	TEMP
		TO MATCH EXISTING	T.M.E.
		TOP OF	T.O.
		TOP LOWER LEVEL	TLL
		TOP UPPER LEVEL	TUL
		TYPICAL	TYP
		UNDERCUT	U. CUT
		UNLESS NOTED	U\N
		VERTICAL	VERT
		WEIGHT	WT
		WIND LOAD	W.L.
		WITH	w/
		WITH OUT	W/O
		WOOD	WD
		WROUGHT IRON	W.I.

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TENDER NO. 30-2025

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DATE: 2023-07-24	DATE:
CONSULTANT NO.: U2-S002	

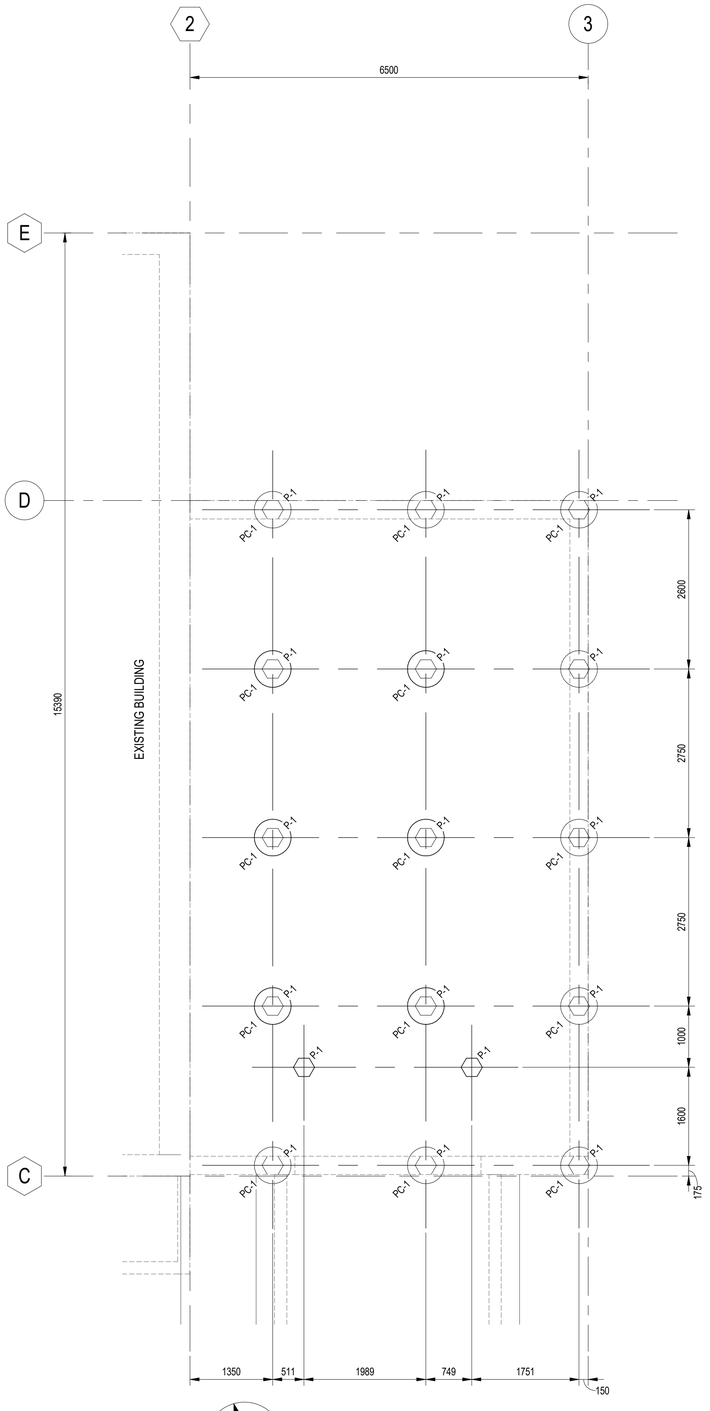
ENGINEER'S SEAL
PROVINCE OF MANITOBA
M.R. BROTHERSTON
Member 25515
REGISTERED PROFESSIONAL ENGINEER
2025-02-27

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NORTH END SEWAGE TREATMENT PLANT
NEWPCC UV UPGRADES
STRUCTURAL
NEW UV STORAGE ROOM
GENERAL NOTES

CITY DRAWING NUMBER	SHEET	REV.	SIZE
		00	A1

LAST SAVE: 2025-02-26 7:56:26 AM
PATH: Autodesk Docs://City of Winnipeg - NEWPCC Upgrades 20230/MOD-U1101.rvt



PLAN AT EL 231.278m

SCALE: 1 : 50

FOUNDATION SCHEDULE		
MARK	SIZE	QTY
P-1	300Ø PC HEX PILE	17
PC-1	600Ø x 600 DEEP PILE CAP	15

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TENDER NO. 30-2025

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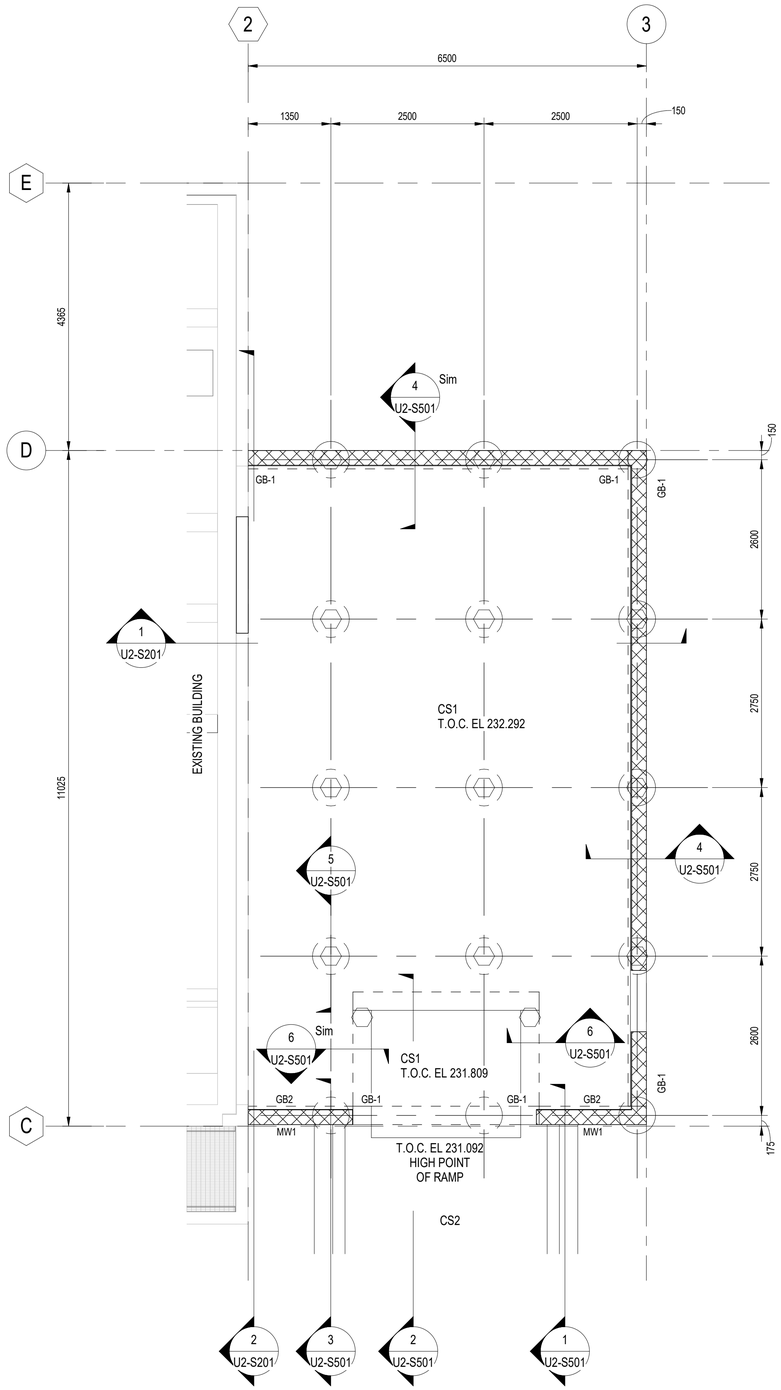
DRAWN BY: MK	APPROVED BY: NW
SCALE: 1 : 50	RELEASED FOR CONSTRUCTION BY:
DATE: 2023-07-24	DATE:
CONSULTANT NO.: U2-S101	

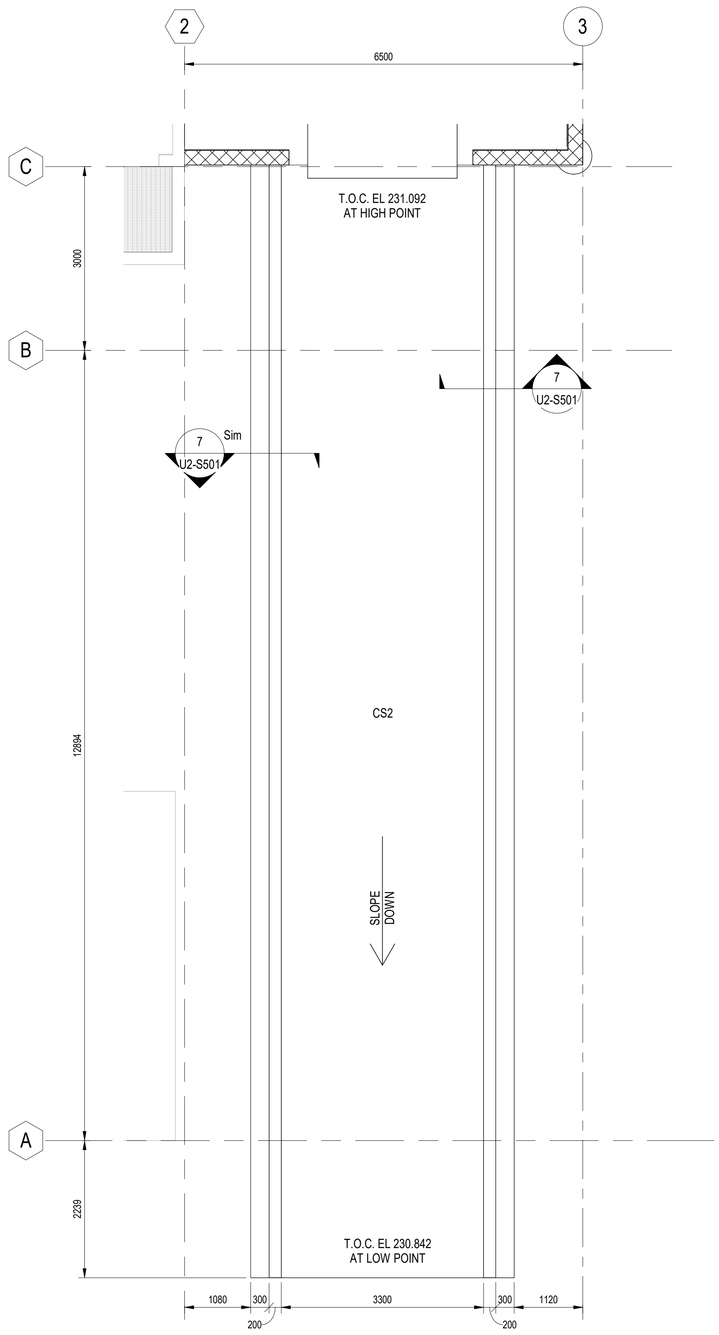
ENGINEER'S SEAL
PROVINCE OF MANITOBA
M.R. BROTHERSTON
Member 25515
REGISTERED PROFESSIONAL ENGINEER
2025-02-27

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NORTH END SEWAGE TREATMENT PLANT
NEWPCC UV UPGRADES
STRUCTURAL
NEW UV STORAGE ROOM
PILING PLAN

CITY DRAWING NUMBER	SHEET	REV.	SIZE
		00	A1





N

PLAN AT EL. 232.292m

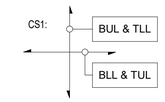
SCALE: 1 : 50

PLAN AT EL 232.292m

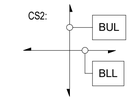
SCALE: 1 : 50

NOTES:

1. REFER TO ELECTRICAL, MECHANICAL AND PROCESS DRAWINGS FOR SIZE AND LOCATIONS OF PENETRATIONS THROUGH THE FLOOR. SLEEVE ALL PENETRATIONS.
2. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF INTERIOR WALLS.
3. DESIGN LOADS:
   DEAD LOADS: STRUCTURE SELF WEIGHT
   LIVE LOADS: L = 4.8 kPa
4. SLAB REINFORCING SCHEDULE
   CS1: 300 SLAB r/w
   15M AT 300oc EW T & B



   CS2: 200 SLAB r/w
   15M AT 200oc EW MID



5. ALL SLAB REINFORCING TO BE CONTINUOUS, PROVIDE CLASS B TENSION SPLICES WHERE REQUIRED FOR LENGTH.
6. PROVIDE STANDARD HOOKS FOR ALL TOP REINFORCING AT DISCONTINUOUS EDGES.

GRADE BEAM SCHEDULE:

GB-1: 300x1200DP GRADE BEAM R/W 3-25M CONT T&B C/W 15M HEF AND 10M CLOSED STIRRUPS AT 300 o/c

GB-2: 300x1400DP GRADE BEAM R/W 3-25M CONT T&B C/W 15M HEF 10M CLOSED STIRRUPS AT 300 o/c

MASONRY WALL REINFORCING:

A. COREFILL AND REINFORCE EXTERIOR 240mm WALLS WITH 1-15M VERT FULL HEIGHT AT MAX 800 o/c.
B. PROVIDE A 600 DP CONT BOND BEAM AND REINF WITH 1-20M TOP AND BOTTOM CONT AT ROOF DECK ELEVATION. SEE DETAILS ON DRAWING U2-S-103.
C. PROVIDE A 200 DP BOND BEAM REINF WITH 1-20M CONT AT TOP OF PARAPET.
D. INSTALL HORIZ JOINT REINFORCING AT 400 o/c. LAP REINF A MIN OF 2 CROSS WIRE LOCATIONS.
E. PROVIDE REINFORCED LINTELS WITH ABOVE ALL OPENINGS, REFER TO DRAWING U2-S502.

TENDER NO. 30-2025

ENGINEERS GEOSCIENTISTS MANITOBA
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DRAWN BY: MK	APPROVED BY: NW
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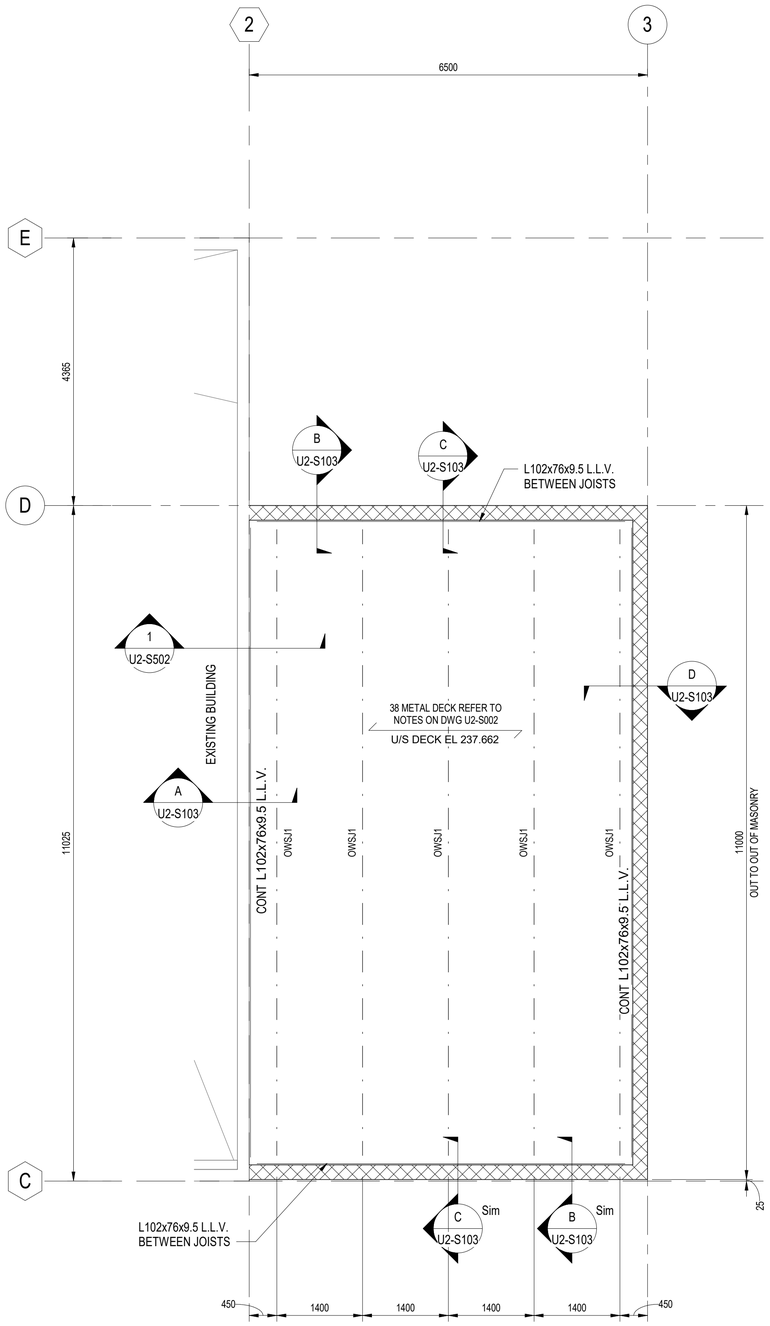
DATE: 2023-07-24	DATE:
CONSULTANT NO.: U2-S102	

ENGINEER'S SEAL
PROVINCE OF MANITOBA
M. R. BROTHERSTON
Member 25515
REGISTERED PROFESSIONAL ENGINEER
2025-02-27

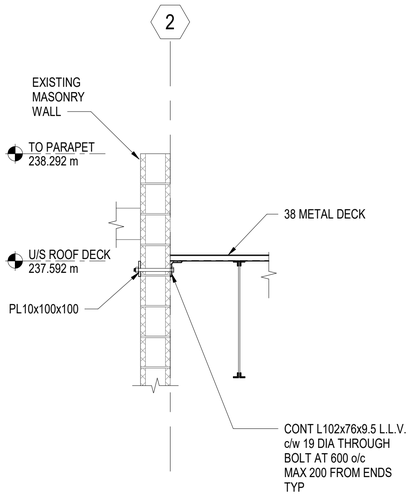
Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NORTH END SEWAGE TREATMENT PLANT
NEWPCC UV UPGRADES
STRUCTURAL
NEW UV STORAGE ROOM
MAIN FLOOR PLAN

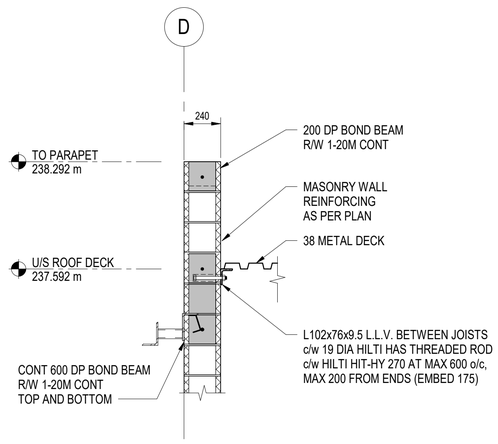
CITY DRAWING NUMBER	SHEET	REV.	SIZE
		00	A1



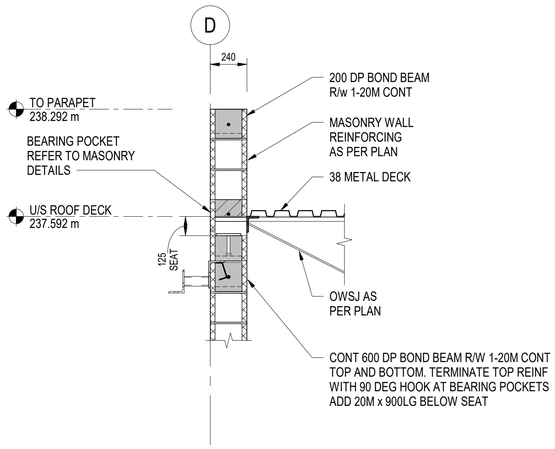
PLAN AT EL. 237.738m
SCALE: 1 : 50



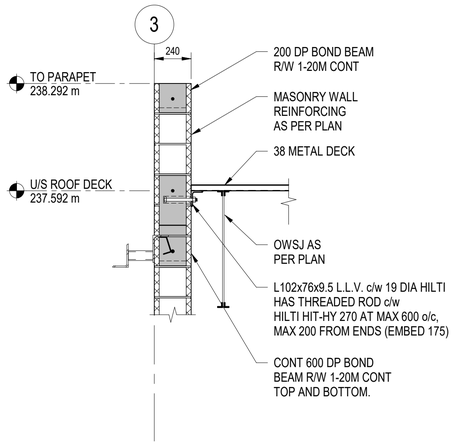
A | SECTION
U2-S103 | SCALE: 1 : 20



B | SECTION
U2-S103 | SCALE: 1 : 20



C | SECTION
U2-S103 | SCALE: 1 : 20



D | SECTION
U2-S103 | SCALE: 1 : 20

NOTES:

1. U/S METAL DECK EL 237.592m.
2. OWSJ FABRICATOR SHALL SUPPLY ALL BRACING, AND HANGERS BETWEEN JOISTS NECESSARY FOR THE COMPLETE INSTALLATION OF THE ROOF TRUSSES. SHOP DRAWINGS SHALL SHOW LOCATIONS OF ALL BRIDGING AND BRACING.
3. DESIGN LOADS:
   - DEAD LOADS: 1.0 kPa
   - SNOW LOADS: 2.15 kPa + SNOW ACCUMULATION SHOWN ON PLAN
   - LIVE LOADS: 1.0 kPa
   - WIND LOAD: IN ACCORDANCE WITH NBC 2020 SECTION 4.1.7
4. JOIST BEARING ELEVATIONS TO BE BASED ON 100 DEEP JOIST SEATS, TYPICAL UNLESS NOTED OTHERWISE.
5. JOIST BRIDGING DESIGNED AND SUPPLIED BY JOIST SUPPLIER.
6. ALL ROOF DECK SHALL SPAN 3 SPANS UNLESS NOTED OTHERWISE.

BEAM & JOIST SCHEDULE	
MARK	SIZE
OWSJ1	750DP OWSJ

ENGINEERS GEOSCIENTISTS MANITOBA
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SCALE: As indicated | RELEASED FOR CONSTRUCTION BY:
DATE: 2023-07-24 | DATE:
CONSULTANT NO.: U2-S103

ENGINEER'S SEAL
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M.R. BROTHERSTON
Member 25515
REGISTERED PROFESSIONAL ENGINEER
2025-02-27

TENDER NO. 30-2025

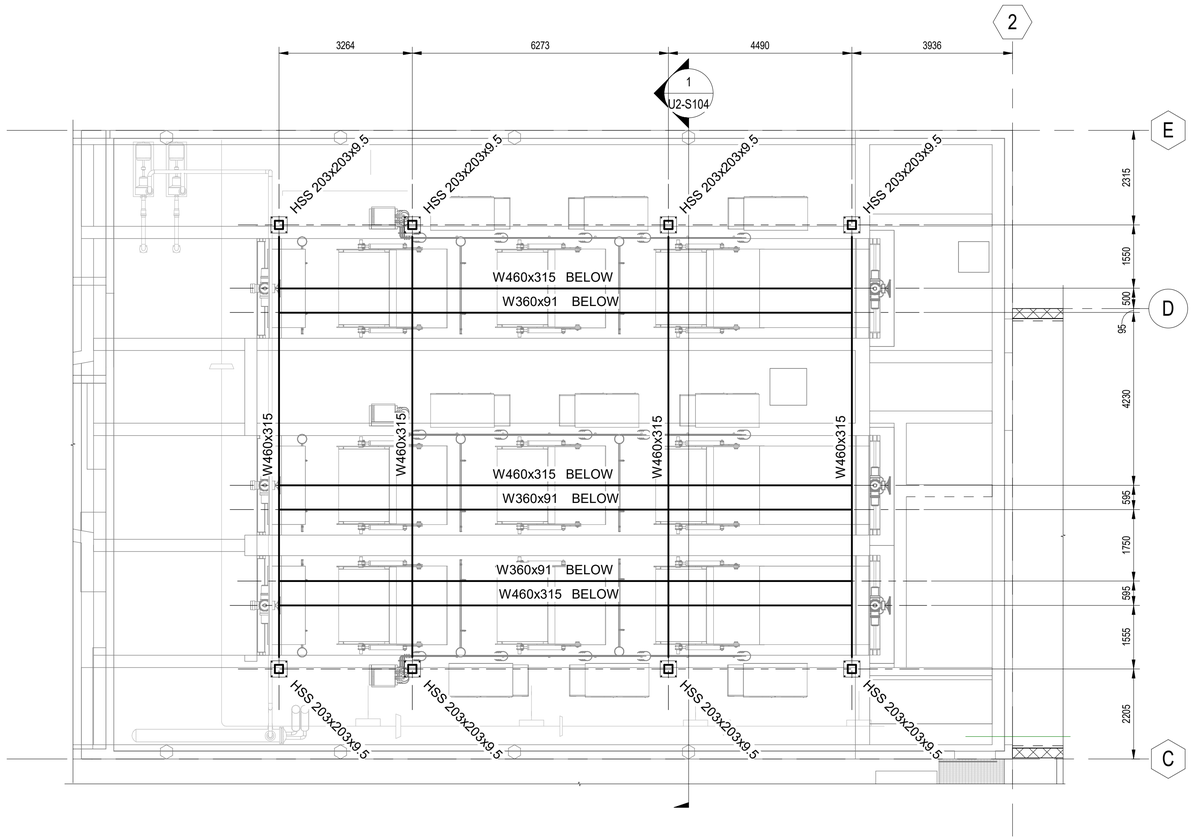
Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

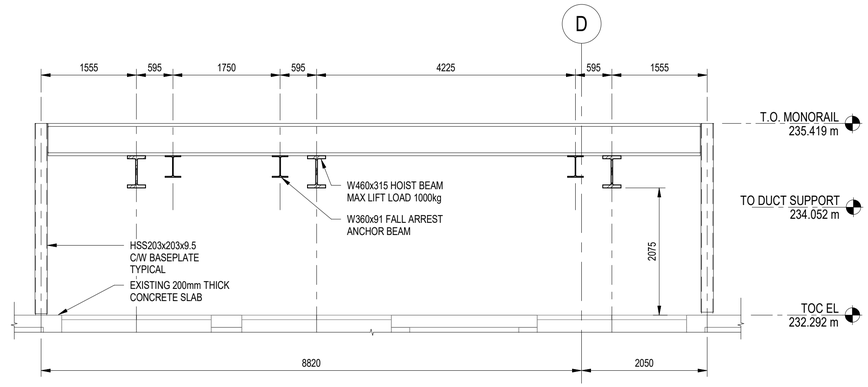
NORTH END SEWAGE TREATMENT PLANT
NEWPCC UV UPGRADES
STRUCTURAL
NEW UV STORAGE ROOM
ROOF FRAMING PLAN

CITY DRAWING NUMBER	SHEET	REV.	SIZE
		00	A1

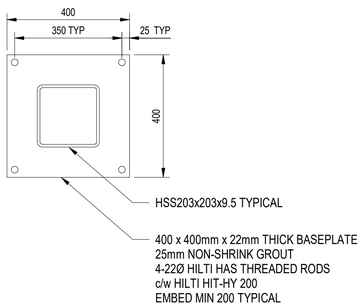
A1 SIZE - 594mm x 841mm

LAST SAVE: 2025-02-26 7:56:29 AM
PATH: Autodesk Docs://City of Winnipeg - NEWPCC Upgrades 2023/SMOD-U101.rvt





1 | SECTION
U2-S104 | SCALE: 1 : 50



MONORAIL FRAMING PLAN

SCALE: 1 : 75

NOTE:

1. WHERE MOMENT CONNECTIONS ARE SPECIFIED BUT VALUE IS NOT SHOWN, DESIGN FOR FULL MOMENT CAPACITY OF THE SMALLER MEMBER JOINED.
2. SITE VERIFY MONORAIL FRAMING DIMENSIONS

BASEPLATE DETAIL

SCALE: 1 : 10

TENDER NO. 30-2025

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CONSULTANT NO.: U2-S104	

ENGINEER'S SEAL
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M.R. BROTHERSTON
Member
25515
REGISTERED PROFESSIONAL ENGINEER
2025-02-27

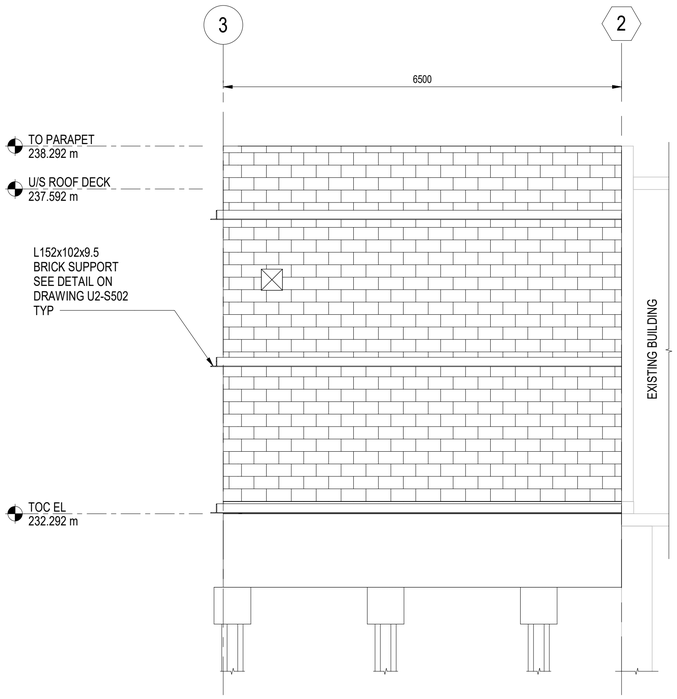
Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NORTH END SEWAGE TREATMENT PLANT
NEWPCC UV UPGRADES
STRUCTURAL
NEW MONORAIL/ SUPPORT STRUCTURE
ENLARGED PLAN, SECTION AND DETAIL

CITY DRAWING NUMBER	SHEET	REV.	SIZE
		00	A1

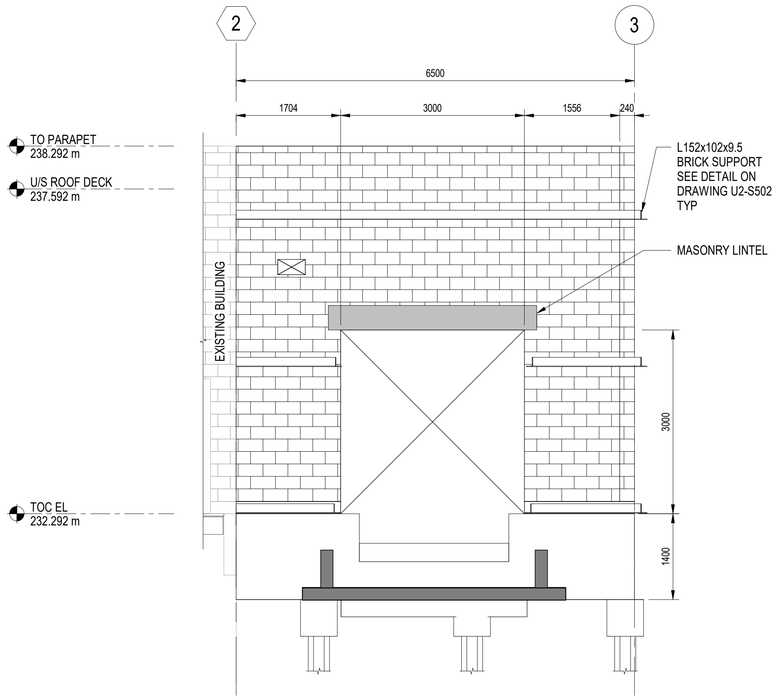
A1 SIZE - 594mm x 841mm

LAST SAVE: 2025-02-26 7:56:29 AM
PATH: Autodesk Docs://City of Winnipeg - NEWPCC Upgrades 2023/SMOD-U1101.rvt



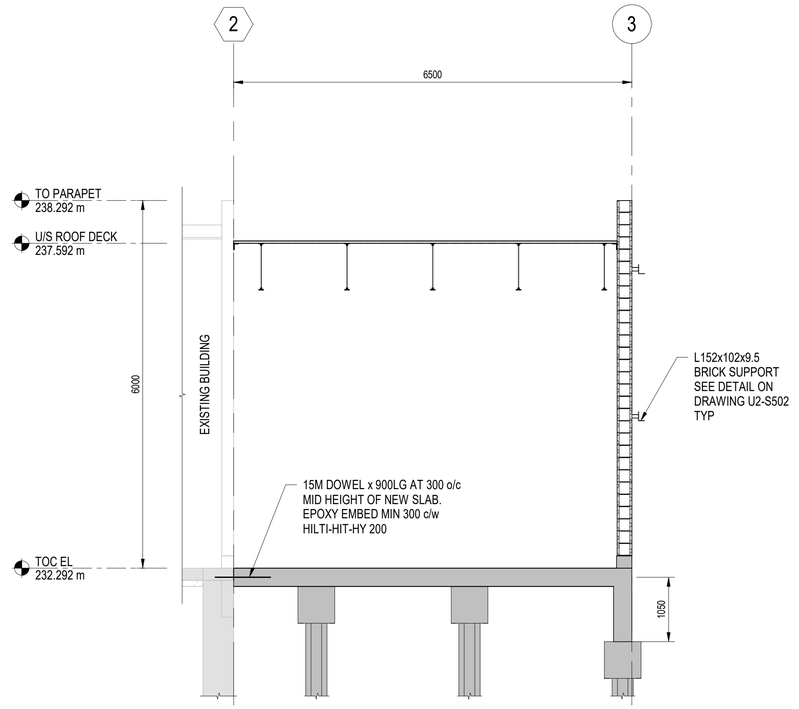
NORTH ELEVATION - NEW UV STORAGE ROOM

SCALE: 1 : 50



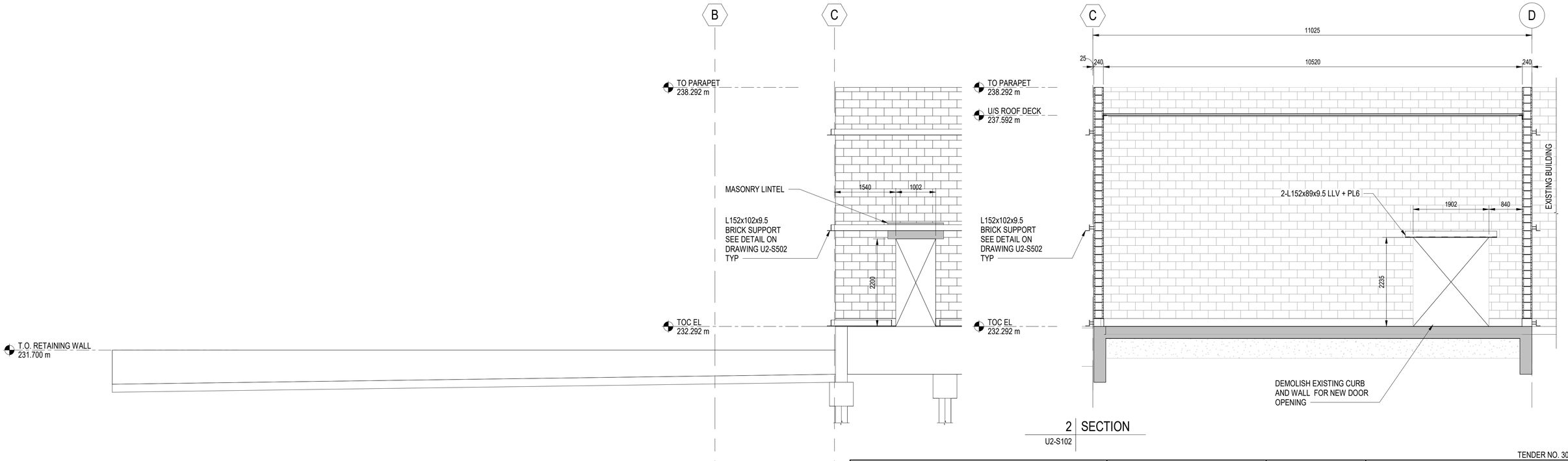
SOUTH ELEVATION - NEW UV STORAGE ROOM

SCALE: 1 : 50



1 | SECTION

U2-S102



2 | SECTION

U2-S102

PARTIAL EAST ELEVATION - NEW UV STORAGE ROOM

SCALE: 1 : 50

ENGINEERS GEOSCIENTISTS MANITOBA
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ENGINEER'S SEAL

PROVINCE OF MANITOBA
M.R. BROTHERSTON
Member
25515
REGISTERED PROFESSIONAL ENGINEER
2025-02-27

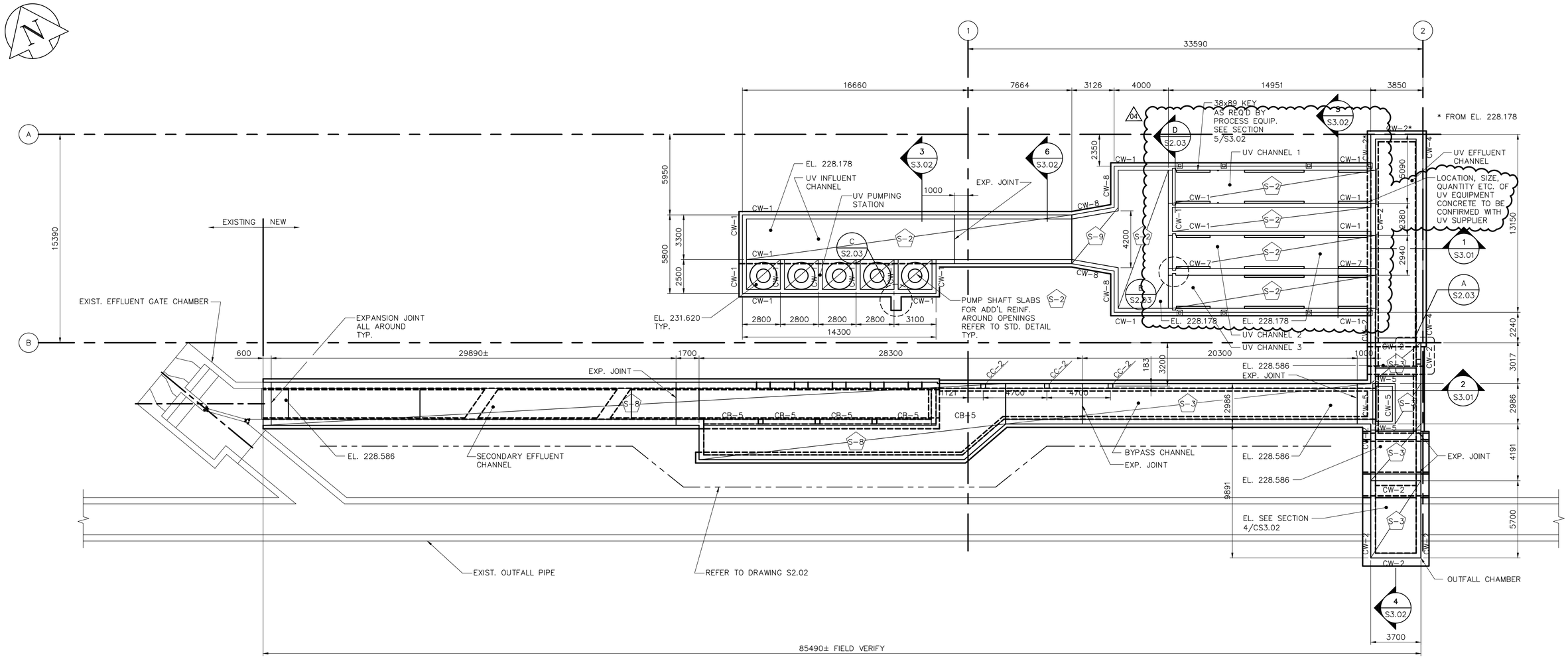
Winnipeg

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NORTH END SEWAGE TREATMENT PLANT
NEWPCC UV UPGRADES
STRUCTURAL
NEW UV STORAGE ROOM
SECTIONS AND ELEVATIONS

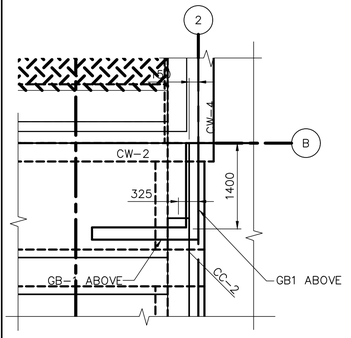
TENDER NO. 30-2025

CITY DRAWING NUMBER	SHEET	REV.	SIZE
		00	A1

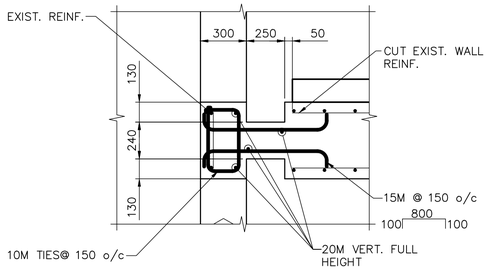


PLAN ABOVE ELEVATION 231.620

SCALE: 1:150

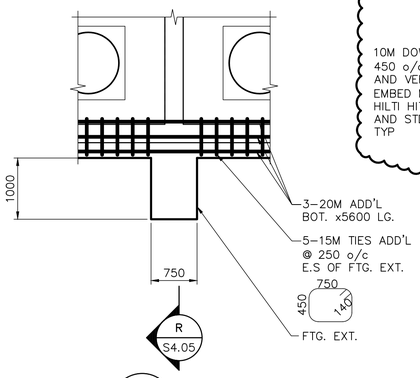


A S2.03 DETAIL 1:50

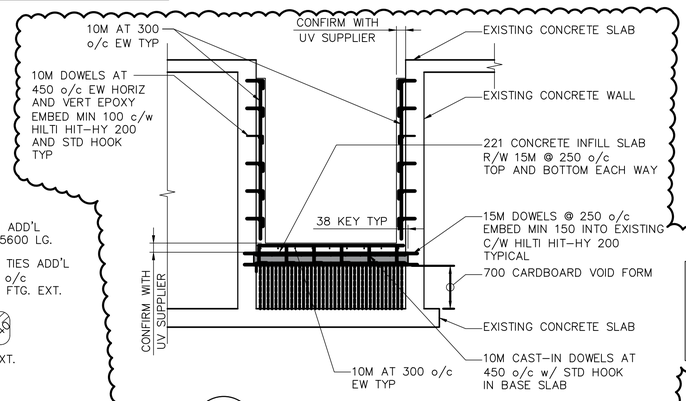


B S2.03 DETAIL 1:20

DETAIL IS FOR BOTH SINGLE AND DOUBLE BLOCK-OUTS.



C S2.03 DETAIL 1:50



D S2.03 TYPICAL UV CHANNEL INFILL 1:50

NOTES:

- CONTRACTOR TO SITE CONFIRM ALL DIMENSIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION

NOTES:

1. FOR GENERAL NOTES AND SCHEDULES REFER TO DRAWING S1.01.
2. FOR STANDARD DETAILS REFER TO DRAWINGS S4.01, S4.02, AND S4.03.

TENDER NO. 30-2025

NOTE: ALL NEW CONCRETE IN EXISTING CHANNELS TO BE 35 MPa STRENGTH A-1 EXPOSURE CLASS CONCRETE.

04

REVISION 04 CHANGES
THE ENGINEER'S DESIGN RESPONSIBILITIES ARE LIMITED TO THE CHANGES INDICATED IN THE CLOUDED WORK

DESIGNED BY: CT	CHECKED BY: MB
DRAWN BY: MK	APPROVED BY: NW
DATE: 2025-02-26	RELEASED FOR CONSTR. DATE:

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04	ISSUED FOR TENDER	2025-02-26	CT	MB
03	AS CONSTRUCTED	07/03/14	GC	GGP
02	ISSUED FOR CONSTRUCTION	05/06/06	GLG	GGP
01	ISSUED FOR ADDENDUM 1	05/03/04	JEH	GGP
00	ISSUED FOR TENDER	05/02/18	JEH	GGP

AECOM

DESIGNED BY: RE, MK	CHECKED BY: GGP
DRAWN BY: C.T.	APPROVED BY: DT
SCALE: AS NOTED	RELEASED FOR CONSTRUCTION BY:
DATE: 2023-07-24	DATE:
CONSULTANT NO.: 66303D-S2.03	

ENGINEER'S SEAL
PROVINCE OF MANITOBA
M.R. BROTHERSTON
Member 25515
REGISTERED PROFESSIONAL ENGINEER
2025-02-27

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NEWPCC - SECONDARY EFFLUENT
UV DISINFECTION FACILITY
STRUCTURAL
PLAN ABOVE ELEVATION 231.620

CITY DRAWING NUMBER	SHEET	REV.	SIZE
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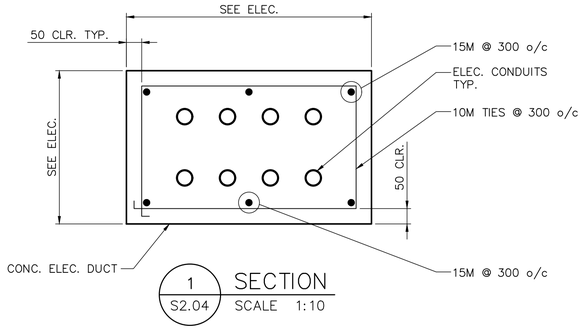
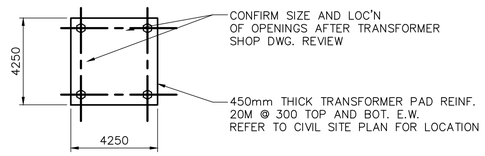


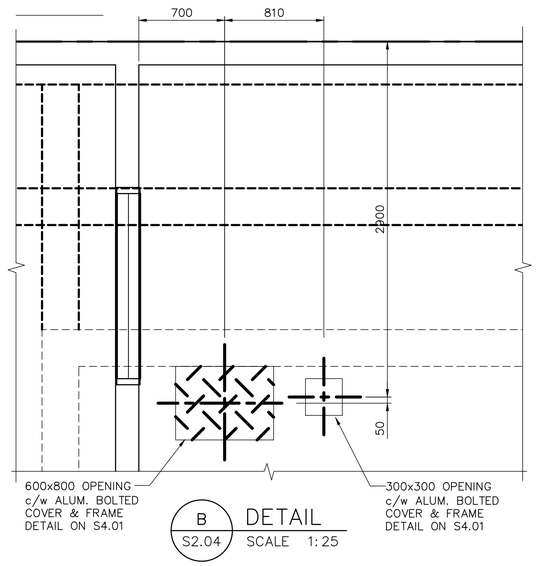
1 S2.04 SECTION
SCALE 1:10



PLAN

PLAN ABOVE ELEVATION 233.520
SCALE: 1:150

EXTENT OF VOID SUPPORT DETAIL



B S2.04 DETAIL
SCALE 1:25

NOTE: ALL NEW CONCRETE IN EXISTING CHANNELS TO BE 35 MPa STRENGTH A-1 EXPOSURE CLASS CONCRETE.

04

NOTES:

1. FOR GENERAL NOTES AND SCHEDULES REFER TO DRAWING S1.01.
2. FOR STANDARD DETAILS REFER TO DRAWINGS S4.01, S4.02, AND S4.03.

TENDER NO. 30-2025

REVISION 04 CHANGES
THE ENGINEER'S DESIGN RESPONSIBILITIES ARE LIMITED TO THE CHANGES INDICATED IN THE CLOUDED WORK

DESIGNED BY:	CT	CHECKED BY:	MB
DRAWN BY:	MK	APPROVED BY:	NW
DATE:	2025-02-26	RELEASED FOR CONSTR. DATE:	

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AECOM Canada ULC
No. 4671

NO.	REVISIONS	DATE	DESIGN	CHECK
04	ISSUED FOR TENDER	2025-02-26	CT	MB
03	AS CONSTRUCTED	07/03/14		
02	ISSUED FOR CONSTRUCTION	05/06/06	LAE	GGP
01	ISSUED FOR ADDENDUM 1	05/03/04	JEH	GGP
00	ISSUED FOR TENDER	05/02/18	JEH	GGP

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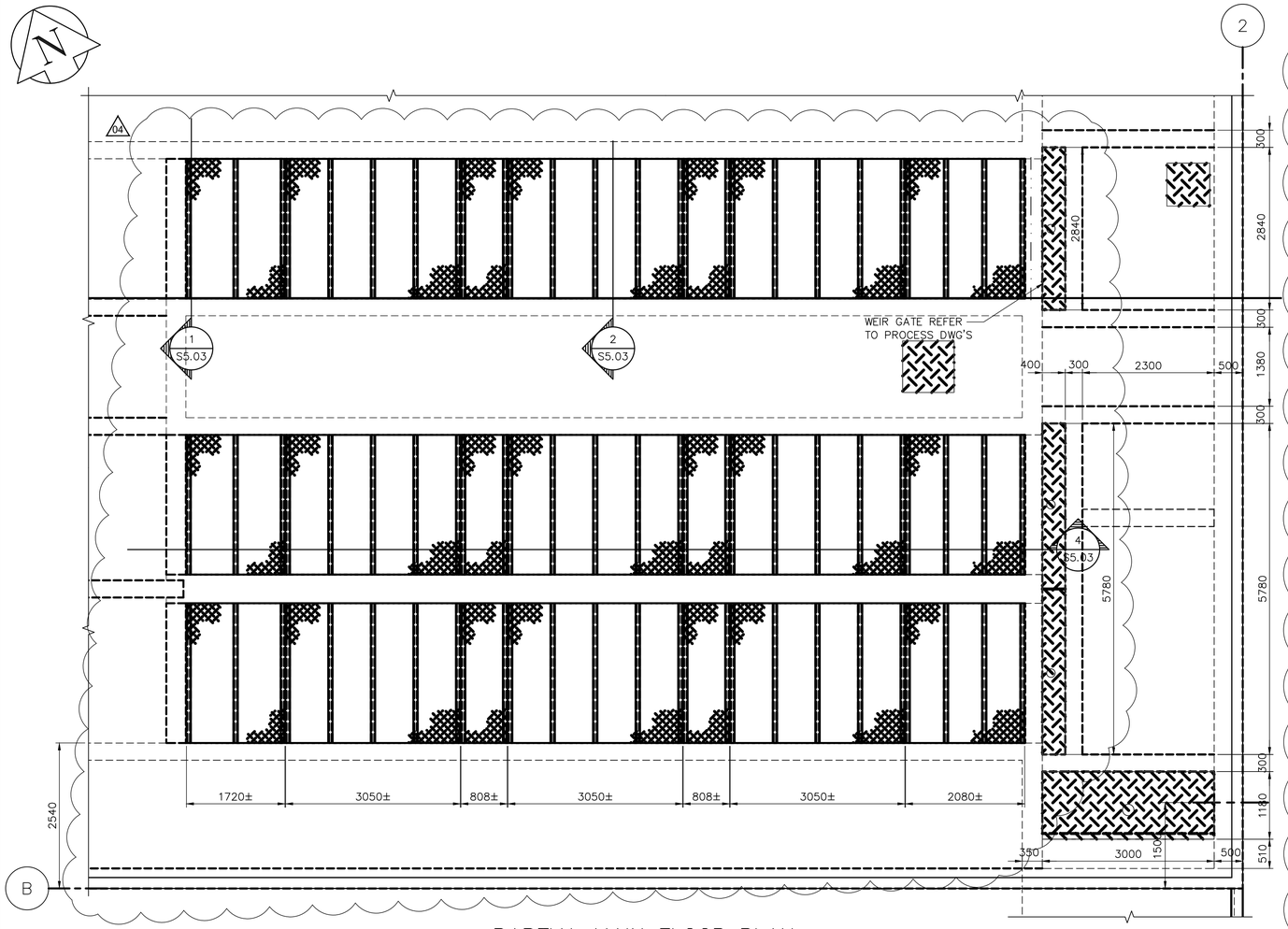
DESIGNED BY: RE, MK	CHECKED BY: GGP
DRAWN BY: CT	APPROVED BY: DT
SCALE: AS NOTED	RELEASED FOR CONSTRUCTION BY:
DATE: 2023-07-24	DATE:
CONSULTANT NO.: 66303D-S2.04	

ENGINEER'S SEAL
PROVINCE OF MANITOBA
MK R. BROTHERSTON Member 25515
REGISTERED PROFESSIONAL ENGINEER
2025-02-27

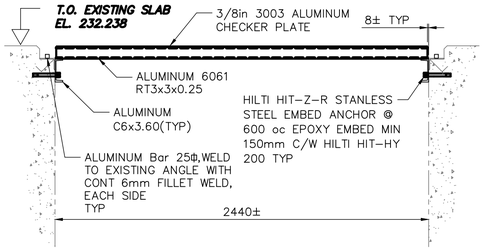
Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NEWPCC - SECONDARY EFFLUENT
UV DISINFECTION FACILITY
STRUCTURAL
PLAN ABOVE ELEVATION 233.520

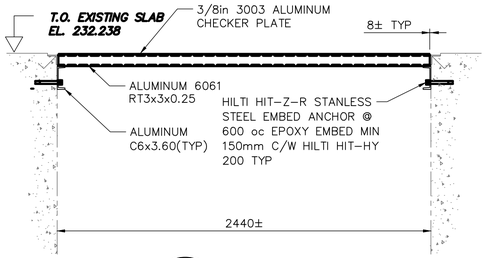
CITY DRAWING NUMBER	SHEET	REV.	SIZE
1-0101U-S0005-001-03	5	04	A1



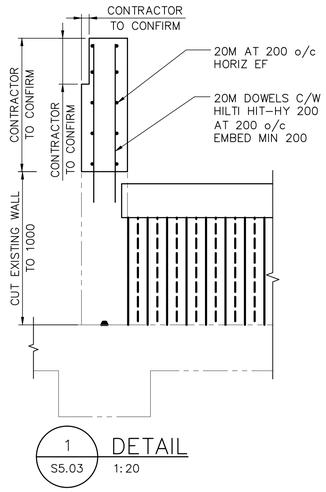
PARTIAL MAIN FLOOR PLAN
SCALE : 1:50



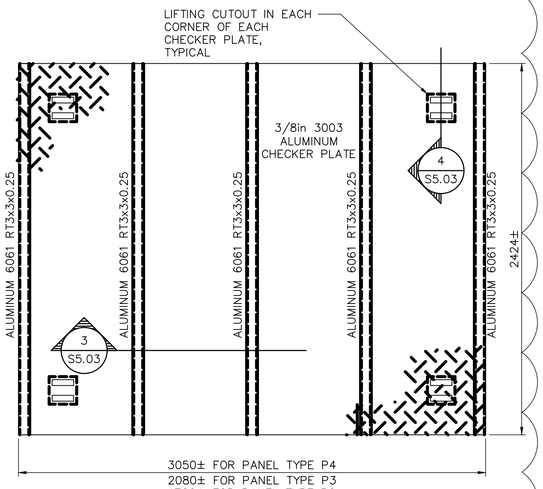
1 S5.03 SECTION 1:20



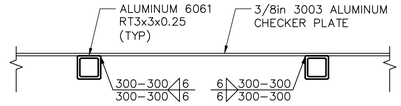
2 S5.03 SECTION 1:20



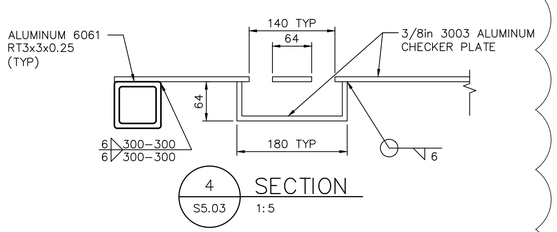
1 S5.03 DETAIL 1:20



PANEL DETAIL
SCALE : 1:20



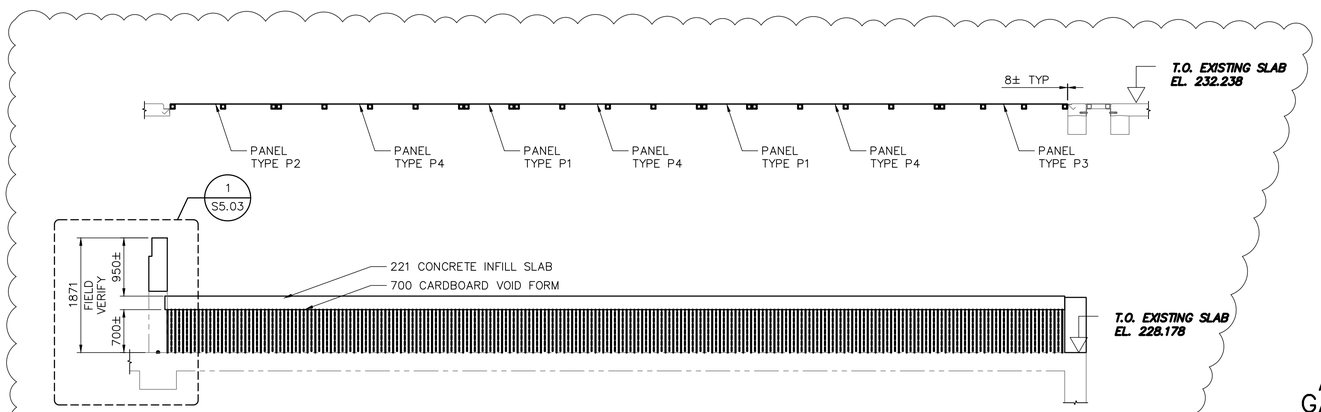
3 S5.03 SECTION 1:10



4 S5.03 SECTION 1:5

NOTES:
- CONTRACTOR TO SITE CONFIRM ALL DIMENSIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION
- CONTRACTOR TO COORDINATE ALL REQUIRED OPENING SIZES AND LOCATIONS WITH MECHANICAL, PROCESS MECHANICAL, ELECTRICAL, ETC.
- PROVIDE 200mm x 200mm INSPECTION HATCHES NEAR EACH NOZZLE LOCATION. HATCHES TO BE HINGED WITH FINGER HOLE. HATCH SHALL SIT FLUSH WITH SURROUNDING CHECKER PLATE. COORDINATE WITH PROCESS DRAWINGS.
- LIVE LOAD = 4.8 kPa

NOTES:
- FINAL COVER CONFIGURATION FINALIZED AFTER ALL EQUIPMENT INSTALLED. NOTCH COVERS AROUND EQUIPMENT, HOSES, CABLES, AND INSTRUMENTS MAKE NOTCHES AS SMALL AS POSSIBLE TO PREVENT LIGHT FROM EXITING THE CHANNEL.
- CONTRACTOR TO CONFIRM ALL DIMENSIONS



4 S5.03 SECTION – PANEL P1 & PANEL P2 1:50

NOTE: ALL NEW CONCRETE IN EXISTING CHANNELS TO BE 35 MPa STRENGTH A-1 EXPOSURE CLASS CONCRETE.

AS BUILT PER
GATEWAY
CONSTRUCTION & ENGINEERING LTD.
MARCH 14/07

REVISION 04 CHANGES THE ENGINEER'S DESIGN RESPONSIBILITIES ARE LIMITED TO THE CHANGES INDICATED IN THE CLOUDED WORK	
DESIGNED BY: CT	CHECKED BY: MB
DRAWN BY: MK	APPROVED BY: NW
DATE: 2025-02-26	RELEASED FOR CONSTR. DATE:

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No. 4671

TENDER NO. 30-2025

NO.	REVISIONS	DATE	DESIGN	CHECK
04	ISSUED FOR TENDER	2025-02-26	CT	MB
03	AS CONSTRUCTED	07/03/14	GC	GGP
02	ISSUED FOR CONSTRUCTION	05/06/06	GLG	GGP
01	ISSUED FOR ADDENDUM 1	05/03/04	JEH	GGP
00	ISSUED FOR TENDER	05/02/18	JEH	GGP

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DESIGNED BY: RE, MK	CHECKED BY: GGP
DRAWN BY: CMS	APPROVED BY: DT
SCALE: AS NOTED	RELEASED FOR CONSTRUCTION BY:
DATE: 2023-07-24	DATE:
CONSULTANT NO.: 66303D-S5.03	

ENGINEER'S SEAL
PROVINCE OF MANITOBA
M. R. BROTHERSTON
Member 25515
REGISTERED PROFESSIONAL ENGINEER
2025-02-27

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NEWPCC - SECONDARY EFFLUENT
UV DISINFECTION FACILITY
STRUCTURAL
UV CHAMBER ACCESS COVERS
PLAN, SECTIONS AND DETAILS

CITY DRAWING NUMBER	SHEET	REV.	SIZE
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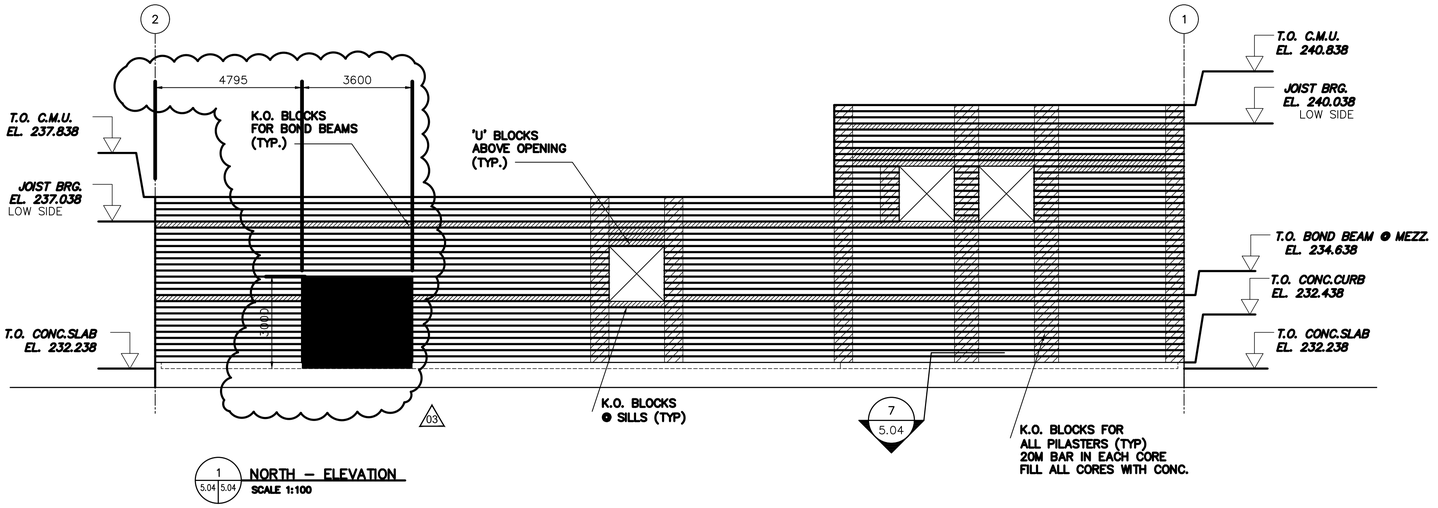
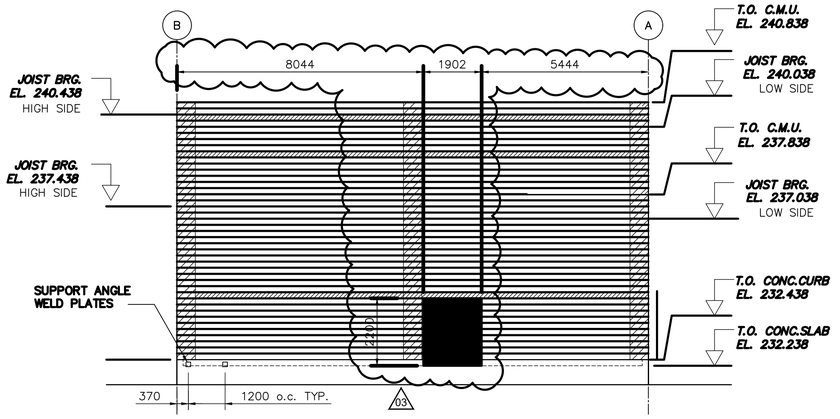
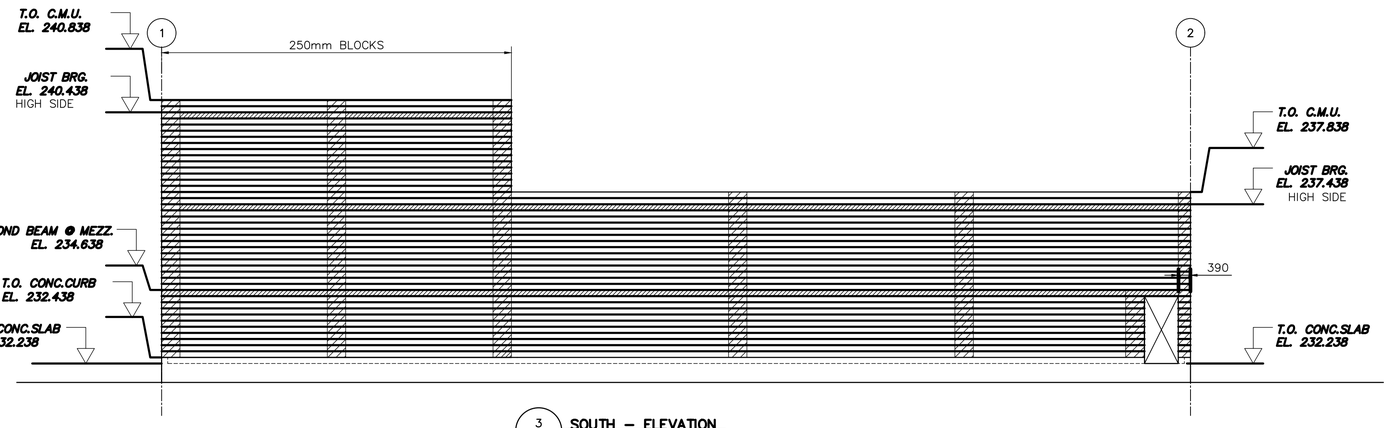


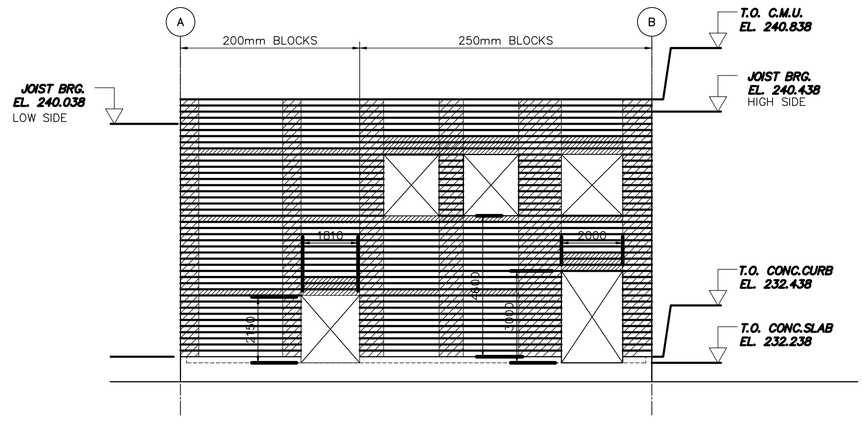
1 / 5.04 | 5.04 NORTH – ELEVATION
SCALE 1:100



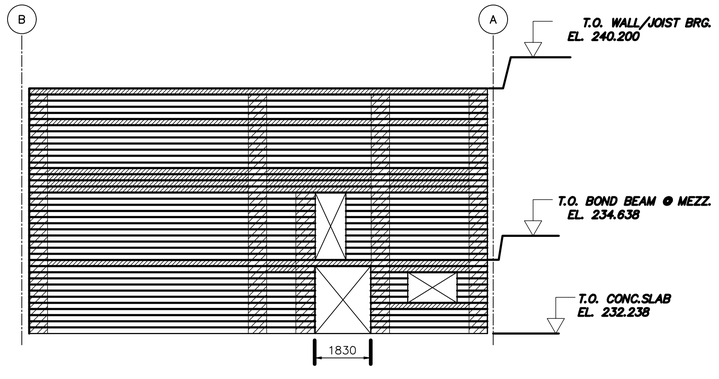
2 / 5.04 | 5.04 EAST – ELEVATION
SCALE 1:100



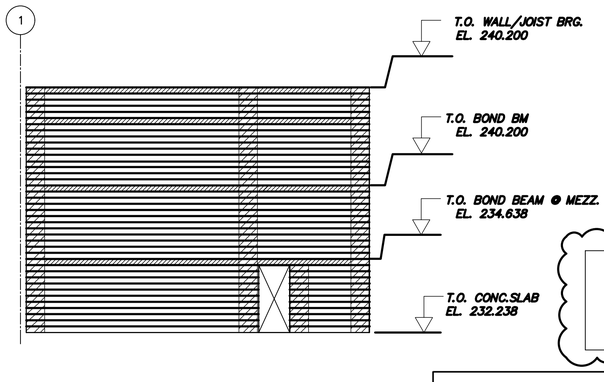
3 / – | 5.04 SOUTH – ELEVATION
SCALE 1:100



4 / 5.04 | 5.04 WEST – ELEVATION
SCALE 1:100

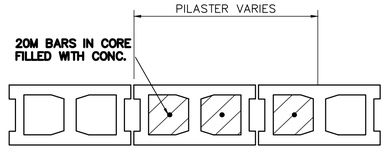


5 / 5.04 | 5.04 INTERIOR NORTH WALL UV AREA
SCALE 1:100



6 / 5.04 | 5.04 INTERIOR EAST WALL ELECTRICAL ROOM
SCALE 1:100

REVISION 03 CHANGES THE ENGINEER'S DESIGN RESPONSIBILITIES ARE LIMITED TO THE CHANGES INDICATED IN THE CLOUDED WORK	
DESIGNED BY: CT	CHECKED BY: MB
DRAWN BY: MK	APPROVED BY: NW
DATE: 2025-02-26	RELEASED FOR CONSTR. DATE:



7 / 5.04 | 5.04 SECTION
SCALE 1:16

NOTES:
– CONTRACTOR TO SITE CONFIRM ALL DIMENSIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION
03

TENDER NO. 30-2025

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GATEWAY
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NO.	REVISIONS	DATE	DESIGN	CHECK
03	ISSUED FOR TENDER	2025-02-26	CT	MB
02	AS CONSTRUCTED	07/03/14	CGL	
01	ISSUED FOR CONSTRUCTION	05/06/06	GLG	
00	ISSUED FOR ADDENDUM 1	05/03/03	CGP	

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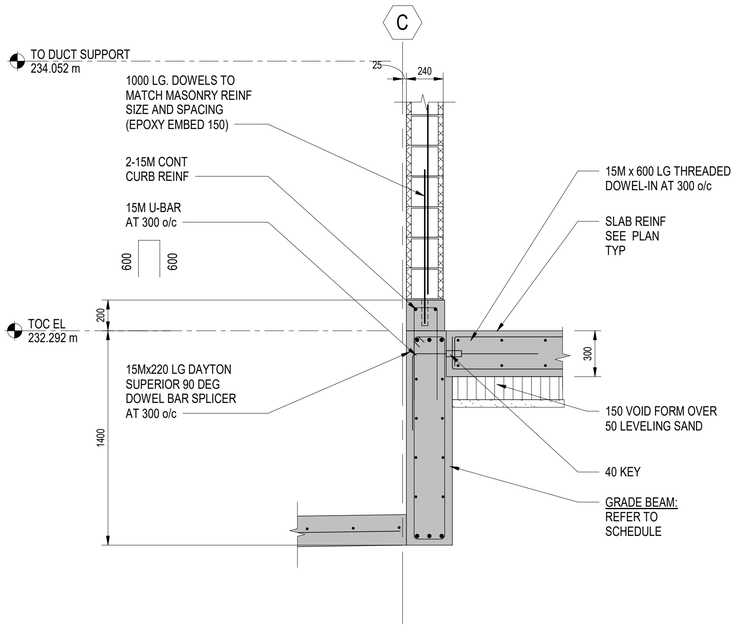
DESIGNED BY: RD/GGP	CHECKED BY: -
DRAWN BY: GGP	APPROVED BY: -
SCALE: AS NOTED	RELEASED FOR CONSTRUCTION BY:
DATE: 2023-07-24	DATE:
CONSULTANT NO.: 66303D-S5.04	

ENGINEER'S SEAL
PROVINCE OF MANITOBA
M.R. BROTHERSTON
Member 25515
REGISTERED PROFESSIONAL ENGINEER
2025-02-27

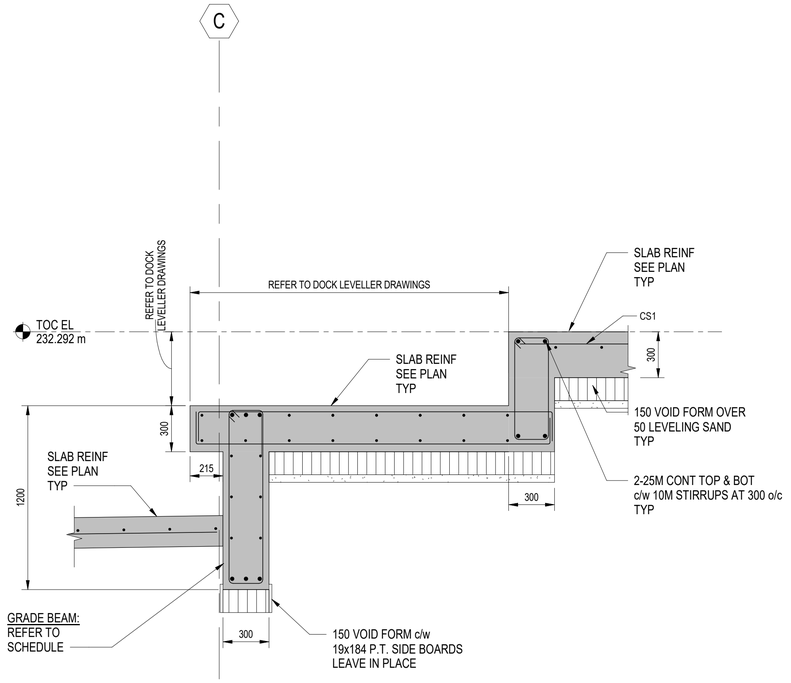
Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NEWPCC - SECONDARY EFFLUENT
UV DISINFECTION FACILITY
STRUCTURAL
MASONRY WALL ELEVATIONS

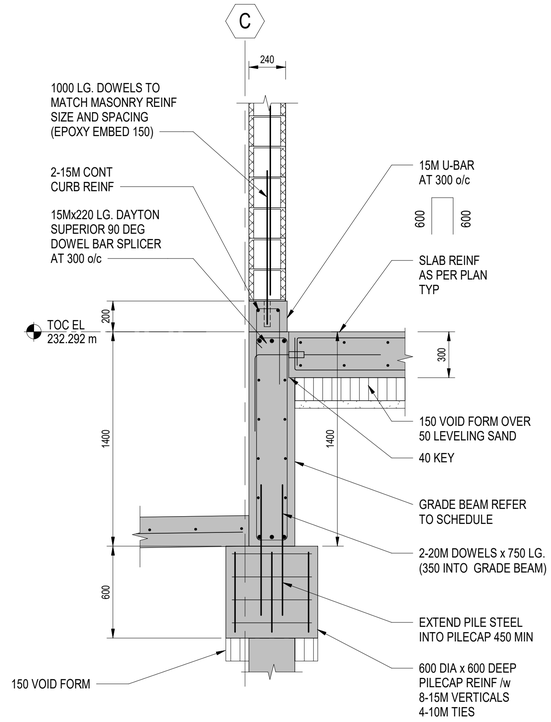
CITY DRAWING NUMBER	SHEET	REV.	SIZE
1-0101U-S0013-001-02	-	03	A1



1 | SECTION
U2-S102 | SCALE: 1 : 20



2 | SECTION
U2-S102 | SCALE: 1 : 20



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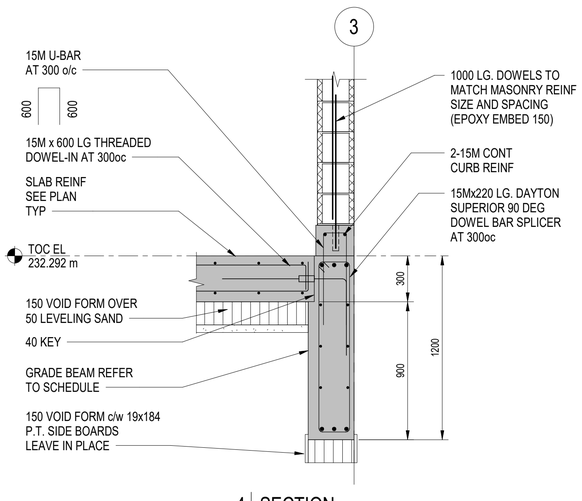
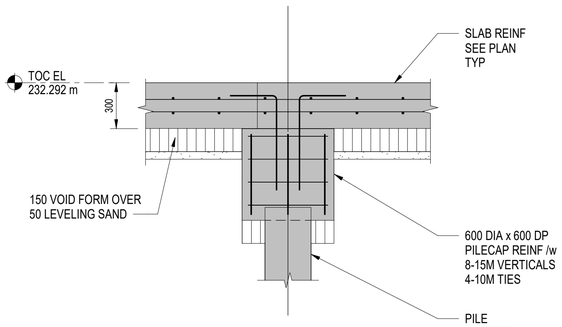
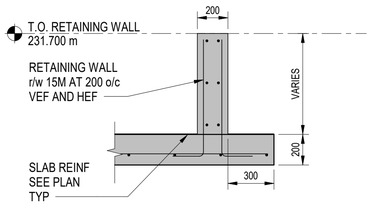
U2-S102 | SCALE: 1 : 20



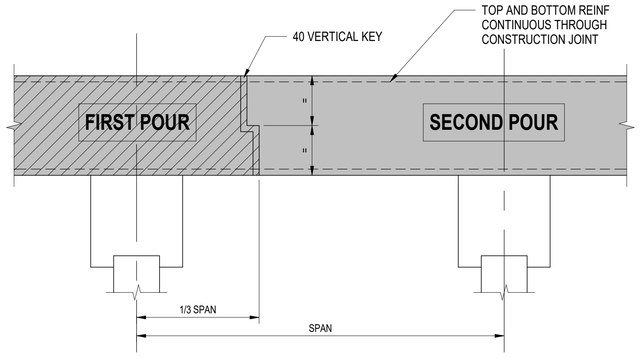
4 | SECTION
U2-S102 | SCALE: 1 : 20



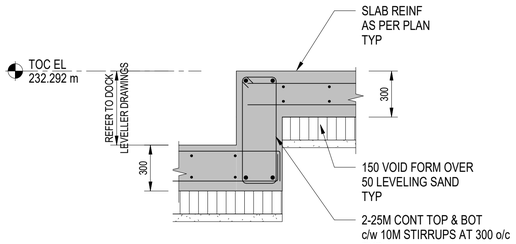
5 | SECTION
U2-S102 | SCALE: 1 : 20



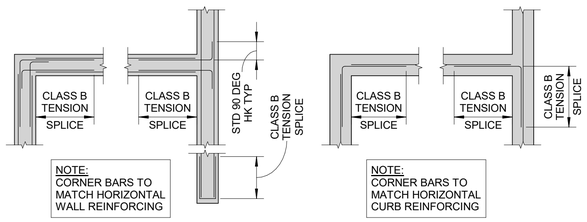
7 | SECTION
U2-S102 | SCALE: 1 : 20



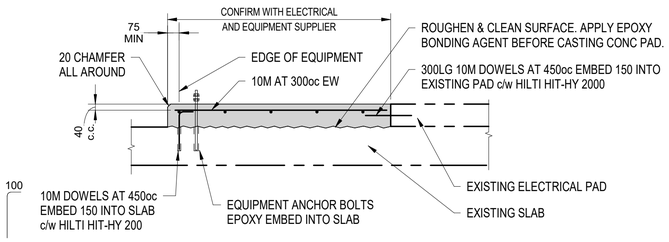
TYPICAL GRADE BEAM CONSTRUCTION JOINT DETAIL
SCALE: 1 : 20



6 | SECTION
U2-S102 | SCALE: 1 : 20



TYPICAL CONCRETE
WALL/GRADE BEAM INTERSECTION



HOUSEKEEPING PAD EXTENSION

NOTE: FOR LOCATION AND SIZE OF EXISTING PADS
REFER TO ELECTRICAL DRAWINGS.

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
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No. 4671

NO.	REVISIONS	DATE	DESIGN	CHECK
00	ISSUED FOR TENDER	2025-02-26	CT	MB

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DESIGNED BY: MB	CHECKED BY: CK
DRAWN BY: MK	APPROVED BY: NW
SCALE: 1 : 20	RELEASED FOR CONSTRUCTION BY:
DATE: 2023-07-24	DATE:
CONSULTANT NO.: U2-S501	

ENGINEER'S SEAL
PROVINCE OF MANITOBA
M.B. BROTHERSTON
Member 25515
REGISTERED PROFESSIONAL ENGINEER
2025-02-27

TENDER NO. 30-2025

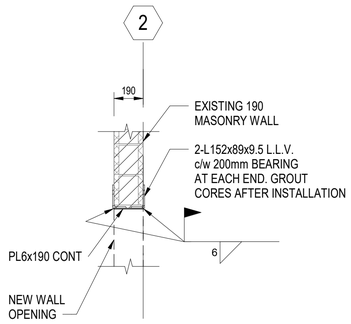
Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NORTH END SEWAGE TREATMENT PLANT
NEWPCC UV UPGRADES
STRUCTURAL
NEW UV STORAGE ROOM
CONCRETE DETAILS

CITY DRAWING NUMBER	SHEET	REV.	SIZE
		00	A1

A1 SIZE - 594mm x 841mm

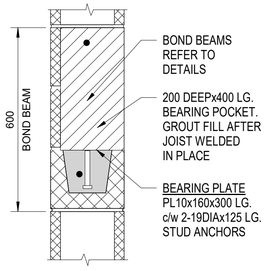
LAST SAVE: 2025-02-26 7:56:30 AM
PATH: Autodesk Docs://City of Winnipeg - NEWPCC Upgrades 2023/SMOD-U1101.rvt

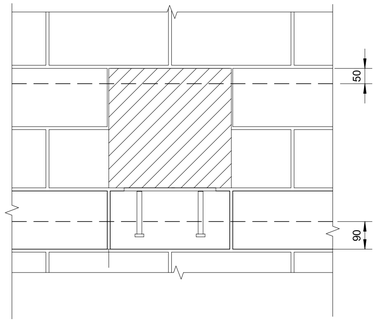


1 | NEW WALL OPENING

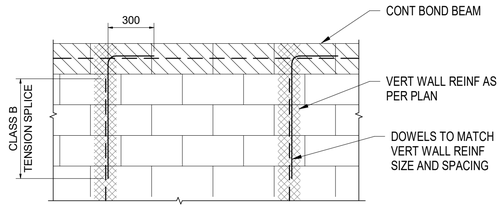
U2-S103 | SCALE: 1 : 20

NOTE:
CONTRACTOR SHALL PROVIDE TEMPORARY SHORING PRIOR TO LINTEL INSTALLATION / WALL DEMOLITION.

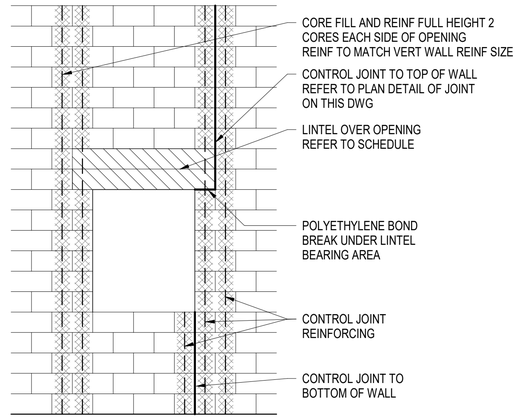




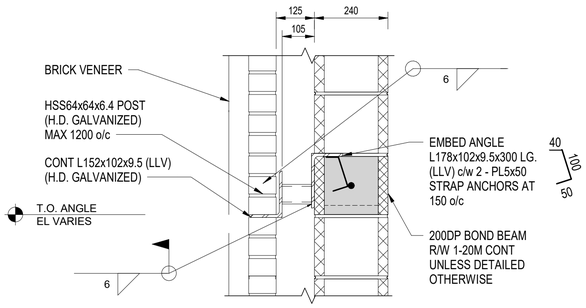
TYPICAL JOIST BEARING POCKET

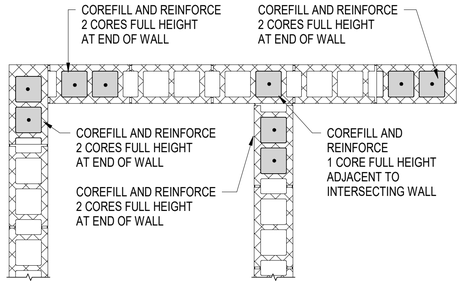


TOP OF MASONRY WALL REINFORCING DETAIL

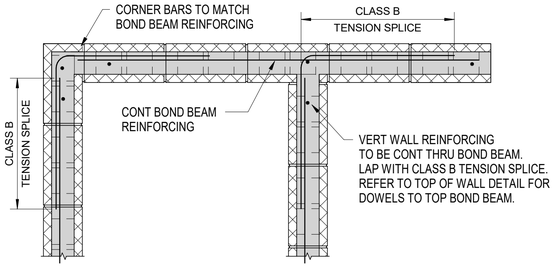


MASONRY CONTROL JOINT AT OPENINGS





VERTICAL REINFORCING



HORIZONTAL REINFORCING

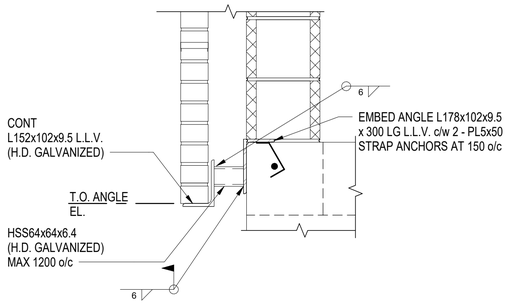
TYPICAL MASONRY WALL INTERSECTION

NOTES:
1. DO NOT BOND CORNERS AND INTERSECTIONS OF 240 MASONRY WALL.

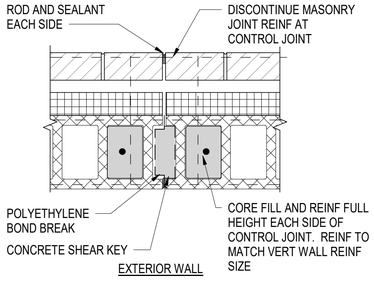
240 MASONRY LINTEL SCHEDULE

OPENING WIDTH	LINTEL SIZE		REINFORCING	
	WIDTH	HEIGHT	TOP	BOTTOM
0 - 800	240	400	-	1-20M
800 - 1200	240	400	1-15M	1-20M
1200 - 2000	190	600	1-15M	1-25M

NOTES:
1. LINTELS TO BEAR MINIMUM 200 BEYOND EACH SIDE OF OPENING
2. WHERE REINFORCING IS REQUIRED TOP AND BOTTOM, PROVIDE 10M STIRRUPS AT 200 o/c. FOR FULL LENGTH OF LINTEL

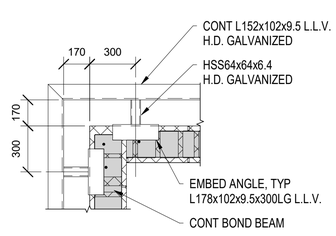


2 | TYPICAL BRICK SUPPORT

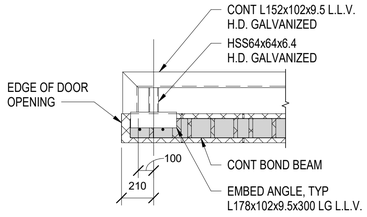


CONTROL JOINTS TO BE CONTINUOUS AT BOND BEAMS. TERMINATE BOND BEAM REINFORCING PROVIDE DOWELS (SIZE TO MATCH REINF) MIN 600 LONG. GREASE ONE END OF DOWELS AND LAP DOWELS WITH BOND BEAM REINFORCING.

MASONRY WALL CONTROL JOINT



BRICK SUPPORT - CORNER DETAIL



BRICK SUPPORT - RETURN DETAIL

TENDER NO. 30-2025

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
AECOM Canada ULC
No. 4671

NO.	REVISIONS	DATE	DESIGN	CHECK
00	ISSUED FOR TENDER	2025-02-26	CT	MB

AECOM

DESIGNED BY: MB	CHECKED BY: CK
DRAWN BY: MK	APPROVED BY: MB
SCALE: As indicated	RELEASED FOR CONSTRUCTION BY:
DATE: 2023-07-24	DATE:
CONSULTANT NO.: U2-S502	

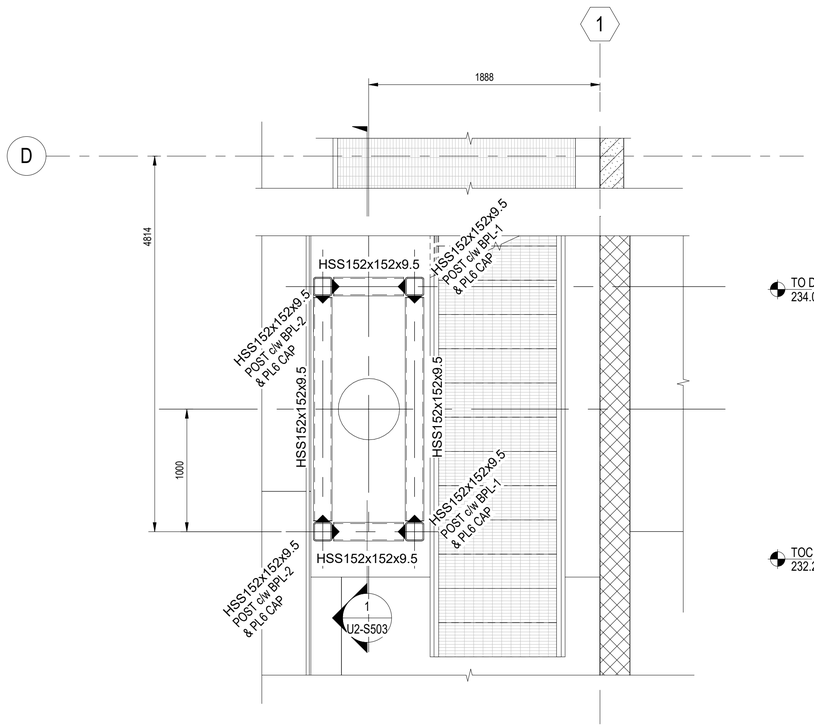
ENGINEER'S SEAL
PROVINCE OF MANITOBA
M.R. BROTHERSTON
Member
25515
REGISTERED PROFESSIONAL ENGINEER
2025-02-27

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

NORTH END SEWAGE TREATMENT PLANT
NEWPCC UV UPGRADES
STRUCTURAL
NEW UV STORAGE ROOM
MASONRY DETAILS

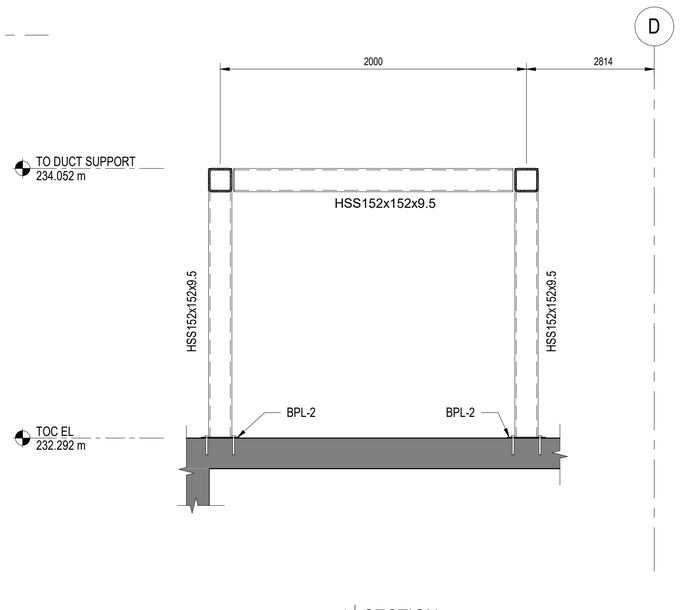
CITY DRAWING NUMBER	SHEET	REV.	SIZE
		00	A1

A1 SIZE - 594mm x 841mm



DUCT SUPPORT PLAN

SCALE: 1 : 25

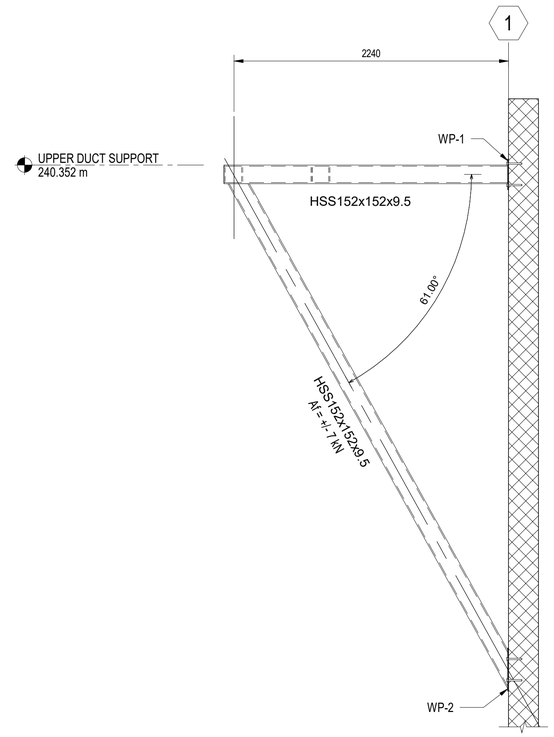


1 SECTION

U2-S503 | SCALE: 1 : 20

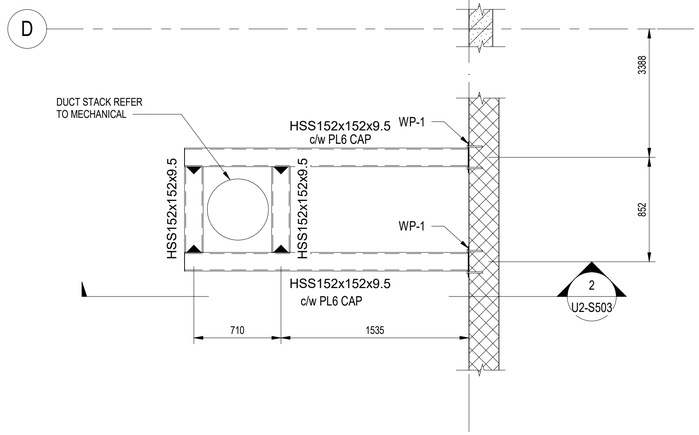
NOTES:

1. ALL STEEL TO BE HOT DIPPED GALVANIZED.
2. DESIGN ALL MOMENT CONNECTIONS FOR THE FULL BENDING MOMENT CAPACITY OF THE SMALLEST MEMBER WITHIN THE CONNECTION.
3. ▶ MOMENT CONNECTION.



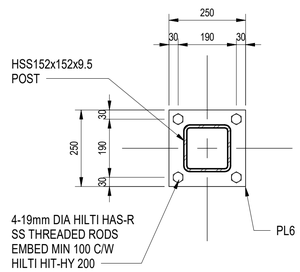
2 SECTION

U2-S503 | SCALE: 1 : 25

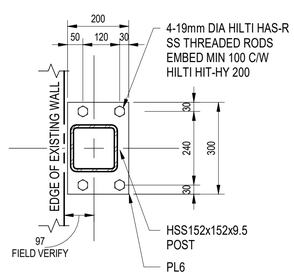


UPPER DUCT SUPPORT PLAN

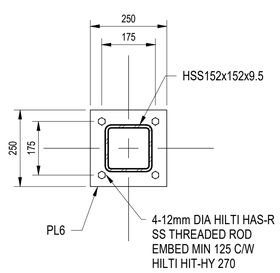
SCALE: 1 : 25



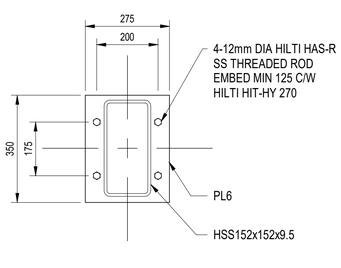
BASEPLATE BPL-1



BASEPLATE BPL-2



WALL PLATE WP-1



WALL PLATE WP-2

PLATE DETAILS

SCALE: 1 : 10

ENGINEERS GEOSCIENTISTS MANITOBA
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TENDER NO. 30-2025

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AECOM

DESIGNED BY: CT	CHECKED BY: MB
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SCALE: As indicated	RELEASED FOR CONSTRUCTION BY:
DATE: 2023-07-24	DATE:

CONSULTANT NO.: U2-S503

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PROVINCE OF MANITOBA
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NORTH END SEWAGE TREATMENT PLANT
NEWPCC UV UPGRADES
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DUCT SUPPORT
PLANS, SECTIONS AND DETAILS

CITY DRAWING NUMBER	SHEET	REV.	SIZE
		00	A1

LAST SAVE: 2025-02-26 7:56:31 AM
PATH: Autodesk Docs://City of Winnipeg - NEWPCC Upgrades 2023/SMOD-U1101.rvt