

DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED
UNDER THE ONTARIO BUILDING CODE 2012.

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

ISSUED FOR TENDER - APRIL 25, 2025
PW 2025-08



DRAWING INDEX

GENERAL DRAWINGS

GA01 GENERAL ARRANGEMENT
GA02 GENERAL SITE ARRANGEMENT

CIVIL DRAWINGS

DC001 EXISTING CONDITIONS & REMOVALS
C001 SITE PLAN SITE WIDE
C002 SERVICING PLAN - PLANT & ADMIN AREA
C003 OUTFALL PIPING PLAN STRUCTURE
C004 GRADING PLAN PLANT - ADMIN AREA
C005 GRADING PLAN PLANT - ADMIN AREA
C006 GRADING PLAN - OUTFALL
C007 CREEK RELOCATION
C008 CREEK RELOCATION - NEW ALIGNMENT
C009 DETAILS
C010 DETAILS

STRUCTURAL DRAWINGS

S000 GENERAL NOTES
S001 DESIGN LOADS
S005 TYPICAL DETAILS
S006 TYPICAL DETAILS
S007 TYPICAL DETAILS
S008 TYPICAL DETAILS
S010 GEOTECHNICAL INTERPRETATION PLAN AND SECTIONS
S011 GEOTECHNICAL INTERPRETATION SECTIONS
S100 ISOMETRIC VIEWS, PLANS AND NOTES
S101 SECTION DETAILS
S200 ISOMETRIC VIEWS AND NOTES
S201 FOUNDATION PLAN
S202 GROUND LEVEL PLAN
S203 ROOF PLAN
S210 MASONRY ELEVATIONS
S220 SECTIONS AND DETAILS
S221 SECTIONS DETAILS
S300 ISOMETRIC VIEWS AND NOTES
S301 BASE SLAB LEVEL PLAN
S302 GROUND LEVEL PLAN
S320 PLANS AND DETAILS
S321 SECTIONS AND DETAILS
S322 SECTIONS AND DETAILS
S323 SECTIONS AND DETAILS
S324 SECTIONS AND DETAILS
S400 ISOMETRIC VIEWS AND NOTES
S401 BASE SLAB LEVEL PLAN
S402 GROUND LEVEL PLAN
S410 ENLARGED PLANS AT PIT AND CHANNELS BASE SLABS
S420 SECTIONS AND DETAILS
S421 SECTIONS AND DETAILS
S422 SECTIONS AND DETAILS
S423 SECTIONS AND DETAILS
S424 SLUDGE PIT DETAILS
S425 EFFLUENT CHANNEL LAUNDERER DETAILS
S500 ISOMETRIC VIEWS AND NOTES
S501 FOUNDATION PLAN
S502 GROUND LEVEL PLAN
S503 ROOF PLAN
S510 MASONRY ELEVATIONS
S520 SECTIONS AND DETAILS
S521 SECTIONS AND DETAILS
S600 ISOMETRIC VIEWS AND NOTES
S601 BASEMENT LEVEL PLAN
S602 GROUND LEVEL PLAN
S603 ROOF PLAN
S610 MASONRY ELEVATIONS
S620 SECTIONS AND DETAILS
S700 DECANT PS PLAN AND SECTION DETAILS
S800 ISOMETRIC VIEWS AND NOTES
S801 FOUNDATION PLAN
S802 GROUND LEVEL PLAN
S803 ROOF PLAN
S810 BRACED BAY ELEVATIONS
S820 SECTIONS AND DETAILS

STRUCTURAL AND ARCHITECTURAL DRAWINGS

SA001 TYPICAL DETAILS
SA002 TYPICAL DETAILS
SA020 HEADWORKS
SA030 AERATION
SA040 CLARIFIERS
SA050 UV BUILDING
SA060 PROCESS BUILDING

ARCHITECTURAL DRAWINGS

A000 GENERAL NOTES, ASSEMBLIES
A001 OBC MATRICES
A002 TYPICAL DETAILS
A003 TYPICAL DETAILS
A004 TYPICAL DETAILS
A005 SCHEDULES AND FINISHES
A006 LIMITING DISTANCE SITE PLAN
A201 GROUND FLOOR PLAN
A202 ROOF PLAN
A203 EXTERIOR BUILDING ELEVATIONS
A204 BUILDING SECTIONS
A205 WALL SECTIONS
A301 TUNNEL FLOOR PLAN
A302 TUNNEL SECTIONS
A501 BASEMENT PLAN
A502 GROUND FLOOR PLAN
A503 ROOF PLAN
A504 EXTERIOR BUILDING ELEVATIONS
A505 BUILDING SECTIONS
A506 WALL SECTIONS
A601 BASEMENT PLAN
A602 GROUND FLOOR PLAN
A603 ROOF PLAN
A604 EXTERIOR BUILDING ELEVATIONS
A605 BUILDING SECTIONS
A606 WALL SECTIONS
A801 GROUND FLOOR PLAN
A802 ROOF PLAN
A803 CEILING PLAN
A804 EXTERIOR BUILDING ELEVATIONS
A805 BUILDING SECTIONS
A806 WALL SECTIONS
A807 MILLWORK ELEVATIONS & SECTIONS
A808 MILLWORK SECTIONS
A809 ENLARGED WASHROOM PLANS AND ELEVATIONS
A810 ENLARGED WASHROOM PLANS AND ELEVATION
A811 MILLWORK DETAILS

MECHANICAL DRAWINGS

MID001 MECHANICAL SCHEDULES SHEET 1
MID002 MECHANICAL SCHEDULES SHEET 2
MID003 WATER ENTRY SCHEMATIC
MID201 HVAC SCHEMATIC
MID202 PLUMBING AND DRAINAGE SCHEMATIC
MID301 TUNNEL HVAC AND PLUMBING SCHEMATICS
MID501 HVAC SCHEMATIC
MID502 PLUMBING AND DRAINAGE SCHEMATICS
MID601 HVAC SCHEMATIC
MID602 PLUMBING AND DRAINAGE SCHEMATICS
MID801 HVAC SCHEMATIC
MID802 PLUMBING SCHEMATICS
M201 HVAC PLAN
M202 PLUMBING PLAN
M301 TUNNEL FLOOR PLAN
M501 GROUND FLOOR PLAN
M601 HVAC PLAN
M602 PLUMBING PLAN
M801 GROUND FLOOR PLAN
M802 PLUMBING PLAN

MECHANICAL AND ELECTRICAL DRAWINGS

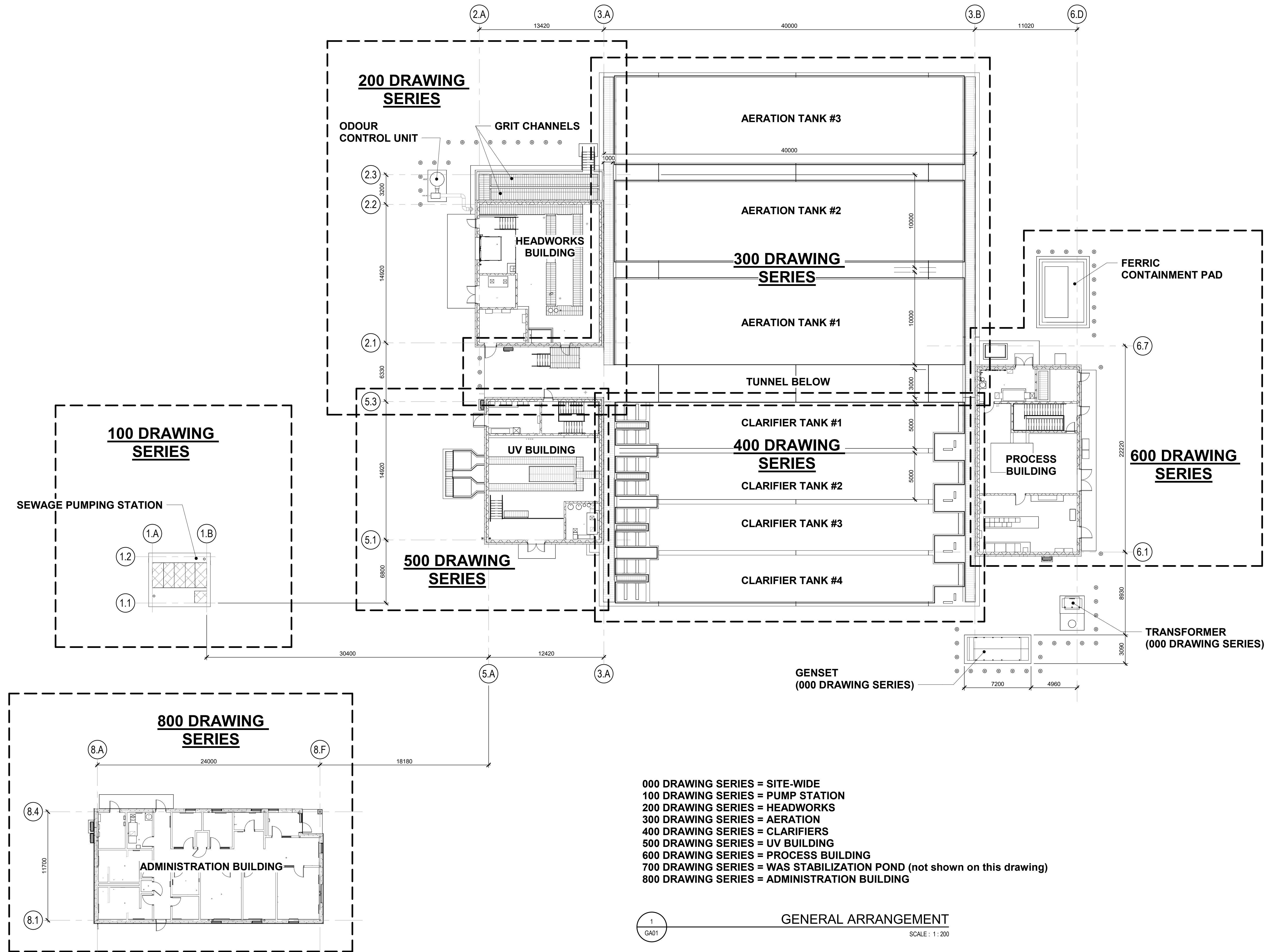
ME001 MOTOR STARTER AND CONTROL LIST (1 OF 3)
ME002 MOTOR STARTER AND CONTROL LIST (2 OF 3)
ME003 MOTOR STARTER AND CONTROL LIST (3 OF 3)
ME004 SITE PLAN CLASSIFICATION DRAWING
ME005 CLASSIFICATION DRAWING

PROCESS DRAWINGS

HP001 PROPOSED HYDRAULIC PROFILE
BFD001 BLOCK FLOW DIAGRAM
PID000 PROCESS AND INSTRUMENTATION LEGEND
PID001 EFFLUENT WATER SYSTEM P&ID
PID011 RAW SEWAGE PUMP STATION P&ID
PID021 HEADWORKS P&ID
PID031 AERATION P&ID
PID041 CLARIFIERS P&ID
PID042 COAGULANT DOSING SYSTEM P&ID
PID051 UV BUILDING P&ID
PID071 SLUDGE STABILIZATION AND DECANT PS P&ID
PM001 PROCESS AND MECHANICAL STANDARD DETAILS
PM002 PROCESS AND MECHANICAL STANDARD DETAILS
PM003 PROCESS AND MECHANICAL STANDARD DETAILS
PM004 PROCESS AND MECHANICAL STANDARD DETAILS
PM005 PROCESS AND MECHANICAL STANDARD DETAILS
P101 RAW SEWAGE PUMP STATION PLAN AND SECTIONS
P201 HEADWORKS PLAN
P301 AERATION PLAN
P302 AERATION SECTIONS
P401 CLARIFIERS PLAN AND SECTION
P402 CLARIFIERS SECTION
P501 UV BUILDING PLAN
P502 UV BUILDING SECTIONS
P503 EFFLUENT SYSTEM PLAN
P504 EFFLUENT SYSTEM SECTIONS
P601 PROCESS BUILDING PLAN
P602 PROCESS BUILDING SECTIONS
P603 PROCESS BUILDING SECTIONS
P604 FERRIC CHLORIDE TANK CONTAINMENT PLAN
P605 FERRIC CHLORIDE TANKS
P701 DECANT PS PLAN AND SECTIONS

ELECTRICAL DRAWINGS

DE001 DEMOLITION SINGLE LINE DIAGRAM
E001 ELECTRICAL NOTES AND LEGENDS
E002 ELECTRICAL TABLES AND SCHEDULES
E003 ELECTRICAL SITE PLAN
E004 GROUNDING AND BONDING DETAILS
E005 ELECTRICAL TESTING AND INSPECTION MATRIX
E006 ELECTRICAL DETAILS (1 OF 3)
E007 ELECTRICAL DETAILS (2 OF 3)
E008 ELECTRICAL DETAILS (3 OF 3)
E009 HEAT TRACE DETAILS
E010 FACILITY SINGLE LINE DIAGRAM
E020 MOTOR STARTER WIRING LOGIC (1 OF 3)
E021 MOTOR STARTER WIRING LOGIC (2 OF 3)
E022 MOTOR STARTER WIRING LOGIC (3 OF 3)
I001 TABLE OF ELECTRICAL EQUIPMENT
I002 ELECTRICAL TABLE OF DEVICES
I010 CONTROL PANEL BILL OF MATERIALS
I011 MISCELLANEOUS CONTROL PANELS
I012 CP-2000 CONTROL PANEL LAYOUT
I013 CP-5000 CONTROL PANEL LAYOUT
I014 CP-6000 CONTROL PANEL LAYOUT
I015 CONTROL PANEL DETAILS
I020 TYPICAL PLC CONTROL PANEL POWER WIRING LOGIC
I021 CONTROL WIRING EXAMPLES
I022 CONTROL WIRING NOTES AND MISCELLANEOUS LOGIC
I023 CP-5000 CONTROL WIRING LOGIC
I024 CP-6000 CONTROL WIRING LOGIC
N001 FACILITY NETWORK DIAGRAM
N002 IT PANELS ELEVATION AND DETAILS
E201 SINGLE LINE DIAGRAM AND PANEL SCHEDULES
E210 HOUSE SERVICES PLAN
I200 CONTROL BLOCK DIAGRAM
I201 PLC-200 - COMPONENT LIST AND IO LIST
I210 INSTRUMENTATION PLAN
I310 POWER AND INSTRUMENTATION PLAN
I410 POWER AND INSTRUMENTATION PLAN
E501 SINGLE LINE DIAGRAM AND PANEL SCHEDULES
E510 HOUSE SERVICES PLAN
I500 CONTROL BLOCK DIAGRAM
I501 PLC-500 - COMPONENT LIST AND IO LIST (1 OF 2)
I502 PLC-500 - IO LIST CONT'D (2 OF 2)
I510 INSTRUMENTATION PLAN
E601 SINGLE LINE DIAGRAM AND PANEL SCHEDULES (1 OF 2)
E602 SINGLE LINE DIAGRAM AND PANEL SCHEDULES (2 OF 2)
E610 GROUND FLOOR HOUSE SERVICES PLAN
E611 BASEMENT HOUSE SERVICES PLAN
I600 CONTROL BLOCK DIAGRAM
I601 PLC-600 - COMPONENT LIST AND IO LIST (1 OF 3)
I602 PLC-600 - IO LIST CONT'D (2 OF 3)
I603 PLC-600 - IO LIST CONT'D (3 OF 3)
I610 GROUND FLOOR INSTRUMENTATION PLAN
I611 BASEMENT INSTRUMENTATION PLAN
E801 SINGLE LINE DIAGRAM AND PANEL SCHEDULES
E802 LIGHTING CONTROL SCHEDULE
E810 HOUSE SERVICES PLAN
E811 REFLECTED CEILING PLAN



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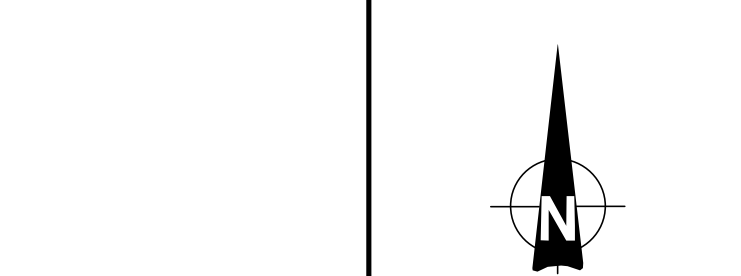
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SCALE: 1 : 200



CONSULTANT:
JR J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

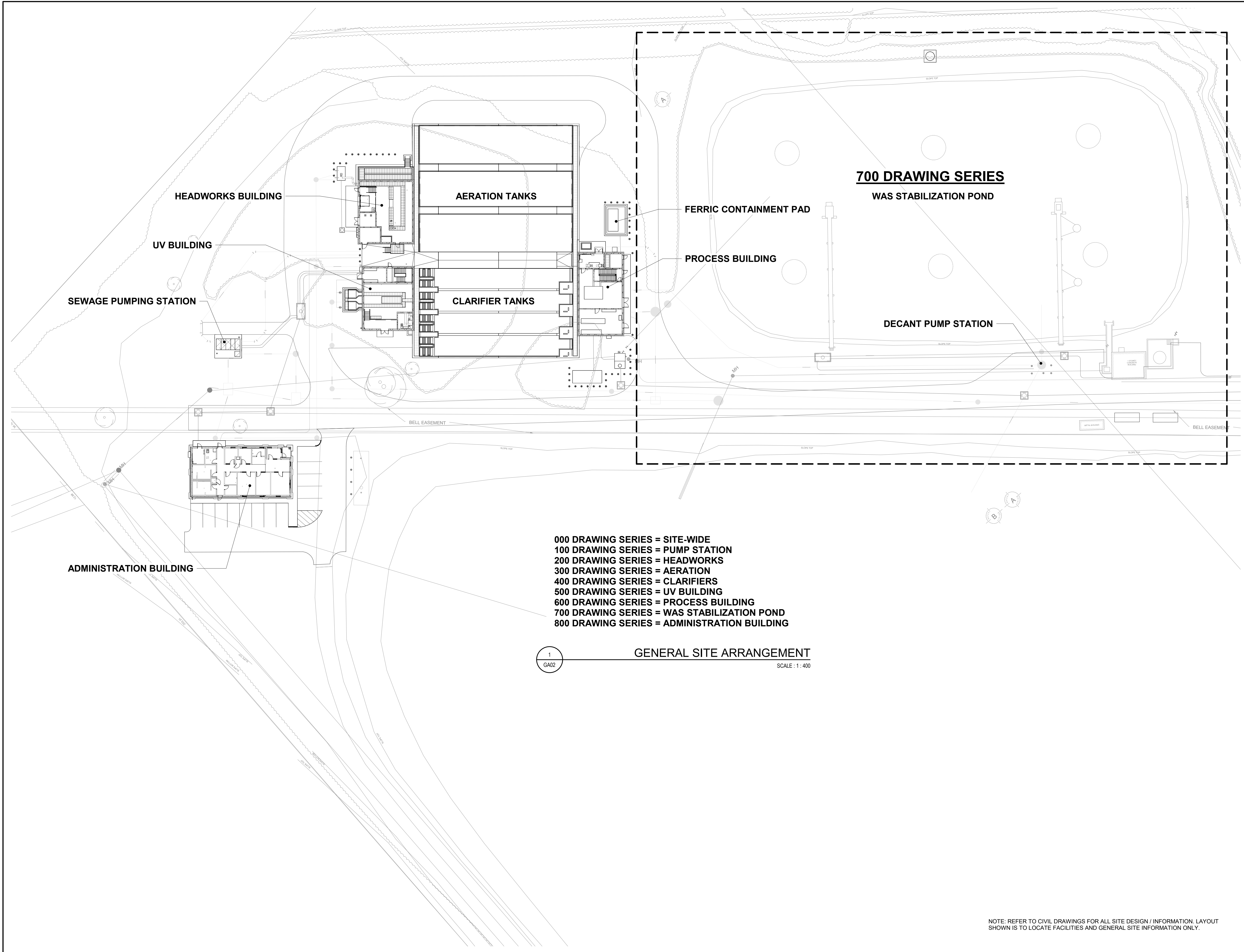
CONSULTANT:



PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

DRAWING:
GENERAL ARRANGEMENT

DESIGN: SJ	DRAWING #:
DRAWN: JIC	GA01
CHECKED: SJ	
JLR #: 32296	



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SCALE: 1 : 400

CLIENT:



BRIGHTON

CONSULTANT:




J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

PROJECT NORTH



PROJECT:

**BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES**

DRAWING:

GENERAL SITE ARRANGEMENT

DESIGN: SJ	DRAWING #: GA02
DRAWN: JIC	
CHECKED: SJ	
JLR #: 32296	

NOTE: REFER TO CIVIL DRAWINGS FOR ALL SITE DESIGN / INFORMATION. LAYOUT SHOWN IS TO LOCATE FACILITIES AND GENERAL SITE INFORMATION ONLY.

- 000 DRAWING SERIES = SITE-WIDE
- 100 DRAWING SERIES = PUMP STATION
- 200 DRAWING SERIES = HEADWORKS
- 300 DRAWING SERIES = AERATION
- 400 DRAWING SERIES = CLARIFIERS
- 500 DRAWING SERIES = UV BUILDING
- 600 DRAWING SERIES = PROCESS BUILDING
- 700 DRAWING SERIES = WAS STABILIZATION POND
- 800 DRAWING SERIES = ADMINISTRATION BUILDING

1
GA02

GENERAL SITE ARRANGEMENT

SCALE : 1 : 400

File Location: C:\Users\jleah\Documents\32296 Site Model Jan 2025\Jleah\Richards.ca.rvt
PLOT DATE: 2025-04-25 3:43:10 PM



BENCHMARK 1: SURVEY SPIKE
ELEV = 79.61 (NORTH SIDE OF DRIVEWAY ENTRANCE)

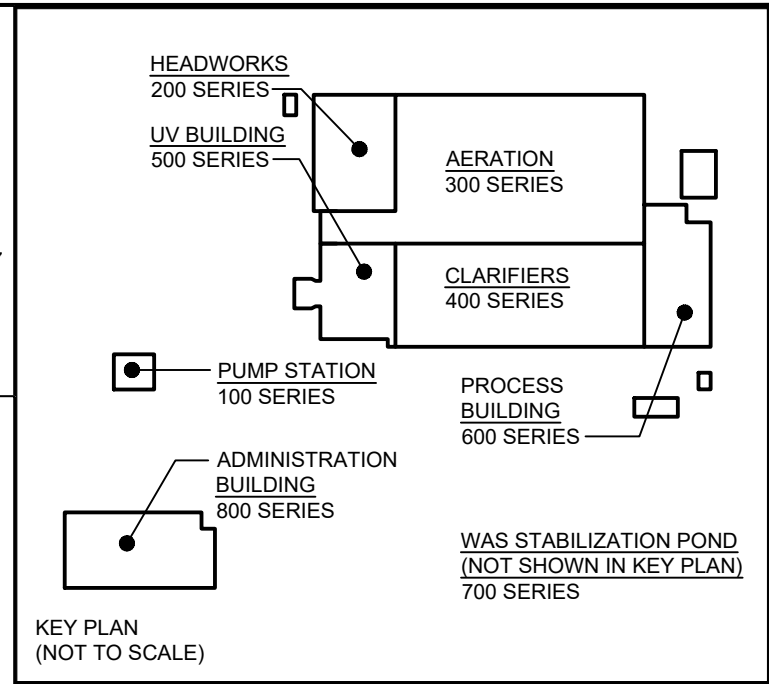
BENCHMARK 2: SURVEY SPIKE
ELEV = 79.12 (NORTH SIDE OF DRIVEWAY ENTRANCE)

COORDINATE VALUES AND DIGITAL FILE ARE IN GRID SYSTEM. UTM ZONE 18 (75° WEST LONGITUDE), NAD 83(CRS)(2010). COMBINED SCALE FACTOR = 1.000177

ELEVATIONS ARE GEODETIC AND REFERRED TO THE CANADIAN GEODETIC VERTICAL DATUM (CGVD28) BY DIRECT MEASUREMENT TO A REAL TIME NETWORK.

LEGEND

- EXISTING VEGETATION LINE
- PROPERTY LINE
- EXISTING UNDERGROUND SERVICE
- EXISTING FENCE
- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
- EXISTING FORCEMAIN
- EXISTING GRAVEL ROAD
- EXISTING CULVERT
- REMOVE AND/OR ABANDON
- EXISTING TREE
- EXISTING UTILITY POLE
- CLEARING AND GRUBBING
- FENCE REMOVAL



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25MM IF THIS IS A FULL SIZE DRAWING.

SCALE: 1:750

CLIENT:

MUNICIPALITY OF BRIGHTON

CONSULTANT: www.jlrichards.ca

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

S.A. SEXTON
100113373
2025-04-29
PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

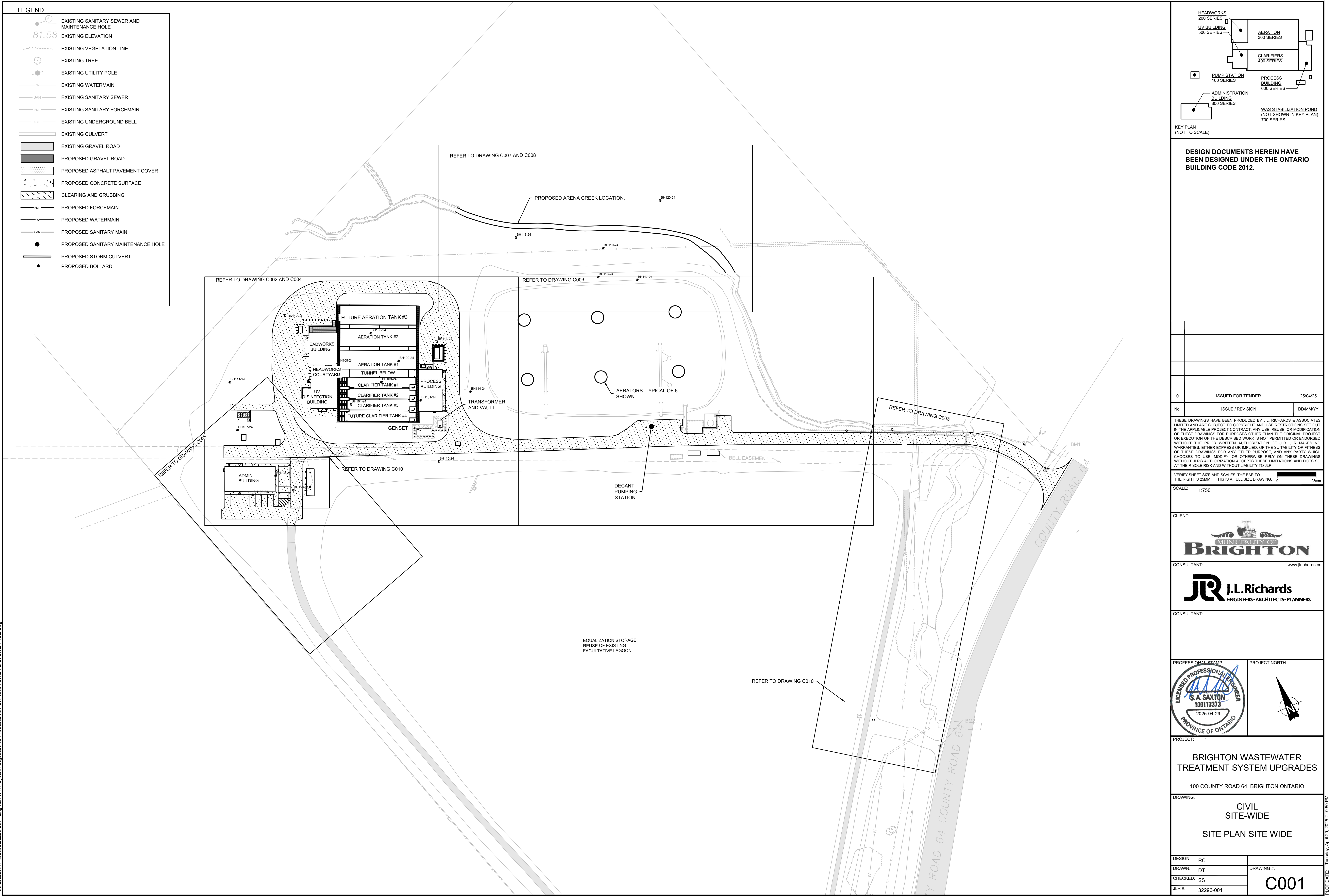
100 COUNTY ROAD 64, BRIGHTON ONTARIO

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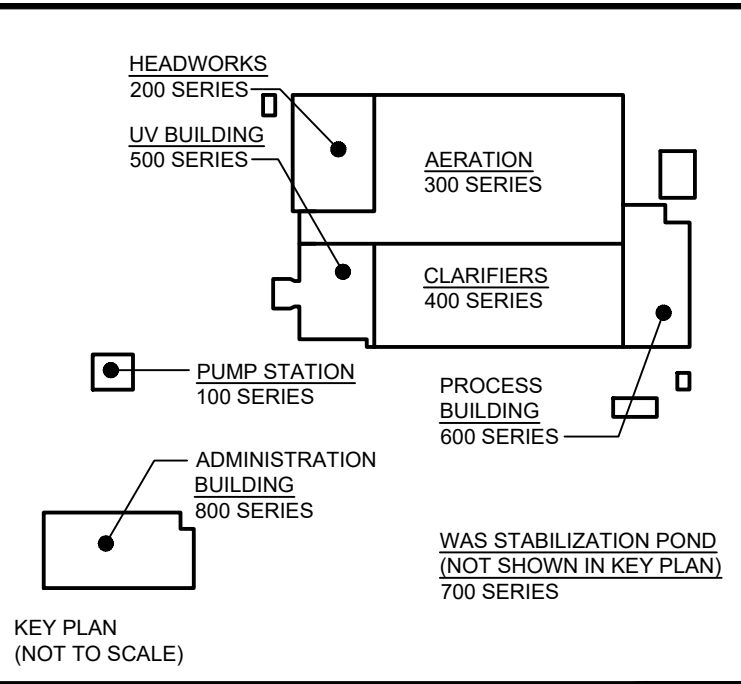
CIVIL SITE-WIDE EXISTING CONDITIONS & REMOVALS

DESIGN: RC	DRAWING #:
DRAWN: DT	DC001
CHECKED: SS	
JLR #:	32296-001

File Location: P:\320000\32296-001 - Brighton WWT System Upgrade\03-Production\01-Civil\001 SITE PLAN SITE WIDE.dwg



- LEGEND**
- EXISTING SANITARY SEWER AND MAINTENANCE HOLE
 - EXISTING ELEVATION
 - EXISTING VEGETATION LINE
 - EXISTING TREE
 - EXISTING UTILITY POLE
 - EXISTING WATERMAIN
 - EXISTING SANITARY SEWER
 - EXISTING SANITARY FORCEMAIN
 - EXISTING UNDERGROUND BELL
 - EXISTING CULVERT
 - EXISTING GRAVEL ROAD
 - PROPOSED GRAVEL ROAD
 - PROPOSED ASPHALT PAVEMENT COVER
 - PROPOSED CONCRETE SURFACE
 - CLEARING AND GRUBBING
 - PROPOSED FORCEMAIN
 - PROPOSED WATERMAIN
 - PROPOSED SANITARY MAIN
 - PROPOSED SANITARY MAINTENANCE HOLE
 - PROPOSED STORM CULVERT
 - PROPOSED BOLLARD



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SCALE: 1:750

CLIENT:

BRIGHTON MUNICIPALITY

CONSULTANT:

J.L. Richards ENGINEERS - ARCHITECTS - PLANNERS

PROFESSIONAL STAMP

S.A. SEXTON 100113373 2025-04-29

PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

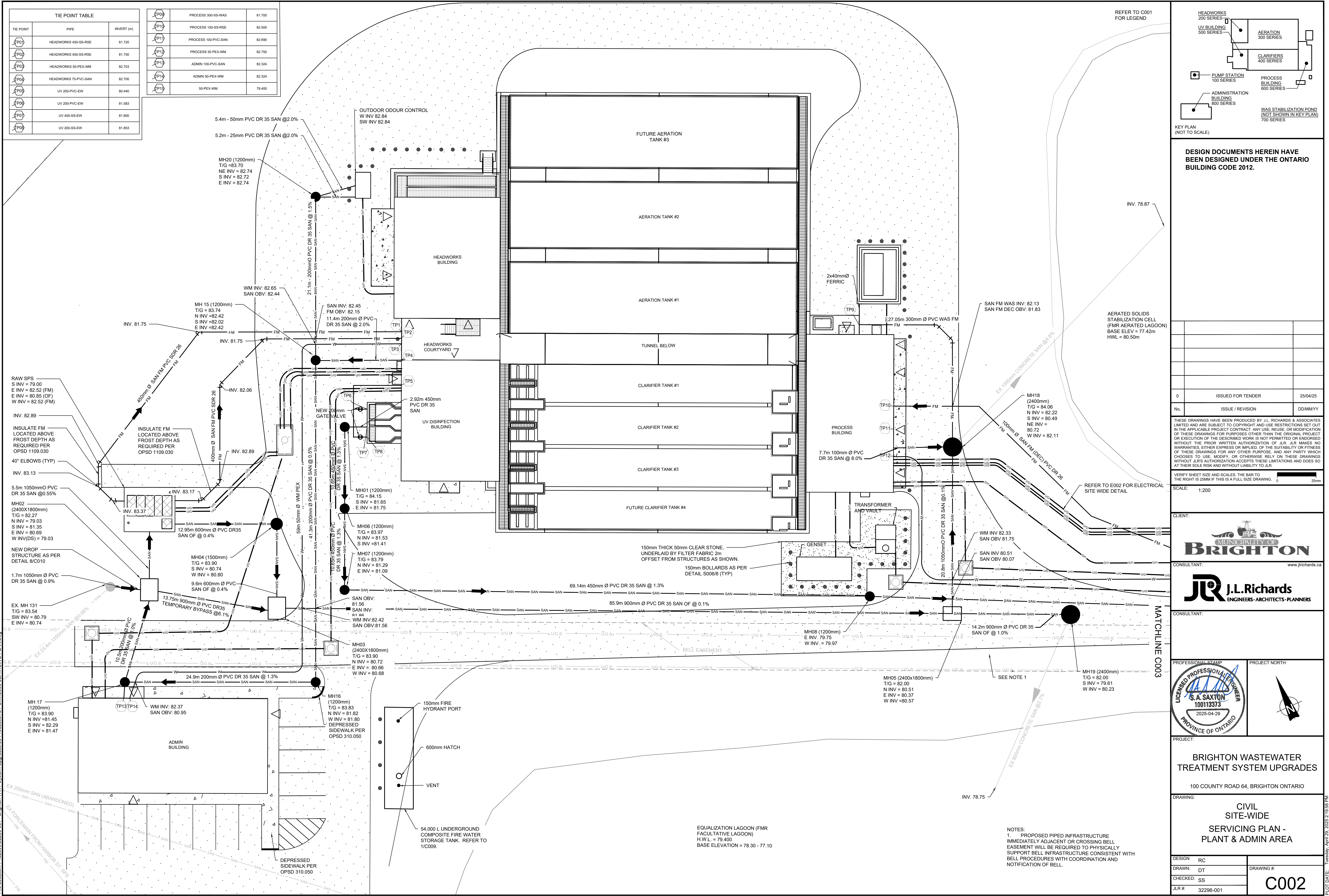
DRAWING:

CIVIL SITE-WIDE

SITE PLAN SITE WIDE

DESIGN: RC	DRAWING #:
DRAWN: DT	C001
CHECKED: SS	
JLR #: 32296-001	

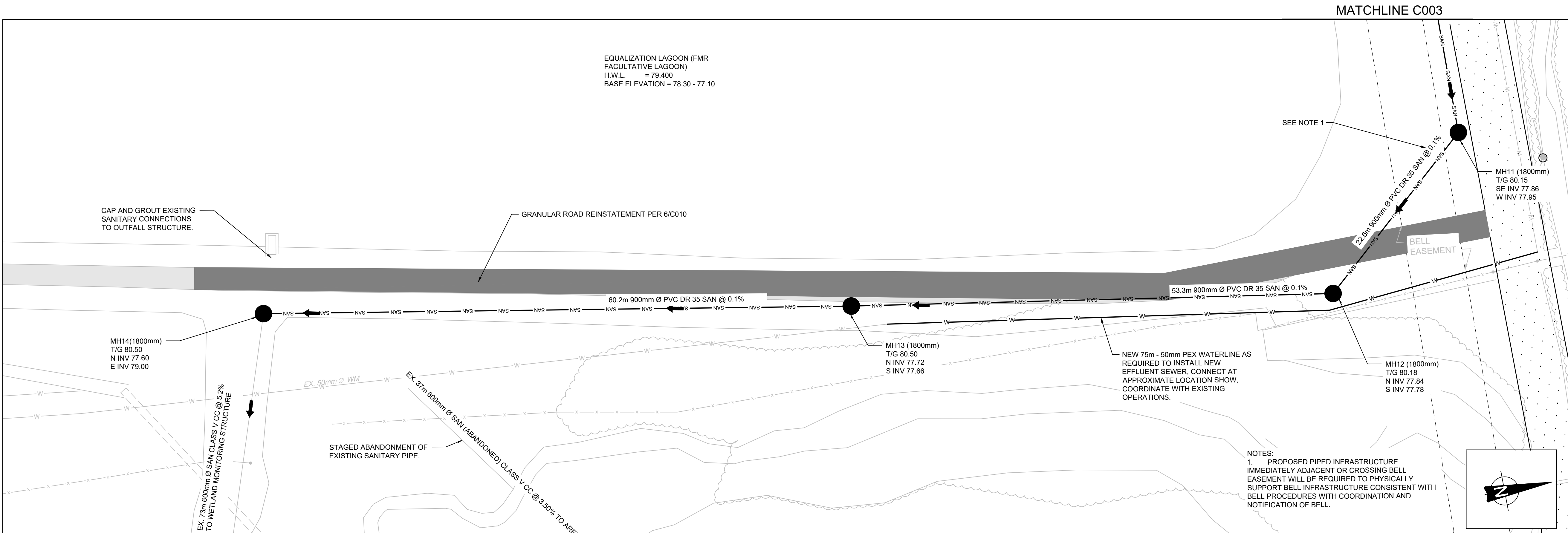
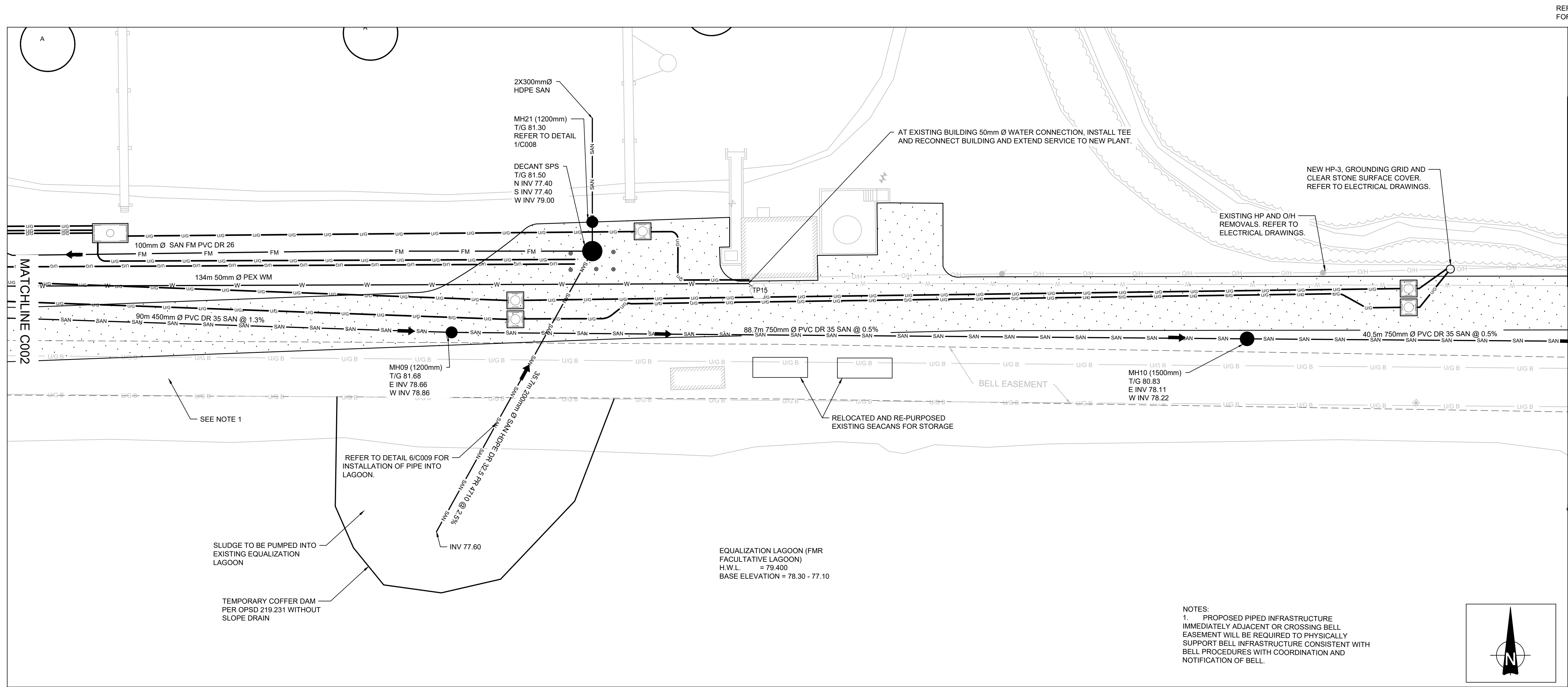
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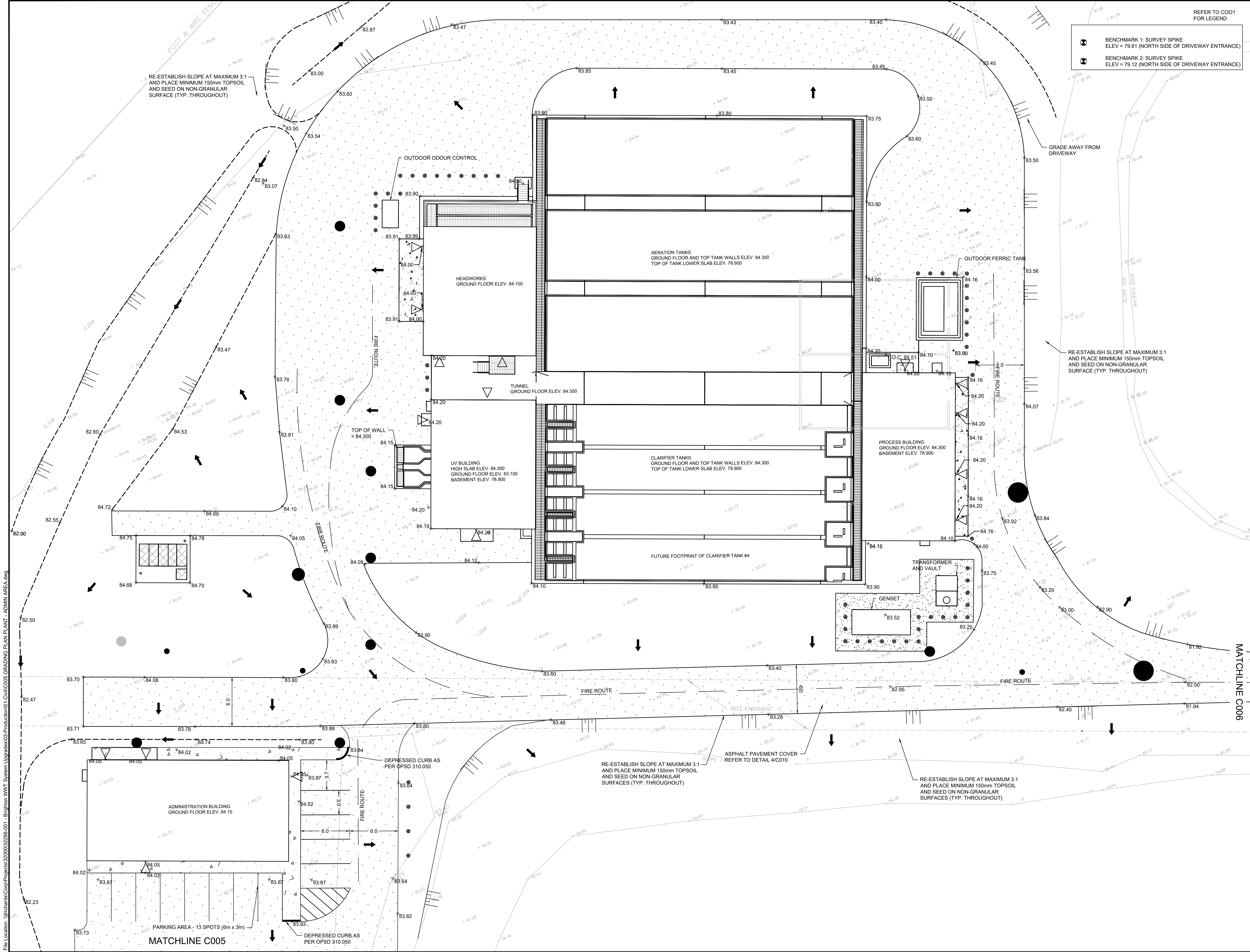


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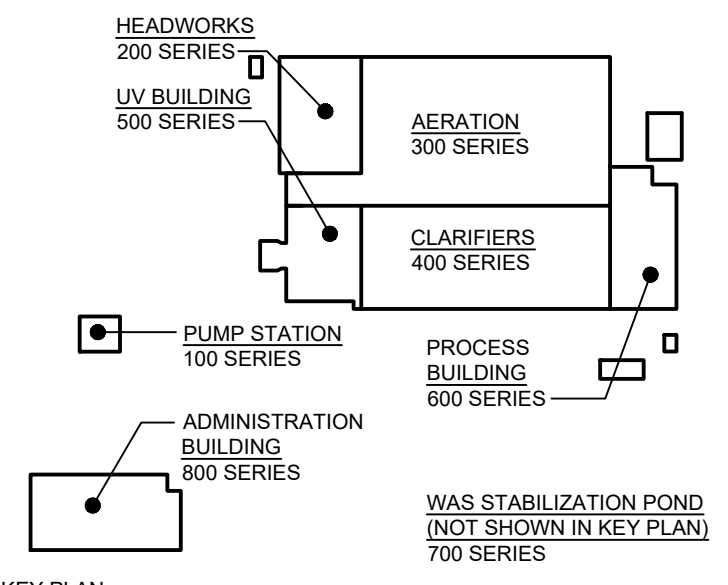




BENCHMARK 1: SURVEY SPIKE
ELEV = 79.61 (NORTH SIDE OF DRIVEWAY ENTRANCE)

BENCHMARK 2: SURVEY SPIKE
ELEV = 79.12 (NORTH SIDE OF DRIVEWAY ENTRANCE)

REFER TO C001
FOR LEGEND



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CLIENT:

CONSULTANT:

CONSULTANT:

PROFESSIONAL STAMP

PROJECT NORTH

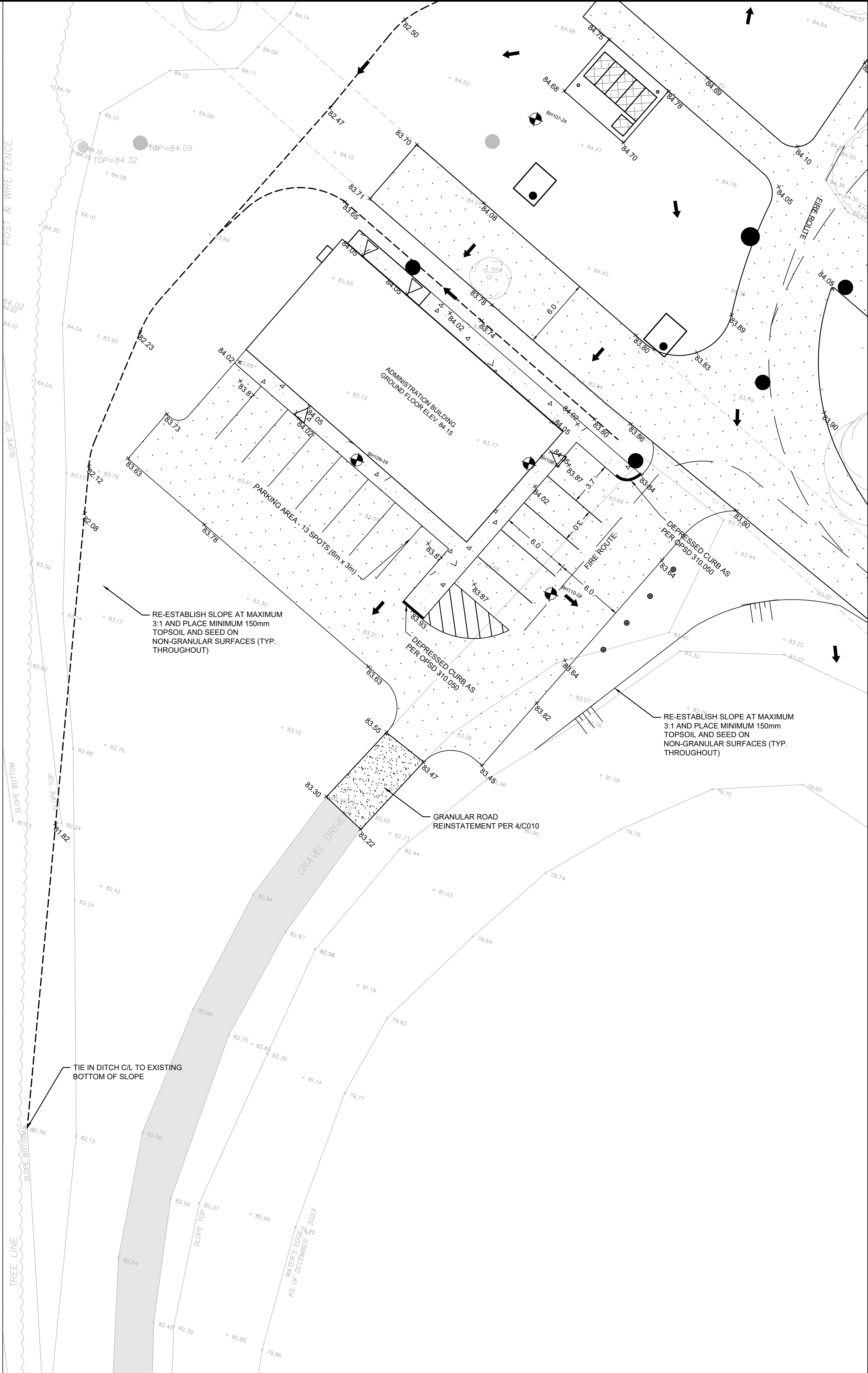
BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

CIVIL
SITE-WIDE
GRADING PLAN PLANT
- ADMIN AREA

DESIGN:	RC	DRAWING #:	
DRAWN:	DT		
CHECKED:	SS		
JLR #:	32296-001		C004



REFER TO C001 FOR LEGEND

BENCHMARK 1: SURVEY SPIKE
ELEV = 79.61 (NORTH SIDE OF DRIVEWAY ENTRANCE)

BENCHMARK 2: SURVEY SPIKE
ELEV = 79.12 (NORTH SIDE OF DRIVEWAY ENTRANCE)

HEADWORKS
200 SERIES
UV BUILDING
500 SERIES
AERATION
300 SERIES
CLARIFIERS
400 SERIES
PUMP STATION
100 SERIES
PROCESS
BUILDING
600 SERIES
ADMINISTRATION
BUILDING
800 SERIES
WAS STABILIZATION POND
(NOT SHOWN IN KEY PLAN)
700 SERIES

KEY PLAN
(NOT TO SCALE)

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SCALE: 1:200

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

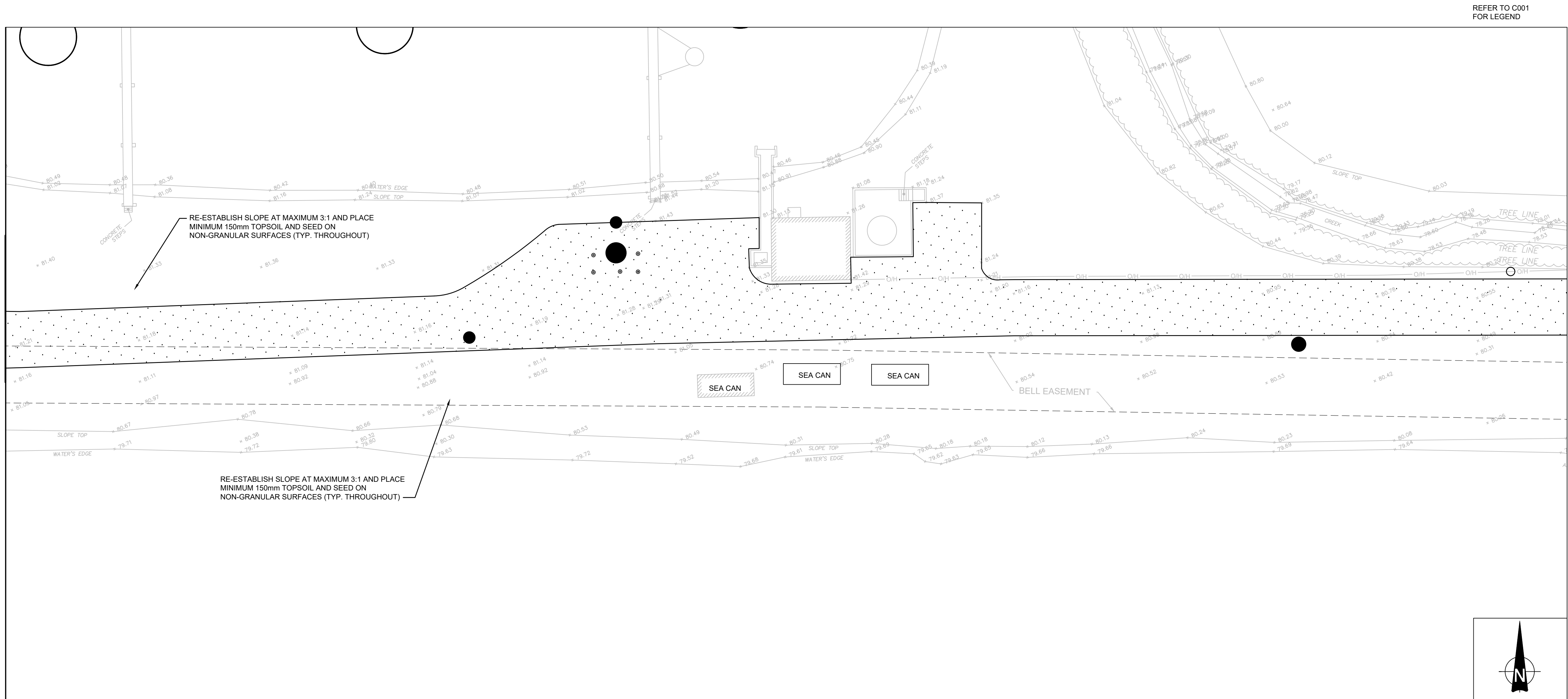
DRAWING:

CIVIL
SITE-WIDE
GRADING PLAN PLANT
- ADMIN AREA

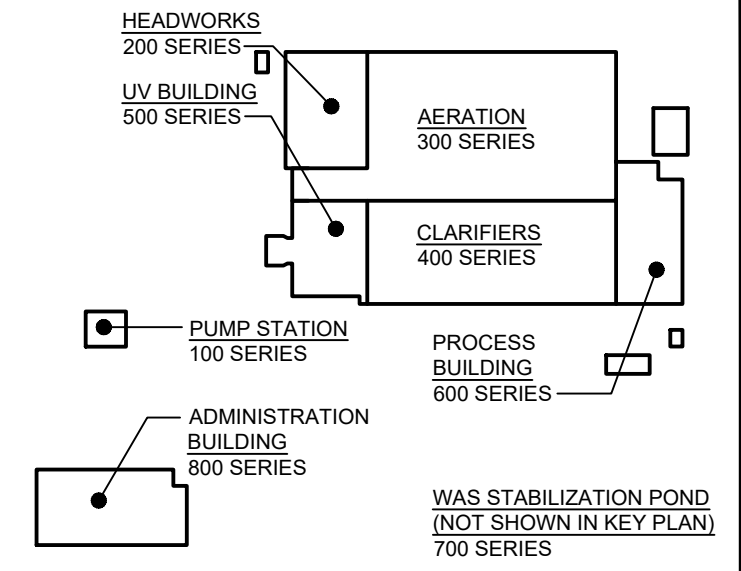
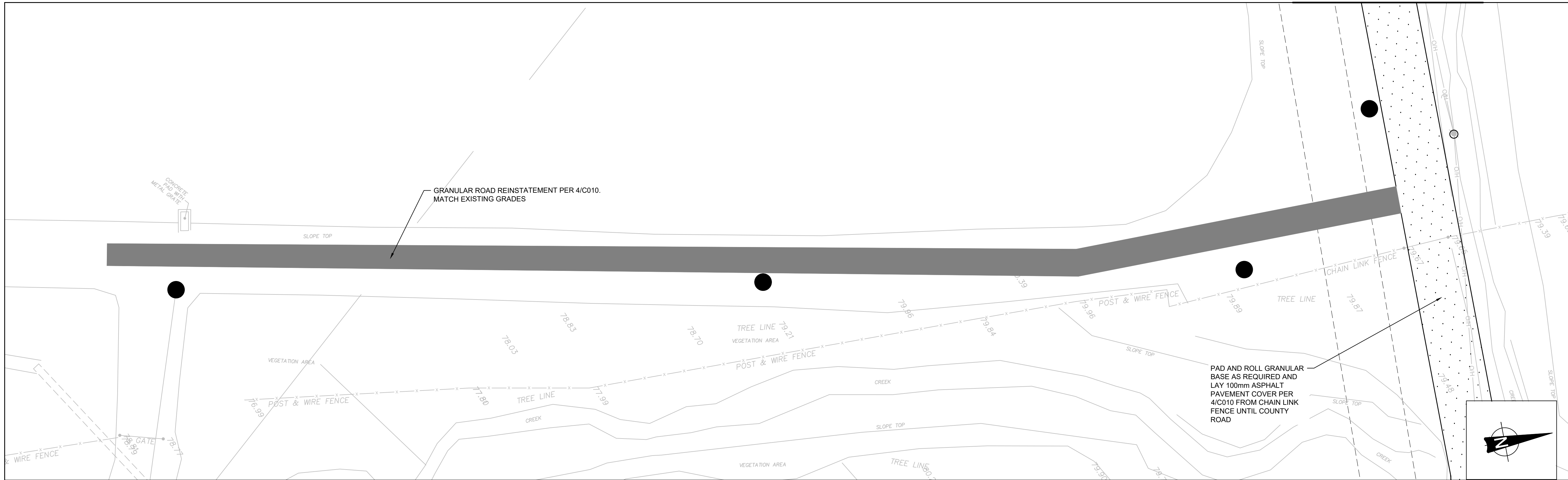
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DRAWN: DT	C005
CHECKED: SS	
JLR #: 32296-001	

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrades\03-Production\01-Civil\C004 OUTFALL GRADING PLAN.dwg

MATCHLINE C004



MATCHLINE C006



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

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SCALE: 1:250

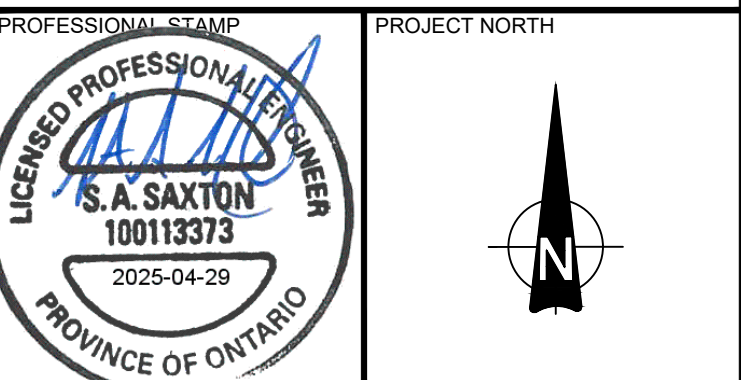
CLIENT:



CONSULTANT:



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO


DRAWING:

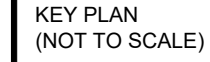
CIVIL SITE-WIDE GRADING PLAN - OUTFALL

DESIGN:	RC	DRAWING #:	
DRAWN:	DT		
CHECKED:	SS		
JLR #:	32296-001		

C006

PLOT DATE: Tuesday, April 29, 2025 2:20:28 PM

	BENCHMARK 1: SURVEY SPIKE ELEV = 79.61 (NORTH SIDE OF DRIVEWAY ENTRANCE)
	BENCHMARK 2: SURVEY SPIKE ELEV = 79.12 (NORTH SIDE OF DRIVEWAY ENTRANCE)



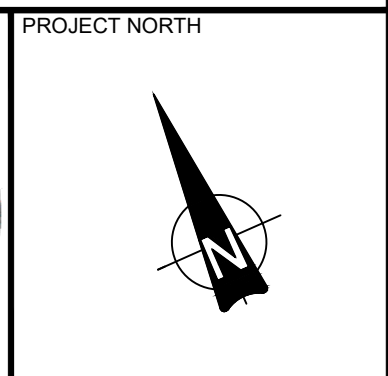
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SCALE: 1:350



J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

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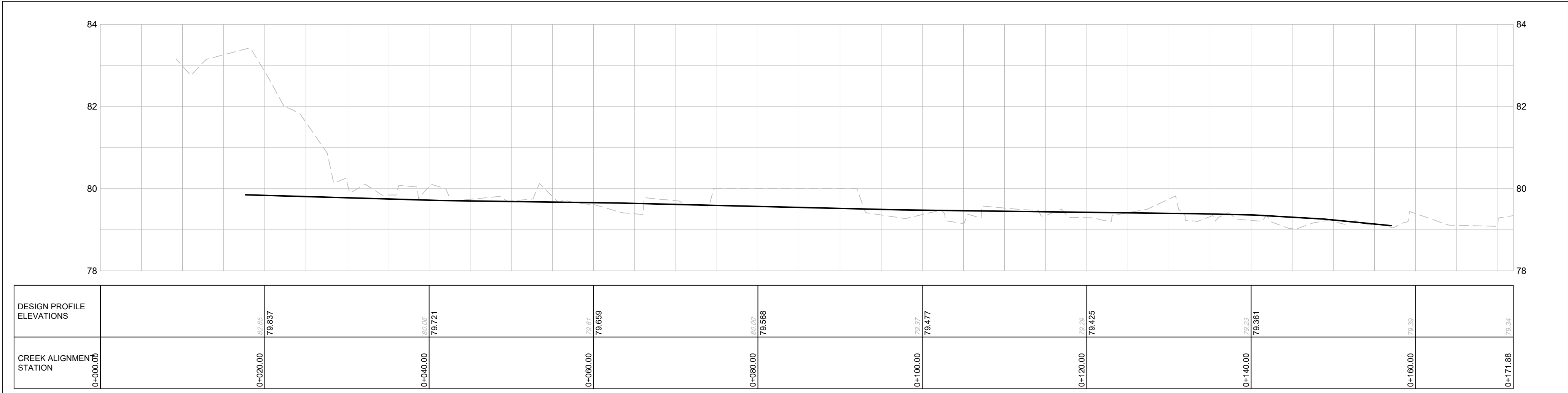
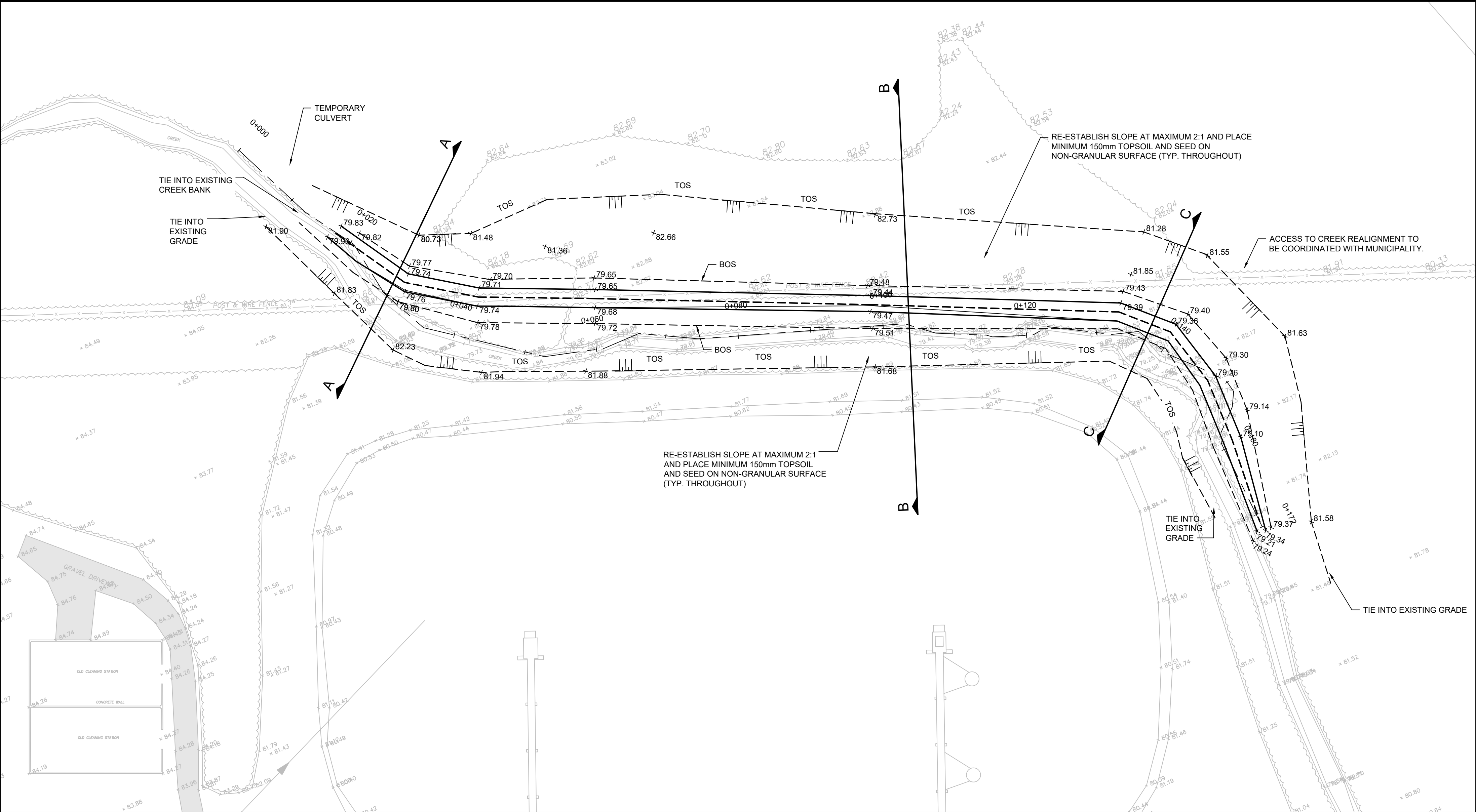


**BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES**

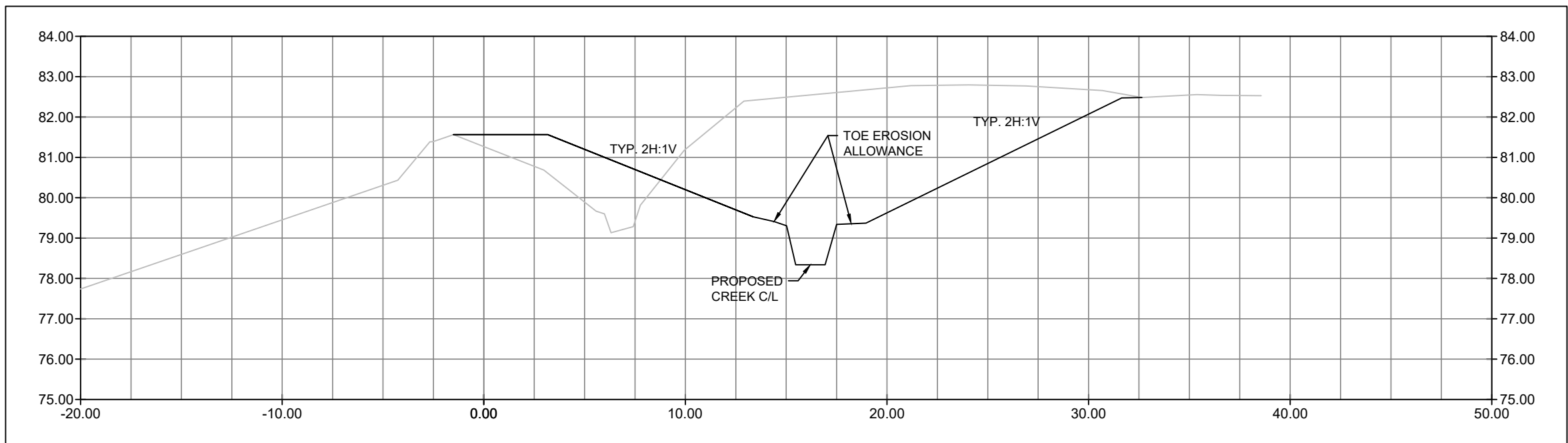
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DESIGN: RC	DRAWING #: C007
DRAWN: DT	
CHECKED: SS	
JLR #: 32296-001	

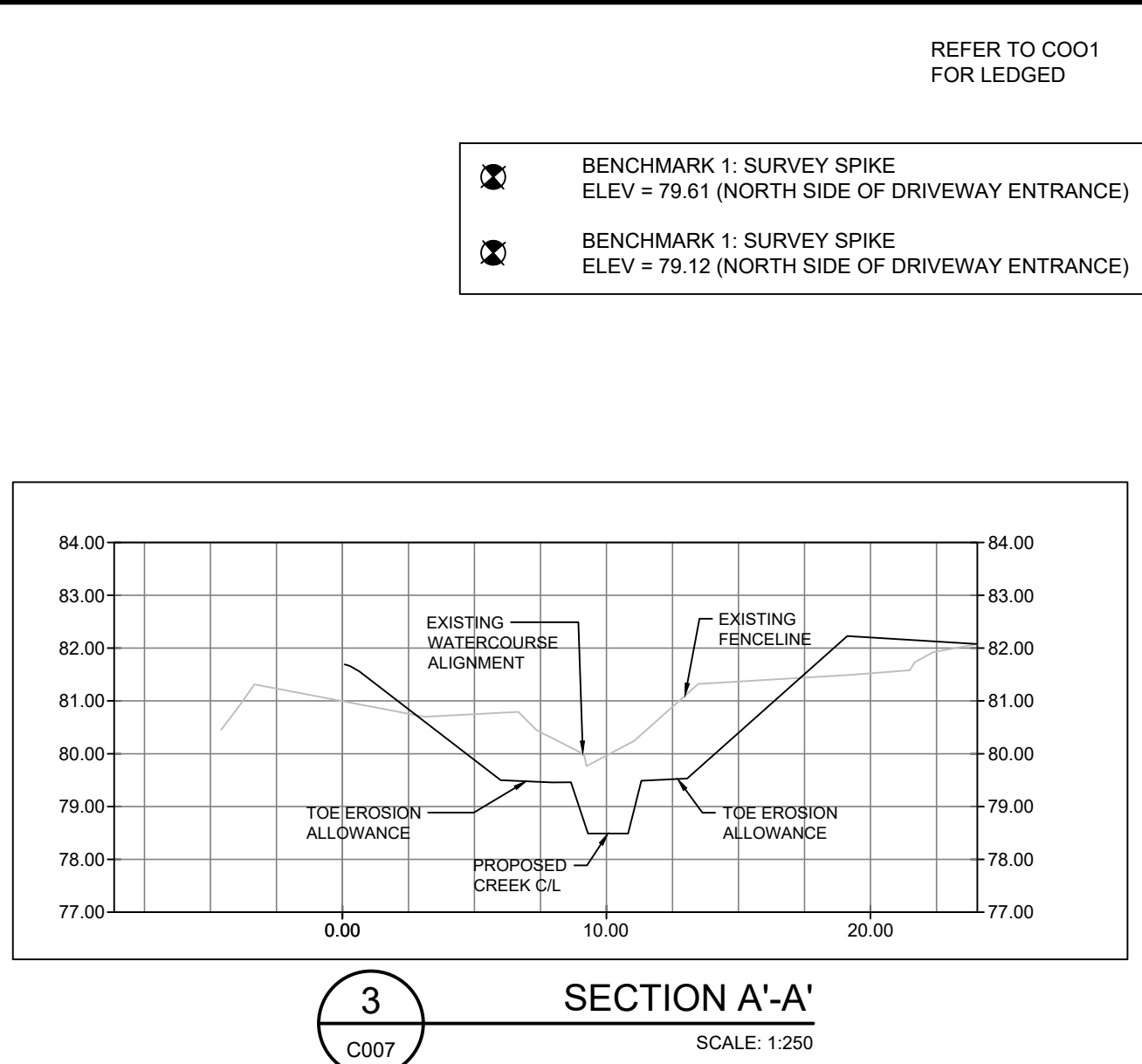
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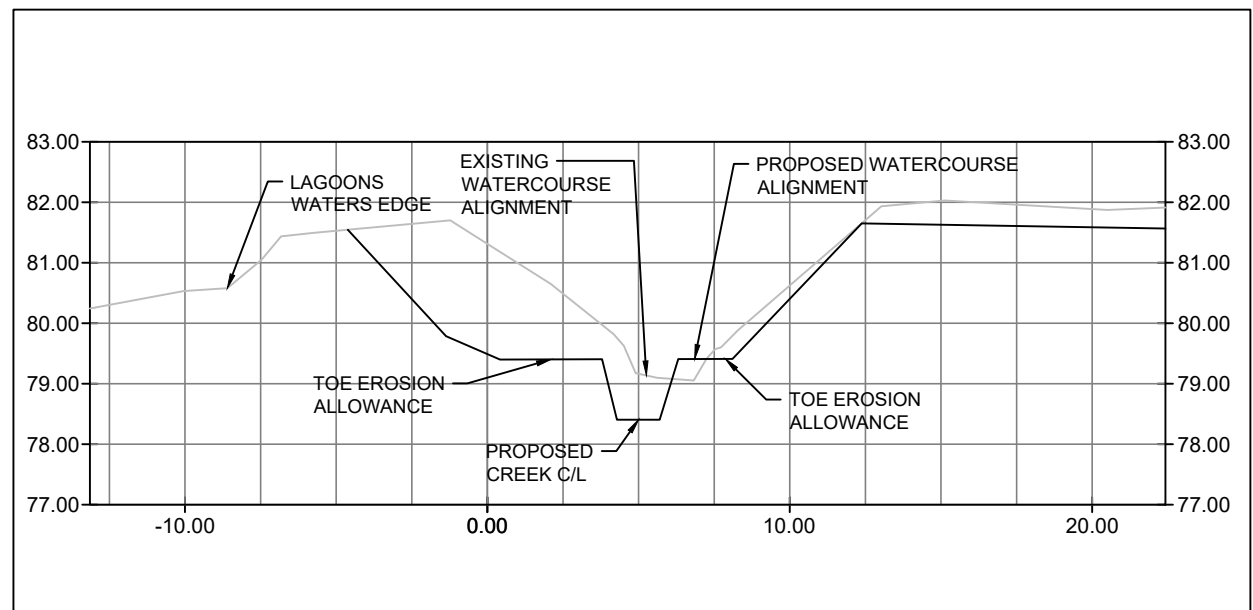
1 CREEK ALIGNMENT
SCALE: 1:500



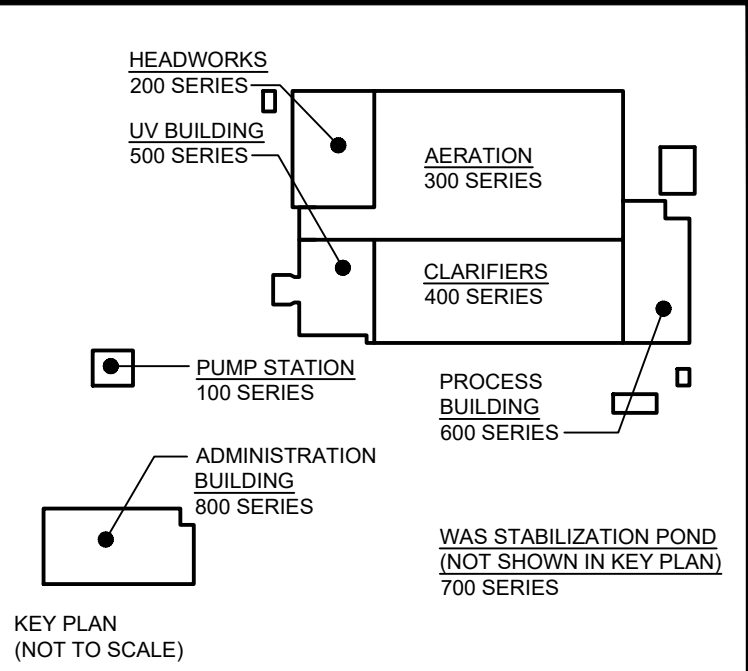
2 SECTION B'-B'
SCALE: 1:250



3 SECTION A'-A'
SCALE: 1:250



4 SECTION C'-C'
SCALE: 1:250



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25MM IF THIS IS A FULL SIZE DRAWING.

SCALE: 1:350

CLIENT:
BRIGHTON
CONSULTANT: www.jlrichards.ca

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP
S.A. SEXTON
100113373
2025-04-29
PROVINCE OF ONTARIO

PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
CIVIL SITE-WIDE CREEK RELOCATION - NEW ALIGNMENT

DESIGN: RC	DRAWING #:
DRAWN: DT	C008
CHECKED: SS	
JLR #:	32296-001

ALTERNATIVES

A PRECAST MONOLITHIC BASE

B CAST-IN-PLACE BASE

C TAPERED TRANSITION SLAB

D 1200mm PRECAST FLAT CAP

E 1500mm PRECAST FLAT CAP

NOTES:

- For sump detail, see OPSD 701.010.
- A Granular backfill shall be placed to a minimum thickness of 300mm all around the maintenance hole.
- Precast concrete components shall be according to OPSD 701.030, 701.031, 701.040, 701.041, 703.011, 703.021, and 706.010.
- Structures exceeding 5.0m in depth shall include safety platform according to OPSD 404.020 or 404.022.
- Pipe support shall be according to OPSD 708.020.
- For benching and pipe opening details, see OPSD 701.021.
- For adjustment unit and frame installation, see OPSD 704.010.
- All dimensions are nominal.
- All dimensions are in millimetres unless otherwise shown.

ALTERNATIVES

A CAST-IN-PLACE BASE

B TAPERED TRANSITION SLAB

C 1200mm PRECAST FLAT CAP

D 1800mm PRECAST FLAT CAP

NOTES:

- For sump detail, see OPSD 701.010.
- A Granular backfill shall be placed to a minimum thickness of 300mm all around the maintenance hole.
- Precast concrete components shall be according to OPSD 701.030, 701.031, 701.050, 701.051, 703.012, 703.022, and 706.020.
- Structures exceeding 5.0m in depth shall include safety platform according to OPSD 404.020 or 404.022.
- Pipe support shall be according to OPSD 708.020.
- For benching and pipe opening details, see OPSD 701.021.
- For adjustment unit and frame installation, see OPSD 704.010.
- All dimensions are nominal.
- All dimensions are in millimetres unless otherwise shown.

ALTERNATIVES

A CAST-IN-PLACE BASE

B TAPERED TRANSITION SLAB

C 1200mm PRECAST FLAT CAP

D 1800mm PRECAST FLAT CAP

NOTES:

- The sump is measured from the lowest invert.
- A Granular backfill shall be placed to a minimum thickness of 300mm all around the maintenance hole.
- Precast concrete components shall be according to OPSD 701.030, 701.031, or 701.032.
- Structure exceeding 5.0m in depth shall include safety platform according to OPSD 404.020.
- Pipe support according to OPSD 708.020.
- For benching and pipe opening details, see OPSD 701.021.
- For adjustment unit and frame installation, see OPSD 704.010.
- All dimensions are nominal.
- All dimensions are in millimetres unless otherwise shown.

ALTERNATIVES

A CAST-IN-PLACE BASE

B TAPERED TRANSITION SLAB

C 1200mm PRECAST FLAT CAP

D 1800mm PRECAST FLAT CAP

NOTES:

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- For benching and pipe opening details, see OPSD 701.021.
- For adjustment unit and frame installation, see OPSD 704.010.
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ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 Rev 5

PRECAST CONCRETE MAINTENANCE HOLE

1500mm DIAMETER

OPSD 701.011

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 Rev 5

PRECAST CONCRETE MAINTENANCE HOLE

1800mm DIAMETER

OPSD 701.012

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 Rev 5

PRECAST CONCRETE MAINTENANCE HOLE

1800mm DIAMETER

OPSD 701.012

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 Rev 5

PRECAST CONCRETE MAINTENANCE HOLE

1200mm DIAMETER

OPSD 701.010

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 Rev 4

MAINTENANCE HOLE BENCHING AND PIPE OPENING ALTERNATIVES

OPSD 701.021

PIPE IN SUPPORTED EXCAVATION

TYPE 1 OR 2 SOIL

LEGEND:

- Ø = Inside diameter

NOTES:

- Height of fill is measured from the finished surface to top of pipe.
- The pipe bed shall be compacted and shaped to receive the bottom of the pipe.
- Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.
- Condition of excavation is symmetrical about centreline of pipe.
- A Granular material placed in the haunch area shall be compacted prior to placing and compacting the remainder of the embedment material.
- Soil types as defined in the Occupational Health and Safety Act and Regulations for Construction Projects.
- All dimensions are in metres unless otherwise shown.

PIPE IN UNSUPPORTED EXCAVATION

TYPE 3 SOIL

LEGEND:

- Ø = Inside diameter
- ØD = Outside diameter

NOTES:

- Height of fill is measured from the finished surface to top of pipe.
- The minimum bedding depth below the pipe shall be 0.15Ø in no case shall this dimension be less than 150mm or greater than 300mm.
- The pipe bed shall be compacted and shaped to receive the bottom of the pipe.
- Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.
- Condition of excavation is symmetrical about centreline of pipe.
- A Granular material placed in the haunch area shall be compacted prior to placing and compacting the remainder of the embedment material.
- Soil types as defined in the Occupational Health and Safety Act and Regulations for Construction Projects.
- All dimensions are in metres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 Rev 3

FLEXIBLE PIPE EMBEDMENT AND BACKFILL EARTH EXCAVATION

OPSD 802.010

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2015 Rev 3

RIGID PIPE BEDDING, COVER, AND BACKFILL TYPE 3 SOIL - EARTH EXCAVATION

OPSD 802.031

SECTION THROUGH TAPER TOP

SECTION THROUGH FLAT CAP

SECTION THROUGH CATCH BASIN

NOTES:

- If first step is in an adjustment unit, the adjustment unit shall be of the type manufactured with a step in place.
- Centre reinforcing in adjustment unit ±10mm.
- Round and square adjustment units are available in sizes of 50, 75, 100, 150, and 300mm.

FRAME PLAN

SECTION A-A

SECTION B-B

SECTION C-C

SECTION D-D

NOTES:

- Covers shall be Type A or Type B, as specified.
- All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 Rev 3

PRECAST CONCRETE ADJUSTMENT UNITS FOR MAINTENANCE HOLES, CATCH BASINS, AND VALVE CHAMBERS

OPSD 704.010

ONTARIO PROVINCIAL STANDARD DRAWING Nov 2018 Rev 4

CAST IRON, SQUARE FRAME WITH CIRCULAR CLOSED OR OPEN COVER FOR MAINTENANCE HOLES

OPSD 401.010

TELESCOPING VALVE MANHOLE

SCALE: 1:50

NOTES:

- 300mm SS TELESCOPING VALVE WITH HAND CRANK OPERATION (DIMENSION AS SHOWN)
- 150mm GOOSENECK VENT WITH INSECT SCREEN
- 50mm THICK HI-40 RIGID INSULATION
- NATIVE BACKFILL 95% SPMD
- LANDSCAPE COVER TO WATER LINE PER 6/C009
- 300mm HDPE SAN @ 2%
- 300mm HDPE SAN @ 2%
- NEW CLAY DYKE PER OPSD 802.095
- 300mm SS
- 1200mm MANHOLE
- 900mm x 900mm ALUMINIUM ACCESS HATCH
- INV. 77.85m
- T.O.S. 81.30
- HWL = 80.46
- BOTTOM OF LAGOON = 77.46
- KEY IN NEW CLAY LINER AS REQUIRED
- NATIVE BACKFILL 95% SPMD
- GRANULAR 'A' BEDDING, COVER, AND BACKFILL
- BLEND CLAY LINER INTO EXISTING CLAY LINER
- AERATED LAGOON
- TO DECANT PS

HEADWORKS
200 SERIES

UV BUILDING
500 SERIES

PUMP STATION
100 SERIES

ADMINISTRATION
BUILDING
800 SERIES

WAS STABILIZATION POND
(NOT SHOWN IN KEY PLAN)
700 SERIES

KEY PLAN
(NOT TO SCALE)

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SCALE: AS SPECIFIED

CLIENT:

MUNICIPALITY OF BRIGHTON

CONSULTANT: www.jlrichards.ca

J.L. Richards
ENGINEERS-ARCHITECTS-PLANNERS

CONSULTANT:

PROFESSIONAL STAMP: **S.A. SEXTON** 100113373 2025-04-29 PROVINCE OF ONTARIO

PROJECT NORTH

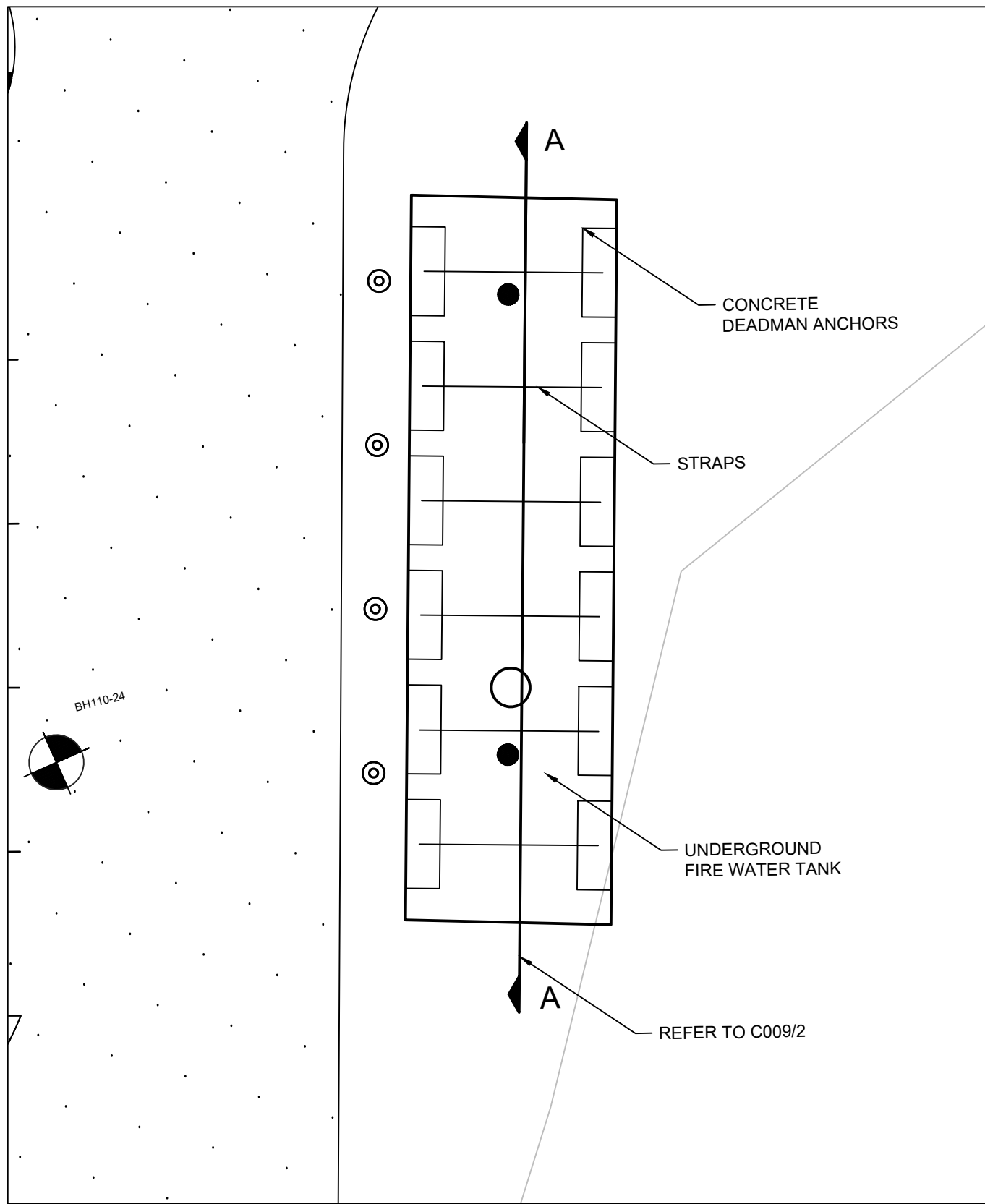
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

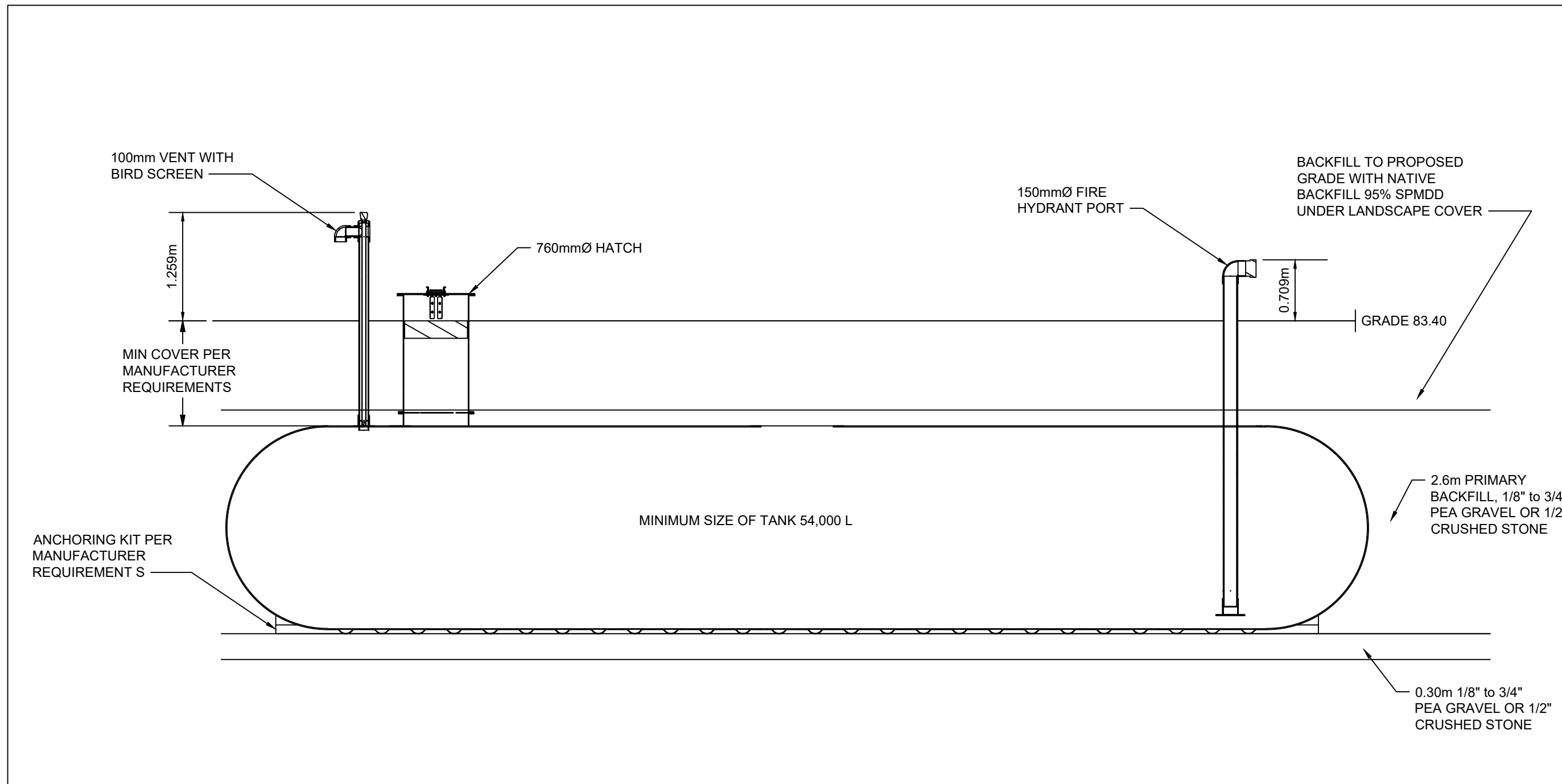
DRAWING: **CIVIL SITE-WIDE DETAILS**

DESIGN: RC	DRAWING #:
DRAWN: DT	C009
CHECKED: SS	
JLR #:	32296-001

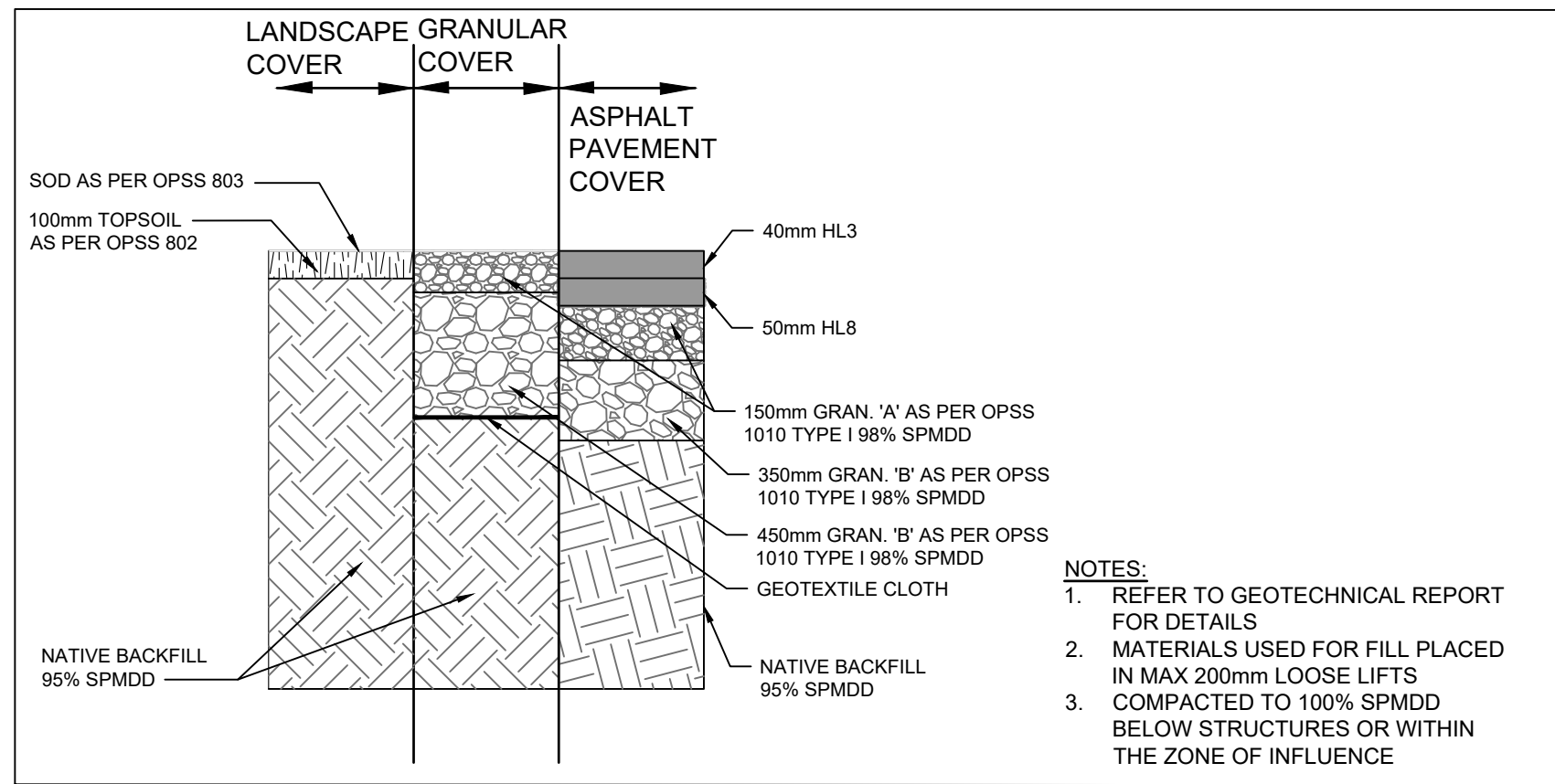
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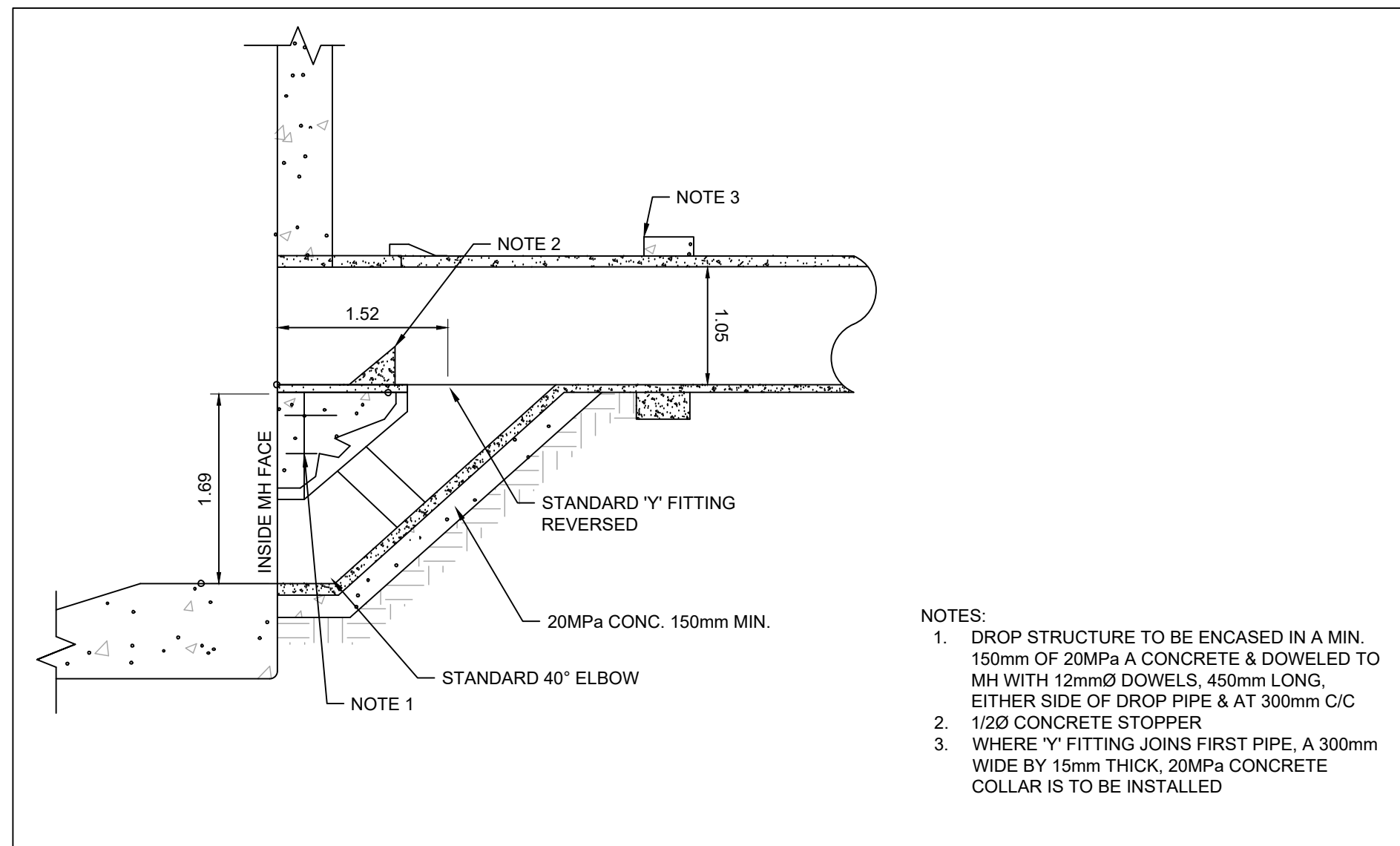
1 FIRE WATER STORAGE
SCALE: 1:100
C010



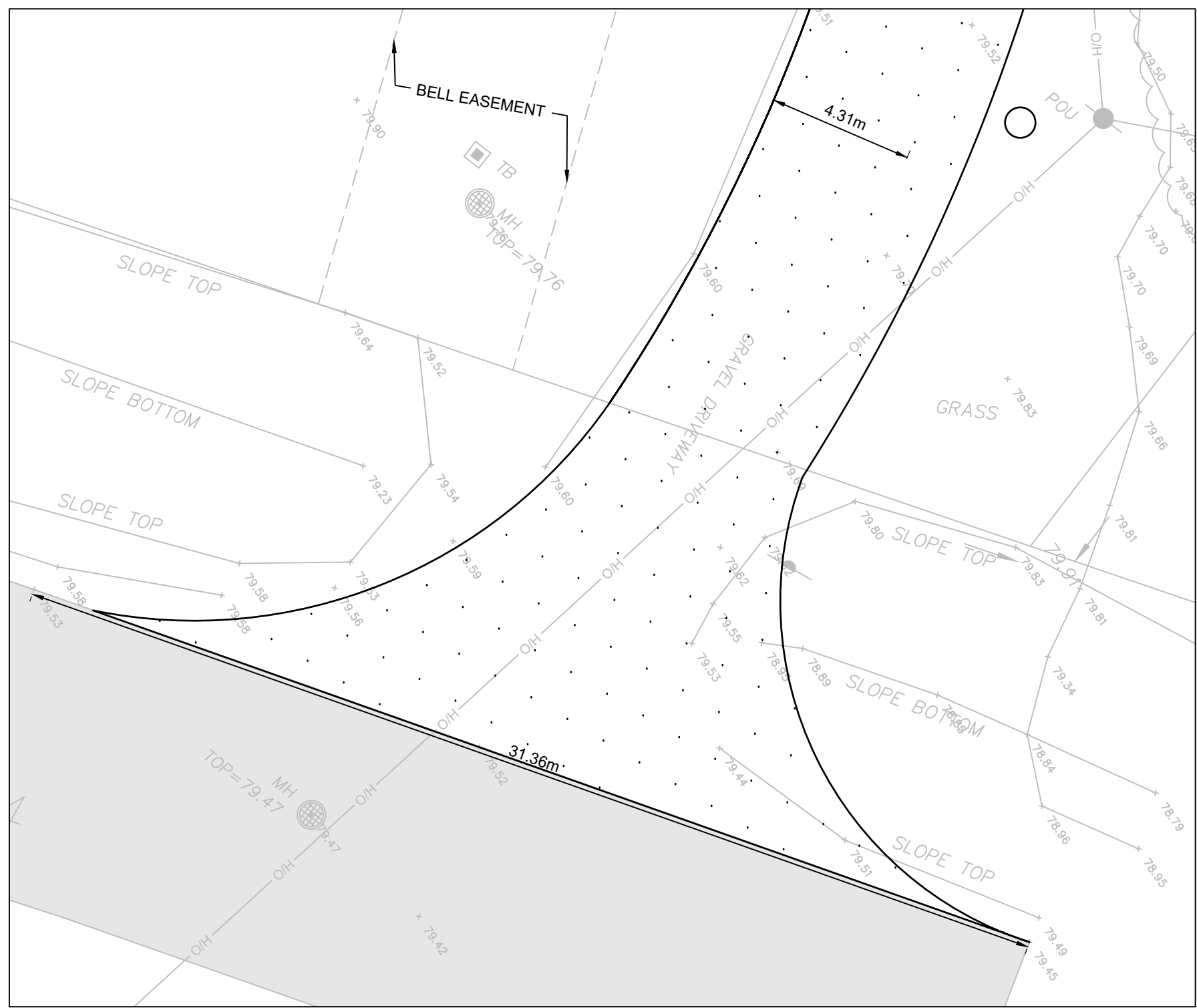
2 COMPOSITE FIRE WATER STORAGE TANK
SCALE: NTS
C010



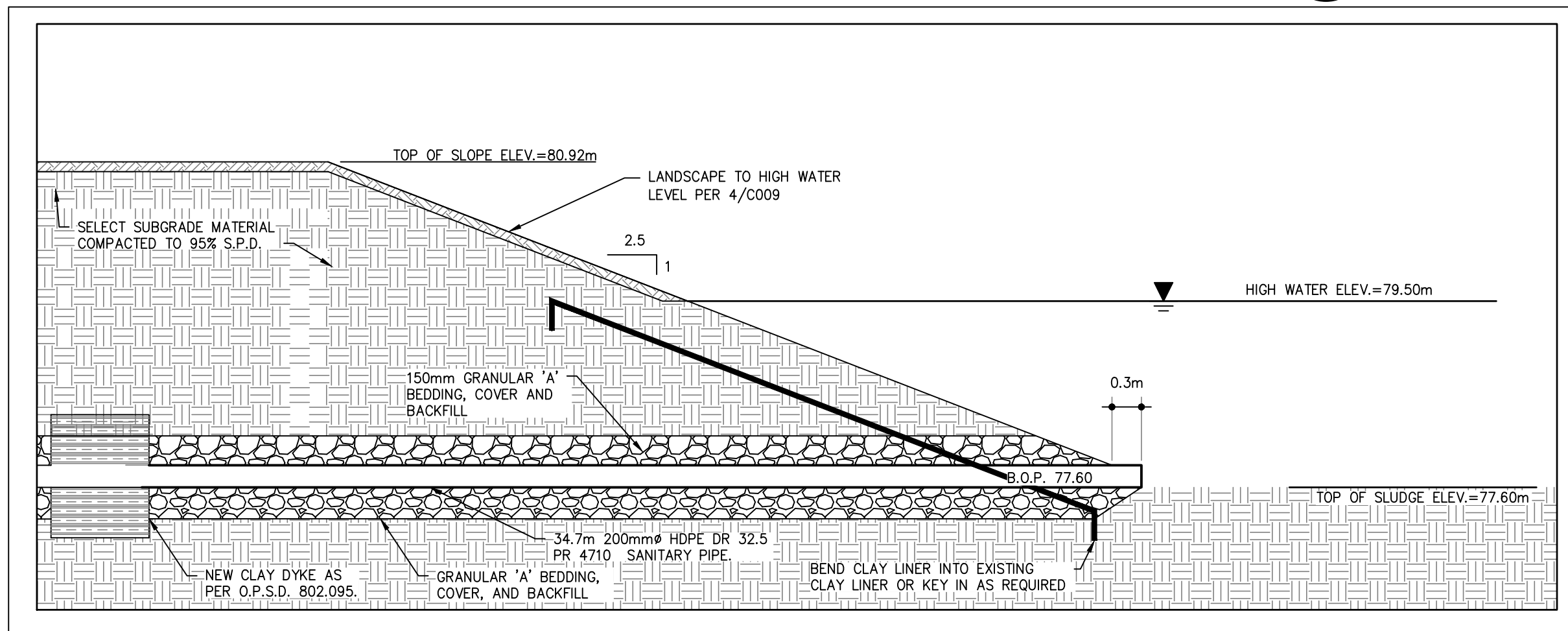
4 FINISHED GRADE REINSTATEMENT
SCALE: NTS
C010



5 DROP STRUCTURE DETAIL
SCALE: 1:50
C010

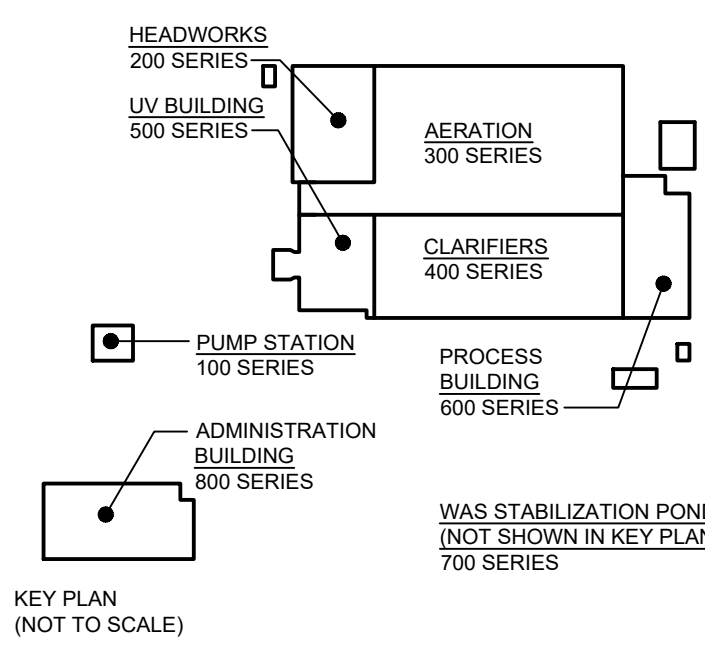


3 ENTRANCE
SCALE: 1:200
C010



6 PIPE THROUGH EQUALIZATION LAGOON
SCALE: 1:100
C010

- NOTES:
1. INSTALLATION OF PIPE INTO LAGOONS THROUGH EXISTING BERMS WILL REQUIRE CONTRACTOR TO MAINTAIN INTEGRITY OF EXISTING BERM. CONTRACTOR TO CONSTRUCT COFFER DAMS, OR USE ALTERNATIVE MEASURES, TO ALLOW REPLACEMENT AND RESTORATION OF BERM CLAY. PIPES SHALL NOT BE LEFT UNSUPPORTED WITHIN LAGOON. PIPES RESTING ON LAGOON BASE TO BE INSTALLED WITH WEIGHTED COLLARS OR STONE BALLAST PLACED ABOVE PER MANUFACTURER'S RECOMMENDATIONS FOR BUOYANCY.



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SCALE: AS SPECIFIED

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

CIVIL
SITE-WIDE
DETAILS

DESIGN: RC

DRAWN: DT

CHECKED: SS

JLR #: 32296-001

DRAWING #:

C0010

1.0 GENERAL

- 1.1 THE NOTES ON THIS SHEET ARE ONLY INTENDED TO SUPPLEMENT THE SPECIFICATIONS. REFER TO THE APPLICABLE SPECIFICATIONS FOR DETAILED PROJECT REQUIREMENTS.
- 1.2 STRUCTURAL DESIGN IS, AND CONSTRUCTION TO BE, IN ACCORDANCE WITH THE ONTARIO BUILDING CODE 2012 (OBC 2012), THE USER'S GUIDE – NBC 2015 STRUCTURAL COMMENTARIES (PART 4 OF DIVISION B) AND THE MATERIAL STANDARDS REFERENCED THEREIN.
- 1.3 READ THESE DRAWINGS IN CONJUNCTION WITH THE ARCHITECTURAL, CIVIL, MECHANICAL, PROCESS AND ELECTRICAL DRAWINGS. COORDINATE THE REQUIREMENTS OF THESE TRADES WITH THE STRUCTURAL WORK AND PROVIDE FOR OPENINGS, SLEEVES, DUCTS, ETC. IN THE CASE OF DISCREPANCIES, NOTIFY THE CONSULTANT IMMEDIATELY FOR CLARIFICATION.
- 1.4 CUTTING OR DRILLING THROUGH REINFORCING STEEL AND MASS WOOD ELEMENTS IS NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE ENGINEER OF RECORD. CONCRETE ELEMENTS TO BE DRILLED OR CORED ARE TO BE SCANNED TO ENSURE NO REINFORCING STEEL, CONDUITS, PIPES, etc. ARE DISTURBED/DAMAGED BY DRILLING/CORING OPERATIONS.
- 1.5 CONFIRM ALL DIMENSIONS, ELEVATIONS, GRADES AND EXISTING CONDITIONS PRIOR TO COMMENCING THE WORK AND REPORT ANY DISCREPANCIES TO THE CONSULTANT. DIMENSIONS ARE BASED ON AS-BUILT DRAWINGS AND FIELD MEASUREMENTS AND ARE TO BE CONFIRMED BY THE CONTRACTOR FOR THEIR ACCURACY.
- 1.6 DRAWINGS SHOW FINISHED STRUCTURES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR THE OVERALL SEQUENCE OF WORK AND ANY TEMPORARY SUPPORT STRUCTURES TO ENSURE THE STRUCTURE AND ALL ITS COMPONENTS ARE STABLE AND SAFE AT ALL TIMES.
- 1.7 DO NOT SCALE THE DRAWINGS. DRAWING UNITS ARE METRIC AND REFERENCE DIMENSIONS ARE IN MILLIMETRES; ELEVATION DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
- 1.8 ISOMETRIC VIEWS ARE PROVIDED TO SHOW GENERAL DESIGN INTENT AND OVERALL GEOMETRY. REFER TO PLANS, ELEVATIONS, AND SECTIONS FOR MEMBER DESIGNATIONS AND DIMENSIONS.

2.0 FOUNDATIONS

- 2.1 STRUCTURAL DESIGN IS BASED ON THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL INVESTIGATION REPORT TITLED PROPOSED WWTs UPGRADES – 100 COUNTY RD 64, BRIGHTON, DECEMBER 18, 2024, AND REFERENCE NO: 19712-001 PREPARED BY CAMBIUM INC.
- 2.2 FOUNDATIONS SHALL BEAR ON NATIVE UNDISTURBED SOIL AT MINIMUM DEPTH INDICATED. THE FOLLOWING BEARING VALUES HAVE BEEN USED IN THE DESIGN OF FOUNDATIONS:
- 2.2.1 COMPACTED GRANULAR FILL OVER NATIVE GLACIAL TILL: 150 kPa (SLS) AND 225 kPa (ULS)
- 2.2.2 NATIVE GLACIAL TILL: 400 kPa (SLS) AND 600 kPa (ULS)
- 2.2.3 NATIVE GLACIAL TILL (REDUCED SETTLEMENT): 200 kPa (SLS) AND 300 kPa (ULS)
- 2.2.4 NATIVE BEDROCK: 600 kPa (SLS) AND 1000 kPa (ULS)
- 2.3 STRUCTURES HAVE BEEN DESIGNED CONSIDERING A GROUNDWATER ELEVATION OF 83.5 m.
- 2.4 RESISTANCE TO BUOYANCY HAS BEEN CONFIRMED FOR ALL TANKS AND BUILDINGS USING THE DEAD WEIGHT OF THE STRUCTURE, THE SOIL ENGAGED BY THE FOUNDATION SYSTEM, AND (IF NECESSARY) ROCK ANCHORS WITH A SAFETY FACTOR AS DEFINED IN CSA S900.2-21.

3.0 CONCRETE

- 3.1 CONCRETE DESIGN TO CSA A23.3 - 14 "DESIGN OF CONCRETE STRUCTURES".
- 3.2 HOLLOW CORE PRECAST PANELS TO CSA A23.3 - 14 AND CSA A23.4 - 16 "PRECAST CONCRETE – MATERIALS AND CONSTRUCTION".
- 3.3 CONCRETE CONSTRUCTION TO CSA A23.1/A23.2 - 14 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION / METHODS OF TEST AND STANDARD PRACTICES FOR CONCRETE".
- 3.4 CONCRETE MIXES ARE BASED ON NORMAL WEIGHT CONCRETE USING TYPE GU/GUL CEMENT AND 20mm MAXIMUM NOMINAL AGGREGATE SIZE, UNLESS OTHERWISE NOTED, AS FOLLOWS:

MIX #	CLASS OF EXPOSURE	MINIMUM SPECIFIED COMPRESSIVE STRENGTH AT AGE	CURING TYPE	USE/APPLICATION
1	N	35MPa AT 28 DAYS	1	COLUMNS, BEAMS, SUSPENDED SLABS, FOOTINGS (NOT WITHIN LIQUID RETAINING CONSTRUCTION)
2	N-CF	30MPa AT 28 DAYS	1	INTERIOR HOUSEKEEPING PADS, SLABS-ON-GRADE
3	C-1	35MPa AT 56 DAYS	2	EXTERIOR SLABS-ON-GRADE, PERIMETER FOUNDATION WALLS, PIERS (NON-BASEMENT CONSTRUCTION)
4	C-1	35MPa AT 28 DAYS	2	ALL LIQUID RETAINING AND BELOW GRADE BASEMENT CONCRETE CONSTRUCTION. USE LOW SHRINKAGE CONCRETE WITH ENTRAINED CRYSTALLINE WATERPROOFING ADMIXTURE
5	F-1	15 MPa AT 28 DAYS	N/A	MUD SLABS AND LEAN CONCRETE-

- 3.5 PREVIOUSLY PLACED CONCRETE AT CONSTRUCTION JOINTS TO BE WIRE BRUSHED, CLEANED AND MOISTENED IMMEDIATELY PRIOR TO PLACING FRESH CONCRETE. WHERE CASTING NEW CONCRETE AGAINST HARDENED CONCRETE, ROUGHEN CONCRETE TO 5mm AMPLITUDE TO EXPOSE AGGREGATE AND PROVIDE INTERLOCK BETWEEN CONCRETE SURFACES. A CONCRETE SURFACE PROFILE (CSP) 6 IS CONSIDERED ACCEPTABLE AS DEFINED BY THE INTERNATIONAL CONCRETE REPAIR INSTITUTE.
- 3.6 ALL REINFORCING BARS TO BE NEW, DEFORMED BARS CONFORMING TO CSA G30.18 GRADE 400W.
- 3.7 CONCRETE CLEAR COVER TO PRIMARY REINFORCING AS FOLLOWS:

EXPOSURE CONDITION	CONCRETE EXPOSURE CLASS N	CONCRETE EXPOSURE CLASS F	CONCRETE EXPOSURE CLASS C
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH OR WEATHER	75 mm		
BEAMS AND COLUMNS AND TOP SURFACE OF SLABS	30 mm	40 mm	60 mm
WALLS AND UNDERSIDE OF SLABS	30 mm		

- 3.8 DETAIL AND FABRICATE ALL HOOKS AND BENDS IN REINFORCING STEEL TO BE STANDARD IN ACCORDANCE WITH CSA A23.1. PLACE HOOKED BARS TO ENSURE TENSION DEVELOPMENT, L_{dt} (mm), PER TABLE BELOW:

f _c MPa	BAR SIZE					
	10M	15M	20M	25M	30M	35M
30	180	270	370	460	550	640
35	170	250	340	420	510	590

TABLE NOTE: FOR 35M OR SMALLER BARS WHERE THE SIDE COVER (NORMAL TO THE PLANE OF THE HOOK) IS AT LEAST 80 mm, AND FOR 90° HOOKS WHERE THE COVER ON THE BAR EXTENSION BEYOND THE HOOK IS AT LEAST 50 mm, THESE HOOKS CAN BE REDUCED BY A FACTOR OF 0.7.

- 3.9 REINFORCING STEEL SPLICES SHALL BE CLASS 'B' TENSION LAP SPLICES IN ACCORDANCE WITH CSA A23.3, AS FOLLOWS, UNLESS NOTED OTHERWISE.

f _c MPa	BAR SIZE					
	10M	15M	20M	25M	30M	35M
25	380	570	750	1170	1410	LAP SPLICES NOT PERMITTED
30	350	520	690	1070	1290	
35	320	480	640	990	1190	

TABLE NOTE: LAP SPLICES SHALL BE INCREASED BY FACTOR OF 1.3 FOR HORIZONTAL REINFORCEMENT PLACED IN SUCH A WAY THAT MORE THAN 300 mm OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE.

4.0 MASONRY

- 4.1 MASONRY DESIGN AND CONSTRUCTION TO CSA S304.1 – 14 "DESIGN OF MASONRY STRUCTURES" AND CSA A371 - 14, "MASONRY CONSTRUCTION FOR BUILDINGS".
- 4.2 CONCRETE BLOCKS TO BE TYPE H/15/A/M AND H/30/A/M, (BUILDING DEPENDENT) AND TO CONFORM TO CSA A165 SERIES – 14, "STANDARDS ON CONCRETE MASONRY UNITS (CONSISTS OF A165.1, A165.2, A165.3)".
- 4.3 CONCRETE BLOCKS TO BE LAID IN 50% RUNNING BOND, UNLESS NOTED OTHERWISE.
- 4.4 MORTAR TO BE TYPE S, TO CSA A179 - 14, "MORTAR AND GROUT FOR UNIT MASONRY". MINIMUM 8.5 MPa COMPRESSIVE STRENGTH AT 28 DAYS WHEN TESTED IN ACCORDANCE WITH CSA A179.
- 4.5 GROUT TO CSA A179, "MORTAR AND GROUT FOR UNIT MASONRY". MINIMUM 12.5 MPa COMPRESSIVE STRENGTH AT 28 DAYS WHEN TESTED IN ACCORDANCE WITH CSA A179.
- 4.6 REINFORCING BARS TO BE NEW, DEFORMED BARS CONFORMING TO CSA G30.18 GRADE 400W.
- 4.7 REINFORCING STEEL SPLICES SHALL BE CLASS 'B' TENSION LAP SPLICES IN ACCORDANCE WITH CSA S304, AS FOLLOWS, UNLESS NOTED OTHERWISE.

f _c MPa	BAR SIZE			
	10M	15M	20M	25M
20	420	630	840	1310

*TABLE NOTE: LAP SPLICES SHALL BE INCREASED BY FACTOR OF 1.3 FOR HORIZONTAL REINFORCEMENT PLACED IN SUCH A WAY THAT MORE THAN 300 mm OF FRESH GROUT IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE.

- 4.8 HORIZONTAL JOINT REINFORCEMENT SHALL BE KNURLED, PREFABRICATED FROM COLD-DRAWN STEEL WIRE CONFORMING TO CSA A370 WITH MINIMUM TENSILE STRENGTH OF 515 MPa.
- 4.9 JOINT REINFORCEMENT SPLICES, SHALL BE CLASS 'B' TENSION LAP SPLICES IN ACCORDANCE WITH CSA S304, AS FOLLOWS, UNLESS NOTED OTHERWISE.

f _{gr} MPa	WIRE SIZE	
	KNURLED	SMOOTH
10	390	780

5.0 STRUCTURAL STEEL AND MISCELLANEOUS METALS

- 5.1 STRUCTURAL STEEL DESIGN AND CONSTRUCTION IN ACCORDANCE WITH CSA S16 - 14 "DESIGN OF STEEL STRUCTURES", THE "CANADIAN INSTITUTE OF STEEL CONSTRUCTION (CISC) - HANDBOOK OF STEEL CONSTRUCTION, 11TH EDITION".
- 5.2 ALUMINUM DESIGN AND CONSTRUCTION IN ACCORDANCE WITH CSA S157 - 17 "STRENGTH DESIGN IN ALUMINUM".
- 5.3 ALL STRUCTURAL STEEL AND MISCELLANEOUS METALS TO CONFORM TO:
- 5.3.1 HOT ROLLED STRUCTURAL SECTIONS AND BARS (W, S, C, L): GRADE 350W TO CSA G40.20/G40.21, UNLESS NOTED OTHERWISE.
- 5.3.2 HOLLOW STRUCTURAL SECTIONS (HSS) TO: CSA-G40.20/G40.21 GRADE 350W, CLASS 'C'.
- 5.3.3 PLATES TO: CSA G40.20/G40.21 GRADE 300W.
- 5.3.4 STEEL PIPE: SEAMLESS TO ASTM A45/A53M, Grade B, F_y = 240MPa.
- 5.3.5 ALUMINUM SECTIONS AND PLATE TO CSA HA SERIES 6061-T6. MINIMUM F_y = 240 MPa AND REDUCED AT HEAT-AFFECTED WELD ZONES AS PER CSA-S157.
- 5.3.6 WELDING IN ACCORDANCE WITH CSA W59. ELECTRODES TO BE E49XX. ALUMINUM WELDING IN ACCORDANCE WITH CSA W59.2. ALL WELDS TO BE CONTINUOUS UNLESS NOTED OTHERWISE. THE MINIMUM FILLET WELD UNLESS NOTED OTHERWISE IS 6mm.
- 5.3.7 ALL BOLTED CONNECTIONS TO USE BOLTS IN ACCORDANCE WITH ASTM F3125 / F3125M. NUTS IN ACCORDANCE ASTM A563M AND WASHERS IN ACCORDANCE WITH ASTM F436M.
- 5.3.8 ANCHOR RODS/BOLTS SHALL BE IN ACCORDANCE WITH ASTM F1554.
- 5.3.9 GROUT BELOW ALL BASE PLATES TO BE FLOWABLE NON-SHRINK, NON-METALLIC GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 40 MPa AT 24 HOURS.
- 5.4 ALL BOLTED CONNECTIONS FORMING PART OF THE SEISMIC LATERAL FORCE RESISTING SYSTEM ARE TO BE CONSIDERED SLIP-CRITICAL CONNECTIONS AND ARE TO HAVE PRETENSIONED BOLTS WITH A CLASS A OR BETTER SURFACE CONNECTIONS ARE NOT TO HAVE SLOTTED HOLES. SEISMIC LATERAL FORCE RESISTING SYSTEM INCLUDES BRACED BAYS, MOMENT FRAMES, etc. AND COLLECTOR LINES. UNLESS NOTED OTHERWISE ON PLANS, COLLECTOR LINES ARE TO BE ASSUMED TO RUN THE LENGTH OF THE GRIDLINE AT BRACED BAY OR MOMENT FRAME LOCATIONS.
- 5.5 FOR BASE PLATES RESISTING LATERAL OR TENSILE LOADS (e.g. BRACED BAYS OR WIND COLUMNS), APPROPRIATELY DESIGNED PLATE WASHERS SHALL BE INSTALLED WHERE OVERSIZED BASE PLATE HOLES ARE EMPLOYED TO ACCOMMODATE ANCHOR ROD INSTALLATION TOLERANCES.

STEEL DECK

- 5.6 STEEL DECK SHALL BE IN ACCORDANCE WITH ASTM A653M AND CSA S136.
- 5.7 THE ROOF STRUCTURE DESIGN IS BASED ON THE FOLLOWING PROPERTIES OF THE STEEL DECK:
- 38 mm DECK – 1.5B[] BY CANAM GROUP INC. MINIMUM YIELD STRENGTH: 275MPa
- 5.8 STEEL DECK DESIGN ASSUMED TO BE TRIPLE-SPAN UNLESS SPECIFICALLY NOTED OTHERWISE.
- 5.9 REFER TO PLANS AND DETAILS FOR STEEL DECK CONNECTIONS.

STEEL JOIST FRAMING

- 5.10 DESIGN OPEN WEB STEEL JOISTS (OWSJ) AND JOIST GIRDERS IN ACCORDANCE WITH CSA S16 - 14 "DESIGN OF STEEL STRUCTURES" AND THE "CANADIAN INSTITUTE OF STEEL HANDBOOK OF STEEL CONSTRUCTION, 11TH EDITION".
- 5.11 REFER TO PLANS AND LOADING NOTES FOR DESIGN LOADS AND DEFLECTION / VIBRATION CRITERIA.
- 5.12 SHOE DEPTH TO BE 100 mm UNLESS NOTED OTHERWISE.
- 5.13 PROVIDE BRIDGING TO MEET CSA S16 AND THE REQUIREMENTS OF THE JOIST DESIGN. BRIDGING SHOWN ON PLANS IS CONSIDERED THE MINIMUM REQUIRED BRIDGING AND THE JOIST MANUFACTURER IS TO DETERMINE BRIDGING REQUIREMENTS TO SAFELY SUPPORT THE LOADS INDICATED ON THE DRAWINGS.

LIST OF ABBREVIATIONS

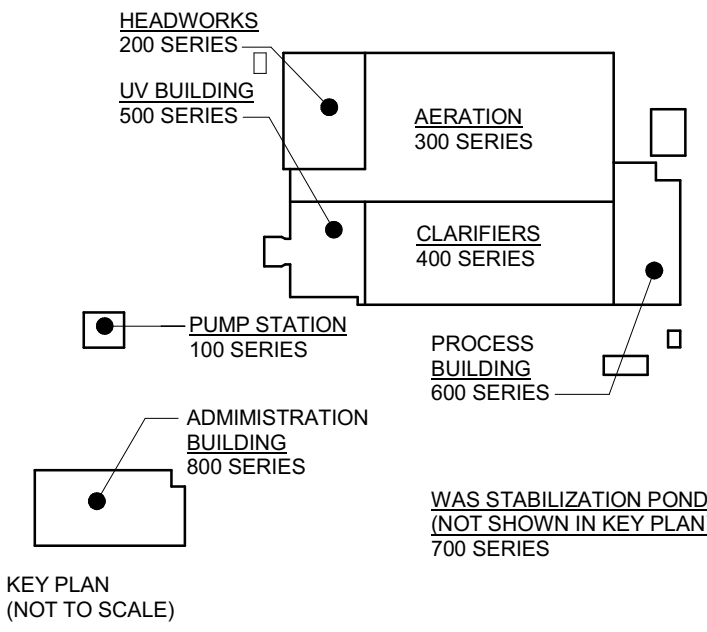
BLL	BOTTOM LOWER LAYER
BM	BEAM
BUL	BOTTOM UPPER LAYER
c/c OR CRS.	CENTRE TO CENTRE
CANT.	CANTILEVER
CJ	CONSTRUCTION JOINT
CONT.	CONTINUOUS
c/w	COMPLETE WITH
DL	DEAD LOAD
DIAG.	DIAGONAL
DIA.	DIAMETER
ELEC.	ELECTRICAL
EL. OR ELEV.	ELEVATION
EX.	EXISTING
EXT.	EXTERIOR
FTG.	FOOTING
Ga	Gauge
HD	HEAVY DUTY
H.P.	HIGH POINT
HOG	HOT DIPPED GALVANIZED
HKP	HOUSEKEEPING PAD
HORIZ.	HORIZONTAL
INT.	INTERIOR
LB	LOAD BEARING
LL	LIVE LOAD
LLV	LONG LEG VERTICAL
LLH	LONG LEG HORIZONTAL
L.P.	LOW POINT
MAX.	MAXIMUM
MECH.	MECHANICAL
MIN.	MINIMUM
MISC.	MISCELLANEOUS
NLB	NON-LOAD BEARING
N.T.S.	NOT TO SCALE
OWSJ	OPEN WEB STEEL JOIST
REINF.	REINFORCEMENT
r/w	REINFORCED WITH
SPMDD	STANDARD PROCTOR MAXIMUM DRY DENSITY
STD	STANDARD
TLL	TOP LOWER LAYER
T.O.	TOP OF
T.O.C.	TOP OF CONCRETE
T.O.S.	TOP OF STEEL
TUL	TOP UPPER LAYER
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
U/S	UNDERSIDE
VERT.	VERTICAL

STRUCTURAL MATERIALS LEGEND

	NEW REINFORCED CONCRETE
	PRECAST CONCRETE OR EXISTING CONCRETE
	LEAN CONCRETE FILL, MUD SLAB, OR GROUT
	CONCRETE BLOCK
	GRATING
	CHECKERED PLATE
	GRANULAR 'A'
	GRANULAR 'B'
	NATIVE SOIL
	EARTH, BACKFILL

SYMBOLS LEGEND

	DIRECTION OF SPAN
\pm	PLUS OR MINUS / APPROXIMATE
X°	'X' DEGREES
\varnothing	DIAMETER
*	REFER TO NOTE ON DRAWING
xx.xx m	FLOOR (OR CONCRETE) ELEVATION



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

0	ISSUED FOR TENDER	25/04/25
No.	ISSUE / REVISION	DD/MM/YY

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SCALE: 1 : 50

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CONSULTANT:

PROFESSIONAL STAMP



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

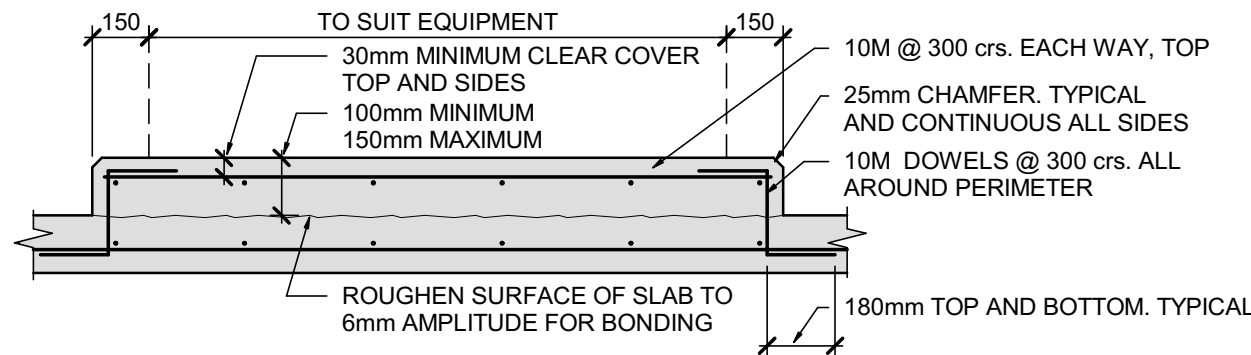
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL SITE-WIDE
GENERAL NOTES

DESIGN: CWD	DRAWING #: S000
DRAWN: JIC	
CHECKED: JMO	
JLR #:	

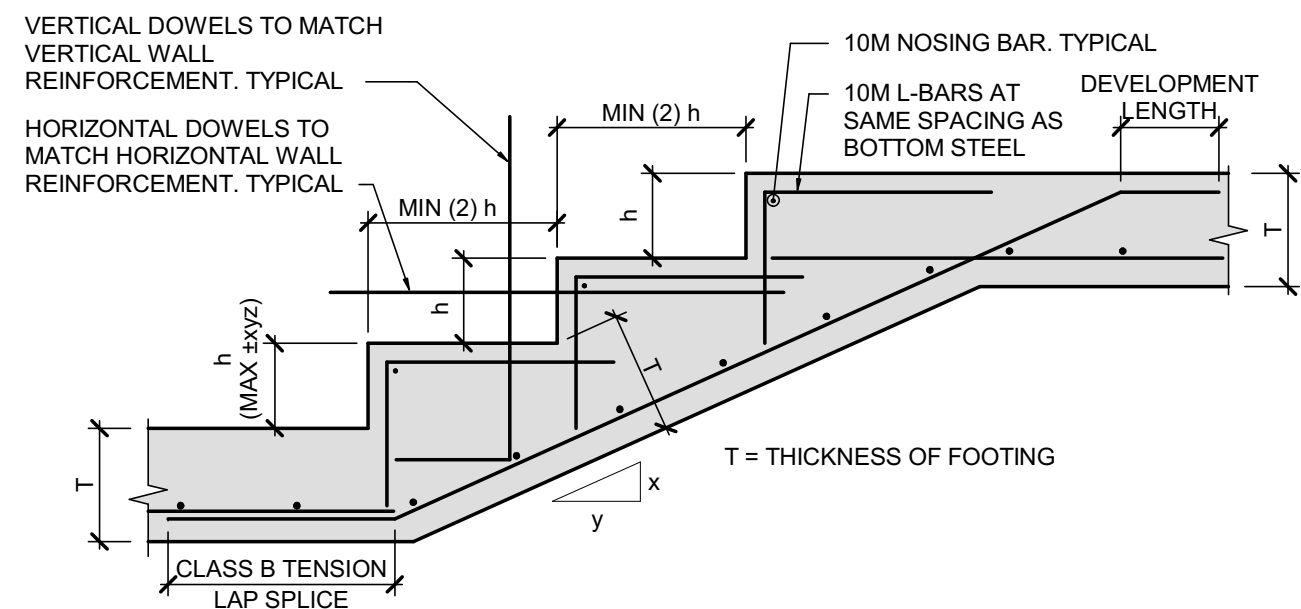
32296



- NOTES:
- DIMENSIONS OF BASES, ANCHOR BOLTS, SIZES AND LOCATIONS TO SUIT EQUIPMENT SUPPLIED. SEE MECHANICAL AND ELECTRICAL DRAWINGS.
 - ANCHOR BOLT SIZES, EMBEDMENT DETAILS, LOCATIONS, ETC AS REQUIRED BY EQUIPMENT MANUFACTURER.
 - HOUSEKEEPING PADS TO EXTEND 150mm PAST EQUIPMENT ON ALL SIDES UNLESS NOTED OTHERWISE.

TYPICAL HOUSEKEEPING PAD DETAIL

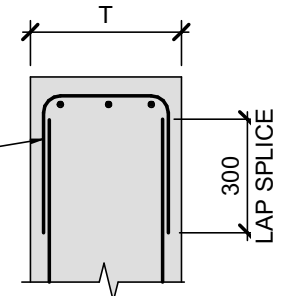
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TYPICAL STEPPED CONCRETE FOOTING DETAIL

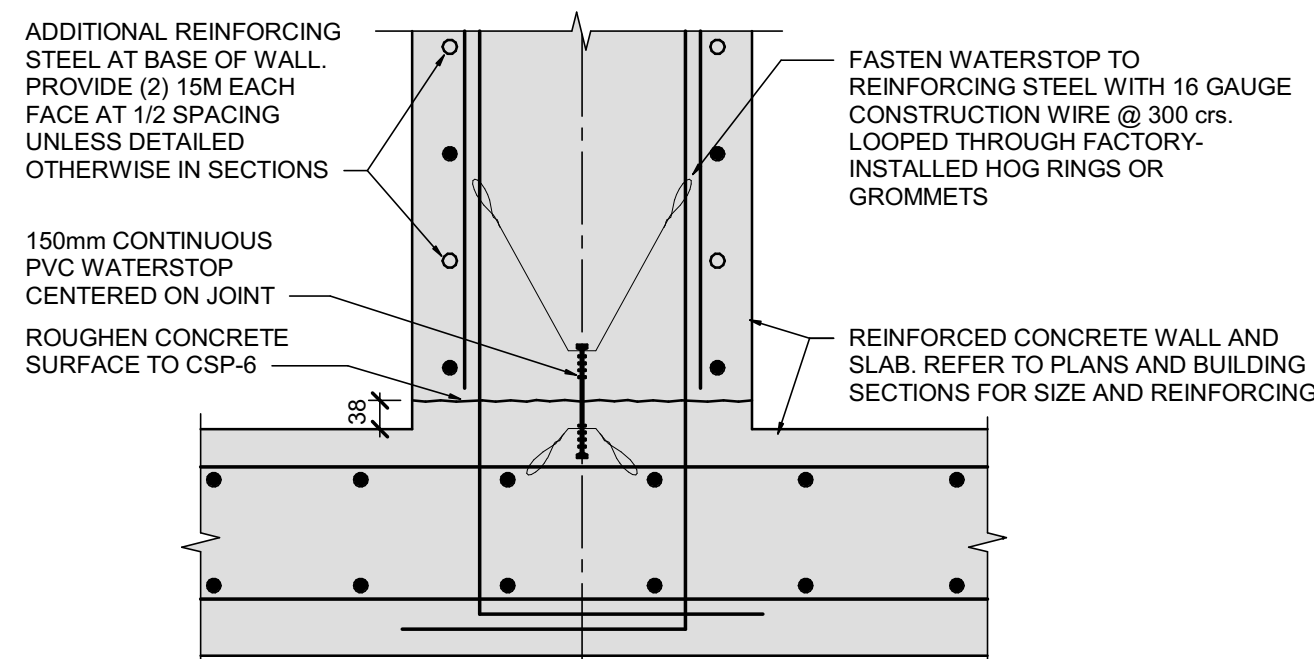
SCALE : 1 : 20

WHERE THICKNESS (T) EXCEEDS 400mm, PROVIDE 15M U-BARS @ 600 CRS. WITH 15M LONGITUDINAL CONTINUOUS, UNLESS NOTED OTHERWISE



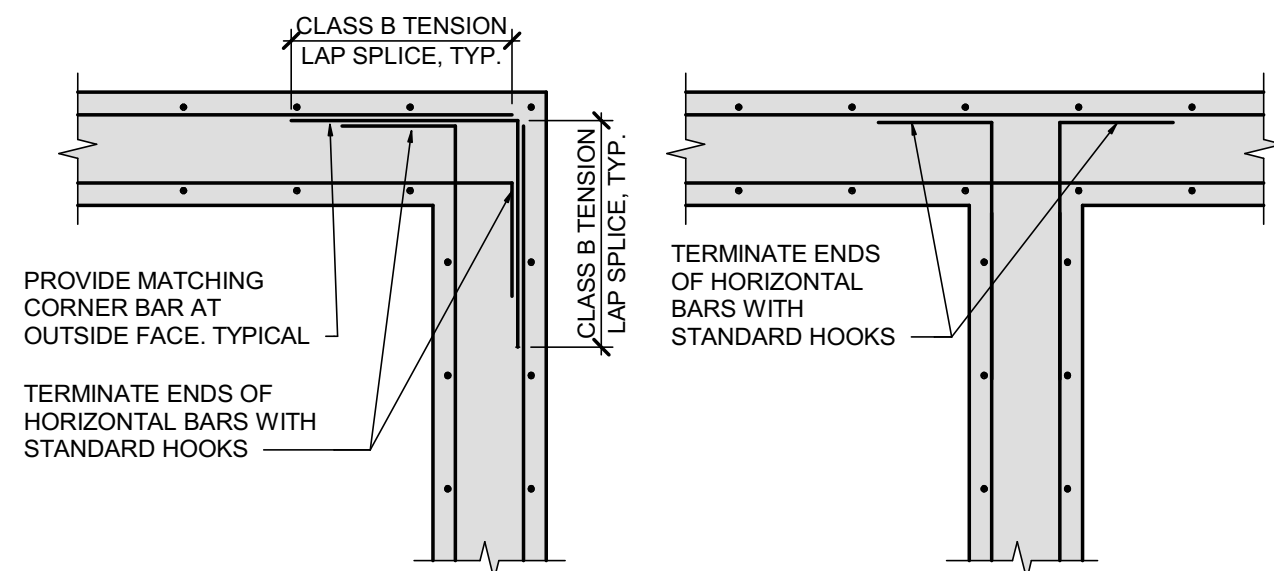
TYPICAL CONCRETE REINFORCING DETAIL AT TOP OF WALL

SCALE : 1 : 20



TYPICAL LIQUID RETAINING WALL BASE DETAIL

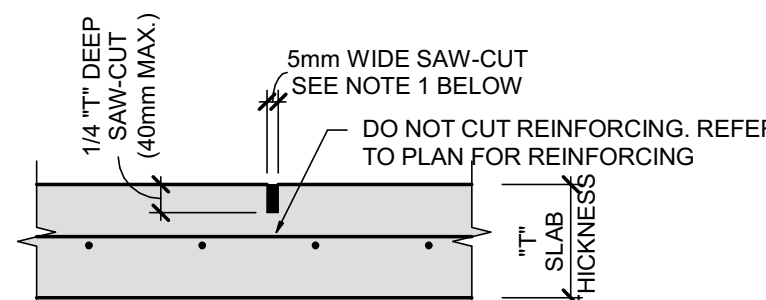
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NOTE: REFER TO SECTIONS FOR REINFORCING ORIENTATION AND SPACING.

TYPICAL CONCRETE WALL REINFORCING PLAN DETAILS (DOUBLE LAYER)

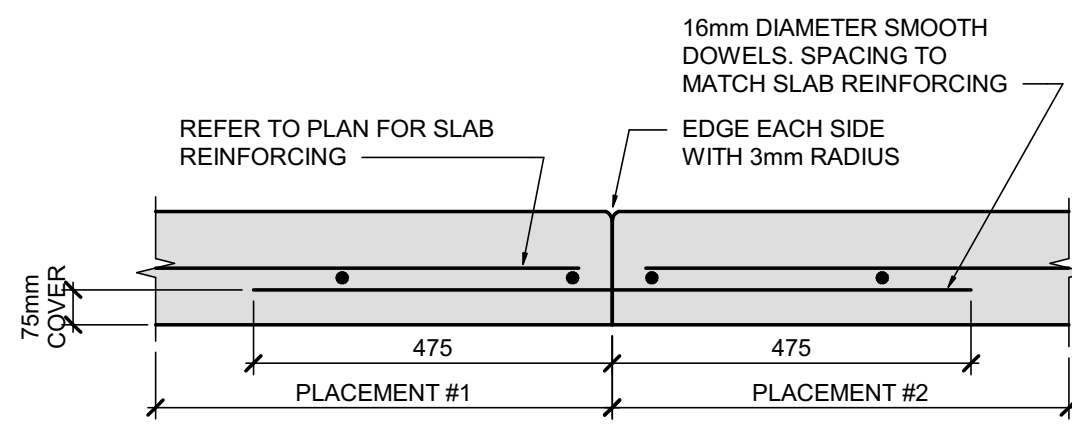
SCALE : 1 : 20



- NOTES:
- CLEAN-OUT JOINT AND FILL WITH CLOSED CELL FOAM ROD. FILL SAW-CUT LEVEL WITH TWO COMPONENT EPOXY URETHANE LOAD BEARING, SELF-LEVELING CONTROL JOINT FILLER. JOINT FILLER TO HAVE 28 DAY STRENGTH OF 4.8 MPa TO ASTM D638 PRIOR TO INSTALLATION OF JOINT FILLER.
 - SAW-CUT SLAB WITHIN 8-10 HOURS OF FINAL TROWELLING AND BEFORE ANY SHRINKAGE CRACKS OCCUR.
 - REFER TO PLAN FOR LOCATION AND EXTENTS OF SAW-CUTS. SAW-CUTS SPACED AT MAXIMUM 4500crs. UNLESS NOTED OTHERWISE.

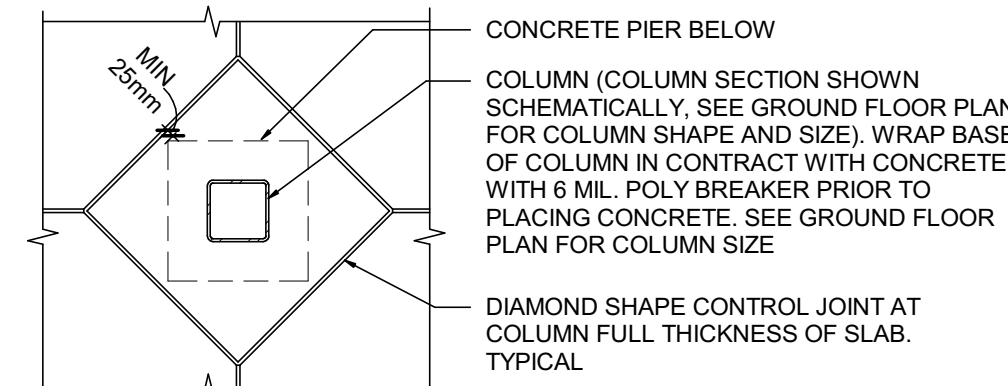
TYPICAL CONCRETE SLAB ON GRADE SAW-CUT DETAIL

SCALE : 1 : 20



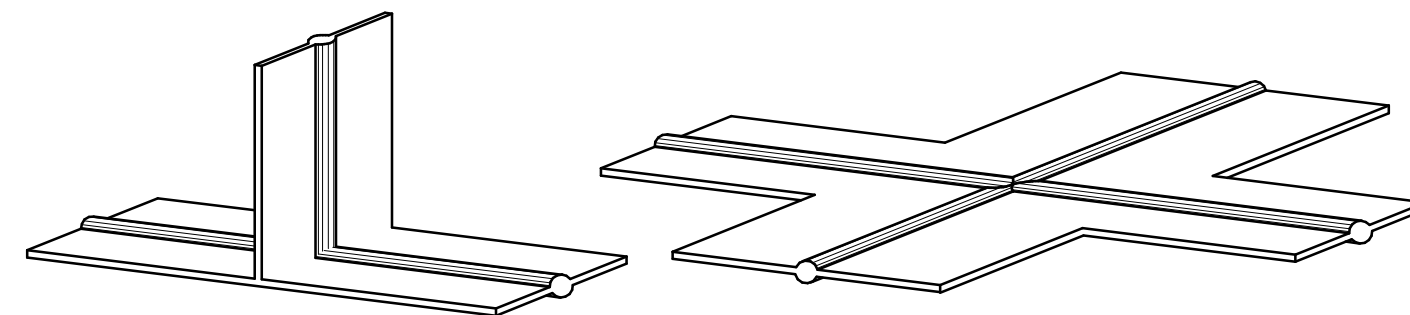
TYPICAL CONCRETE SLAB ON GRADE CONSTRUCTION JOINT DETAIL

SCALE : 1 : 10



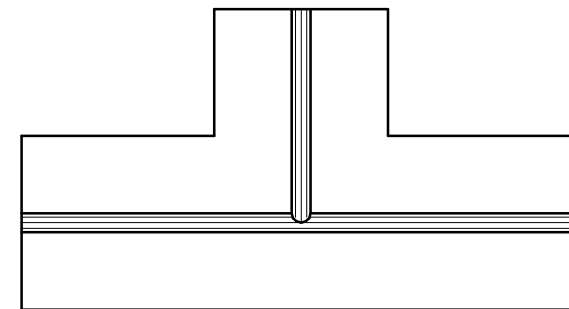
TYPICAL CONCRETE SLAB ON GRADE SAW-CUT PLAN DETAIL AT COLUMNS

SCALE : 1 : 25

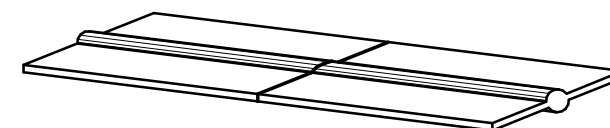


VERTICAL TO HORIZONTAL TEE JOINT

HORIZONTAL TEE OR CROSS JOINT



90° VERTICAL / HORIZONTAL TEE JOINT

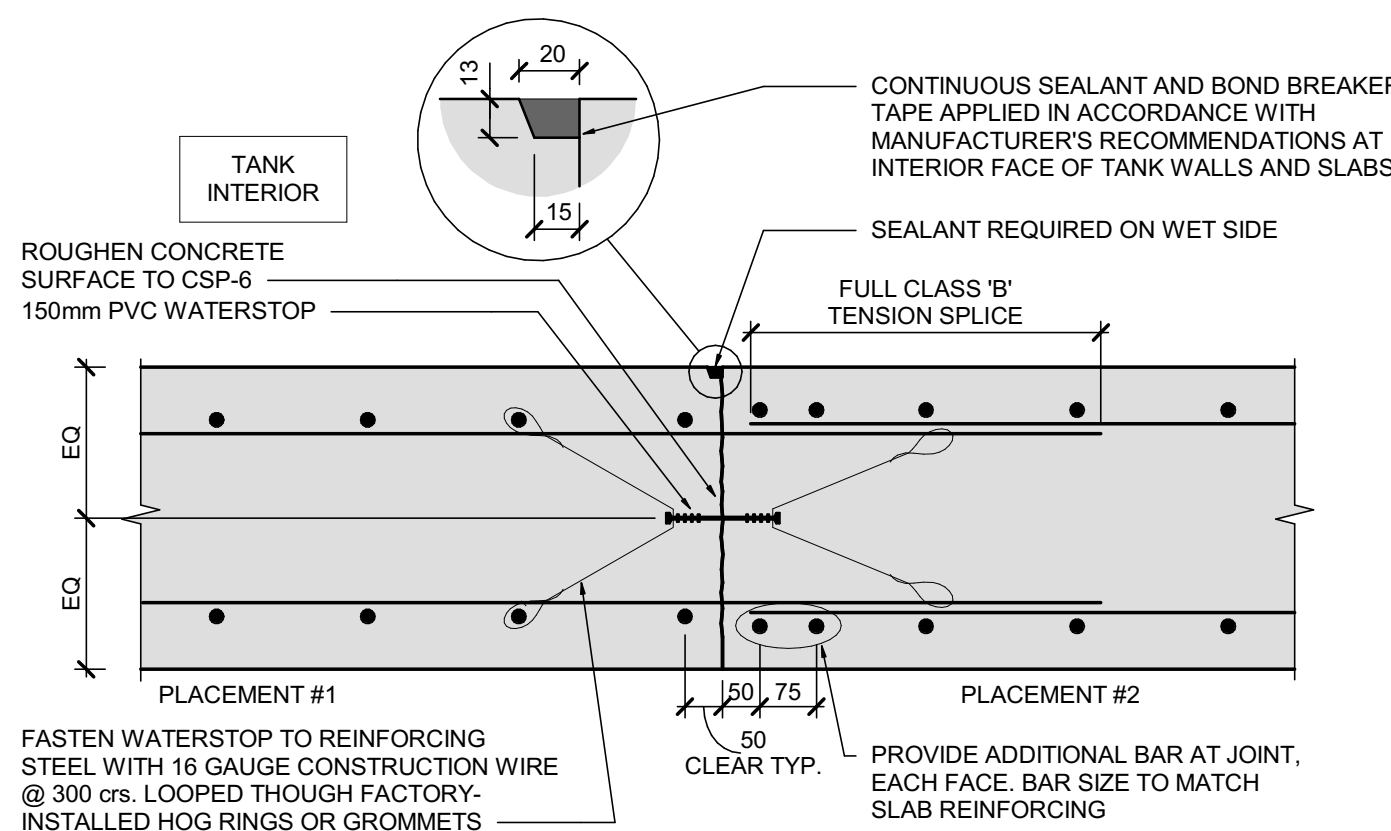


BUTT END JOINT

- NOTES:
- THE DETAILS ABOVE DEPICT FACTORY MADE WATERSTOP FABRICATIONS THAT ARE TO BE JOINED TO STRAIGHT WATERSTOPS WITH JOINT WATERSTOPS TO FORM A CONTINUOUS UNBROKEN WATER SEAL IN ALL PARTS OF THE STRUCTURE AT ALL EXPANSION JOINTS AND AT CONSTRUCTION JOINTS WHERE INDICATED ON DRAWINGS.
 - WATERSTOPS AT JOINT LOCATIONS SHALL BE JOINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. AT ALL CHANGES IN DIRECTION, INTERSECTIONS AND TRANSITIONS, THE JOINTS SHALL BE FACTORY MADE JOINT FABRICATIONS. THE ONLY ACCEPTABLE JOINING WATERSTOP AT SPLICE LOCATIONS AND INTERSECTIONS TO BE JOINED TOGETHER AS PER MANUFACTURER'S RECOMMENDATIONS. ALL 'TEES' AND 'CROSSES' AND OTHER SPECIAL INTERSECTIONS SHALL BE ACCURATELY ASSEMBLED.
 - WELD AT SPLICE WILL PENETRATE FULL DEPTH OF THE WATERSTOP MATERIAL.
 - ALLOW FOR REVIEW OF ALL WATERSTOP INSTALLATIONS, CONNECTIONS AND SPLICES PRIOR TO CASTING CONCRETE.

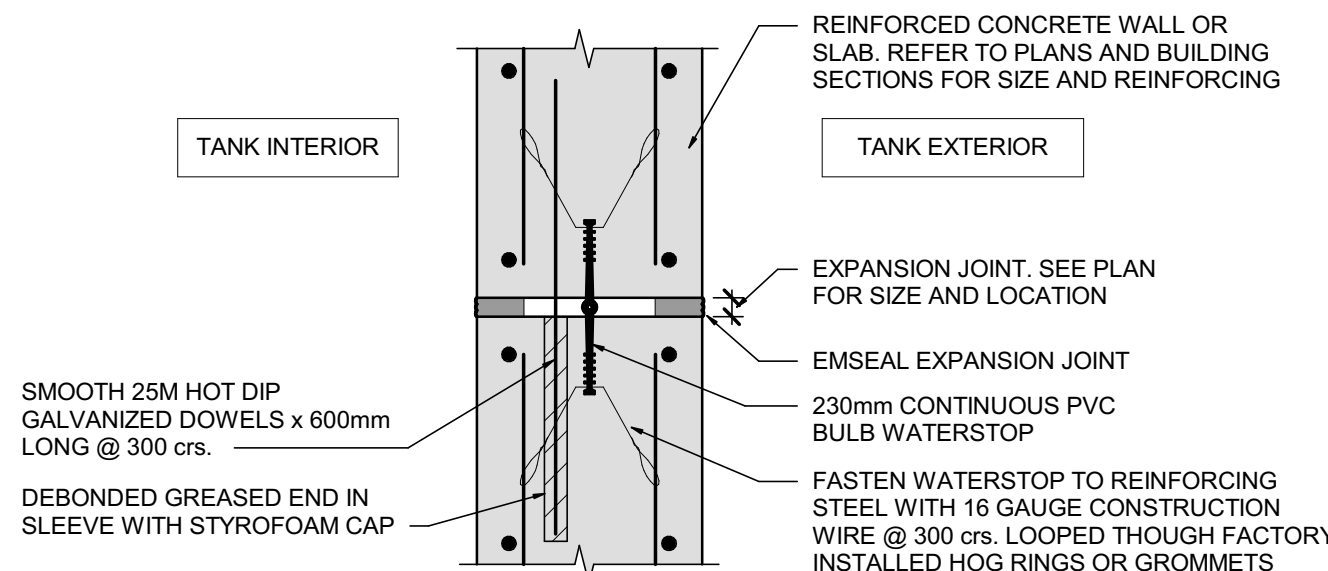
TYPICAL PVC WATERSTOP JOINTING DETAILS

SCALE : 1 : 20



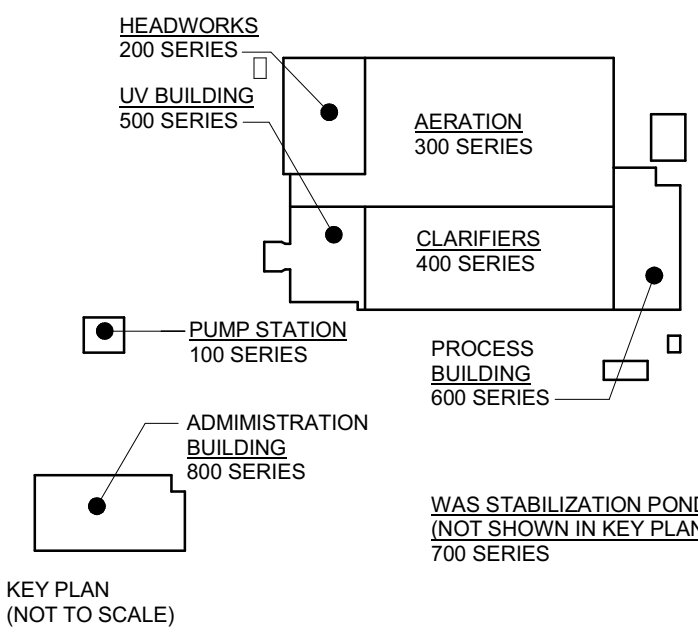
TYPICAL CONSTRUCTION JOINT DETAIL IN LIQUID RETAINING WALLS AND SLABS

SCALE : 1 : 10



TYPICAL WATERSTOP EXPANSION JOINT DETAIL

SCALE : 1 : 10



DESIGN DOCUMENTS HEREIN HAVE
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SCALE: As indicated

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PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

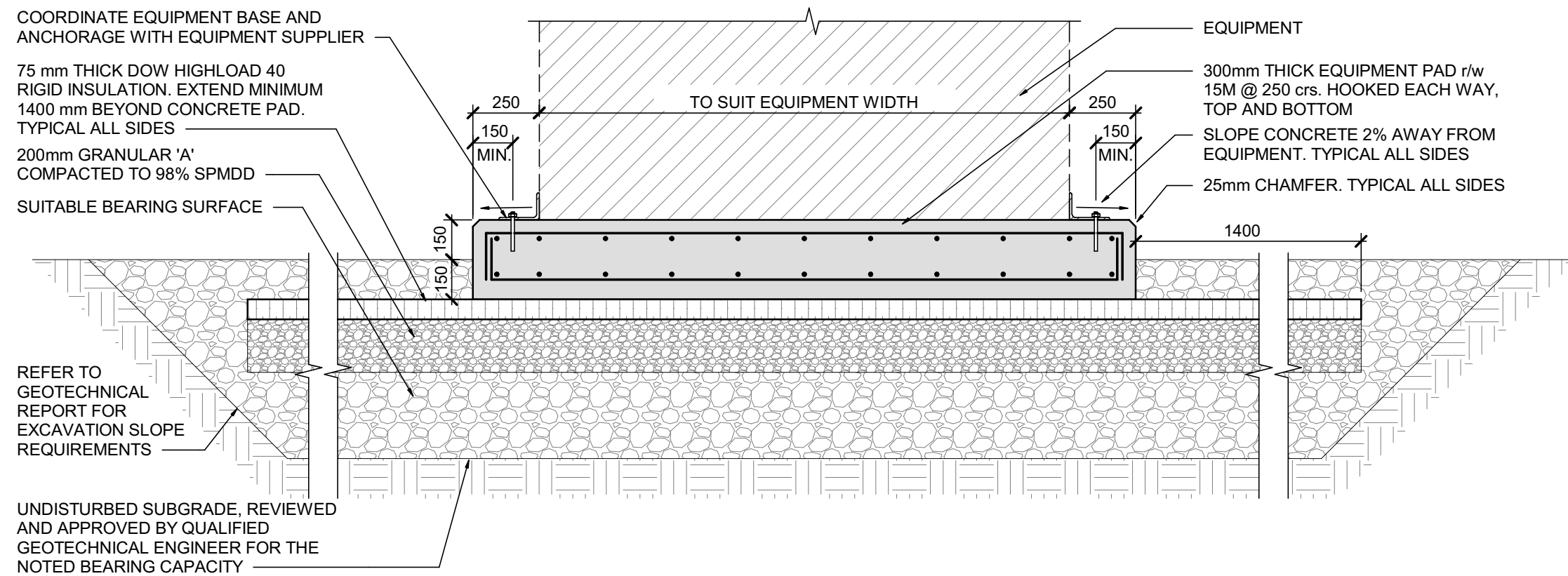
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL
SITE-WIDE
TYPICAL DETAILS

DESIGN: CWD
DRAWN: JIC
CHECKED: JMO
JLR #:

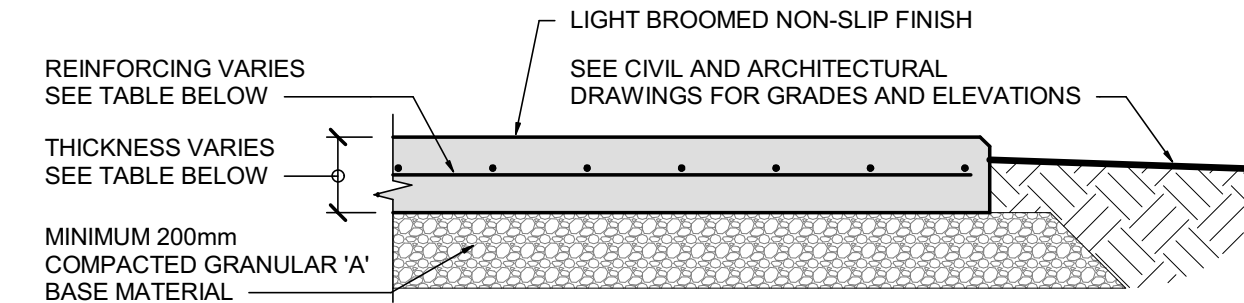
DRAWING #:
S005



TYPICAL EXTERIOR EQUIPMENT PAD DETAIL

1
S006

SCALE : 1 : 20

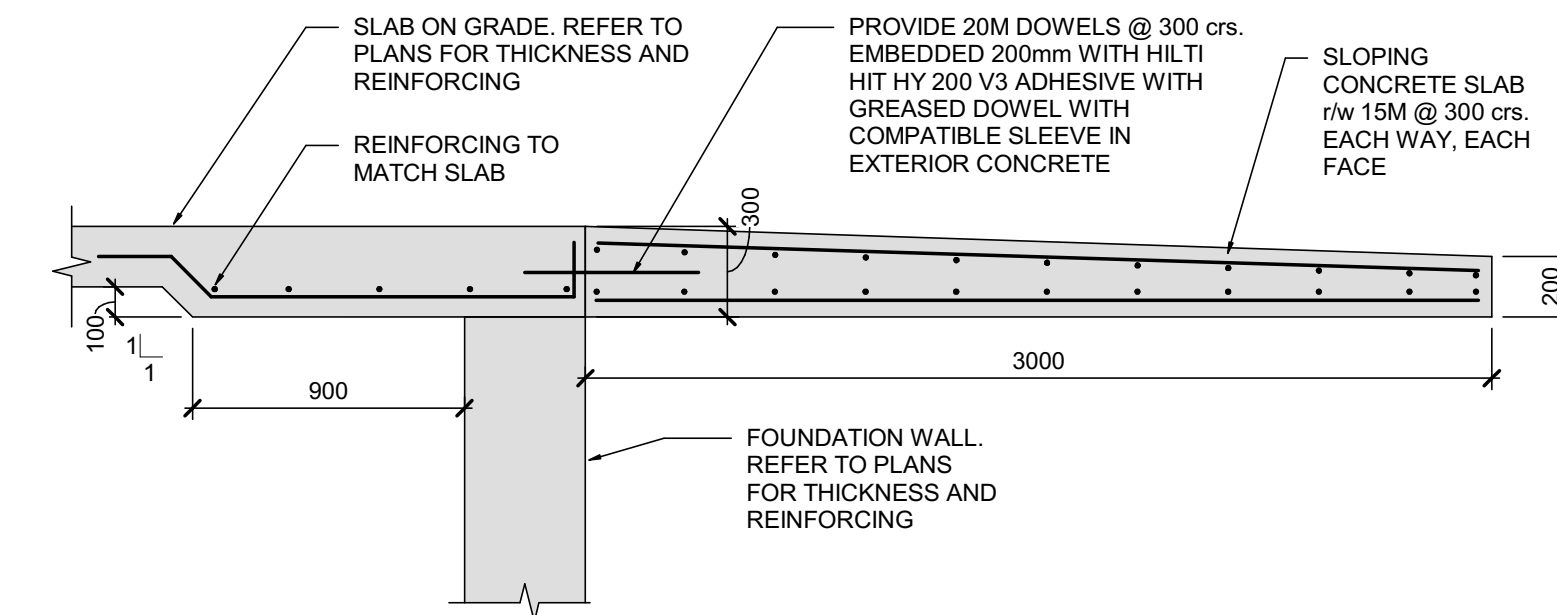


EXTERIOR CONCRETE SLAB SCHEDULE (UNLESS NOTED OTHERWISE)		
THICKNESS	REINFORCING	LOCATION
125	10M @ 200 CRS. EACH WAY, MID-DEPTH	EXTERIOR DOORS AND STAIRS
200	15M @ 200 CRS. EACH WAY, 60mm BELOW TOP SURFACE	EXTERIOR VEHICULAR APRON SLABS

TYPICAL EXTERIOR CONCRETE SLAB DETAIL

2
S006

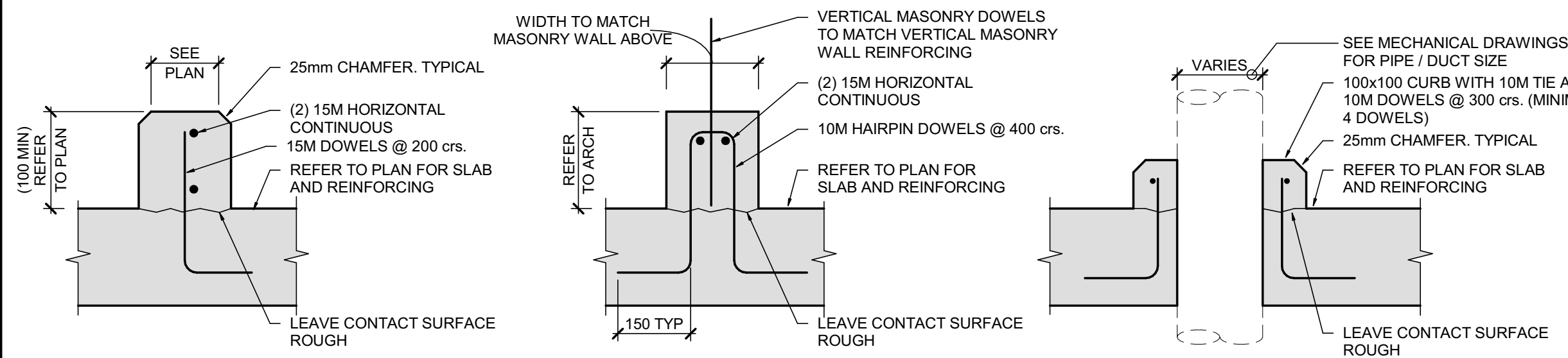
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TYPICAL SECTION AT OVERHEAD DOORS

3
S006

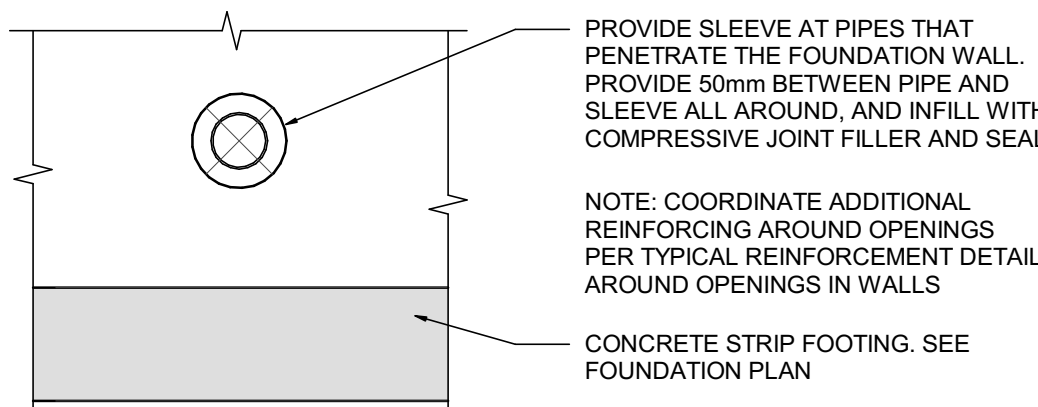
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TYPICAL CONCRETE CURB DETAILS

4
S006

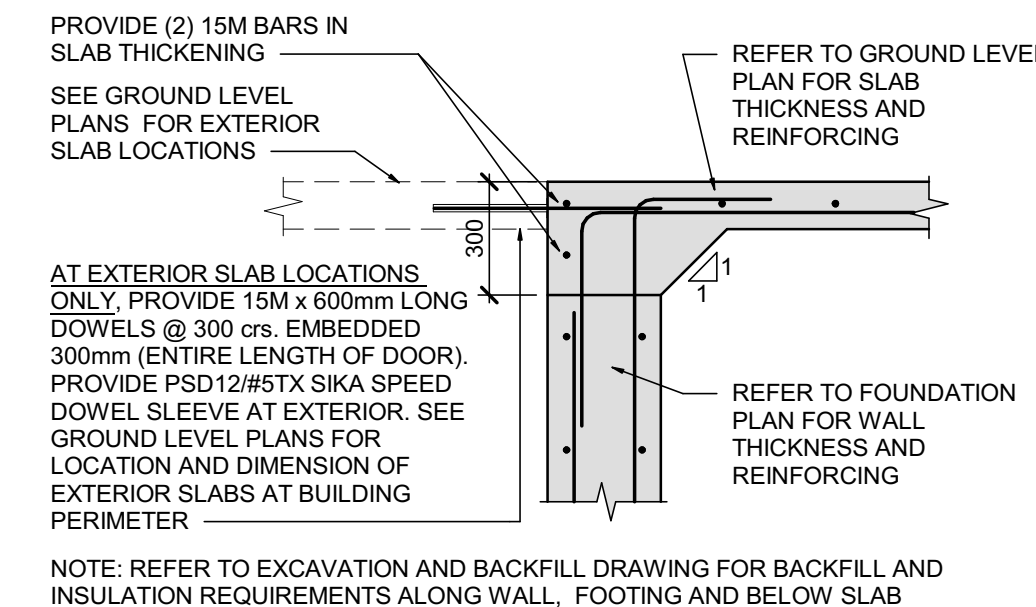
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TYPICAL DETAIL OF UNDERGROUND SERVICE THROUGH FOUNDATION WALL

5
S006

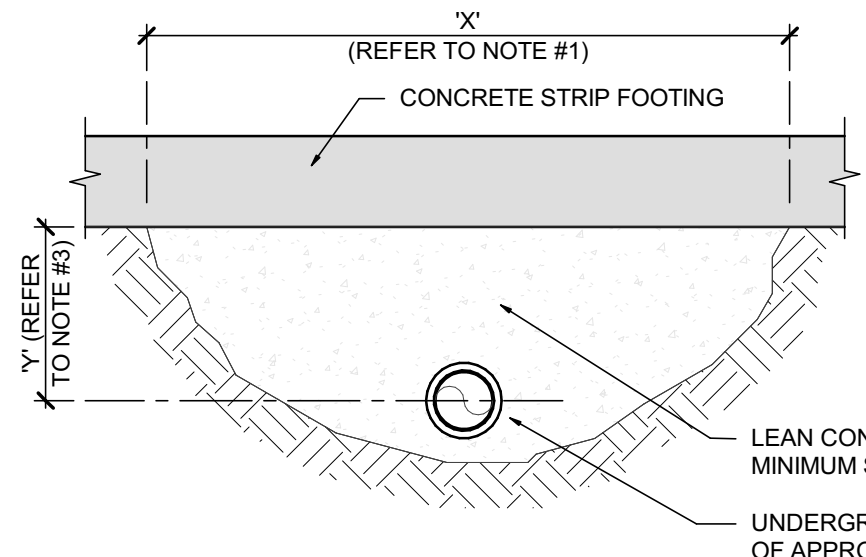
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TYPICAL SLAB DETAIL AT MAN DOORS

12
S006

SCALE : 1 : 20

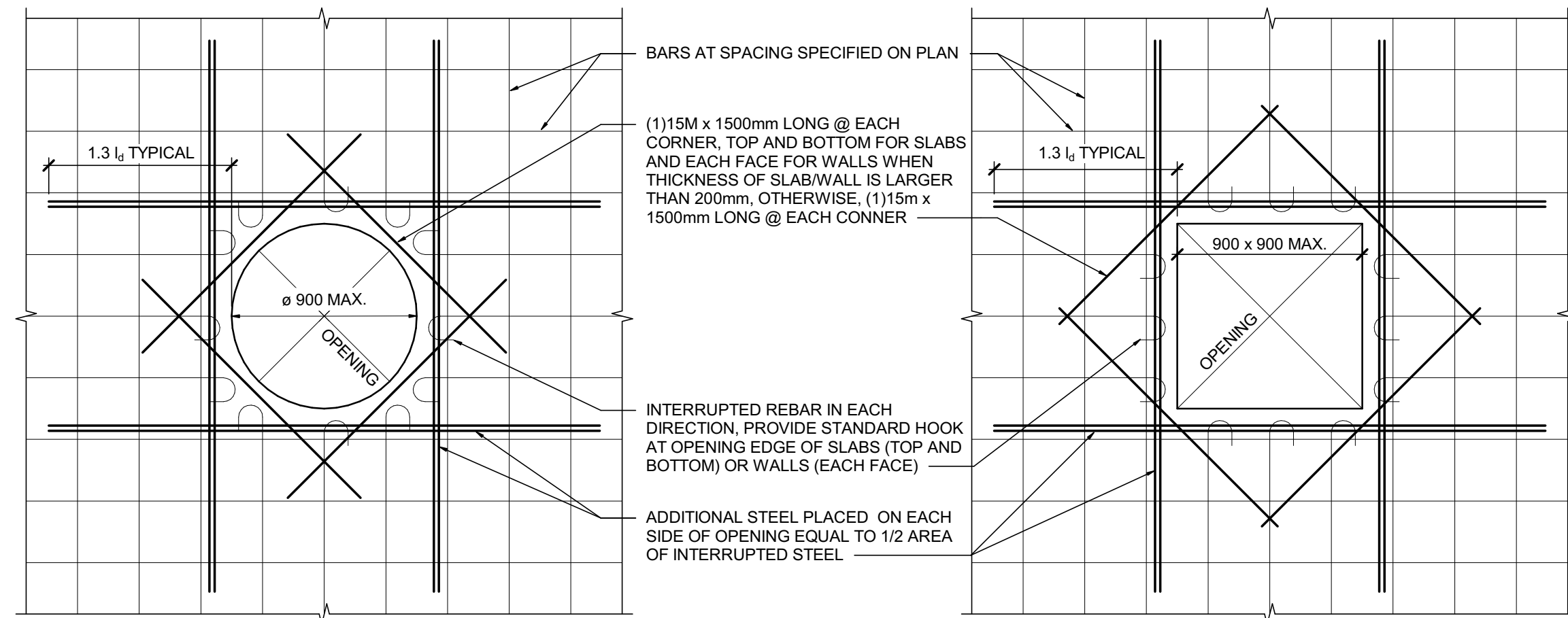


TYPICAL DETAIL OF UNDERGROUND SERVICE UNDER STRIP FOOTING

6
S006

SCALE : 1 : 25

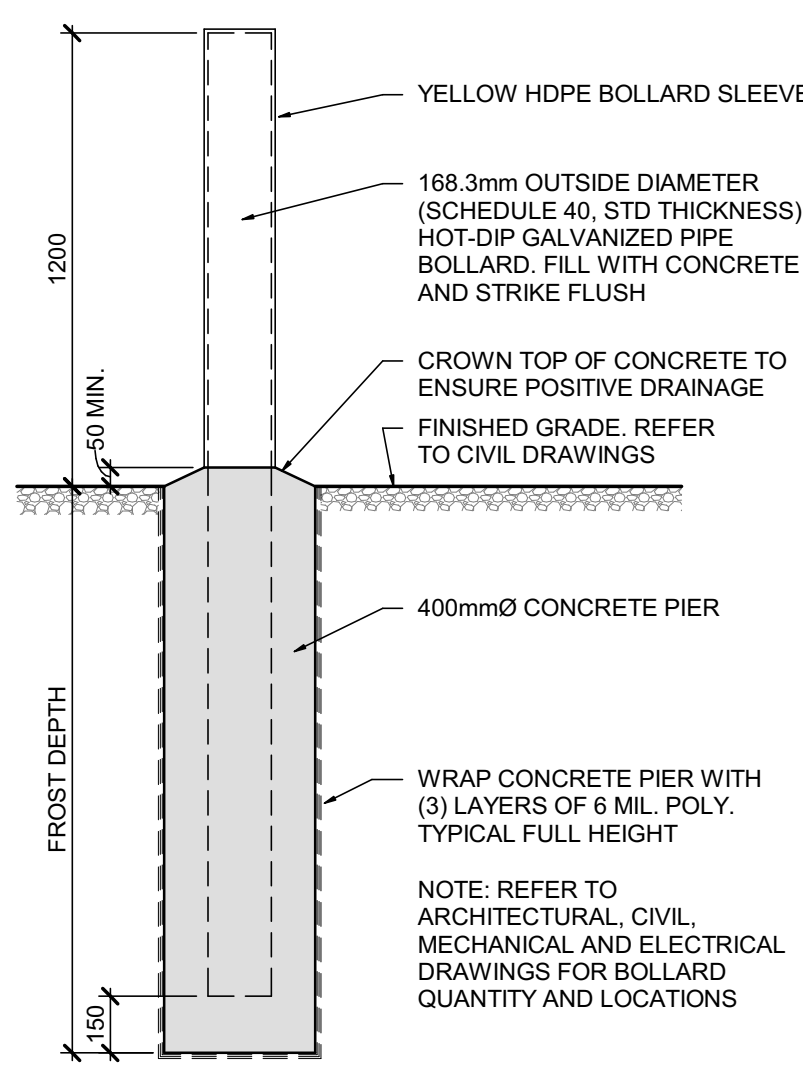
- NOTES:
- IF WIDTH OF EXCAVATION ("X") FOR SERVICE BELOW CONCRETE STRIP FOOTING EXCEEDS 1800, STEP FOOTING SO STRIP FOOTING PASSES BELOW SERVICE. (REFER TO TYPICAL STEP FOOTING DETAIL) INFORM STRUCTURAL CONSULTANT ABOUT UNDERGROUND SERVICES WHICH PASS BELOW CONCRETE STRIP FOOTINGS.
 - PLACING SERVICES BELOW CONCRETE PAD FOOTINGS IS NOT ACCEPTABLE, RELOCATED SERVICE TO AVOID CONFLICT WITH PAD FOOTINGS OR LOWER PAD FOOTING BELOW SERVICE.
 - COMPLETELY FILL EXCAVATION FOR SERVICE WITH LEAN CONCRETE. FILL TO UNDERSIDE OF STRIP FOOTING. EXTEND LEAN CONCRETE A DIMENSIONS "Y" IN PLAN EACH SIDE OF STRIP FOOTING.



TYPICAL DETAIL FOR OPENINGS UP TO 900mm IN WALLS AND SUSPENDED SLABS

7
S006

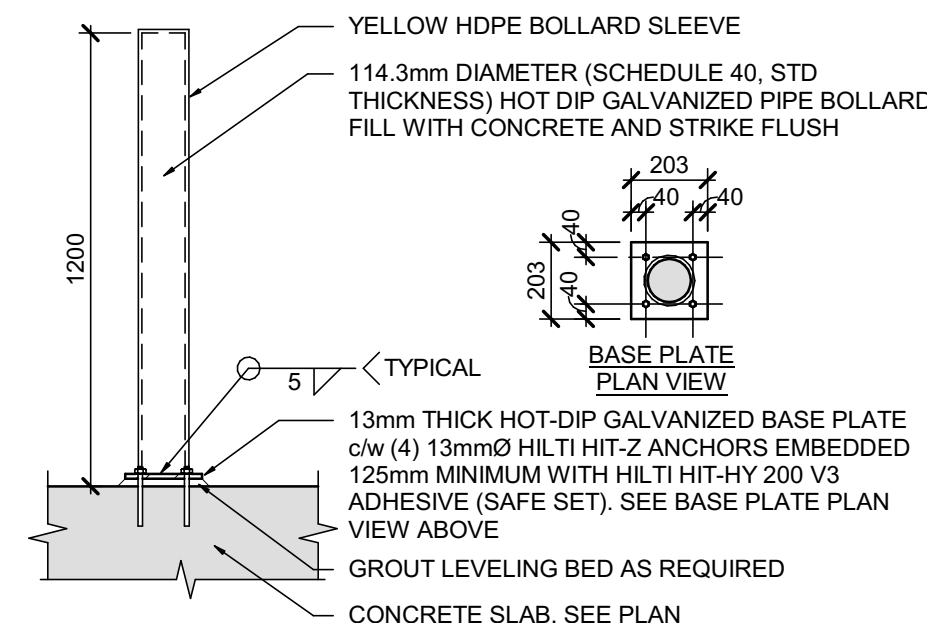
SCALE : 1 : 25



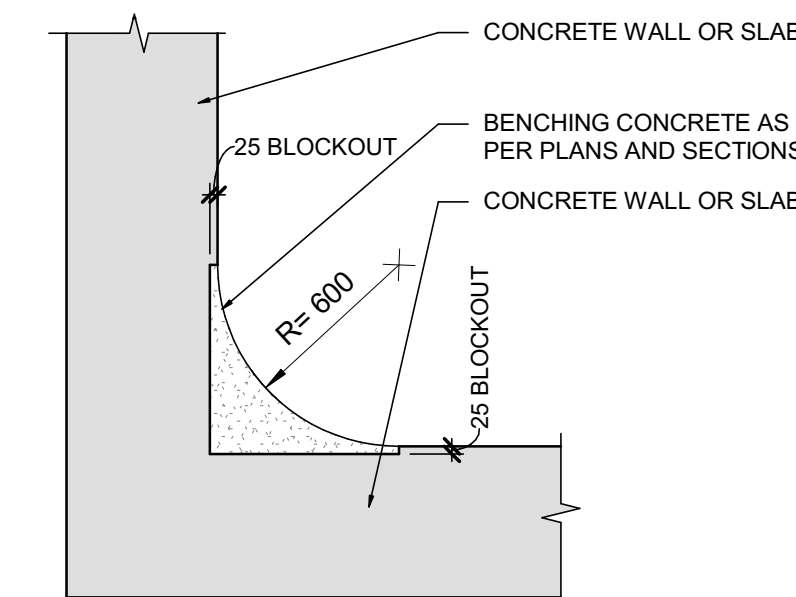
TYPICAL BOLLARD DETAILS

8
S006

SCALE : 1 : 20



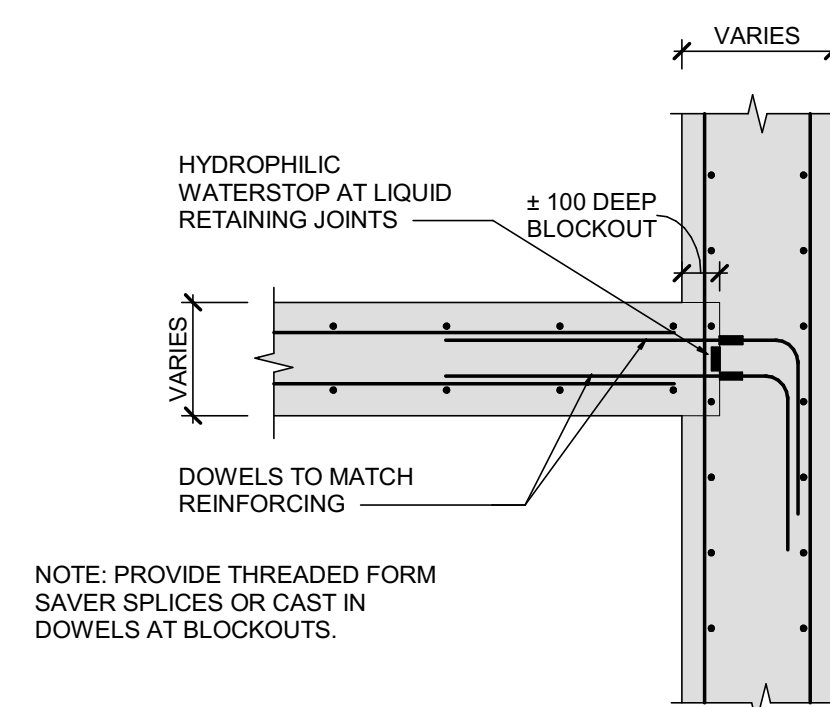
TYPICAL SURFACE-MOUNT BOLLARD



TYPICAL CONCRETE BENCHING CORNER DETAIL

9
S006

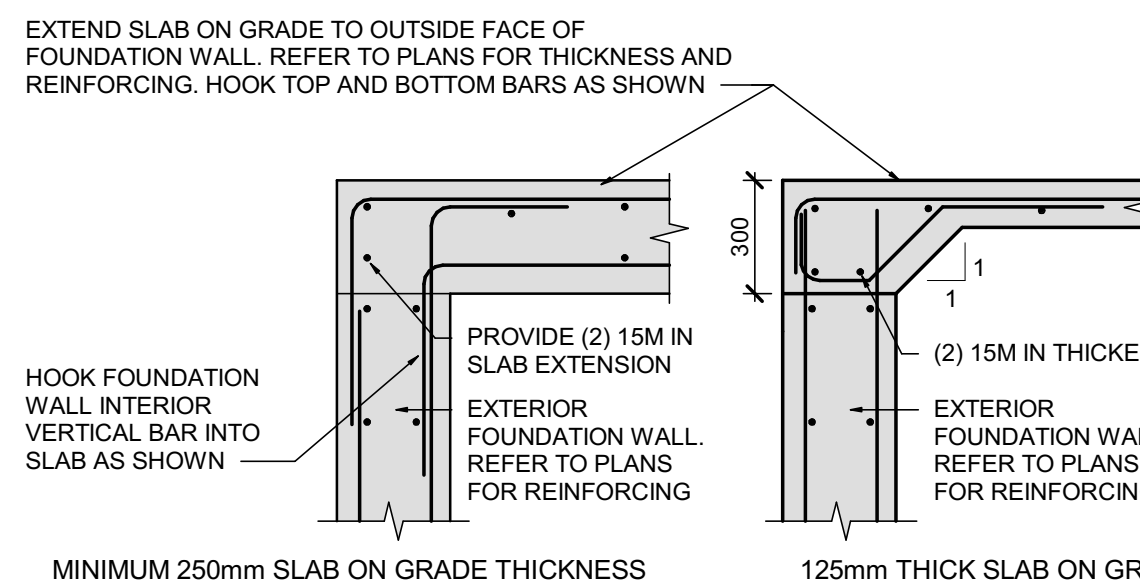
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TYPICAL BLOCK-OUT CONSTRUCTION DETAIL

10
S006

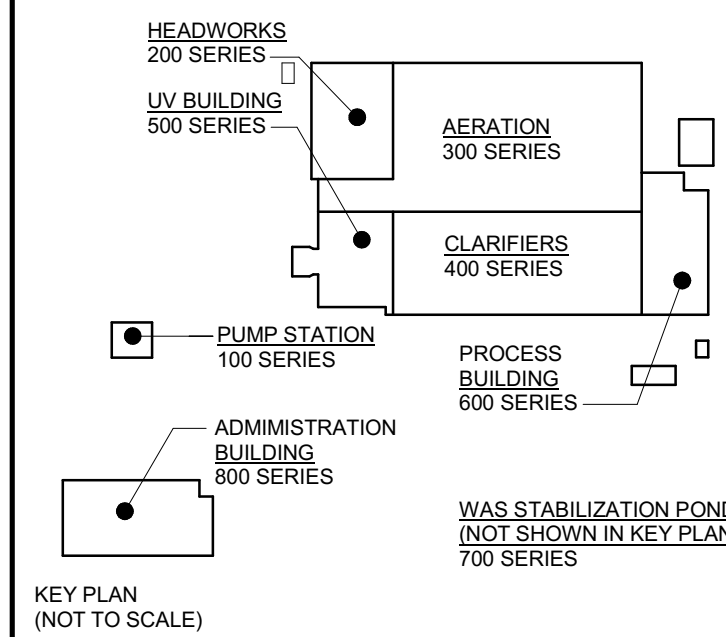
SCALE : 1 : 20



TYPICAL SLAB DEPRESSION DETAIL AT DOORS

11
S006

SCALE : 1 : 20



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0	ISSUED FOR TENDER	25/04/25
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SCALE: As indicated

CLIENT:



CONSULTANT:



CONSULTANT:

PROFESSIONAL STAMP



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

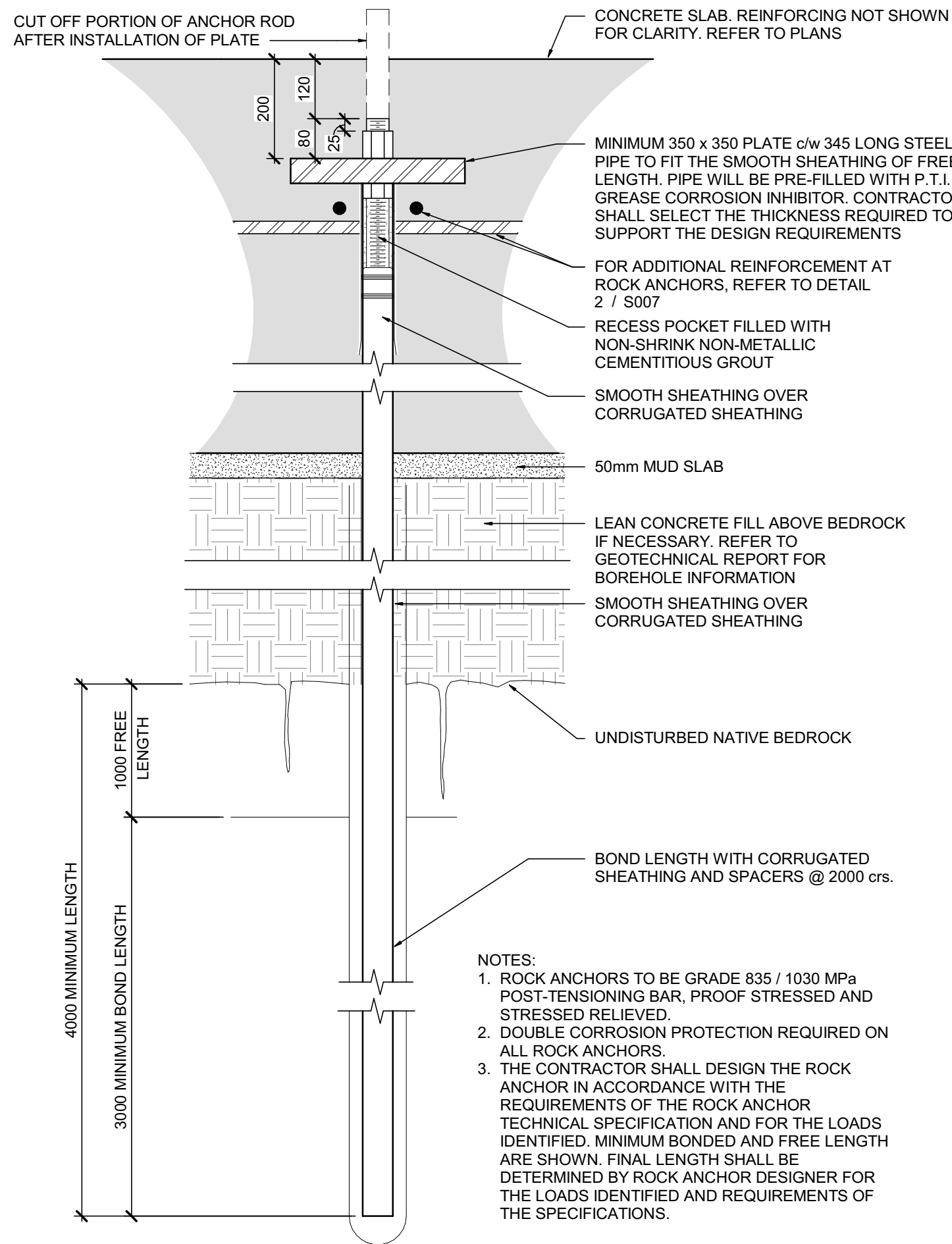
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

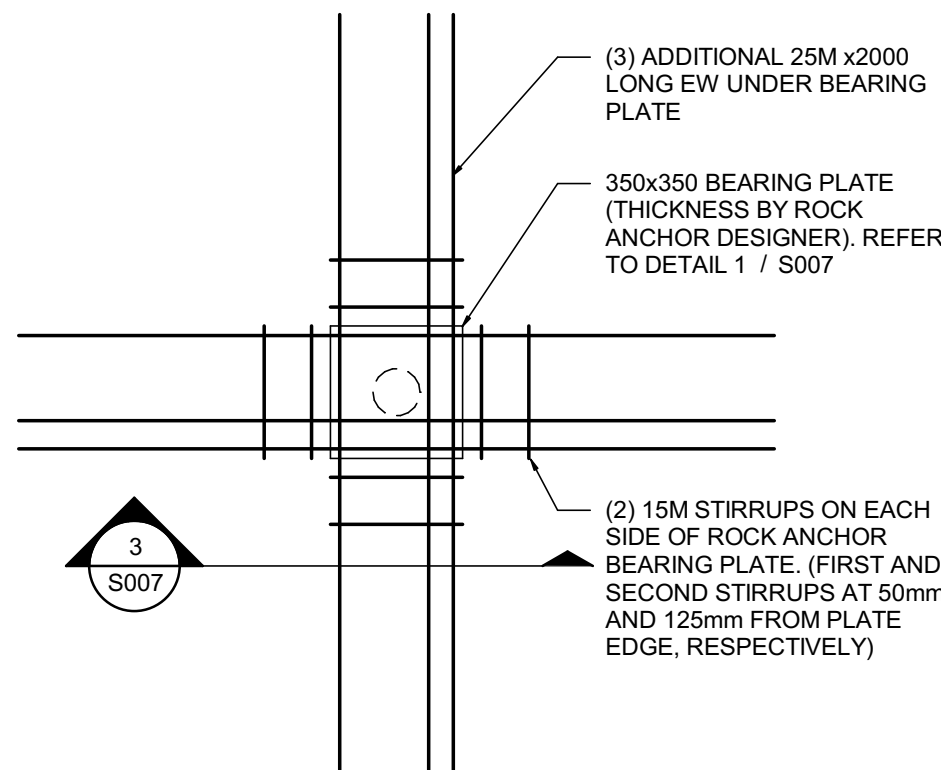
STRUCTURAL SITE-WIDE
TYPICAL DETAILS

DESIGN: CWD	DRAWING #:
DRAWN: JIC	
CHECKED: JMO	
JLR #:	32296

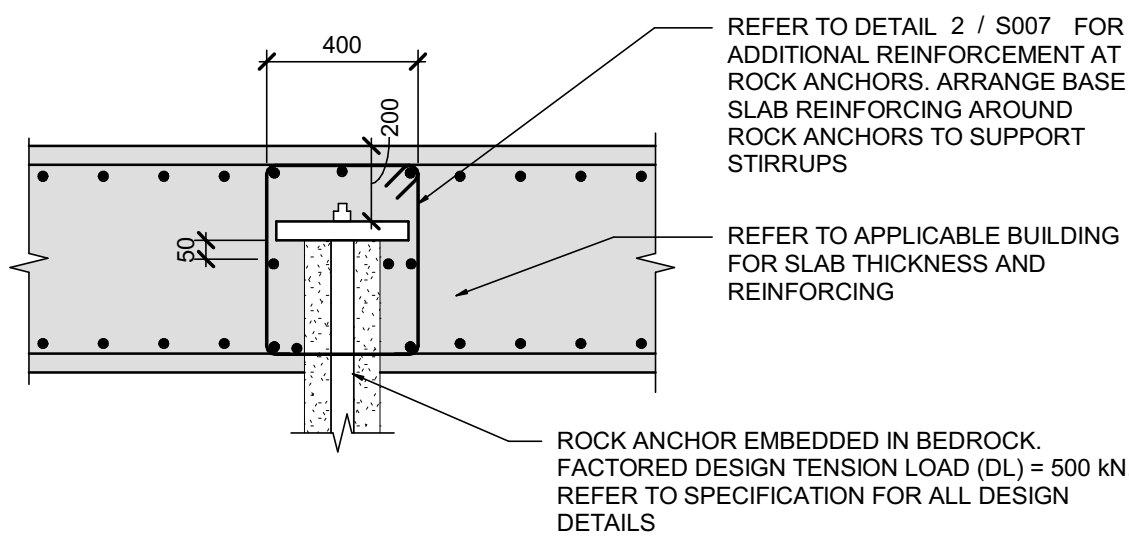
S006



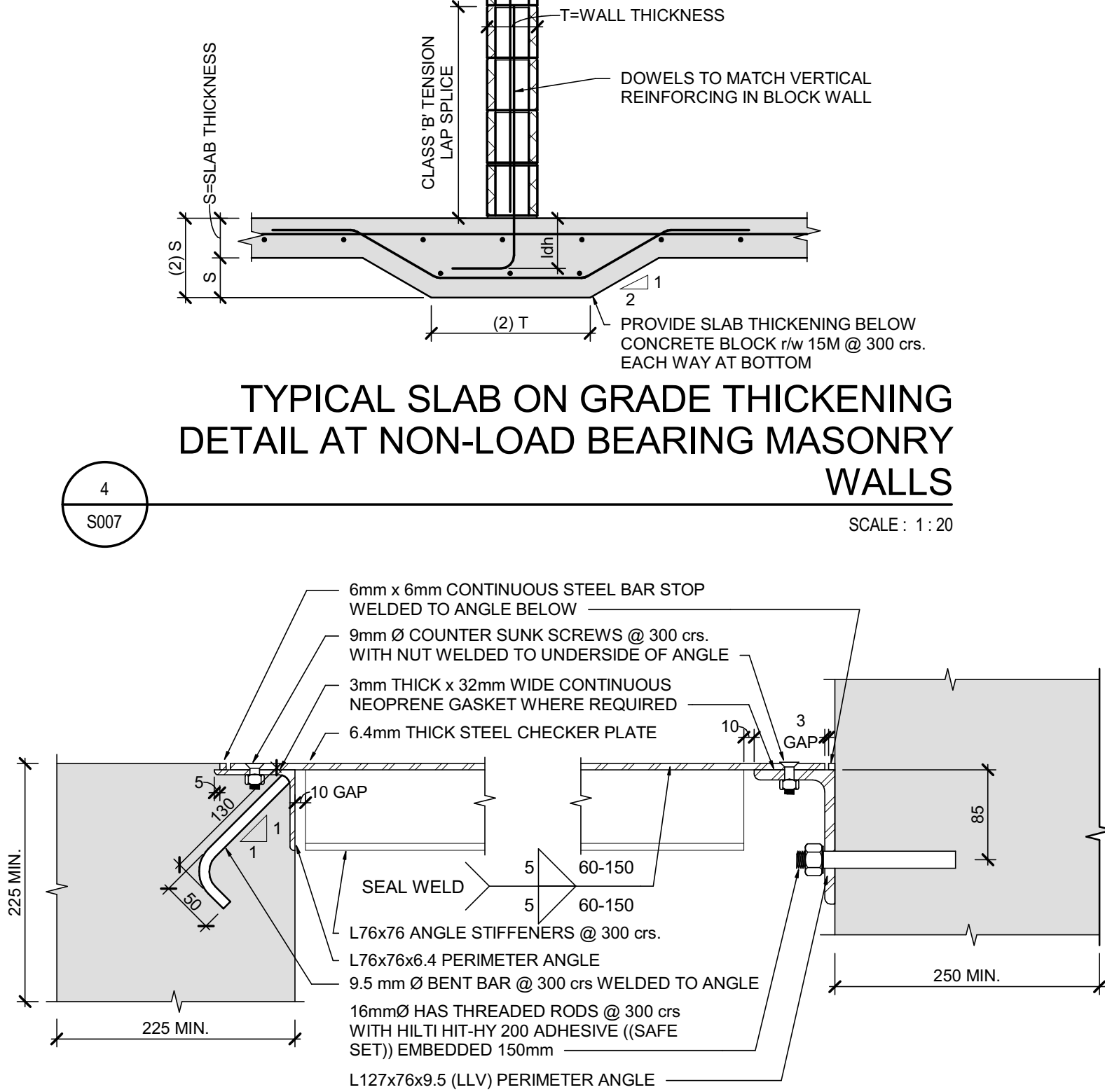
TYPICAL ROCK ANCHOR DETAIL
SCALE : 1 : 10



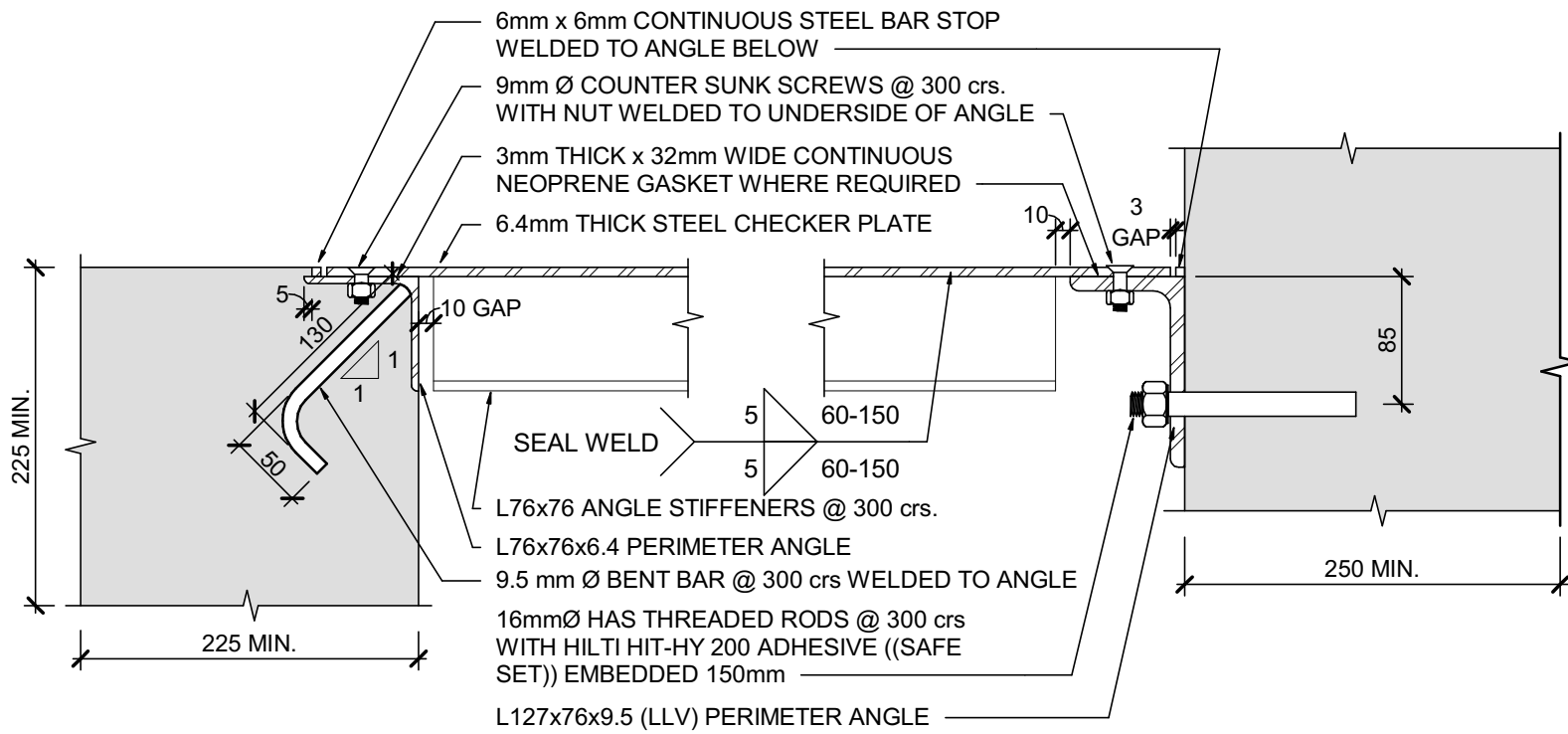
TYPICAL ROCK ANCHOR PLAN DETAIL
SCALE : 1 : 20



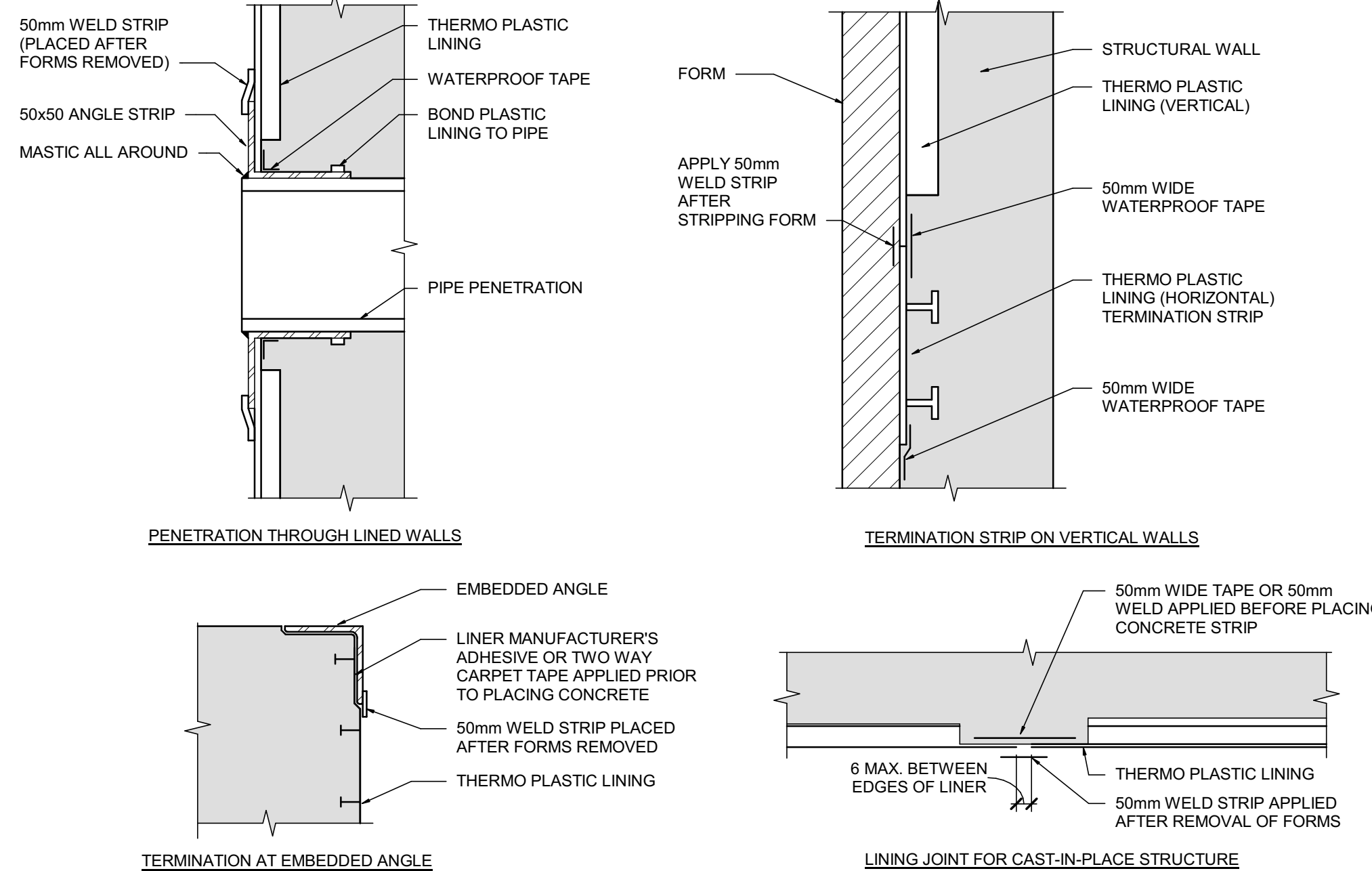
TYPICAL ROCK ANCHOR SECTION
SCALE : 1 : 20



TYPICAL SLAB ON GRADE THICKENING DETAIL AT NON-LOAD BEARING MASONRY WALLS
SCALE : 1 : 20

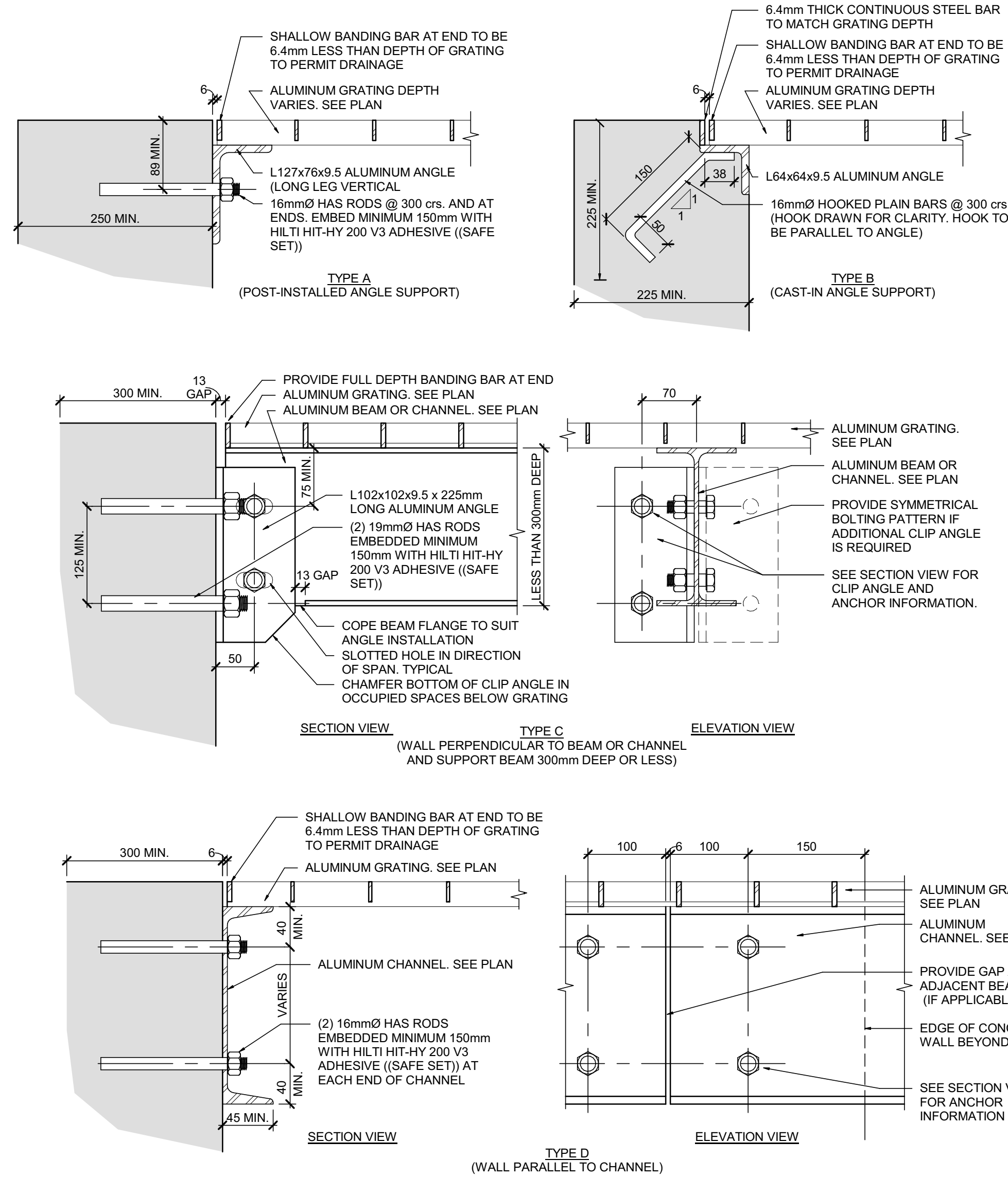


TYPICAL CHECKERED PLATE ANCHORAGE DETAILS
SCALE : 1 : 5



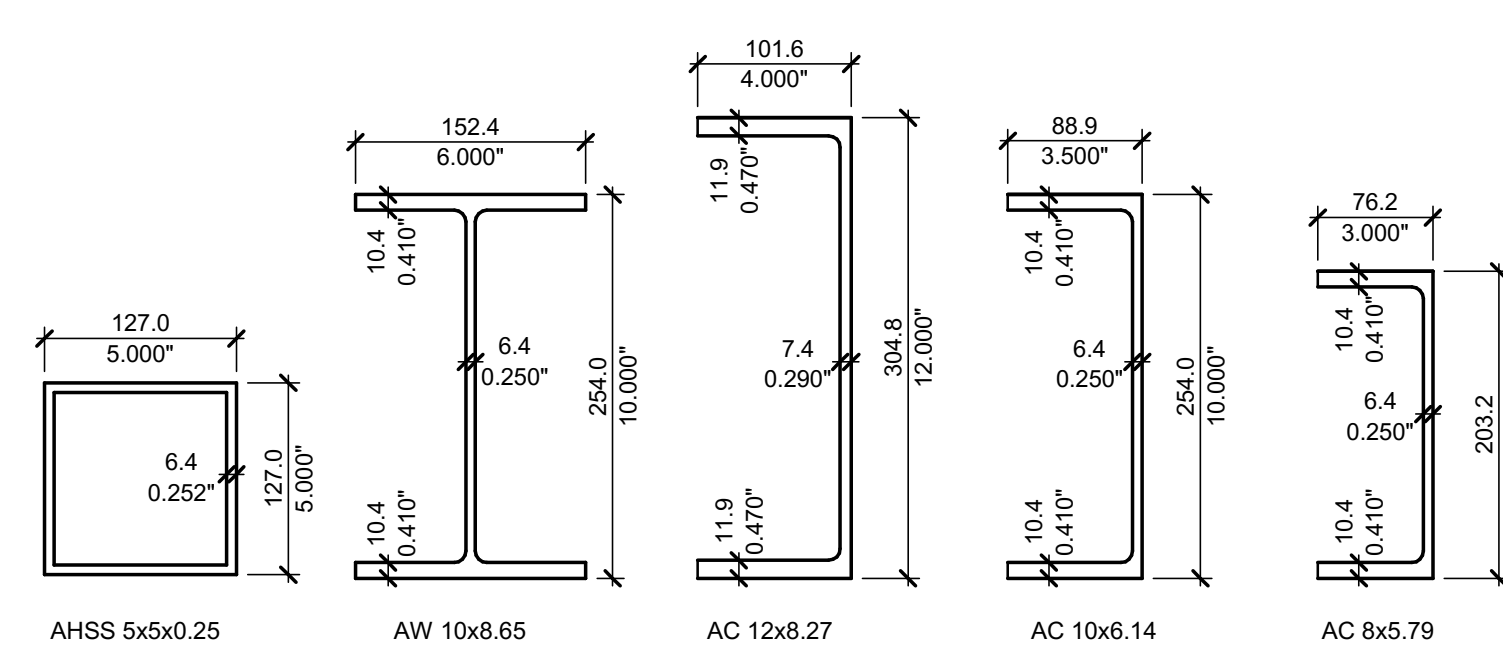
NOTE: DETAILS SHOW INTENT OF REQUIREMENTS. MANUFACTURERS DETAILS TO BE SUBMITTED FOR REVIEW IN ACCORDANCE WITH SPECIFICATIONS.

TYPICAL THERMOPLASTIC LINING DETAILS
SCALE : 1 : 10



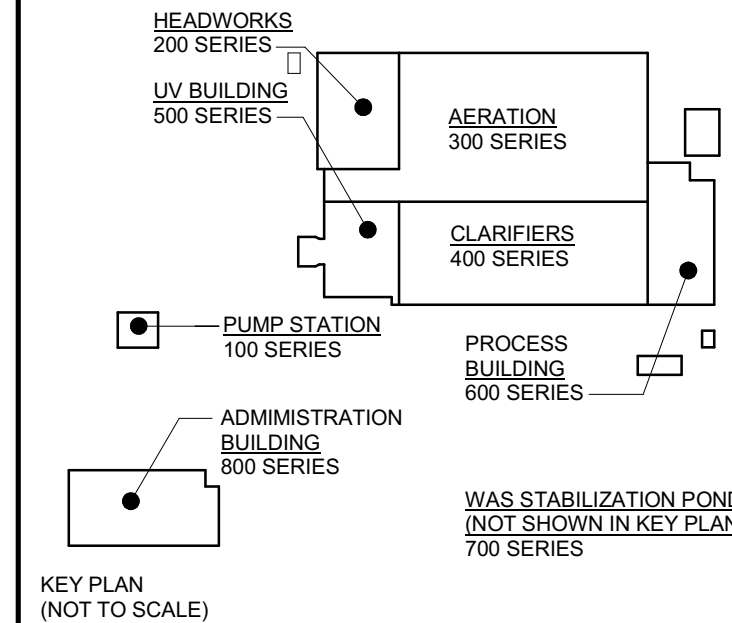
NOTES:
1. FOR ALL TRENCH GRATING AND AT ALL CUTOUTS AND OPENINGS, BEARING BARS AT ENDS OF EACH GRATING PANEL SHALL HAVE BANDING BARS. BANDING BARS TO BE EQUAL IN DEPTH TO THE BEARING BARS AT CUTOUTS AND OPENINGS AND 6.4mm LESS THAN DEPTH OF GRATING AT TRENCHES TO ALLOW FOR DRAINAGE. CONNECT TRIM BANDING AS PER NAAMM MBG DETAILS, UNLESS NOTED OTHERWISE ON THE PROJECT DRAWINGS. LOAD BANDINGS TO BE AS DETAILED AND SPECIFIED ON THE PROJECT DRAWINGS.
2. WELD GRATING TO SUPPORT STEEL IN ACCORDANCE WITH THE AMERICAN NATIONAL STANDARD METAL BAR GRATING MANUAL ANSIAAAMM MBG S31.
3. FASTEN REMOVABLE GRATING TO SUPPORTING STEEL WITH THE CLIP ASSEMBLY CONSISTING OF A TOP SADDLE CLIP, LOWER CLAMP AND 7.9 mm (5/16") DIAMETER BOLT AND NUT.
4. SERRATED GRATING SHALL BE USED IN SLIPPERY AREAS, RAMPS AND AT ALL EXTERIOR PLATFORMS AND STAIRS.
5. NO OVERHANG OR CANTILEVERING BEARING BARS ARE ALLOWED UNLESS THEY ARE SPECIFIED ON THE PROJECT DRAWINGS.
6. GRATING SECTIONS NOT TO EXCEED 22 kg IN WEIGHT OR AS SHOWN ON DRAWINGS.

TYPICAL ALUMINUM GRATING ANCHORAGE DETAILS
SCALE : 1 : 5



NOTES:
1. ALUMINUM FRAMING TO BE DISCONTINUOUS OVER SUPPORTS (SIMPLY SUPPORTED) UNLESS SPECIFICALLY NOTED OTHERWISE.
2. ALUMINUM BEAMS TO HAVE HORIZONTAL SLOTTED CONNECTIONS OVER EXPANSION JOINTS.
3. PROVIDE ONLY BOLTED CONNECTION TO ALUMINUM BEAMS, UNLESS AGREED TO BY THE CONSULTANT.
4. ALUMINUM MEMBERS BASED ON STANDARD CANADIAN MEMBER SIZE SHOWN ABOVE (FY=240MPa).
5. REFER TO STANDARD DETAILS FOR CONNECTION OF ALUMINUM GRATING SUPPORT FRAMING AT CONCRETE WALLS.
6. WHERE ALUMINUM CHANNELS ARE FACE MOUNTED TO CONCRETE, CHANNELS SHALL BE EXTENDED A MINIMUM OF 300mm FROM EDGE OF CLEAR SPAN, UNLESS NOTED OTHERWISE.

TYPICAL ALUMINUM BEAM AND POST PROPERTIES
SCALE : 1 : 5



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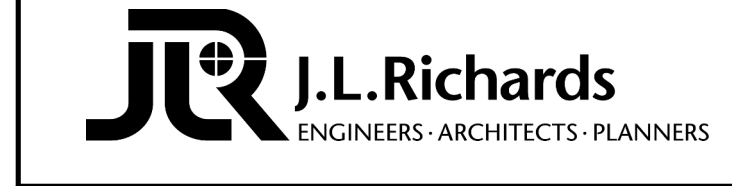
VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm

SCALE: As indicated

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

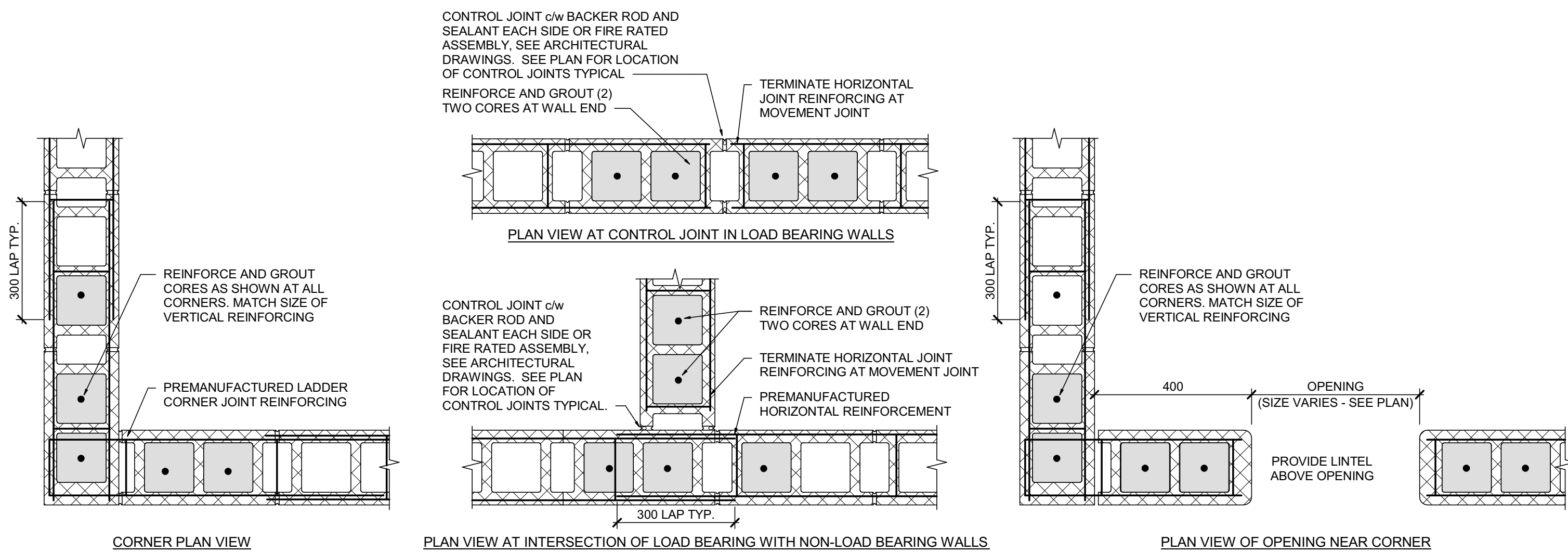
STRUCTURAL SITE-WIDE

TYPICAL DETAILS

DESIGN: CWD
DRAWN: JIC
CHECKED: JMO
JLR #: 32296

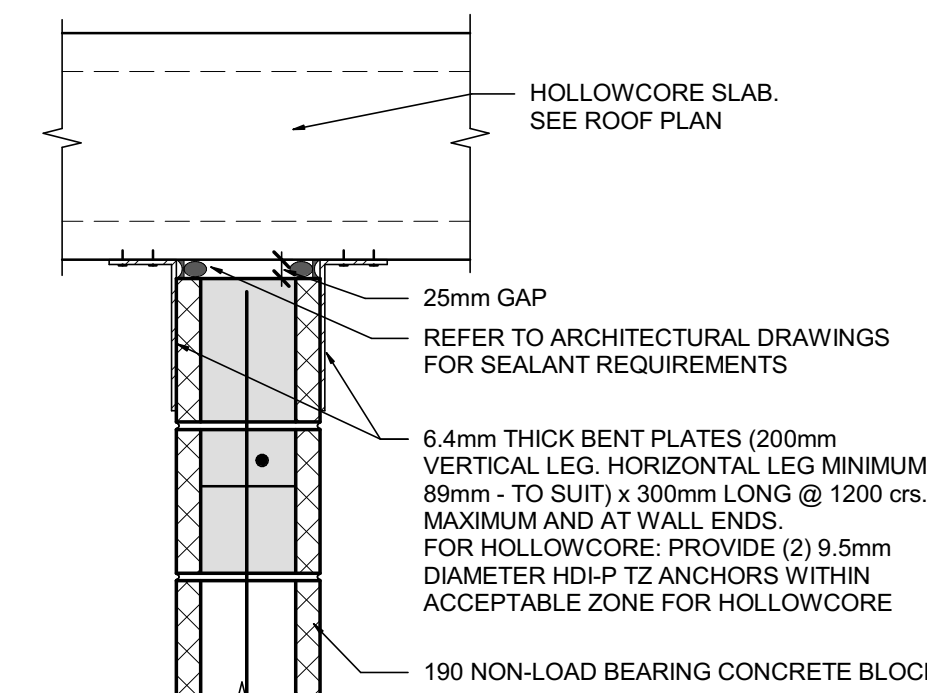
DRAWING #: **S007**

File Location: P:\32000\32296-001 - Brighton WWT System Upgrades\03-Production\03-Struct\32296 S007 Site Wide.vrt
PLOT DATE: 2025-04-23 2:37:21 PM



TYPICAL MASONRY HORIZONTAL REINFORCEMENT DETAILS

SCALE : 1 : 10

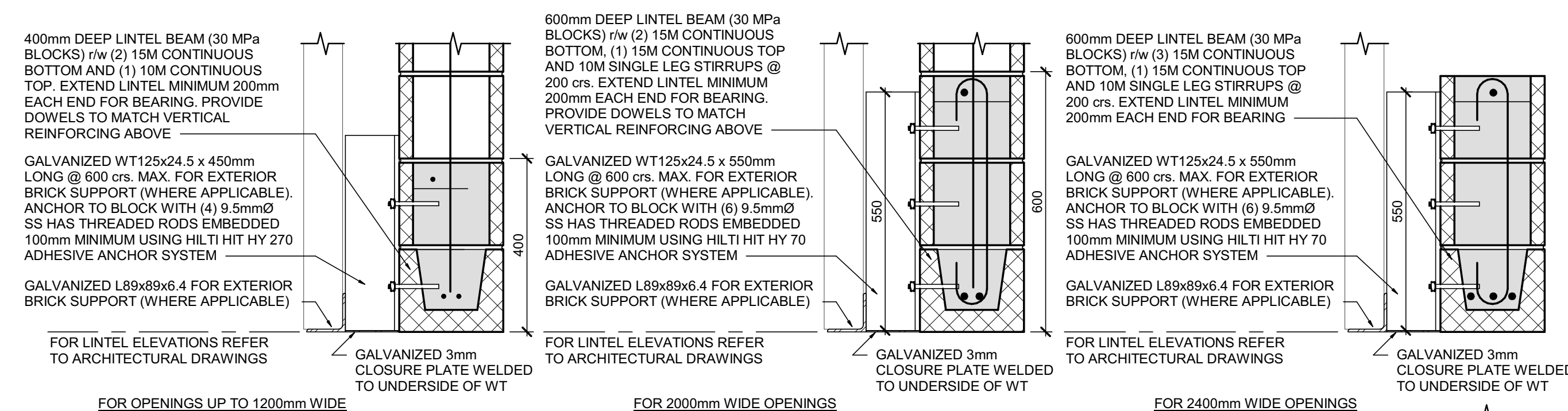


HILTI ANCHOR DESIGN SCHEDULE						
NOMINAL ANCHOR DIAMETER	LENGTH	NOMINAL BIT DIAMETER	ALLOWABLE LOADS lb (kN)		ULTIMATE LOADS lb (kN)	
			TENSION	SHEAR	TENSION	SHEAR
3/8" (9.5mm)	3/4" (19mm)	9/16" (14.3mm)	475 (2.1)	700 (3.1)	1,900 (8.5)	2,800 (12.5)

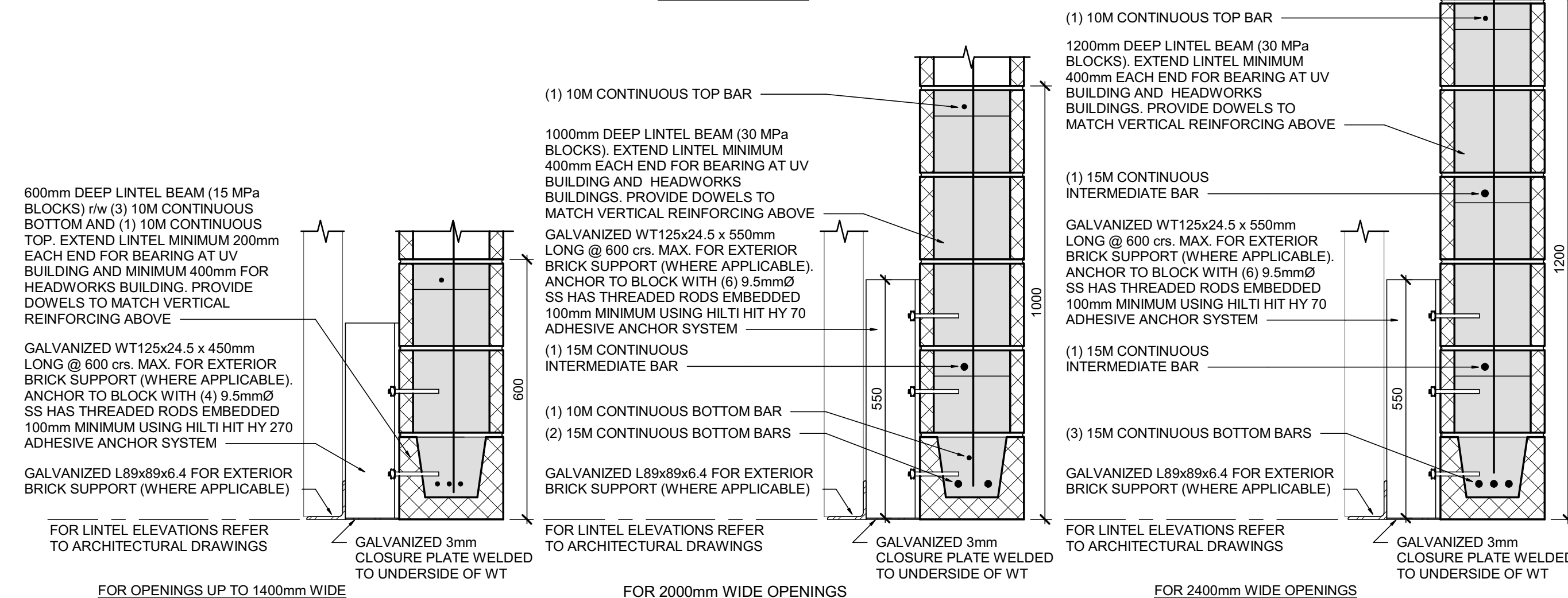
- NOTES:
1. THE ADMISSIBLE ANCHOR LOCATION MUST BE ESTABLISHED TO PREVENT DAMAGE TO THE PRESTRESSED CABLE DURING THE DRILLING PROCESS. VERIFY THE LOCATION AND HEIGHT OF THE CABLE WITH THE HOLLOW CORE PLANK SUPPLIER TO CONFIRM ADMISSIBLE ANCHOR LOCATION.
 2. MINIMUM COMPRESSIVE STRENGTH OF PRESTRESSED CONCRETE IS 7,000 psi. PUBLISHED RESULTS REPRESENT THE AVERAGE RESULTS CONDUCTED IN LOCAL BASE MATERIALS. DUE TO VARIATIONS IN MATERIALS AND DIMENSIONAL CONFIGURATIONS, ON-SITE TESTING IS REQUIRED TO DETERMINE THE ACTUAL PERFORMANCE.
 3. ALLOWABLE LOADS CALCULATED WITH A FACTOR OF SAFETY OF 4.

TYPICAL NON-LOAD BEARING MASONRY WALL SUPPORT DETAIL

SCALE : 1 : 10



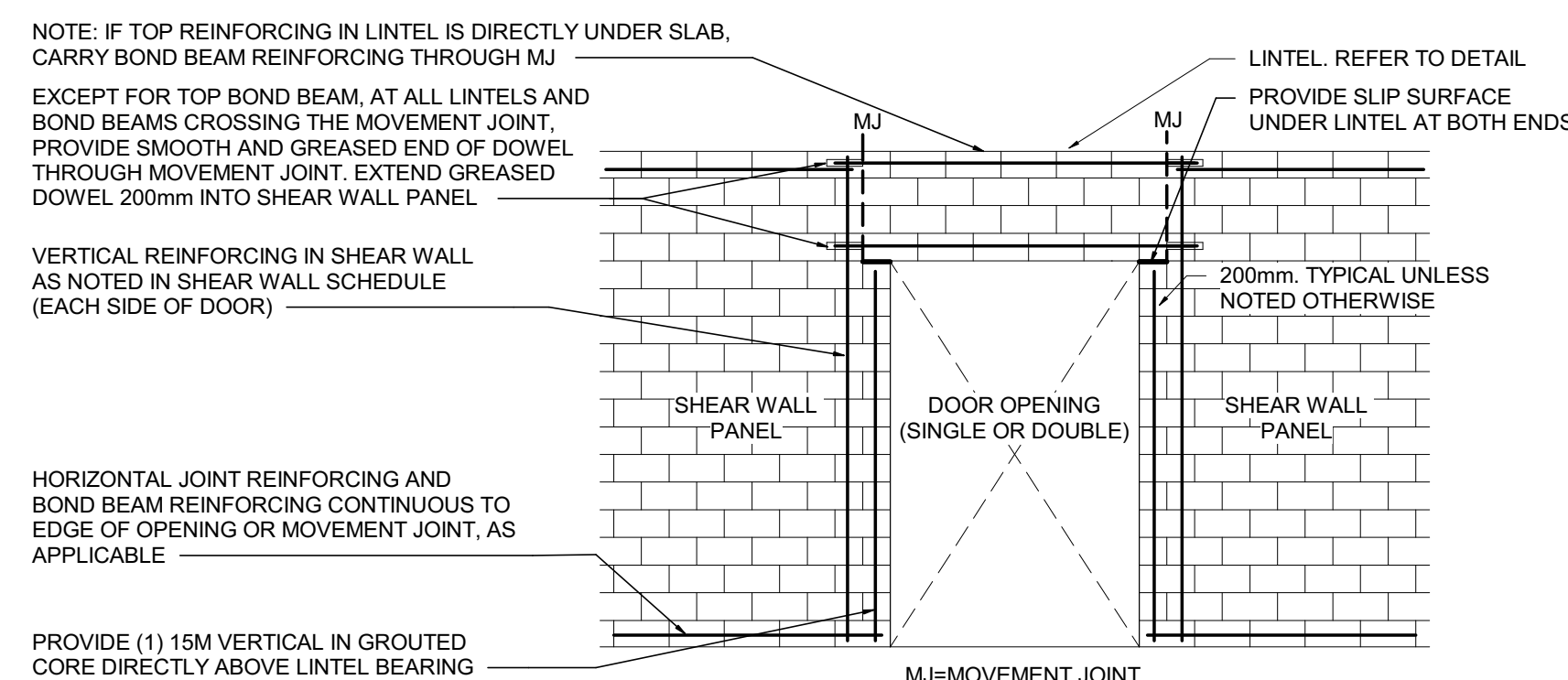
PROCESS BUILDING



HEADWORKS BUILDING AND UV BUILDING

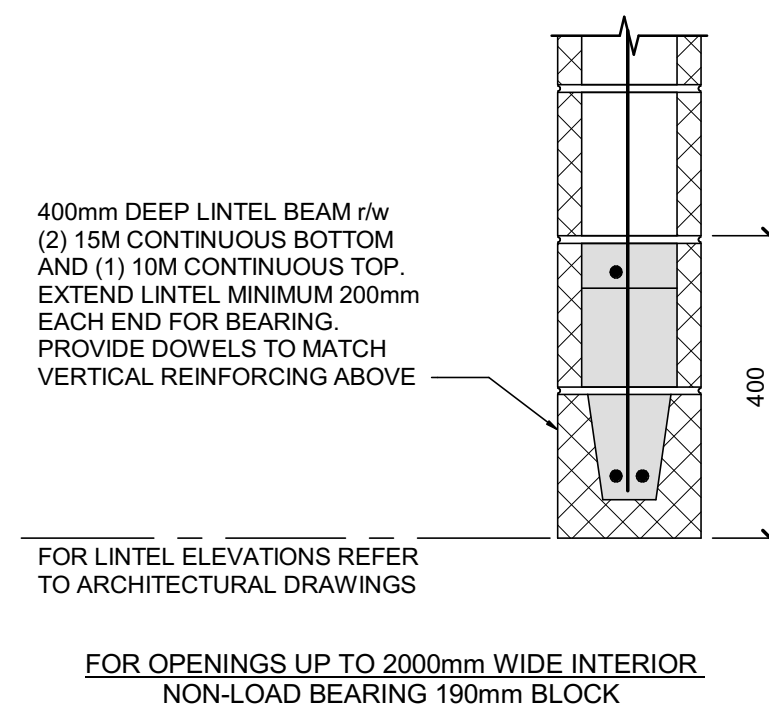
TYPICAL MASONRY LINTEL DETAILS

SCALE : 1 : 10



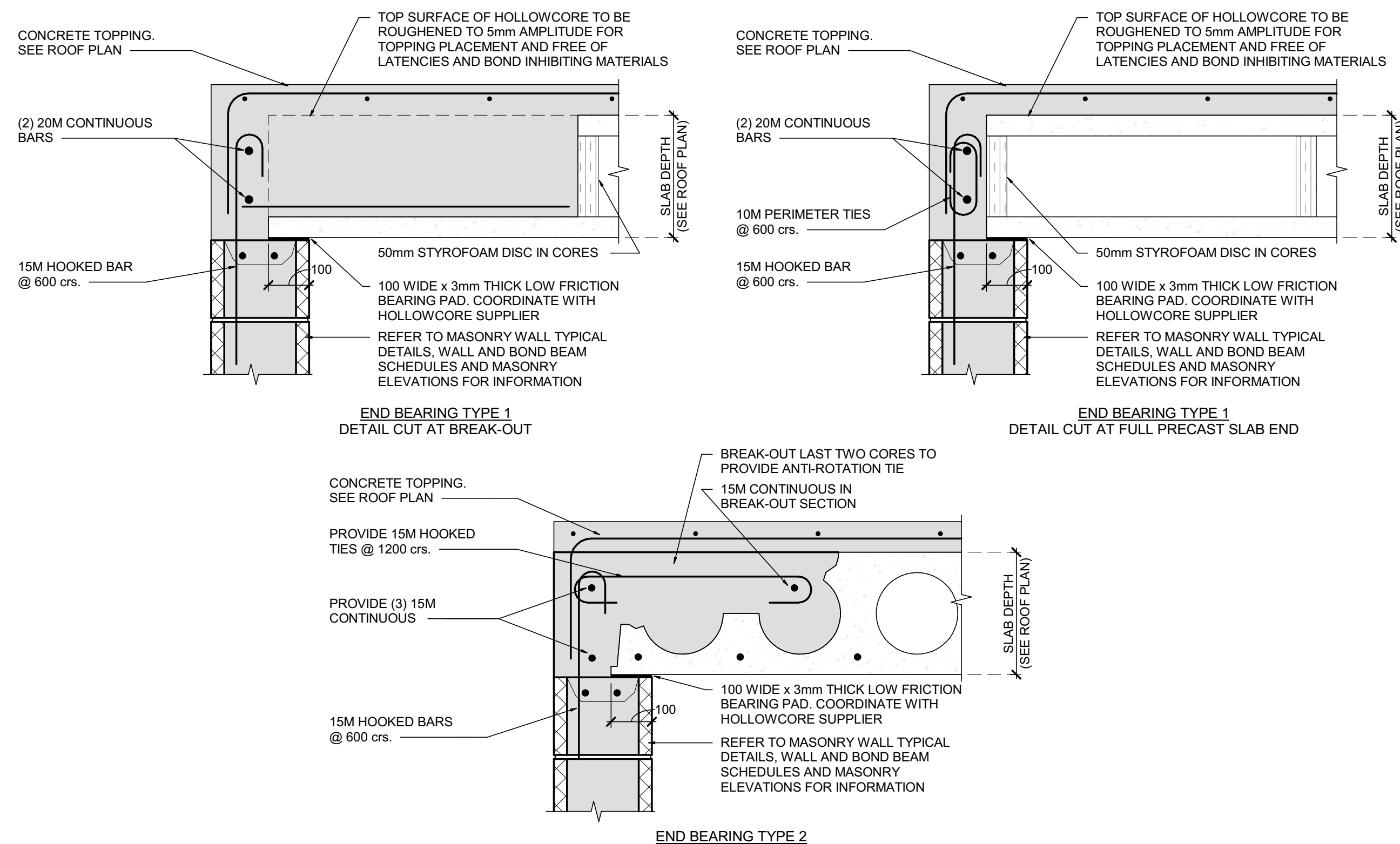
TYPICAL MASONRY LINTEL DETAILS AT DOORS

SCALE : 1 : 50



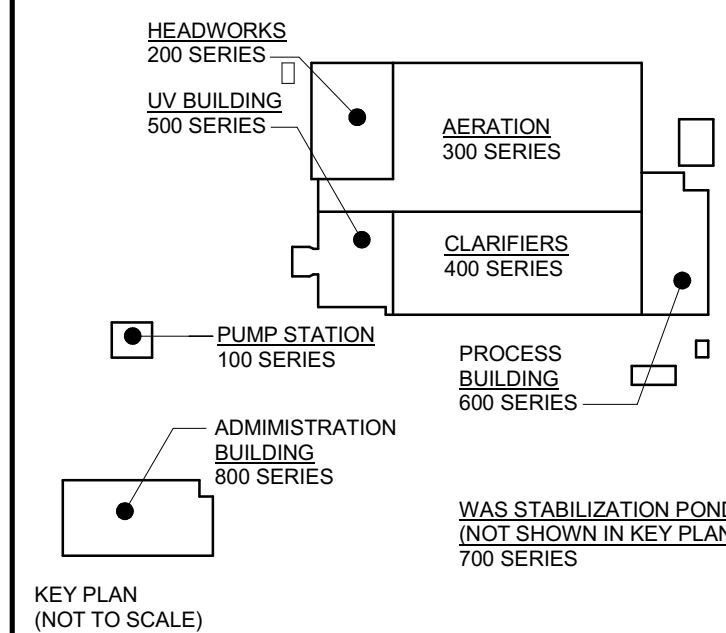
MASONRY LINTEL DETAIL NON-LOADBEARING

SCALE : 1 : 10



TYPICAL HOLLOWCORE PRECAST SLAB DETAILS

SCALE : 1 : 10



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SCALE: As indicated		
CLIENT:		
CONSULTANT:		
CONSULTANT:		
PROFESSIONAL STAMP		
PROJECT NORTH		
PROJECT:		
DRAWING:		
DESIGN:		
DRAWN:		
CHECKED:		
JLR #:		

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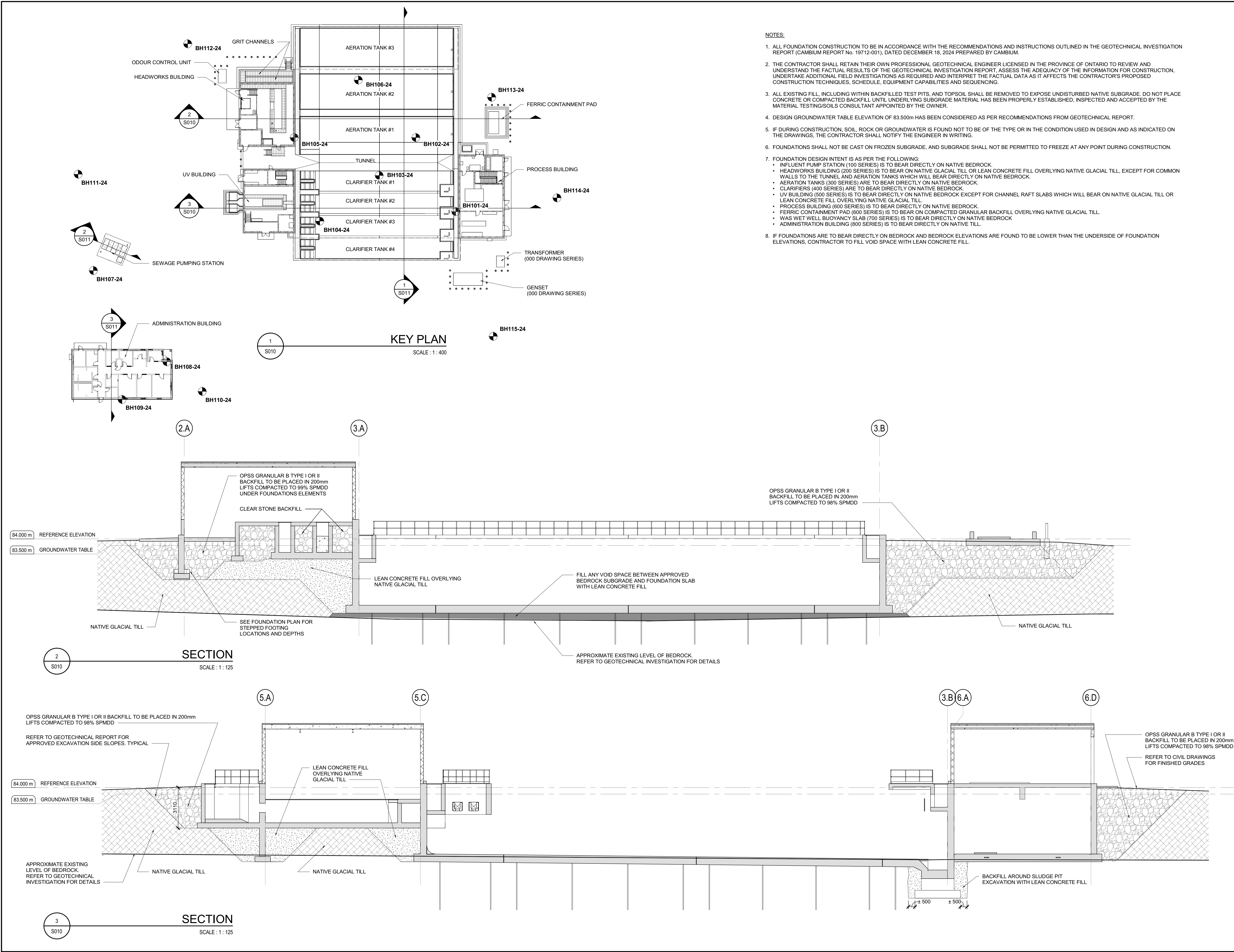
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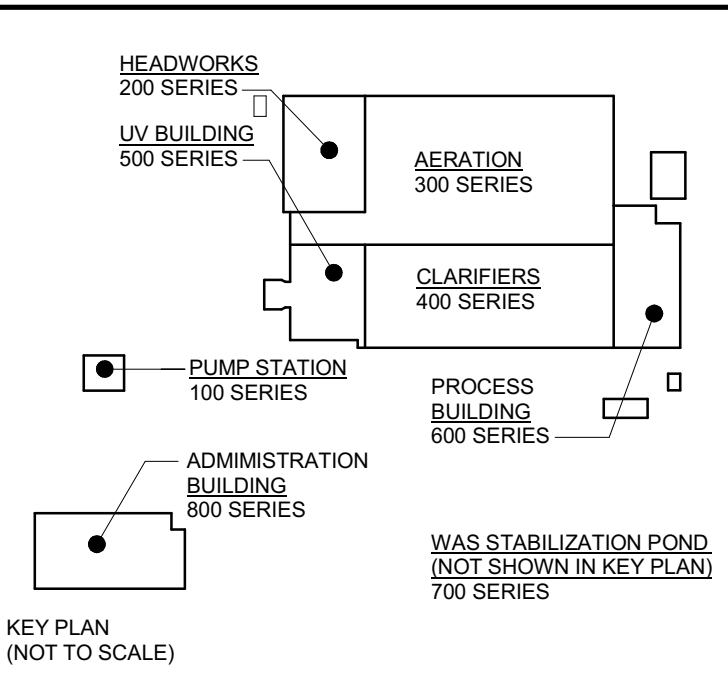
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File Location: P:\32000\32266-001 - Brighton WWT System Upgrades\03-Production\03-Struct\32266 S008 Site Wide.vit



- NOTES:
1. ALL FOUNDATION CONSTRUCTION TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS AND INSTRUCTIONS OUTLINED IN THE GEOTECHNICAL INVESTIGATION REPORT (CAMBIUM REPORT No. 19712-001), DATED DECEMBER 18, 2024 PREPARED BY CAMBIUM.
 2. THE CONTRACTOR SHALL RETAIN THEIR OWN PROFESSIONAL GEOTECHNICAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO TO REVIEW AND UNDERSTAND THE FACTUAL RESULTS OF THE GEOTECHNICAL INVESTIGATION REPORT, ASSESS THE ADEQUACY OF THE INFORMATION FOR CONSTRUCTION, UNDERTAKE ADDITIONAL FIELD INVESTIGATIONS AS REQUIRED AND INTERPRET THE FACTUAL DATA AS IT AFFECTS THE CONTRACTOR'S PROPOSED CONSTRUCTION TECHNIQUES, SCHEDULE, EQUIPMENT CAPABILITIES AND SEQUENCING.
 3. ALL EXISTING FILL, INCLUDING WITHIN BACKFILLED TEST PITS, AND TOPSOIL SHALL BE REMOVED TO EXPOSE UNDISTURBED NATIVE SUBGRADE. DO NOT PLACE CONCRETE OR COMPACTED BACKFILL UNTIL UNDERLYING SUBGRADE MATERIAL HAS BEEN PROPERLY ESTABLISHED, INSPECTED AND ACCEPTED BY THE MATERIAL TESTING/SOILS CONSULTANT APPOINTED BY THE OWNER.
 4. DESIGN GROUNDWATER TABLE ELEVATION OF 83.500m HAS BEEN CONSIDERED AS PER RECOMMENDATIONS FROM GEOTECHNICAL REPORT.
 5. IF DURING CONSTRUCTION, SOIL, ROCK OR GROUNDWATER IS FOUND NOT TO BE OF THE TYPE OR IN THE CONDITION USED IN DESIGN AND AS INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING.
 6. FOUNDATIONS SHALL NOT BE CAST ON FROZEN SUBGRADE, AND SUBGRADE SHALL NOT BE PERMITTED TO FREEZE AT ANY POINT DURING CONSTRUCTION.
 7. FOUNDATION DESIGN INTENT IS AS PER THE FOLLOWING:
 - INFLUENT PUMP STATION (100 SERIES) IS TO BEAR DIRECTLY ON NATIVE BEDROCK.
 - HEADWORKS BUILDING (200 SERIES) IS TO BEAR ON NATIVE GLACIAL TILL OR LEAN CONCRETE FILL OVERLYING NATIVE GLACIAL TILL, EXCEPT FOR COMMON WALLS TO THE TUNNEL AND AERATION TANKS WHICH WILL BEAR DIRECTLY ON NATIVE BEDROCK.
 - AERATION TANKS (300 SERIES) ARE TO BEAR DIRECTLY ON NATIVE BEDROCK.
 - CLARIFIERS (400 SERIES) ARE TO BEAR DIRECTLY ON NATIVE BEDROCK.
 - UV BUILDING (600 SERIES) IS TO BEAR DIRECTLY ON NATIVE BEDROCK EXCEPT FOR CHANNEL RAFT SLABS WHICH WILL BEAR ON NATIVE GLACIAL TILL OR LEAN CONCRETE FILL OVERLYING NATIVE GLACIAL TILL.
 - PROCESS BUILDING (800 SERIES) IS TO BEAR DIRECTLY ON NATIVE BEDROCK.
 - FERRIC CONTAINMENT PAD (800 SERIES) IS TO BEAR ON COMPACTED GRANULAR BACKFILL OVERLYING NATIVE GLACIAL TILL.
 - WAS WET WELL BUOYANCY SLAB (700 SERIES) IS TO BEAR DIRECTLY ON NATIVE BEDROCK
 - ADMINISTRATION BUILDING (800 SERIES) IS TO BEAR DIRECTLY ON NATIVE TILL.
 8. IF FOUNDATIONS ARE TO BEAR DIRECTLY ON BEDROCK AND BEDROCK ELEVATIONS ARE FOUND TO BE LOWER THAN THE UNDERSIDE OF FOUNDATION ELEVATIONS, CONTRACTOR TO FILL VOID SPACE WITH LEAN CONCRETE FILL.



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SCALE: As indicated

CLIENT:

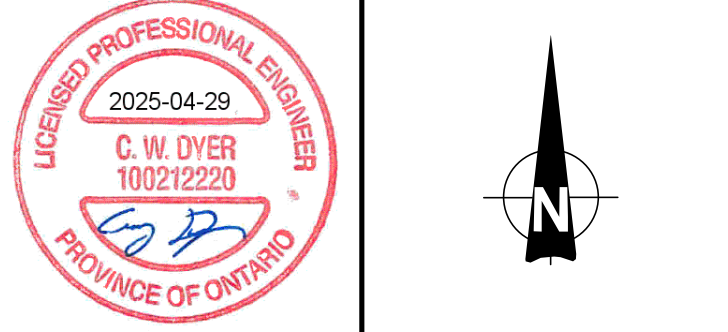


CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

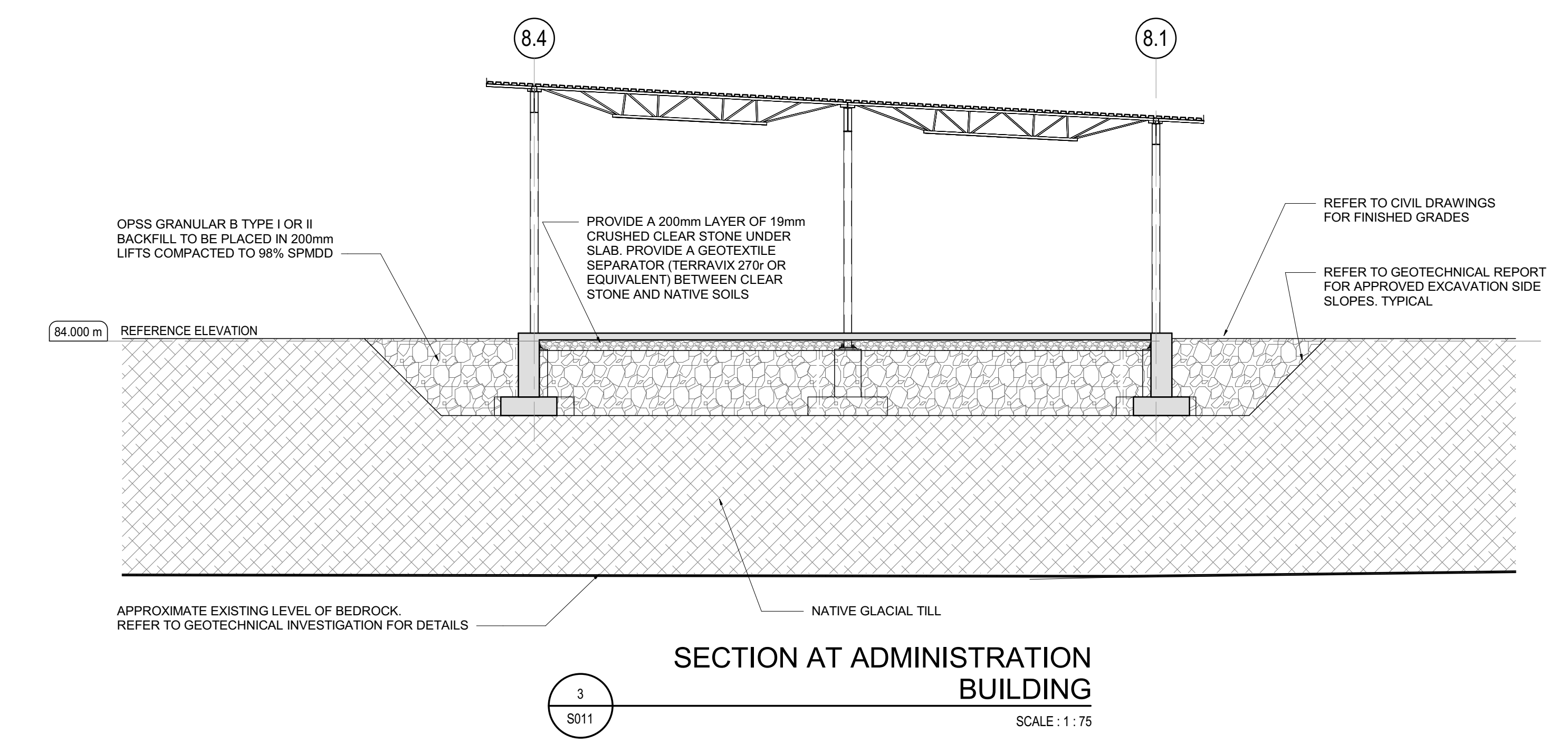
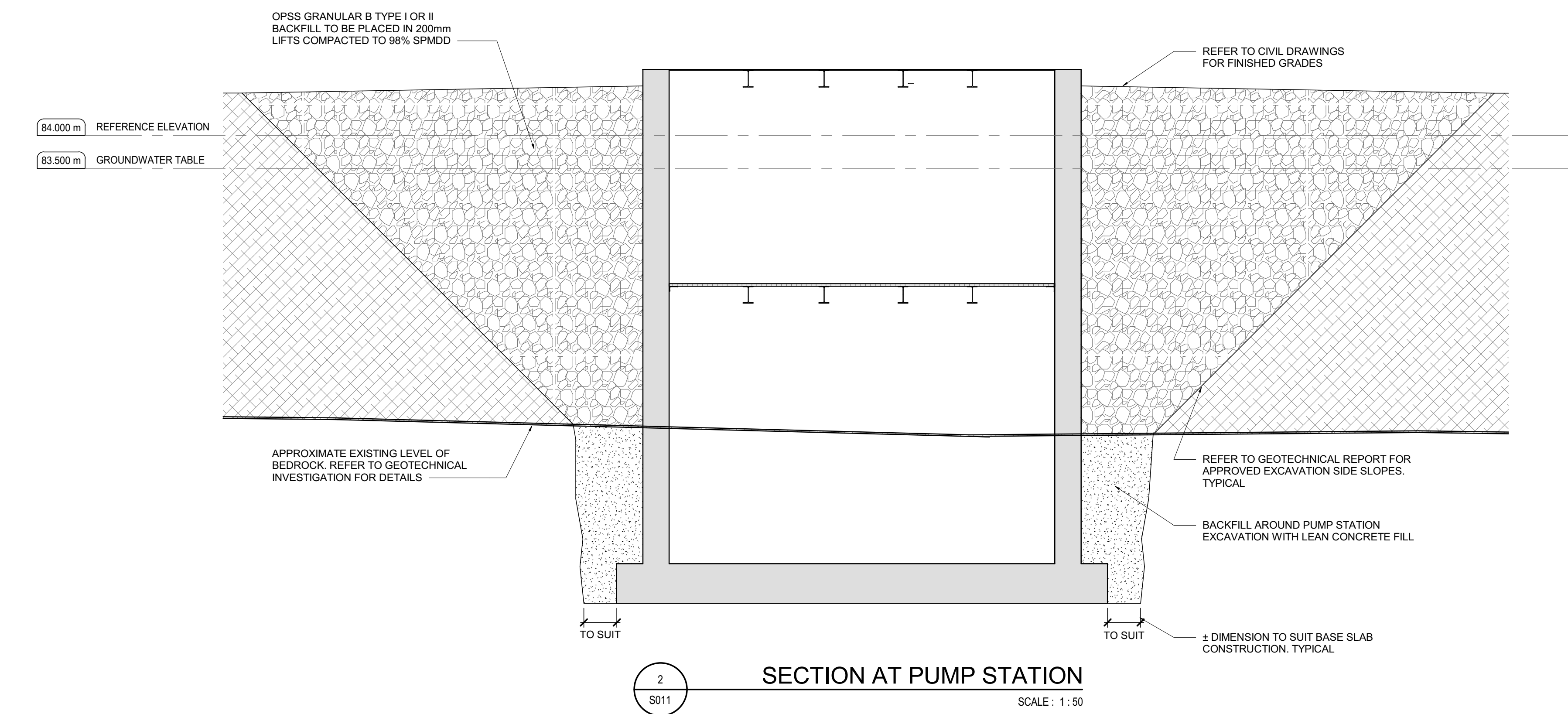
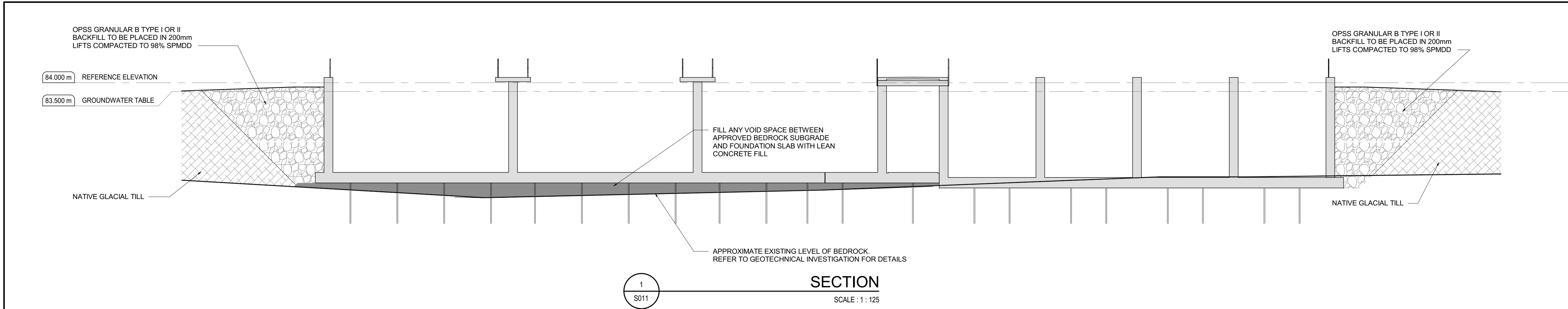
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL SITE-WIDE
GEOTECHNICAL INTERPRETATION
PLAN AND SECTIONS

DESIGN: CWD	DRAWING #:
DRAWN: JIC	S010
CHECKED: JMO	
JLR #:	32296

File Location: C:\Users\jale\Documents\32296 S010 Excavation_jlrichards.ca.rvt PLOT DATE: 2025-04-29 10:34:51 AM



HEADWORKS
200 SERIES

UV BUILDING
500 SERIES

AERATION
300 SERIES

CLARIFIERS
400 SERIES

PUMP STATION
100 SERIES

PROCESS
BUILDING
600 SERIES

ADMINISTRATION
BUILDING
800 SERIES

WAS STABILIZATION POND
(NOT SHOWN IN KEY PLAN)
700 SERIES

KEY PLAN
(NOT TO SCALE)

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025mm

SCALE: As indicated

CLIENT:

MUNICIPALITY OF
BRIGHTON

CONSULTANT: www.jrichards.ca

JR J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

PROJECT NORTH

PROFESSIONAL STAMP
LICENSED PROFESSIONAL ENGINEER
2025-04-29
C. W. DYER
100212220
PROVINCE OF ONTARIO

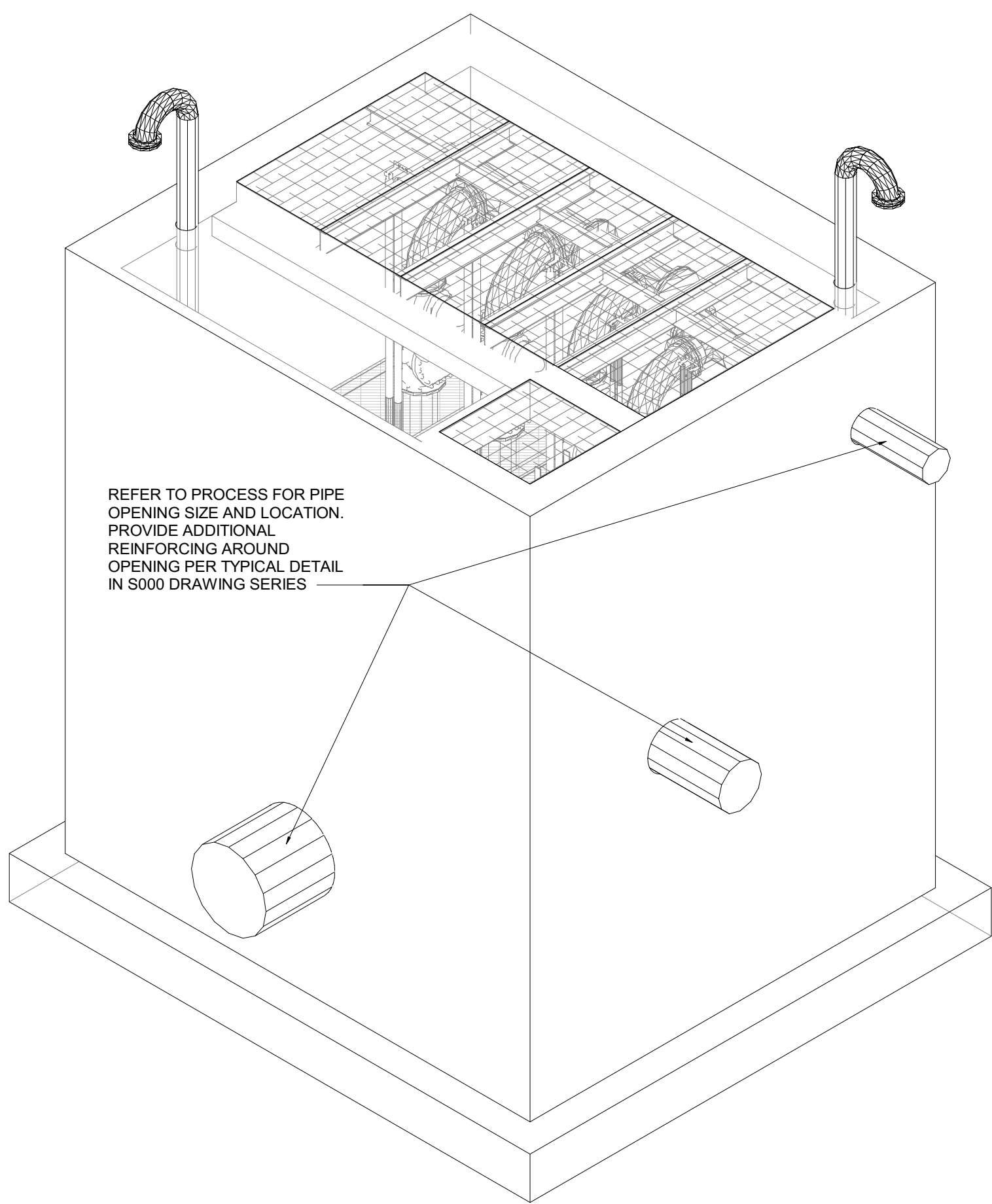
PROJECT:
BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
STRUCTURAL
SITE-WIDE
GEOTECHNICAL INTERPRETATION
SECTIONS

DESIGN: CWD
DRAWN: JIC
CHECKED: JMO
JLR #: 32296

DRAWING #:
S011

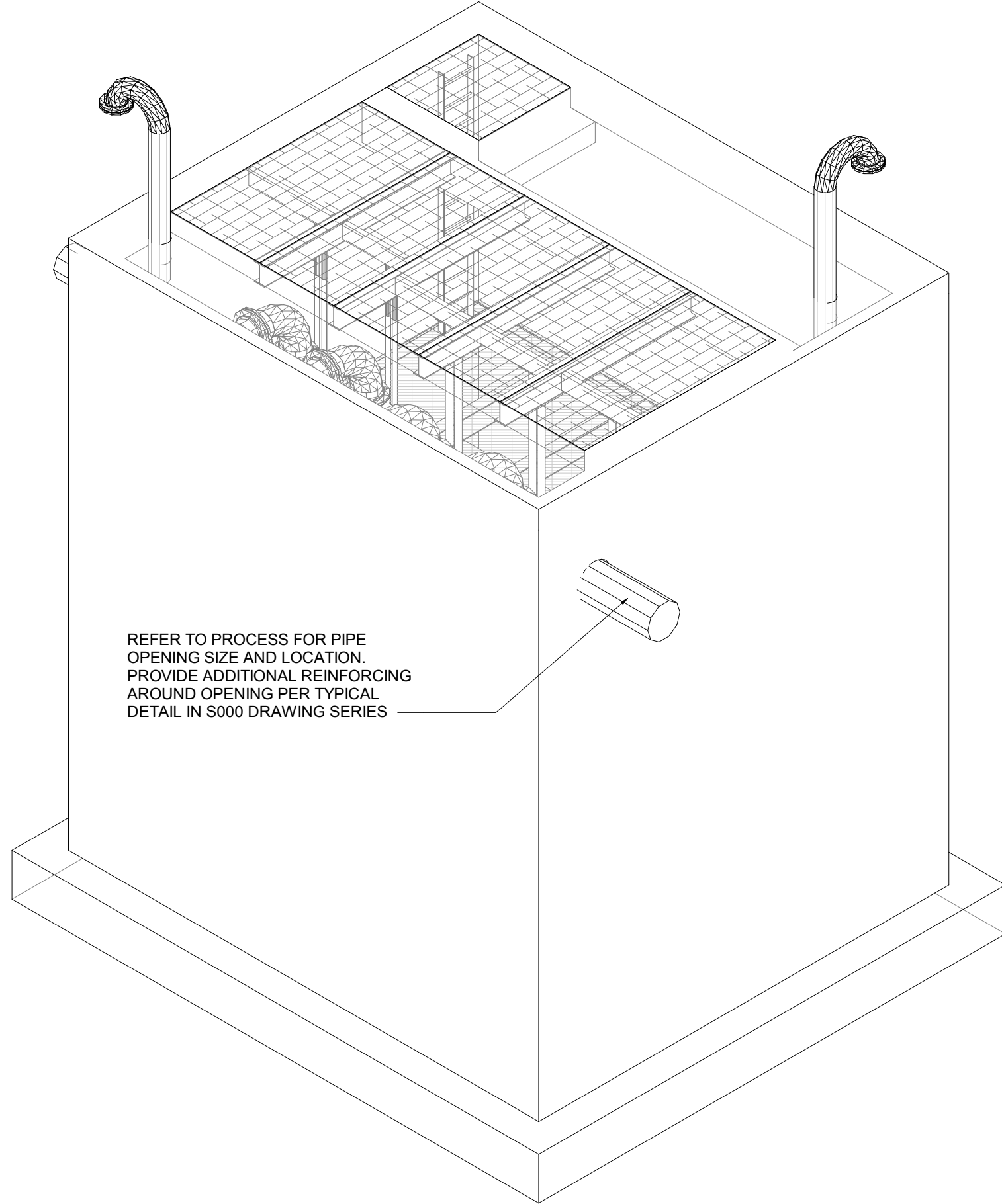
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PLOT DATE: 2025-04-29 10:34:51 AM



1
S100

SOUTH EAST ISOMETRIC VIEW

NOT TO SCALE



2
S100

NORTH WEST ISOMETRIC VIEW

NOT TO SCALE

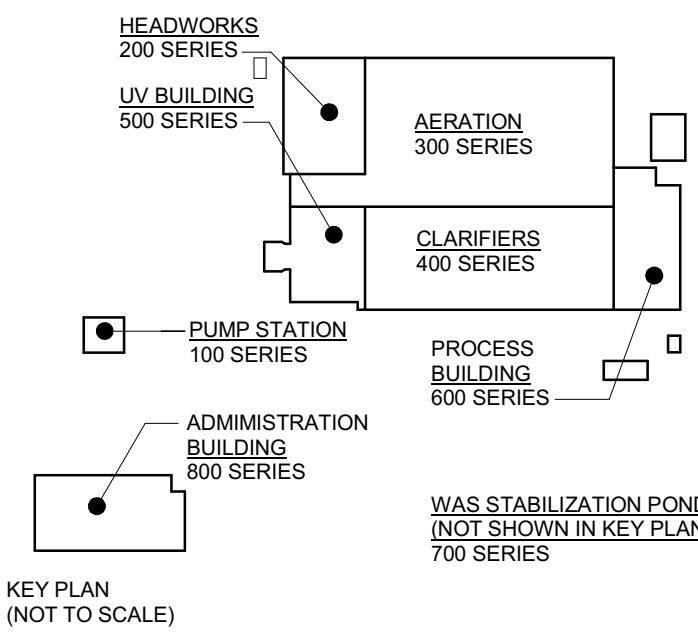
DRAWING NOTES

1. REFER TO S000 DRAWING SERIES FOR STRUCTURAL GENERAL NOTES, LEGEND TO STRUCTURAL MATERIALS AND LIST OF STRUCTURAL ABBREVIATIONS.
2. PROVIDE ADDITIONAL REINFORCING AROUND ALL SLAB AND WALL OPENINGS THAT EXCEED 150mm IN DIAMETER (OR WIDTH / LENGTH) AS PER STANDARD DETAILS IN S000 DRAWING SERIES. WHERE (2) TWO OR MORE OPENINGS LESS THAN 150mm IN DIAMETER (OR WIDTH / LENGTH) ARE SPACED CLOSER THAN 150mm, ADDITIONAL REINFORCING SHALL BE PROVIDED AS PER THE STANDARD DETAILS IN S000 DRAWING SERIES.
3. COORDINATE ALL MECHANICAL, PROCESS AND ELECTRICAL OPENINGS WITH THE RESPECTIVE DISCIPLINE.
4. REFER TO FOUNDATION AND BACKFILL DRAWINGS FOR FOUNDATION SUBGRADE AND PREPARATION, AND BACKFILL REQUIREMENTS.
5. PROVIDE 25mm CHAMFER AT ALL EXPOSED CONCRETE CORNERS. DO NOT PROVIDE CHAMFER IF THERE IS A BEARING CONDITION.
6. THE FOLLOWING DESIGN LOADS ARE CONSIDERED FOR THE PUMPING STATION AND RELATED WORKS:

DESIGN LOADS

LIVE LOAD ON TOP SLAB: 7.2 kPa

LIVE LOAD ON PLATFORM LEVEL: 4.8 kPa OR A CONCENTRATED LOAD OF 6 kN (WEIGHT OF ONE LARGE PUMP)



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.

SCALE: 1 : 50

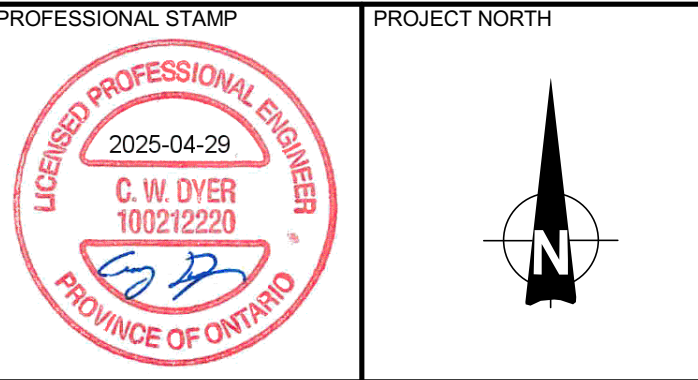
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

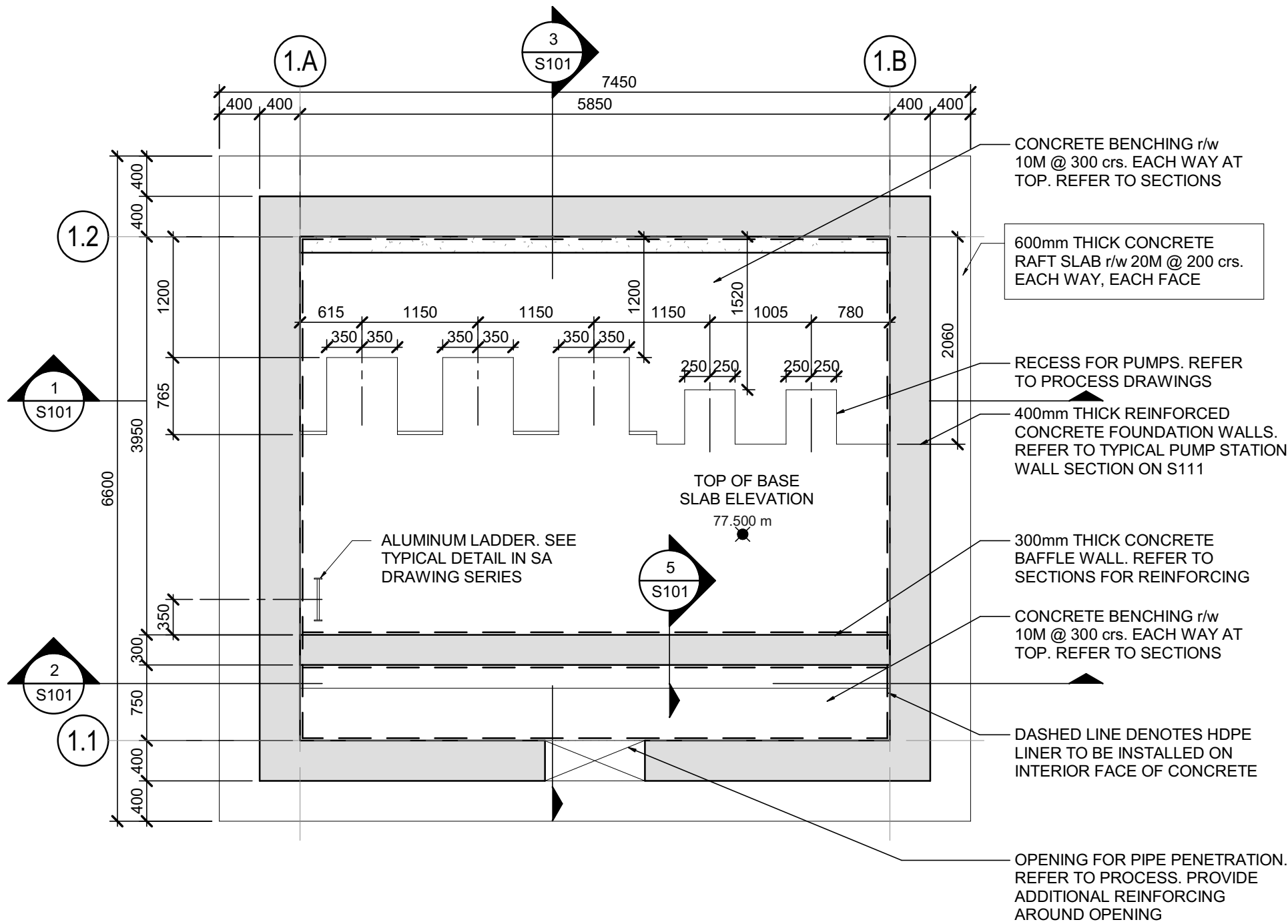
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL PUMP STATION
ISOMETRIC VIEWS, PLANS AND NOTES

DESIGN: CWD	DRAWING #:
DRAWN: SWW/JIC	
CHECKED: JMO	
JLR #:	32296

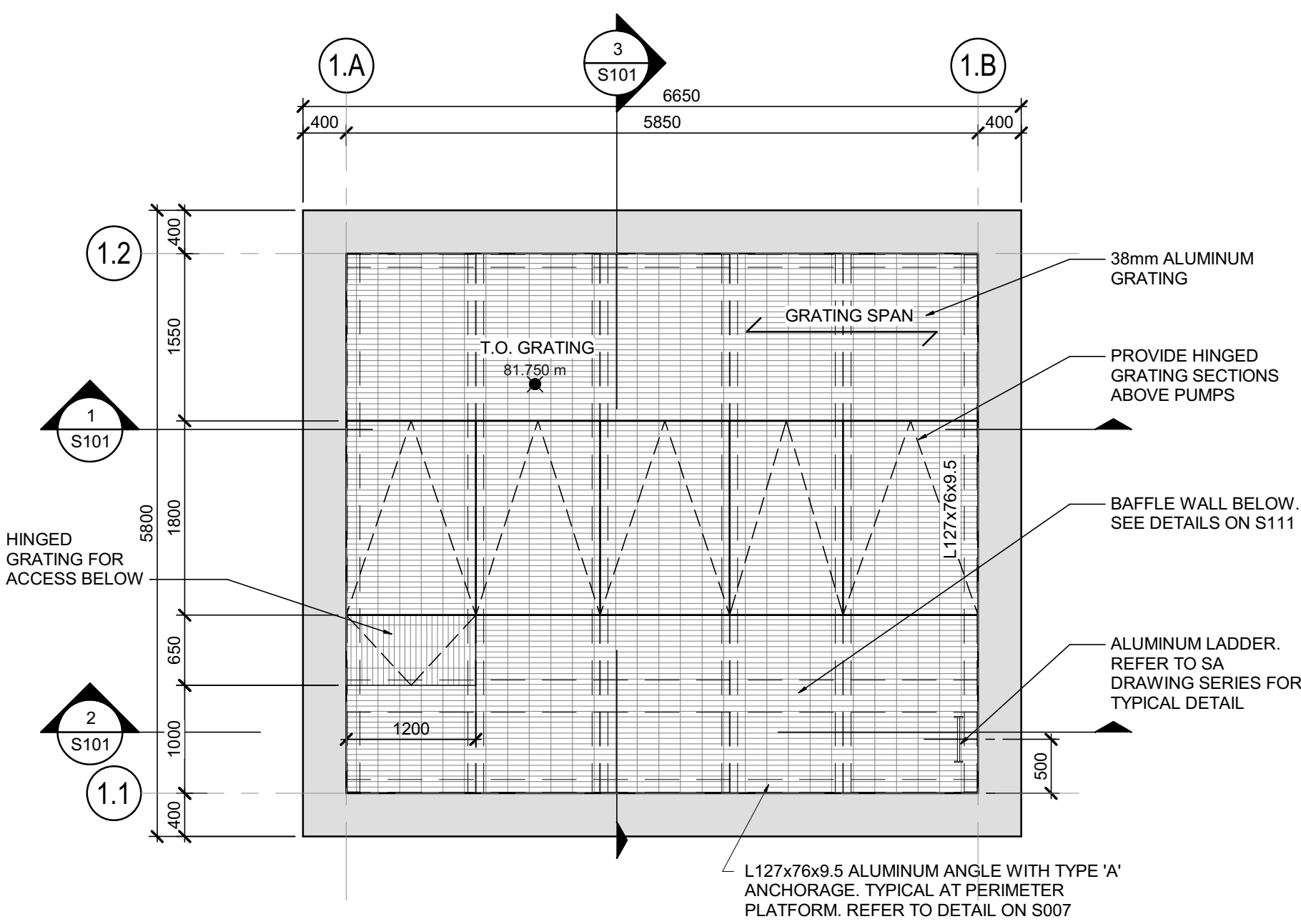
S100



3
S100

FOUNDATION PLAN

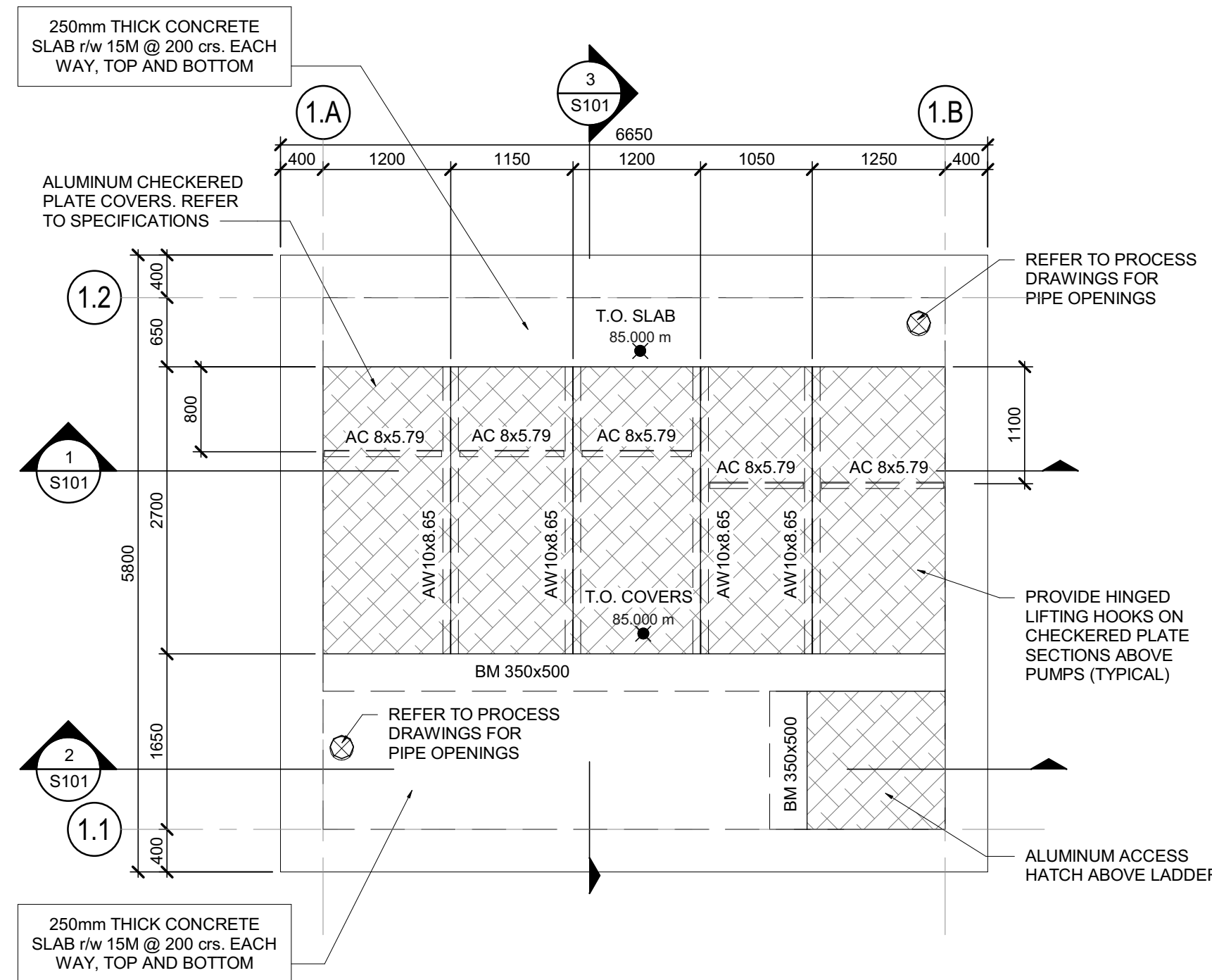
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4
S100

PLATFORM LEVEL PLAN

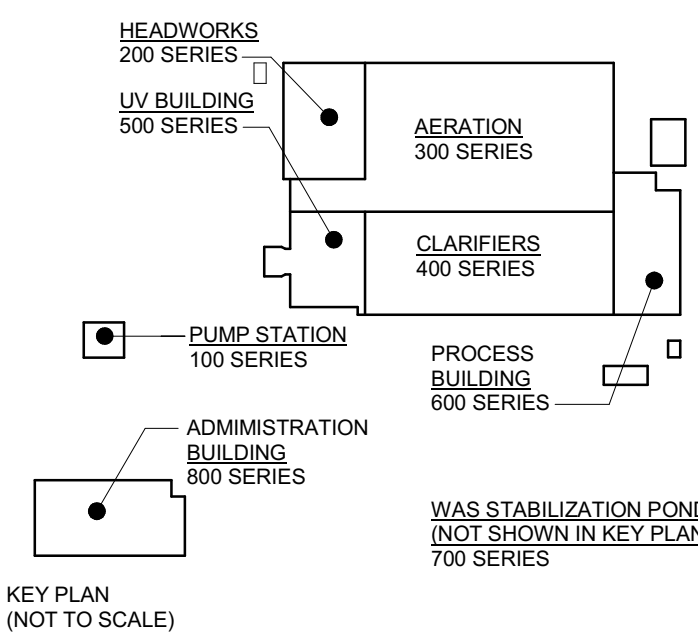
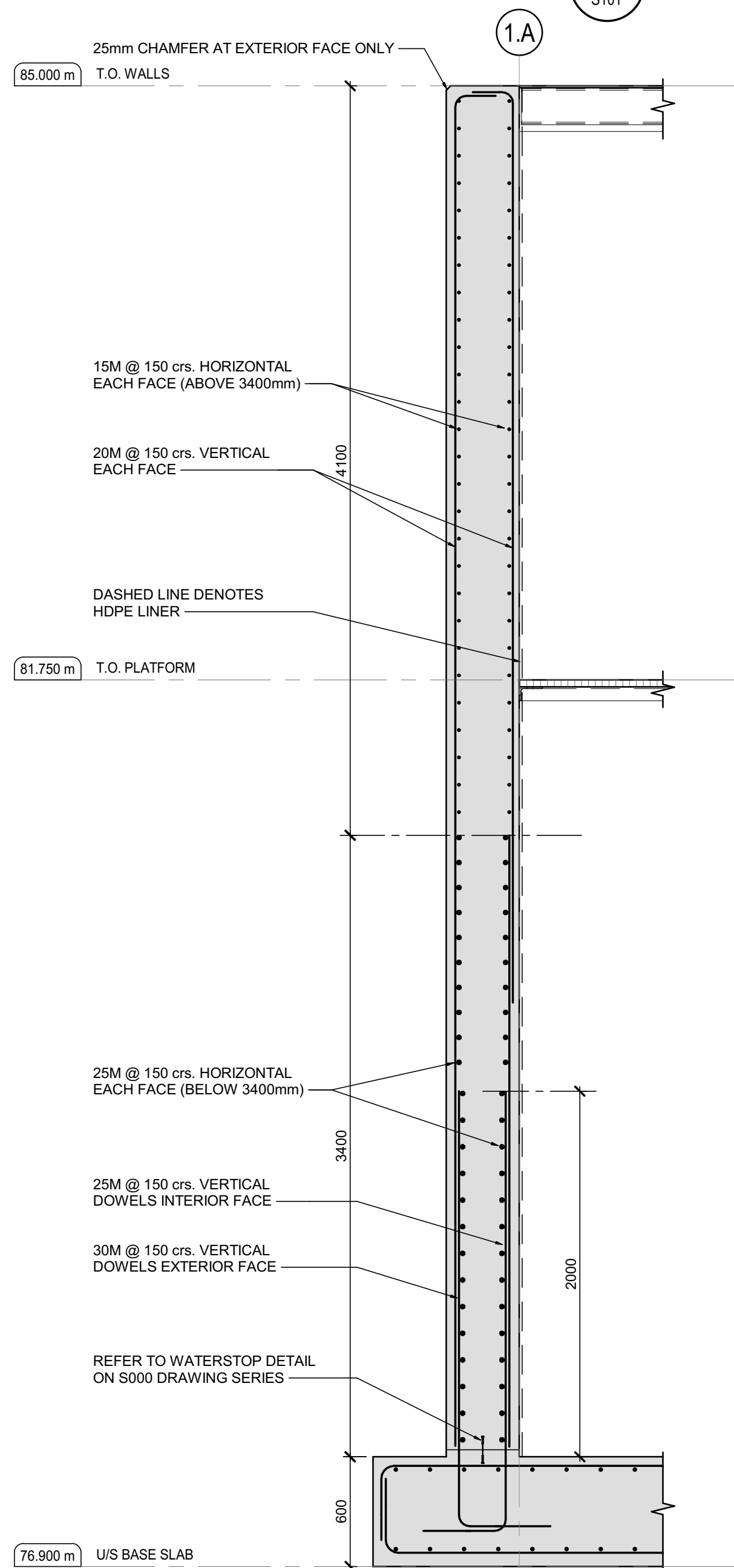
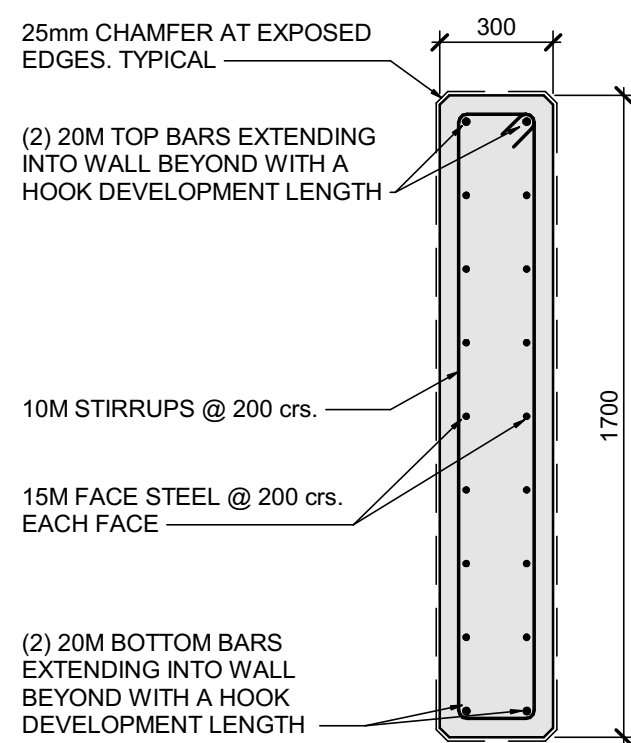
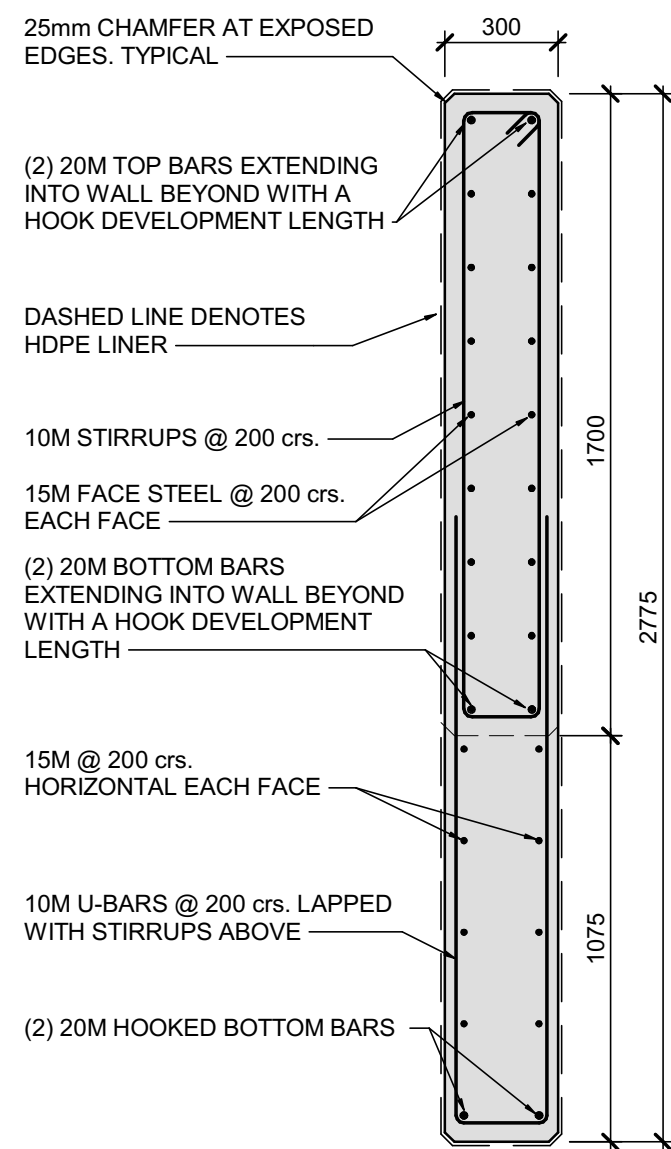
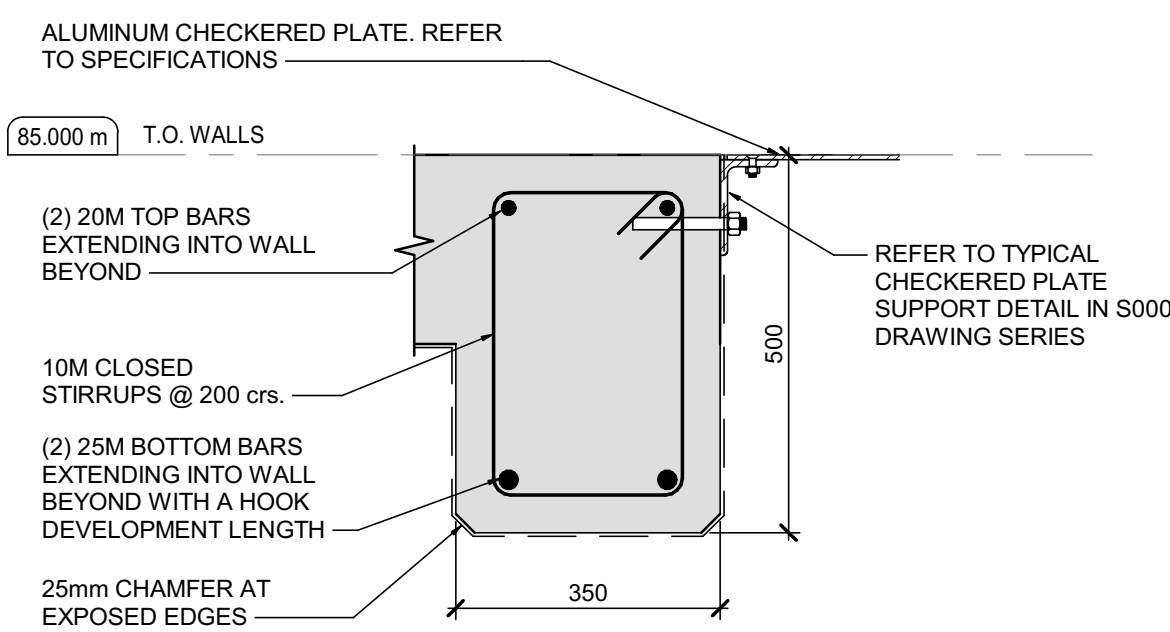
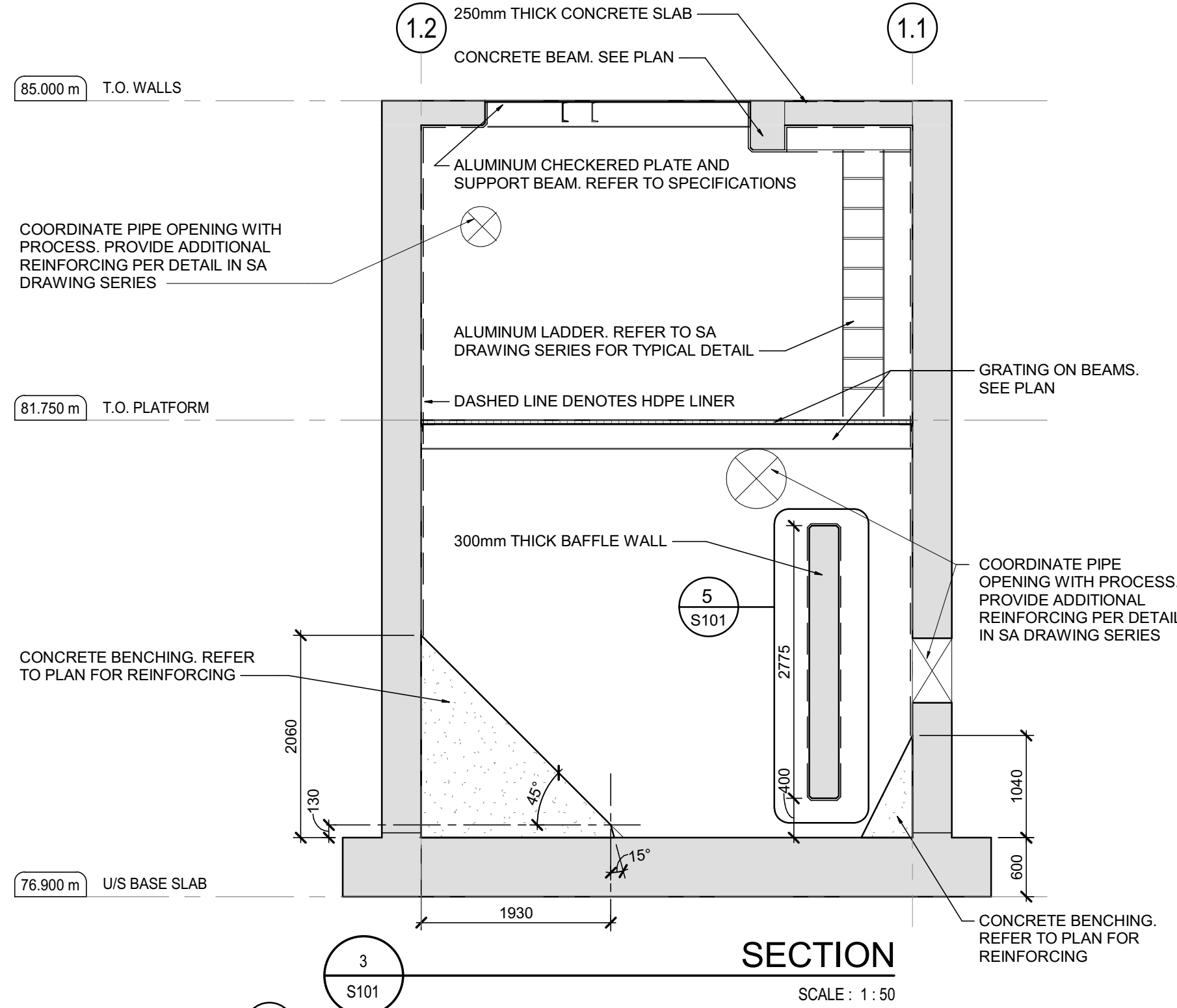
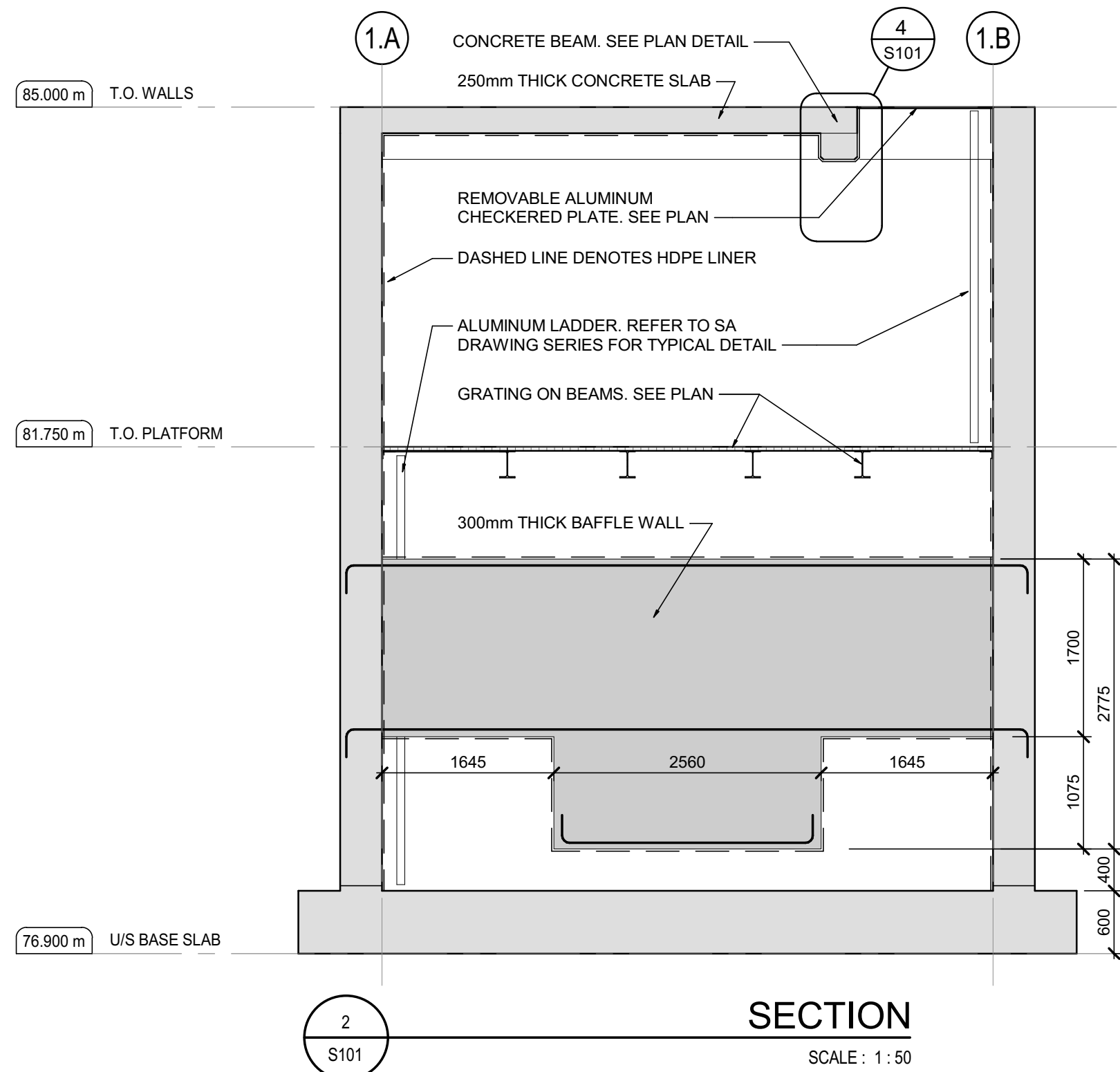
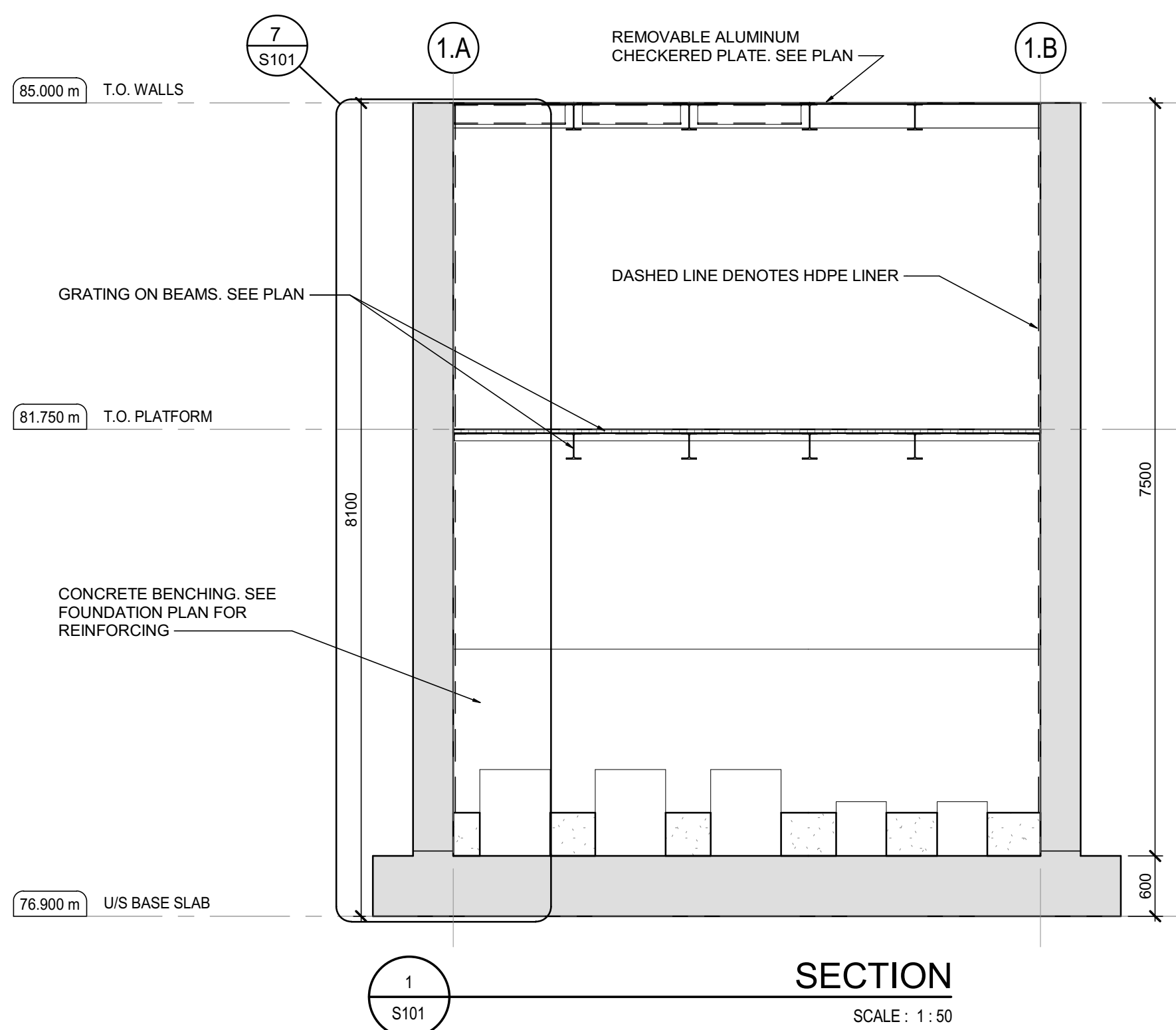
SCALE: 1 : 50



5
S100

GROUND LEVEL PLAN

SCALE: 1 : 50



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CLIENT:

BRIGHTON

CONSULTANT:

J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

PROFESSIONAL STAMP

PROJECT NORTH

PROFESSIONAL ENGINEER
2025-04-29
C. W. DYER
100212220
PROVINCE OF ONTARIO

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

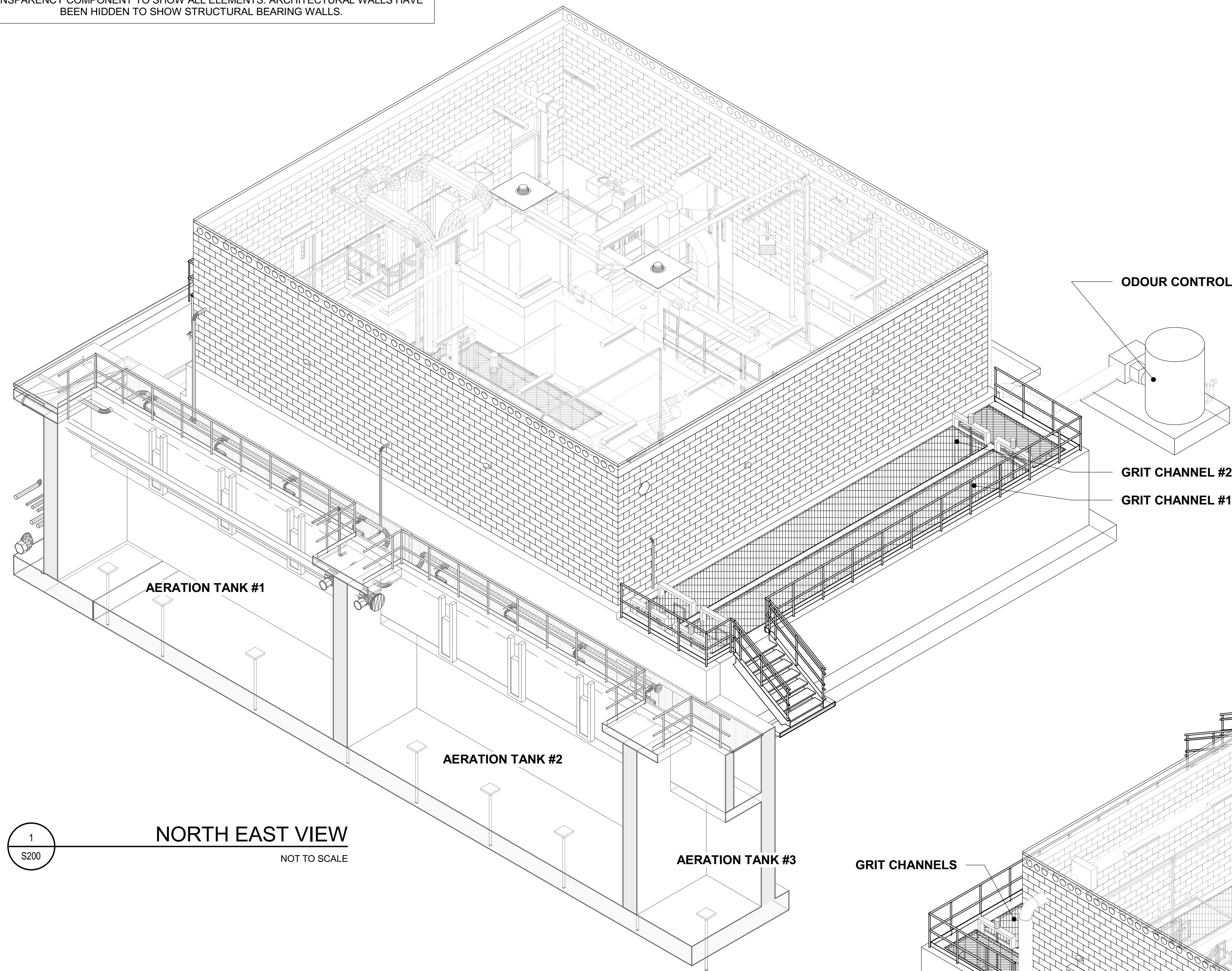
100 COUNTY ROAD 64, BRIGHTON ONTARIO

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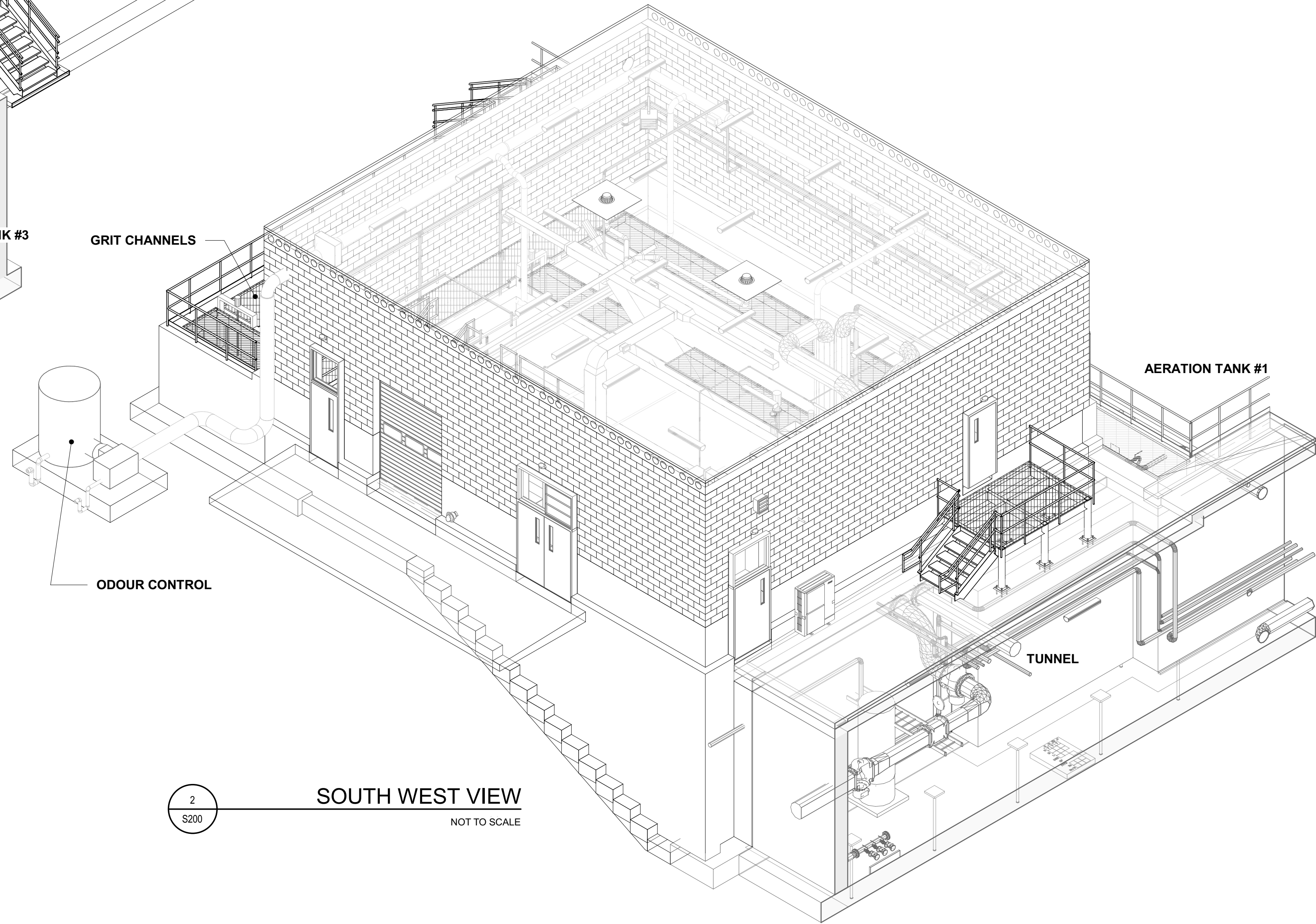
STRUCTURAL PUMP STATION SECTION DETAILS

DESIGN: CWD	DRAWING #:
DRAWN: SWW/JIC	S101
CHECKED: JMO	
JLR #:	32296

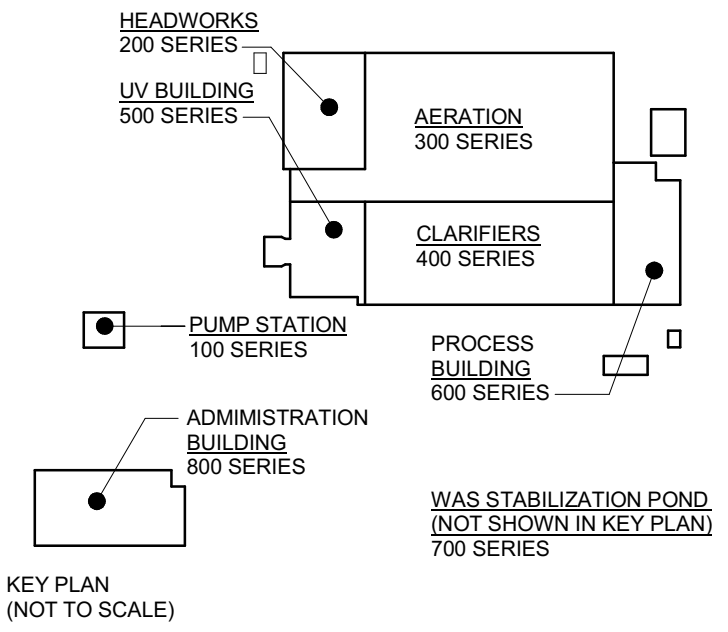
NOTE: THESE ISOMETRIC VIEWS ARE PROVIDED TO SHOW GENERAL DESIGN INTENT AND OVERALL BUILDING GEOMETRY ONLY. REFER TO PLANS, ELEVATIONS AND SECTION DETAILS IN THIS DRAWING PACKAGE FOR ACCURACY AND CONTRACTUAL INFORMATION. HORIZONTAL FLOORS, ROOFS AND SLABS HAVE BEEN DISPLAYED WITH A TRANSPARENCY COMPONENT TO SHOW ALL ELEMENTS. ARCHITECTURAL WALLS HAVE BEEN HIDDEN TO SHOW STRUCTURAL BEARING WALLS.



1
S200
NORTH EAST VIEW
NOT TO SCALE



2
S200
SOUTH WEST VIEW
NOT TO SCALE



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SCALE:

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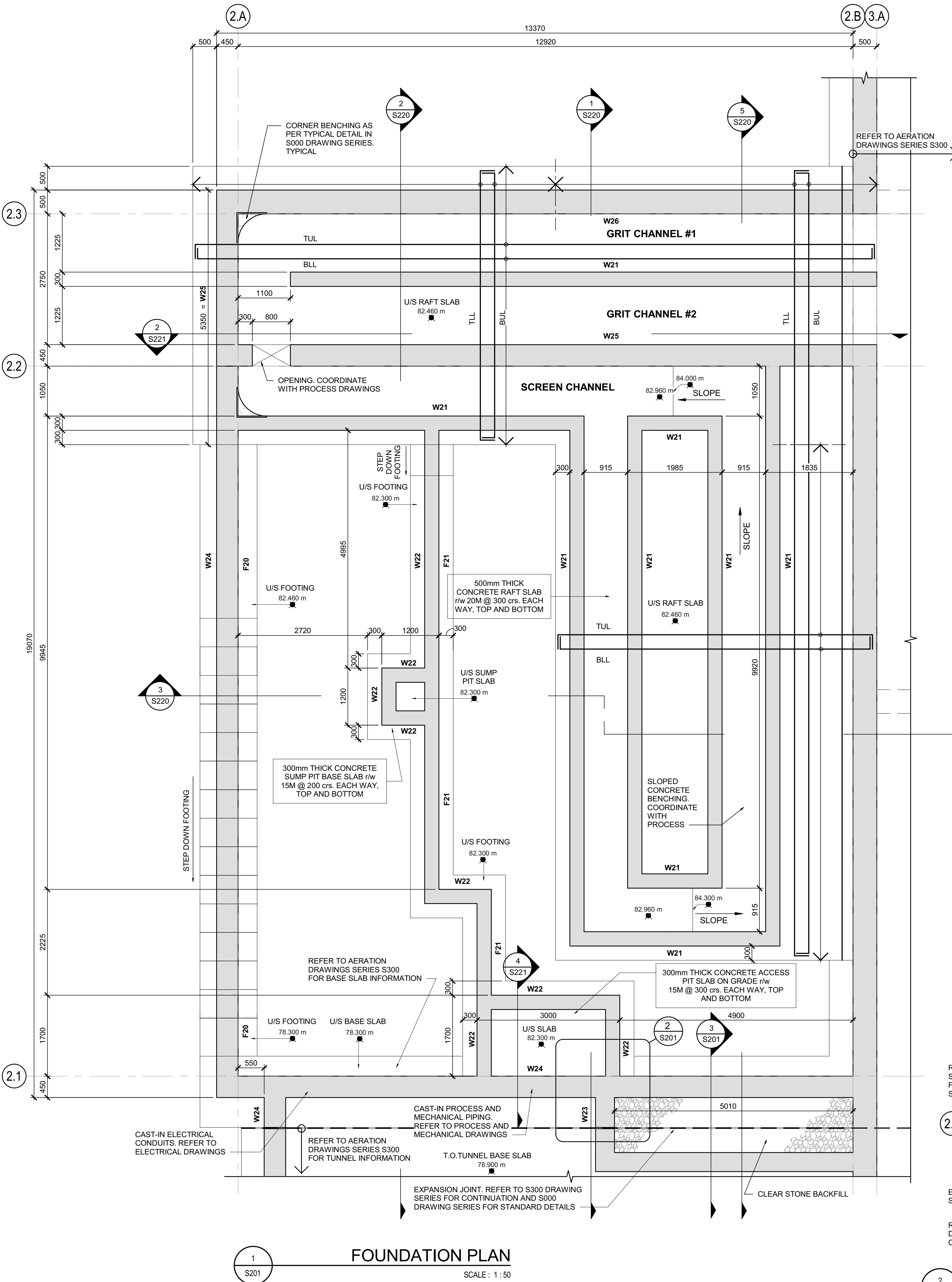
PROJECT NORTH

PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
STRUCTURAL HEADWORKS
ISOMETRIC VIEWS AND NOTES

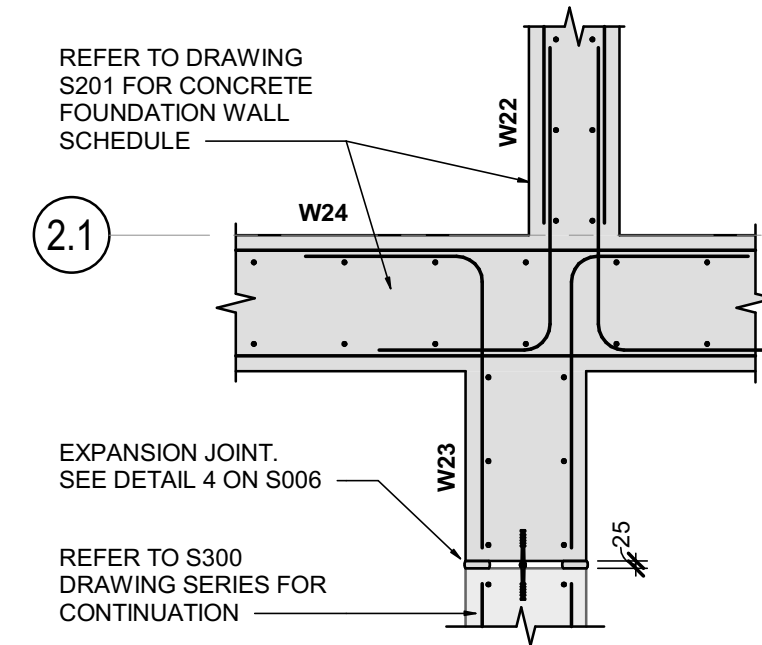
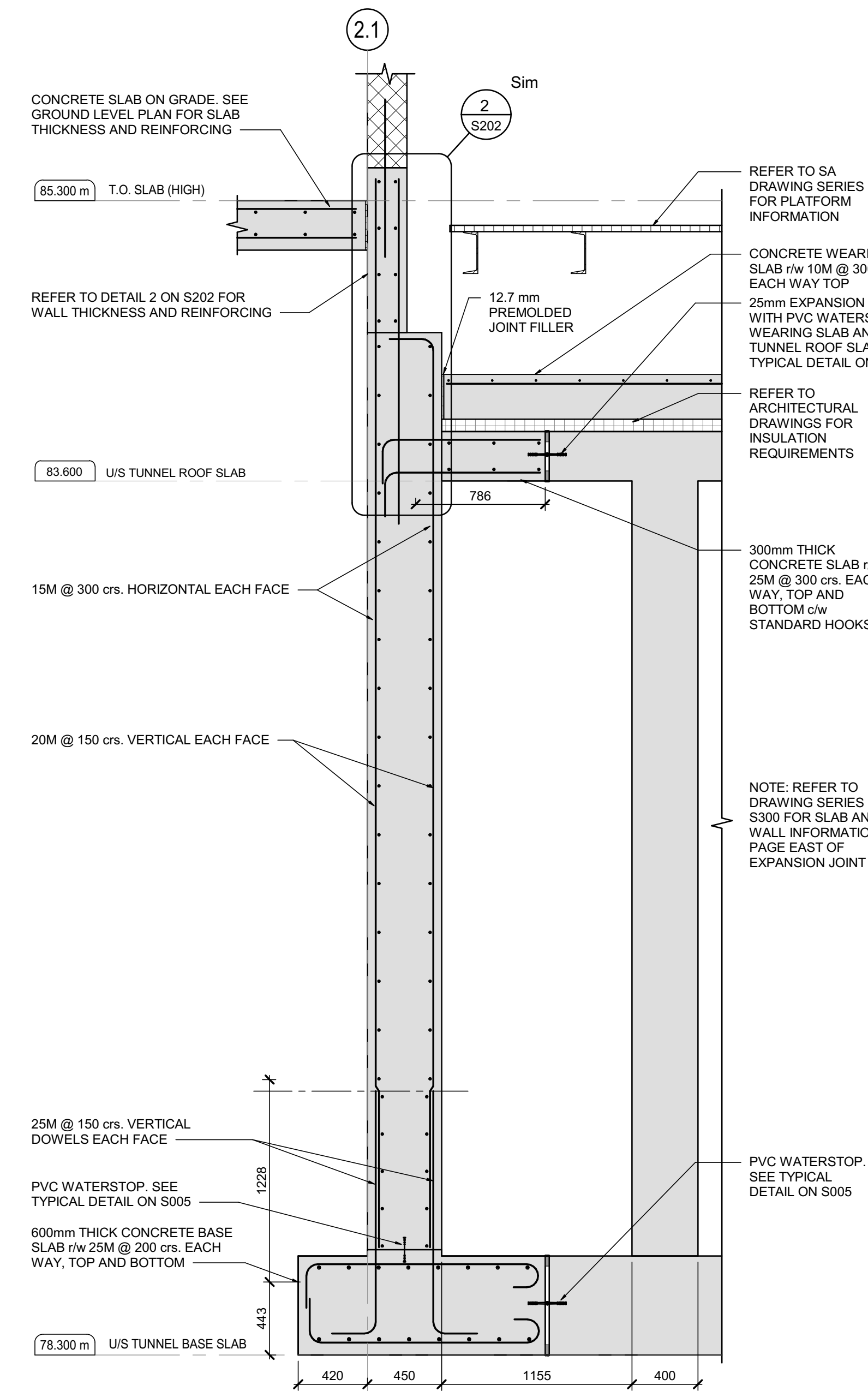
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DRAWN: JIC	S200
CHECKED: JMO	
JLR #: 32296	

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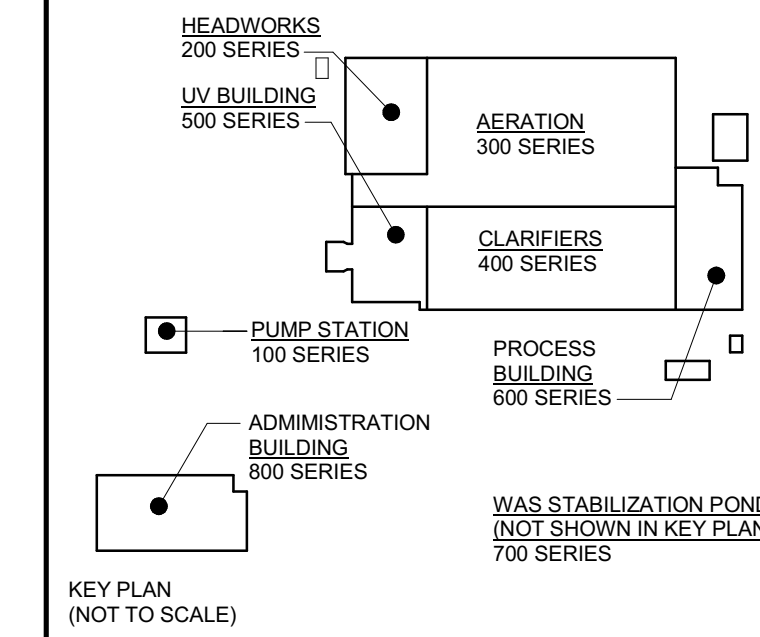
CONCRETE FOUNDATION WALL SCHEDULE		
MARK	DESCRIPTION	REINFORCING
W20	240mm THICK CONCRETE WALL	15M @ 300 CRS. EACH WAY, EACH FACE
W21	300mm THICK CONCRETE WALL	15M @ 150 CRS. HORIZONTAL EACH FACE, 15M @ 200 CRS. VERTICAL EACH FACE
W22	300mm THICK CONCRETE WALL	15M @ 300 CRS. EACH WAY, EACH FACE
W23	400mm THICK CONCRETE WALL	20M @ 300 CRS. EACH WAY, EACH FACE
W24	450mm THICK CONCRETE WALL	SEE SECTION 3 ON S201
W25	450mm THICK CONCRETE WALL	15M @ 150 CRS. HORIZONTAL EACH FACE, 20M @ 200 CRS. VERTICAL EACH FACE
W26	500mm THICK CONCRETE WALL	15M @ 150 CRS. HORIZONTAL EACH FACE, 20M @ 200 CRS. VERTICAL EACH FACE

CONCRETE FOOTING SCHEDULE		
MARK	SIZE	REINFORCING
F20	1200 x 400 STRIP FOOTING	(5) 15 LONGITUDINAL AND 15M @ 300 CRS. HOOKED TRANSVERSE, TOP AND BOTTOM
F21	900 x 400 STRIP FOOTING	(4) 15 LONGITUDINAL AND 15M @ 300 CRS. HOOKED TRANSVERSE, TOP AND BOTTOM



3
S201
TYPICAL FOUNDATION WALL W24 AT CANTILEVERED BASE SLAB
SCALE: 1:25

- DRAWING NOTES:
1. REFER TO S000 DRAWING SERIES FOR STRUCTURAL GENERAL NOTES, LEGEND TO STRUCTURAL MATERIALS AND A LIST OF STRUCTURAL ABBREVIATIONS.
 2. COORDINATE ALL OPENINGS WITH THE ASSOCIATED RESPONSIBLE DISCIPLINE AS NOTED ON PLAN AND IN THE REMAINDER OF THE DRAWING SET. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS AS PER TYPICAL DETAIL IN S000 DRAWING SERIES.
 3. REFER TO TYPICAL DETAILS IN S000 DRAWING SERIES FOR DOWELS, HORIZONTAL AND VERTICAL REINFORCING OF WALLS AND LINTELS.
 4. ALL LIQUID RETAINING STRUCTURES INCLUDING CONCRETE WALLS AND SLABS ARE TO HAVE CRYSTALLINE WATERPROOFING ENTRAINED WITHIN THE MIX DESIGN ON THESE PLANS. ALL BELOW GRADE WALLS AND SLABS THAT ENCLOSE OCCUPIED SPACES SHALL HAVE CRYSTALLINE WATERPROOFING ENTRAINED IN THE MIX DESIGN. REFER TO CAST-IN-PLACE CONCRETE SPECIFICATION FOR FURTHER DETAILS.
 5. REFER TO SA DRAWING SERIES FOR STAIR, PLATFORM, GUARDRAIL / HANDRAIL AND LADDER INFORMATION.
 6. PROVIDE 25mm CHAMFER AT ALL EXPOSED CONCRETE CORNERS. DO NOT PROVIDE CHAMFER IF THERE IS A TOP OR SIDE BEARING CONDITION. CHAMBERS MAY NOT BE SHOWN IN ALL VIEWS AND / OR DETAILS.



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.				
SCALE: As indicated				

CLIENT:

BRIGHTON

CONSULTANT:

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

2025-04-29
C.W. DYER
100212220
PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

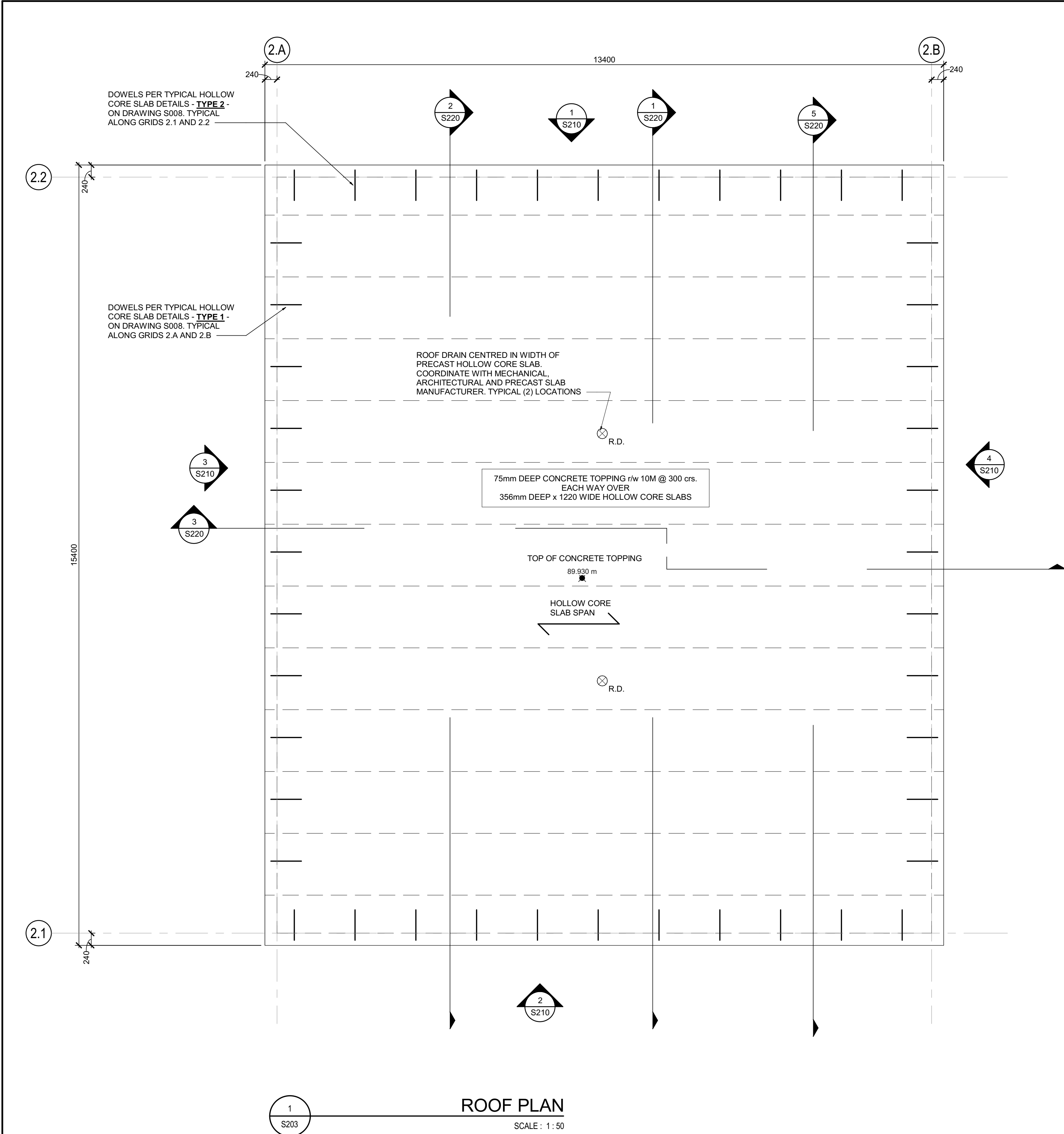
STRUCTURAL HEADWORKS

FOUNDATION PLAN

DESIGN: CWD
DRAWN: JIC
CHECKED: JMO
JLR #: 32296

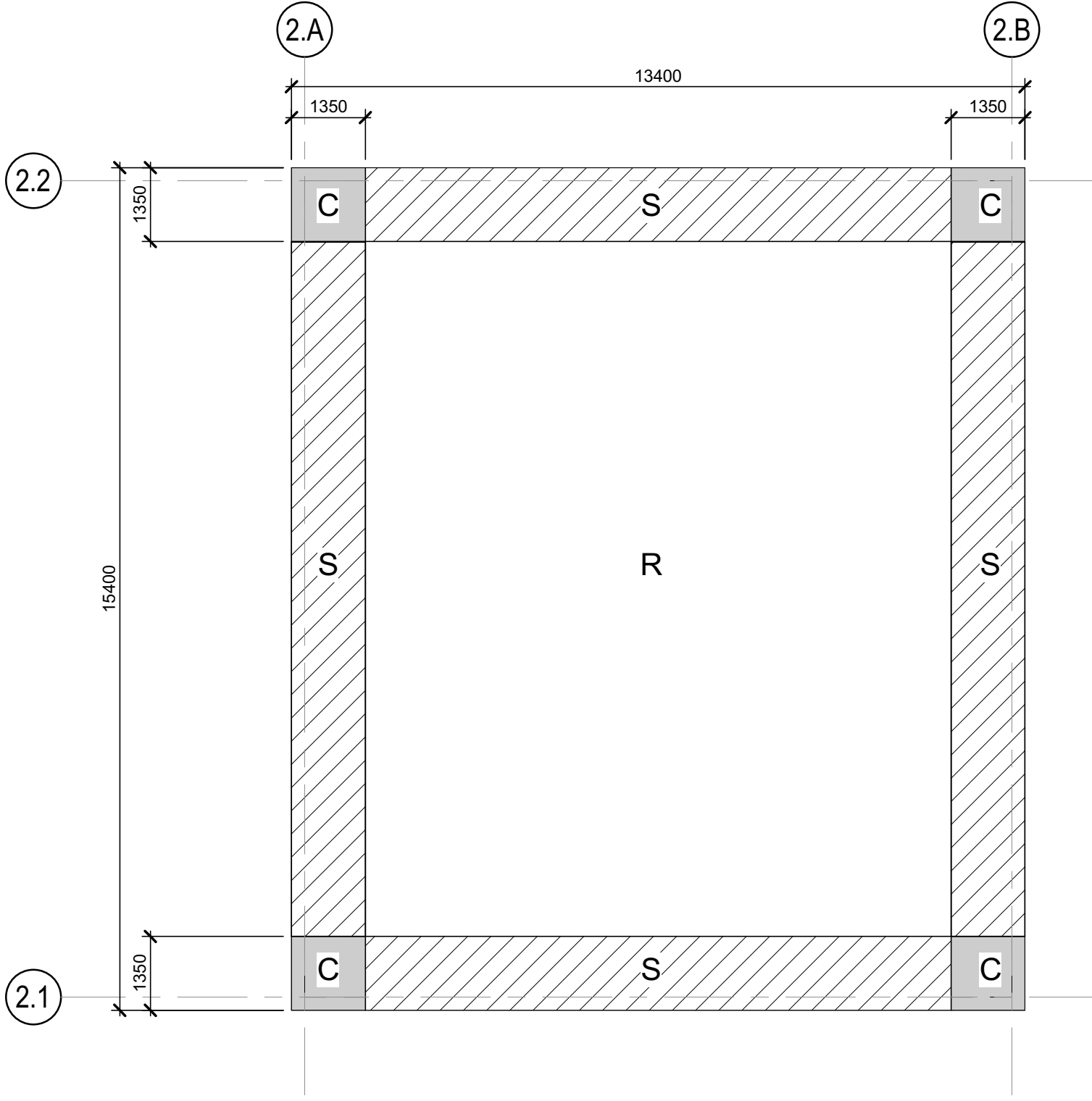
DRAWING #:

S201



1
S203
ROOF PLAN
SCALE: 1:50

- DRAWING NOTES:**
1. FOR PROJECT GENERAL NOTES, LEGEND TO STRUCTURAL MATERIALS AND A LIST OF STRUCTURAL ABBREVIATIONS, REFER TO SERIES 000 DRAWINGS.
- DESIGN ROOF LOADS**
- DEAD LOADS:
CONCRETE TOPPING - 1.76 kPa
ROOFING - 0.5 kPa
M&E ALLOWANCE - 0.5 kPa
POINT LOAD ALLOWANCE: - 4.0 kN (APPLIED ANYWHERE ALONG LENGTH OF SLAB)
- LIVE LOADS - 1 kPa
- SNOW LOAD - 2.1 kPa (INCLUDES Is = 1.25)
- WIND LOAD - SEE BELOW



ROOF STRUCTURAL COMPONENTS AND CLADDING EXTERNAL WIND PRESSURES				
WIND PRESSURE (kPa) BASED ON SUPPORTED TRIBUTARY AREA (m ²)				
NEGATIVE (UPLIFT) WIND PRESSURE (kPa) (UNFACTORED)				
-VE DENOTES PRESSURES AWAY FROM SURFACE				
ZONE	A ≤ 2 (m ²)	2 < A ≤ 5 (m ²)	5 < A ≤ 10 (m ²)	A > 10 (m ²)
C	-2.93	-2.37	-1.64	-1.08
S	-1.35	-1.35	-1.35	-1.08
R	-0.98	-0.93	-0.86	-0.81
POSITIVE WIND PRESSURE (kPa) (UNFACTORED)				
+VE DENOTES PRESSURES TOWARDS SURFACE				
ZONE	A ≤ 2 (m ²)	2 < A ≤ 5 (m ²)	5 < A ≤ 10 (m ²)	A > 10 (m ²)
C	0.27	0.24	0.20	0.16
S	0.27	0.24	0.20	0.16
R	0.27	0.24	0.20	0.16

2
S203
WIND UPLIFT DIAGRAM
SCALE: 1:100

HEADWORKS
200 SERIES

UV BUILDING
500 SERIES

AERATION
300 SERIES

CLARIFIERS
400 SERIES

PUMP STATION
100 SERIES

ADMINISTRATION
BUILDING
800 SERIES

PROCESS
BUILDING
600 SERIES

WAS STABILIZATION POND
(NOT SHOWN IN KEY PLAN)
700 SERIES

KEY PLAN
(NOT TO SCALE)

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SCALE: As indicated

CLIENT:

BRIGHTON
MUNICIPALITY

CONSULTANT: www.jrichards.ca

J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

2025-04-29
C. W. DYER
100212220
PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

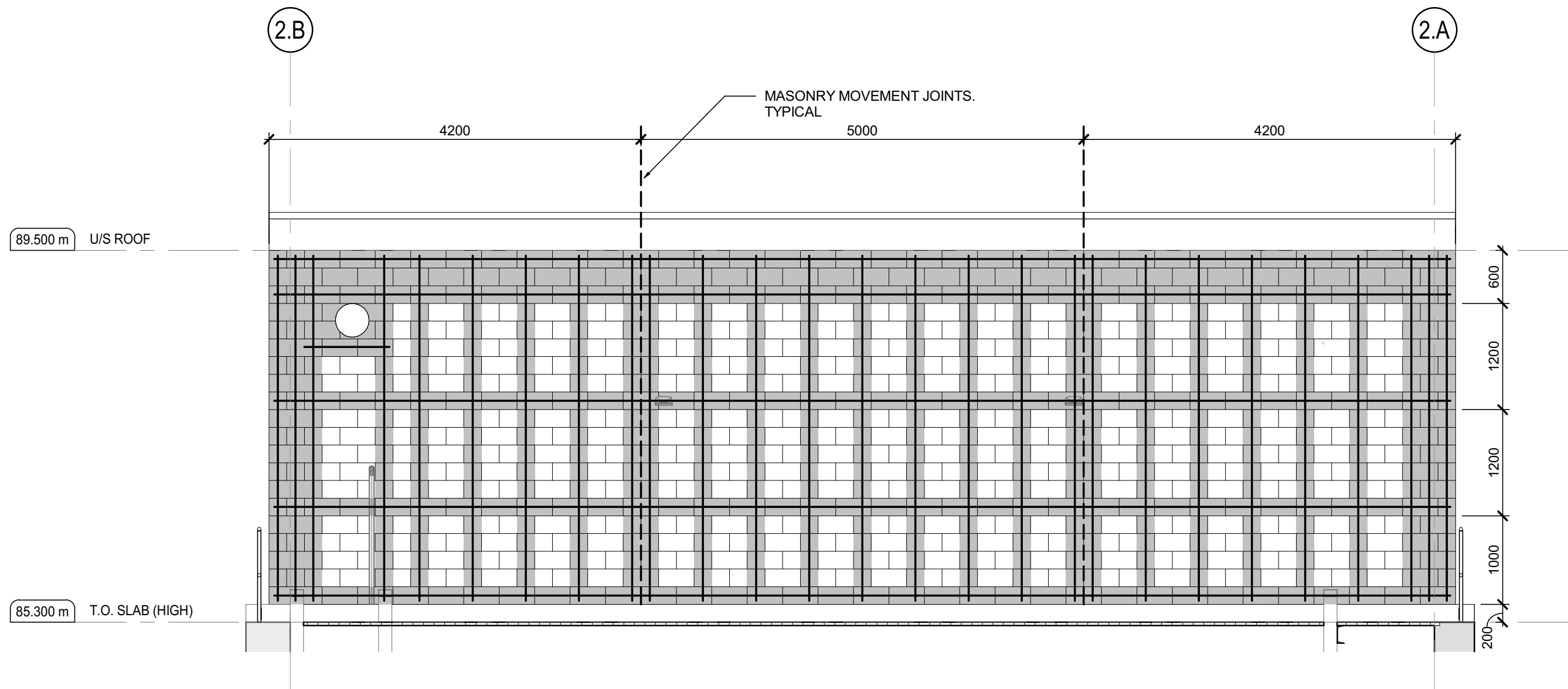
100 COUNTY ROAD 64, BRIGHTON ONTARIO

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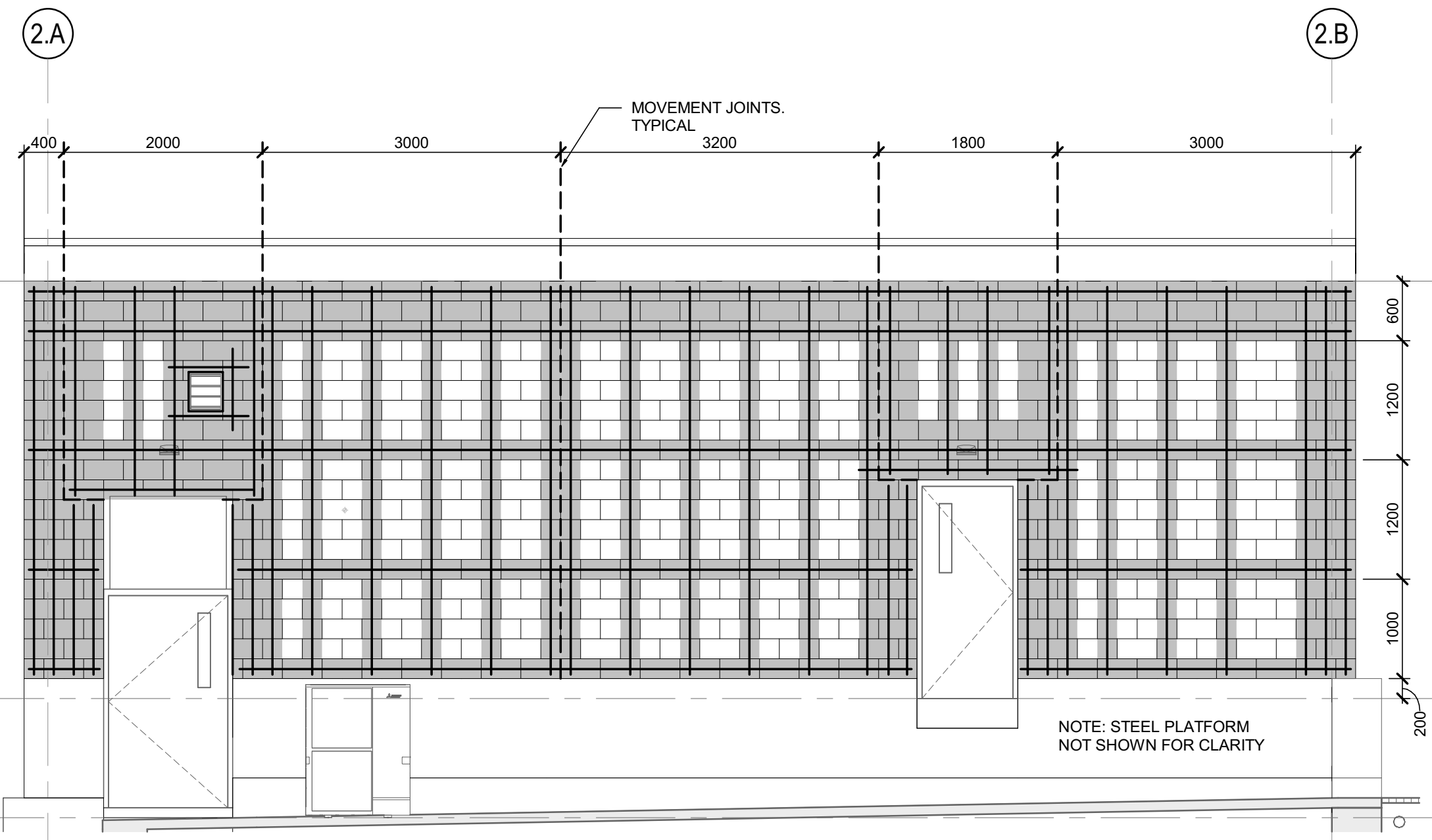
STRUCTURAL HEADWORKS

ROOF PLAN

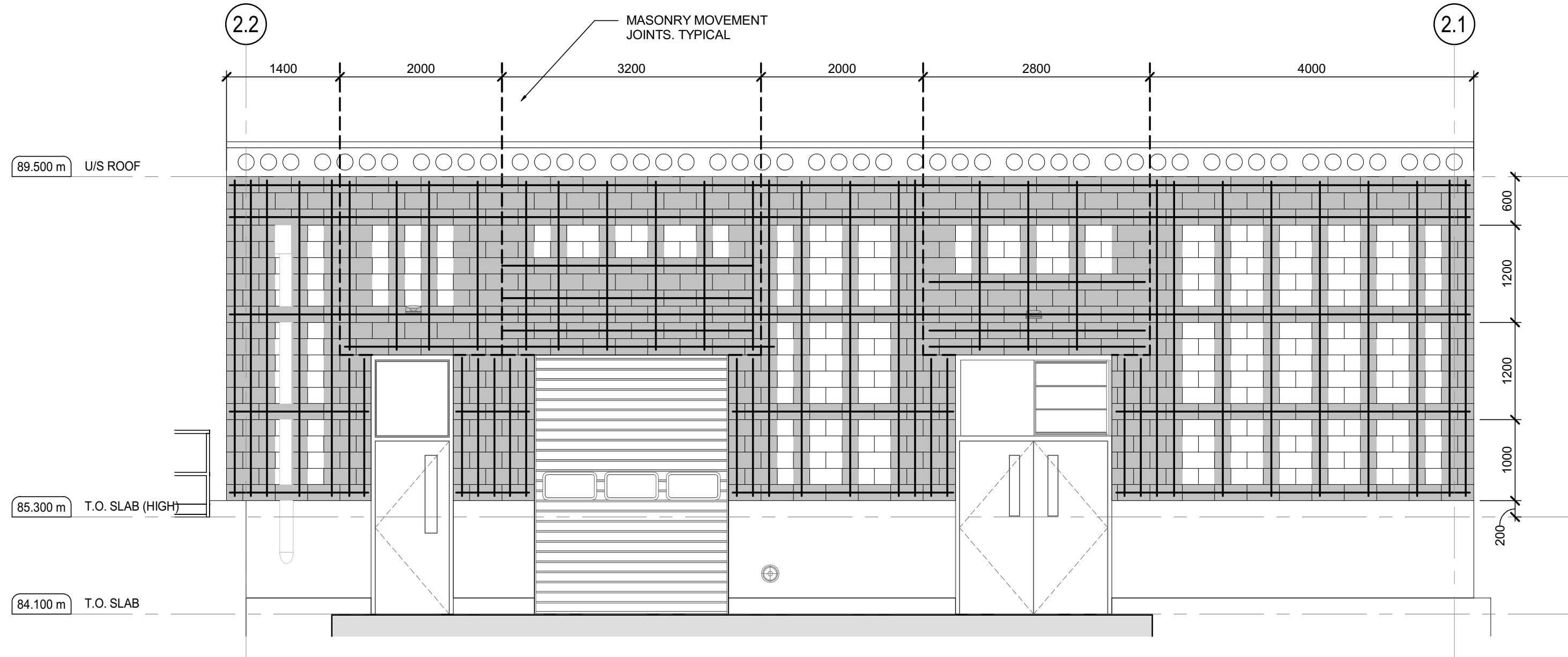
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DRAWN: JIC	S203
CHECKED: JMO	
JLR #:	32296



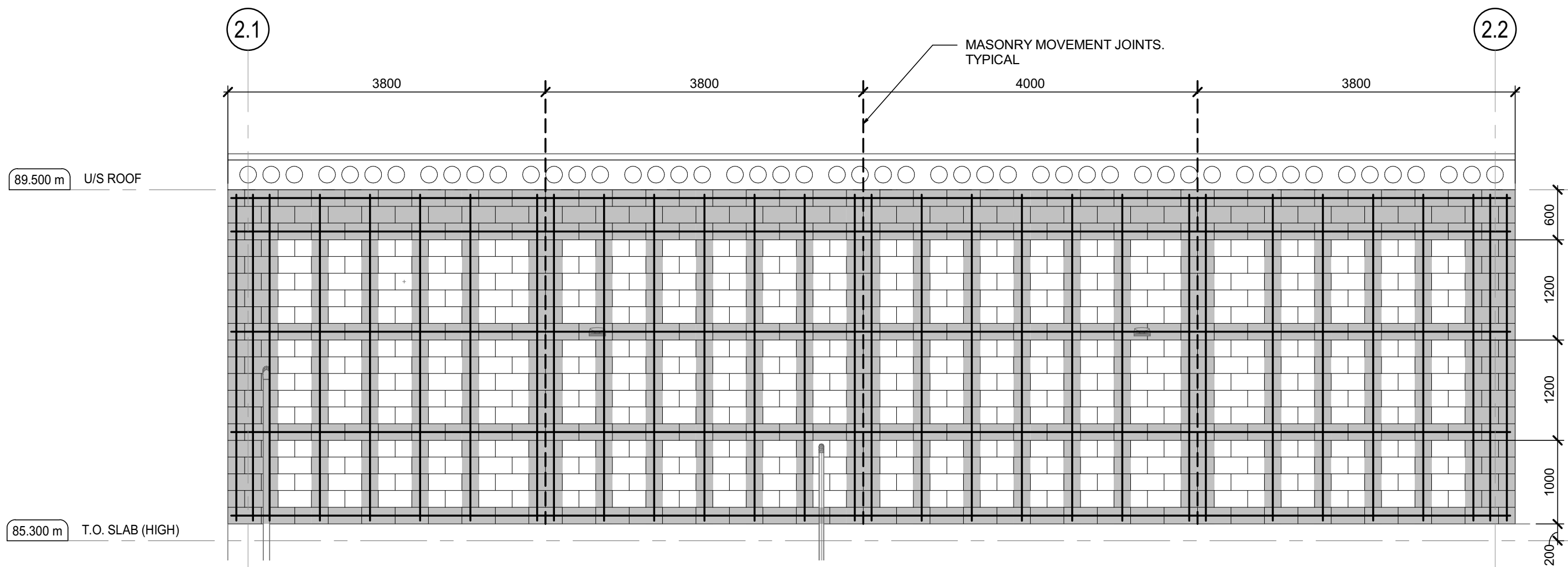
NORTH ELEVATION
SCALE: 1:50



SOUTH ELEVATION
SCALE: 1:50



WEST ELEVATION
SCALE: 1:50



EAST ELEVATION
SCALE: 1:50

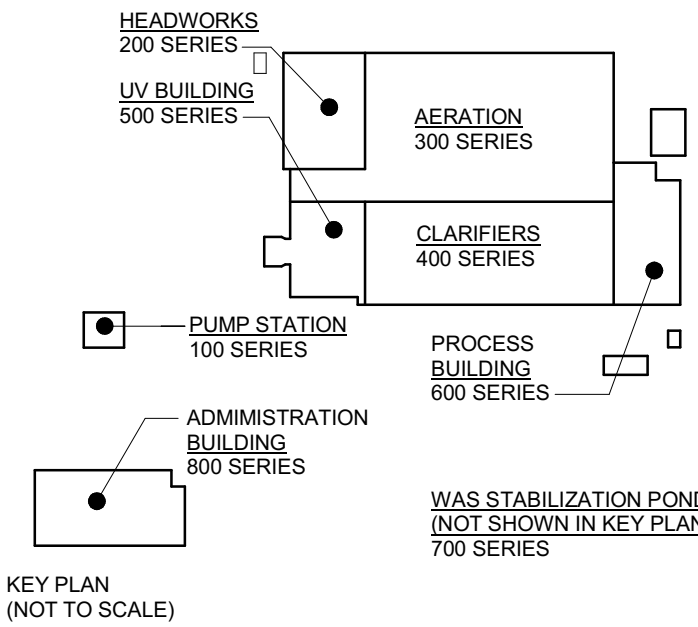
DRAWING NOTES:

1. ARCHITECTURAL EXTERIOR VENEER NOT SHOWN FOR CLARITY.
2. ALL LINTELS TO EXTEND 400mm MINIMUM BEYOND ALL OPENINGS.
3. REFER TO MASONRY STANDARD DETAILS IN S000 SERIES DRAWINGS.

MASONRY NOTES:

1. HEADWORKS BUILDING TO BE CONSTRUCTED WITH 15 MPa CONCRETE BLOCK.
2. LOAD BEARING MASONRY WALLS ARE MODERATELY DUCTILE SHEAR WALLS AND ARE TO BE PARTIALLY GROUTED.
3. FOR LOAD BEARING MASONRY, PROVIDE DOUBLE BOND BEAM COURSE AT THE TOP OF ALL WALLS AND SINGLE BOND BEAM COURSE AT BOTTOM OF ALL WALLS REINFORCED WITH (1) 15M CONTINUOUS BAR. HORIZONTAL REINFORCING OF TOP BEAMS TO CONTINUE THROUGH MOVEMENT JOINTS.
4. FOR NON-LOAD BEARING MASONRY, PROVIDE SINGLE BOND BEAM COURSE AT THE TOP AND BOTTOM OF ALL WALLS REINFORCED WITH (1) 15M CONTINUOUS BAR.
5. UNLESS NOTED OTHERWISE, HORIZONTAL REINFORCING STEEL AT BOTTOM AND INTERMEDIATE BOND BEAMS SHALL TERMINATE IN 180 DEGREE STANDARD HOOKS AROUND VERTICAL REINFORCING AT MOVEMENT JOINTS.
6. BOND BEAM REINFORCING STEEL SHALL NOT BE LAPPED WITHIN 600mm OF WALL ENDS.
7. PROVIDE MATCHING VERTICAL DOWELS TO FOUNDATION WALLS (NOT SHOWN IN ELEVATIONS).

MASONRY BLOCK WALL REINFORCING		
WALL TYPE	VERTICAL REINFORCING	HORIZONTAL REINFORCING
240 LOAD BEARING EXTERIOR	15M @ 600 crs., AT WALL ENDS, AND (2) COURSES AT SIDES OF OPENINGS	200mm DEEP BOND COURSE r/w (1) 10M CONTINUOUS @ 1200 crs.
190 NON-LOAD BEARING INTERIOR	15M @ 1200 crs., AT WALL ENDS AND AT SIDES OF OPENINGS	STANDARD GAUGE LADDER REINFORCING @ 400 crs.



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SCALE: As indicated

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL HEADWORKS

MASONRY ELEVATIONS

DESIGN: CWD

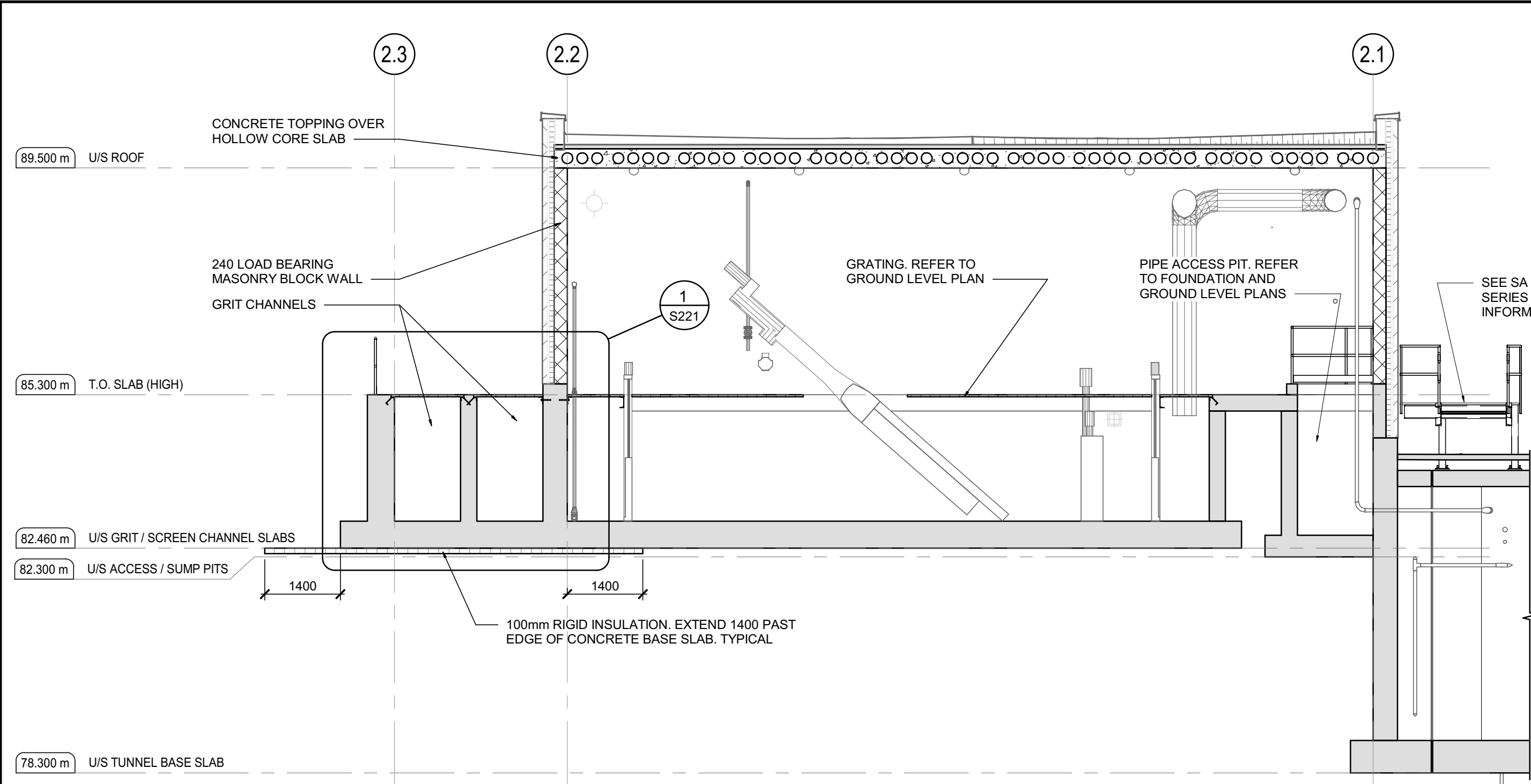
DRAWN: JIC

CHECKED: JMO

JLR #: 32296

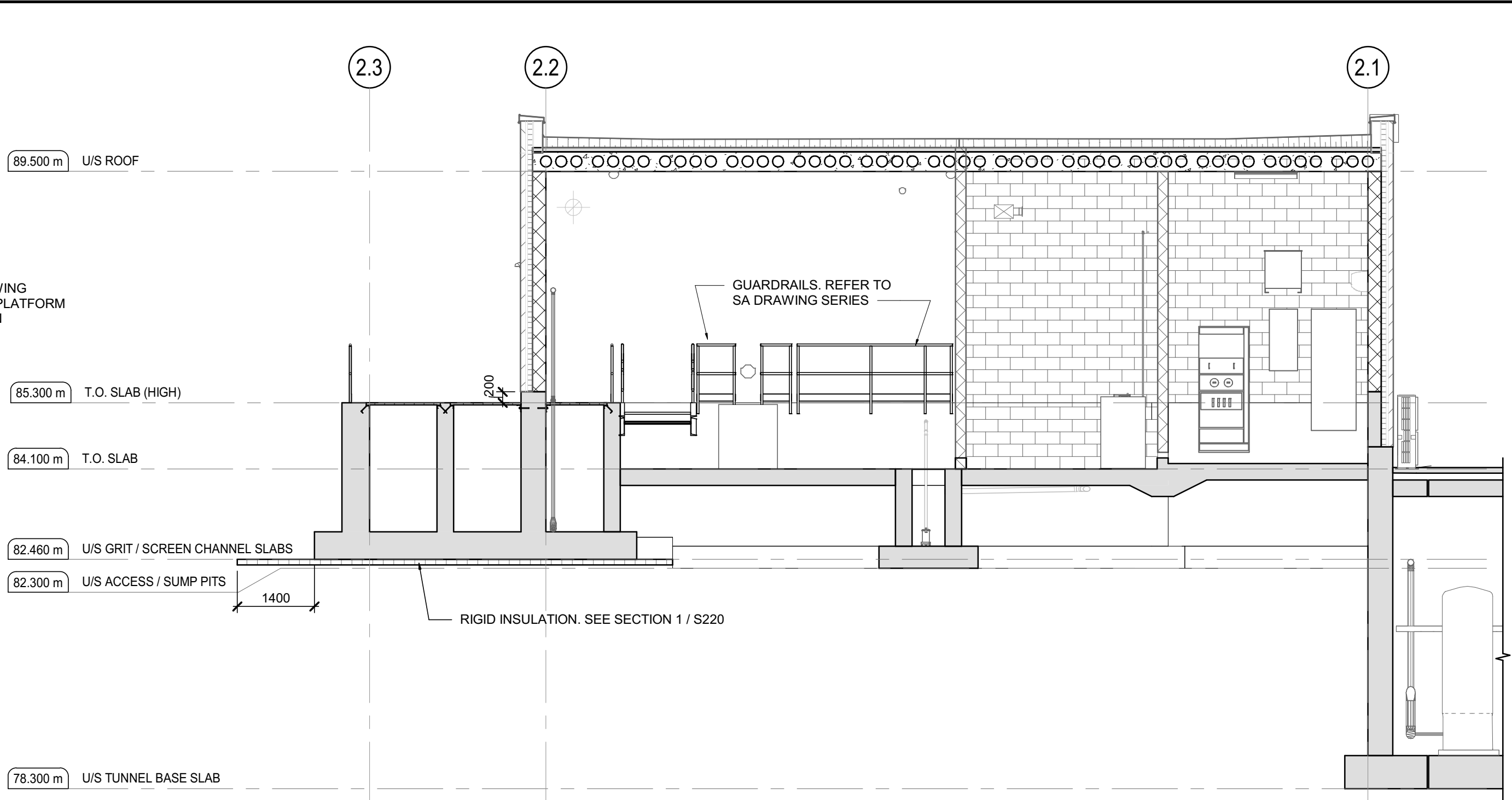
DRAWING #:

S210



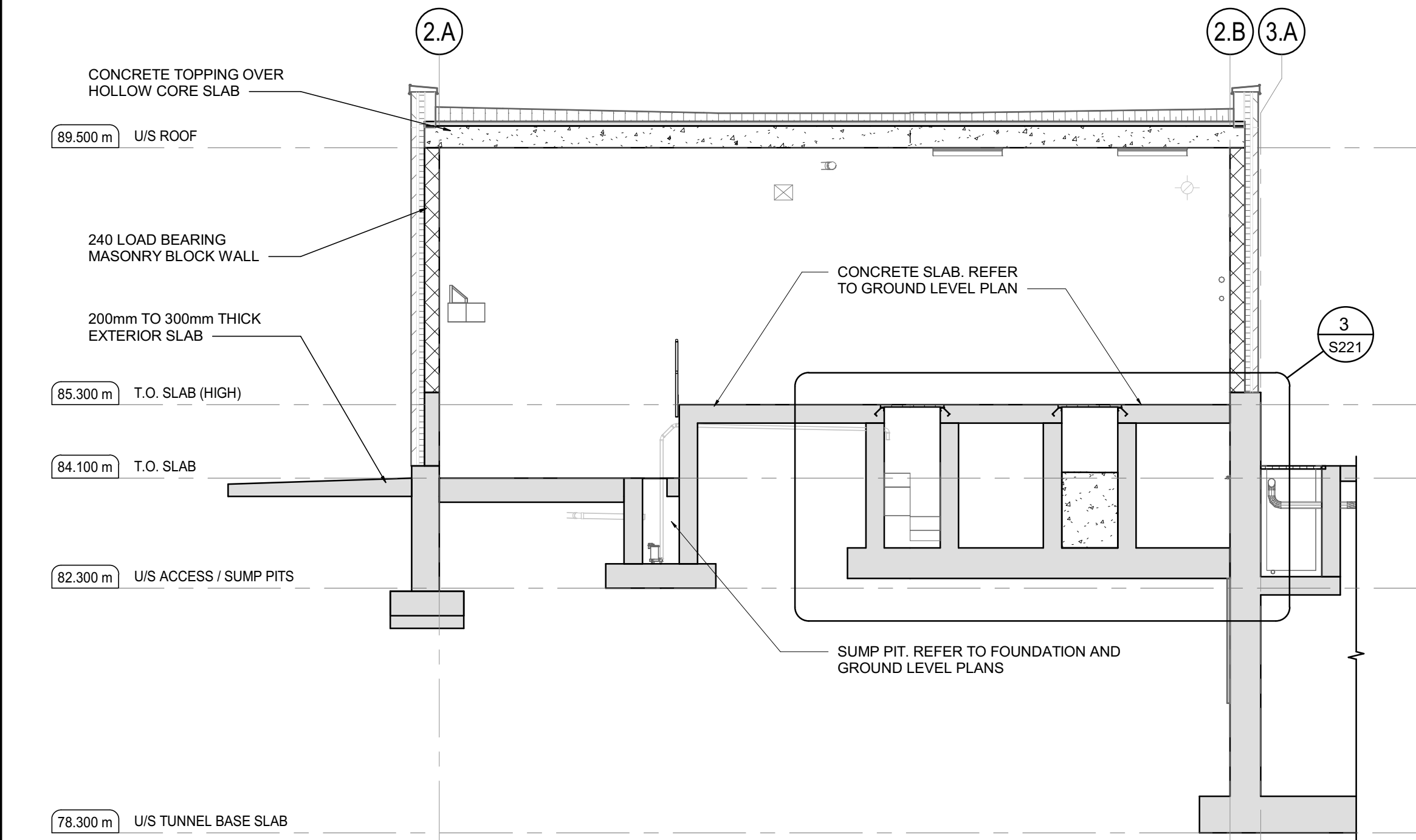
1
S220

BUILDING SECTION
SCALE: 1:75



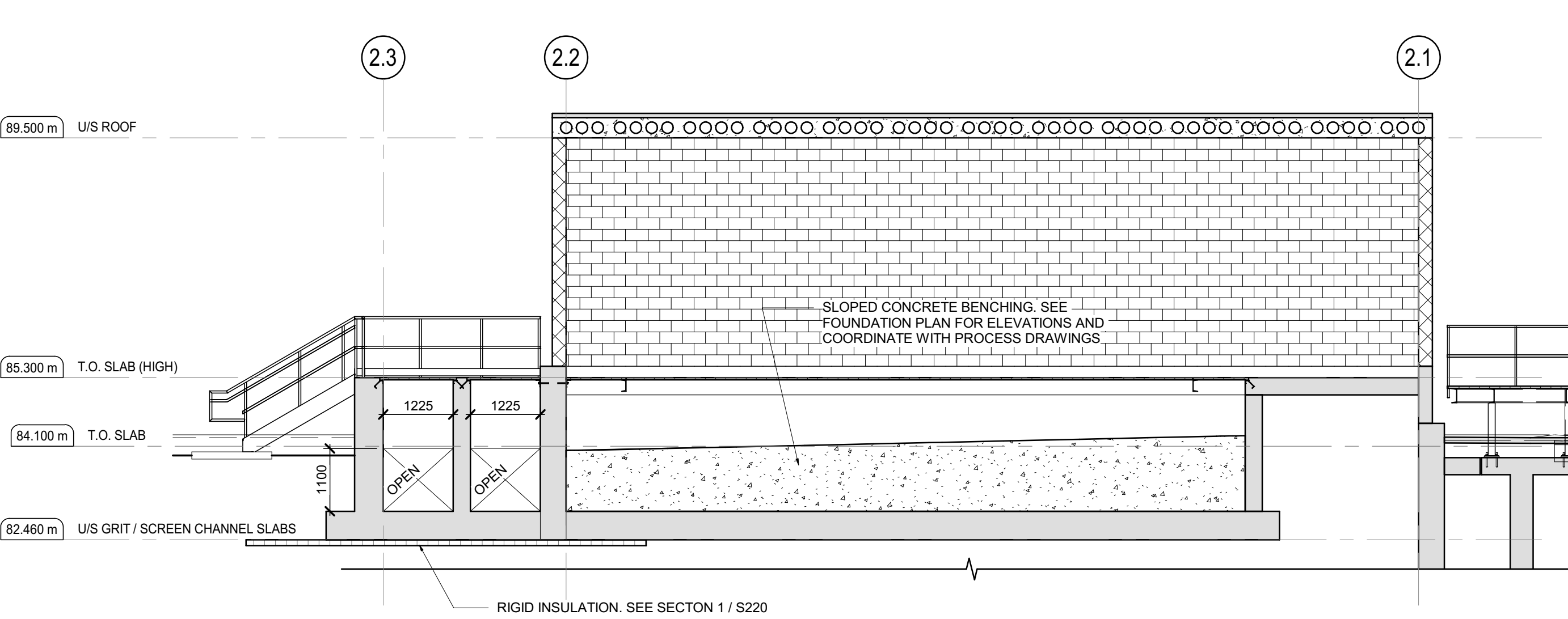
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S220

BUILDING SECTION
SCALE: 1:75



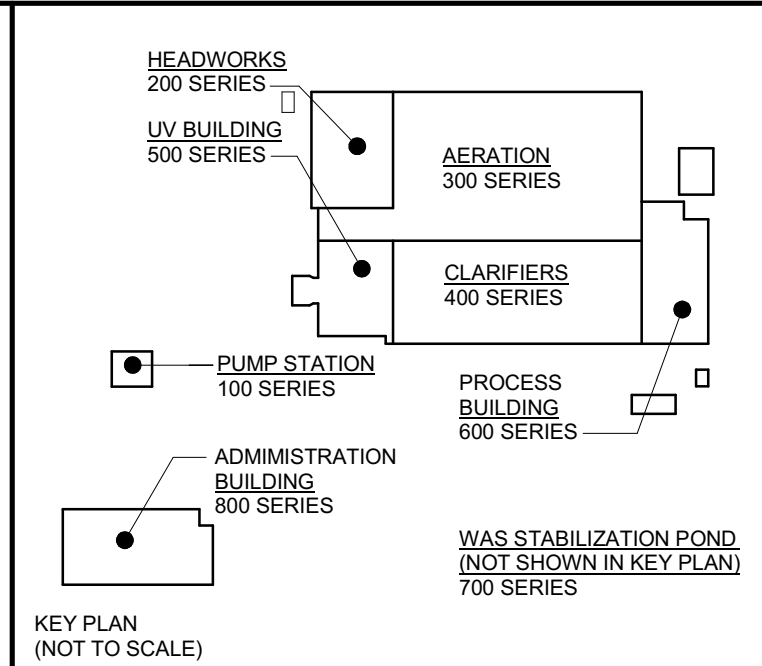
3
S220

BUILDING SECTION
SCALE: 1:75



5
S220

BUILDING SECTION
SCALE: 1:75



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SCALE: 1:75

CLIENT:

MUNICIPALITY OF BRIGHTON

CONSULTANT: www.jrichards.ca

J.L. Richards ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

PROJECT NORTH

PROJECT: BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING: STRUCTURAL HEADWORKS

SECTIONS AND DETAILS

DESIGN: CWD

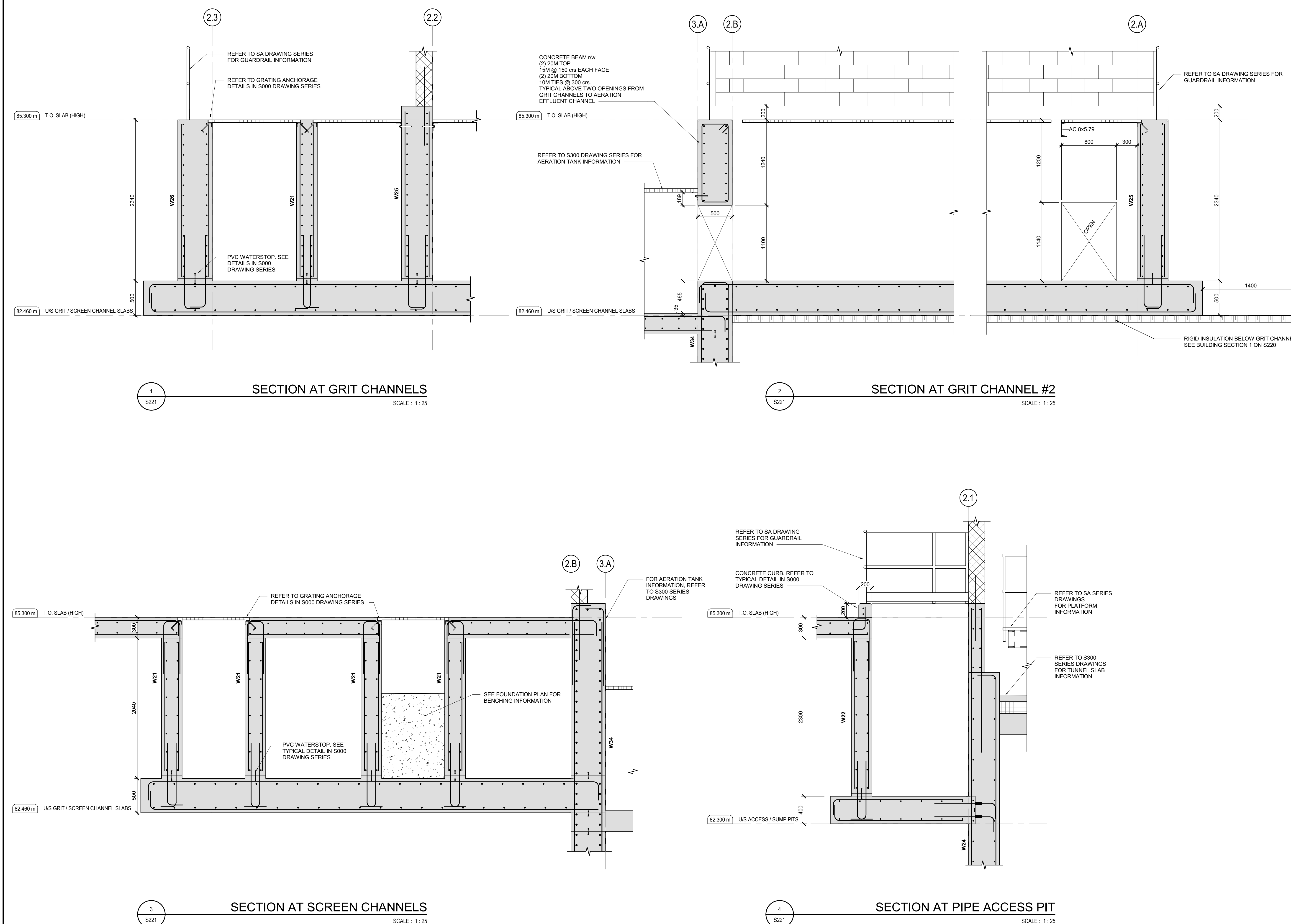
DRAWN: JIC

CHECKED: JMO

JLR #: 32296

DRAWING #: S220

FILE DATE: 2025-04-22 4:32:12 PM



HEADWORKS
200 SERIES

UV BUILDING
500 SERIES

PUMP STATION
100 SERIES

ADMINISTRATION
BUILDING
800 SERIES

AERATION
300 SERIES

CLARIFIERS
400 SERIES

PROCESS
BUILDING
600 SERIES

WAS STABILIZATION POND
(NOT SHOWN IN KEY PLAN)
700 SERIES

KEY PLAN
(NOT TO SCALE)

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SCALE: 1:25

CLIENT:

BRIGHTON
MUNICIPALITY

CONSULTANT:

J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP
2025-04-29
C.W. DYER
100212220
PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

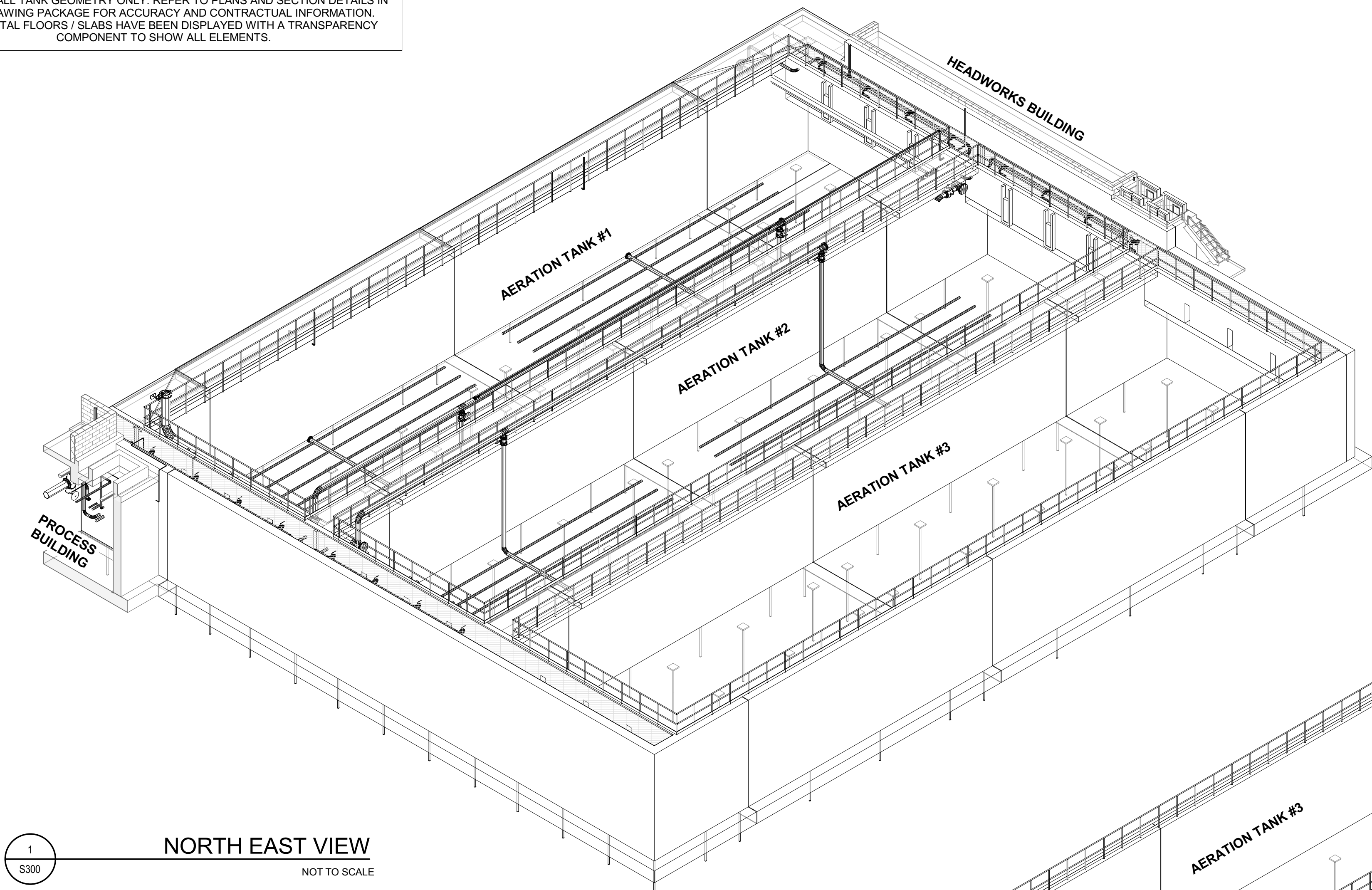
STRUCTURAL HEADWORKS

SECTION DETAILS

DESIGN:	CWD	DRAWING #: S221
DRAWN:	JIC	
CHECKED:	JMO	
JLR #:	32296	

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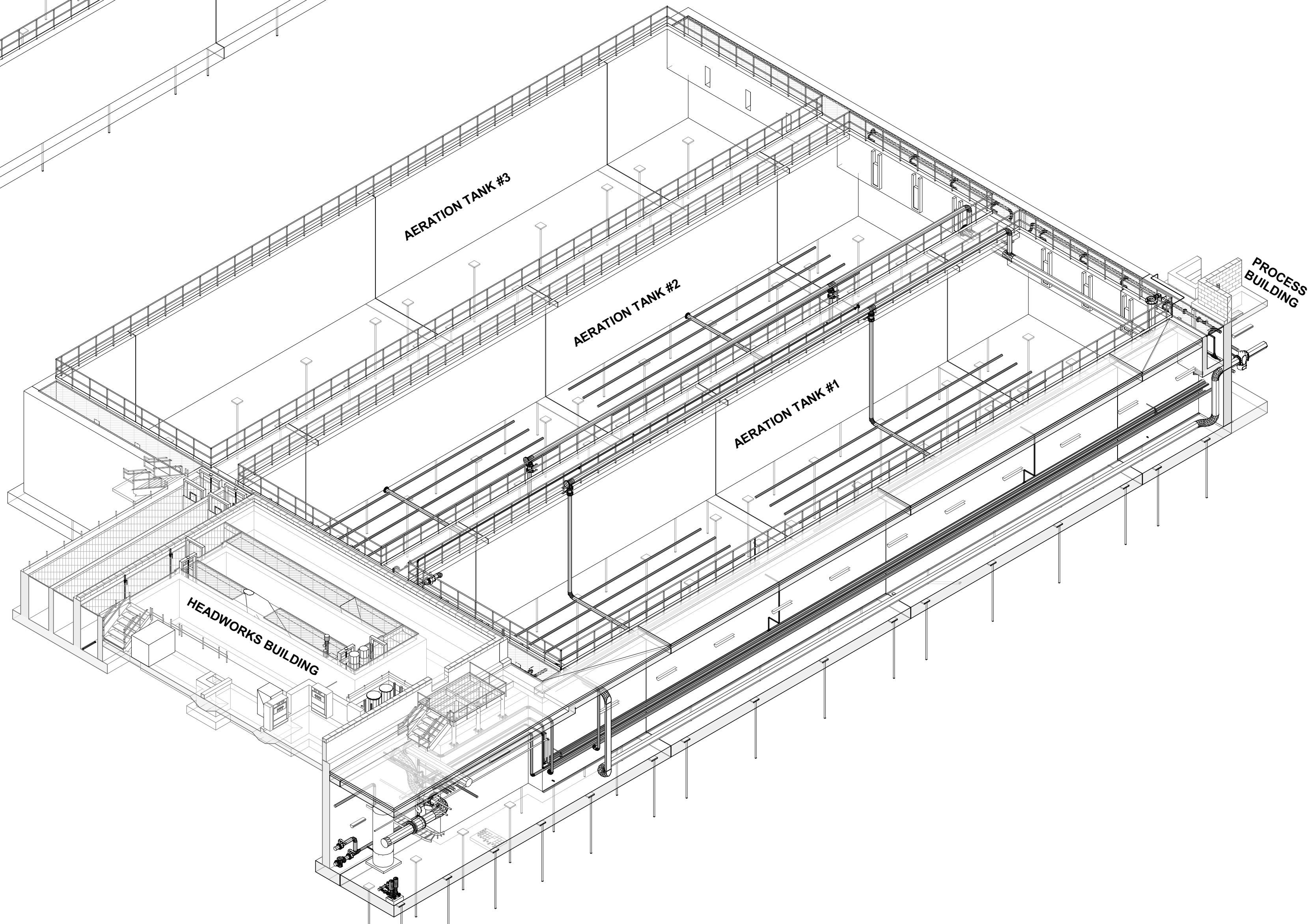
NOTE: THESE ISOMETRIC VIEWS ARE PROVIDED TO SHOW GENERAL DESIGN INTENT AND OVERALL TANK GEOMETRY ONLY. REFER TO PLANS AND SECTION DETAILS IN THIS DRAWING PACKAGE FOR ACCURACY AND CONTRACTUAL INFORMATION. HORIZONTAL FLOORS / SLABS HAVE BEEN DISPLAYED WITH A TRANSPARENCY COMPONENT TO SHOW ALL ELEMENTS.



1
S300

NORTH EAST VIEW

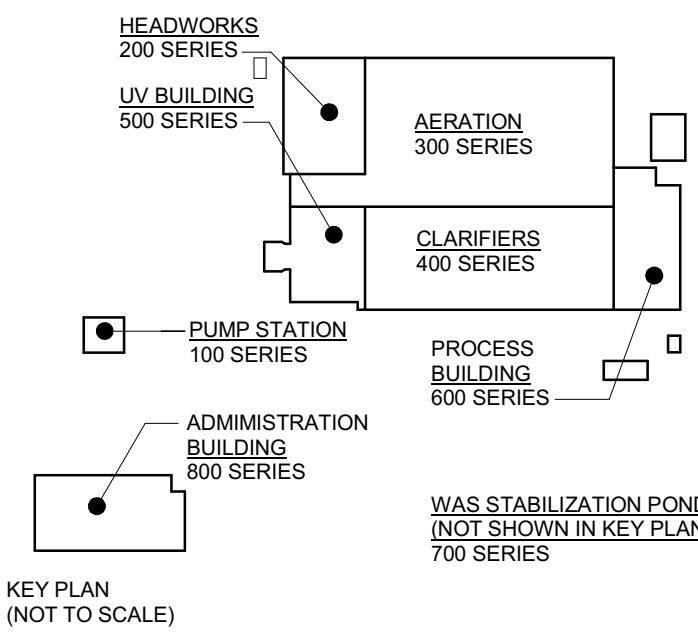
NOT TO SCALE



2
S300

SOUTH WEST VIEW

NOT TO SCALE



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SCALE:

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL AERATION

ISOMETRIC VIEWS AND NOTES

DESIGN: CWD

DRAWN: JIC/SWW

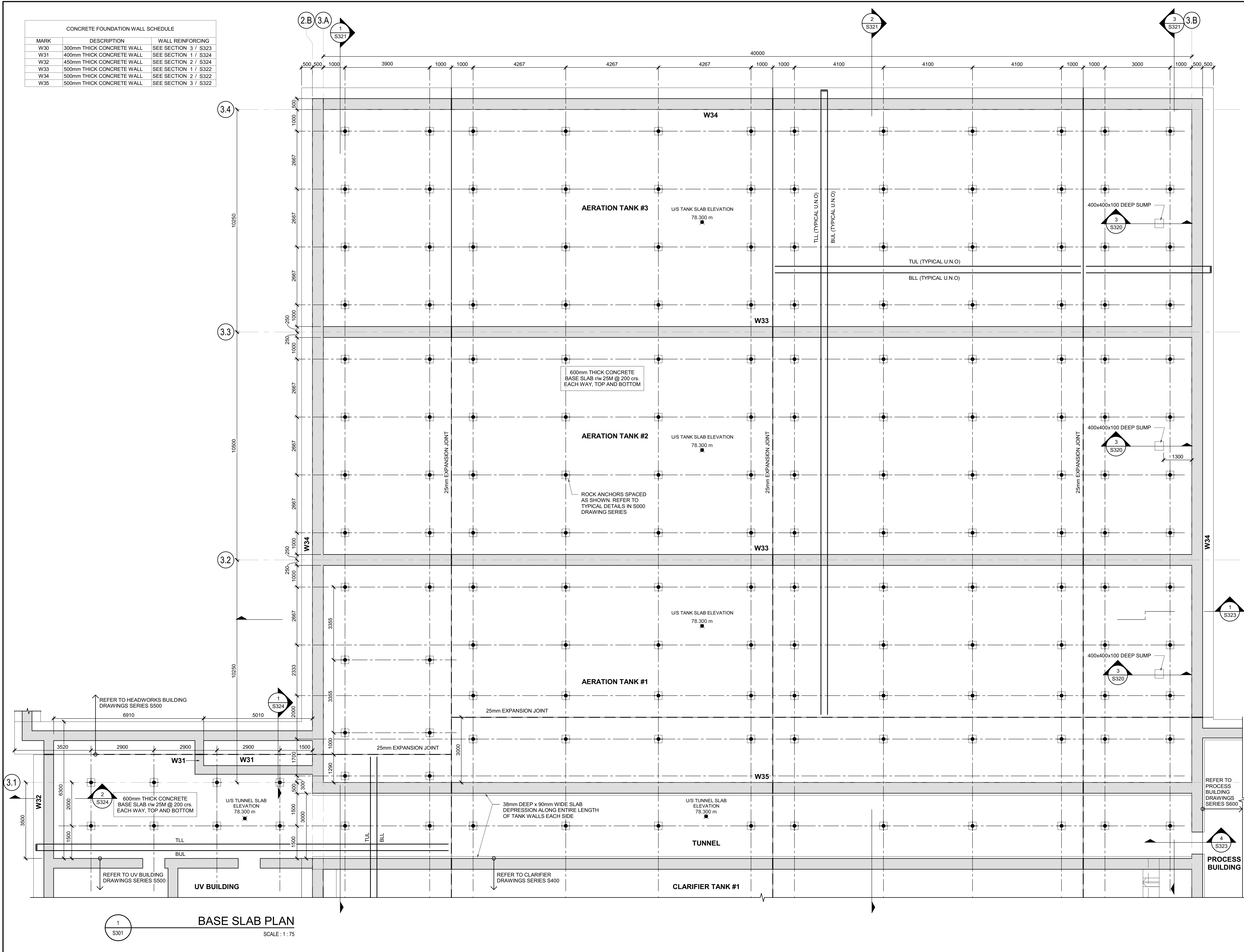
CHECKED: JMO

JLR #: 32296

DRAWING #:
S300

File Location: C:\Users\jrc\Desktop\Brighton LOCAL\32296 S-Aeration LOCAL.rvt PLOT DATE: 2025-04-23 9:04:17 AM

CONCRETE FOUNDATION WALL SCHEDULE		
MARK	DESCRIPTION	WALL REINFORCING
W30	300mm THICK CONCRETE WALL	SEE SECTION 3 / S323
W31	400mm THICK CONCRETE WALL	SEE SECTION 1 / S324
W32	450mm THICK CONCRETE WALL	SEE SECTION 2 / S324
W33	500mm THICK CONCRETE WALL	SEE SECTION 1 / S322
W34	500mm THICK CONCRETE WALL	SEE SECTION 2 / S322
W35	500mm THICK CONCRETE WALL	SEE SECTION 3 / S322



1
S301

BASE SLAB PLAN

SCALE: 1:75

HEADWORKS
200 SERIES

UV BUILDING
500 SERIES

AERATION
300 SERIES

CLARIFIERS
400 SERIES

PUMP STATION
100 SERIES

ADMINISTRATION
BUILDING
800 SERIES

PROCESS
BUILDING
600 SERIES

WAS STABILIZATION POND
(NOT SHOWN IN KEY PLAN)
700 SERIES

KEY PLAN
(NOT TO SCALE)

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SCALE: As indicated

CLIENT:

BRIGHTON
MUNICIPALITY

CONSULTANT:

J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

PROJECT NORTH

PROJECT:

**BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES**

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

**STRUCTURAL
AERATION**

BASE SLAB LEVEL PLAN

DESIGN:	CWD	DRAWING #:	S301
DRAWN:	JIC/SWW		
CHECKED:	JMO		
JLR #:	32296		

DRAWING NOTES:

1. REFER TO S000 DRAWING SERIES FOR STRUCTURAL GENERAL NOTES AND LEGENDS TO STRUCTURAL MATERIAL.
2. PROVIDE ANGLE FRAMES TO SUPPORT GRATING AS PER STANDARD DETAILS IN S000 DRAWING SERIES.
3. COORDINATE ALL OPENINGS WITH THE ASSOCIATED RESPONSIBLE DISCIPLINE AS NOTED ON PLAN AND IN THE REMAINDER OF THE DRAWING SET. PROVIDE ADDITIONAL REINFORCING AS REQUIRED PER STANDARD DETAILS.
4. ALL LIQUID RETAINING STRUCTURES INCLUDING CONCRETE WALLS AND SLABS ARE TO HAVE CRYSTALLINE WATERPROOFING ENTRAINED WITHIN THE MIX DESIGN ON THESE PLANS. ALL BELOW GRADE WALLS AND SLABS THAT ENCLOSE OCCUPIED SPACES SHALL HAVE CRYSTALLINE WATERPROOFING ENTRAINED IN THE MIX DESIGN. REFER TO CAST-IN-PLACE CONCRETE SPECIFICATION FOR FURTHER DETAILS.
5. REFER TO SA DRAWING SERIES FOR STAIR, PLATFORM, GUARDRAIL / HANDRAIL AND LADDER INFORMATION.
6. PROVIDE 25mm CHAMFER AT ALL EXPOSED CONCRETE CORNERS. DO NOT PROVIDE CHAMFER IF THERE IS A BEARING CONDITION.

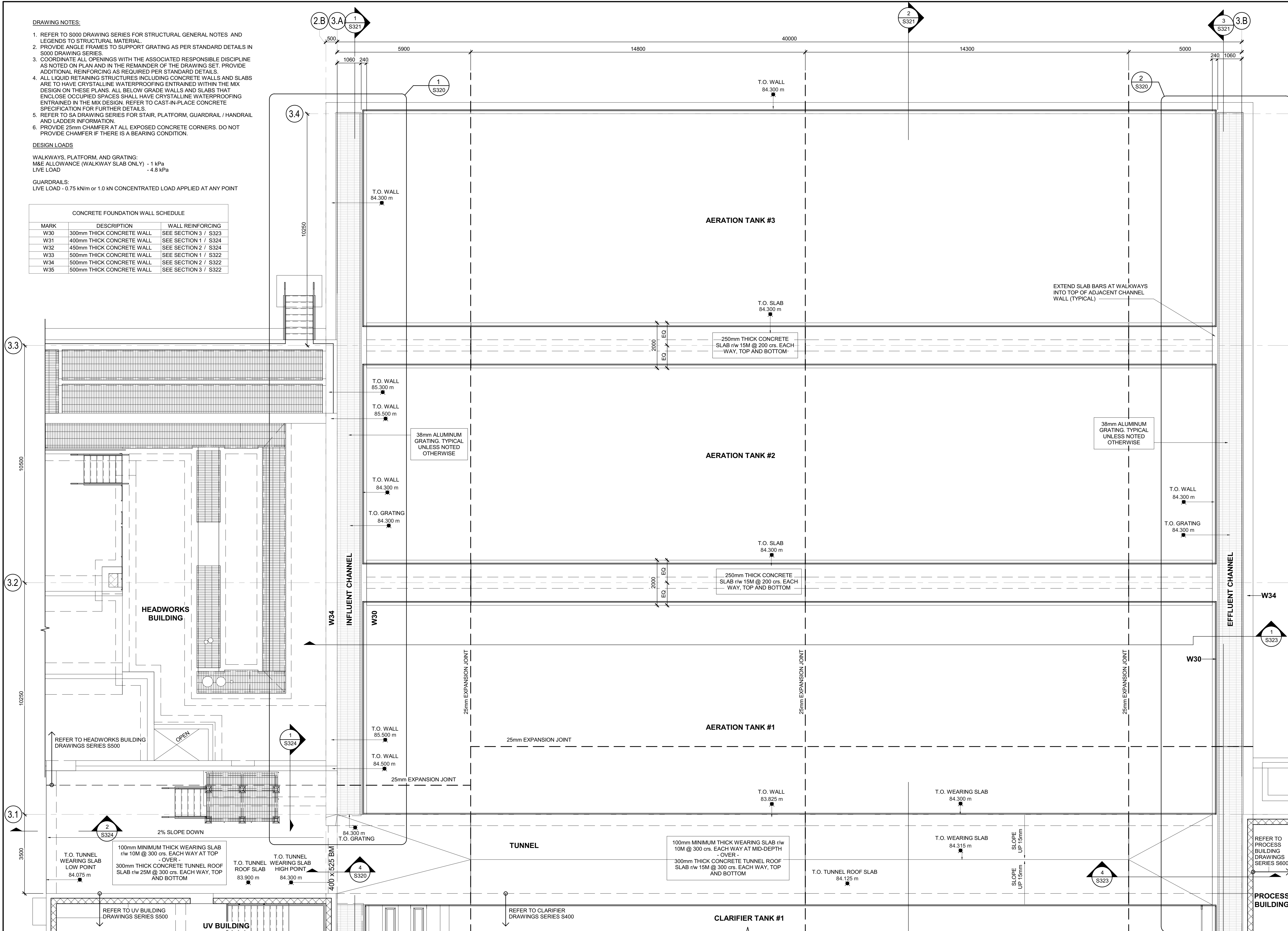
DESIGN LOADS

WALKWAYS, PLATFORM, AND GRATING:
M&E ALLOWANCE (WALKWAY SLAB ONLY) - 1 kPa
LIVE LOAD - 4.8 kPa

GUARDRAILS:
LIVE LOAD - 0.75 kN/m or 1.0 kN CONCENTRATED LOAD APPLIED AT ANY POINT

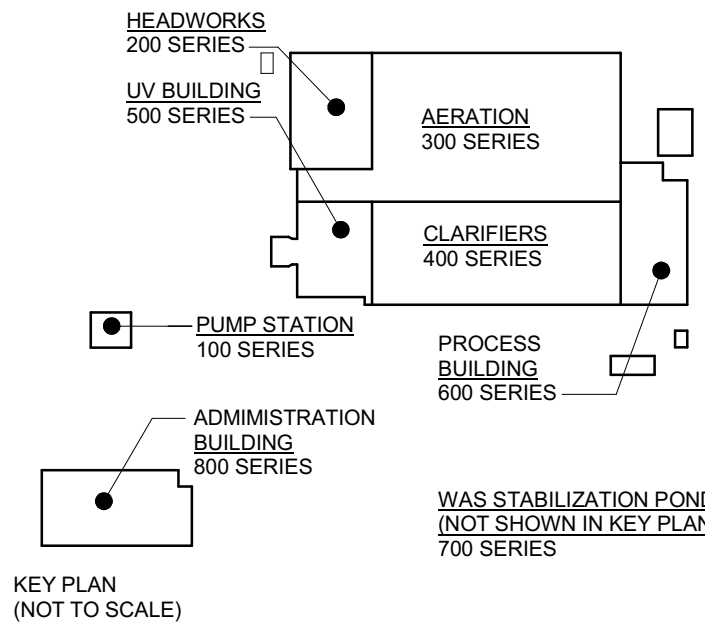
CONCRETE FOUNDATION WALL SCHEDULE

MARK	DESCRIPTION	WALL REINFORCING
W30	300mm THICK CONCRETE WALL	SEE SECTION 3 / S323
W31	400mm THICK CONCRETE WALL	SEE SECTION 1 / S324
W32	450mm THICK CONCRETE WALL	SEE SECTION 2 / S324
W33	500mm THICK CONCRETE WALL	SEE SECTION 1 / S322
W34	500mm THICK CONCRETE WALL	SEE SECTION 2 / S322
W35	500mm THICK CONCRETE WALL	SEE SECTION 3 / S322



GROUND LEVEL PLAN

SCALE: 1:75



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SCALE: As indicated

CLIENT:



CONSULTANT: www.jrichards.ca

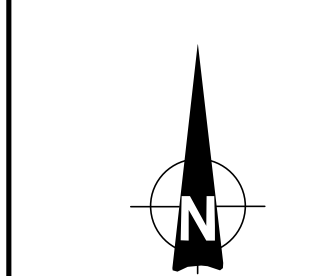


CONSULTANT:

PROFESSIONAL STAMP



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL AERATION
GROUND LEVEL PLAN

DESIGN: CWD

DRAWN: JIC/SWW

CHECKED: JMO

JLR #: 32296

DRAWING #:

S302

File Location: C:\Users\jrichards\Desktop\Brighton\LOCAL\32296 S-Aeration\LOCAL.rvt PLOT DATE: 2025-04-23 9:04:17 AM



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CLIENT:  **BRIGHTON**

CONSULTANT: www.itrichards.com

CONSULTANT:

PROJECT:

**BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES**

100 COUNTY ROAD 64, BRIGHTON ONTARIO

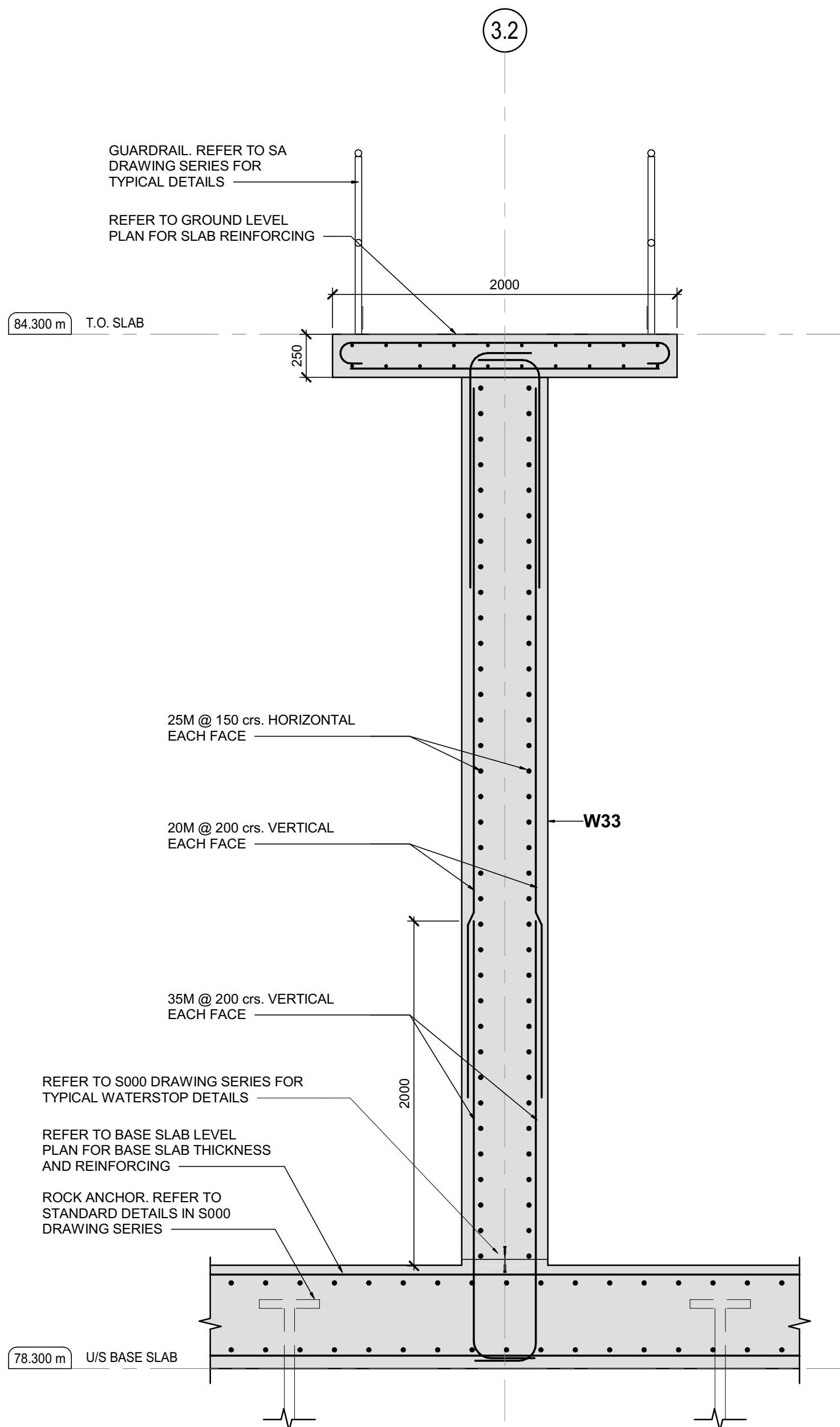
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DESIGN:	CWD	DRAWING #:	S320
DRAWN:	SWW		
CHECKED:	JMO		
JLR #:	32296		

Print Date:	2025-04-23 9:04:18 AM	File Location:	C:\Users\scale\Desktop\Brighton	LOCAL	3296	S-Aeration	LOCAL	not
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DESIGN: CWD	DRAWING #: S321
DRAWN: SWW	
CHECKED: JMO	
JLR #: 32296	

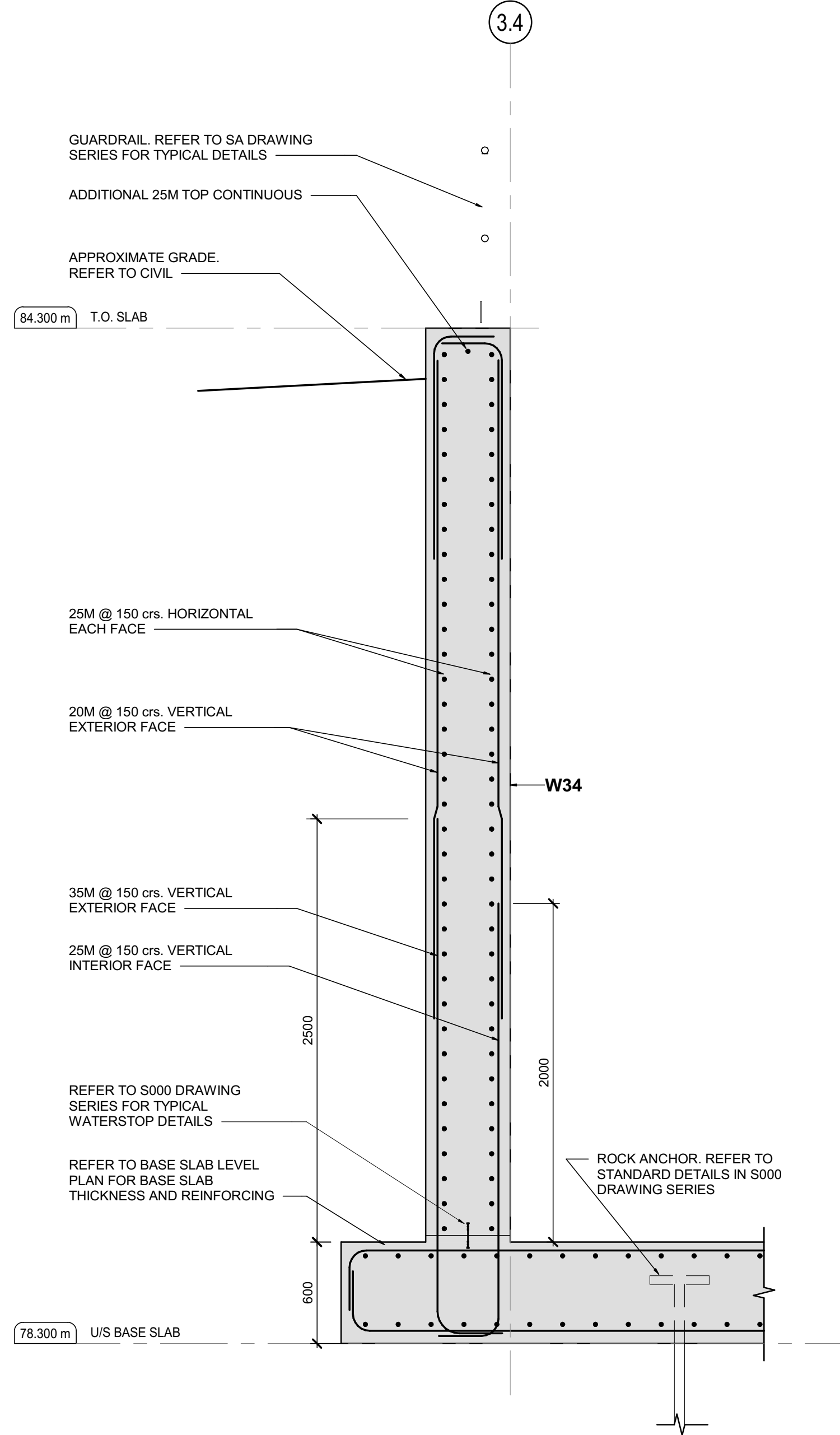
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1
S322

INTERIOR AERATION TANK
WALL DETAIL (W33)

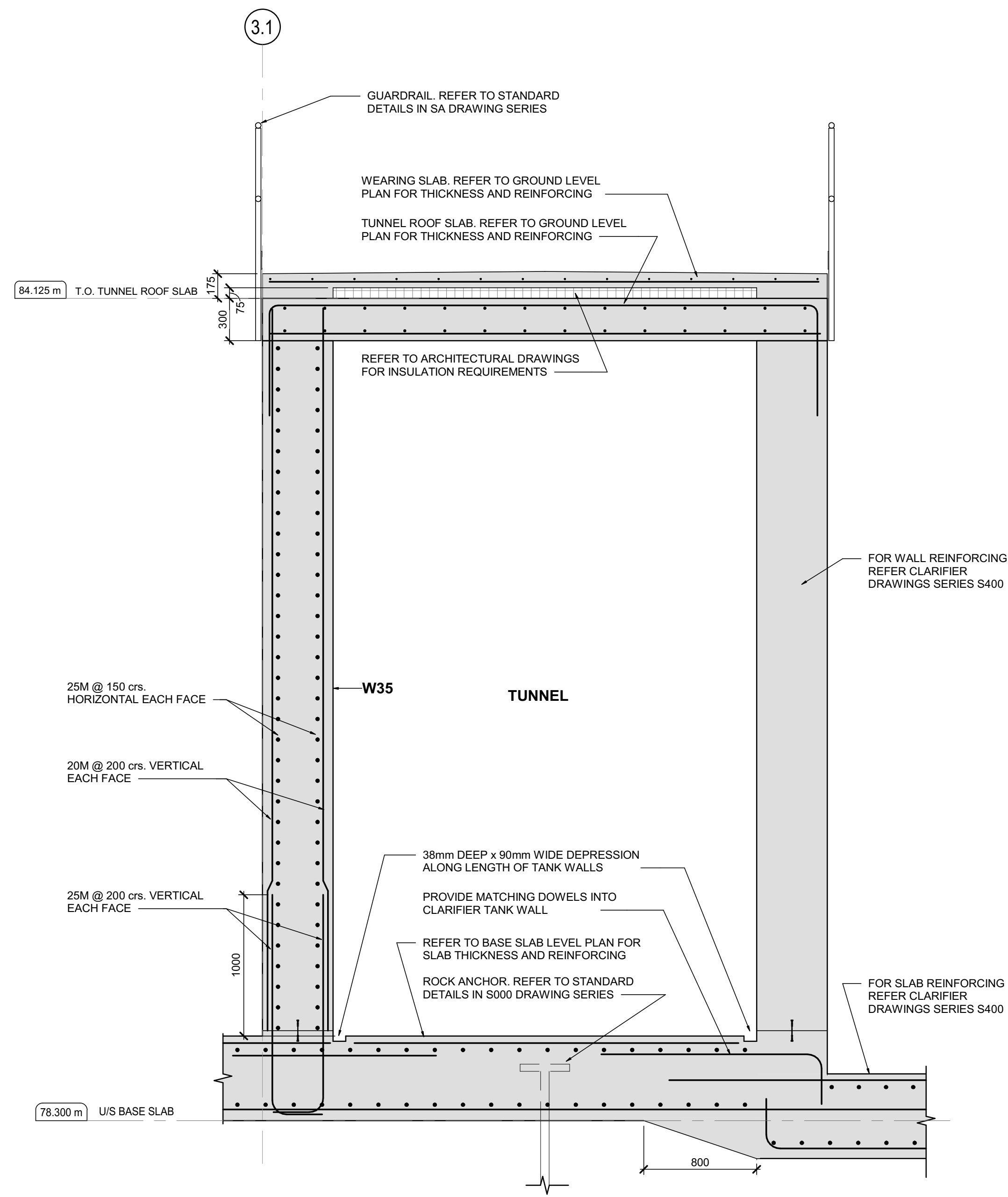
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2
S322

EXTERIOR AERATION TANK
WALL DETAIL (W34)

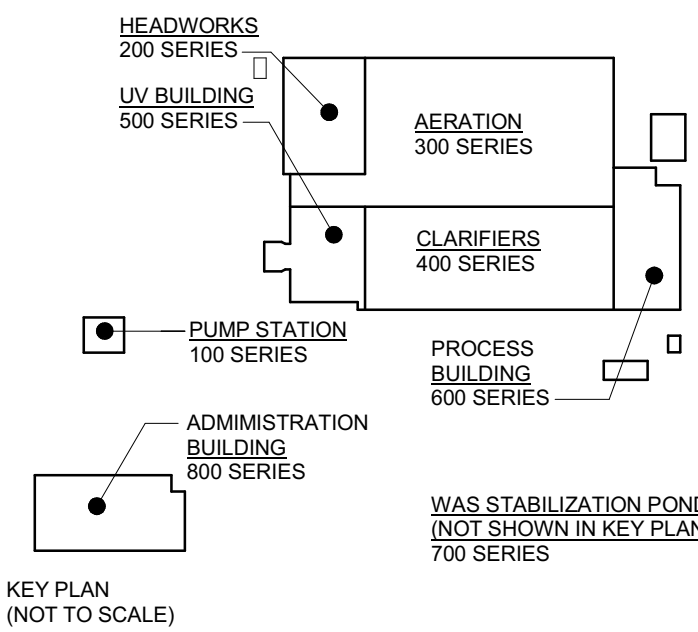
SCALE : 1 : 25



3
S322

SECTION AT TUNNEL (W35)

SCALE : 1 : 25



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm

SCALE: 1 : 25

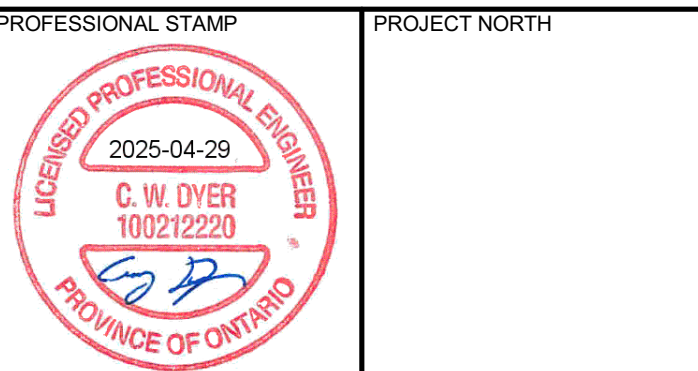
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

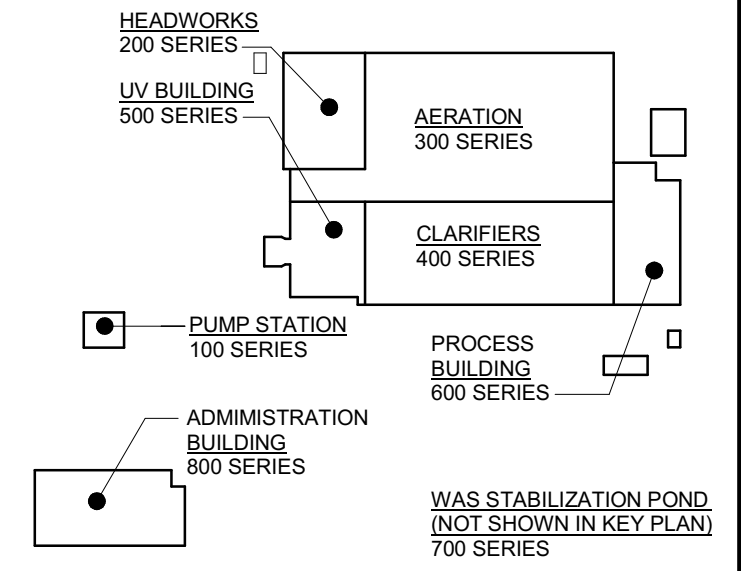
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL
AERATION
SECTIONS AND DETAILS

DESIGN: CWD	DRAWING #:
DRAWN: SWW	S322
CHECKED: JMO	
JLR #:	

32296



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SCALE: As indicated

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL AERATION

SECTIONS AND DETAILS

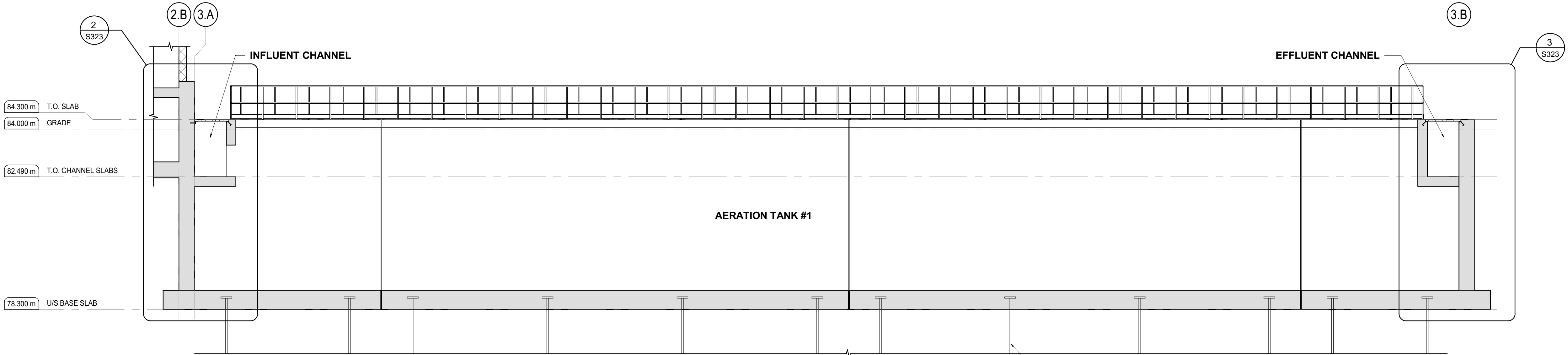
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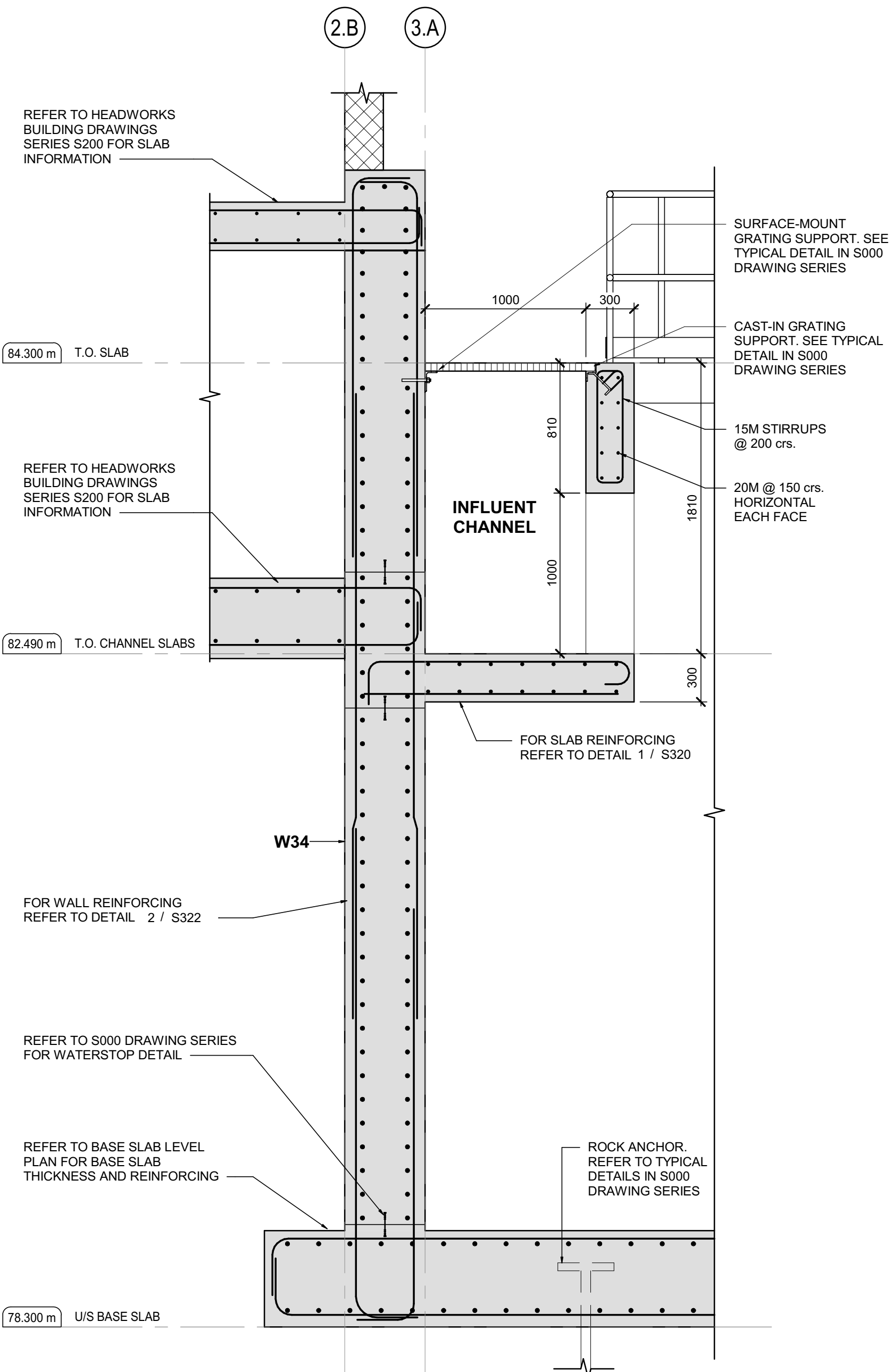
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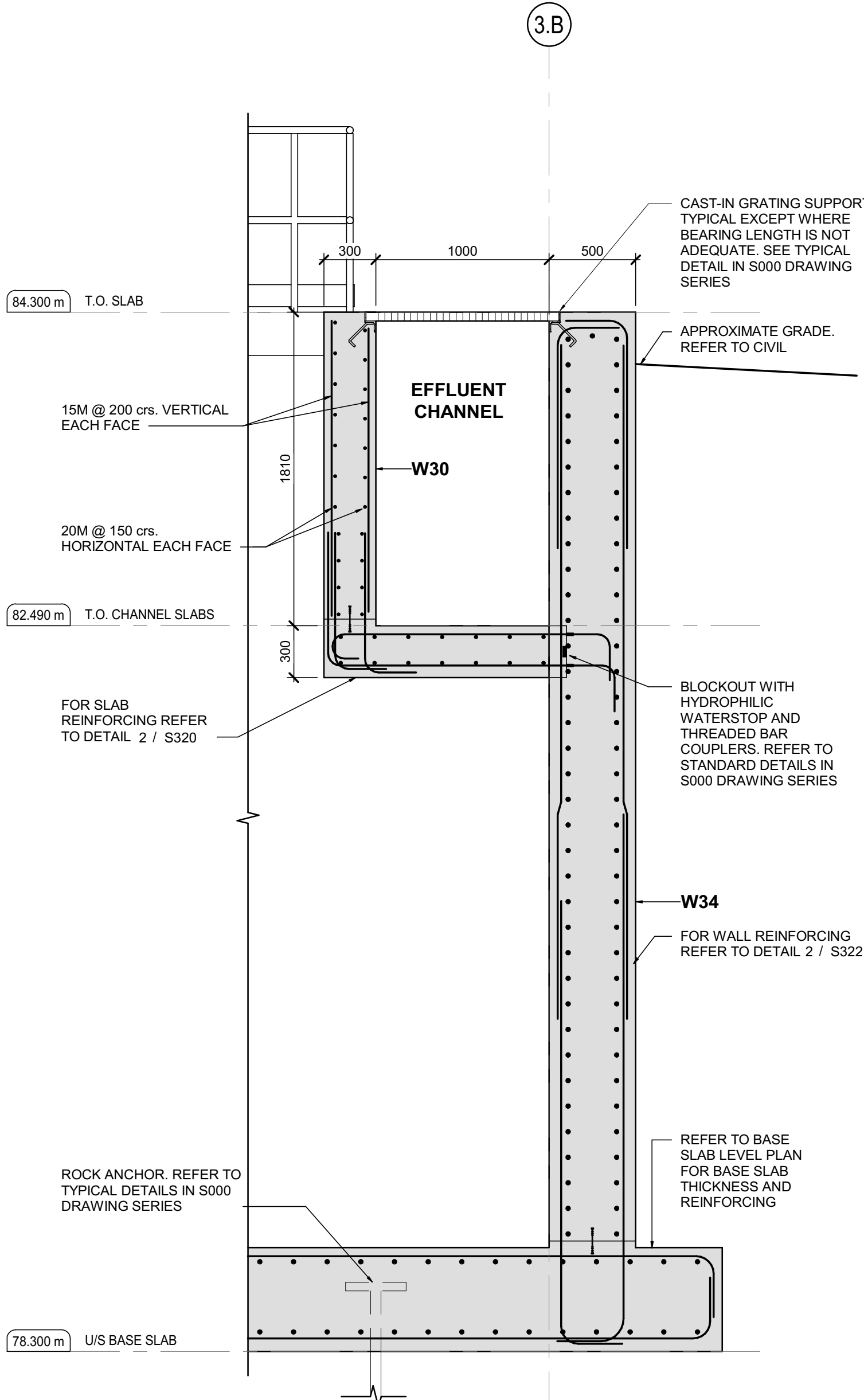
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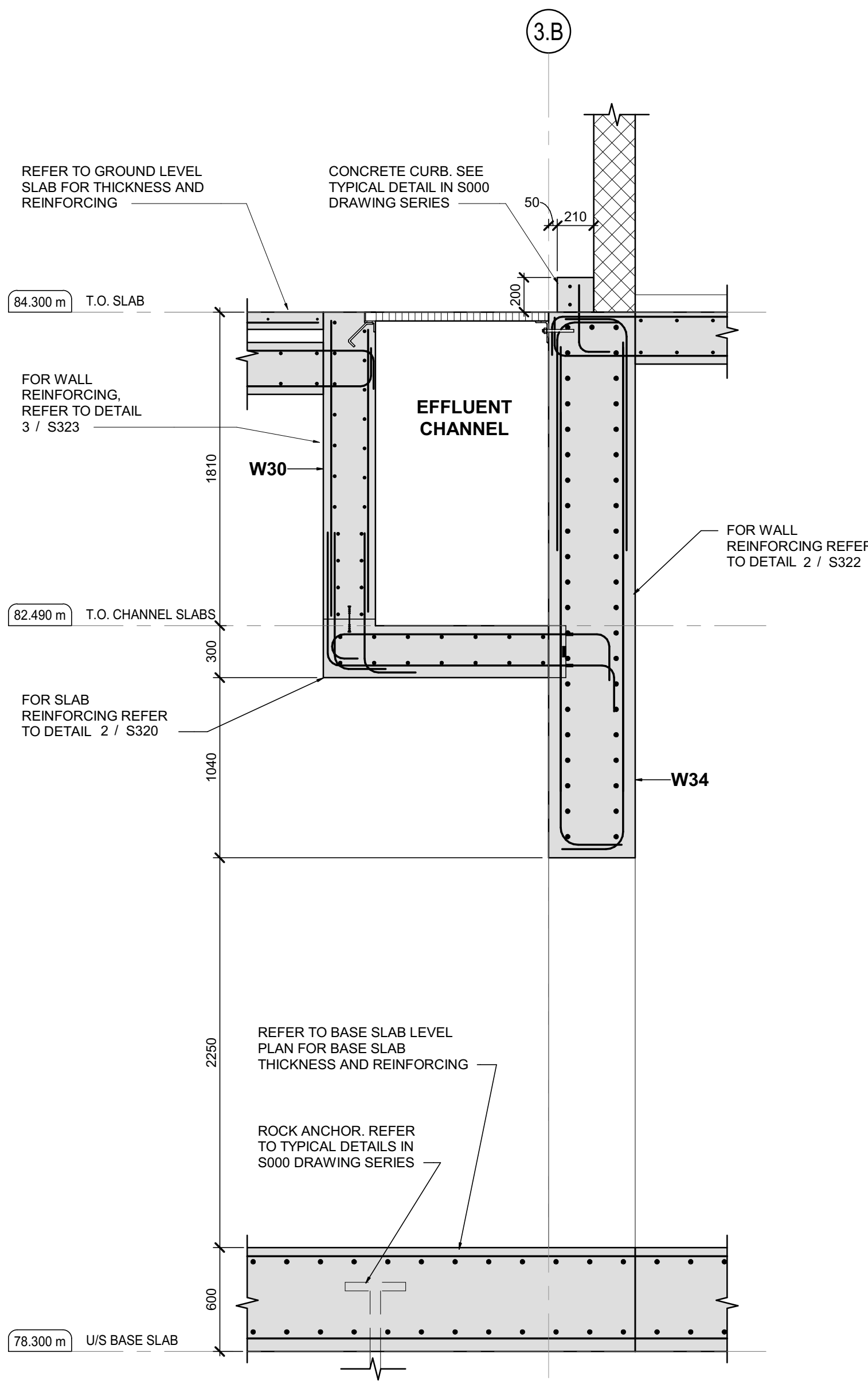
1 AERATION TANK SECTION SCALE: 1:75



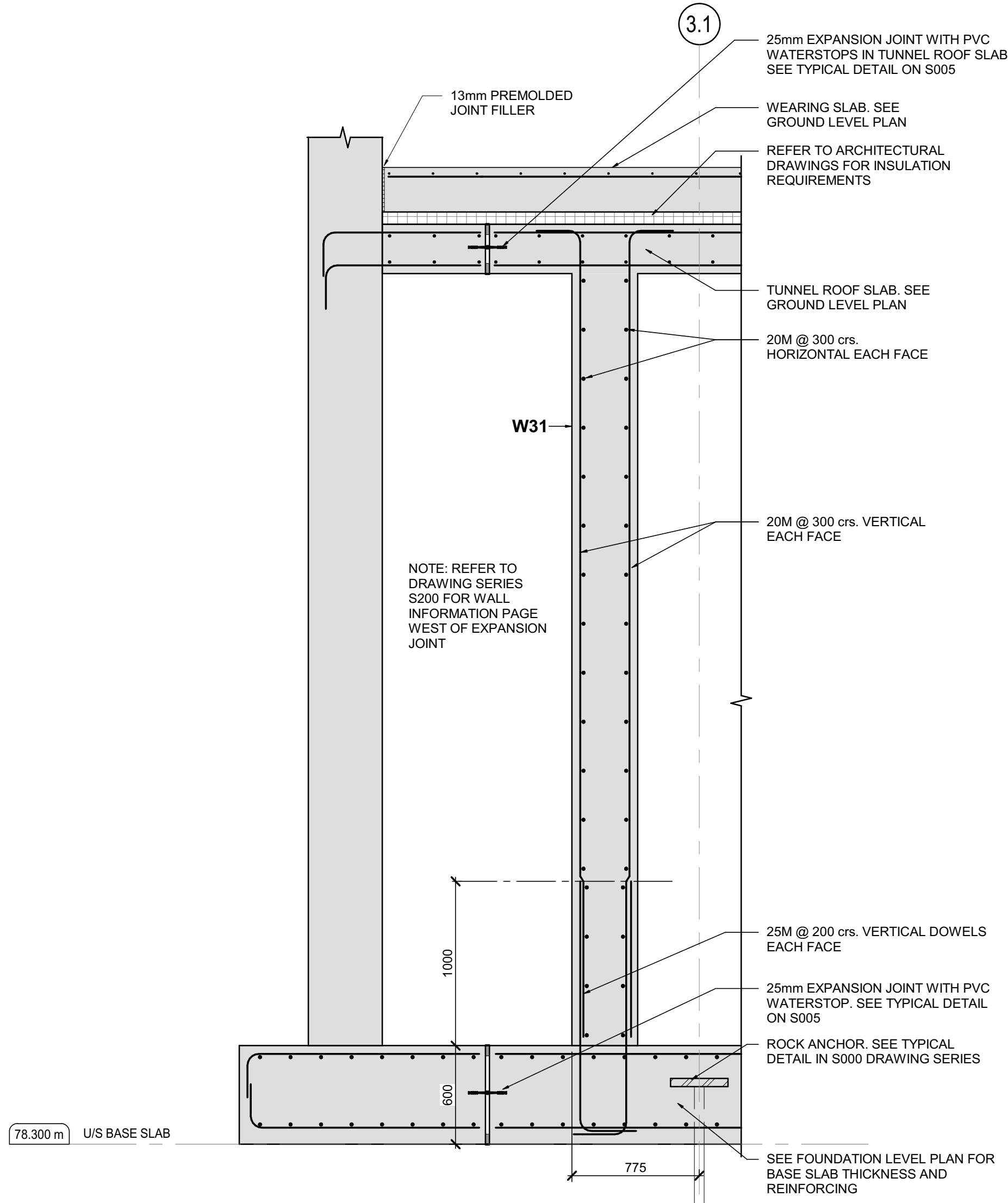
2 INFLUENT CHANNEL SECTION SCALE: 1:25



3 EFFLUENT CHANNEL SECTION SCALE: 1:25

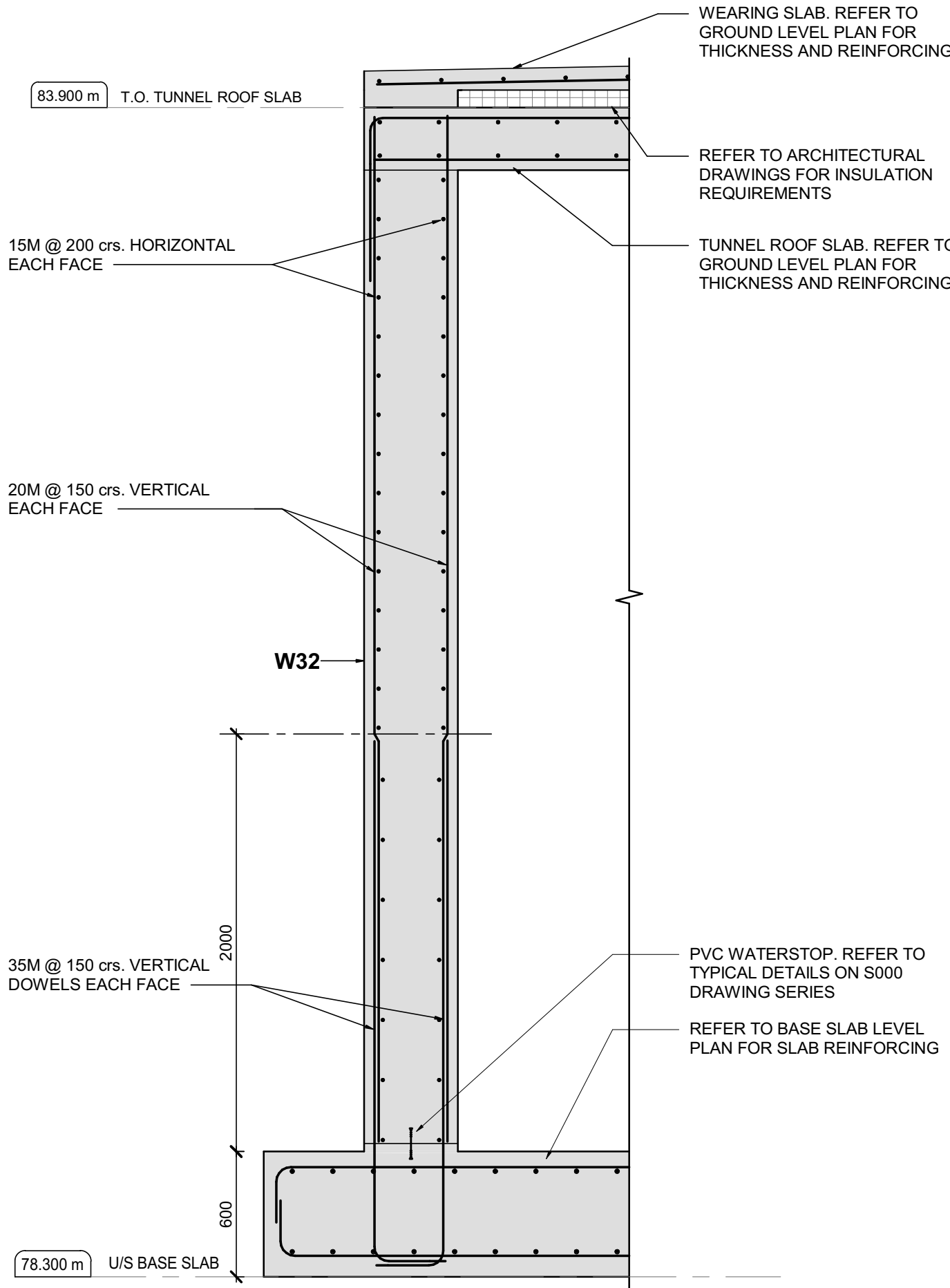


4 EFFLUENT CHANNEL AT TUNNEL SECTION SCALE: 1:25



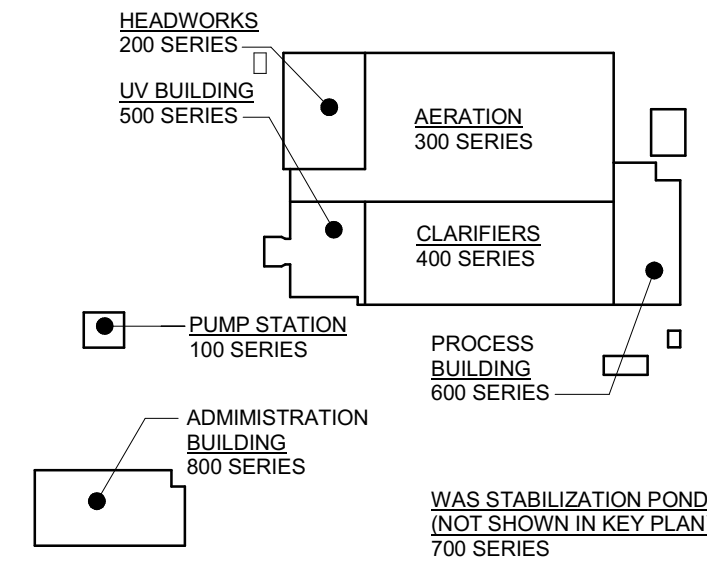
FOUNDATION WALL
SECTION (W31)

SCALE: 1 : 25



SECTION AT TUNNEL (W32)

SCALE: 1 : 25



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SCALE: 1 : 25

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL
AERATION

SECTIONS AND DETAILS

DESIGN: CWD

DRAWN: JIC

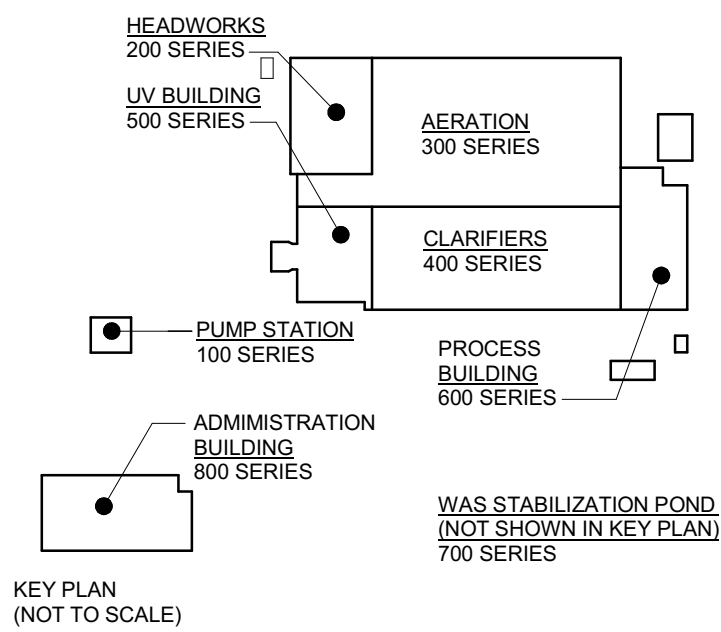
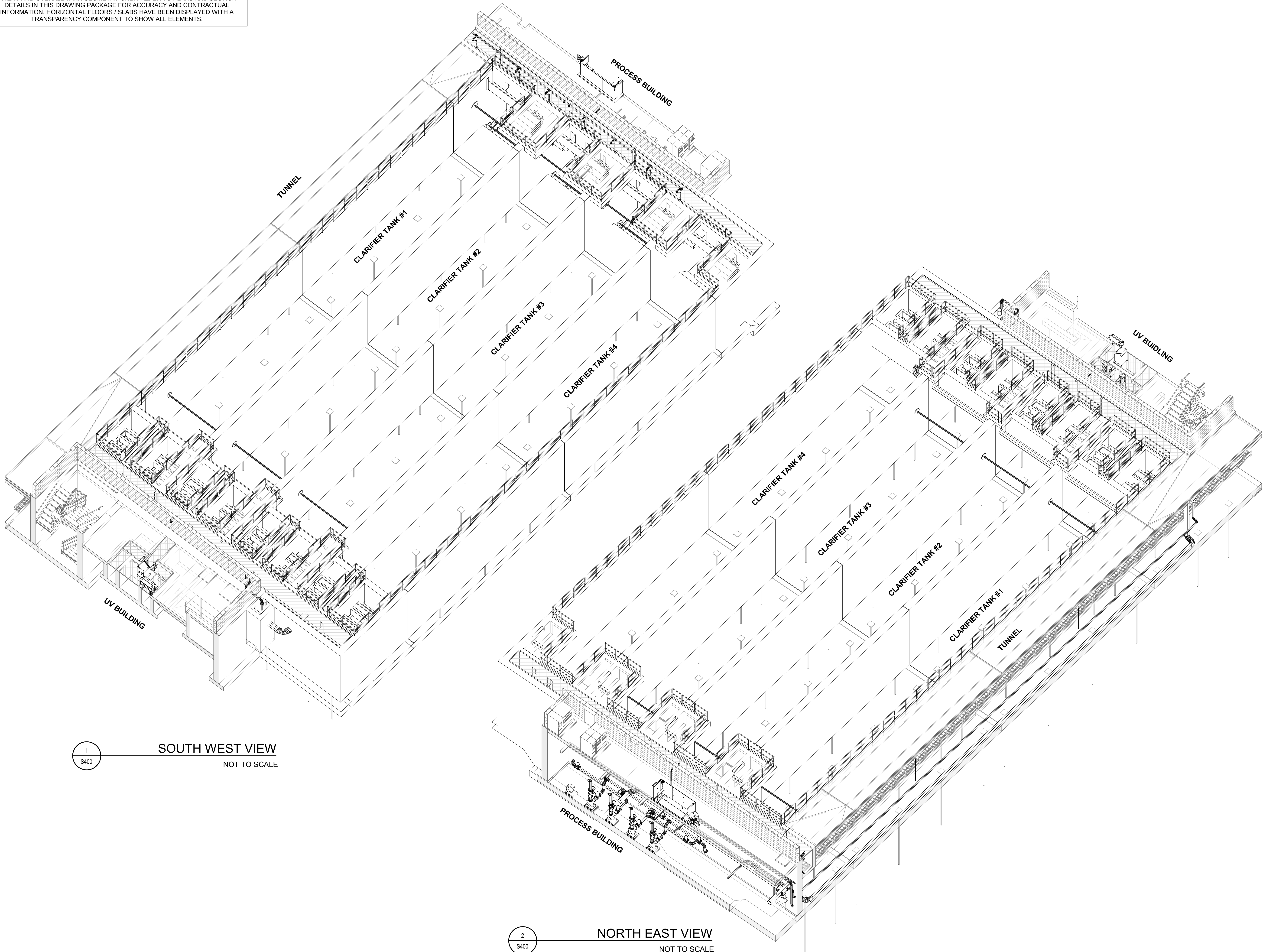
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JLR #: 32296

DRAWING #:
S324

File Location: C:\Users\jral\Desktop\Brighton LOCAL\32296 S.aeration 1 LOCAL.rvt PLOT DATE: 2025-04-23 9:04:20 AM

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CONSULTANT: J.L. Richards ENGINEERS · ARCHITECTS · PLANNERS

PROFESSIONAL STAMP

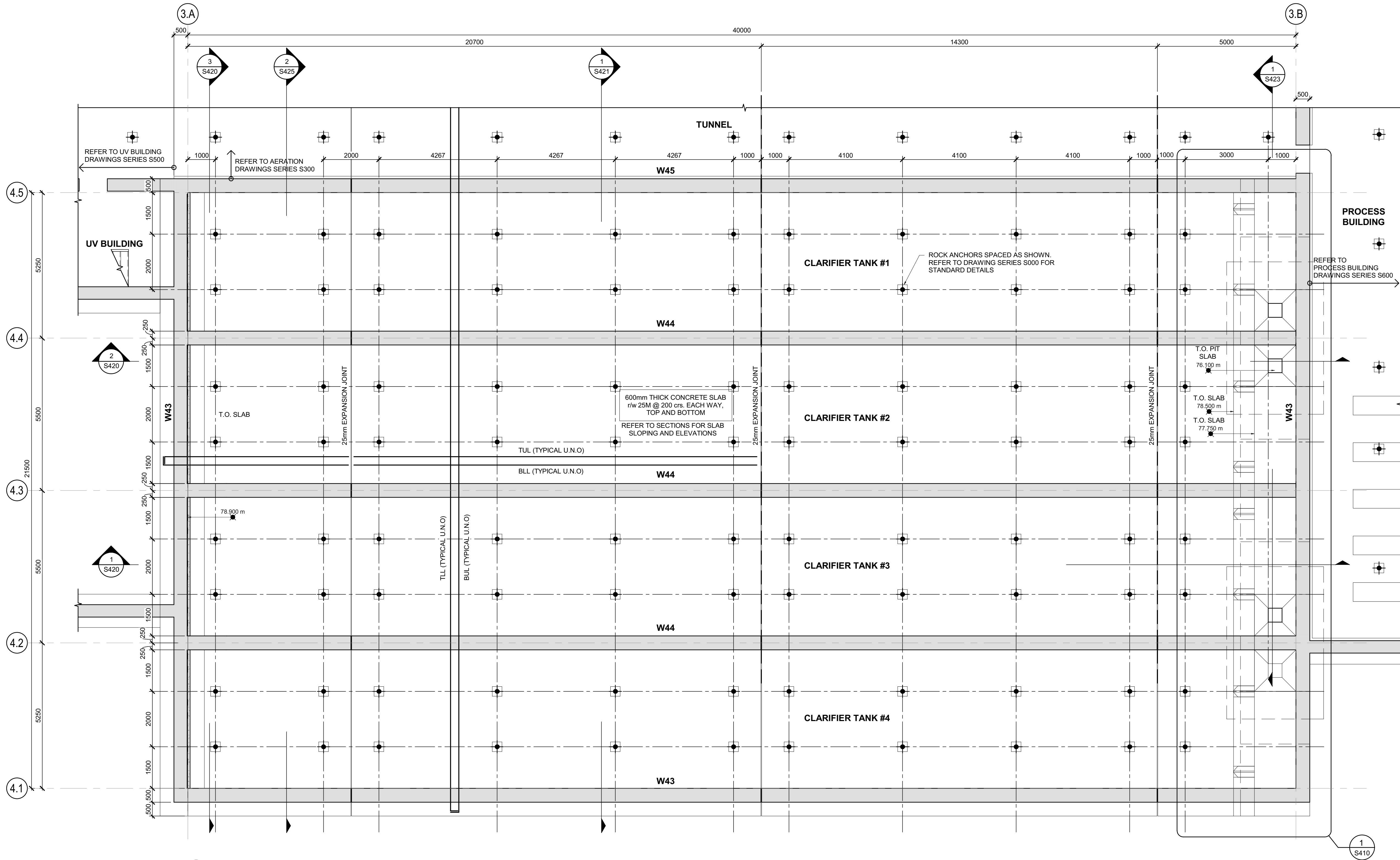
PROJECT NORTH

PROJECT: BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING: STRUCTURAL CLARIFIERS
ISOMETRIC VIEWS AND NOTES

DESIGN: CWD	DRAWING #:
DRAWN: JIC	S400
CHECKED: JMO	
JLR #: 32296	

File Location: C:\Users\jrc\Desktop\Brighton LOCAL\32296 S-Clarifiers LOCAL.rvt PLOT DATE: 2025-04-23 3:10:49 PM

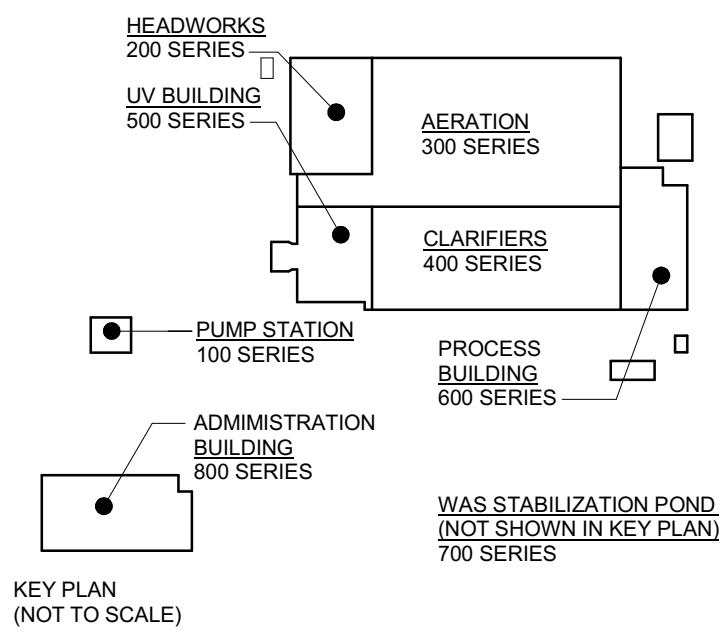


1
S401

BASE SLAB LEVEL PLAN

SCALE : 1 : 75

CONCRETE FOUNDATION WALL SCHEDULE		
MARK	DESCRIPTION	WALL REINFORCING
W40	300mm THICK CONCRETE WALL	REFER TO SECTION 1 / S422
W41	350mm THICK CONCRETE WALL	REFER TO SECTION 4 / S422
W42	400mm THICK CONCRETE WALL	REFER TO SECTION 3 / S422
W43	500mm THICK CONCRETE WALL	REFER TO SECTION 2 / S421
W44	500mm THICK CONCRETE WALL	REFER TO SECTION 3 / S421
W45	500mm THICK CONCRETE WALL	REFER TO SECTION 4 / S421



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SCALE: As indicated

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL CLARIFIERS

BASE SLAB LEVEL PLAN

DESIGN: CWD

DRAWN: JIC/SWW

CHECKED: JMO

JLR #: 32296

DRAWING #:
S401

File Location: C:\Users\jrcal\Desktop\Brighton Local\32296 S-Clarifiers LOCAL.rvt PLOT DATE: 2025-04-23 3:10:49 PM

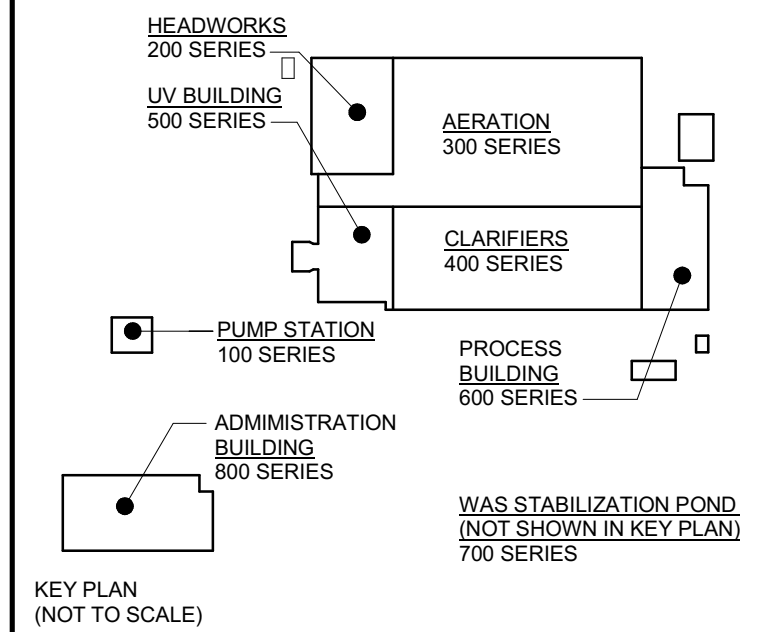
DRAWING NOTES:

1. REFER TO S000 DRAWING SERIES FOR STRUCTURAL GENERAL NOTES AND LEGENDS TO STRUCTURAL MATERIAL.
2. PROVIDE ANGLE FRAMES TO SUPPORT GRATING AS PER STANDARD DETAILS IN S000 DRAWING SERIES.
3. COORDINATE ALL OPENINGS WITH THE ASSOCIATED RESPONSIBLE DISCIPLINE AS NOTED ON PLAN AND IN THE REMAINDER OF THE DRAWING SET. PROVIDE ADDITIONAL REINFORCING AS REQUIRED PER STANDARD DETAILS.
4. ALL LIQUID RETAINING STRUCTURES INCLUDING CONCRETE WALLS AND SLABS ARE TO HAVE CRYSTALLINE WATERPROOFING ENTRAINED WITHIN THE MIX DESIGN ON THESE PLANS. ALL BELOW GRADE WALLS AND SLABS THAT ENCLOSE OCCUPIED SPACES SHALL HAVE CRYSTALLINE WATERPROOFING ENTRAINED IN THE MIX DESIGN. REFER TO CAST-IN-PLACE CONCRETE SPECIFICATION FOR FURTHER DETAILS.
5. REFER TO SA DRAWING SERIES FOR STAIR, PLATFORM, GUARDRAIL / HANDRAIL AND LADDER INFORMATION.
6. PROVIDE 25mm CHAMFER AT ALL EXPOSED CONCRETE CORNERS. DO NOT PROVIDE CHAMFER IF THERE IS A BEARING CONDITION.

DESIGN LOADS

WALKWAYS, PLATFORM, AND GRATING:
M&E ALLOWANCE (WALKWAY SLAB ONLY) - 1 kPa
LIVE LOAD - 4.8 kPa

GUARDRAILS:
LIVE LOAD - 0.75 kN/m or 1.0 kN CONCENTRATED LOAD APPLIED AT ANY POINT



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SCALE: 1 : 75

CLIENT:

CONSULTANT:

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

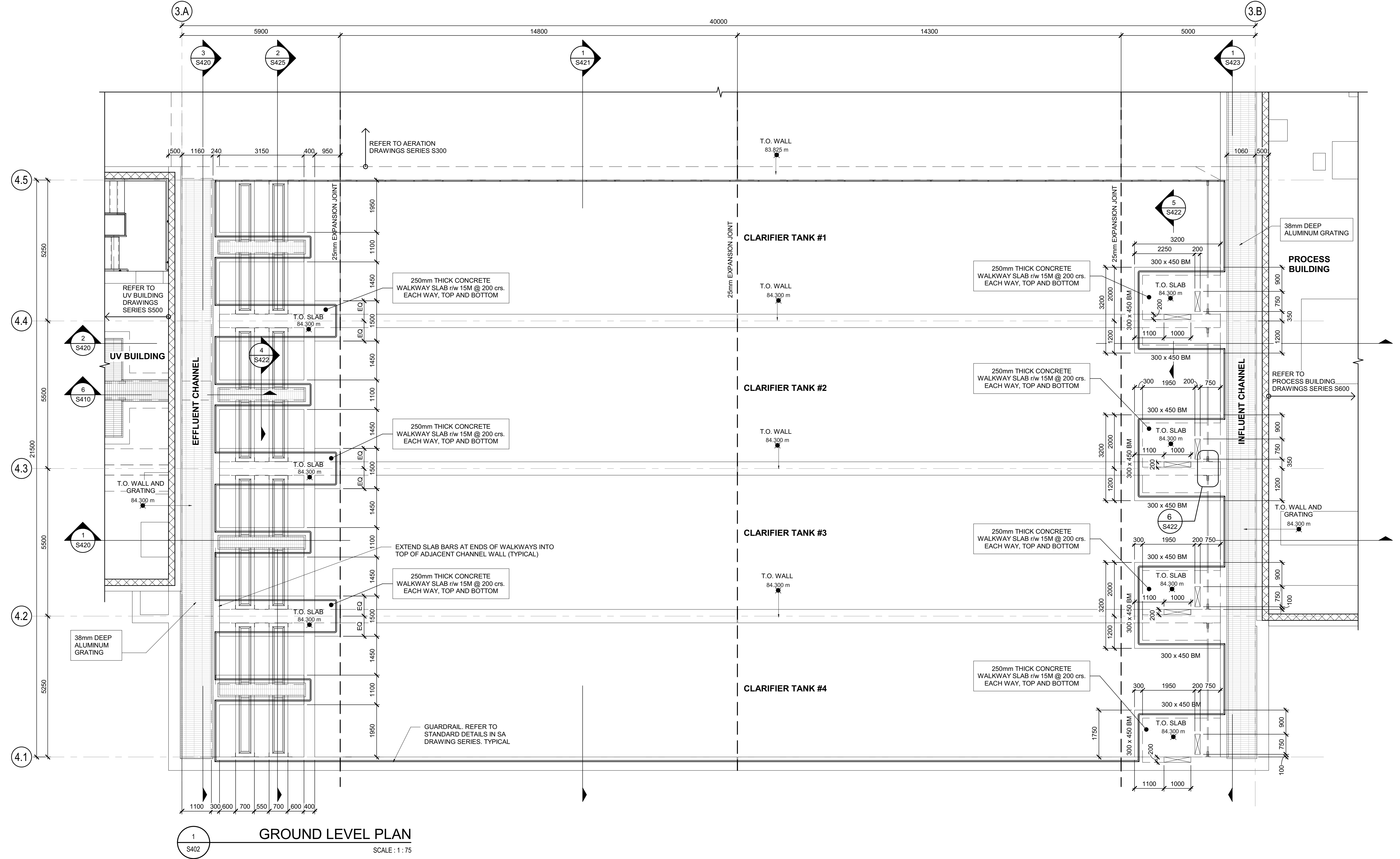
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL CLARIFIERS

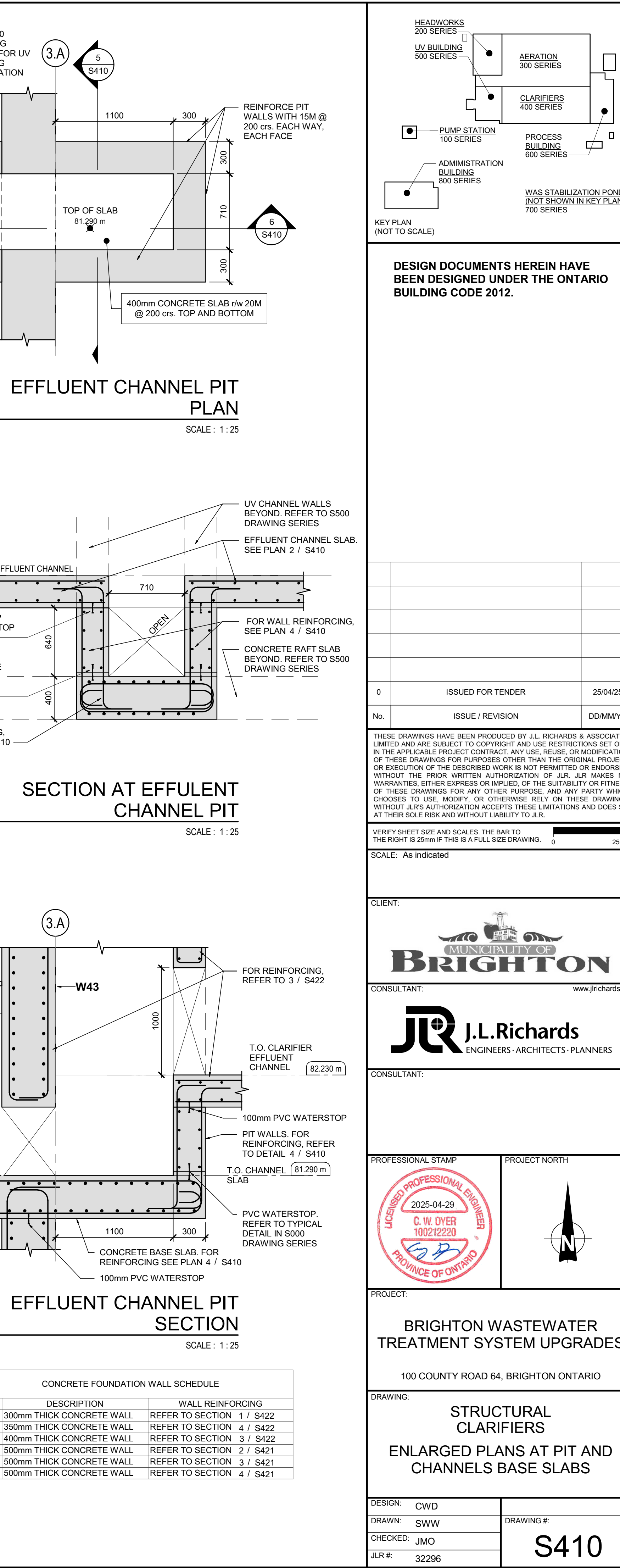
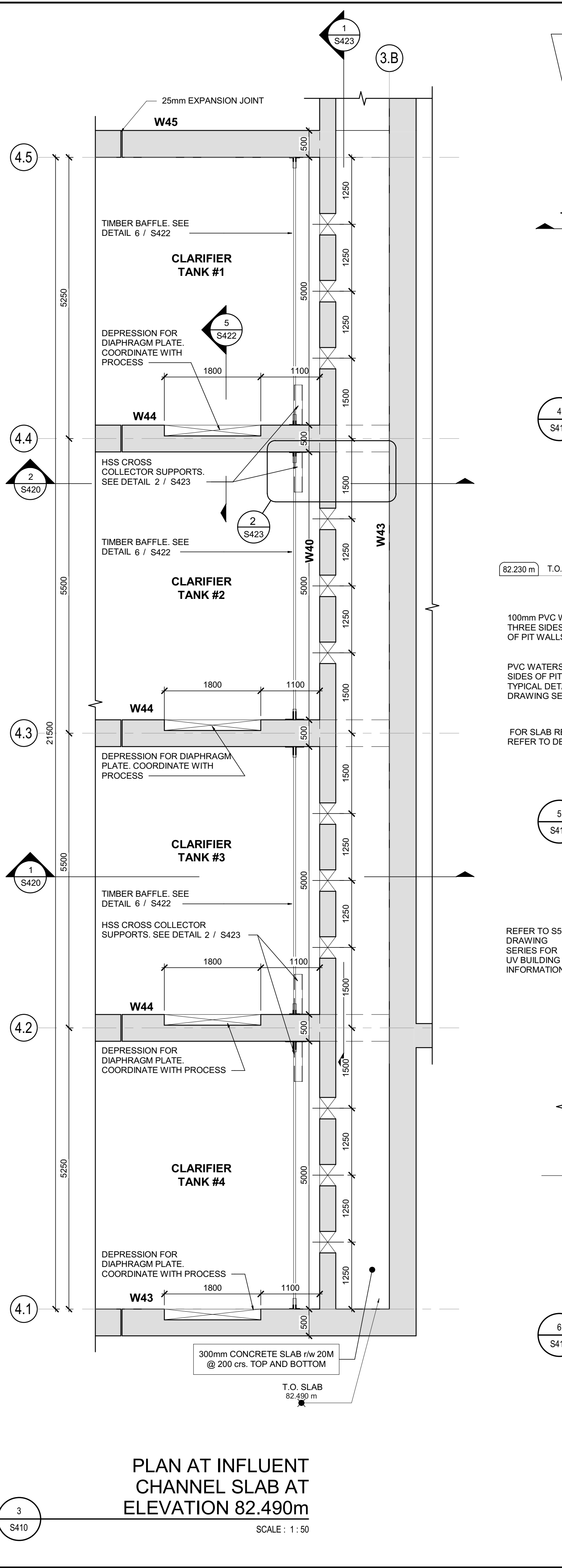
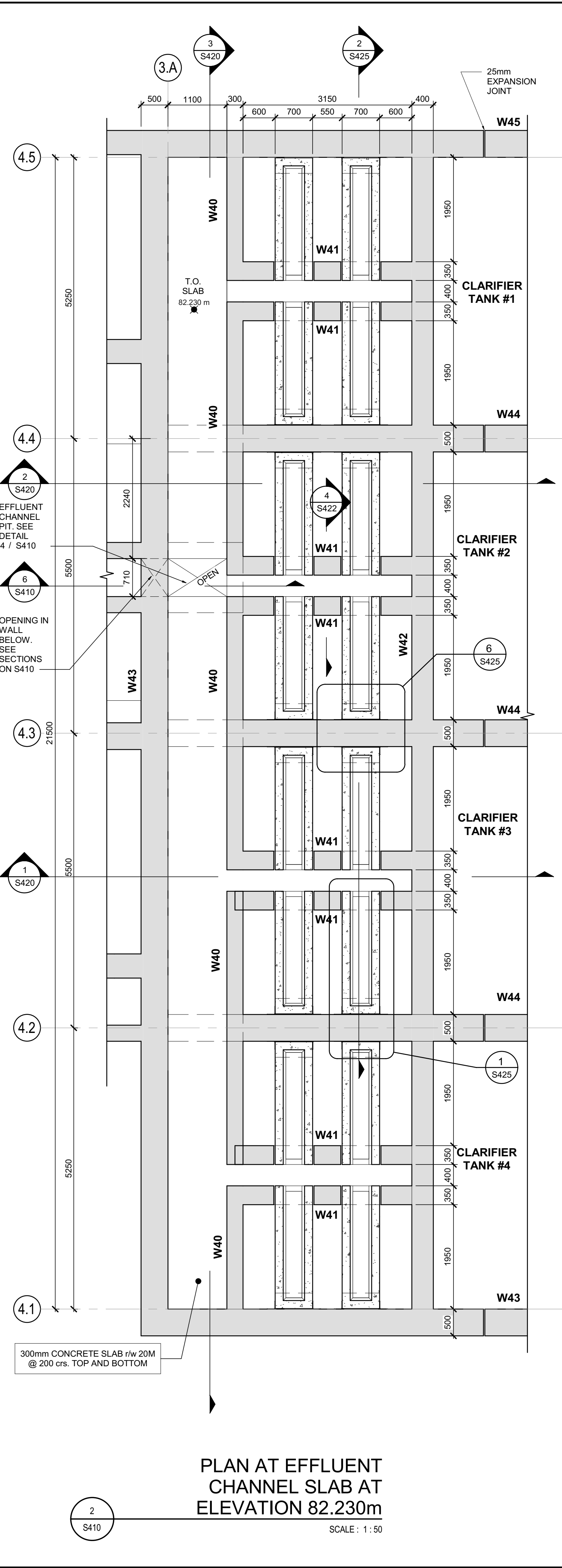
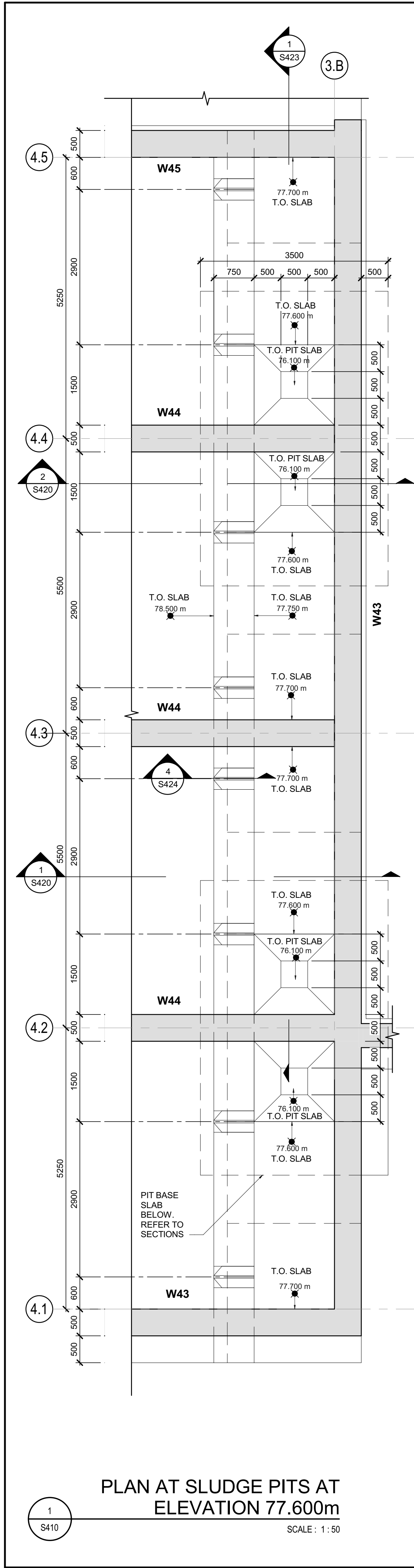
GROUND LEVEL PLAN

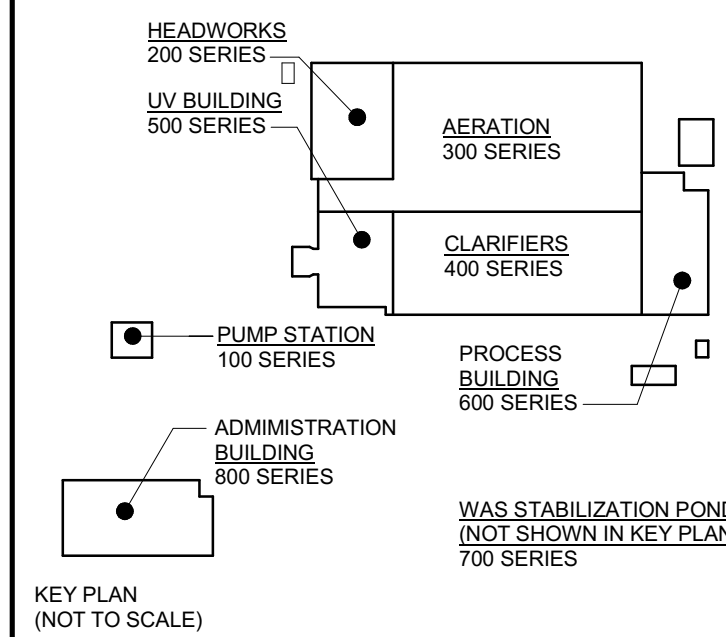
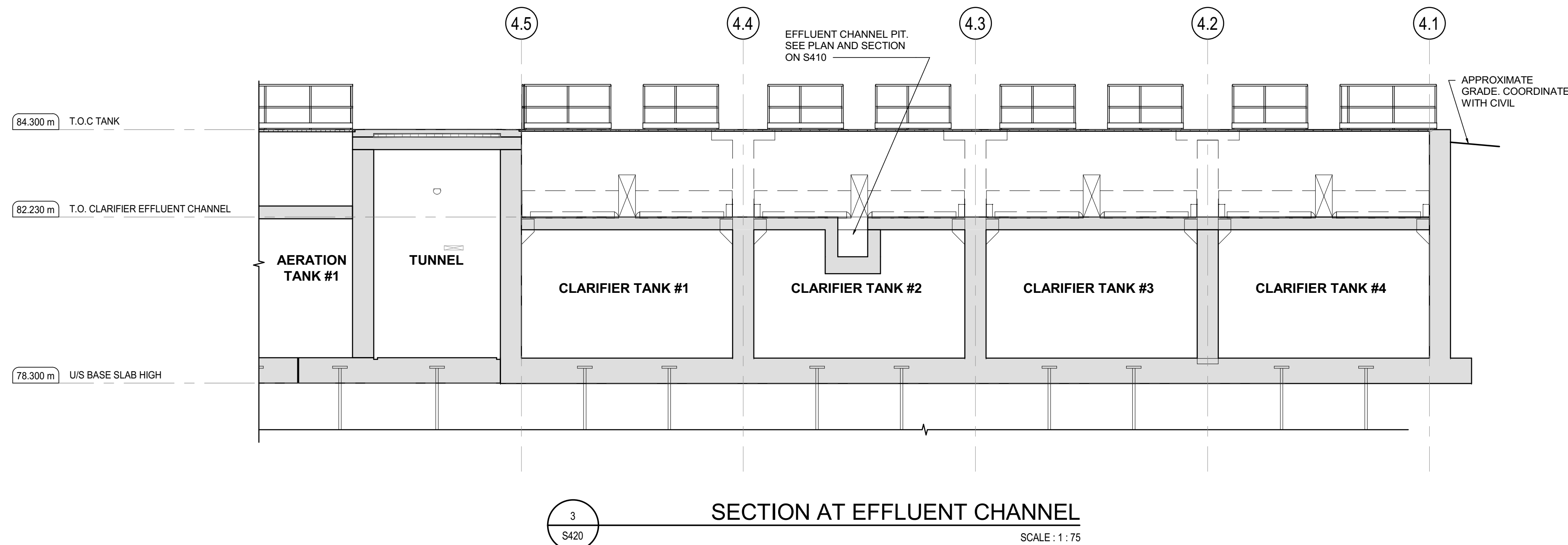
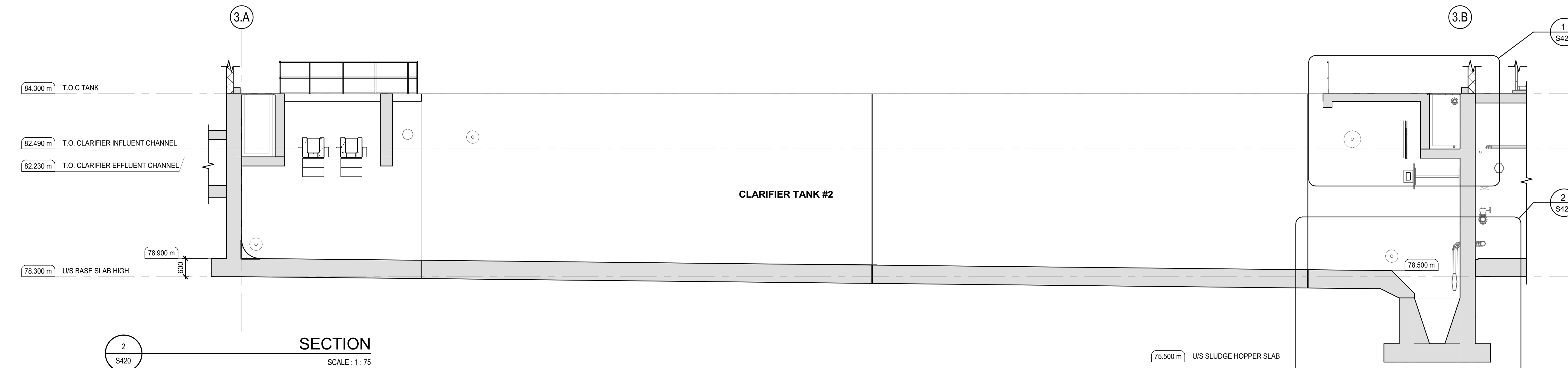
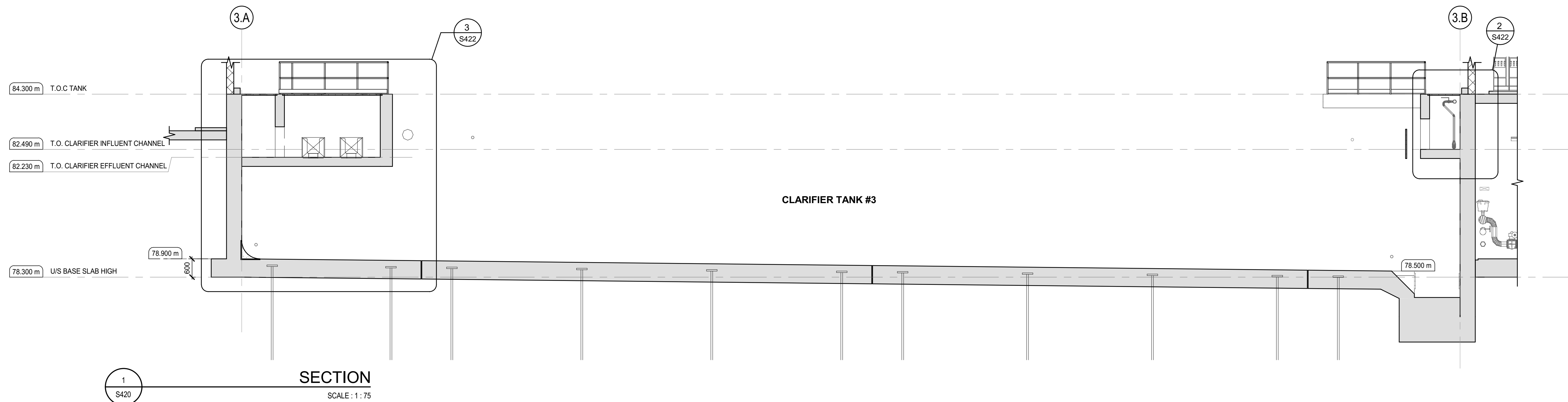
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DRAWN: JIC/SWW	S402
CHECKED: JMO	
JLR #: 32296	



GROUND LEVEL PLAN

SCALE : 1 : 75





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SCALE: 1:75

CLIENT:



CONSULTANT:



CONSULTANT:

PROFESSIONAL STAMP



PROJECT:

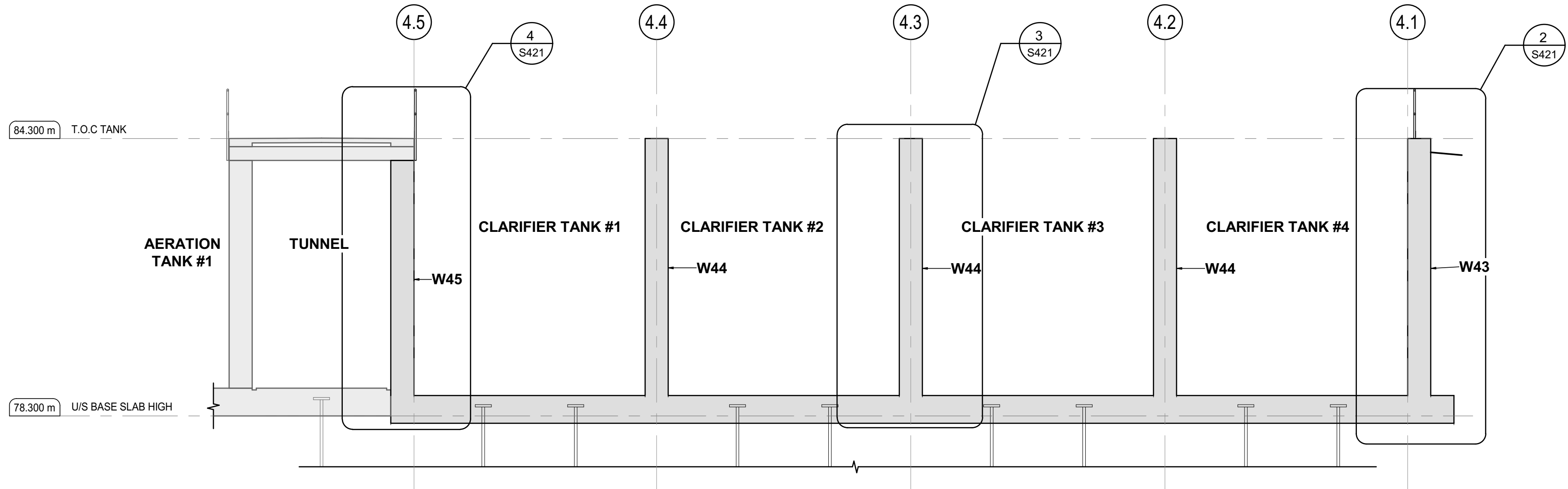
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

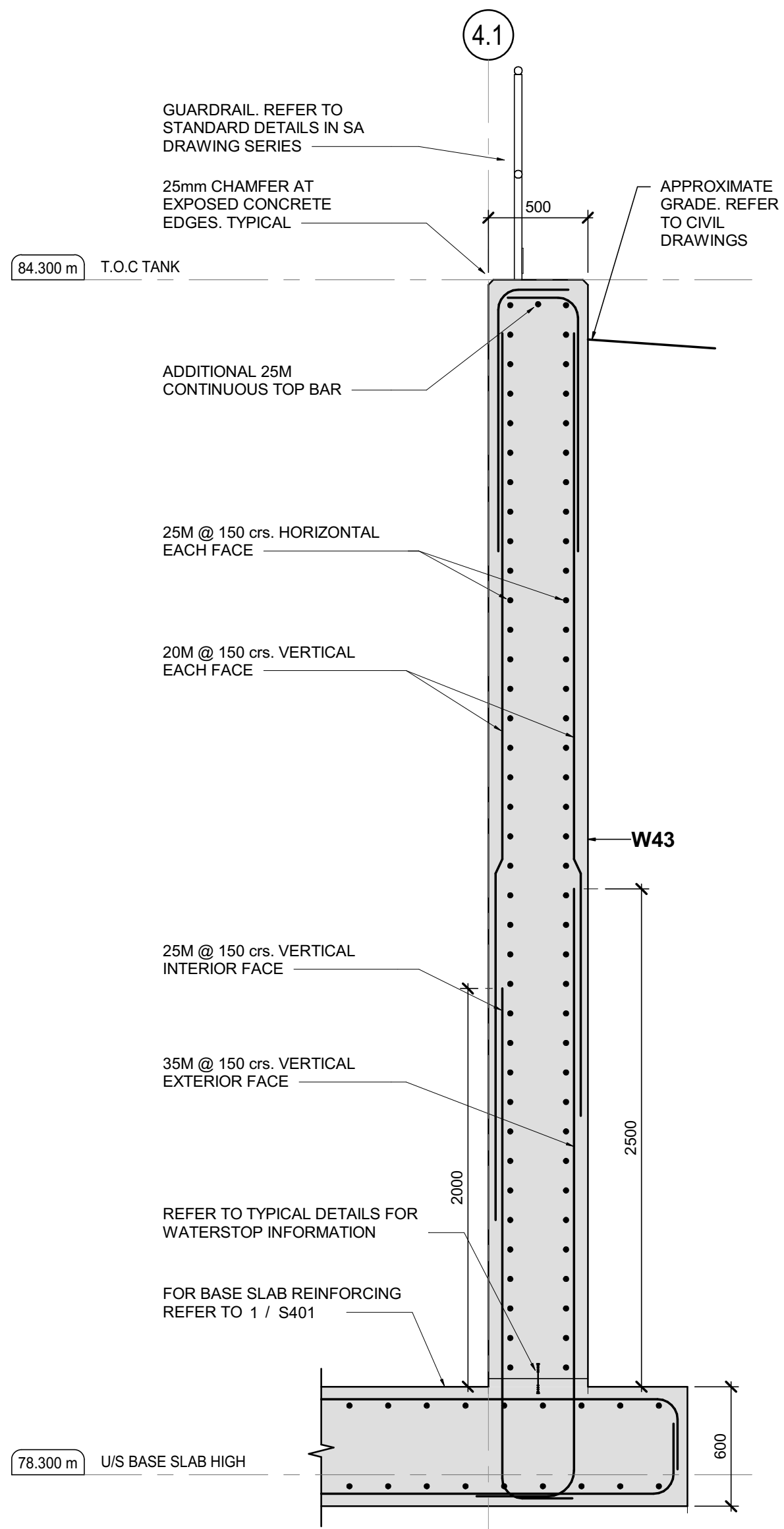
DRAWING:

STRUCTURAL CLARIFIERS
SECTIONS AND DETAILS

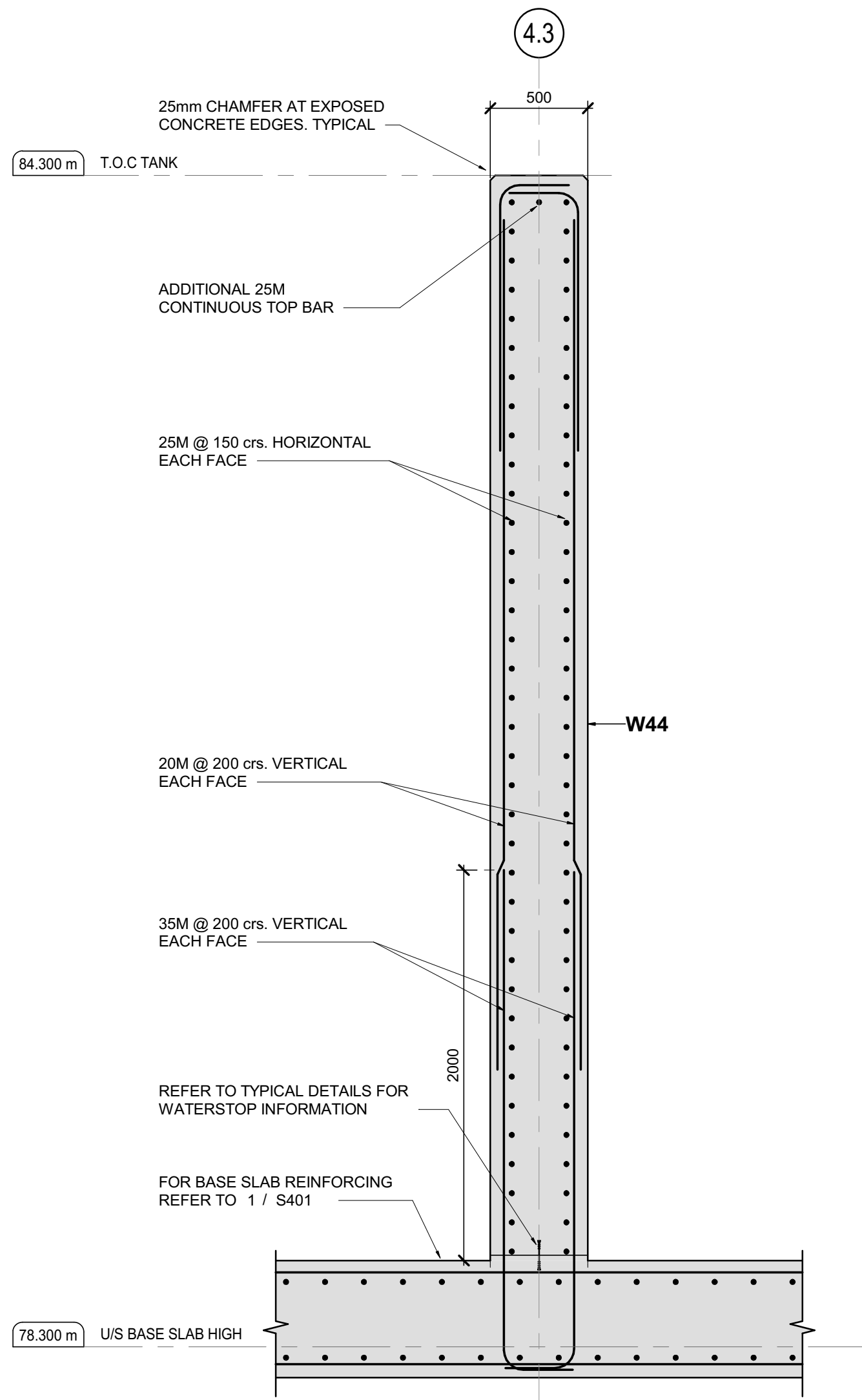
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JLR #:	32296



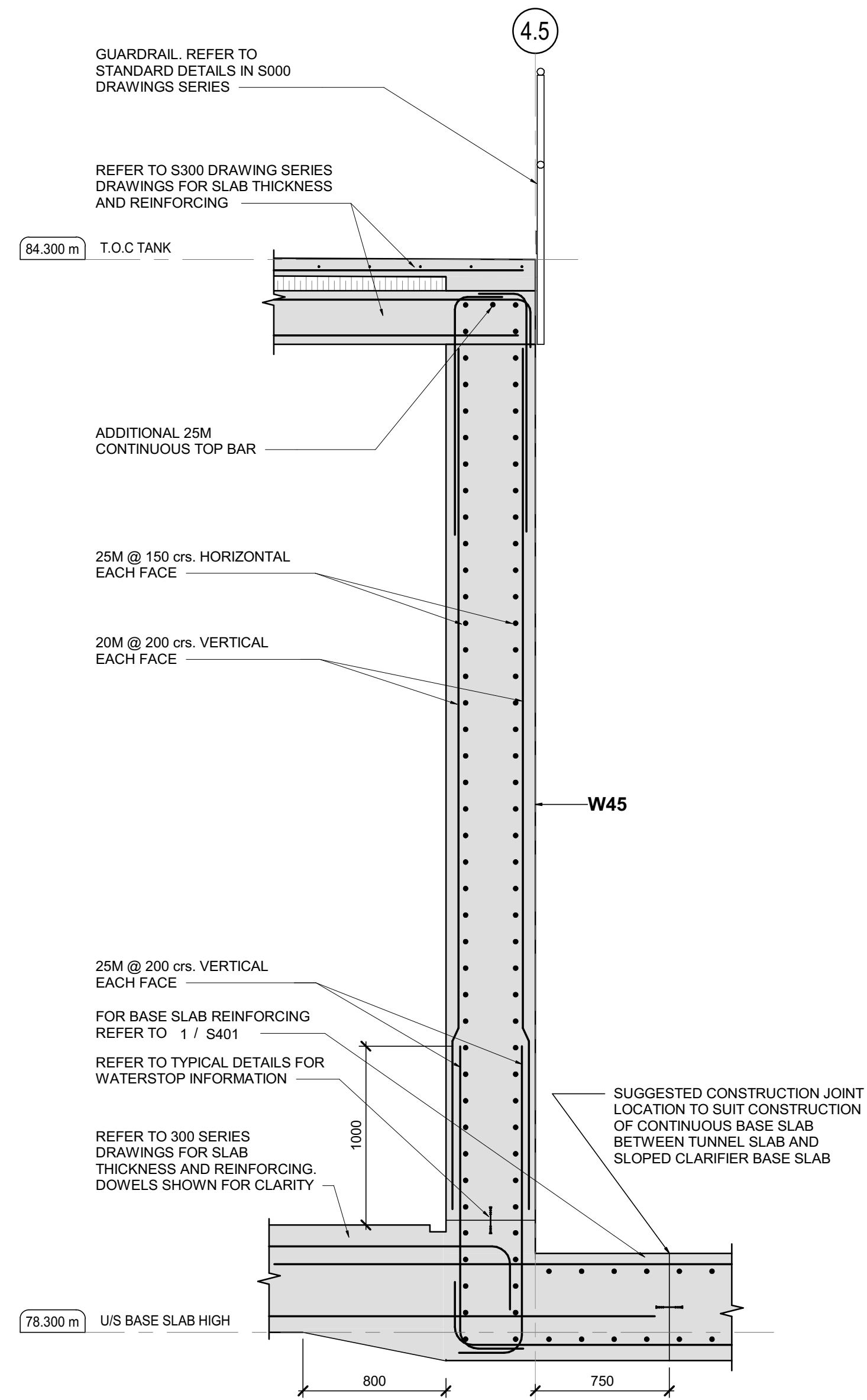
1 CLARIFIER TANKS SECTION
S421
SCALE : 1 : 75



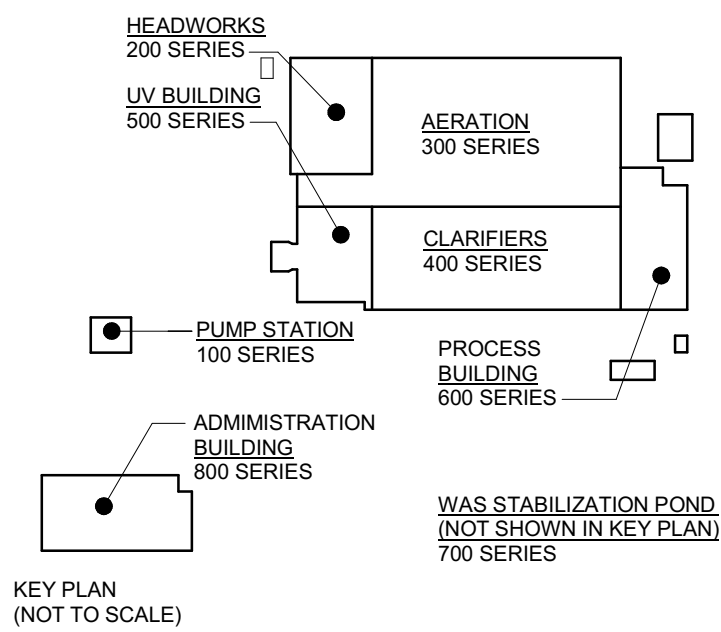
2 EXTERIOR CLARIFIER TANK WALL DETAIL (W43)
S421
SCALE : 1 : 25



3 INTERIOR CLARIFIER TANK WALL DETAIL (W44)
S421
SCALE : 1 : 25



4 TUNNEL CLARIFIER TANK WALL DETAIL (W45)
S421
SCALE : 1 : 25



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SCALE: As indicated

CLIENT:

BRIGHTON
MUNICIPALITY

CONSULTANT: www.jrichards.ca

J.R. J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP: 2025-04-29, C.W. DYER, 100212220, PROVINCE OF ONTARIO

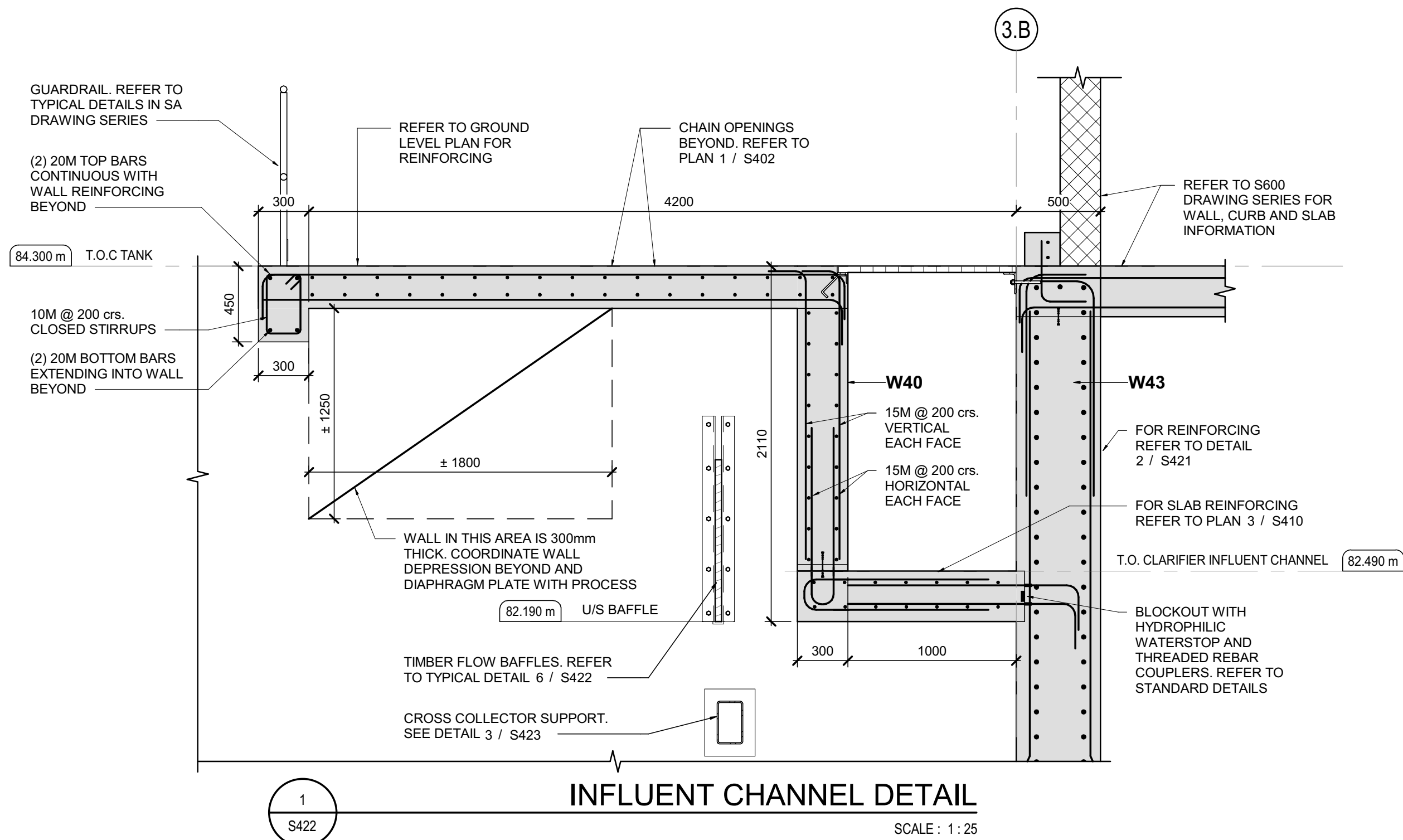
PROJECT NORTH

PROJECT: BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING: STRUCTURAL CLARIFIERS
SECTIONS AND DETAILS

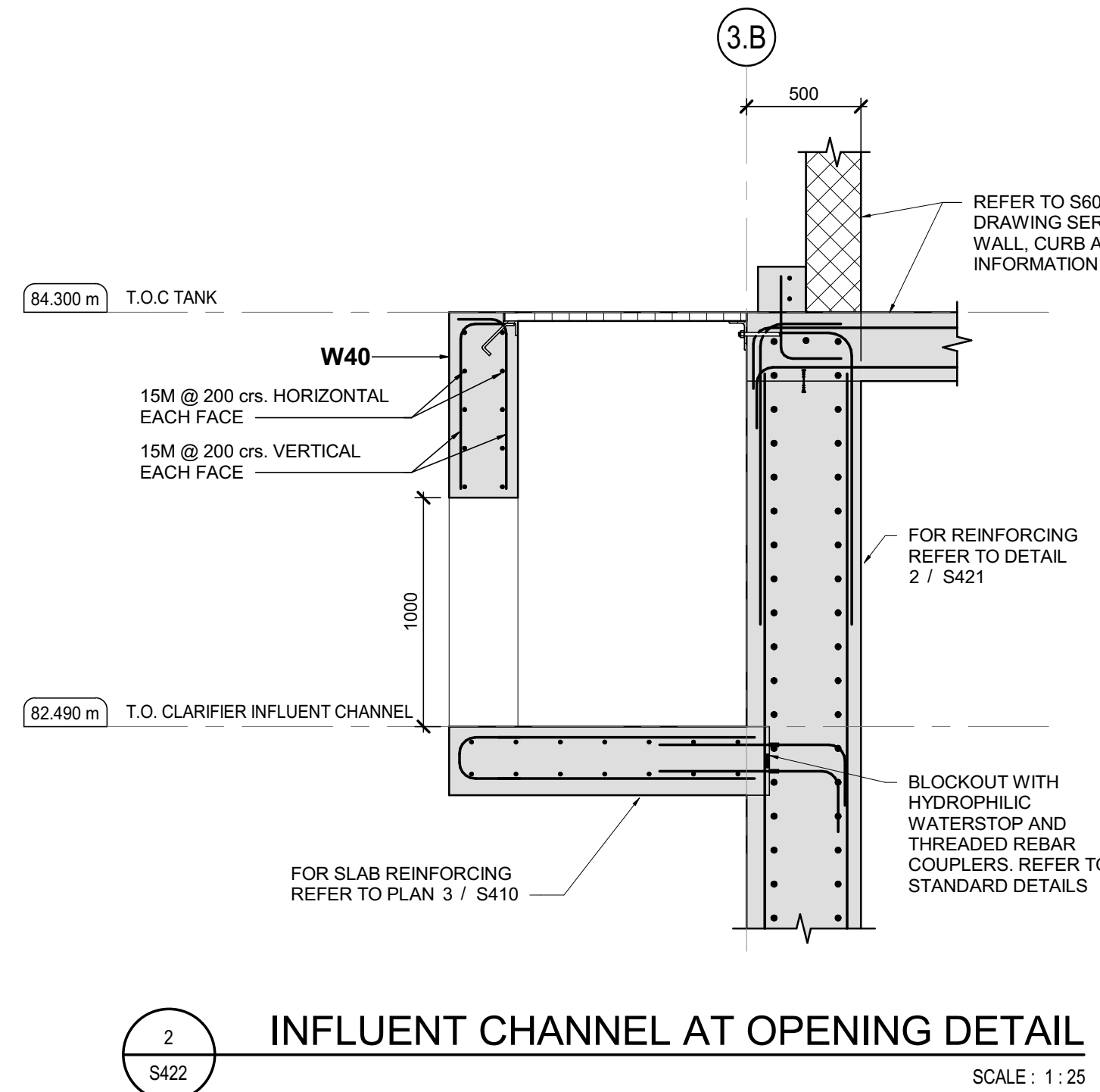
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CHECKED: JMO	
JLR #:	32296

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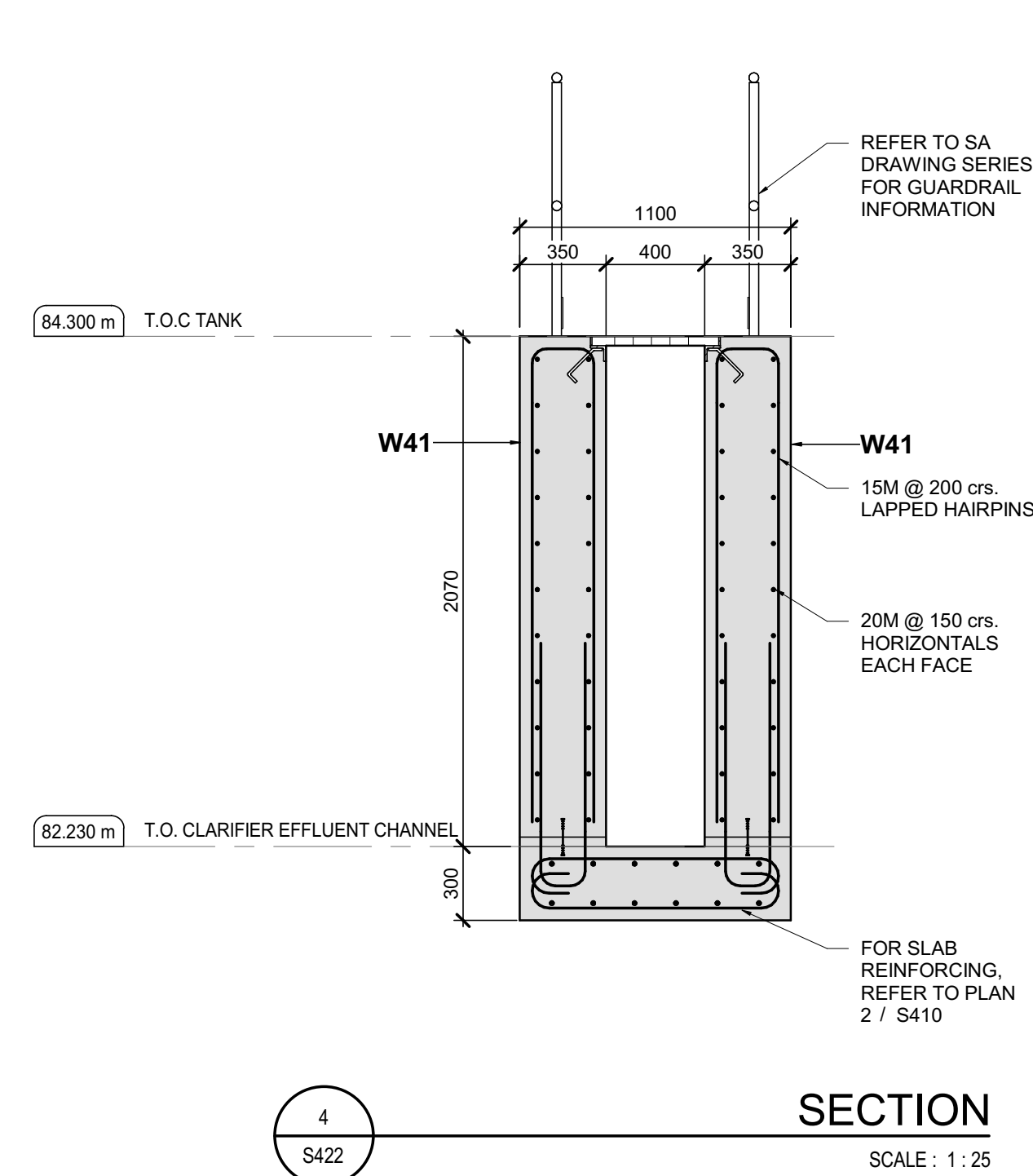
INFLUENT CHANNEL DETAIL

SCALE: 1:25



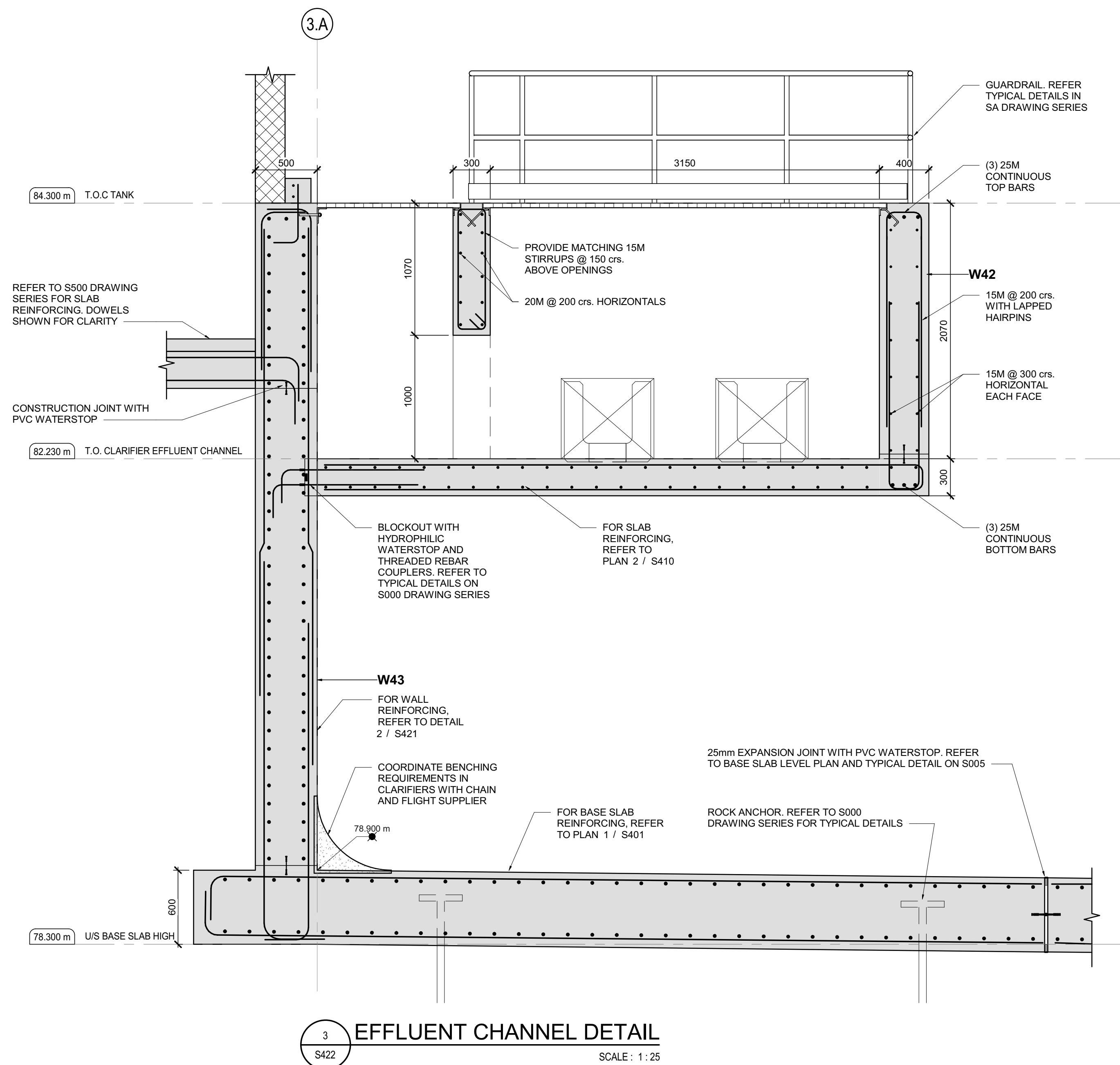
INFLUENT CHANNEL AT OPENING DETAIL

SCALE: 1:25



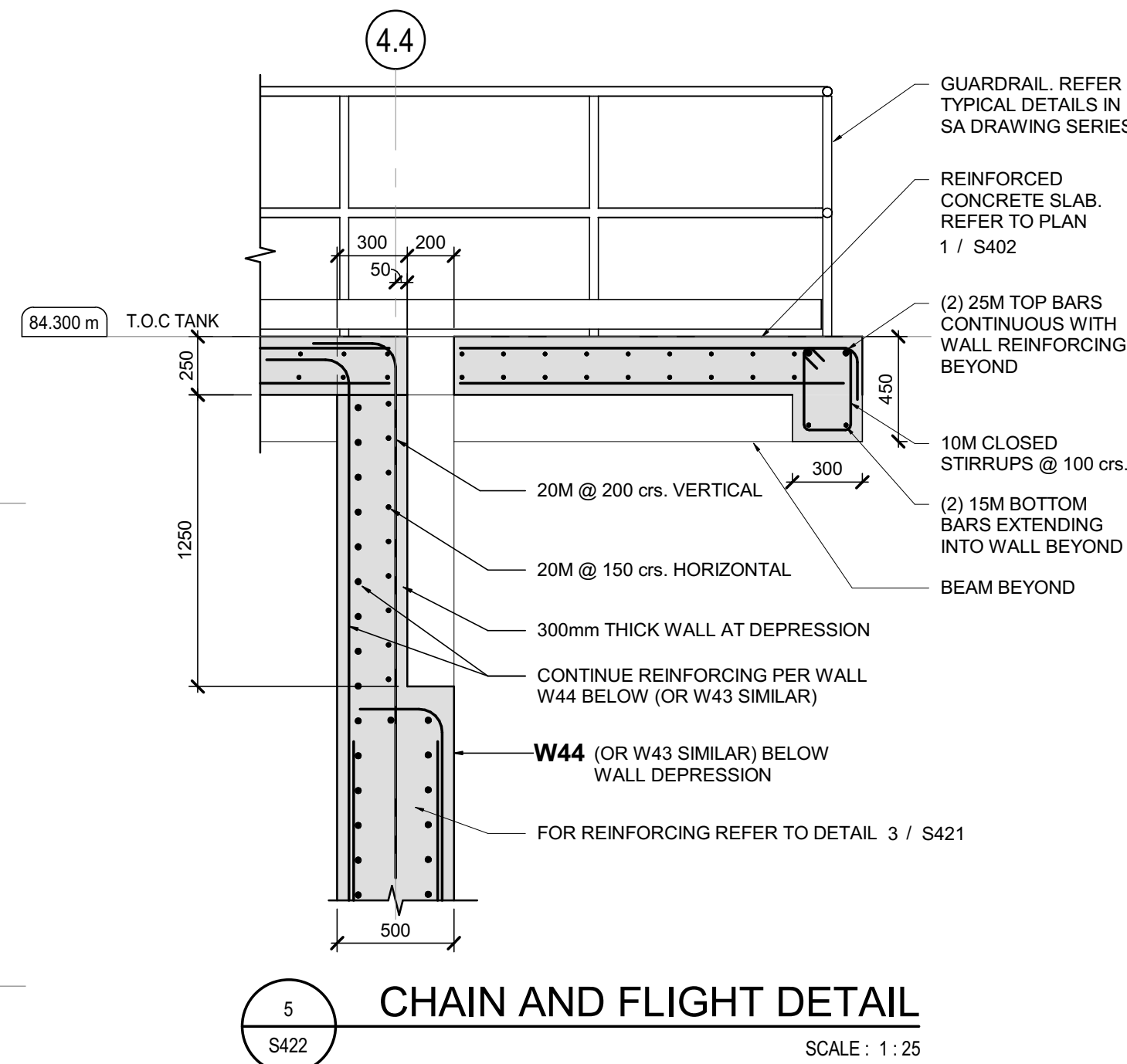
SECTION

SCALE: 1:25



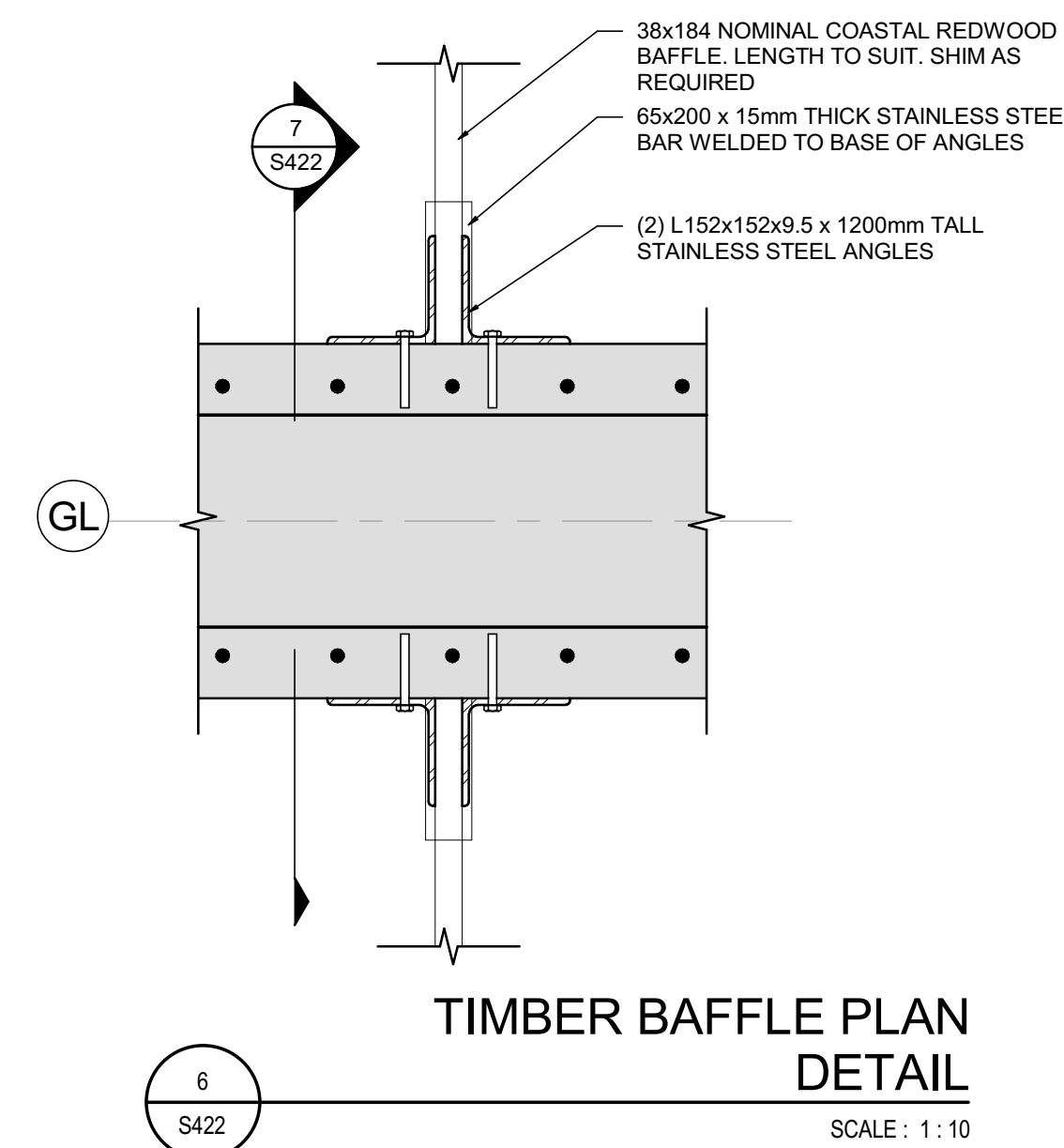
EFFLUENT CHANNEL DETAIL

SCALE: 1:25



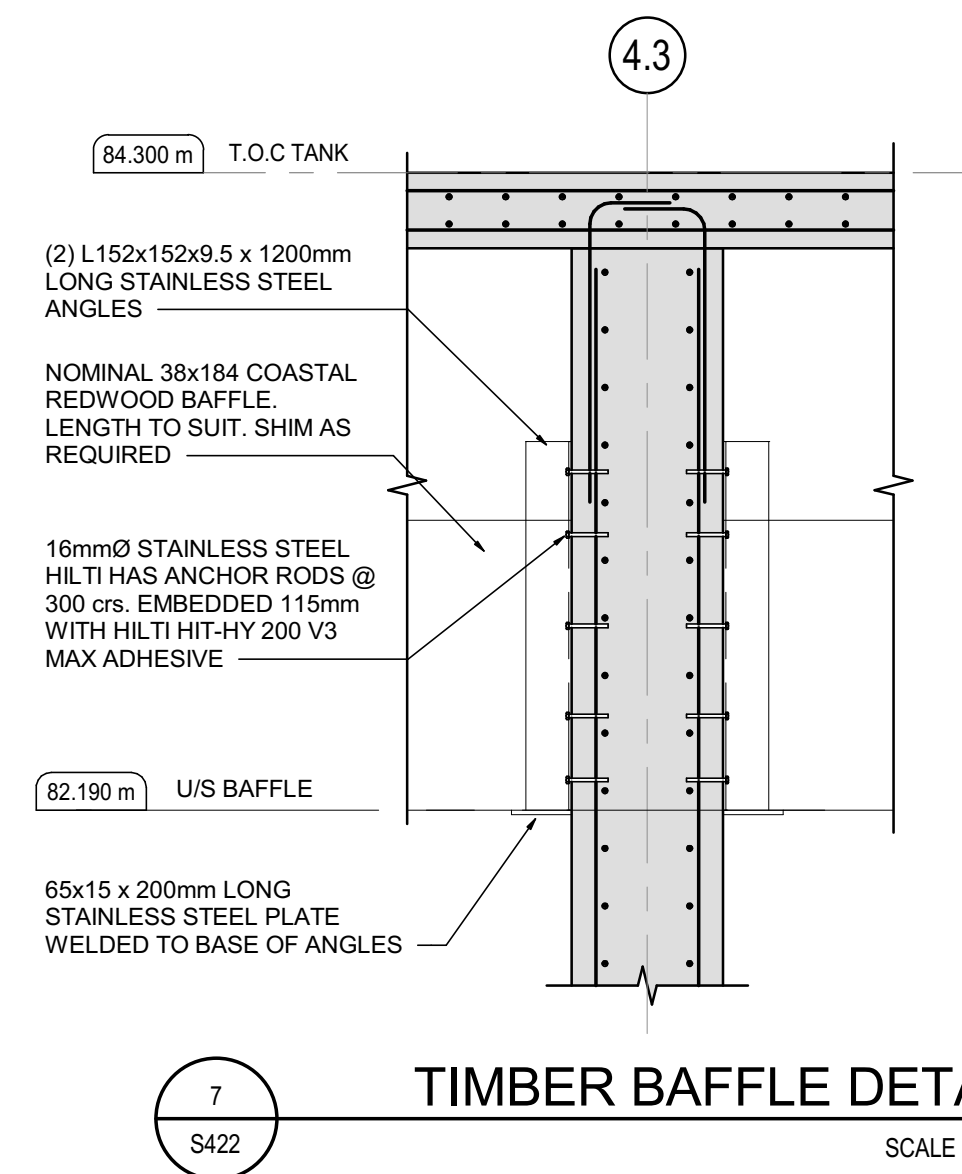
CHAIN AND FLIGHT DETAIL

SCALE: 1:25



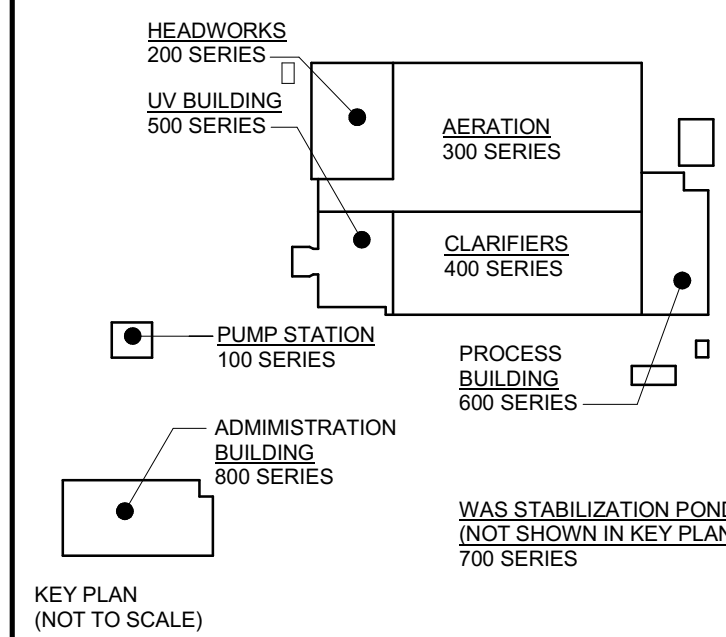
TIMBER BAFFLE PLAN DETAIL

SCALE: 1:10



TIMBER BAFFLE DETAIL

SCALE: 1:25



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SCALE: As indicated

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL CLARIFIERS SECTIONS AND DETAILS

DESIGN: CWD

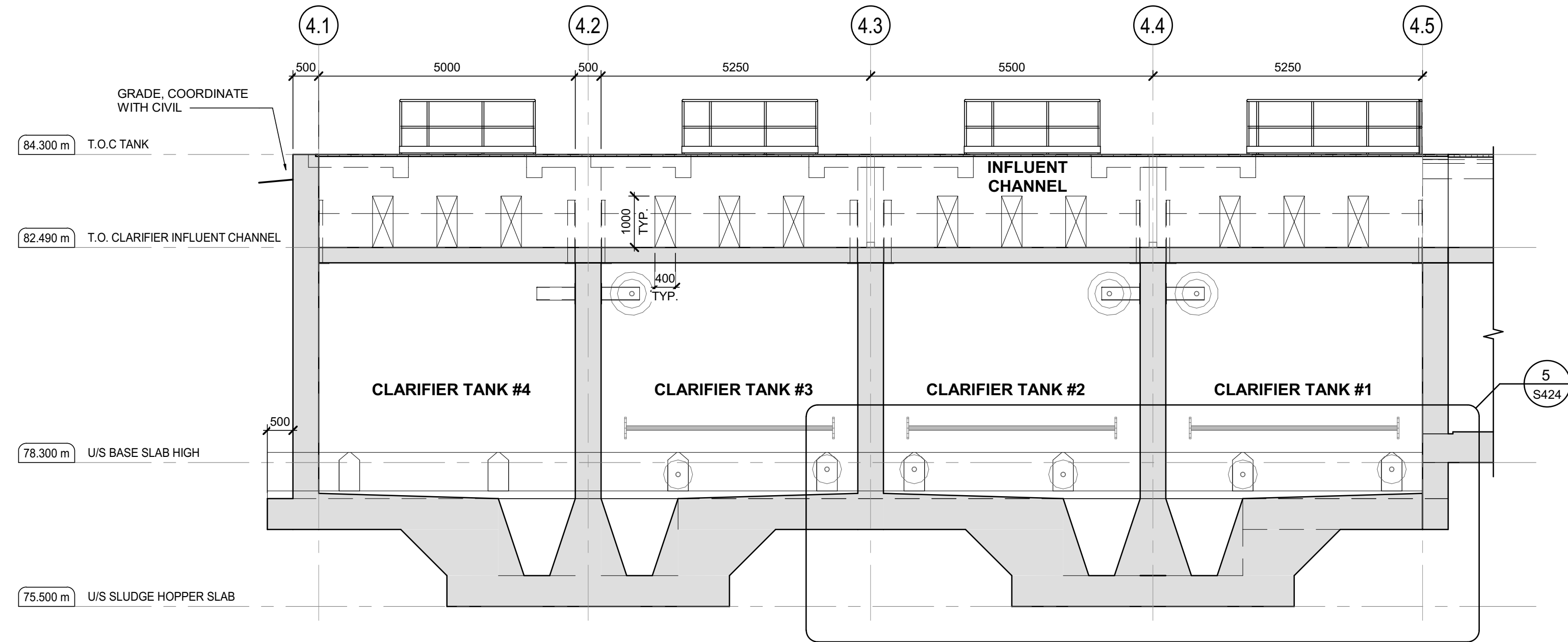
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CHECKED: JMO

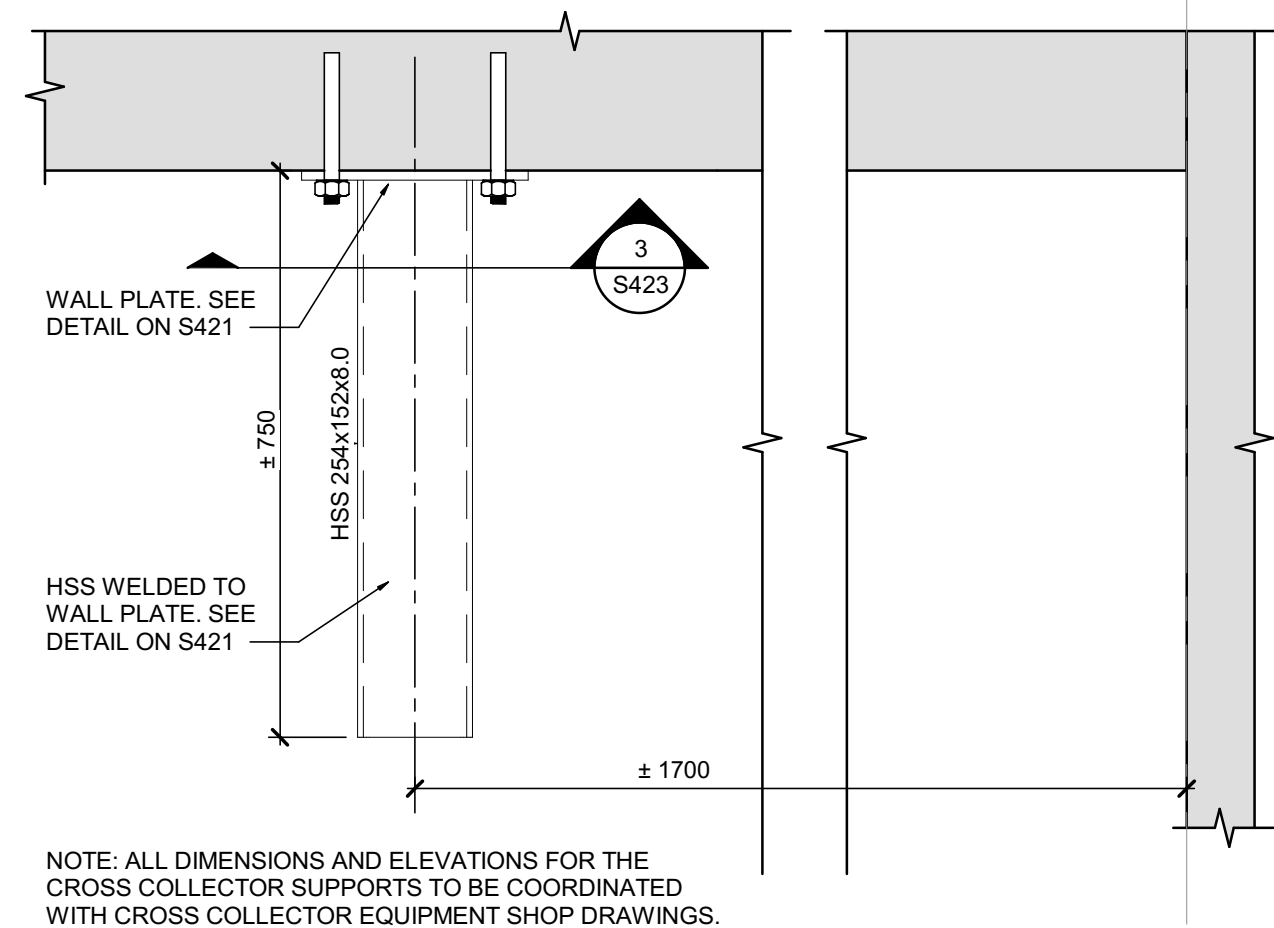
JLR #: 32296

S422

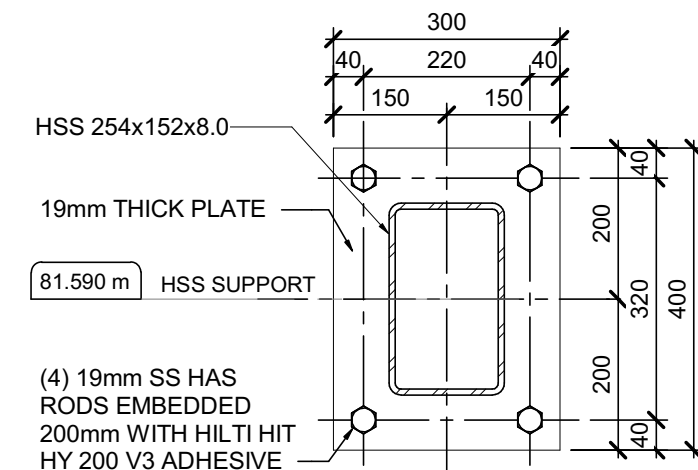
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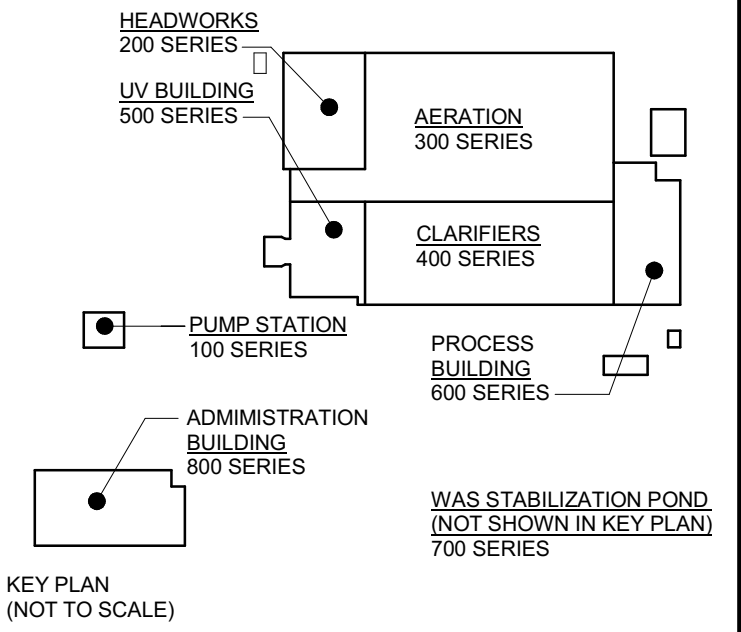
SECTION AT INFLUENT CHANNEL
SCALE: 1:75



HSS CROSS COLLECTOR SUPPORT PLAN DETAIL
SCALE: 1:10



HSS CROSS COLLECTOR SUPPORT WALL PLATE DETAIL
SCALE: 1:10



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SCALE: As indicated

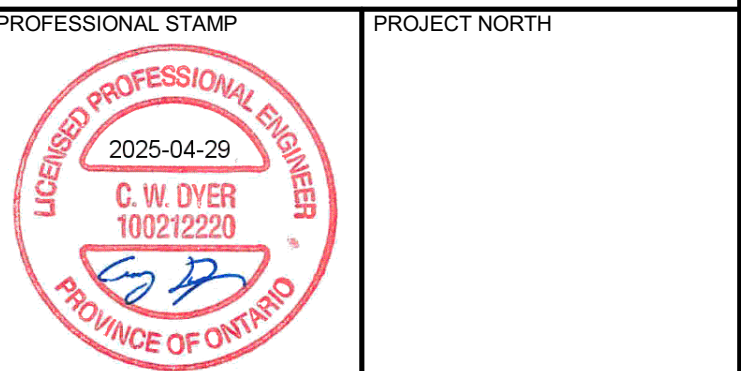
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

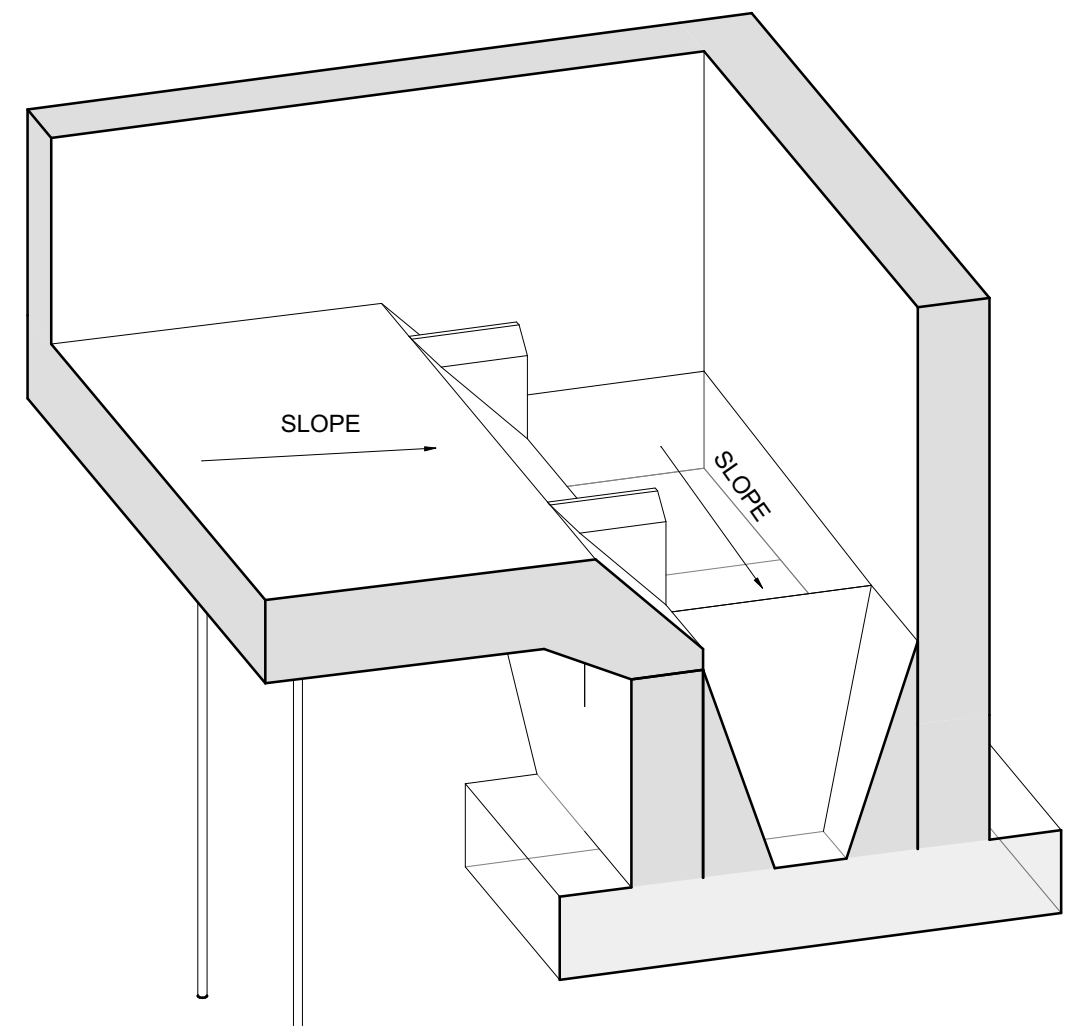
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL CLARIFIERS
SECTIONS AND DETAILS

DESIGN: CWD	DRAWING #:
DRAWN: SWW	S423
CHECKED: JMO	
JLR #: 32296	

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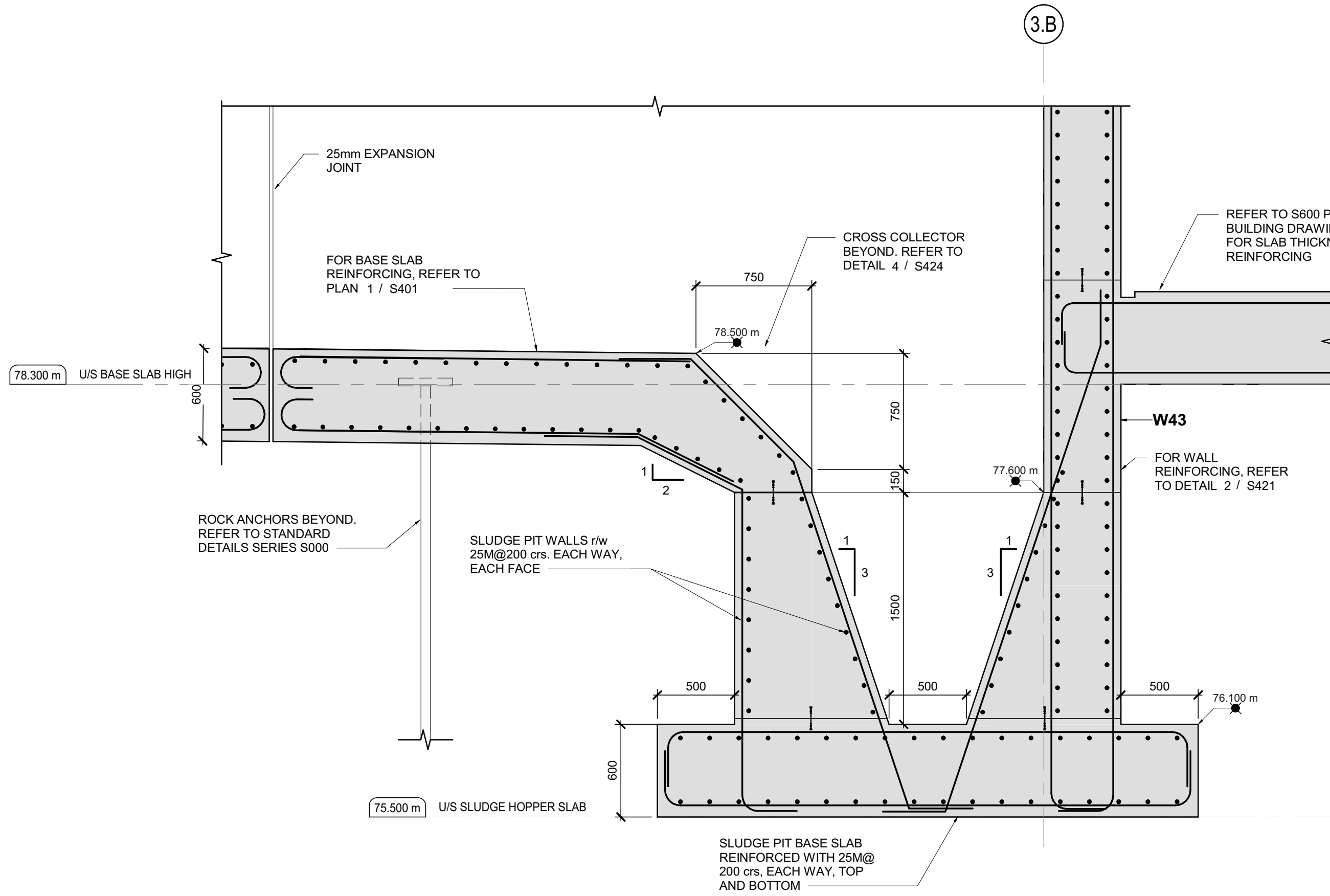


NOTE: THIS ISOMETRIC VIEW IS PROVIDED TO SHOW GENERAL DESIGN INTENT AND OVERALL GEOMETRY IN SLUDGE PIT ONLY. REFER TO PLANS AND SECTION DETAILS IN THIS DRAWING PACKAGE FOR ACCURACY AND CONTRACTUAL INFORMATION.

1
S424

SLUDGE PIT 3D VIEW

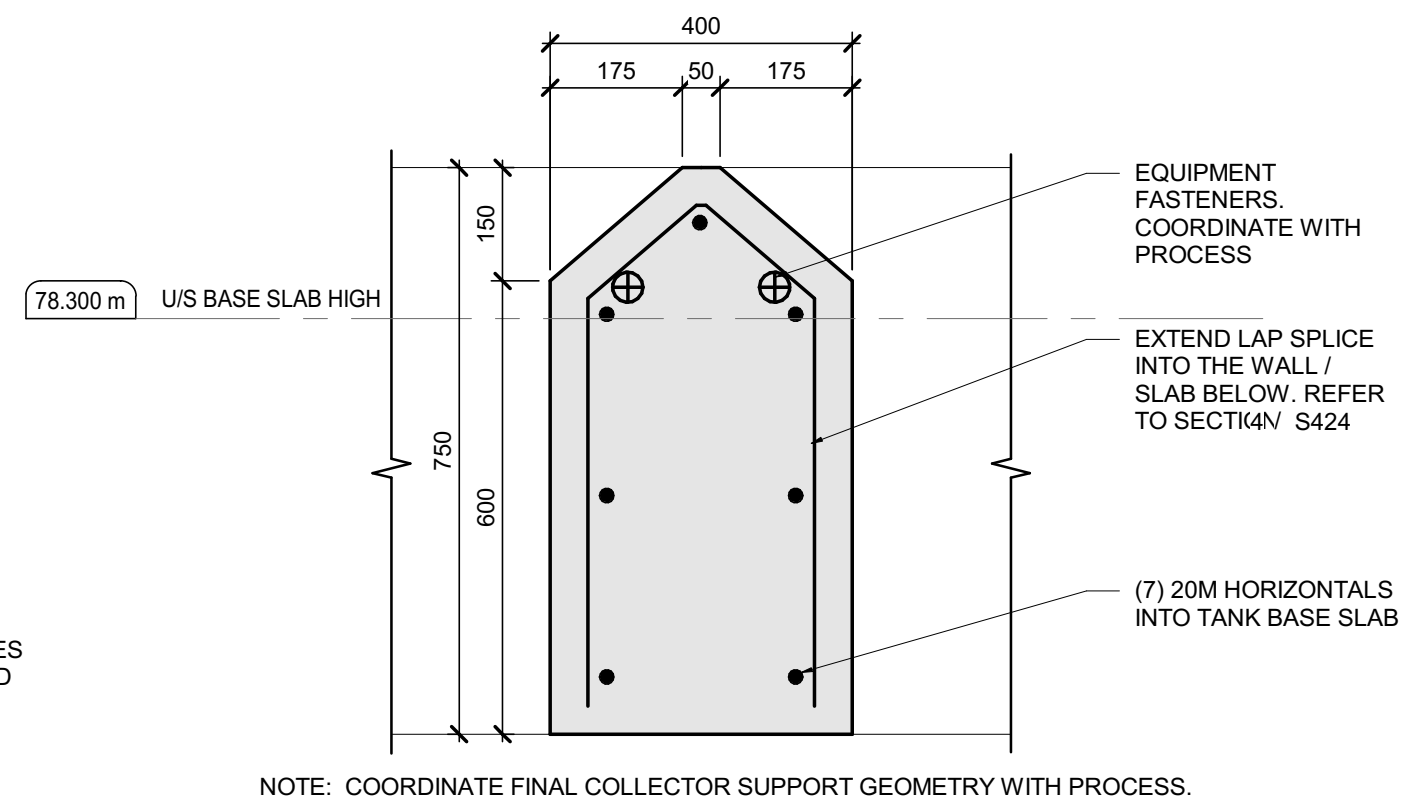
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2
S424

SLUDGE PIT SECTION

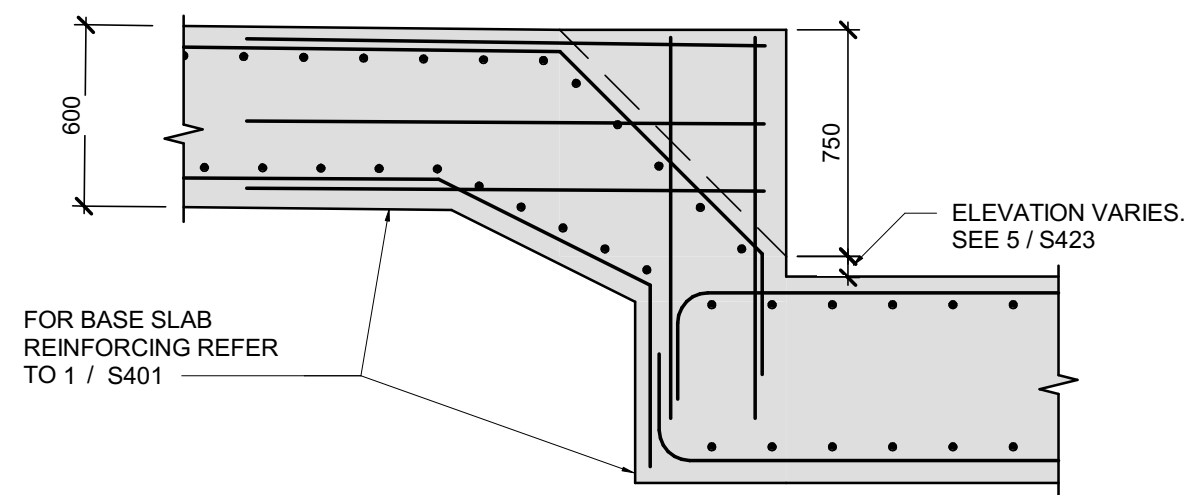
SCALE: 1:25



3
S424

CROSS COLLECTOR SLUDGE SUPPORT ELEVATION

SCALE: 1:10

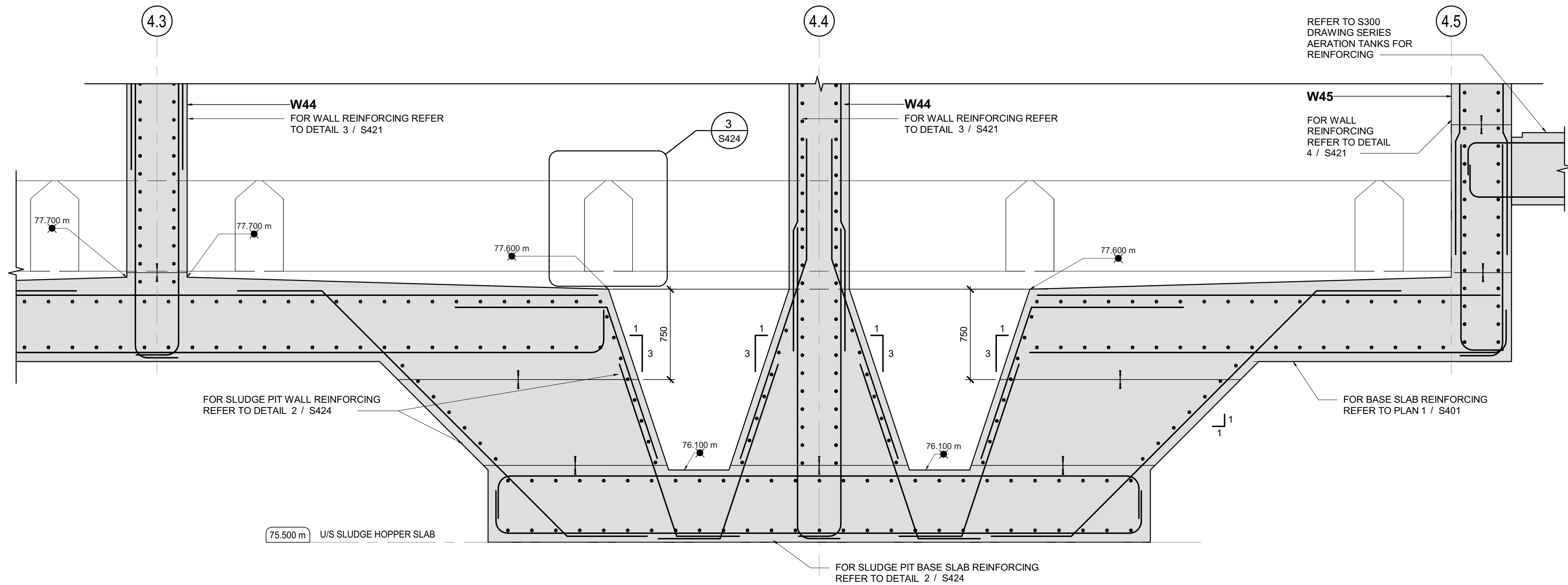


NOTE: COORDINATE FINAL COLLECTOR SUPPORT GEOMETRY WITH PROCESS.

4
S424

CROSS COLLECTOR SLUDGE SUPPORT SECTION

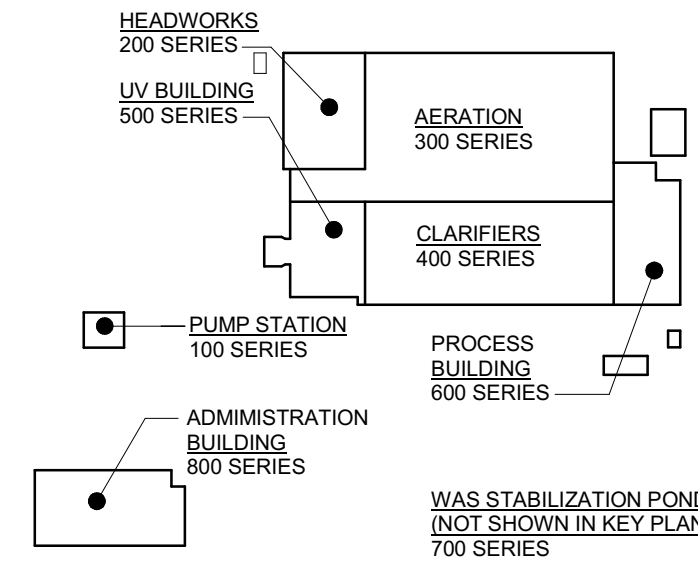
SCALE: 1:25



5
S424

SECTION DETAIL AT SLUDGE PITS

SCALE: 1:25



KEY PLAN
(NOT TO SCALE)

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CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL
CLARIFIERS

SLUDGE PIT DETAILS

DESIGN: CWD

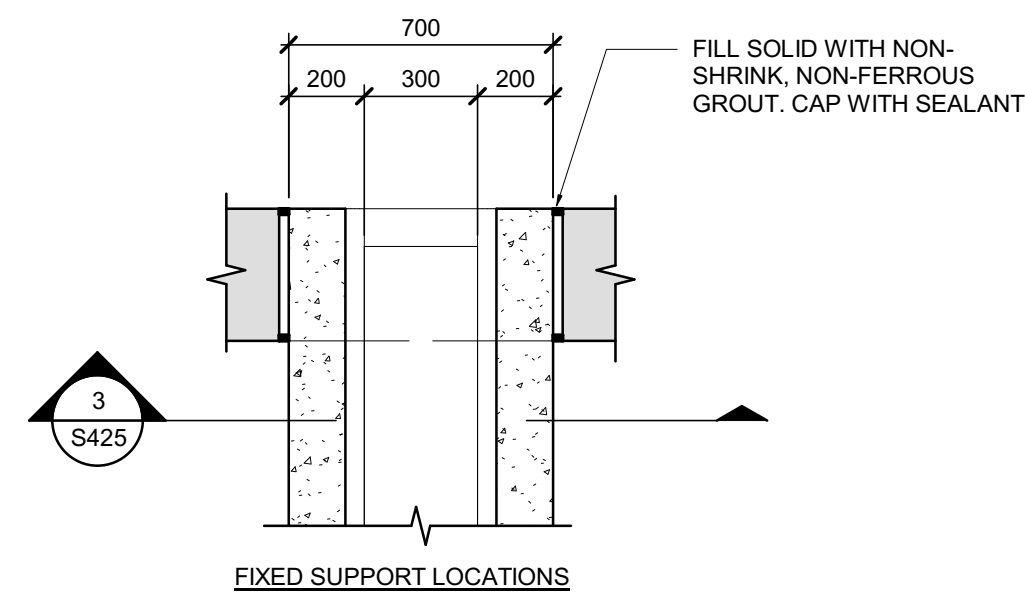
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CHECKED: JMO

JLR #: 32296

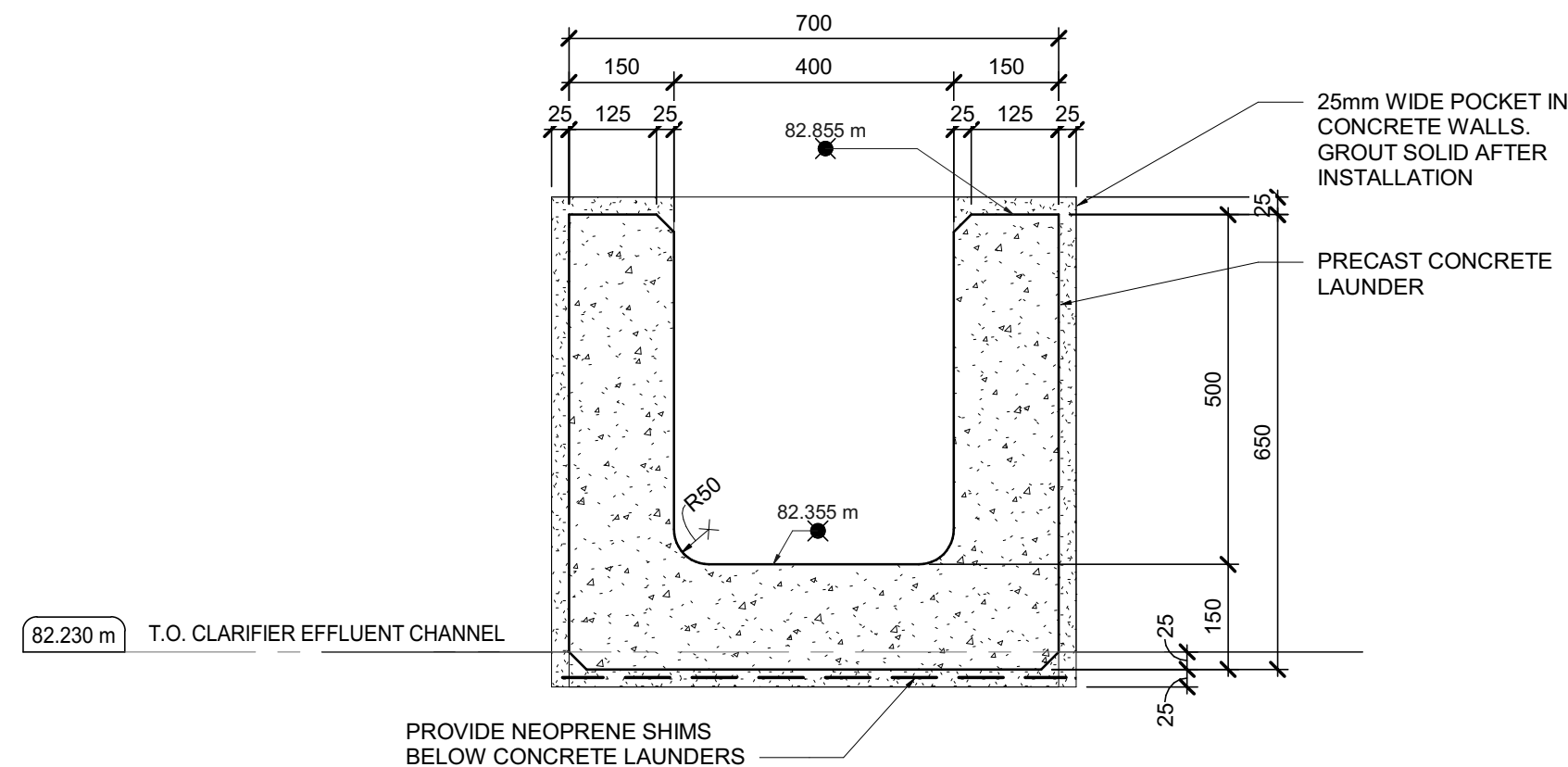
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S424

File Location: C:\Users\jral\Desktop\Brighton LOCAL\32296 S-Clarifiers LOCAL.rvt PLOT DATE: 2025-04-23 3:10:53 PM



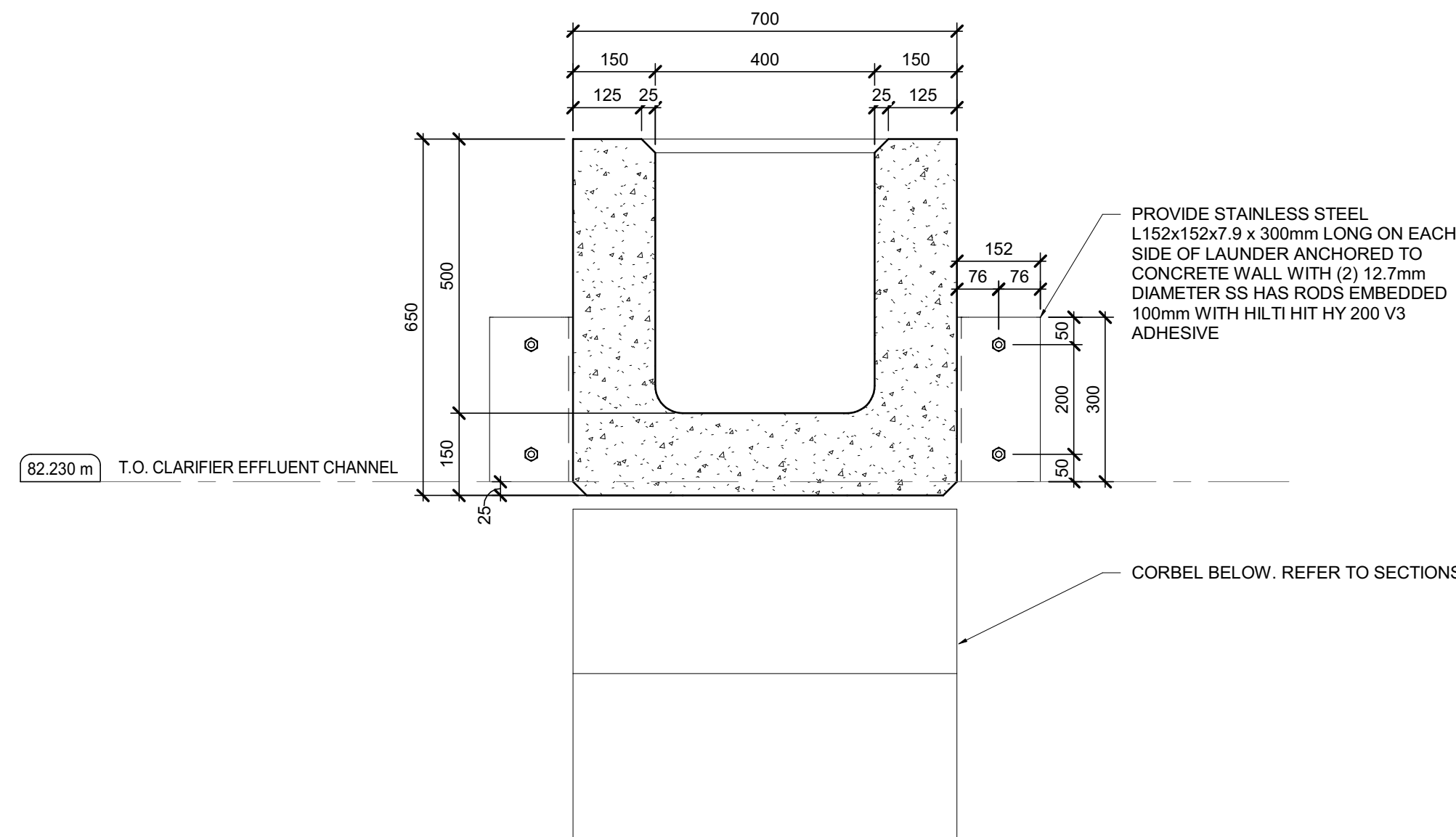
LAUNDRER PLAN DETAIL

SCALE : 1 : 20



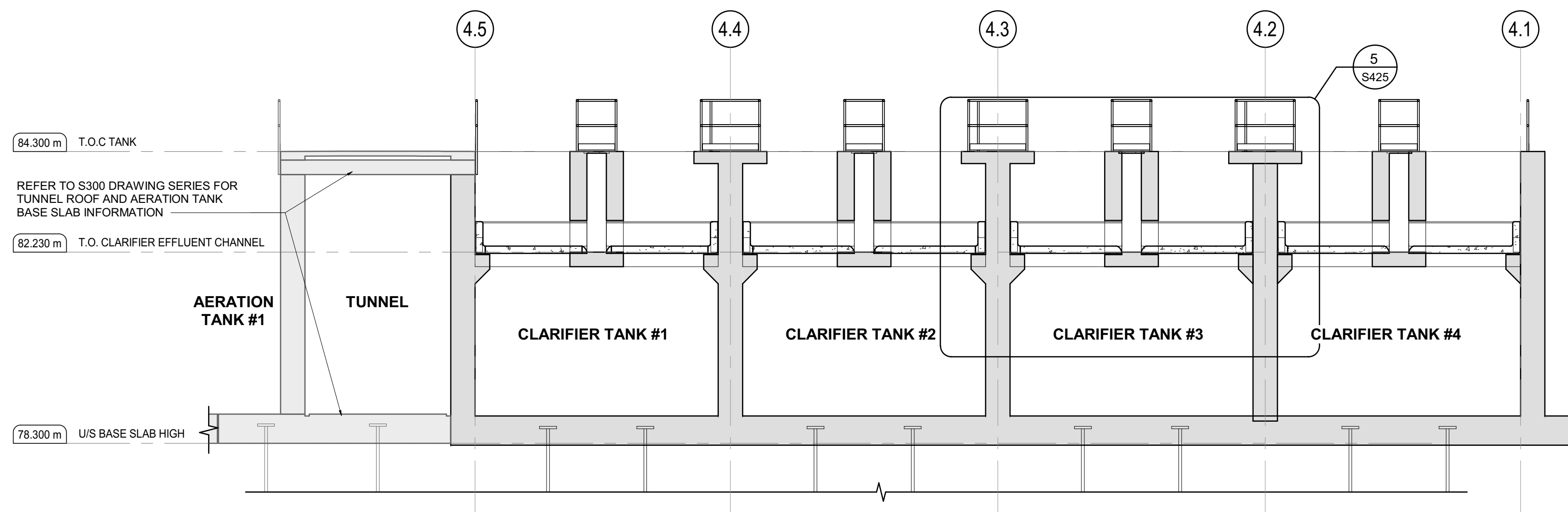
TYPICAL LAUNDRER SECTION AT FIXED SUPPORT LOCATIONS

SCALE : 1 : 10



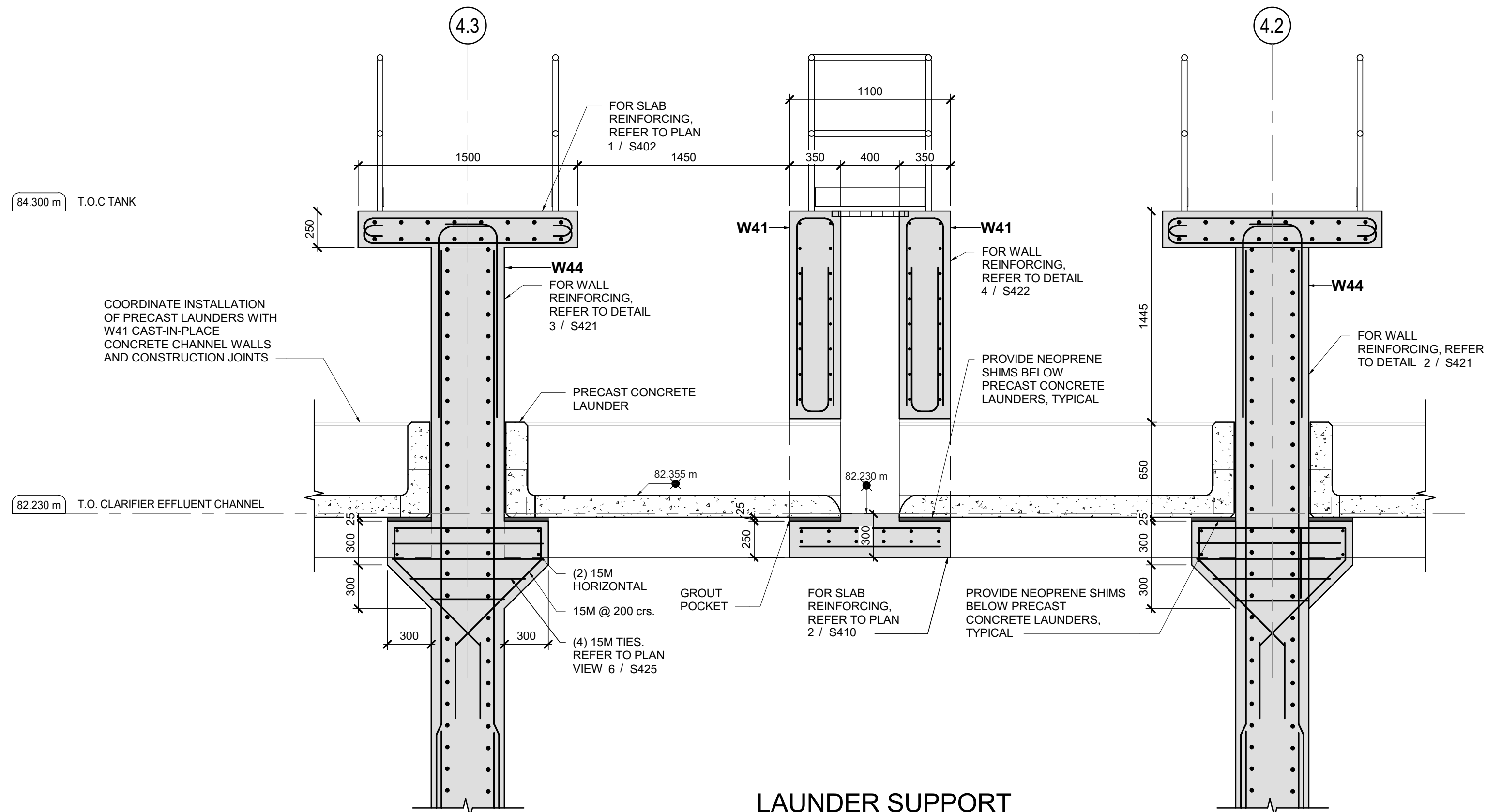
TYPICAL LAUNDRER SECTION AT SLIDING SUPPORT LOCATIONS

SCALE : 1 : 10



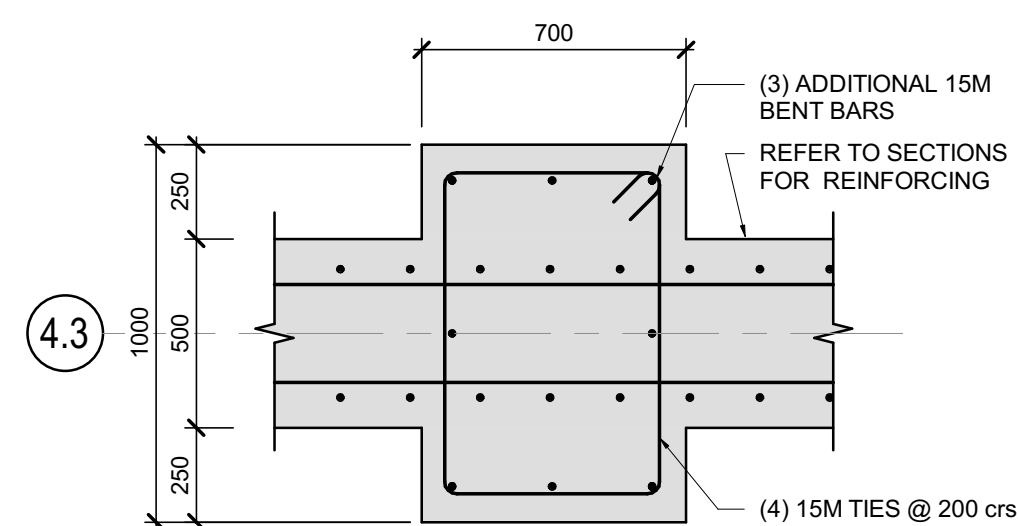
SECTION AT EFFLUENT CHANNEL AND LAUNDERS

SCALE : 1 : 75



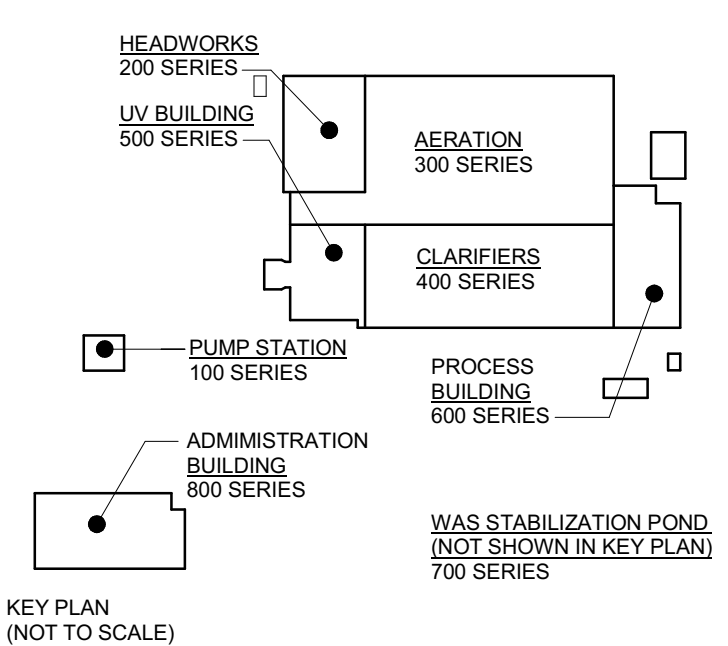
LAUNDRER SUPPORT SECTION DETAIL

SCALE : 1 : 25



LAUNDRER SUPPORT PLAN DETAIL

SCALE : 1 : 25



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SCALE: As indicated

CLIENT:



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CONSULTANT:

PROFESSIONAL STAMP



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

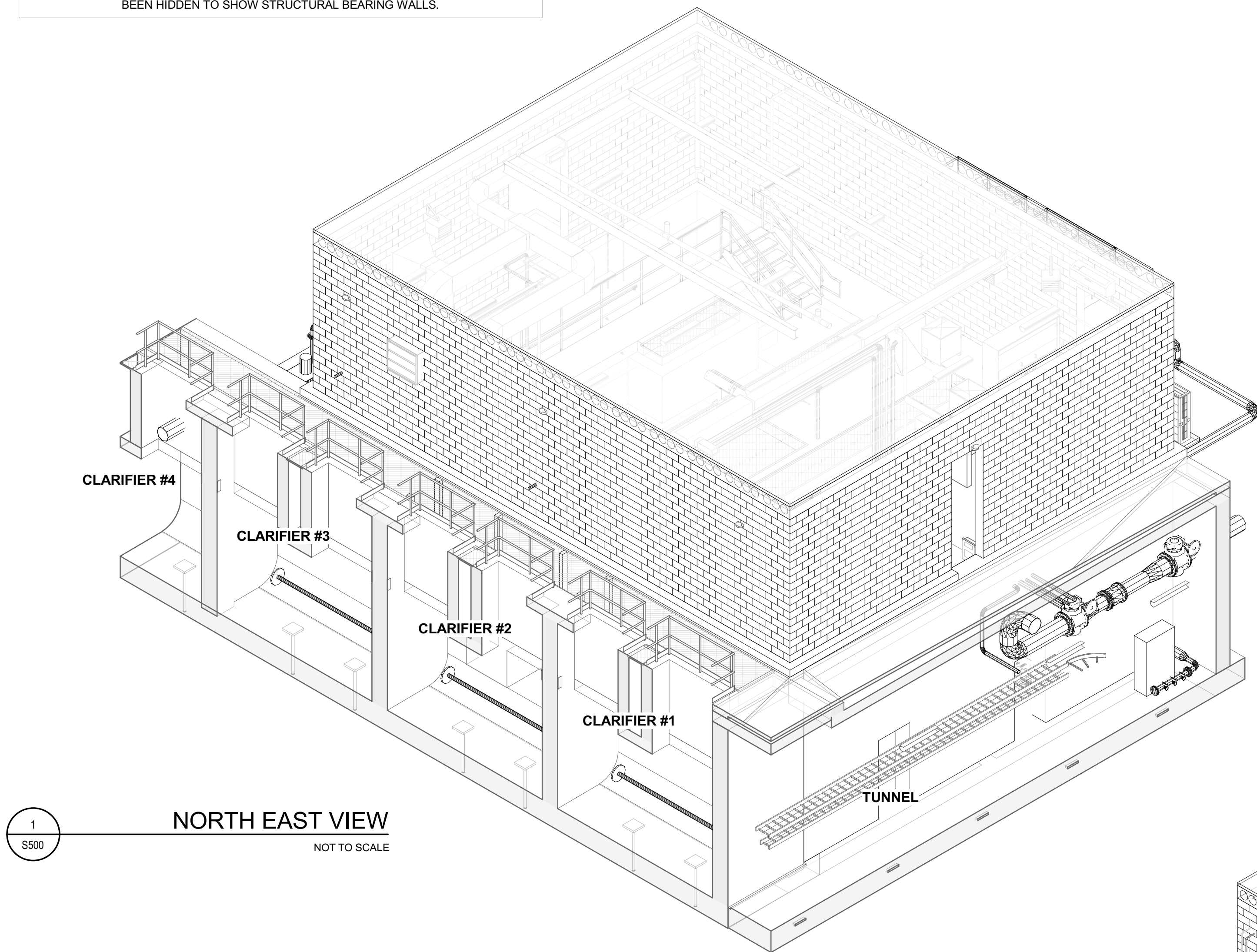
STRUCTURAL
CLARIFIERS
EFFLUENT CHANNEL LAUNDRER DETAILS

DESIGN: CWD
DRAWN: SWW
CHECKED: JMO
JLR #: 32296

DRAWING #:
S425

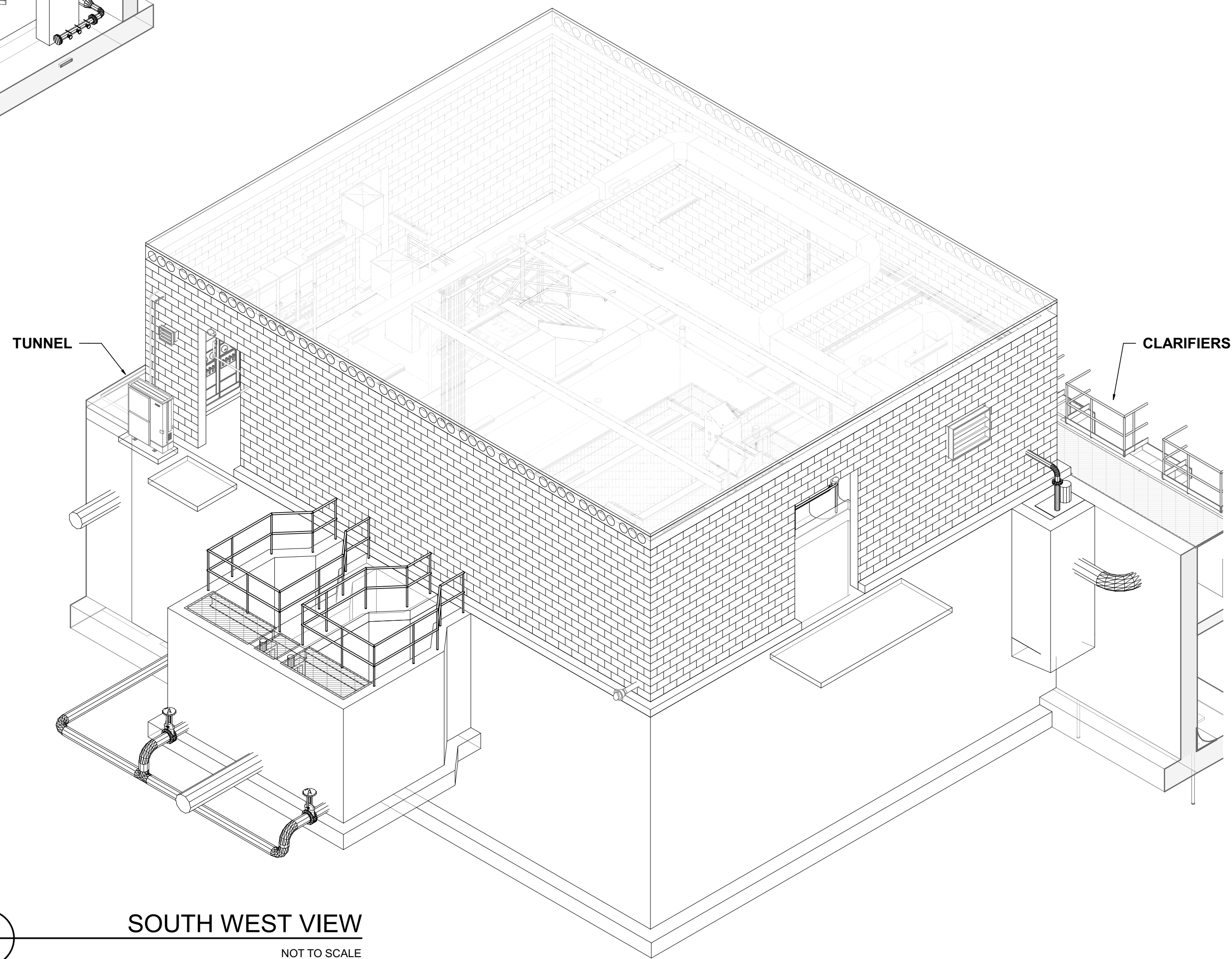
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PLOT DATE: 2025-04-23 3:10:54 PM

NOTE: THESE ISOMETRIC VIEWS ARE PROVIDED TO SHOW GENERAL DESIGN INTENT AND OVERALL BUILDING GEOMETRY ONLY. REFER TO PLANS, ELEVATIONS AND SECTION DETAILS IN THIS DRAWING PACKAGE FOR ACCURACY AND CONTRACTUAL INFORMATION. HORIZONTAL FLOORS, ROOFS AND SLABS HAVE BEEN DISPLAYED WITH A TRANSPARENCY COMPONENT TO SHOW ALL ELEMENTS. ARCHITECTURAL WALLS HAVE BEEN HIDDEN TO SHOW STRUCTURAL BEARING WALLS.



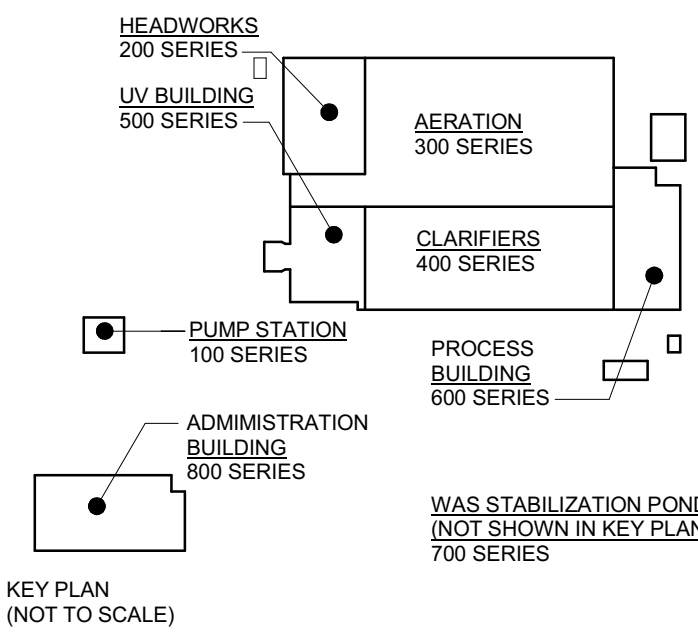
1
S500

NORTH EAST VIEW
NOT TO SCALE



2
S500

SOUTH WEST VIEW
NOT TO SCALE



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CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

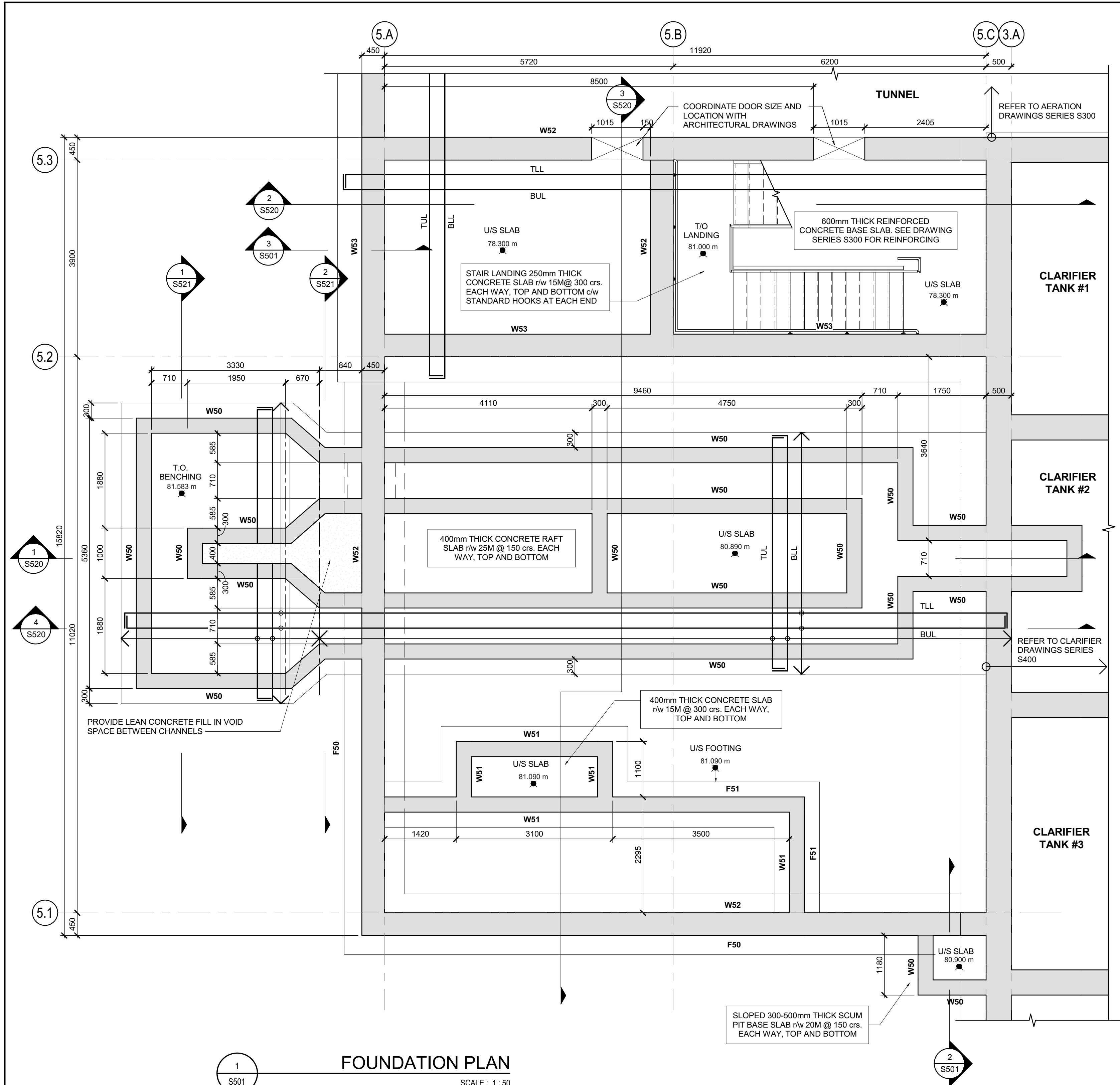
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL UV BUILDING
ISOMETRIC VIEWS AND NOTES

DESIGN: CWD	DRAWING #:
DRAWN: JIC	S500
CHECKED: JMO	
JLR #: 32296	

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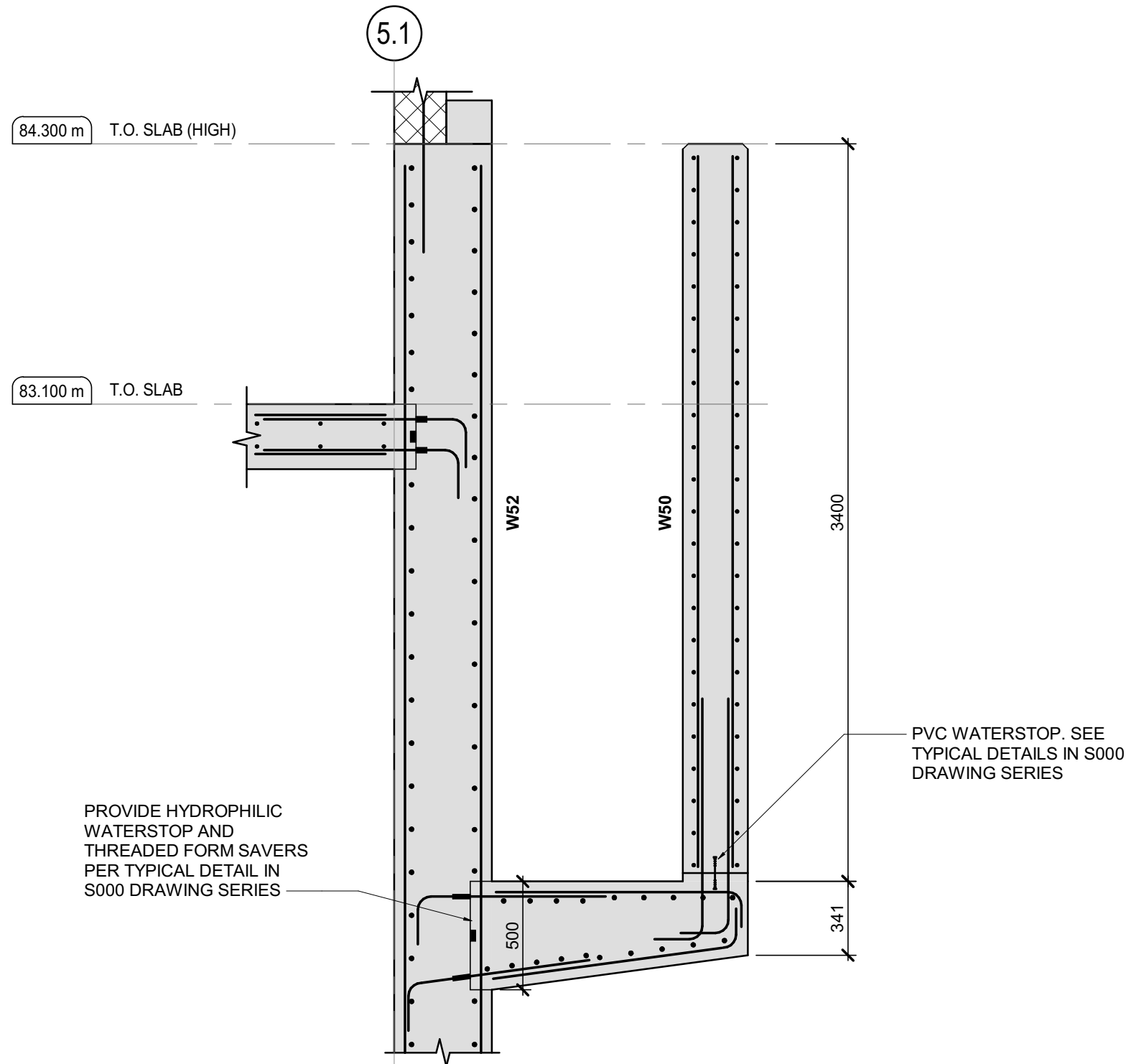


1 S501 FOUNDATION PLAN SCALE: 1:50

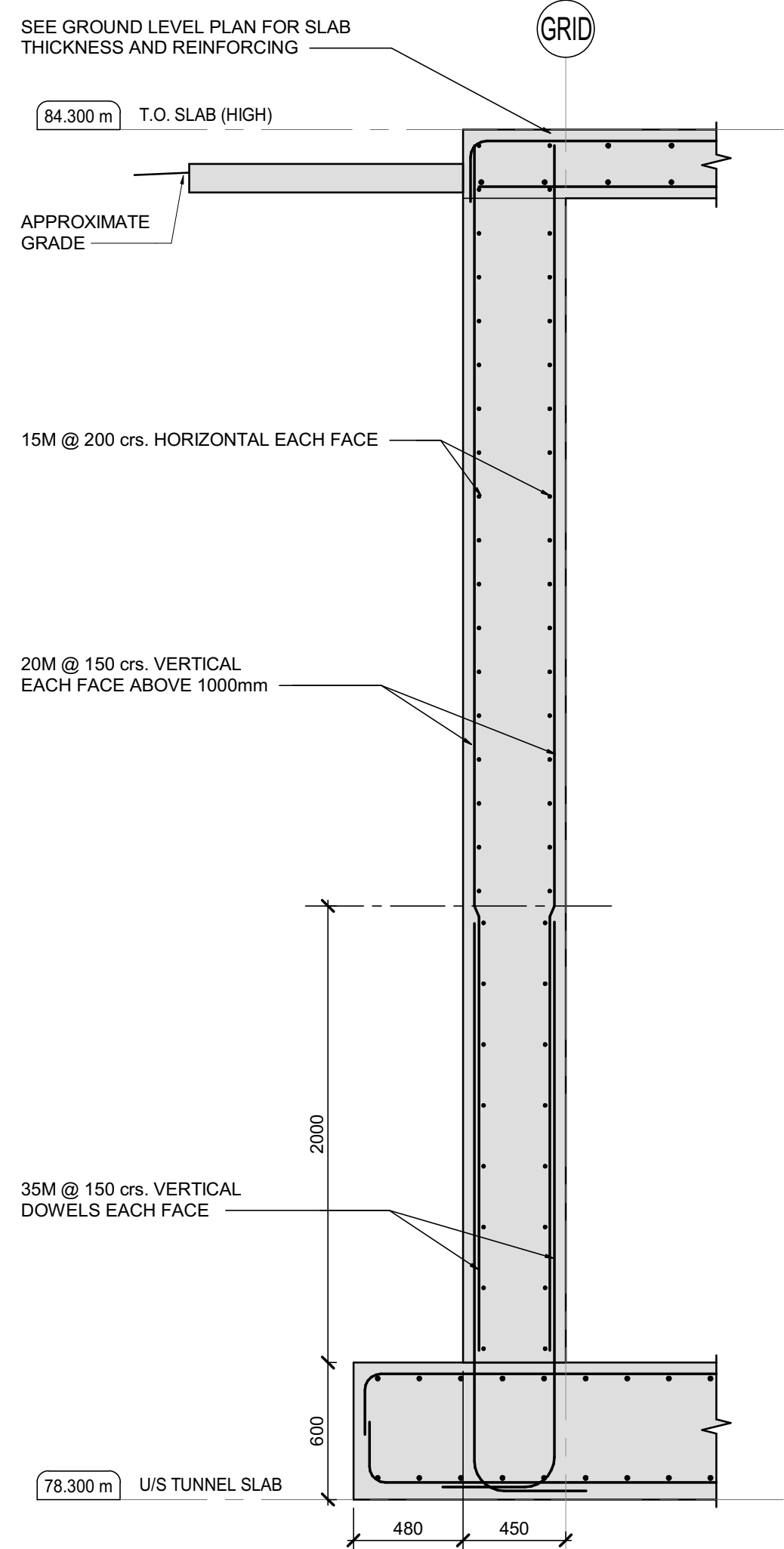
CONCRETE FOUNDATION WALL SCHEDULE			
MARK	DESCRIPTION	REINFORCING	
W50	300mm THICK CONCRETE WALL	15M @ 150 CRS.	EACH WAY, EACH FACE
W51	300mm THICK CONCRETE WALL	15M @ 300 CRS.	EACH WAY, EACH FACE
W52	450mm THICK CONCRETE WALL	20M @ 300 CRS.	EACH WAY, EACH FACE
W53	450mm THICK CONCRETE WALL	SEE SECTION 3 ON S501	

CONCRETE FOOTING SCHEDULE		
MARK	WIDTH x DEPTH	REINFORCING
F50	1200 x 400 STRIP FOOTING	(4) 15M LONGITUDINAL AND 15M @ 300 CRS.HOOKED TRANSVERSE TOP AND BOTTOM
F51	900 x 400 STRIP FOOTING	(4) 15M LONGITUDINAL AND 15M @ 300 CRS.HOOKED TRANSVERSE TOP AND BOTTOM

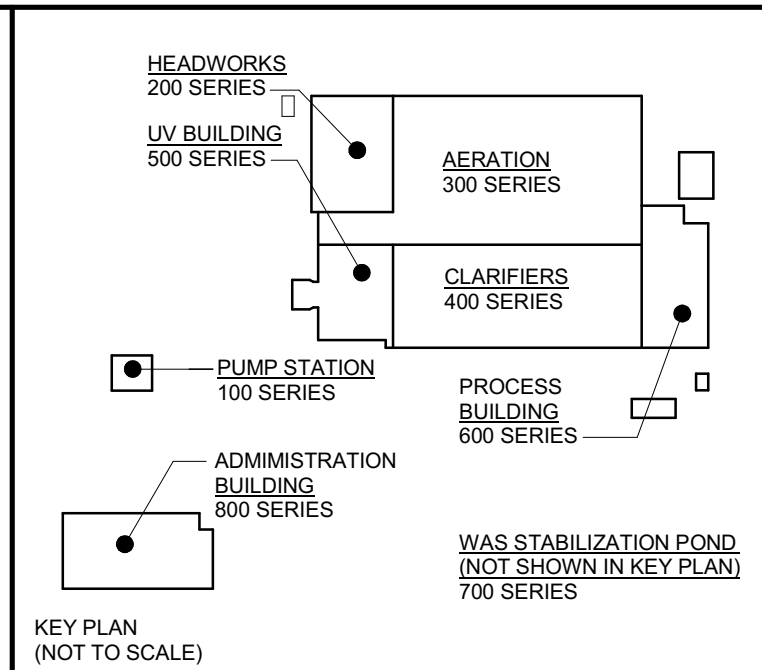
- DRAWING NOTES:
- REFER TO S000 DRAWING SERIES FOR STRUCTURAL GENERAL NOTES, LEGEND TO STRUCTURAL MATERIALS AND A LIST OF STRUCTURAL ABBREVIATIONS.
 - COORDINATE ALL OPENINGS WITH THE ASSOCIATED RESPONSIBLE DISCIPLINE AS NOTED ON PLAN AND IN THE REMAINDER OF THE DRAWING SET . PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS AS PER TYPICAL DETAIL IN S000 DRAWING SERIES.
 - REFER TO TYPICAL DETAILS IN S000 DRAWING SERIES FOR DOWELS, HORIZONTAL AND VERTICAL REINFORCING OF WALLS AND LINTELS.
 - ALL LIQUID RETAINING STRUCTURES INCLUDING CONCRETE WALLS AND SLABS ARE TO HAVE CRYSTALLINE WATERPROOFING ENTRAINED WITHIN THE MIX DESIGN ON THESE PLANS. ALL BELOW GRADE WALLS AND SLABS THAT ENCLOSE OCCUPIED SPACES SHALL HAVE CRYSTALLINE WATERPROOFING ENTRAINED IN THE MIX DESIGN. REFER TO CAST-IN-PLACE CONCRETE SPECIFICATION FOR FURTHER DETAILS.
 - REFER TO SA DRAWING SERIES FOR STAIR, PLATFORM, GUARDRAIL / HANDRAIL AND LADDER INFORMATION.



2 S501 SECTION AT SCUM PIT SCALE: 1:25



3 S501 FOUNDATION WALL SECTION W53 SCALE: 1:25



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CLIENT:

BRIGHTON MUNICIPALITY

CONSULTANT:

J.L. Richards ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP: LICENSED PROFESSIONAL ENGINEER, 2025-04-29, C.W. DYER, 100212220, PROVINCE OF ONTARIO

PROJECT NORTH

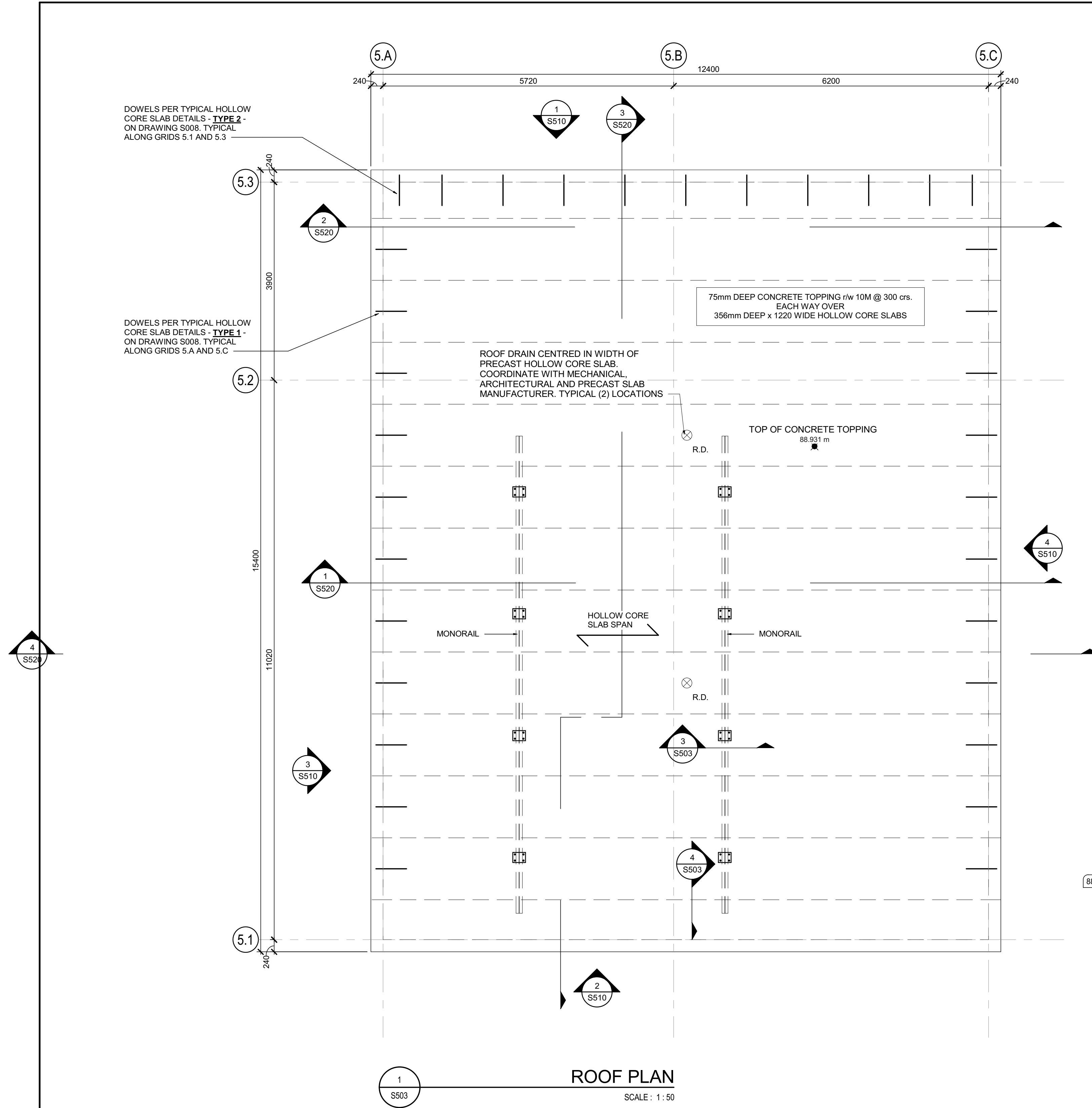
PROJECT: BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING: STRUCTURAL UV BUILDING FOUNDATION PLAN

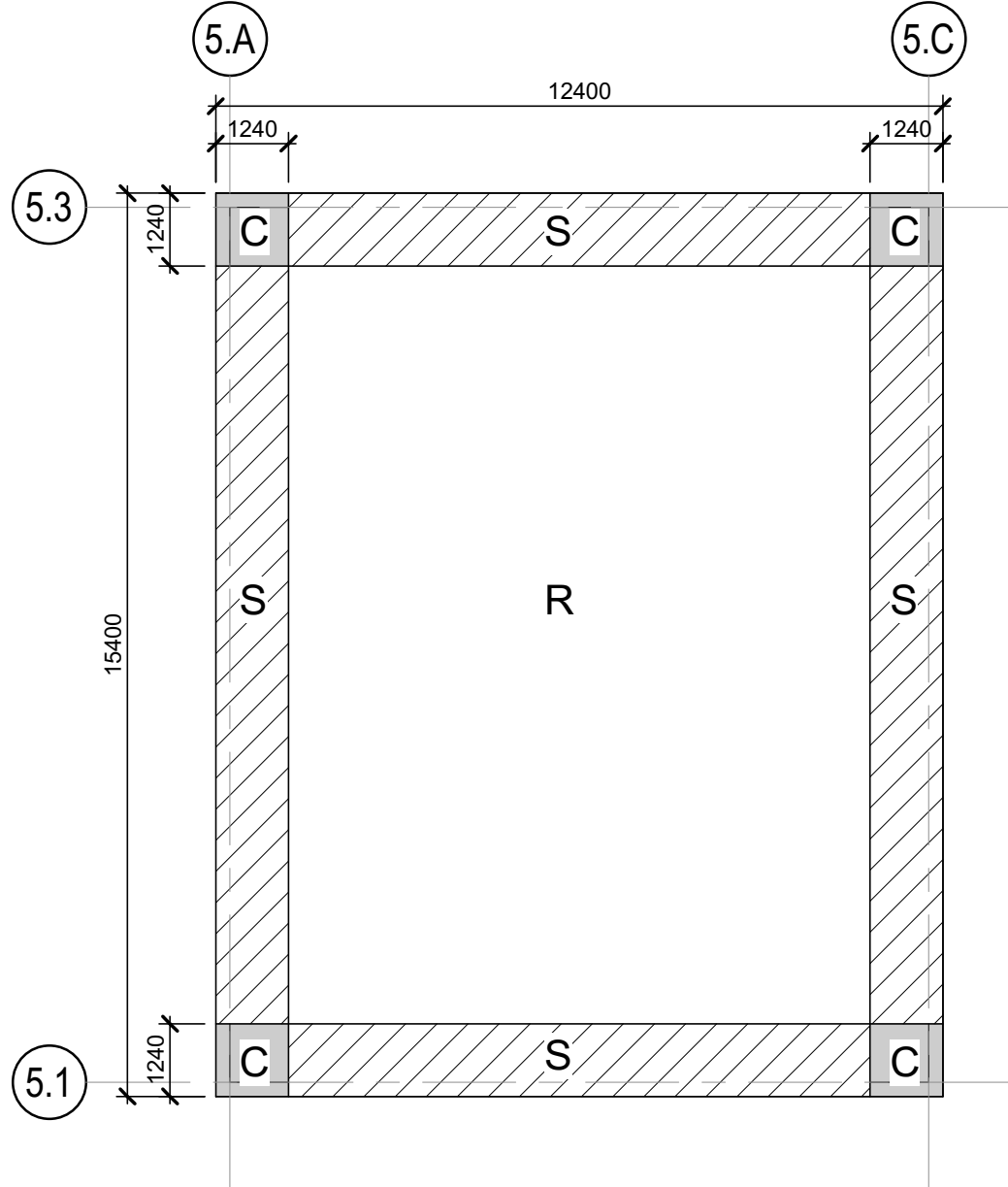
DESIGN: CWD	DRAWING #:
DRAWN: JIC	S501
CHECKED: JMO	
JLR #:	32296

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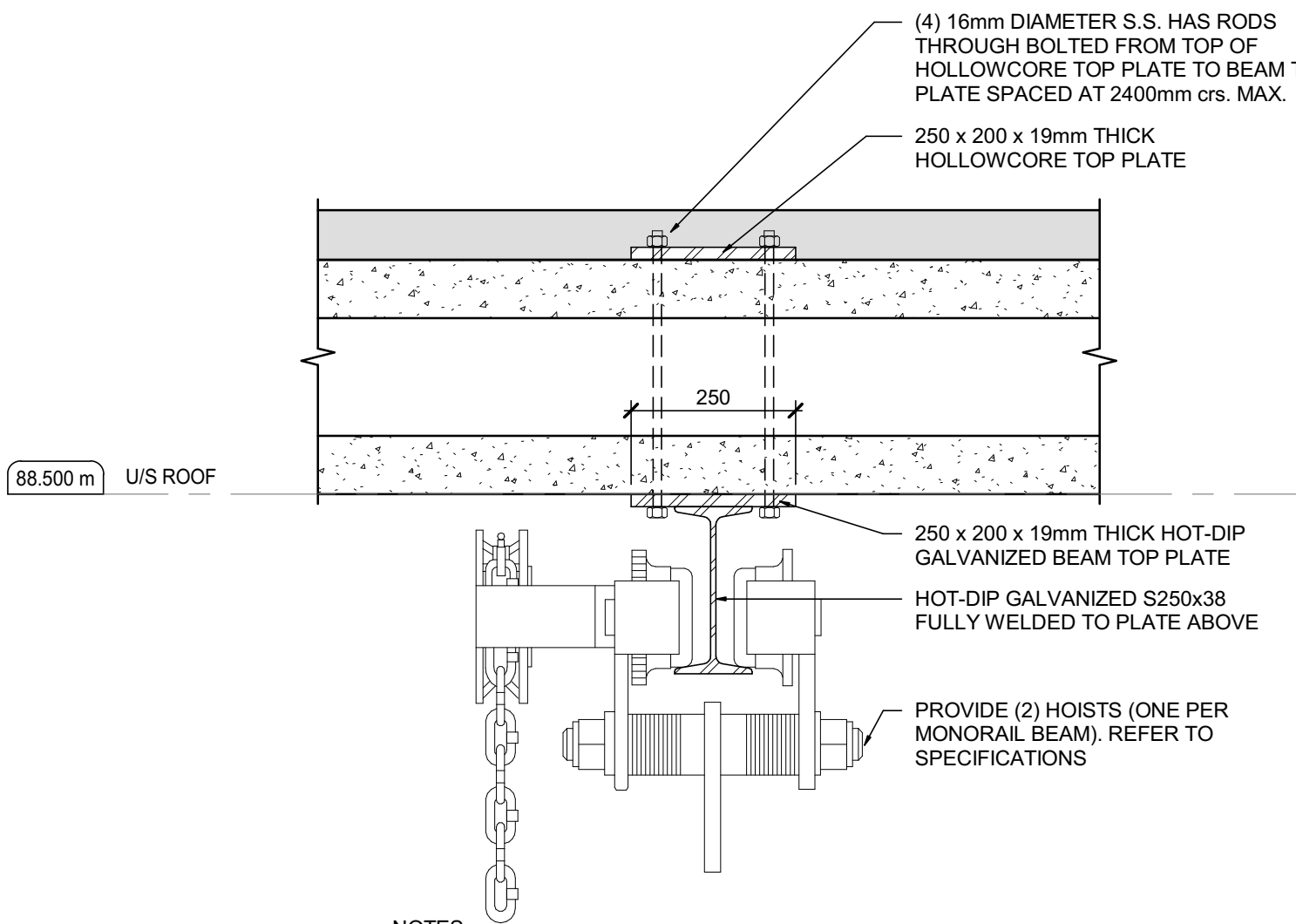
ROOF PLAN

SCALE : 1 : 50



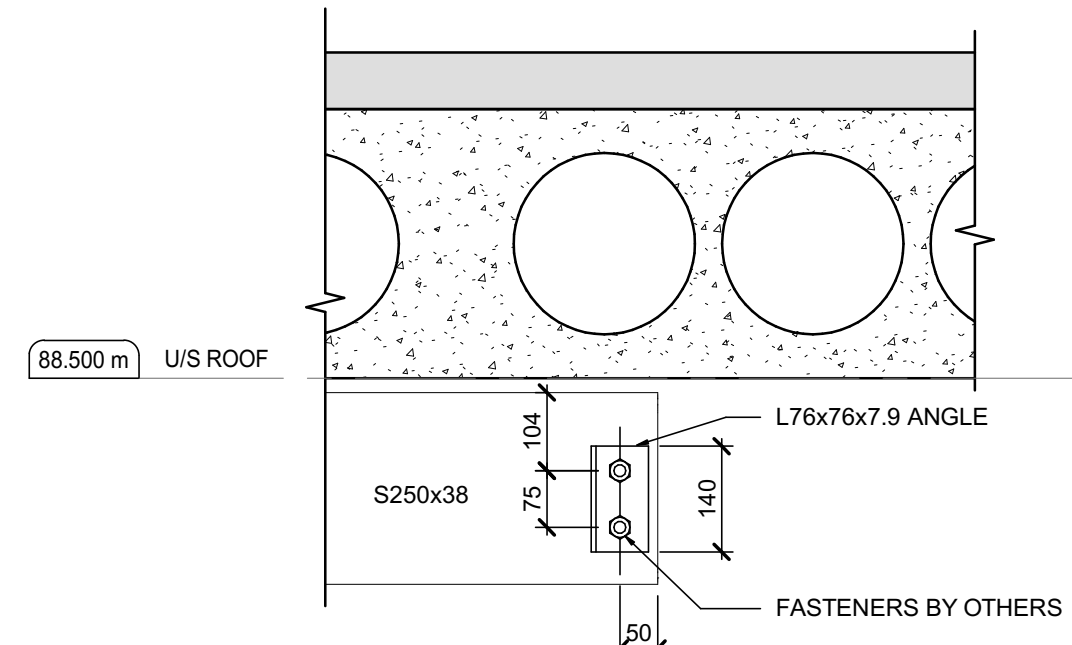
WIND UPLIFT DIAGRAM

SCALE : 1 : 125



SECTION AT MONORAIL

SCALE : 1 : 10



TYPICAL MONORAIL END DETAIL

SCALE : 1 : 10

DRAWING NOTES:

1. REFER TO S000 DRAWING SERIES FOR PROJECT GENERAL NOTES, LEGEND TO STRUCTURAL MATERIALS AND A LIST OF STRUCTURAL ABBREVIATIONS.

DESIGN ROOF LOADS

DEAD LOADS:
CONCRETE TOPPING - 1.76 kPa
ROOFING - 0.5 kPa
M&E ALLOWANCE - 0.5 kPa
POINT LOAD ALLOWANCE - 4.0 kN (APPLIED ANYWHERE ALONG THE LENGTH OF THE PRECAST SLAB)

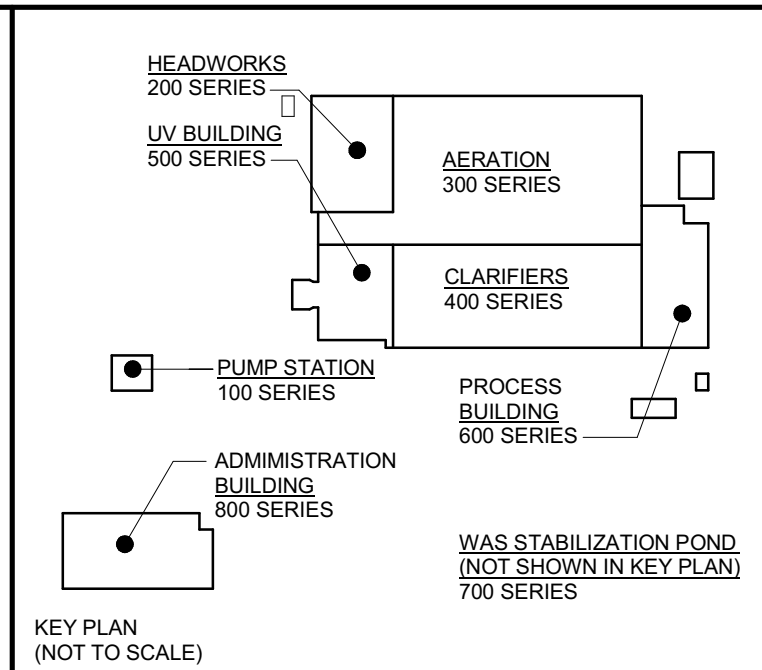
LIVE LOADS:
ROOF LIVE - 1 kPa
SNOW LOAD - 2.1 kPa (INCLUDES Is = 1.25)

WIND LOAD - SEE BELOW

MONORAIL LOADS

MONORAIL CAPACITY - 1 TONNE (10 kN)
IMPACT FORCE - 1 kN
NORMAL HORIZONTAL FORCE - 2 kN

ROOF STRUCTURAL COMPONENTS AND CLADDING EXTERNAL WIND PRESSURES				
WIND PRESSURE (kPa) BASED ON SUPPORTED TRIBUTARY AREA (m ²)				
NEGATIVE (UPLIFT) WIND PRESSURE (kPa) (UNFACTORED)				
-VE DENOTES PRESSURES AWAY FROM SURFACE				
ZONE	A ≤ 2 (m ²)	2 < A ≤ 5 (m ²)	5 < A ≤ 10 (m ²)	A > 10 (m ²)
C	-2.93	-2.37	-1.64	-1.08
S	-1.35	-1.35	-1.35	-1.08
R	-0.98	-0.93	-0.86	-0.81
POSITIVE WIND PRESSURE (kPa) (UNFACTORED)				
+VE DENOTES PRESSURES TOWARDS SURFACE				
ZONE	A ≤ 2 (m ²)	2 < A ≤ 5 (m ²)	5 < A ≤ 10 (m ²)	A > 10 (m ²)
C	0.27	0.24	0.20	0.16
S	0.27	0.24	0.20	0.16
R	0.27	0.24	0.20	0.16



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CONSULTANT:

PROFESSIONAL STAMP



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL UV BUILDING

ROOF PLAN

DESIGN: CWD

DRAWN: JIC

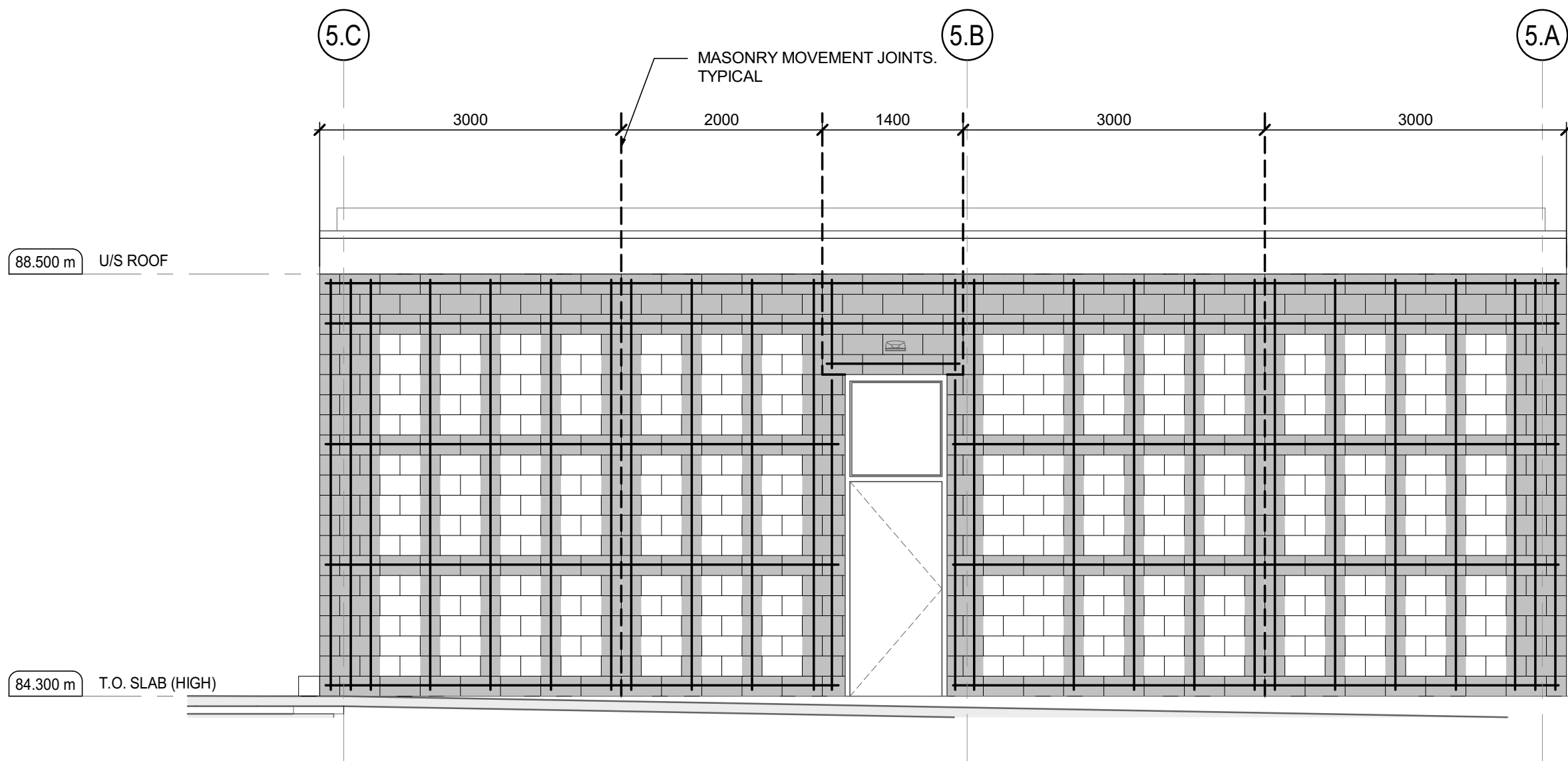
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JLR #: 32296

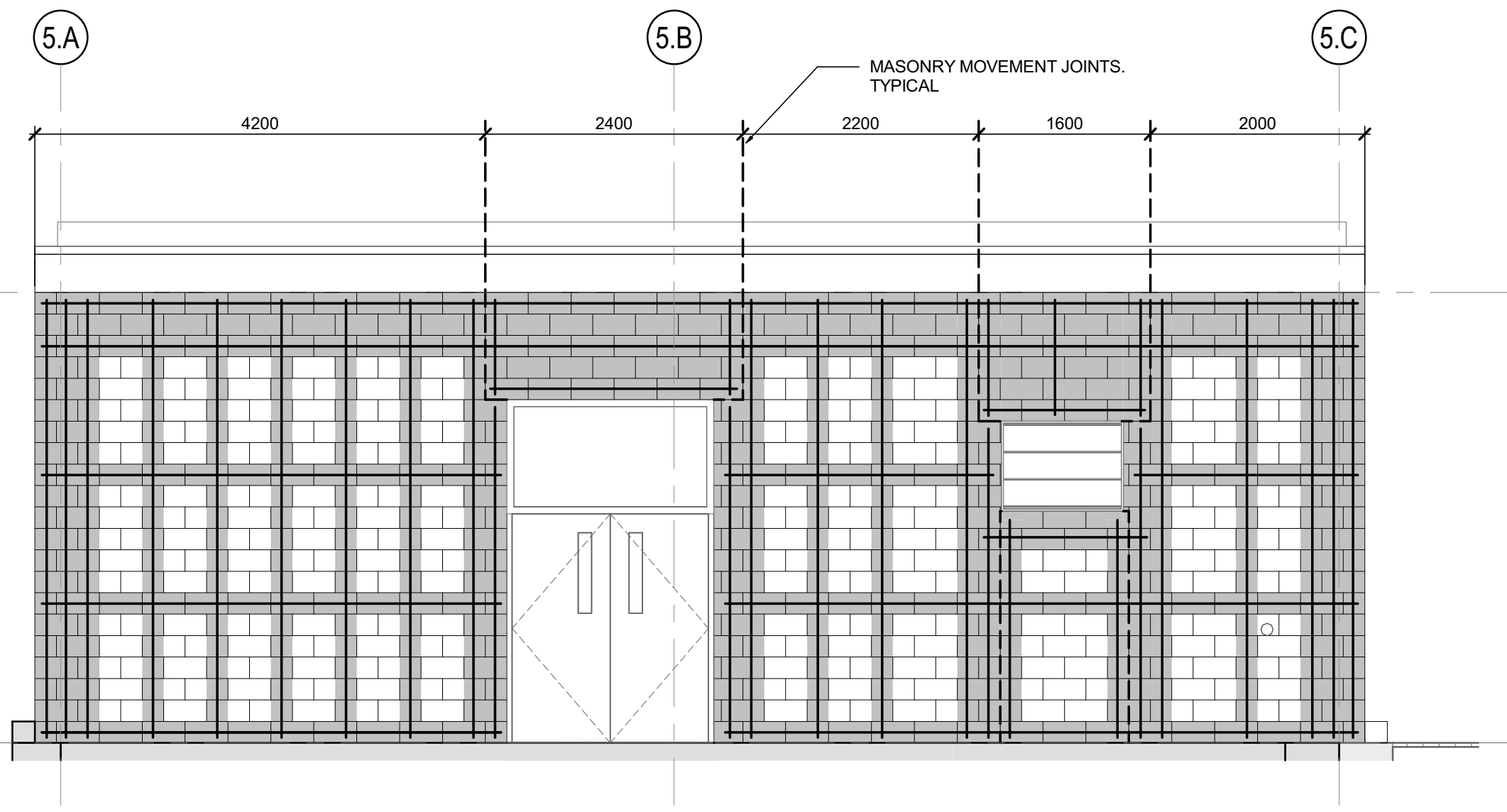
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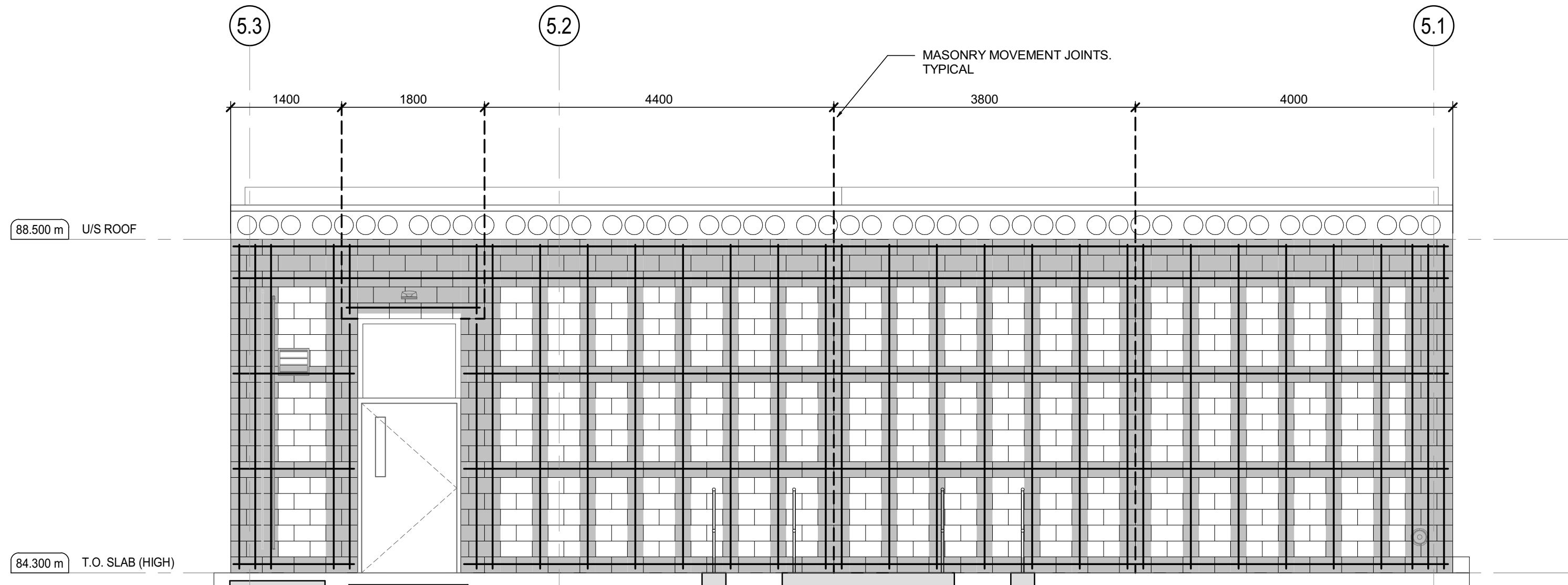
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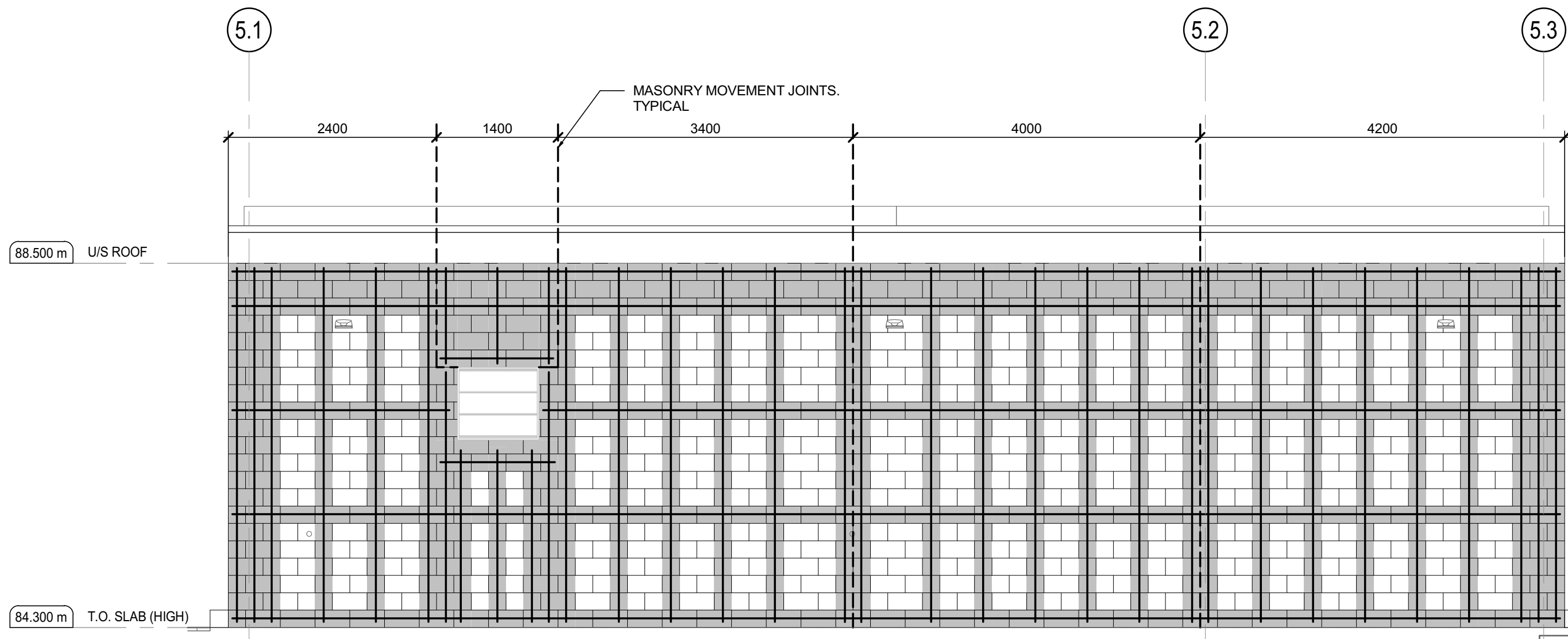
1 NORTH ELEVATION
SS10 SCALE : 1 : 50



2 SOUTH ELEVATION
SS10 SCALE : 1 : 50



3 WEST ELEVATION
SS10 SCALE : 1 : 50



4 EAST ELEVATION
SS10 SCALE : 1 : 50

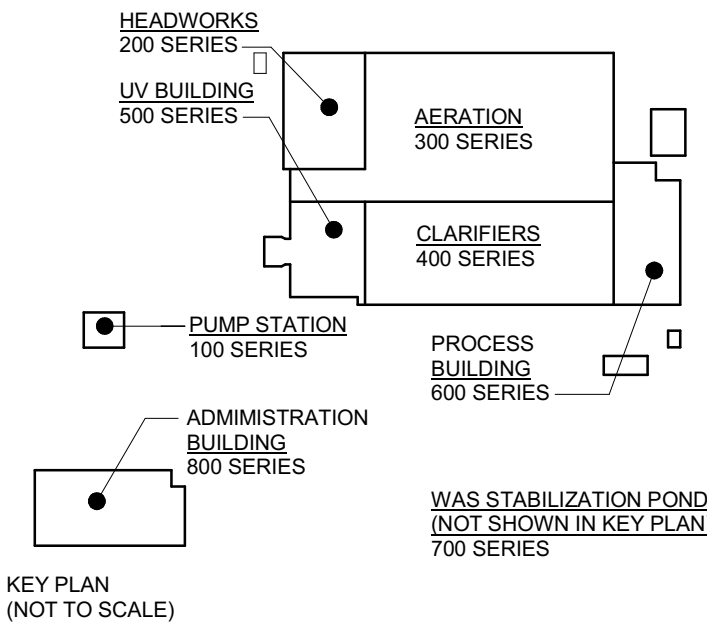
DRAWING NOTES:

1. ARCHITECTURAL EXTERIOR VENEER NOT SHOWN FOR CLARITY.
2. ALL LINTELS TO EXTEND 400mm MINIMUM BEYOND ALL OPENINGS.
3. REFER TO MASONRY STANDARD DETAILS IN S000 SERIES DRAWINGS.

MASONRY NOTES:

1. UV BUILDING TO BE CONSTRUCTED WITH 15 MPa CONCRETE BLOCK.
2. LOAD BEARING MASONRY WALLS ARE MODERATELY DUCTILE SHEAR WALLS AND ARE TO BE PARTIALLY GROUTED.
3. FOR LOAD BEARING MASONRY, PROVIDE DOUBLE BOND BEAM COURSE AT THE TOP OF ALL WALLS AND SINGLE BOND BEAM COURSE AT BOTTOM OF ALL WALLS REINFORCED WITH (1) 15M CONTINUOUS BAR. HORIZONTAL REINFORCING OF TOP BEAMS TO CONTINUE THROUGH MOVEMENT JOINTS.
4. FOR NON-LOAD BEARING MASONRY, PROVIDE SINGLE BOND BEAM COURSE AT THE TOP AND BOTTOM OF ALL WALLS REINFORCED WITH (1) 15M CONTINUOUS BAR.
5. UNLESS NOTED OTHERWISE, HORIZONTAL REINFORCING STEEL AT BOTTOM AND INTERMEDIATE BOND BEAMS SHALL TERMINATE IN 180 DEGREE STANDARD HOOKS AROUND VERTICAL REINFORCING AT MOVEMENT JOINTS.
6. BOND BEAM REINFORCING STEEL SHALL NOT BE LAPPED WITHIN 600mm OF WALL ENDS.
7. PROVIDE MATCHING VERTICAL DOWELS TO FOUNDATION WALLS (NOT SHOWN IN ELEVATIONS).

WALL TYPE	MASONRY BLOCK WALL REINFORCING	
	VERTICAL REINFORCING	HORIZONTAL REINFORCING
240 LOAD BEARING EXTERIOR	15M @ 600 crs., AT WALL ENDS AND (2) COURSES AT SIDES OF OPENINGS	200mm DEEP BOND COURSE /w (1) 10M CONTINUOUS @ 1200 crs.
190 NON-LOAD BEARING INTERIOR	15M @ 1200 crs., AT WALL ENDS AND AT SIDES OF OPENINGS	STANDARD GAUGE LADDER REINFORCING @ 400 crs.



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SCALE: As indicated

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL
UV BUILDING

MASONRY ELEVATIONS

DESIGN: CWD

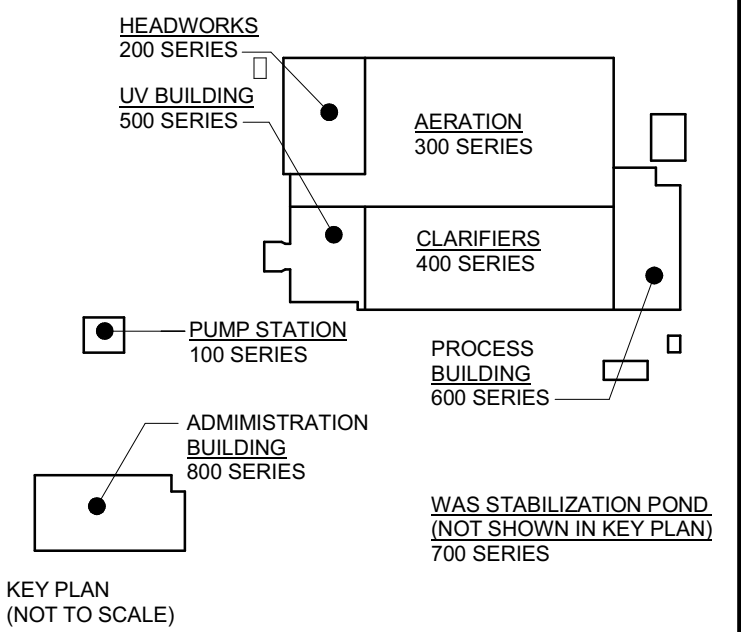
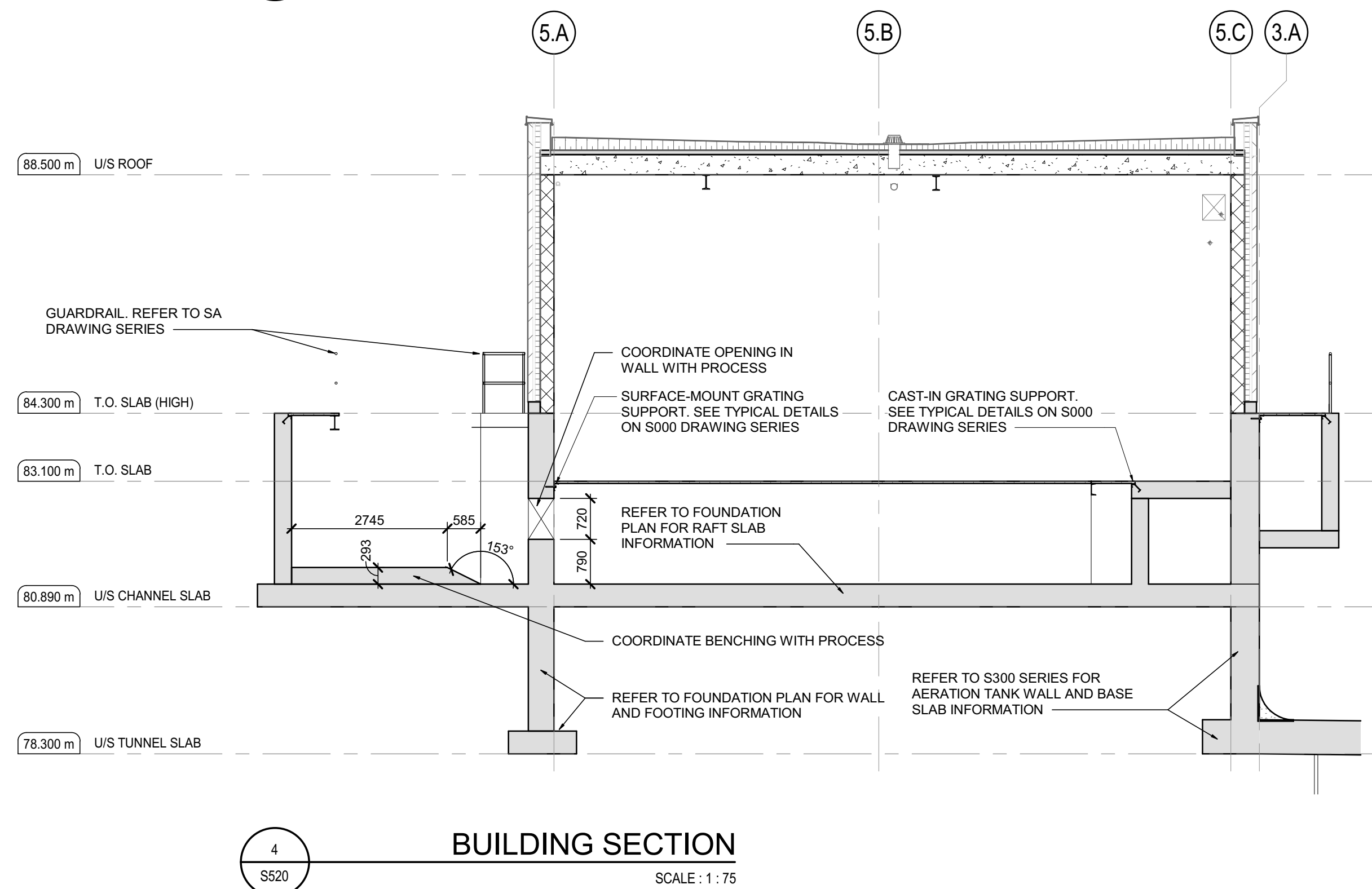
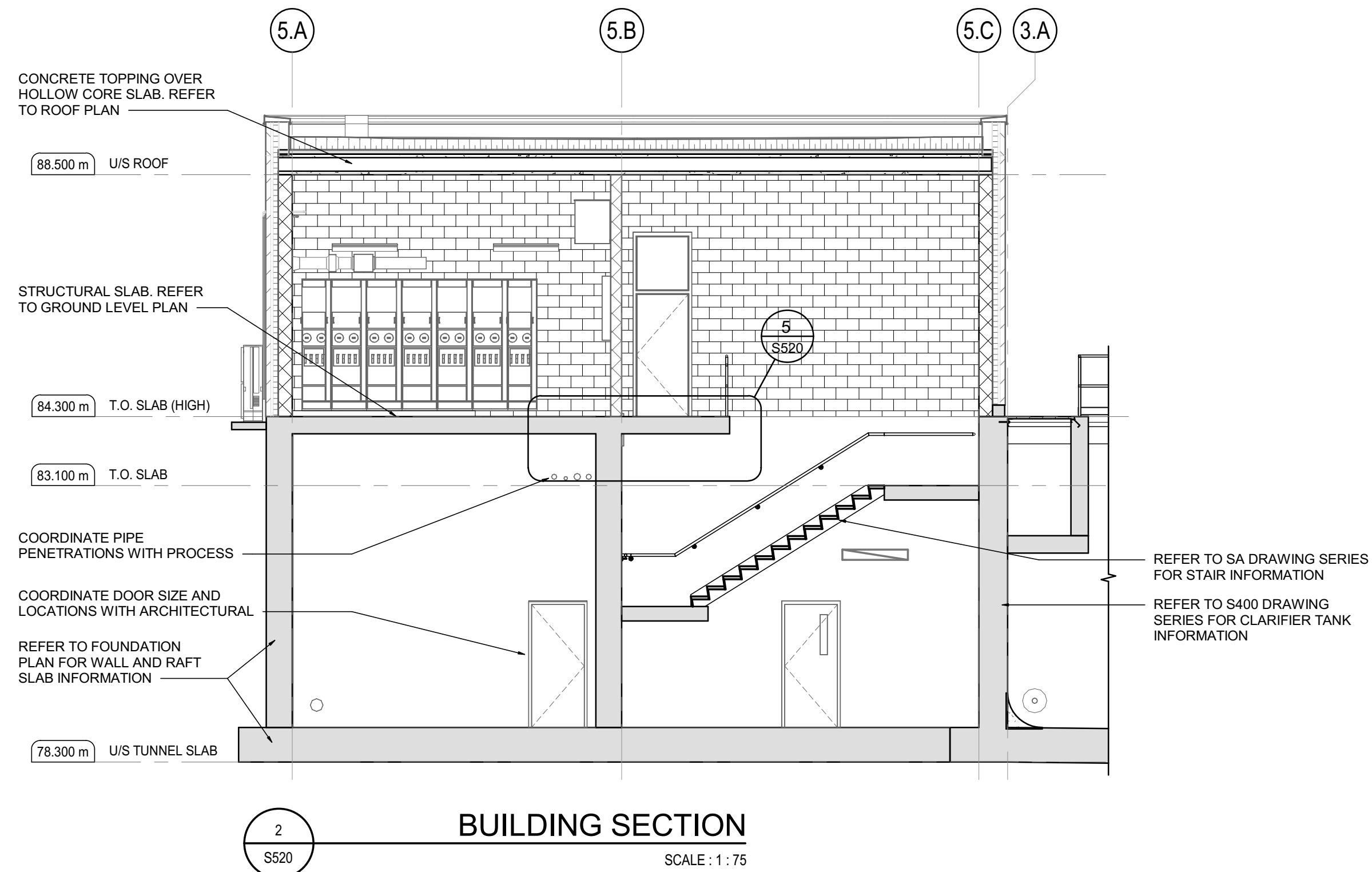
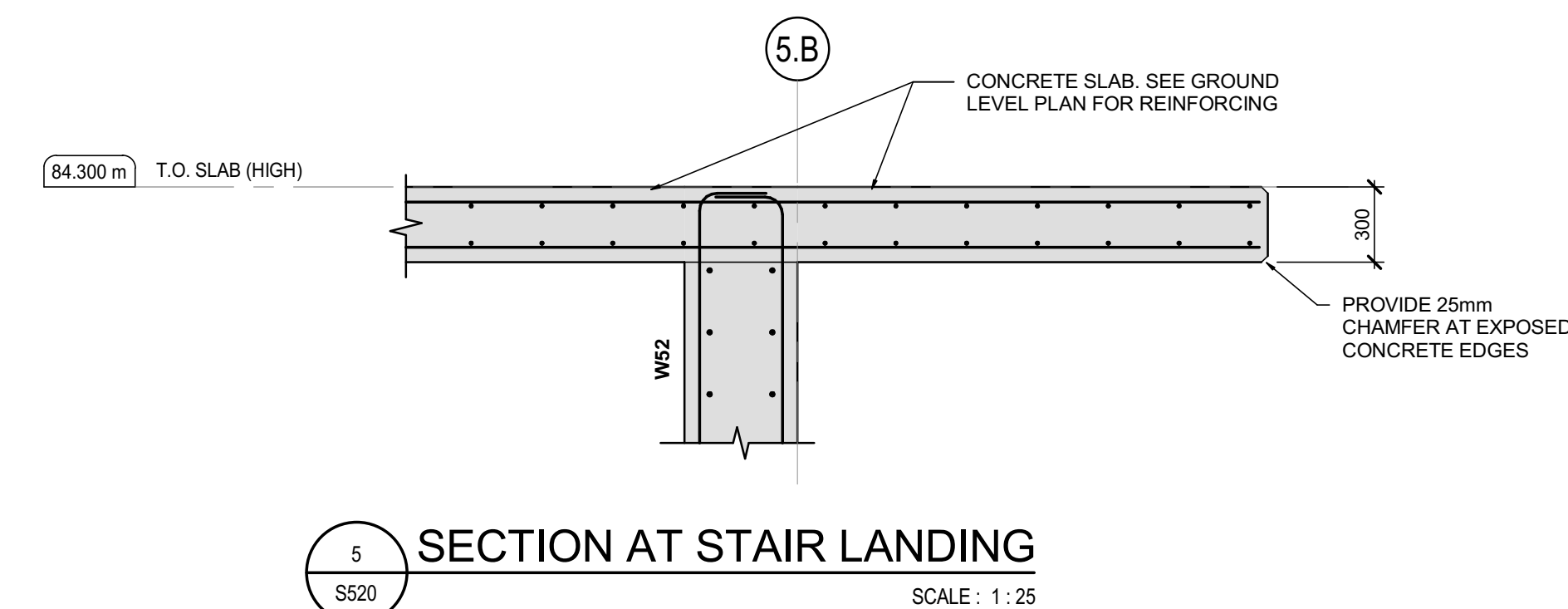
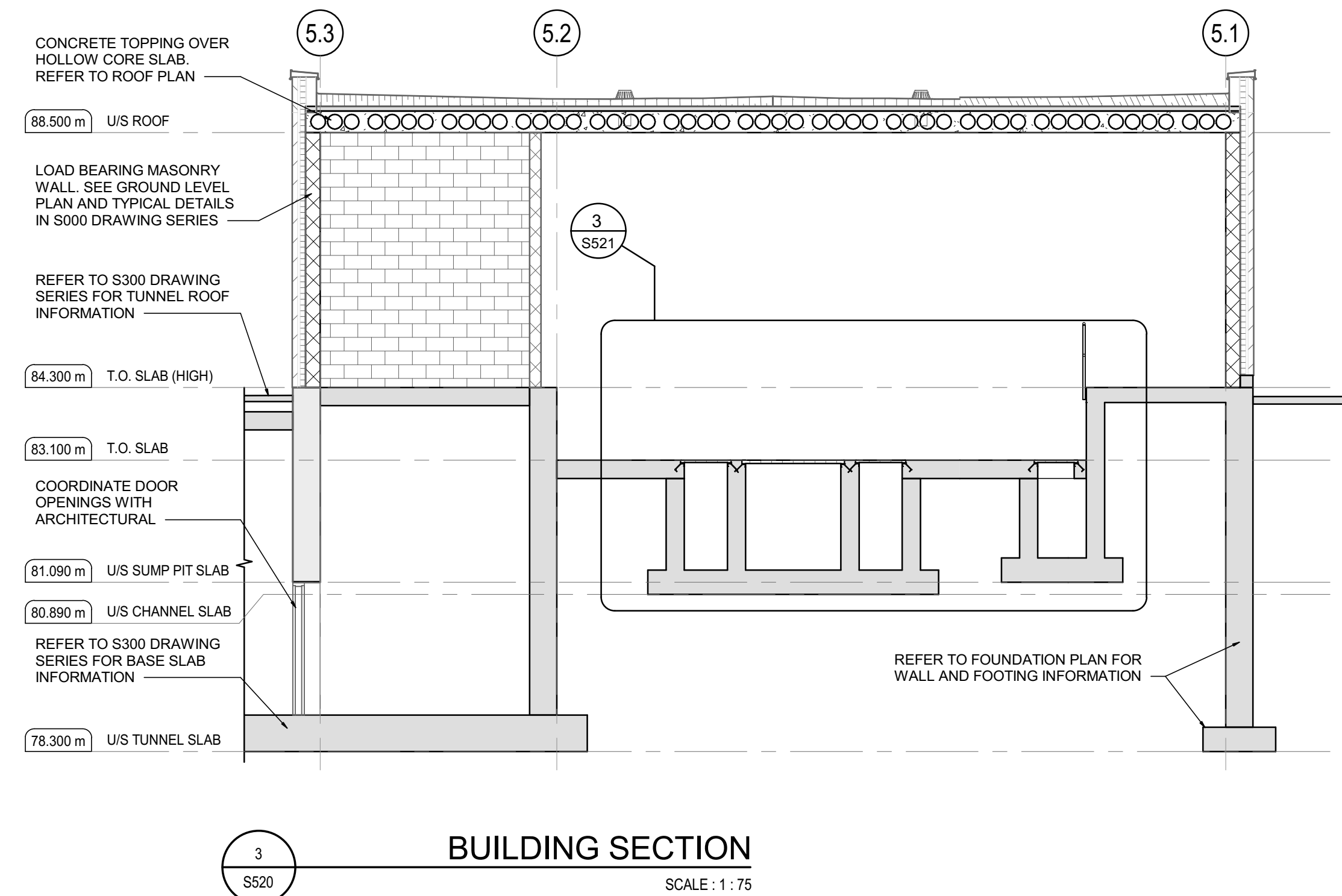
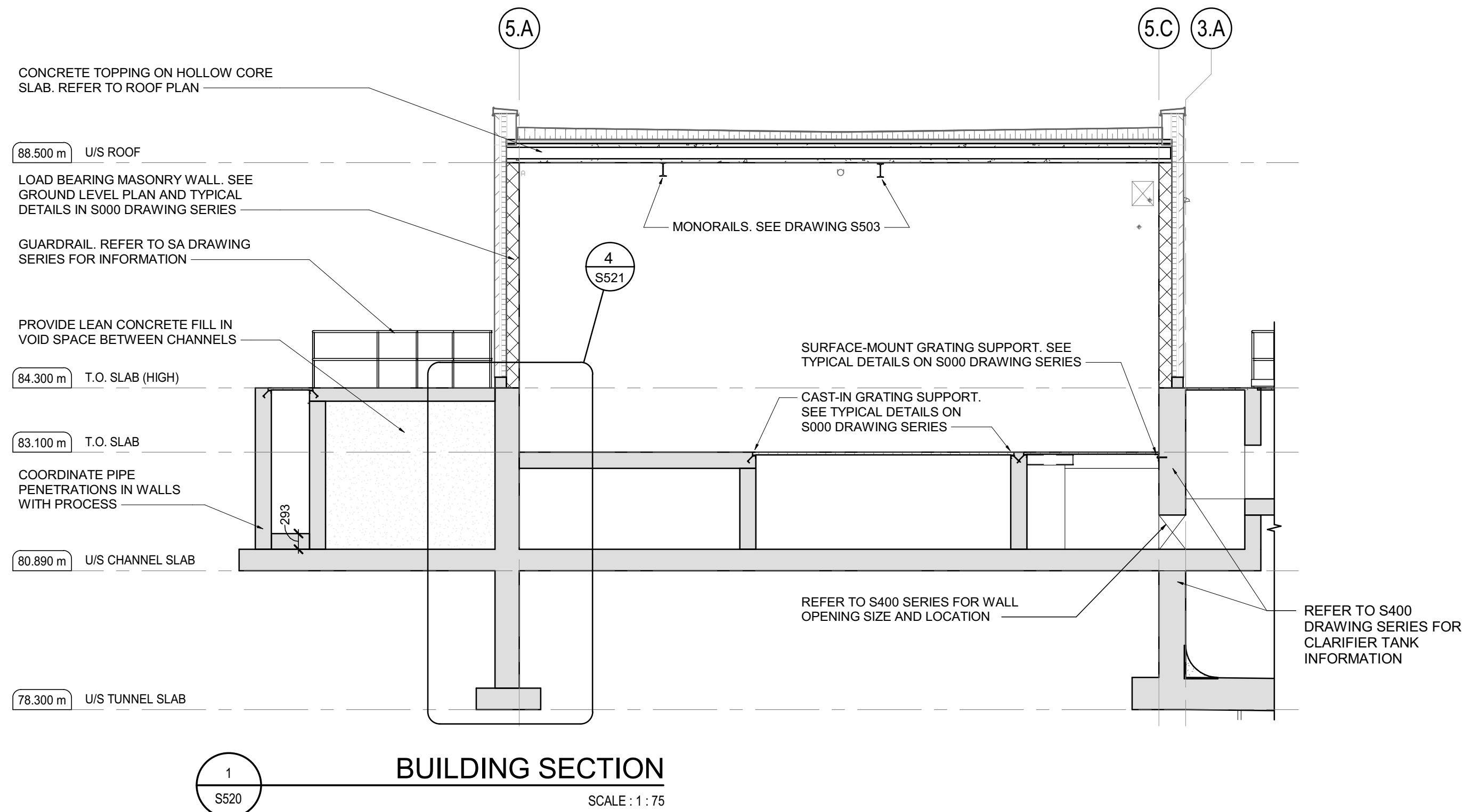
DRAWN: JIC

CHECKED: JMO

JLR #: 32296

DRAWING #:

S510



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PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

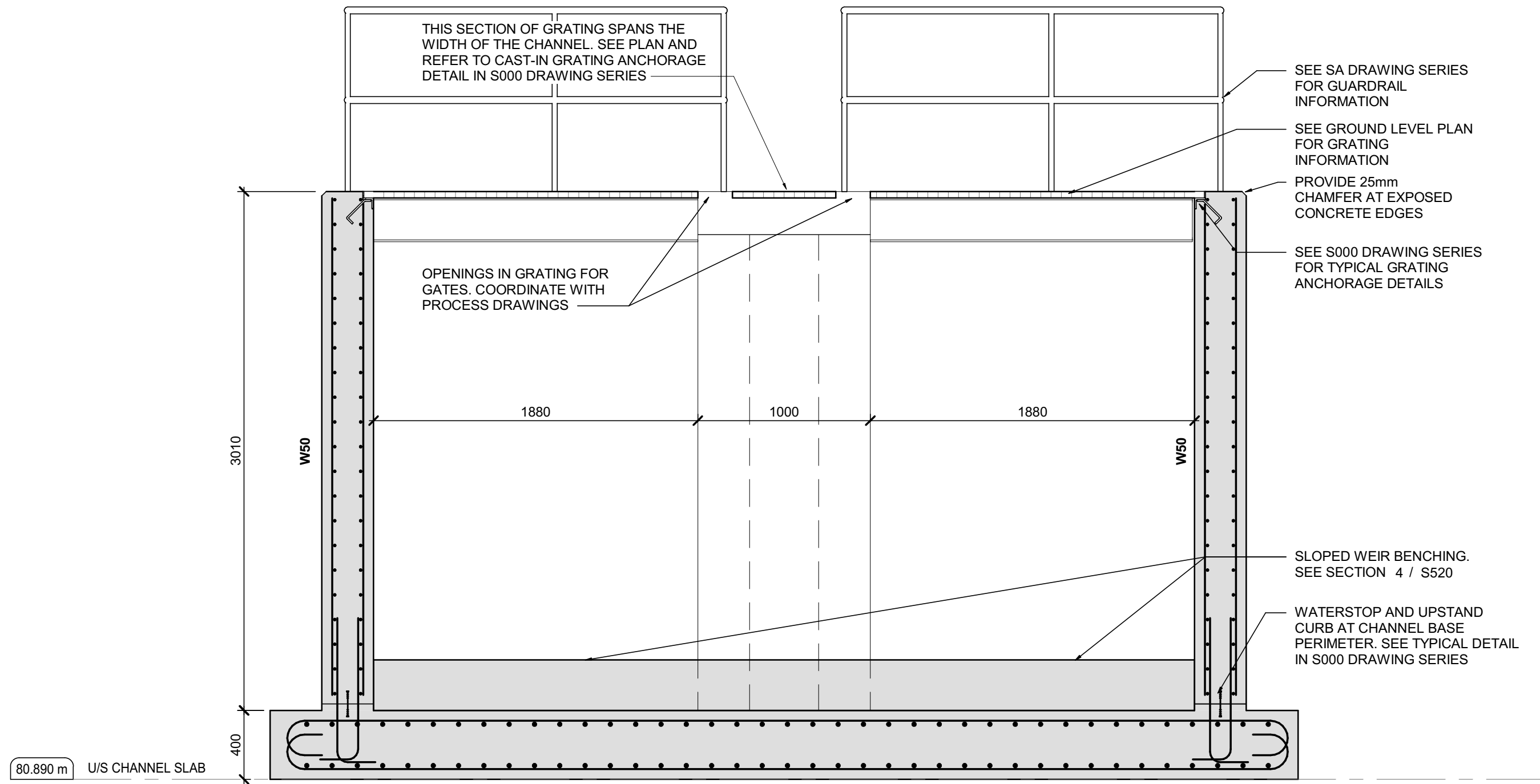
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STRUCTURAL UV BUILDING

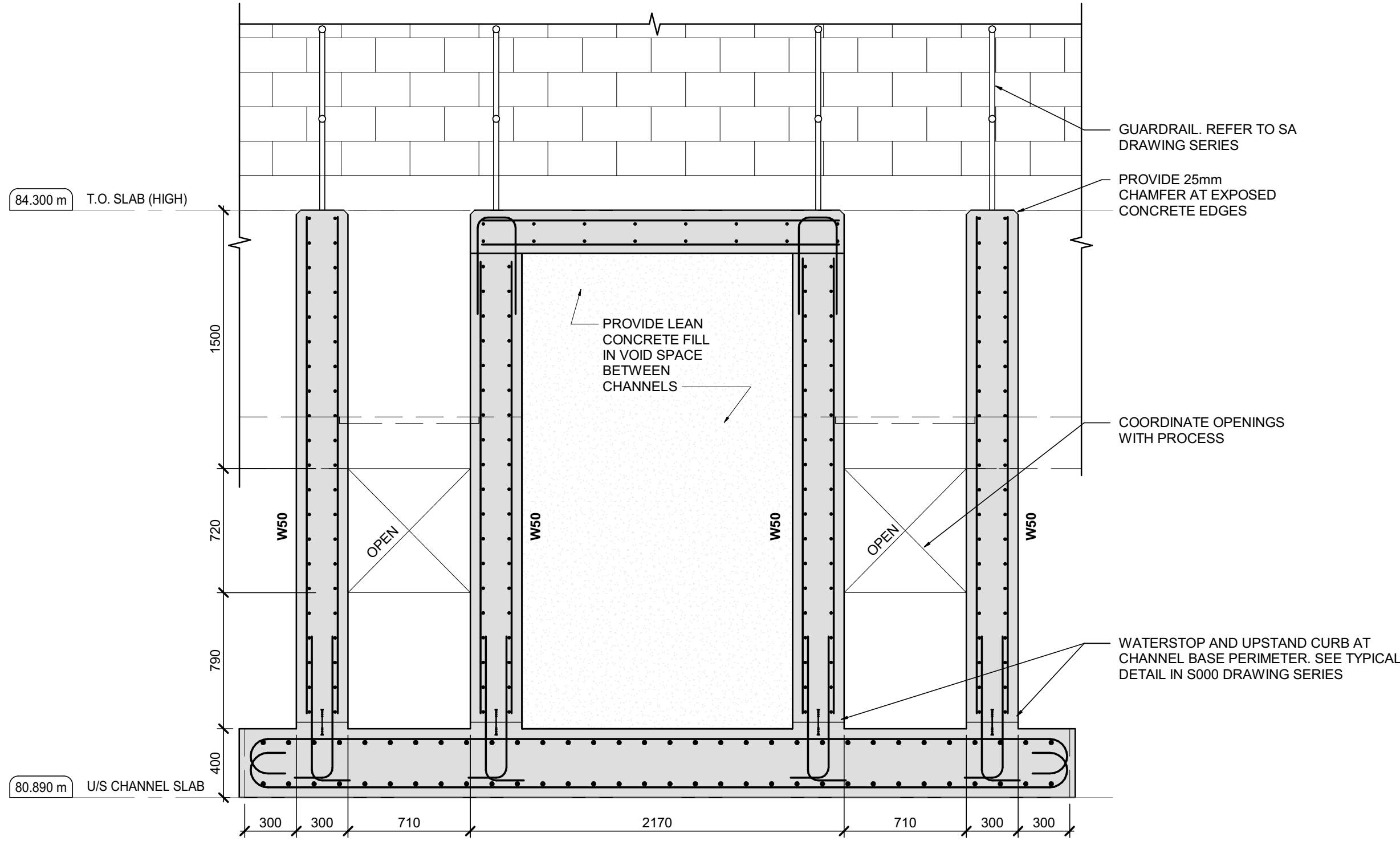
SECTIONS AND DETAILS

DESIGN: CWD	DRAWING #:
DRAWN: JIC	S520
CHECKED: JMO	
JLR #:	32296

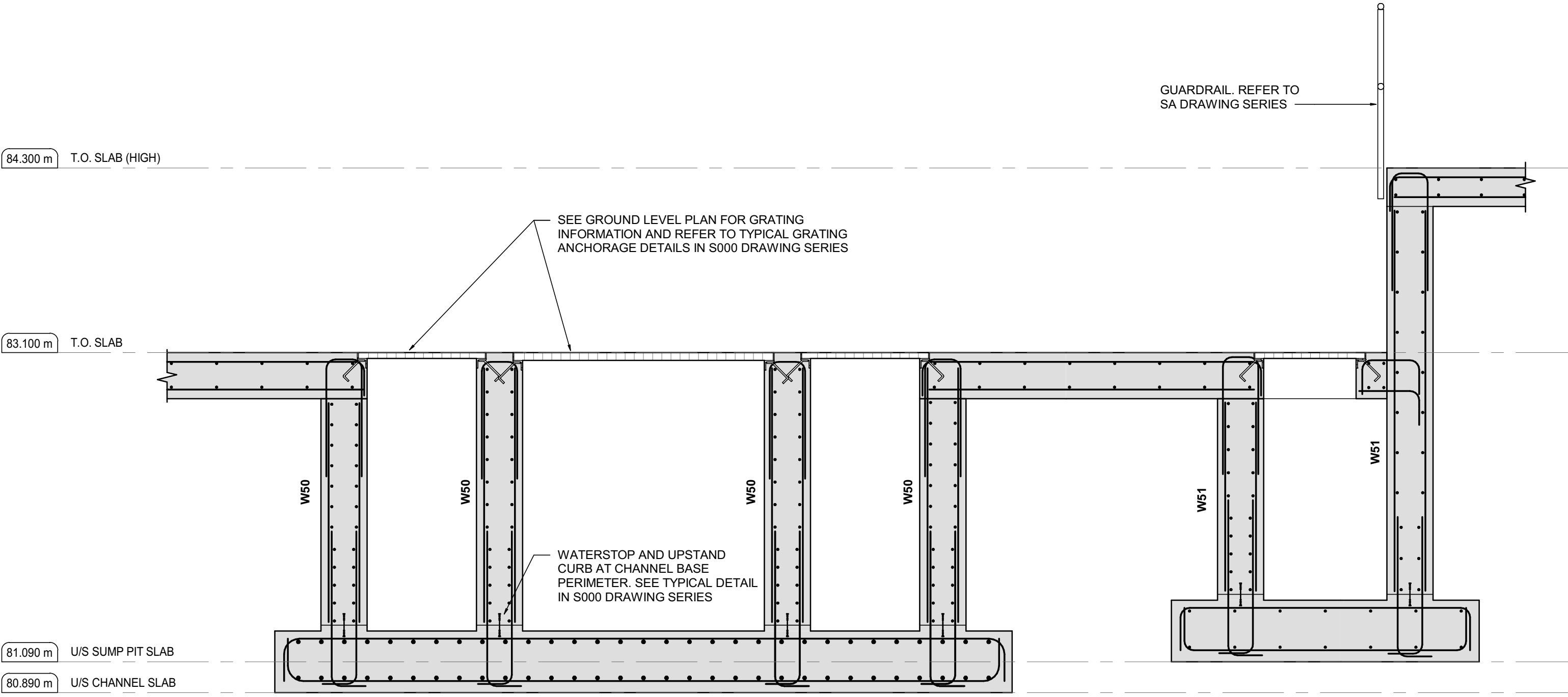
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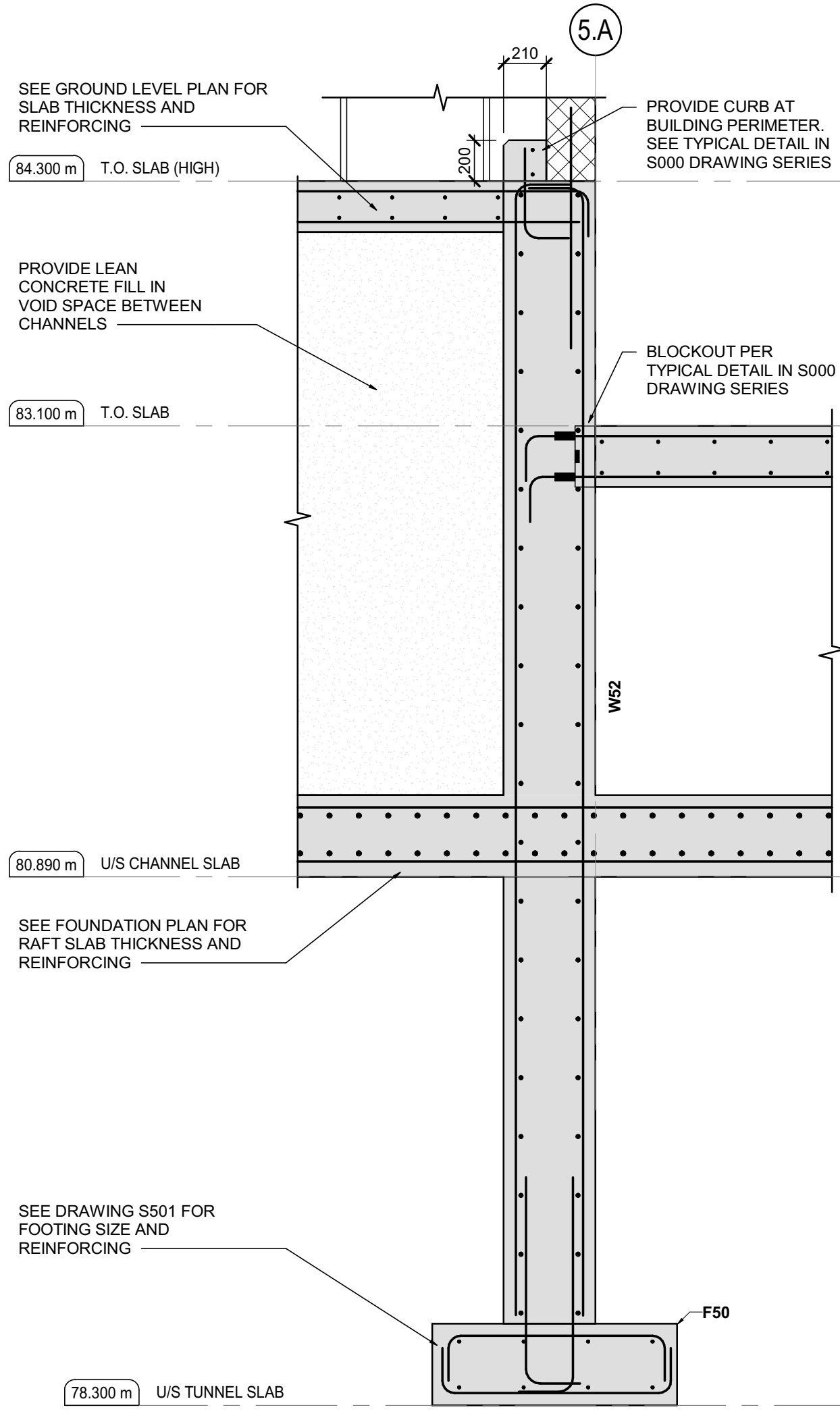
1
S521
SECTION AT UV LEVEL CONTROL WEIRS
SCALE: 1:25



2
S521
SECTION AT UV LEVEL CONTROL WEIRS
SCALE: 1:25

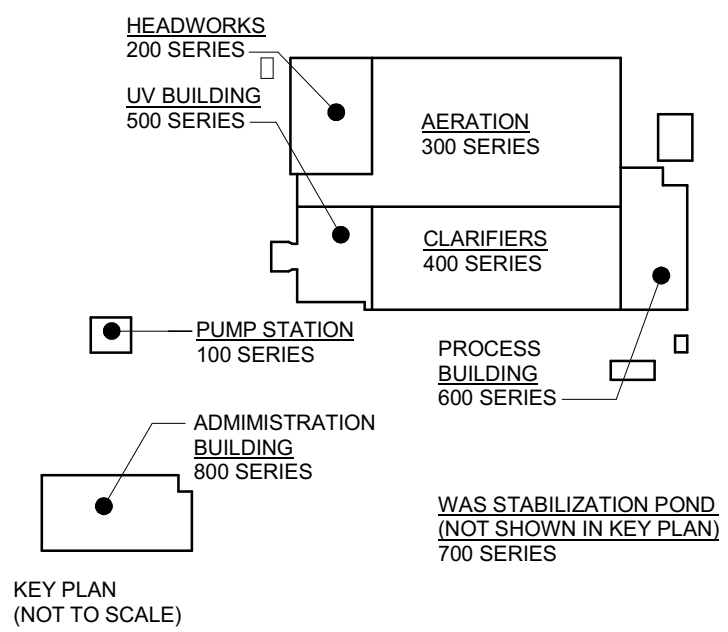


3
S521
SECTION AT UV CHANNELS
SCALE: 1:25



4
S521
SECTION AT WALL W52
SCALE: 1:25

- NOTES:
1. REFER TO WALL SCHEDULE ON DRAWING S501 FOR WALL REINFORCING.
 2. REFER TO PLANS FOR SLAB REINFORCING.



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm
SCALE: 1:25

CLIENT:

BRIGHTON
MUNICIPALITY

CONSULTANT:

J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

PROFESSIONAL STAMP

2025-04-29
C. W. DYER
100212220
PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

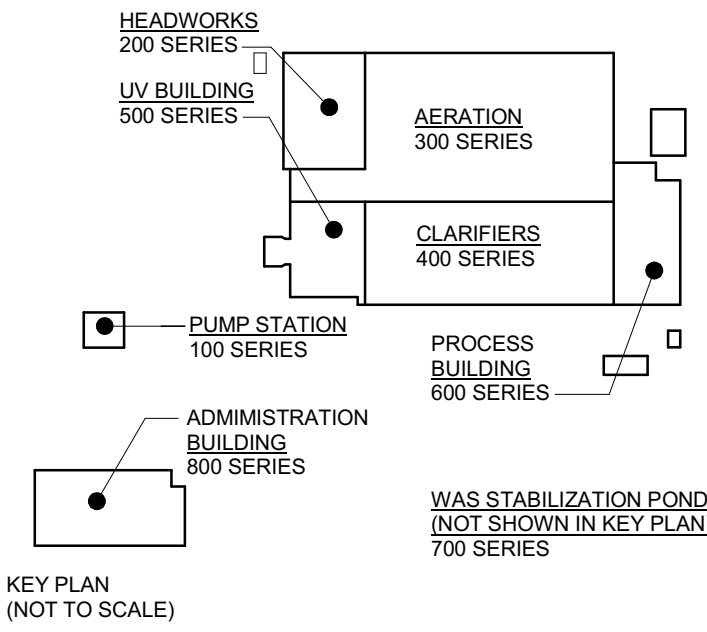
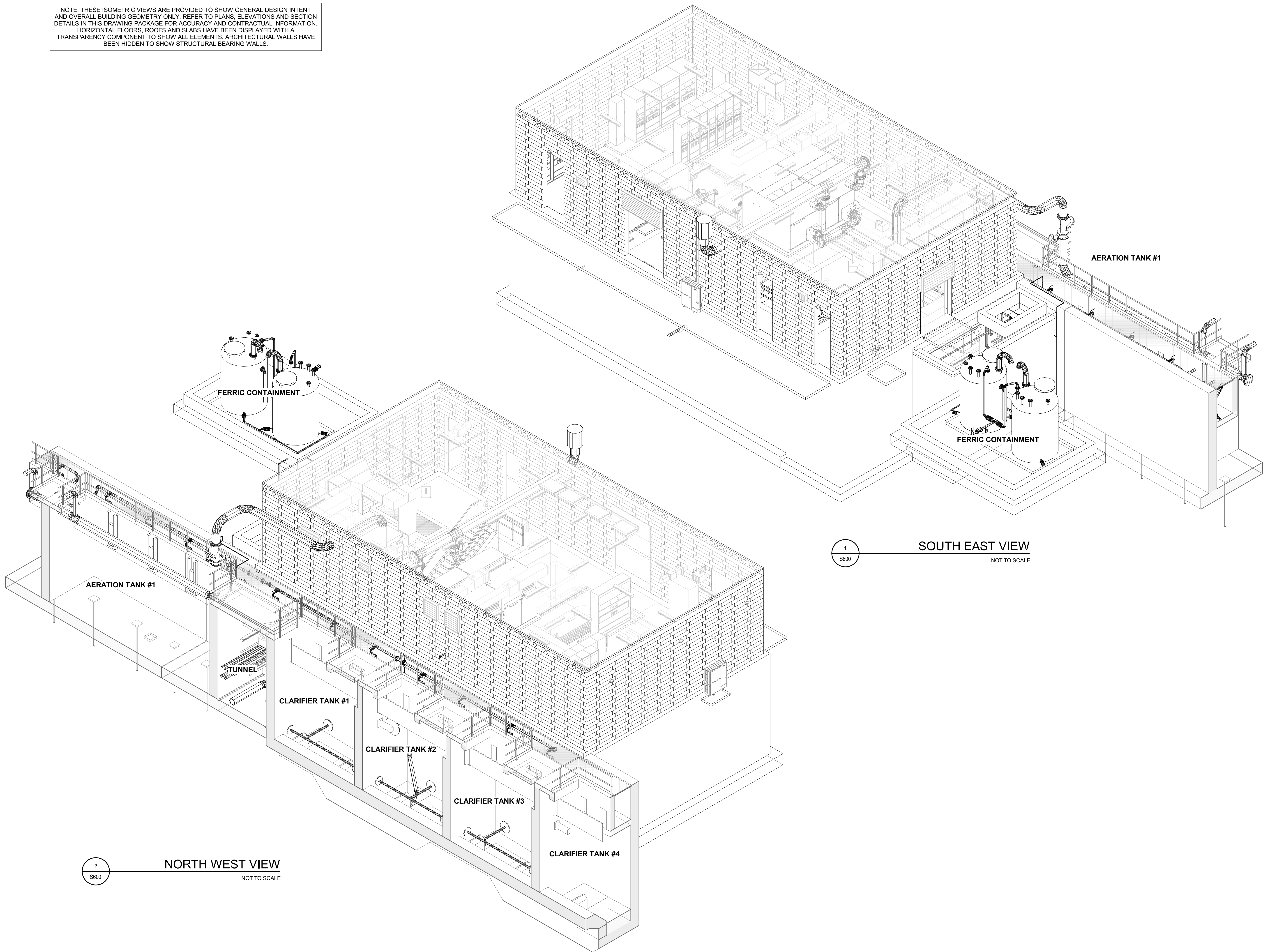
DRAWING:

STRUCTURAL UV BUILDING

SECTIONS AND DETAILS

DESIGN:	Designer	DRAWING #:	S521
DRAWN:	Author		
CHECKED:	Checker		
JLR #:	32296		

NOTE: THESE ISOMETRIC VIEWS ARE PROVIDED TO SHOW GENERAL DESIGN INTENT AND OVERALL BUILDING GEOMETRY ONLY. REFER TO PLANS, ELEVATIONS AND SECTION DETAILS IN THIS DRAWING PACKAGE FOR ACCURACY AND CONTRACTUAL INFORMATION. HORIZONTAL FLOORS, ROOFS AND SLABS HAVE BEEN DISPLAYED WITH A TRANSPARENCY COMPONENT TO SHOW ALL ELEMENTS. ARCHITECTURAL WALLS HAVE BEEN HIDDEN TO SHOW STRUCTURAL BEARING WALLS.



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SCALE:

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

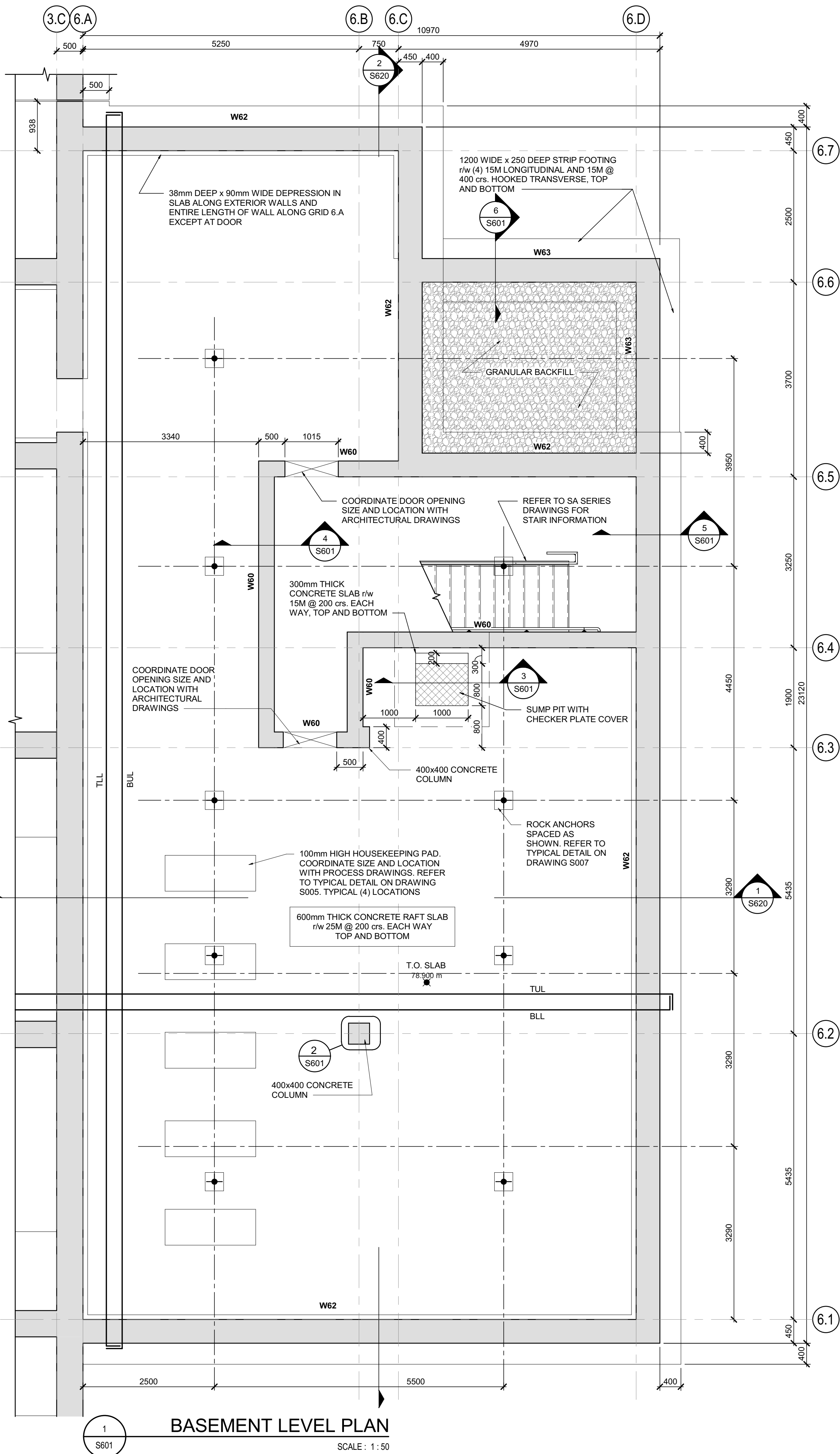
DRAWING:

STRUCTURAL PROCESS BUILDING

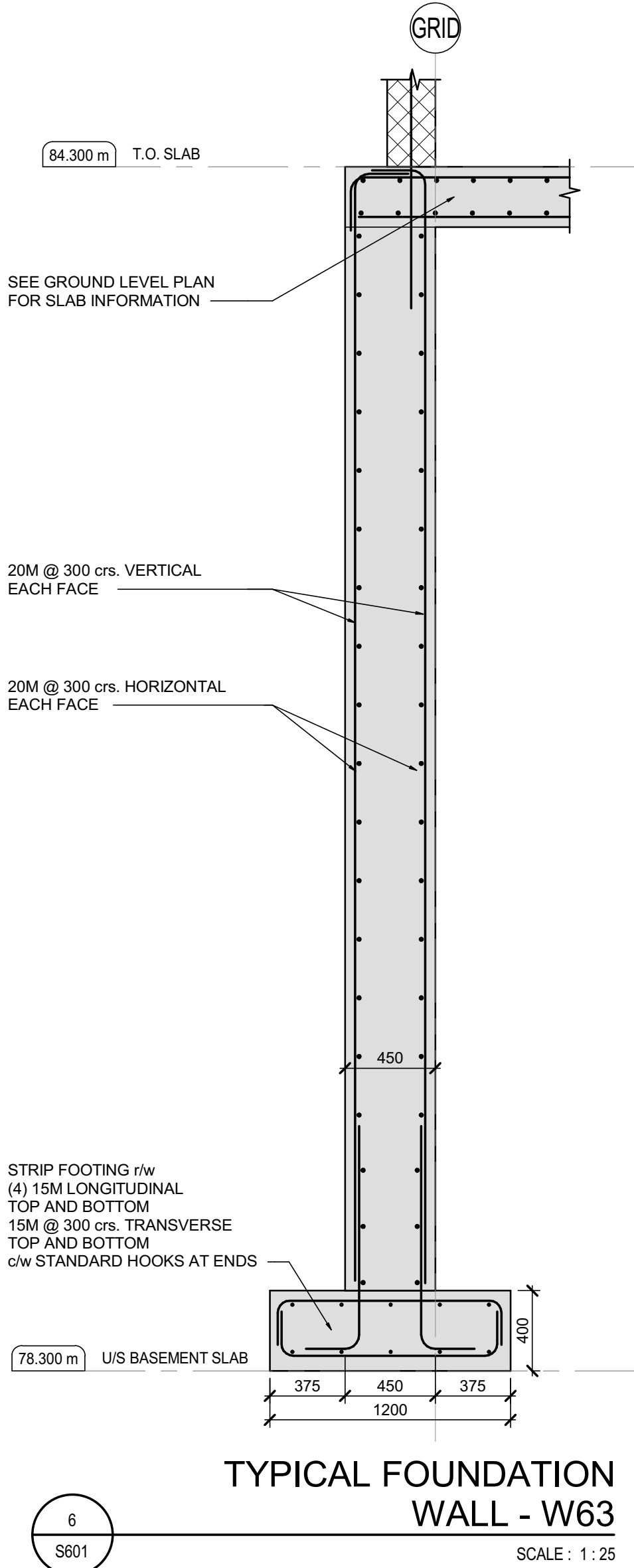
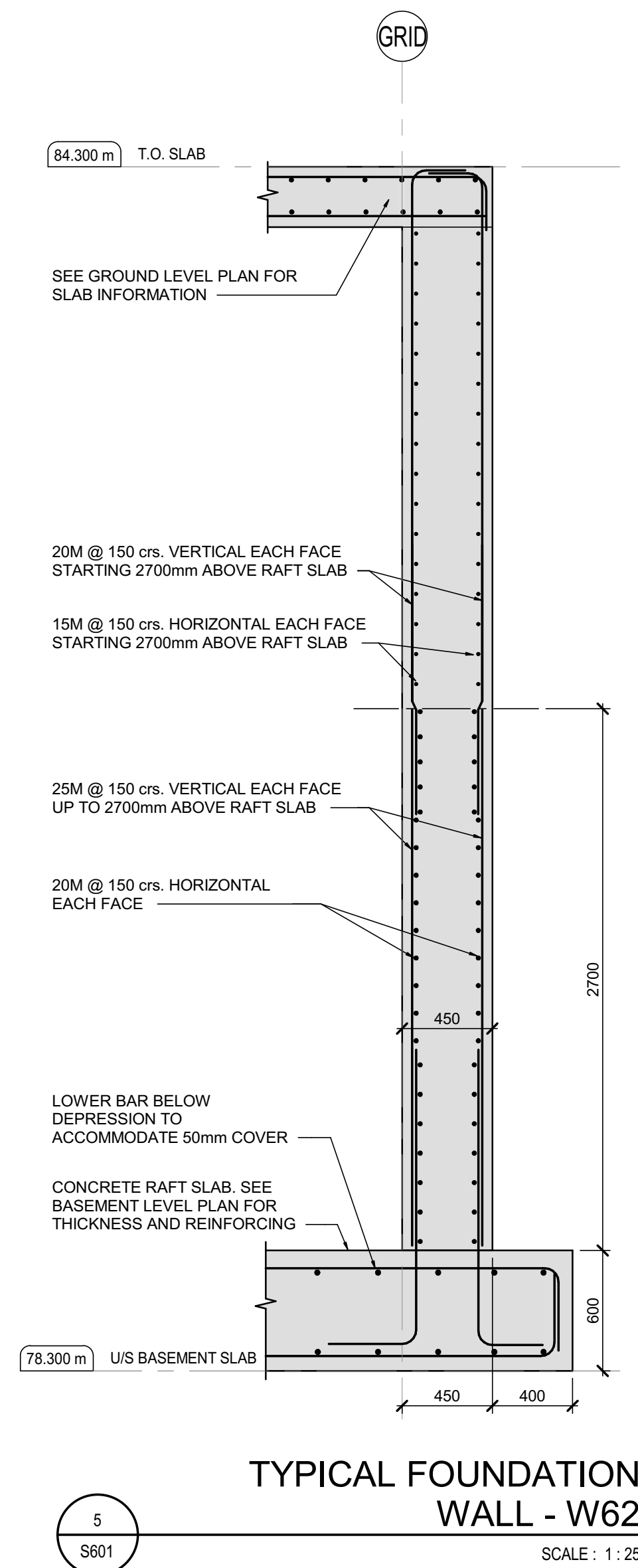
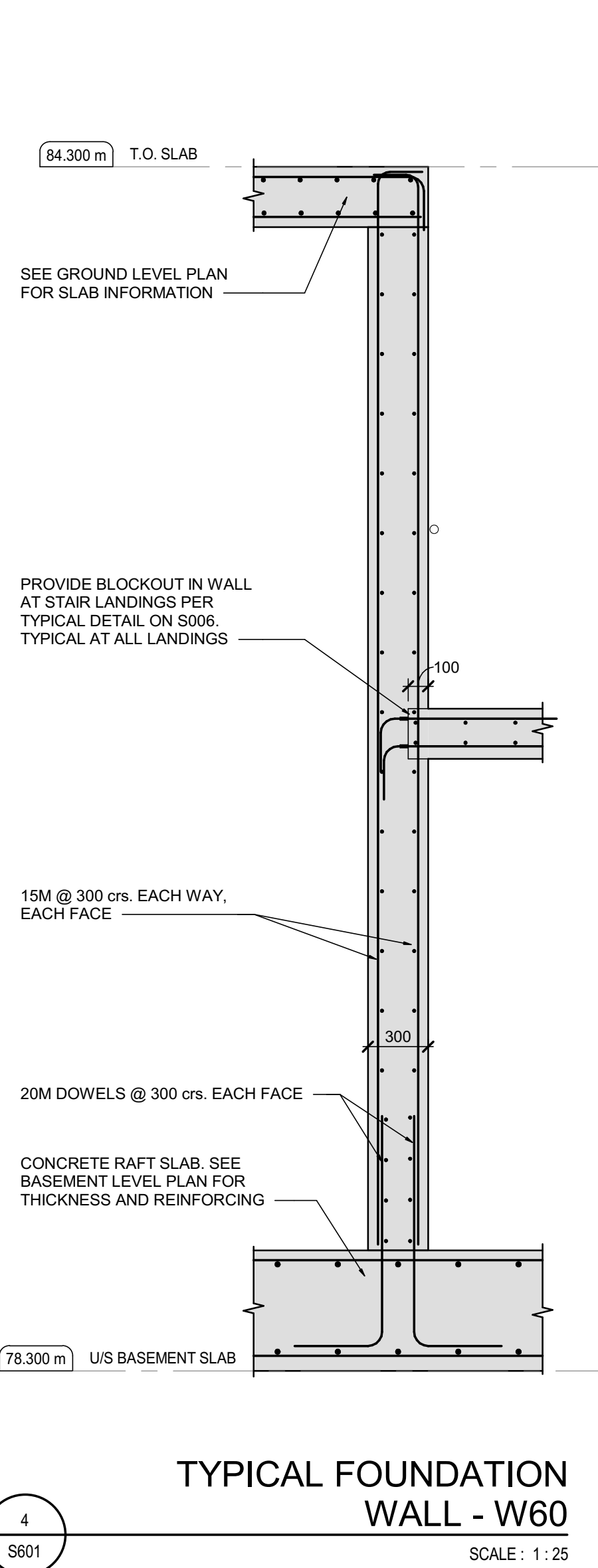
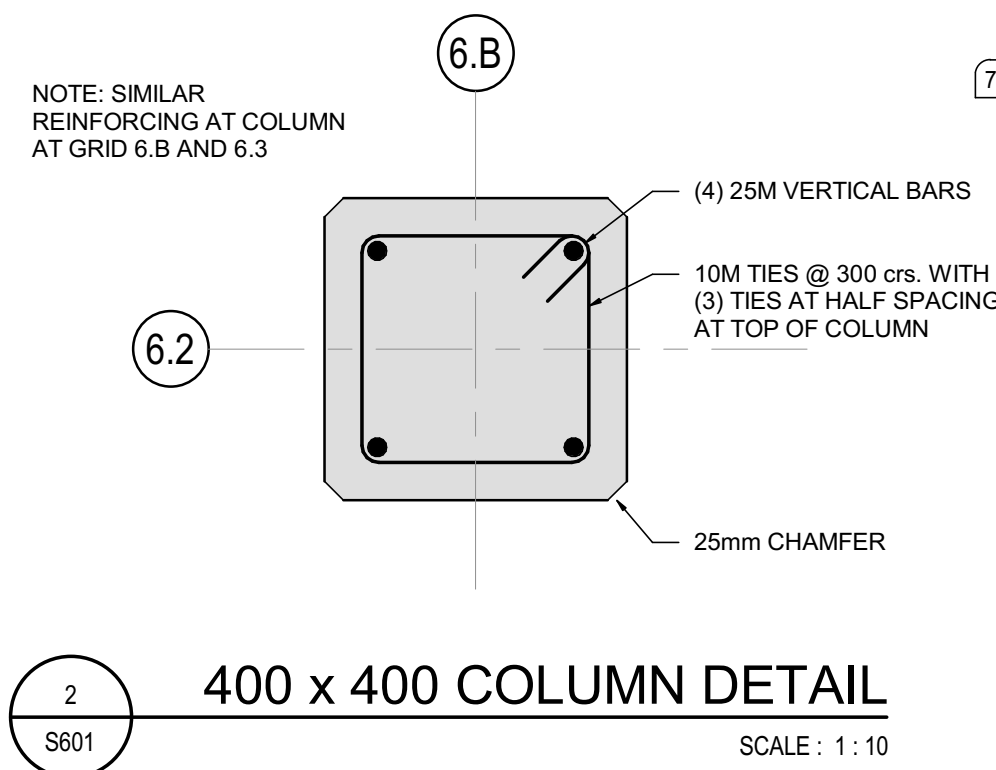
ISOMETRIC VIEWS AND NOTES

DESIGN: CWD	DRAWING #:
DRAWN: JIC	S600
CHECKED: JMO	
JLR #:	32296

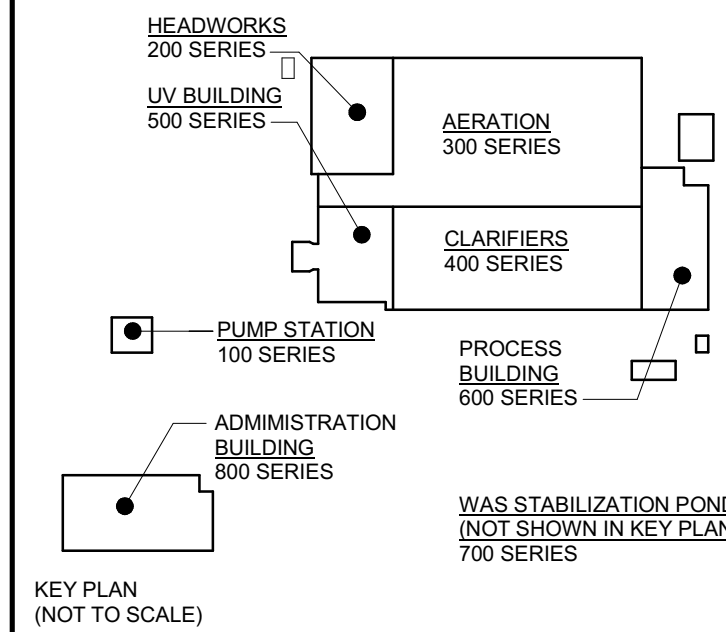
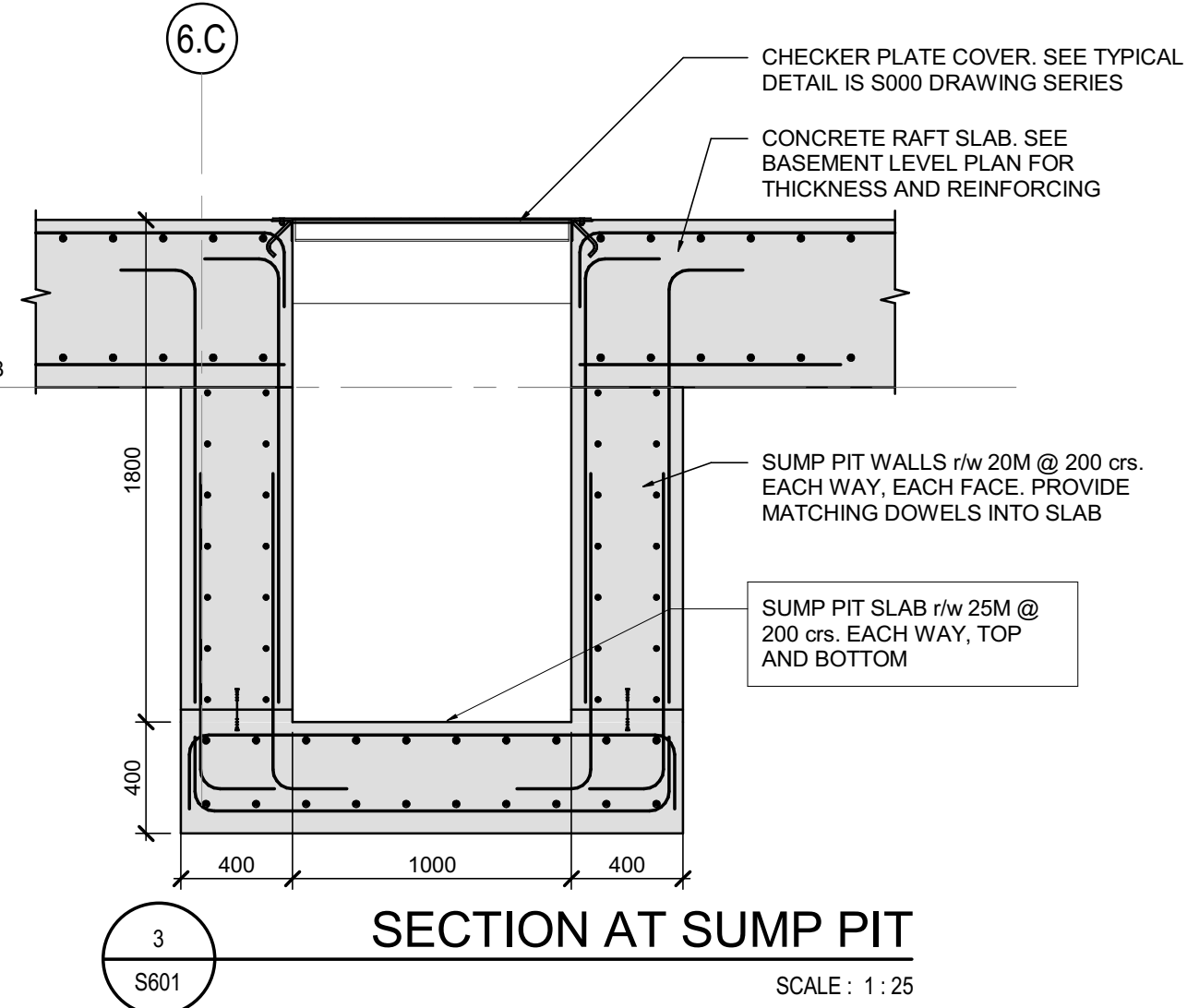
File Location: C:\Users\jral\Desktop\Brighton LOCAL\32296 S-Process Bldg LOCAL.dwg PLOT DATE: 2025-04-23 1:40:17 PM



CONCRETE FOUNDATION WALL SCHEDULE		
MARK	DESCRIPTION	REINFORCING
W60	300mm THICK CONCRETE WALL	SEE SECTION 4 ON S601
W61	400mm THICK CONCRETE WALL	SEE SUMP PIT SECTION 3 ON S601
W62	450mm THICK CONCRETE WALL	SEE SECTION 5 ON S601
W63	450mm THICK CONCRETE WALL	SEE SECTION 6 ON S601



- DRAWING NOTES:
1. REFER TO S000 DRAWING SERIES FOR STRUCTURAL GENERAL NOTES, LEGEND TO STRUCTURAL MATERIALS AND A LIST OF STRUCTURAL ABBREVIATIONS.
 2. COORDINATE ALL OPENINGS WITH THE ASSOCIATED RESPONSIBLE DISCIPLINE AS NOTED ON PLAN AND IN THE REMAINDER OF THE DRAWING SET. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS AS PER TYPICAL DETAIL IN S000 DRAWING SERIES.
 3. REFER TO TYPICAL DETAILS IN S000 DRAWING SERIES FOR DOWELS, HORIZONTAL AND VERTICAL REINFORCING OF WALLS AND LINTELS.
 4. ALL LIQUID RETAINING STRUCTURES INCLUDING CONCRETE WALLS AND SLABS ARE TO HAVE CRYSTALLINE WATERPROOFING ENTRAINED WITHIN THE MIX DESIGN ON THESE PLANS. ALL BELOW GRADE WALLS AND SLABS THAT ENCLOSE OCCUPIED SPACES SHALL HAVE CRYSTALLINE WATERPROOFING ENTRAINED IN THE MIX DESIGN. REFER TO CAST-IN-PLACE CONCRETE SPECIFICATION FOR FURTHER DETAILS.
 5. REFER TO SA DRAWINGS SERIES FOR STAIR, PLATFORM, GUARDRAIL / HANDRAIL AND LADDER INFORMATION.
 6. PROVIDE 25mm CHAMFER AT ALL EXPOSED CONCRETE CORNERS. DO NOT PROVIDE CHAMFER IF THERE IS A BEARING CONDITION.



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CLIENT:

BRIGHTON

CONSULTANT:

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

2025-04-29
C. W. DYER
100212220
PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

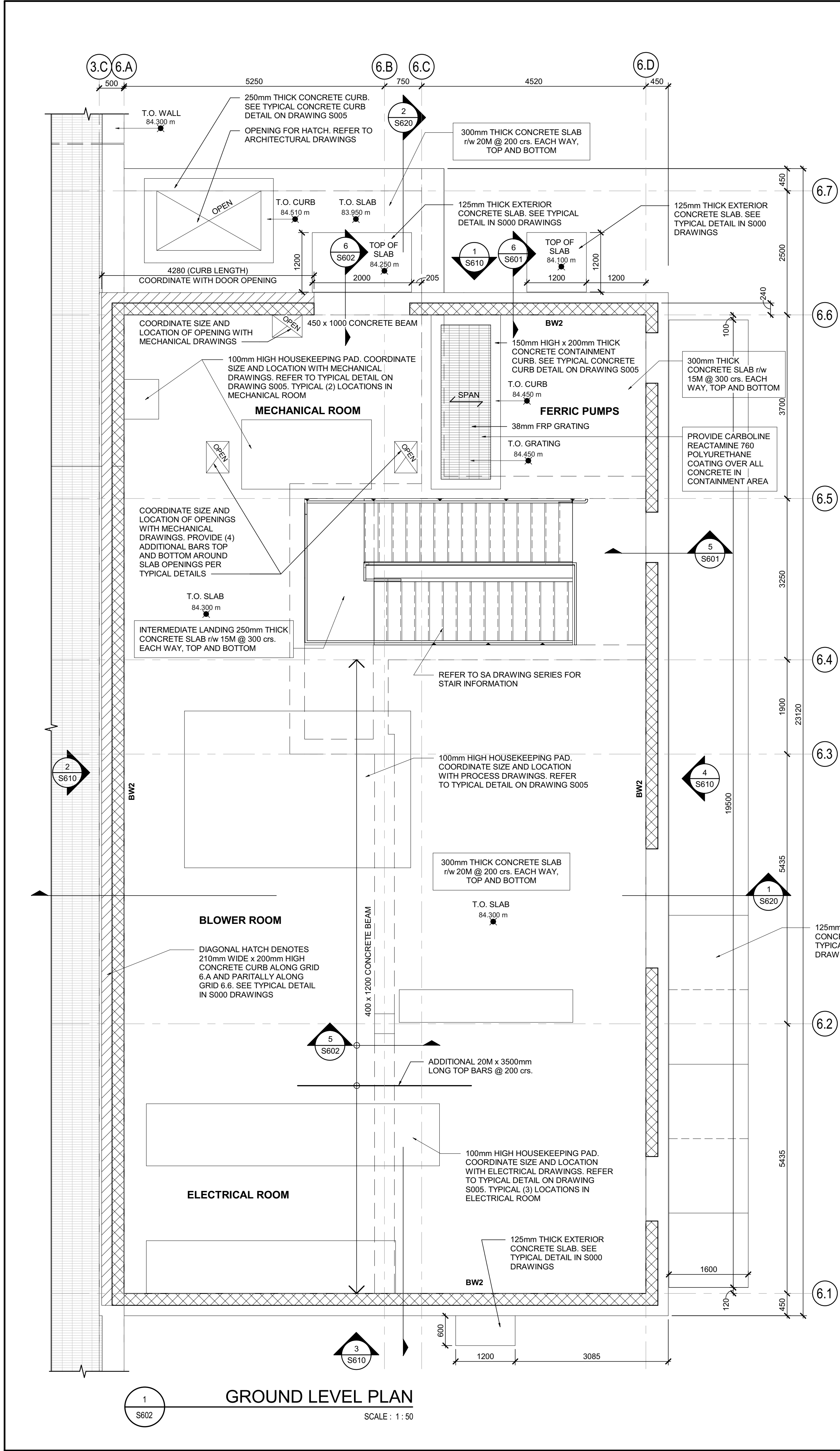
DRAWING:

STRUCTURAL PROCESS BUILDING BASEMENT LEVEL PLAN

DESIGN: CWD
DRAWN: JIC
CHECKED: JMO
JLR #:

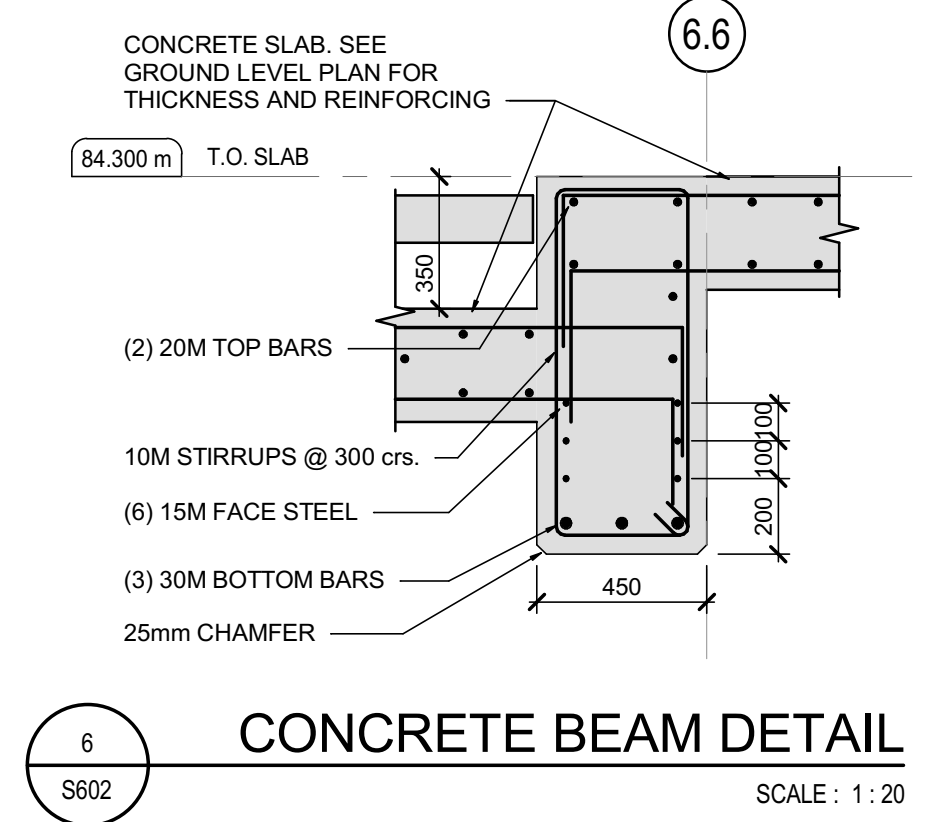
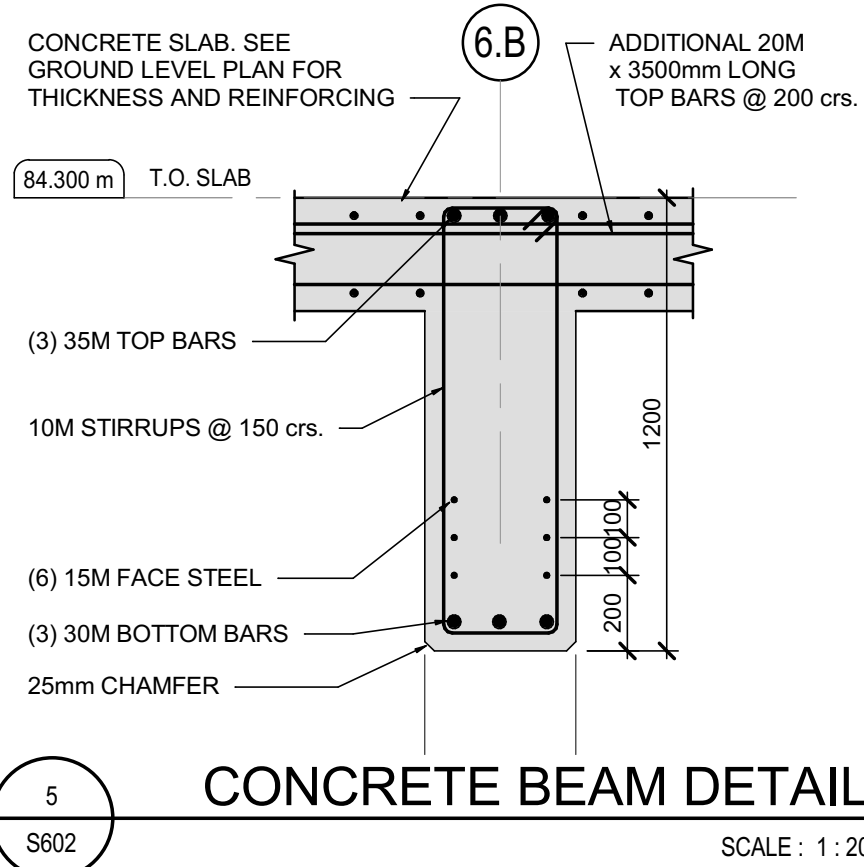
DRAWING #:

S601



CONCRETE BLOCK SCHEDULE	
MARK	DESCRIPTION
BW2	240mm 30 MPa CONCRETE BLOCK WALL

NOTE: REFER TO ARCHITECTURAL DRAWINGS FOR NON-LOAD BEARING BLOCK WALL LOCATIONS AND REFER TO TYPICAL AND STANDARD DETAILS DRAWINGS FOR MASONRY DETAILS.

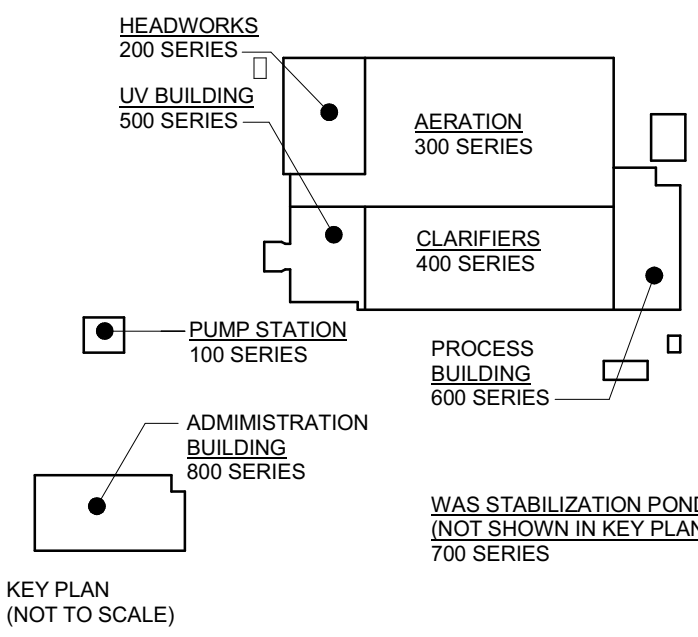


- DRAWING NOTES:**
- REFER TO S000 DRAWING SERIES FOR STRUCTURAL GENERAL NOTES, LEGEND TO STRUCTURAL MATERIALS AND A LIST OF STRUCTURAL ABBREVIATIONS.
 - PROVIDE ANGLE FRAMES TO SUPPORT GRATING AND CHECKER PLATE AS PER TYPICAL DETAILS IN S000 SERIES DRAWINGS.
 - REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF ALL NON-LOAD BEARING CONCRETE BLOCK WALLS.
 - COORDINATE ALL OPENINGS WITH THE ASSOCIATED RESPONSIBLE DISCIPLINE AS NOTED ON PLAN AND IN THE REMAINDER OF THE DRAWING SET. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS AS PER TYPICAL DETAILS IN S000 DRAWING SERIES.
 - REFER TO TYPICAL DETAILS IN S000 DRAWING SERIES FOR DOWELS, HORIZONTAL AND VERTICAL REINFORCING OF WALLS AND LINTELS. ENSURE THERE IS A 25mm VERTICAL JOINT BETWEEN ALL NON LOAD BEARING CONCRETE BLOCK WALLS AND CONCRETE WALLS OR LOAD BEARING CONCRETE BLOCK WALLS.
 - REFER TO SA DRAWINGS SERIES FOR STAIR, PLATFORM, GUARDRAIL / HANDRAIL AND LADDER INFORMATION.
 - PROVIDE 25mm CHAMFER AT ALL EXPOSED CONCRETE CORNERS. DO NOT PROVIDE CHAMFER IF THERE IS A BEARING CONDITION.

DESIGN GROUND FLOOR LOADS

SUPERIMPOSED DEAD LOAD:
M&E ALLOWANCE - 0.5 kPa

LIVE LOAD:
PROCESS AREAS - 9.60 kPa
ELECTRICAL ROOM - 14.4 kPa
EGRESS AREAS - 4.80 kPa
EXTERIOR HATCH - 4.80 kPa
FERRIC TANKS - 22.0 kPa



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.

SCALE: As indicated

CLIENT:
BRIGHTON MUNICIPALITY
CONSULTANT: www.jrichards.ca

J.L. Richards
ENGINEERS • ARCHITECTS • PLANNERS

CONSULTANT:

PROFESSIONAL STAMP
LICENSED PROFESSIONAL ENGINEER
2025-04-29
C. W. DYER
100212220
PROVINCE OF ONTARIO

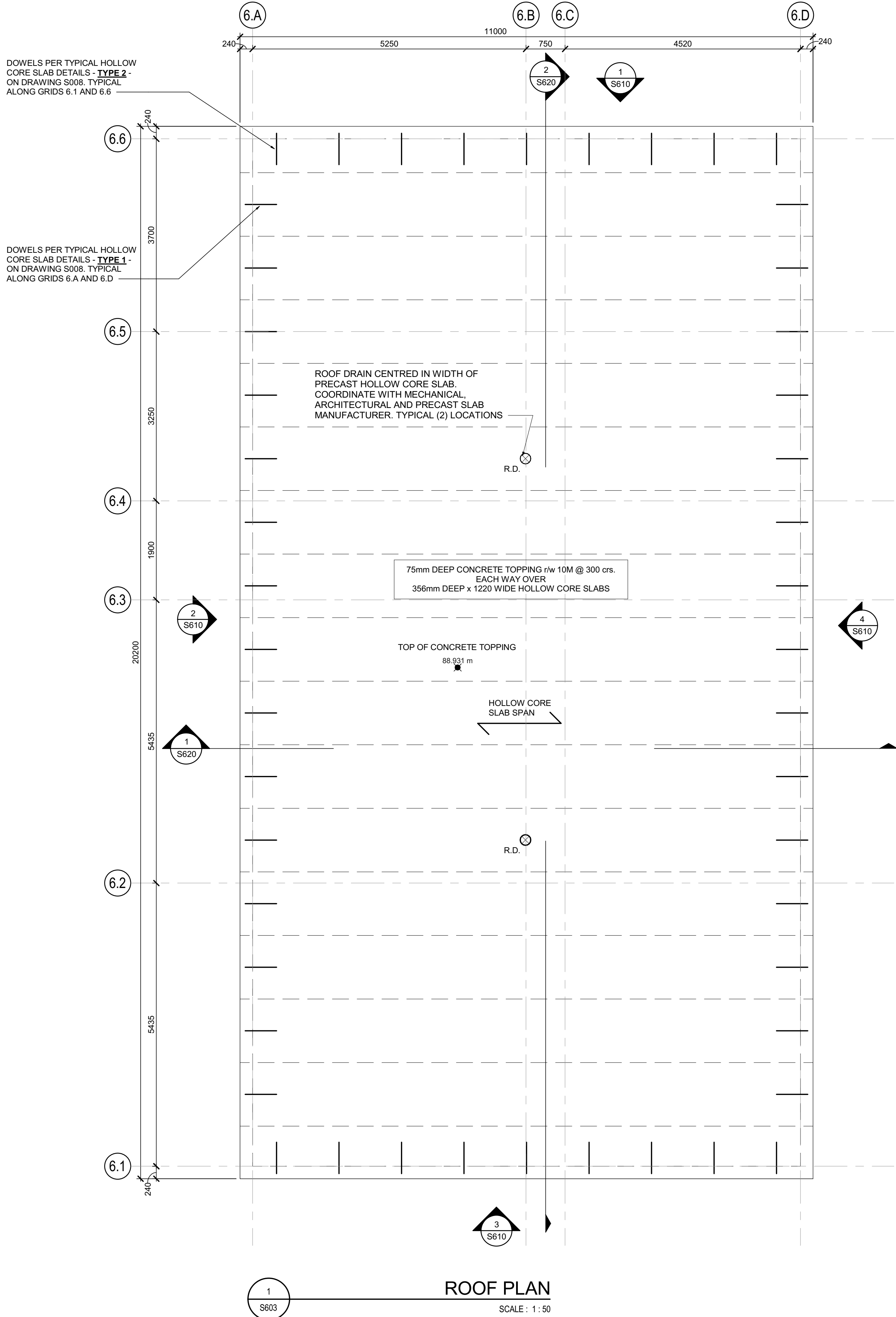
PROJECT NORTH
N

PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
STRUCTURAL PROCESS BUILDING GROUND LEVEL PLAN

DESIGN: CWD
DRAWN: JIC
CHECKED: JMO
JLR #: 32296

DRAWING #:
S602



1
S603

ROOF PLAN

SCALE : 1 : 50

DRAWING NOTES:

1. FOR PROJECT GENERAL NOTES, LEGEND TO STRUCTURAL MATERIALS AND A LIST OF STRUCTURAL ABBREVIATIONS, REFER TO SERIES 000 DRAWINGS.

DESIGN ROOF LOADS

DEAD LOADS:

CONCRETE TOPPING - 1.76 kPa

ROOFING - 0.5 kPa

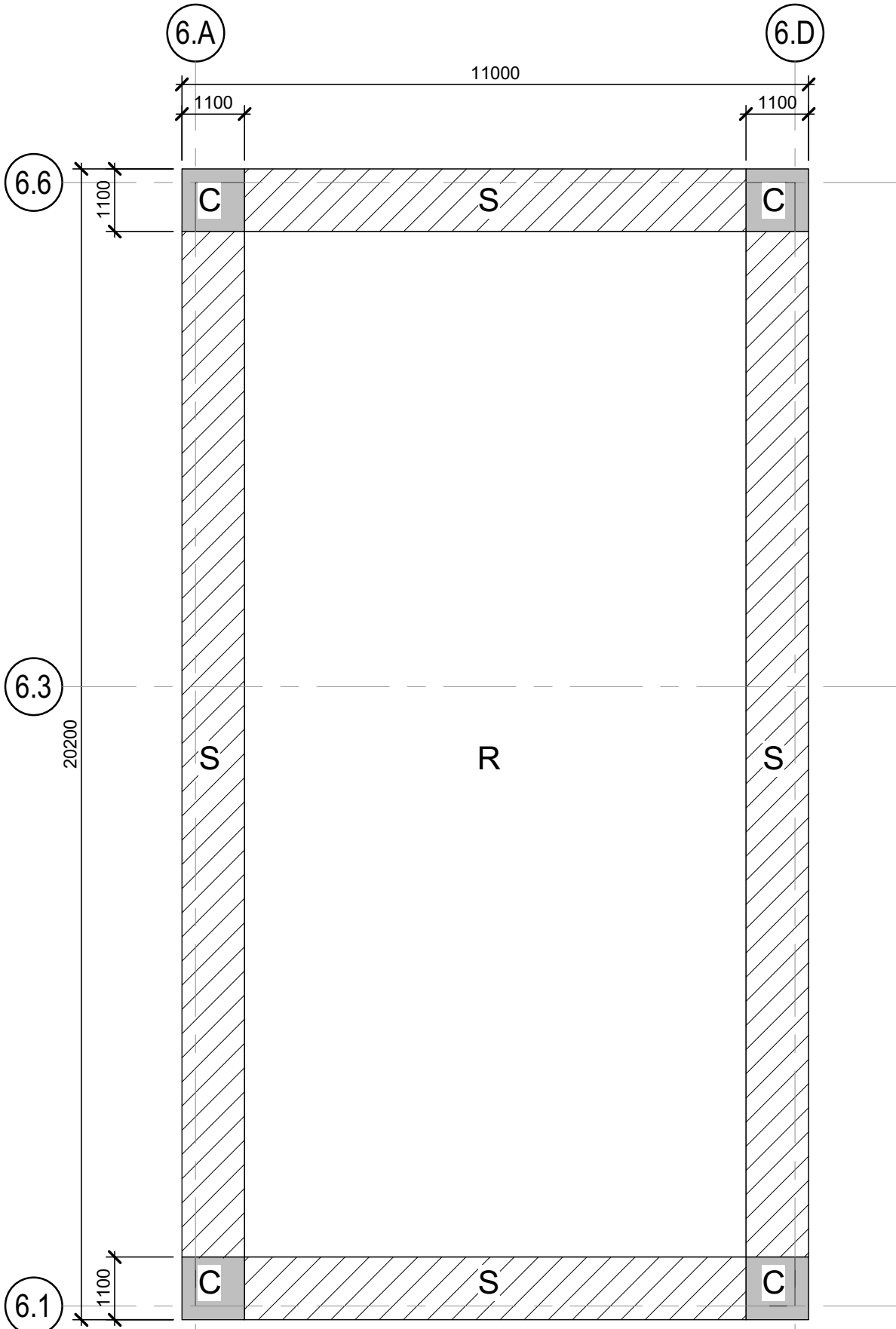
M&E ALLOWANCE - 0.5 kPa

POINT LOAD ALLOWANCE - 4.0 kN (APPLIED ANYWHERE ALONG THE LENGTH OF THE PRECAST SLAB)

LIVE LOADS - 1 kPa

SNOW LOAD - 2.1 kPa (INCLUDES Is = 1.25)

WIND LOAD - SEE BELOW

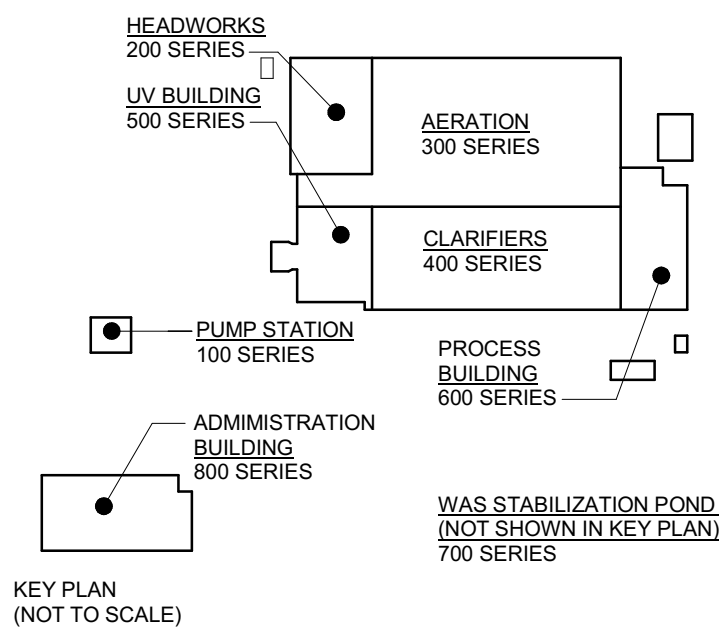


ROOF STRUCTURAL COMPONENTS AND CLADDING EXTERNAL WIND PRESSURES				
WIND PRESSURE (kPa) BASED ON SUPPORTED TRIBUTARY AREA (m ²)				
NEGATIVE (UPLIFT) WIND PRESSURE (kPa) (UNFACTORED)				
-VE DENOTES PRESSURES AWAY FROM SURFACE				
ZONE	A ≤ 2 (m ²)	2 < A ≤ 5 (m ²)	5 < A ≤ 10 (m ²)	A > 10 (m ²)
C	-2.93	-2.37	-1.64	-1.08
S	-1.35	-1.35	-1.35	-1.08
R	-0.98	-0.93	-0.86	-0.81
POSITIVE WIND PRESSURE (kPa) (UNFACTORED)				
+VE DENOTES PRESSURES TOWARDS SURFACE				
ZONE	A ≤ 2 (m ²)	2 < A ≤ 5 (m ²)	5 < A ≤ 10 (m ²)	A > 10 (m ²)
C	0.27	0.24	0.20	0.16
S	0.27	0.24	0.20	0.16
R	0.27	0.24	0.20	0.16

2
S603

WIND UPLIFT DIAGRAM

SCALE : 1 : 100



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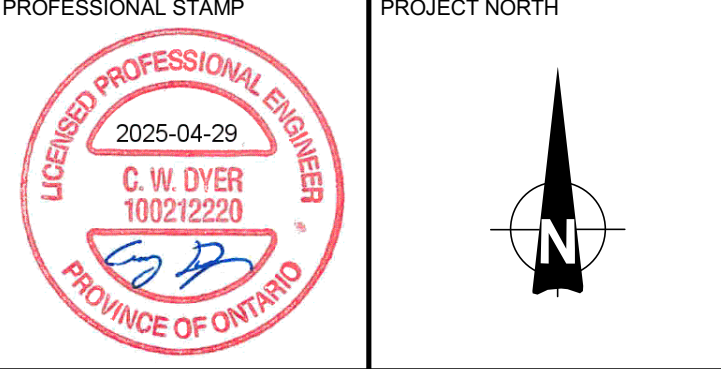
SCALE: As indicated



CONSULTANT: www.jrichards.ca



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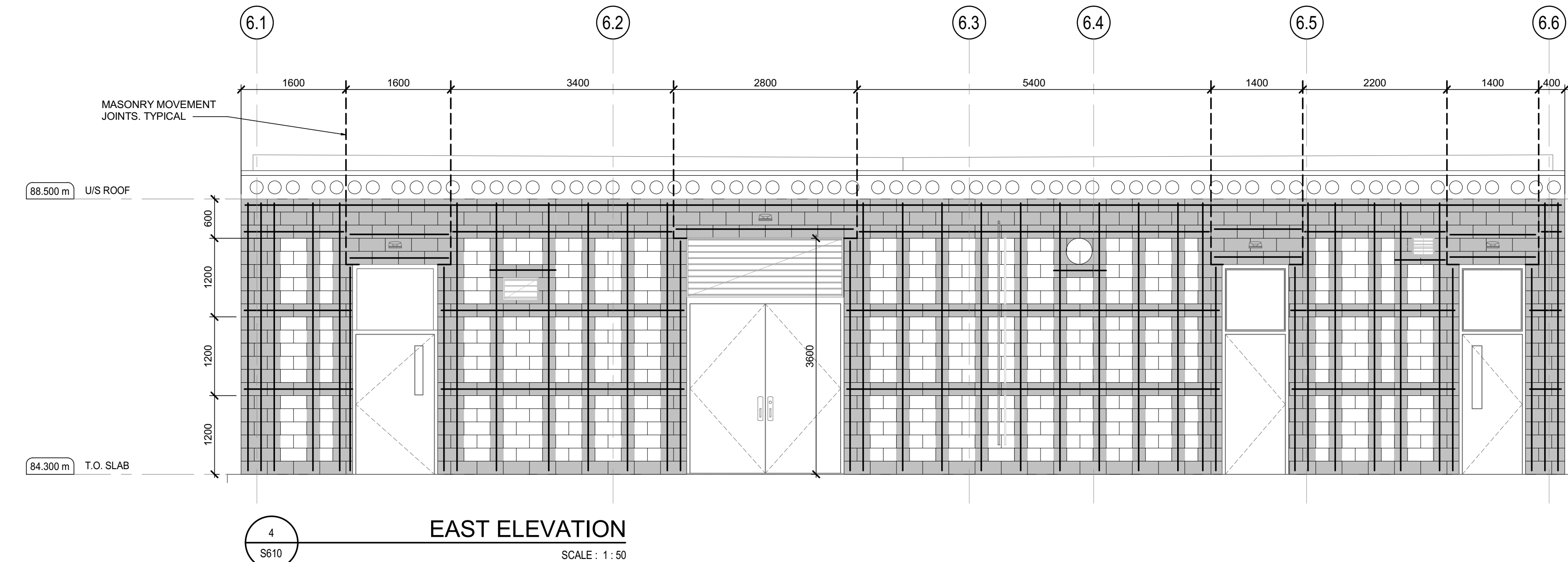
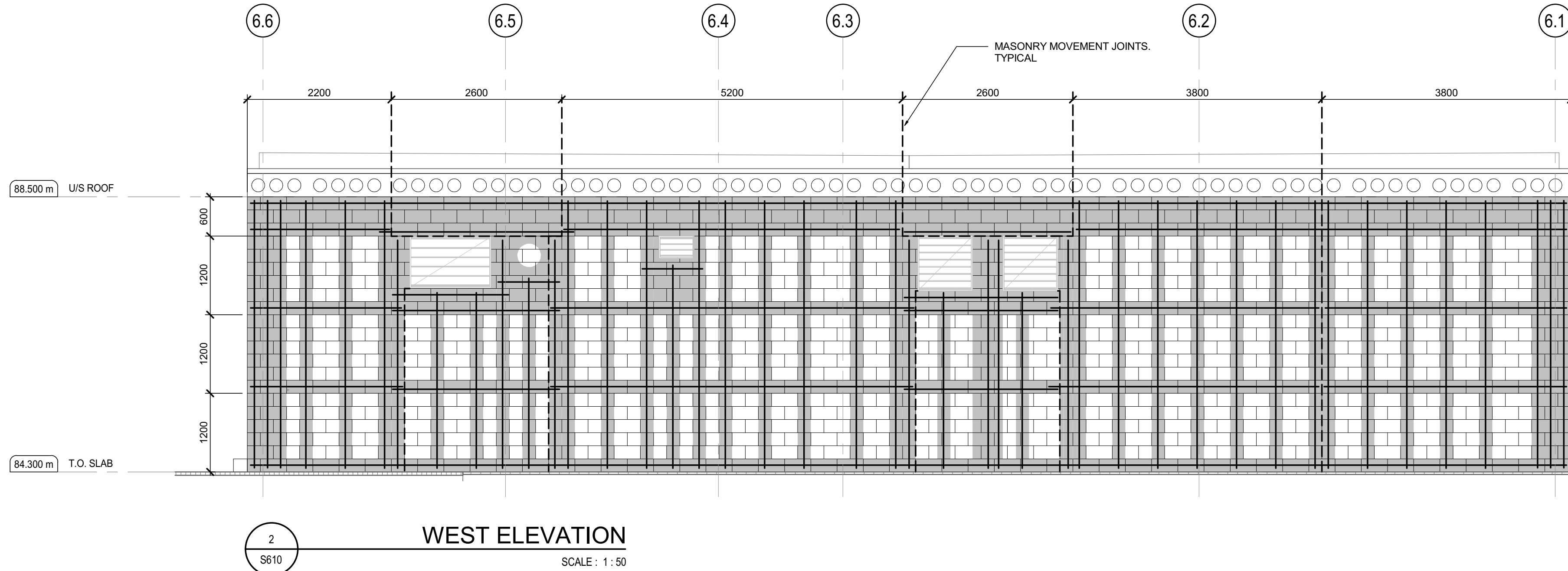
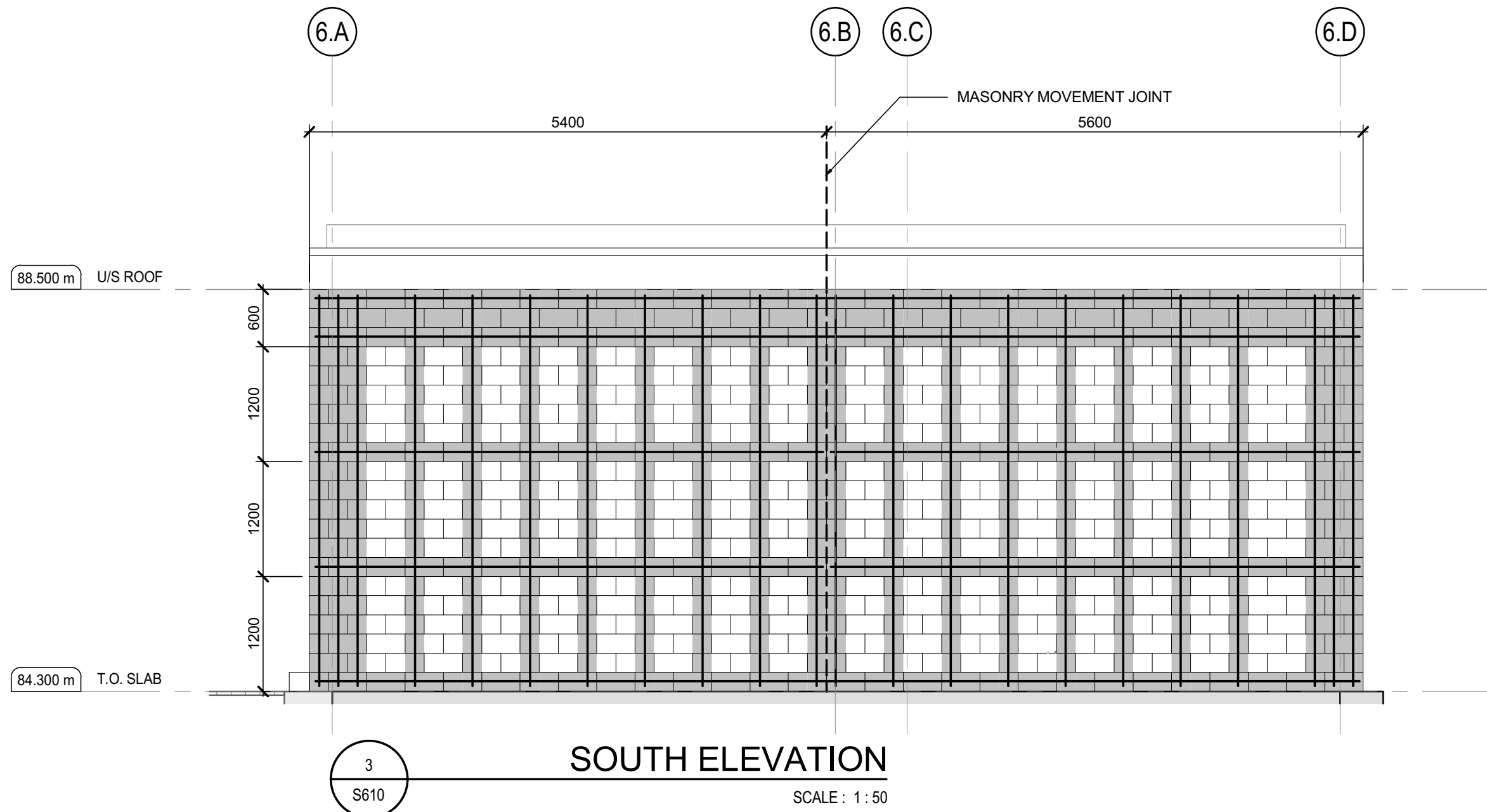
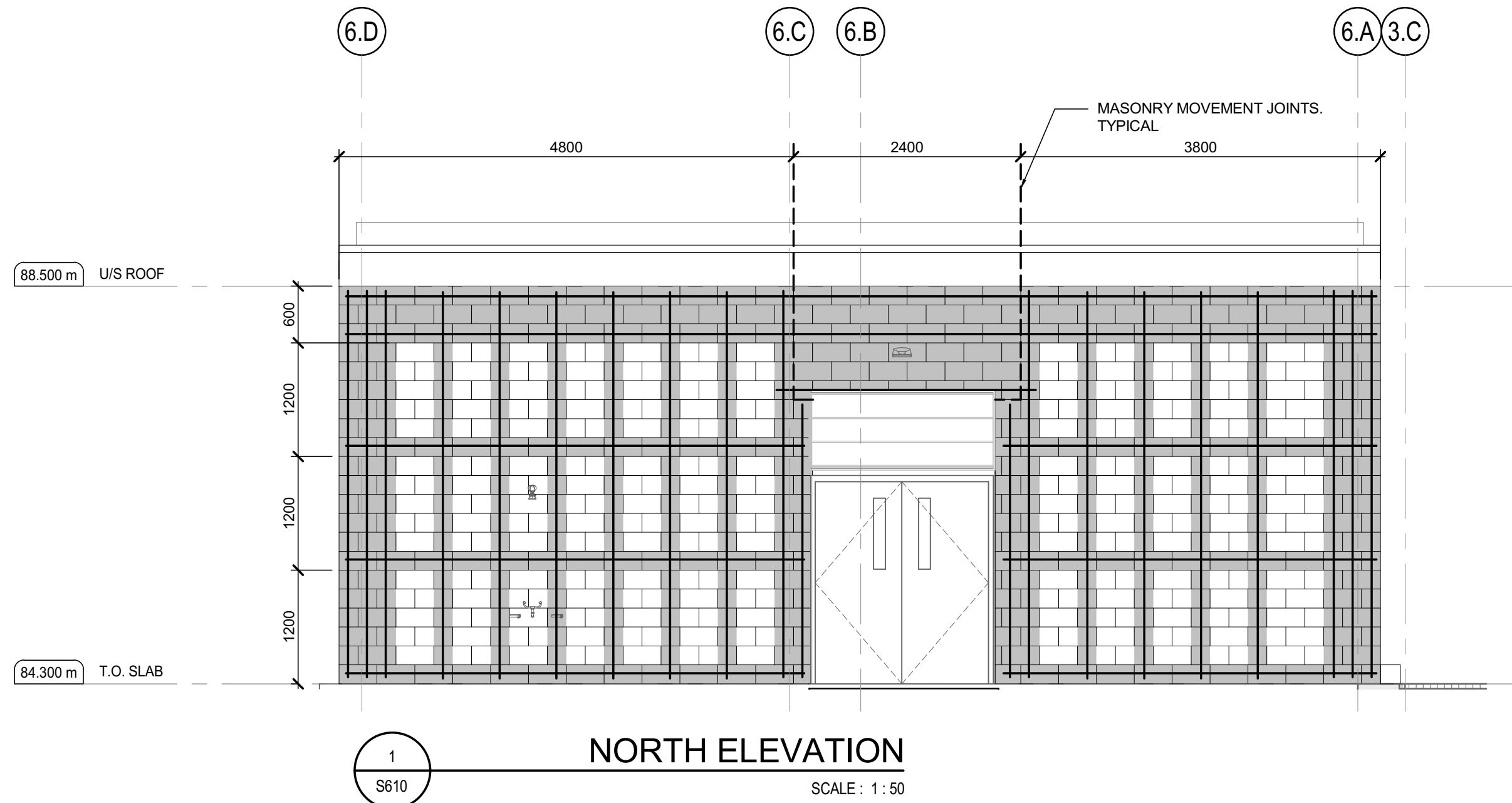


PROJECT: BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING: STRUCTURAL
PROCESS BUILDING
ROOF PLAN

DESIGN: CWD
DRAWN: JIC
CHECKED: JMO
JLR #: 32296

DRAWING #:
S603



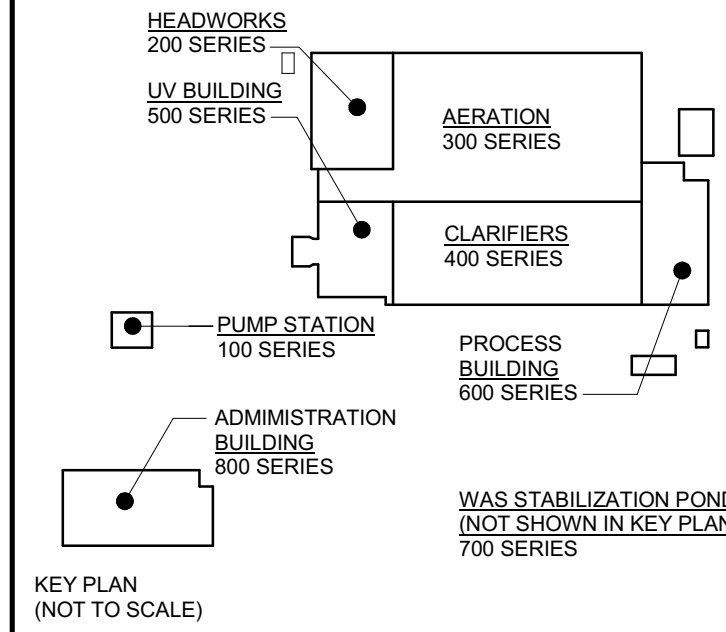
DRAWING NOTES:

1. ARCHITECTURAL EXTERIOR VENEER NOT SHOWN FOR CLARITY.
2. ALL LINTELS TO EXTEND 200mm MINIMUM BEYOND ALL OPENINGS IN THE PROCESS BUILDING.
3. REFER TO MASONRY STANDARD DETAILS IN S000 SERIES DRAWINGS.

MASONRY NOTES:

1. PROCESS BUILDING TO BE CONSTRUCTED WITH 30 MPa CONCRETE BLOCK.
2. LOAD BEARING MASONRY WALLS ARE MODERATELY DUCTILE SHEAR WALLS AND ARE TO BE PARTIALLY GROUTED.
3. FOR LOAD BEARING MASONRY, PROVIDE DOUBLE BOND BEAM COURSE AT THE TOP OF ALL WALLS AND SINGLE BOND BEAM COURSE AT BOTTOM OF ALL WALLS REINFORCED WITH (1) 15M CONTINUOUS BAR. HORIZONTAL REINFORCING OF TOP BEAMS TO CONTINUE THROUGH MOVEMENT JOINTS.
4. FOR NON-LOAD BEARING MASONRY, PROVIDE SINGLE BOND BEAM COURSE AT THE TOP AND BOTTOM OF ALL WALLS REINFORCED WITH (1) 15M CONTINUOUS BAR.
5. UNLESS NOTED OTHERWISE, HORIZONTAL REINFORCING STEEL AT BOTTOM AND INTERMEDIATE BOND BEAMS SHALL TERMINATE IN 180 DEGREE STANDARD HOOKS AROUND VERTICAL REINFORCING AT MOVEMENT JOINTS.
6. BOND BEAM REINFORCING STEEL SHALL NOT BE LAPPED WITHIN 600mm OF WALL ENDS.
7. PROVIDE MATCHING VERTICAL DOWELS TO FOUNDATION WALLS (NOT SHOWN IN ELEVATIONS).

MASONRY BLOCK WALL REINFORCING		
WALL TYPE	VERTICAL REINFORCING	HORIZONTAL REINFORCING
240 LOAD BEARING EXTERIOR	15M @ 600 crs., AT WALL ENDS AND (2) COURSES AT SIDES OF OPENINGS	200mm DEEP BOND COURSE r/w (1) 10M CONTINUOUS @ 1200 crs.
190 NON-LOAD BEARING INTERIOR	15M @ 1200 crs., AT WALL ENDS AND AT SIDES OF OPENINGS	STANDARD GAUGE LADDER REINFORCING @ 400 crs.



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SCALE: As indicated

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

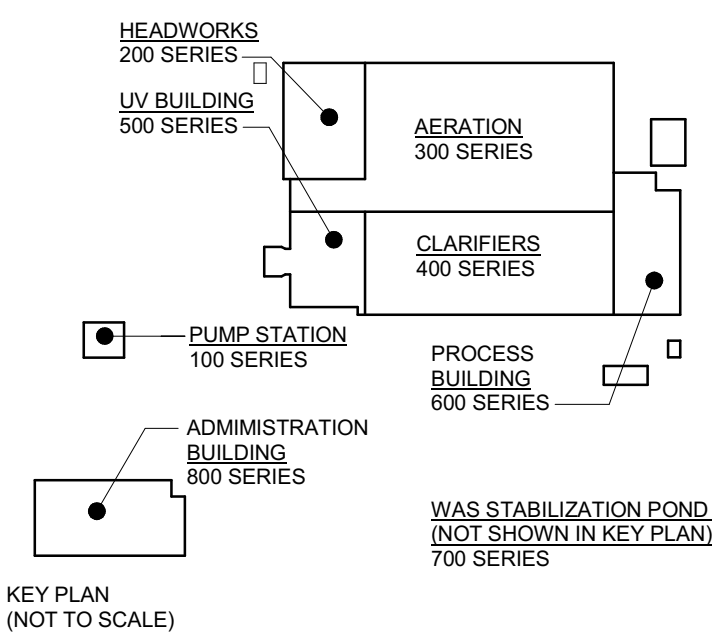
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL
PROCESS BUILDING
MASONRY ELEVATIONS

DESIGN: CWD	DRAWING #:
DRAWN: JIC	S610
CHECKED: JMO	
JLR #: 32296	

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SCALE: As indicated

CLIENT:

CONSULTANT: www.jlrichards.ca

CONSULTANT: _____



PROJECT: _____

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

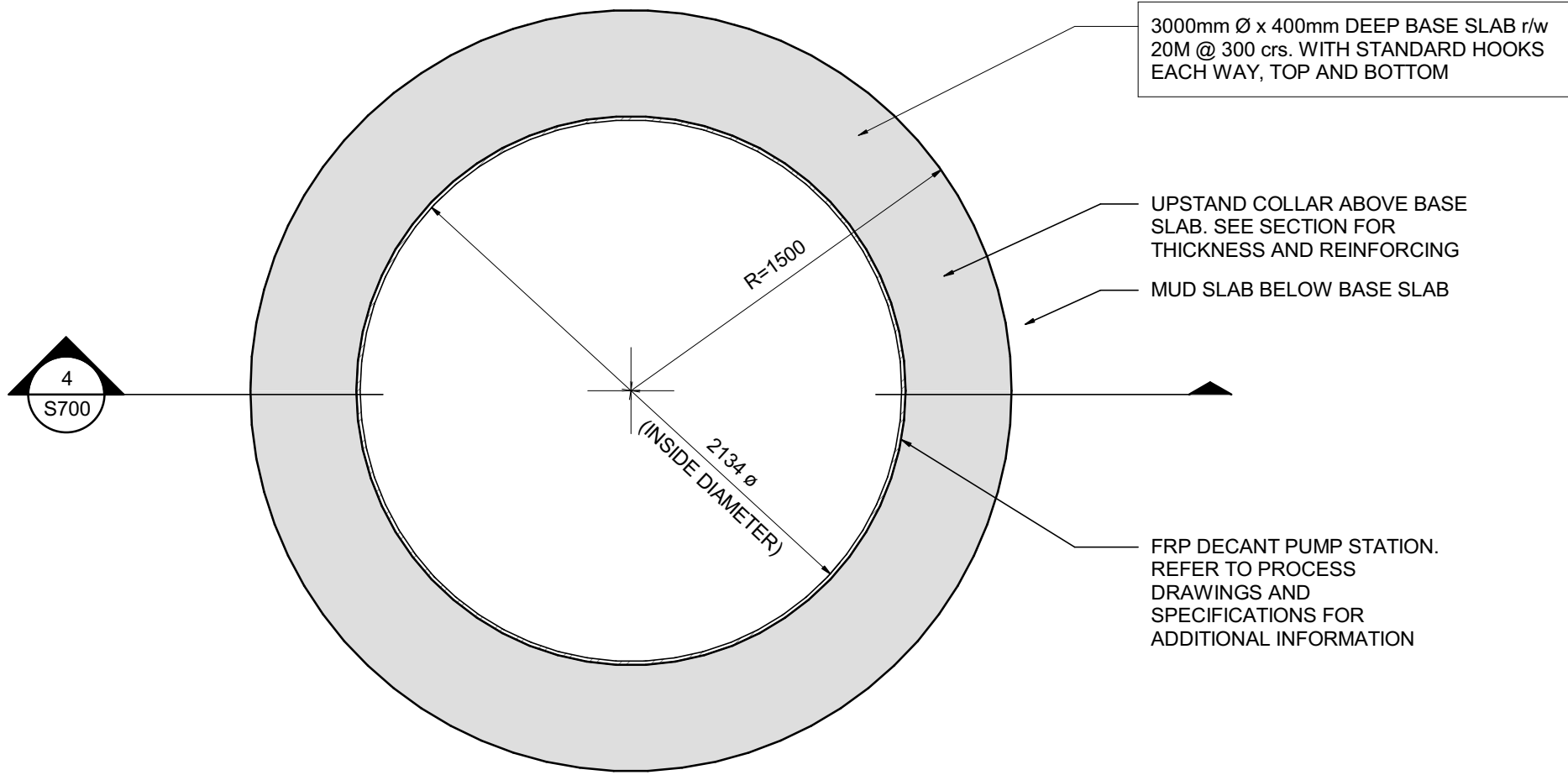
100 COUNTY ROAD 64, BRIGHTON ONTARIO

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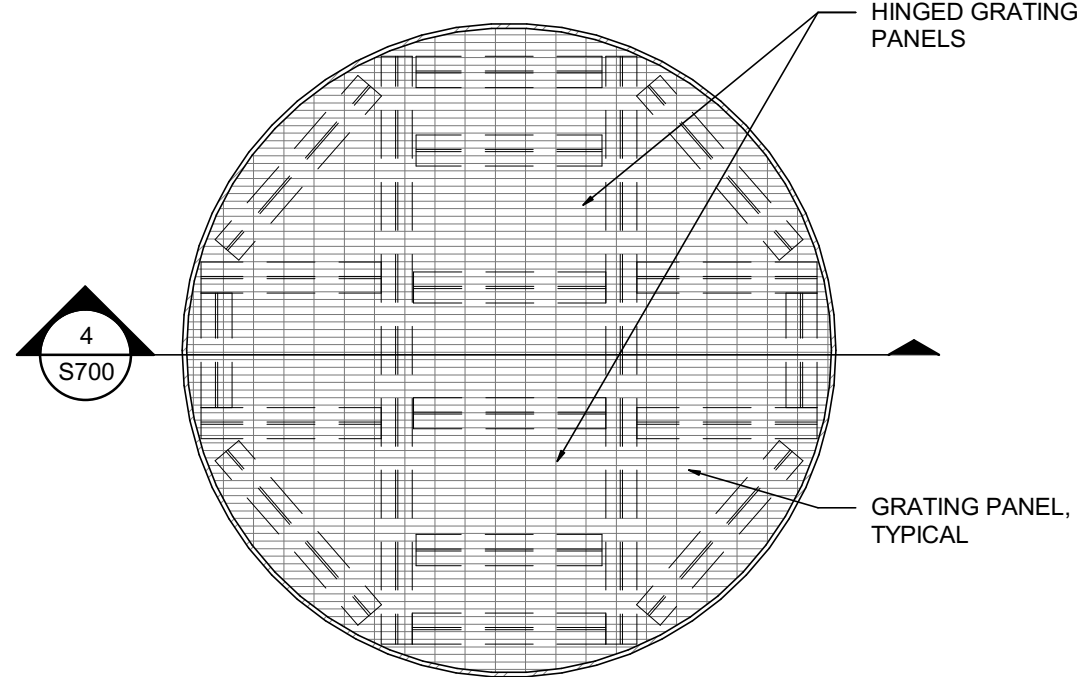
STRUCTURAL
PROCESS BUILDING

SECTIONS AND DETAILS

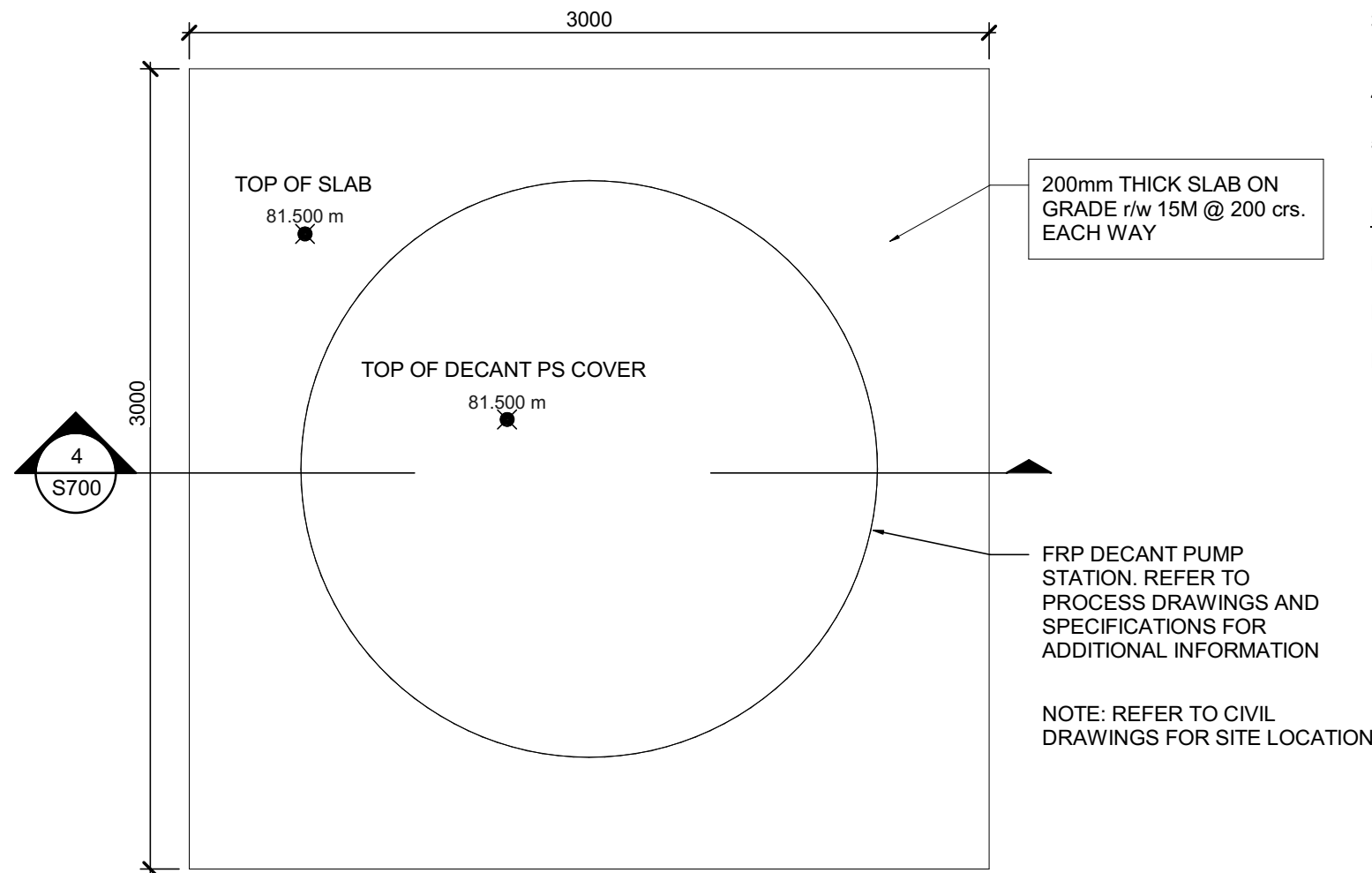
DESIGN: CWD	DRAWING #: S620
DRAWN: JIC	
CHECKED: JMO	
JLR #: 32296	



1 PLAN AT BASE SLAB LEVEL
SCALE: 1:25

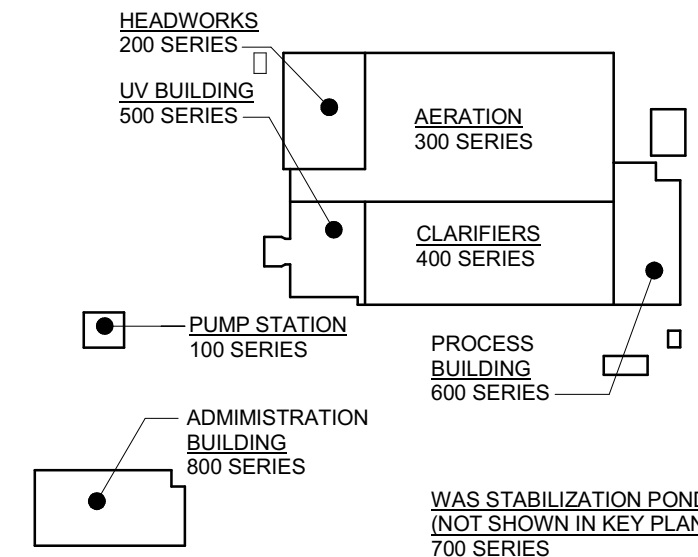


2 PLAT AT PLATFORM
SCALE: 1:25



3 PLAN AT GRADE LEVEL
SCALE: 1:25

- DRAWING NOTES:**
- REFER TO SD000 DRAWING SERIES FOR STRUCTURAL GENERAL NOTES, LEGEND TO STRUCTURAL MATERIALS AND LIST OF STRUCTURAL ABBREVIATIONS.
 - COORDINATE ALL MECHANICAL, PROCESS AND ELECTRICAL OPENINGS WITH THE PERSPECTIVE DISCIPLINE.
 - REFER TO FOUNDATIONS AND BACKFILL DRAWINGS FOR FOUNDATION SUBGRADE AND PREPARATION, AND BACKFILL REQUIREMENTS.
 - PROVIDE 25mm CHAMFER AT EXPOSED CONCRETE CORNERS.
 - THE FOLLOWING DESIGN LOADS ARE CONSIDERED FOR THE DECANT PUMPING STATION AND RELATED WORKS:
- DESIGN LOADS**
- LIVE LOAD ON TOP SLAB AND HATCHES: 4.8 kPa
- LIVE LOAD ON PLATFORM LEVEL: 3.6 kPa OR A CONCENTRATED LOAD OF 6 kN
- BUOYANCY (UPLIFT) 60 kPa (FACTORED)



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.

SCALE: 1:25

CLIENT:

BRIGHTON
MUNICIPALITY

CONSULTANT:

J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

2025-04-29
C. W. DYER
100212220
PROVINCE OF ONTARIO

PROJECT NORTH

North Arrow

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

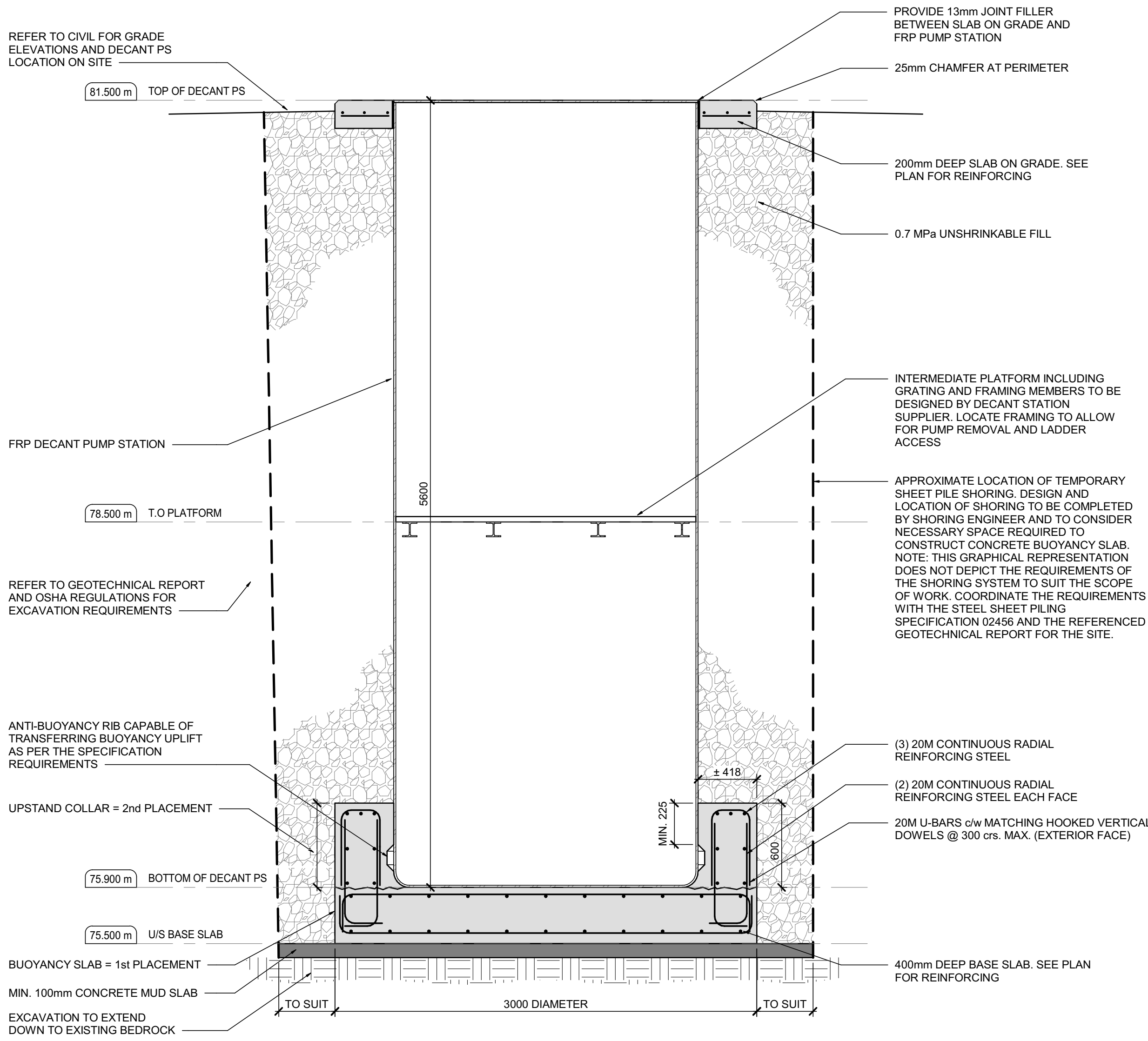
DRAWING:

STRUCTURAL WAS STABILIZATION POND DECANT PS PLAN AND SECTION DETAILS

DESIGN: CWD
DRAWN: JIC
CHECKED: JMO
JLR #: 32296

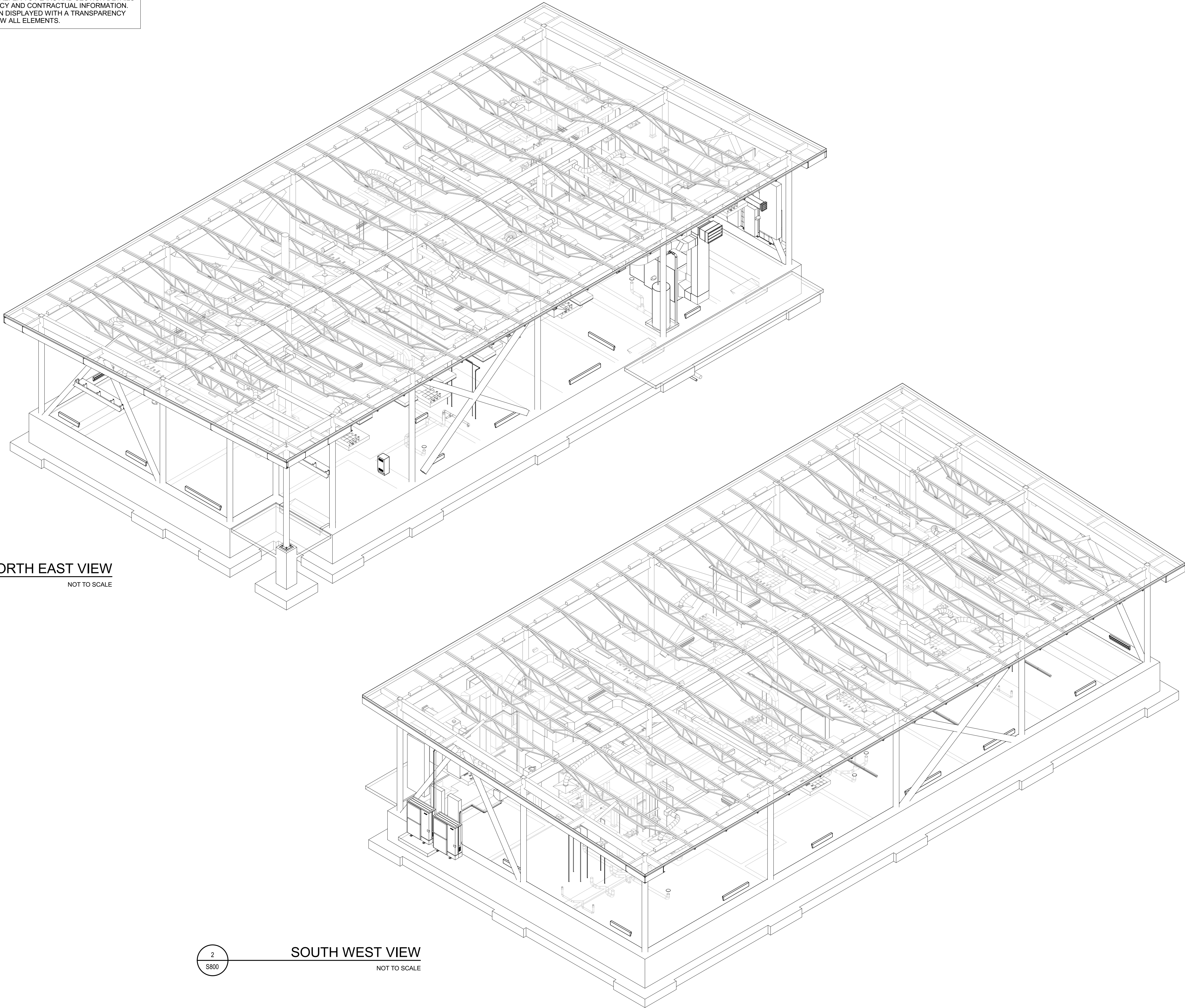
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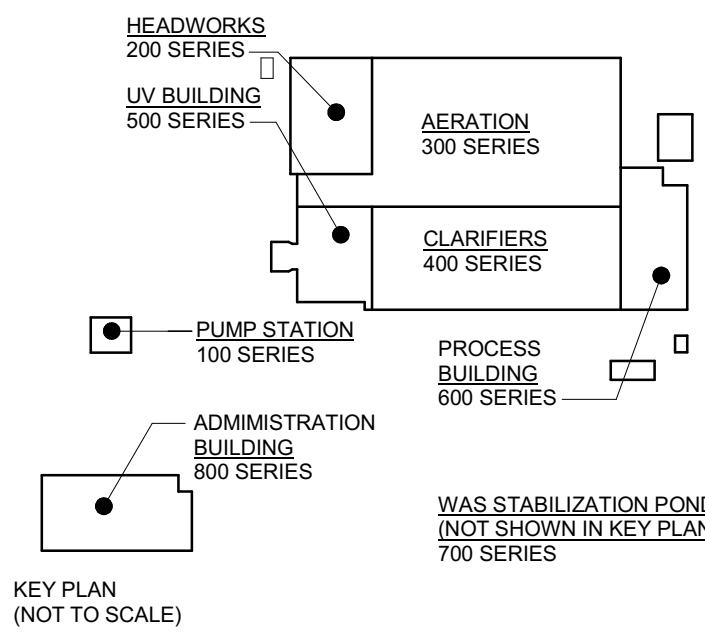
4 SECTION
SCALE: 1:25

NOTE: THESE ISOMETRIC VIEWS ARE PROVIDED TO SHOW GENERAL DESIGN INTENT AND OVERALL BUILDING GEOMETRY ONLY. REFER TO PLANS AND SECTION DETAILS IN THIS DRAWING PACKAGE FOR ACCURACY AND CONTRACTUAL INFORMATION. HORIZONTAL FLOORS / SLABS HAVE BEEN DISPLAYED WITH A TRANSPARENCY COMPONENT TO SHOW ALL ELEMENTS.



1 NORTH EAST VIEW
S800 NOT TO SCALE

2 SOUTH WEST VIEW
S800 NOT TO SCALE



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm

SCALE:

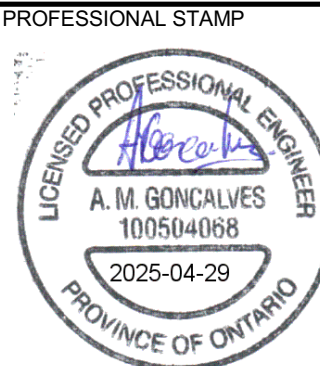
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL ADMINISTRATION BUILDING ISOMETRIC VIEWS AND NOTES

DESIGN: CWD

DRAWN: JIC

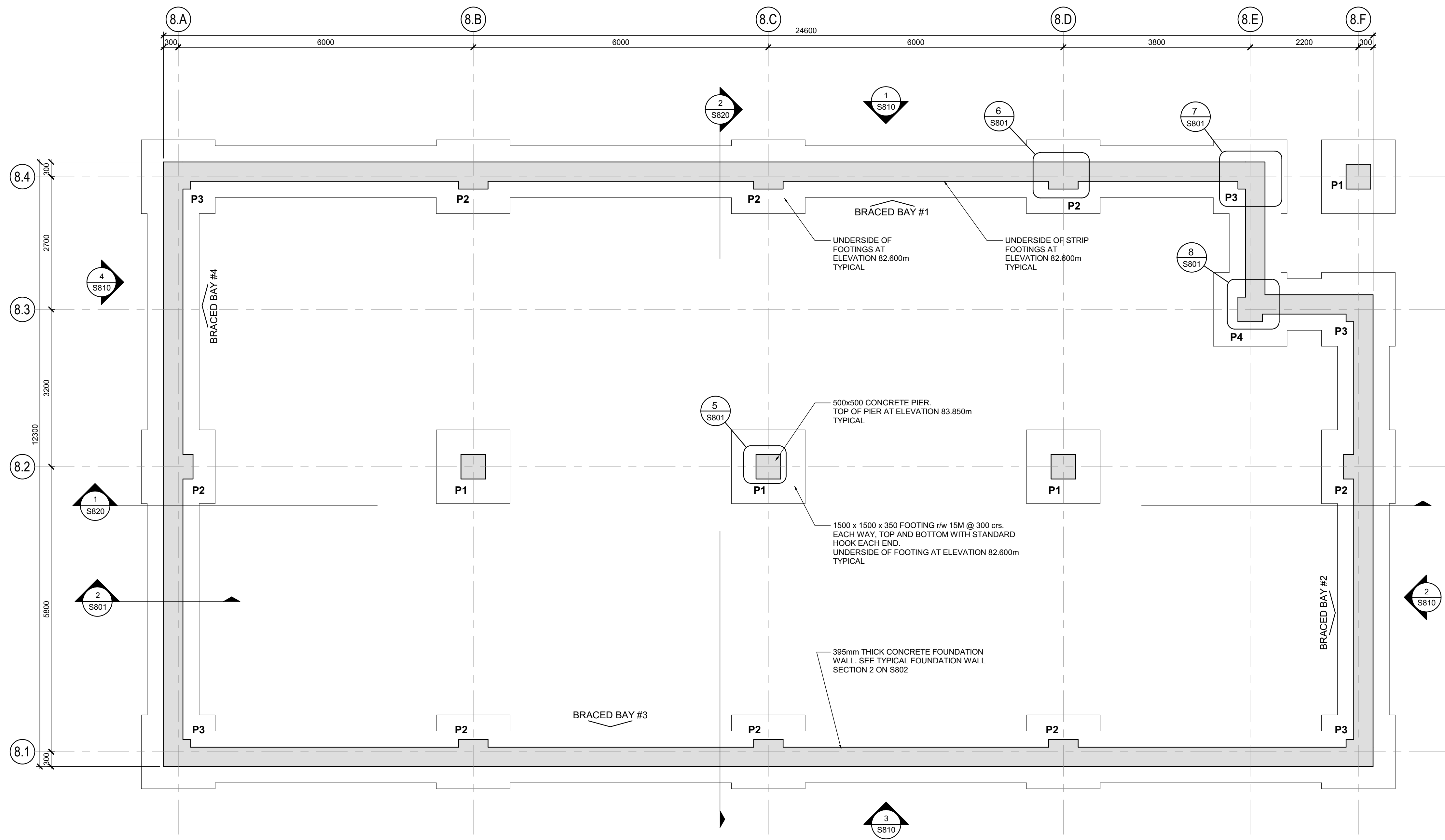
CHECKED: JMO

JLR #: 32296

DRAWING #:

S800

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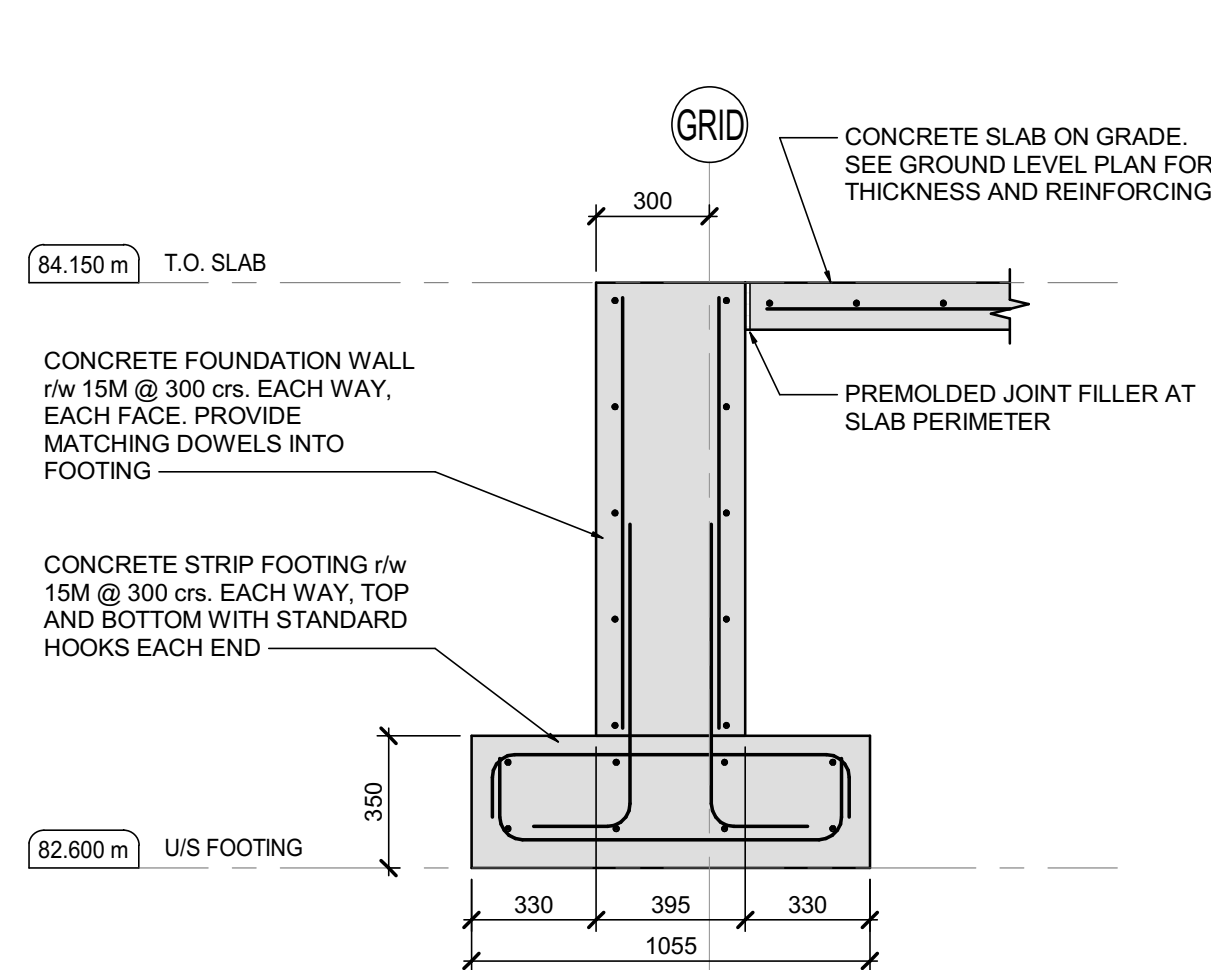


1 FOUNDATION PLAN

SCALE : 1 : 50

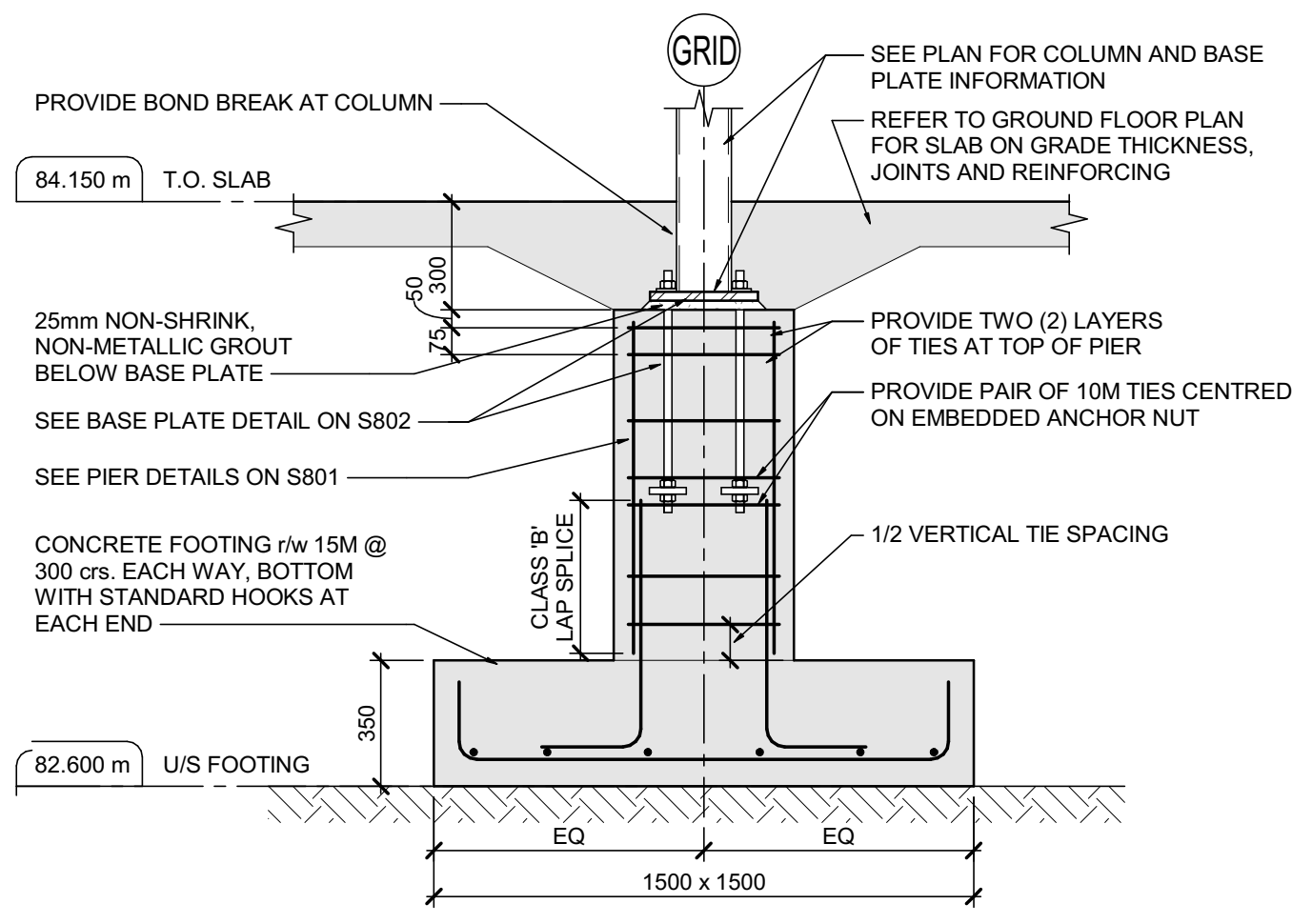
DRAWING NOTES:

- REFER TO S000 DRAWING SERIES FOR STRUCTURAL GENERAL NOTES, LEGEND TO STRUCTURAL MATERIALS AND A LIST OF STRUCTURAL ABBREVIATIONS.
- COORDINATE ALL OPENINGS WITH THE ASSOCIATED RESPONSIBLE DISCIPLINE AS NOTED ON PLAN AND IN THE REMAINDER OF THE DRAWING SET. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS AS PER TYPICAL DETAIL IN S000 DRAWING SERIES.
- REFER TO TYPICAL DETAILS IN S000 DRAWING SERIES.



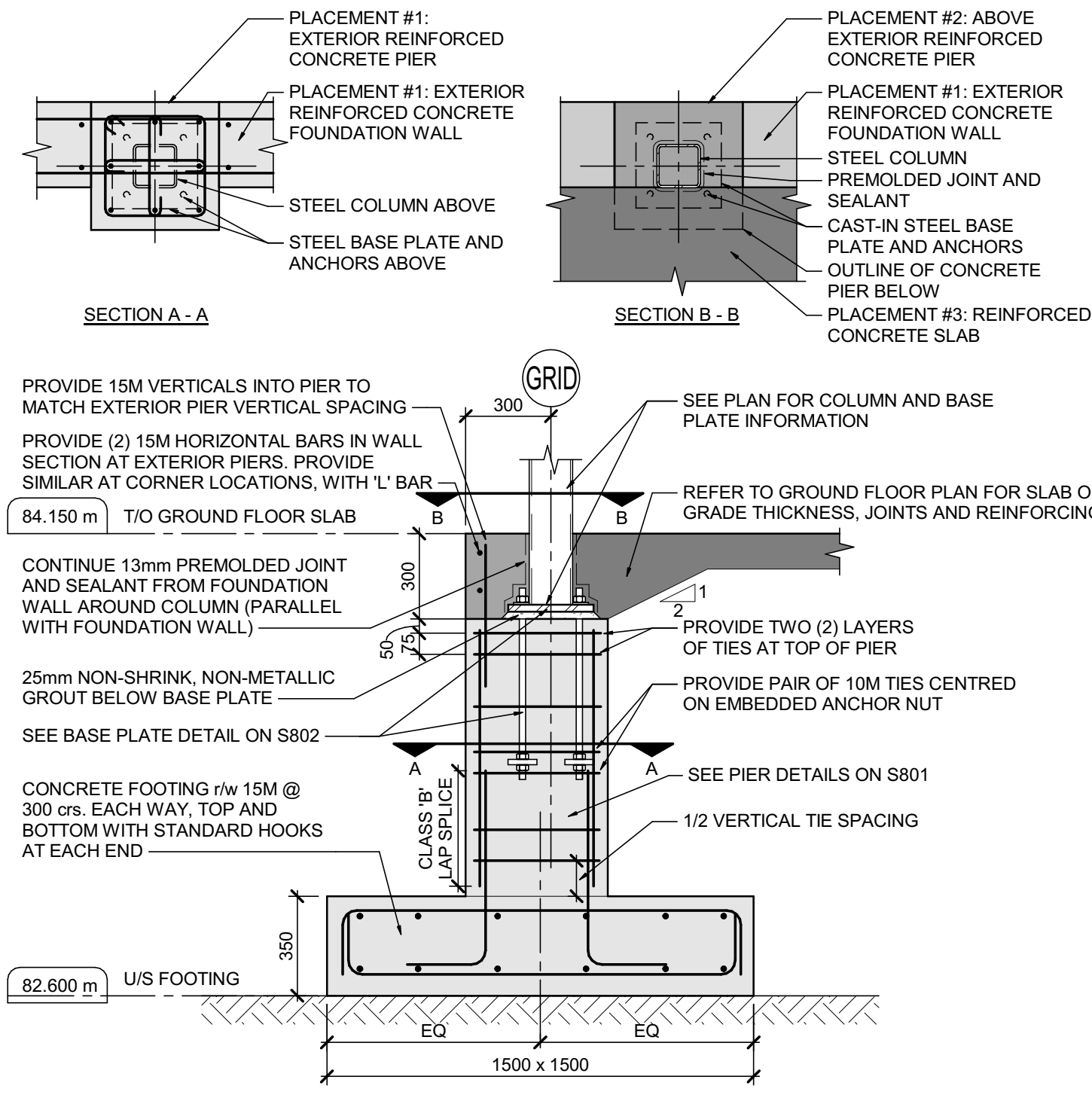
2 TYPICAL FOUNDATION WALL SECTION

SCALE : 1 : 20



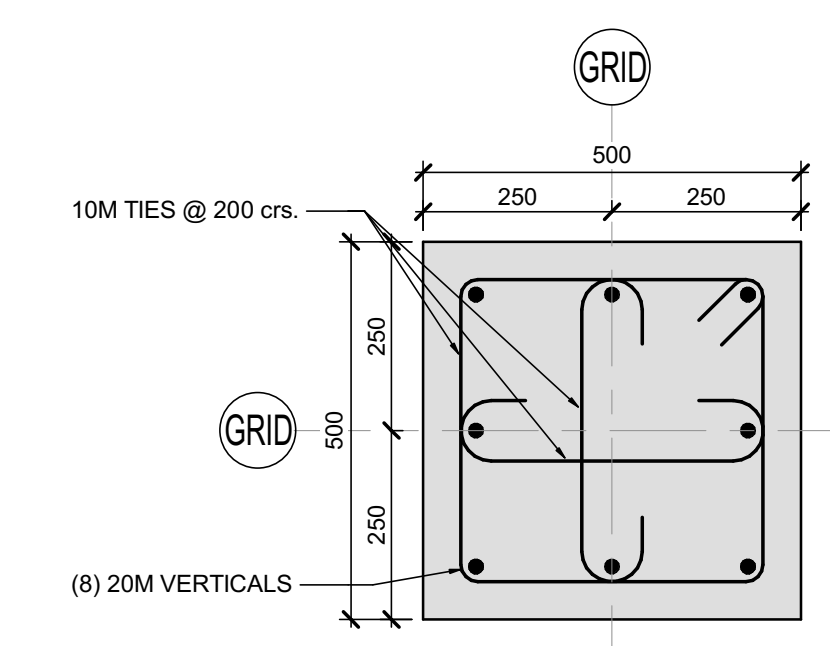
3 TYPICAL CONCRETE PIER SECTION AT INTERIOR GRAVITY COLUMN

SCALE : 1 : 20



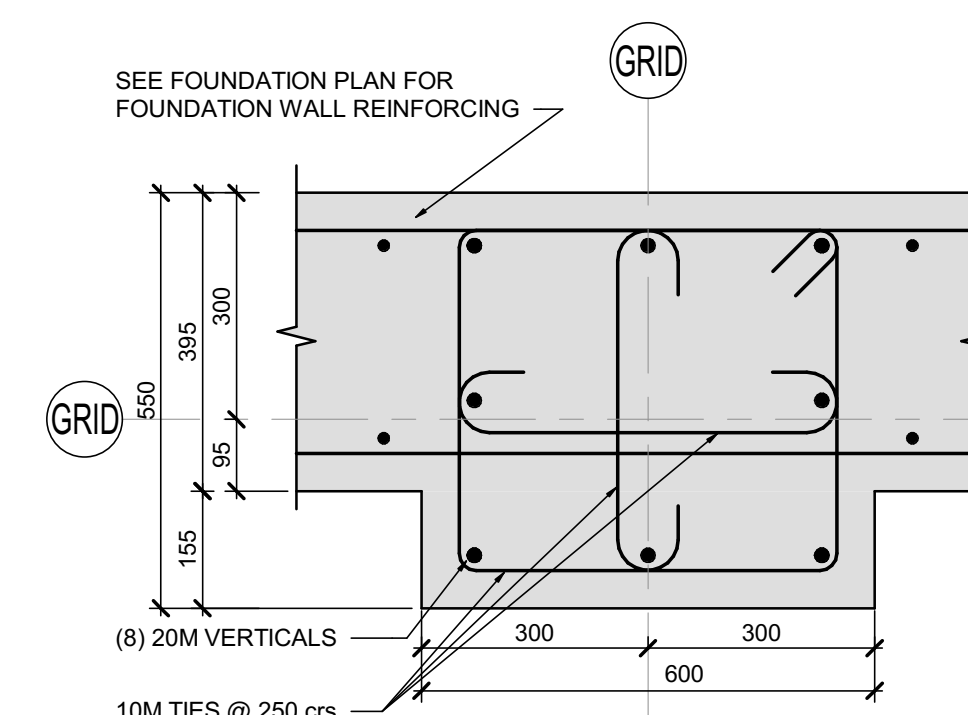
4 TYPICAL CONCRETE PIER SECTION AT EXTERIOR GRAVITY COLUMN AND CONCEALED BRACED BAY LOCATIONS

SCALE : 1 : 20



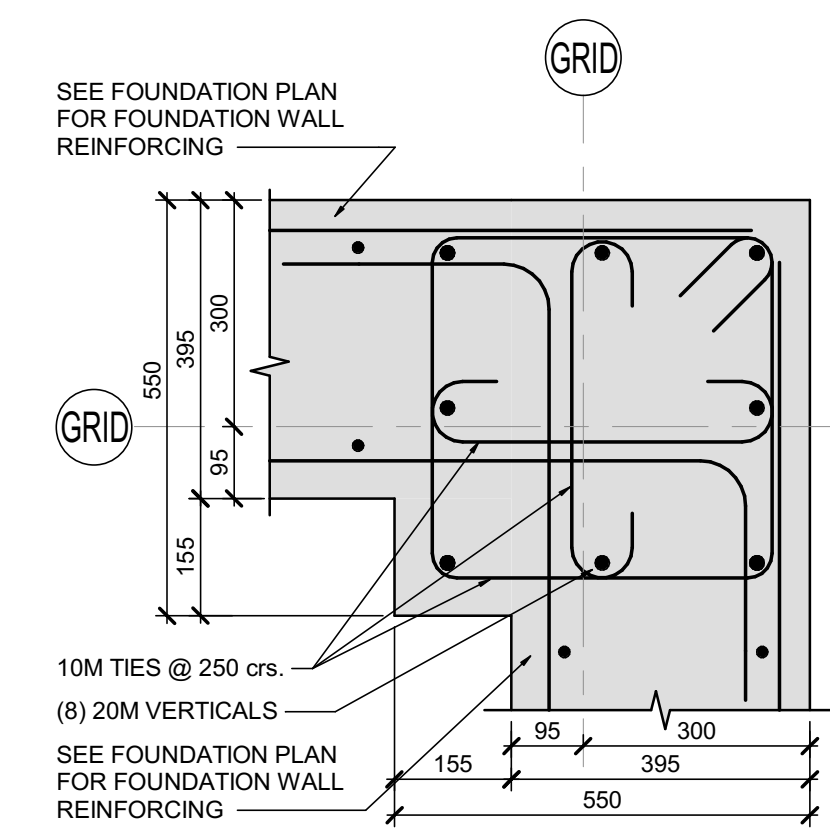
P1 PIER DETAIL

SCALE : 1 : 10



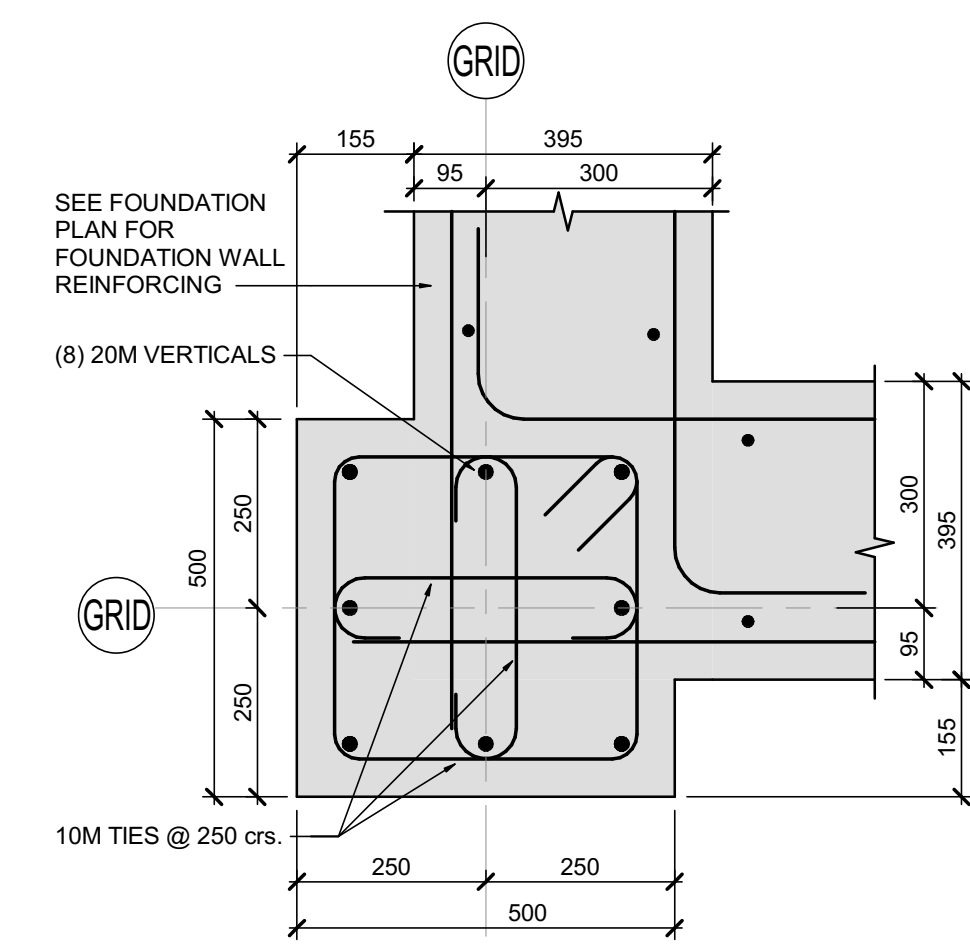
P2 PIER DETAIL AT EXTERIOR WALL

SCALE : 1 : 10



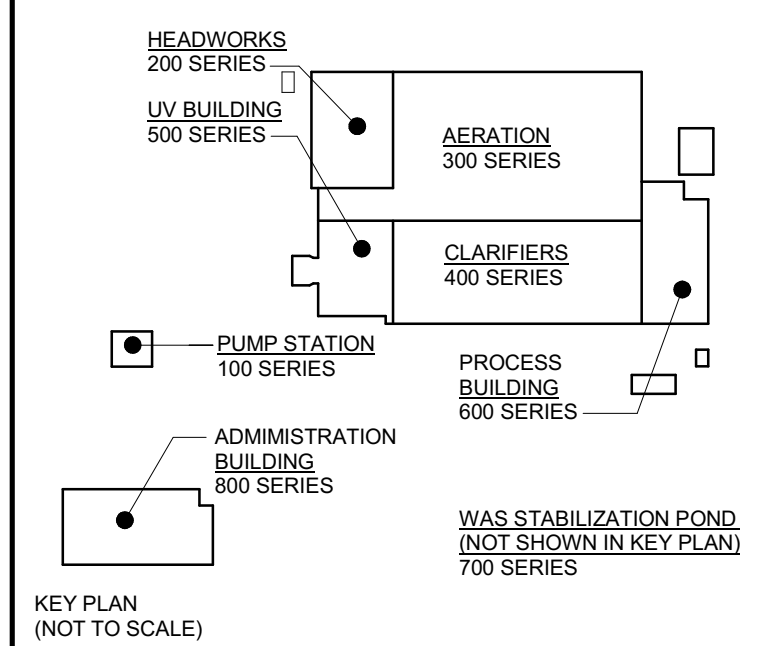
P3 PIER DETAIL AT EXTERIOR CORNER

SCALE : 1 : 10



P4 PIER DETAIL AT INTERIOR CORNER

SCALE : 1 : 10



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.

SCALE: As indicated

CLIENT:
BRIGHTON
MUNICIPALITY

CONSULTANT:
J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:
J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
STRUCTURAL ADMINISTRATION BUILDING FOUNDATION PLAN

DESIGN: CWD
DRAWN: JIC
CHECKED: JMO
JLR #: 32296
DRAWING #: **S801**

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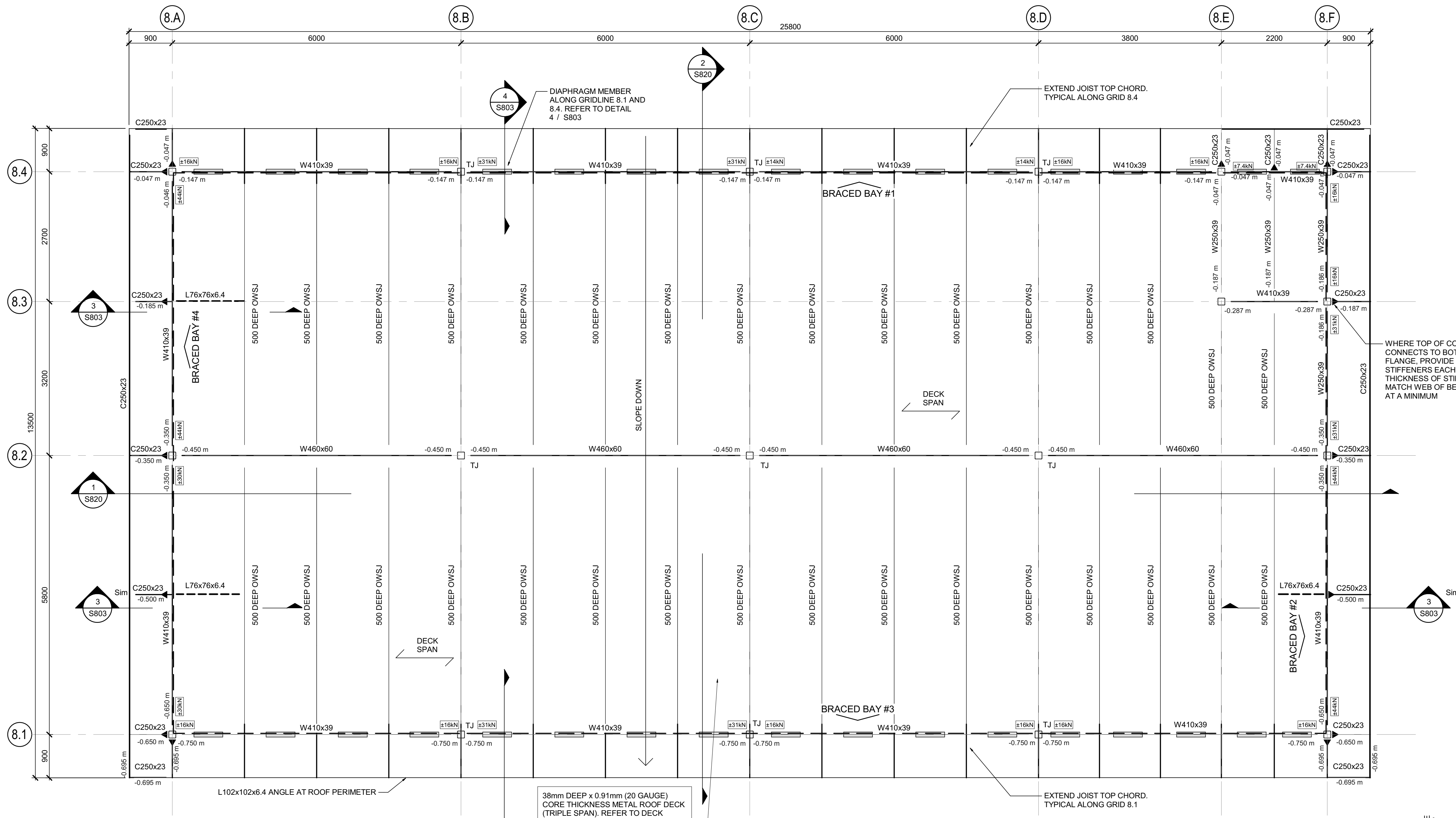
LIVE LOAD:
OFFICE SPACE AND EGRESS AREAS - 4.8 kPa



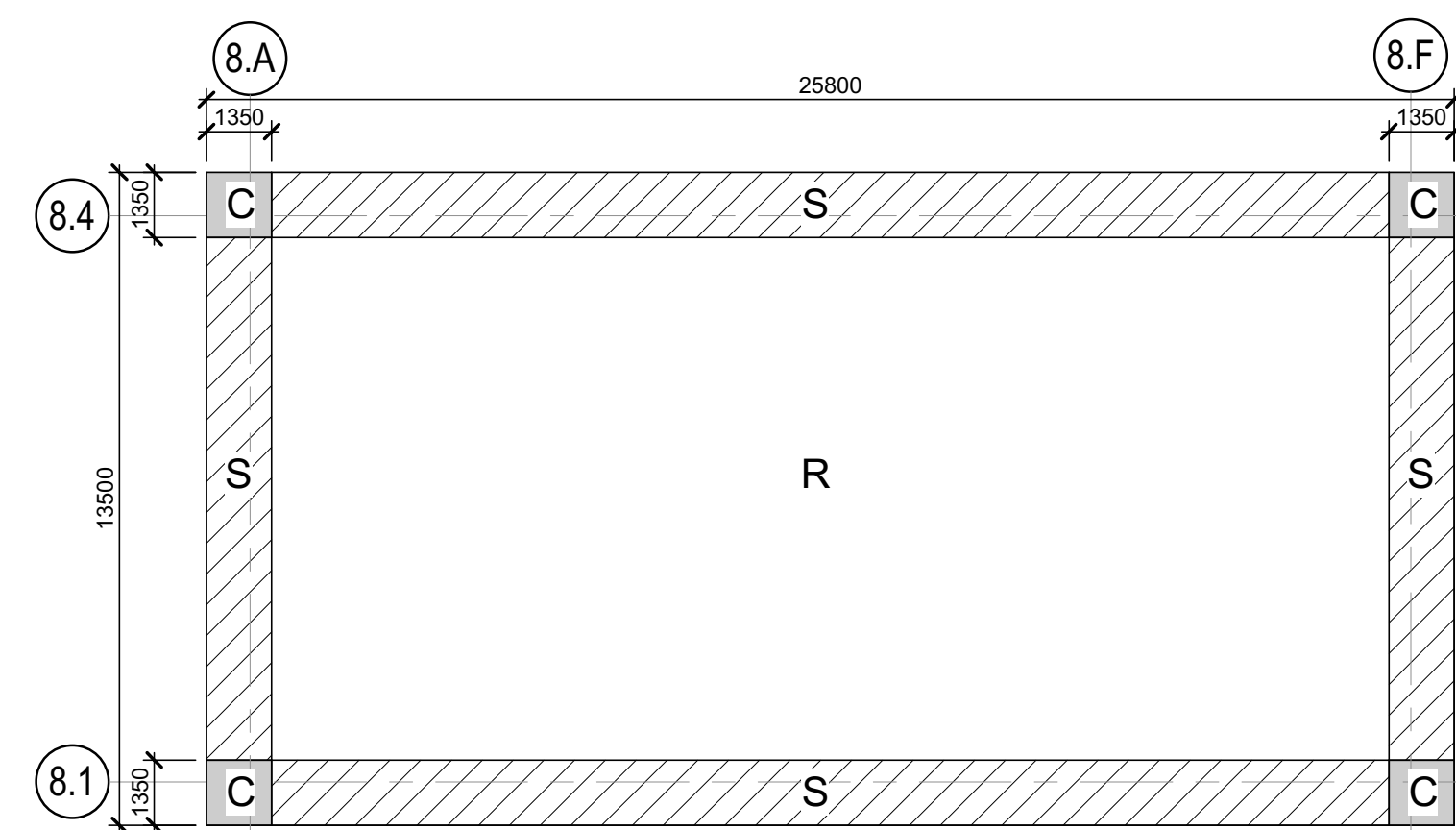
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S802



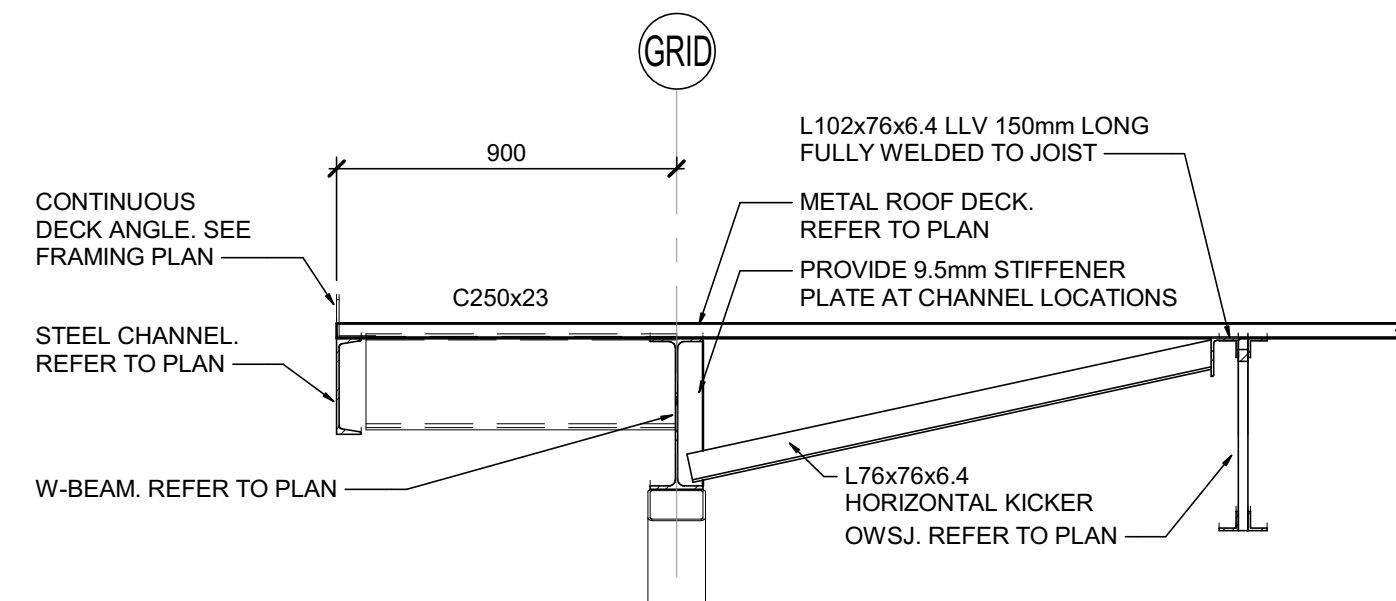
ROOF FRAMING PLAN
SCALE: 1:50



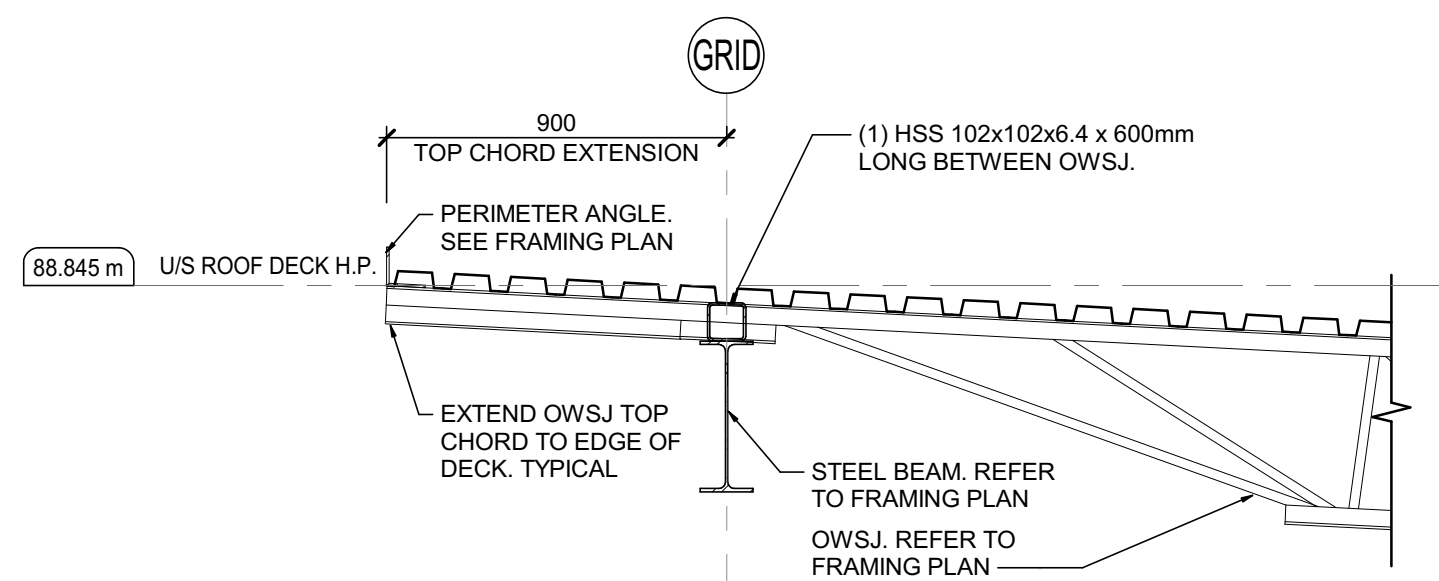
WIND UPFLIFT DIAGRAM
SCALE: 1:150

- WIND UPLIFT DIAGRAM NOTES:
- LOADS INDICATED IN THE TABLE ABOVE ARE PRESSURES APPLIED TO THE EXTERIOR FACE OF THE ROOF. PRESSURES INDICATED ARE CALCULATED WITH A ULS IMPORTANCE FACTOR OF $I_w = 1.0$. THE OWSJ DESIGNER SHALL ALSO CONSIDER $I_w = 0.75$ FOR SLS IN THEIR DESIGN.
 - OWSJ DESIGNER TO TAKE INTO ACCOUNT IN THE DESIGN THE PRESSURES APPLIED TO THE EXTERIOR FACE OF THE ROOF AS WELL AS UNFACTORED INTERNAL PRESSURES OF 0.26 kPa OR INTERNAL SUCTION OF 0.39 kPa, WITH AN IMPORTANT FACTOR AS STATED IN NOTE 1.

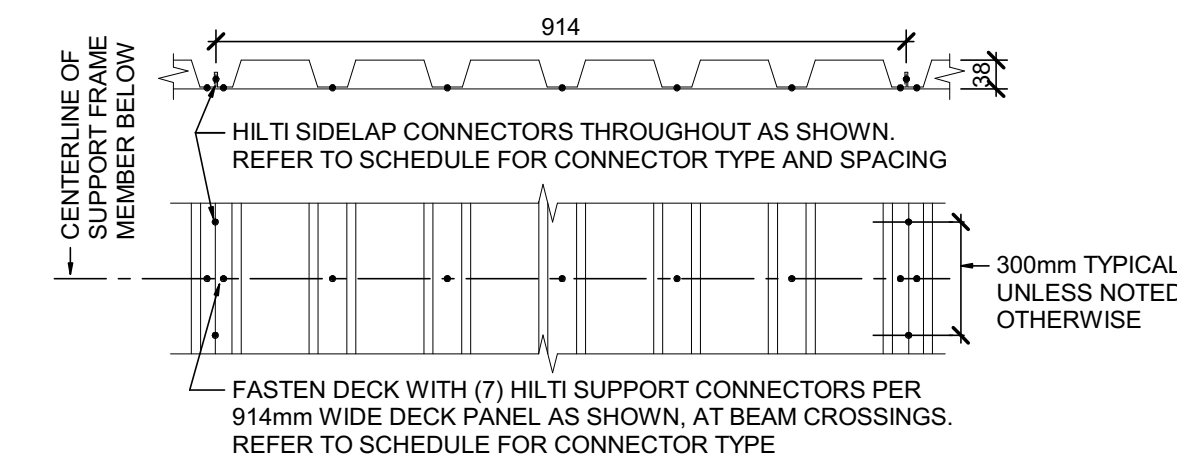
- NOTES:
- COLLECTOR LINES INDICATED ON PLAN THUS (— $\pm 16kN$ —) REFERS TO FRAMING PLAN LOADING INFORMATION.
 - ALL CONNECTIONS ALONG THE COLLECTOR LINES HAVE ADEQUATE CAPACITY TO RESIST THE COMBINED EFFECTS OF FACTORED SEISMIC AXIAL LOADS AND FACTORED SHEAR LOADS, BASED ON THE LOAD COMBINATION $1.0D + 0.25S$.
- LEGEND:
- THIS SYMBOL IDENTIFIES THE LOCATION OF MOMENT CONNECTION. COLUMN TO BEAM CONNECTION TO BE DESIGNED FOR THE FOLLOWING LOADS ON THIS PLAN:
- $M_{lx} = \pm 20 \text{ kNm}$
 $V_{fy} = \pm 20 \text{ kN}$



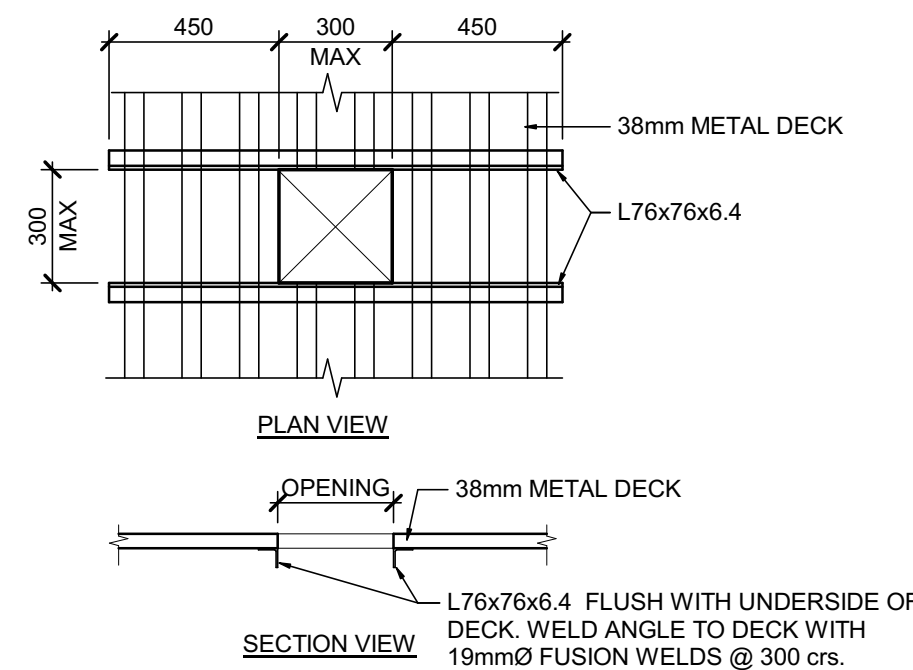
ROOF EDGE DETAIL
SCALE: 1:20



TYPICAL DIAPHRAGM DETAIL
SCALE: 1:20

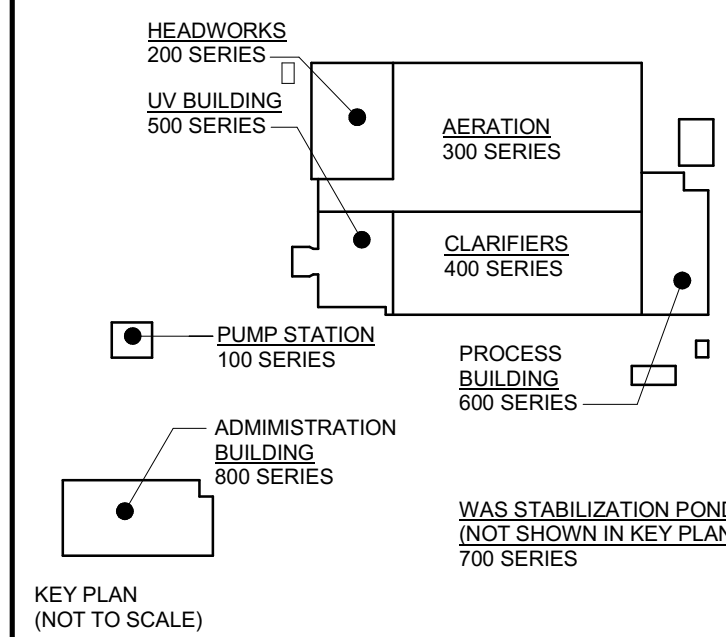


TYPICAL METAL DECK FASTENING DETAIL
SCALE: 1:10



TYPICAL METAL DECK OPENING SUPPORT DETAIL
SCALE: 1:20

- DRAWING NOTES
- SEE GENERAL NOTES AND DESIGN LOADS IN S000 DRAWING SERIES.
 - SEE EXCAVATION AND BACKFILL INFORMATION ON DRAWING S010.
 - SEE TYPICAL AND STANDARD DETAIL IN S000 DRAWING SERIES.
 - TOP OF STEEL (HIGH POINT) ELEVATION TO BE 88.845m. ALL ELEVATIONS NOTED ON THE ROOF PLAN ARE REFERENCED FROM THIS DATUM.
 - DIAPHRAGM SHEAR COLLECTOR PER DETAIL ON THIS DRAWING, CONNECTED TO TOP FLANGE OF BEAMS BETWEEN OWSJ SHOES AS SHOWN IN PLAN.
 - REFER TO BRACED BAY ELEVATIONS ON DRAWING S810 FOR SEISMIC AXIAL LOADS ON BEAMS FOR DESIGN AT COLLECTOR LINES.
 - OWSJ BRIDGING TO BE COORDINATED WITH DUCTWORK. REFER TO MECHANICAL DRAWINGS.
 - REFER TO PLANS AND SECTIONS FOR JOIST TOP CHORD EXTENSION REQUIREMENTS.
 - FOR DESIGN OF ROOF JOISTS, THE DESIGNER MAY CONSIDER A MAXIMUM OF 0.3 kPa DEAD LOAD IN COMBINATION WITH WIND UPLIFT LOAD CASE.
- DESIGN ROOF LOADS
- SUPERIMPOSED DEAD LOADS:
- ROOFING - 0.4 kPa
STEEL DECK - 0.1 kPa
M&E ALLOWANCE - 0.25 kPa
SUSPENDED CEILING ALLOWANCE - 0.2 kPa
- LIVE LOADS - 1 kPa
- SNOW LOAD - 1.7 kPa (INCLUDES $I_s = 1.0$)
- WHERE TOP OF COLUMN CONNECTS TO BOTTOM BEAM FLANGE, PROVIDE WEB STIFFENERS EACH SIDE OF WEB. THICKNESS OF STIFFENER TO MATCH WEB OF BEAM THICKNESS AT A MINIMUM



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SCALE: As indicated

CLIENT:

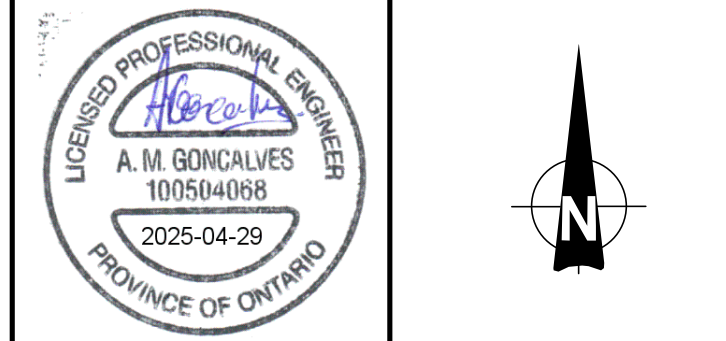


CONSULTANT:



CONSULTANT:

PROFESSIONAL STAMP



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL ADMINISTRATION BUILDING
ROOF PLAN

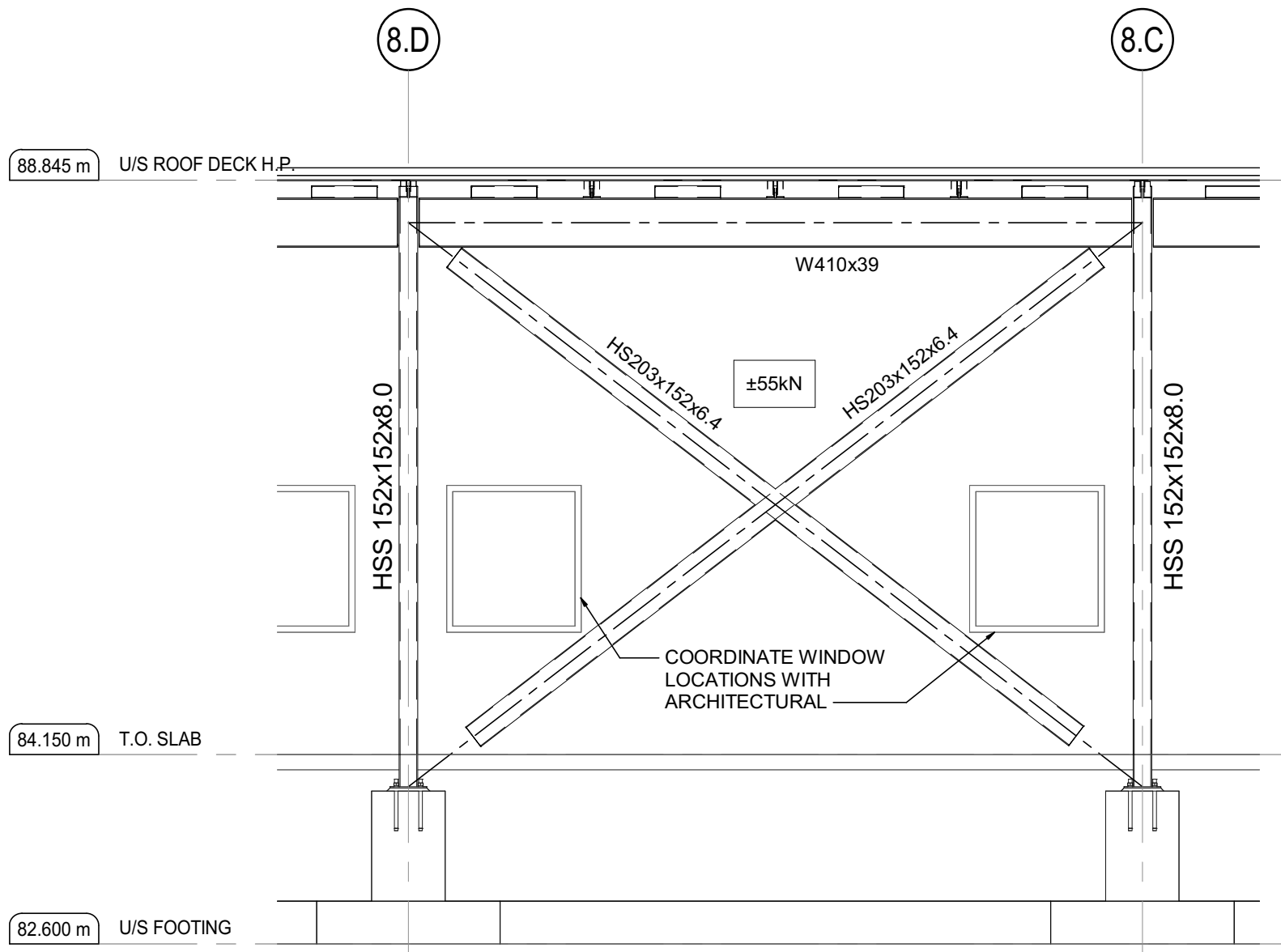
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DRAWN: JIC

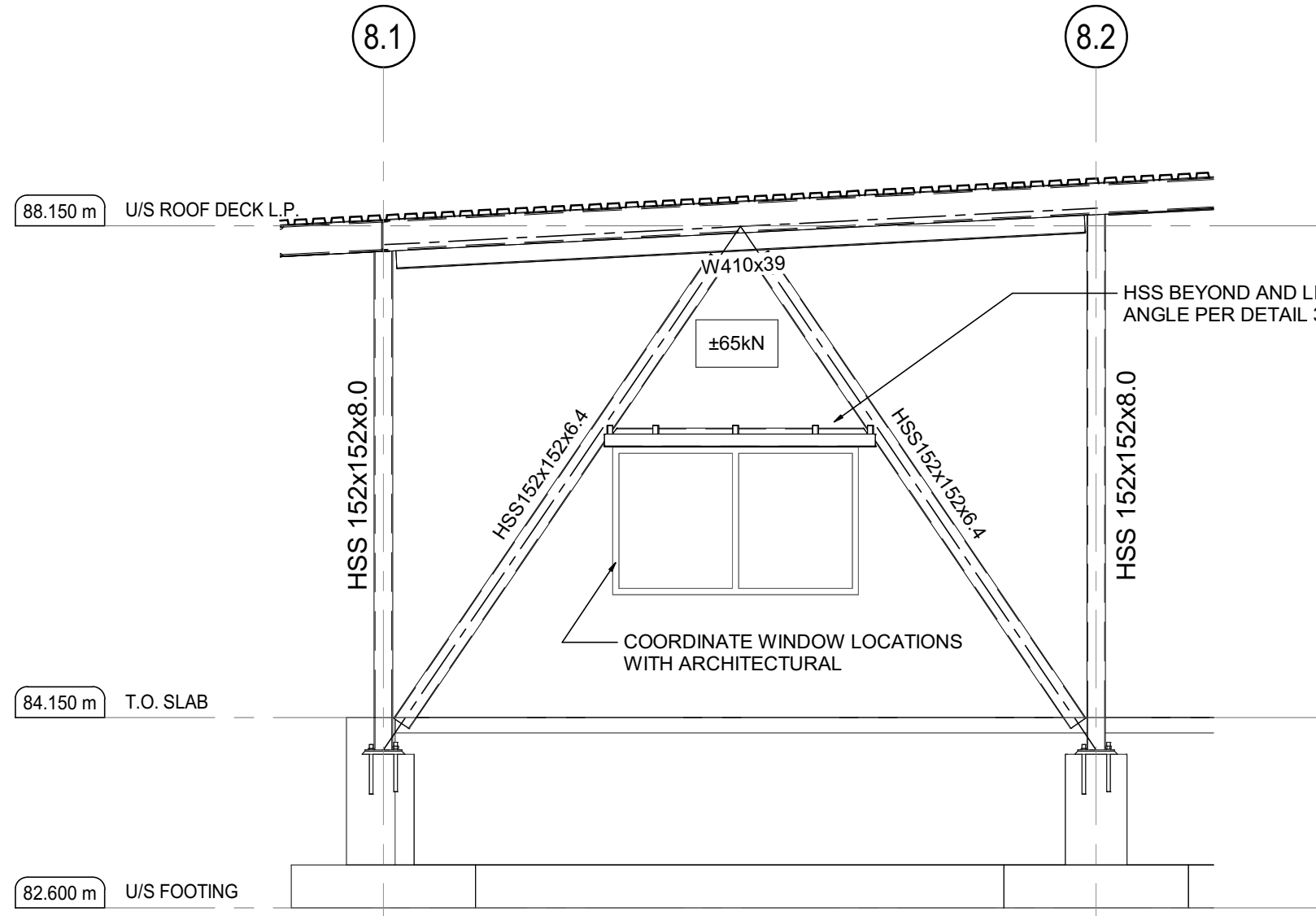
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JLR #: 32296

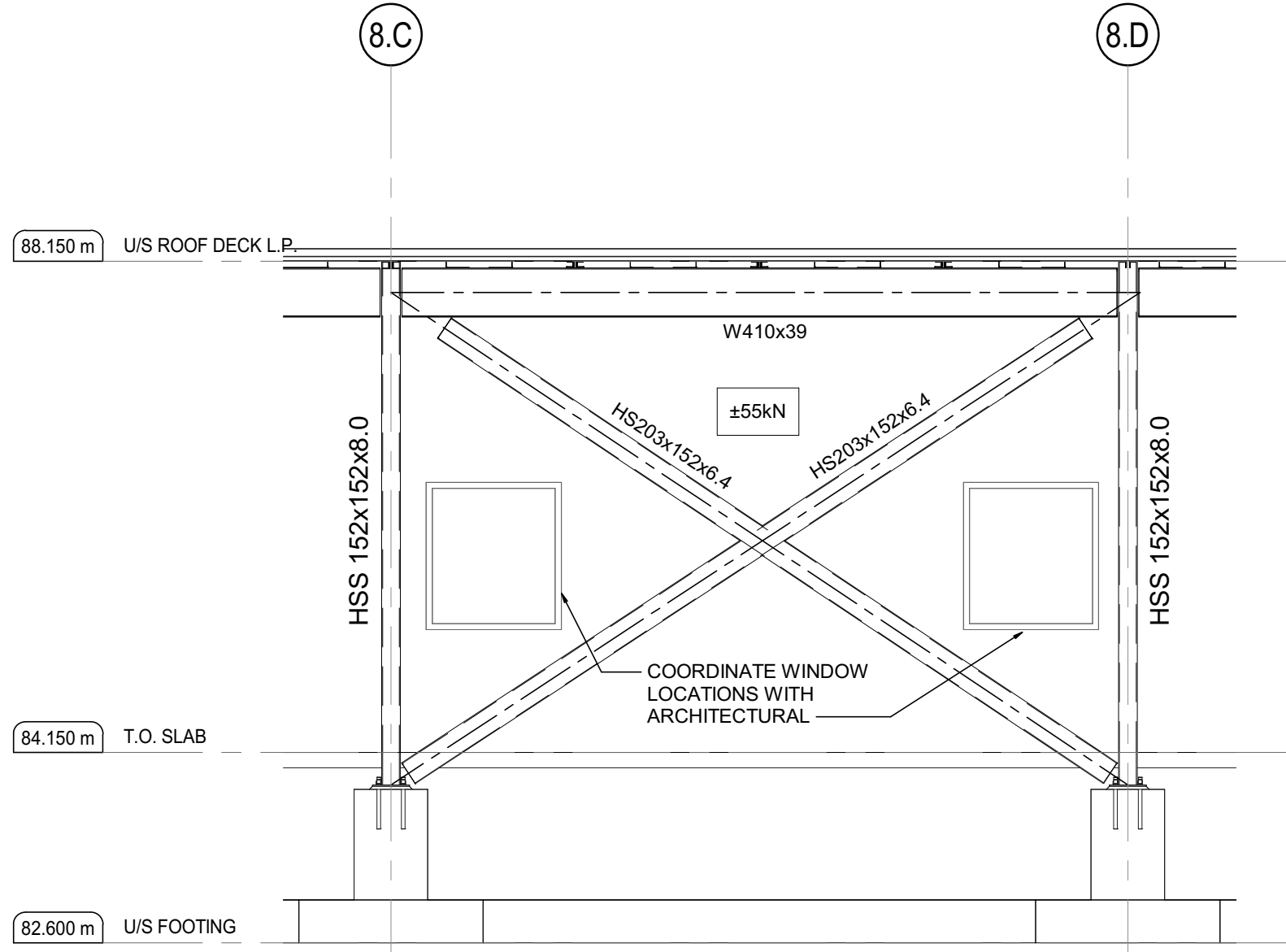
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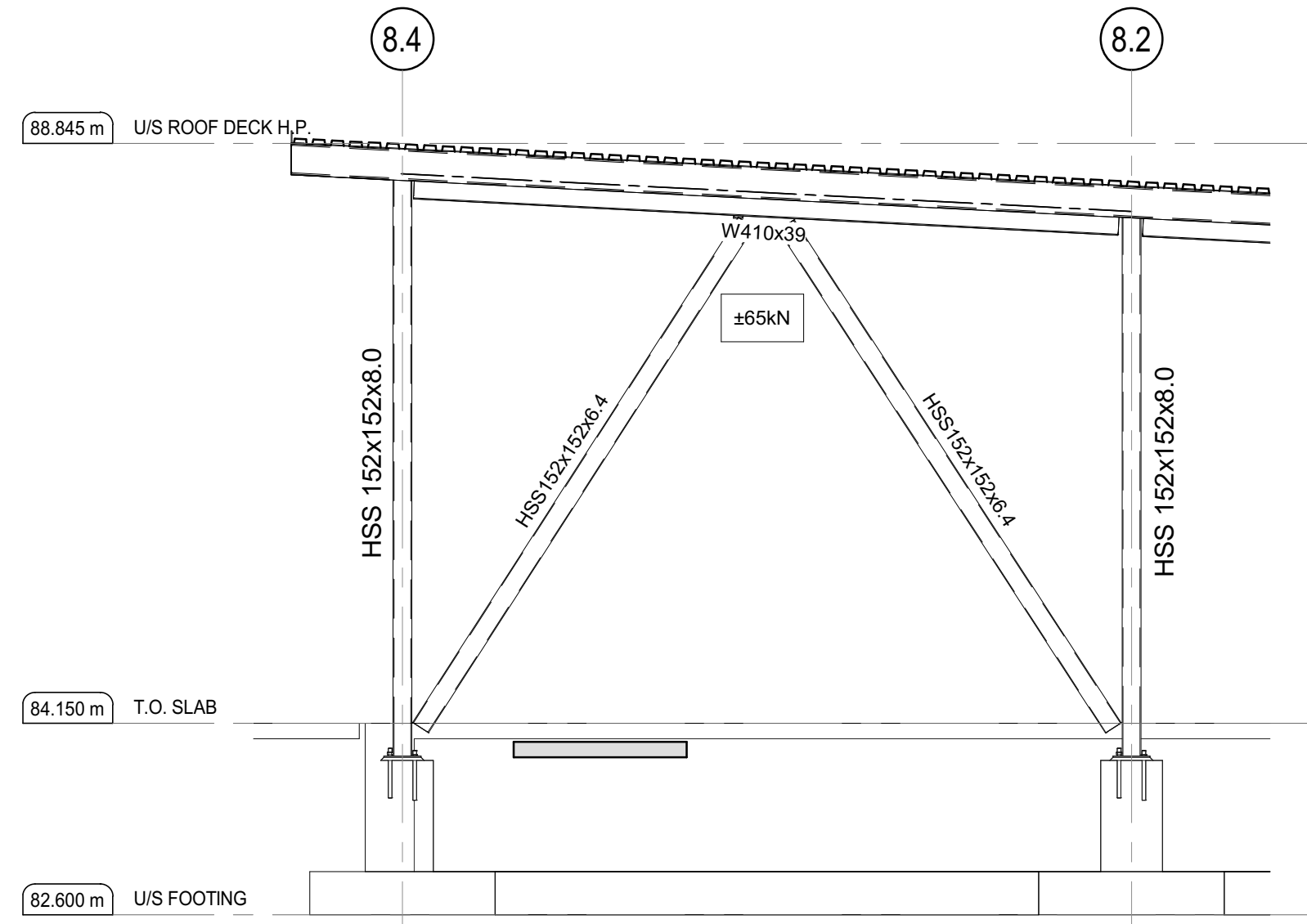
1
S810
BRACED BAY ELEVATION #1
SCALE : 1 : 50



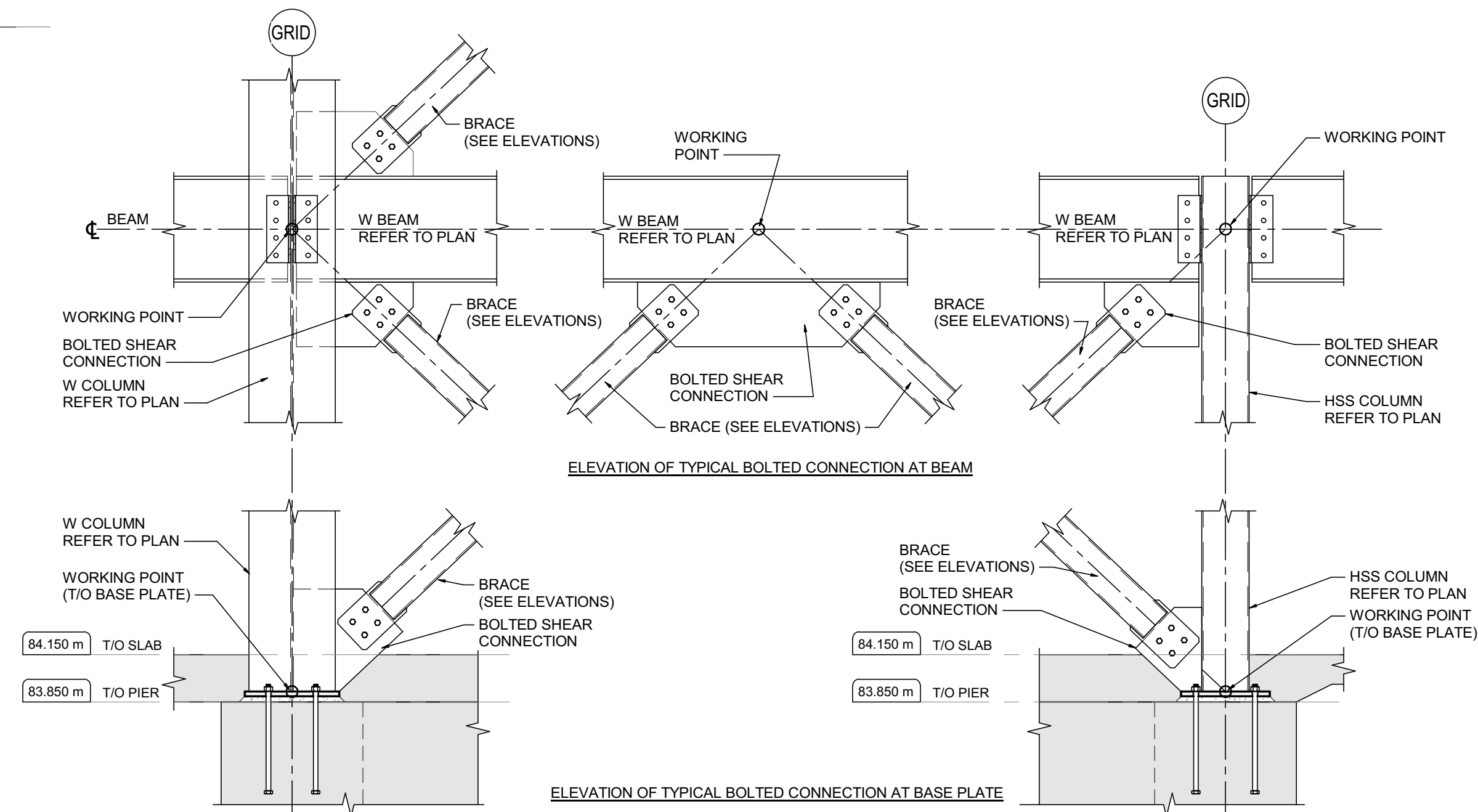
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S810
BRACED BAY ELEVATION #2
SCALE : 1 : 50



3
S810
BRACED BAY ELEVATION #3
SCALE : 1 : 50

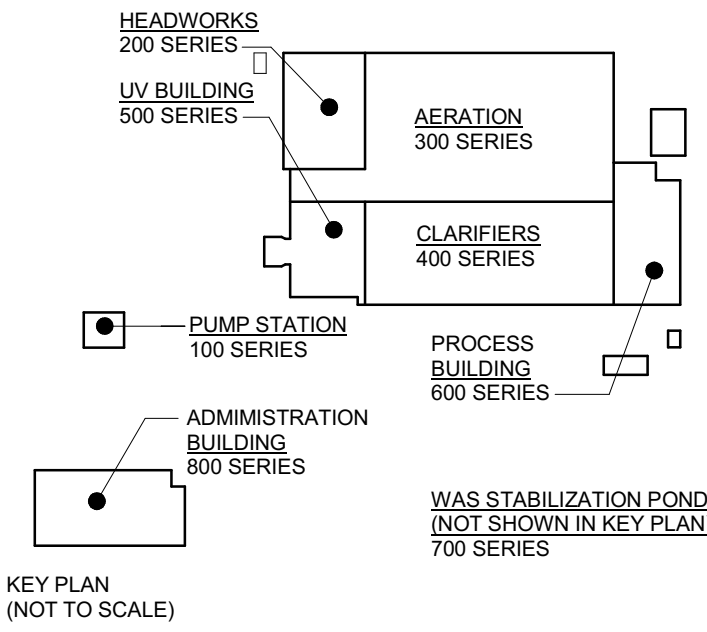


4
S810
BRACED BAY ELEVATION #4
SCALE : 1 : 50



5
S810
TYPICAL BRACE CONNECTION DETAILS
SCALE : 1 : 20

- DRAWING NOTES:
1. BRACED BAY CONNECTIONS SHALL BE DESIGNED IN ACCORDANCE WITH CSA S16-19 CLAUSE 27 FOR CONVENTIONAL CONSTRUCTION CONCENTRICALLY BRACED FRAMES ($R_d = 1.5$, $R_o = 1.3$).
 2. ALL BRACE CONNECTIONS ARE TO BE DESIGNED FOR FACTORED AXIAL FORCE P_f , AS NOTED.
 3. ALL CONNECTIONS ALONG THE COLLECTOR LINES HAVE ADEQUATE CAPACITY TO RESIST THE COMBINED EFFECTS OF FACTORED SEISMIC AXIAL LOADS AND FACTORED SHEAR LOADS, BASED ON THE LOAD COMBINATION $1.0D + 0.25S$.



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SCALE: As indicated

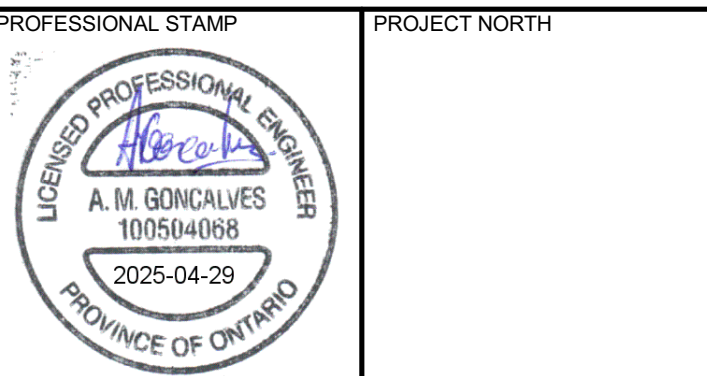
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL
ADMINISTRATION BUILDING
BRACED BAY ELEVATIONS

DESIGN: CWD

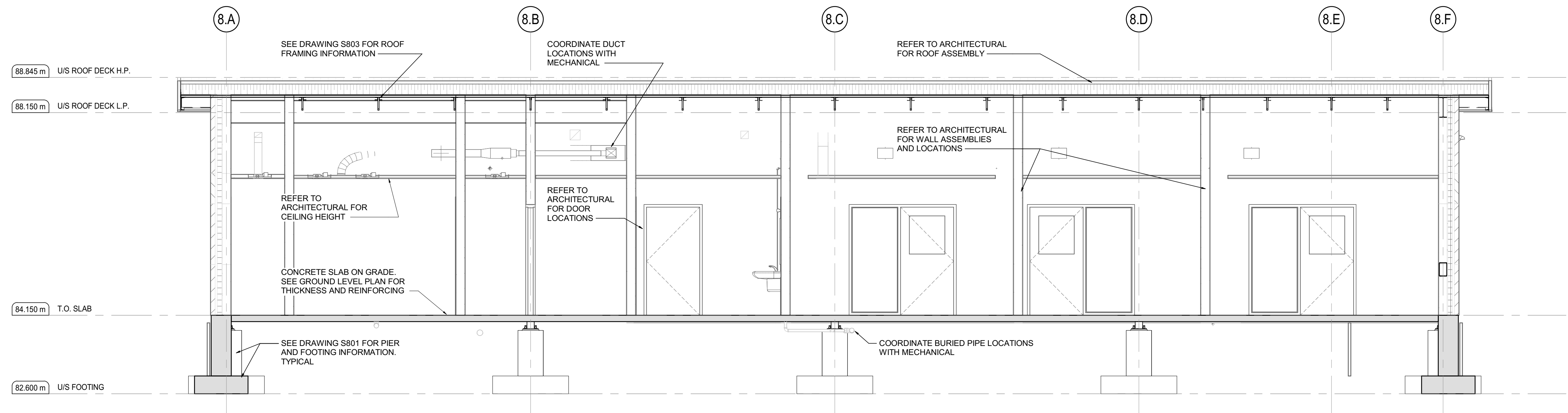
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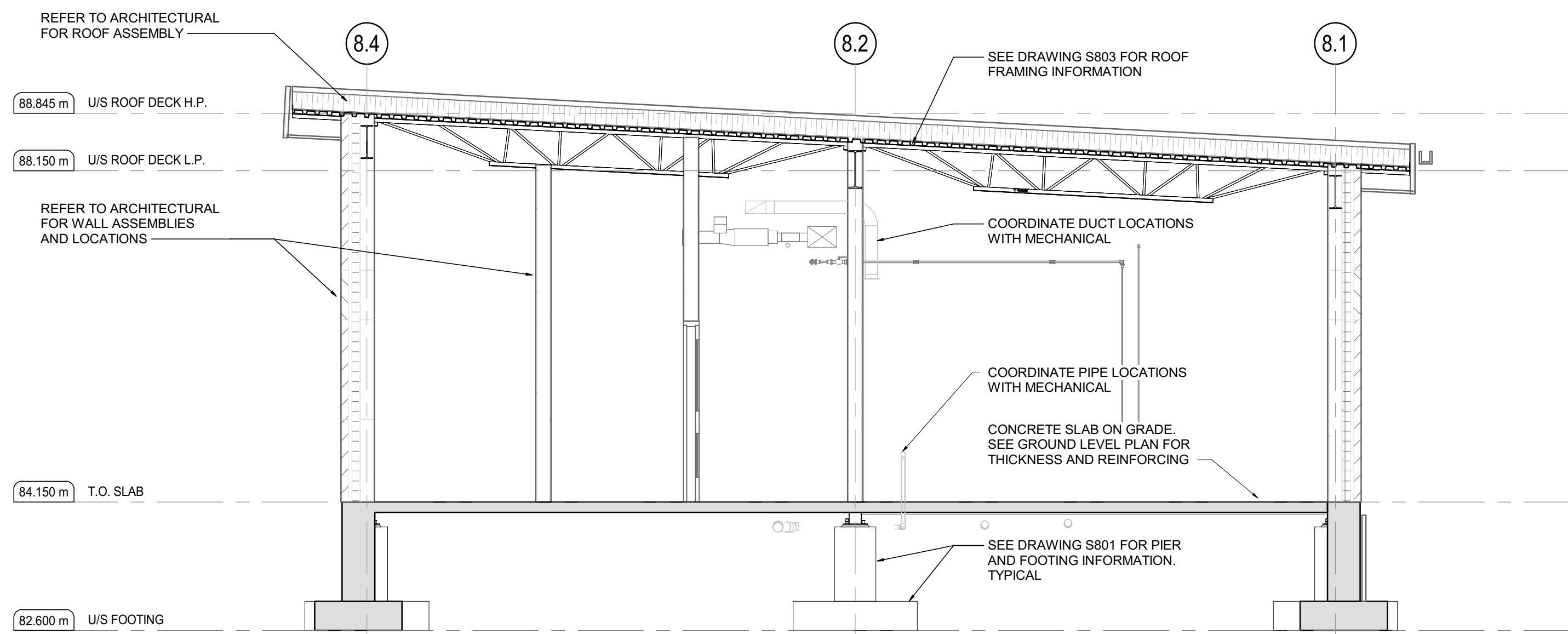
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S810

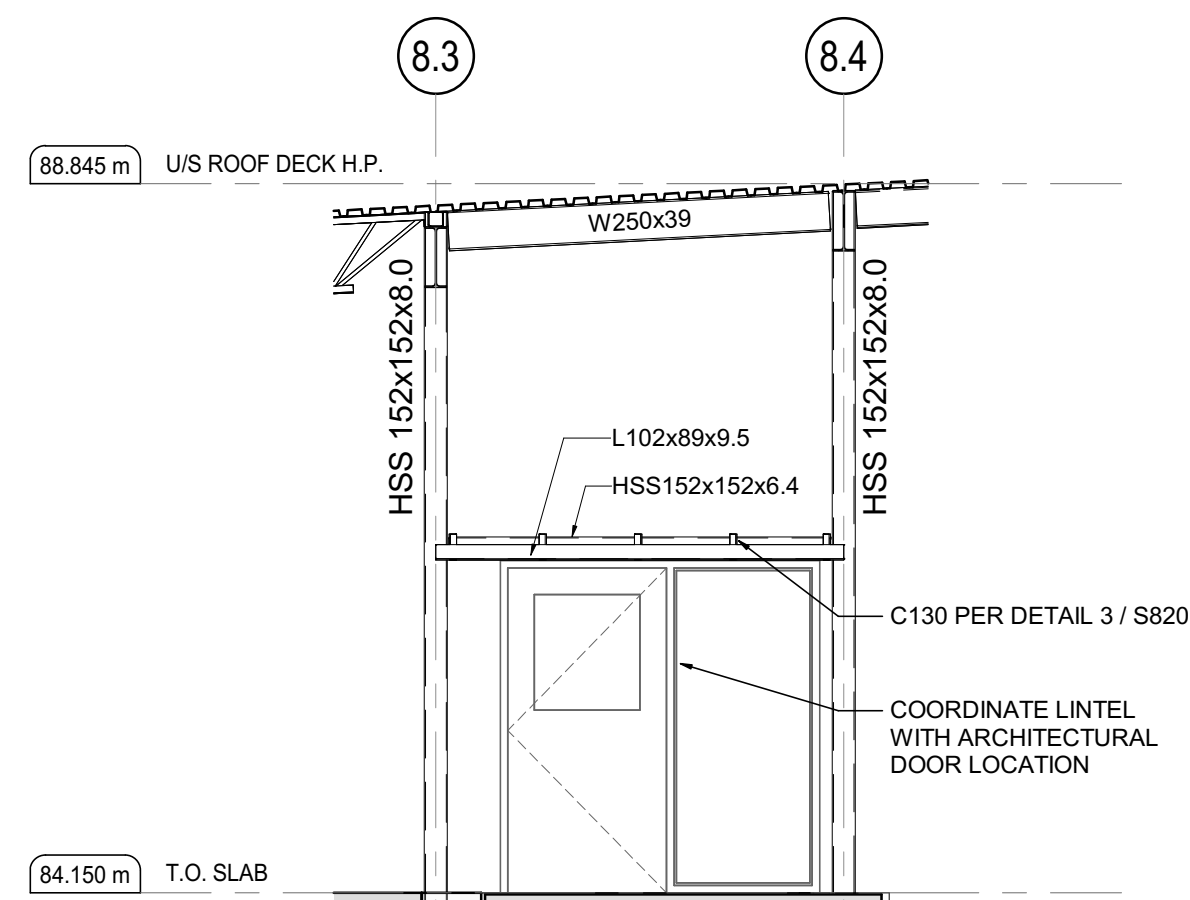
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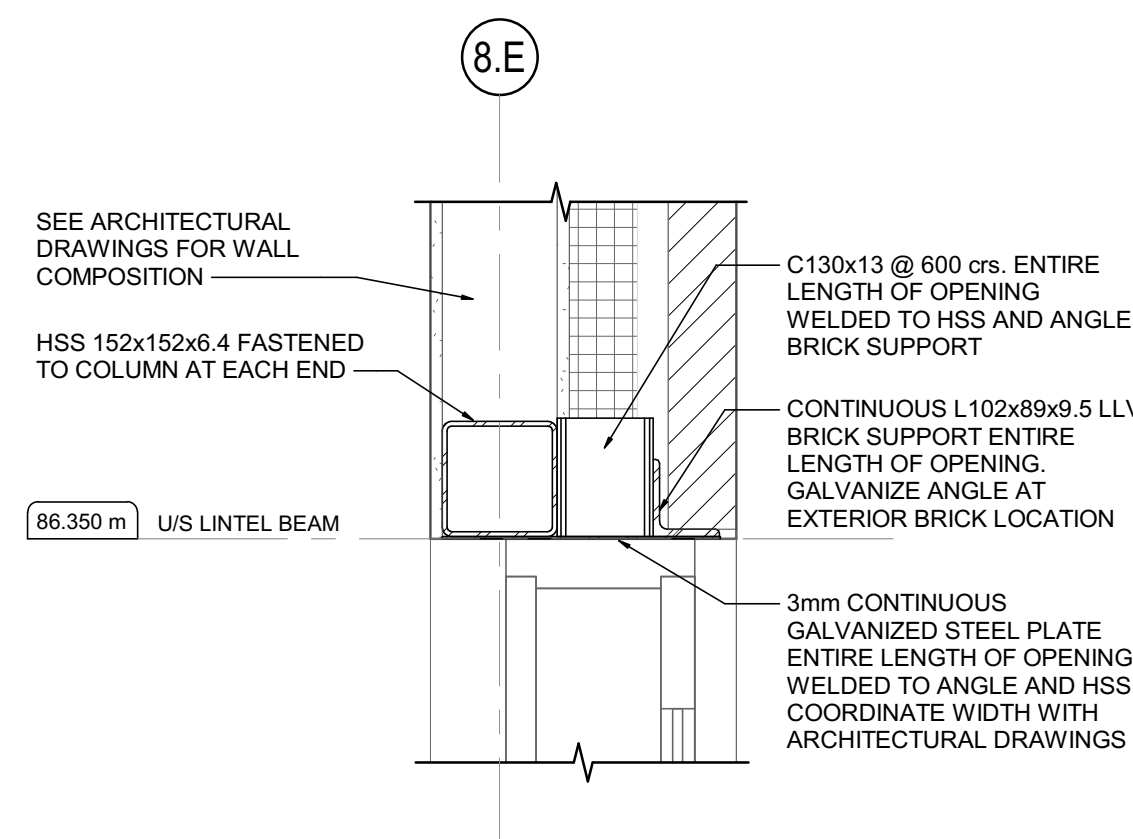
1
S820
BUILDING SECTION
SCALE: 1:50



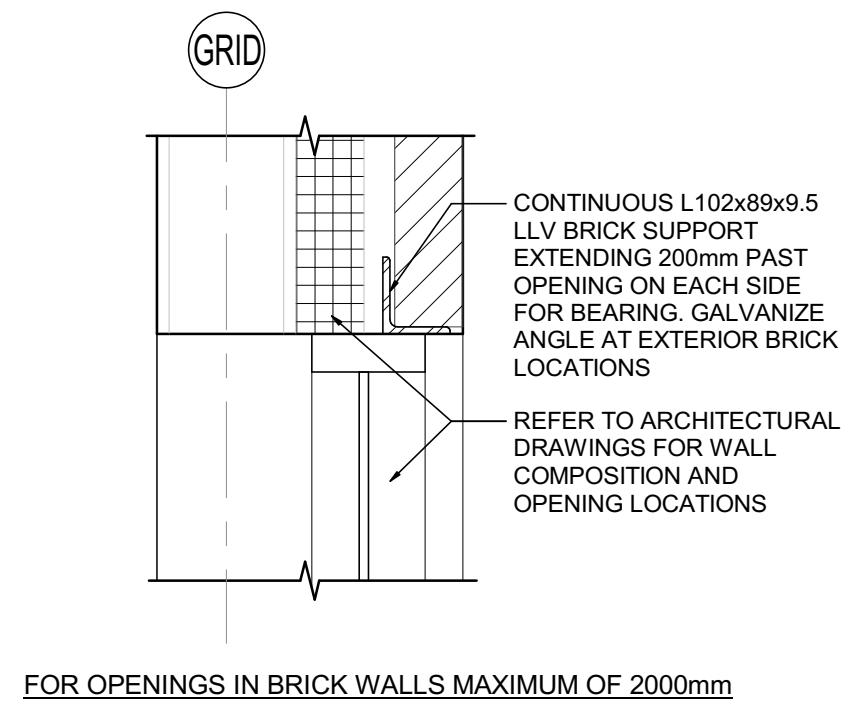
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S820
BUILDING SECTION
SCALE: 1:50



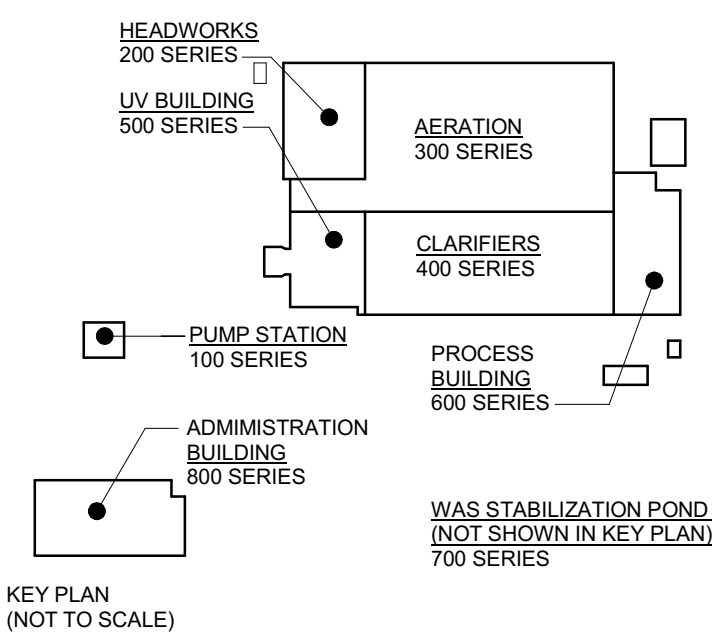
5
S820
STEEL FRAME ELEVATION AT ENTRANCE
SCALE: 1:50



3
S820
LINTEL DETAIL AT ENTRANCE DOOR
SCALE: 1:10



4
S820
TYPICAL LOOSE LINTEL DETAIL ABOVE WINDOWS AND DOORS
SCALE: 1:10



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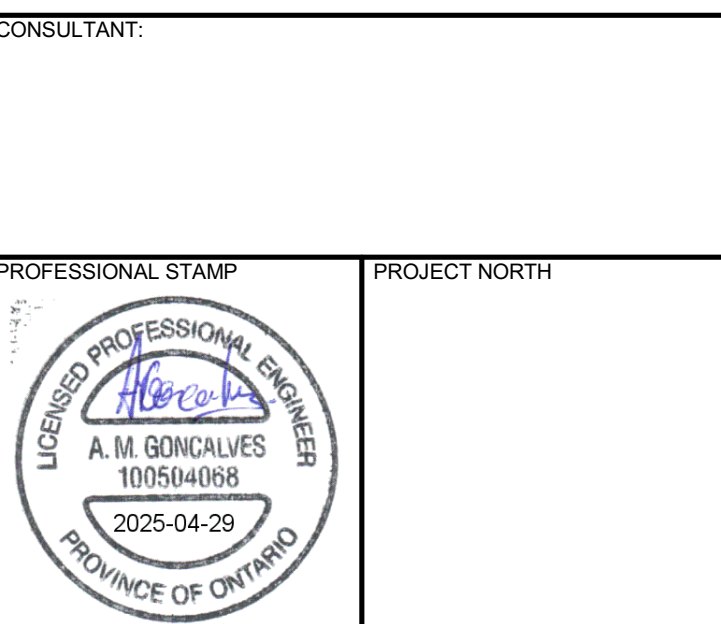
0	ISSUED FOR TENDER	25/04/25
No.	ISSUE / REVISION	DD/MM/YY

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SCALE: As indicated



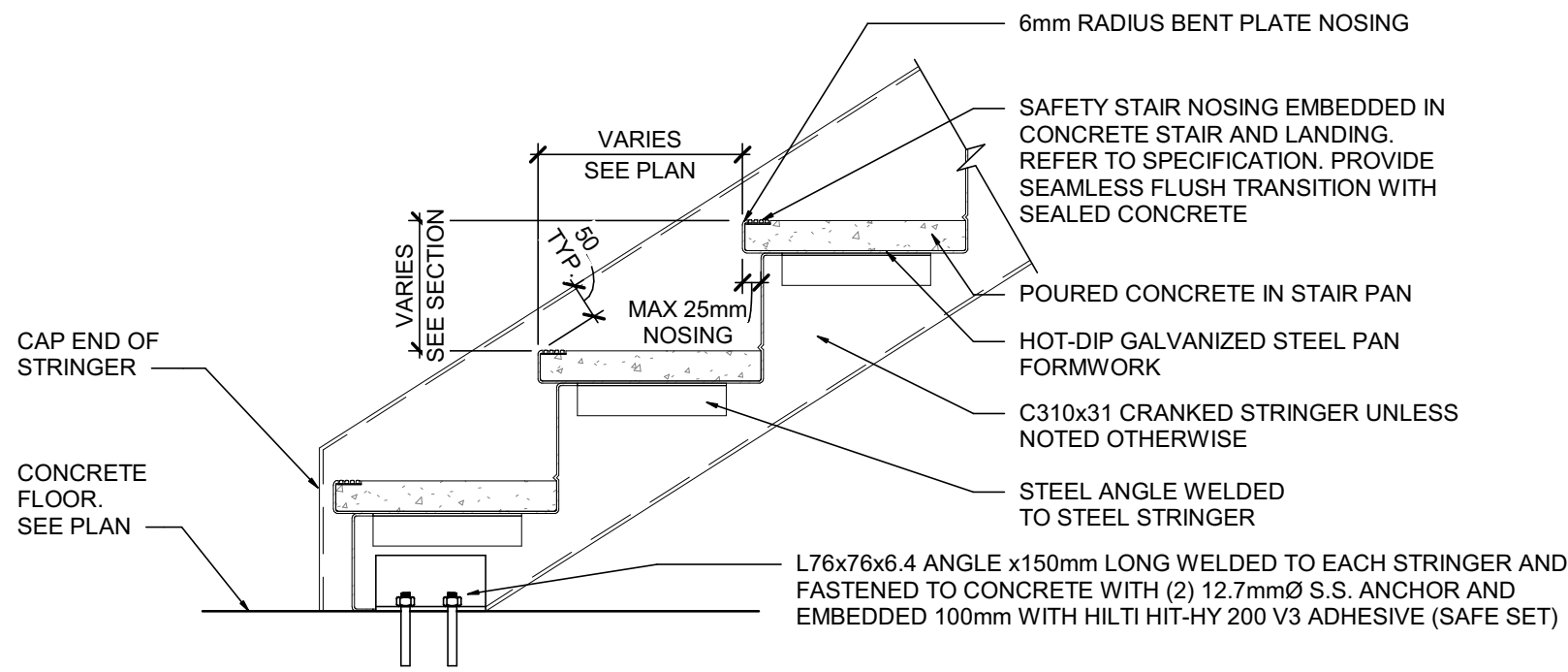
CONSULTANT:
J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS



PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
STRUCTURAL ADMINISTRATION BUILDING SECTIONS AND DETAILS

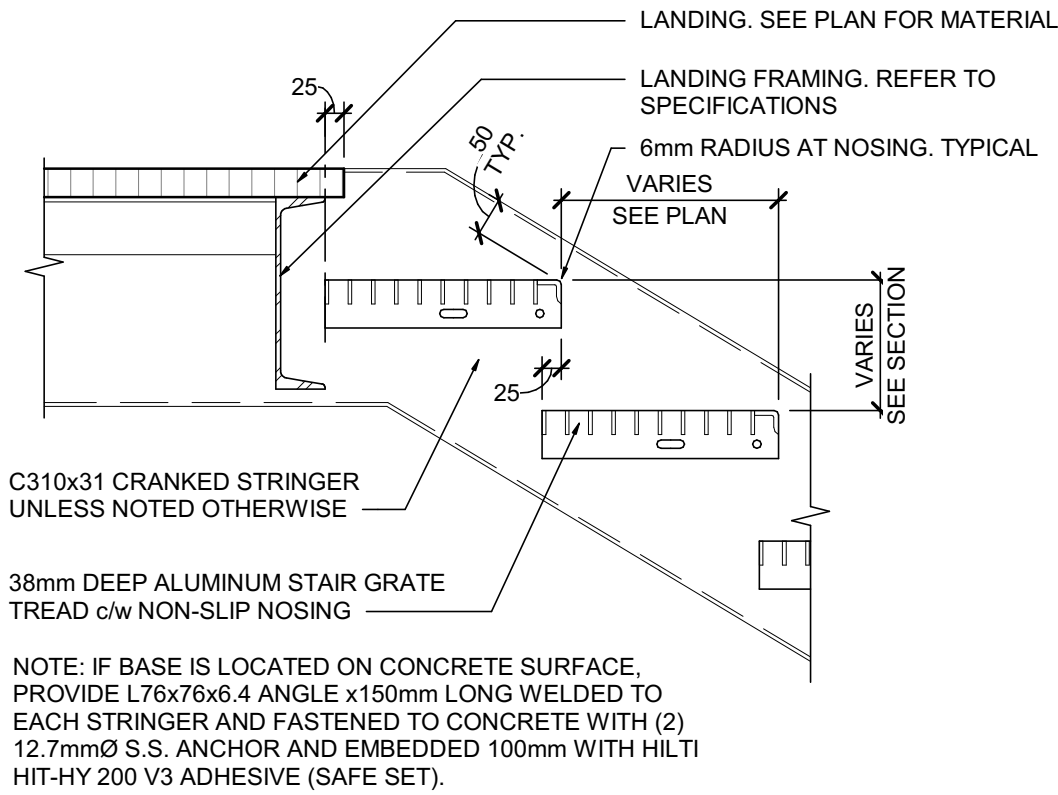
DESIGN: CWD	DRAWING #:
DRAWN: JIC	S820
CHECKED: JMO	
JLR #:	32296



TYPICAL CONCRETE FILLED STEEL PAN
STAIR TREAD DETAIL

1
SA002

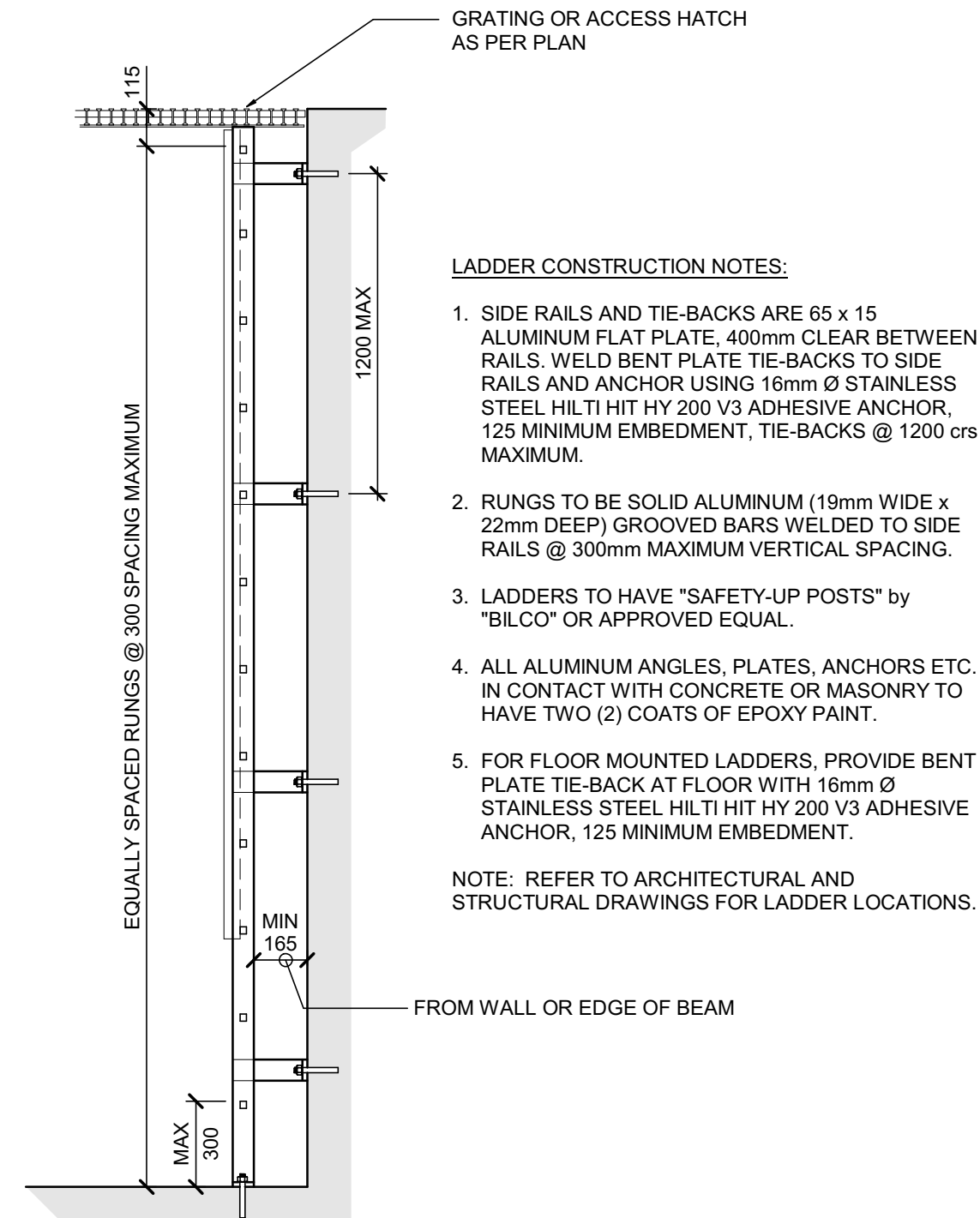
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TYPICAL ALUMINUM GRATING STAIR TREAD
DETAIL

2
SA002

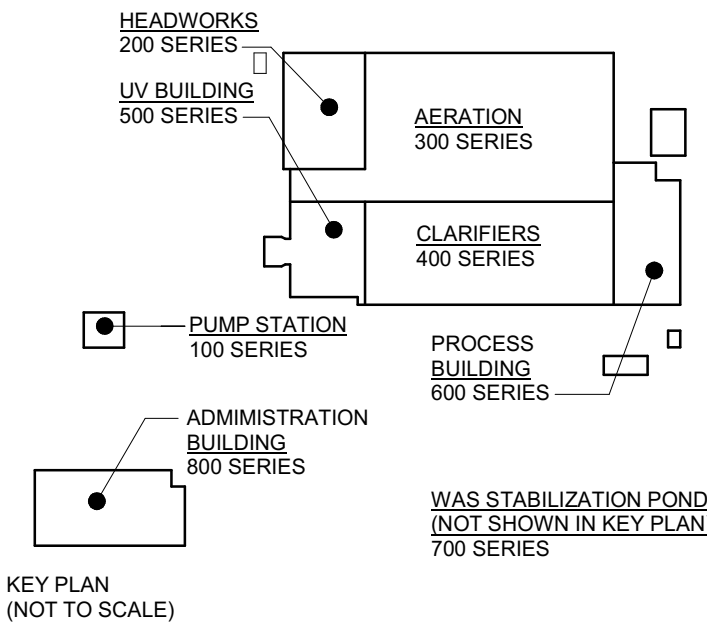
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TYPICAL ALUMINUM ACCESS LADDER

3
SA002

SCALE : 1 : 20



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SCALE: As indicated

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL & ARCHITECTURAL
SITE-WIDE

TYPICAL DETAILS

DESIGN: CD/SC

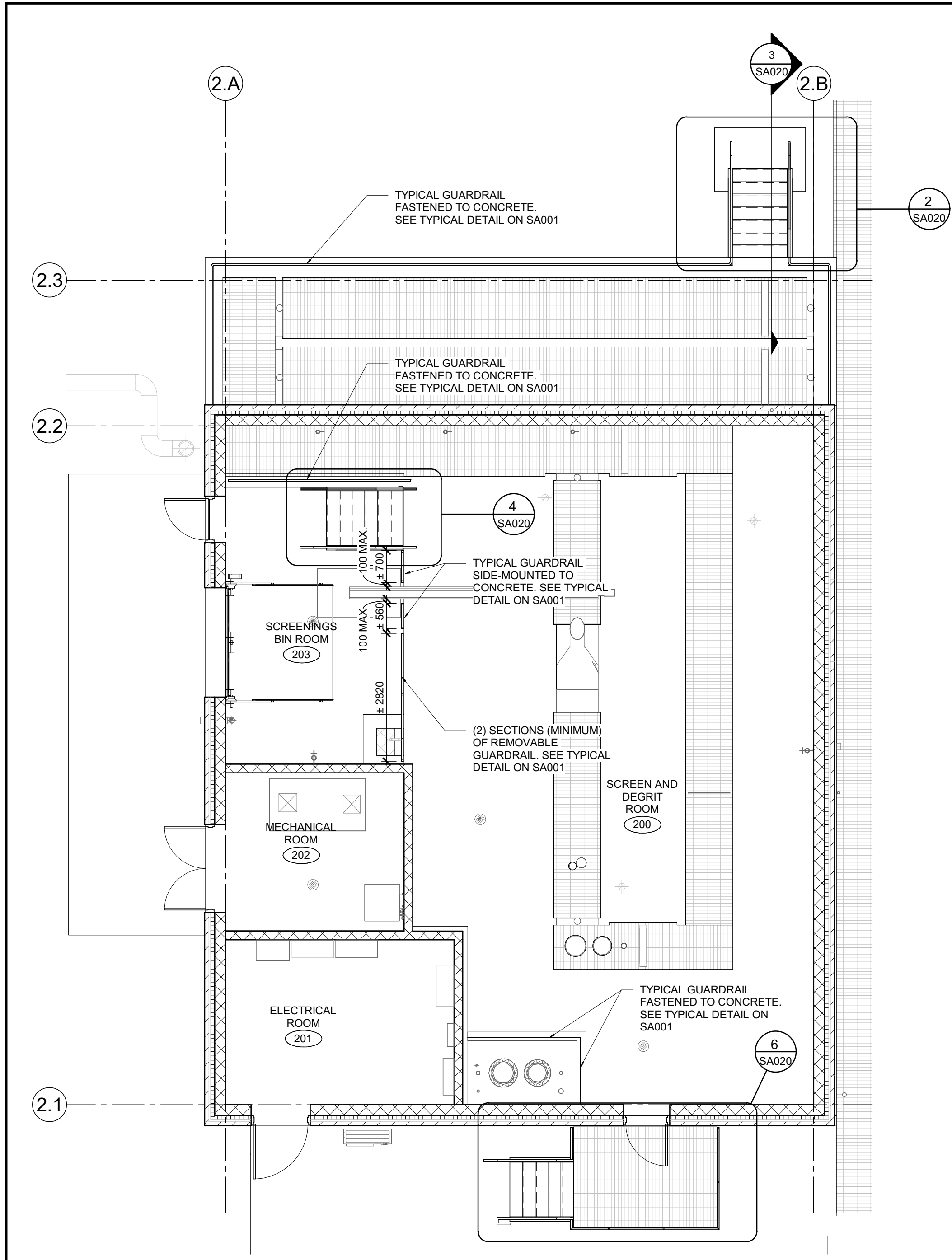
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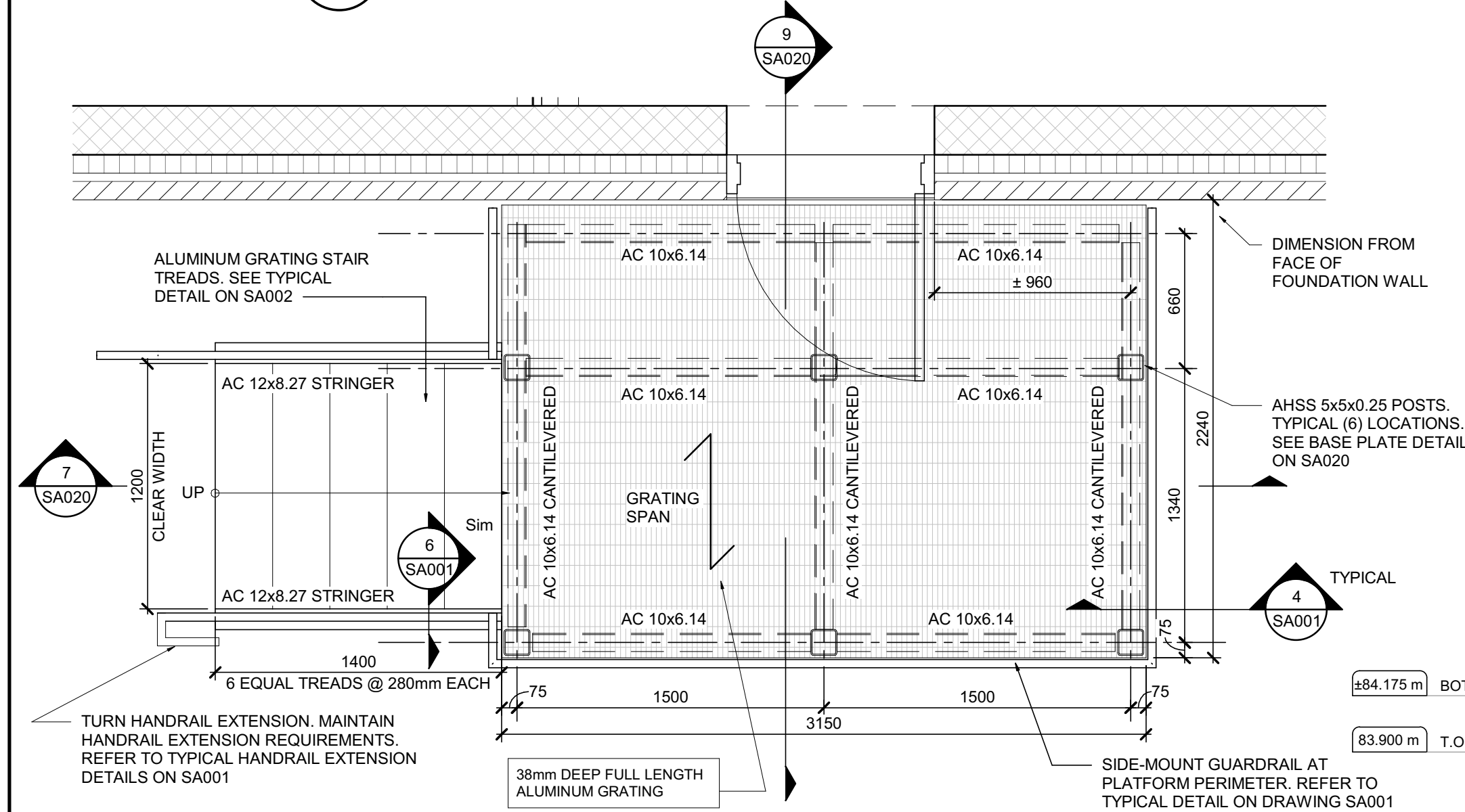
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SA002

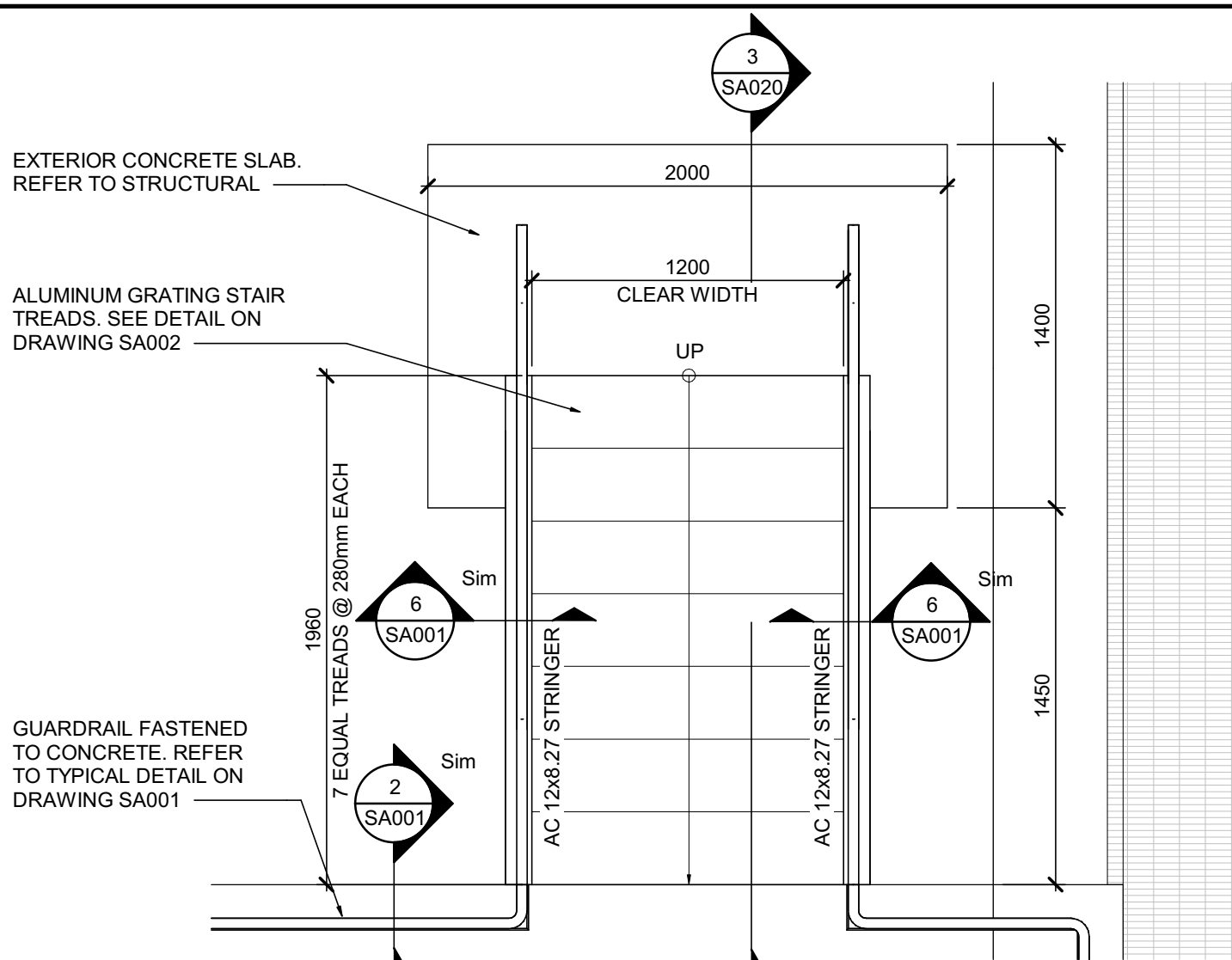
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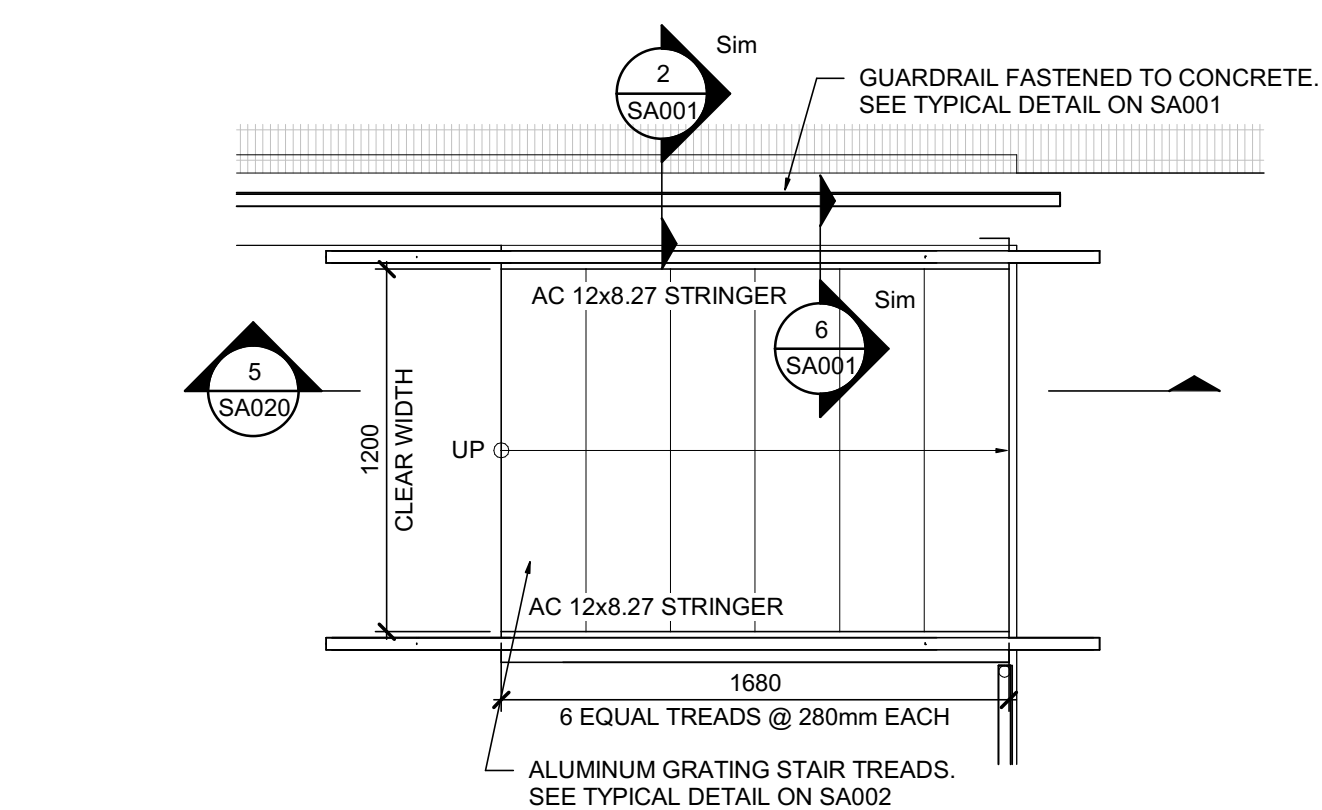
HEADWORKS - KEY PLAN
SCALE: 1:75



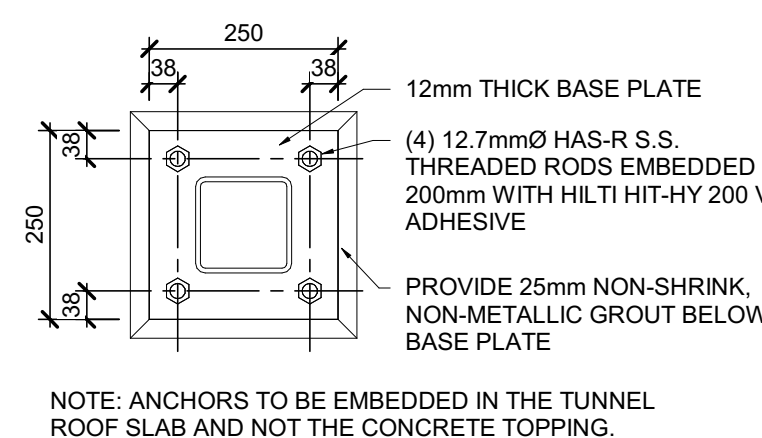
ENLARGED PLAN AT EXTERIOR SOUTH STAIRS
SCALE: 1:25



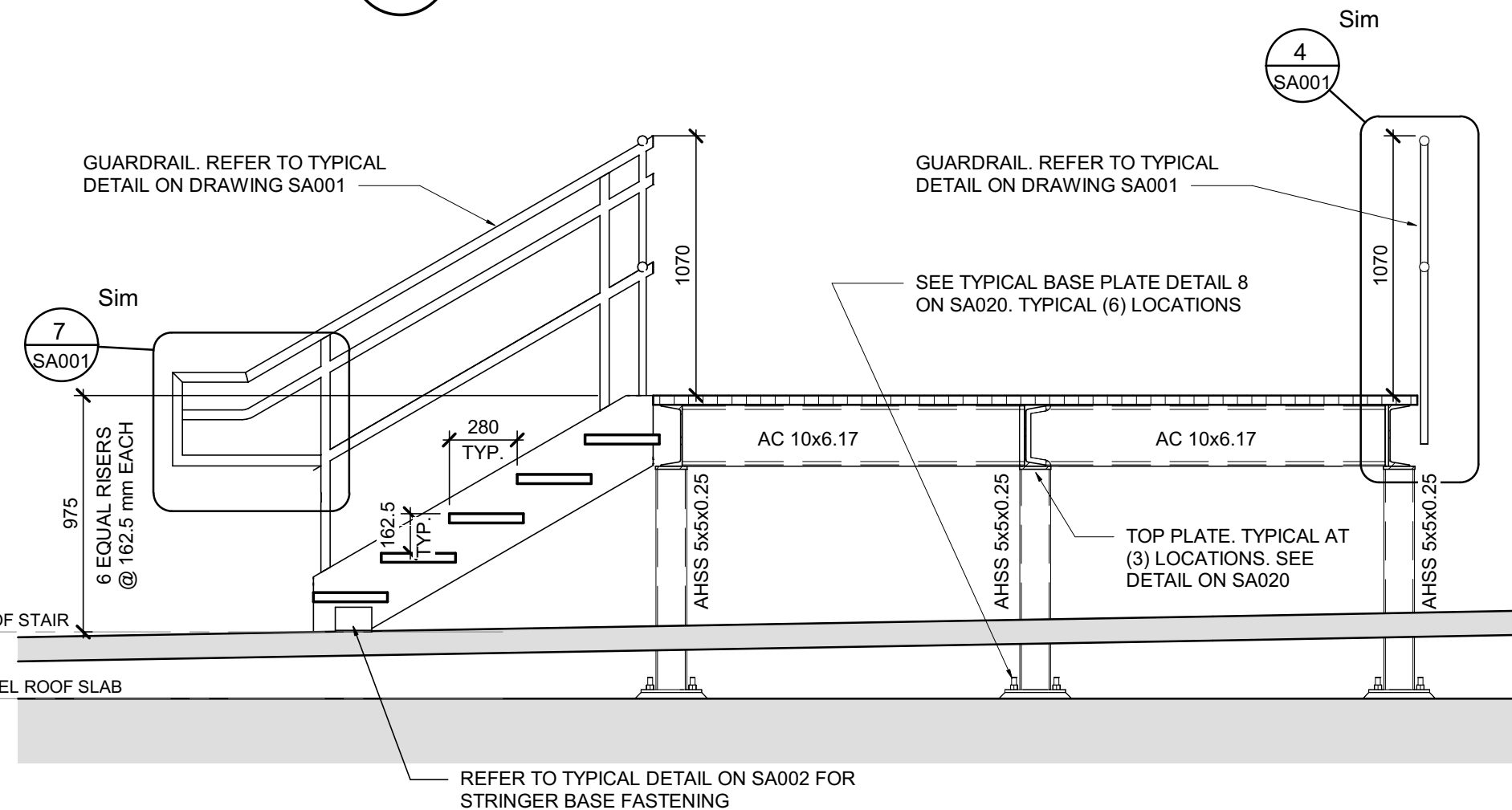
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SCALE: 1:25



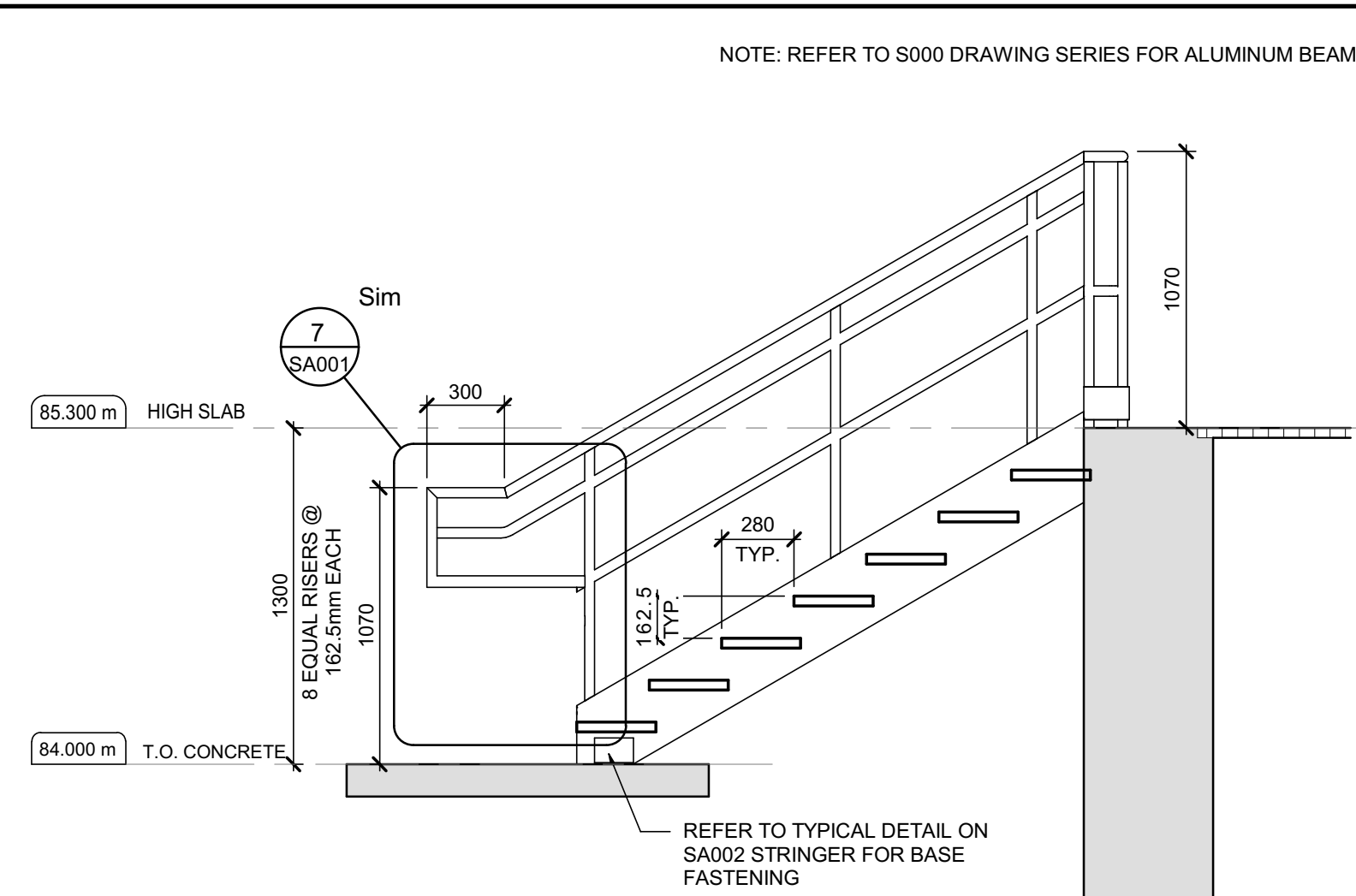
ENLARGED PLAN AT INTERIOR STAIRS
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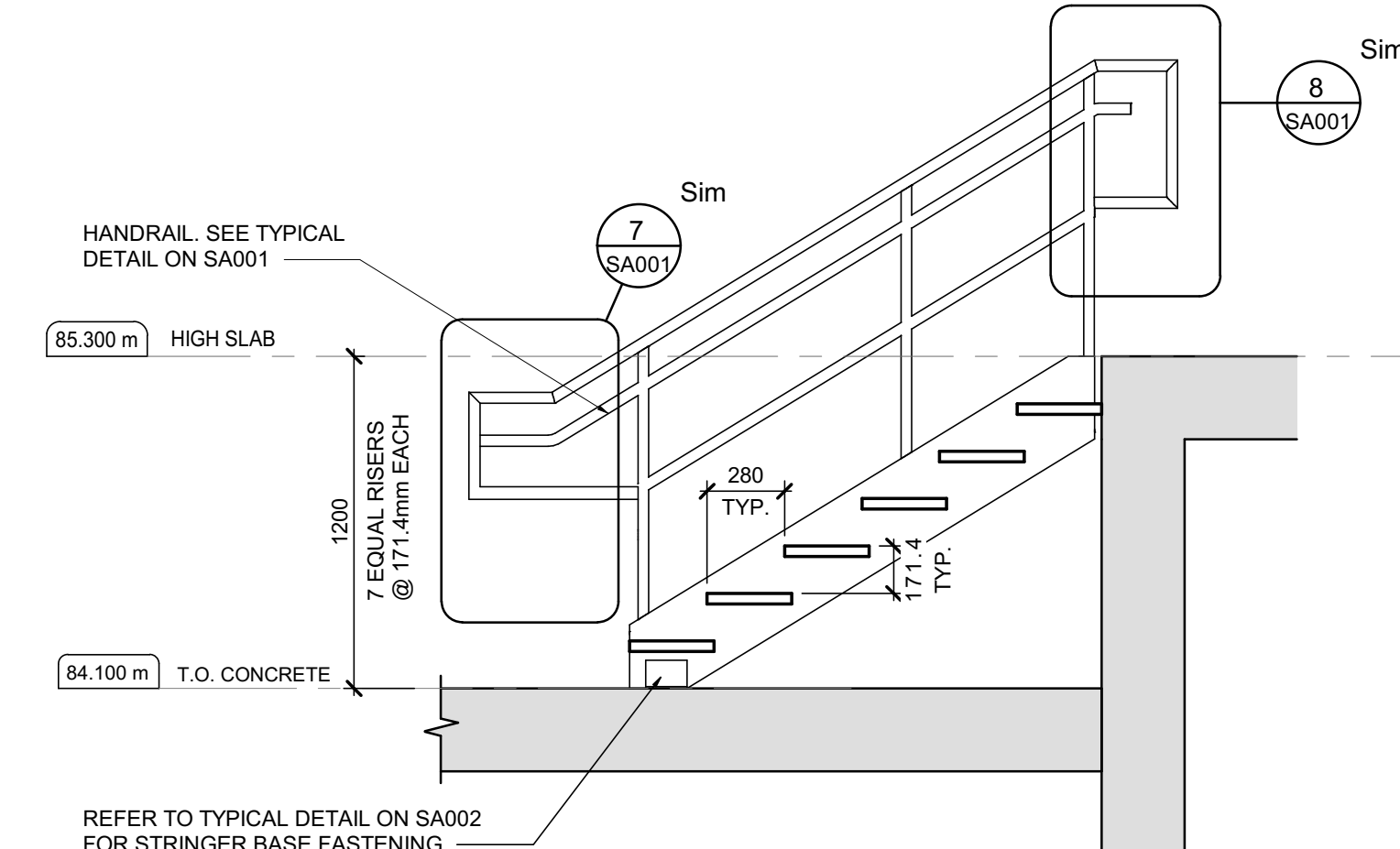
BASE PLATE PLAN DETAIL
SCALE: 1:10



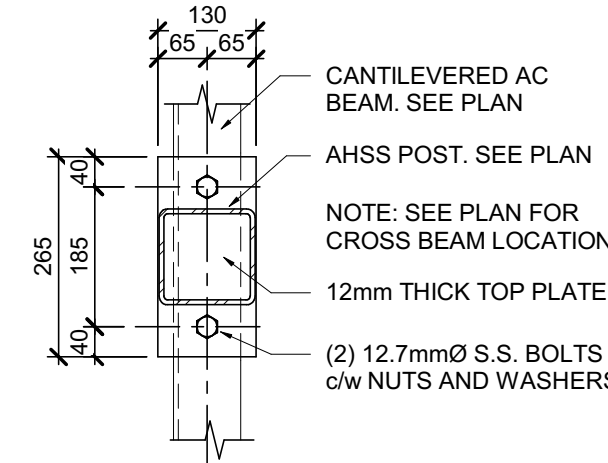
SECTION AT EXTERIOR SOUTH STAIRS
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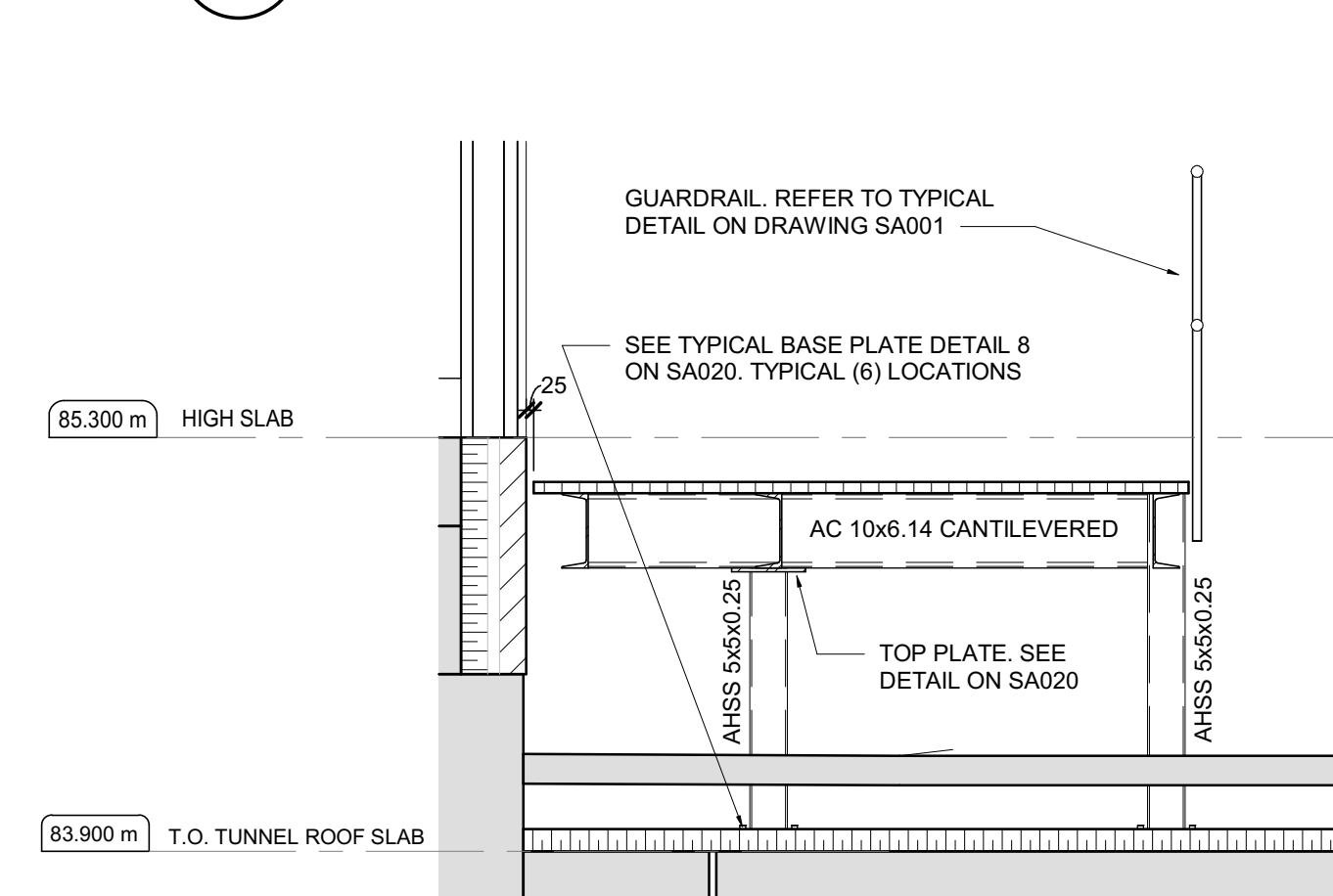
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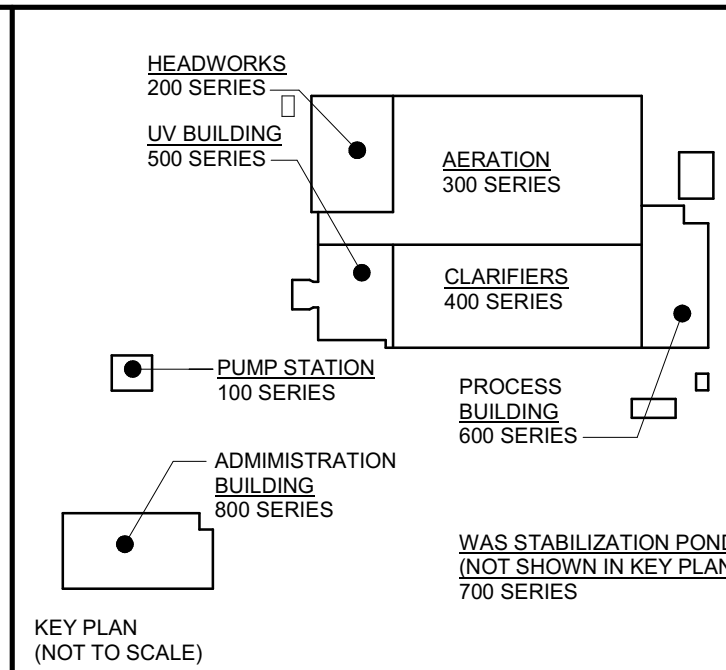
SECTION AT INTERIOR STAIRS
SCALE: 1:25



TOP CONNECTION PLATE PLAN DETAIL
SCALE: 1:10



SECTION AT EXTERIOR SOUTH STAIRS
SCALE: 1:25



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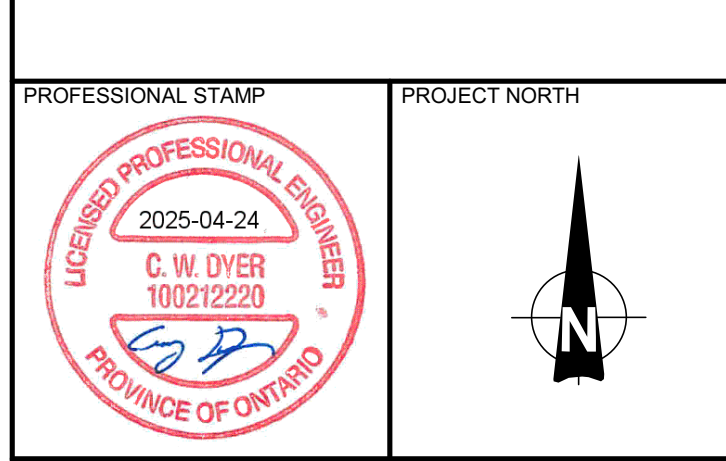
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SCALE: As indicated



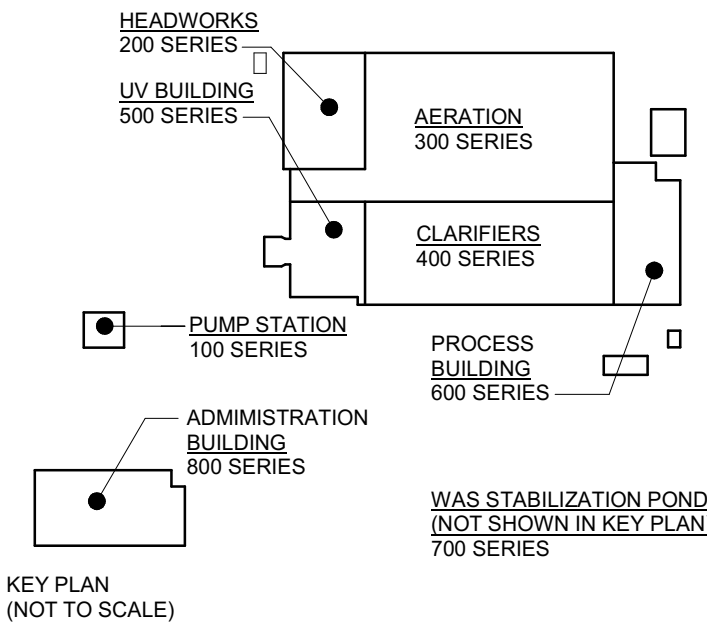
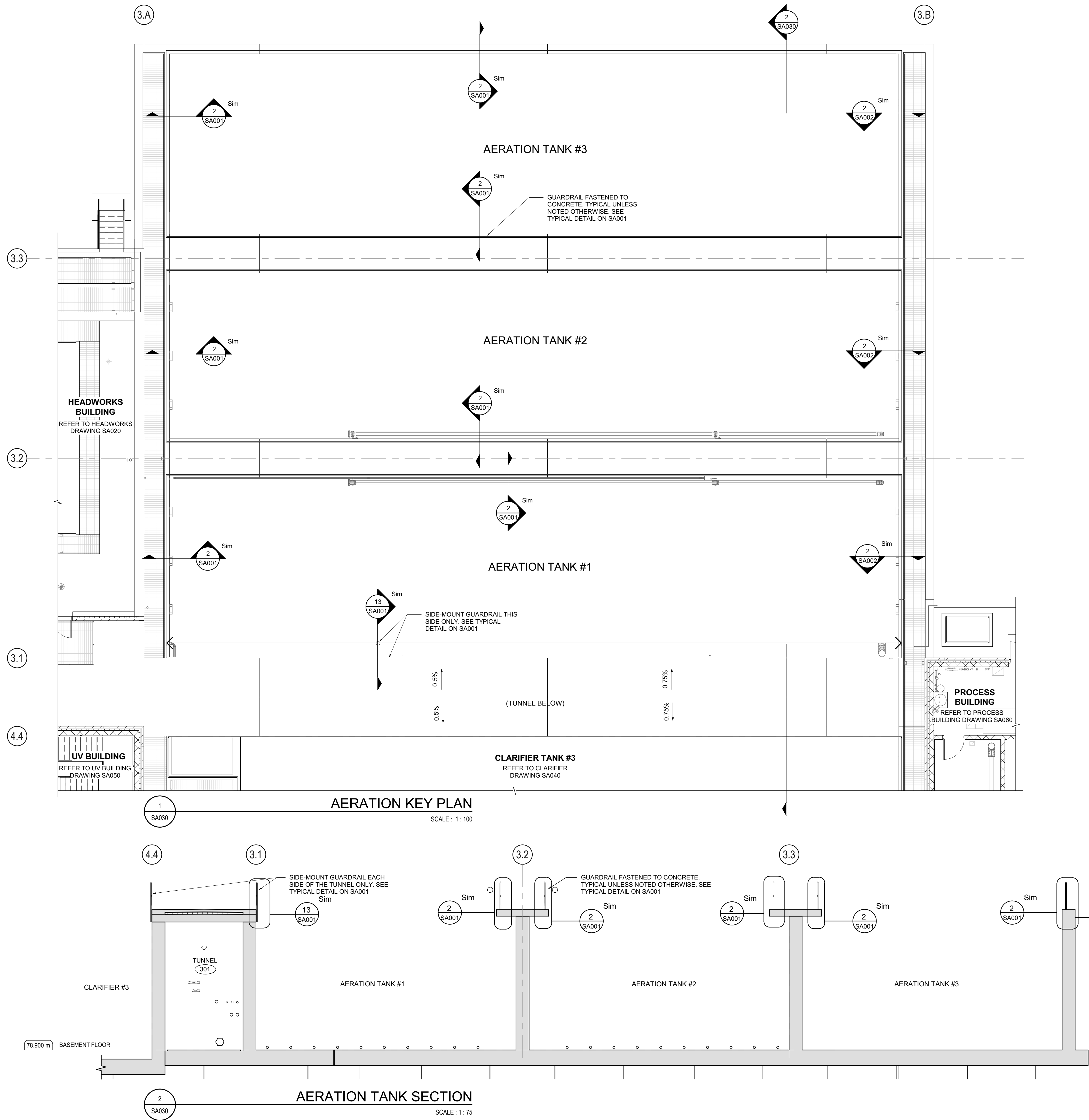
CONSULTANT: jsc@jrichards.ca



PROJECT: BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING: STRUCTURAL & ARCHITECTURAL SITE-WIDE
HEADWORKS

DESIGN: CD/SC	DRAWING #:
DRAWN: JIC/NPH	SA020
CHECKED: JMO/HB	
JLR #:	32296



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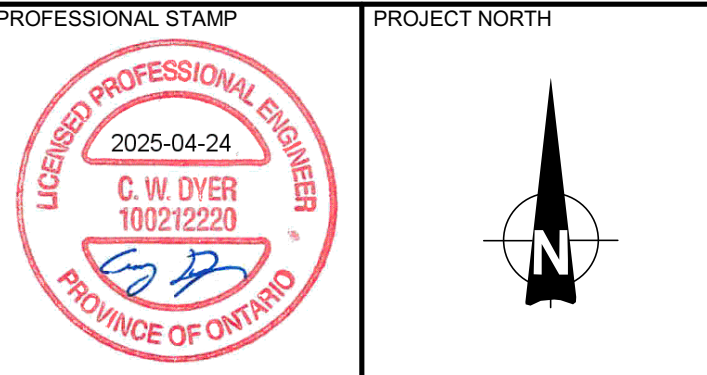
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CONSULTANT: www.jrichards.ca



CONSULTANT:



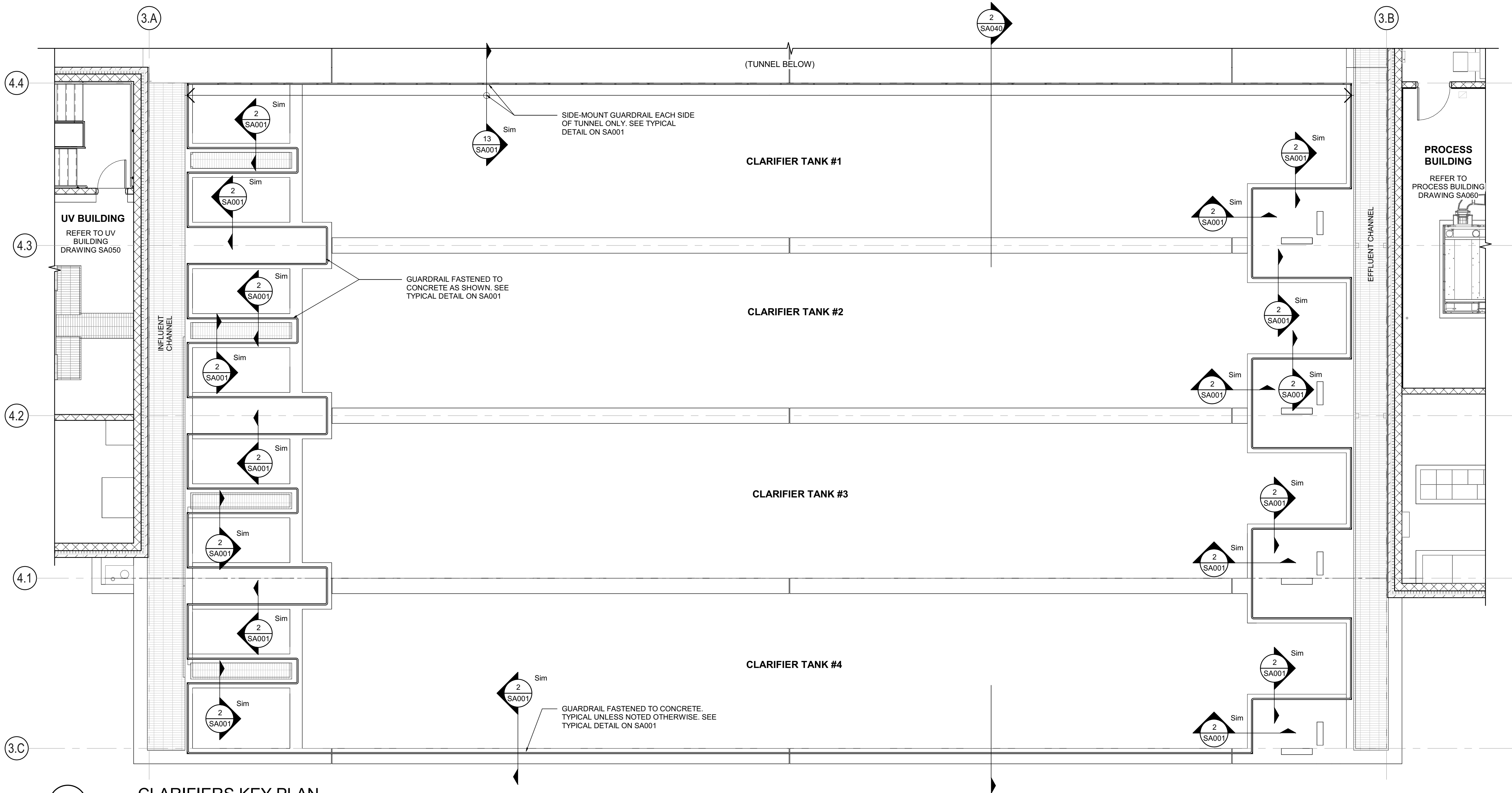
PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

STRUCTURAL & ARCHITECTURAL SITE-WIDE AERATION

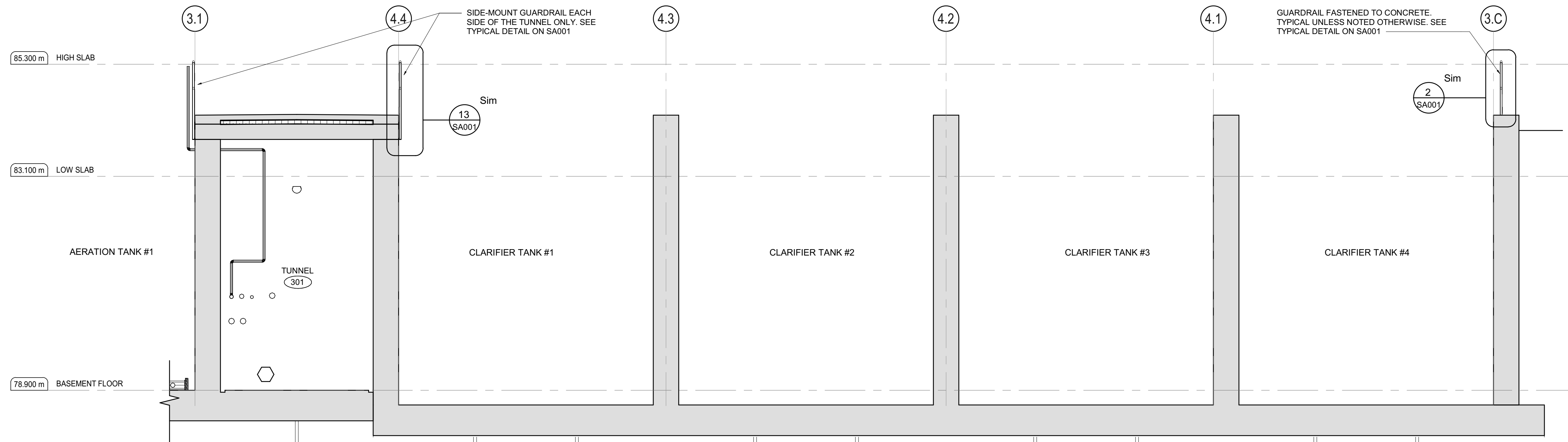
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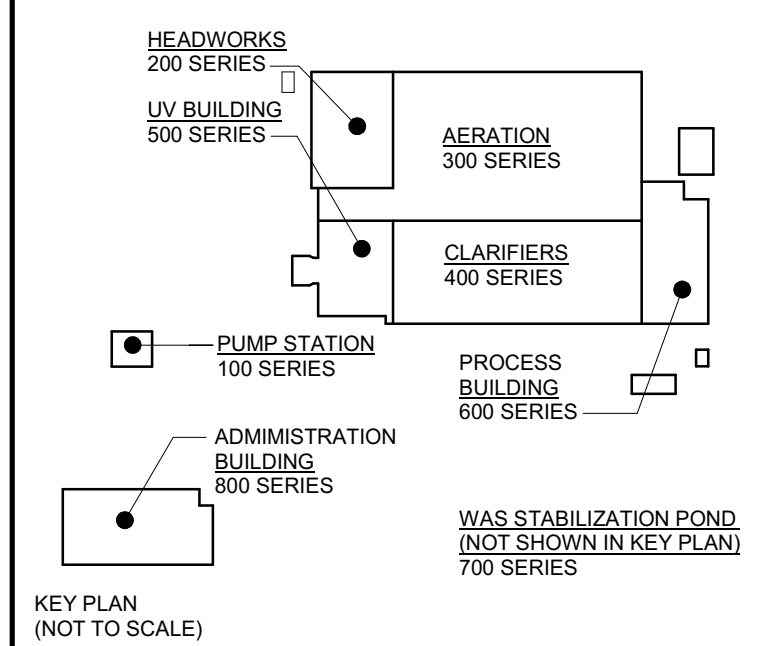
1
SA040

CLARIFIERS KEY PLAN
SCALE: 1:75



2
SA040

CLARIFIERS SECTION
SCALE: 1:50



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SCALE: As indicated



CONSULTANT:
J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP: 2025-04-24, C.W. DYER, 100212220, PROVINCE OF ONTARIO

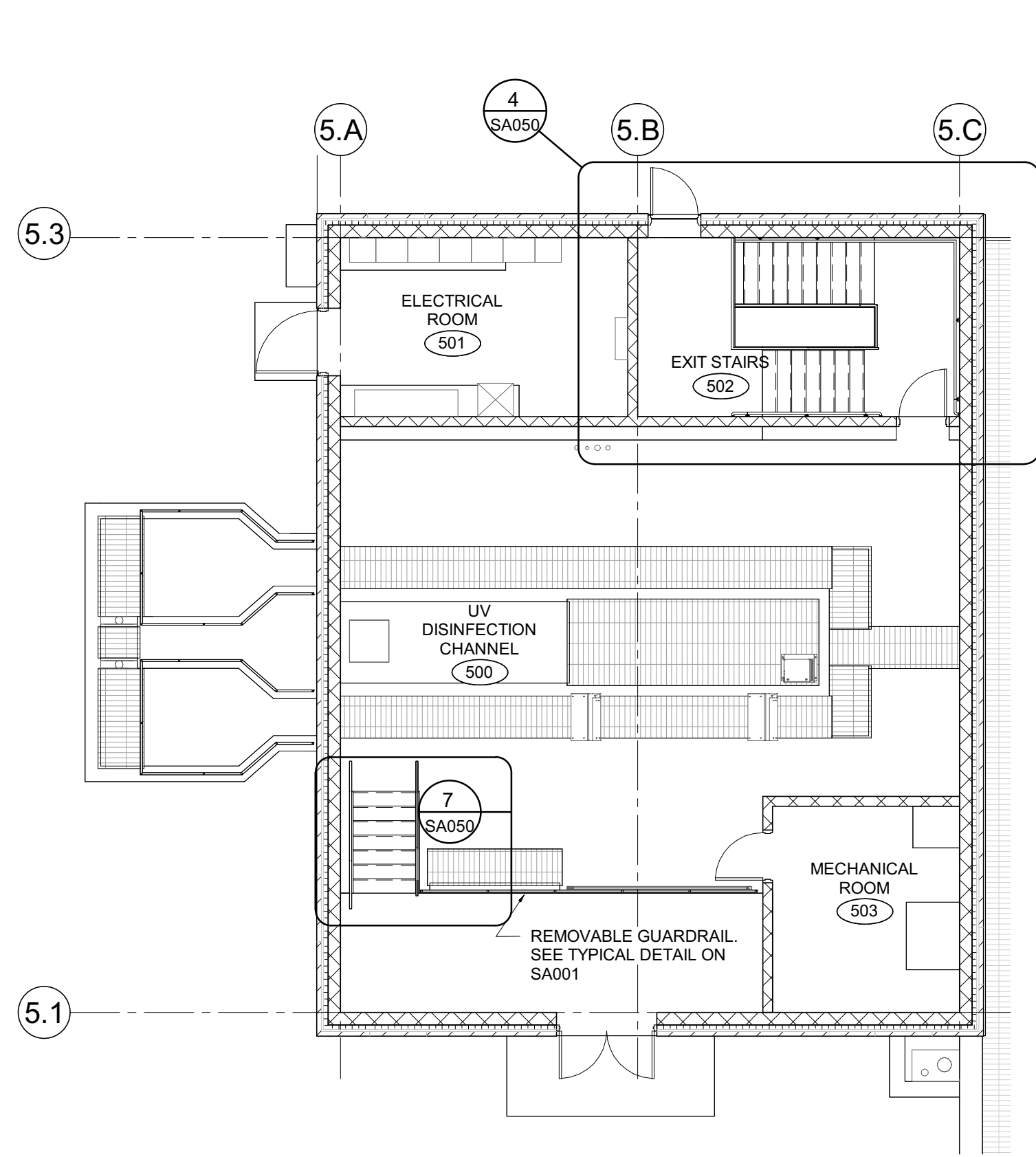
PROJECT NORTH: [North Arrow]

PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

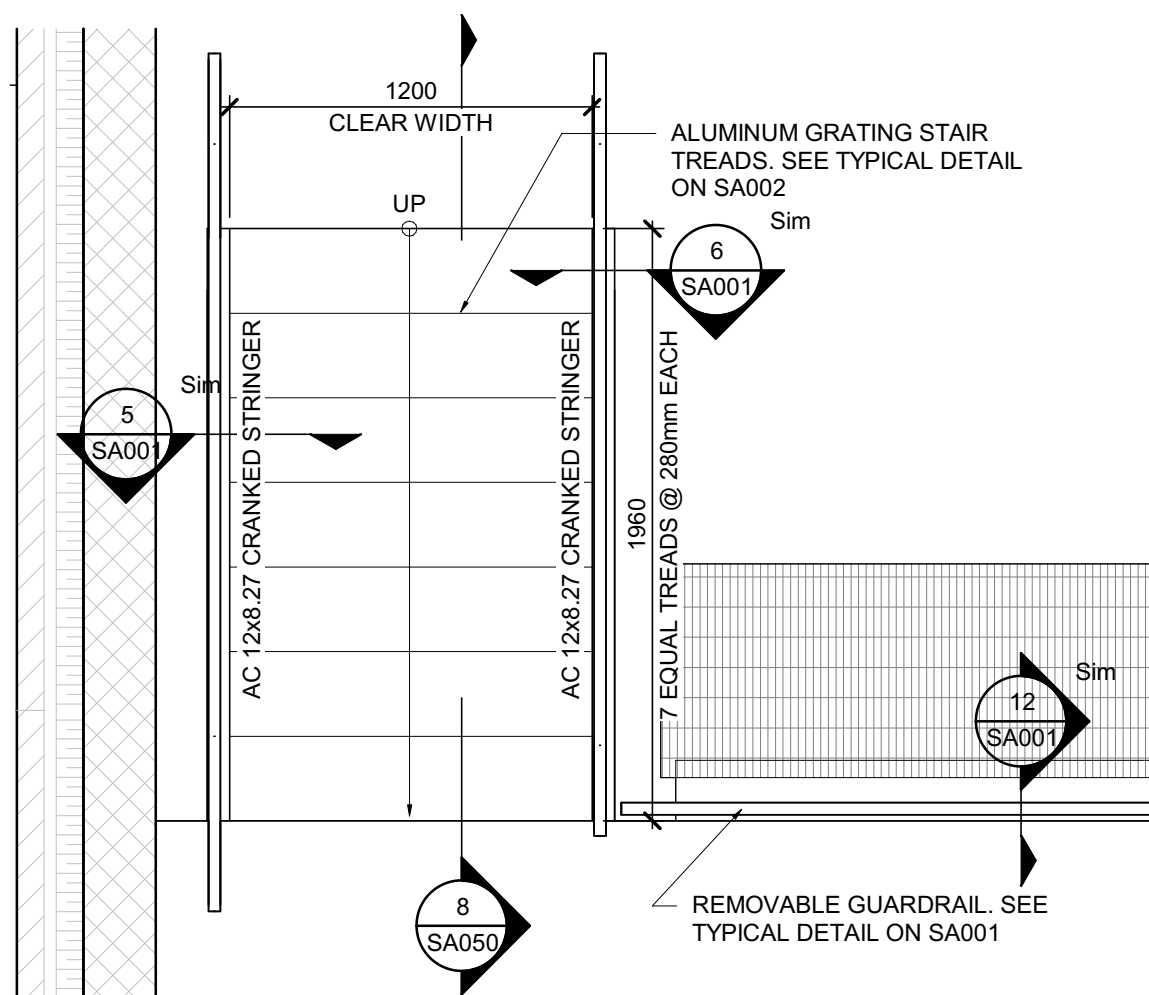
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STRUCTURAL & ARCHITECTURAL SITE-WIDE CLARIFIERS

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DRAWN: JIC/NPH	SA040
CHECKED: JMO/HB	
JLR #: 32296	

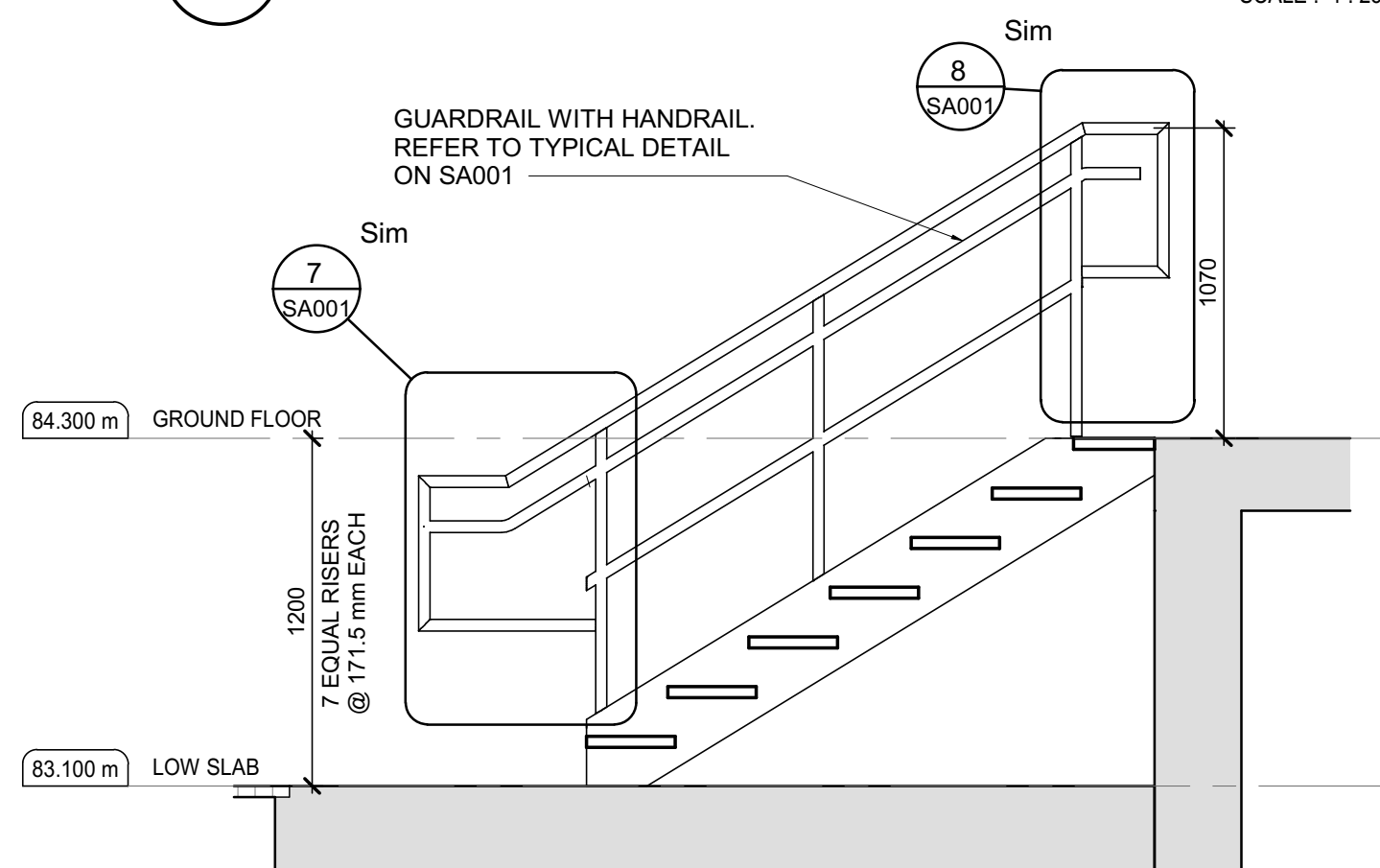
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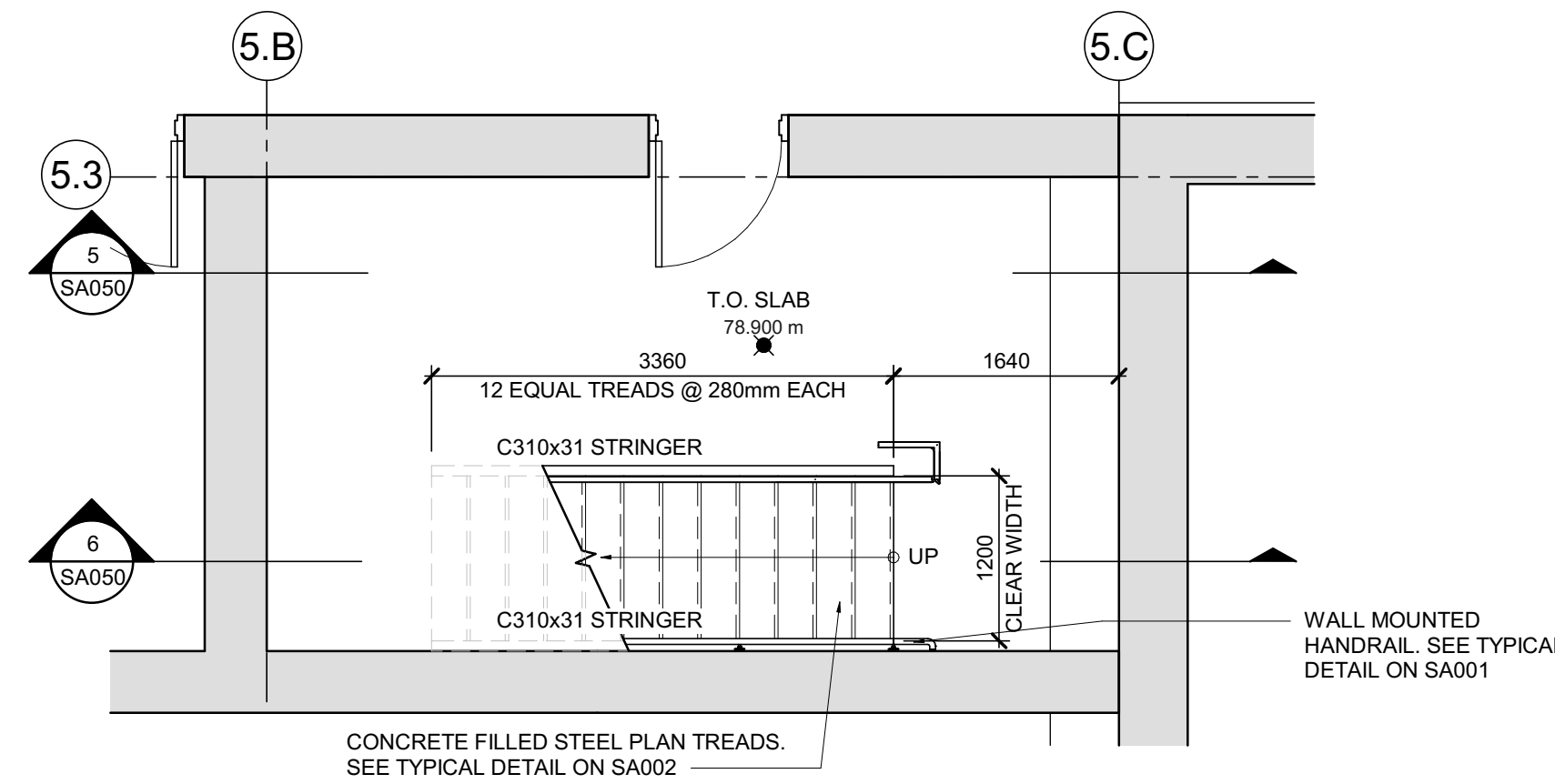
UV BUILDING - KEY PLAN
SCALE : 1 : 100



ENLARGED PLAN AT INTERIOR STAIRS
SCALE : 1 : 25

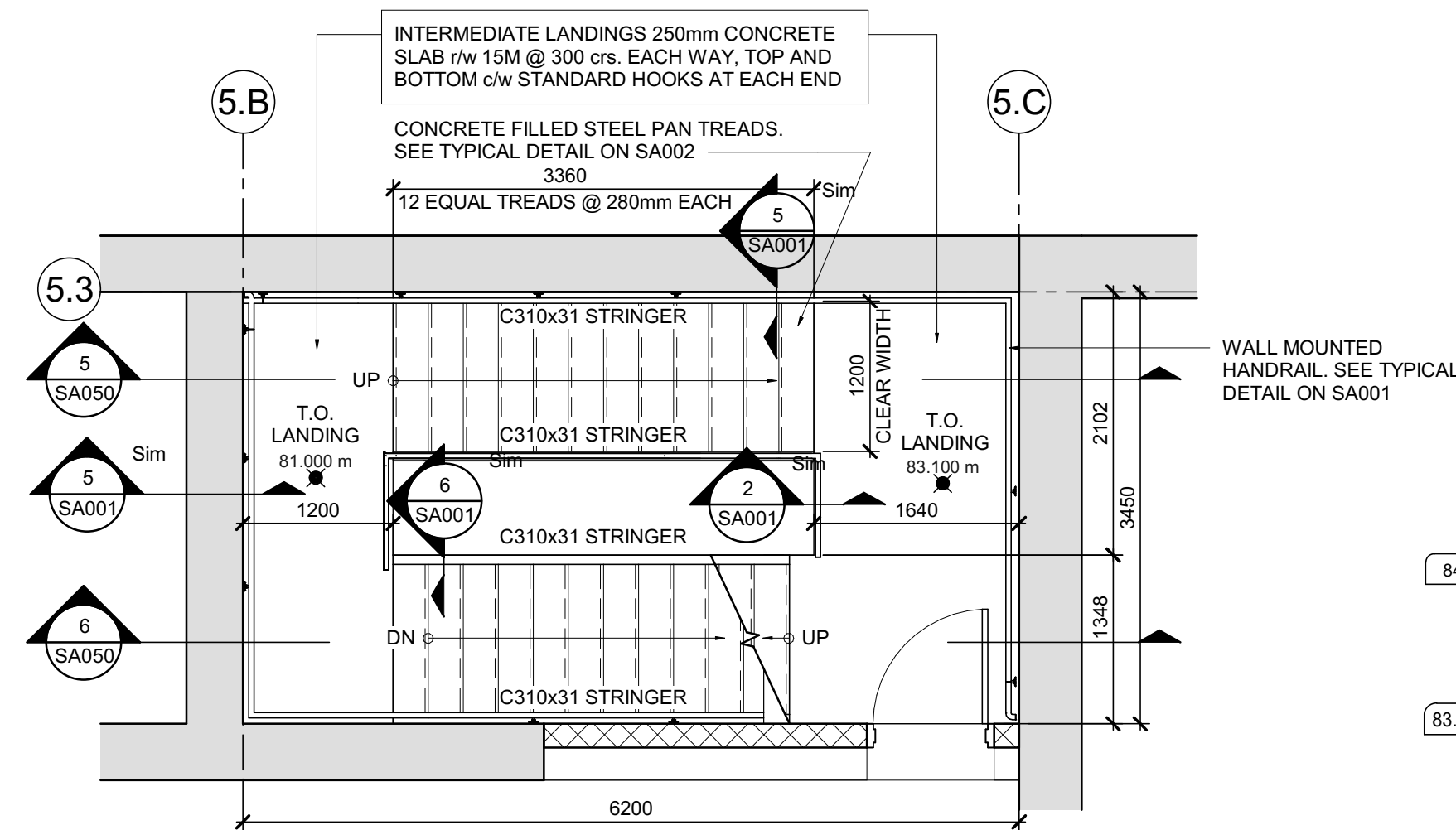


SECTION AT INTERIOR STAIRS
SCALE : 1 : 25



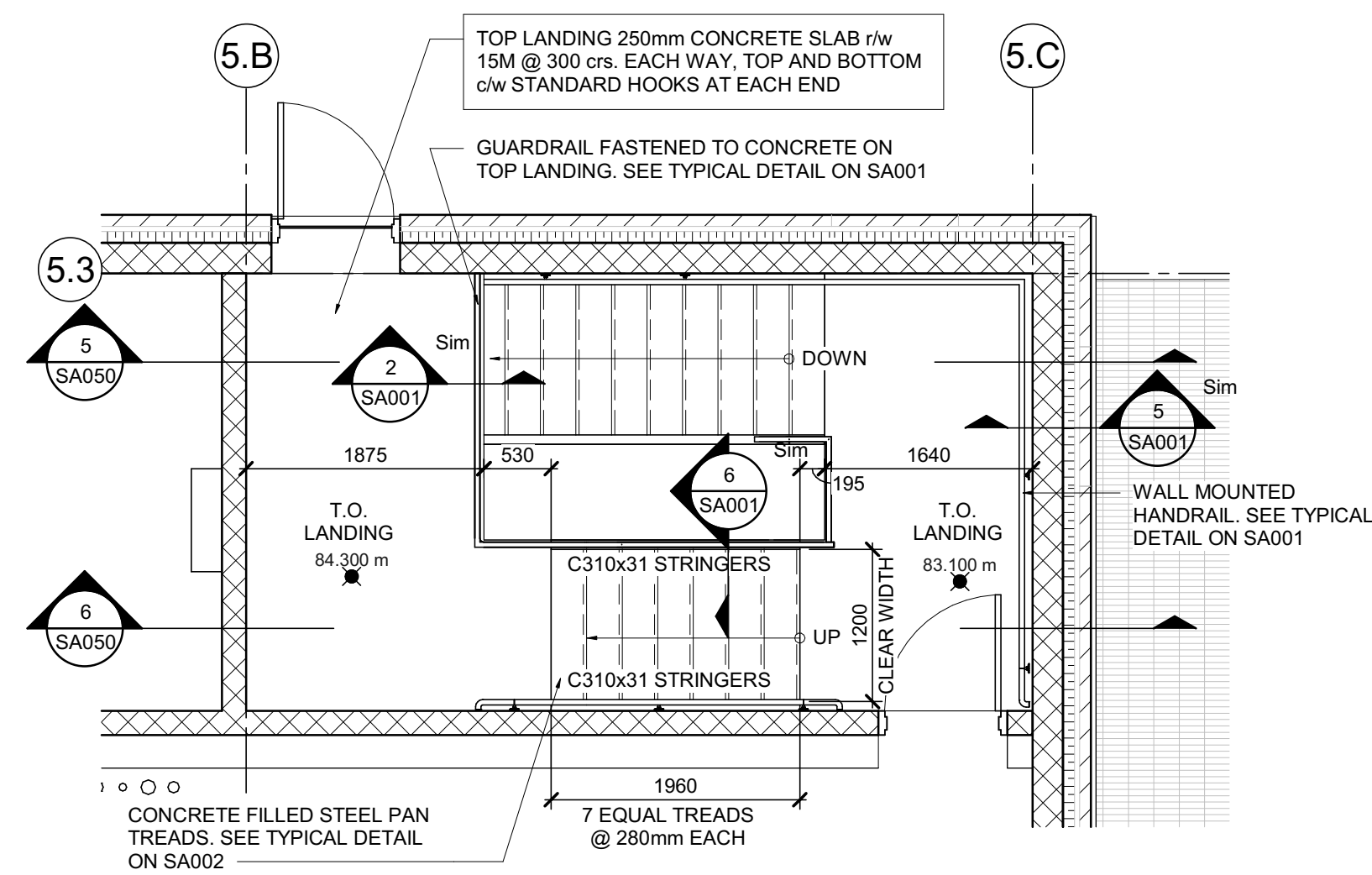
ENLARGED PLAN OF EXIT STAIR AT
BASEMENT LEVEL

SCALE : 1 : 50



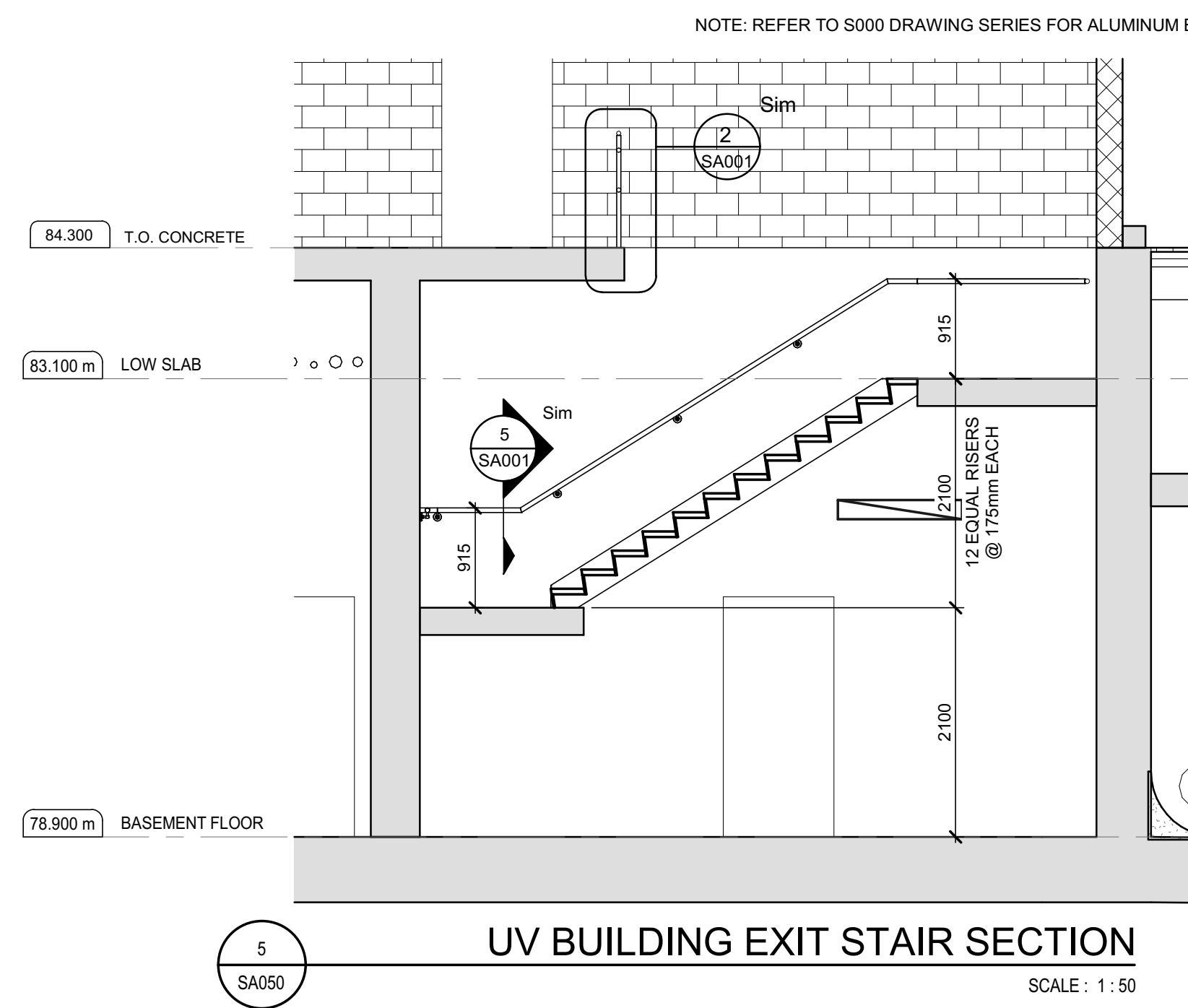
ENLARGED PLAN OF EXIT STAIR AT
INTERMEDIATE LANDINGS

SCALE : 1 : 50



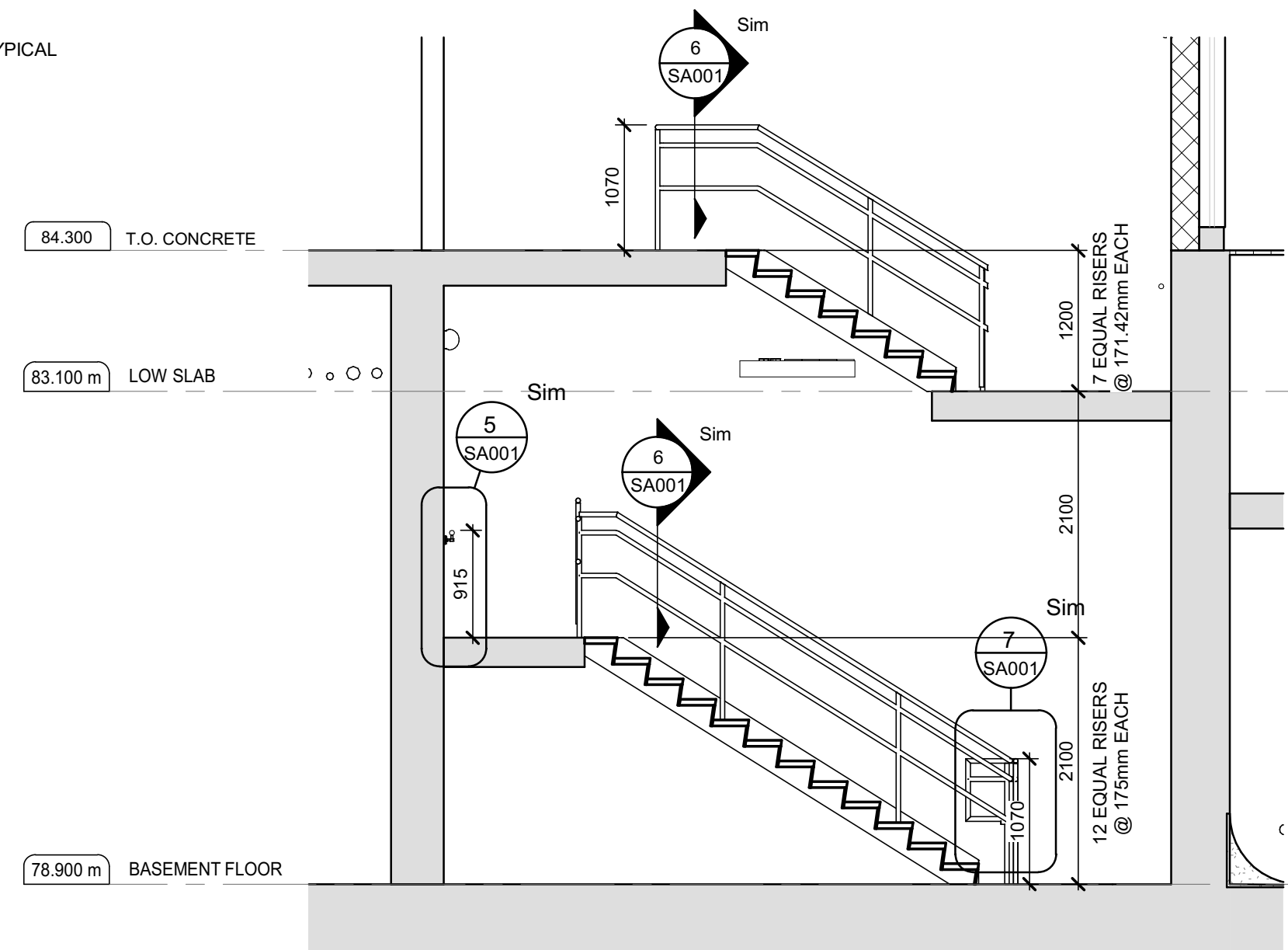
ENLARGED PLAN OF EXIT STAIR AT
GROUND LEVEL

SCALE : 1 : 50



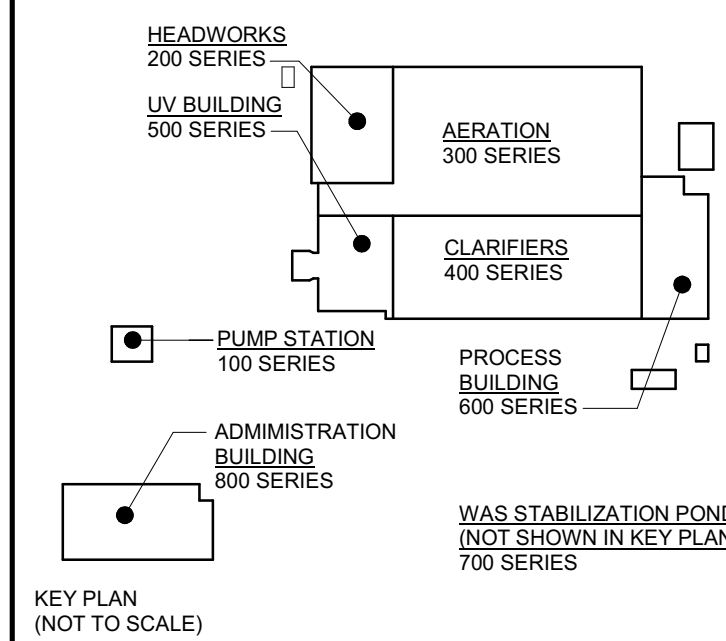
UV BUILDING EXIT STAIR SECTION

SCALE : 1 : 50



UV BUILDING EXIT STAIR SECTION

SCALE : 1 : 50



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SCALE: As indicated



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
STRUCTURAL & ARCHITECTURAL
SITE-WIDE

UV BUILDING

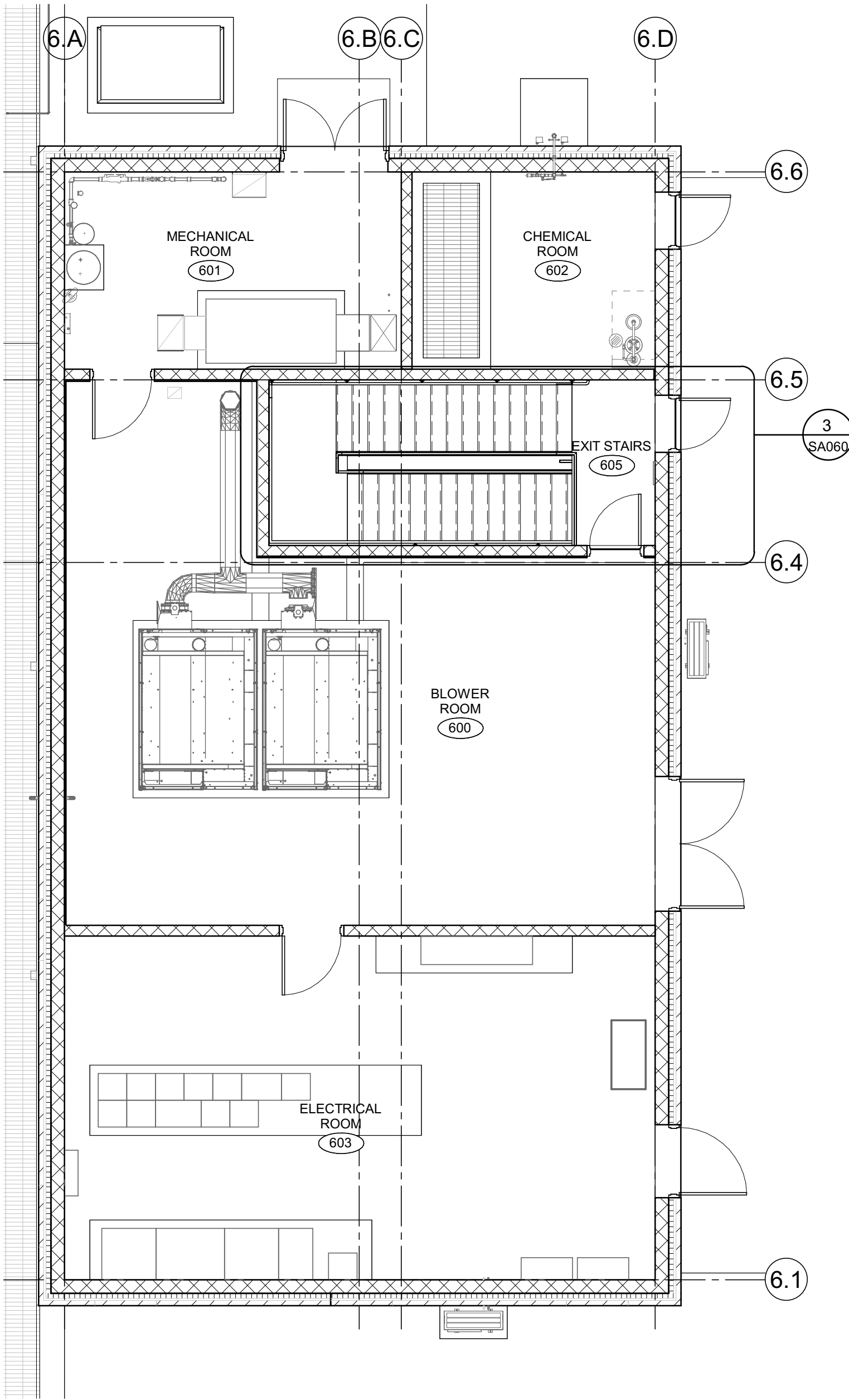
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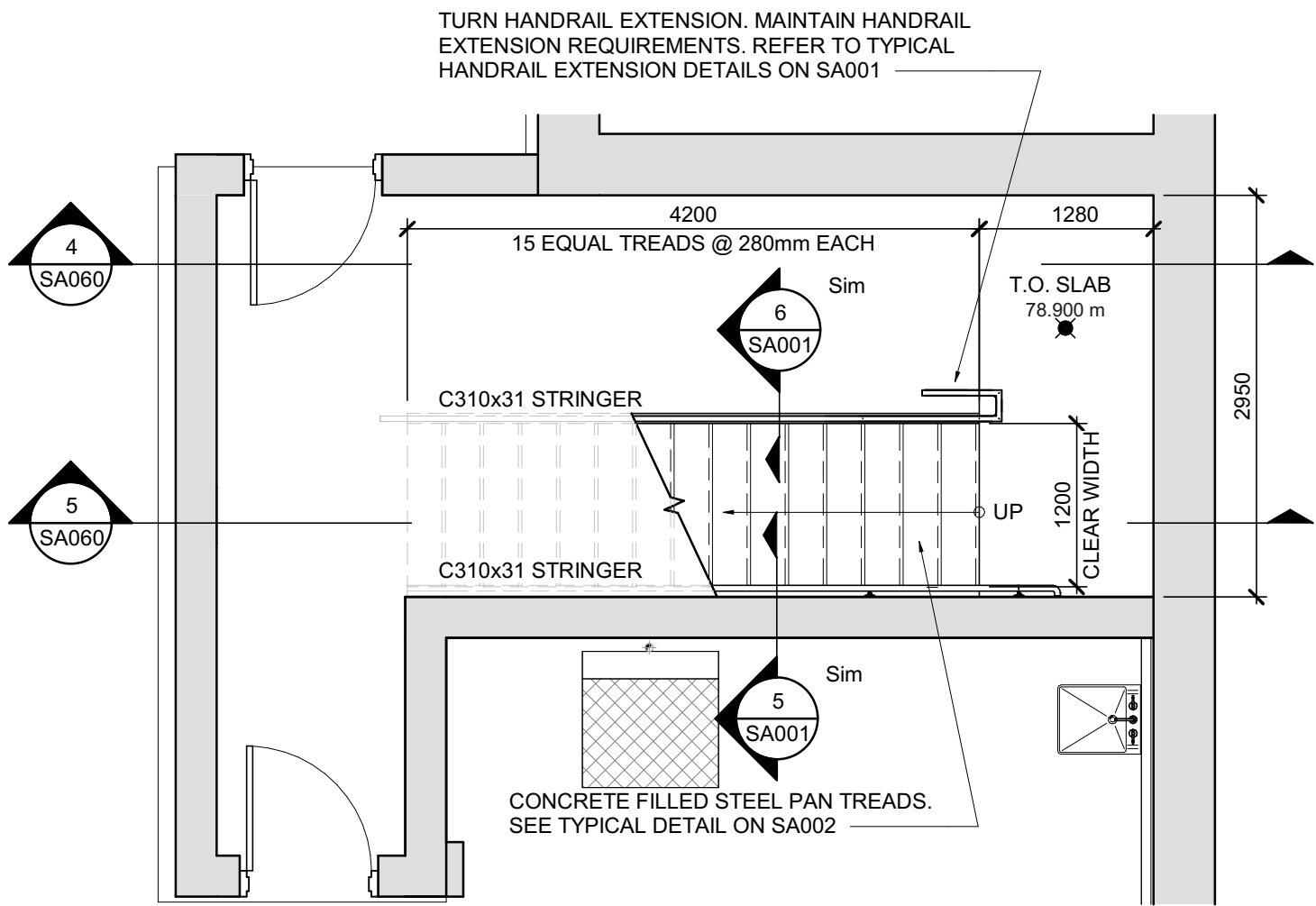
JLR #: 32296

DRAWING #:
SA050



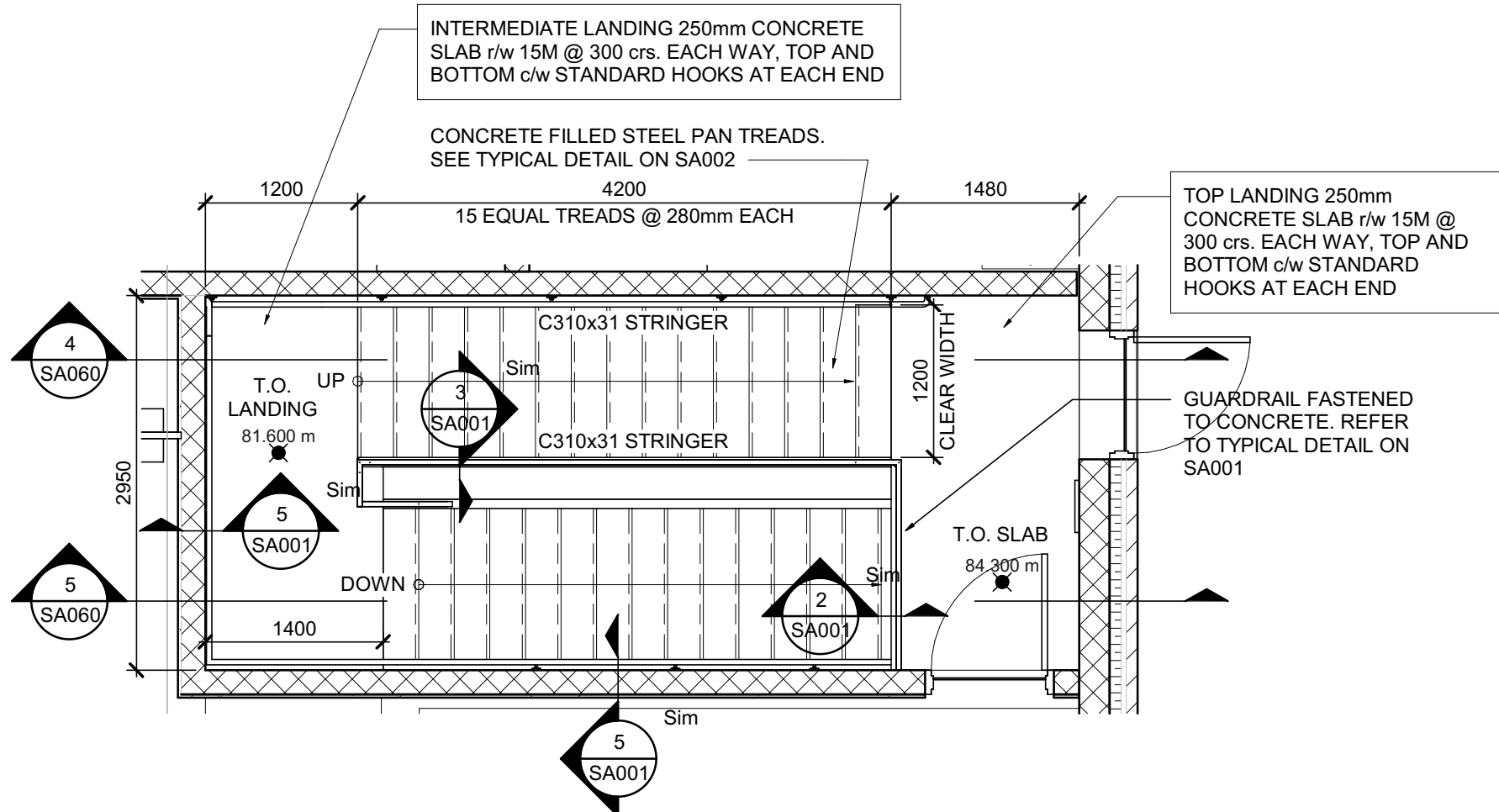
PROCESS BUILDING - KEY PLAN

SCALE : 1 : 75



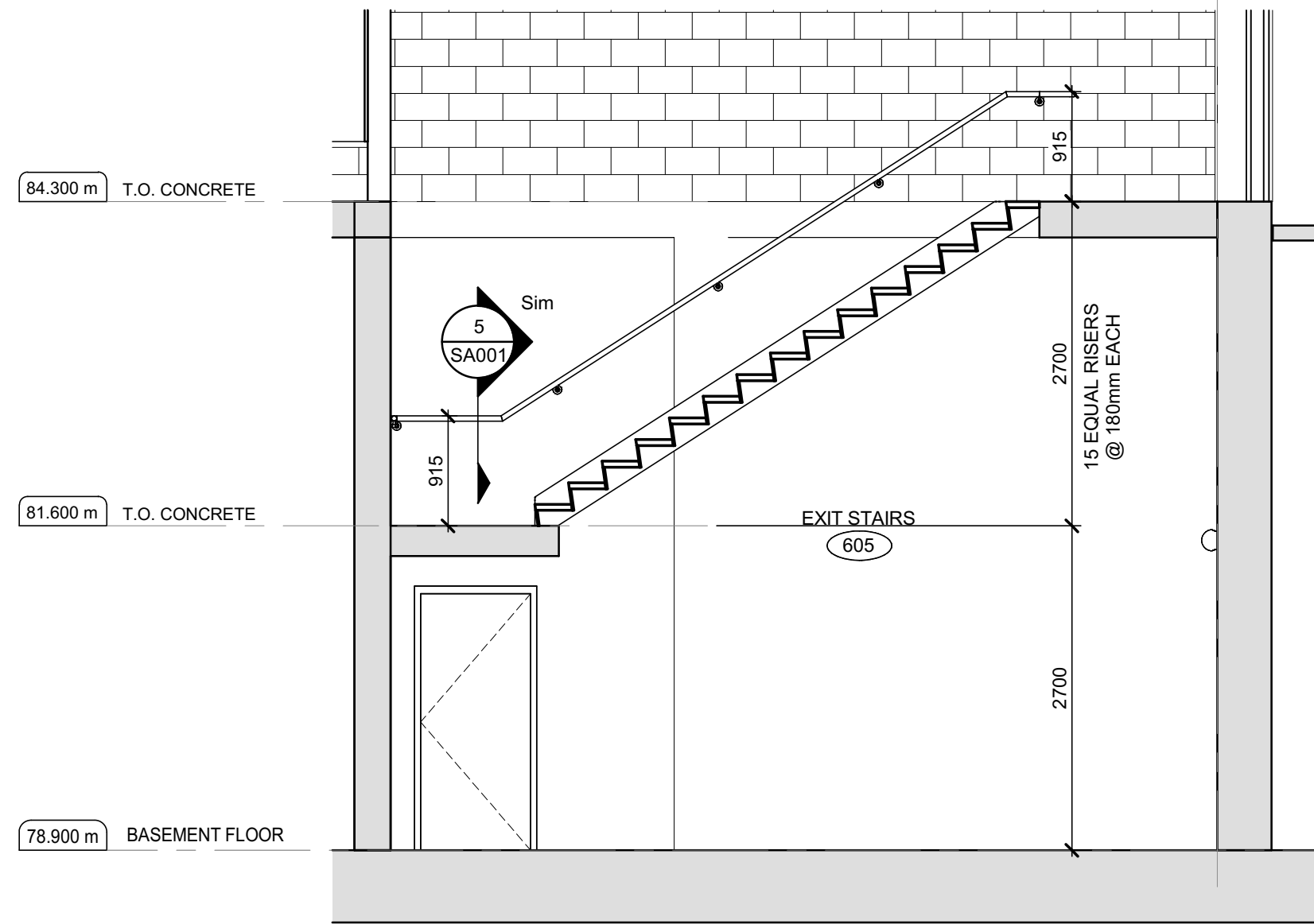
ENLARGED PLAN OF EXIT STAIR AT BASEMENT LEVEL

SCALE : 1 : 50



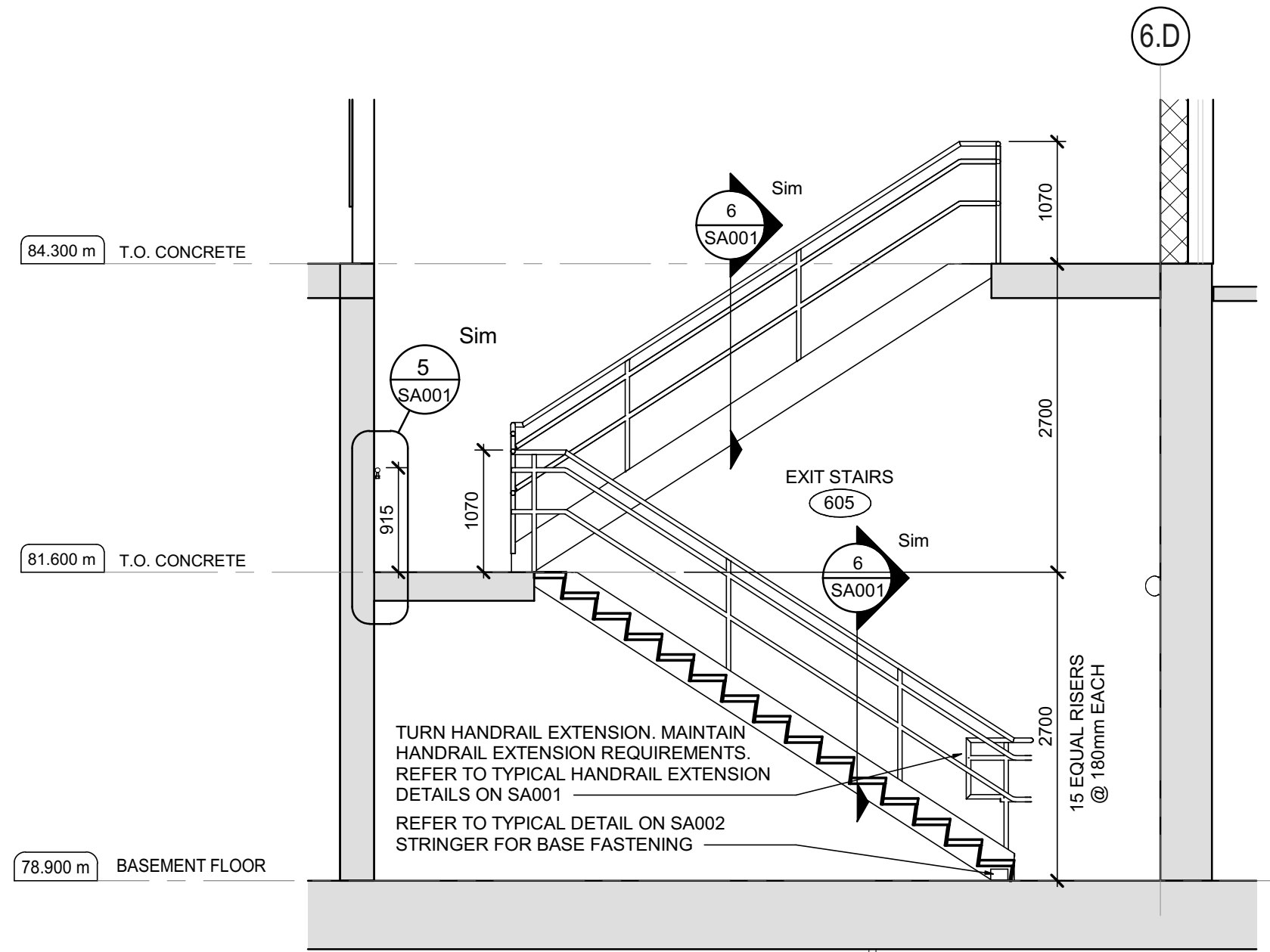
ENLARGED PLAN OF EXIT STAIR AT GROUND LEVEL

SCALE : 1 : 50



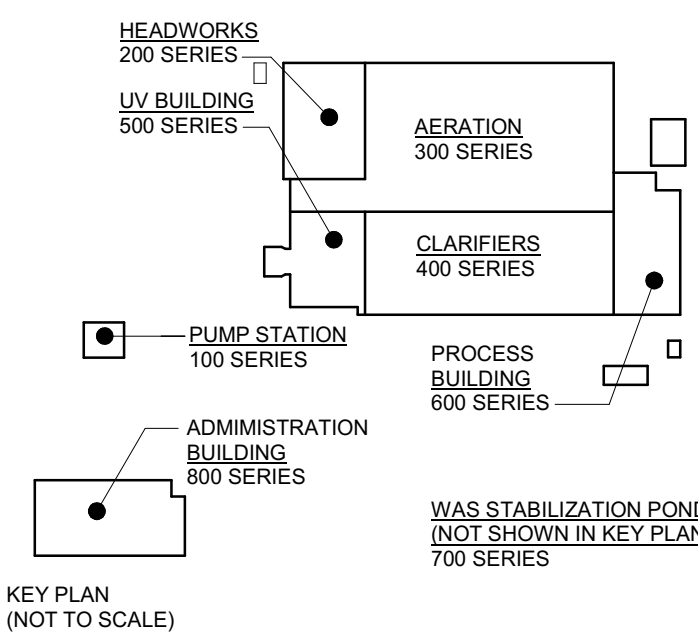
PROCESS BUILDING EXIT STAIR SECTION

SCALE : 1 : 50



PROCESS BUILDING EXIT STAIR SECTION

SCALE : 1 : 50



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SCALE: As indicated

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

STRUCTURAL & ARCHITECTURAL SITE-WIDE

PROCESS BUILDING

DESIGN: CD/SC

DRAWN: JIC/NPH

CHECKED: JMO/HB

JLR #: 32296

DRAWING #:

SA060

File Location: C:\Users\jrcal\Documents\32296 SA-Site Wide_Jrcal\jrichards.ca\ot PLOT DATE: 2025-04-24 10:57:10 AM

GENERAL NOTES

1. ALL WORK TO COMPLY WITH THE 2012 ONTARIO BUILDING CODE. ALL APPLICABLE MUNICIPAL BY-LAWS AND AS DIRECTED BY THE AUTHORITY HAVING JURISDICTION.
3. VERIFY ALL DIMENSIONS ON SITE. REPORT ANY DISCREPANCIES TO THE CONSULTANT BEFORE PROCEEDING WITH THE WORK.
4. DRAWINGS ARE NOT TO BE SCALED.
5. CONSULT CONSULTANT IMMEDIATELY WHEREVER DIMENSIONS SHOWN ARE UNCLEAR OR WHERE CONFLICTS ARISE.
6. TAKE NECESSARY PRECAUTION THAT NO STEEL ELEMENTS BE IN CONTACT WITH ANY ALUMINUM ELEMENTS TO AVOID ANY CORROSION. (ANTICIPATE A BAND OF NEOPRENE TO PREVENT CONTACT WHERE NEEDED)
7. ANTICIPATE AN OVERLAP OF ALL MEMBRANES (ROOF, VAPOUR-BARRIER, AIR BARRIER AND VAPOUR/AIR BARRIER) AS PER MANUFACTURER RECOMMENDATIONS.
8. FIRE SEPARATIONS TO BE CONSTRUCTED AROUND AND BETWEEN STEEL STRUCTURE, FLOOR SLAB TO UNDERSIDE OF STEEL DECK ABOVE, FIRESTOPPED AND FIRESEALED (INCLUDING AT ALL OPENINGS). FIRE SEPARATIONS SHALL BE CONTINUOUS.
9. FIRE SEPARATIONS HAVING A FIRE RATING OF 0HR SHALL BE SMOKE SEALED.
10. AUTOMATIC DOOR OPERATOR ACTUATORS (ADOA) SHALL BE LOCATED AT NOT LESS THAN 610mm AND NOT MORE THAN 1500mm BEYOND THE DOOR SWING WHERE THE DOOR OPENS TOWARDS THE CONTROL AND SHALL BE INSTALLED AT 990mm FROM FINISHED FLOOR OR GROUND. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS.
11. CEILING PLANS ARE TO BE READ IN CONJUNCTION WITH OTHER ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
12. NOTIFY CONSULTANT IMMEDIATELY & PRIOR TO COMMENCING WORK WHEN POTENTIAL MECHANICAL, ELECTRICAL & PLENUM SERVICES INTERFERENCES ARE DISCOVERED OR WHERE PLENUM DEPTH IS INADEQUATE. DO NOT RELOCATE LIGHTING FIXTURES OR LOWER CEILING HEIGHTS WITHOUT CONSULTANT'S APPROVAL.
13. EXCEPT AS INDICATED, ALL LIGHTING FIXTURES, SECURITY, MECHANICAL AND ELECTRICAL INSTALLED IN EXPOSED T-BAR CEILING TO BE CENTERED IN CEILING TILE.
14. AT ALL TRANSITIONS BETWEEN DIFFERING FLOORING TYPES, PROVIDE TRANSITION STRIPS, REFER TO SPECIFICATIONS.
15. ALL FLOORING MATERIALS TO BE INSTALLED PRIOR TO INSTALLATION OF WALL BASE.

TYPICAL PARTITION NOTES

1. REFER TO FLOOR PLANS AND ELEVATIONS FOR EXTENTS AND LOCATION OF EXTERIOR WALL AND INTERIOR PARTITIONS ASSEMBLIES.
2. ALL INTERIOR PARTITIONS TO EXTEND FROM T/O FLOOR SLAB TO U/S OF STRUCTURE (REFER TO STRUCTURAL), UNLESS OTHERWISE NOTED. GYPSUM BOARD TO BE SCRIBED TO PROFILE OF ROOF DECK TO FORM A TIGHT SEAL. SAND BED TO BE REMOVED WHERE REQUIRED IN ORDER TO FACILITATE INSTALLATION OF BOTTOM TRACK DIRECTLY ON THE FLOOR SLAB.
3. ALL INTERIOR STUD PARTITIONS ARE DIMENSIONED FROM CENTRE OF METAL STUD UNLESS OTHERWISE NOTED.
4. REFER TO FLOOR PLANS AND BUILDING SECTIONS FOR APPLICABLE FIRE RESISTANT RATINGS (FRR).
5. ALL GYPSUM BOARD PANELS SHALL BE SCREWED IN PLACE AND TO HAVE 3 COATS OF COMPOUND OVER JOINTS OR AS DESCRIBED IN THE APPROVED FIRE RATED ASSEMBLY.
6. PROVIDE WATER RESISTANT GYPSUM BOARD AT JANITOR CLOSETS.
7. SEAL ALL INSULATED PARTITIONS WITH ACOUSTICAL SEALANT AT ALL PENETRATIONS OF PARTITIONS, BOTH BELOW FINISHED CEILING AND ABOVE FINISHED CEILING TO SLAB AS APPLICABLE.
8. CONTRACTOR SHALL SUPPLY AND INSTALL ADDITIONAL BLOCKING TO SUIT WALL MOUNTED PLUMBING FIXTURES, COORDINATE WITH MECHANICAL.
9. CONTRACTOR SHALL SUPPLY AND INSTALL ADDITIONAL BLOCKING TO SUIT WALL MOUNTED CABINETS, COUNTERS, GRAB BARS, WASHROOM ACCESSORIES, CLOSET SHELVING, DOOR OPERATORS, WALL MOUNTED DOOR STOPS, ETC. AS INDICATED ON DRAWINGS AND SHALL COORDINATE WITH THE CLIENT ADDITIONAL BLOCKING BEFORE GYPSUM WORKS
10. REFER TO AND COORDINATE WITH INTERIOR ELEVATIONS FOR EXTENTS OF ARCHITECTURAL WALL FINISHES.
12. PROVIDE WATER RESISTANT GYPSUM BOARD AT ALL LOCATIONS OF WALL TILE INSIDE ALL WASHROOMS (CEILINGS INCLUDED)

ABBREVIATIONS NOTES

ACT
ADO
ADOA

AFF
AL
AN
AP
AV/B
B.PLYWD
BD

BEN

BF
BYWVN
c/c
C/W
CA
CB
CG
CJ
CLNG
CT
CTDWR
CD
ECB
EFM
EPT
ESD

EXP ST
EXT
FD
FEC

FG
FL
FRR
GB1
GB2
GL
GWB
GWBM

HD
HM
HW
ICB
IN
INT
IP
LAV
LF
LK
LKR
LM
LVL
MIR
N.I.C.
O.C.
P. LAM
PLWVD
PR

PREF
PS
PT

ACOUSTIC CEILING TILE
AUTOMATIC DOOR OPERATOR
AUTOMATIC DOOR OPERATOR ACTUATOR
ABOVE FINISHED FLOOR
ALUMINUM
ANODIZED
ACOUSTIC PANEL
AIR-VAPOUR BARRIER
BIRCH PLYWOOD
BOLLARD, REFER TO STRUCTURAL
FLOOR MOUNTED BENCH, REFER TO 2 / A760
BARRIER FREE
BETWEEN
CENTRE TO CENTRE
COMPLETE WITH
CARD ACCESS
CONCRETE BLOCK
CORNER GUARD
CONTROL JOINT
CEILING
CERAMIC TILE
RECESSED COMBINATION TOWEL DISPENSER/ WASTE RECEPTACLE
DOOR CLOSER
EMERGENCY CALL BUTTON
ENTRANCE FLOOR MAT
EXTERIOR PAINT
ELECTROSTATIC DISSIPATIVE TILE
EXPOSED STRUCTURE
EXTERIOR
FLOOR DRAIN
FIRE EXTINGUISHER CABINET, REFER TO MECHANICAL
FLOOR GRILLE
FLASHING
FIRE RESISTANCE RATING
600mm HORIZONTAL GRAB BAR
760mm x 760mm GRAB BAR
GLAZING
GYPSUM BOARD
MOISTURE RESISTANT GYPSUM BOARD
HAND DRYER
HOLLOW METAL
HOLLOW WOOD
INTEGRATED COVE BASE
INSULATED
INTERIOR
INTUMESCENT PAINT
LAVATORY
LIGHT FIXTURE
PUSH TO LOCK BUTTON
LOCKER
LAMINATED
LEVEL
MIRROR
NOT IN CONTRACT
ON CENTRE
PLASTIC LAMINATE
PLYWOOD
POWER RECEPTACLE, REFER TO ELECTRICAL
PREFINISHED
PRESSED STEEL
PAINT

ABBREVIATIONS NOTES

RB
RCP
RFS
RH
RSF
RTF
RWL
SC
SCP
SD
SE
SFP
SH
SIM
SND
SR
SS
STSL
SW
T.B.D.
T.O.C.
T/O
TP
TR
TTD
TYP
UIS
UR
VB
VG
WC
WD
WP

RUBBER BASE
REFLECTED CEILING PLAN
RAISED FLOOR SYSTEM
ROBE HOOK
RESILIENT SHEET FLOORING
RESILIENT TILE FLOORING
RAIN WATER LEADER
SHOWER CURTAIN
SOLID COMPOSITE PANEL
SOAP DISPENSER
SEALER / PRIMER
SPRAY FIRE PROOFING
SHOWER HEAD
SIMILAR
SANITARY NAPKIN DISPOSAL
STEEL
SOLID SURFACE
STAINLESS STEEL
SOLID WOOD
TO BE DETERMINED
TOP OF CONCRETE
TOP OF
TEMPERED
TRIM
TOILET TISSUE DISPENSER
TYPICAL
UNDERSIDE
URINAL
VAPOUR BARRIER
VISION GLAZING PANEL
WOOD
WALL PROTECTION

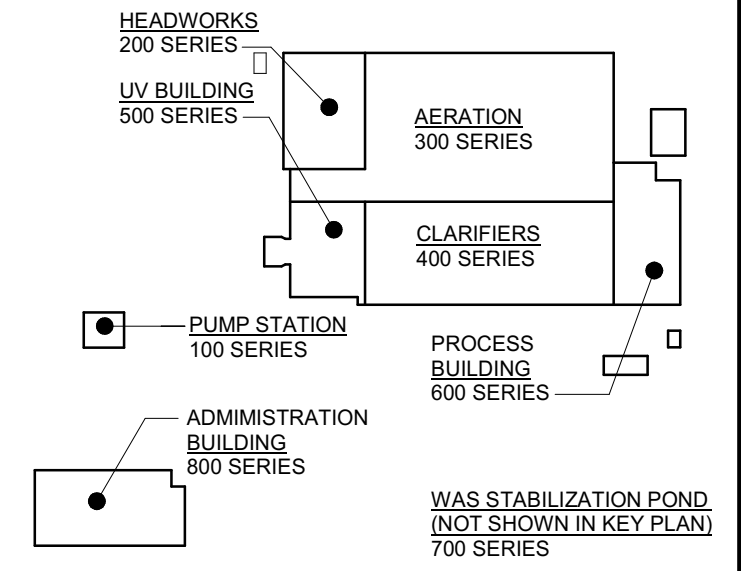
TYPICAL EXTERIOR WALL ASSEMBLIES				
DESIGNATION	CONSTRUCTION DETAIL	DESCRIPTION	FIRE RATING	REMARKS
W1		EXTERIOR WALL CONSTRUCTION - 90mm BRICK VENEER, REFER TO ELEVATIONS FOR COURSING - 42mm AIR SPACE - 89mm SEMI-RIGID INSULATION (R-15) - AIR BARRIER, CONTINUOUS AND SEALED - 240mm CONCRETE BLOCK, REFER TO STRUCTURAL DWGS.	REFER TO ARCHITECTURAL DRAWINGS	CONCRETE BLOCK HAS MINIMUM 2-HOUR FIRE-RESISTANCE RATING BASED ON SB-2 TABLE 2.1.1
W2		EXTERIOR WALL CONSTRUCTION - 90mm BRICK VENEER, REFER TO ELEVATIONS FOR COURSING - 42mm AIR SPACE - 89mm SEMI-RIGID INSULATION (R-15) - AIR BARRIER - 16mm EXTERIOR GYPSUM SHEATHING - 152mm METAL STUDS (25 GAUGE) @ 400mm C/C. CAVITY FILLED WITH MINERAL WOOL INSULATION - VAPOUR BARRIER - 16mm GYPSUM BOARD - WALL FINISH, REFER TO ROOM FINISH SCHEDULE	REFER TO ARCHITECTURAL DRAWINGS	-
W3		PARAPET CONSTRUCTION - 90mm BRICK VENEER, REFER TO ELEVATIONS FOR COURSING - 42mm AIR SPACE - 89mm SEMI-RIGID INSULATION (R-15) - AIR/VAPOUR BARRIER - 16mm EXTERIOR GYPSUM SHEATHING - 152mm METAL STUDS (25 GAUGE) @ 400mm C/C. CAVITY FILLED WITH MINERAL WOOL INSULATION - 16mm EXTERIOR GYPSUM SHEATHING - 2 - PLY MODIFIED BITUMEN ROOFING MEMBRANE SYSTEM UP PARAPET	-	-

TYPICAL INTERIOR PARTITION ASSEMBLIES				
DESIGNATION	CONSTRUCTION DETAIL	DESCRIPTION	FIRE RATING	REMARKS
Pa1		INTERIOR PARTITION - BLOCK - 190mm CONCRETE BLOCK - REFER TO ROOM FINISH SCHEDULE FOR WALL FINISH - REFER TO STRUCTURAL FOR REINFORCING DETAILS	-	BUILD TO U/S FLOOR SLAB OR DECKING
Pa2		- WALL FINISH, REFER TO ROOM FINISH SCHEDULE - 16mm GYPSUM BOARD - 92mm METAL STUD @ 400mm O/C - 16mm GYPSUM BOARD - WALL FINISH, REFER TO ROOM FINISH SCHEDULE	-	BUILD TO U/S OF DECK
Pa3		INTERIOR PARTITION - BLOCK FIRE SEPARATION (FIRE STOPPED AND FIRE SEALED) - 190mm CONCRETE BLOCK - REFER TO ROOM FINISH SCHEDULE FOR WALL FINISH - REFER TO STRUCTURAL FOR REINFORCING DETAILS	AS NOTED ON DRAWING	BUILD FIRE SEPARATION TO U/S FLOOR SLAB OR DECKING c/w ULC SEALANT
Pa4		- WALL FINISH, REFER TO ROOM FINISH SCHEDULE - 16mm GYPSUM BOARD, TYPE "X" - 152mm METAL STUD @ 400mm O/C. CAVITY FILLED WITH MINERAL WOOL ACOUSTIC BATT INSULATION - 16mm GYPSUM BOARD, TYPE "X" - WALL FINISH, REFER TO ROOM FINISH SCHEDULE	1 HR (ULC DESIGN No.W453)	BUILD TO U/S OF DECK
Pa5		- WALL FINISH, REFER TO ROOM FINISH SCHEDULE - 16mm GYPSUM BOARD - 92mm METAL STUD @ 400mm O/C	-	BUILD TO U/S OF DECK

TYPICAL ROOF ASSEMBLIES				
DESIGNATION	CONSTRUCTION DETAIL	DESCRIPTION	FIRE RATING	REMARKS
R1		- 2-PLY MODIFIED BITUMEN ROOFING MEMBRANE SYSTEM - 6mm THICK HIGH DENSITY PROTECTION BOARD - SLOPED POLYISOCYANURATE RIGID INSULATION - 2 LAYERS 50mm POLYISOCYANURATE RIGID INSULATION (R-23) - VAPOUR BARRIER - STRUCTURAL CONCRETE COMPONENT, REFER TO STRUCTURAL	-	-
R2		- STANDING SEAM ROOF - BREATHABLE WEATHER BARRIER - 16mm GYPSUM SHEATHING - THERMAL CLIPS AND Z GIRTS FILLED WITH 2 LAYERS SEMI RIGID INSULATION (R-35) - AIR/VAPOUR BARRIER - 16mm GYPSUM SHEATHING - STEEL DECK AND BEAMS, REFER TO STRUCTURAL	-	-
R3		- CONCRETE TOPPING ROOF, REFER TO STRUCTURAL - 75mm HIGH LOAD RIGID INSULATION - WATERPROOFING MEMBRANE - STRUCTURAL CONCRETE COMPONENT, REFER TO STRUCTURAL	-	-
R4		- ASPHALT PAVEMENT COVER (40mm HL3 + 60mm HL6) - FILTER FABRIC - 75mm HIGH LOAD RIGID INSULATION (R-15) - 2-PLY MODIFIED BITUMEN ROOFING MEMBRANE SYSTEM - STRUCTURAL CONCRETE COMPONENT, REFER TO STRUCTURAL	-	-

TYPICAL CEILING ASSEMBLIES				
DESIGNATION	CONSTRUCTION DETAIL	DESCRIPTION	FIRE RATING	REMARKS
ACT		- SUSPENDED ACOUSTIC CEILING TILE, REFER TO SPECIFICATIONS	-	-
GBM		- 16mm MOISTURE RESISTANT GYPSUM BOARD, REFER TO ROOM FINISH SCHEDULE - 92mm 25 GAUGE METAL FURRING CHANNEL @400 C/C	-	-

DRAWING SYMBOLS LEGEND	
ROOM NAME (ABCC)	ROOM IDENTIFICATION A = BUILDING / FACILITY IDENTIFICATION B = BUILDING LEVEL IDENTIFICATION C = ROOM IDENTIFICATION NUMBER
D#	DOOR IDENTIFICATION
E#	EXTERIOR WINDOW IDENTIFICATION
SC#	INTERIOR WINDOW IDENTIFICATION
W#	EXTERIOR WALL TYPE IDENTIFICATION
Pa#	INTERIOR WALL TYPE IDENTIFICATION
R#	ROOF TYPE IDENTIFICATION
CLG (###)	CEILING TYPE IDENTIFICATION
? [] # / #	KEYNOTE IDENTIFICATION
△	REVISION IDENTIFICATION
A-B C	PATH OF EGRESS TAG A = BUILDING LEVEL IDENTIFICATION B = PATH IDENTIFICATION C = PATH LENGTH (m)
View Name SCALE : 1:100	
A B	VIEW TITLE A = DETAIL NUMBER B = SHEET REFERENCE
A B	EXTERIOR ELEVATION CALLOUT A = DETAIL NUMBER B = SHEET REFERENCE
A B	INTERIOR ELEVATION CALLOUT A = DETAIL NUMBER B = SHEET REFERENCE
A B	BUILDING SECTION CALLOUT A = DETAIL NUMBER B = SHEET REFERENCE
A B	WALL SECTION CALLOUT A = DETAIL NUMBER B = SHEET REFERENCE
SIM A B	PLAN DETAIL CALLOUT A = DETAIL NUMBER B = SHEET REFERENCE
0.000m	ELEVATION DESCRIPTION
0.000m	ELEVATION IDENTIFICATION (ELEVATION AND SECTION)
0.000m	NEW FLOOR ELEVATION MARKER
1	GRID IDENTIFICATION
	DOOR, FRAME AND HARDWARE, REFER TO SCHEDULE
	NEW PARTITION / WALL
	DEMOLITION PARTITION / WALL
2hr	DENOTES 2 HOUR FIRE RESISTANCE RATING
1hr	DENOTES 1 HOUR FIRE RESISTANCE RATING
0hr	DENOTES FIRE SEPARATION



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

0	ISSUED FOR TENDER	25/04/2025
No.	ISSUE / REVISION	DDMM/YY

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.

SCALE: As indicated

CLIENT:

CONSULTANT: www.jrichards.ca

ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

2025-04-25 OF

ARCHITECTS

STEPHANIE CAMPBELL

LICENCE 9391

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL SITE-WIDE

GENERAL NOTES, ASSEMBLIES

DESIGN: SC/KA

DRAWN: NP

CHECKED: HB/SC

JLR #: 32296-001

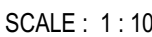
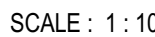
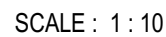
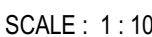
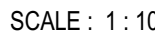
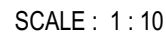
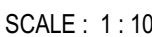
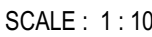
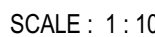
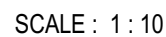
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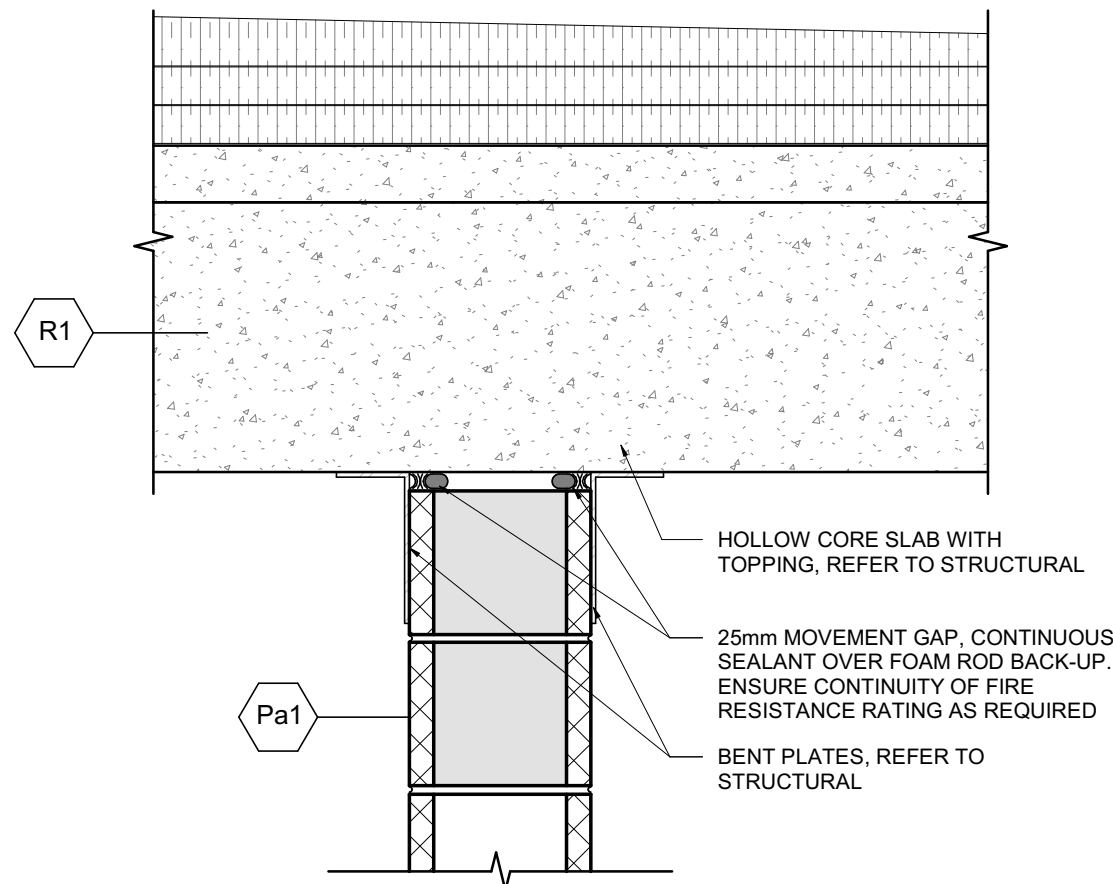
BRIGHTON WWTP - ADMIN BUILDING									
ONTARIO BUILDING CODE (OBC) - 2012					OBC REFERENCE				
MAJOR OCCUPANCY(S): - GROUP D, BUSINESS AND PERSONAL SERVICES					3.1.2.1(1).				
BUILDING AREA (m²): - NEW ADMIN BUILDING = 302					1.1.3.2. & [A] 1.4.1.2.				
GROSS AREA (m²): - GROUND FLOOR = 302					[A] 1.4.1.2.				
NUMBER OF STOREYS (m): - ONE (1) STOREY ABOVE GRADE					3.2.1.1, 1.1.3.2. & [A] 1.4.1.2.				
HEIGHT OF BUILDING (m): - 4.2 ABOVE GRADE					3.2.1.1, 1.1.3.2. & [A] 1.4.1.2.				
BUILDING CLASSIFICATION: - 3.2.2.55. GROUP D, UP TO 2 STOREYS					3.2.2.20.-83.				
SPRINKLER SYSTEM PROPOSED: - NO					3.2.1.5. & 3.2.2.24.				
STANDPIPE REQUIRED: - NO					3.2.9.1.				
FIRE ALARM REQUIRED: - NO					3.2.4.1.				
HIGH BUILDING: - NO					3.2.6.				
MEZZANINE(S): - N/A					3.2.1.1(3)-(7).				
FIREWALL PROPOSED: - N/A					3.1.10.				
HAZARDOUS SUBSTANCES: - NO					3.3.1.2.(1) & 3.3.1.19.(1).				
CONSTRUCTION TYPE: RESTRICTIONS: ACTUAL: HEAVY TIMBER CONSTRUCTION:					COMBUSTIBLE PERMITTED NONCOMBUSTIBLE NO				
OCCUPANCY LOAD: - 33 PERSONS BASED ON AN AREA OF PERSON OF 9.30 / m² AS PER TABLE 3.1.7.1.					3.1.17.				
BARRIER-FREE DESIGN: - BARRIER-FREE DESIGN IS PROVIDED WITHIN THE ADMINISTRATION BUILDING.					3.8.				
REQUIRED FIRE RESISTANCE RATING (FRR): FLOORS OVER BASEMENT: FLOORS: MEZZANINE: ROOF:					3.2.2.20-83 & 3.2.1.4. RATING = N/A RATING = N/A RATING = N/A RATING = N/A SUPPORTING ASSEMBLY: N/A SUPPORTING ASSEMBLY: N/A SUPPORTING ASSEMBLY: N/A SUPPORTING ASSEMBLY: N/A				
INTERCONNECTED FLOOR SPACE: - N/A					3.2.8.2.(6).				
PLUMBING FIXTURE REQUIREMENTS: - BASED ON TABLE 3.7.2.2.-8 AND AN OCCUPANT LOAD OF 32 PERSONS (16 / SEX), A MINIMUM OF 1 WATER CLOSET OF EACH SEX IS REQUIRED. - 2 WATER CLOSETS ARE PROVIDED FOR EACH SEX WITH AN ADDITIONAL UNIVERSAL WASHROOM PROVIDED FOR ACCESSIBILITY.					3.7.4.9.				
SPATIAL SEPARATION:					3.2.3.				
WALL	AREA OF E.B.F. (m²)	LIMITING DISTANCE (m)	L/H OR H/L	FIRE RESISTANCE RATING (HRS.)	ALLOWABLE % U.P.O.	ACTUAL % U.P.O.	CONSTRUCTION TYPE	CLADDING TYPE	
NORTH	117.0	14.0	3:1 TO 10:1	-	100	11	COMBUSTIBLE OR NON-COMBUSTIBLE	COMBUSTIBLE OR NON-COMBUSTIBLE	
SOUTH	108.0	12.0	3:1 TO 10:1	-	100	6	COMBUSTIBLE OR NON-COMBUSTIBLE	COMBUSTIBLE OR NON-COMBUSTIBLE	
EAST	56.0	9.0	LESS THAN 3:1	-	100	15	COMBUSTIBLE OR NON-COMBUSTIBLE	COMBUSTIBLE OR NON-COMBUSTIBLE	
WEST	55.0	9.0	LESS THAN 3:1	-	100	0	COMBUSTIBLE OR NON-COMBUSTIBLE	COMBUSTIBLE OR NON-COMBUSTIBLE	
NOTES: THE ADMINISTRATION BUILDING COMPLIES WITH THE REQUIREMENTS MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING (MMAH) SUPPLEMENTARY STANDARD SB-10, "ENERGY EFFICIENCY REQUIREMENTS (SB-10) FOR ZONE 6, AND INCLUDES R-35 CI FOR THE ROOF, R-13+R-15 CI FOR WALLS, AND R-10 FOR SLAB-ON GRADE.									

BRIGHTON WWTP - UV BUILDING									
ONTARIO BUILDING CODE (OBC) - 2012					OBC REFERENCE				
MAJOR OCCUPANCY(S): - GROUP F, DIVISION 3, LOW HAZARD INDUSTRIAL					3.1.2.1(1).				
BUILDING AREA (m²): - NEW UV BUILDING = 190					1.1.3.2. & [A] 1.4.1.2.				
GROSS AREA (m²): - GROUND FLOOR = 190					[A] 1.4.1.2.				
NUMBER OF STOREYS (m): - ONE (1) STOREY ABOVE GRADE					3.2.1.1, 1.1.3.2. & [A] 1.4.1.2.				
HEIGHT OF BUILDING (m): - 5.5 ABOVE GRADE					3.2.1.1, 1.1.3.2. & [A] 1.4.1.2.				
BUILDING CLASSIFICATION: - 3.2.2.62. GROUP F, DIVISION 3, ONE STOREY, ANY AREA, LOW FIRE LOAD OCCUPANCY					3.2.2.20.-83.				
SPRINKLER SYSTEM PROPOSED: - NO					3.2.1.5. & 3.2.2.24.				
STANDPIPE REQUIRED: - NO					3.2.9.1.				
FIRE ALARM REQUIRED: - NO					3.2.4.1.				
HIGH BUILDING: - NO					3.2.6.				
MEZZANINE(S): - N/A					3.2.1.1(3)-(7).				
FIREWALL PROPOSED: - N/A					3.1.10.				
HAZARDOUS SUBSTANCES: - NO					3.3.1.2.(1) & 3.3.1.19.(1).				
CONSTRUCTION TYPE: RESTRICTIONS: ACTUAL: HEAVY TIMBER CONSTRUCTION:					NONCOMBUSTIBLE REQUIRED NONCOMBUSTIBLE NO				
OCCUPANCY LOAD: - 32 PERSONS BASED ON OCCUPANT LOAD OF ADMINISTRATION BUILDING.					3.1.17.				
BARRIER-FREE DESIGN: - BARRIER-FREE IS NOT PROVIDED IN THE UV BUILDING. REFER TO NOTES.					3.8.				
REQUIRED FIRE RESISTANCE RATING (FRR): FLOORS OVER BASEMENT: FLOORS: MEZZANINE: ROOF:					3.2.2.20-83 & 3.2.1.4. RATING = N/A RATING = N/A RATING = N/A RATING = N/A SUPPORTING ASSEMBLY: N/A SUPPORTING ASSEMBLY: N/A SUPPORTING ASSEMBLY: N/A SUPPORTING ASSEMBLY: N/A				
INTERCONNECTED FLOOR SPACE: - N/A					3.2.8.2.(6).				
PLUMBING FIXTURE REQUIREMENTS: - PLUMBING FIXTURES PROVIDED IN THE ADMINISTRATION BUILDING.					3.7.4.9.				
SPATIAL SEPARATION:					3.2.3.				
WALL	AREA OF E.B.F. (m²)	LIMITING DISTANCE (m)	L/H OR H/L	FIRE RESISTANCE RATING (HRS.)	ALLOWABLE % U.P.O.	ACTUAL % U.P.O.	CONSTRUCTION TYPE	CLADDING TYPE	
NORTH	88.0	2.5	3:1 TO 10:1	2h	10	4	NON-COMBUSTIBLE	NON-COMBUSTIBLE	
SOUTH	67.3	11.0	3:1 TO 10:1	-	100	9	COMBUSTIBLE OR NON-COMBUSTIBLE	COMBUSTIBLE OR NON-COMBUSTIBLE	
EAST	83.0	12.0	LESS THAN 3:1	-	100	0	COMBUSTIBLE OR NON-COMBUSTIBLE	COMBUSTIBLE OR NON-COMBUSTIBLE	
WEST	83.0	12.0	LESS THAN 3:1	-	100	5	COMBUSTIBLE OR NON-COMBUSTIBLE	COMBUSTIBLE OR NON-COMBUSTIBLE	
NOTES: - ACCESSIBILITY PHILOSOPHY: AS NOTED IN ARTICLE [A-3.8.2.1.] IN SOME FACILITIES, PARTICULARLY IN PRIME INDUSTRIES SUCH AS FORESTRY AND METALLURGY, THE CONSTRUCTION NORMALLY USED AND THE OPERATIONS CARRIED OUT WITHIN THE SPACES CAN MAKE COMPLIANCE WITH THE REQUIREMENTS OF SECTION 3.8. IMPRACTICAL. IT IS THEREFORE INTENDED THAT THESE REQUIREMENTS BE APPLIED WITH DISCRETION IN BUILDINGS OF GROUP F, DIVISION 2 OR 3 MAJOR OCCUPANCY. FOR THE PROPOSED DESIGN OF THE UV BUILDING DOES NOT FOLLOW THE REQUIREMENTS OF SECTION 3.8 ACCESSIBILITY. THE PROCESS AREAS OF THE SITE ARE CONSIDERED GROUP F, DIVISION 2 OR 3 OCCUPANCIES. THEY DO NOT CONTAIN ANY SUBSIDIARY OCCUPANCIES, ARE NOT INTENDED FOR PUBLIC USE, AND ARE ONLY OCCUPIED ON A TEMPORARY BASIS FOR MAINTENANCE OPERATIONS BY TRAINED PERSONNEL. BASED ON THE ABOVE WE ARE OF THE OPINION THAT BARRIER FREE ACCESS IS NOT REQUIRED IN THE PROCESS RELATED AREAS. - OBC APPLICATION DIVISION A- PART 1, ALL BUILDINGS ARE REQUIRED TO BE DESIGNED TO PART 12 RESOURCE CONSERVATION AND ENVIRONMENTAL INTEGRITY. ADDITIONAL, PER CLAUSE 12.2.1.1.(2), ALL BUILDINGS SHALL CONFORM TO MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING (MMAH) SUPPLEMENTARY STANDARD SB-10, "ENERGY EFFICIENCY REQUIREMENTS (SB-10). THE FOLLOWING THREE EXCEPTION CLAUSES EXCLUDE THE PROCESS RELATED AREAS AT THE BRIGHTON WWTP FACILITIES, EXCEPT FOR THE ADMINISTRATION BUILDING, FROM THE ENERGY EFFICIENCY DESIGN REQUIREMENTS AS OUTLINE IN SB-10. CLAUSE 1.2.1.1.(D) EXEMPTS A BUILDING OR PART OF A BUILDING WHERE THE ENVIRONMENTAL CONDITION WITHIN THE BUILDING IS GOVERNED BY THE PROCESS OPERATION OF THE BUILDING, OR PERMANENT OPENINGS TO THE OUTDOORS OR TO UNCONDITIONED ENVIRONMENT. THE PROPOSED PROCESS FACILITIES GENERALLY CONSISTS OF OPEN PROCESS TANKAGE, AREAS THAT ARE NOT CONDITIONED DUE TO PROCESSES AND EQUIPMENT, LOW-OCCUPANCY AREAS, AND AREAS WITH VENTILATION RATES THAT ARE DRIVEN BY THEIR RESPECTIVE TREATMENT PROCESSES. CLAUSE 1.2.1.1.(F) EQUIPMENT OR PROCESSES THAT USE ENERGY FOR MANUFACTURING, INDUSTRIAL, AND COMMERCIAL PURPOSES. THE FACILITIES ARE AN INDUSTRIAL OCCUPANCY AND THEY HOUSE EQUIPMENT AND PROCESSES RELATED TO THE WASTEWATER TREATMENT. CLAUSE 1.2.1.1.(G) BUILDINGS CONTAINING OCCUPANCIES LISTED IN TABLE 1.2.1.1 ALTHOUGH FACILITIES ARE NOT EXPLICITLY LISTED IN TABLE 1.2.1.1., THIS TABLE IS NOT INTENDED TO BE EXHAUSTIVE. OUR INTERPRETATION OF TABLE 1.2.1.1., IS THAT THE PROCESS AREAS ARE OF SIMILAR NATURE TO THE IDENTIFIED OCCUPANCIES AND WOULD BE EXEMPT FROM THE REQUIREMENTS OF PART 12 RESOURCE CONSERVATION AND ENVIRONMENTAL INTEGRITY.									

BRIGHTON WWTP - HEADWORKS BUILDING									
ONTARIO BUILDING CODE (OBC) - 2012							OBC REFERENCE		
MAJOR OCCUPANCY(S): - GROUP F, DIVISION 2, MEDIUM HAZARD INDUSTRIAL							3.1.2.1(1).		
BUILDING AREA (m²): - NEW HEADWORKS BUILDING = 202							1.1.3.2. & [A] 1.4.1.2.		
GROSS AREA (m²): - GROUND FLOOR = 202							[A] 1.4.1.2.		
NUMBER OF STOREYS (m): - ONE (1) STOREY ABOVE GRADE							3.2.1.1, 1.1.3.2. & [A] 1.4.1.2.		
HEIGHT OF BUILDING (m): - 6.4 BELOW GRADE WITH 5.4m BASEMENT. BASEMENT SEPARATED FROM FLOOR ABOVE WITH A FIRE-RESISTANCE RATING OF 45MIN.							3.2.1.1, 3.2.1.4, 1.1.3.2. & [A] 1.4.1.2.		
BUILDING CLASSIFICATION: - 3.2.2.71. GROUP F, DIVISION 2, UP TO 2 STOREYS							3.2.2.20.-83.		
SPRINKLER SYSTEM PROPOSED: - NO							3.2.1.5. & 3.2.2.24.		
STANDPIPE REQUIRED: - NO							3.2.9.1.		
FIRE ALARM REQUIRED: - NO							3.2.4.1.		
HIGH BUILDING: - NO							3.2.6.		
MEZZANINE(S): - N/A							3.2.1.1(3)-(7).		
FIREWALL PROPOSED: - N/A							3.1.10.		
HAZARDOUS SUBSTANCES: - NO							3.3.1.2.(1) & 3.3.1.19.(1).		
CONSTRUCTION TYPE: RESTRICTIONS: ACTUAL: HEAVY TIMBER CONSTRUCTION:				NONCOMBUSTIBLE REQUIRED NONCOMBUSTIBLE NO			3.2.2.20-83 & 3.2.1.4.		
OCCUPANCY LOAD: - 32 PERSONS BASED ON OCCUPANT LOAD OF ADMINISTRATION BUILDING.							3.1.17.		
BARRIER-FREE DESIGN: - BARRIER-FREE IS NOT PROVIDED IN THE HEADWORKS BUILDING. REFER TO NOTES.							3.8.		
REQUIRED FIRE RESISTANCE RATING (FRR): FLOORS OVER BASEMENT: RATING = N/A FLOORS: RATING = N/A MEZZANINE: RATING = N/A ROOF: RATING = N/A							3.2.2.20-83 & 3.2.1.4. SUPPORTING ASSEMBLY: N/A SUPPORTING ASSEMBLY: N/A SUPPORTING ASSEMBLY: N/A SUPPORTING ASSEMBLY: N/A		
INTERCONNECTED FLOOR SPACE: - N/A							3.2.8.2.(6).		
PLUMBING FIXTURE REQUIREMENTS: - PLUMBING FIXTURES PROVIDED IN THE ADMINISTRATION BUILDING.							3.7.4.9.		
SPATIAL SEPARATION:							3.2.3.		
WALL	AREA OF E.B.F. (m²)	LIMITING DISTANCE (m)	L/H OR H/L	FIRE RESISTANCE RATING (HRS.)	ALLOWABLE % U.P.O.	ACTUAL % U.P.O.	CONSTRUCTION TYPE	CLADDING TYPE	
NORTH	90.0	16.0	3:1 TO 10:1	-	100	0	COMBUSTIBLE OR NON-COMBUSTIBLE	COMBUSTIBLE OR NON-COMBUSTIBLE	
SOUTH	91.0	2.5	3:1 TO 10:1	2h	5	5	NON-COMBUSTIBLE	NON-COMBUSTIBLE	
EAST	99.0	16.0	LESS THAN 3:1	-	100	0	COMBUSTIBLE OR NON-COMBUSTIBLE	COMBUSTIBLE OR NON-COMBUSTIBLE	
WEST	104.0	20.0	LESS THAN 3:1	-	100	17	COMBUSTIBLE OR NON-COMBUSTIBLE	COMBUSTIBLE OR NON-COMBUSTIBLE	
NOTES: - ACCESSIBILITY PHILOSOPHY: AS NOTED IN ARTICLE [A-3.8.2.1.] IN SOME FACILITIES, PARTICULARLY IN PRIME INDUSTRIES SUCH AS FORESTRY AND METALLURGY, THE CONSTRUCTION NORMALLY USED AND THE OPERATIONS CARRIED OUT WITHIN THE SPACES CAN MAKE COMPLIANCE WITH THE REQUIREMENTS OF SECTION 3.8. IMPRACTICAL. IT IS THEREFORE INTENDED THAT THESE REQUIREMENTS BE APPLIED WITH DISCRETION IN BUILDINGS OF GROUP F, DIVISION 2 OR 3 MAJOR OCCUPANCY. FOR THE PROPOSED DESIGN OF THE HEADWORKS BUILDING DOES NOT FOLLOW THE REQUIREMENTS OF SECTION 3.8 ACCESSIBILITY. THE PROCESS AREAS OF THE SITE ARE CONSIDERED GROUP F, DIVISION 2 OR 3 OCCUPANCIES. THEY DO NOT CONTAIN ANY SUBSIDIARY OCCUPANCIES, ARE NOT INTENDED FOR PUBLIC USE, AND ARE ONLY OCCUPIED ON A TEMPORARY BASIS FOR MAINTENANCE OPERATIONS BY TRAINED PERSONNEL. BASED ON THE ABOVE WE ARE OF THE OPINION THAT BARRIER FREE ACCESS IS NOT REQUIRED IN THE PROCESS RELATED AREAS. - OBC APPLICATION DIVISION A- PART 1, ALL BUILDINGS ARE REQUIRED TO BE DESIGNED TO PART 12 RESOURCE CONSERVATION AND ENVIRONMENTAL INTEGRITY. ADDITIONAL, PER CLAUSE 12.2.1.1.(2), ALL BUILDINGS SHALL CONFORM TO MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING (MMAH) SUPPLEMENTARY STANDARD SB-10, "ENERGY EFFICIENCY REQUIREMENTS (SB-10). THE FOLLOWING THREE EXCEPTION CLAUSES EXCLUDE THE PROCESS RELATED AREAS AT THE BRIGHTON WWTP FACILITIES, EXCEPT FOR THE ADMINISTRATION BUILDING, FROM THE ENERGY EFFICIENCY DESIGN REQUIREMENTS AS OUTLINE IN SB-10. CLAUSE 1.2.1.1.(D) EXEMPTS A BUILDING OR PART OF A BUILDING WHERE THE ENVIRONMENTAL CONDITION WITHIN THE BUILDING IS GOVERNED BY THE PROCESS OPERATION OF THE BUILDING, OR PERMANENT OPENINGS TO THE OUTDOORS OR TO UNCONDITIONED ENVIRONMENT. THE PROPOSED PROCESS FACILITIES GENERALLY CONSISTS OF OPEN PROCESS TANKAGE, AREAS THAT ARE NOT CONDITIONED DUE TO PROCESSES AND EQUIPMENT, LOW-OCCUPANCY AREAS, AND AREAS WITH VENTILATION RATES THAT ARE DRIVEN BY THEIR RESPECTIVE TREATMENT PROCESSES. CLAUSE 1.2.1.1.(F) EQUIPMENT OR PROCESSES THAT USE ENERGY FOR MANUFACTURING, INDUSTRIAL, AND COMMERCIAL PURPOSES. THE FACILITIES ARE AN INDUSTRIAL OCCUPANCY AND THEY HOUSE EQUIPMENT AND PROCESSES RELATED TO THE WASTEWATER TREATMENT. CLAUSE 1.2.1.1.(G) BUILDINGS CONTAINING OCCUPANCIES LISTED IN TABLE 1.2.1.1 ALTHOUGH FACILITIES ARE NOT EXPLICITLY LISTED IN TABLE 1.2.1.1., THIS TABLE IS NOT INTENDED TO BE EXHAUSTIVE. OUR INTERPRETATION OF TABLE 1.2.1.1., IS THAT THE PROCESS AREAS ARE OF SIMILAR NATURE TO THE IDENTIFIED OCCUPANCIES AND WOULD BE EXEMPTED FROM THE REQUIREMENTS OF PART 12 RESOURCE CONSERVATION AND ENVIRONMENTAL INTEGRITY.									

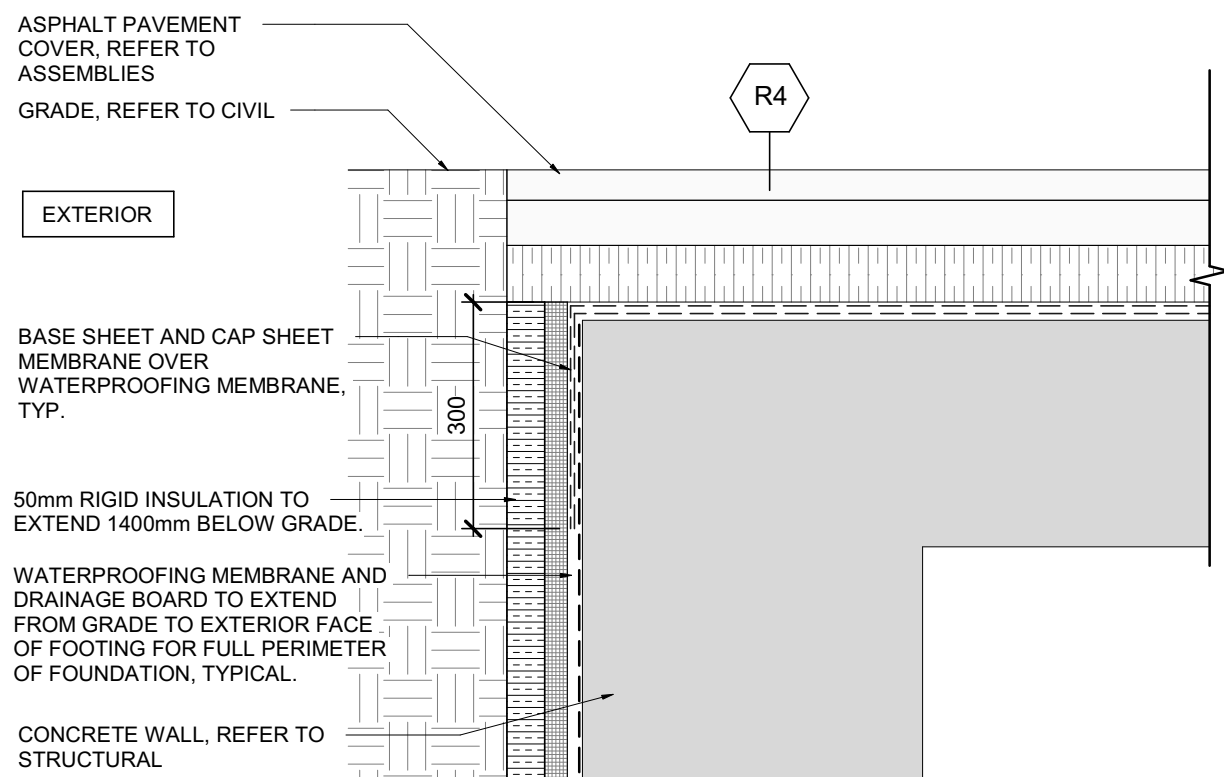


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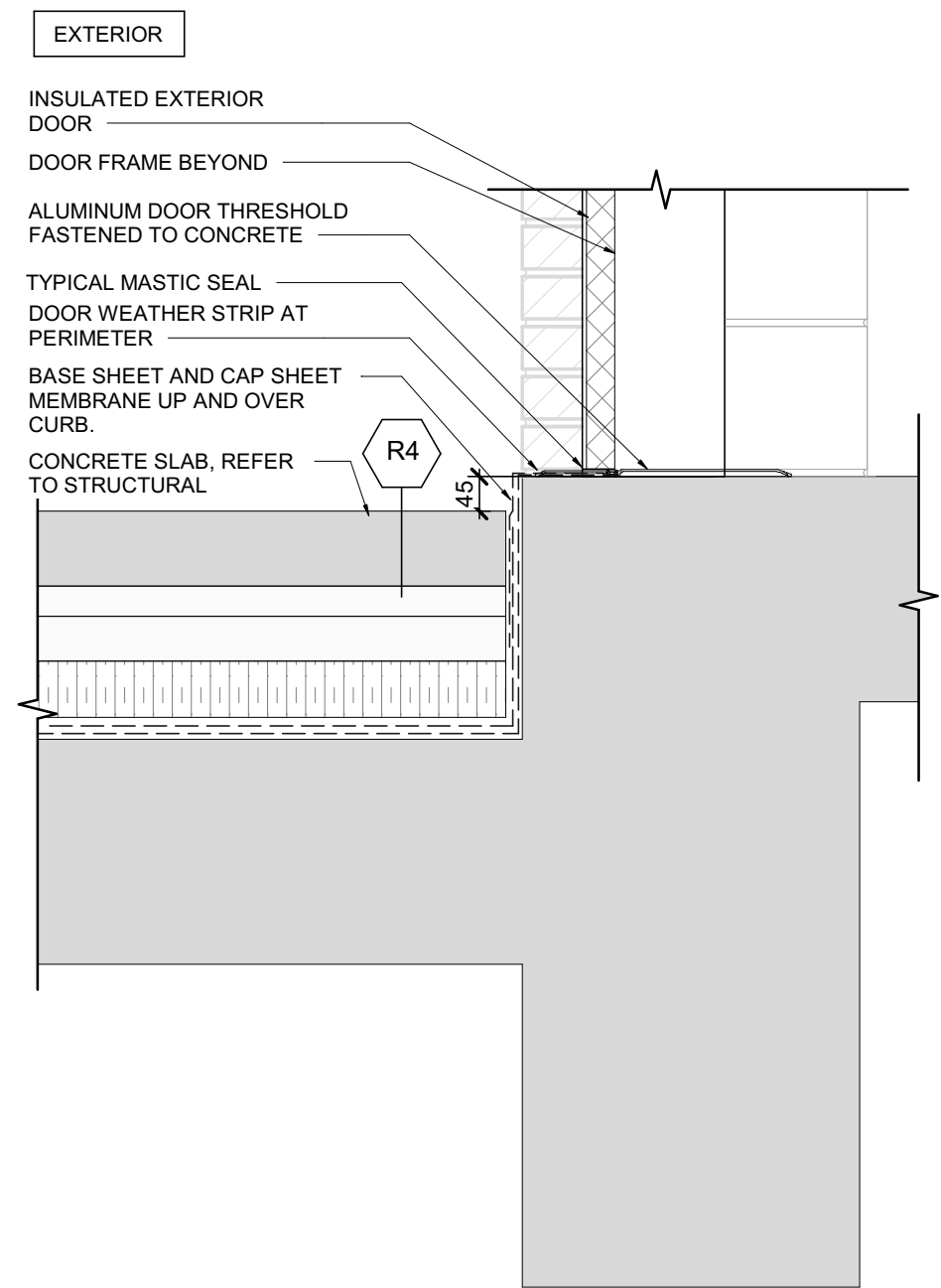
1. TYPICAL INTERIOR CONCRETE BLOCK PARTITION@ HOLLOW CONCRETE SLAB

SCALE : 1 : 10



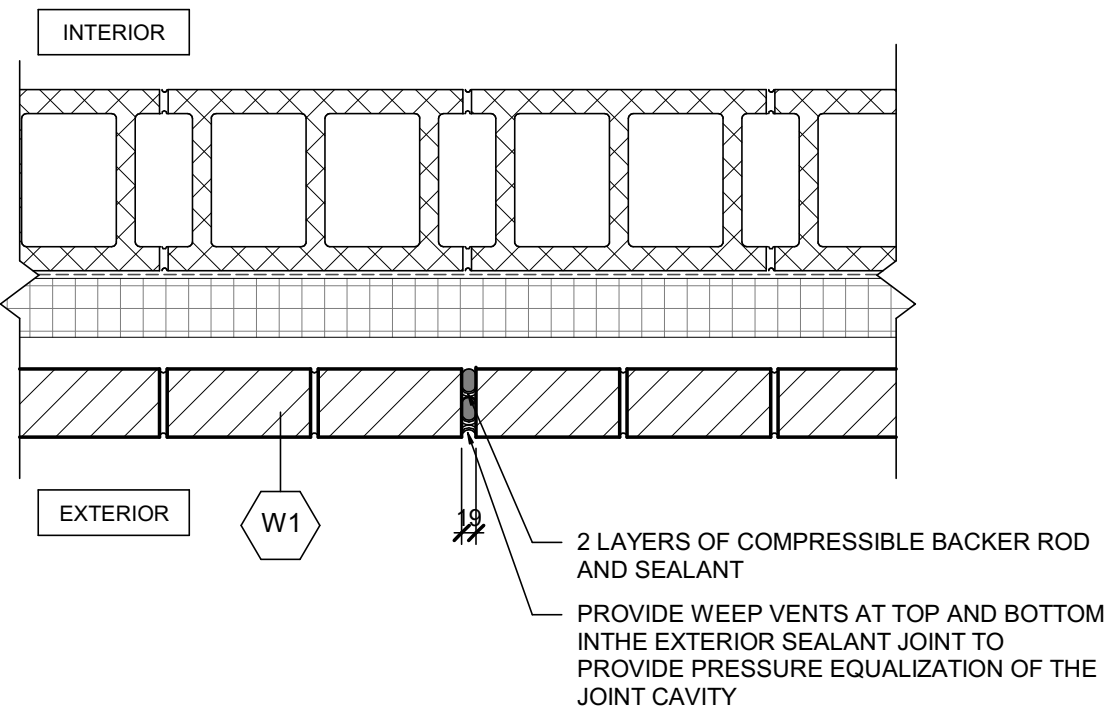
4. GRAVEL ROOF DETAIL @BELOW GRADE WALL

SCALE : 1 : 10



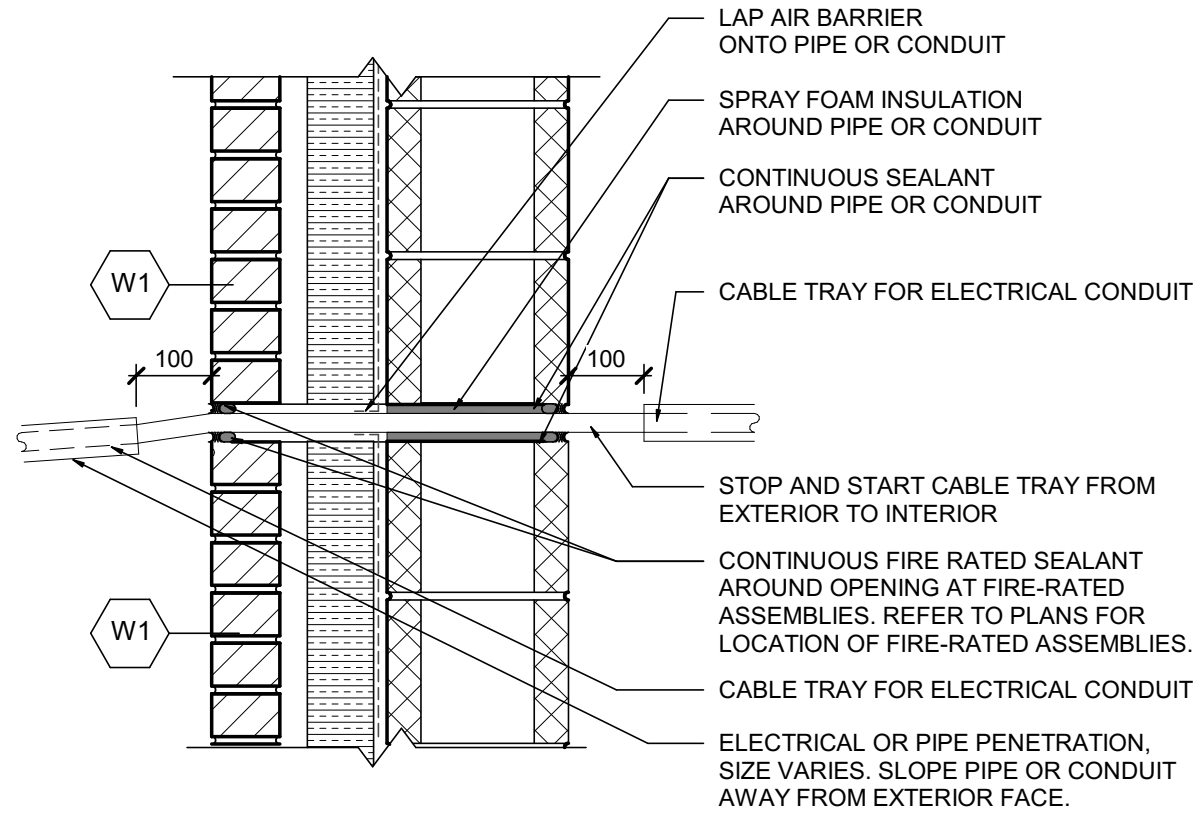
6. GRAVEL ROOF DETAIL @DOOR THRESHOLD

SCALE : 1 : 10



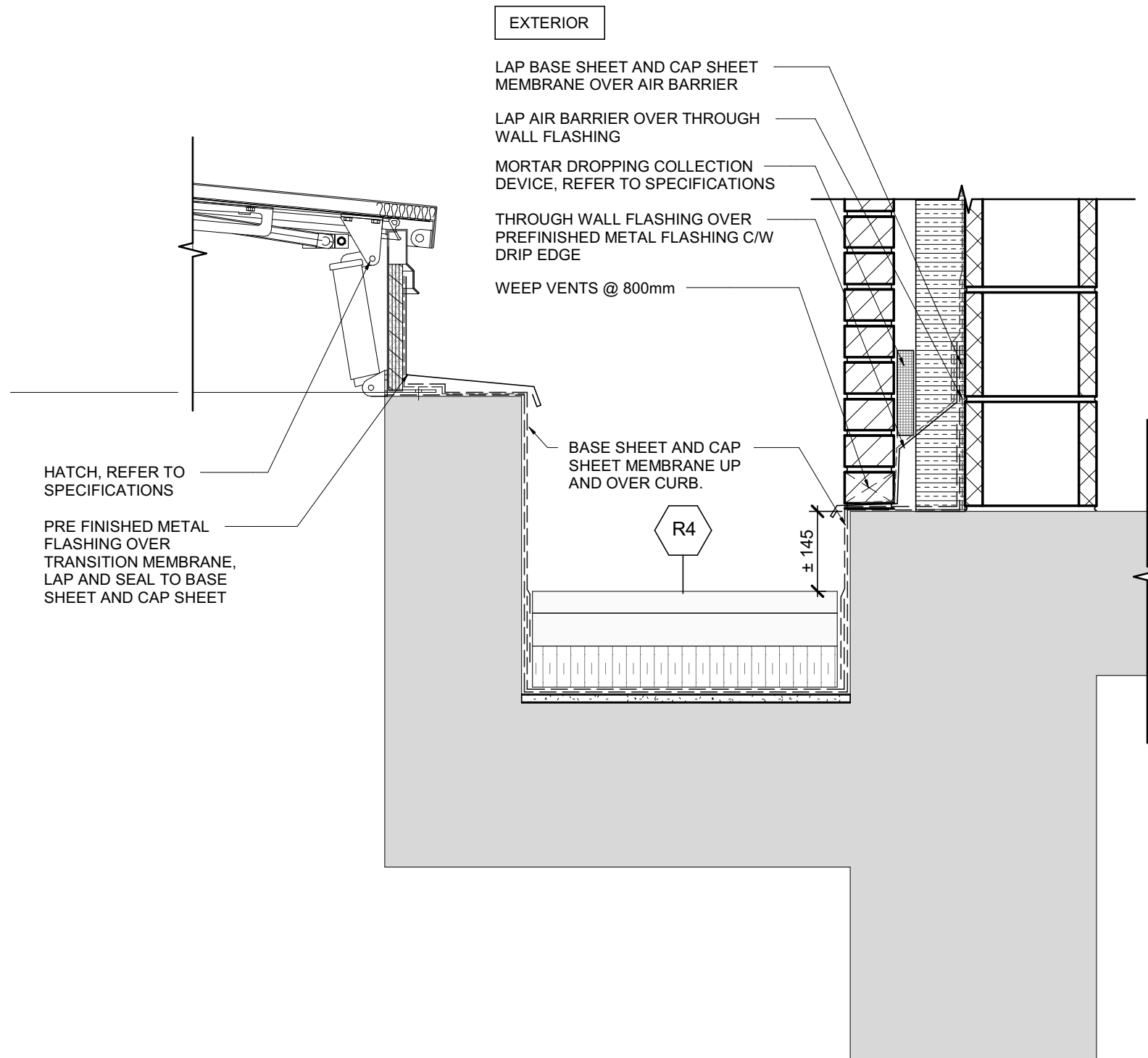
2. TYPICAL CONTROL JOINT PLAN DETAIL

SCALE : 1 : 10



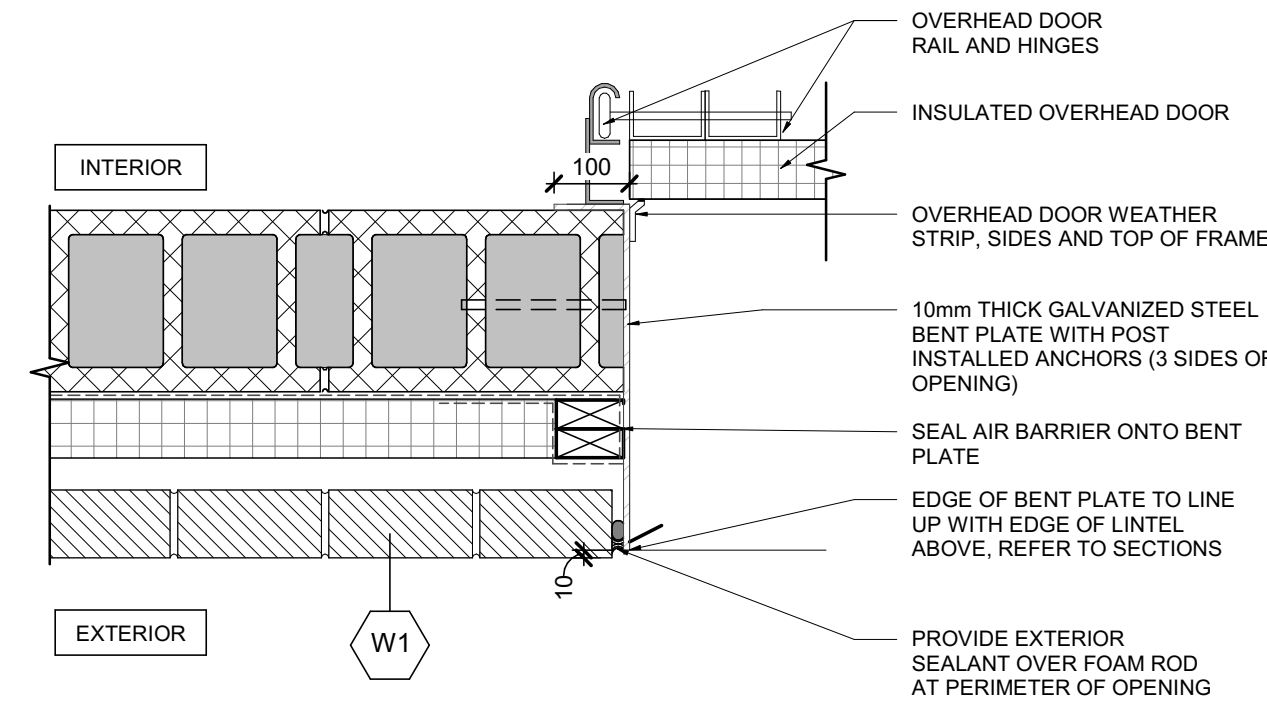
5. TYPICAL ELECTRICAL OR PIPE PENETRATION @ CONCRETE BLOCK

SCALE : 1 : 10



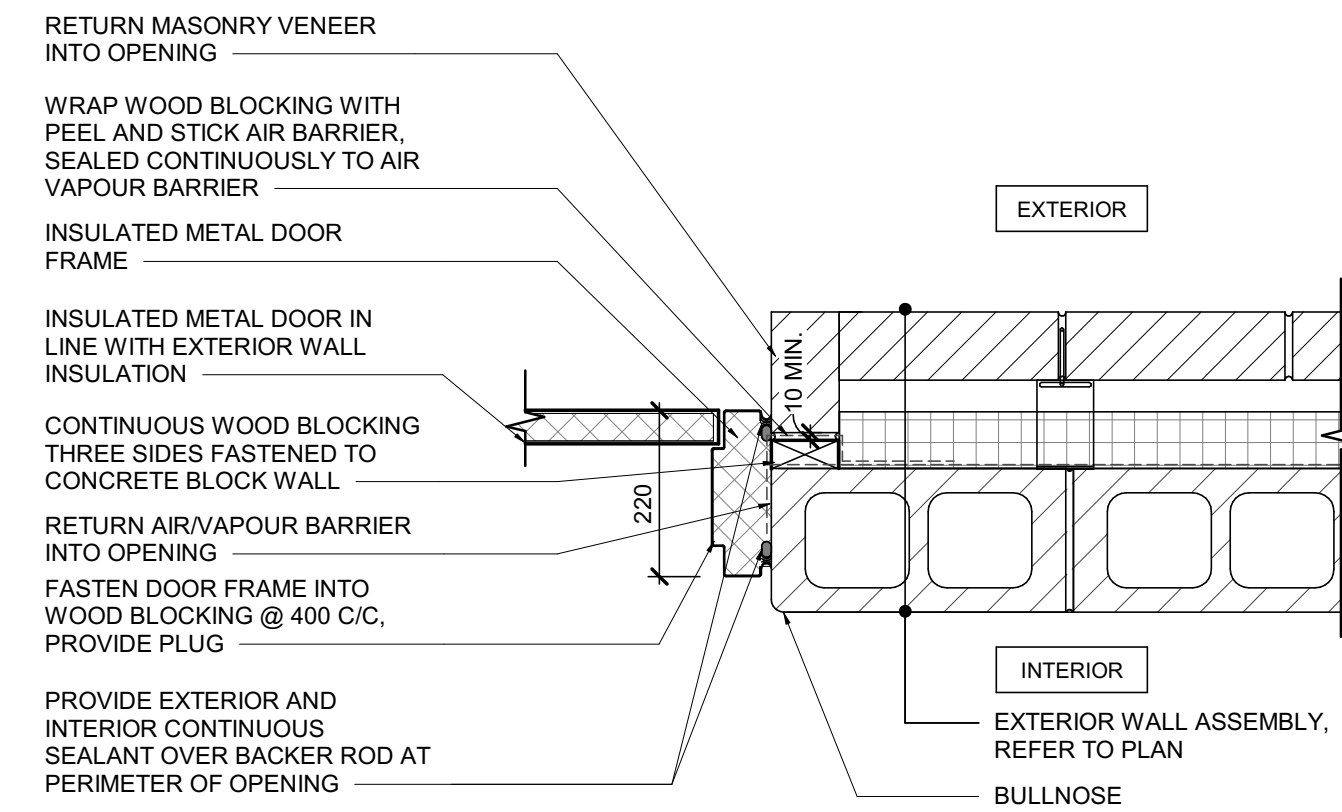
7. FLOOR HATCH DETAIL @ABOVE GRADE WALL

SCALE : 1 : 10



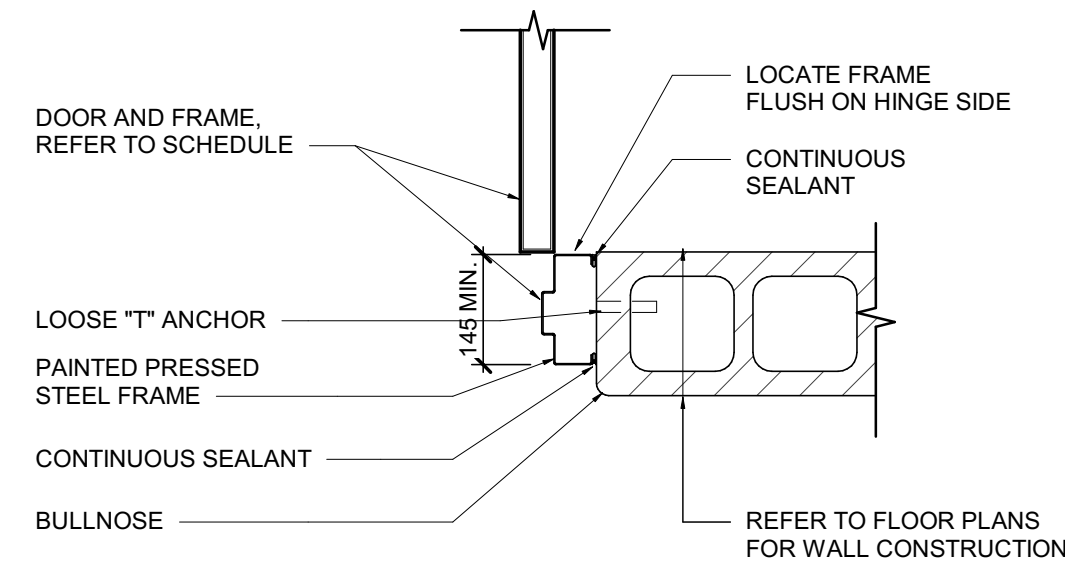
3. TYPICAL OVERHEAD DOOR ANCHOR

SCALE : 1 : 10



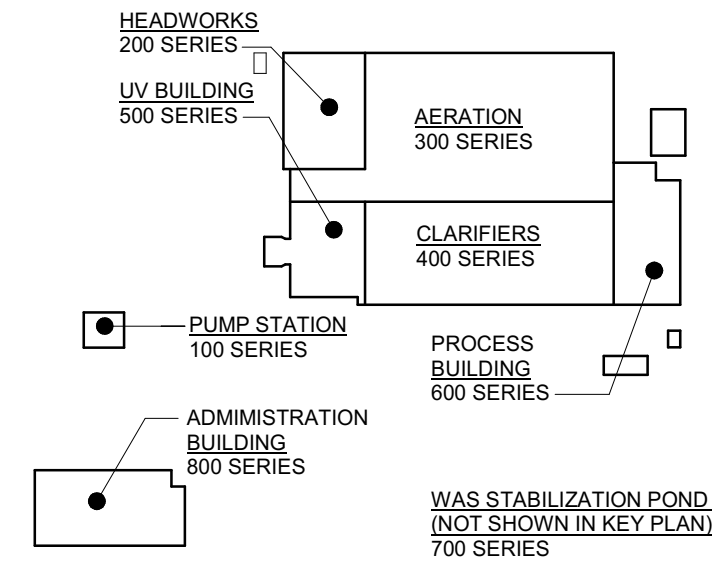
1. TYPICAL EXTERIOR DOOR JAMB @ CONCRETE BLOCK

SCALE : 1 : 10



8. TYPICAL INTERIOR DOOR JAMB @ CONCRETE BLOCK

SCALE : 1 : 10



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

0 ISSUED FOR TENDER 25/04/2025

No. ISSUE / REVISION DD/MM/YY

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SCALE: 1 : 10

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP

2025-04-25 OF ARCHITECTS

STEPHANIE CAMPBELL LICENCE 9391

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL SITE-WIDE

TYPICAL DETAILS

DESIGN: SC/KA

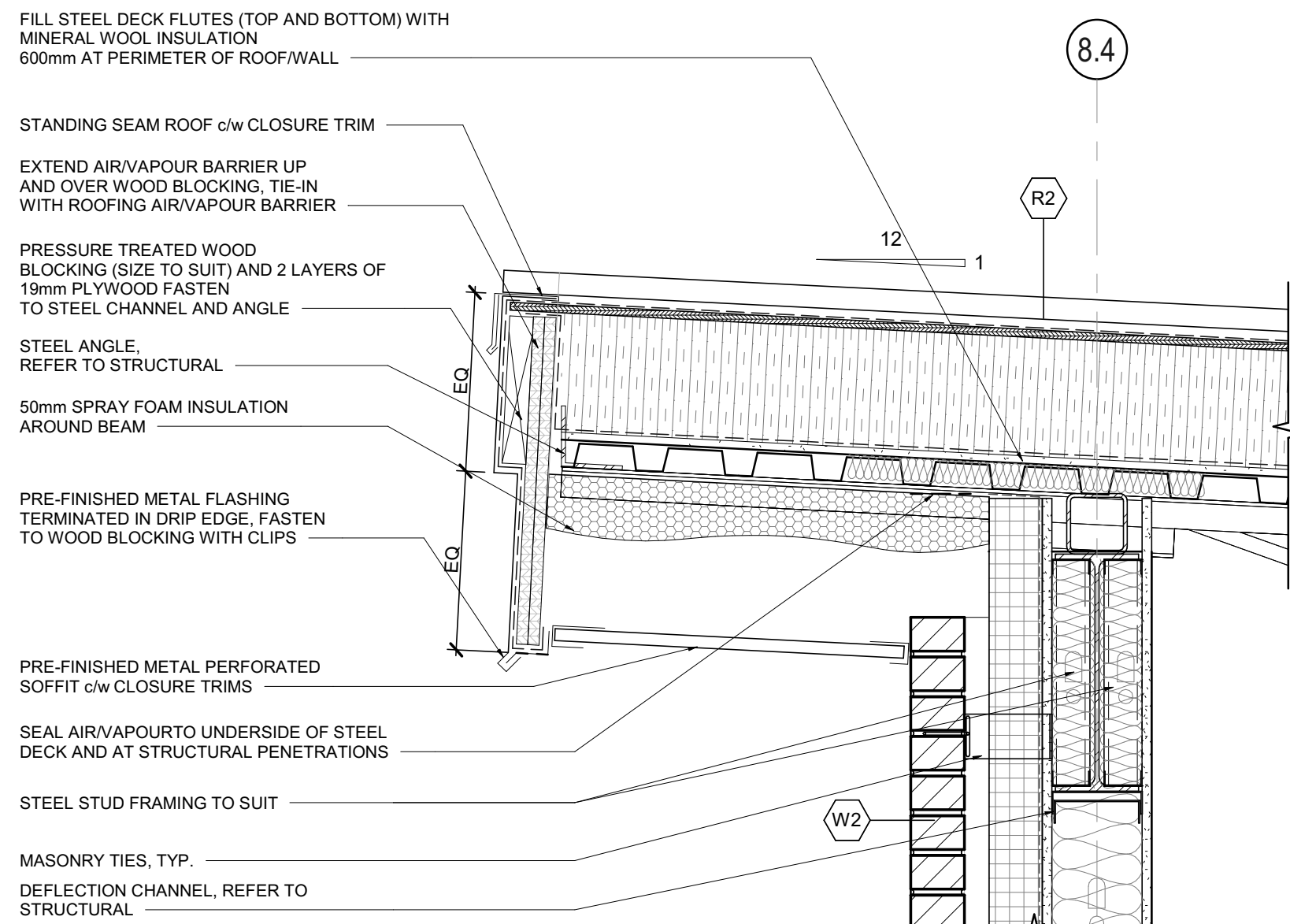
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CHECKED: HB/SC

JLR #: 32296-001

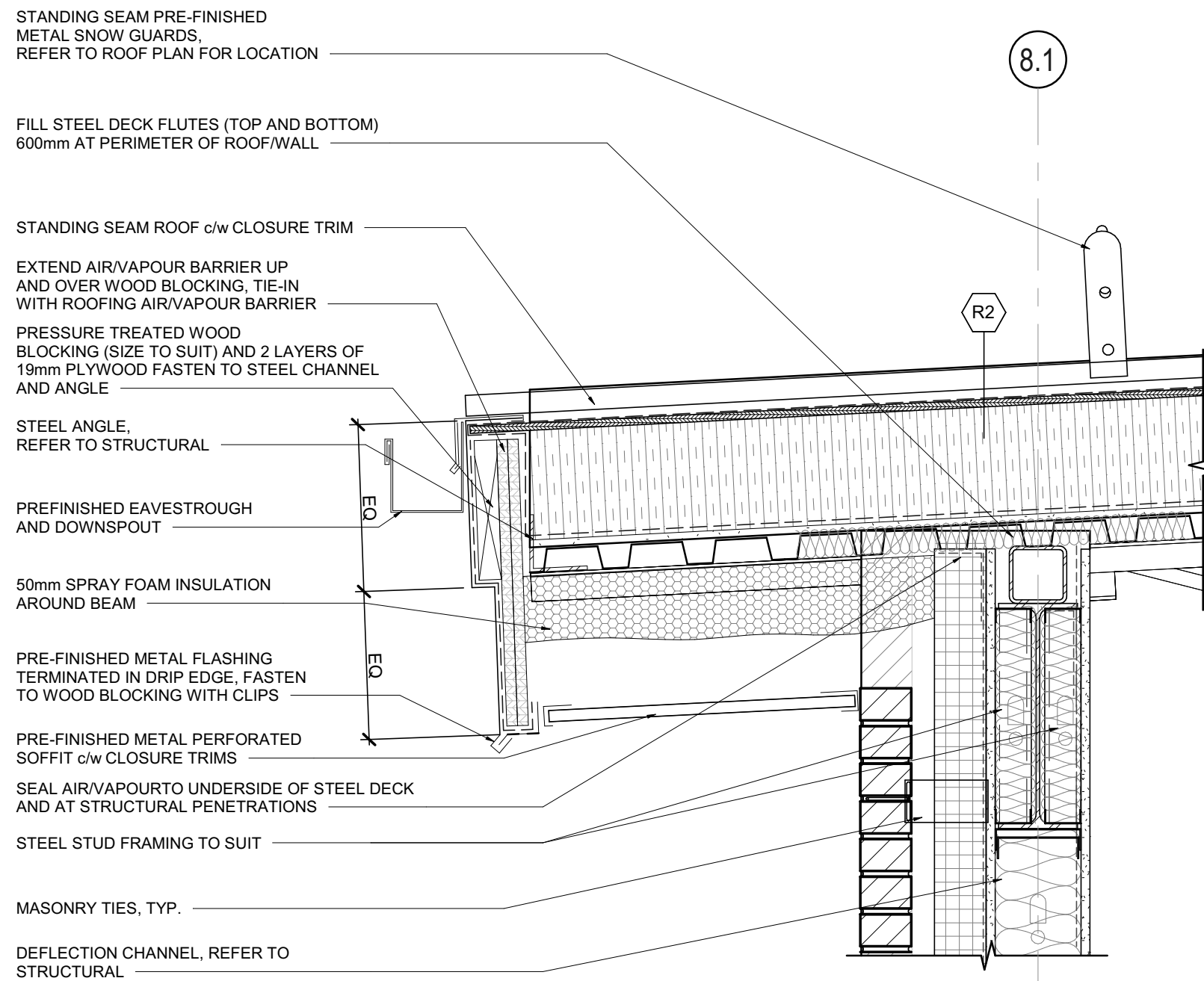
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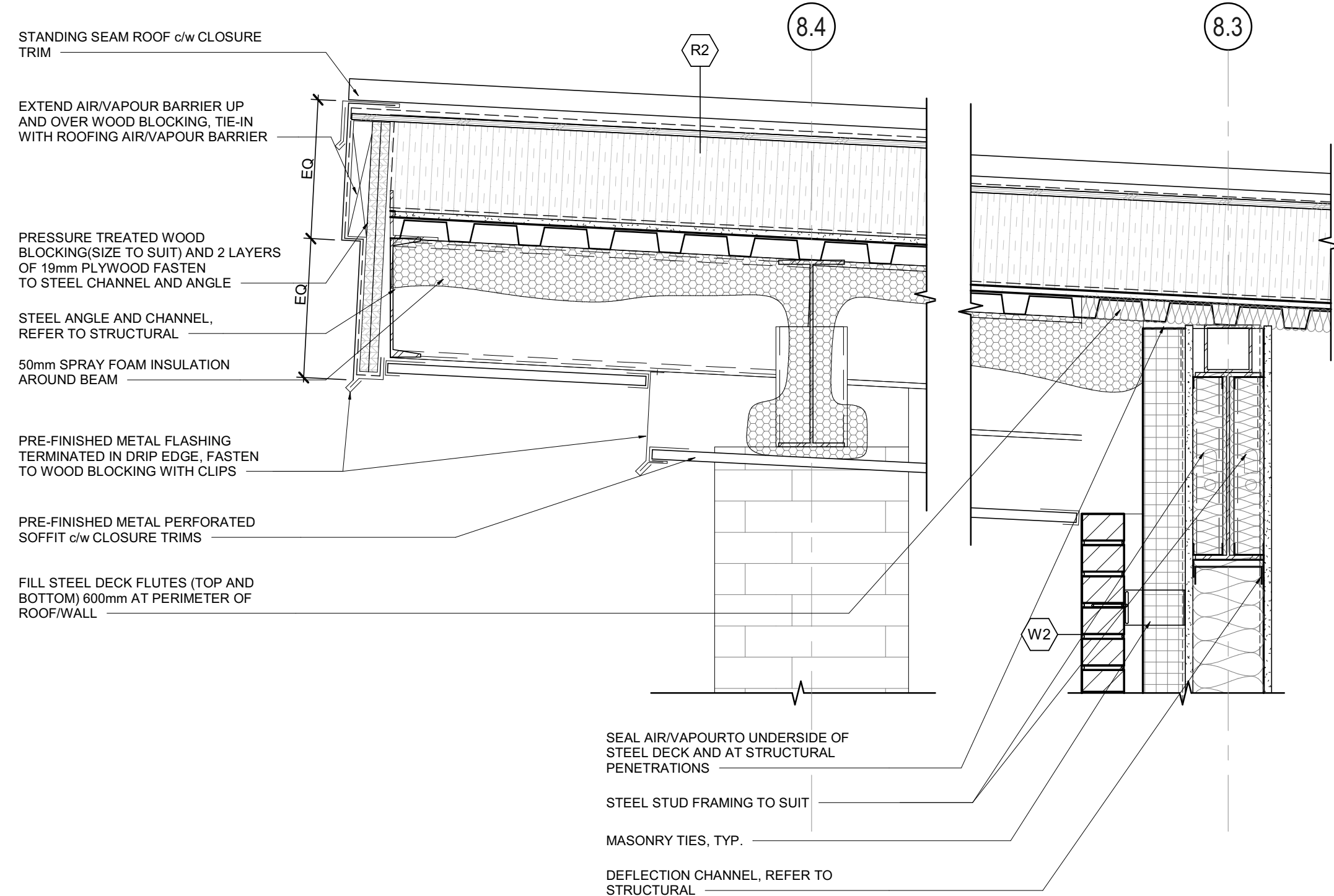
STANDING SEEM ROOF OVERHANG DETAIL
@HIGH POINT

SCALE : 1 : 10



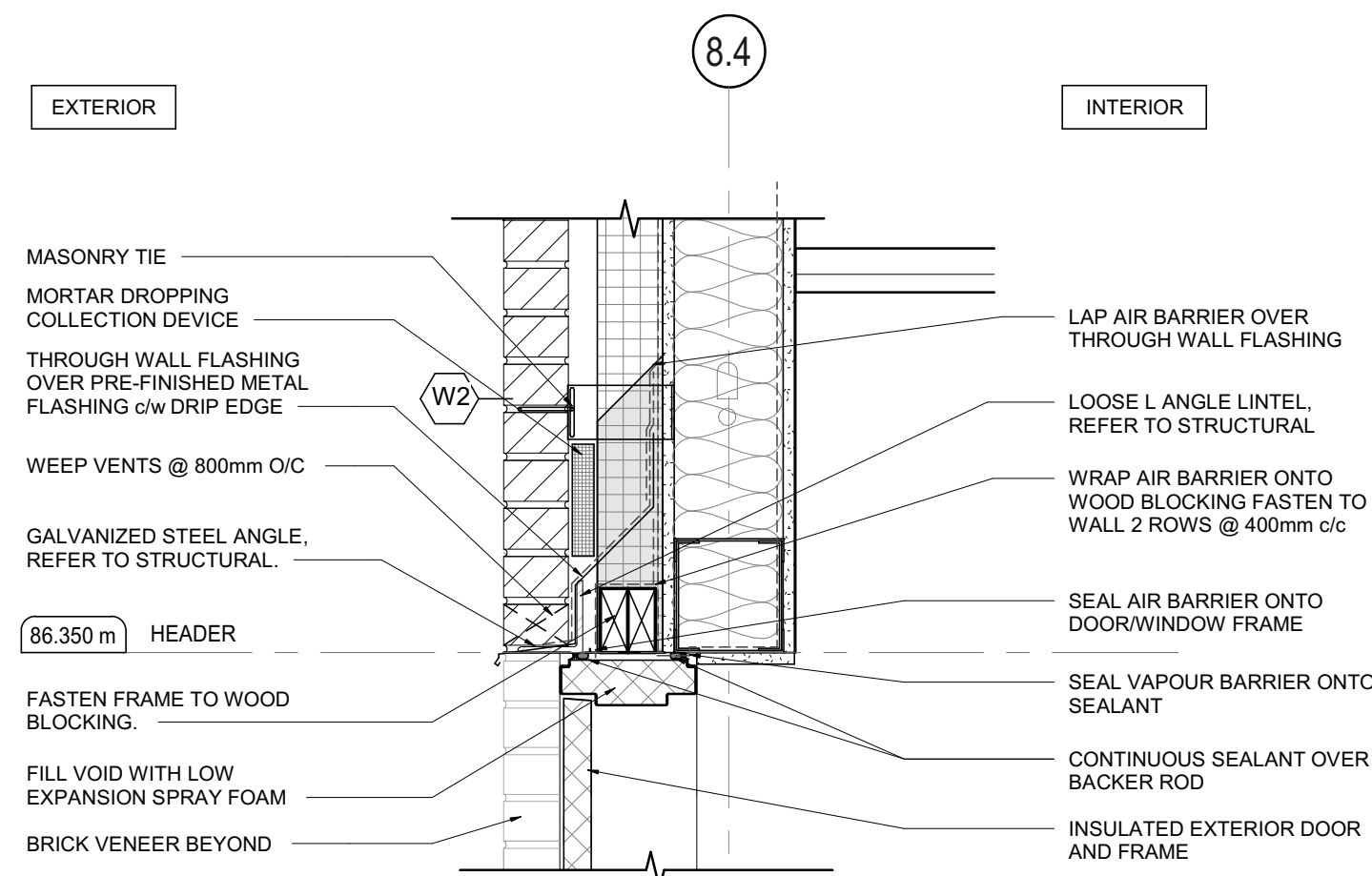
STANDING SEEM ROOF OVERHANG DETAIL
@LOW POINT

SCALE : 1 : 10



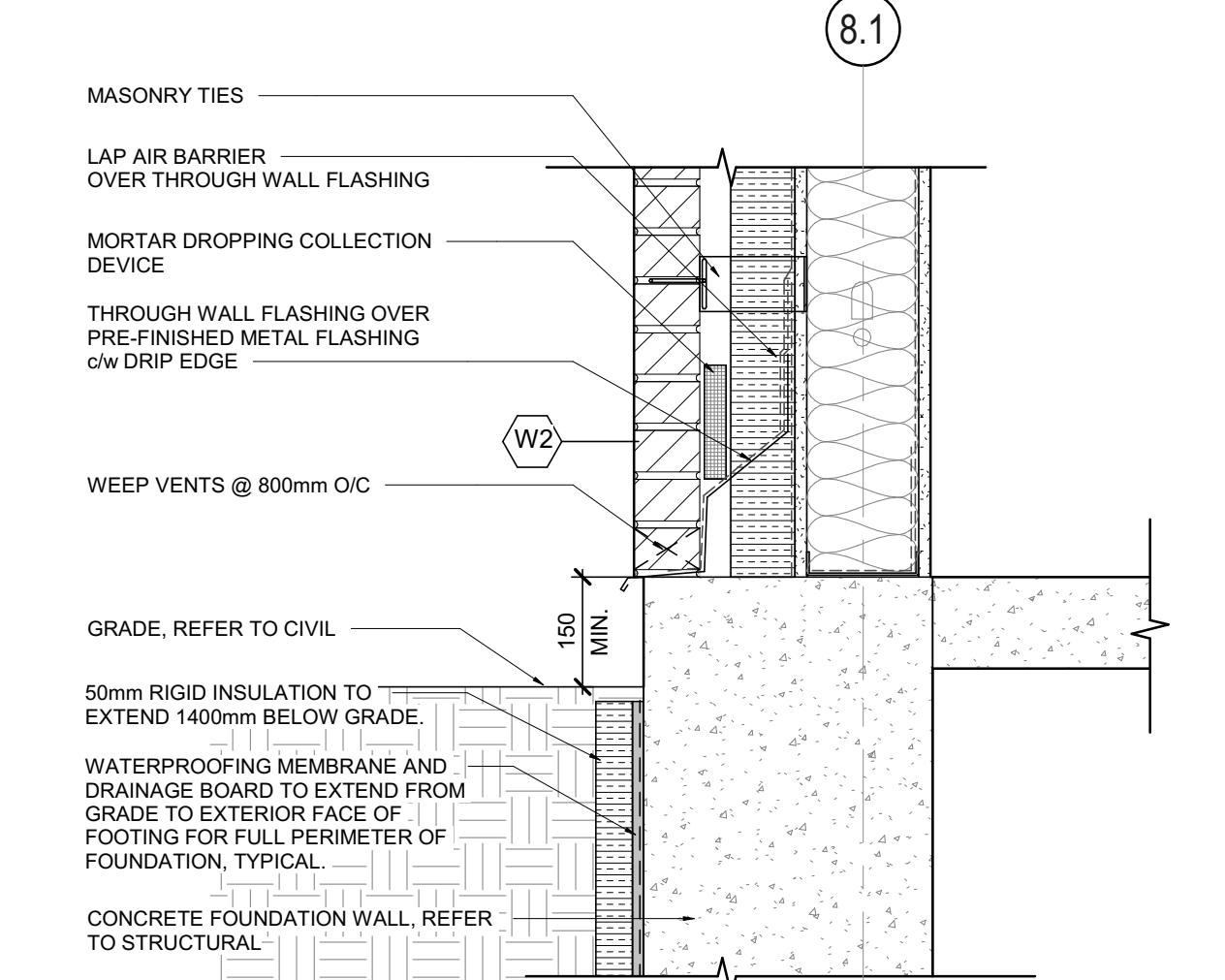
STANDING SEEM ROOF OVERHANG DETAIL
@CANOPY

SCALE : 1 : 10



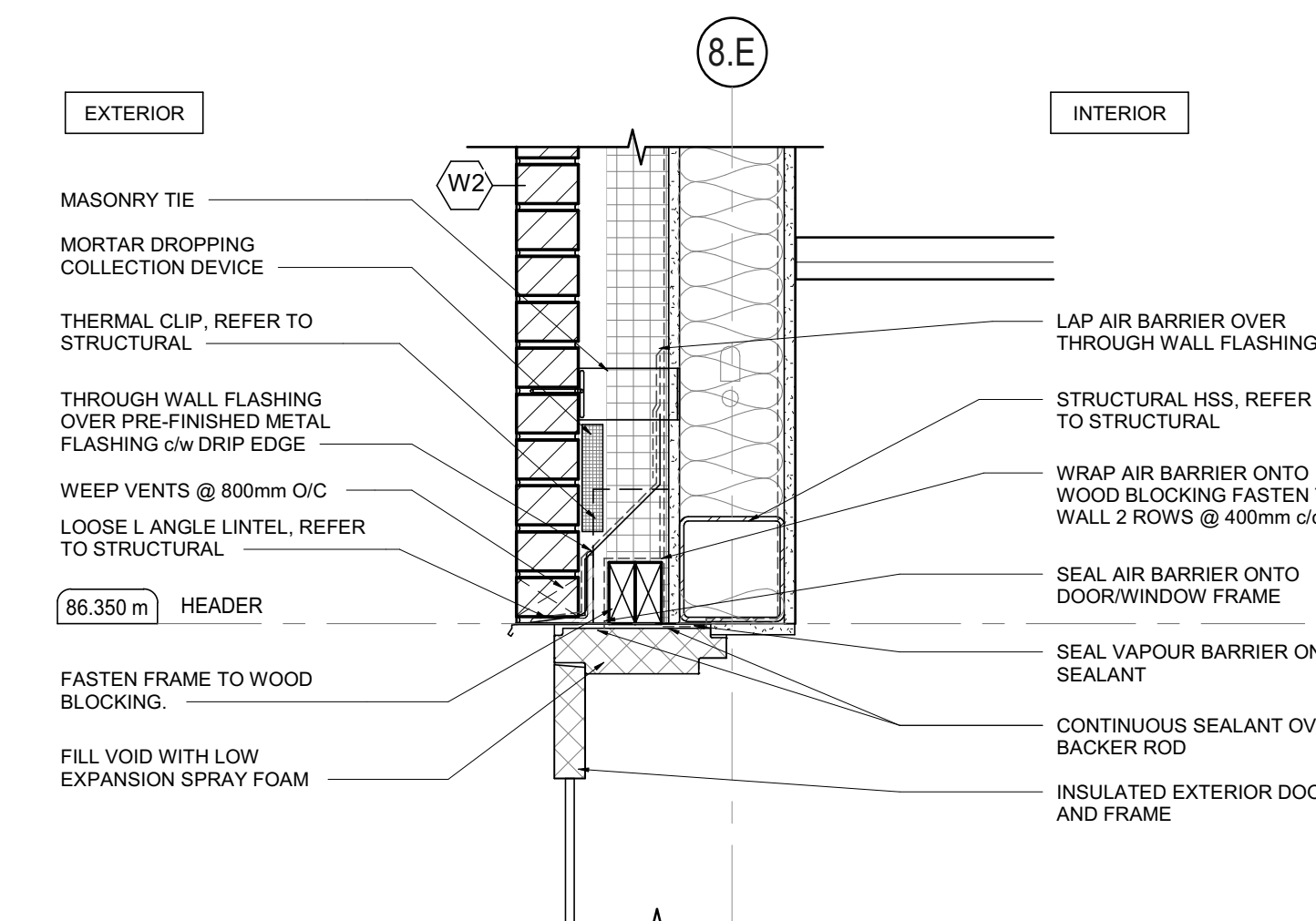
TYPICAL DOOR/WINDOW HEADER

SCALE : 1 : 10



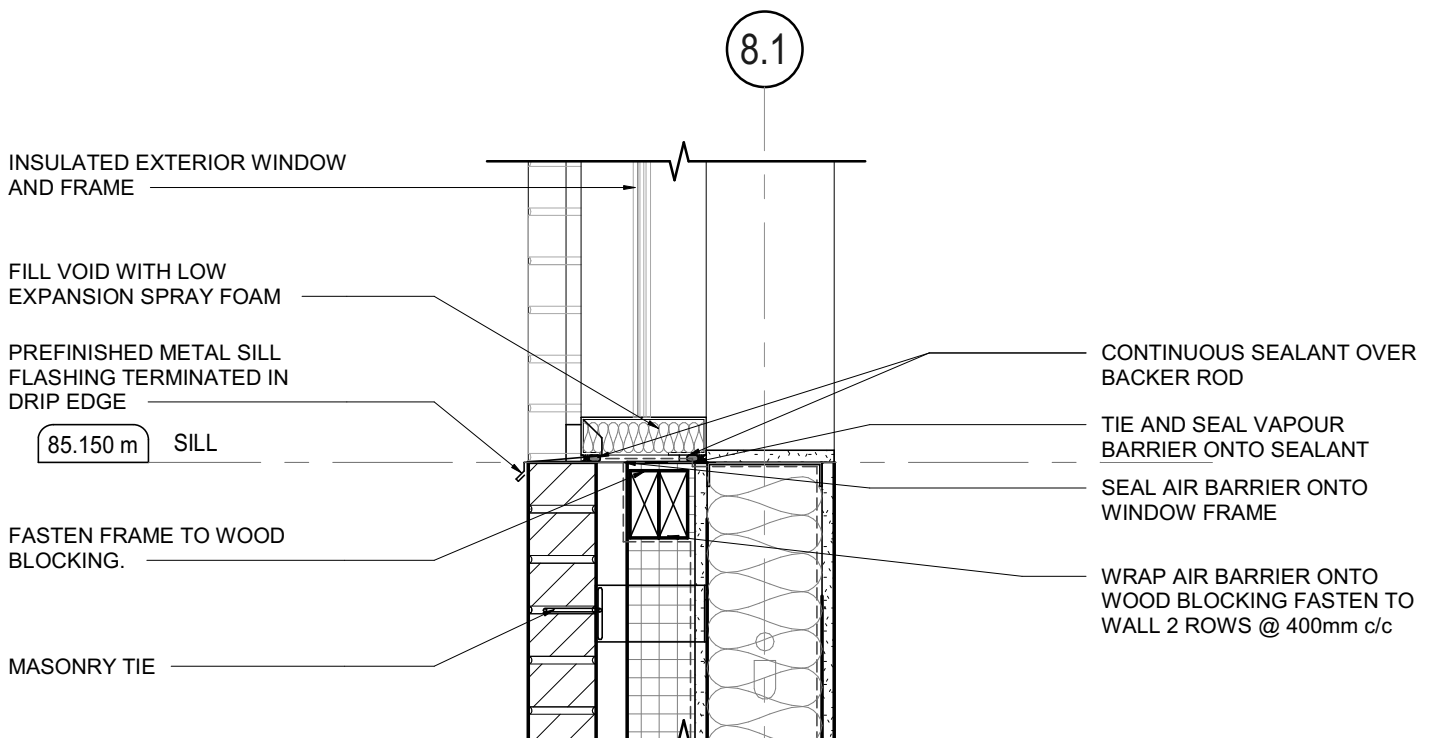
BASE DETAIL @ METAL STUDS

SCALE : 1 : 10



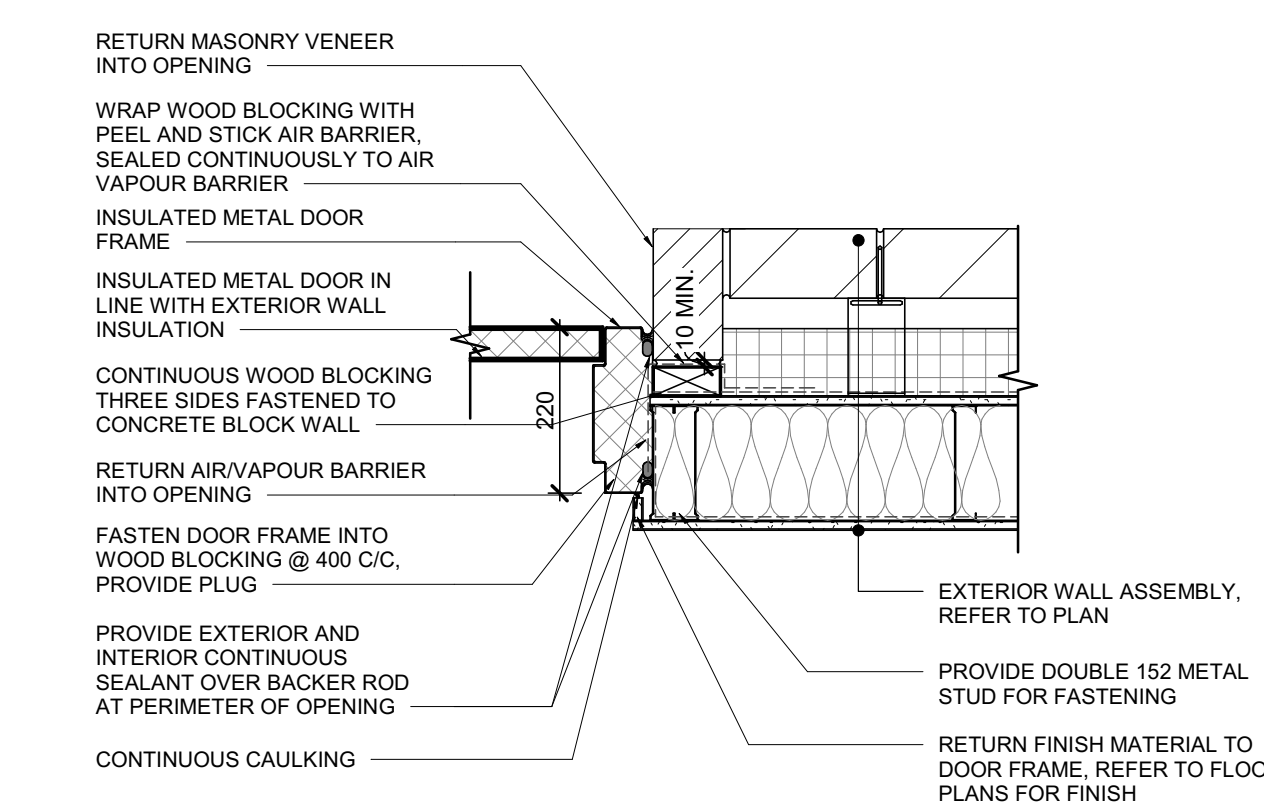
DOOR HEADER @ VESTIBULE

SCALE : 1 : 10



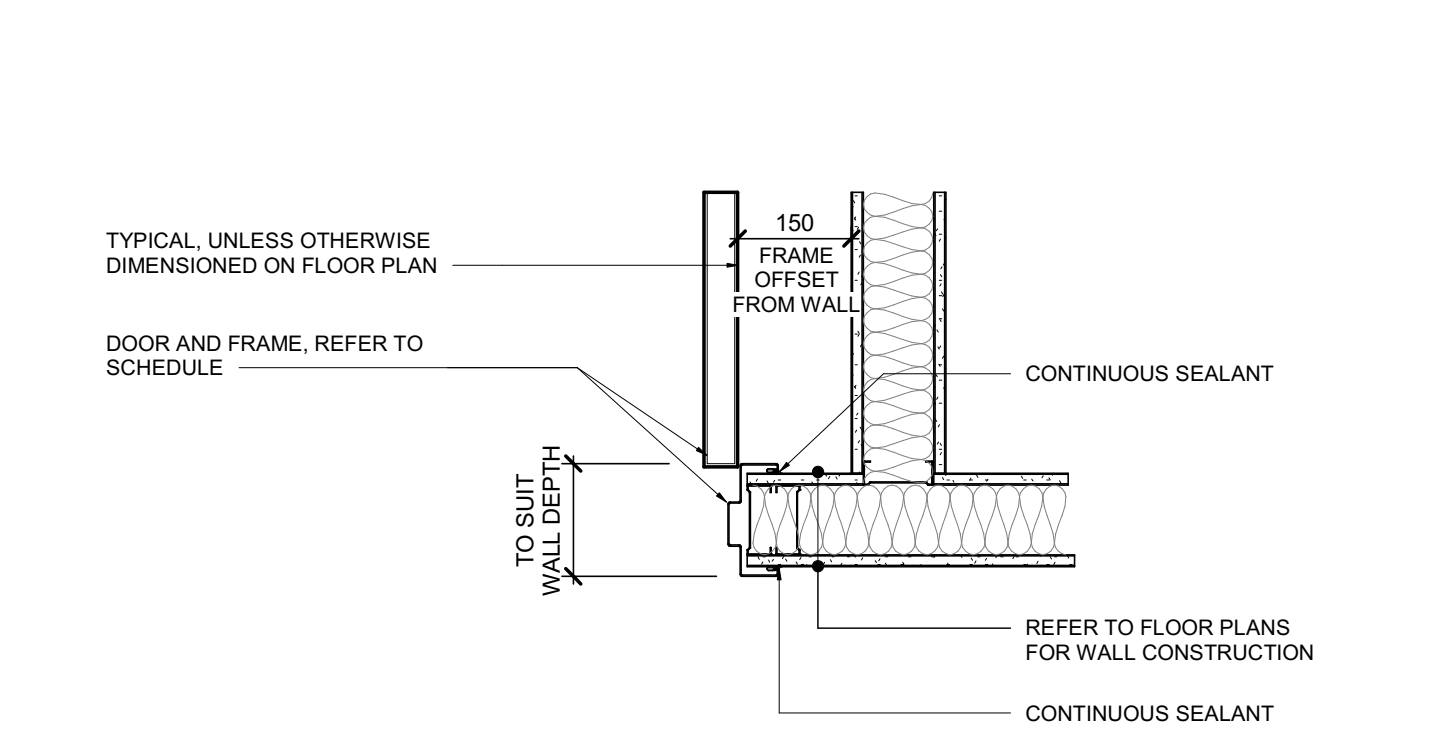
TYPICAL WINDOW SILL

SCALE : 1 : 10



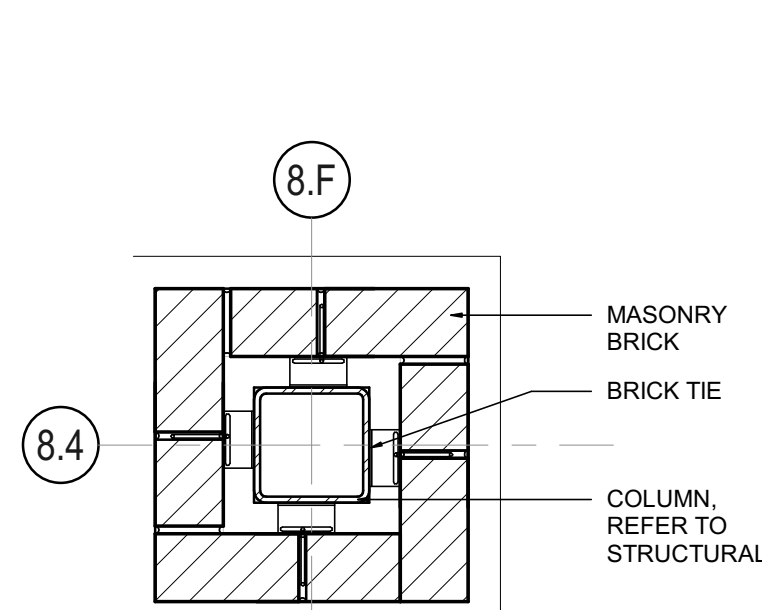
TYPICAL EXTERIOR DOOR JAMB @ METAL STUD

SCALE : 1 : 10



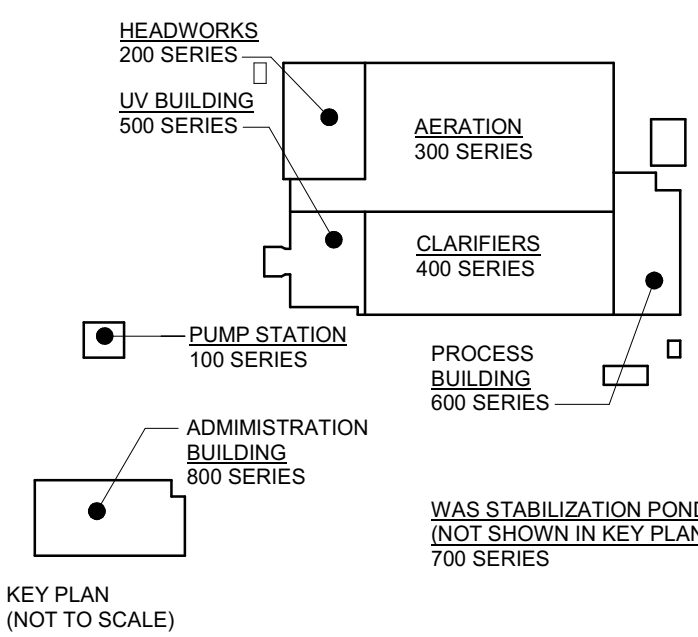
TYPICAL INTERIOR DOOR JAMB @ METAL STUD

SCALE : 1 : 10



BRICK COLUMN PLAN SECTION DETAIL

SCALE : 1 : 10



DESIGN DOCUMENTS HEREIN HAVE
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ISSUE / REVISION DDMMYY

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CONSULTANT:

PROFESSIONAL STAMP



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL
SITE WIDE
TYPICAL DETAILS

DESIGN: SC/KA

DRAWN: NP

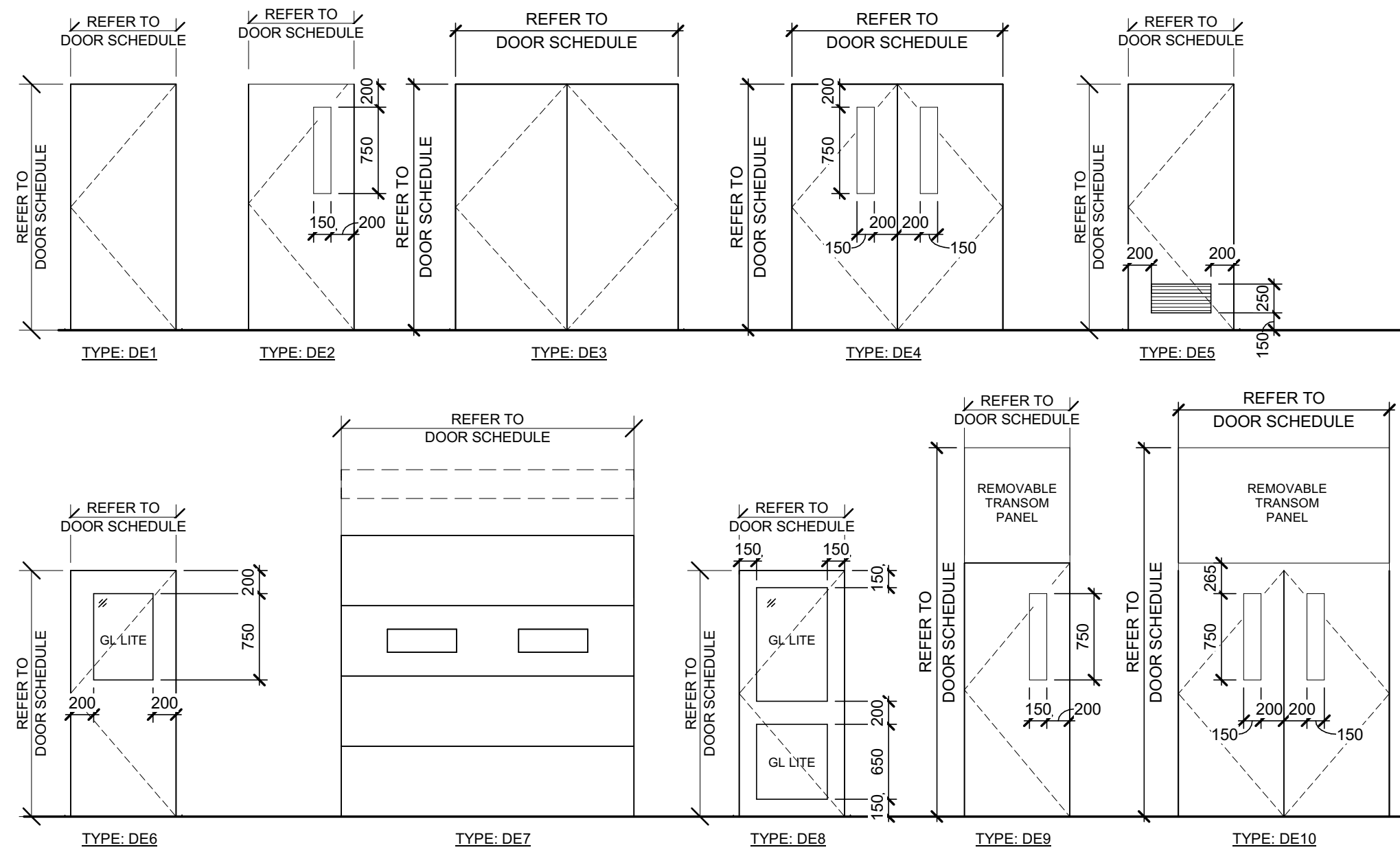
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JLR #: 32296-001

A004

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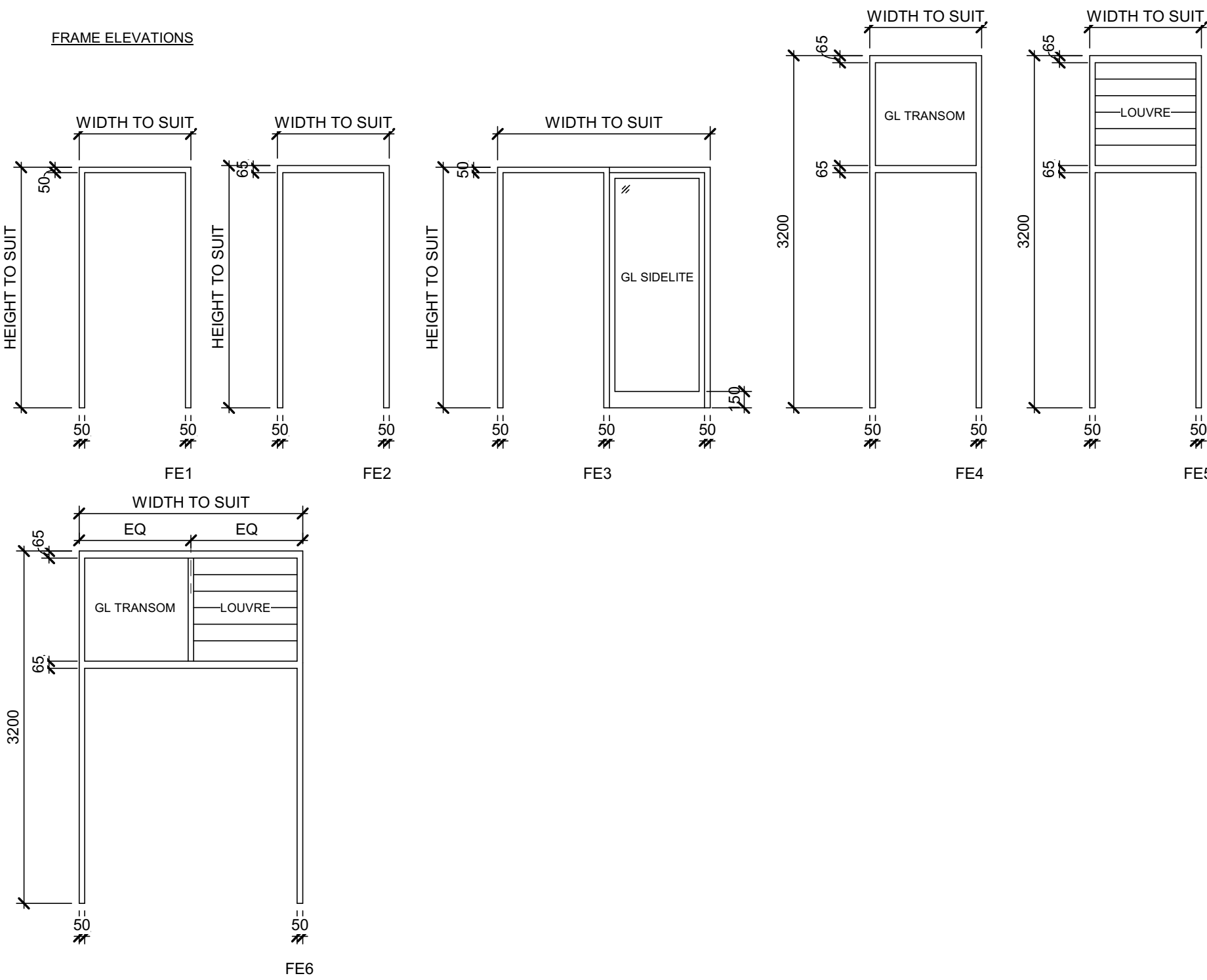
DOOR ELEVATIONS



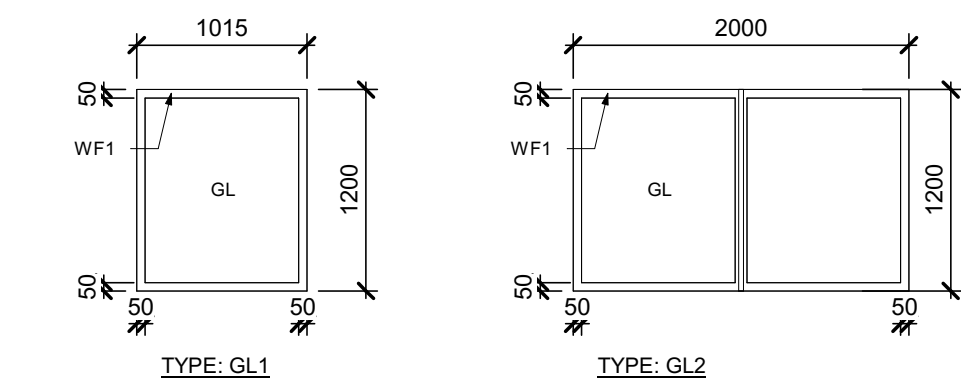
DOOR NOTES:

1. REFER TO DOOR AND FRAME SCHEDULE FOR DOOR HEIGHTS AND WIDTHS.
2. TEMPERED GLAZING IN ALL INTERIOR DOORS, UNLESS OTHERWISE NOTED.
3. INSULATED TEMPERED GLAZING IN EXTERIOR DOORS AND TRANSOMS.
4. FIRE RATED GLAZING IN ALL FIRE RATED DOORS, REFER TO SCHEDULE.
5. DOORS IN FIRE RATED ASSEMBLIES TO BE SMOKE SEALED.
6. PROVIDE DOOR RESTRAINT SYSTEM FOR ALL OVERHEAD DOORS, BY PRO-PORTES (WWW.PRO-PORTES.COM). SYSTEM TO BE INTERLOCKED WITH THE DOOR OPERATOR MOTOR IN ORDER TO CUT OFF POWER TO THE OPERATOR WHEN RESTRAINT SYSTEM IS ENGAGED.
7. REFER TO SPECIFICATIONS FOR GLAZING DETAILS

FRAME ELEVATIONS



WINDOW ELEVATIONS



HATCH SCHEDULE1

Building	HATCH NUMBER	HATCH SIZE	REMARKS
PROCESS BUILDING	IH3	1900 x 800	REFER TO SPECIFICATIONS

ROOM FINISH SCHEDULE

ROOM No.	NAME	FLOOR		WALLS										CEILING		FIRE RATING	REMARKS
		FINISH	BASE	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH		
200	SCREEN AND DEGRIT ROOM	SC	-	CB	-	CB	-	CB	-	CB	-	CB	-	ES	-	-	-
201	ELECTRICAL ROOM	EP	-	CB	PT	CB	PT	CB	PT	CB	PT	CB	PT	ES	-	-	-
202	MECHANICAL ROOM	SC	-	CB	PT	CB	PT	CB	PT	CB	PT	CB	PT	ES	-	-	-
203	SCREENINGS BIN ROOM	SC	-	CB	-	CB	-	CB	-	CB	-	CB	-	ES	-	-	-
301	TUNNEL	SC	-	EC	EC	EC	EC	EC	EC	EC	EC	EC	EC	ES	-	-	-
500	UV DISINFECTION CHANNEL	SC	-	CB	-	CB	-	CB	-	CB	-	CB	-	ES	-	-	-
501	ELECTRICAL ROOM	EP	-	CB	PT	CB	PT	CB	PT	CB	PT	CB	PT	ES	-	-	-
502	EXIT STAIRS	SC	-	CB	-	CB	-	CB	EC	CB	-	CB	-	ES	-	-	-
503	MECHANICAL ROOM	SC	-	CB	PT	CB	PT	CB	PT	CB	PT	CB	PT	ES	-	-	-
504	ELECTRICAL ROOM BASEMENT LEVEL	SC	-	CB	-	CB	-	CB	-	CB	-	CB	-	ES	-	-	-
600	BLOWER ROOM	SC	-	CB	-IAP	CB	-IAP	CB	-IAP	CB	-IAP	CB	-IAP	ES	-	-	REFER TO PLAN AND WALL SECTION FOR EXTENT OF AP
601	MECHANICAL ROOM	SC	-	CB	PT	CB	PT	CB	PT	CB	PT	CB	PT	ES	-	-	-
602	CHEMICAL ROOM	EP	-	CB	PT	CB	PT	CB	PT	CB	PT	CB	PT	ES	-	-	-
604	PROCESS BUILDING BASEMENT	SC	-	EC	PT	EC	PT	EC	PT	EC	PT	EC	PT	ES	-	-	-
605	EXIT STAIRS	SC	-	EC/CB	-	EC/CB	-	EC/CB	-	EC/CB	-	EC/CB	-	ES	-	-	-
800	CORRIDOR	VT	RB	GB	PT	GB	PT	GB	PT	GB	PT	GB	PT	ACT	-	2700	-
801	LUNCH / MEETING ROOM	VT	RB	GB	PT	GB	PT	GB	PT	GB	PT	GB	PT	ACT	-	2700	-
802	OFFICE	VT	RB	GB	PT	GB	PT	GB	PT	GB	PT	GB	PT	ACT	-	2700	-
803	LABORATORY	VT	RB	GBM	PT	GBM	PT	GBM	PT	GBM	PT	GBM	PT	ACT	-	2700	-
804	UNIVERSAL WASHROOM	CT	CT	CT/GWBM	-IPT	CT/GWBM	-IPT	CT/GWBM	-IPT	CT/GWBM	-IPT	CT/GWBM	-IPT	ACT	-	2700	REFER TO INTERIOR ELEVATIONS FOR EXTENT OF CT
805	DOCUMENT ROOM	VT	RB	GB	PT	GB	PT	GB	PT	GB	PT	GB	PT	ACT	-	2700	-
806	JANITOR'S CLOSET	SC	RB	GBM	PT	GBM	PT	GBM	PT	GBM	PT	GBM	PT	ES	-	-	-
807	MEN'S WASHROOM / CHANGE ROOM	CT	CT	CT/GWBM	-IPT	CT/GWBM	-IPT	CT/GWBM	-IPT	CT/GWBM	-IPT	CT/GWBM	-IPT	GBM / ACT	-	2700	REFER TO INTERIOR ELEVATIONS FOR EXTENT OF CT
808	WOMEN'S WASHROOM / CHANGE ROOM	CT	CT	CT/GWBM	-IPT	CT/GWBM	-IPT	CT/GWBM	-IPT	CT/GWBM	-IPT	CT/GWBM	-IPT	GBM / ACT	-	2700	REFER TO INTERIOR ELEVATIONS FOR EXTENT OF CT
809	ELECTRICAL ROOM	EP	RB	GB	PT	GB	PT	GB	PT	GB	PT	GB	PT	ES	-	-	-
810	MECHANICAL ROOM	SC	RB	GB	PT	GB	PT	GB	PT	GB	PT	GB	PT	ES	-	-	-
812	SCADA ROOM	VT	RB	GB	PT	GB	PT	GB	PT	GB	PT	GB	PT	ACT	-	2700	-
813	IT CLOSET	VT	RB	GB	PT	GB	PT	GB	PT	GB	PT	GB	PT	ACT	-	2700	-
814	CONTROL ROOM	VT	RB	GB	PT	GB	PT	GB	PT	GB	PT	GB	PT	ACT	-	2700	-
815	PHOTOCOPIER AREA	VT	RB	GB	PT	GB	PT	GB	PT	GB	PT	GB	PT	ACT	-	2700	-
816	LAUNDRY ROOM	VT	RB	GBM	PT	GBM	PT	GBM	PT	GBM	PT	GBM	PT	ACT	-	2700	-
817	VESTIBULE	VT	RB	GB	PT	GB	PT	GB	PT	GB	PT	GB	PT	ACT	-	2700	-

MATERIALS LEGEND

ACT ACOUSTIC CEILING TILE
CB CONCRETE BLOCK
EC EXPOSED CONCRETE
EP EPOXY FINISH
ES EXPOSED STRUCTURE
PT PAINT
SC SEALED CONCRETE
GB GYPSUM BOARD
GBM MOISTURE RESISTANT GYPSUM BOARD
VT VINYL TILE
CT CERAMIC TILE
RB RUBBER BASE
AP ACOUSTIC PANEL

NOTE:

1. FLOOR AND WALL FINISH TO BE COMPLETED PRIOR TO EQUIPMENT AND SERVICES INSTALLATION. CONTRACTOR TO PATCH AND MAKE PROPER FINISHES AFTER INSTALLATION OF ALL EQUIPMENT AND SERVICES.
2. DO NOT PAINT PORTIONS OF WALL THAT ARE ADJACENT TO TANKS OR CHANNELS.

DOOR & FRAME SCHEDULE

Building	DOOR NUMBER	LOCATION	DOOR			FRAME			FIRE RATING	HARDWARE GROUP	REMARKS
			DOOR SIZE	TYPE	MATERIAL	FINISH	TYPE	MATERIAL	FINISH		
HEADWORKS BUILDING	D201	SCREEN AND DEGRIT ROOM	1050 x 2135 x 45	DE2	IHM	PT	FE2	PS	PT	1.5H	GROUP 14
HEADWORKS BUILDING	D202	ELECTRICAL ROOM	1200 x 3100 x 45	DE9	IHM	PT	FE2	PS	PT	1.5H	GROUP 14
HEADWORKS BUILDING	D203	MECHANICAL ROOM	2 - 915 x 2135 x 45	DE4	IHM	PT	FE4	PS	PT	-	GROUP 2A
HEADWORKS BUILDING	D204	SCREENINGS BIN AREA	3048 x 3200	DE7	IHM	PT	-	PS	PT	-	-
HEADWORKS BUILDING	D205	SCREENINGS BIN AREA	915 x 2135 x 45	DE2	IHM	PT	FE4	PS	PT	-	GROUP 1
TUNNEL	D301	PROCESS BUILDING BASEMENT	1050 x 2135 x 45	DE2	HM	PT	FE2	PS	PT	45 MIN	GROUP 15
UV BUILDING	D501	EXIT STAIRS	915 x 2135 x 45	DE1	IHM	PT	FE4	PS	PT	1.5H	GROUP 14
UV BUILDING	D502	UV DISINFECTION CHANNEL	2 - 915 x 3135 x 45	DE10	IHM	PT	FE2	PS	PT	-	GROUP 2A
UV BUILDING	D503	ELECTRICAL ROOM	1200 x 3135 x 45	DE9	IHM	PT	FE2	PS	PT	-	GROUP 1
UV BUILDING	D504	EXIT STAIRS	1050 x 2135 x 45	DE1	HM	PT	FE2	PS	PT	45 MIN	GROUP 15
UV BUILDING	D505	MECHANICAL ROOM	1050 x 2135 x 45	DE2	HM	PT	FE2	PS	PT	-	GROUP 16
UV BUILDING	D506	EXIT STAIRS BASEMENT	1050 x 2135 x 45	DE2	HM	PT	FE2	PS	PT	1.5H	GROUP 15
UV BUILDING	D507	BASEMENT TUNNEL	1050 x 2135 x 45	DE1	HM	PT	FE2	PS	PT	1.5H	GROUP 5
PROCESS BUILDING	D601	CHEMICAL ROOM	915 x 2135 x 45	DE2	IHM	PT	FE4	PS	PT	-	GROUP 1
PROCESS BUILDING	D602	EXIT STAIRS GROUND FLOOR	915 x 2135 x 45	DE1	IHM	PT	FE4	PS	PT	-	GROUP 1
PROCESS BUILDING	D603	BLOWER ROOM	2 - 1200 x 2615 x 45	DE3	IHM	PT	FE5	PS	PT	-	GROUP 2A
PROCESS BUILDING	D604	ELECTRICAL ROOM	1200 x 3135 x 45	DE9	IHM	PT	FE2	PS	PT	-	GROUP 1
PROCESS BUILDING	D605	MECHANICAL ROOM	1050 x 2135 x 45	DE2	HM	PT	FE2	PS	PT	-	GROUP 4
PROCESS BUILDING	D606	MECHANICAL ROOM	2 - 915 x 2135 x 45	DE4	IHM	PT	FE5	PS	PT	-	GROUP 2A
PROCESS BUILDING	D607	EXIT STAIRS GROUND FLOOR	915 x 2135 x 45	DE1	HM	PT	FE4	PS	PT	45 MIN	GROUP 15
PROCESS BUILDING	D608	ELECTRICAL ROOM	1050 x 2135 x 45	DE2	HM	PT	FE2	PS	PT	-	GROUP 4
PROCESS BUILDING	D609	EXIT STAIRS BASEMENT	1050 x 2135 x 45	DE1	HM	PT	FE2	PS	PT	45 MIN	GROUP 15
PROCESS BUILDING	D610	EXIT STAIRS BASEMENT	1050 x 2135 x 45	DE1	HM	PT	FE2	PS	PT	45 MIN	GROUP 15
ADMINISTRATION BUILDING	D801	ELECTRICAL ROOM	1050 x 2135 x 45	DE9	IHM	PT	FE2	PS	PT	-	GROUP 1
ADMINISTRATION BUILDING	D802	CORRIDOR	1050 x 2135 x 45	DE2	IHM	PT	FE2	PS	PT	-	GROUP 1
ADMINISTRATION BUILDING	D803	VESTIBULE	1050 x 2150 x 45	DE8	AN	-	FE3	AN	-	-	GROUP 10
ADMINISTRATION BUILDING	D804	LAUNDRY ROOM	1050 x 2135 x 45	DE2	HM	PT	FE2	PS	PT	-	GROUP 4
ADMINISTRATION BUILDING	D805	LUNCH ROOM	1050 x 2135 x 45	DE1	HM	PT	FE3	PS	PT	-	GROUP 4
ADMINISTRATION BUILDING	D806	OFFICE	1050 x 2135 x 45	DE1	HM	PT	FE3	PS	PT	-	GROUP 3
ADMINISTRATION BUILDING	D807	LABORATORY	1050 x 2135 x 45	DE1	HM	PT	FE3	PS	PT	-	GROUP 3
ADMINISTRATION BUILDING	D808	UNIVERSAL WASHROOM	1050 x 2135 x 45	DE5	HM	PT	FE1	PS	PT	-	GROUP 8
ADMINISTRATION BUILDING	D809	DOCUMENT ROOM	1050 x 2135 x 45	DE6	HM	PT	FE1	PS	PT	-	GROUP 16
ADMINISTRATION BUILDING	D810	MENS WASHROOM	1050 x 2135 x 45	DE5	HM	PT	FE1	PS	PT	-	GROUP 7
ADMINISTRATION BUILDING	D811	JANITOR'S CLOSET	915 x 2135 x 45	DE5	HM	PT	FE1	PS	PT	45 MIN	GROUP 5
ADMINISTRATION BUILDING	D812	WOMENS WASHROOM	1050 x 2135 x 45	DE5	HM	PT	FE1	PS	PT	-	GROUP 7
ADMINISTRATION BUILDING	D813	MECHANICAL ROOM	1050 x 2135 x 45	DE2	HM	PT	FE2	PS	PT	-	GROUP 16
ADMINISTRATION BUILDING	D814	VESTIBULE	1050 x 2150 x 45	DE8	AN	-	FE3	AN	-	-	GROUP 9
ADMINISTRATION BUILDING	D815	SCADA ROOM	1050 x 2135 x 45	DE1	HM	PT	FE3	PS	PT	-	GROUP 3
ADMINISTRATION BUILDING	D816	CLOSET	915 x 2135 x 45	DE5	HM	PT	FE1	PS	PT	-	GROUP 16
ADMINISTRATION BUILDING	D817	CONTROL ROOM	1050 x 2135 x 45	DE1	HM	PT	FE3	PS	PT	-	GROUP 3
ADMINISTRATION BUILDING	D818	CORRIDOR	1050 x 2135 x 45	DE2	IHM	PT	FE2	PS	PT	-	GROUP 1

DOOR LEGEND

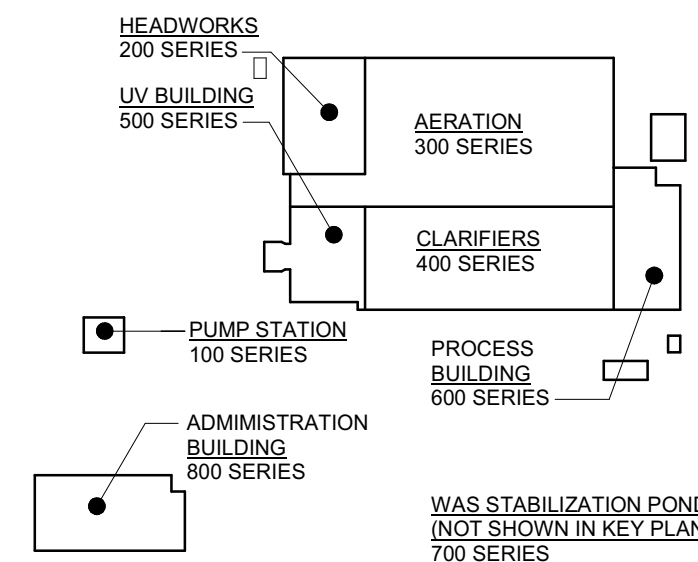
HM HOLLOW METAL DOOR
IHM INSULATED HOLLOW METAL DOOR
PT PAINT
PS PRESSED STEEL
AN ANODIZED ALUMINIUM

WINDOW SCHEDULE

WINDOW No.	WIDTH	HEIGHT	QUANTITY	FRAME TYPE	FRAME MATERIAL	SILL HEIGHT	COMMENTS
GL1	1100	1200	8	AN	AN	REFER TO ELEVATIONS	--
GL2	2000	1200	1	AN	AN	1000	-

WINDOW LEGEND

AN ANODIZED ALUMINIUM



KEY PLAN
(NOT TO SCALE)

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SCALE: 1 : 45

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP

PROJECT NORTH

2025-04-25

OF

ARCHITECTS

Stephanie Campbell

STEPHANIE CAMPBELL

LICENCE

9391

PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL
SITE - WIDE

SCHEDULES AND FINISHES

DESIGN: SC/KA

DRAWN: NP

CHECKED: HB/SC

JLR #: 32296-001

DRAWING #:
A005

SITE PLAN LEGEND

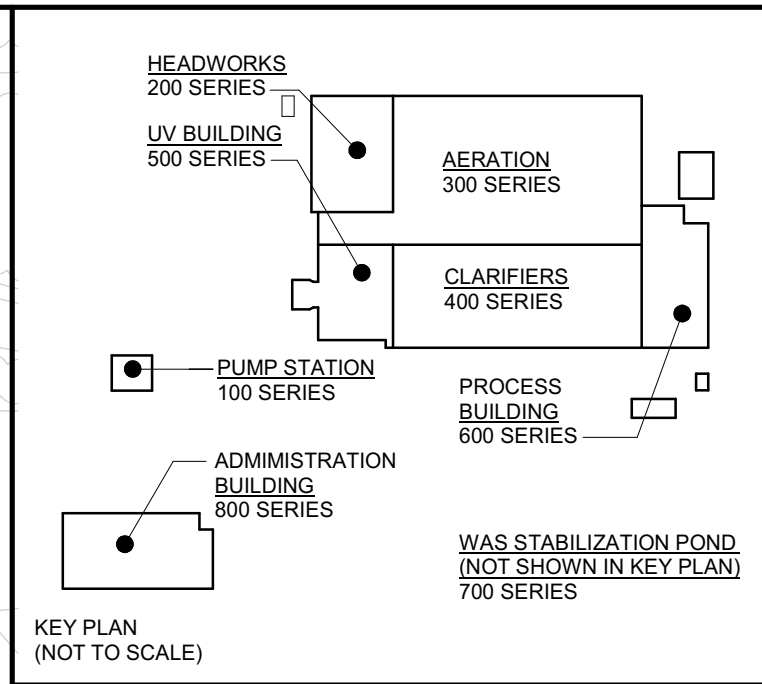
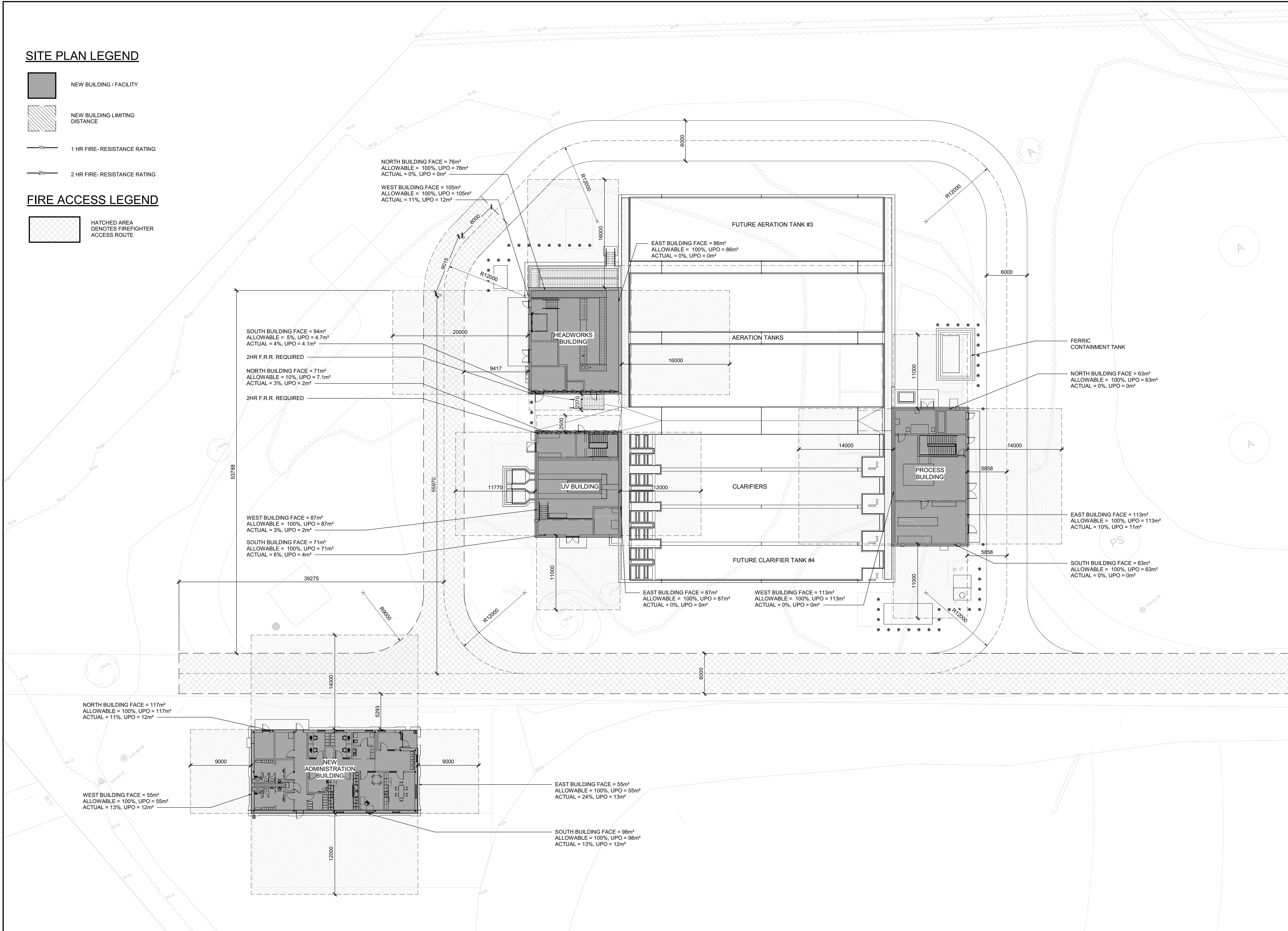
- NEW BUILDING / FACILITY
- NEW BUILDING LIMITING DISTANCE
- 1hr

1 HR FIRE- RESISTANCE RATING
- 2hr

2 HR FIRE- RESISTANCE RATING

FIRE ACCESS LEGEND

- HATCHED AREA
DEVOTES FIREFIGHTER
ACCESS ROUTE



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SCALE: As indicated

CLIENT:

CONSULTANT:

J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

www.jrichards.ca

CONSULTANT:

PROJECT NORTH

PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:
ARCHITECTURAL SITE - WIDE
LIMITING DISTANCE SITE PLAN

DESIGN: SC/KA	DRAWING #:
DRAWN: NP	A006
CHECKED: HB/SC	
JLR #:	32296-001

LEGEND:

— 2hr — FIRE SEPARATION
(2hr min FIRE RATING)

WIDTH AND HEIGHT OF EXITS:

1) THE WIDTH OF AN EXIT SHALL BE NOT LESS THAN
- 1100mm FOR CORRIDORS AND PASSAGEWAYS
- 900mm FOR STAIRS
- 790mm FOR DOORWAYS

2) EVERY EXIT SHALL HAVE A CLEAR HEIGHT OVER THE CLEAR WIDTH OF THE EXIT OF NOT LESS THAN 2100mm

3) CLEAR HEIGHT OF DOORWAYS SHALL NOT BE LESS THAN 2030mm

TRAVEL DISTANCE:

--- SERVICE EGRESS
30 m

● START POINT

▲ EXIT POINT

BOLLARDS TYPICAL,
REFER TO STRUCTURAL

GENERATOR PAD,
REFER TO STRUCTURAL

CONCRETE SLAB,
REFER TO STRUCTURAL.

GUARDRAIL

CONCRETE PAD, REFER
TO STRUCTURAL.

REFER TO AERATION
DRAWINGS SERIES A300

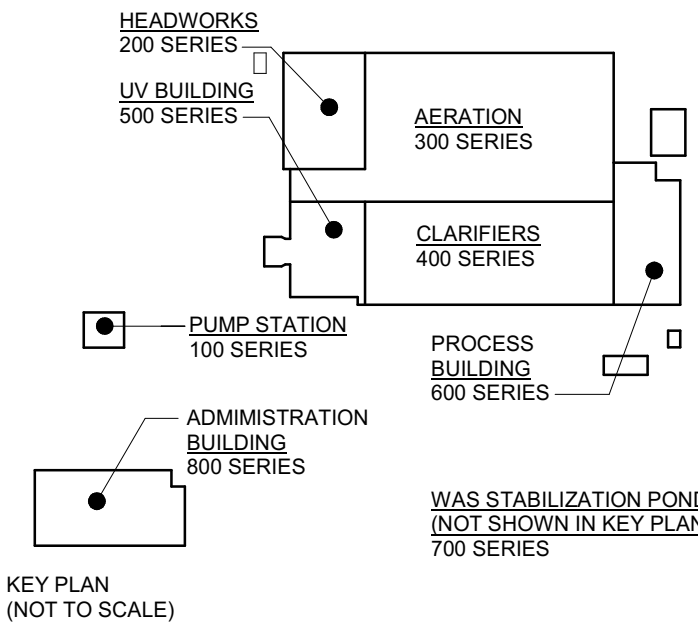
AERATION TANK no.2

AERATION TANK no.1

REFER TO AERATION
DRAWINGS SERIES A300
FOR TUNNEL INFORMATION

(TUNNEL BELOW)

NOTE: REFER TO SA DRAWING
SERIES FOR STAIR AND GUARDRAIL
INFORMATION



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SCALE: As indicated

CLIENT:



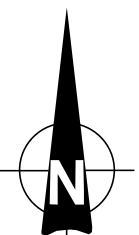
CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL
HEADWORKS

GROUND FLOOR PLAN

DESIGN: SC/KA

DRAWN: NP

CHECKED: HB/SC

JLR #: 32296-001

DRAWING #:

A201

1
A201

HEADWORKS GROUND FLOOR PLAN

SCALE: 1:50

HIDDEN LINES
DENOTES EXTENT
OF TUNNEL BELOW

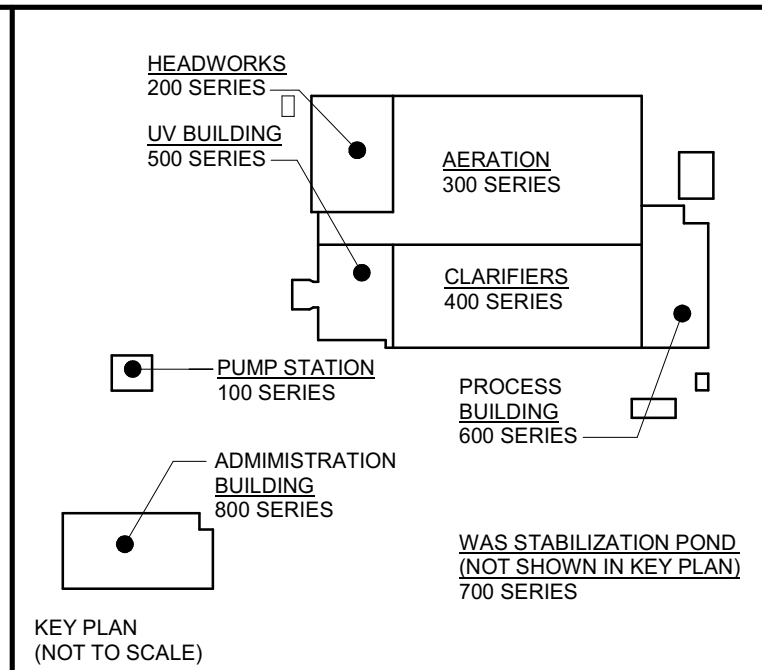
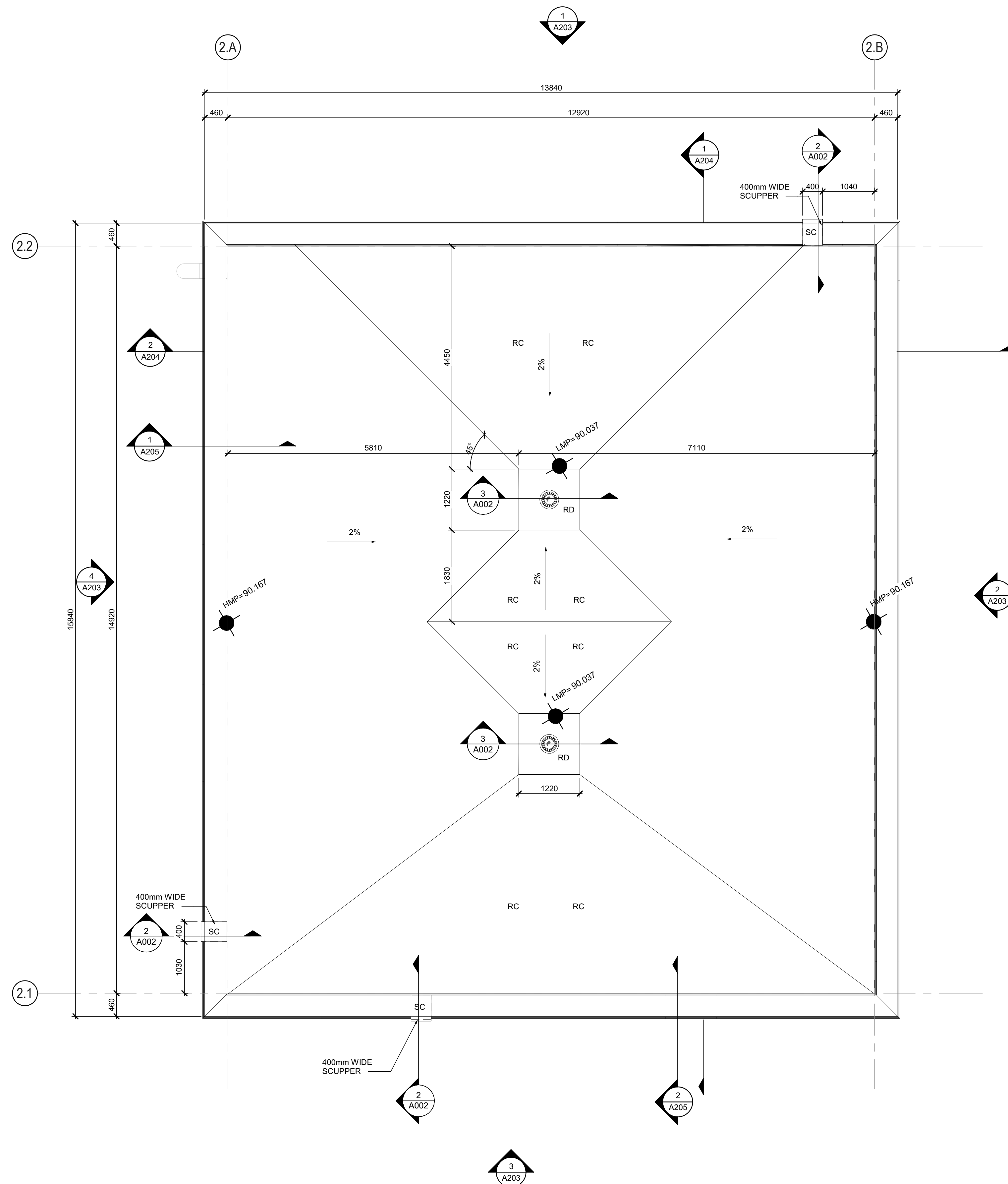
REFER TO UV BUILDING
DRAWINGS SERIES A500

UV BUILDING

File Location: C:\Users\NParedes\OneDrive\Documents\32296 A-Headworks R23_NParedes\Hill.rvt
PLOT DATE: 25/04/2025 3:16:39 PM

ROOF LEGEND

- SLOPE →
- LLMP LOW POINT OF ROOF MEMBRANE
- HMP HIGH POINT OF ROOF MEMBRANE
- SC ROOF SCUPPER
- RD ROOF DRAIN
- RC SLOPED INSULATION ROOF CRICKET



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SCALE: As indicated

CLIENT:

CONSULTANT:

ENGINEERS · ARCHITECTS · PLANNERS

PROFESSIONAL STAMP

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL HEADWORKS

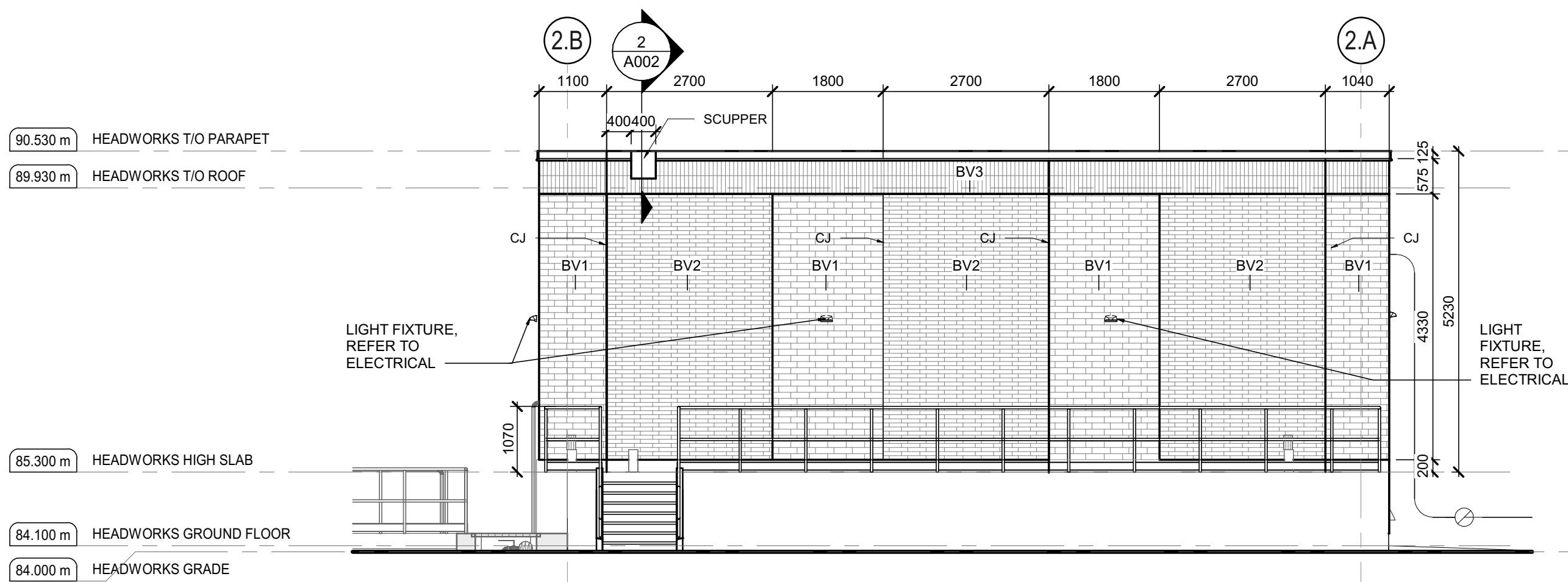
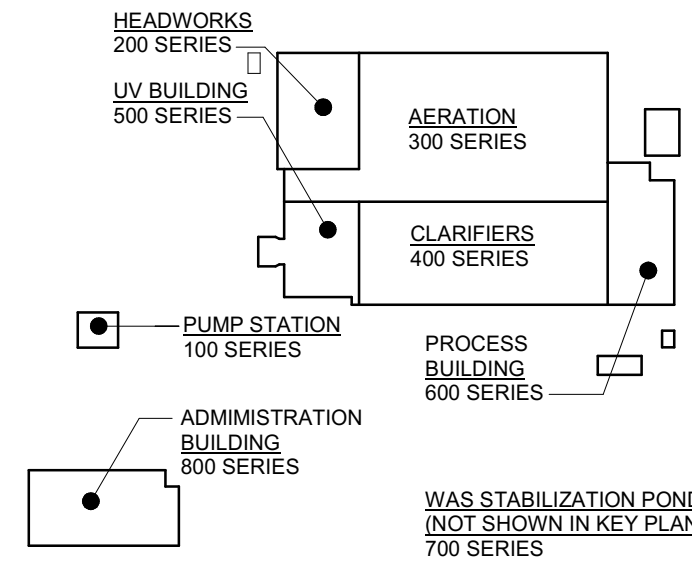
ROOF PLAN

DESIGN:	SC/KA	DRAWING #:
DRAWN:	NP	A202
CHECKED:	HB/SC	
JLR #:	32296-001	

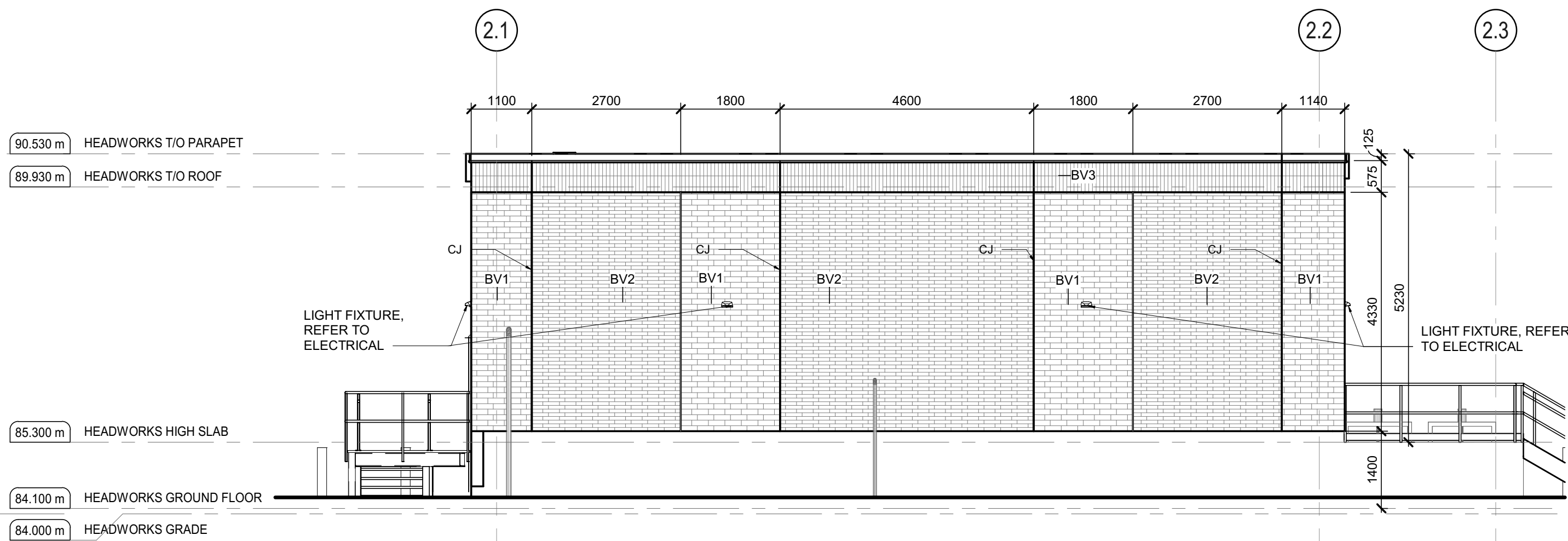
1 A202 HEADWORKS ROOF PLAN SCALE : 1 : 50

BRICK TYPE LEGEND			
ABREVIATION	BRICK TYPE	DIMENSION	COURSING
BV1	BRICK VENEER 1	90x90x290mm	RUNNING BOND
BV2	BRICK VENEER 2	90x57x290mm	RUNNING BOND
BV3	BRICK VENEER 3	90x57x290mm	SOLDIER COURSE

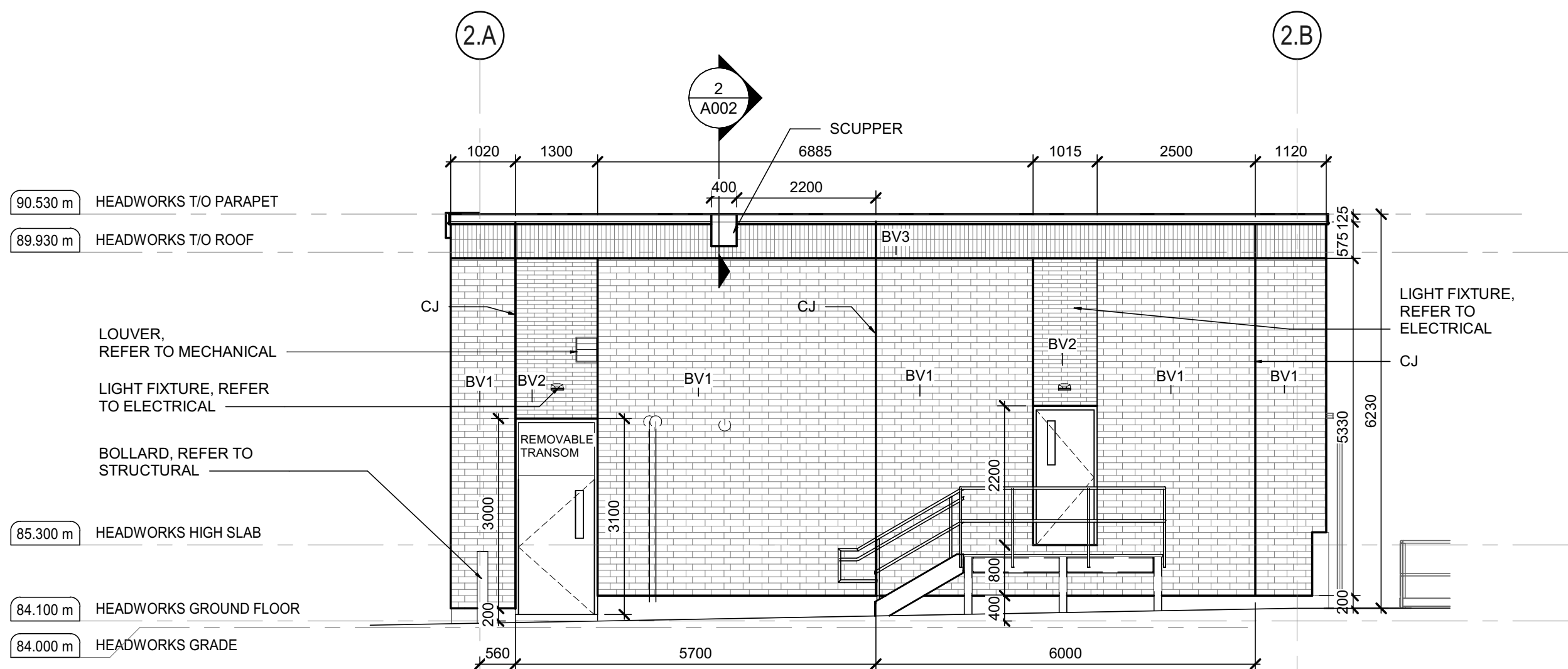
NOTE: REFER TO SA DRAWING SERIES FOR STAIR AND GUARDRAIL INFORMATION



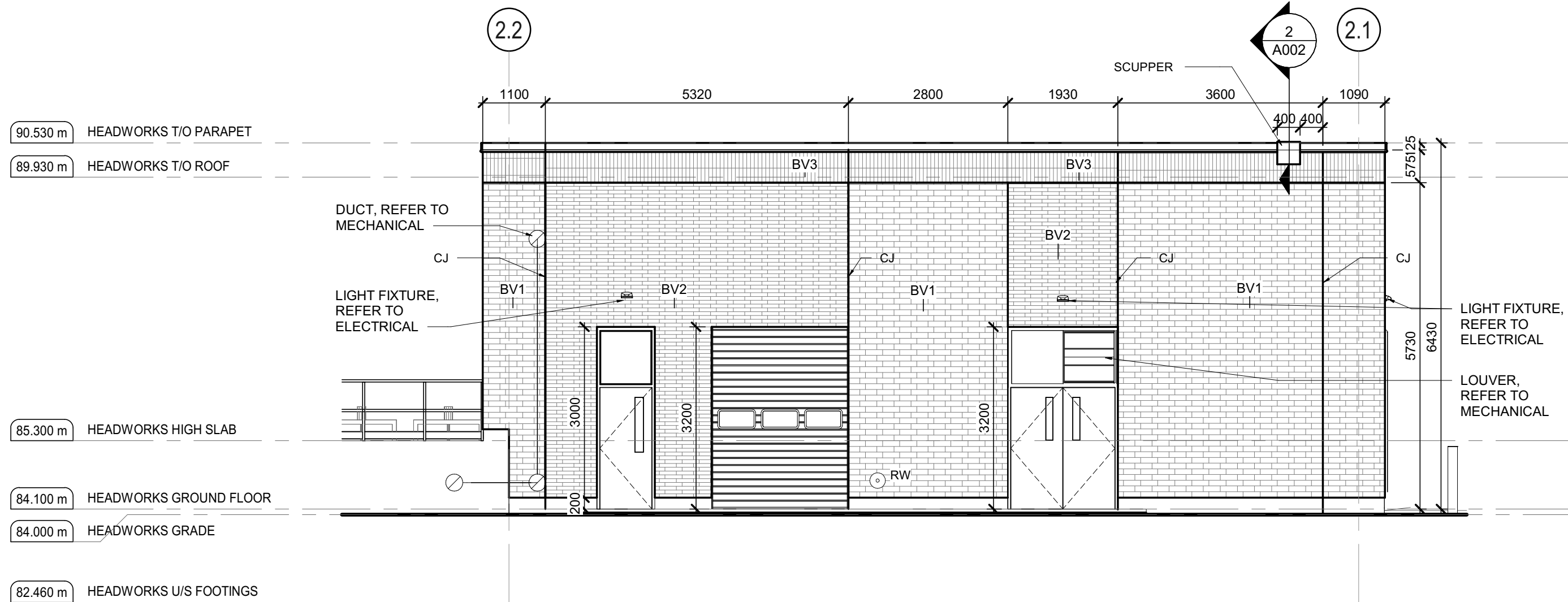
1 NORTH EXTERIOR ELEVATION
A203 SCALE : 1 : 75



2 EAST EXTERIOR ELEVATION
A203 SCALE : 1 : 75



3 SOUTH EXTERIOR ELEVATION
A203 SCALE : 1 : 75



4 WEST EXTERIOR ELEVATION
A203 SCALE : 1 : 75

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SCALE: 1 : 75

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL HEADWORKS

EXTERIOR BUILDING ELEVATIONS

DESIGN: SC/KA

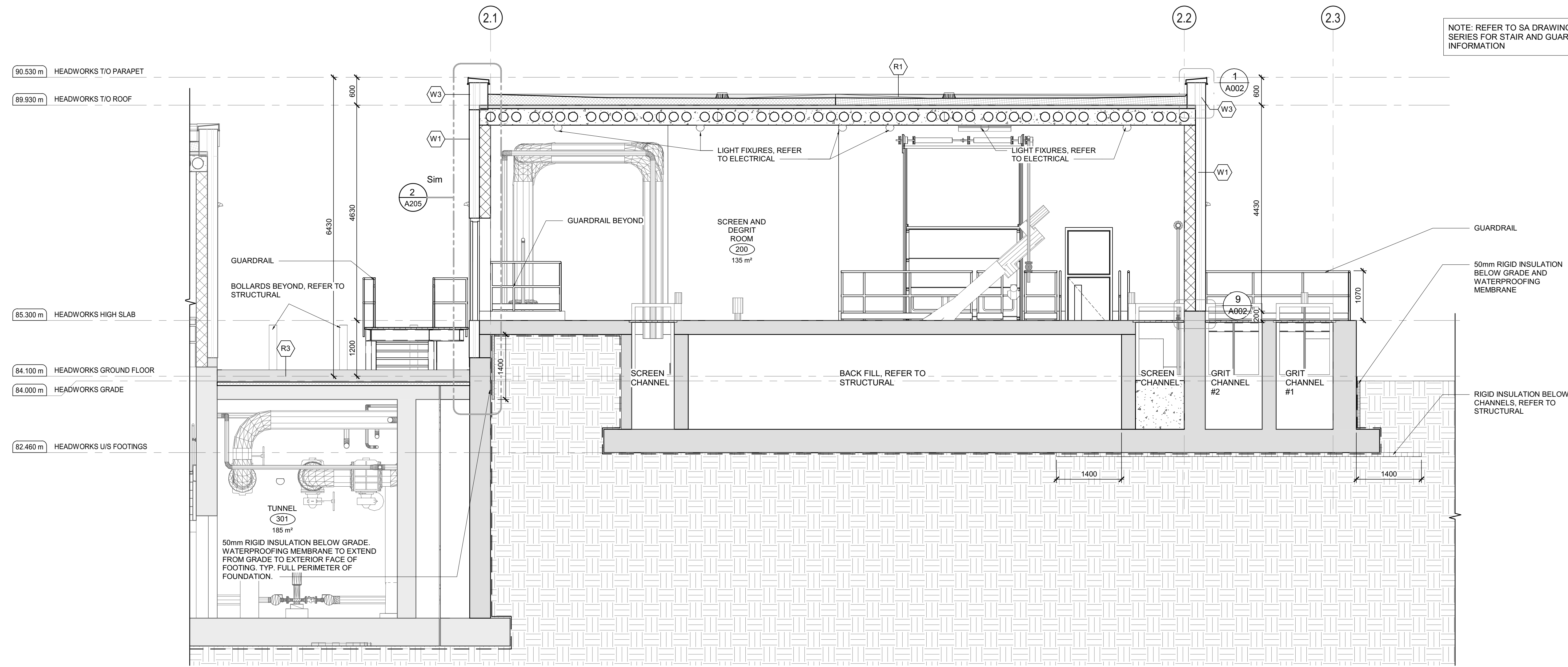
DRAWN: NP

CHECKED: HB/SC

JLR #: 32296-001

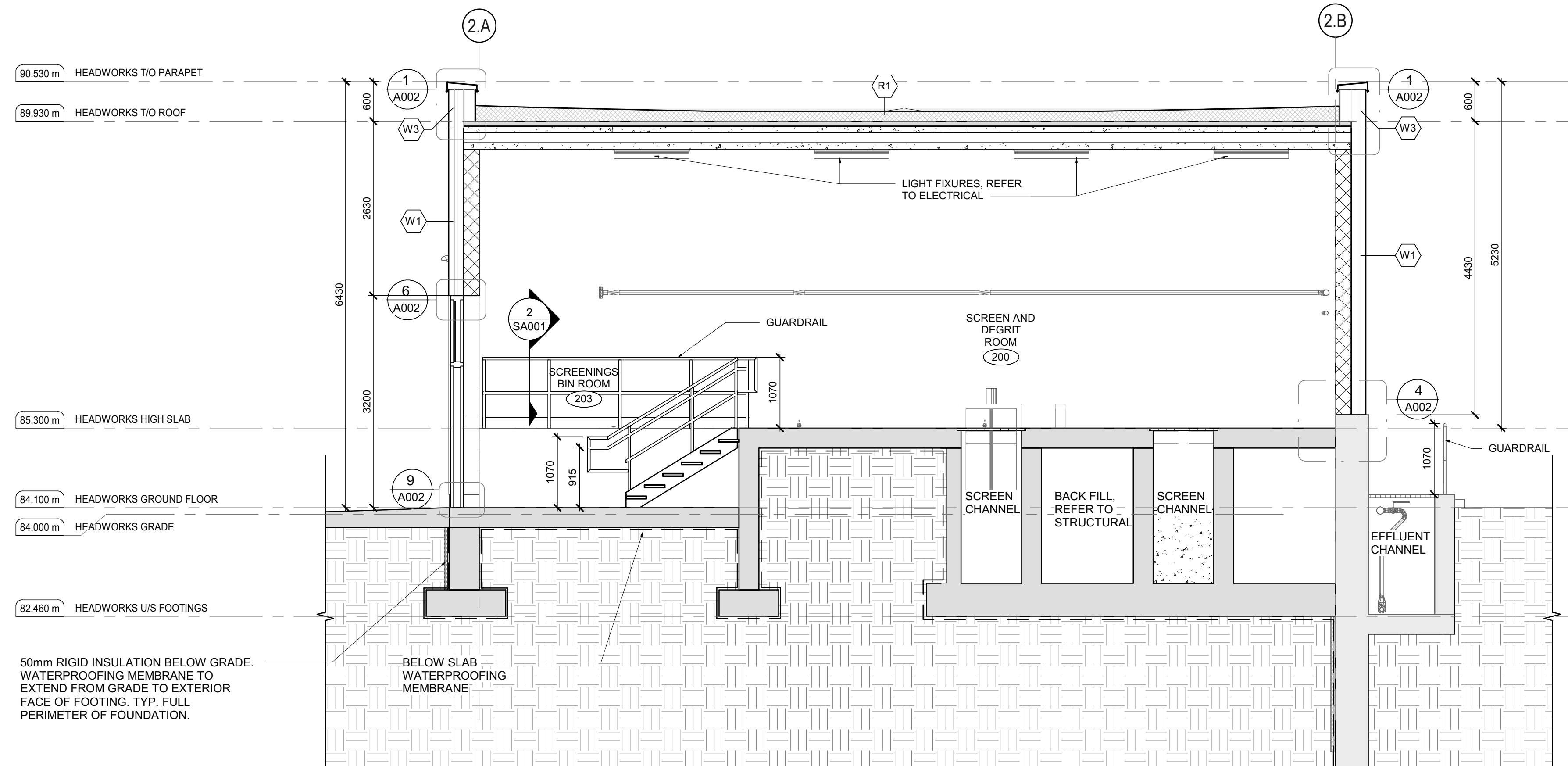
DRAWING #:
A203

File Location: C:\Users\NParedes\Documents\32296 A-Headworks\323_NParedes\Hall.rvt PLOT DATE: 25/04/2025 3:16:43 PM



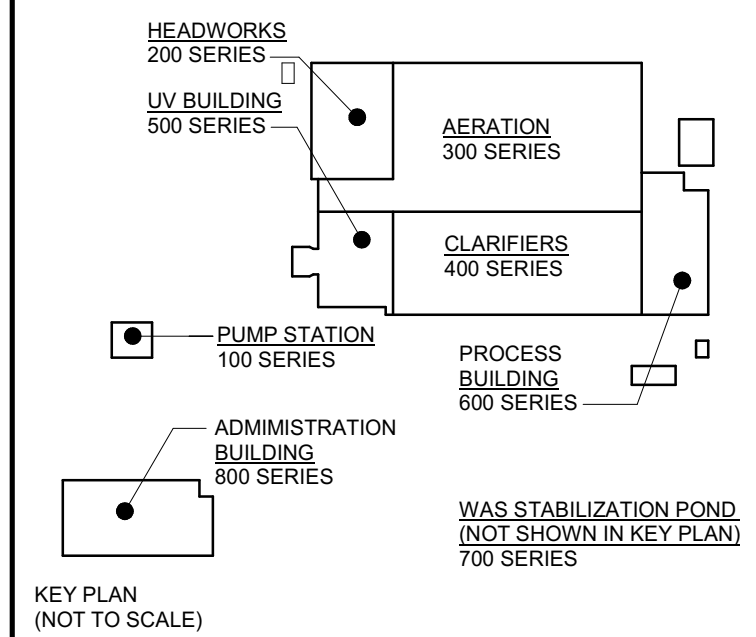
BUILDING SECTION 1

SCALE: 1 : 50



BUILDING SECTION 2

SCALE: 1 : 50



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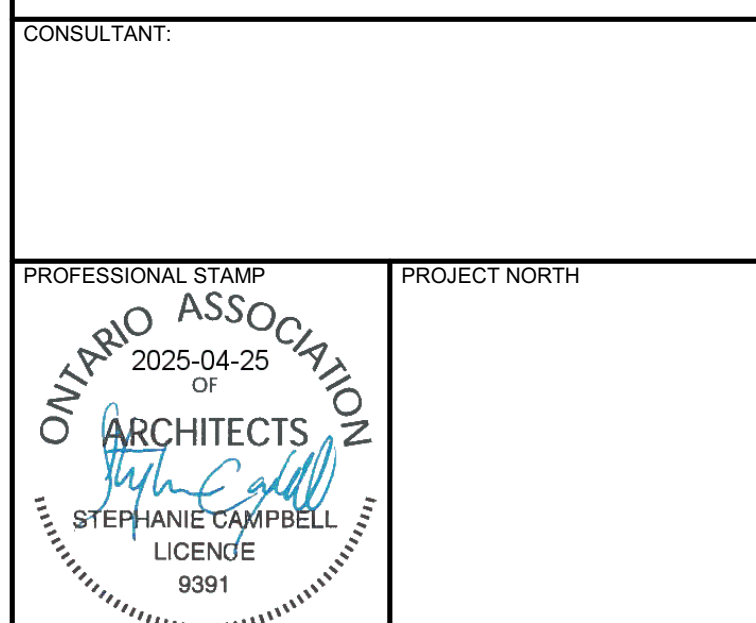
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SCALE: 1 : 50



CONSULTANT: J.L. Richards ENGINEERS · ARCHITECTS · PLANNERS

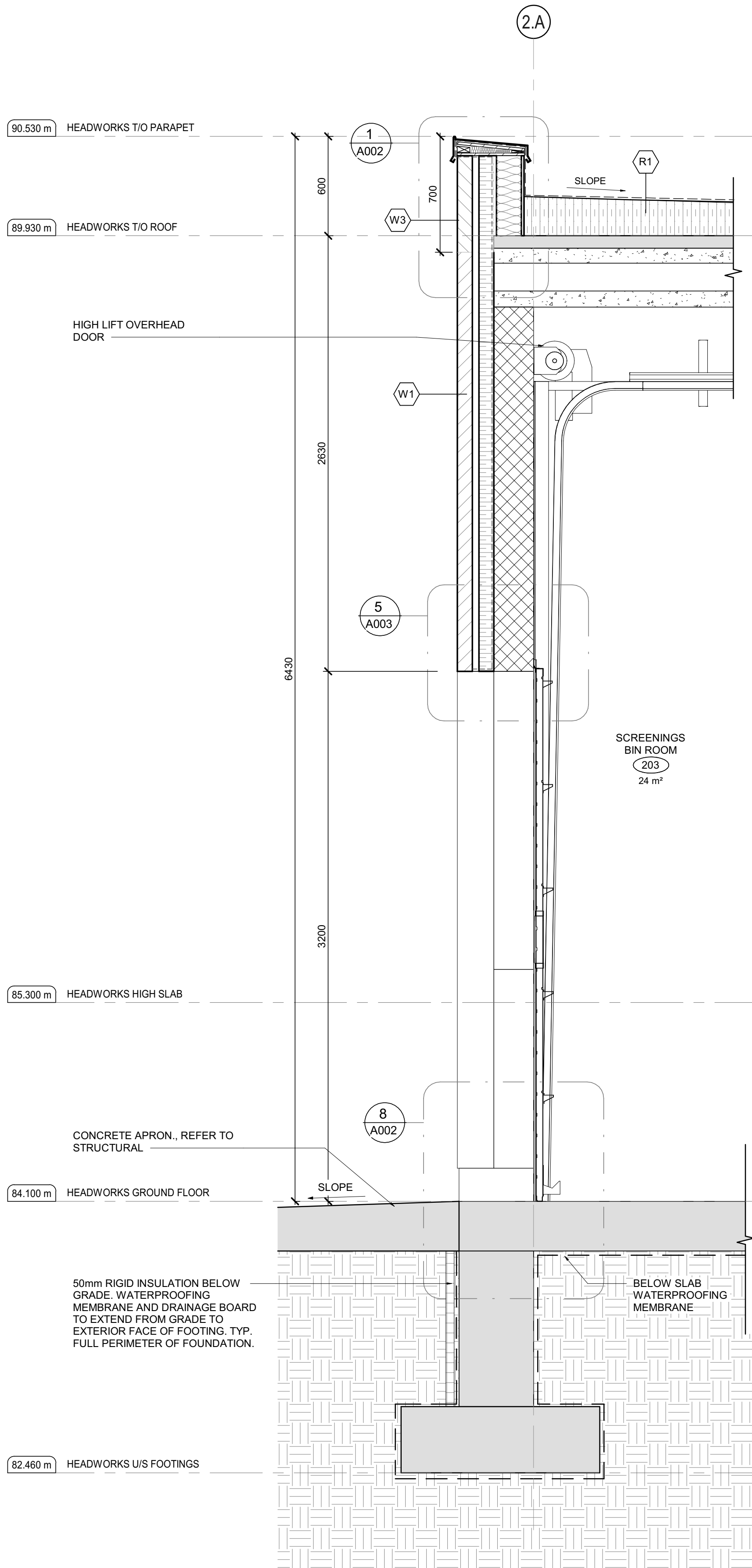


PROJECT: BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON, ONTARIO

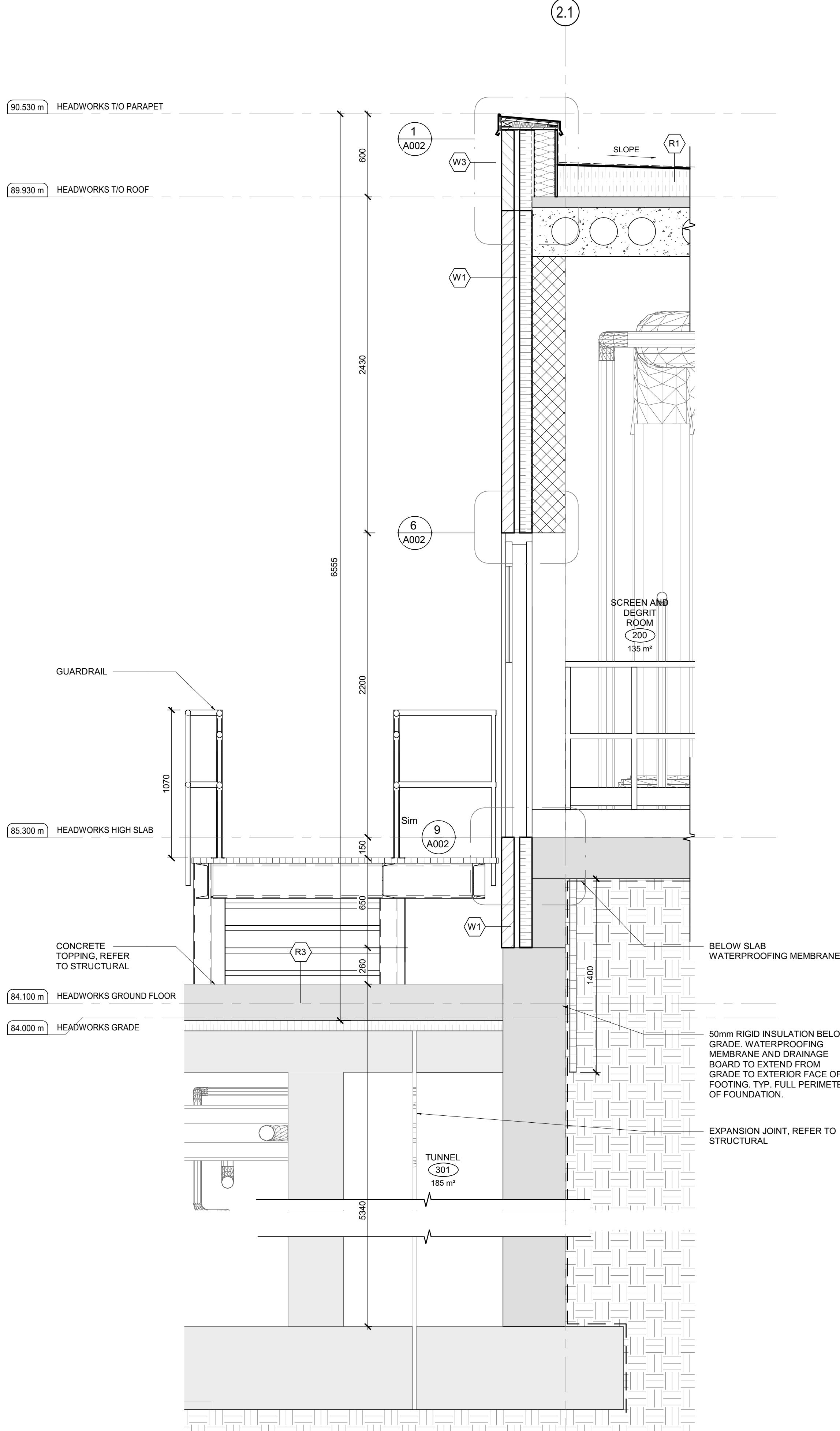
DRAWING: ARCHITECTURAL HEADWORKS
BUILDING SECTIONS

DESIGN: SC/KA	DRAWING #:
DRAWN: NP	A204
CHECKED: HB/SC	
JLR #:	32296-001

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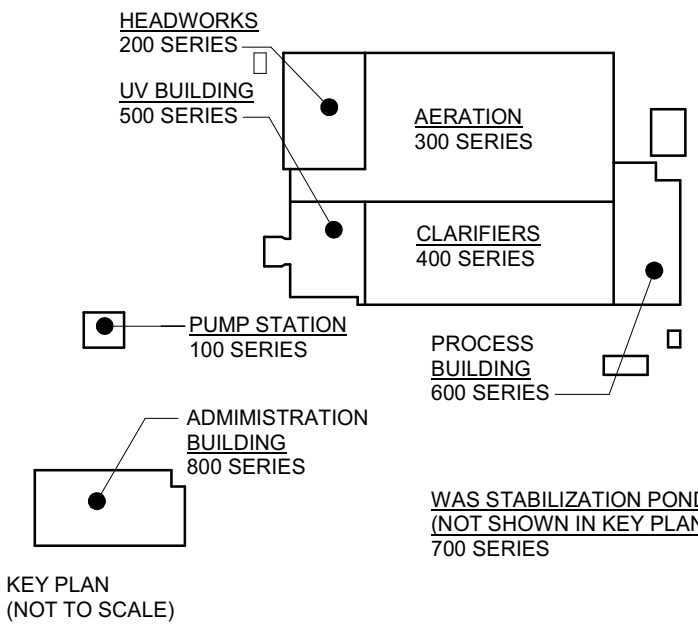


HEADWORKS WALL SECTION 1
SCALE: 1 : 20



HEADWORKS WALL SECTION 2
SCALE: 1 : 20

NOTE: REFER TO SA DRAWING SERIES FOR STAIR AND GUARDRAIL INFORMATION



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0 ISSUED FOR TENDER 25/04/2025

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.

SCALE: 1 : 20

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL HEADWORKS
WALL SECTIONS

DESIGN: SC/KA

DRAWN: NP

CHECKED: HB/SC

JLR #: 32296-001

DRAWING #:

A205

File Location: C:\Users\NParedes\Documents\32296 A-Headworks\323_NParedes\Hill.rvt PLOT DATE: 25/04/2025 3:16:46 PM

1) THE WIDTH OF AN EXIT SHALL BE NOT LESS THAN

- 1100mm FOR CORRIDORS AND PASSAGEWAYS
- 900mm FOR STAIRS
- 790mm FOR DOORWAYS

2) EVERY EXIT SHALL HAVE A CLEAR HEIGHT OVER THE CLEAR WIDTH OF THE EXIT OF NOT LESS THAN 2100mm

3) CLEAR HEIGHT OF DOORWAYS SHALL NOT BE LESS THAN 2030mm

— — — — SERVICE EGRESS
30 m

● START POINT

 EXIT POINT

—45min— FIRE SEPARATION
(45min FIRE RATING)

HEADWORKS
200 SERIES

U/V BUILDING
500 SERIES

PUMP STATION
100 SERIES

ADMINISTRATION
BUILDING
800 SERIES

AERATION
300 SERIES

CLARIFIERS
400 SERIES

PROCESS
BUILDING
600 SERIES

WAS STABILIZATION POND
(NOT SHOWN IN KEY PLAN
700 SERIES)

KEY PLAN
(NOT TO SCALE)

**DESIGN DOCUMENTS HEREIN HAVE
BEEN DESIGNED UNDER THE ONTARIO
BUILDING CODE 2012.**

0	ISSUED FOR TENDER	25/04/2025
No.	ISSUE / REVISION	DD/MM/YY

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.

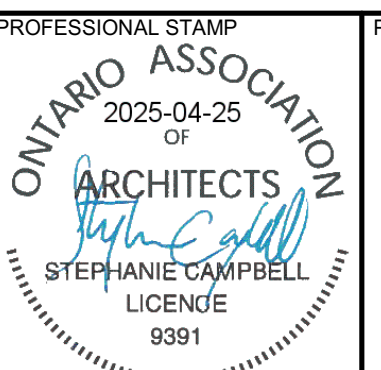
0 25mm

SCALE: 1 : 100

CLIENT:

CONSULTANT: www.jlrichards.ca

CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING: _____

DRAWING: _____

DRAWING: ARCHITECTURAL AERATION

TUNNEL FLOOR PLAN

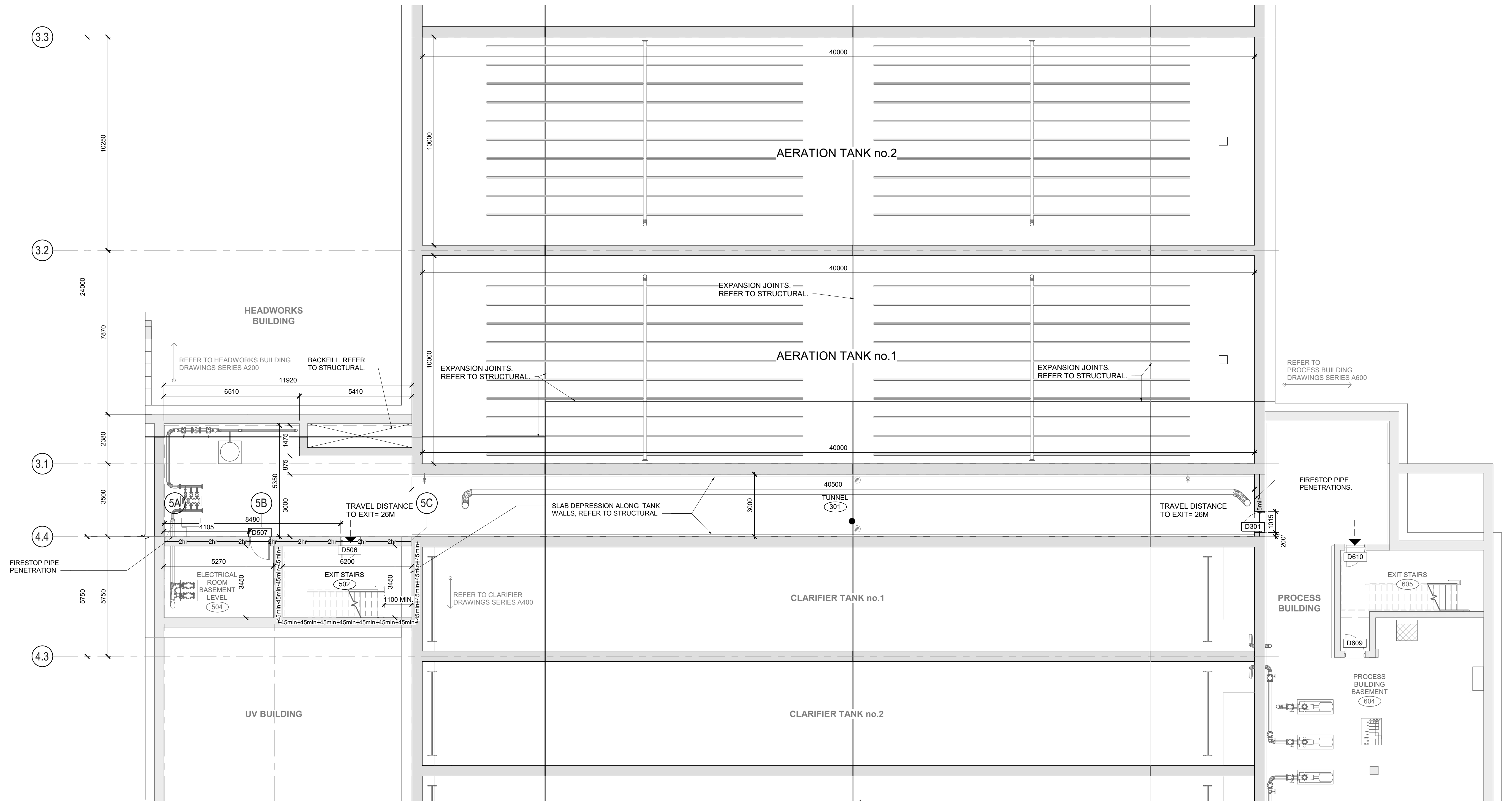
DESIGN: SC/KA

DRAWN: NP

CHECKED: HR/SC

DRAWING #:

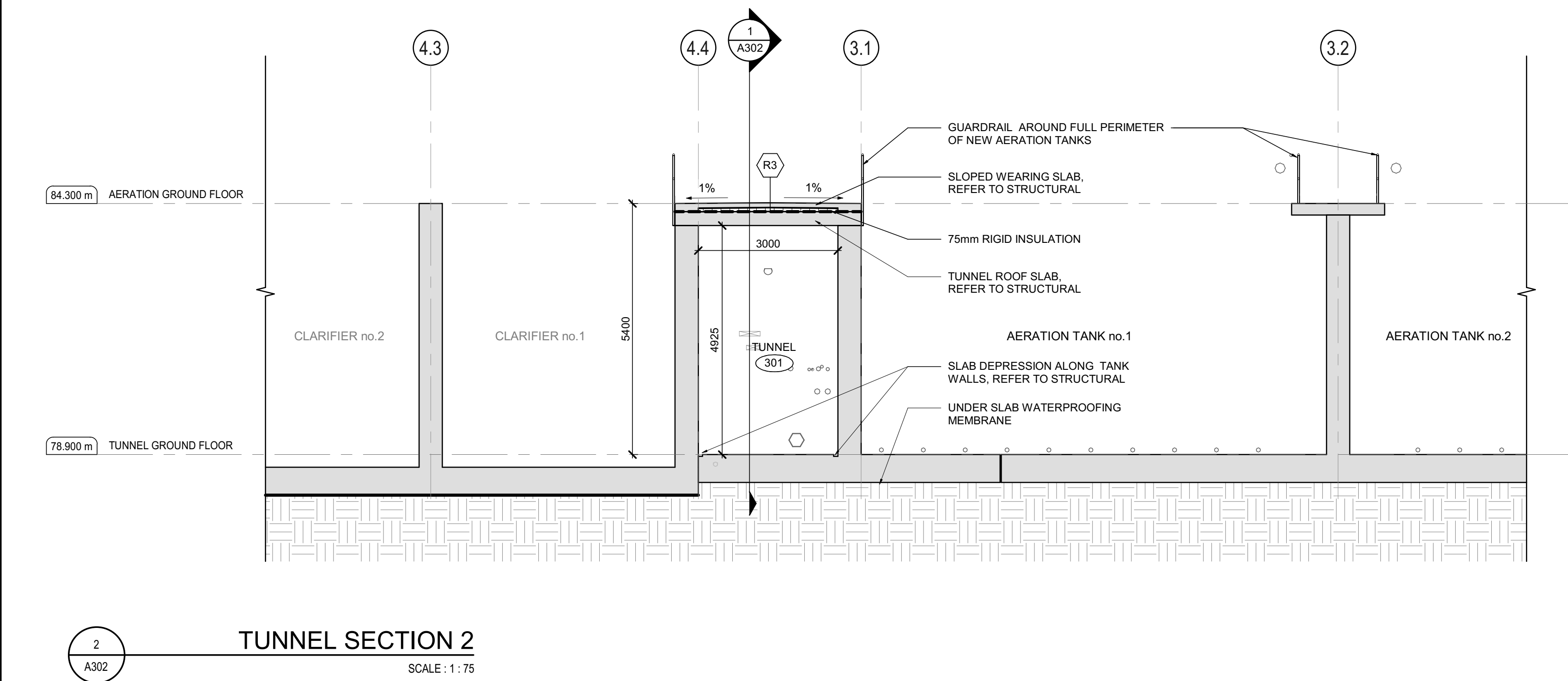
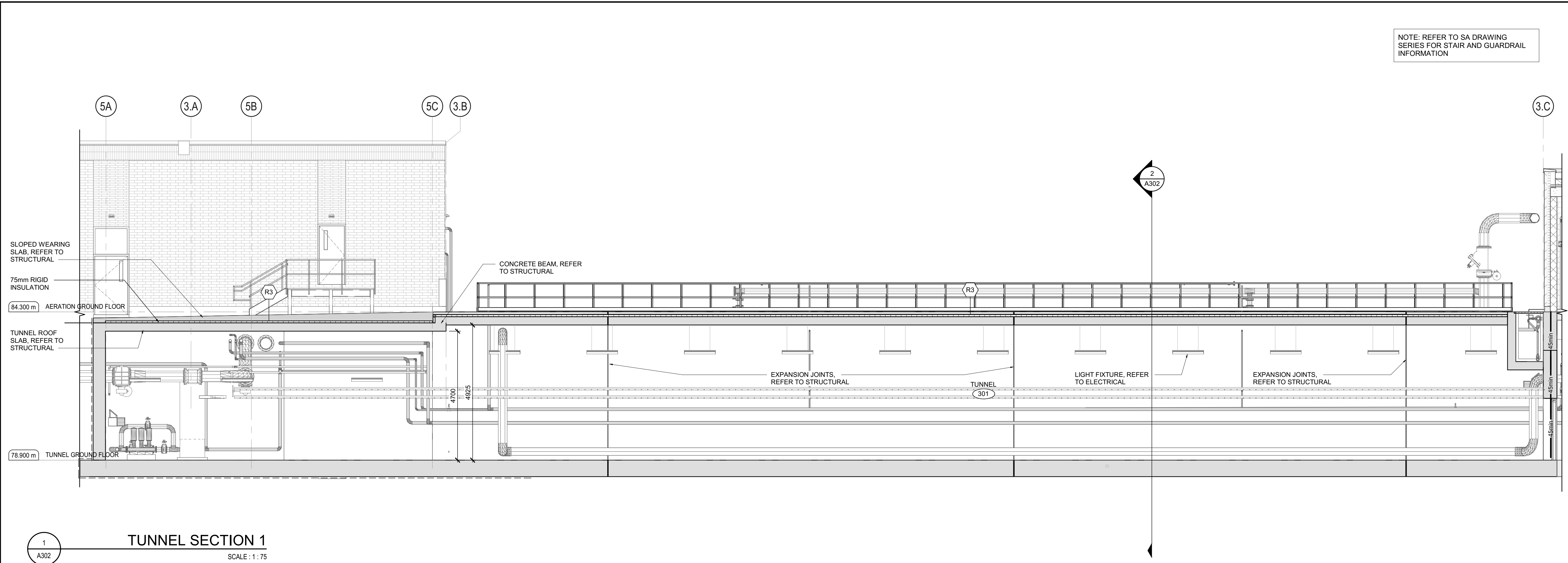
A301



1
A301

TUNNEL FLOOR PLAN

SCALE : 1 : 100



KEY PLAN (NOT TO SCALE)

HEADWORKS 200 SERIES
UV BUILDING 500 SERIES
PUMP STATION 100 SERIES
ADMINISTRATION BUILDING 800 SERIES
AERATION 300 SERIES
CLARIFIERS 400 SERIES
PROCESS BUILDING 600 SERIES
WAS STABILIZATION POND (NOT SHOWN IN KEY PLAN) 700 SERIES

DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.

SCALE: 1 : 75

CLIENT:

BRIGHTON
MUNICIPALITY

CONSULTANT:

J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

2025-04-25
OF
ARCHITECTS
STEPHANIE CAMPBELL
LICENCE
9391

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

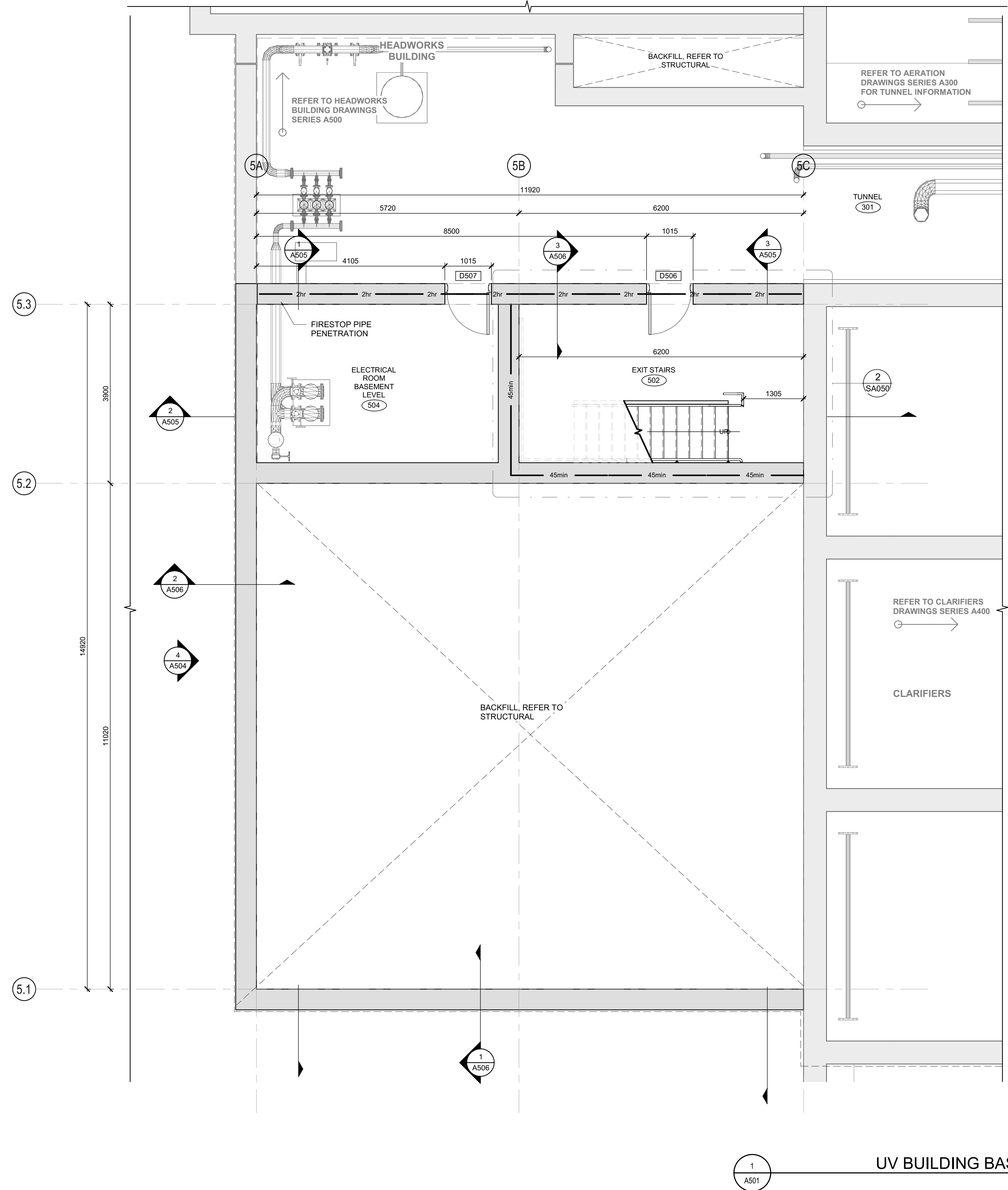
DRAWING:

ARCHITECTURAL AERATION

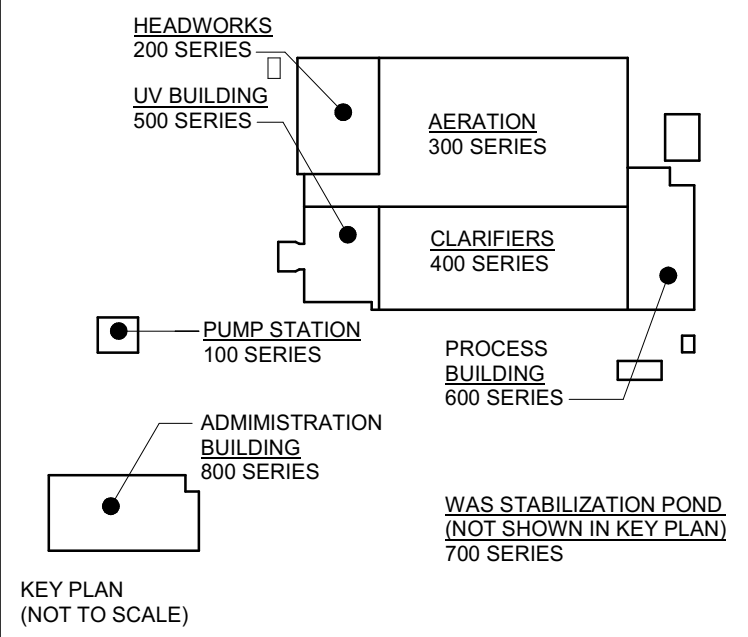
TUNNEL SECTIONS

DESIGN:	SC/KA	DRAWING #: A302
DRAWN:	NP	
CHECKED:	HB/SC	
JLR #:	32296-001	

FILE LOCATION: C:\Users\Nparedeshai\Documents\Revit Local Files\Revit 2023\32296-A-Aeration R23_Nparedeshai.rvt
PLOT DATE: 2025-04-22 4:10:59 PM



NOTE: REFER TO SA DRAWING SERIES FOR STAIR AND GUARDRAIL INFORMATION



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. SCALE: 1 : 50

CLIENT:

CONSULTANT:

www.jrichards.ca

CONSULTANT:

PROFESSIONAL STAMP

2025-04-25 OF ARCHITECTS

STEPHANIE CAMPBELL LICENCE 9391

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL UV BUILDING BASEMENT PLAN

DESIGN: SC/KA	DRAWING #:
DRAWN: NP	A501
CHECKED: HB/SC	
JLR #: 32296-001	

1 A501 UV BUILDING BASEMENT PLAN SCALE: 1 : 50

LEGEND:

45min FIRE SEPARATION (45min FIRE RATING)

WIDTH AND HEIGHT OF EXITS:

1) THE WIDTH OF AN EXIT SHALL BE NOT LESS THAN
- 1100mm FOR CORRIDORS AND PASSAGEWAYS
- 900mm FOR STAIRS
- 790mm FOR DOORWAYS

2) EVERY EXIT SHALL HAVE A CLEAR HEIGHT OVER THE CLEAR WIDTH OF THE EXIT OF NOT LESS THAN 2100mm

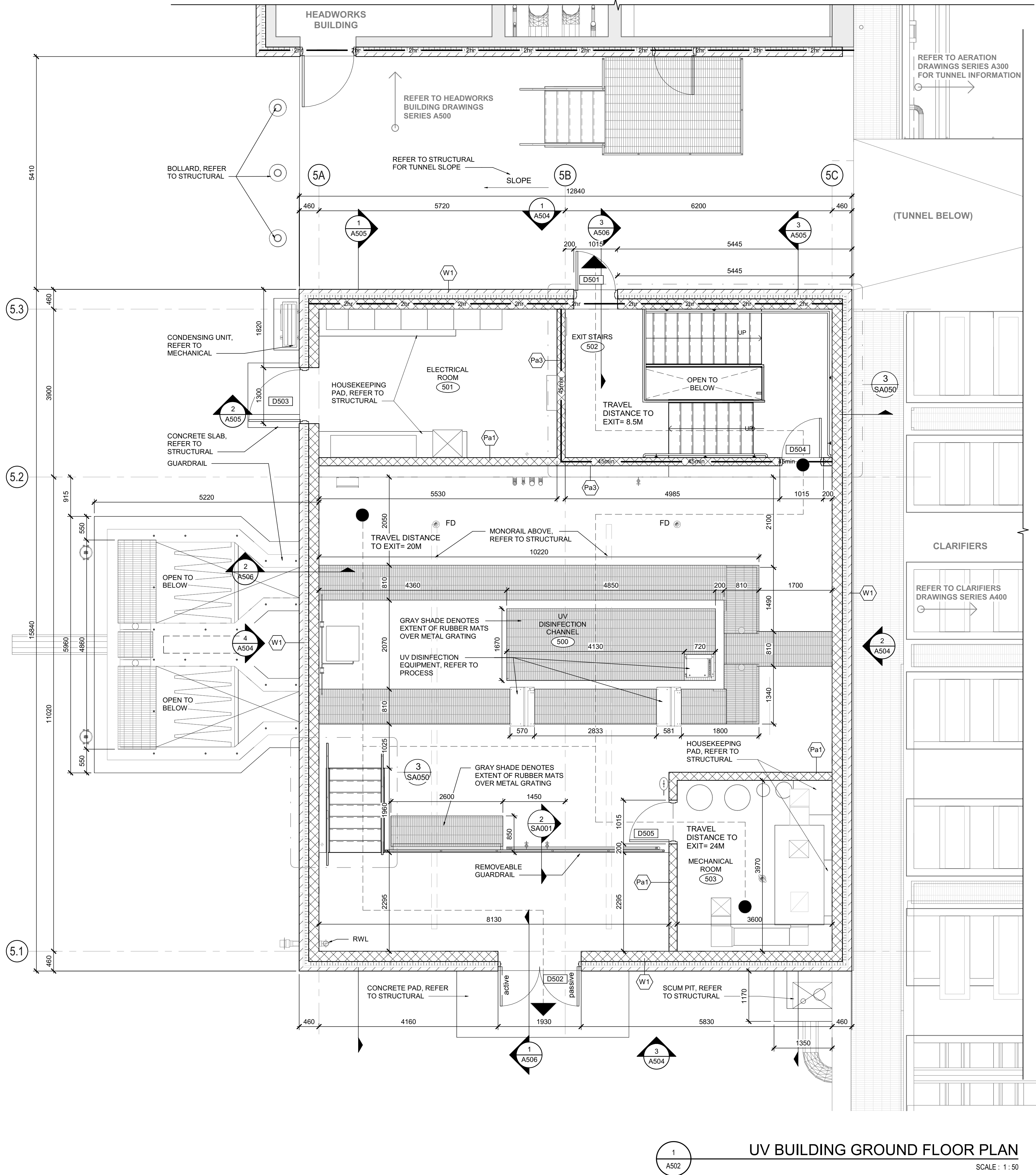
3) CLEAR HEIGHT OF DOORWAYS SHALL NOT BE LESS THAN 2030mm

TRAVEL DISTANCE:

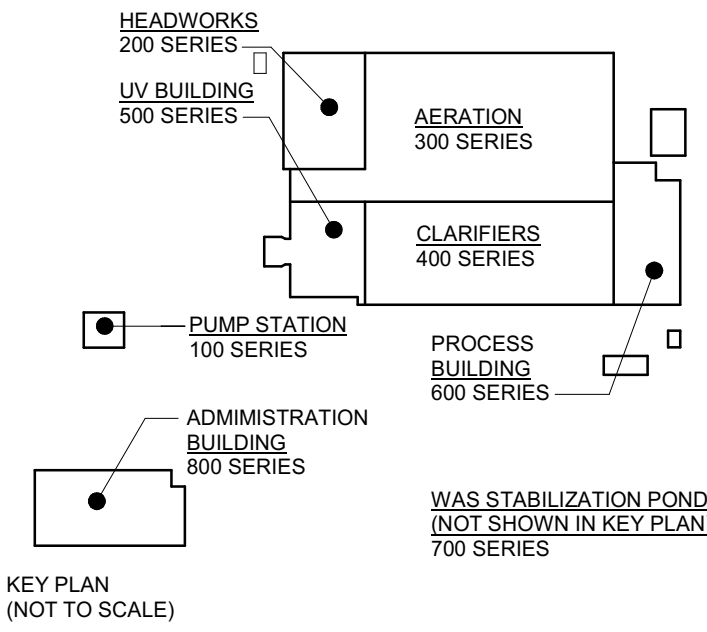
--- SERVICE EGRESS 30 m

● START POINT

▲ EXIT POINT



NOTE: REFER TO SA DRAWING SERIES FOR STAIR AND GUARDRAIL INFORMATION



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0	ISSUED FOR TENDER	25/04/2025
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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.

SCALE: As indicated

CLIENT:

CONSULTANT:

www.jrichards.ca

CONSULTANT:

PROFESSIONAL STAMP

2025-04-25 OF ARCHITECTS

STEPHANIE CAMPBELL LICENCE 9391

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL UV BUILDING

GROUND FLOOR PLAN

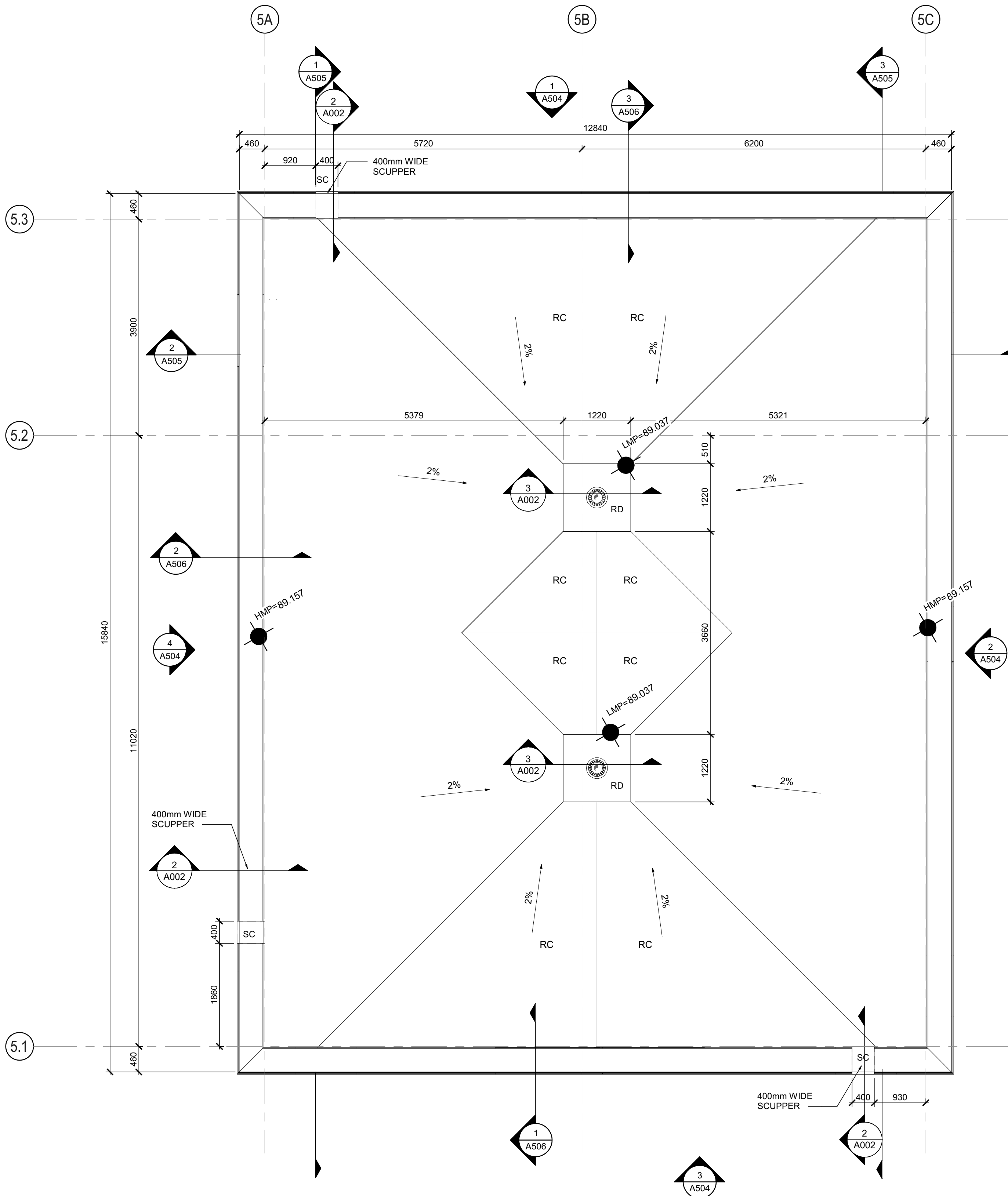
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DRAWN: NP	A502
CHECKED: HB/SC	
JLR #:	32296-001

UV BUILDING GROUND FLOOR PLAN

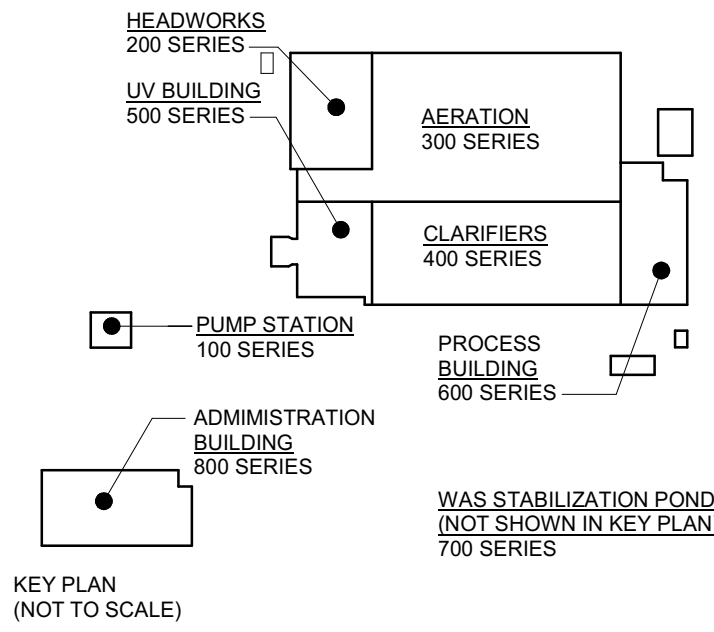
SCALE: 1:50

ROOF LEGEND

- SLOPE →
- LMP LOW POINT OF ROOF MEMBRANE
- HMP HIGH POINT OF ROOF MEMBRANE
- SC ROOF SCUPPER
- RD ROOF DRAIN
- RC SLOPED INSULATION ROOF CRICKET



1 UV BUILDING ROOF PLAN
A503 SCALE: 1:50



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm

SCALE: As indicated

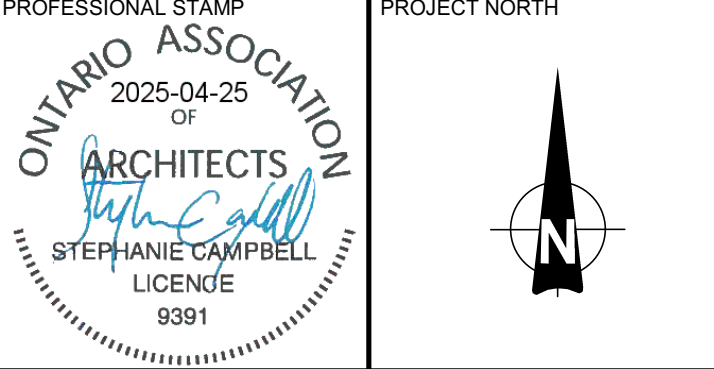
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON, ONTARIO

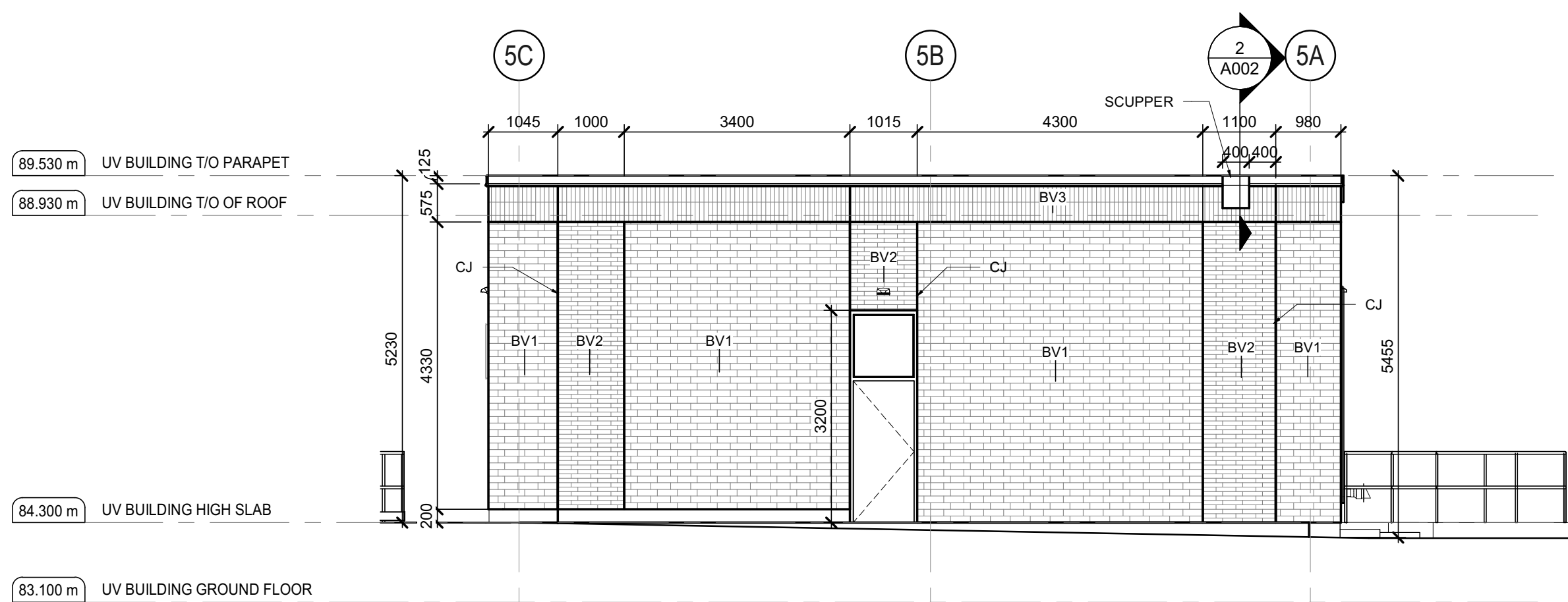
DRAWING:

ARCHITECTURAL
UV BUILDING
ROOF PLAN

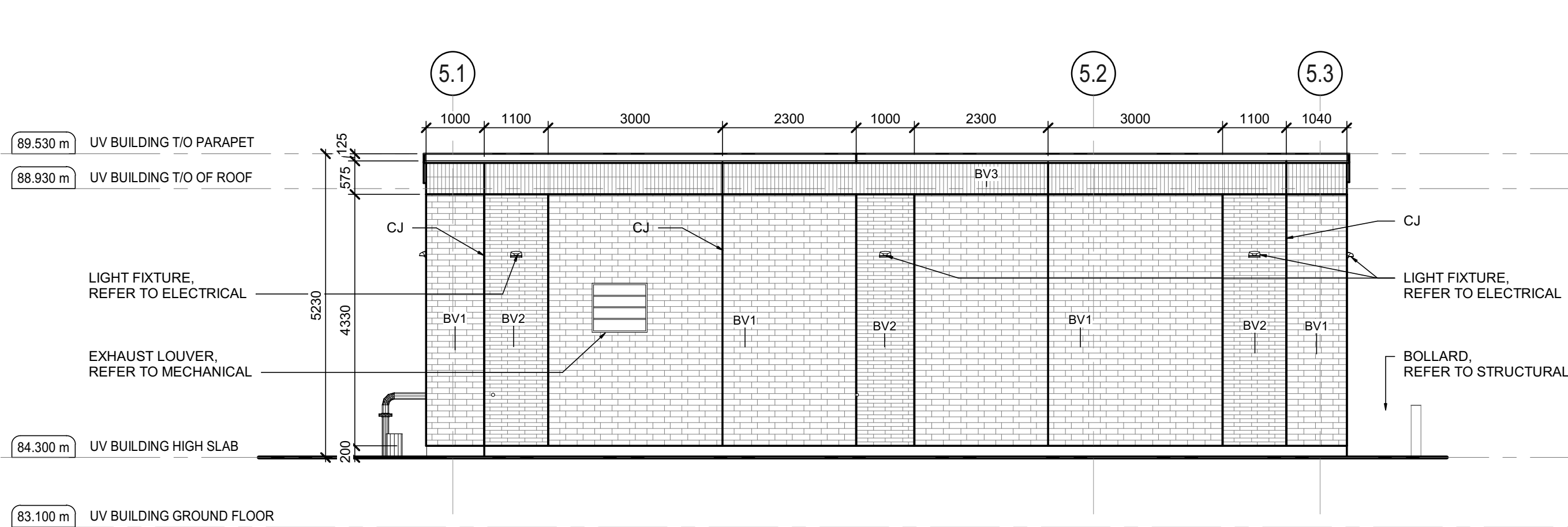
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DRAWN: NP	A503
CHECKED: HB/SC	
JLR #: 32296-001	

File Location: C:\Users\NParades\Documents\32296 UV Building R22_NParades\Hall.rvt
PLOT DATE: 4/24/2025 3:24:33 PM

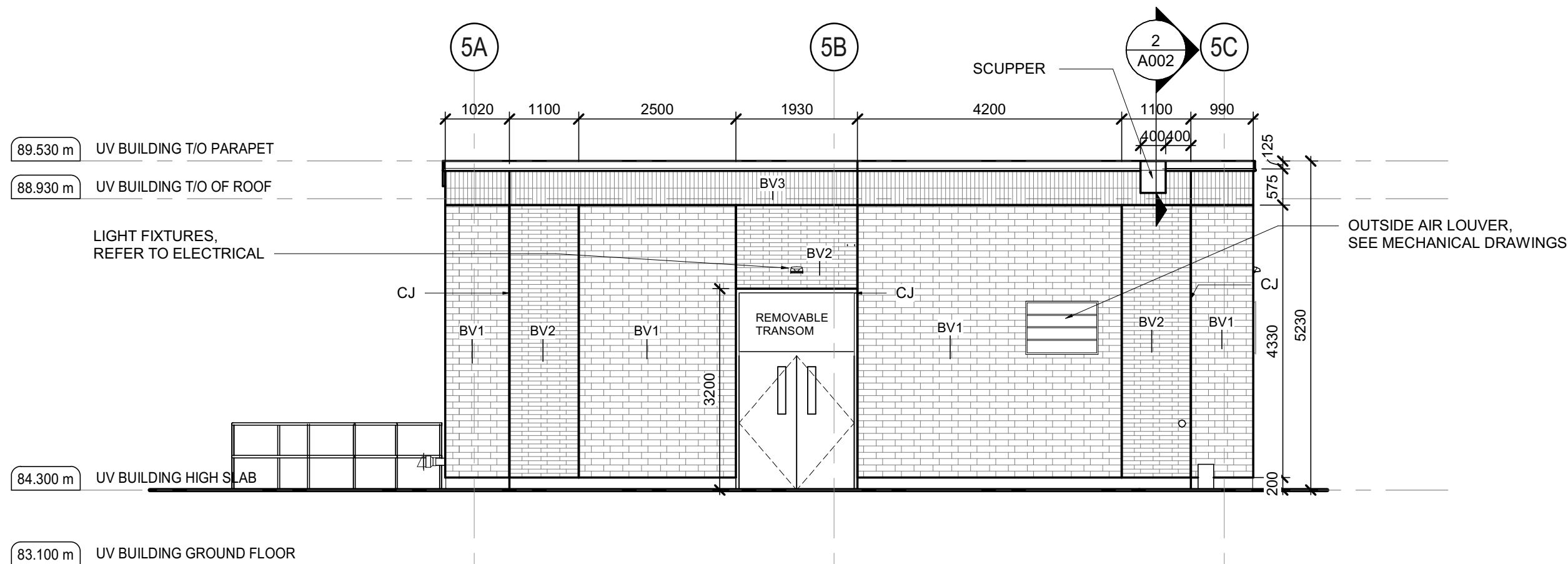
BRICK TYPE LEGEND			
ABBREVIATION	BRICK TYPE	DIMENSION	COURSING
BV1	BRICK VENEER 1	90x90x290mm	RUNNING BOND
BV2	BRICK VENEER 2	90x57x290mm	RUNNING BOND
BV3	BRICK VENEER 3	90x57x290mm	SOLDIER COURSE



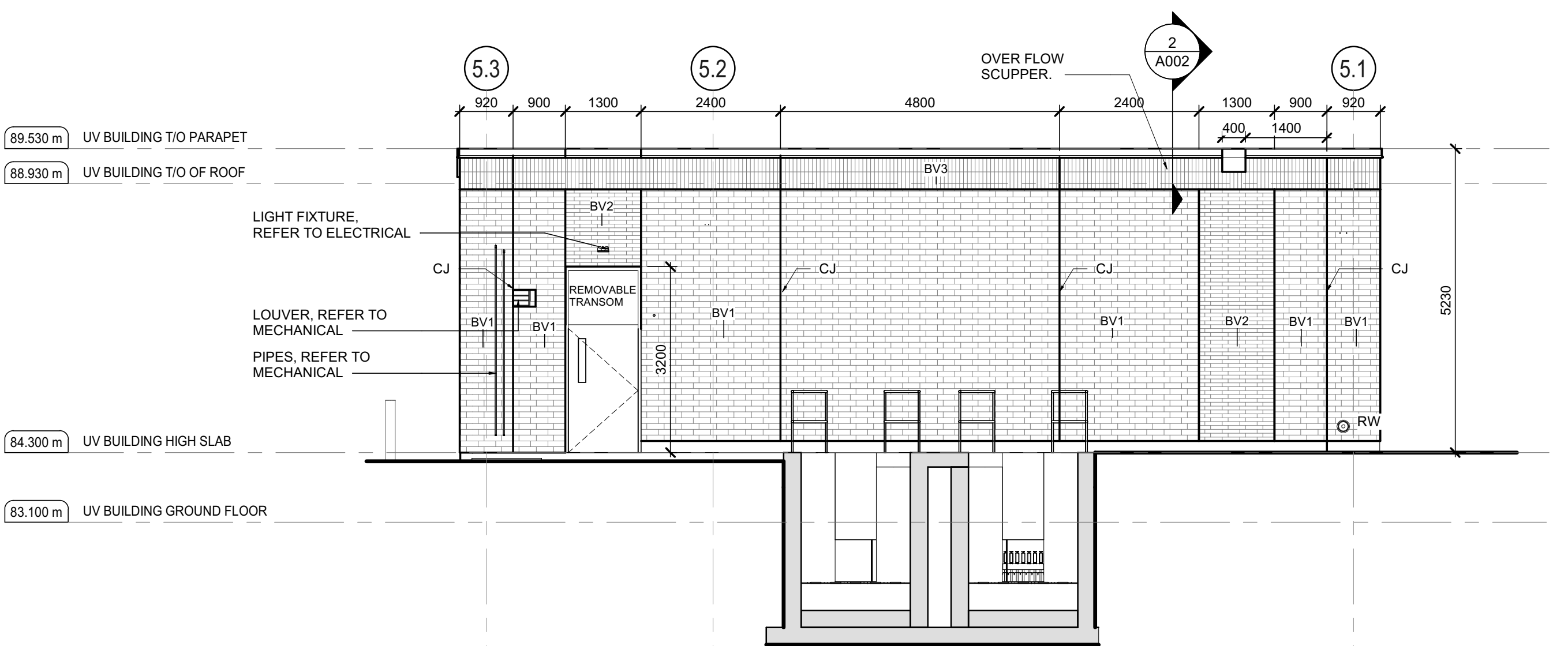
1
A504
NORTH EXTERIOR ELEVATION
SCALE : 1 : 75



2
A504
EAST EXTERIOR ELEVATION
SCALE : 1 : 75

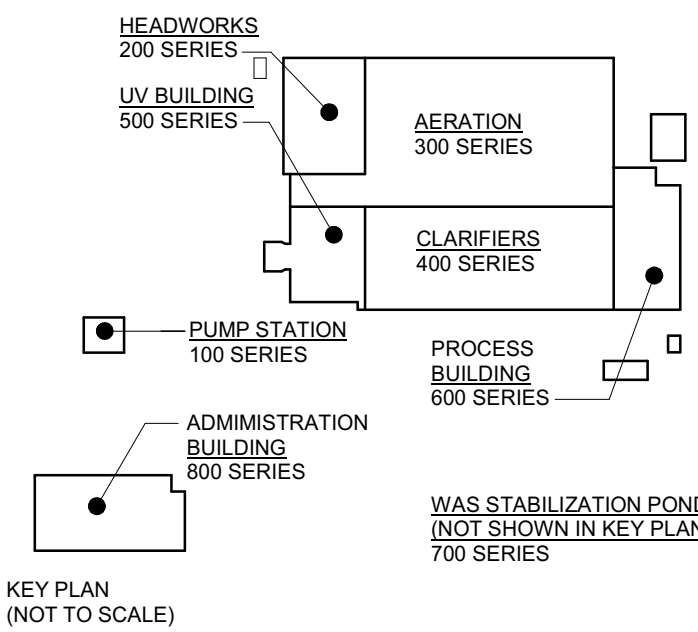


3
A504
SOUTH EXTERIOR ELEVATION
SCALE : 1 : 75



4
A504
WEST EXTERIOR ELEVATION
SCALE : 1 : 75

NOTE: REFER TO SA DRAWING
SERIES FOR STAIR AND GUARDRAIL
INFORMATION



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.

SCALE: 1 : 75

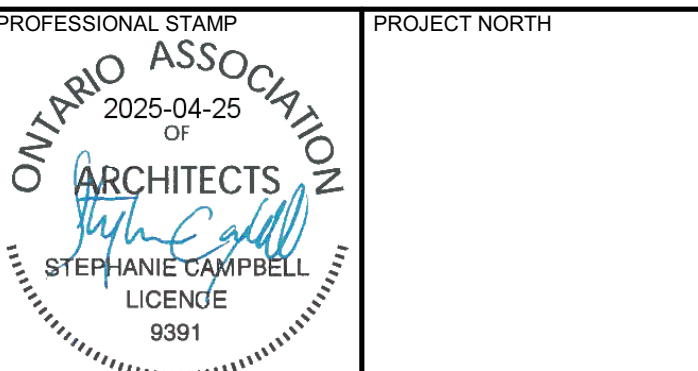
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL
UV BUILDING

EXTERIOR BUILDING ELEVATIONS

DESIGN: SC/KA

DRAWN: NP

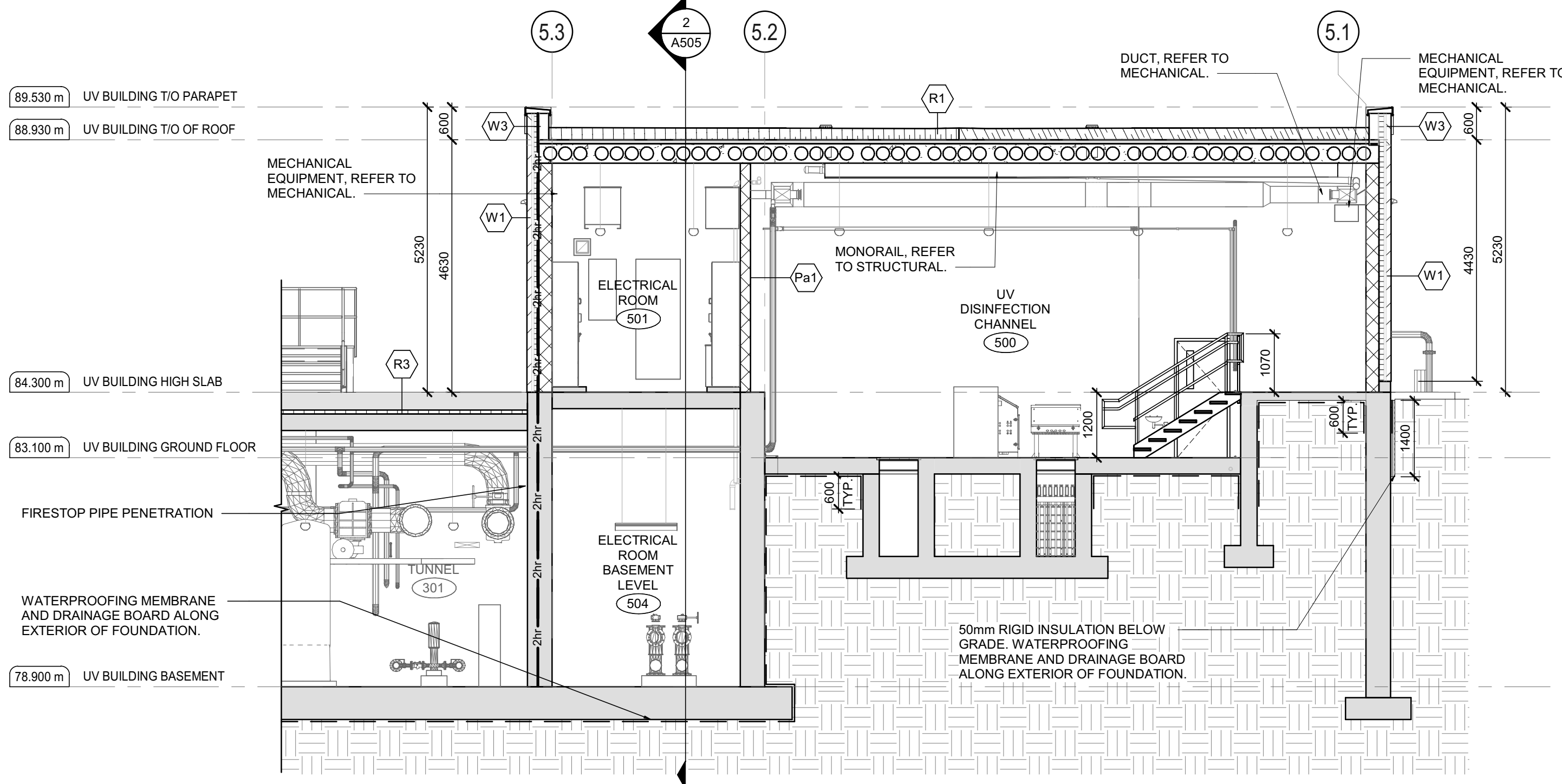
CHECKED: HB/SC

JLR #: 32296-001

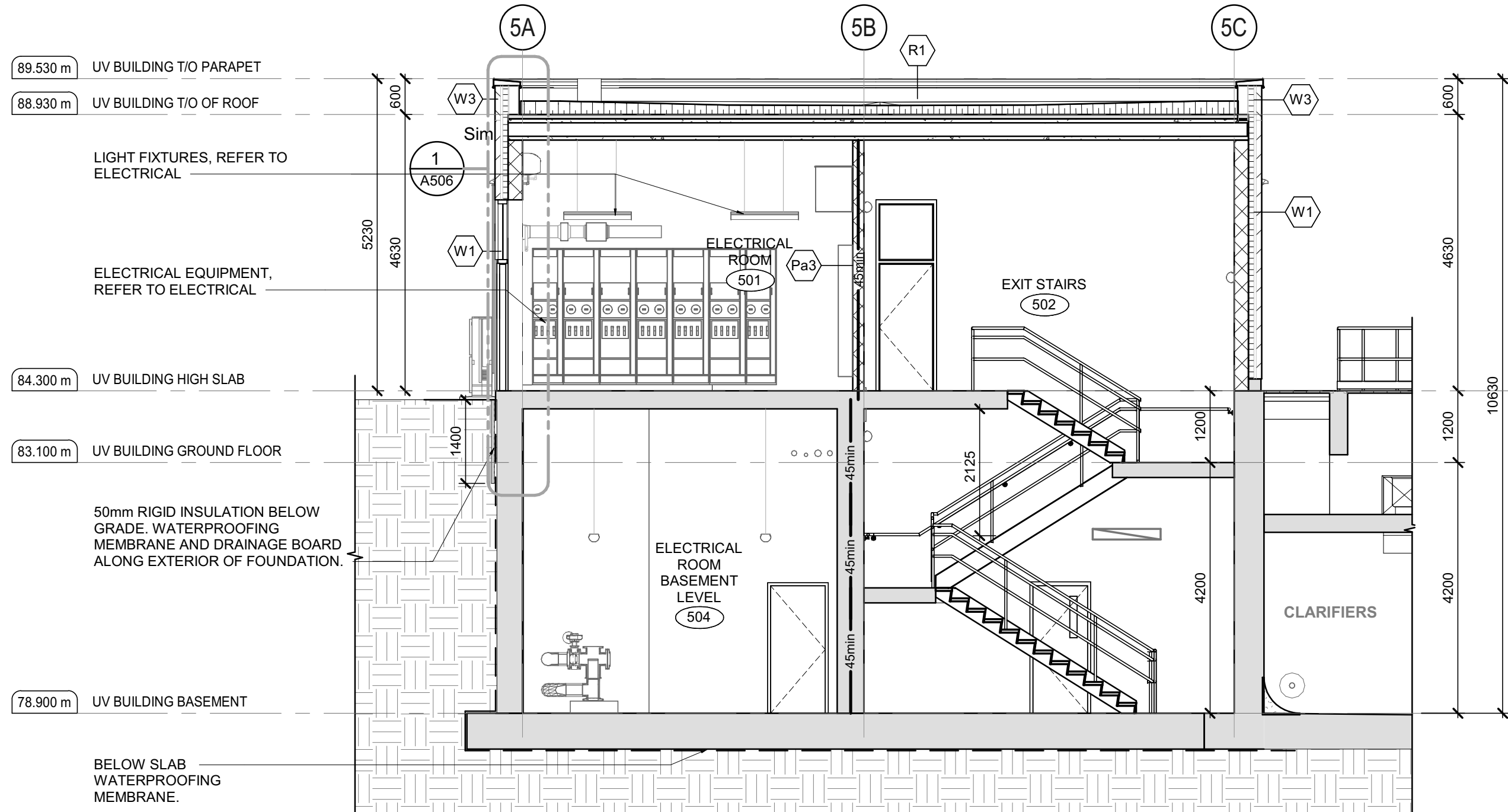
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A504

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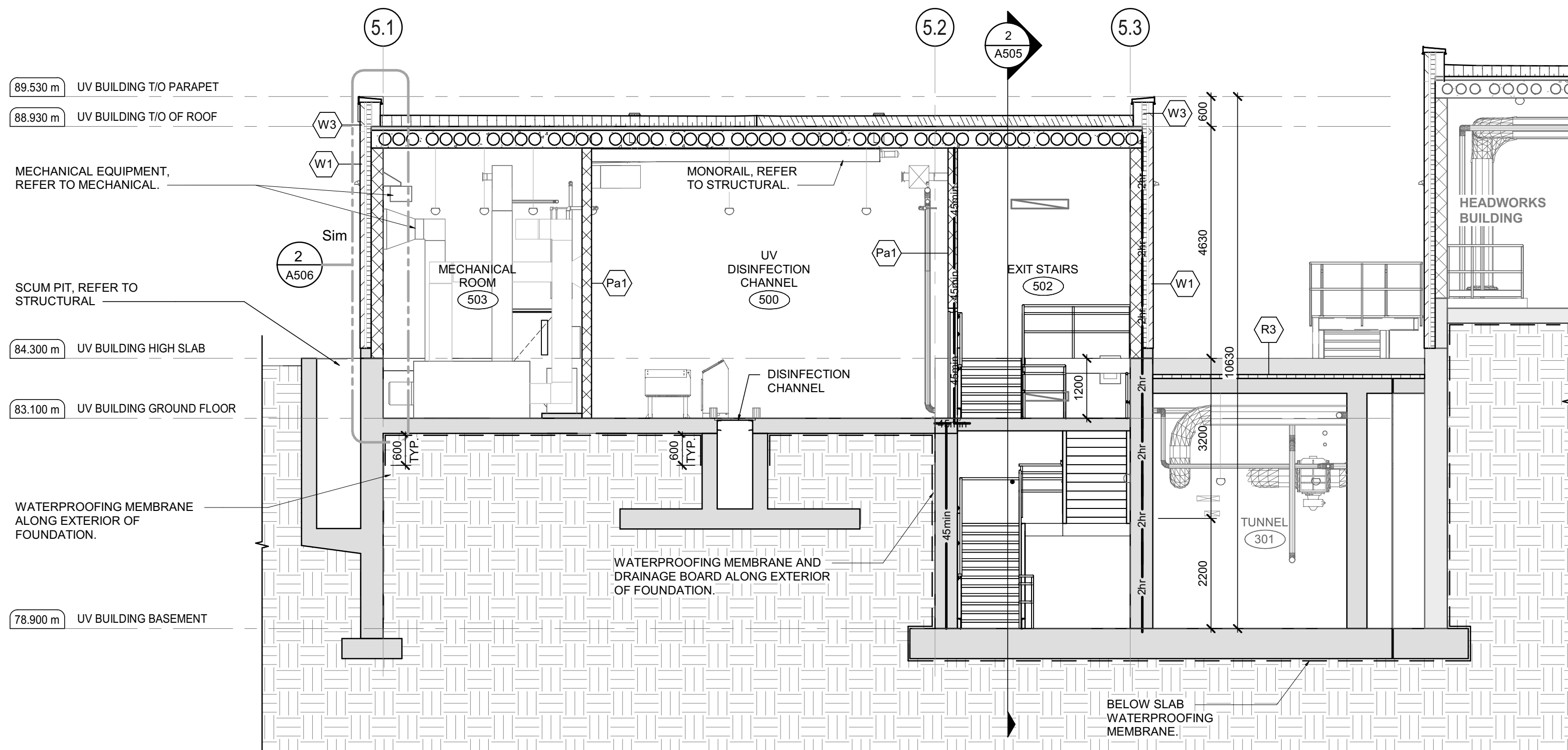
NOTE: REFER TO SA DRAWING
SERIES FOR STAIR AND GUARDRAIL
INFORMATION



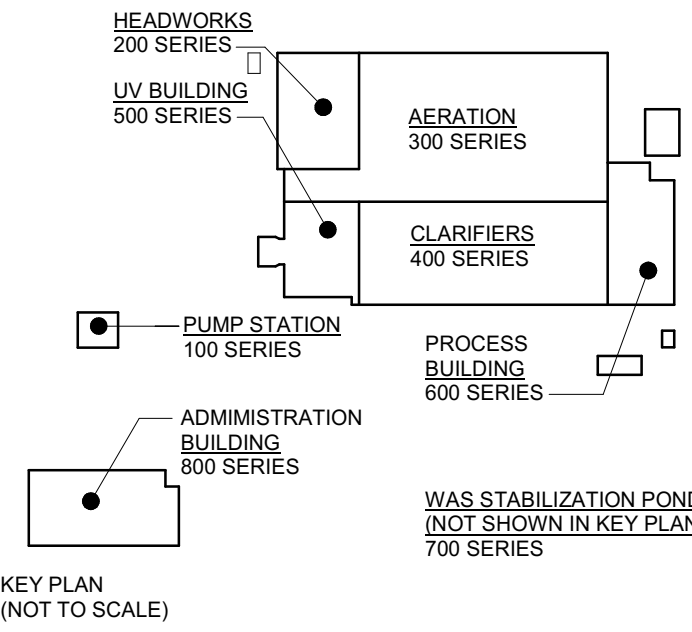
1
A505
BUILDING SECTION 1
SCALE : 1 : 75



2
A505
BUILDING SECTION 2
SCALE : 1 : 75



3
A505
BUILDING SECTION 3
SCALE : 1 : 75



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.

SCALE: 1 : 75

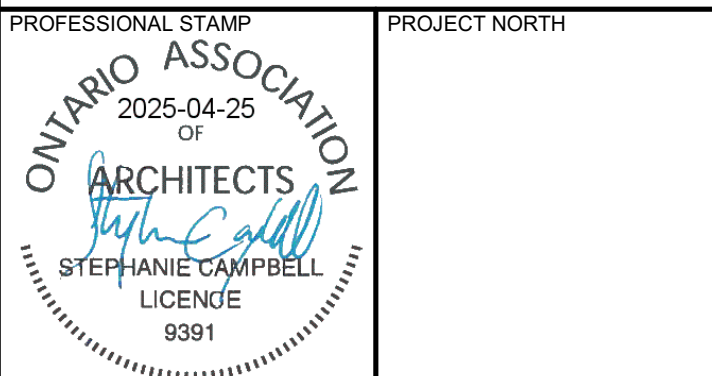
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

**BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES**

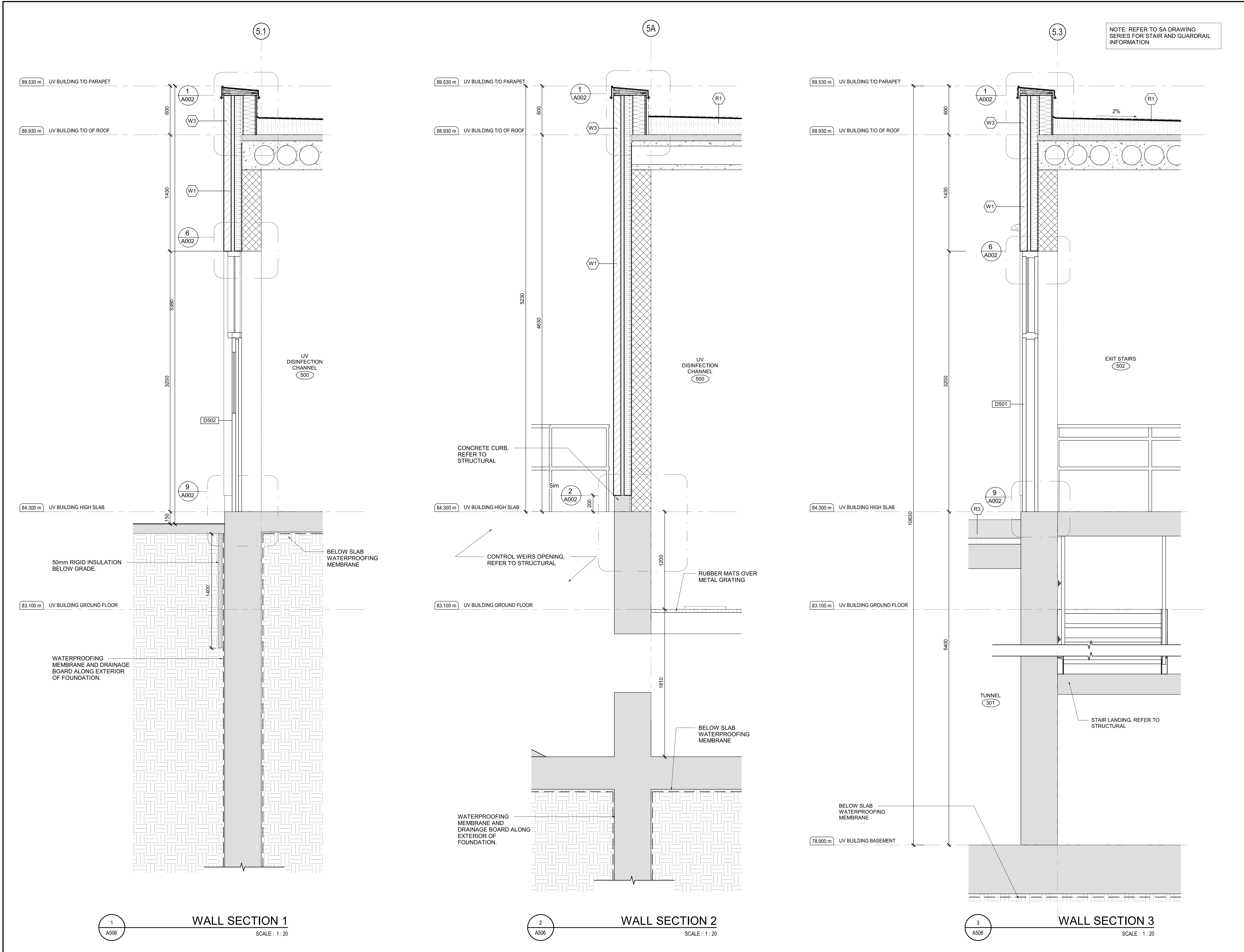
100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

**ARCHITECTURAL
UV BUILDING
BUILDING SECTIONS**

DESIGN: SC/KA	DRAWING #:
DRAWN: NP	A505
CHECKED: HB/SC	
JLR #:	32296-001

File Location: C:\Users\NParadesha\Documents\32296 AUV Building R22_NParadesha.rvt
PLOT DATE: 4/24/2025 3:24:36 PM



HEADWORKS
200 SERIES

UV BUILDING
500 SERIES

AERATION
300 SERIES

CLARIFIERS
400 SERIES

PUMP STATION
100 SERIES

ADMINISTRATION
BUILDING
800 SERIES

PROCESS
BUILDING
600 SERIES

WAS STABILIZATION POND
(NOT SHOWN IN KEY PLAN)
700 SERIES

KEY PLAN
(NOT TO SCALE)

DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.

SCALE: 1 : 20

CLIENT:

BRIGHTON
MUNICIPALITY

CONSULTANT:

J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

2025-04-25
OF
ARCHITECTS
STEPHANIE CAMPBELL
LICENCE
9391

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

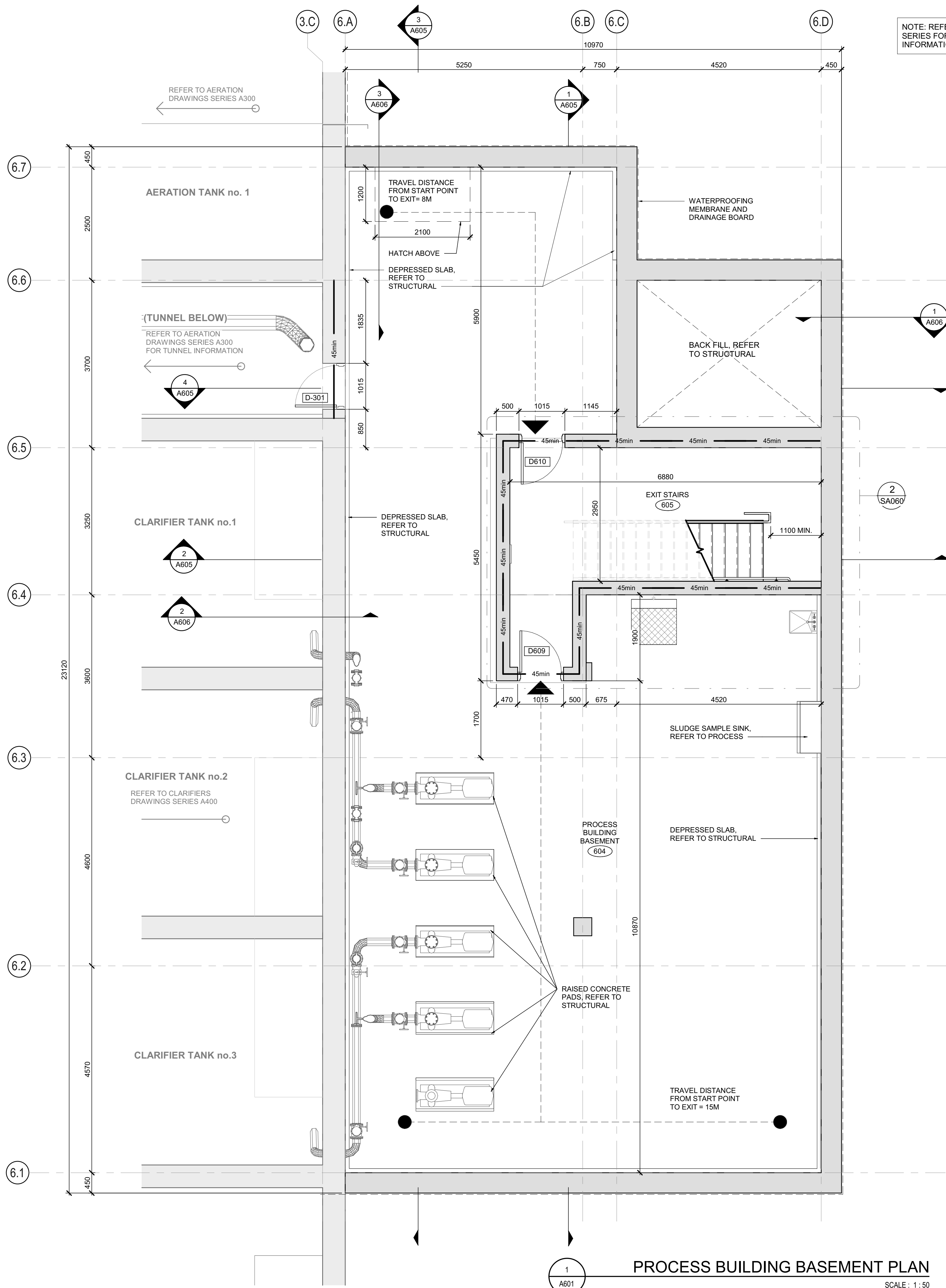
ARCHITECTURAL UV BUILDING WALL SECTIONS

DESIGN:	SC/KA	A506
DRAWN:	NP	
CHECKED:	HB/SC	
JLR #:	32296-001	

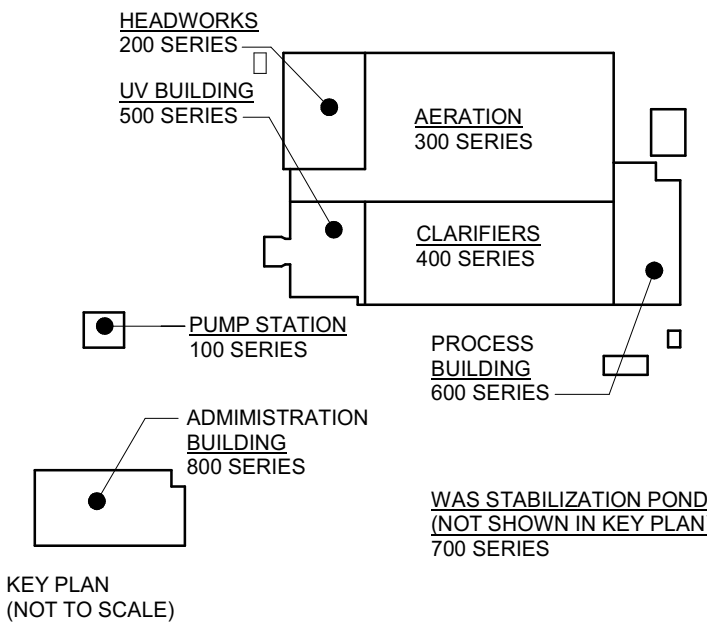
FILE LOCATION: C:\Users\NParades\Documents\32296 AUV Building R23_NParades\Hall.vrt
PLOT DATE: 4/24/2025 3:24:37 PM

LEGEND:	
	FIRE SEPARATION (45min FIRE RATING)

WIDTH AND HEIGHT OF EXITS:	
1) THE WIDTH OF AN EXIT SHALL BE NOT LESS THAN	
- 1100mm FOR CORRIDORS AND PASSAGEWAYS	
- 900mm FOR STAIRS	
- 790mm FOR DOORWAYS	
2) EVERY EXIT SHALL HAVE A CLEAR HEIGHT OVER THE CLEAR WIDTH OF THE EXIT OF NOT LESS THAN 2100mm	
3) CLEAR HEIGHT OF DOORWAYS SHALL NOT BE LESS THAN 2030mm	
TRAVEL DISTANCE:	
	SERVICE EGRESS 30 m
	START POINT
	EXIT POINT



NOTE: REFER TO SA DRAWING SERIES FOR STAIR AND GUARDRAIL INFORMATION



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0 ISSUED FOR TENDER 25/04/2025

No. ISSUE / REVISION DDMMYY

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm

SCALE: As indicated

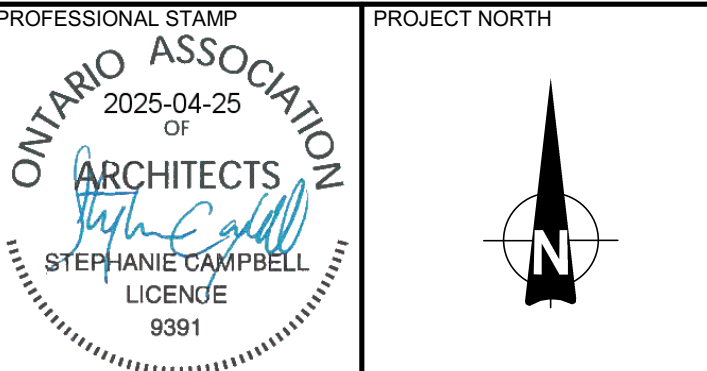
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL PROCESS BUILDING

BASEMENT PLAN

DESIGN: SC/KA

DRAWN: NP

CHECKED: HB/SC

JLR #: 32296-001

DRAWING #:

A601

File Location: C:\Users\NParedes\Documents\32296 A-Process Building R23 NParedes\Hall.mxd PLOT DATE: 4/24/2025 2:42:20 PM

LEGEND:

45min FIRE SEPARATION (45min FIRE RATING)

WIDTH AND HEIGHT OF EXITS:

- 1) THE WIDTH OF AN EXIT SHALL BE NOT LESS THAN:
 - 1100mm FOR CORRIDORS AND PASSAGEWAYS
 - 900mm FOR STAIRS
 - 790mm FOR DOORWAYS
- 2) EVERY EXIT SHALL HAVE A CLEAR HEIGHT OVER THE CLEAR WIDTH OF THE EXIT OF NOT LESS THAN 2100mm
- 3) CLEAR HEIGHT OF DOORWAYS SHALL NOT BE LESS THAN 2030mm

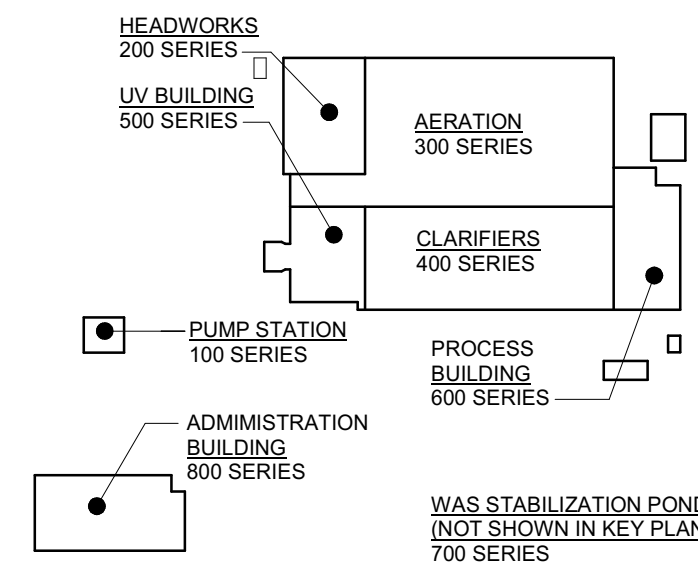
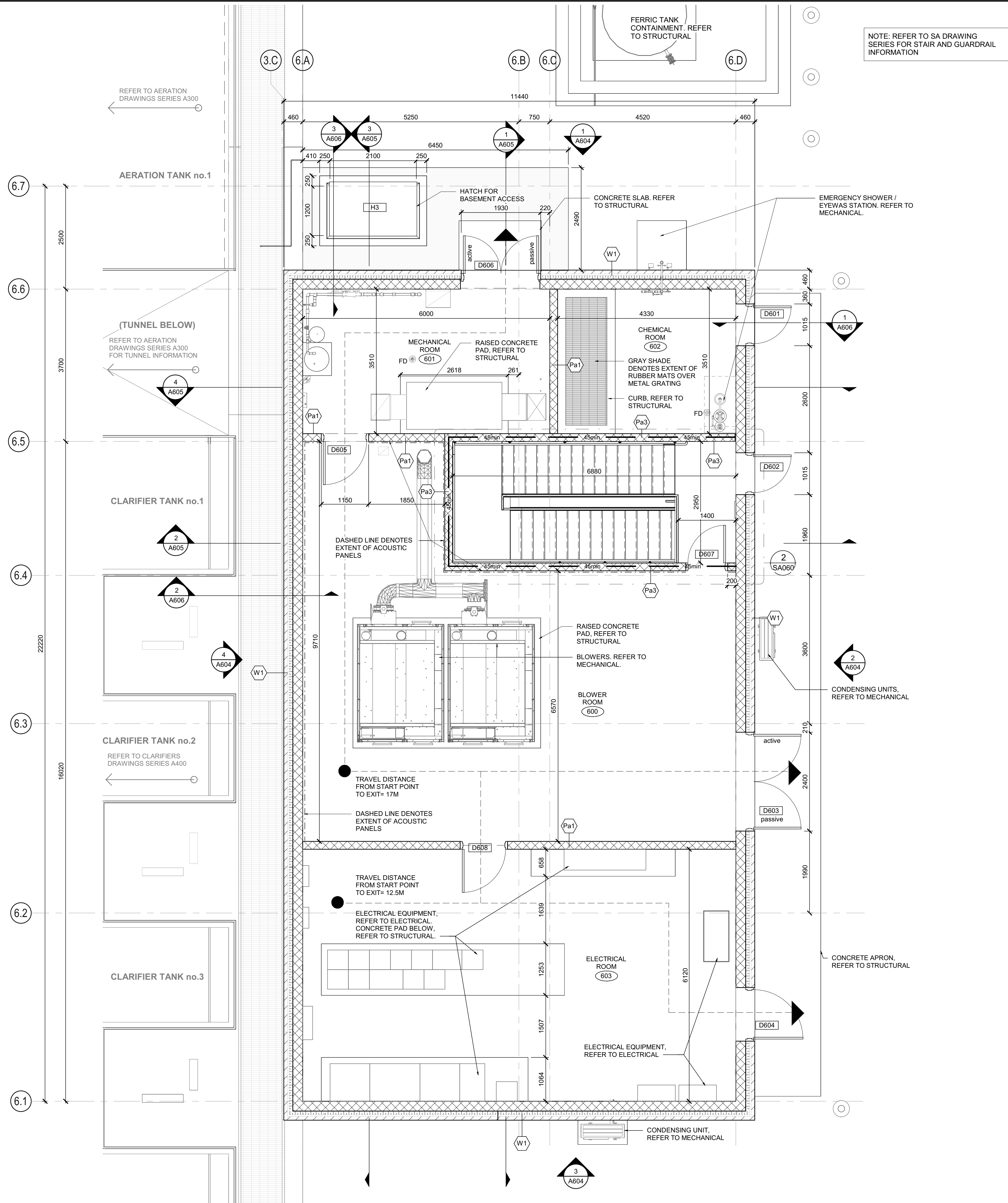
TRAVEL DISTANCE:

- SERVICE EGRESS 30 m
- START POINT
- EXIT POINT

1
A602

PROCESS BUILDING GROUND FLOOR PLAN

SCALE: 1:50



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm

SCALE: As indicated

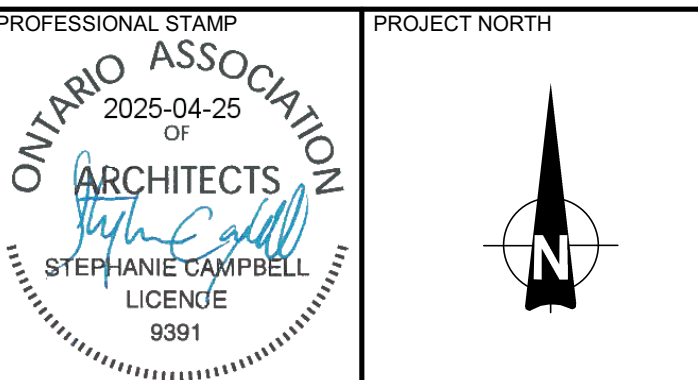
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL
PROCESS BUILDING
GROUND FLOOR PLAN

DESIGN: SC/KA

DRAWN: NP

CHECKED: HB/SC

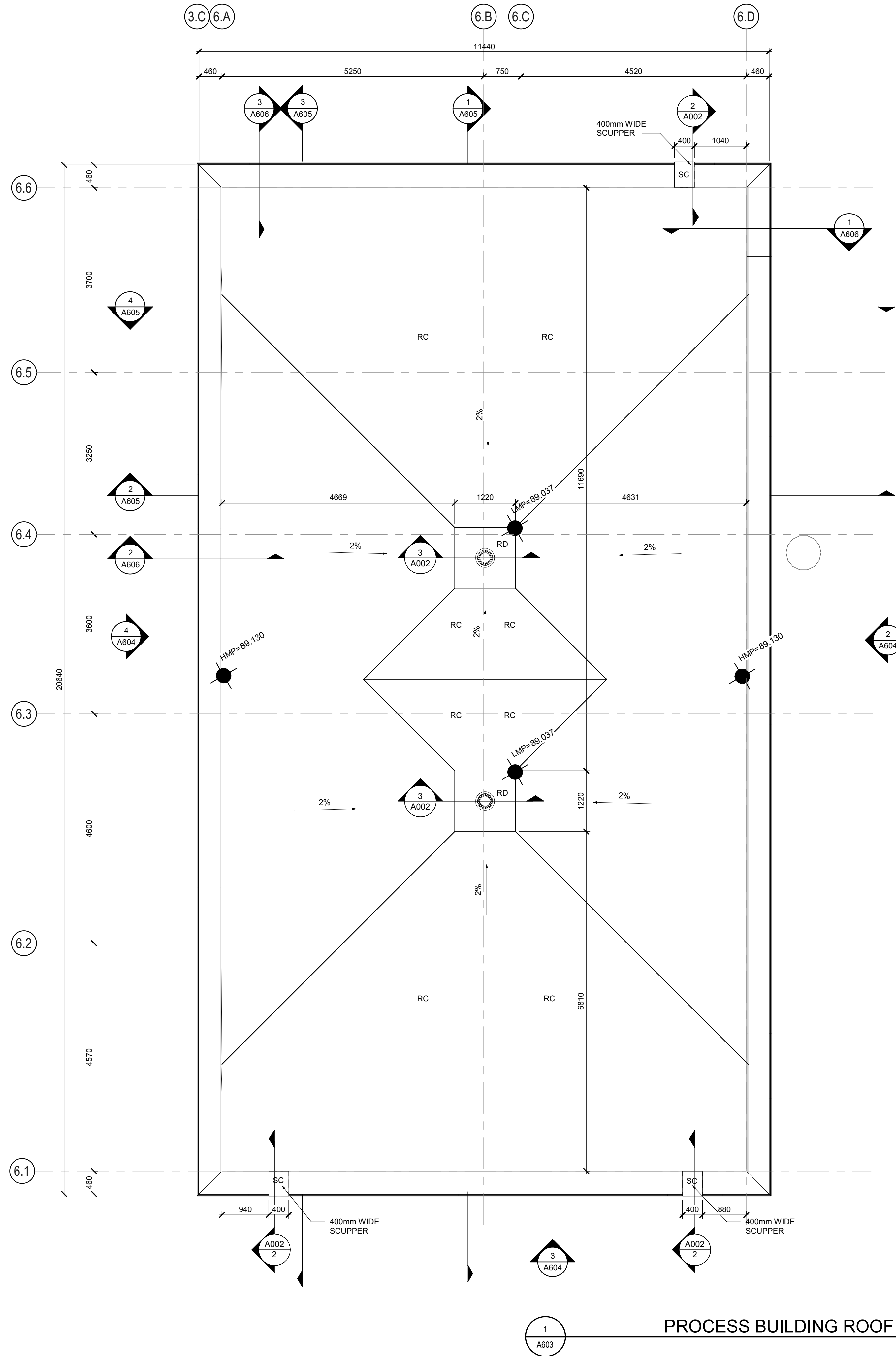
JLR #: 32296-001

DRAWING #:
A602

File Location: C:\Users\NParades\Documents\32296 A-Process Building R23 NParades\Hall.rvt PLOT DATE: 4/24/2025 2:42:22 PM

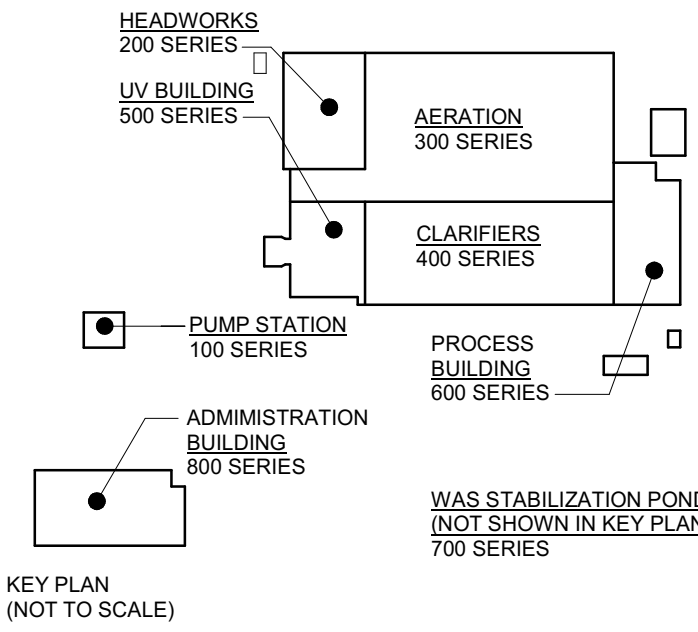
ROOF LEGEND

- SLOPE →
- LLMP LOW POINT OF ROOF MEMBRANE
- HMP HIGH POINT OF ROOF MEMBRANE
- SC ROOF SCUPPER
- RD ROOF DRAIN
- RC SLOPED INSULATION ROOF CRICKET



PROCESS BUILDING ROOF PLAN

SCALE: 1:50



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SCALE: As indicated

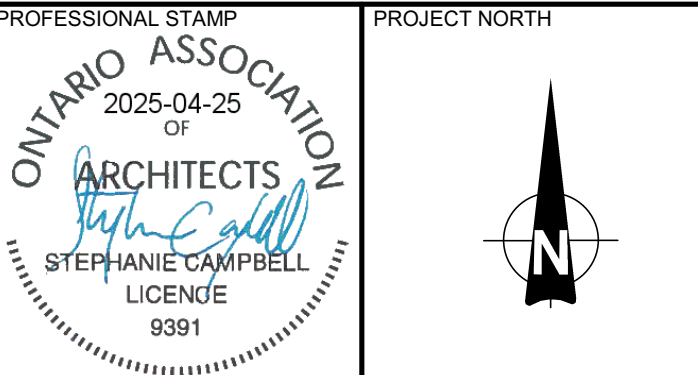
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL PROCESS BUILDING

ROOF PLAN

DESIGN: SC/KA

DRAWN: NP

CHECKED: HB/SC

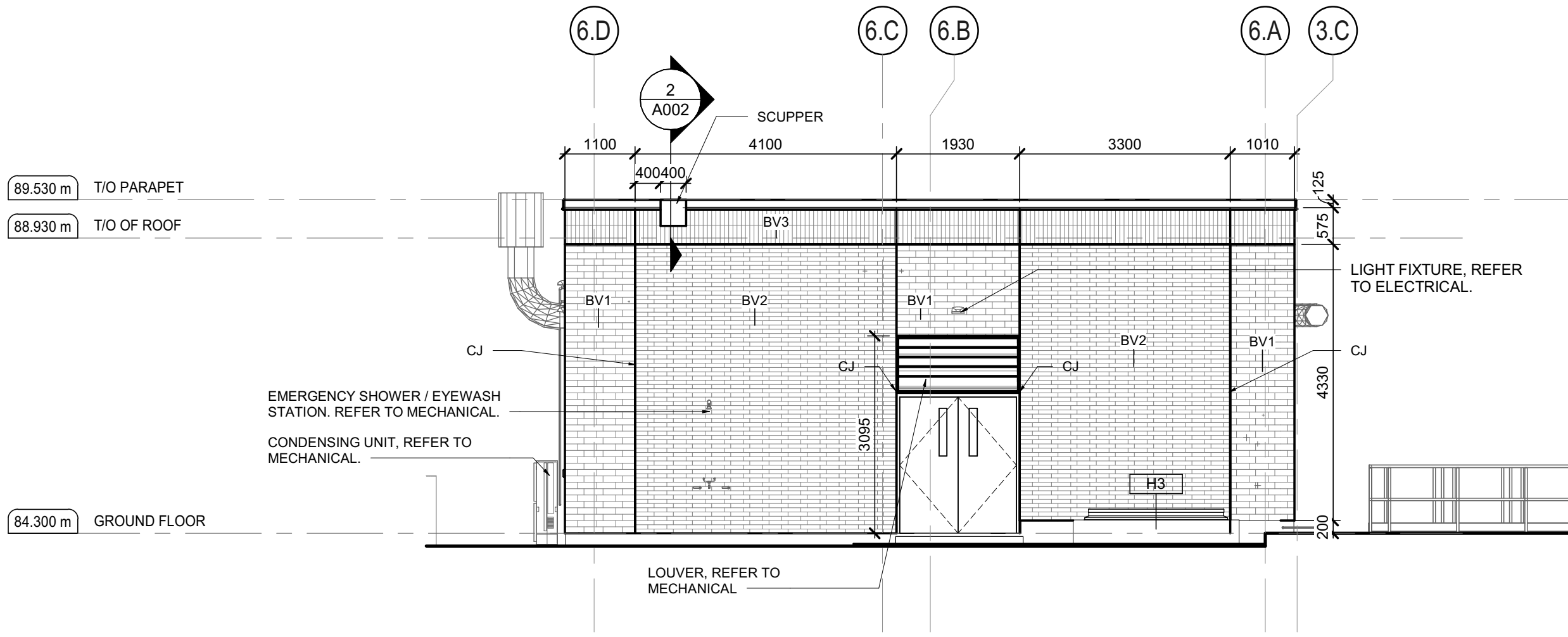
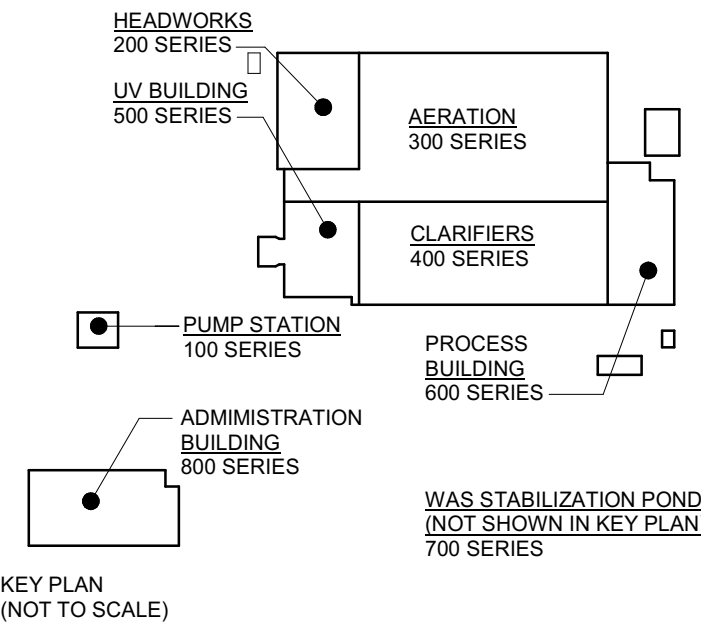
JLR #: 32296-001

DRAWING #:
A603

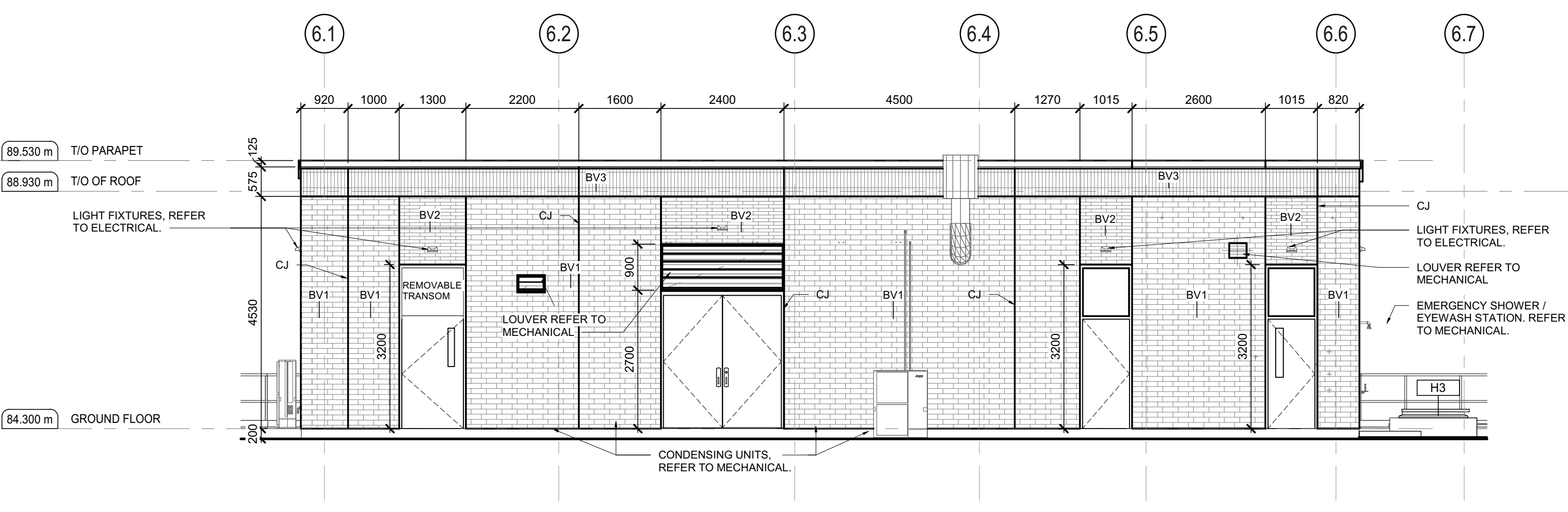
File Location: C:\Users\NParedes\Documents\32296 A-Process Building R23 NParedes\Hall.rvt
PLOT DATE: 4/24/2025 2:42:23 PM

BRICK TYPE LEGEND			
ABBREVIATION	BRICK TYPE	DIMENSION	COURSING
BV1	BRICK VENEER 1	90x90x290mm	RUNNING BOND
BV2	BRICK VENEER 2	90x57x290mm	RUNNING BOND
BV3	BRICK VENEER 3	90x57x290mm	SOLDIER COURSE

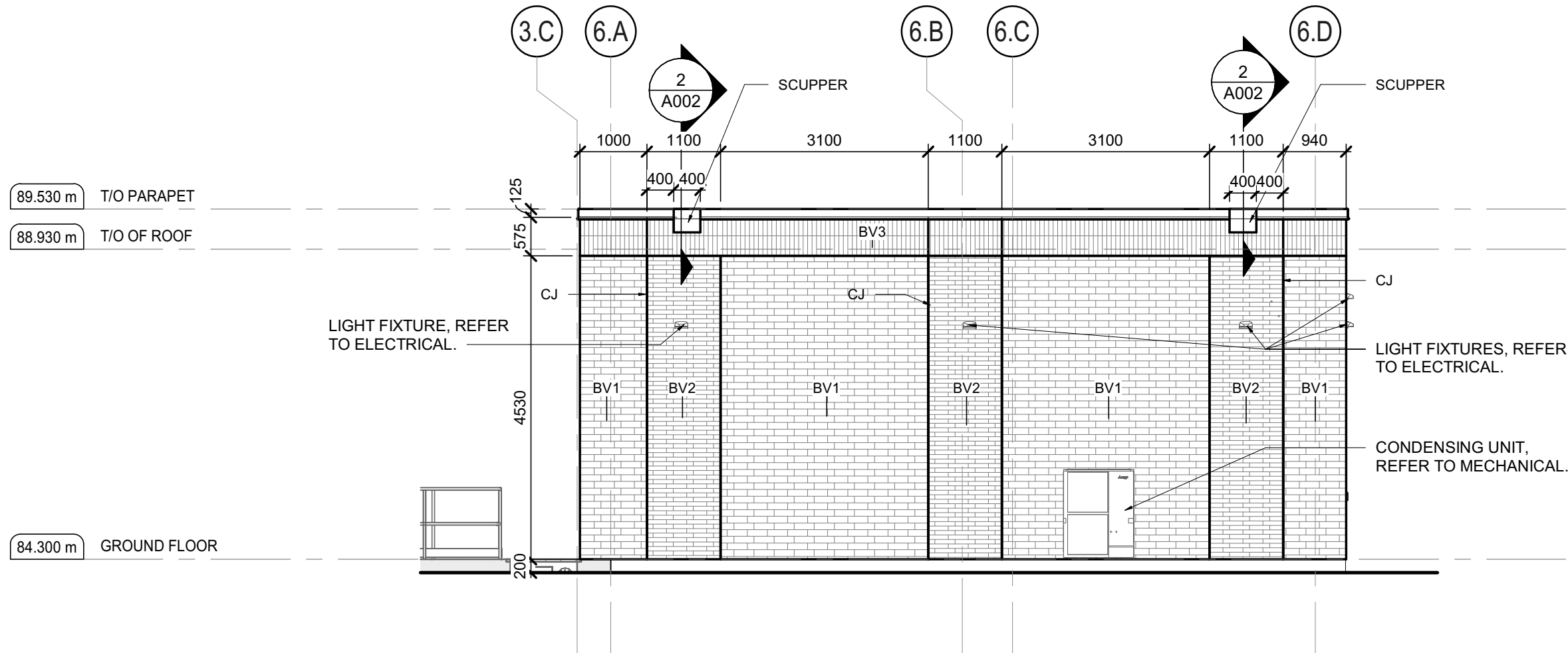
NOTE: REFER TO SA DRAWING
SERIES FOR STAIR AND GUARDRAIL
INFORMATION



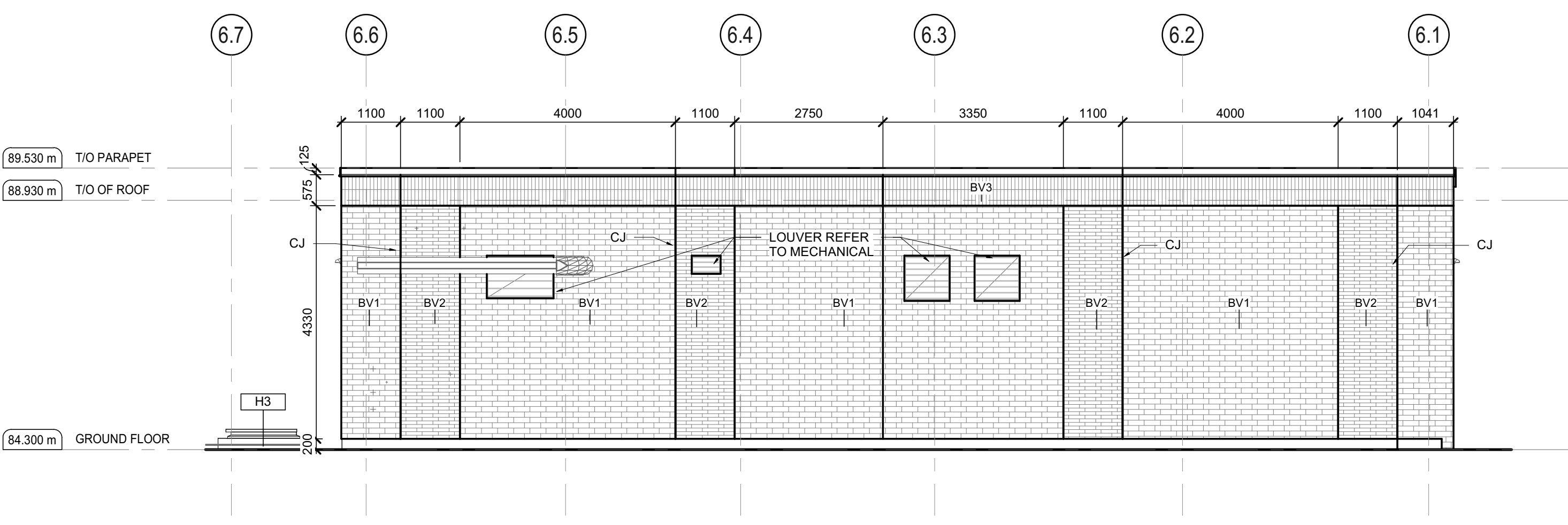
1
A604
NORTH EXTERIOR ELEVATION
SCALE : 1 : 75



2
A604
EAST EXTERIOR ELEVATION
SCALE : 1 : 75



3
A604
SOUTH EXTERIOR ELEVATION
SCALE : 1 : 75



4
A604
WEST EXTERIOR ELEVATION
SCALE : 1 : 75

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm
SCALE: 1 : 75

CLIENT:

CONSULTANT:

J.L. Richards
ENGINEERS • ARCHITECTS • PLANNERS

www.jrichards.ca

CONSULTANT:

PROFESSIONAL STAMP

2025-04-25
OF
ARCHITECTS
STEPHANIE CAMPBELL
LICENCE
9391

PROJECT NORTH

PROJECT:

**BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES**

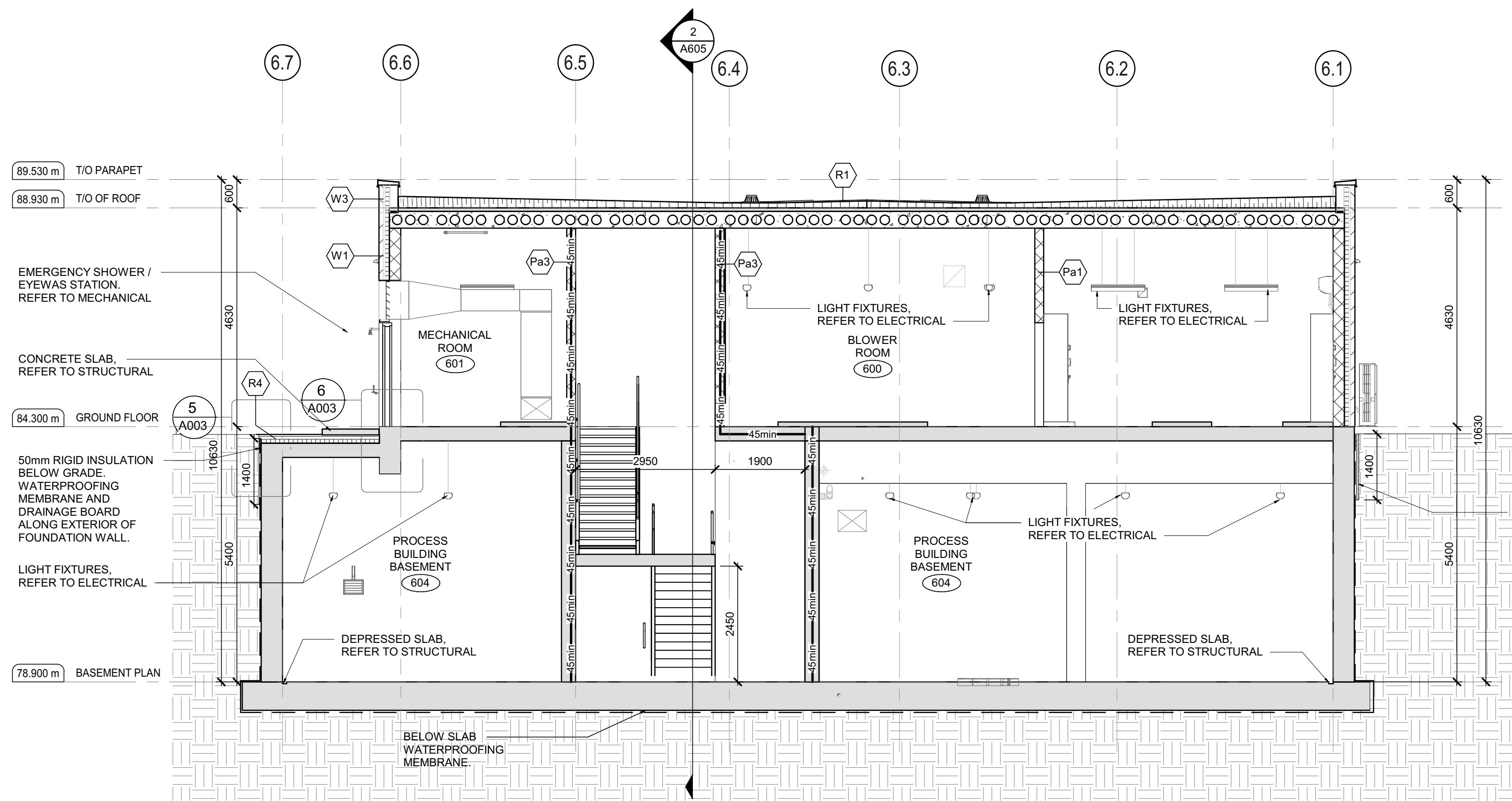
100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

**ARCHITECTURAL
PROCESS BUILDING**

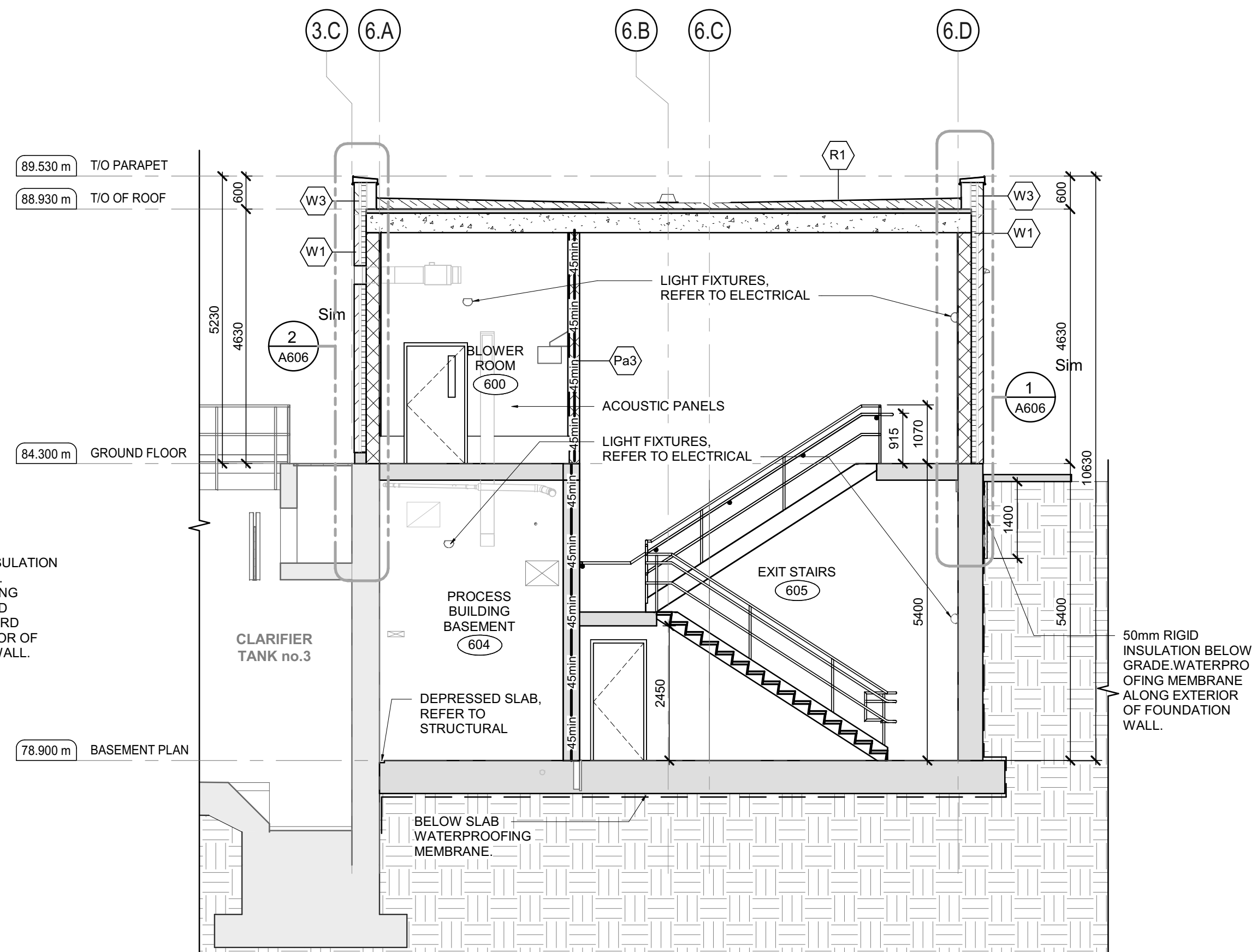
EXTERIOR BUILDING ELEVATIONS

DESIGN:	SC/KA	DRAWING #:
DRAWN:	NP	A604
CHECKED:	HB/SC	
JLR #:	32296-001	



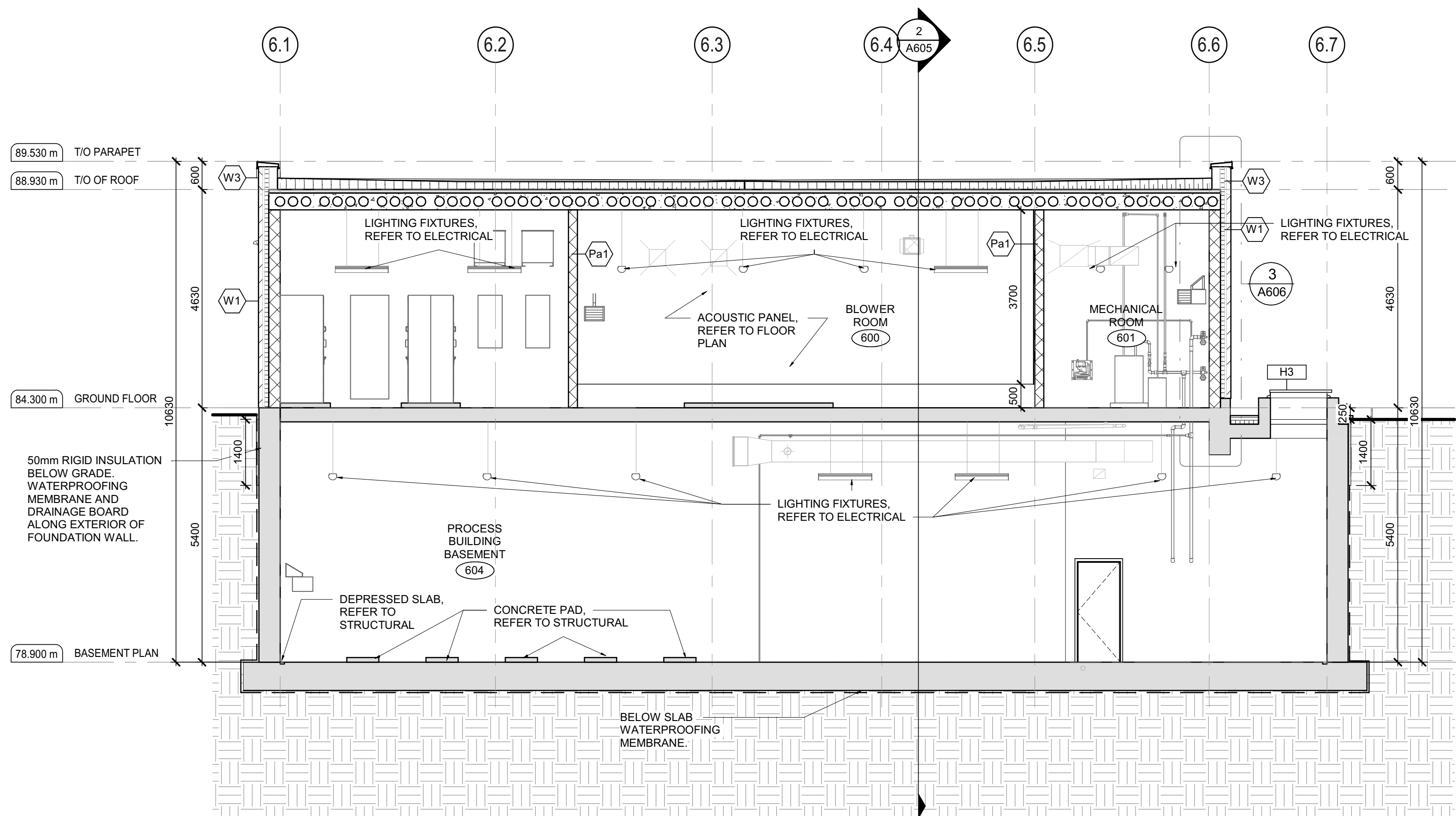
BUILDING SECTION 1

SCALE: 1:75



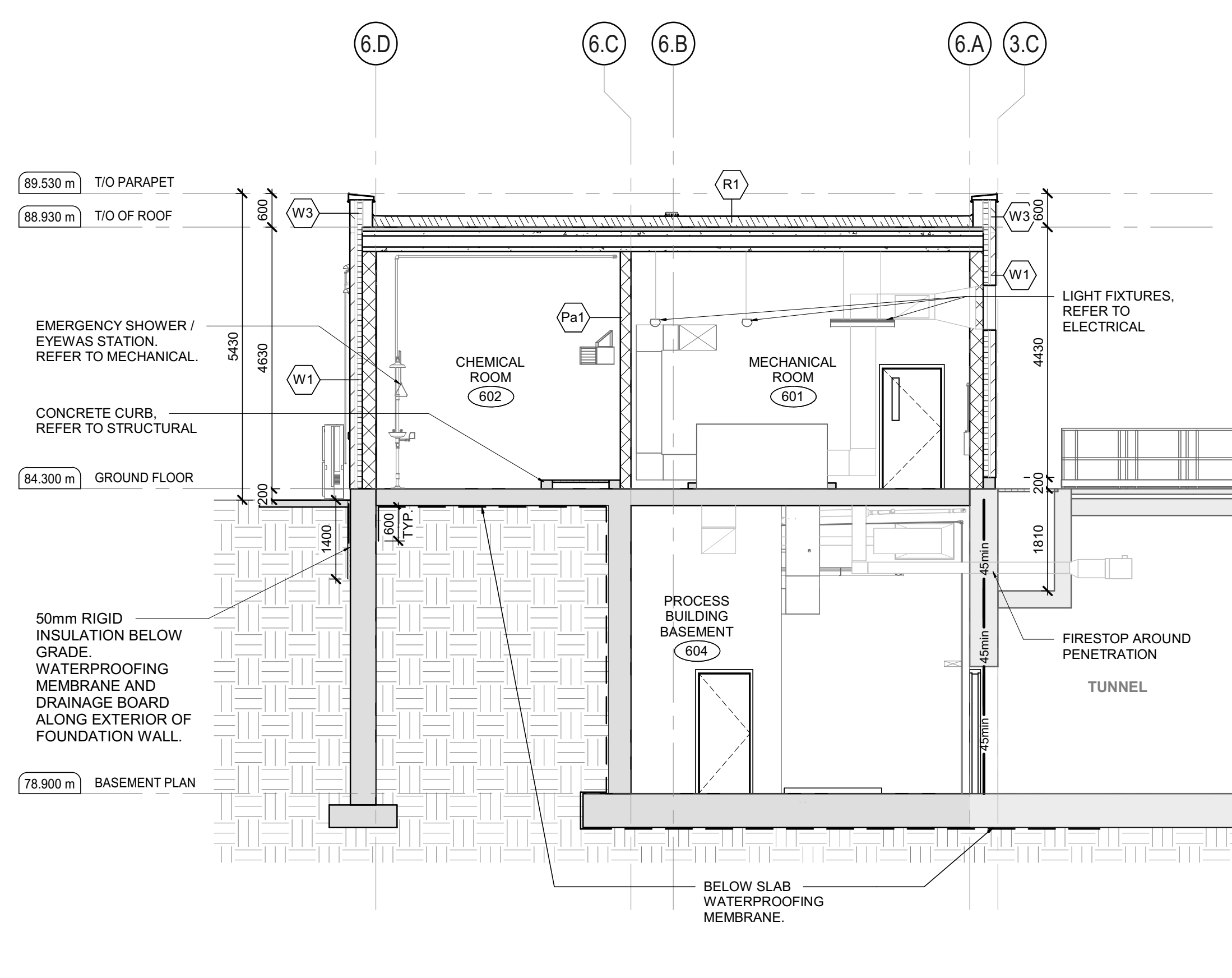
BUILDING SECTION 2

SCALE: 1:75



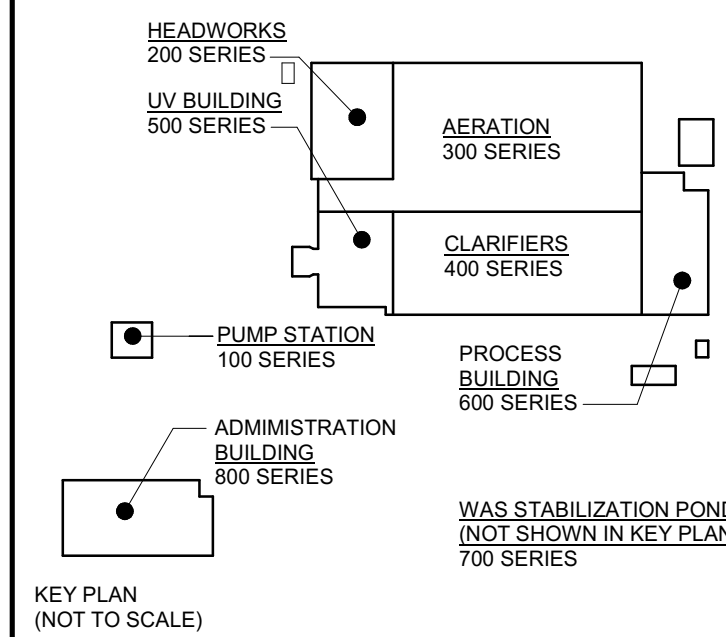
BUILDING SECTION 3

SCALE: 1:75



BUILDING SECTION 4

SCALE: 1:75



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm

SCALE: 1:75

CLIENT:

BRIGHTON

CONSULTANT:

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

2025-04-25 OF

ARCHITECTS

STEPHANIE CAMPBELL

LICENCE

9391

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL PROCESS BUILDING BUILDING SECTIONS

DESIGN:	SC/KA	DRAWING #:	A605
DRAWN:	NP		
CHECKED:	HB/SC		
JLR #:	32296-001		

LEGEND:

1hr FIRE SEPARATION (60min FIRE RATING)

WIDTH AND HEIGHT OF EXITS:

1) THE WIDTH OF AN EXIT SHALL BE NOT LESS THAN

- 1100mm FOR CORRIDORS AND PASSAGEWAYS
- 900mm FOR STAIRS
- 790mm FOR DOORWAYS

2) EVERY EXIT SHALL HAVE A CLEAR HEIGHT OVER THE CLEAR WIDTH OF THE EXIT OF NOT LESS THAN 2100mm

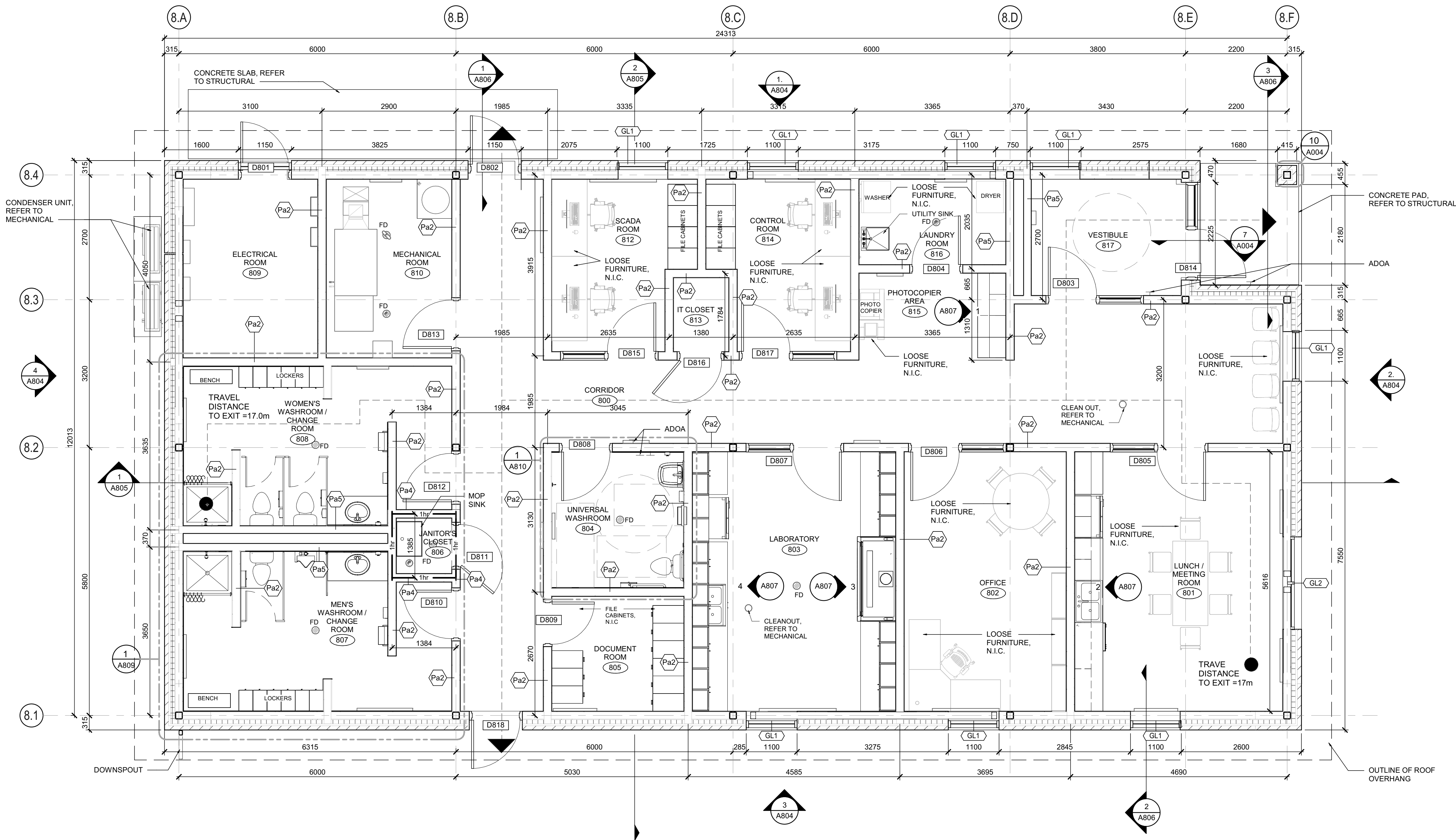
3) CLEAR HEIGHT OF DOORWAYS SHALL NOT BE LESS THAN 2030mm

TRAVEL DISTANCE:

--- SERVICE EGRESS 30 m

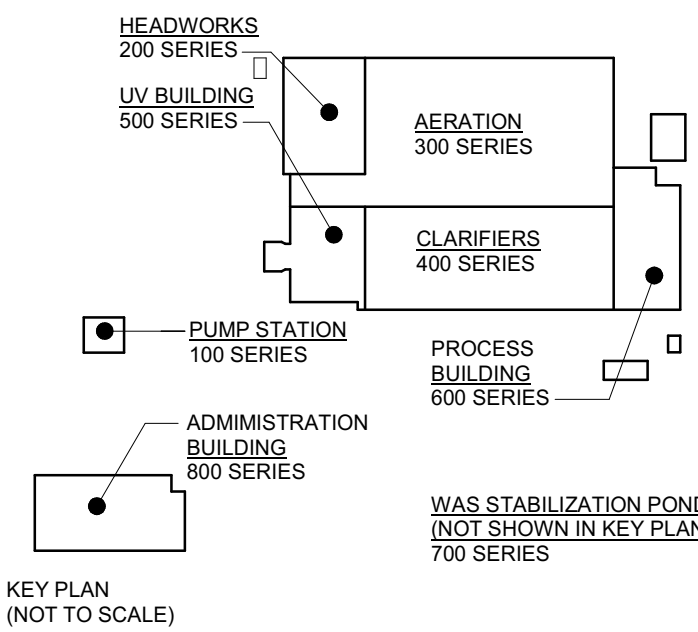
● START POINT

▲ EXIT POINT



ADMINISTRATION BUILDING GROUND FLOOR PLAN

SCALE: 1:50



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SCALE: As indicated

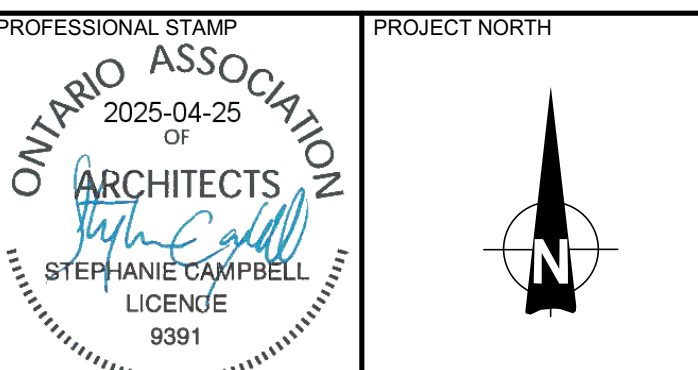
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

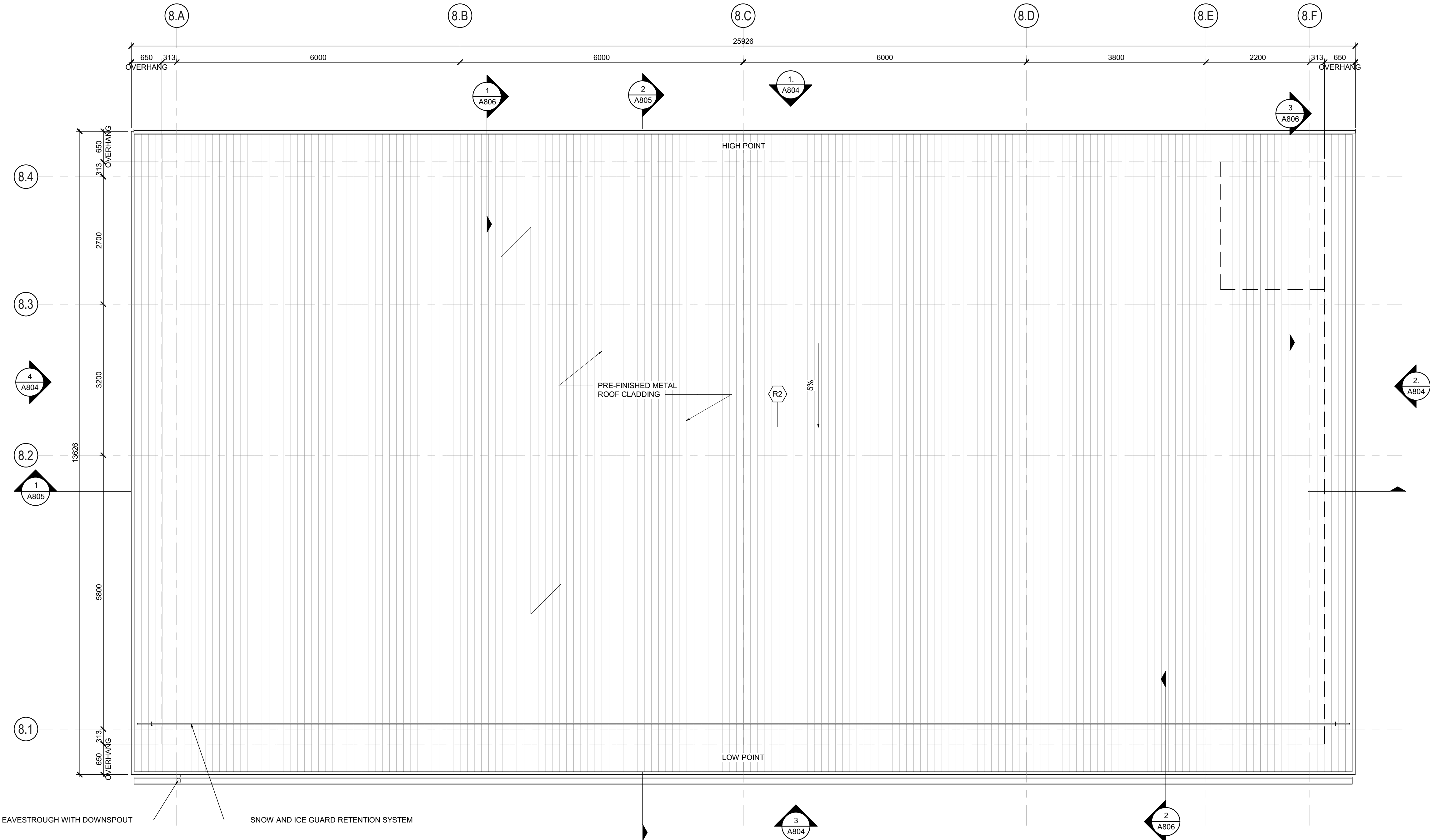
100 COUNTY ROAD 64, BRIGHTON, ONTARIO

ARCHITECTURAL ADMINISTRATION BUILDING GROUND FLOOR PLAN

DESIGN: SC/KA	DRAWING #:
DRAWN: NP	A801
CHECKED: HB/SC	
JLR #:	32296-001

ROOF LEGEND

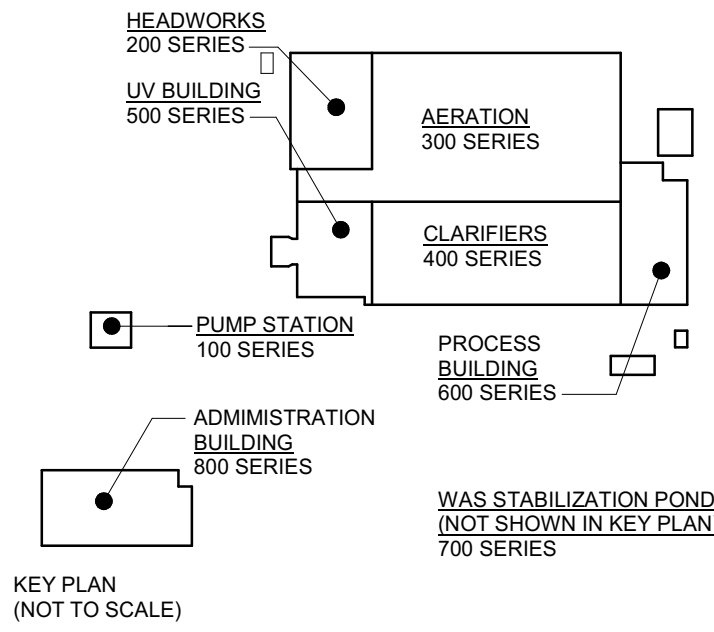
- SLOPED INSULATION
@ 1:50
- SLOPE
- LMP
LOW POINT OF ROOF
MEMBRANE
- HMP
HIGH POINT OF ROOF
MEMBRANE
- SC
ROOF SCUPPER
- RD
ROOF DRAIN
- RC
SLOPED INSULATION
ROOF CRICKET



1
A802

ADMINISTRATION BUILDING ROOF PLAN

SCALE : 1 : 50



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SCALE: As indicated

CLIENT:

BRIGHTON
MUNICIPALITY

CONSULTANT:

J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

2025-04-25
OF
ARCHITECTS
STEPHANIE CAMPBELL
LICENCE
9391

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL
ADMINISTRATION BUILDING
ROOF PLAN

DESIGN: SC/KA

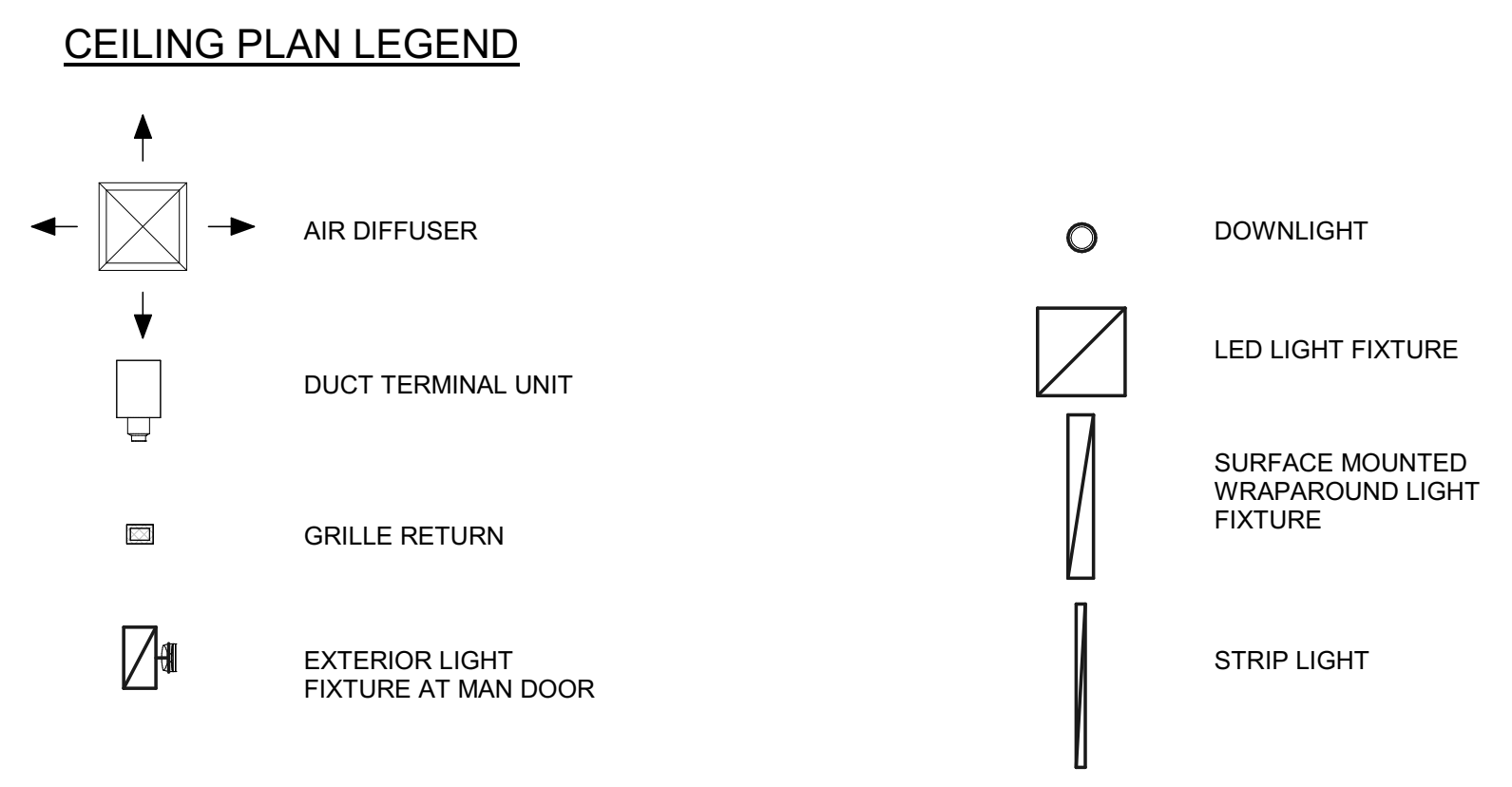
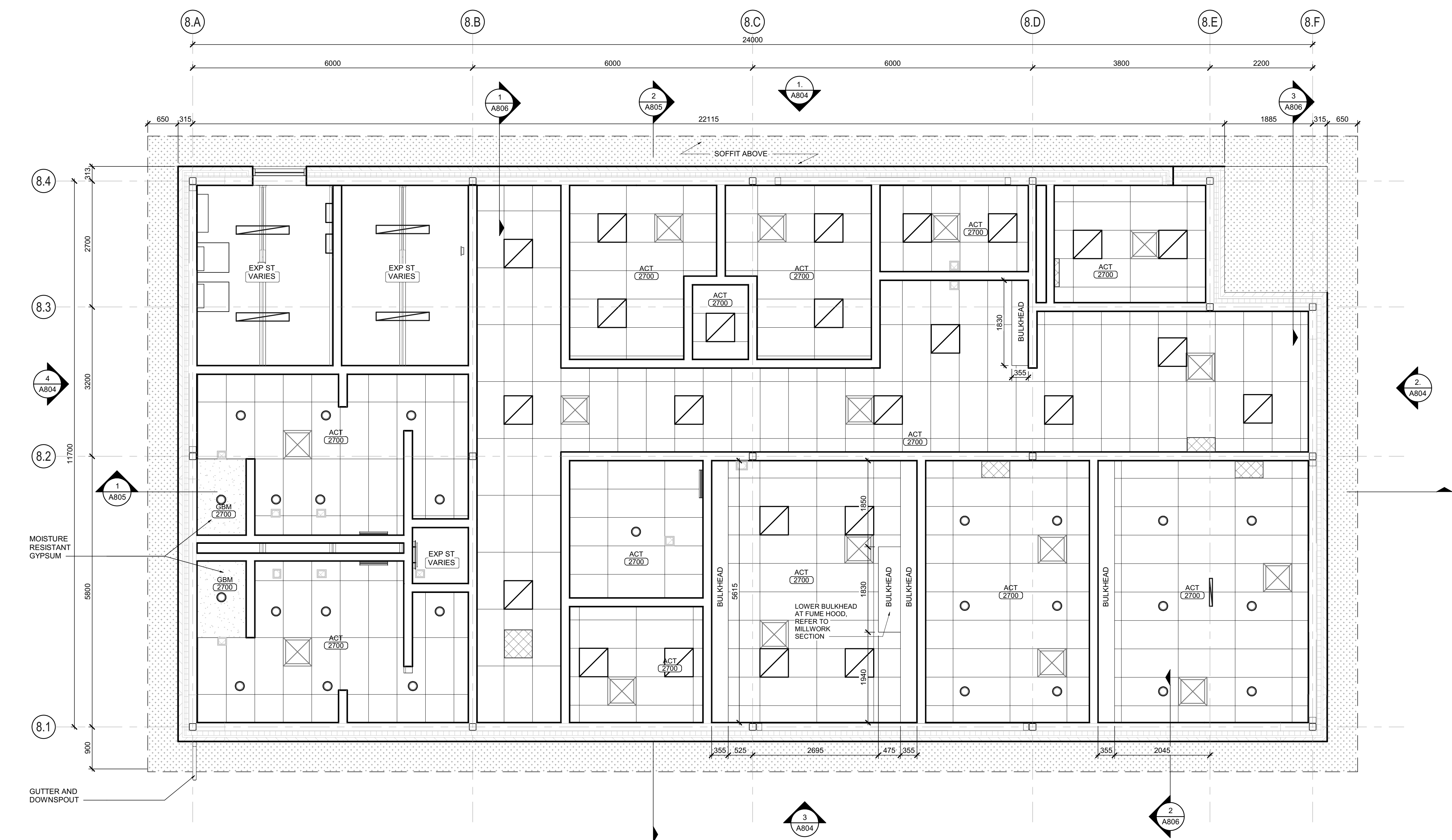
DRAWN: NP

CHECKED: HB/SC

JLR #: 32296-001

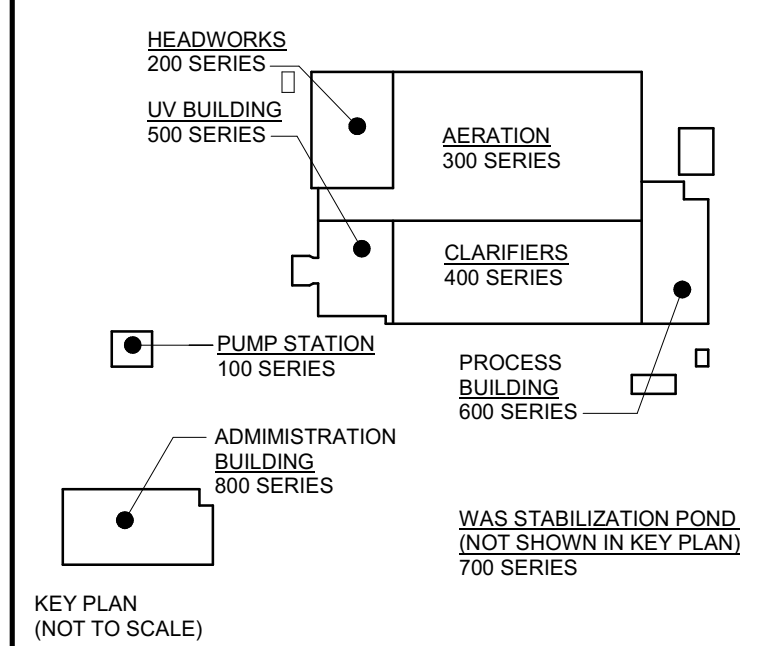
DRAWING #:

A802



1
A803

CEILING PLAN
SCALE: 1 : 50



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SCALE: 1 : 50

CLIENT:

CONSULTANT:

ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

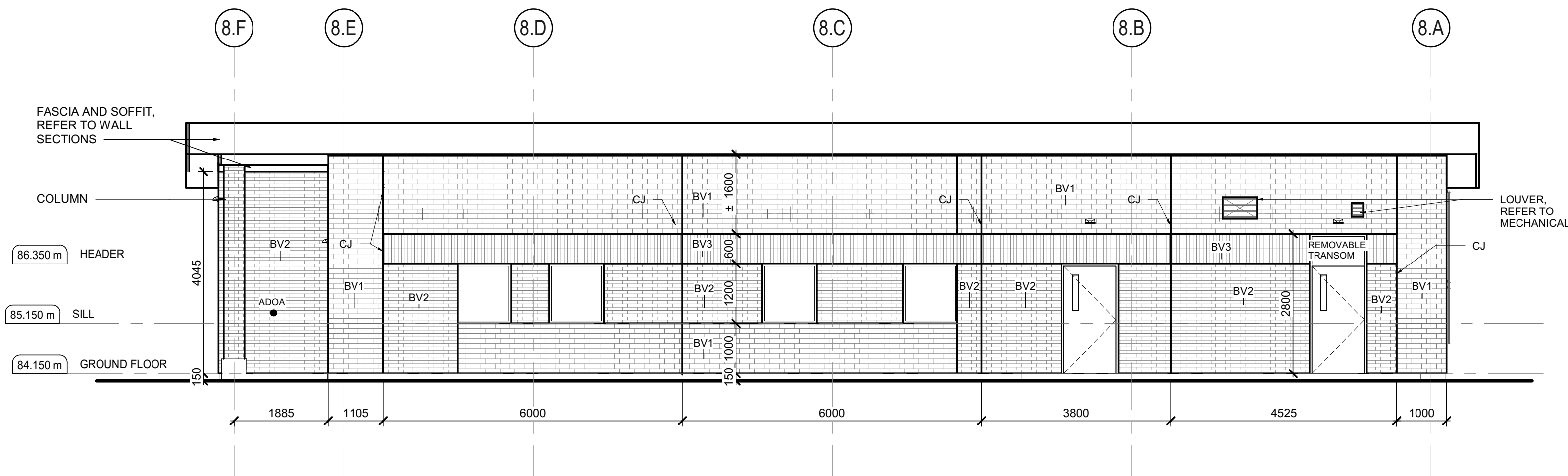
PROFESSIONAL STAMP

PROJECT NORTH

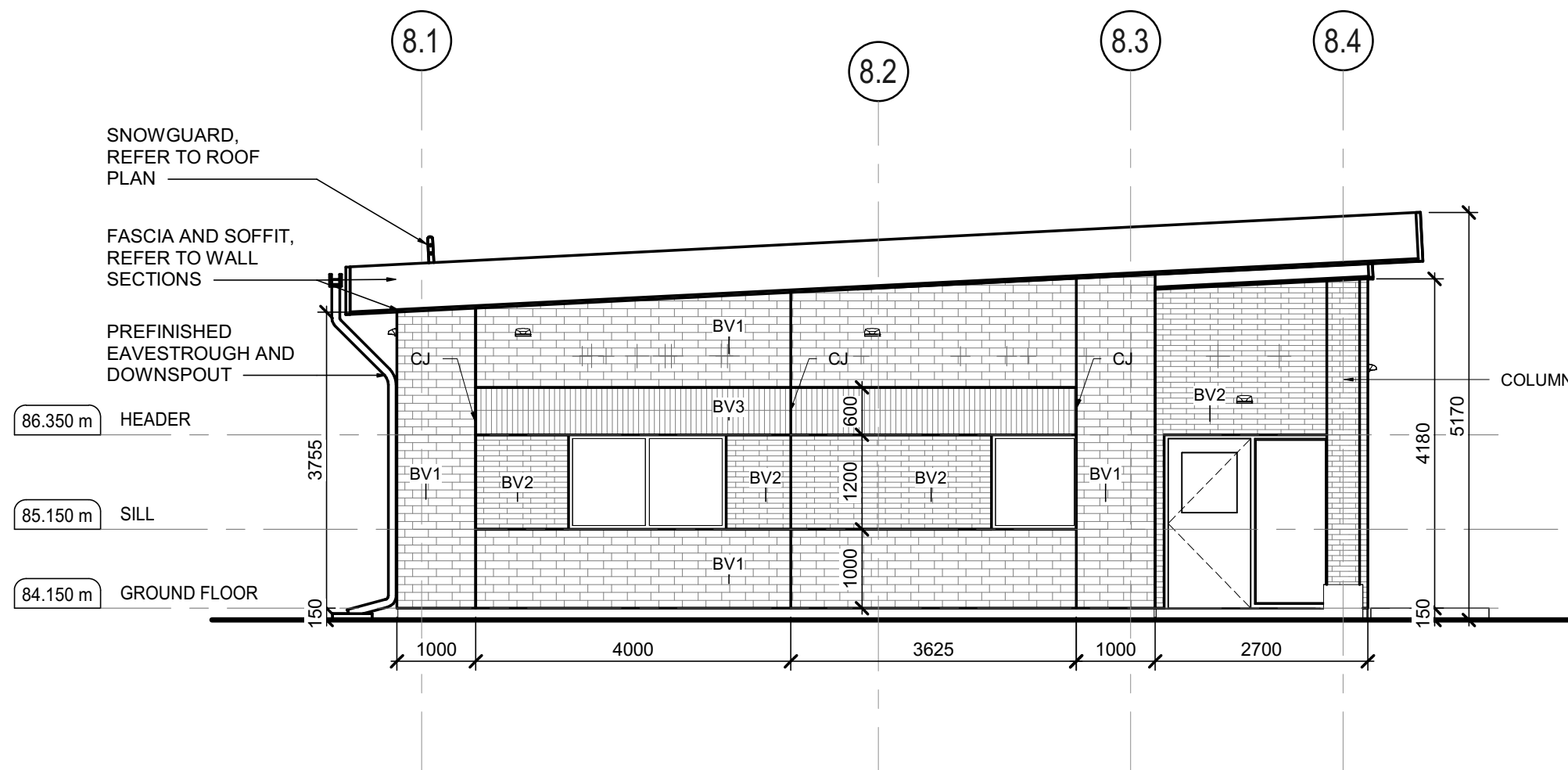
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES	
100 COUNTY ROAD 64, BRIGHTON, ONTARIO	
DRAWING:	
ARCHITECTURAL ADMINISTRATION BUILDING	
CEILING PLAN	
DESIGN: SC/KA	A803
DRAWN: NP	
CHECKED: HB/SC	
JLR #: 32296-001	

File Location: C:\Users\NParedes\Documents\32296 - Admin R23 - NParedes\Hall.rvt
PLOT DATE: 25/04/2025 2:11:26 PM

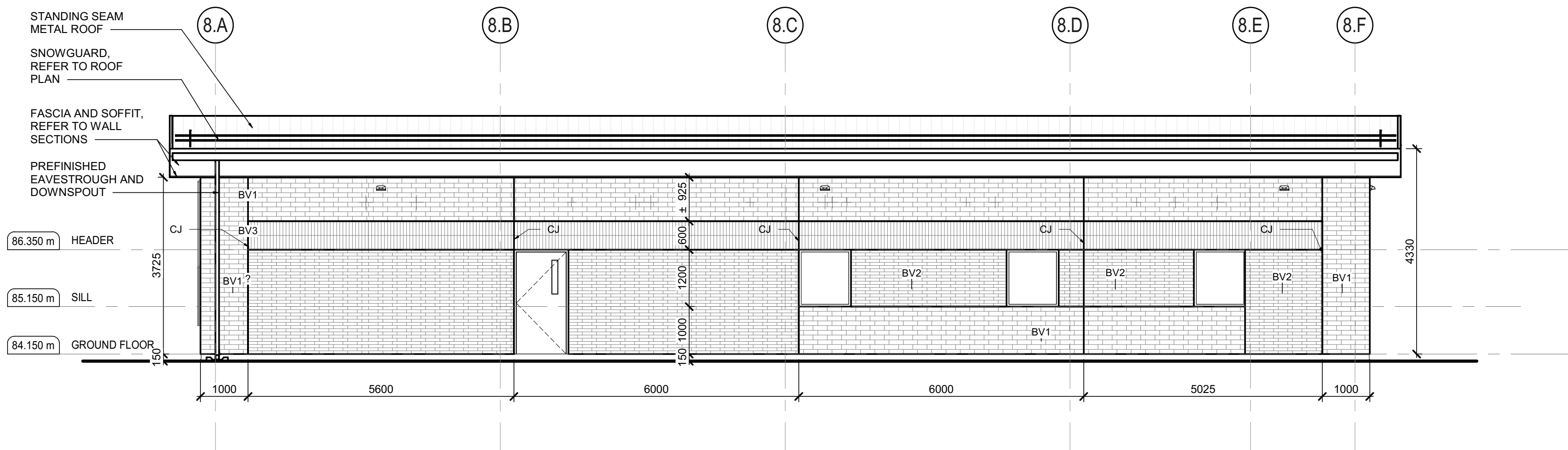
BRICK TYPE LEGEND			
Abbreviation Text	BRICK TYPE	DIMENSION	COURSING
BV1	BRICK VENEER 1	90x90x290mm	RUNNING BOND
BV2	BRICK VENEER 2	90x57x290mm	RUNNING BOND
BV3	BRICK VENEER 3	90x57x290mm	SOLDIER COURSE



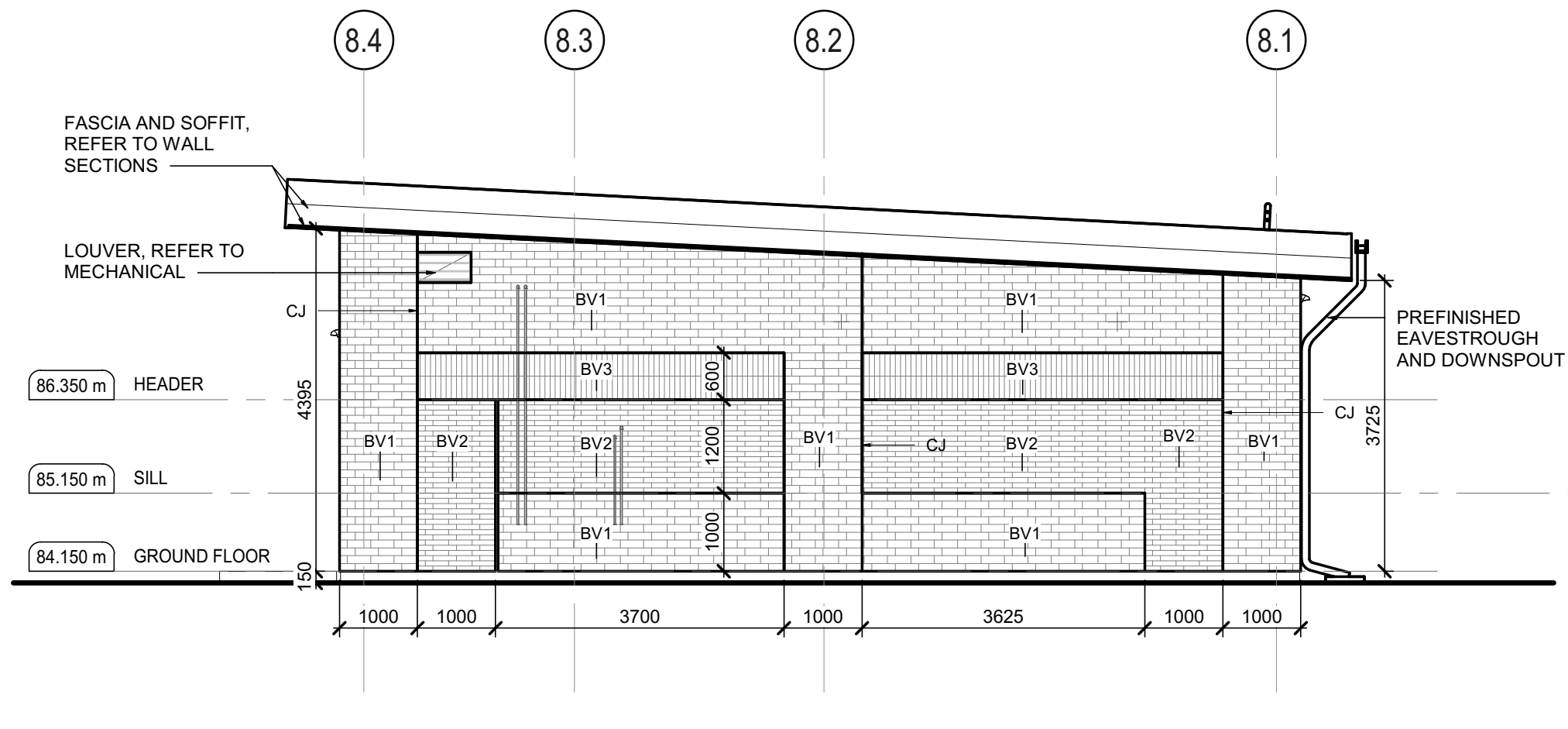
1. NORTH EXTERIOR ELEVATION
SCALE : 1 : 75



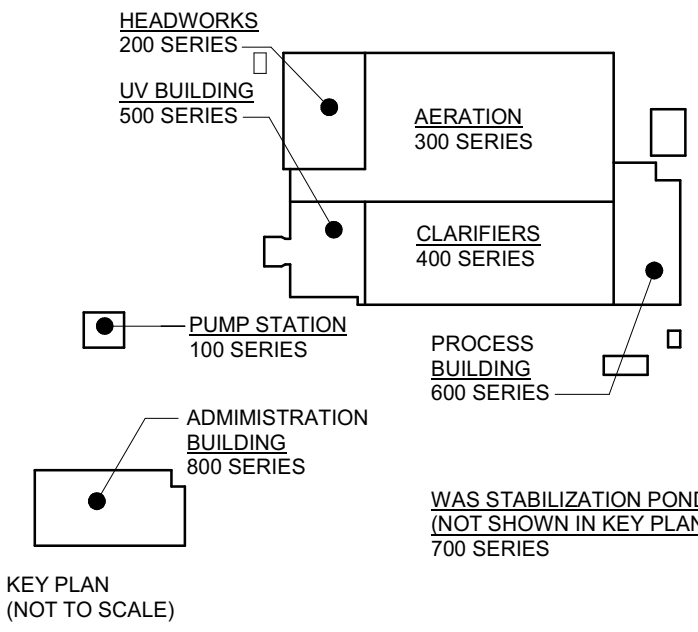
2. EAST EXTERIOR ELEVATION
SCALE : 1 : 75



3. SOUTH EXTERIOR ELEVATION
SCALE : 1 : 75



4. WEST EXTERIOR ELEVATION
SCALE : 1 : 75



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm
SCALE: 1 : 75

CLIENT:

BRIGHTON
MUNICIPALITY

CONSULTANT: www.jrichards.ca

JLR J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP
2025-04-25
OF
ARCHITECTS
STEPHANIE CAMPBELL
LICENCE
9391

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

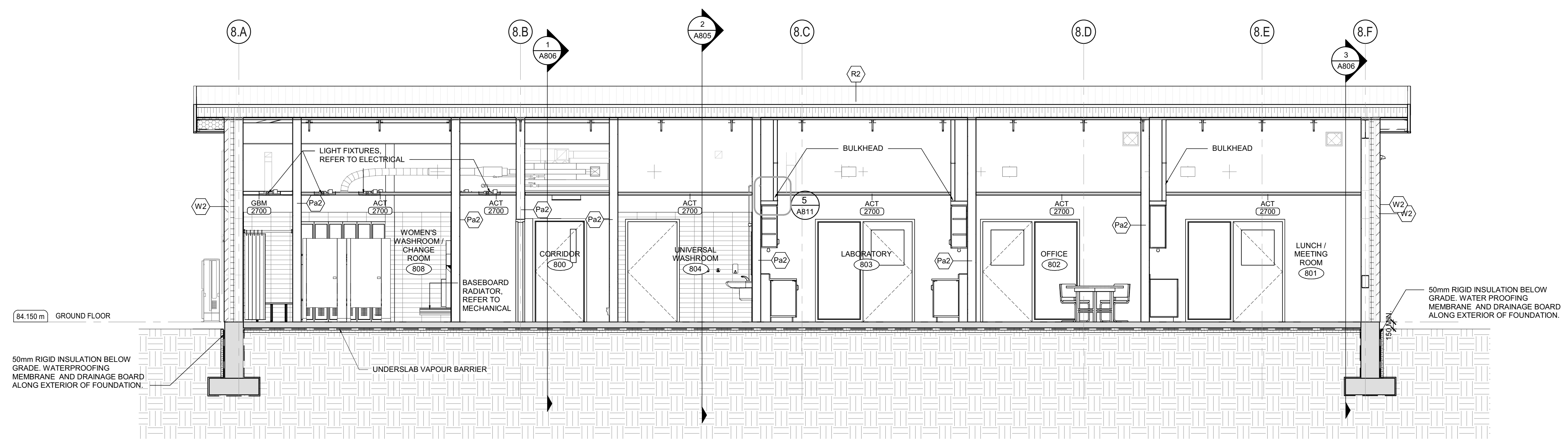
100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

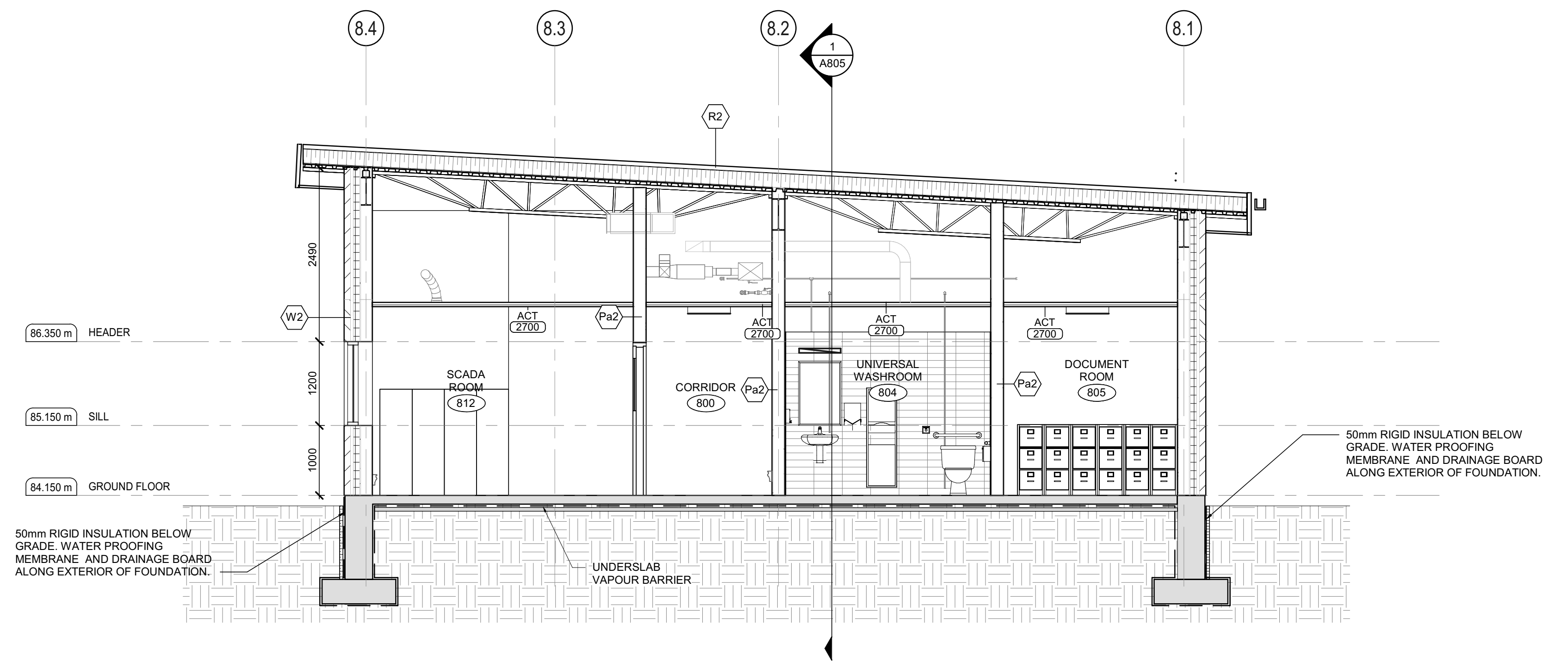
ARCHITECTURAL ADMINISTRATION BUILDING

EXTERIOR BUILDING ELEVATIONS

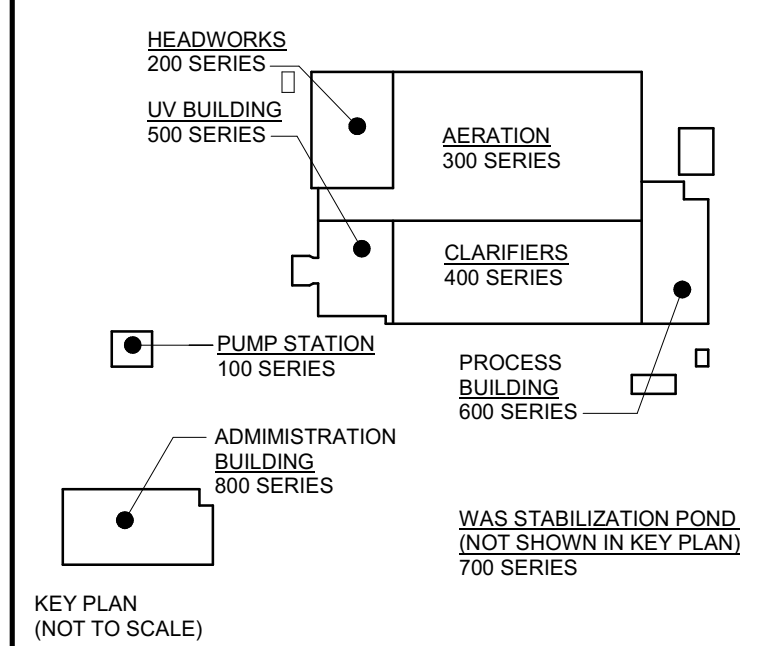
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DRAWN: NP	A804
CHECKED: HB/SC	
JLR #: 32296-001	



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ADMINISTRATION BUILDING SECTION 1
SCALE : 1 : 50



2
A805
ADMINISTRATION BUILDING SECTION 2
SCALE : 1 : 50



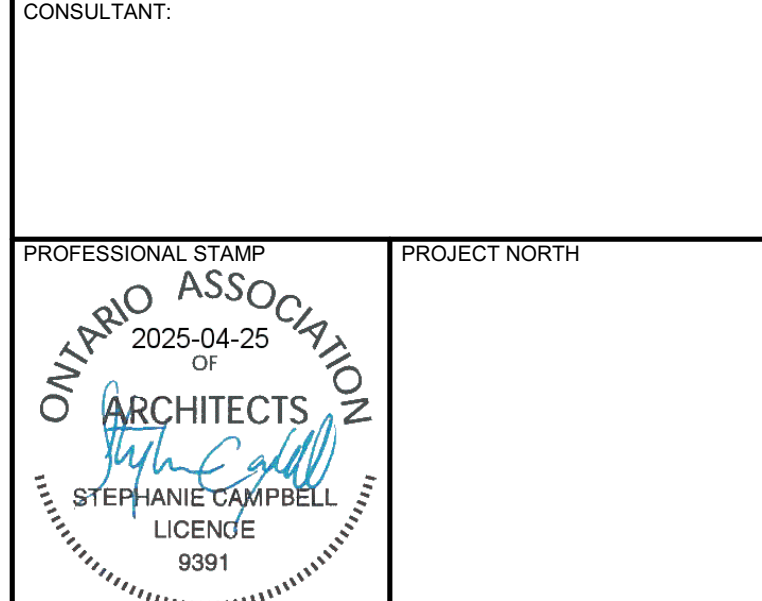
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SCALE: 1 : 50

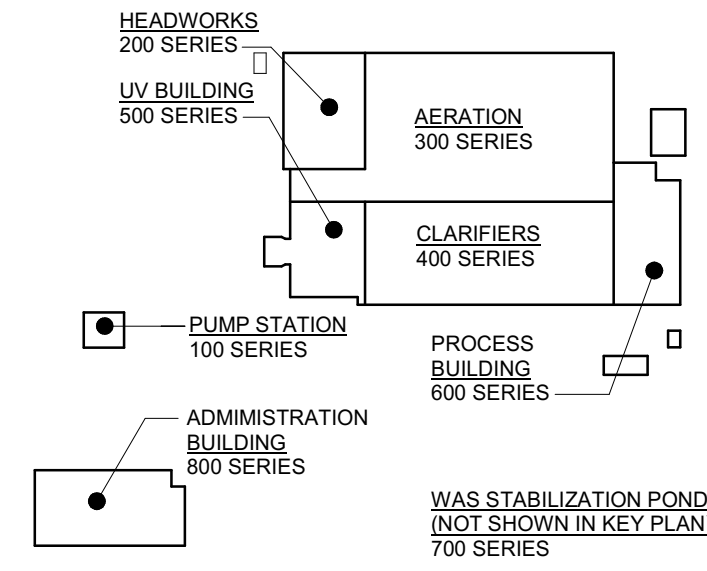


PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:
ARCHITECTURAL ADMINISTRATION BUILDING BUILDING SECTIONS

DESIGN: SC/KA	DRAWING #:
DRAWN: NP	A805
CHECKED: HB/SC	
JLR #:	32296-001

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SCALE: 1 : 20

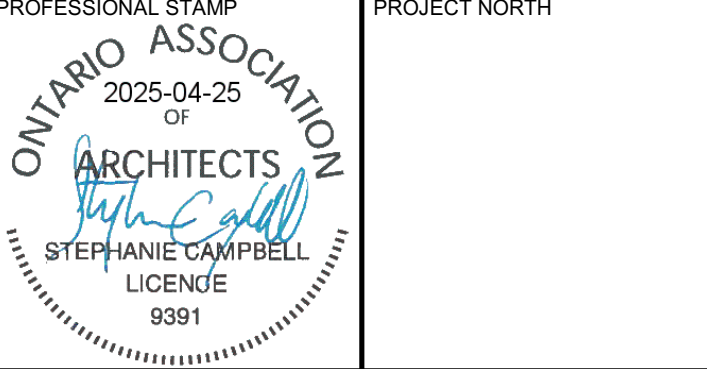
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL
ADMINISTRATION BUILDING

WALL SECTIONS

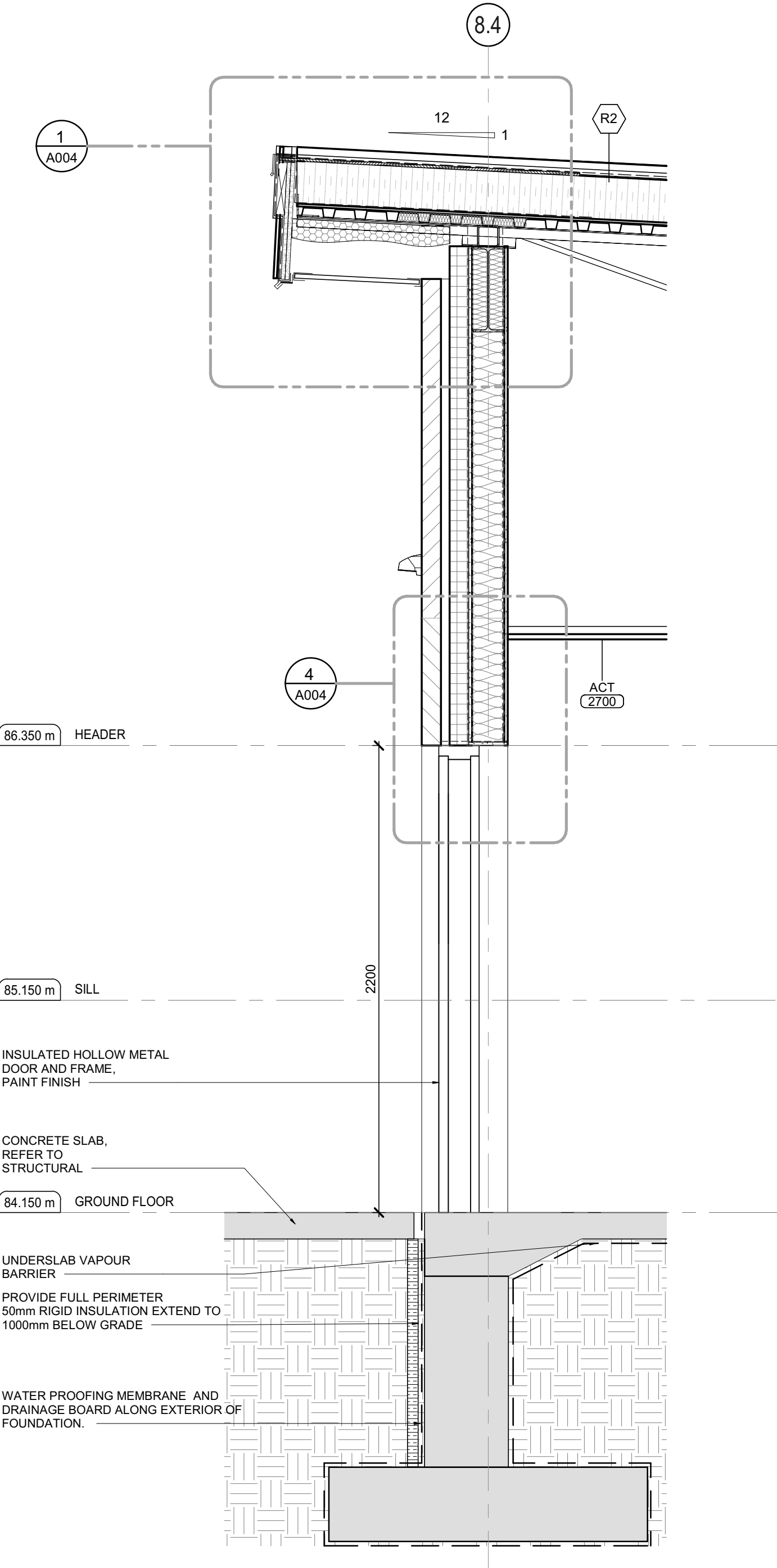
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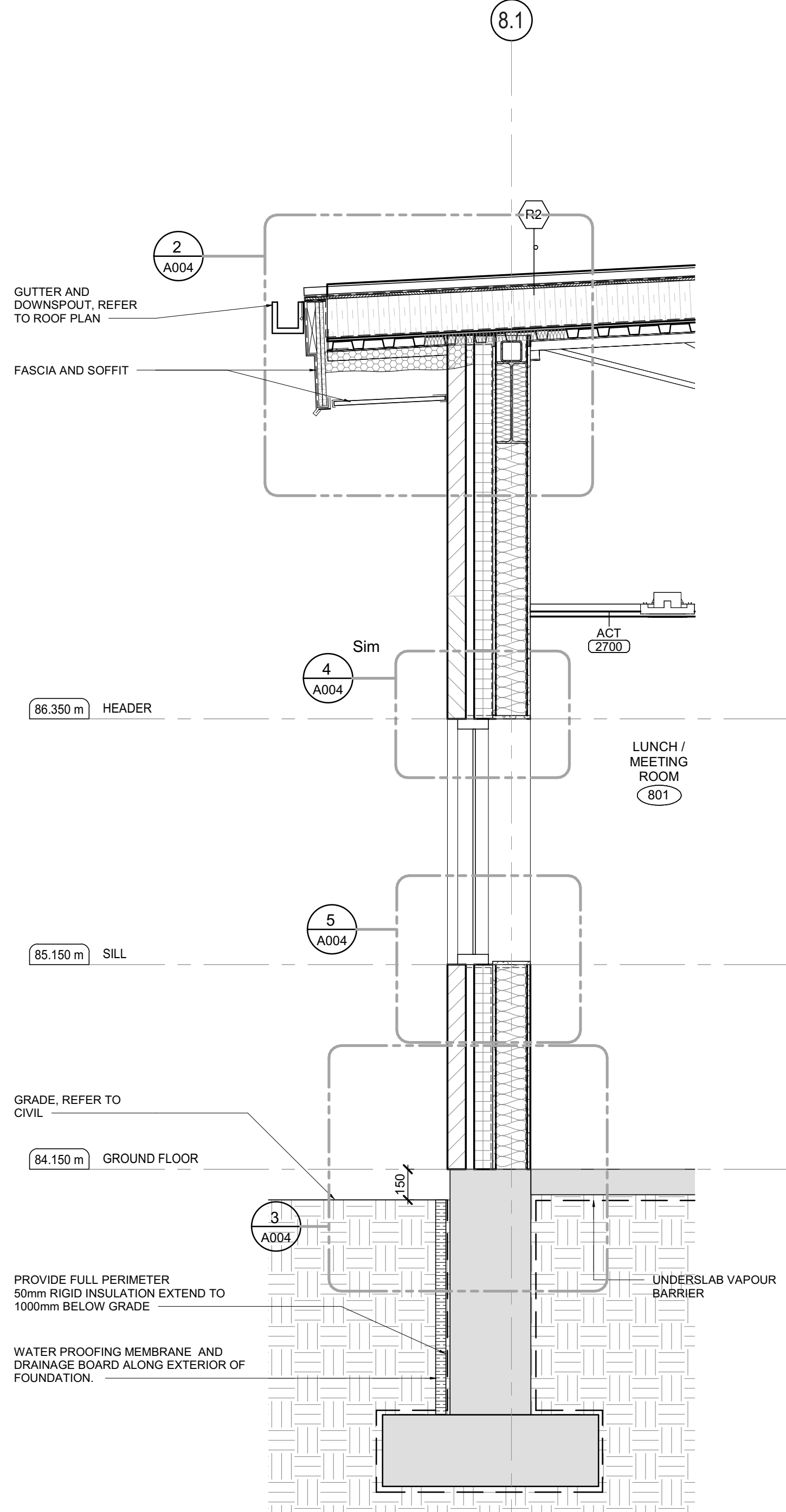
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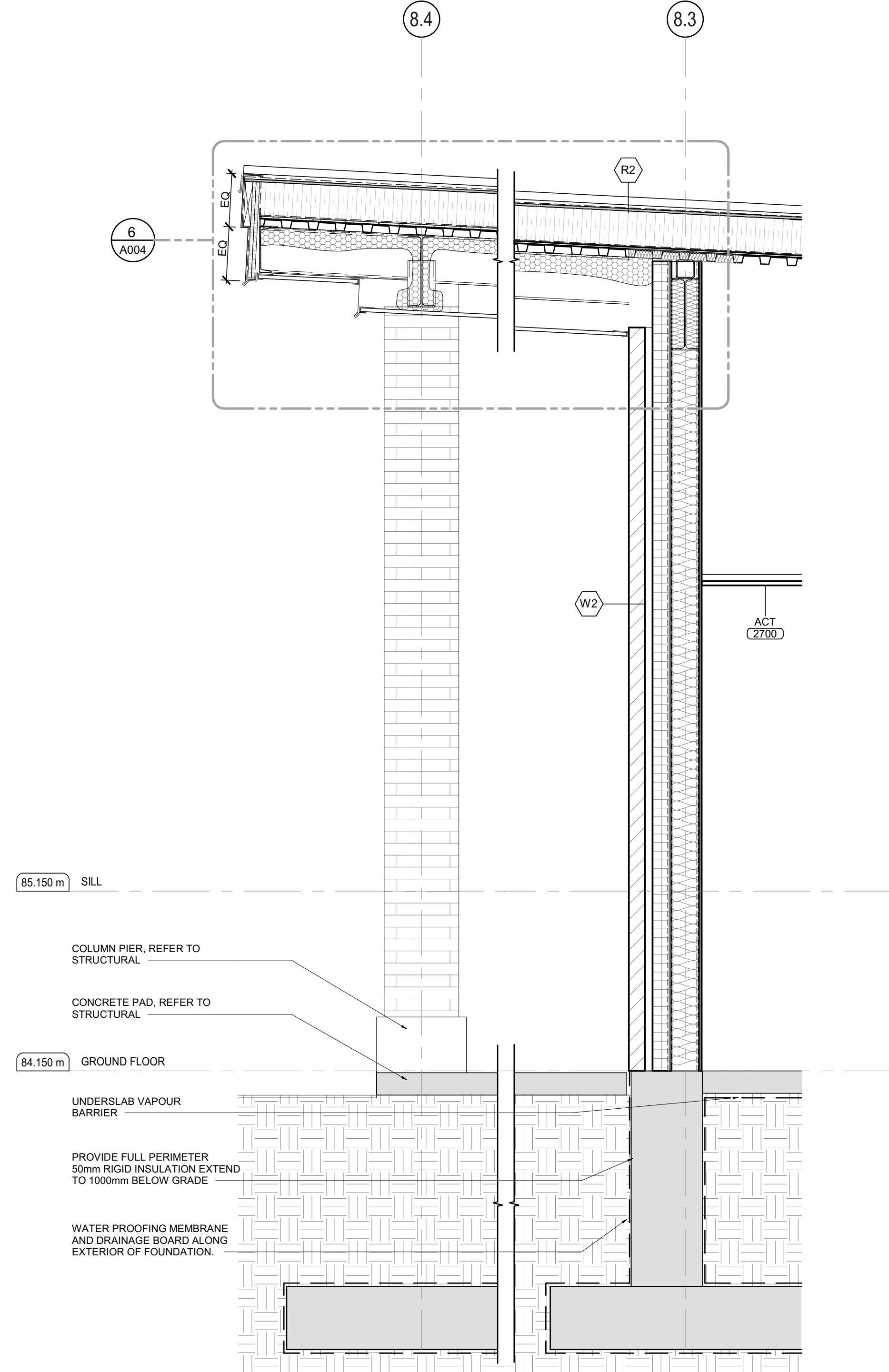
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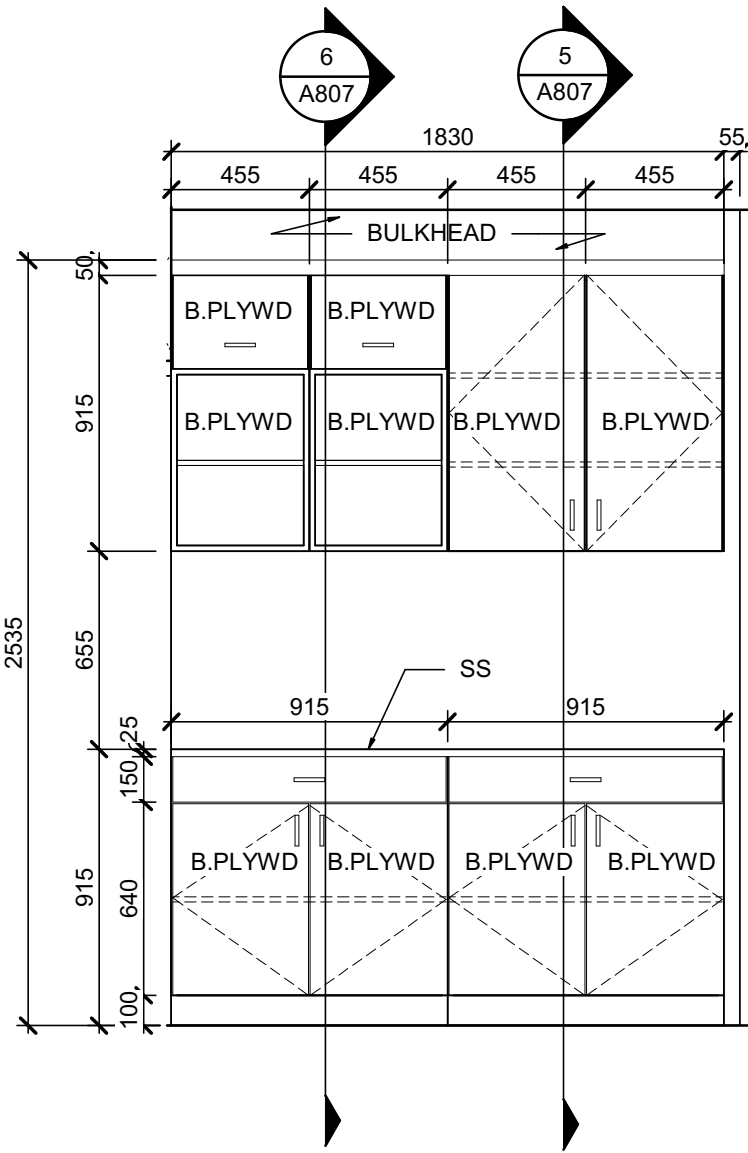
1 ADMINISTRATION WALL SECTION @DOOR
A806 SCALE: 1 : 20



2 ADMINISTRATION WALL SECTION @WINDOW
A806 SCALE: 1 : 20

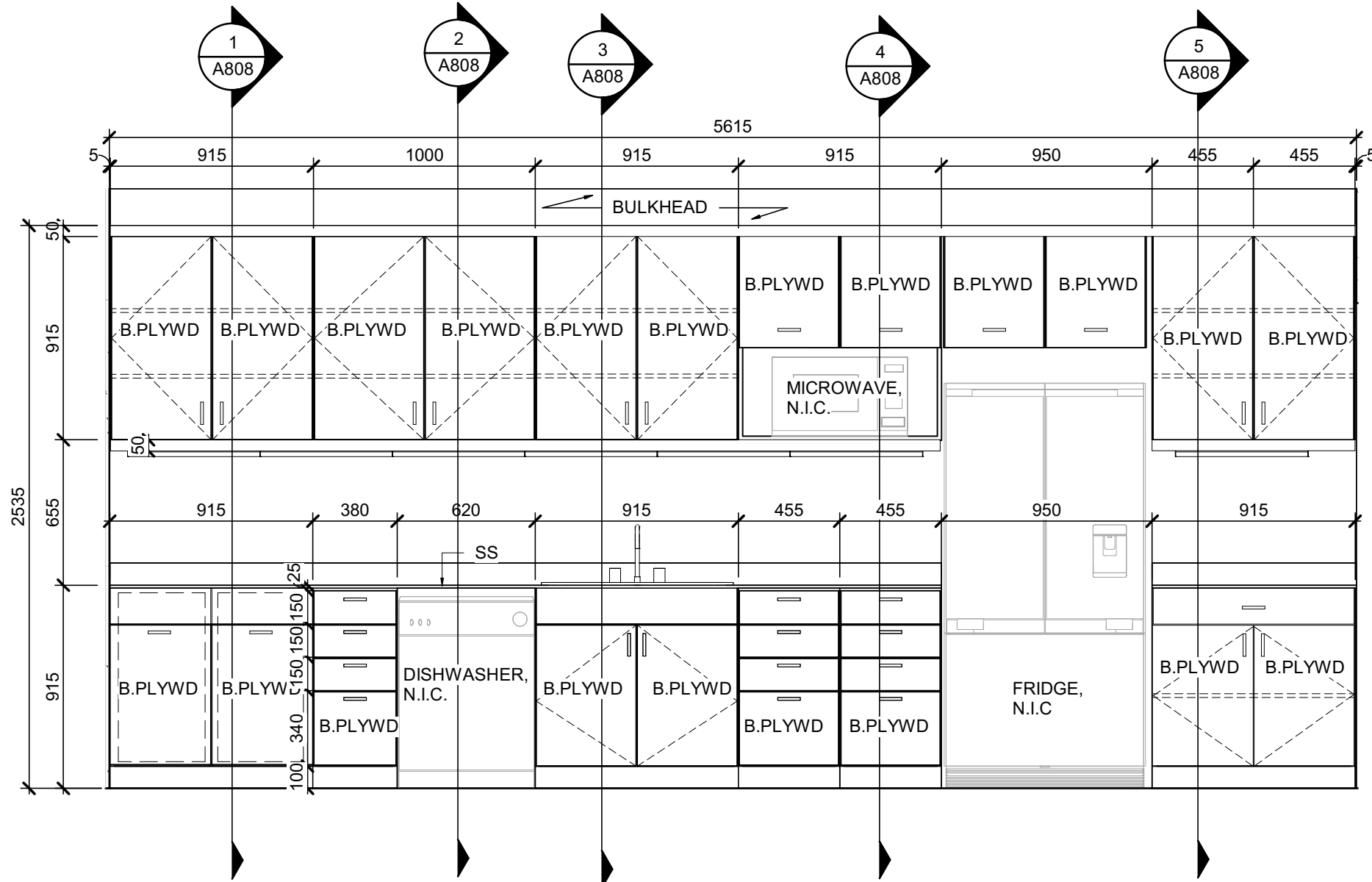


3 ADMINISTRATION WALL SECTION @VESTIBULE OVERHANG
A806 SCALE: 1 : 20



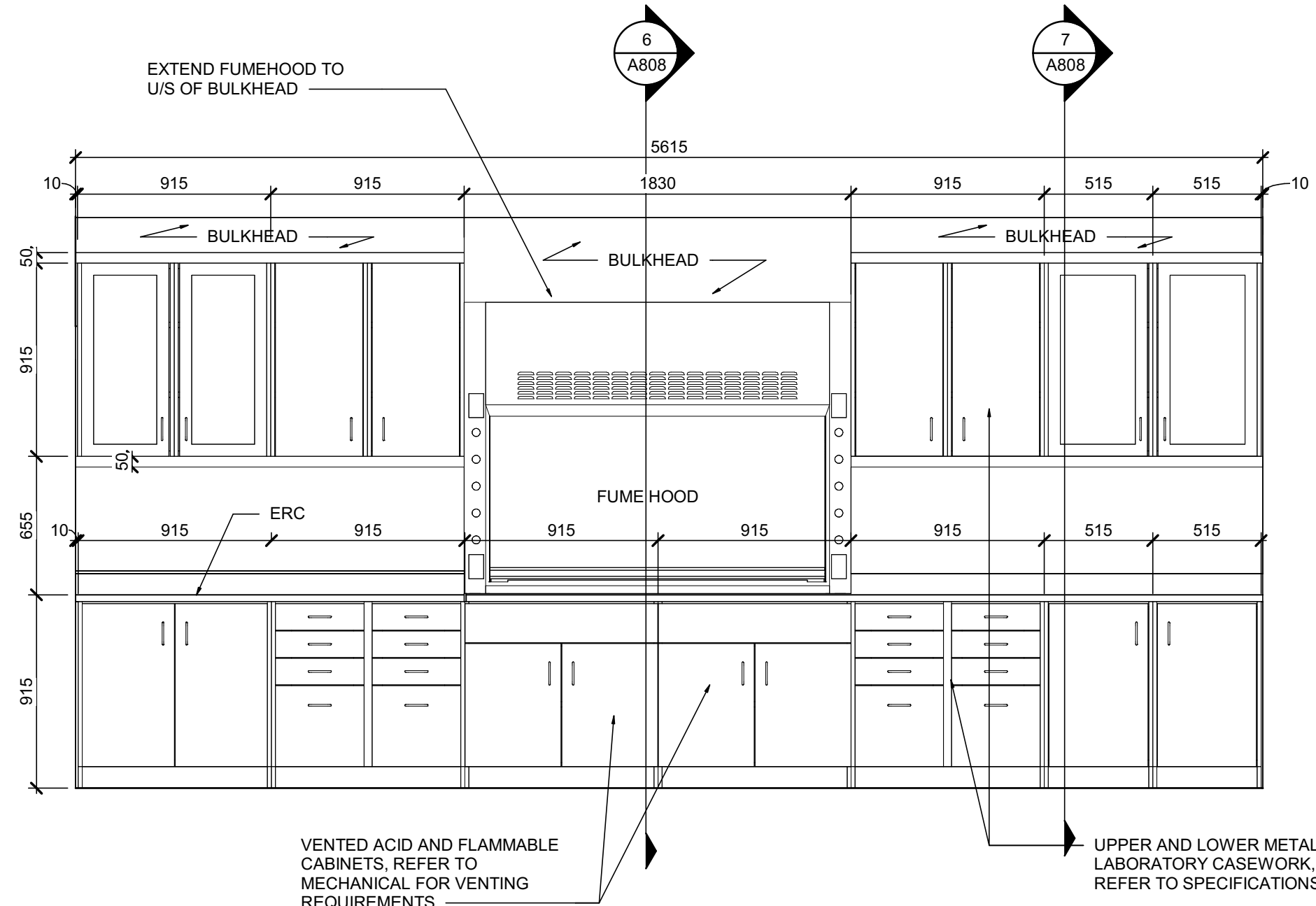
PHOTOCOPIER AREA -
MILLWORK ELEVATION

SCALE : 1 : 25



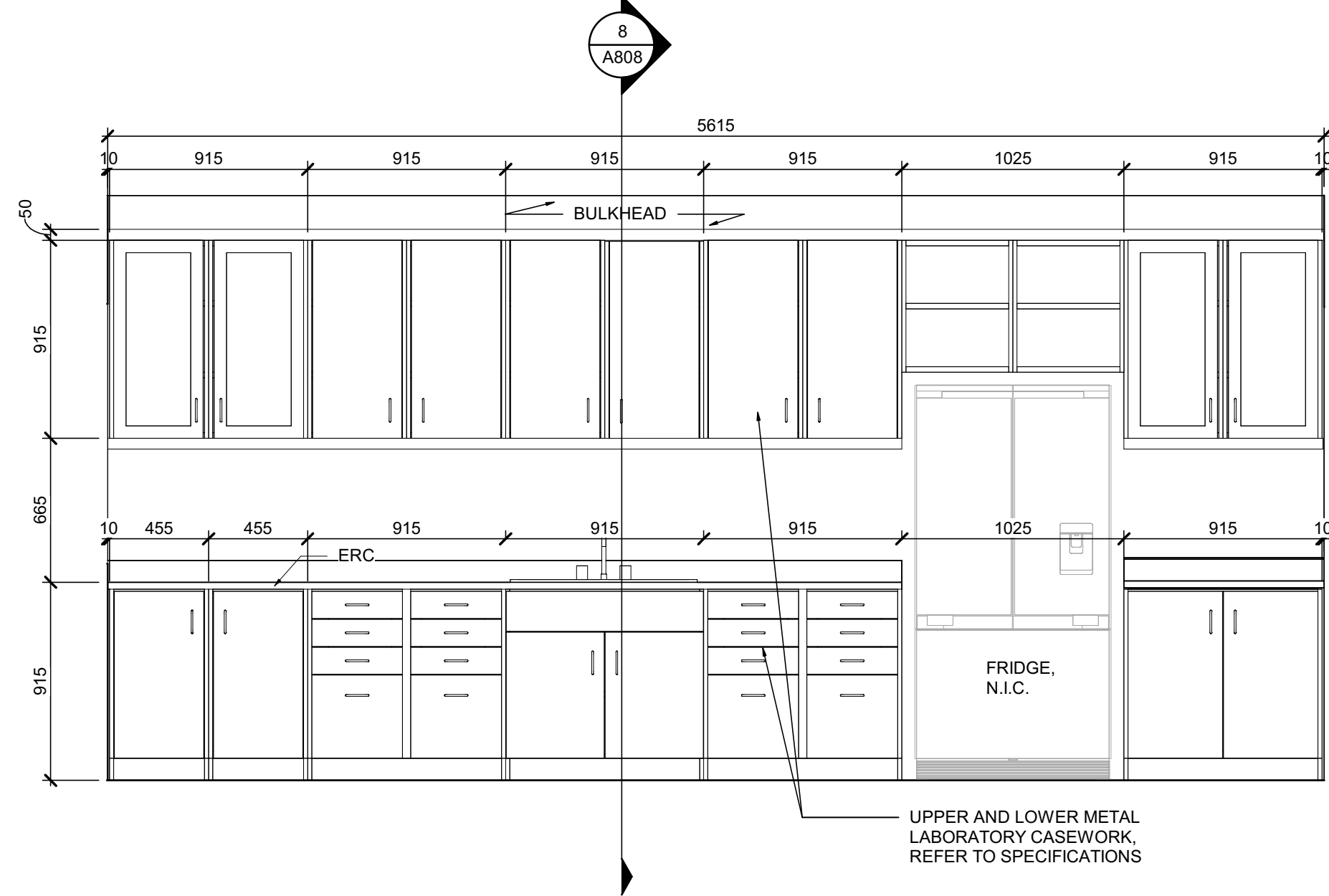
LUNCH ROOM - MILLWORK ELEVATION

SCALE : 1 : 25



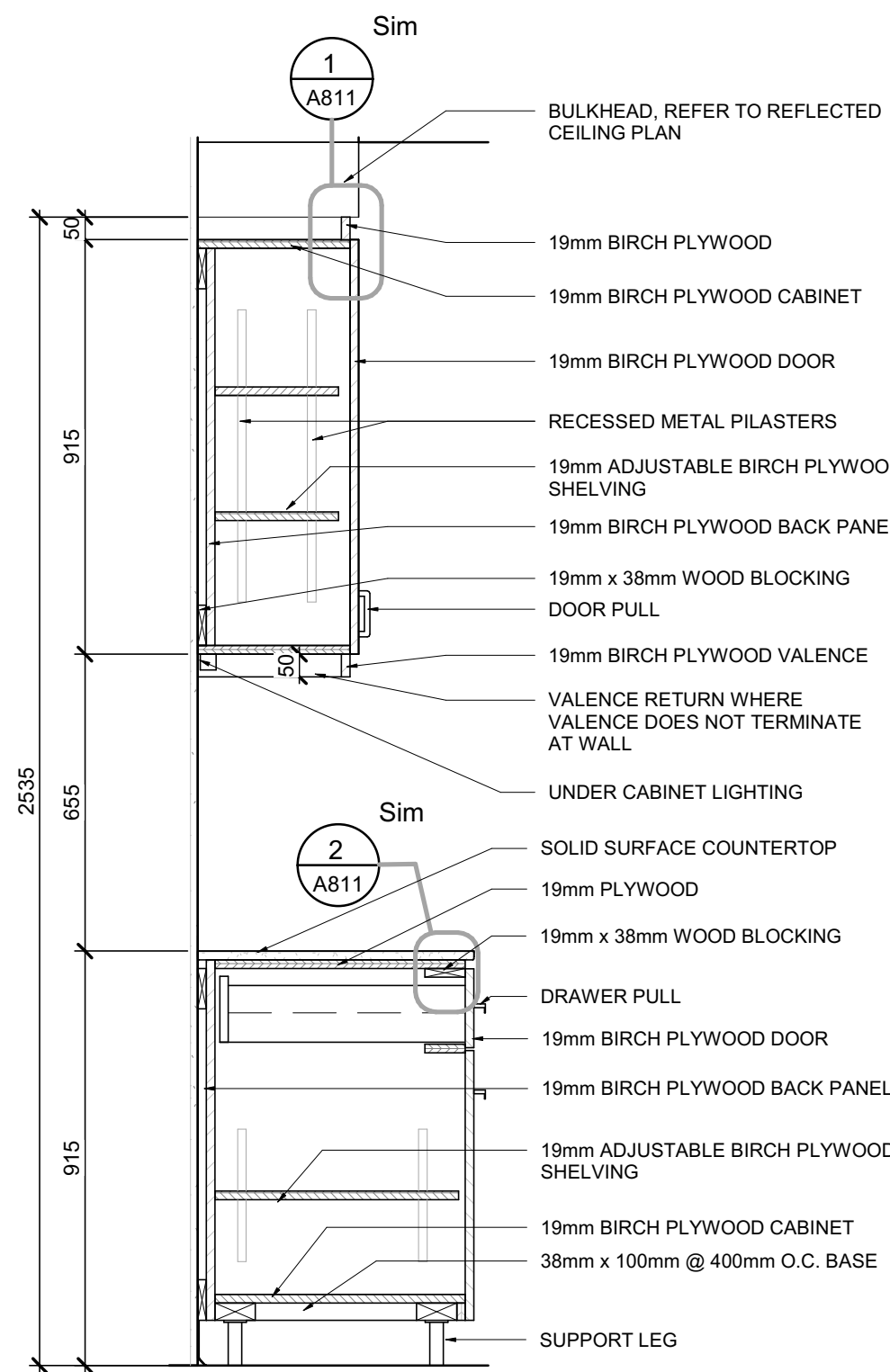
LABORATORY - EAST MILLWORK
ELEVATION

SCALE : 1 : 25



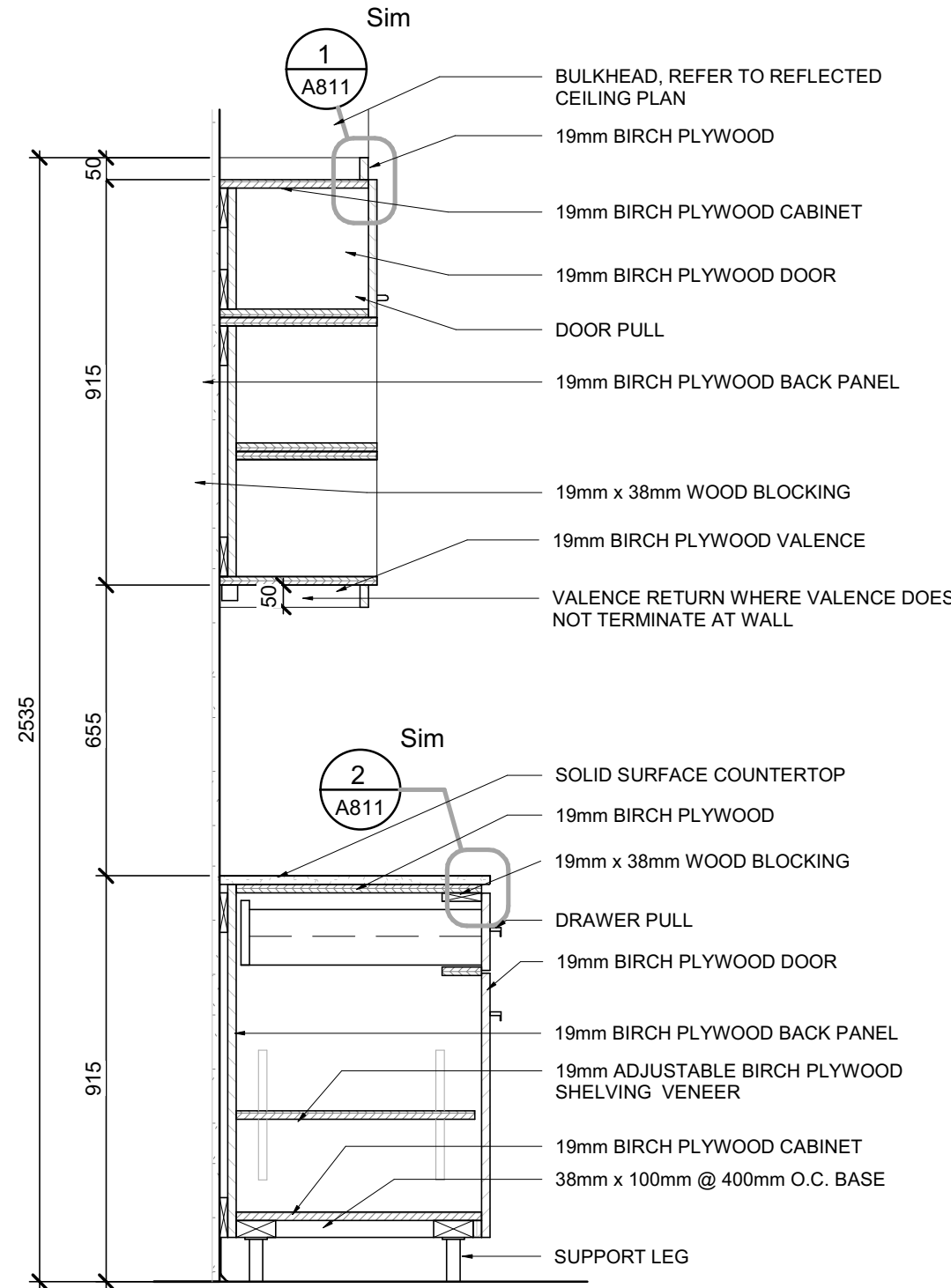
LABORATORY - WEST MILLWORK
ELEVATION

SCALE : 1 : 25



MILLWORK SECTION
@PHOTOCOPIER AREA

SCALE : 1 : 15



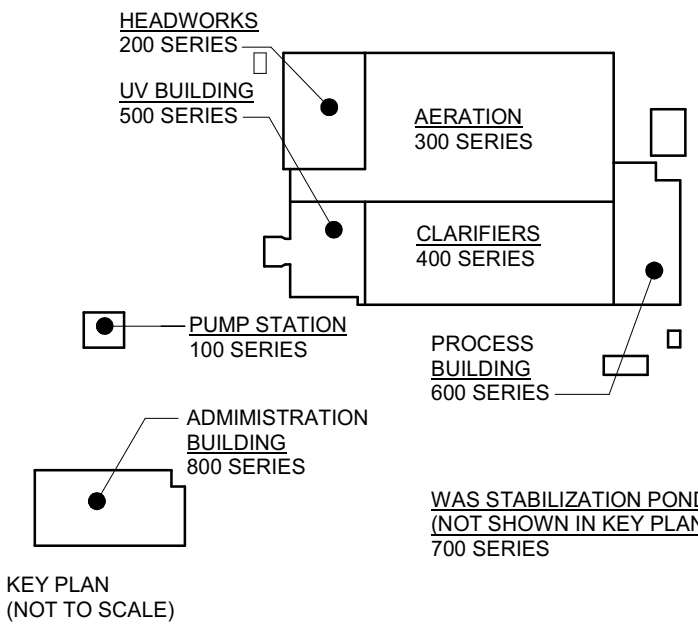
MILLWORK SECTION
@PHOTOCOPIER AREA

SCALE : 1 : 15

LEGEND:	
B.PLYWD	BIRCH PLYWOOD
SS	SOLID SURFACE
ERC	SOLID EPOXY RESIN COUNTERTOP

TYPICAL MILLWORK NOTES

- FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
- FOR MILLWORK ELEVATIONS, SECTIONS AND DETAILS, ALL 'CLEAR' DIMENSIONS ARE MEASURED FROM FACE OF MATERIAL.
- CONTRACTOR TO COORDINATE ALL MILLWORK WITH OWNER SUPPLIED FIXTURES AND APPLIANCES.
- ALL MILLWORK TO BE FABRICATED TO ARCHITECTURAL WOODWORK INSTITUTE 'CUSTOM' GRADE.
- MILLWORK CONSTRUCTION TO BE 19mm THICK PLYWOOD, UNLESS OTHERWISE NOTED.
- MILLWORK EXTERIOR FINISH TO BE PLASTIC LAMINATE, UNLESS OTHERWISE NOTED.
- MILLWORK INTERIOR FINISH TO BE PLASTIC LAMINATE, UNLESS OTHERWISE NOTED.
- UNDERSIDE OF ALL UPPER CABINETS TO RECEIVE PLASTIC LAMINATE FINISH TO MATCH CABINET FRONTS.
- CONTRACTOR TO COORDINATE CUT OUTS FOR ALL SINKS, FAUCETS, GROMMETS, AND OTHER ACCESSORIES.
- REFER TO SPECIFICATIONS FOR HINGES, DRAWER SLIDES, PULL TYPES AND ANY OTHER MILLWORK INFORMATION NOT OTHERWISE SPECIFIED.
- ALL EXPOSED CUSTOM STEEL PIECES TO BE FINISHED WITH ELECTROSTATICALLY APPLIED POWDER COAT.
- PROVIDE LOCKS FOR ALL DOORS AND DRAWERS. ALL LOCKSET KEYING INFORMATION TO BE PROVIDED BY, AND COORDINATED WITH THE CLIENT PRIOR TO INSTALLATION.
- ALL SHELVES ARE TO BE ADJUSTABLE UNLESS OTHERWISE NOTED.
- ALL DRAWER AND DOORS TO BE FITTED WITH BUMPERS (BMP).
- MAINTAIN 3mm GAP BETWEEN DOORS AND DRAWER FRONTS UNLESS OTHERWISE NOTED.
- SOLID SURFACE COUNTERS TO BE FINISHED WITH 3mm RADIUS AT ALL EXPOSED CORNERS.
- SOLID SURFACE FABRICATION JOINTS SHALL BE INCONSPICUOUS IN APPEARANCE AND WITHOUT VOIDS TO CREATE A MONOLITHIC APPEARANCE.
- POST-FORMED PLASTIC LAMINATE COUNTERTOPS TO HAVE 3mm RADIUS AT ALL EXPOSED CORNERS.
- PROVIDE SOLID WOOD BLOCKING IN WALLS AS REQUIRED TO SUPPORT ALL MILLWORK.



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CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL
ADMINISTRATION BUILDING
MILLWORK ELEVATIONS &
SECTIONS

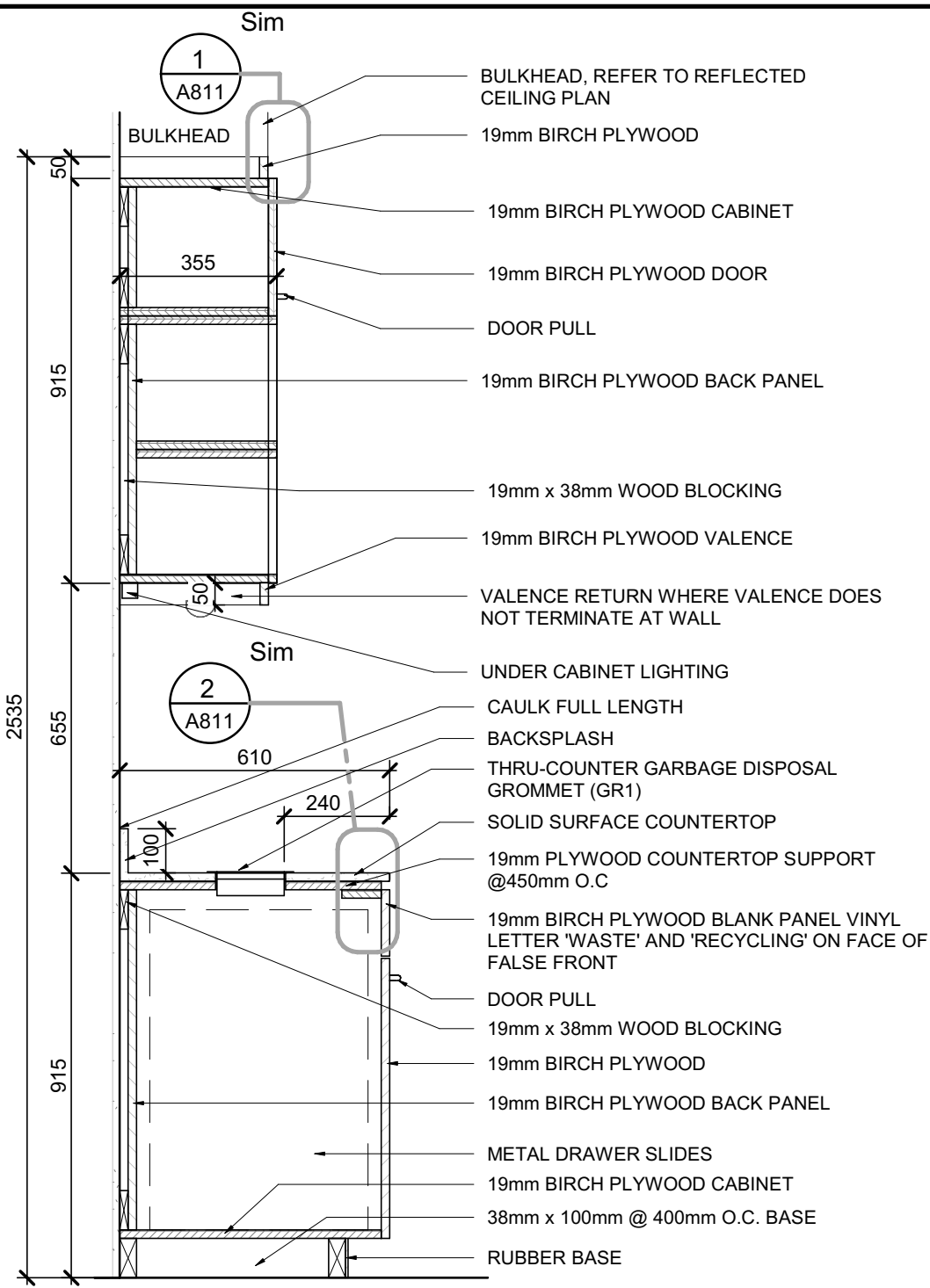
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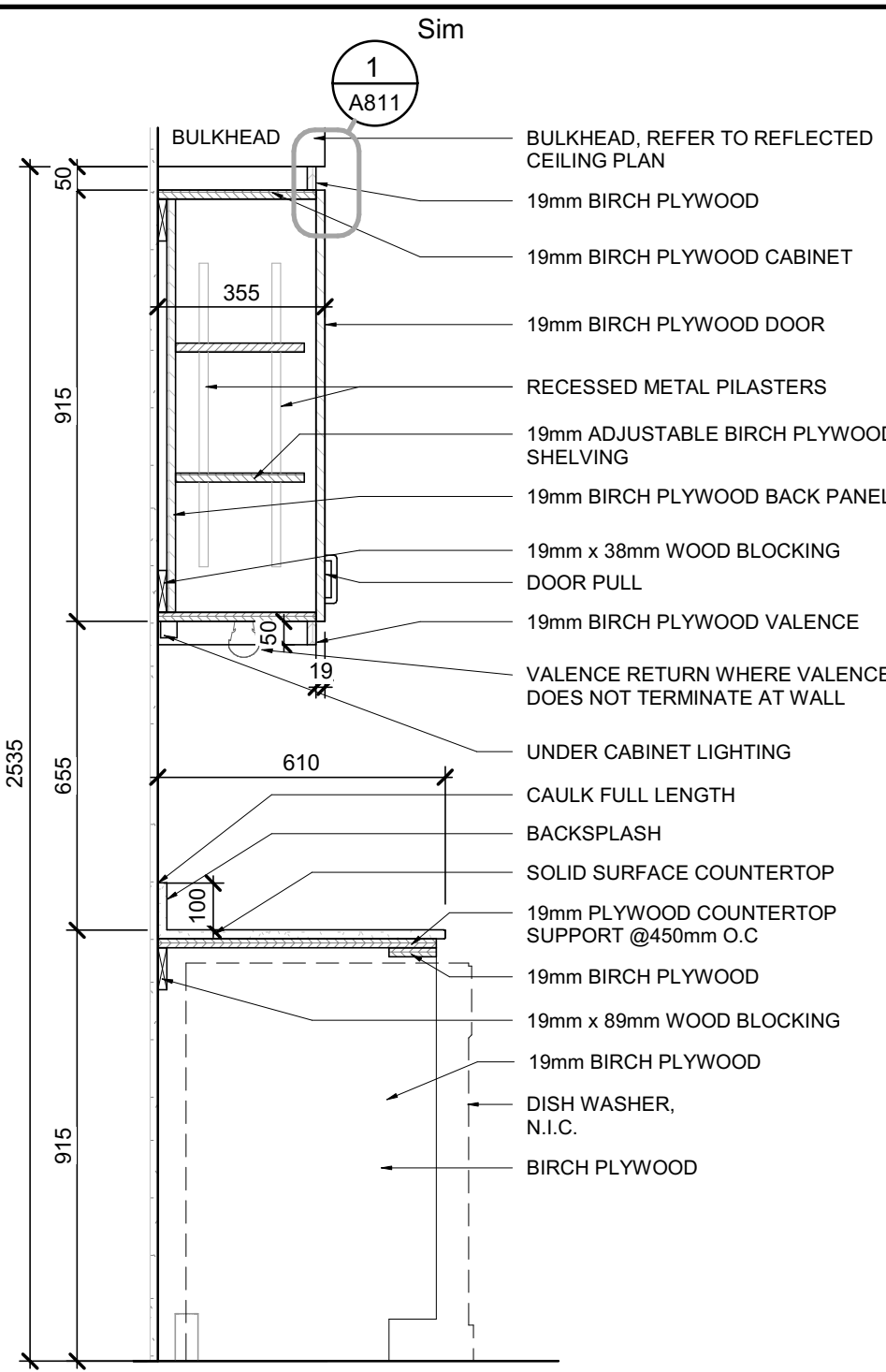
JLR #: 32296-001

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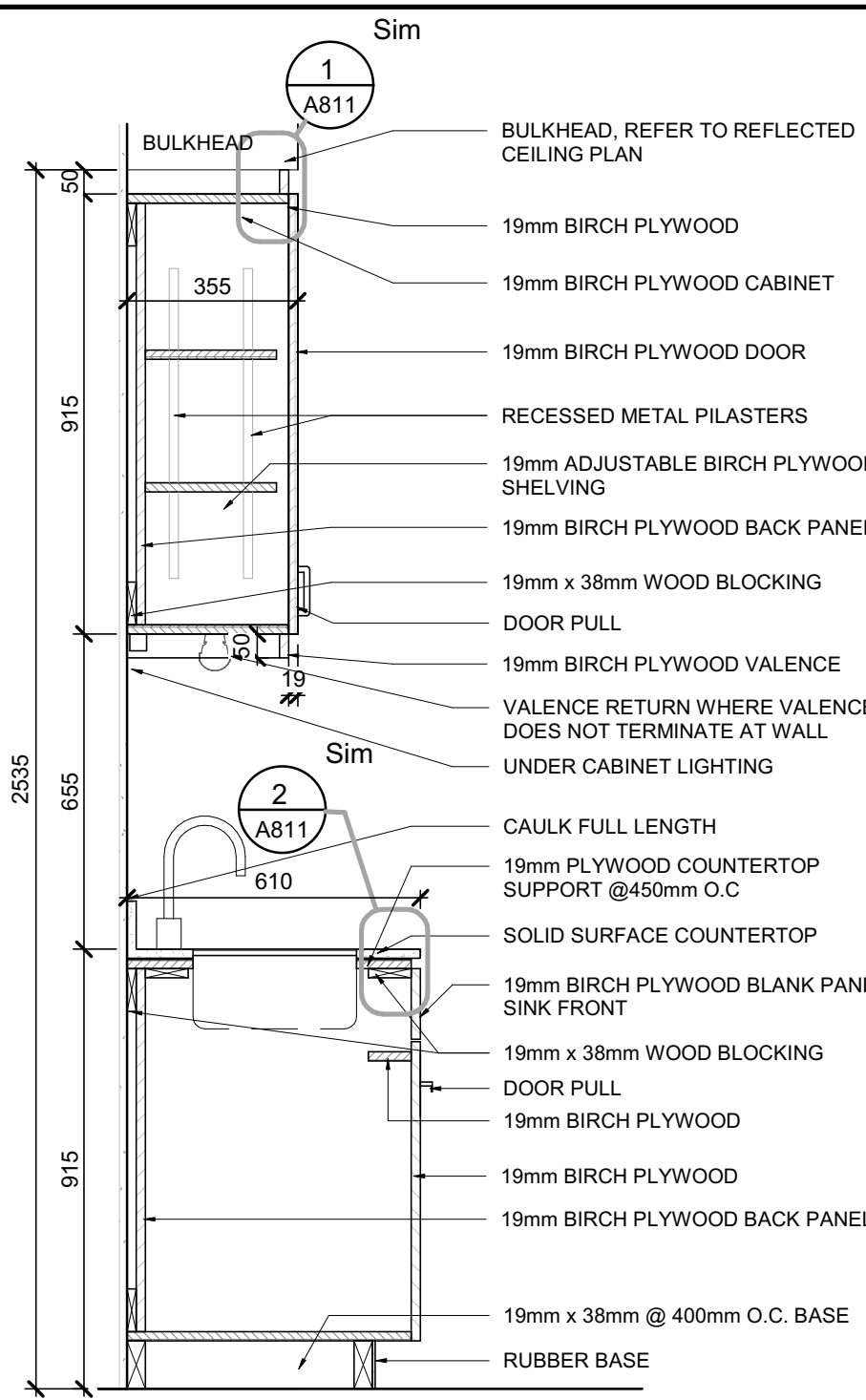
MILLWORK DETAIL@ LUNCH
ROOM GARBAGE DISPOSAL

SCALE : 1 : 15



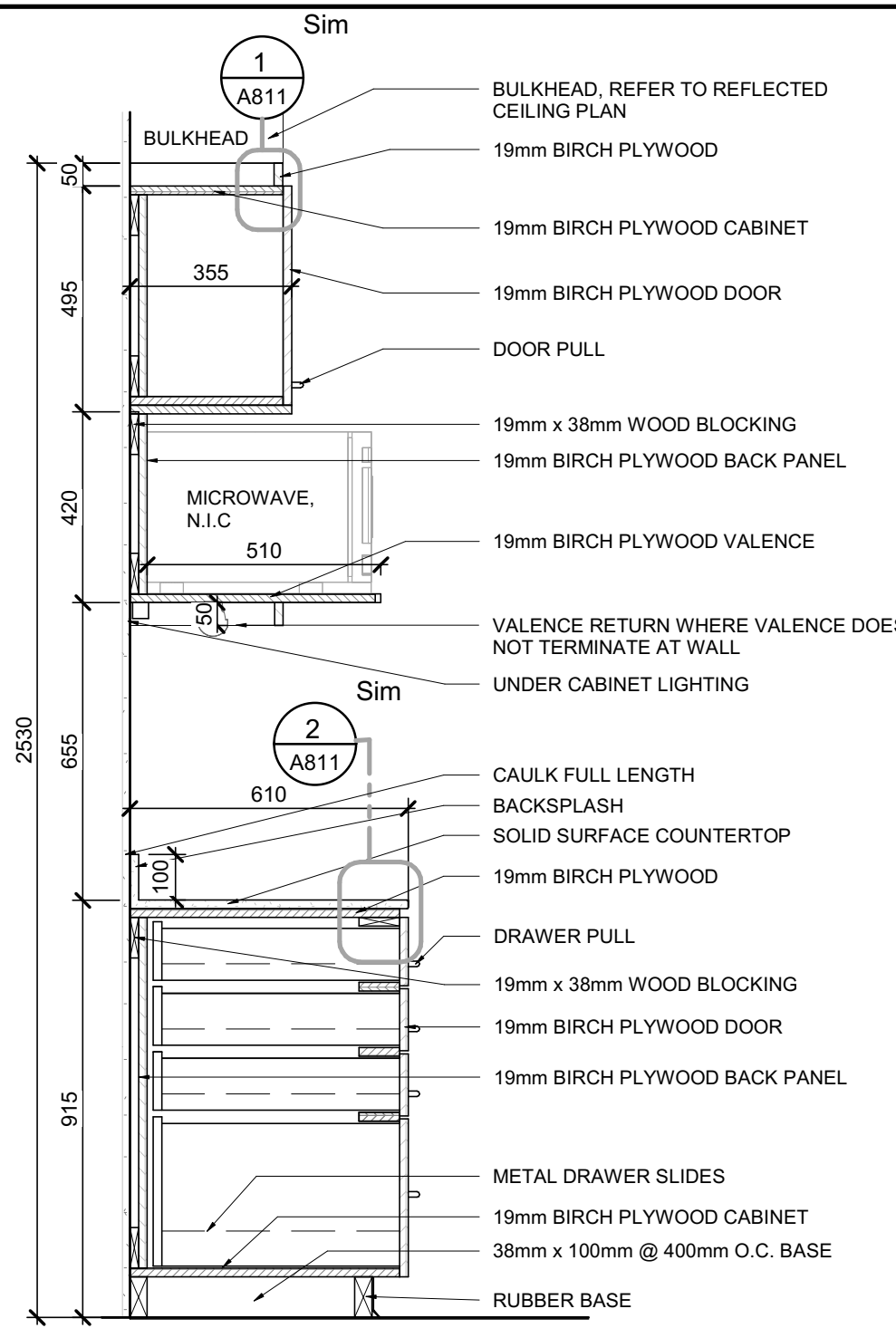
MILLWORK DETAIL @
LUNCH ROOM DISHWASHER

SCALE : 1 : 15



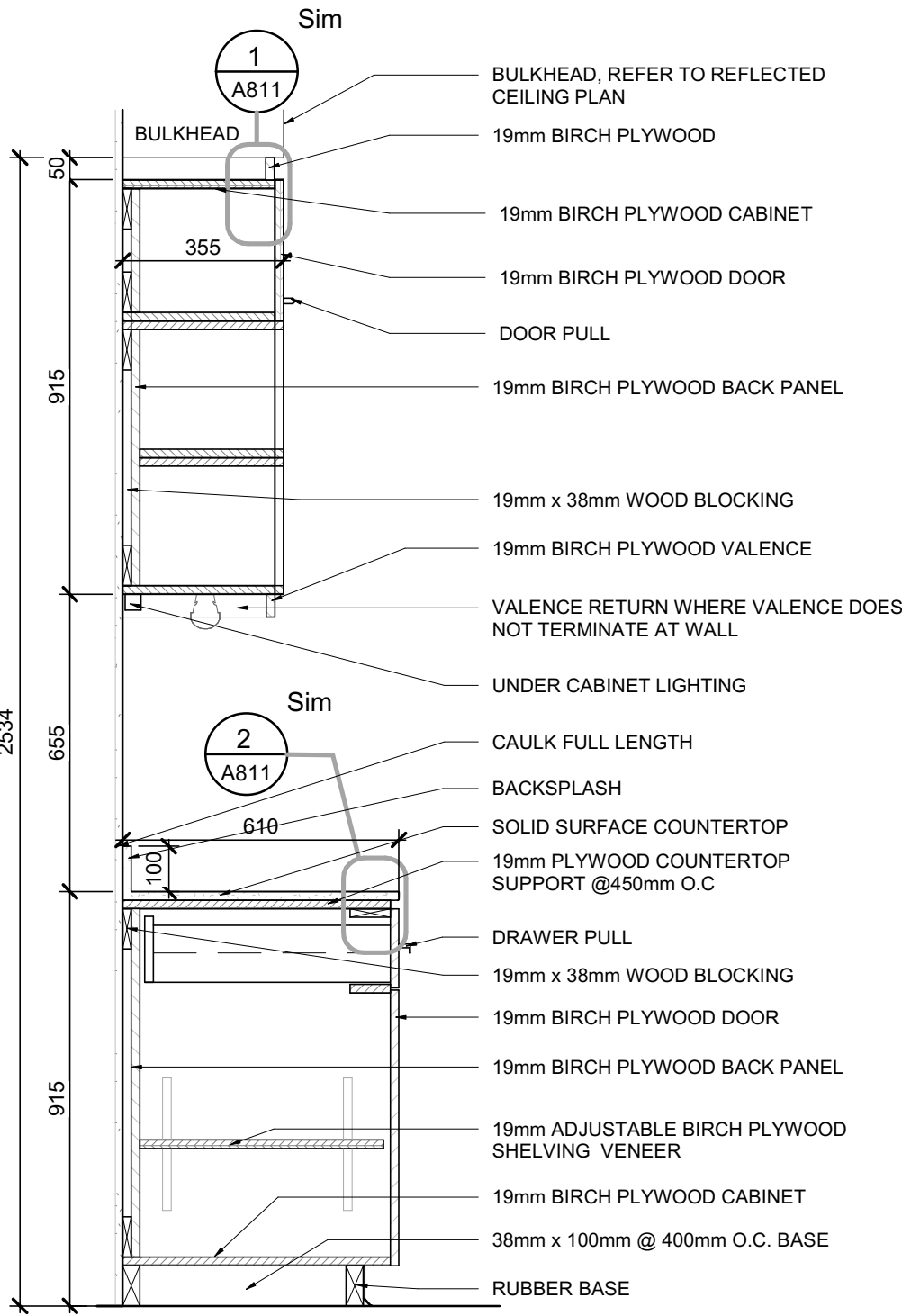
MILLWORK DETAIL@ LUNCH
ROOM SINK

SCALE : 1 : 15



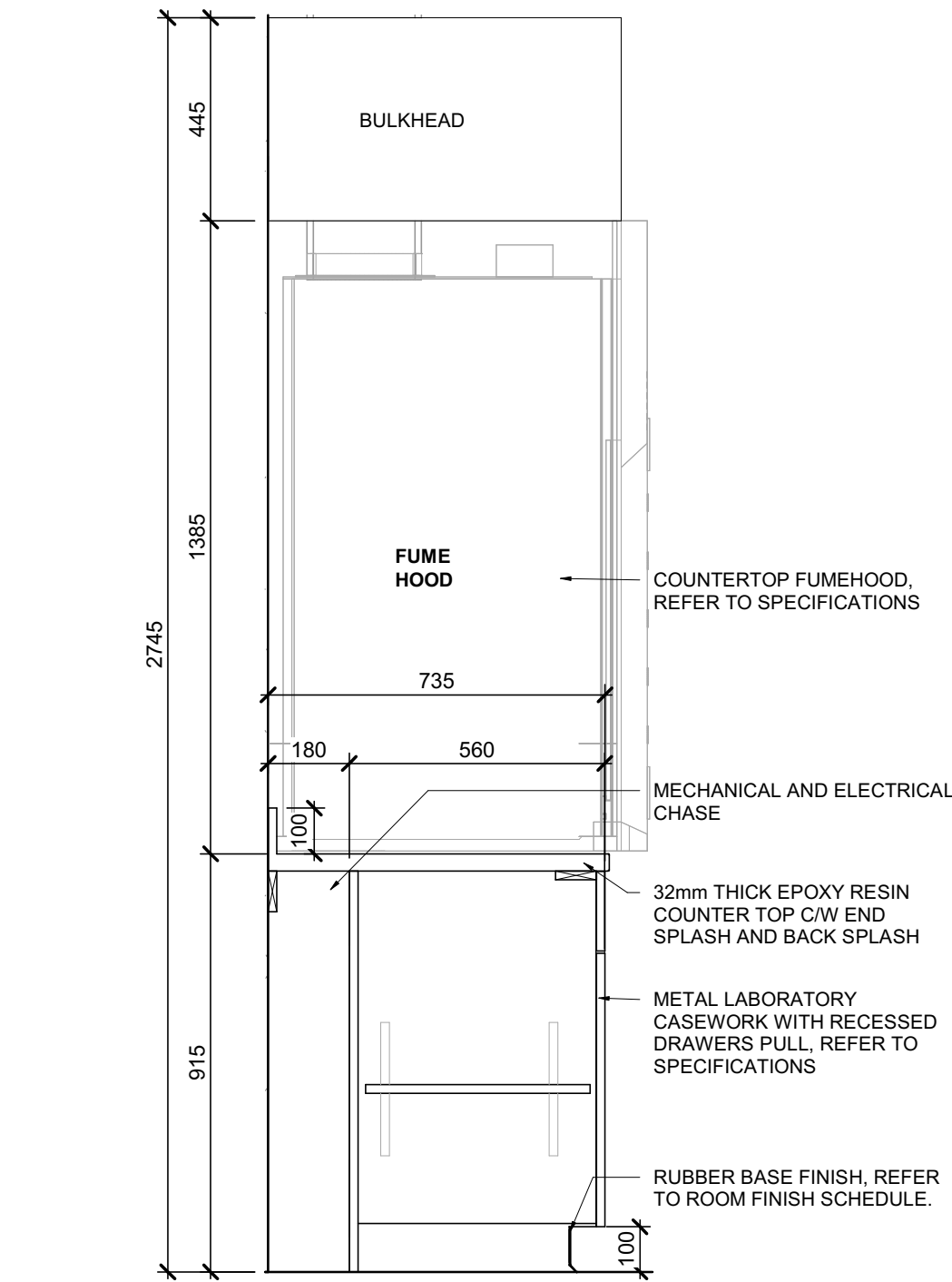
MILLWORK DETAIL@
LUNCH ROOM MICROWAVE

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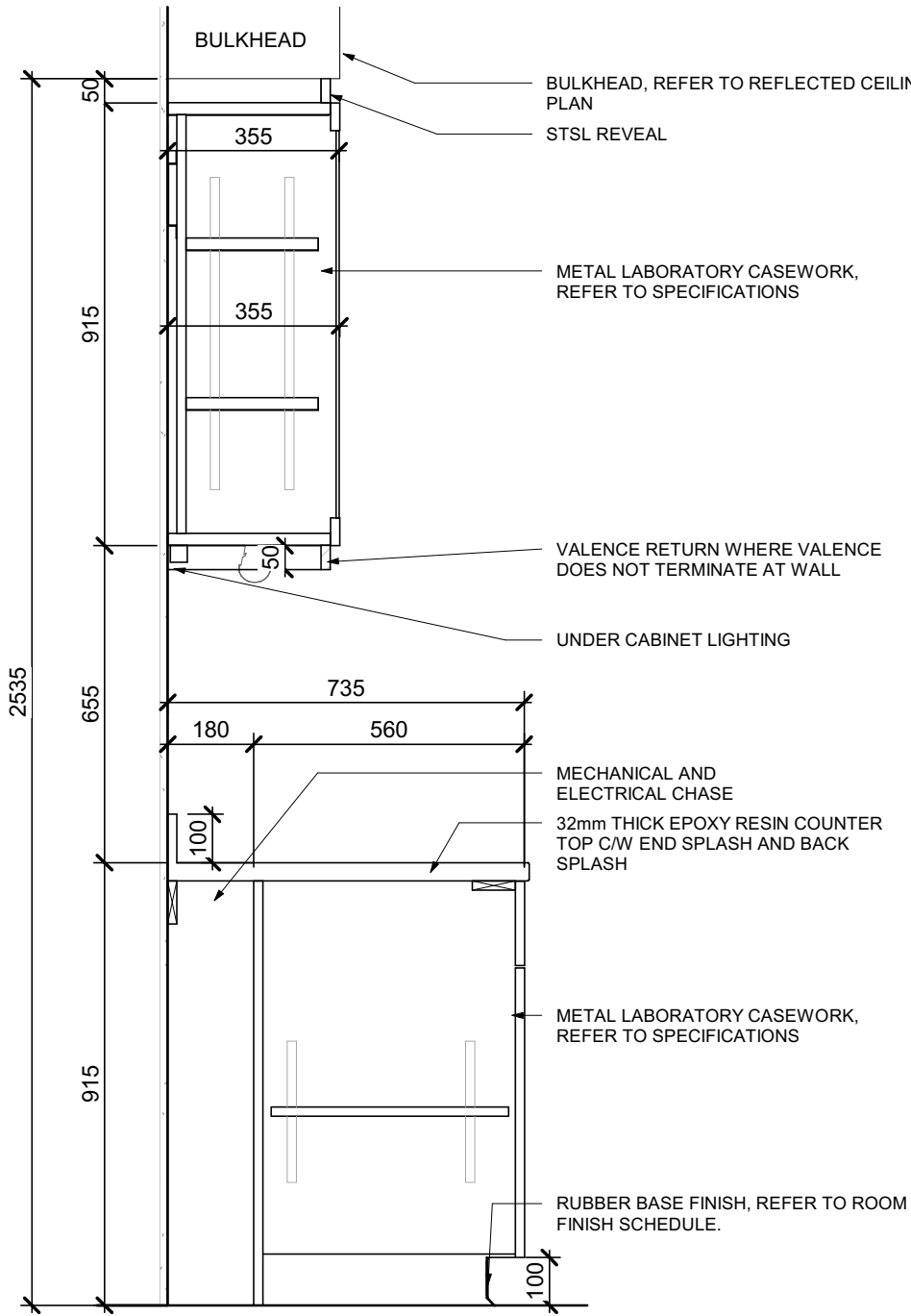
MILLWORK DETAIL@
LUNCHROOM

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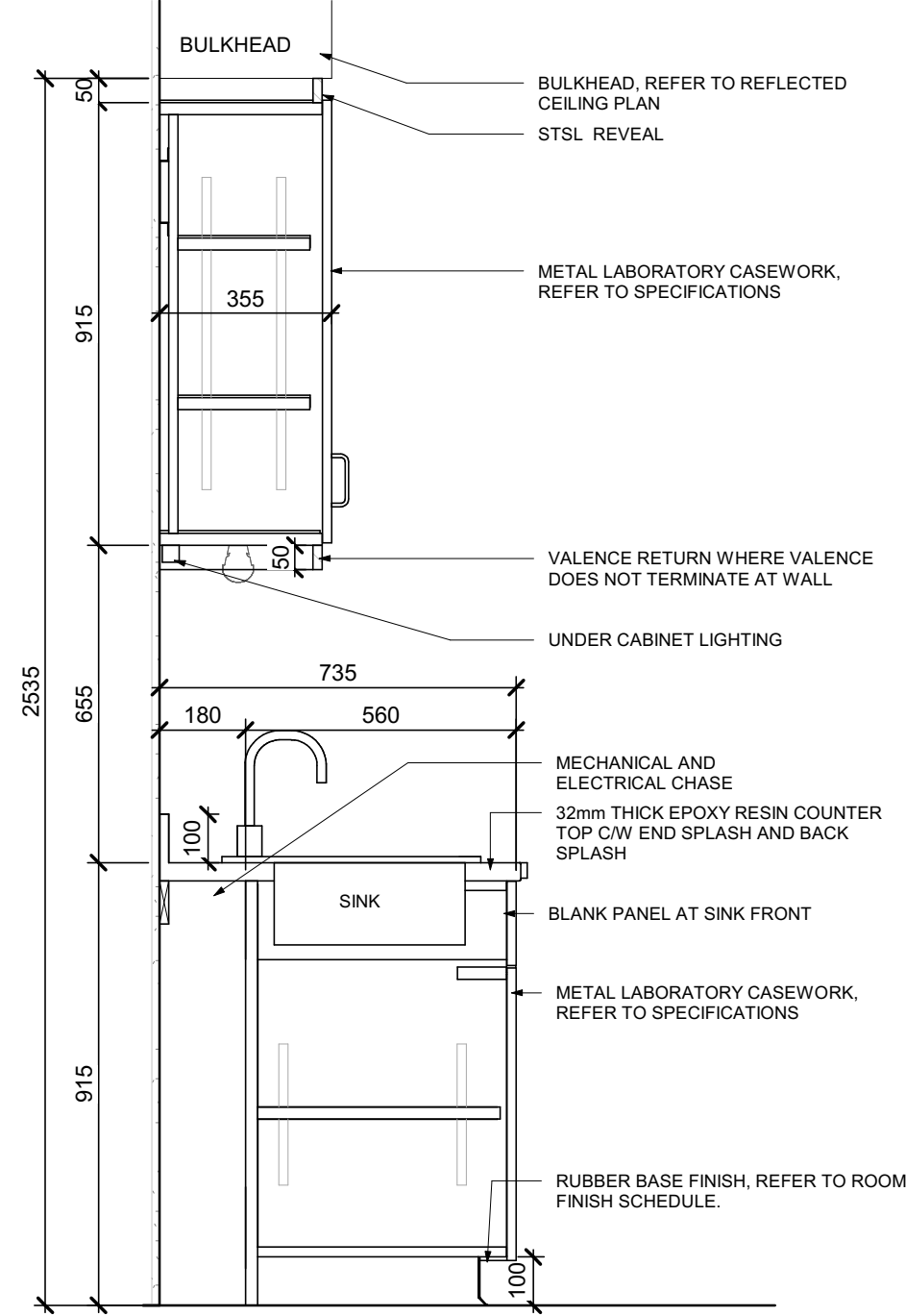
MILLWORK
DETAIL@LABORATORY
FUMEHOOD

SCALE : 1 : 15



MILLWORK
DETAIL@LABORATORY

SCALE : 1 : 15

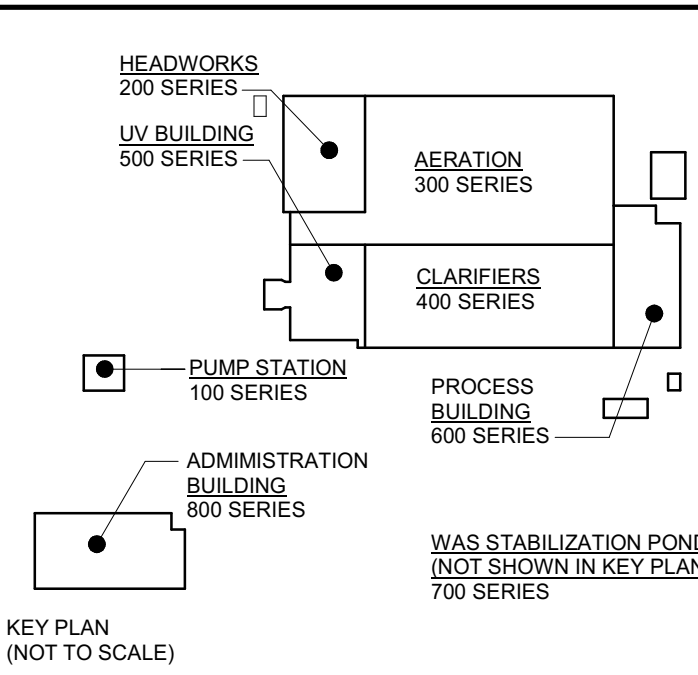


MILLWORK
DETAIL@LABORATORY SINK

SCALE : 1 : 15

LEGEND:

B.PLYWD	BIRCH PLYWOOD
SS	SOLID SURFACE
ERC	SOLID EPOXY RESIN COUNTERTOP



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CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP
2025-04-25
OF
ARCHITECTS
STEPHANIE CAMPBELL
LICENCE
9391

PROJECT NORTH

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

ARCHITECTURAL
ADMINISTRATION BUILDING

MILLWORK SECTIONS

DESIGN: SC/KA

DRAWN: NP

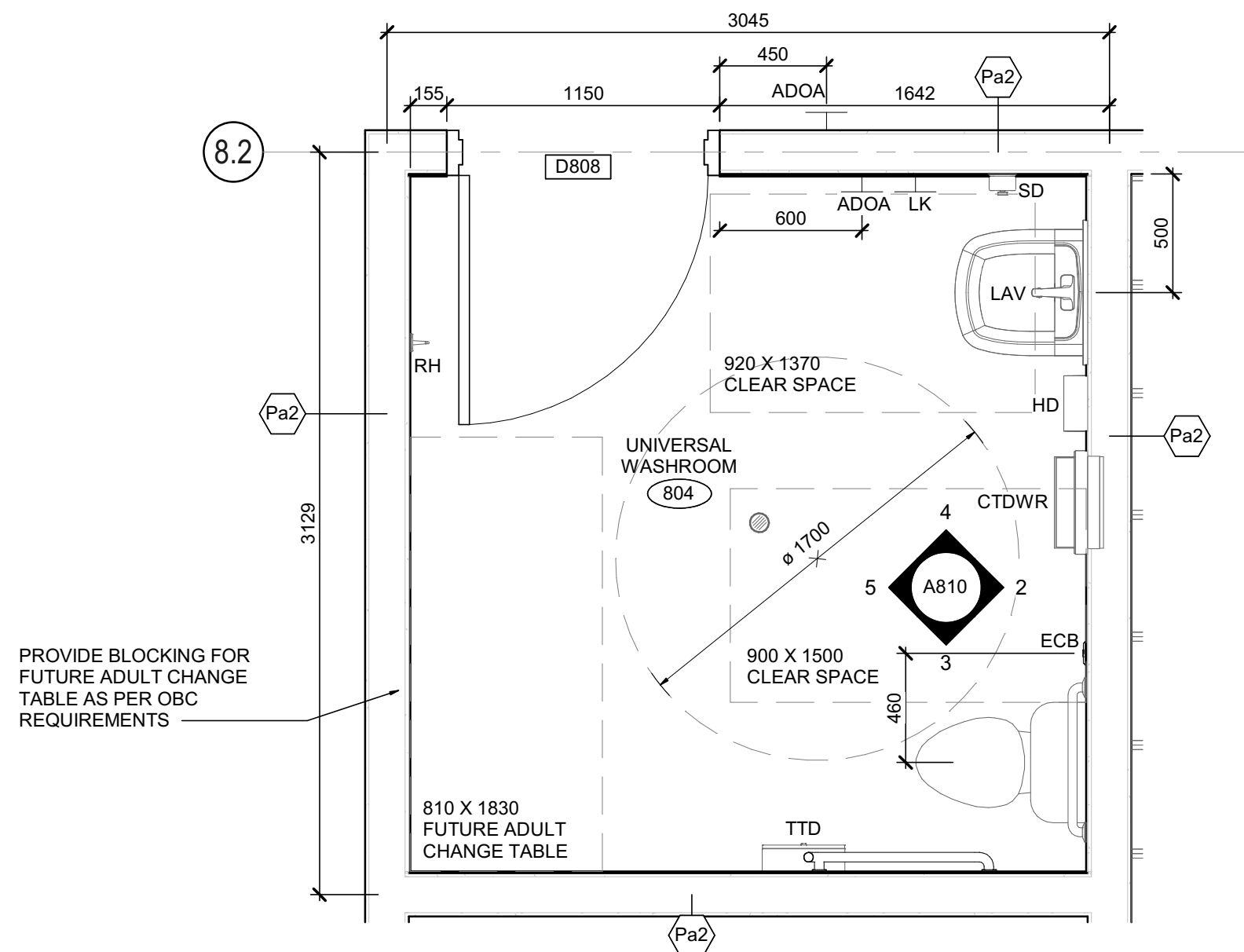
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JLR #: 32296-001

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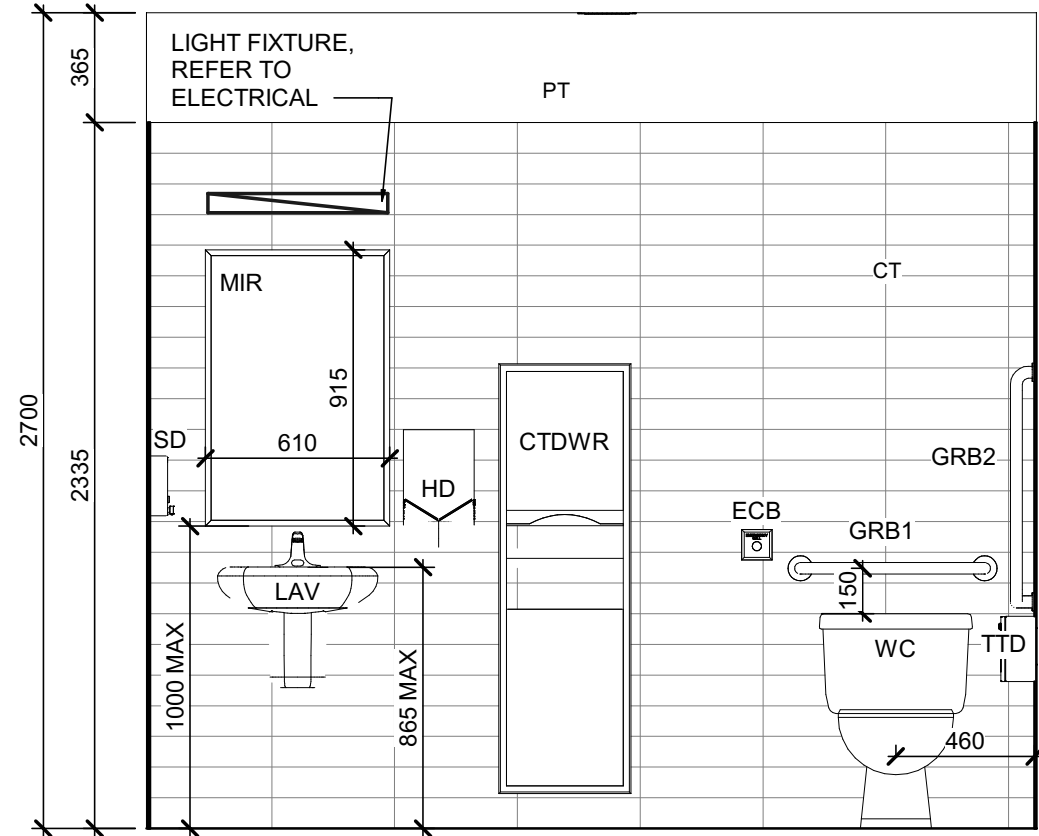
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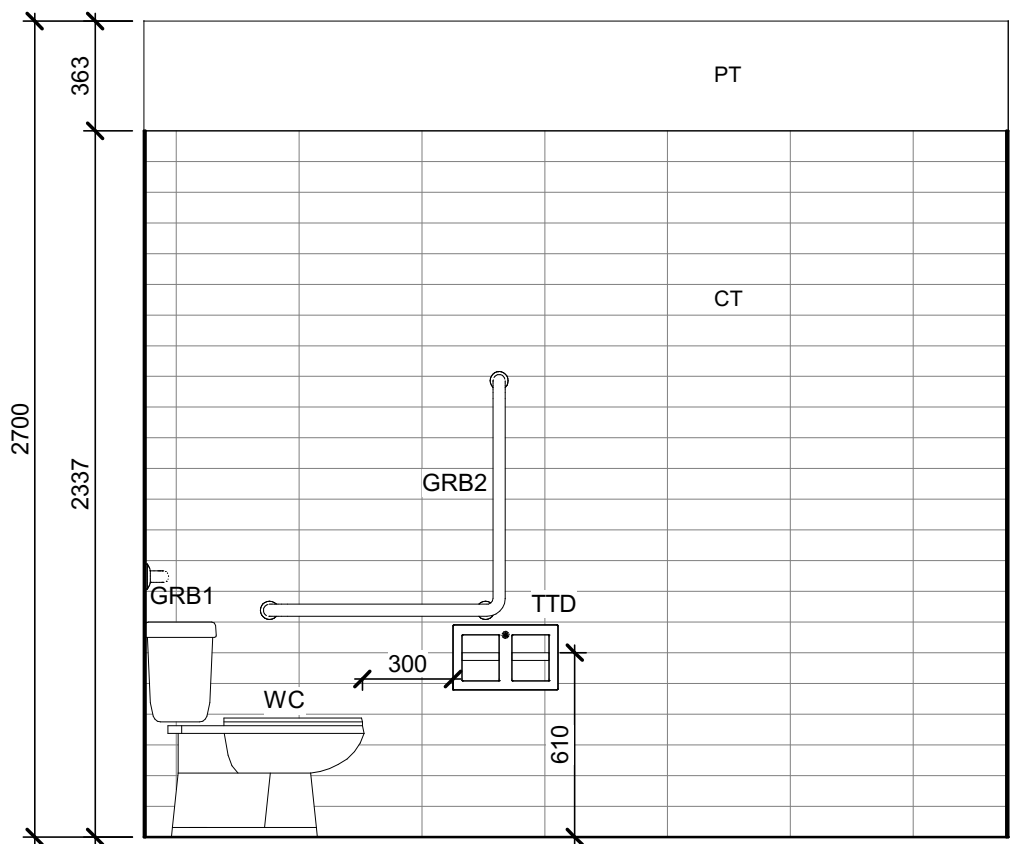
ENLARGED UNIVERSAL WASHROOM

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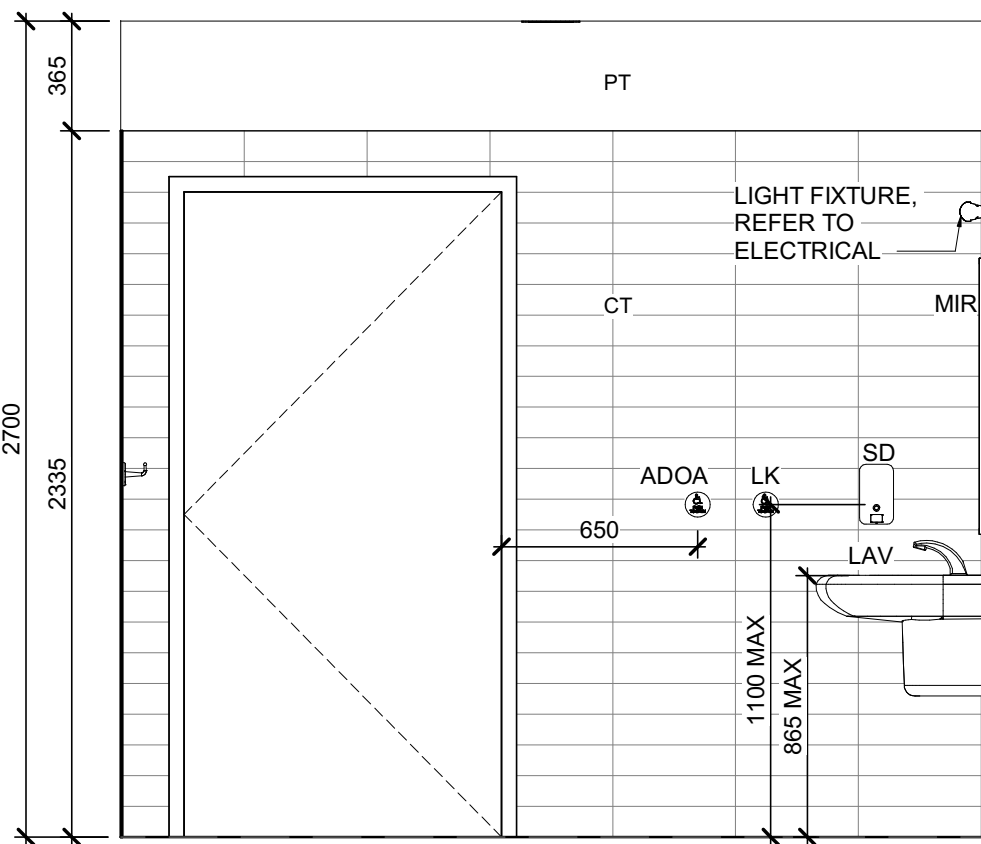
UNIVERSAL WASHROOM
EAST ELEVATION

SCALE : 1 : 25



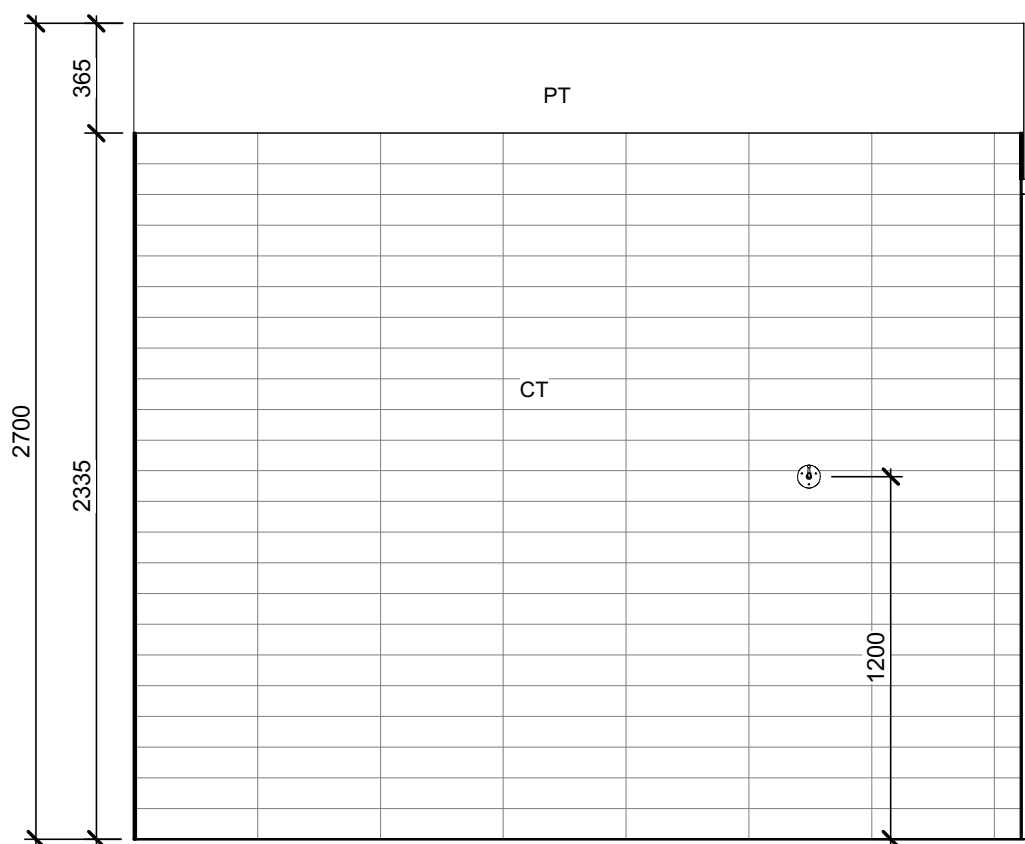
UNIVERSAL WASHROOM
SOUTH ELEVATION

SCALE : 1 : 25



UNIVERSAL WASHROOM
NORTH ELEVATION

SCALE : 1 : 25



WASHROOM ELEVATION

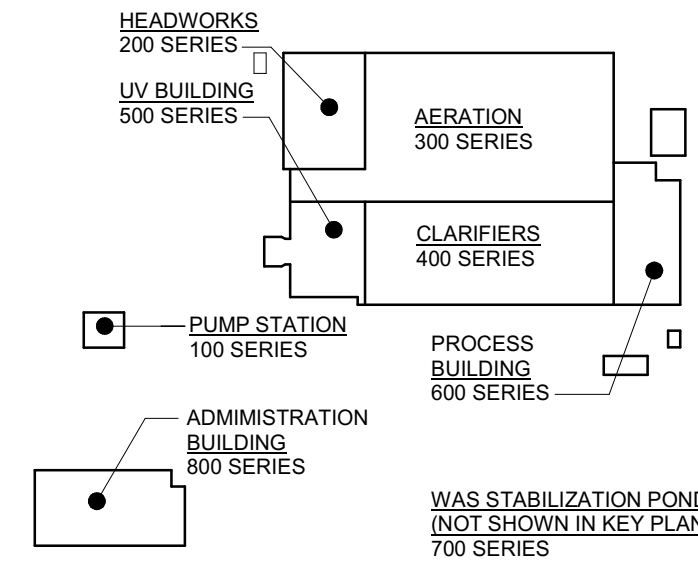
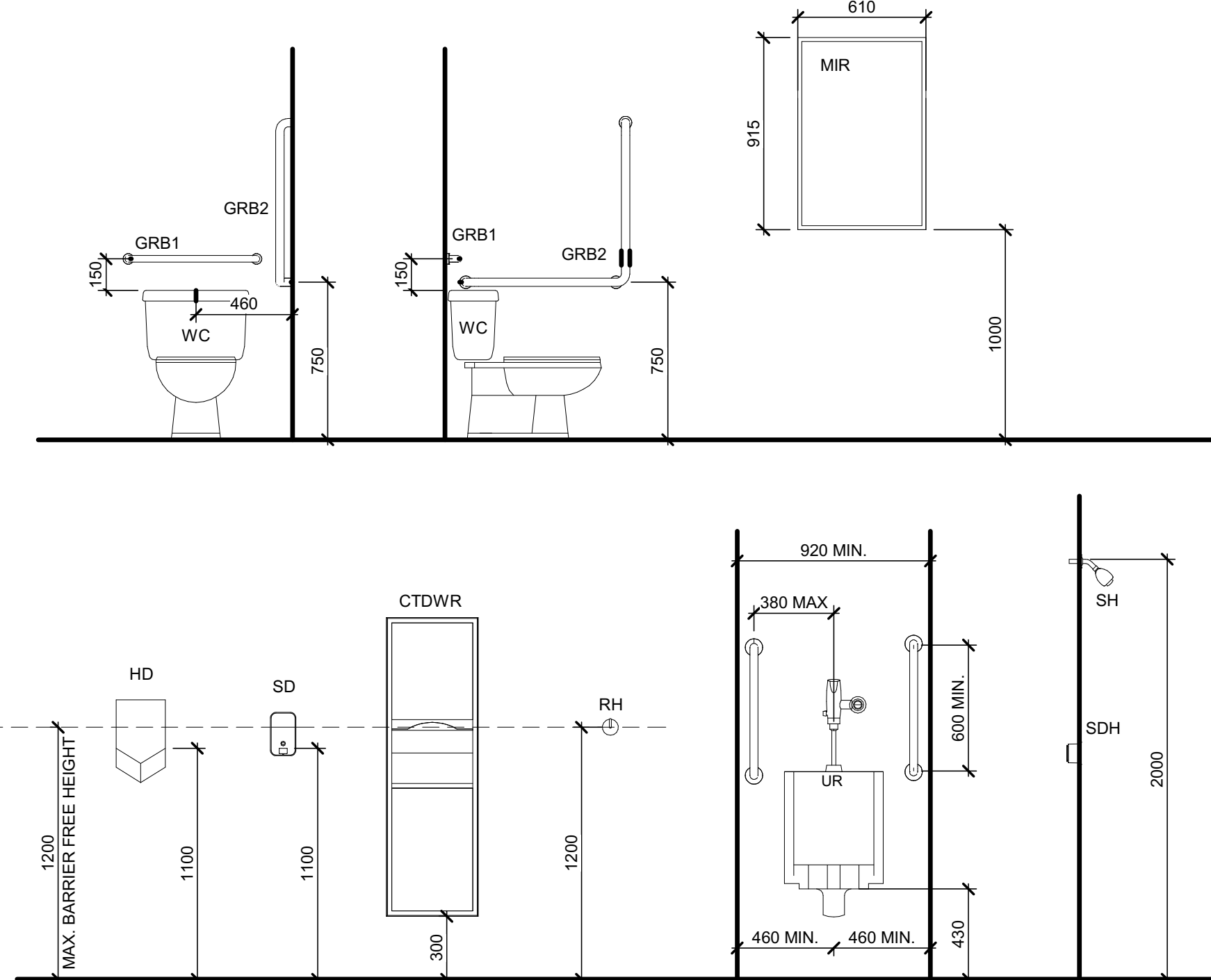
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ABBREVIATIONS

ADOA	AUTOMATIC DOOR OPERATOR ACTUATOR
CTDWR	RECESSED COMBINATION TOWEL DISPENSER/ WASTE RECEPTACLE
CT	CERAMIC TILE
ECB	EMERGENCY CALL BUTTON
FD	FLOOR DRAIN. REFER TO MECH. DWG'S
GB1	GRAB BAR, 24" HORIZONTAL
GB2	GRAB BAR, 30"x 30" L SHAPE
HD	HAND DRYER
BN	BENCH
LAV	LAVATORY
LK	"PUSH TO LOCK" BUTTON
LKR	LOCKER
MIR	MIRROR
RH	ROBE HOOK
SC	SHOWER CURTAIN
SD	SOAP DISPENSER
SH	SHOWER HEAD
SND	SANITARY NAPKIN DISPOSAL
TTD	TOILET TISSUE DISPENSER
UR	URINAL
WC	WATER CLOSET

--- EXTENT OF CERAMIC TILE (CT)

TYP. WASHROOM ACCESSORIES



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SCALE: As indicated

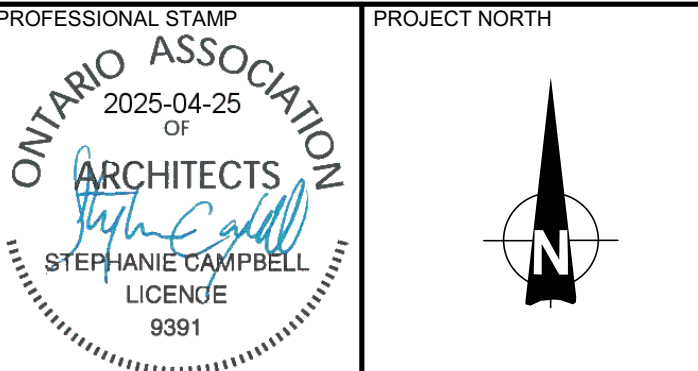
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

ARCHITECTURAL ADMINISTRATION BUILDING ENLARGED WASHROOM PLANS AND ELEVATION

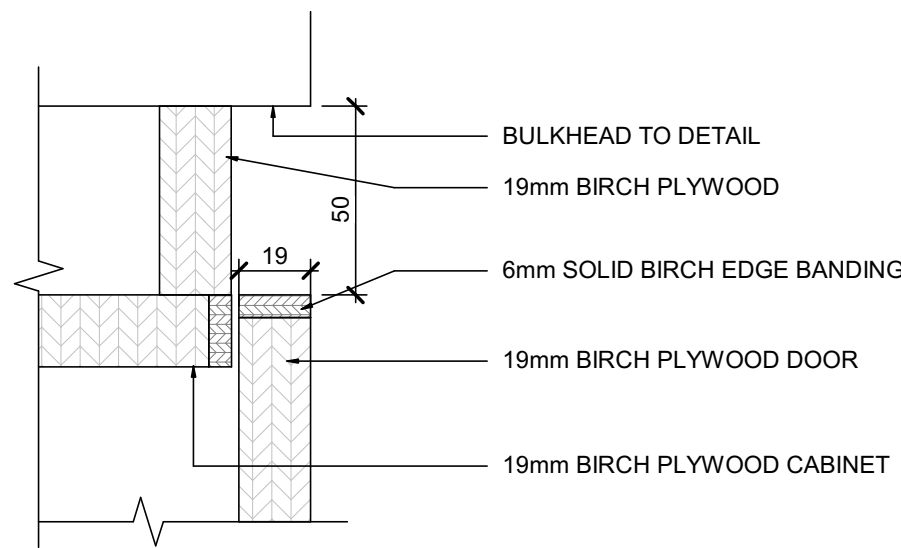
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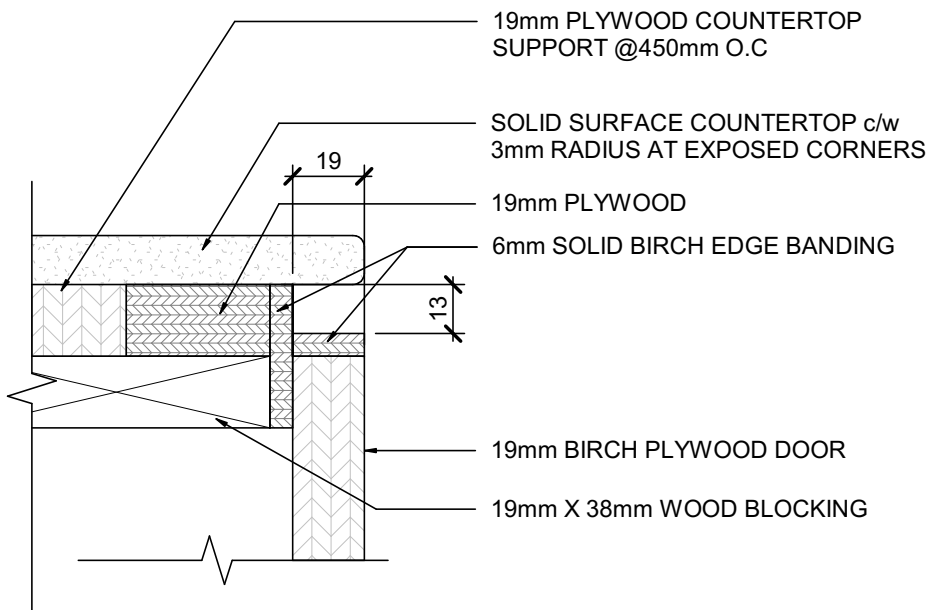
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1
A811

DETAIL - REVEAL

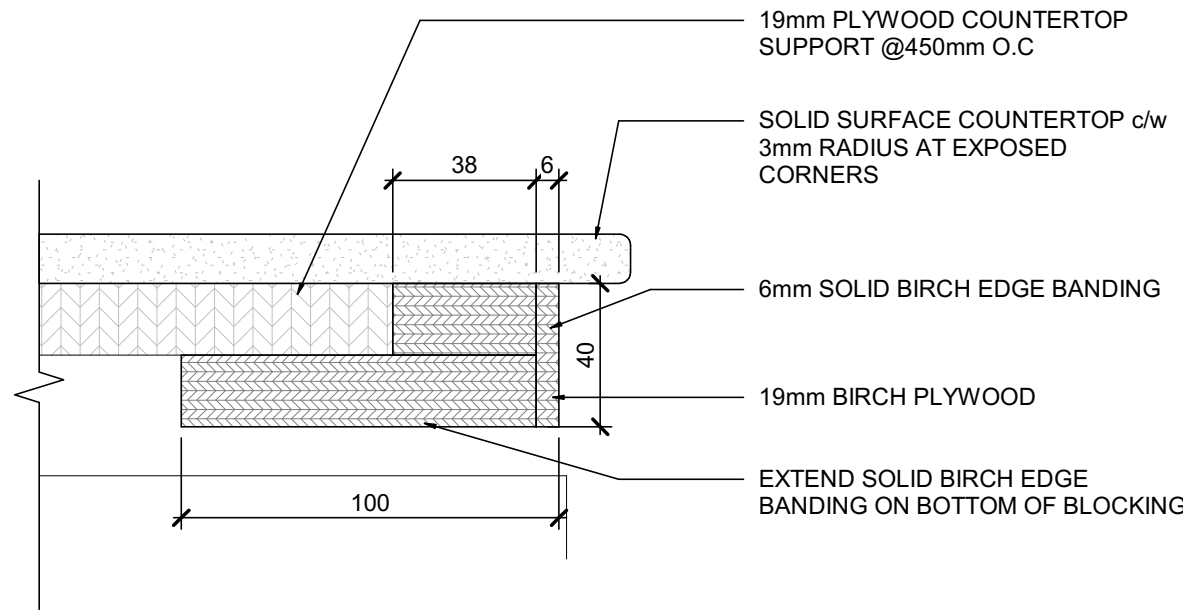
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2
A811

DETAIL - COUNTERTOP NOSING 1

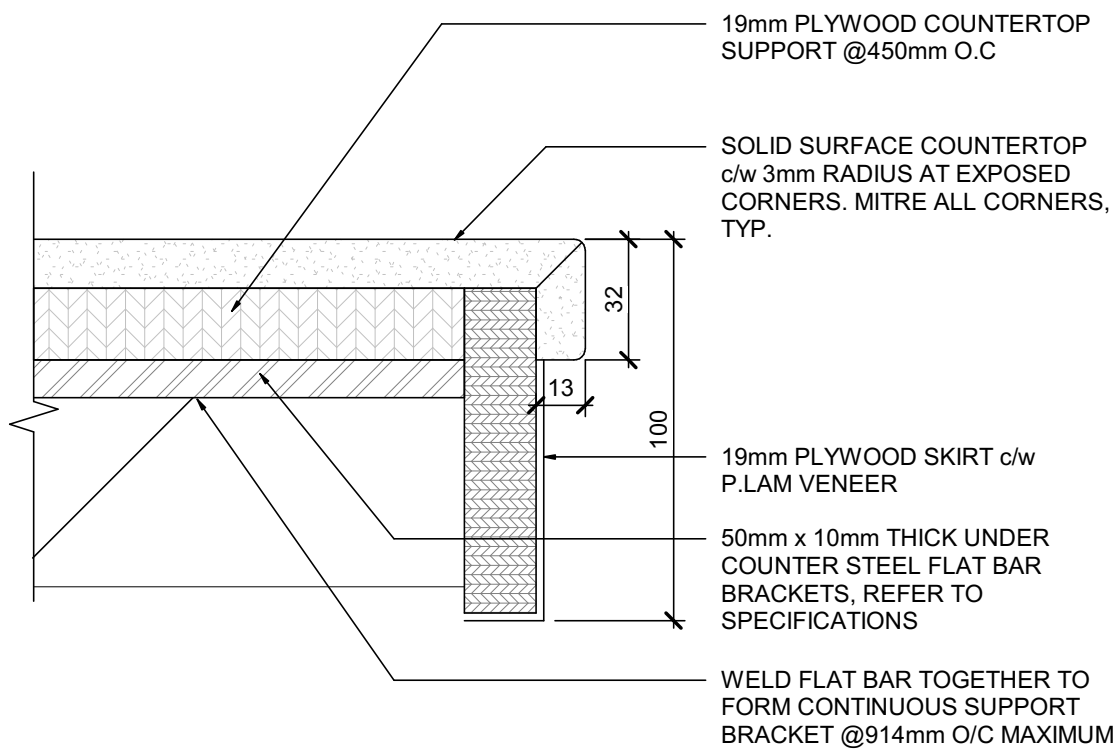
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3
A811

DETAIL - COUNTERTOP NOSING 2

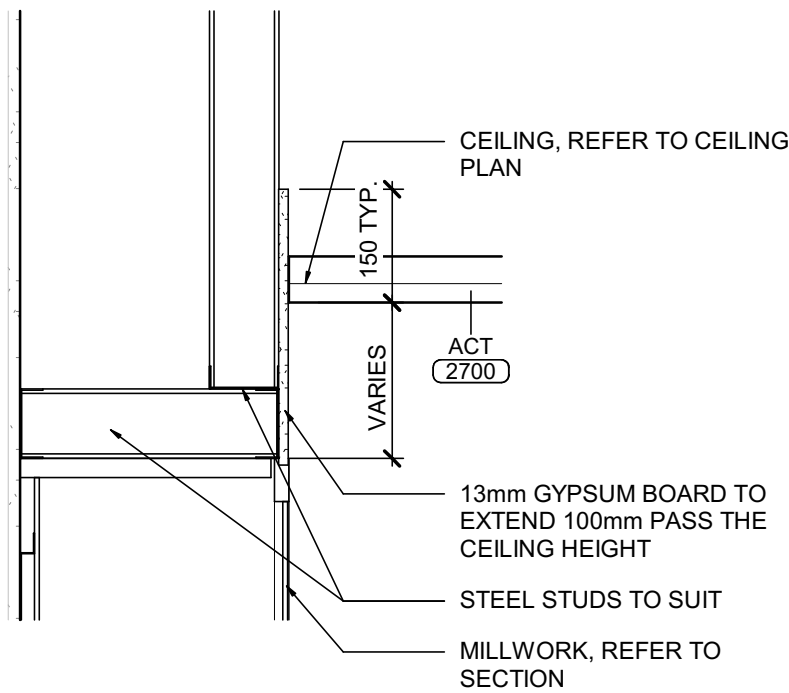
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4
A811

DETAIL - VANITY NOSING @
WASHROOM

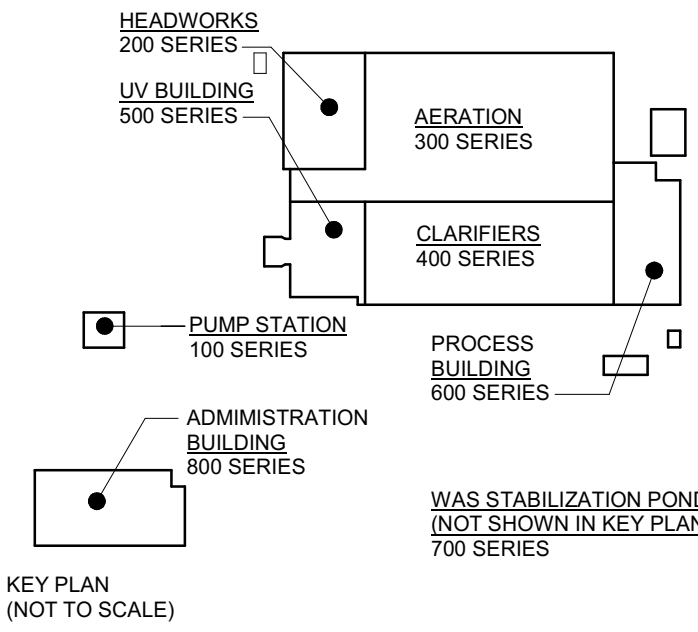
SCALE : 1 : 2



5
A811

BULKHEAD SECTION
DETAIL @ CEILING

SCALE : 1 : 10



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CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

ARCHITECTURAL
ADMINISTRATION BUILDING
MILLWORK DETAILS

DESIGN: SC/KA

DRAWN: NP

CHECKED: HB/SC

JLR #: 32296-001

DRAWING #:

A811

AIR HANDLING UNIT SCHEDULE

I.D.	DESCRIPTION	FAN OPERATION					HEATING COIL				COOLING COIL					ENERGY RECOVERY WINTER (HEATING)				ENERGY RECOVERY SUMMER (COOLING)				WEIGHT	SOUND	ELECTRICAL				COMMENTS
		SUPPLY					TOTAL LOAD	EAT	LAT	AIR P.D.	TOTAL CAP.	SENSIBLE COOLING	EAT DBWB	LAT DBWB	AIR P.D.	SENSIBLE EFF.	LATENT EFF.	EAT (DB)	LAT (DB)	SENSIBLE EFF.	LATENT EFF.	EAT (DB)	LAT (DB)			FLA	MOCP	VOLT	PHASE	
		AIR FLOW	T.S.P.	E.S.P.	FAN RPM	POWER																								
		L/s	Pa	Pa		KW																								
AHU 9801	ADMINISTRATION AIR HANDLING UNIT	755	670	125	3200	1.49	14	-23	21	10	15.4	9.25	22.6	12.5	110	87.5	89.7	3.3	9.8	87.4	89.4	23.9	22.6	220	42	18	25	600	3	INTEGRAL VFD, ENERGY WHEEL
MUA 9201	HEADWORKS BUILDING MAKE-UP AIR UNIT	380	164	125	996	0.373	20	-23	20.8	10	NA	NA	NA	12.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	219	49	23	30	600	3	

ENERGY AND HEAT RECOVERY UNIT SCHEDULE

I.D.	DESCRIPTION	FAN OPERATION						RECOVERY DATA						WEIGHT	ELECTRICAL				COMMENTS
		SUPPLY			EXHAUST			WINTER SENSIBLE EFFICIENCY	WINTER LATENT EFFICIENCY	WINTER TOTAL EFFICIENCY	SUMMER SENSIBLE EFFICIENCY	SUMMER LATENT EFFICIENCY	SUMMER TOTAL EFFICIENCY		FLA	MOCP	VOLT	PHASE	
		AIR FLOW	E.S.P.	POWER	AIR FLOW	E.S.P.	POWER												
		L/s	Pa	KW	L/s	Pa	KW												
ERV 9501	UV BUILDING ENERGY RECOVERY UNIT	991	125	1.5	991	249	1.5	63	47	58	63	36	46	354	12.4	20	208	3	
HRV 9601	PROCESS BUILDING HEAT RECOVERY UNIT	1586	125	2.24	1586	249	2.24	59	0	39	59	0	22	453	15.6	25	208	3	INTEGRAL VFD

ODOUR CONTROL UNIT SCHEDULE

I.D.	DESCRIPTION	FAN OPERATION					SOUND	ELECTRICAL				COMMENTS
		SUPPLY						FLA	LOAD	VOLT	PHASE	
		AIR FLOW	T.S.P.	E.S.P.	FAN RPM	POWER						
		L/s	Pa	Pa								
OCU 9201	HEADWORKS ODOUR CONTROL UNIT	472	1992	498	4132	3.72	97	4.5	5	600	3	

EXPANSION TANK SCHEDULE

I.D.	DESCRIPTION	TANK VOLUME	ACCEPT. VOLUME	HORIZ/VERT	DIMENSIONS		OPERATING PRESSURE
					DIA.	LENGTH	
					mmØ	mm	
ET-9501	DIAPHRAGM THERMAL EXP. TANK	24.2	12.1	VERT.	305	457	380
ET-9502	DIAPHRAGM THERMAL EXP. TANK	62.8	42.8	VERT.	381	635	380
ET-9601	DIAPHRAGM THERMAL EXP. TANK	62.8	42.8	VERT.	381	635	380
ET-9801	DIAPHRAGM THERMAL EXP. TANK	62.8	42.8	VERT.	381	635	380

ELECTRIC STEAM HUMIDIFIER SCHEDULE

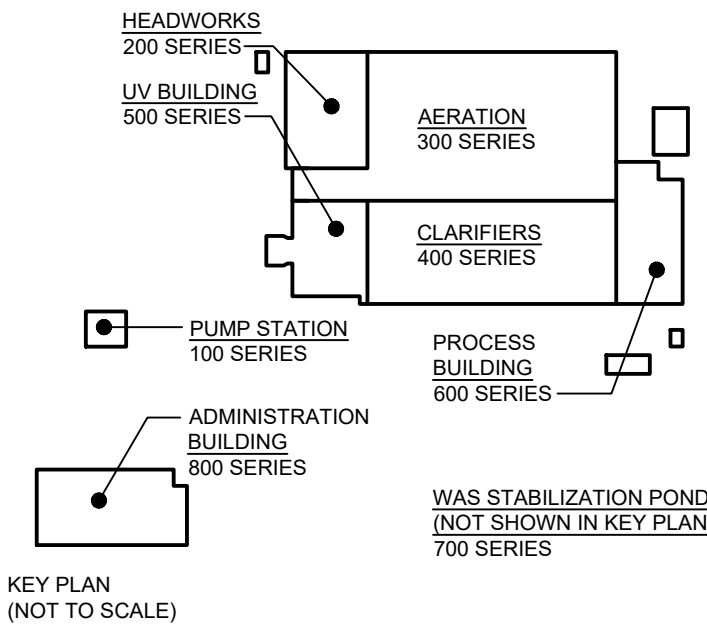
I.D.	DESCRIPTION	MANUF./MODEL	OUTPUT	DUCT SIZE	ELECTRICAL			CONTROL	COMMENTS
					KW	VOLT	PH		
			Kgh	mm x mm					
HUM-9801	ADMIN BUILDING HUMIDIFIER	CAREL JUE015XN0U1	10.4	450X300	11.25	600	3	BACNET ETHERNET CARD	

DOMESTIC WATER HEATER TANK SCHEDULE

I.D.	DESCRIPTION	LOCATION	MANUF./MODEL	RECOVERY CAPACITY		CONNECTION SIZE		ELECTRICAL					COMMENTS
				TEMP. RISE	L/m	H.W.	C.W.	ELEMENTS		POWER			
								QUANTITY	WATTAGE	KW	VOLT	PH	
				°C		mm	mm						
DHWT-9501	UV BUILDING MHW TANK	MECHANICAL ROOM 503	A.O. SMITH / 50D	55	0.5	19	19	1	2000	2	208	3	
DHWT-9502	UV BUILDING SHW TANK	MECHANICAL ROOM 503	RUUD / EVRO	55	3.91	38	38	1	15000	15	208	3	
DHWT-9601	PROCESS BUILDING DHW TANK	MECHANICAL ROOM 601	RUUD / EVRO	55	3.91	38	38	1	15000	15	208	3	
DHWT-9801	ADMIN BUILDING DHW TANK	MECHANICAL ROOM 810	RUUD / EVRO	55	3.91	38	38	1	15000	15	208	3	

UNIT HEATER & CABINET HEATER SCHEDULE

I.D.	DESCRIPTION	TYPE	OPERATING DATA		ELECTRICAL			COMMENTS
			CAPACITY	AIR FLOW	RATING	VOLTS	PH	
KW	L/s	KW	V					
CUH 9501	ELECTRIC CABINET UNIT HEATER	CABINET	4	118	4	208	1	WALL MOUNT T-STAT
CUH 9601	ELECTRIC CABINET UNIT HEATER	CABINET	2	118	2	208	1	WALL MOUNT T-STAT
CUH 9602	ELECTRIC CABINET UNIT HEATER	CABINET	2	118	2	208	1	WALL MOUNT T-STAT
CUH 9801	ELECTRIC CABINET UNIT HEATER	CABINET	2	118	2	208	1	WALL MOUNT T-STAT
EBB 9801	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	0.3	NA	0.3	120	1	
EBB 9802	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	0.3	NA	0.3	120	1	
EBB 9803	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	0.3	NA	0.3	120	1	
EBB 9804	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	1	NA	1	120	1	
EBB 9805	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	1.5	NA	0.75	120	1	
EBB 9806	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	0.75	NA	0.75	120	1	
EBB 9807	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	0.75	NA	0.75	120	1	
EBB 9808	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	0.75	NA	0.75	120	1	
EBB 9809	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	1.25	NA	1.25	120	1	
EBB 9810	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	1.5	NA	1.5	120	1	
EBB 9811	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	0.3	NA	0.3	120	1	
EBB 9812	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	0.75	NA	0.75	120	1	
EBB 9813	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	1	NA	1	120	1	
EBB 9814	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	0.75	NA	0.75	120	1	
EBB 9815	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	0.5	NA	0.5	120	1	
EBB 9817	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	0.5	NA	0.5	120	1	
EBB 9818	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	1.25	NA	1.25	120	1	
EBB 9819	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	1	NA	1	120	1	
EBB 9820	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	0.3	NA	0.3	120	1	
EBB 9821	ELECTRIC BASEBOARD HEATER	WALL-MOUNTED	0.5	NA	0.5	120	1	
EUH 9201	ELECTRIC UNIT HEATER	WALL-MOUNTED	3	240.7	3	600	3	WALLMOUNT T-STAT
EUH 9202	ELECTRIC UNIT HEATER	WALL-MOUNTED	3	240.7	3	600	3	WALLMOUNT T-STAT
EUH 9203	ELECTRIC UNIT HEATER	WALL-MOUNTED	10	330.4	10	600	3	WALLMOUNT T-STAT
EUH 9204	ELECTRIC UNIT HEATER	WALL-MOUNTED	4	240.7	4	600	3	WALLMOUNT T-STAT
EUH 9205	ELECTRIC UNIT HEATER	WALL-MOUNTED	10	330.4	10	600	3	WALLMOUNT T-STAT
EUH 9301	ELECTRIC UNIT HEATER	WALL-MOUNTED	4	240.7	4	600	3	WALLMOUNT T-STAT
EUH 9302	ELECTRIC UNIT HEATER	WALL-MOUNTED	4	240.7	4	600	3	WALLMOUNT T-STAT
EUH 9303	ELECTRIC UNIT HEATER	WALL-MOUNTED	4	240.7	4	600	3	WALLMOUNT T-STAT
EUH 9501	ELECTRIC UNIT HEATER	WALL-MOUNTED	2	240.7	2	600	3	WALLMOUNT T-STAT
EUH 9502	ELECTRIC UNIT HEATER	WALL-MOUNTED	10	330.4	10	600	3	WALLMOUNT T-STAT
EUH 9503	ELECTRIC UNIT HEATER	WALL-MOUNTED	10	330.4	10	600	3	WALLMOUNT T-STAT
EUH 9504	ELECTRIC UNIT HEATER	WALL-MOUNTED	5	330.4	5	600	3	WALLMOUNT T-STAT
EUH 9601	ELECTRIC UNIT HEATER	WALL-MOUNTED	7.5	330.4	7.5	600	3	WALLMOUNT T-STAT
EUH 9602	ELECTRIC UNIT HEATER	WALL-MOUNTED	7.5	330.4	7.5	600	3	WALLMOUNT T-STAT
EUH 9603	ELECTRIC UNIT HEATER	WALL-MOUNTED	10	330.4	10	600	3	WALLMOUNT T-STAT
EUH 9604	ELECTRIC UNIT HEATER	WALL-MOUNTED	4	240.7	4	600	3	WALLMOUNT T-STAT
EUH 9605	ELECTRIC UNIT HEATER	WALL-MOUNTED	4	240.7	4	600	3	WALLMOUNT T-STAT
EUH 9606	ELECTRIC UNIT HEATER	WALL-MOUNTED	10	330.4	10	600	3	WALLMOUNT T-STAT
EUH 9607	ELECTRIC UNIT HEATER	WALL-MOUNTED	10	330.4	10	600	3	WALLMOUNT T-STAT
EUH 9608	ELECTRIC UNIT HEATER	WALL-MOUNTED	10	330.4	10	600	3	WALLMOUNT T-STAT
EUH 9609	ELECTRIC UNIT HEATER	WALL-MOUNTED	10	330.4	10	600	3	WALLMOUNT T-STAT
EUH 9801	ELECTRIC UNIT HEATER	WALL-MOUNTED	2	240.7	2	600	3	WALLMOUNT T-STAT



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CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

MECHANICAL SITE WIDE MECHANICAL SCHEDULES SHEET 1

DESIGN: CI

DRAWN: CI

CHECKED: PE

JLR #: 32296-001

DRAWING #: MID001

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrade\03-Production\05-Mech\32296-001-MECH-SCHED.dwg

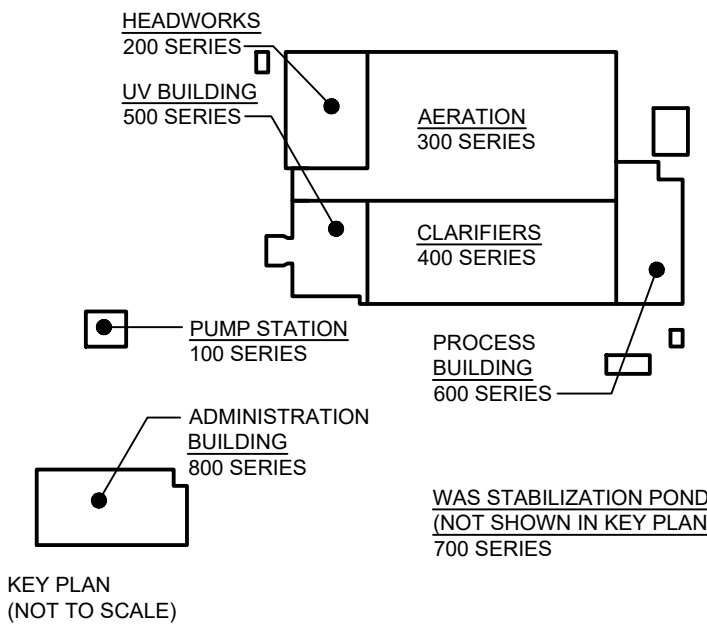
PLUMBING PUMP SCHEDULE									
I.D.	DESCRIPTION	TYPE	OPERATING POINT 'A'		FLUID TYPE	MOTOR			COMMENTS
			FLOW	TDH		RATING	VOLT	PH	
			L/s	m		HP	V		
P 9201	HEADWORKS SANITARY DRAINAGE PUMP NO. 1	SUBMERSIBLE	0.26	2.33	DRAIN WATER	0.33	120	1	INTEGRAL FLOAT. PROVIDE LOCAL CONTROL PANEL
P 9501	UV SANITARY DRAINAGE PUMP NO. 1	SUBMERSIBLE	0.9	7.1	DRAIN WATER	0.33	120	1	INTEGRAL FLOAT. PROVIDE LOCAL CONTROL PANEL
P 9502	UV SANITARY DRAINAGE PUMP NO. 2	SUBMERSIBLE	0.9	7.1	DRAIN WATER	0.33	120	1	INTEGRAL FLOATS PROVIDE LOCAL CONTROL PANEL
P 9601	PROCESS SANITARY DRAINAGE PUMP NO. 1	SUBMERSIBLE	1.19	5.9	DRAIN WATER	0.5	120	1	INTEGRAL FLOAT. PROVIDE LOCAL CONTROL PANEL
P 9602	PROCESS SANITARY DRAINAGE PUMP NO. 2	SUBMERSIBLE	1.19	5.9	DRAIN WATER	0.5	120	1	INTEGRAL FLOAT. PROVIDE LOCAL CONTROL PANEL

INCREMENTAL UNIT SCHEDULE									
I.D.	DESCRIPTION	LOCATION	CAPACITY	WEIGHT	SOUND	ELECTRICAL			COMMENTS
						VOLTS	PH	MCA	
			kW	kg	dB(A)	V		A	
AC 9201	INDOOR AC UNIT	201	5.3	13	43	208	1		FED BY OUTDOOR UNIT CND-9201
AC 9501	INDOOR AC UNIT	501	5.3	13	43	208	1		FED BY OUTDOOR UNIT CND-9501
AC 9601	INDOOR AC UNIT	803	5.3	13	43	208	1		FED BY OUTDOOR UNIT CND-9601
AC 9602	CEILING CASSETE AC UNIT	600	15.1	26	33	208	1	2.15	SERVICED BY CND 9602
AC 9603	CEILING CASSETTE AC UNIT	600	15.1	26	33	208	1	2.15	SERVICED BY CND 9602
AC 9604	CEILING CASSETTE AC UNIT	600	15.1	26	33	208	1	2.15	SERVICED BY CND 9602
AC 9605	CEILING CASSETTE AC UNIT	600	15.1	26	33	208	1	2.15	SERVICED BY CND 9602
AC 9801	INDOOR AC UNIT	809	5.3	13	43	208	1		FED BY OUTDOOR UNIT CND-9801
CND 9201	HEADWORKS OUTDOOR CONDENSING UNIT	EXT	5.3	44	44	208	1	11	
CND 9501	UV BUILDING OUTDOOR CONDENSING UNIT	EXT	5.3	44	44	208	1	11	
CND 9601	PROCESS BUILDING OUTDOOR CONDENSING UNIT	EXT	5.3	44	44	208	1	11	
CND 9602	PROCESS BUILDING OUTDOOR CONDENSING UNIT	EXT	60.35	533	64	208	3	49.3	TWO FEEDS: SECOND FEED 42.1 MCA, 50 MOCP
CND 9801	ADMIN BUILDING OUTDOOR CONDENSING UNIT	EXT	5.3	44	44	208	1	11	SERVICES INDOOR UNIT AC 9801
CND 9802	ADMIN BUILDING OUTDOOR CONDENSING UNIT	EXT	15.43	250	66	600	3	6	SERVICES AHU-9801 OUTDOOR CONDENSER

FAN SCHEDULE													
I.D.	DESCRIPTION	LOCATION	TYPE	FAN				SOUND @ INLET	ELECTRICAL			COMMENTS	
				AIRFLOW	EXT. S.P.	DRIVE TYPE	RPM		POWER	VOLTS	PH		
				L/s	Pa				HP	V			
EF 9301	VENTILATION EXHAUST FAN	301	TYPE 1	152	40	DIRECT DRIVE	1550	66	0.186	120	1	ECM MOTOR C/W SPEED CONTROLLER	
EF 9601	PROCESS COOLING EXHAUST FAN	600	TYPE 1	715	125	DIRECT DRIVE	1360	70	0.56	600	3	VFD	
EF 9802	PROCESS COOLING EXHAUST FAN	600	TYPE 1	715	125	DIRECT DRIVE	1360	70	0.56	600	3	VFD	
EF 9603	PLASTIC VENTILATION EXHAUST FAN	602	TYPE 2	71	50	BELT	1550	57	0.186	120	1	ECM MOTOR C/W SPEED CONTROLLER	
EF 9604	VENTILATION EXHAUST FAN	600	TYPE 1	76	40	DIRECT DRIVE	1300	53	0.186	120	1	ECM MOTOR C/W SPEED CONTROLLER	
EF 9605	BACKUP BASEMENT EXHAUST FAN	601	TYPE 1	1596	200	DIRECT DRIVE	1160	66	0.75	208	1	NEW FNVR 208V	
EF 9801	FUMEHOOD EXHAUST FAN	803	TYPE 1	283	125	DIRECT DRIVE	1725	70	0.167	120	1	ECM MOTOR C/W SPEED CONTROLLER	
SF 9201	VENTILATION SUPPLY FAN	201	TYPE 1	47	50	DIRECT DRIVE	1550	54	0.019	120	1	ECM MOTOR C/W SPEED CONTROLLER	
SF 9501	VENTILATION SUPPLY FAN	501	TYPE 1	47	50	DIRECT DRIVE	1550	54	0.019	120	1	ECM MOTOR C/W SPEED CONTROLLER	
SF 9601	VENTILATION SUPPLY FAN	601	TYPE 1	47	50	DIRECT DRIVE	1550	54	0.019	120	1	ECM MOTOR C/W SPEED CONTROLLER	
SF 9801	VENTILATION SUPPLY FAN	809	TYPE 1	47	50	DIRECT DRIVE	1550	54	0.019	120	1	ECM MOTOR C/W SPEED CONTROLLER	
TF 9301	TRANSFER AIR FAN	301	TYPE 1	152	50	DIRECT DRIVE	1550	66	0.186	120	1	ECM MOTOR C/W SPEED CONTROLLER	

VAV SCHEDULE										
I.D.	DESCRIPTION	LOCATION	MANUF./MODEL	MAXIMUM AIR FLOW	MINIMUM AIR FLOW	INLET DUCT SIZE	MAX S.P.	NC	CONTROL	COMMENTS
				L/s	L/s	MM Ø	Pa			
VAV-9801	SINGLE DUCT TERMINAL UNIT	800	EH PRICE	69	27	100	25	>25	BAS	
VAV-9802	SINGLE DUCT TERMINAL UNIT	800	EH PRICE	74	27	100	25	>25	BAS	
VAV-9803	SINGLE DUCT TERMINAL UNIT	808	EH PRICE	57	23	100	25	>25	BAS	
VAV-9804	SINGLE DUCT TERMINAL UNIT	807	EH PRICE	63	27	125	25	>25	BAS	
VAV-9805	SINGLE DUCT TERMINAL UNIT	805	EH PRICE	34	12	100	25	>25	BAS	
VAV-9806	SINGLE DUCT TERMINAL UNIT	800	EH PRICE	24	10	100	25	>25	BAS	
VAV-9807	SINGLE DUCT TERMINAL UNIT	803	EH PRICE	92	39	125	25	>25	BAS	
VAV-9808	SINGLE DUCT TERMINAL UNIT	814	EH PRICE	45	17	100	25	>25	BAS	
VAV-9809	SINGLE DUCT TERMINAL UNIT	815	EH PRICE	24	10	100	25	>25	BAS	
VAV-9810	SINGLE DUCT TERMINAL UNIT	802	EH PRICE	70	28	125	25	>25	BAS	
VAV-9811	SINGLE DUCT TERMINAL UNIT	801	EH PRICE	73	27	125	25	>25	BAS	
VAV-9812	SINGLE DUCT TERMINAL UNIT	817	EH PRICE	34	10	100	25	>25	BAS	
VAV-9813	SINGLE DUCT TERMINAL UNIT	800	EH PRICE	96	39	125	25	>25	BAS	

LOUVER SCHEDULE									
I.D.	DESCRIPTION	MANUF. / MATERIAL	AIR FLOW	MAXIMUM P.D.	SIZE			FREE AREA	COMMENTS
					WIDTH	DEPTH	LENGTH		
			L/s	Pa	mm	mm	mm	M²	
L-9201	ELECTRICAL ROOM 201 OA LOUVRE	GREENHECK / ESD-635	47	25	300	150	350	0.03	
L-9202	MECHANICAL ROOM 202 OA LOUVRE	GREENHECK / ESD-635	380	25	900	150	900	0.47	
L-9501	MECHANICAL ROOM 503 OA LOUVRE	GREENHECK / ESD-635	991	25	1100	150	800	0.49	
L-9502	MECHANICAL ROOM 503 EA LOUVRE	GREENHECK / ESD-635	944	25	900	150	800	0.4	
L-9503	ELECTRICAL ROOM 501 OA LOUVRE	GREENHECK / ESD-635	47	25	350	150	300	0.03	
L-9601	MECHANICAL ROOM 601 EA LOUVRE	GREENHECK / ESD-635	1585	25	1200	150	750	0.46	
L-9602	MECHANICAL ROOM 602 OA LOUVRE	GREENHECK / ESD-635	1585	25	1925	150	800	0.57	
L-9603	ELECTRICAL ROOM 603 OA LOUVRE	GREENHECK / ESD-635	76	25	500	150	300	0.05	
L-9604	CHEMICAL ROOM 602 EA LOUVRE	GREENHECK / ESD-635	71	25	300	150	300	0.02	
L-9605	BLOWER ROOM 600 OA LOUVRE	GREENHECK / ESD-635	1506	25	2350	150	875	1.17	
L-9606	BOWER ROOM 600 VENTILATION EA LOUVRE	GREENHECK / ESD-635	76	25	300	150	300	0.02	
L-9607	BLOWER ROOM 600 FREE COOLING EA LOUVRE	GREENHECK / ESD-635	715	25	800	150	800	0.35	
L-9607	BLOWER ROOM 600 FREE COOLING EA LOUVRE	GREENHECK / ESD-635	715	25	800	150	800	0.35	
L-9801	ELECTRICAL ROOM 809 EA LOUVRE	GREENHECK / ESD-635	282	25	650	150	350	0.08	
L-9802	MECHANICAL ROOM 610 OA LOUVRE	GREENHECK / ESD-635	282	25	650	150	450	0.11	
L-9803	ELECTRICAL ROOM 609 OA LOUVRE	GREENHECK / ESD-635	47	25	300	150	350	0.03	



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PROFESSIONAL STAMP



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

MECHANICAL SITE WIDE
MECHANICAL SCHEDULES
SHEET 2

DESIGN: CI

DRAWN: CI

CHECKED: PE

JLR #: 32296-001

DRAWING #:

MID002

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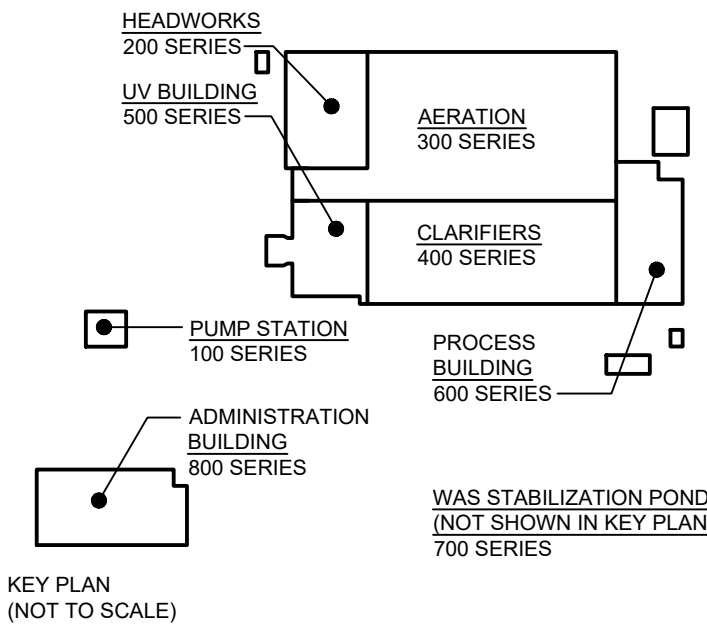
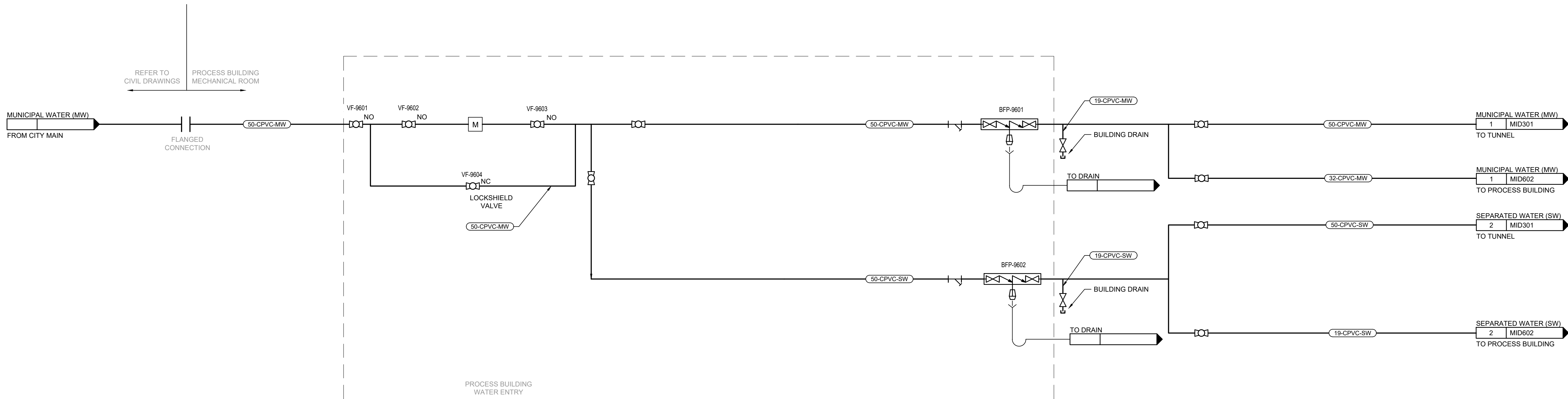
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WATER ENTRY PLUMBING SCHEMATIC

MID001

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SCALE: NTS

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

MECHANICAL SITE-WIDE

WATER ENTRY SCHEMATIC

DESIGN: CI/VD	DRAWING #:
DRAWN: CI/VD	MID003
CHECKED: PE	
JLR #: 32296-001	

PLOT DATE: Friday, Apr 25, 2025 12:41:39 PM

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrade\03-Production\05-Mech\MID201 - HEADWORKS BUILDING HVAC & PLUMBING SCHEMATICS.dwg

CONTROL SEQUENCE OF OPERATIONS

- OUTDOOR AIR TO BE SUPPLIED CONTINUOUSLY TO ELECTRICAL ROOM BY SUPPLY FAN SF-9201
- ELECTRICAL ROOM AC TO START WHEN SPACE TEMPERATURE RISES ABOVE 25°C AND STOP WHEN SPACE TEMPERATURE DROPS BELOW 25°C THROUGH OEM THERMOSTAT.
- ELECTRICAL ROOM ELECTRIC UNIT HEATER TO SWITCH ON WHEN SPACE TEMPERATURE DROPS BELOW 15°C (USER ADJUSTABLE SETPOINT). UNIT HEATER TO SWITCH OFF WHEN SPACE TEMPERATURE RISES ABOVE SETPOINT. CONTROL OF FAN AND HEATER TO BE THROUGH OEM THERMOSTAT.
- SCADA TO MONITOR ELECTRICAL ROOM SPACE TEMPERATURE AND ALARM WHEN SPACE TEMPERATURE DROPS BELOW 10°C OR RISES ABOVE 30°C.

CONTROL SEQUENCE OF OPERATIONS

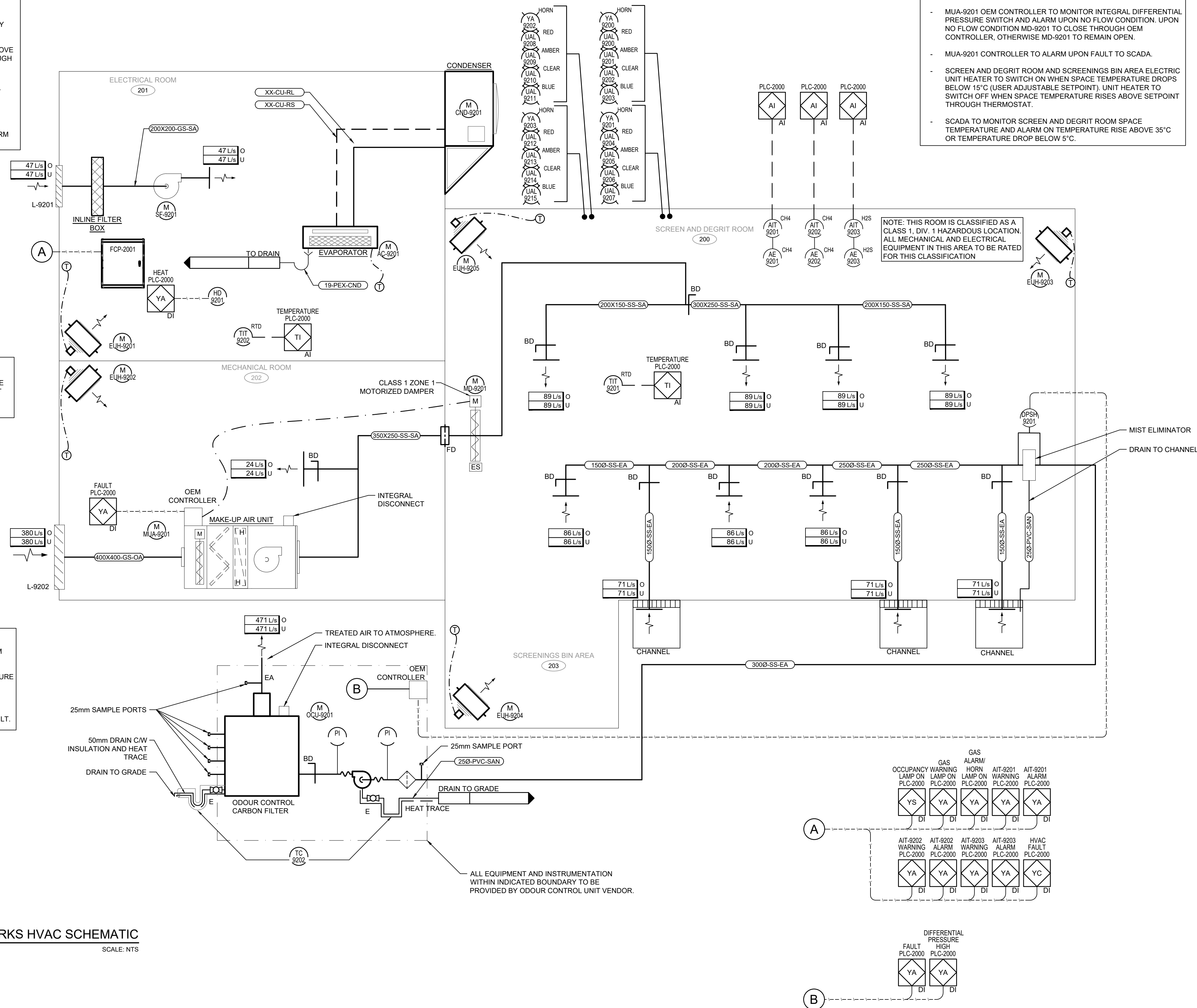
- MECHANICAL ROOM ELECTRIC UNIT HEATER TO SWITCH ON WHEN SPACE TEMPERATURE DROPS BELOW 15°C (USER ADJUSTABLE SETPOINT). UNIT HEATER TO SWITCH OFF WHEN TEMPERATURE RISES ABOVE SETPOINT. CONTROL OF FAN AND HEATER TO BE THROUGH OEM THERMOSTAT.

CONTROL SEQUENCE OF OPERATIONS

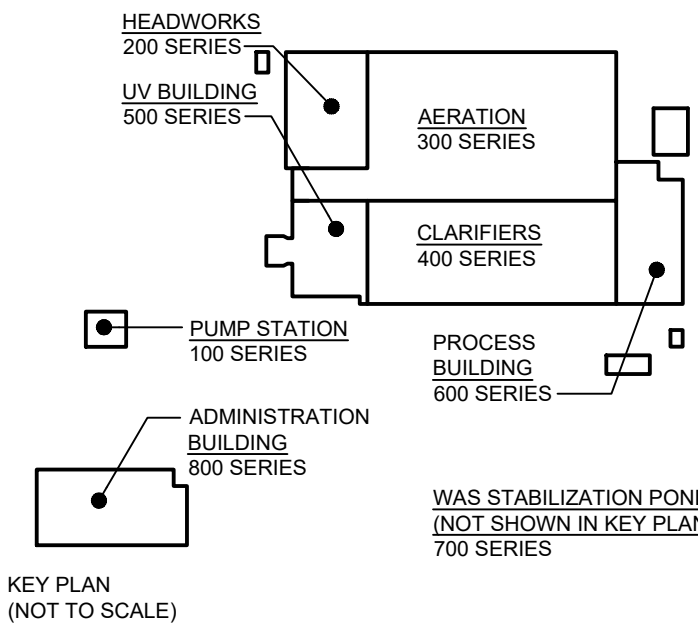
- ODOUR CONTROL UNIT OCU-9201 TO CONTINUOUSLY EXHAUST AIR FROM SCREEN AND DEGRIT ROOM.
- OEM CONTROLLER TO MONITOR MIST ELIMINATOR DIFFERENTIAL PRESSURE SENSORS AND ALARM UPON CLOGGED FILTER CONDITIONS. SCADA TO MONITOR OEM CONTROLLER AND ALARM UPON CLOGGED FILTER CONDITION.
- SCADA TO MONITOR OCU-9201 OEM CONTROLLER AND ALARM UPON FAULT.

CONTROL SEQUENCE OF OPERATIONS

- MAKE-UP AIR UNIT MUA-9201 TO CONTINUOUSLY PROVIDE VENTILATION AIR TO MECHANICAL ROOM. SCREEN AND DEGRIT ROOM AND SCREENINGS BIN AREA.
- MUA-9201 OEM CONTROLLER TO MONITOR OA TEMPERATURE AND ACTIVATE ELECTRIC HEATING COIL WHEN OA TEMPERATURE DROPS BELOW 10°C. OEM CONTROLLER TO MONITOR SA TEMPERATURE AND MODULATE ELECTRIC HEATING COIL TO MAINTAIN SA DISCHARGE TEMPERATURE OF 20°C DURING HEATING CONDITIONS. UPON OA TEMPERATURE RISE ABOVE 10°C ELECTRIC HEATING COIL TO TURN OFF.
- MUA-9201 OEM CONTROLLER TO MONITOR INTEGRAL DIFFERENTIAL PRESSURE SWITCH AND ALARM UPON NO FLOW CONDITION. UPON NO FLOW CONDITION MD-9201 TO CLOSE THROUGH OEM CONTROLLER, OTHERWISE MD-9201 TO REMAIN OPEN.
- MUA-9201 CONTROLLER TO ALARM UPON FAULT TO SCADA.
- SCREEN AND DEGRIT ROOM AND SCREENINGS BIN AREA ELECTRIC UNIT HEATER TO SWITCH ON WHEN SPACE TEMPERATURE DROPS BELOW 15°C (USER ADJUSTABLE SETPOINT). UNIT HEATER TO SWITCH OFF WHEN SPACE TEMPERATURE RISES ABOVE SETPOINT THROUGH THERMOSTAT.
- SCADA TO MONITOR SCREEN AND DEGRIT ROOM SPACE TEMPERATURE AND ALARM ON TEMPERATURE RISE ABOVE 35°C OR TEMPERATURE DROP BELOW 5°C.



1 HEADWORKS HVAC SCHEMATIC
MID201
SCALE: NTS



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SCALE: NTS

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

MECHANICAL HEADWORKS
HVAC SCHEMATIC

DESIGN: VD/CI

DRAWN: VD/CI

CHECKED: PE

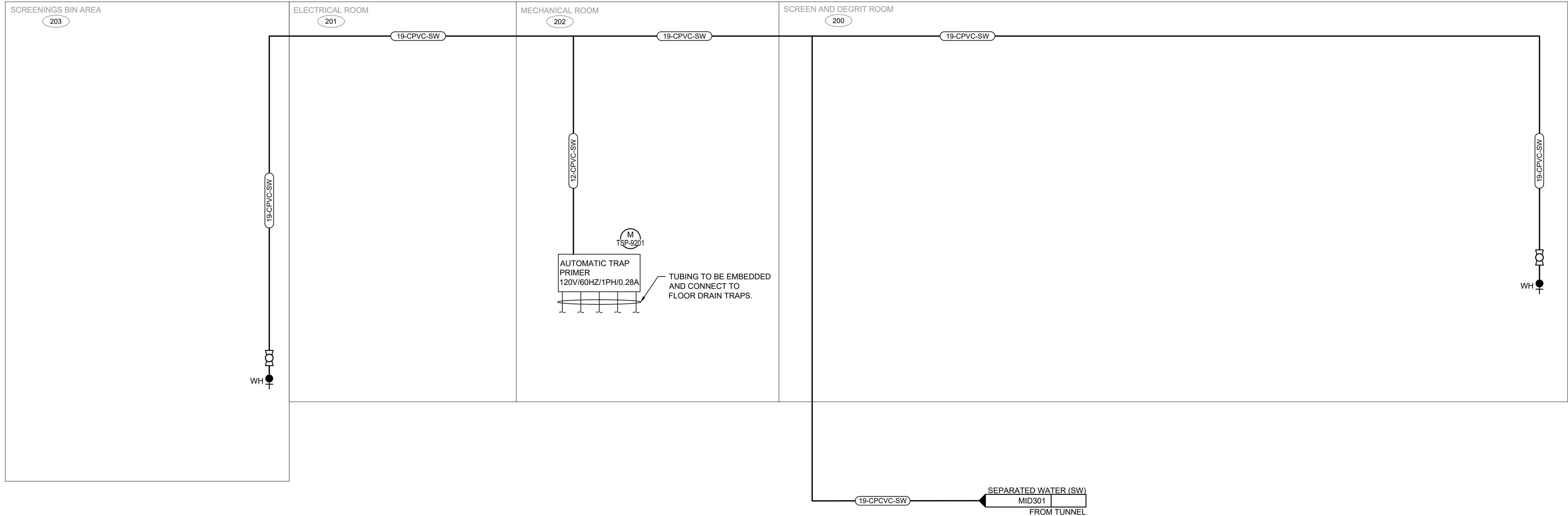
JLR #: 32296-001

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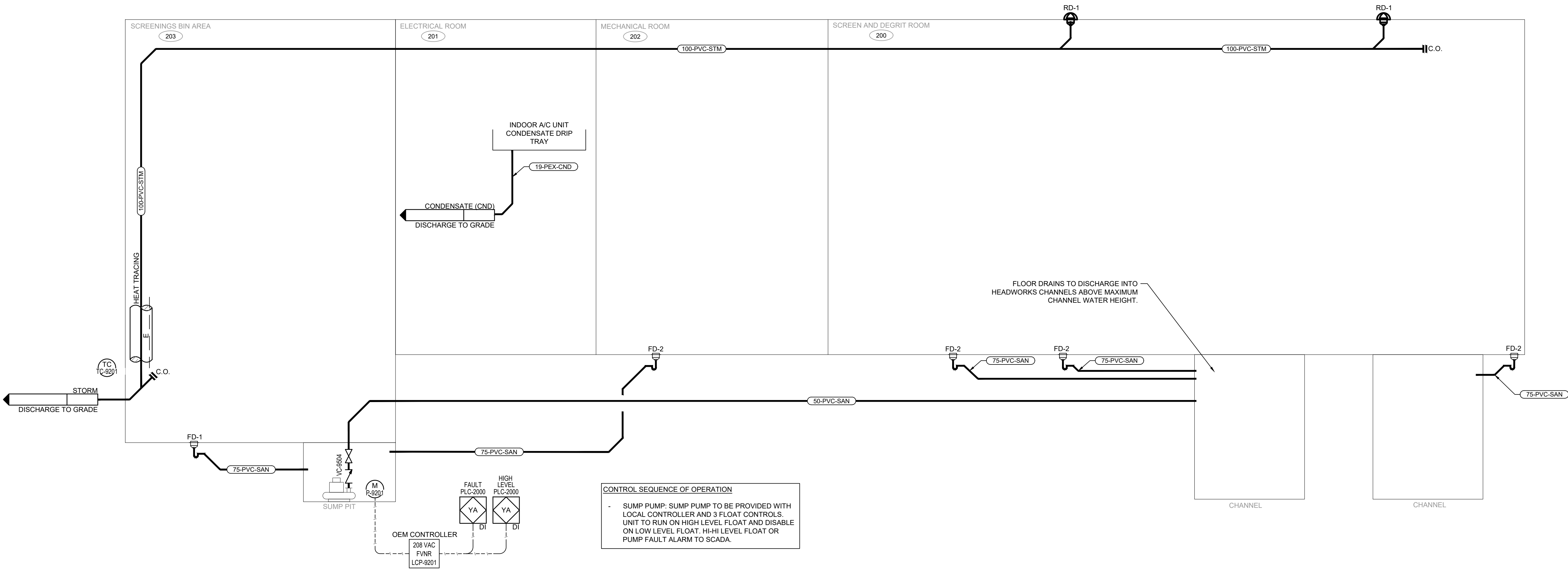
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PLOT DATE: Apr 25, 2025 13:30 PM

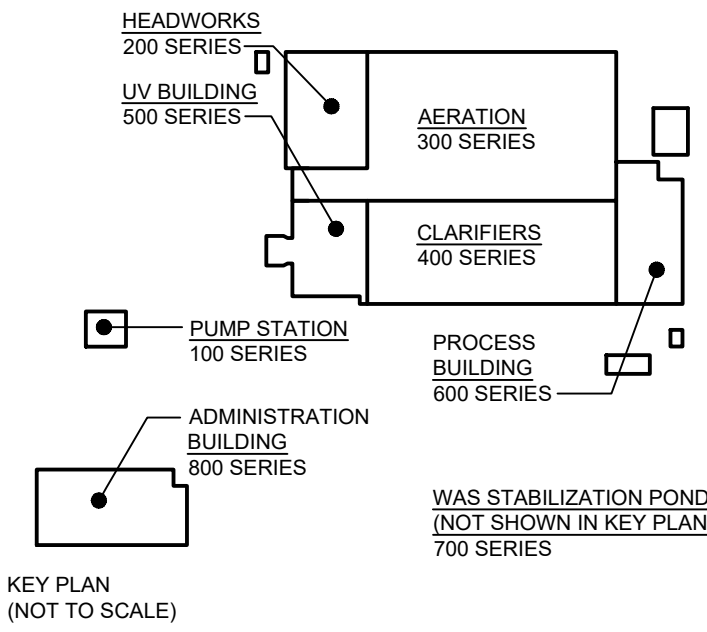
File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrades\03-Production\05-Mech\MID202 HEADWORKS BUILDING PLUMBING & DRAINAGE SCHEMATIC.dwg



1 HEADWORKS BUILDING PLUMBING SCHEMATIC
MID202 SCALE: NTS



2 HEADWORKS BUILDING DRAINAGE SCHEMATIC
MID202 SCALE: NTS



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SCALE: NTS

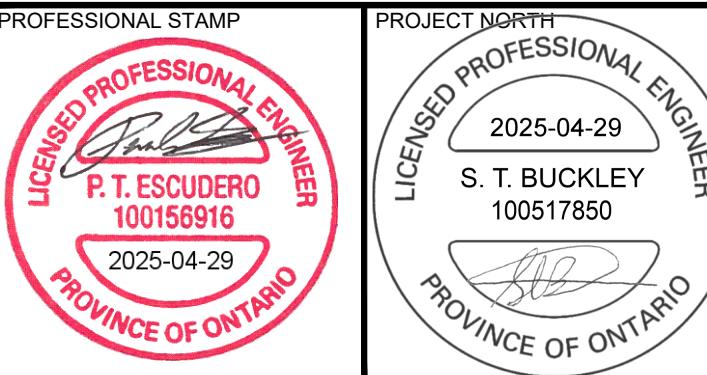
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

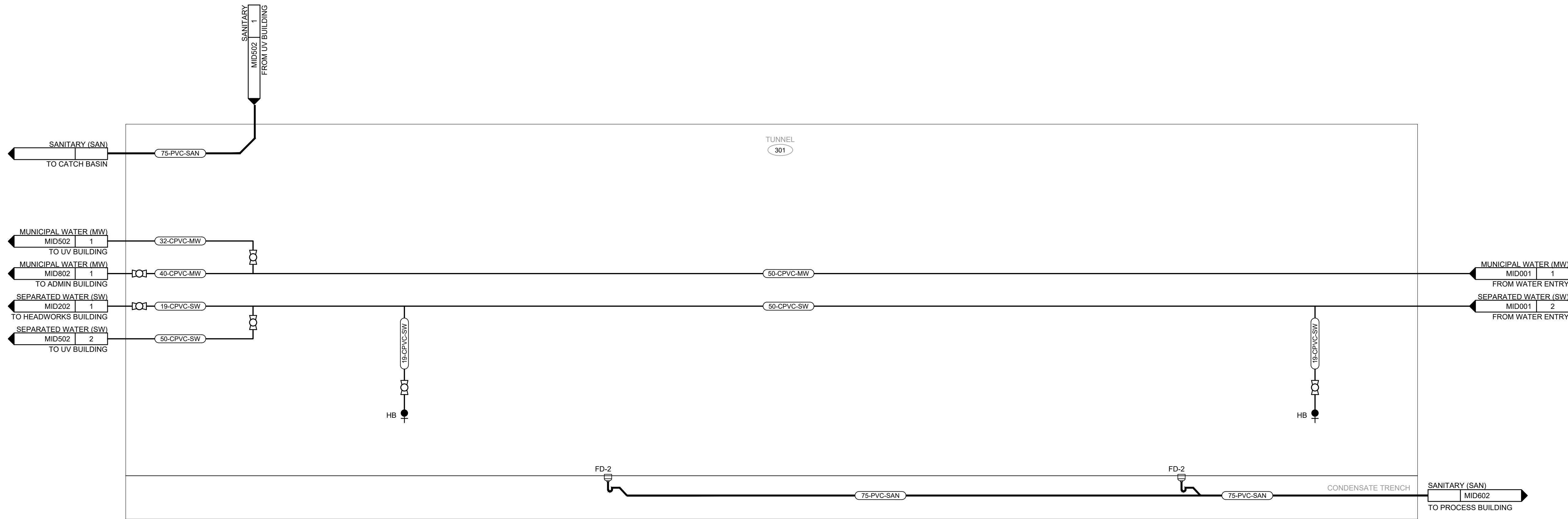
MECHANICAL
HEADWORKS
PLUMBING AND DRAINAGE
SCHEMATIC

DESIGN: VD/CI	DRAWING #:
DRAWN: VD/CI	MID202
CHECKED: PE	
JLR #:	

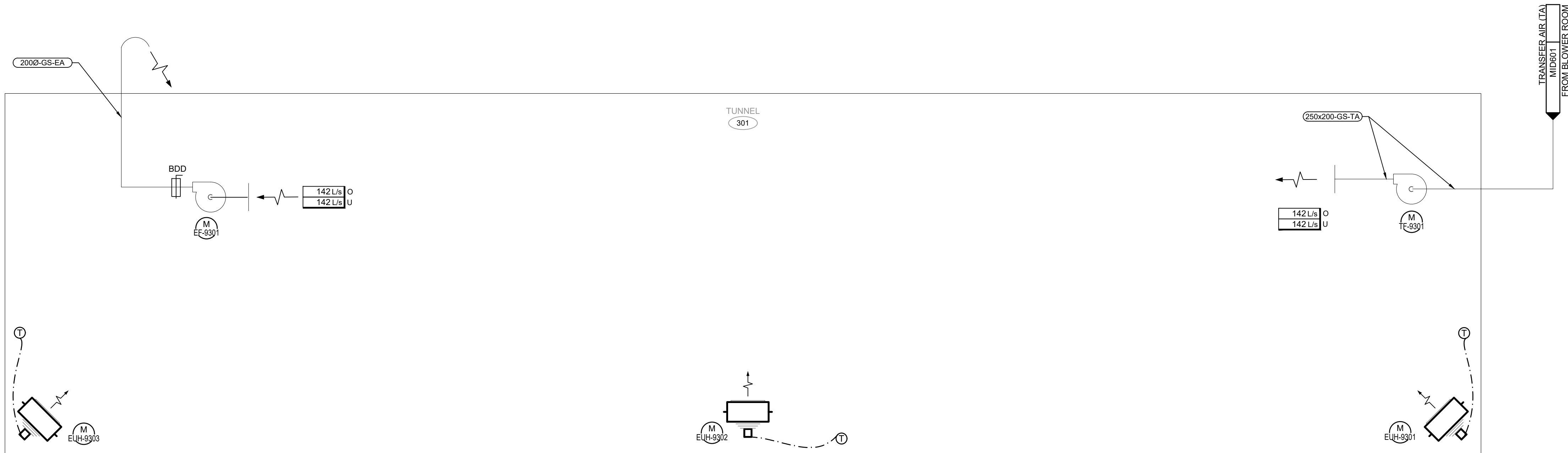
32296-001

PLOT DATE: Friday, April 25, 2025 12:47 PM

File Location: P:\320000\32296-001 - Brighton WWT System Upgrade\03-Production\05-Mech\MID301 SERVICE TUNNEL HVAC & PLUMBING SCHEMATICS.dwg



1 SERVICE TUNNEL PLUMBING & DRAINAGE SCHEMATIC
SCALE: NTS



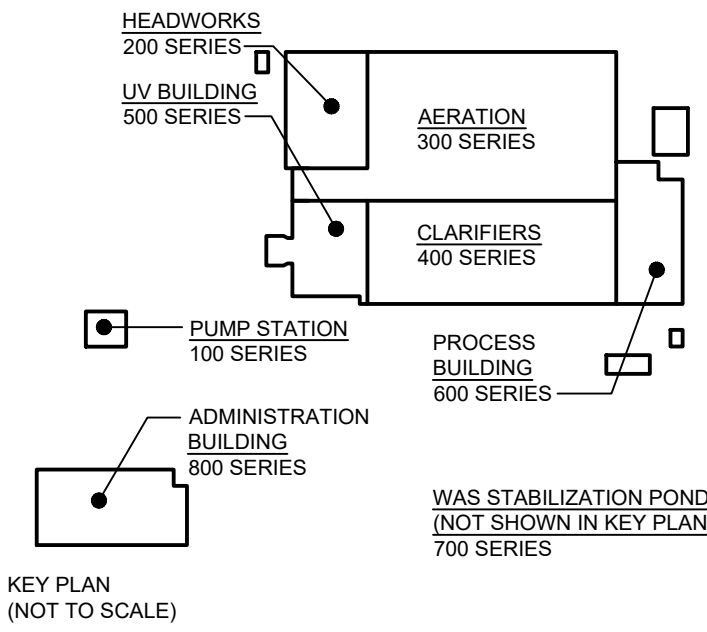
2 SERVICE TUNNEL HVAC SCHEMATIC
SCALE: NTS

CONTROL SEQUENCE OF OPERATIONS

- TUNNEL ELECTRIC UNIT HEATERS TO SWITCH ON WHEN SPACE TEMPERATURE DROPS BELOW 15°C (USER ADJUSTABLE SETPOINT). UNIT HEATER TO SWITCH OFF WHEN TEMPERATURE RISES ABOVE SETPOINT THROUGH OEM THERMOSTAT.

CONTROL SEQUENCE OF OPERATIONS

- TRANSFER AIR FAN TF-9301 TO CONTINUOUSLY PROVIDE VENTILATION AIR FROM PROCESS BUILDING BLOWER ROOM TO TUNNEL.
- EXHAUST FAN EF-9301 TO CONTINUOUSLY EXHAUST AIR FROM TUNNEL.



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SCALE:

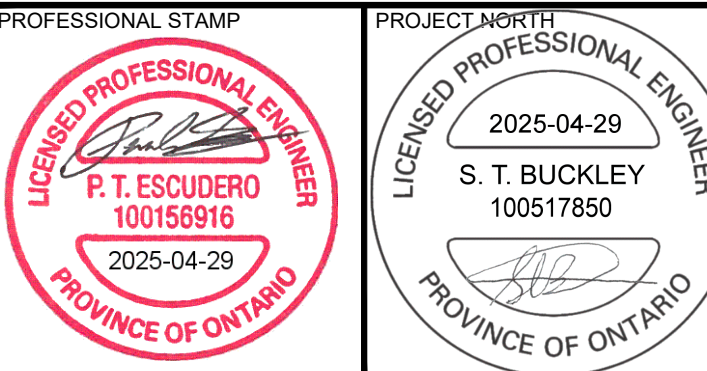
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

MECHANICAL AERATION TUNNEL HVAC AND PLUMBING SCHEMATICS

DESIGN: VD/CI	DRAWING #:
DRAWN: VD/CI	MID301
CHECKED: PE	
JLR #:	

32296-001

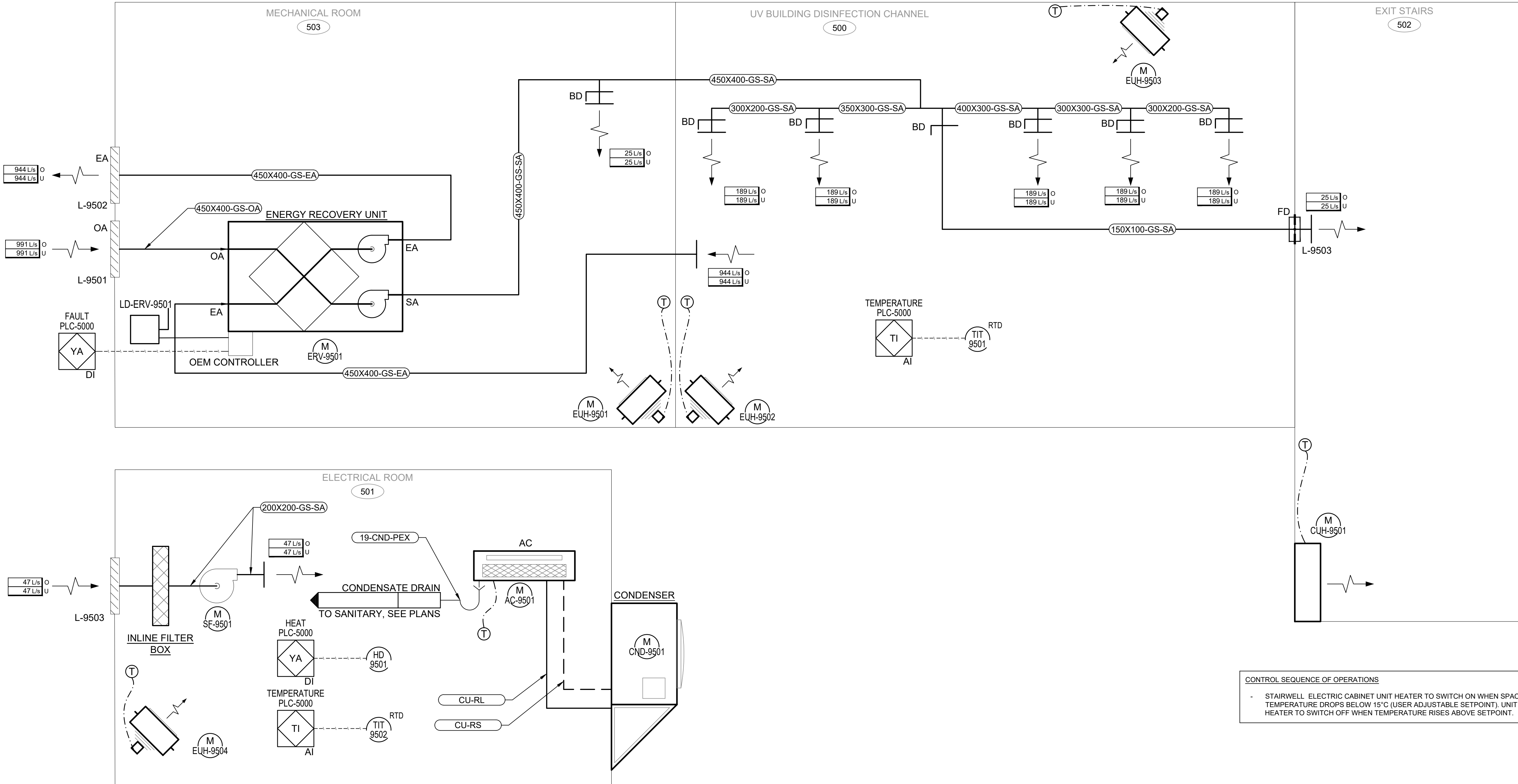
PLOT DATE: Friday, April 25, 2025 12:41:42 PM

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrade\03-Production\05-Mech\MID501 UV Building HVAC & PLUMBING SCHEMATICS.dwg

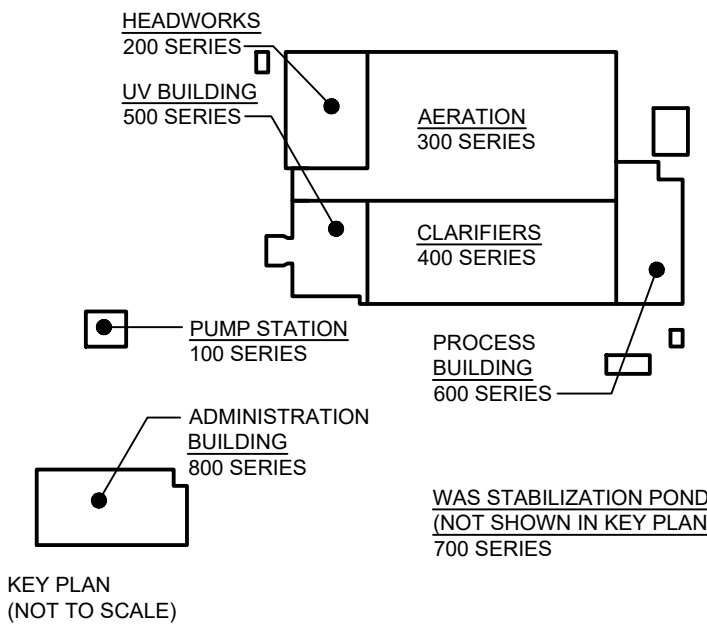
1 UV BUILDING HVAC SCHEMATIC
MID201 SCALE: NTS

- CONTROL SEQUENCE OF OPERATIONS
- MECHANICAL ROOM ELECTRIC UNIT HEATER TO SWITCH ON WHEN SPACE TEMPERATURE DROPS BELOW 15°C (USER ADJUSTABLE SETPOINT). UNIT HEATER TO SWITCH OFF WHEN TEMPERATURE RISES ABOVE SETPOINT THROUGH OEM THERMOSTAT.

- CONTROL SEQUENCE OF OPERATIONS
- ENERGY RECOVERY UNIT ERV-9501 TO CONTINUOUSLY PROVIDE VENTILATION AIR TO UV DISINFECTION CHANNEL ROOM, MECHANICAL ROOM AND STAIRWELL. ERV-9501 TO CONTINUOUSLY PROVIDE EXHAUST AIR FROM UV DISINFECTION ROOM.
 - OEM CONTROLLER TO MONITOR OA TEMPERATURE AND ACTIVATE INTEGRAL SEASONAL BYPASS UPON OA TEMPERATURE ABOVE 15°C. UPON OA TEMPERATURE DROP BELOW 15°C SEASONAL BYPASS TO DEACTIVATE.
 - UV DISINFECTION CHANNEL ROOM ELECTRIC UNIT HEATERS TO SWITCH ON WHEN SPACE TEMPERATURE DROPS BELOW 15°C (USER ADJUSTABLE SETPOINT). UNIT HEATER TO SWITCH OFF WHEN SPACE TEMPERATURE RISES ABOVE SETPOINT THROUGH OEM THERMOSTAT.
 - SCADA TO MONITOR UV DISINFECTION CHANNEL ROOM SPACE TEMPERATURE AND ALARM UPON SPACE TEMPERATURE RISE ABOVE 35°C
 - ERV-9501 CONTROLLER TO ALARM UPON FAULT TO SCADA.



- CONTROL SEQUENCE OF OPERATIONS
- OUTDOOR AIR TO BE SUPPLIED CONTINUOUSLY TO ELECTRICAL ROOM BY SUPPLY FAN SF-9501
 - ELECTRICAL ROOM AC TO START WHEN SPACE TEMPERATURE RISES ABOVE 25°C AND STOP WHEN SPACE TEMPERATURE DROPS BELOW 25°C.
 - ELECTRICAL ROOM ELECTRIC UNIT HEATER TO SWITCH ON WHEN SPACE TEMPERATURE DROPS BELOW 15°C (USER ADJUSTABLE SETPOINT). UNIT HEATER TO SWITCH OFF WHEN SPACE TEMPERATURE RISES ABOVE SETPOINT.
 - SCADA TO MONITOR ELECTRICAL ROOM SPACE TEMPERATURE AND ALARM WHEN SPACE TEMPERATURE DROPS BELOW 10°C OR RISES ABOVE 30°C.



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SCALE: NTS

CLIENT:

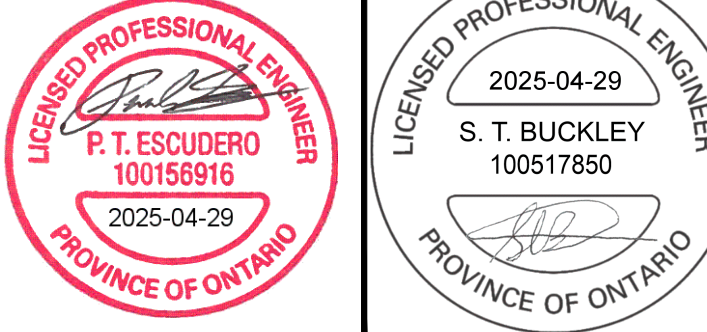


CONSULTANT: www.jlrichards.ca



CONSULTANT:

PROFESSIONAL STAMP



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

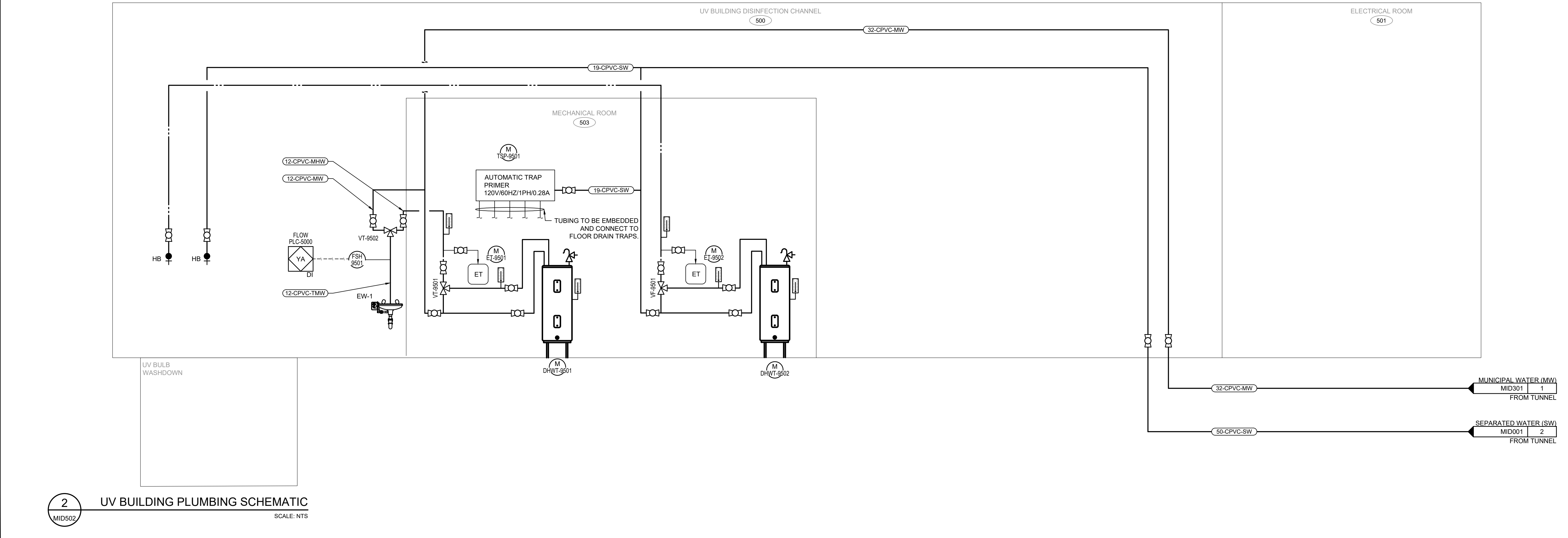
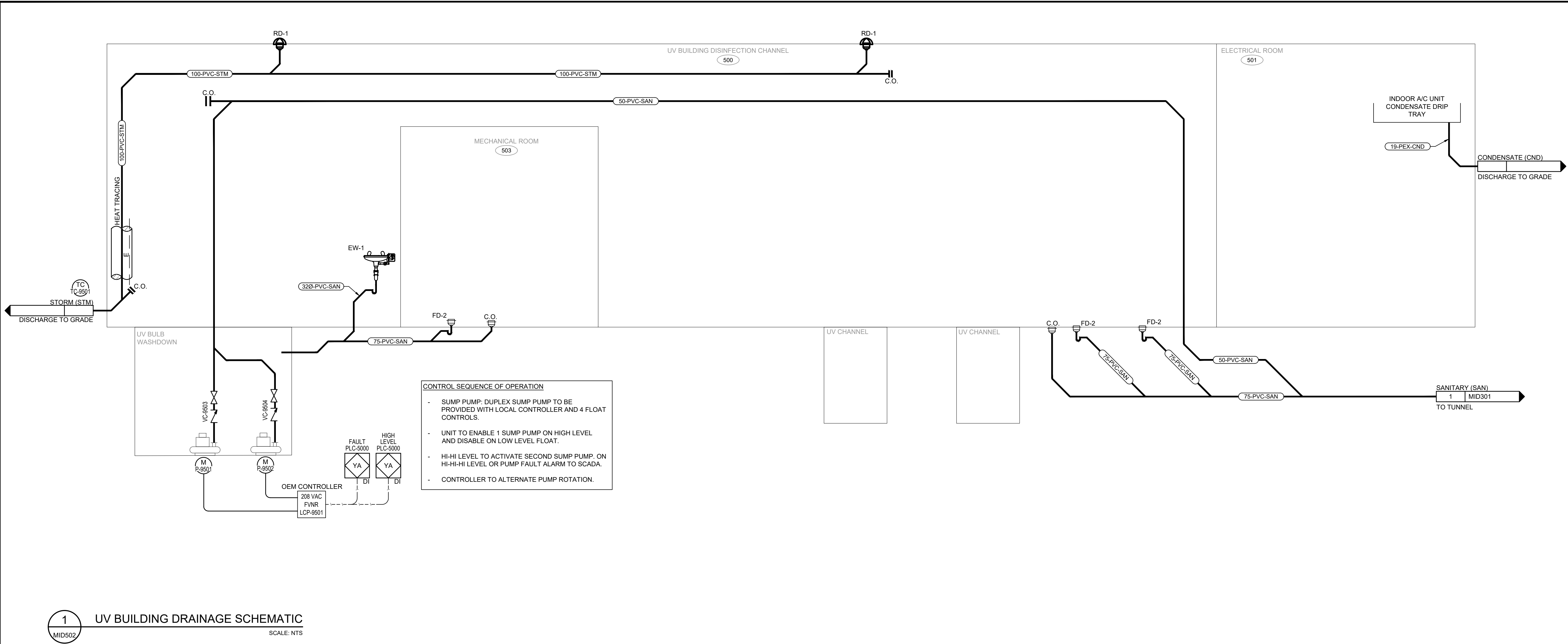
DRAWING:

MECHANICAL
UV BUILDING
HVAC SCHEMATIC

DESIGN:	VD/CI	DRAWING #:
DRAWN:	VD/CI	MID501
CHECKED:	PE	
JLR #:	32296-001	

PLOT DATE: Friday, April 25, 2025 12:42:42 PM

File Location: P:\320000\32296-001 - Brighton WWT System Upgrades\03-Production\05-Mech\MID502 UV Building Plumbing and Drainage Schematics.dwg



HEADWORKS
200 SERIES
UV BUILDING
500 SERIES
PUMP STATION
100 SERIES
ADMINISTRATION
BUILDING
800 SERIES
AERATION
300 SERIES
CLARIFIERS
400 SERIES
PROCESS
BUILDING
600 SERIES
WAS STABILIZATION POND
(NOT SHOWN IN KEY PLAN)
700 SERIES

KEY PLAN
(NOT TO SCALE)

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CLIENT:

CONSULTANT:

CONSULTANT:

PROFESSIONAL STAMP

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

MECHANICAL UV BUILDING PLUMBING AND DRAINAGE SCHEMATICS

DESIGN:	VD/CI	DRAWING #:	MID502
DRAWN:	VD/CI		
CHECKED:	PE		
JLR #:	32296-001		

PLOT DATE: Friday, April 25, 2025 12:47 PM

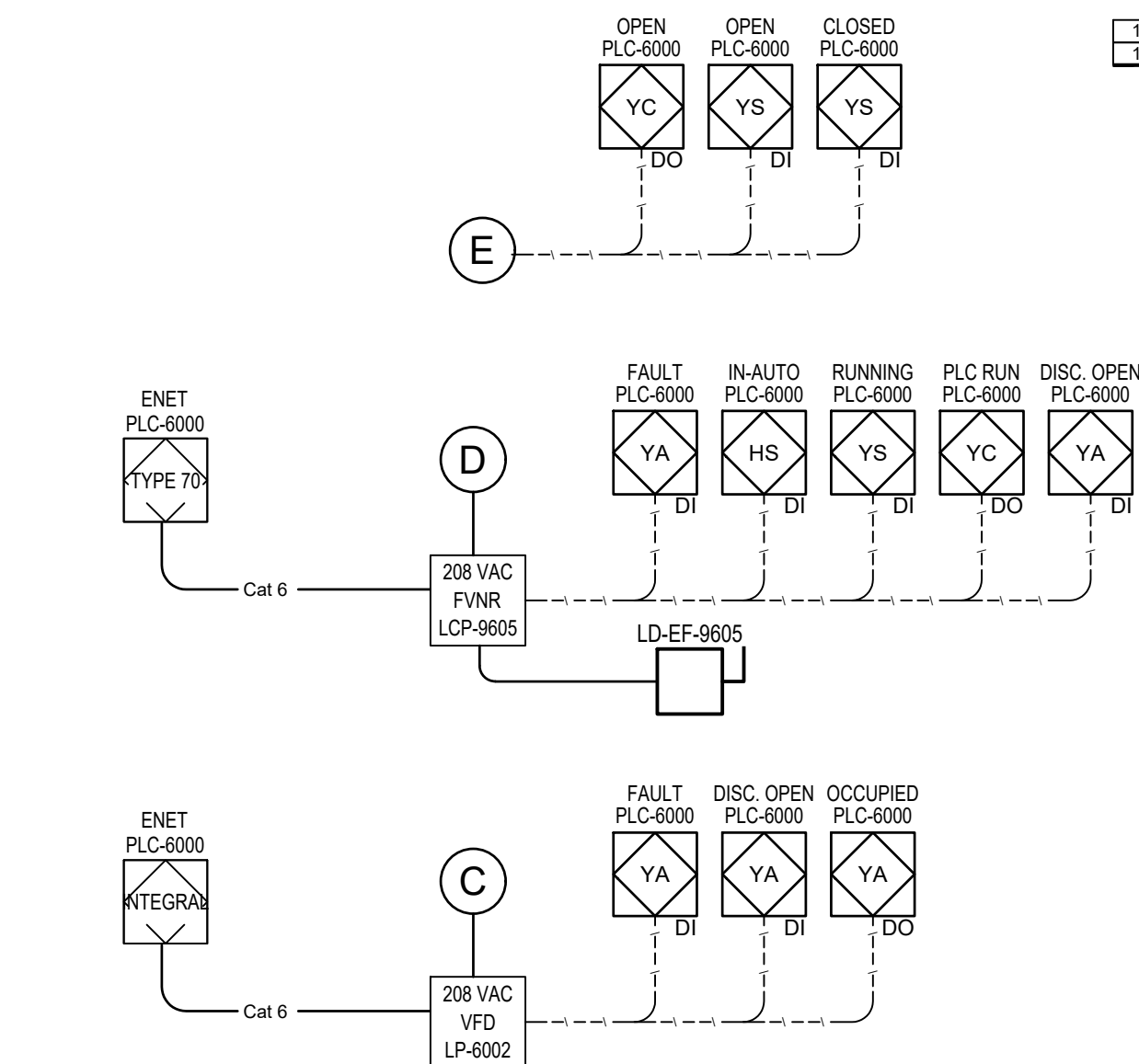
File Location: P:\2020\03\22\95-001 - Brighton WWT System Upgrade\03-Production\05-Mech\MID601 - PROCESS BUILDING HVAC & PLUMBING SCHEMATICS.dwg

CONTROL SEQUENCE OF OPERATIONS

- SCADA TO MONITOR BLOWER ROOM SPACE TEMPERATURE AND MODULATE EXHAUST FANS EF-9601 AND 9602 TO PROVIDE FREE COOLING. EF-9601 AND 9602 VFDs TO MODULATE FAN SPEED TO MAINTAIN SPACE TEMPERATURE BELOW 25°C.
- UPON SPACE TEMPERATURE RISE ABOVE 25°C EF-9601 AND 9602 TO TURN OFF AND CEILING CASSETTE AC-9602, 9603, 9604 AND 9605 TO ACTIVATE. CEILING CASSETTE TO MAINTAIN SPACE TEMPERATURE OF 25°C (USER ADJUSTABLE SETPOINT).
- UPON DROP IN OUTDOOR AIR TEMPERATURE BELOW 18°C, AC CEILING CASSETTES TO TURN OFF (IF ON) AND EF-9601 AND 9602 TO TURN ON AND ATTEMPT TO MAINTAIN SPACE TEMPERATURE BELOW 25°C. IF EXHAUST FANS FAIL TO MAINTAIN TEMPERATURE BELOW 25°C AFTER 1HR AC CEILING CASSETTES TO TURN ON AND MAINTAIN SPACE TEMPERATURE SETPOINT. MINIMUM RUN TIME TO BE 1 HOUR.
- EXHAUST FAN EF-9604 TO PROVIDE VENTILATION TO BLOWER ROOM CONTINUOUSLY.
- BLOWER ROOM ELECTRIC UNIT HEATERS TO SWITCH ON WHEN SPACE TEMPERATURE DROPS BELOW 10°C (USER ADJUSTABLE SETPOINT). UNIT HEATER TO SWITCH OFF WHEN SPACE TEMPERATURE RISES ABOVE SETPOINT THROUGH OEM THERMOSTAT.
- SCADA TO MONITOR BLOWER ROOM SPACE TEMPERATURE AND ALARM UPON FAILURE TO MAINTAIN TEMPERATURE BELOW 35°C AND ABOVE 10°C.

CONTROL SEQUENCE OF OPERATIONS

- MECHANICAL ROOM ELECTRIC UNIT HEATER TO SWITCH ON WHEN SPACE TEMPERATURE DROPS BELOW 15°C (USER ADJUSTABLE SETPOINT). UNIT HEATER TO SWITCH OFF WHEN TEMPERATURE RISES ABOVE SETPOINT THROUGH OEM THERMOSTAT.

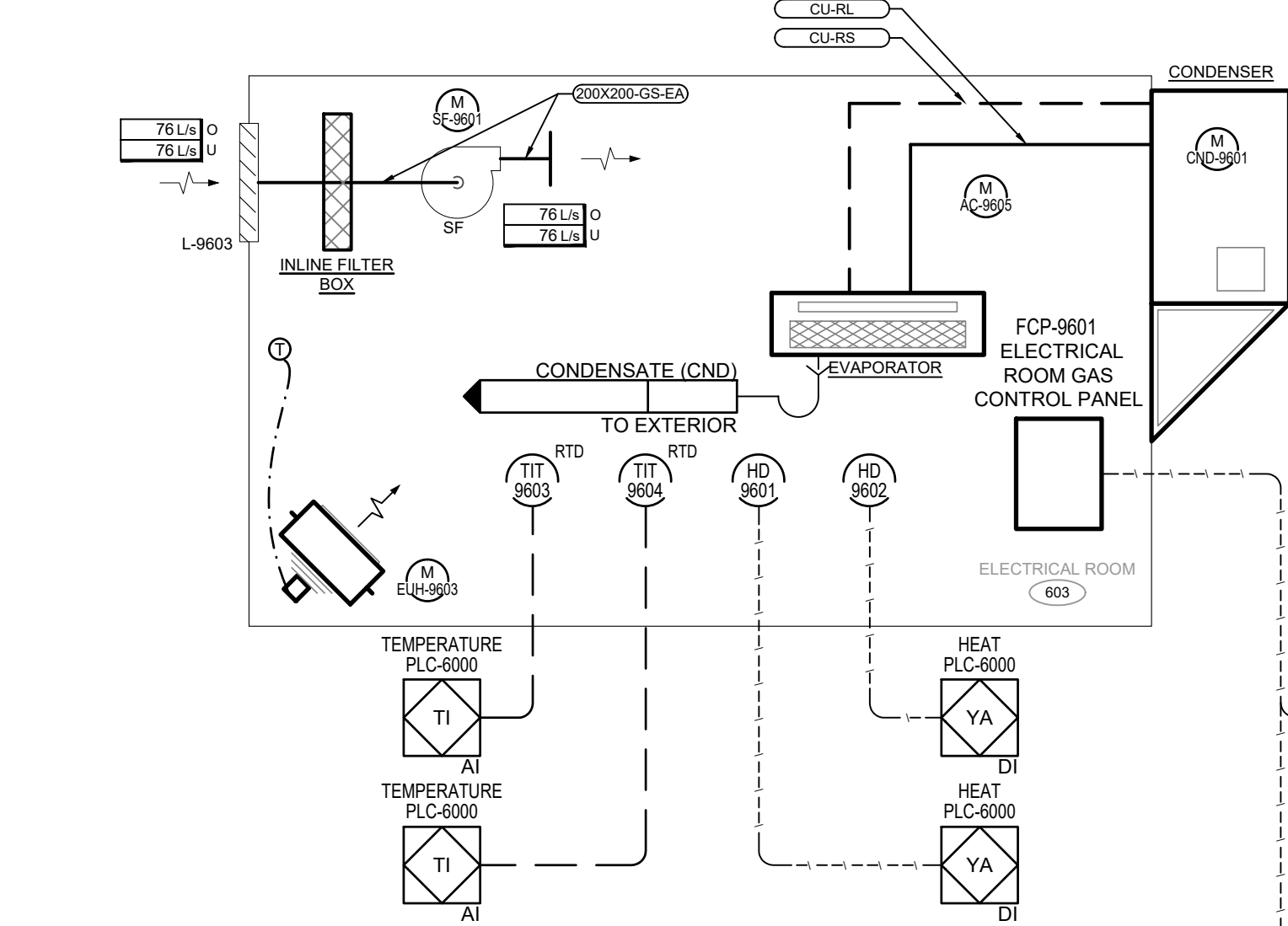


CONTROL SEQUENCE OF OPERATIONS

- STAIRWELL ELECTRIC CABINET UNIT HEATER TO SWITCH ON WHEN SPACE TEMPERATURE DROPS BELOW 15°C (USER ADJUSTABLE SETPOINT). UNIT HEATER TO SWITCH OFF WHEN TEMPERATURE RISES ABOVE SETPOINT.

CONTROL SEQUENCE OF OPERATIONS

- OUTDOOR AIR TO BE SUPPLIED CONTINUOUSLY TO ELECTRICAL ROOM BY SUPPLY FAN SF-9601
- ELECTRICAL ROOM AC TO START WHEN SPACE TEMPERATURE RISES ABOVE 25°C AND STOP WHEN SPACE TEMPERATURE DROPS BELOW 25°C THROUGH OEM THERMOSTAT.
- ELECTRICAL ROOM ELECTRIC UNIT HEATER TO SWITCH ON WHEN SPACE TEMPERATURE DROPS BELOW 15°C (USER ADJUSTABLE SETPOINT). UNIT HEATER TO SWITCH OFF WHEN SPACE TEMPERATURE RISES ABOVE SETPOINT THROUGH OEM THERMOSTAT.
- SCADA TO MONITOR ELECTRICAL ROOM SPACE TEMPERATURE AND ALARM WHEN SPACE TEMPERATURE DROPS BELOW 10°C OR RISES ABOVE 30°C.

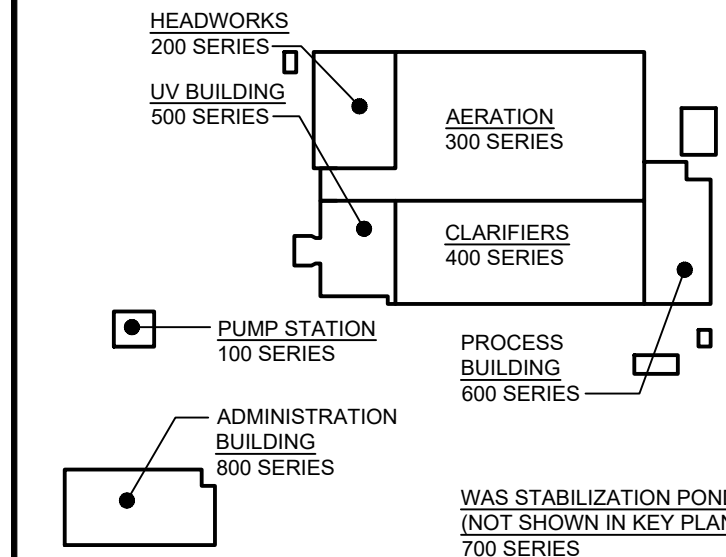


CONTROL SEQUENCE OF OPERATIONS

- MOTORIZED DAMPER MD-9601 TO REMAIN CLOSED DURING NORMAL HRV OPERATIONS.
- HEAT RECOVERY UNIT HRV-9601 TO CONTINUOUSLY PROVIDE VENTILATION AIR AND EXHAUST TO/FROM SLUDGE PUMP ROOM. HRV-9601 TO HAVE TWO OPERATING CONDITIONS OF OCCUPIED AND NON-OCCUPIED MODES. SCADA TO MONITOR OCCUPANCY SWITCH, CH4 SENSOR AND H2S SENSOR.
- DURING UNOCCUPIED CONDITIONS, HRV INTEGRAL VFDs TO RUN AT REDUCED SPEED TO MAINTAIN 783L/s (3ACH) OF EXHAUST AND SUPPLY AIR. SCADA TO MONITOR CH4 SENSOR, H2S SENSOR AND OCCUPANCY SENSOR. IF CH4 OR H2S LOWER LIMITS ARE EXCEEDED, SCADA TO ALARM AND SEND SIGNAL TO HRV OEM CONTROLLER TO ACTIVATE OCCUPIED MODE. SCADA TO ALSO ENABLE OCCUPIED MODE BASED ON OCCUPANCY SWITCH.
- DURING OCCUPIED MODE HRV INTEGRAL VFDs TO INCREASE SPEED TO FULL SPEED MAINTAINING 1585L/s (6ACH) EXHAUST AND SUPPLY AIR. UPON CH4 AND H2S SENSORS READING BELOW LOWER LIMITS HRV TO ACTIVATE UNOCCUPIED MODE.
- OEM CONTROLLER TO MONITOR OA TEMPERATURE. UPON RISE IN OA TEMPERATURE ABOVE 15°C HRV TO ACTIVATE INTEGRAL SEASONAL BYPASS.
- OEM CONTROLLER TO MONITOR INTEGRAL SUPPLY AND RETURN DIFFERENTIAL PRESSURE SENSORS AND SEND ALARM TO SCADA UPON NO FLOW CONDITIONS.
- SCADA TO MONITOR HRV AND ALARM ON FAULT. UPON NO FLOW CONDITIONS OR HRV FAULT MD-9601 TO OPEN. ON PROOF OF DAMPER OPEN SIGNAL, EMERGENCY BACK-UP EXHAUST FAN EF-9605 TO ACTIVATE AND MAINTAIN 1585L/s OF EXHAUST FROM SLUDGE PUMP ROOM. UPON FAULT CLEAR, MD-9601 TO CLOSE AND EMERGENCY FAN EF-9605 TO POWER OFF. HRV NORMAL OPERATION TO RESUME ON PROOF OF DAMPER CLOSE.
- SLUDGE PUMP ROOM ELECTRIC UNIT HEATERS TO SWITCH ON WHEN SPACE TEMPERATURE DROPS BELOW 15°C (USER ADJUSTABLE SETPOINT). UNIT HEATER TO SWITCH OFF WHEN SPACE TEMPERATURE RISES ABOVE SETPOINT THROUGH OEM THERMOSTAT.
- SCADA TO MONITOR SLUDGE PUMP ROOM SPACE TEMPERATURE AND ALARM UPON SPACE TEMPERATURE RISE ABOVE 35°C.

CONTROL SEQUENCE OF OPERATIONS

- OUTDOOR AIR TO BE EXHAUSTED CONTINUOUSLY FROM CHEMICAL ROOM BY EXHAUST FAN SF-9603
- ELECTRICAL ROOM ELECTRIC UNIT HEATER TO SWITCH ON WHEN SPACE TEMPERATURE DROPS BELOW 15°C (USER ADJUSTABLE SETPOINT). UNIT HEATER TO SWITCH OFF WHEN SPACE TEMPERATURE RISES ABOVE SETPOINT THROUGH OEM THERMOSTAT.



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SCALE: NTS

CLIENT:



CONSULTANT:



CONSULTANT:

PROFESSIONAL STAMP



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

MECHANICAL PROCESS BUILDING HVAC SCHEMATIC

DESIGN: VD/CI

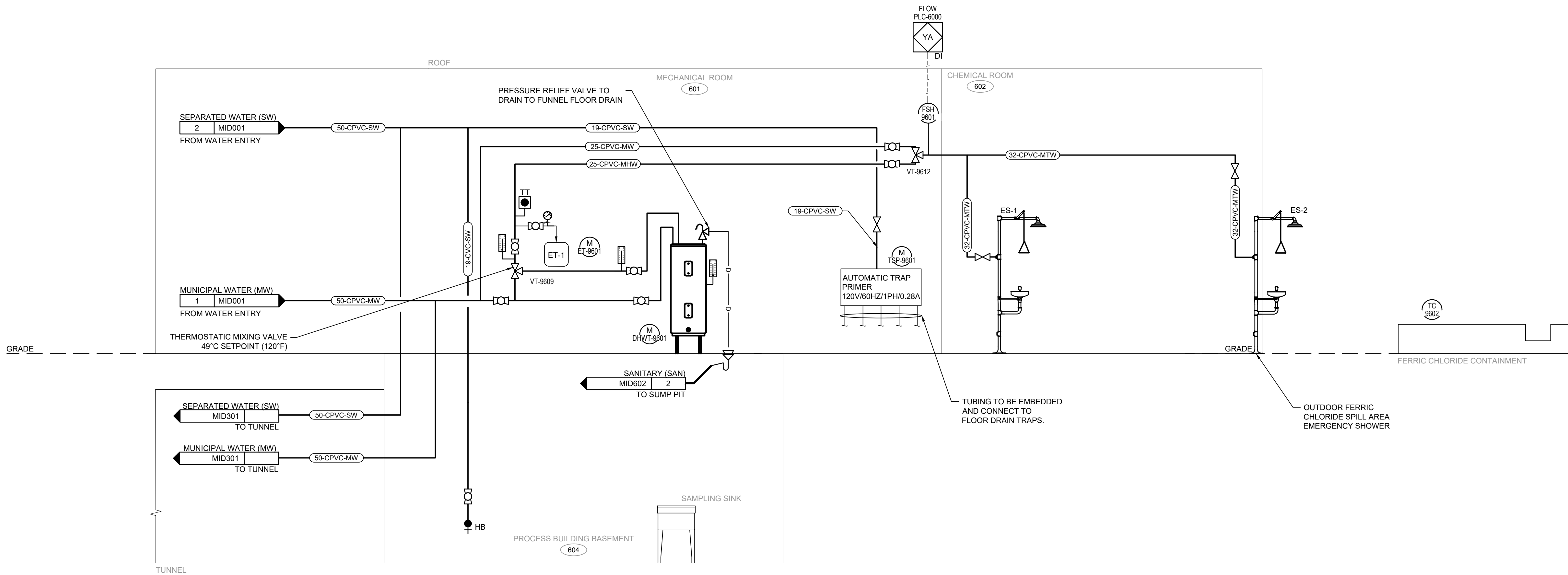
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CHECKED: PE

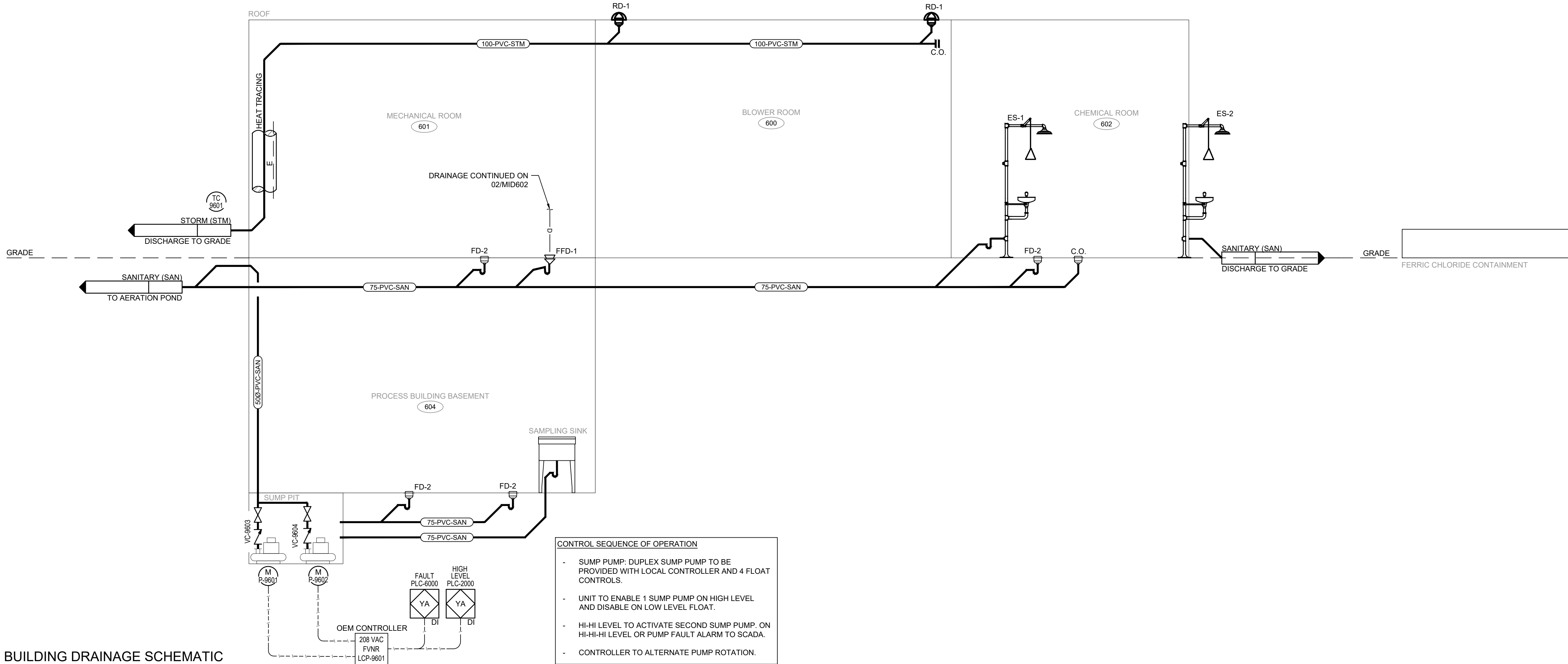
JLR #: 32296-001

DRAWING #: MID601

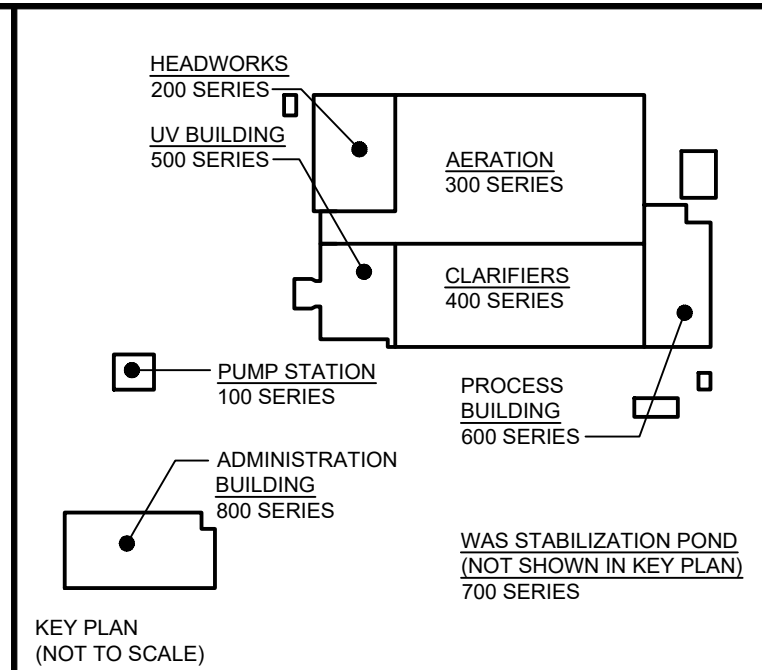
PLOT DATE: Friday, April 25, 2025 9:41:45 PM



1 PROCESS BUILDING PLUMBING SCHEMATIC
SCALE: NTS



2 PROCESS BUILDING DRAINAGE SCHEMATIC
SCALE: NTS



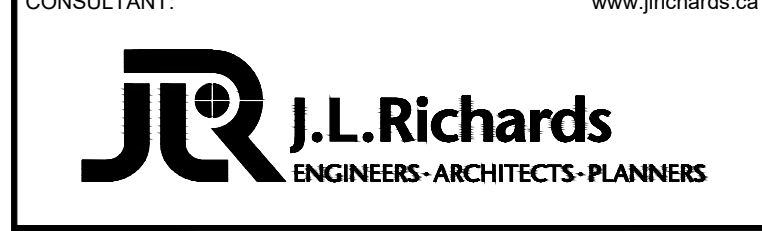
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No.	ISSUE / REVISION	DD/MM/YY

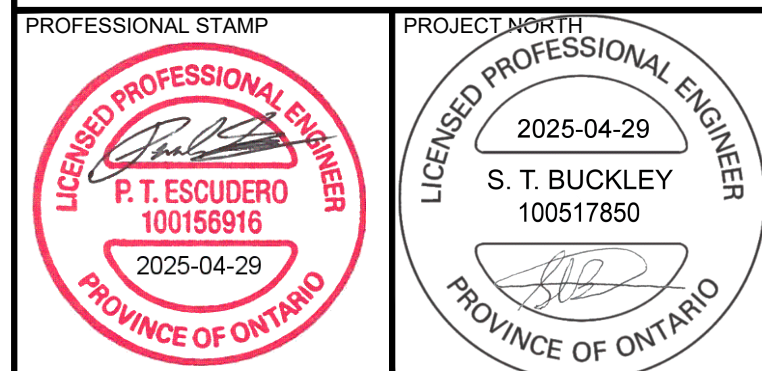
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SCALE: NTS



CONSULTANT:

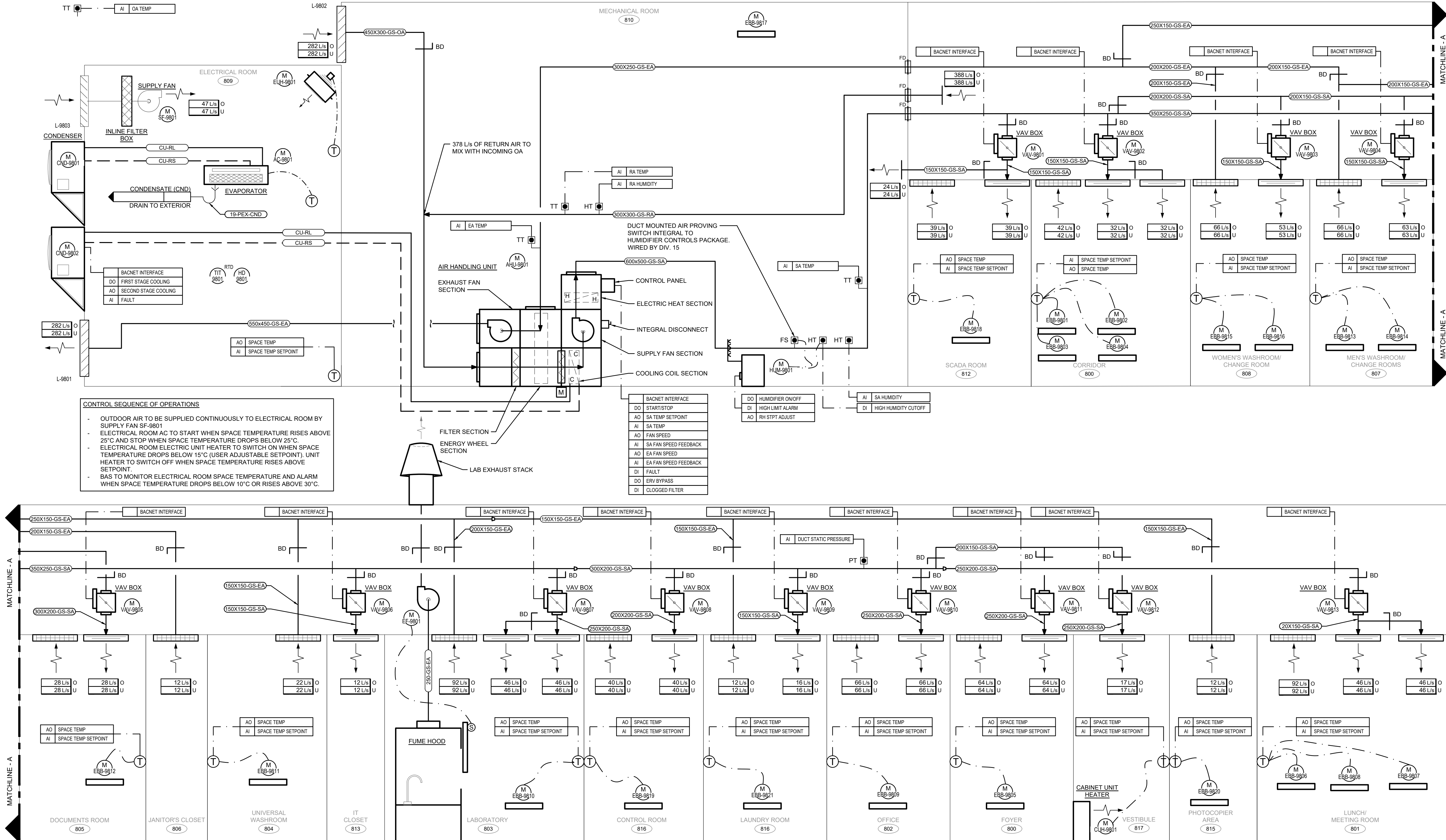


PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
MECHANICAL PROCESS BUILDING PLUMBING AND DRAINAGE SCHEMATICS

DESIGN: VD/CI	DRAWING #:
DRAWN: VD/CI	MID602
CHECKED: PE	
JLR #:	32296-001

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrade\03-Production\03-Mech\MID801 ADMINISTRATION BUILDING HVAC SCHEMATIC.dwg



AHU-9801 CONTROL SEQUENCE OF OPERATIONS

- RUN CONDITIONS:**
- SCHEDULED: THE UNIT SHALL RUN BASED UPON AN OPERATOR ADJUSTABLE SCHEDULE.
 - SUPPLY FAN: THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. BAS TO MEASURE DUCT STATIC PRESSURE SETPOINT. THE SPEED SHALL NOT DROP BELOW 30% (ADJ.). THE STATIC PRESSURE SETPOINT SHALL BE RESET BASED UPON THE POSITION OF THE ZONE DAMPERS, WITH A GOAL OF REDUCING THE STATIC PRESSURE UNTIL AT LEAST ONE ZONE DAMPER IS NEARLY WIDE OPEN. THE INITIAL DUCT STATIC PRESSURE SETPOINT SHALL BE 150 PA (ADJ.). IF NO ZONE DAMPER IS NEARLY WIDE OPEN, THE SETPOINT SHALL INCREMENTALLY RESET DOWN TO A MINIMUM OF 75 PA (ADJ.). AS ONE OR MORE DAMPERS NEARS THE WIDE OPEN POSITION, THE SETPOINT SHALL INCREMENTALLY RESET UP TO A MAXIMUM OF 373 PA (ADJ.).
 - EXHAUST FAN: THE EXHAUST FAN SHALL RUN WHENEVER THE SUPPLY FAN RUNS. THE EXHAUST FAN SHALL MAINTAIN A CONSTANT EXHAUST FLOW RATE.
 - ENERGY WHEEL HEATING AND COOLING RECOVERY MODE: THE CONTROLLER SHALL MEASURE THE HEAT WHEEL DISCHARGE AIR TEMPERATURE SETPOINT AND MODULATE ENERGY WHEEL SPEED TO MAINTAIN A SETPOINT OF 2°C (ADJ.) LESS THAN THE UNIT SUPPLY AIR TEMPERATURE. THE ENERGY WHEEL SHALL RUN FOR COOL RECOVERY WHENEVER THE UNIT RETURN AIR TEMPERATURE IS 3°C (ADJ.) OR MORE BELOW (COOLING MODE) THE OUTSIDE AIR TEMPERATURE OR 3°C (ADJ.) OR MORE ABOVE (HEATING MODE) THE OUTSIDE AIR TEMPERATURE. AND THE ECONOMIZER IS OFF, AND THE SUPPLY FAN IS ON, DURING ECONOMIZER MODE HEAT WHEEL IS TO SHUT OFF.
 - THE ENERGY WHEEL SHALL BE PROGRAMMED BY THE MANUFACTURER WITH

RECOMMENDED PERIODIC SELF-CLEANING AND FROST PROTECTION CYCLES.

- SUPPLY AIR TEMPERATURE SETPOINT - OUTSIDE AIR RESET: THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE SETPOINT RESET BASED ON OUTSIDE AIR TEMPERATURE.
- THE OUTSIDE AIR TEMPERATURE SETPOINT FOR COOLING SHALL RESET AS FOLLOWS:
 - AS OUTSIDE AIR RISES FROM 10°C (ADJ.) TO 28°C (ADJ.) THE SUPPLY AIR TEMPERATURE SHALL RESET DOWNWARDS FROM 18.3°C TO 12.7°C
 - IF THE RETURN AIR TEMPERATURE DROPS BELOW 20°C (ADJ.), THEN THE SUPPLY AIR TEMPERATURE SHALL BE RESET FOR HEATING AS FOLLOWS:
 - AS OUTSIDE AIR TEMPERATURE DROPS FROM 10°C (ADJ.) TO -6°C (ADJ.), THE SUPPLY AIR TEMPERATURE SETPOINT SHALL RESET UPWARDS FROM 22°C TO 28°C.
- COOLING STAGES:
 - THE CONTROLLER SHALL MEASURE SUPPLY AIR TEMPERATURE AND STAGE THE COOLING TO MAINTAIN COOLING SETPOINT. THE SYSTEM SHALL HAVE THREE STAGES AS FOLLOWS:
 1. FREE COOLING: WHEN OUTDOOR AIR CONDITIONS ARE DESIRABLE COMPARED TO RETURN AIR CONDITIONS BASED ON ENTHALPY, ENERGY WHEEL TO SHUT OFF AND SUPPLY FAN VFD TO MODULATE UP TO 60HZ (100%) TO PROVIDE AMBIENT AIR FOR BUILDING COOLING.
 2. 2ND STAGE: STEP-UP COMPRESSOR TO OPERATE AT LOWER OF TWO SPEEDS TO MAINTAIN SUPPLY AIR TEMPERATURE DURING LOWER AIRFLOW CONDITIONS. UPON RISE IN SUPPLY AIR TEMPERATURE ABOVE SETPOINT COMPRESSOR TO MOVE TO STAGE 3.
 3. 3RD STAGE: STEP-UP COMPRESSOR TO OPERATE AT 100% SPEED TO MAINTAIN COOLING SUPPLY AIR TEMPERATURE SETPOINT.
 - COOLING SHALL BE ENABLED WHEN OUTSIDE AIR TEMPERATURE IS GREATER THAN 18°C (ADJ.) AND ECONOMIZER MODE IS COMPLETELY DISABLED AND

HEATING MODE IS COMPLETELY DISABLED.

- HEATING:**
- THE ELECTRIC HEATING COIL SHALL BE ENABLED WHEN OUTSIDE AIR TEMPERATURE DROPS BELOW 15°C AND SUPPLY FAN STATUS IS ON AND COOLING IS OFF.
 - DURING HEATING CONDITIONS SUPPLY FAN AND EXHAUST FAN VFDs TO MODULATE DOWN TO MAINTAIN MINIMUM VENTILATION AIRFLOW OF 282 L/s (100%) TO PROVIDE AMBIENT AIR FOR BUILDING COOLING.
 - THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODULATE THE ELECTRIC HEATING COIL SCR TO MAINTAIN A NEUTRAL SUPPLY AIR TEMPERATURE SETPOINT OF 22°C (ADJ.).
- ALARMS:**
- FILTER DIFFERENTIAL PRESSURE HIGH
 - SUPPLY AIR TEMPERATURE HIGH
 - SUPPLY AIR TEMPERATURE LOW
 - HIGH STATIC SHUTDOWN
 - SUPPLY FAN FAILURE
 - HIGH SUPPLY AIR STATIC PRESSURE
 - LOW SUPPLY AIR STATIC PRESSURE
 - SUPPLY AIR VFD FAULT
 - EXHAUST FAN VFD FAULT
 - HEAT WHEEL ROTATION FAILURE
 - HEAT WHEEL VFD FAULT

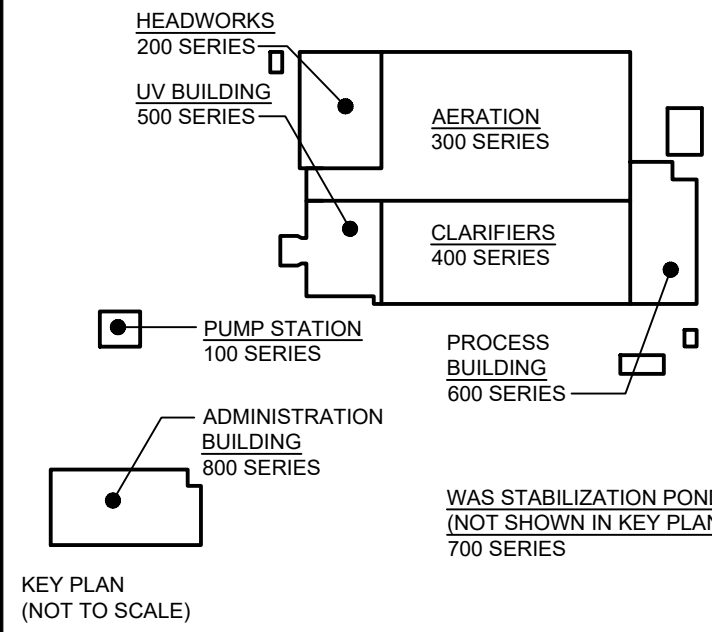
TYPICAL VAV BOX CONTROL SEQUENCE OF OPERATIONS

- BAS TO OPERATE VAV BOXES AND ENABLE HEATING EQUIPMENT TO MAINTAIN SPACE TEMPERATURE SETPOINT AS SENSED BY SPACE TEMPERATURE TRANSMITTER SENSOR/THERMOSTAT.
- VAV BOX TO MODULATE BETWEEN MIN. AND MAX. AIRFLOWS DURING COOLING

- OPERATION.**
- VAV BOX TO OPERATE AT MIN. AIRFLOW DURING HEATING OPERATIONS. BAS TO PREVENT SIMULTANEOUS HEATING AND COOLING.
 - BAS TO MONITOR AND CONTROL THE FOLLOWING THROUGH BACNET INTERFACE:
 1. SA TEMPERATURE
 2. SPACE TEMPERATURE SETPOINT.
 3. DAMPER POSITION
 4. DAMPER COMMAND.
 5. SPACE TEMPERATURE.
 6. AIR VOLUME
 - ALARM ON FAILURE TO MAINTAIN SPACE TEMPERATURE, ALARM ON VAV BOX FAILURE.

FUME HOOD CONTROL SEQUENCE OF OPERATIONS

- EF-9801 EXHAUST FAN TO BE MANUALLY ENABLED THROUGH FACE MOUNTED SWITCH AND RUN CONTINUOUSLY UNTIL DISABLED.



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ISSUE / REVISION DDMMYY

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SCALE: NA

CLIENT:

BRIGHTON
MUNICIPALITY
CONSULTANT: www.jrichards.ca

J.L. Richards
ENGINEERS-ARCHITECTS-PLANNERS

CONSULTANT:

PROFESSIONAL STAMP
P. T. ESCUDERO
100156916
2025-04-29
PROVINCE OF ONTARIO

PROJECT NORTH
S. T. BUCKLEY
100517850
2025-04-29
PROVINCE OF ONTARIO

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

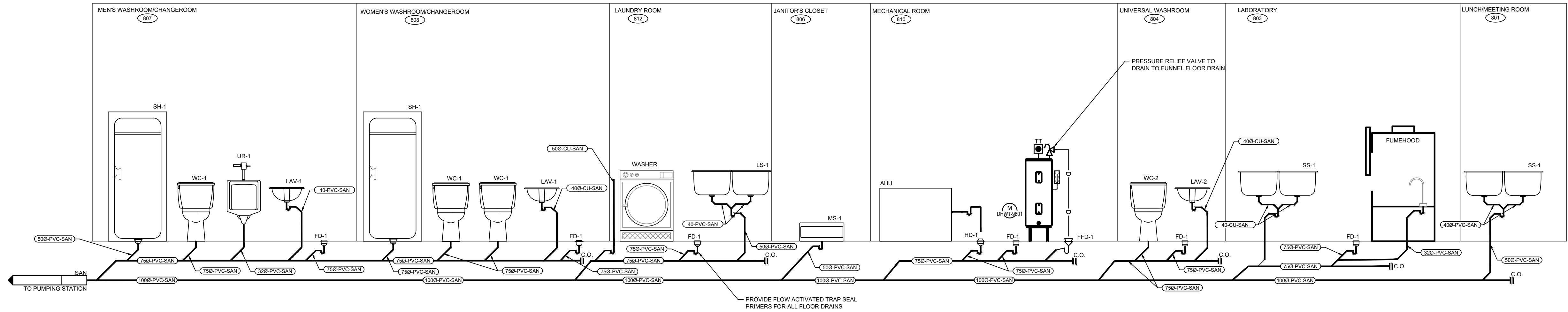
100 COUNTY ROAD 64, BRIGHTON ONTARIO

MECHANICAL ADMINISTRATION BUILDING HVAC SCHEMATIC

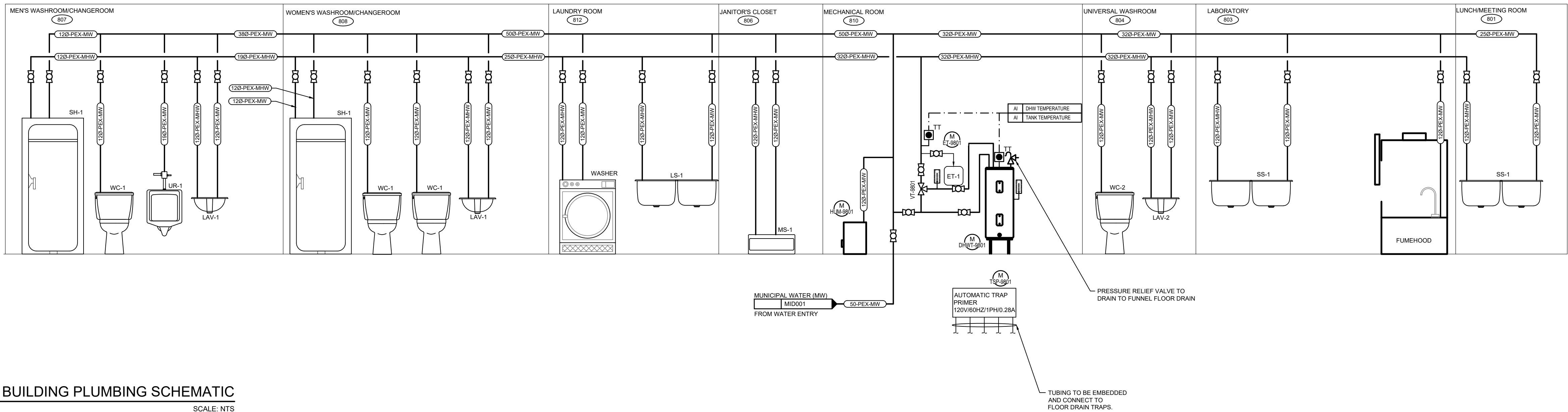
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DRAWN: VD/CI
CHECKED: TP
JLR #: 32296-001

DRAWING #:
MID801

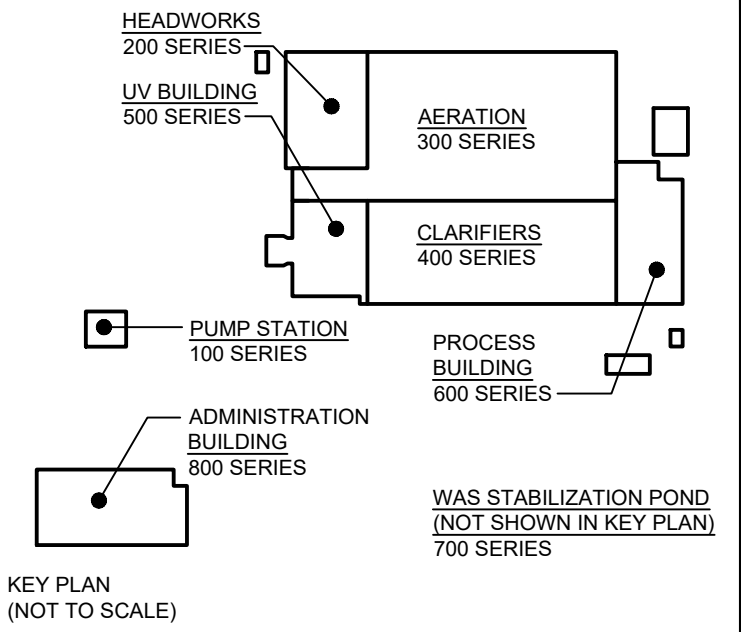
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1 ADMIN BUILDING DRAINAGE SCHEMATIC
SCALE: NTS



2 ADMIN BUILDING PLUMBING SCHEMATIC
SCALE: NTS



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CONSULTANT:

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

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100156916
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S. T. BUCKLEY
100517850
2025-04-29
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PROJECT:

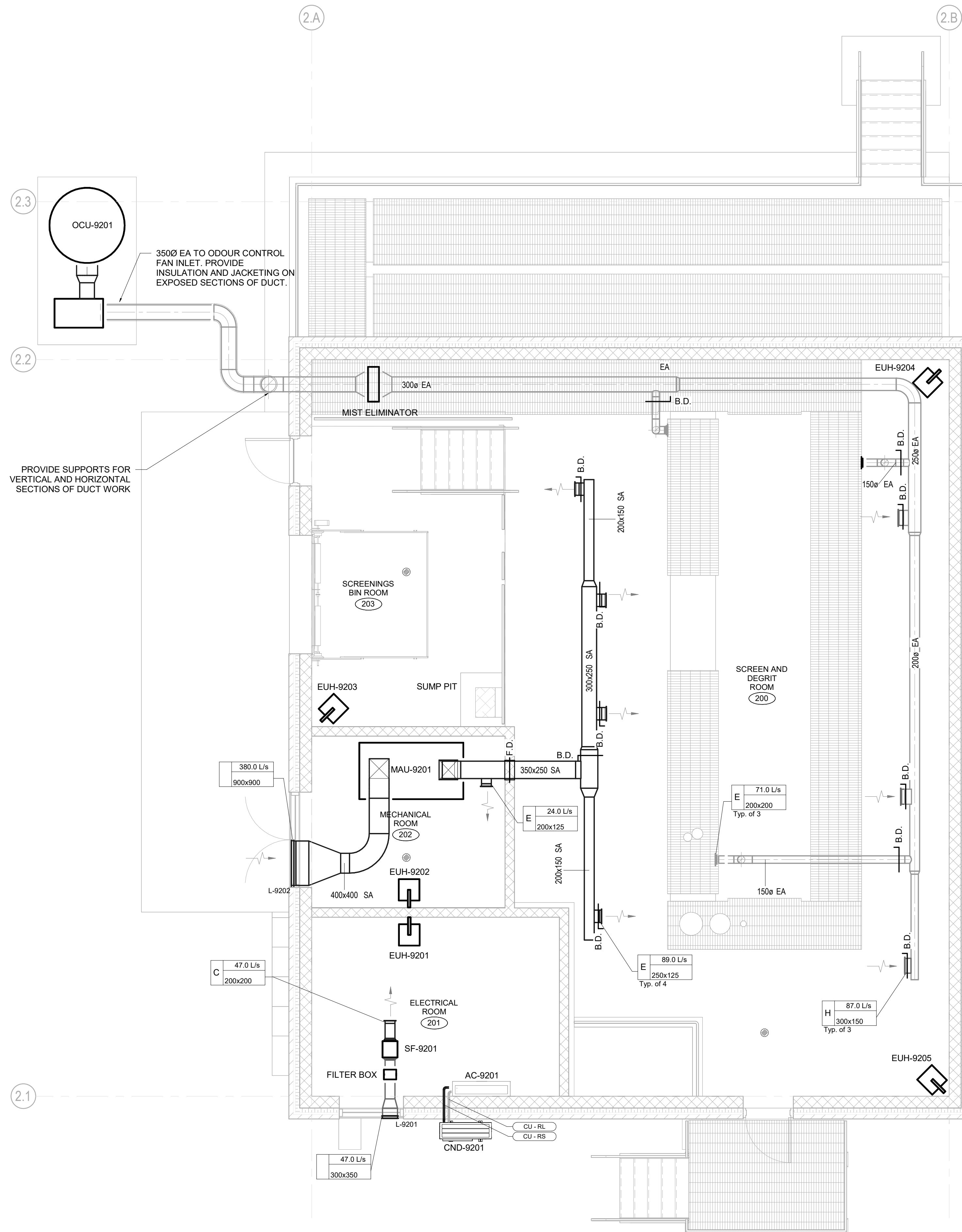
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

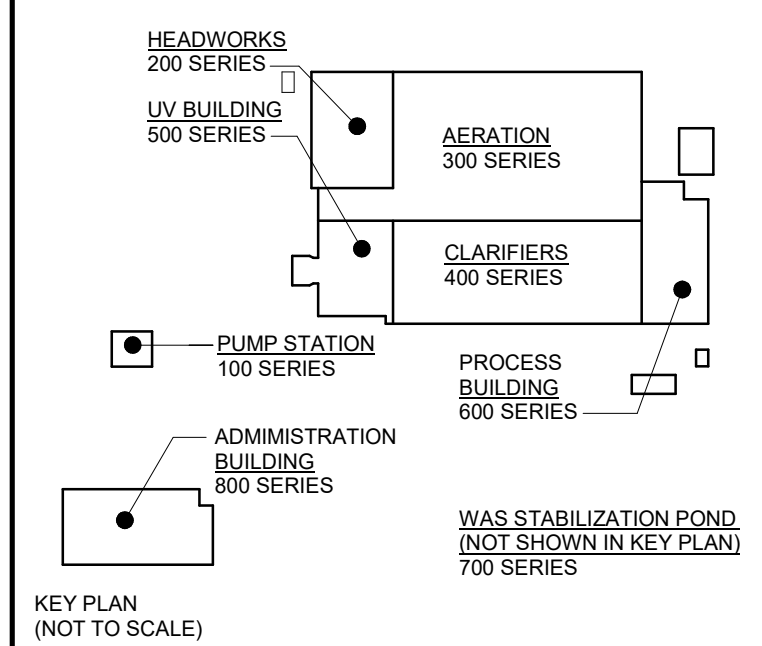
DRAWING:

MECHANICAL ADMINISTRATION BUILDING PLUMBING SCHEMATICS

DESIGN:	VD/CI	DRAWING #:	MID802
DRAWN:	VD/CI		
CHECKED:	PE		
JLR #:	32296-001		



1 HEADWORKS HVAC GROUND FLOOR PLAN
M201
SCALE: 1:50



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SCALE: 1:50

CLIENT:

CONSULTANT:

ENGINEERS · ARCHITECTS · PLANNERS

PROFESSIONAL STAMP

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

MECHANICAL HEADWORKS

HVAC PLAN

DESIGN:	PE/CI	DRAWING #: M201
DRAWN:	CI	
CHECKED:	TP	
JLR #:	32296-001	

File Location: C:\Users\jale\Documents\32296-001 M-Headworks R23_jale@jrichards.ca.rvt
PLOT DATE: 2025-04-25 1:15:02 PM

500 PVC DRAIN C/W INSULATION, JACKETING AND HEAT TRACE TO HAVE TRAP SEAL AT DEPTH OF 300mm BELOW GRADE. PROVIDE CLEANOUT FITTINGS ON BOTH SIDES OF P-TRAP. REFER TO CIVIL DRAWINGS FOR CONNECTION TO MANHOLE

250 PVC DRAIN C/W INSULATION, JACKETING AND HEAT TRACE FROM BLOWER TO HAVE TRAP SEAL AT DEPTH OF 200mm BELOW GRADE. PROVIDE CLEANOUT PLUGS ON BOTH SIDES OF P-TRAP. REFER TO CIVIL DRAWINGS FOR CONNECTION TO MANHOLE

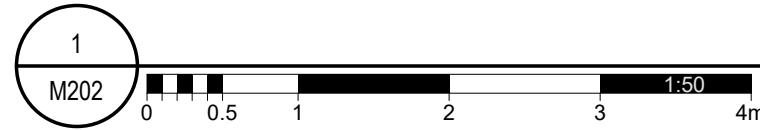
1000 RWL DOWN AND THROUGH WALL TO DRAIN TO GRADE. NOZZLE TO BE APPROXIMATELY 400mm ABOVE GRADE.

AC-9201 CONDENSATE DRAIN TO EXTERIOR

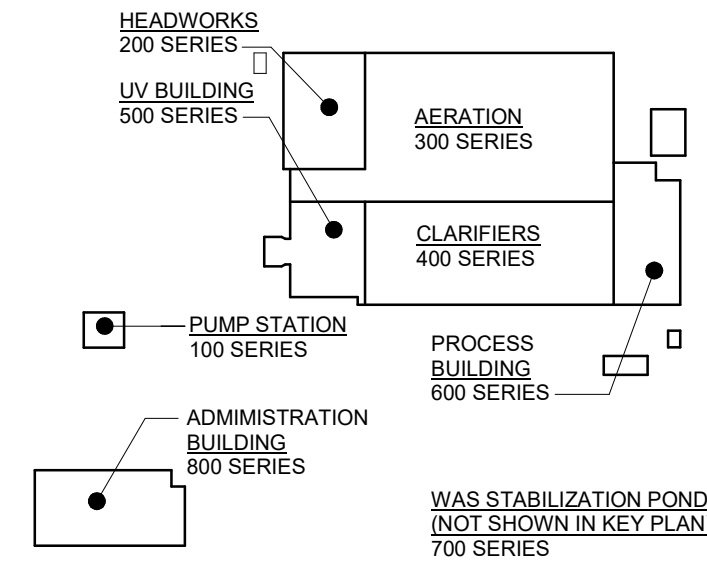
DRAIN FLOOR DRAINS INTO CHANNEL

RUN SW UP HIGH

HEADWORKS PLUMBING GROUND FLOOR PLAN



SCALE : 1 : 50



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SCALE: 1 : 50

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

MECHANICAL HEADWORKS

PLUMBING PLAN

DESIGN: PE/CI

DRAWN: CI

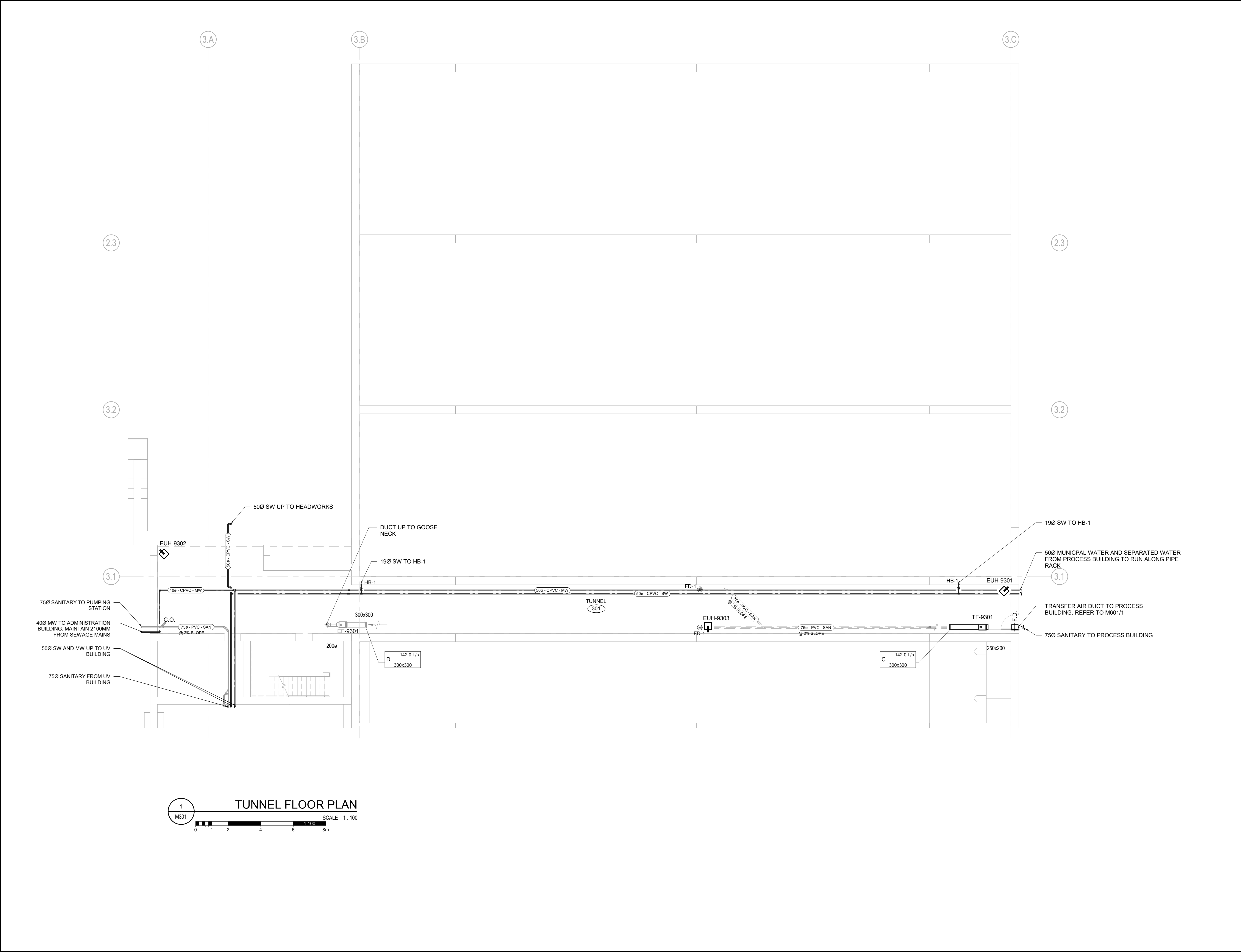
CHECKED: TP

JLR #: 32296-001

DRAWING #:

M202

File Location: C:\Users\jale\Documents\32296-001 M-Headworks R23_jale@jrichards.ca.rvt PLOT DATE: 2025-04-25 1:15:03 PM



HEADWORKS
200 SERIES

UV BUILDING
500 SERIES

PUMP STATION
100 SERIES

ADMINISTRATION
BUILDING
800 SERIES

AERATION
300 SERIES

CLARIFIERS
400 SERIES

PROCESS
BUILDING
600 SERIES

WAS STABILIZATION POND
(NOT SHOWN IN KEY PLAN)
700 SERIES

KEY PLAN
(NOT TO SCALE)

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SCALE: 1 : 100

CLIENT:

CONSULTANT:

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CONSULTANT:

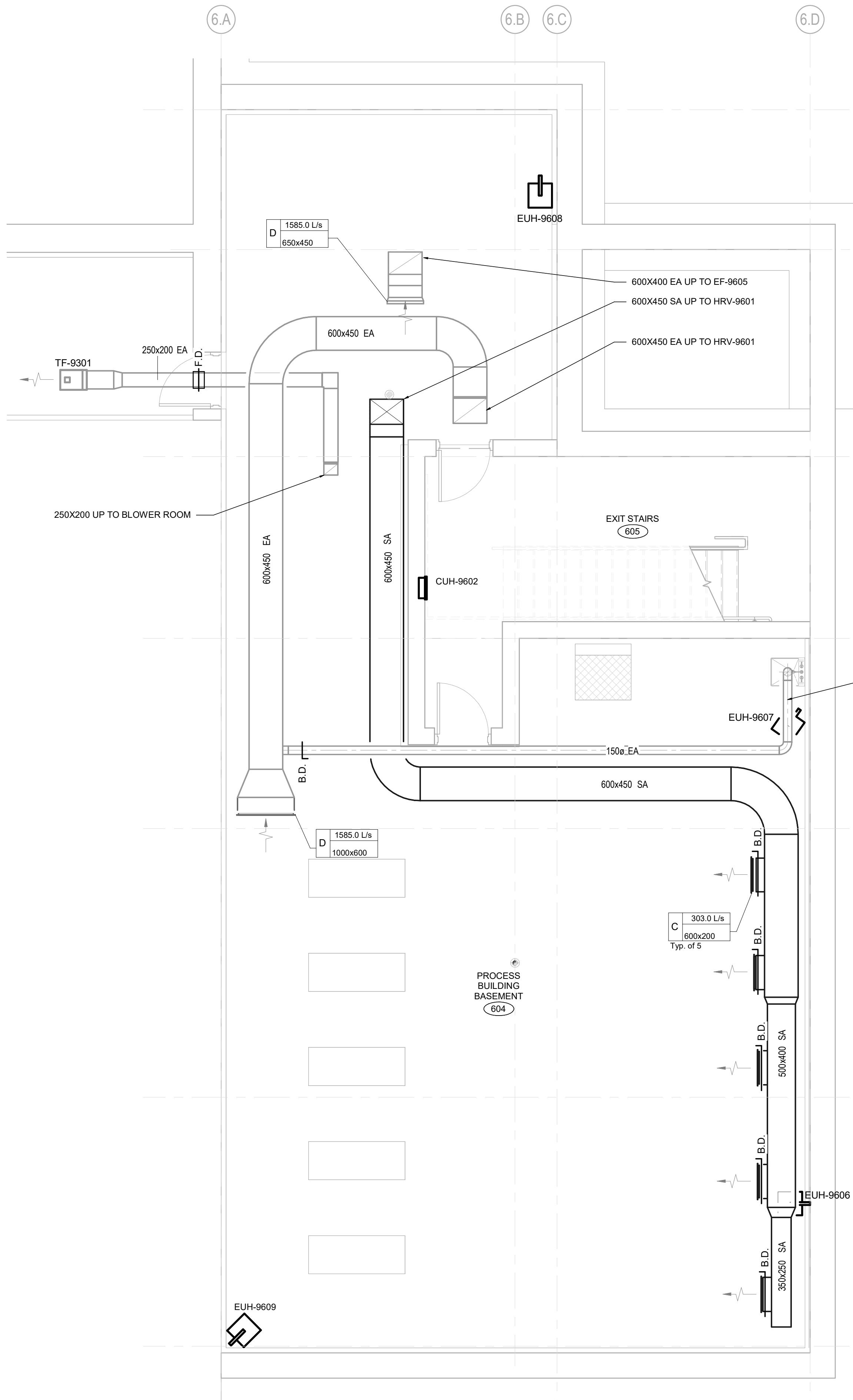
PROFESSIONAL STAMP

PROJECT NORTH

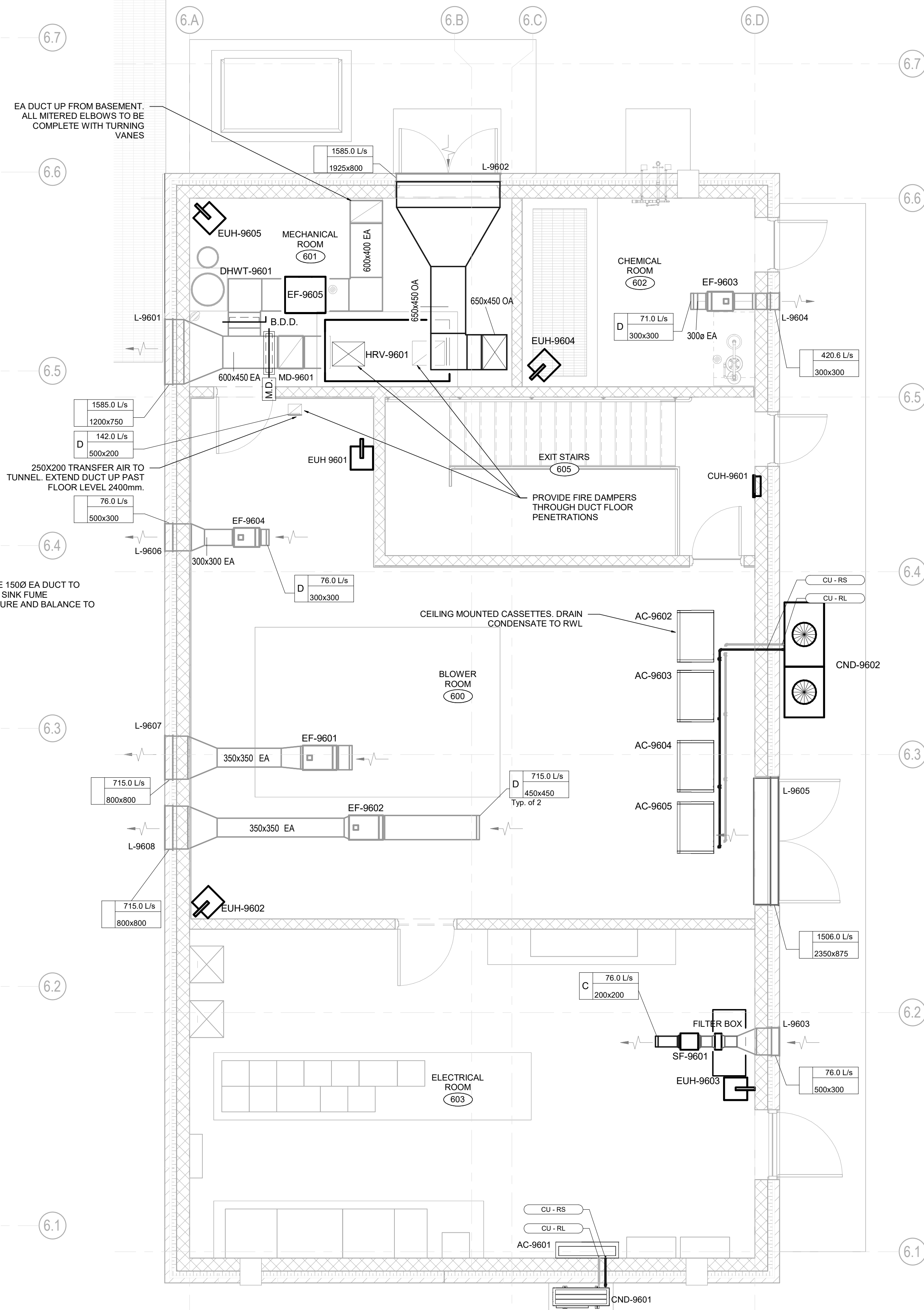
PROJECT:
**BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES**
100 COUNTY ROAD, BRIGHTON, ONTARIO

DRAWING:
**MECHANICAL
AERATION**
TUNNEL FLOOR PLAN

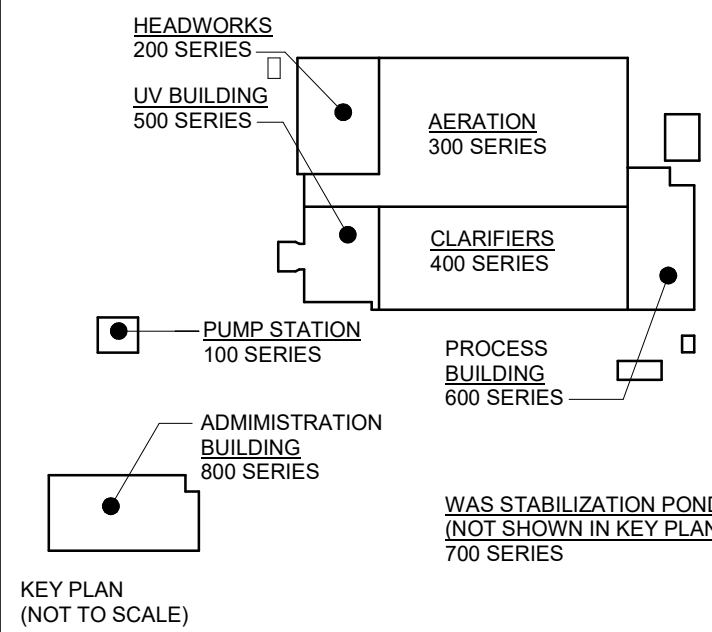
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DRAWN:	CI	
CHECKED:	TP	
JLR #:	32296-001	



2
M601
PROCESS BUILDING BASEMENT PLAN
SCALE: 1:50



1
M601
PROCESS BUILDING GROUND FLOOR HVAC PLAN
SCALE: 1:50



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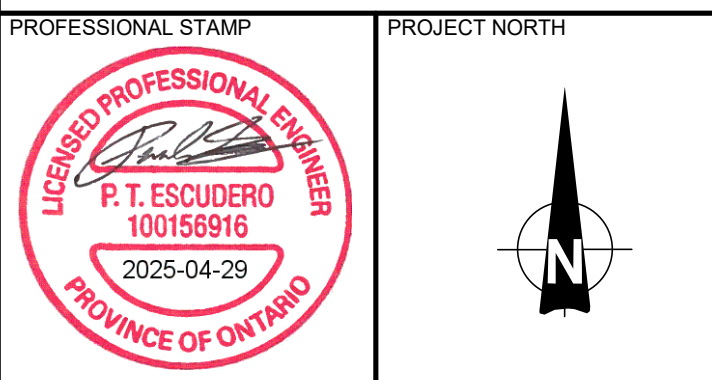
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SCALE: 1:50



CONSULTANT:

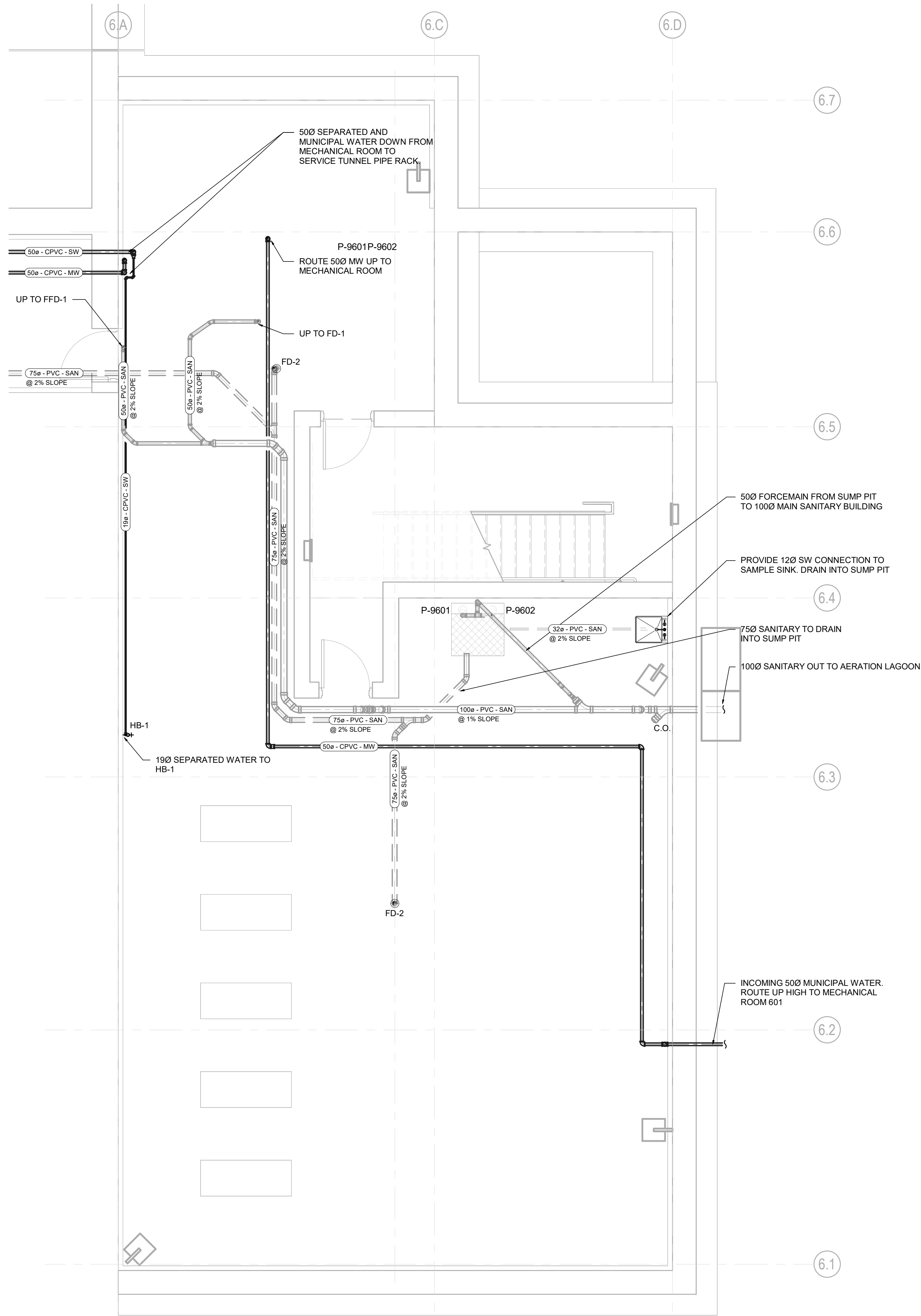


PROJECT: BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTRY ROAD 64, BRIGHTON, ONTARIO

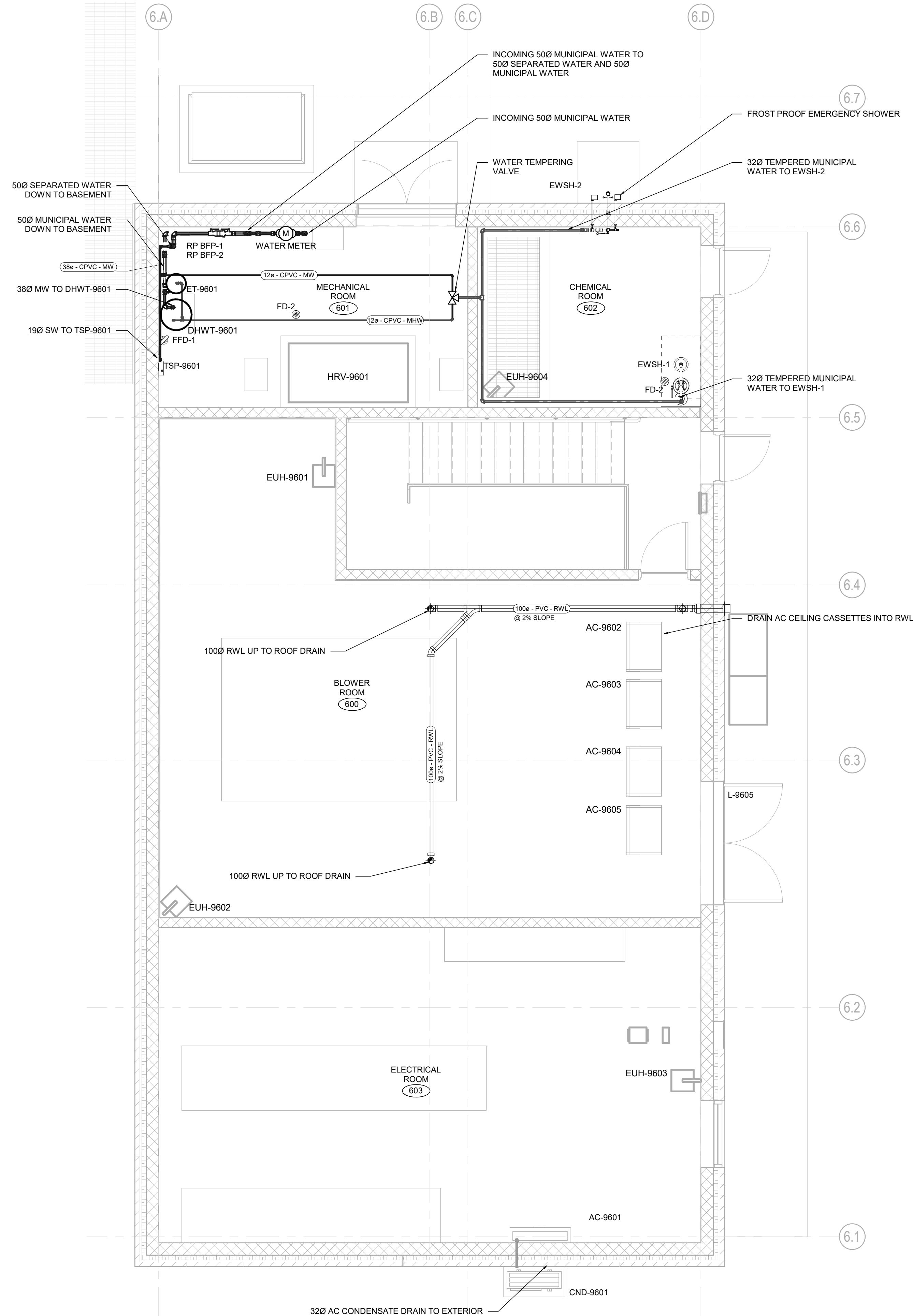
DRAWING: MECHANICAL PROCESS BUILDING
HVAC PLAN

DESIGN: PE/CI	DRAWING #:
DRAWN: CI	M601
CHECKED: TP	
JLR #:	32296-001

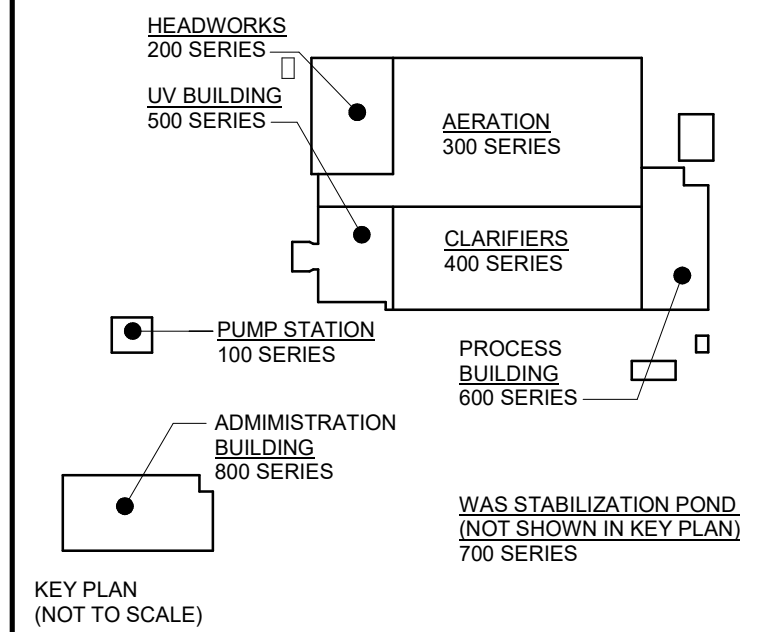
File Location: C:\Users\jale\Documents\32296-001 M-Process Building R23_jale@richards.ca.rvt
PLOT DATE: 2025-04-25 1:23:48 PM



1 BASEMENT PLUMBING PLAN
M602
SCALE: 1:50



2 GROUND FLOOR PLUMBING PLAN
M602
SCALE: 1:50



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

0	ISSUED FOR TENDER	25/04/25
No.	ISSUE / REVISION	DDMMYY

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm
SCALE: 1:50

CLIENT:

BRIGHTON
MUNICIPALITY

CONSULTANT:

J.L. Richards
ENGINEERS · ARCHITECTS · PLANNERS
www.jrichards.ca

PROFESSIONAL STAMP

P. T. ESCUDERO
100158916
2025-04-29
PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT:

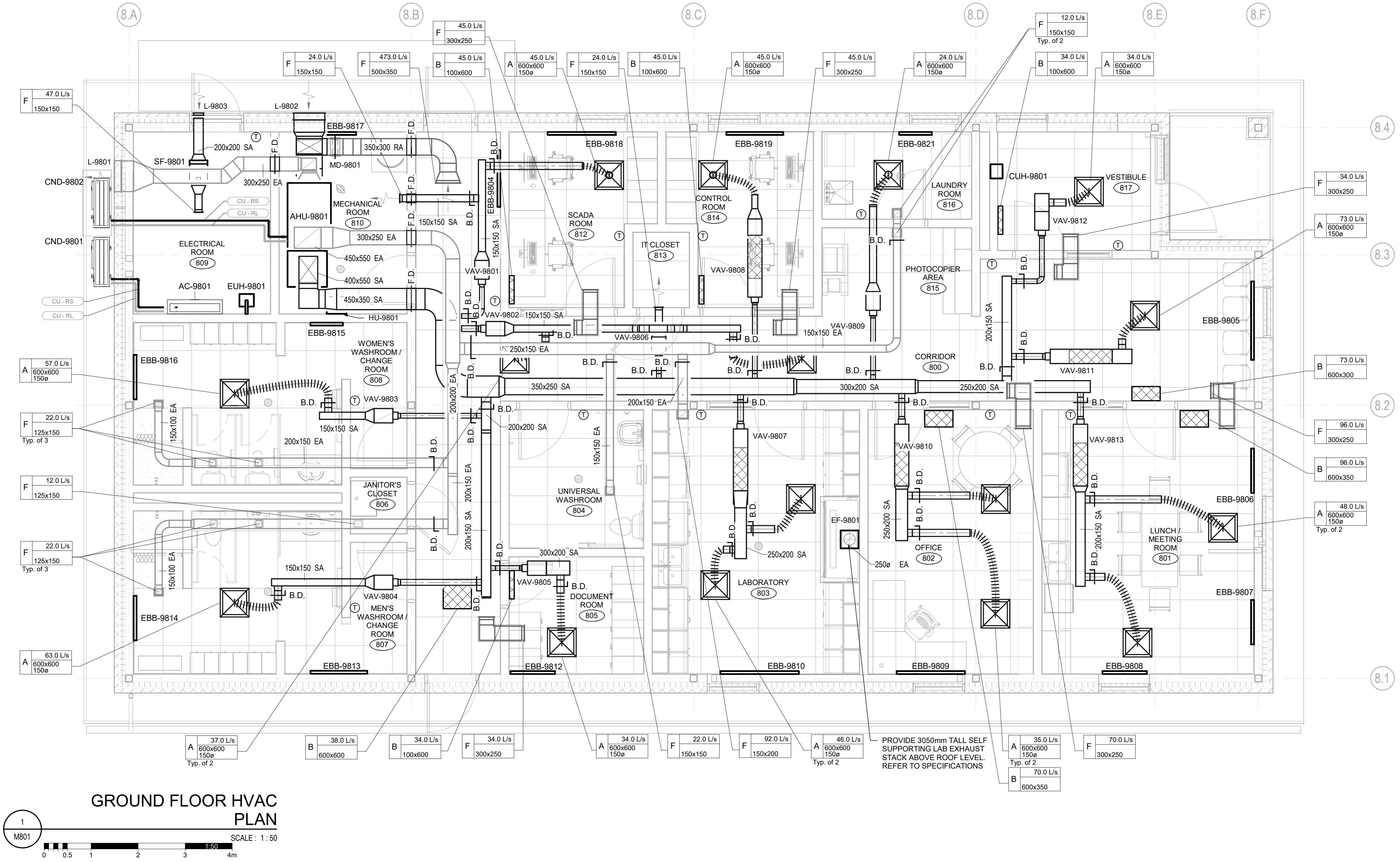
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTRY ROAD 64, BRIGHTON, ONTARIO

DRAWING:

MECHANICAL PROCESS BUILDING PLUMBING PLAN

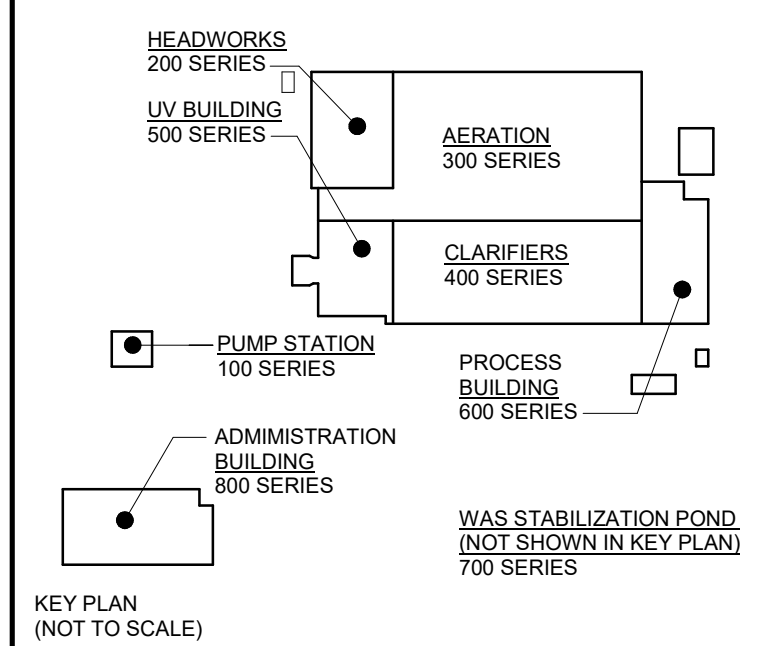
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DRAWN:	CI		
CHECKED:	TP		
JLR #:	32296-001		

File Location: C:\Users\jleah\Documents\32296-001 M-Process Building R23_jleah\jrichards.ca\vt
PLOT DATE: 2025-04-25 1:23:49 PM



GROUND FLOOR HVAC PLAN

1
M801
SCALE: 1:50
0 0.5 1 2 3 4m



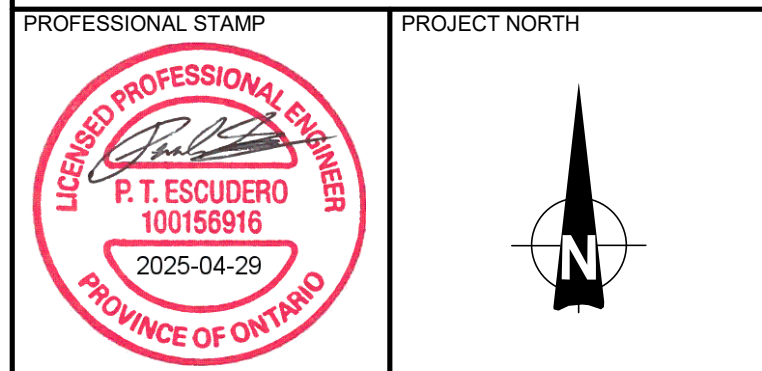
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No.	ISSUE / REVISION	DDMMYY
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SCALE: 1:50

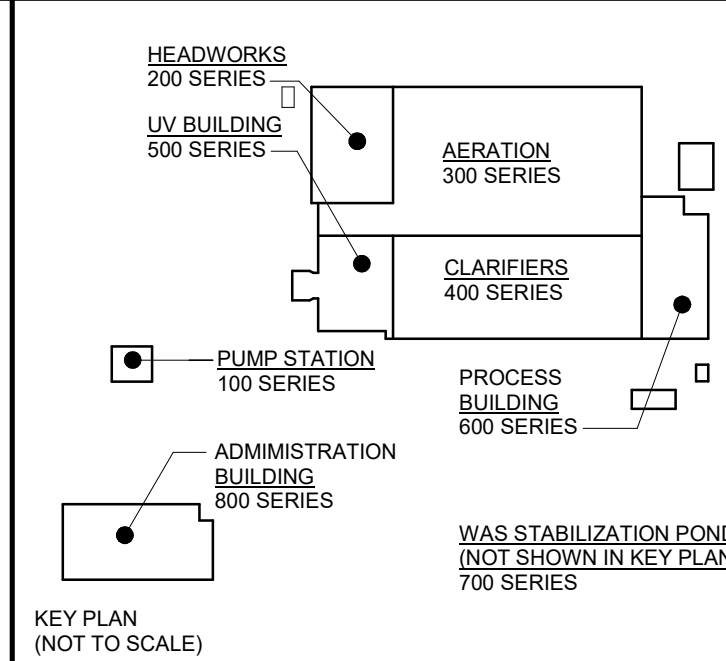
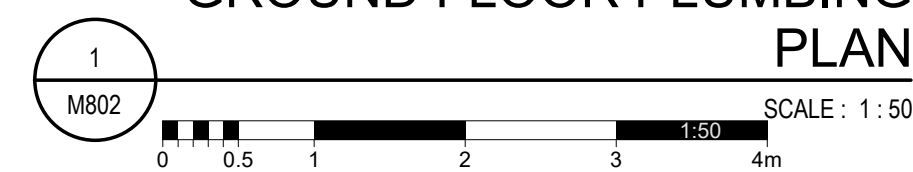


PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON, ONTARIO

DRAWING:
MECHANICAL ADMINISTRATION BUILDING
GROUND FLOOR PLAN

DESIGN: PE/CI	DRAWING #:
DRAWN: VD/CI	M801
CHECKED: TP	
JLR #: 32296-001	

File Location: C:\Users\jale\Documents\32296-001 M-Admin R23_jale@jrichards.ca.vrt
PLOT DATE: 2025-04-25 1:26:10 PM



DESIGN DOCUMENTS HEREIN HAVE
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BUILDING CODE 2012.

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No.	ISSUE / REVISION	DD/MM/YYYY

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.

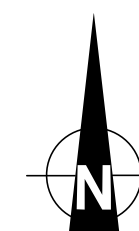
0 25

SCALE: 1 : 50

CLIENT:

CONSULTANT: www.jlrichards.com

CONSULTANT: _____



PROJECT:	
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BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON, ONTARIO

MECHANICAL
ADMINISTRATION BUILDING
PLUMBING PLAN

DESIGN: PE/CI	DRAWING #: M802
DRAWN: VD/CI	
CHECKED: TP	
JLR #: 32296-001	

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrades\03-Production\06-Elect\2296-001 - MSLC.dwg

MOTOR STARTER AND CONTROL LIST																													
GENERAL					MOTOR									CONTROL DETAILS & RESPONSIBILITIES															
														STARTER				AT MOTOR				AUTOMATION				COMMENTS			
DEVICE TAG	PROJECT PHASE	DESCRIPTION	GENERATOR SEQUENCE	DEVICE LOCATION	POWER SOURCE	VOLTAGE	PHASE	LOAD	SUPPLIED BY	INSTALLED BY	WIRED BY	COMMISSIONED BY	TYPE	DETAIL REFERENCE	SUPPLIED BY	INSTALLED BY	WIRED BY	COMMISSIONED BY	SUPPLIED BY	INSTALLED BY	WIRED BY	COMMISSIONED BY	SUPPLIED BY	INSTALLED BY	CONTROL WIRED BY	COMMISSIONED BY	STARTER NOTES		
AC 9201		INDOOR AC UNIT	0	201	LP 2002	208	1	0 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		T-STAT POWERED BY CONDENSING UNIT	
AC 9501		INDOOR AC UNIT	0	501	LP 5002	208	1	0 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		T-STAT POWERED BY CONDENSING UNIT	
AC 9601		INDOOR AC UNIT	0	603	LP 6002	208	1	0 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		T-STAT POWERED BY CONDENSING UNIT	
AC 9602		CEILING CASSETTE AC UNIT	0	600	LP 6002	208	1	0.13 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		T-STAT/PLC ENABLED, DIV 16 TO PROVIDE MOTOR RATED SWITCH	
AC 9603		CEILING CASSETTE AC UNIT	0	600	LP 6002	208	1	0.13 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		T-STAT/PLC ENABLED, DIV 16 TO PROVIDE MOTOR RATED SWITCH	
AC 9604		CEILING CASSETTE AC UNIT	0	600	LP 6002	208	1	0.13 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		T-STAT/PLC ENABLED, DIV 16 TO PROVIDE MOTOR RATED SWITCH	
AC 9605		CEILING CASSETTE AC UNIT	0	600	LP 6002	208	1	0.13 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		T-STAT/PLC ENABLED, DIV 16 TO PROVIDE MOTOR RATED SWITCH	
AC 9801		INDOOR AC UNIT	0	809	LP 8002	208	1	0 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		T-STAT POWERED BY CONDENSING UNIT	
AHU 9801		ADMINISTRATION AIR HANDLING UNIT	0	810	DP 8001	600	3	20 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		BAS CONTROLLED, PROVIDE INTEGRAL DISCONNECT C/W ALL REQUIRED CONTROL WIRING	
BL 3301		ROTARY AERATION BLOWER NO. 1	0	600	MCC 6000A	600	3	250 HP	PS	M	E	G	TYPE 70	2/E020	M	M	E	G	E	E	E	G	E	E	E	G		SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT	
BL 3302		ROTARY AERATION BLOWER NO. 2	0	600	MCC 6000B	600	3	250 HP	PS	M	E	G	TYPE 70	2/E020	M	M	E	G	E	E	E	G	E	E	E	G		SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT	
BL 3303		ROTARY AERATION BLOWER NO. 3 (FUTURE)	0	600	MCC 6000B	600	3	250 HP	F	F	F	F	TYPE 70	2/E020	F	F	F	F	F	F	F	F	F	F	F	F		SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT	
CC 3201		CLARIFIER TANK NO. 1 CROSS COLLECTOR	0	TNK-401	MCC 6000A	600	3	0.5 HP	PS	M	E	G	TYPE 12		M	M	E	G	E	E	E	G	E	E	E	G		SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT	
CC 3202		CLARIFIER TANK NO. 2 CROSS COLLECTOR	0	TNK-402	MCC 6000A	600	3	0.5 HP	PS	M	E	G	TYPE 12		M	M	E	G	E	E	E	G	E	E	E	G		SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT	
CC 3203		CLARIFIER TANK NO. 3 CROSS COLLECTOR	0	TNK-403	MCC 6000A	600	3	0.5 HP	PS	M	E	G	TYPE 12		M	M	E	G	E	E	E	G	E	E	E	G		SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT	
CC 3204		CLARIFIER TANK NO. 4 CROSS COLLECTOR (FUTURE)	0	TNK-404	MCC 6000A	600	3	0.5 HP	F	F	F	F	TYPE 12		F	F	F	F	F	F	F	F	F	F	F	F		SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT	
CND 9201		HEADWORKS OUTDOOR CONDENSING UNIT	0	EXT	LP 2002	208	1	1.82 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		T-STAT, DISCONNECT PROVIDED BY DIV 16	
CND 9501		UV BUILDING OUTDOOR CONDENSING UNIT	0	EXT	LP 5002	208	1	1.82 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		T-STAT, DISCONNECT PROVIDED BY DIV 16	
CND 9601		PROCESS BUILDING OUTDOOR CONDENSING UNIT	0	EXT	LP 6002	208	1	1.82 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		T-STAT, DISCONNECT PROVIDED BY DIV 16	
CND 9602		PROCESS BUILDING OUTDOOR CONDENSING UNIT	0	EXT	LP 6002	208	3	60 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		T-STAT, DISCONNECT PROVIDED BY DIV 16	
CND 9801		ADMIN BUILDING OUTDOOR CONDENSING UNIT	0	EXT	LP 8002	208	1	1.82 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		T-STAT, DISCONNECT PROVIDED BY DIV 16	
CND 9802		ADMIN BUILDING OUTDOOR CONDENSING UNIT	0	EXT	DP 8001	600	3	6.7 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		BAS CONTROLLED, LOCAL DISCONNECT BY DIV 16	
CUH 9501		ELECTRIC CABINET UNIT HEATER	0	502	LP 5002	208	1	4 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		OEM T-STAT, MOTOR RATED SWITCH PROVIDED BY DIV 16	
CUH 9601		ELECTRIC CABINET UNIT HEATER	0	605	LP 6002	208	1	2 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		OEM T-STAT, MOTOR RATED SWITCH PROVIDED BY DIV 16	
CUH 9602		ELECTRIC CABINET UNIT HEATER	0	605	LP 6002	208	1	2 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		OEM T-STAT, MOTOR RATED SWITCH PROVIDED BY DIV 16	
CUH 9801		ELECTRIC CABINET UNIT HEATER	0	817	LP 8002	208	1	2 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		BAS CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16	
DHWT 9501		UV BUILDING MV DOMESTIC HOT WATER TANK	0	503	LP 5002	120	1	2 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G		MOTOR RATED SWITCH PROVIDED BY DIV 16	
DHWT 9502		UV BUILDING SV DOMESTIC HOT WATER TANK	0	503	LP 5002	208	3	15 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G		MOTOR RATED SWITCH PROVIDED BY DIV 16	
DHWT 9601		PROCESS BUILDING DOMESTIC HOT WATER TANK	0	601	LP 6002	208	3	15 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G		MOTOR RATED SWITCH PROVIDED BY DIV 16	
DHWT 9801		ADMIN BUILDING DOMESTIC HOT WATER TANK	0	810	LP 8002	208	3	15 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G		MOTOR RATED SWITCH PROVIDED BY DIV 16	
EBB 9801		ELECTRIC BASEBOARD HEATER	0	800	LP 8002	120	1	0.3 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9802		ELECTRIC BASEBOARD HEATER	0	800	LP 8002	120	1	0.3 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9803		ELECTRIC BASEBOARD HEATER	0	800	LP 8002	120	1	0.3 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9804		ELECTRIC BASEBOARD HEATER	0	800	LP 8002	120	1	1 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9805		ELECTRIC BASEBOARD HEATER	0	800	LP 8002	120	1	0.75 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9806		ELECTRIC BASEBOARD HEATER	0	801	LP 8002	120	1	0.75 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9807		ELECTRIC BASEBOARD HEATER	0	801	LP 8002	120	1	0.75 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9808		ELECTRIC BASEBOARD HEATER	0	801	LP 8002	120	1	0.75 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9809		ELECTRIC BASEBOARD HEATER	0	802	LP 8002	120	1	1.25 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9810		ELECTRIC BASEBOARD HEATER	0	803	LP 8002	120	1	1.5 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9811		ELECTRIC BASEBOARD HEATER	0	804	LP 8002	120	1	0.3 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9812		ELECTRIC BASEBOARD HEATER	0	805	LP 8002	120	1	0.75 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9813		ELECTRIC BASEBOARD HEATER	0	807	LP 8002	120	1	1 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9814		ELECTRIC BASEBOARD HEATER	0	807	LP 8002	120	1	0.75 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9815		ELECTRIC BASEBOARD HEATER	0	808	LP 8002	120	1	0.5 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9817		ELECTRIC BASEBOARD HEATER	0	810	LP 8002	120	1	0.5 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9818		ELECTRIC BASEBOARD HEATER	0	812	LP 8002	120	1	1.25 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9819		ELECTRIC BASEBOARD HEATER	0	814	LP 8002	120	1	1 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9820		ELECTRIC BASEBOARD HEATER	0	815	LP 8002	120	1	0.3 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9821		ELECTRIC BASEBOARD HEATER	0	816	LP 8002	120	1	0.5 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EBB 9816		ELECTRIC BASEBOARD HEATER	0	808	LP 8002	120	1	0.75 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	M	G		BASIT-STAT CONTROLLED	
EF 9301		VENTILATION EXHAUST FAN	0	301	LP 6002	120	1	0.186 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	E	G		MOTOR RATED SWITCH PROVIDED BY DIV 16	
EF 9601		PROCESS COOLING EXHAUST FAN	0	600	MCC 6000A	600	3	0.56 KW	M	M	E	G	TYPE 70	2/E020	M	M	E	G	E	E	E	G	E	E	E	G		SCADA CONTROLLED, DIV 16 TO PROVIDE	

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrades\03-Production\06-Elect\2296-001 - MSCI.dwg

MOTOR STARTER AND CONTROL LIST																																	
GENERAL				MOTOR									CONTROL DETAILS & RESPONSIBILITIES																				
													STARTER					AT MOTOR				AUTOMATION				COMMENTS							
DEVICE TAG	PROJECT PHASE	DESCRIPTION	GENERATOR SEQUENCE	DEVICE LOCATION	POWER SOURCE	VOLTAGE	PHASE	LOAD	SUPPLIED BY	INSTALLED BY	WIRED BY	COMMISSIONED BY	TYPE	DETAIL REFERENCE	SUPPLIED BY	INSTALLED BY	WIRED BY	COMMISSIONED BY	SUPPLIED BY	INSTALLED BY	WIRED BY	COMMISSIONED BY	SUPPLIED BY	INSTALLED BY	CONTROL WIRED BY	COMMISSIONED BY	STARTER NOTES						
EUH 9202		ELECTRIC UNIT HEATER	0	202	DP 2001	600	3	3 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, PROVIDE ALL APPURTENANCES REQUIRED TO MAKE THIS EQUIPMENT COMPLIANT FOR USE IN CLASS 1 ZONE 1 ENVIRONMENT		
EUH 9203		ELECTRIC UNIT HEATER	0	203	DP 2001	600	3	10 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, PROVIDE ALL APPURTENANCES REQUIRED TO MAKE THIS EQUIPMENT COMPLIANT FOR USE IN CLASS 1 ZONE 1 ENVIRONMENT		
EUH 9204		ELECTRIC UNIT HEATER	0	200	DP 2001	600	3	4 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, PROVIDE ALL APPURTENANCES REQUIRED TO MAKE THIS EQUIPMENT COMPLIANT FOR USE IN CLASS 1 ZONE 1 ENVIRONMNET		
EUH 9205		ELECTRIC UNIT HEATER	0	200	DP 2001	600	3	10 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16		
EUH 9301		ELECTRIC UNIT HEATER	0	301	DP 6001	600	3	4 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, PROVIDE ALL APPURTENANCES REQUIRED TO MAKE THIS EQUIPMENT COMNPLIANT FOR USE IN CLASS 1 ZONE 1 ENVIRONMENT		
EUH 9302		ELECTRIC UNIT HEATER	0	301	DP 2001	600	3	4 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16		
EUH 9303		ELECTRIC UNIT HEATER	0	301	DP 6001	600	3	4 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16		
EUH 9501		ELECTRIC UNIT HEATER	0	503	DP 5001	600	3	2 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16		
EUH 9502		ELECTRIC UNIT HEATER	0	500	DP 5001	600	3	10 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16		
EUH 9503		ELECTRIC UNIT HEATER	0	500	DP 5001	600	3	10 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16		
EUH 9504		ELECTRIC UNIT HEATER	0	501	DP 5001	600	3	5 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED		
EUH 9601		ELECTRIC UNIT HEATER	0	600	DP 6001	600	3	7.5 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16		
EUH 9602		ELECTRIC UNIT HEATER	0	600	DP 6001	600	3	7.5 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16		
EUH 9603		ELECTRIC UNIT HEATER	0	603	DP 6001	600	3	10 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED		
EUH 9604		ELECTRIC UNIT HEATER	0	602	DP 6001	600	3	4 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16		
EUH 9605		ELECTRIC UNIT HEATER	0	601	DP 6001	600	3	4 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16		
EUH 9606		ELECTRIC UNIT HEATER	0	604	DP 6001	600	3	10 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16		
EUH 9607		ELECTRIC UNIT HEATER	0	604	DP 6001	600	3	10 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16		
EUH 9608		ELECTRIC UNIT HEATER	0	604	DP 6001	600	3	10 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16		
EUH 9609		ELECTRIC UNIT HEATER	0	604	DP 6001	600	3	10 KW	E	E	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED, MOTOR RATED SWITCH PROVIDED BY DIV 16		
EUH 9801		ELECTRIC UNIT HEATER	0	809	DP 8001	600	3	2 KW	M	M	E	G	INTEGRAL		E	E	E	G	E	E	E	G	E	E	E	G	E	E	E	G	T-STAT CONTROLLED		
G 2101		AUGER SCREEN INLINE GRINDER	0	200	MCP 2100	600	3	5 HP	PS	M	E	G			G	E	E	G	E	E	E	G	M	E	E	G							
G 2102		AUGER SCREEN INLINE GRINDER (FUTURE)	0	200		600	3	5 HP	F	F	F	F			F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
HRV 9601		PROCESS BUILDING HEAT RECOVERY UNIT	0	601	LP 8002	208	3	6.1 HP	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G					SCADA/OEM CONTROLLED, PROVIDE INTEGRAL DISCONNECT C/W ALL REQUIRED CONTROL WIRING		
HUM 9801		ADMIN BUILDING OA HUMIDIFIER	0	810	LP 8002	208	3	11.25 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G					LOCAL DISCONNECT BY DIV 16, BAS CONTROLLED		
LC 3201		CLARIFIER TANK NO. 1 LONGITUDINAL COLLECTOR	0	TNK-401	MCC 6000A	600	3	0.5 HP	PS	M	E	G	TYPE 11		M	M	E	G	E	E	E	G	C	C	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
LC 3202		CLARIFIER TANK NO. 2 LONGITUDINAL COLLECTOR	0	TNK-402	MCC 6000A	600	3	0.5 HP	PS	M	E	G	TYPE 11		M	M	E	G	E	E	E	G	C	C	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
LC 3203		CLARIFIER TANK NO. 3 LONGITUDINAL COLLECTOR	0	TNK-403	MCC 6000A	600	3	0.5 HP	PS	M	E	G	TYPE 11		M	M	E	G	E	E	E	G	C	C	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
LC 3204		CLARIFIER TANK NO. 4 LONGITUDINAL COLLECTOR (FUTURE)	0	TNK-404	MCC 6000A	600	3	0.5 HP	F	F	F	F	TYPE 11		F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
MD 9201		HEADWORKS BUILDING SCREEN AND DEGRIT MOTORIZED DAMPER	0	200	LP 2002	120	1	6 W	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G					CONTROLLED BY MAKE-UP AIR UNIT		
MD 9601		EF-9605 MOTORIZED DAMPER	0	601	LP 6002	120	1	6 W	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G					CONTROLLED BY SCADA		
MD 9801		ADMIN BUILDING MECH RM RA MOTORIZED DAMPER	0	810	LP 8002	120	1	6 W	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G					CONTROLLED BY BAS		
MD 9802		ADMIN BUILDING ELEC RM MOTORIZED DAMPER	0	809	LP 8002	120	1	6 W	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G					CONTROLLED BY BAS		
MS 2101		AUGER MOTOR	0	200	MCP 2100	600	3	2 HP	PS	M	E	G	TYPE 30		G	E	E	G	E	E	E	G	M	E	E	G							
MS 2102		AUGER SCREEN INLINE GRINDER SCREEN	0	200	MCP 2100	600	3	1 HP	PS	M	E	G			G	E	E	G	E	E	E	G	M	E	E	G					OEM/SCADA CONTROLLED		
MS 2103		AUGER MOTOR (FUTURE)	0	200		600	3	2 HP	F	F	F	F			F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
MS 2104		AUGER SCREEN INLINE GRINDER SCREEN (FUTURE)	0	200		600	3	1 HP	F	F	F	F			F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F			
MUA 9201		HEADWORKS BUILDING MAKE-UP AIR UNIT	0	202	DP 2001	600	3	26 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G					PROVIDE INTEGRAL DISCONNECT, SCADA MONITORED		
MX 7201		AERATED SOLIDS STABILIZATION CELL SURFACE ASPIRATOR NO. 1	0	700	MCC 6000A	600	3	25 HP	PS	M	E	G	TYPE 50	1/E021	M	M	E	G	C	C	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
MX 7202		AERATED SOLIDS STABILIZATION CELL SURFACE ASPIRATOR NO. 2	0		MCC 6000B	600	3	25 HP	PS	M	E	G	TYPE 50	1/E021	M	M	E	G	C	C	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
MX 7203		AERATED SOLIDS STABILIZATION CELL SURFACE ASPIRATOR NO. 3	0		MCC 6000A	600	3	25 HP	PS	M	E	G	TYPE 50	1/E021	M	M	E	G	C	C	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
MX 7204		AERATED SOLIDS STABILIZATION CELL SURFACE ASPIRATOR NO. 4	0		MCC 6000B	600	3	25 HP	PS	M	E	G	TYPE 50	1/E021	M	M	E	G	C	C	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
MX 7205		AERATED SOLIDS STABILIZATION CELL SURFACE ASPIRATOR NO. 5	0		MCC 6000A	600	3	25 HP	PS	M	E	G	TYPE 50	1/E021	M	M	E	G	C	C	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
MX 7206		AERATED SOLIDS STABILIZATION CELL SURFACE ASPIRATOR NO. 6	0		MCC 6000B	600	3	25 HP	PS	M	E	G	TYPE 50	1/E021	M	M	E	G	C	C	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
OCU 9201		HEADWORKS ODOUR CONTROL UNIT	0	EXT	DP 2001	600	3	5 HP	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	E	G							
P 1101		RAW SEWAGE PUMP NO. 1	0	100	MCC 5000	600	3	15 HP	PS	M	E	G	TYPE 73	3/E020	E	E	E	G	E	E	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
P 1102		RAW SEWAGE PUMP NO. 2	0	100	MCC 5000	600	3	15 HP	PS	M	E	G	TYPE 73	3/E020	E	E	E	G	E	E	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
P 1103	80.9%	RAW SEWAGE PUMP NO. 3	0	100	MCC 5000	600	3	35 HP	PS	M	E	G	TYPE 73	3/E020	E	E	E	G	E	E	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
P 1104		RAW SEWAGE PUMP NO. 4	0	100	MCC 5000	600	3	35 HP	PS	M	E	G	TYPE 73	3/E020	E	E	E	G	E	E	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
P 5101	88.1%	SLUDGE PUMP NO. 1	0	604	MCC 6000A	600	3	10 HP	PS	M	E	G	TYPE 70	2/E020	E	E	E	G	E	E	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
P 5102	88.1%	SLUDGE PUMP NO. 2	0	604	MCC 6000A	600	3	10 HP	PS	M	E	G	TYPE 70	2/E020	E	E	E	G	E	E	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
P 5103	88.1%	SLUDGE PUMP NO. 3	0	604	MCC 6000A	600	3	10 HP	PS	M	E	G	TYPE 70	2/E020	E	E	E	G	E	E	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
P 5104		SLUDGE PUMP NO. 4	0	604	MCC 6000A	600	3	10 HP	PS	M	E	G	TYPE 70	2/E020	E	E	E	G	E	E	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
P 5201		SCUM PUMP	0	EXT	MCC 5000	600	3	5 HP	PS	M	E	G	TYPE 13		M	M	E	G	E	E	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
P 7101		FERRIC CHLORIDE PUMP NO. 1	0	602	LP 6003	120	1	400 W	PS	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G					SCADA CONTROLLED		
P 7102		FERRIC CHLORIDE PUMP NO. 2	0	602	LP 6003	120	1	400 W	PS	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G					SCADA CONTROLLED		
P 7301		DECANT PUMP NO. 1	0	702	MCC 6000B	600	3	4 HP	PS	M	E	G	TYPE 73	3/E020	E	E	E	G	E	E	E	G	E	E	E	G					SCADA CONTROLLED, DIV 16 TO PROVIDE DISCONNECT		
P 7302		DECANT PUMP NO. 2	0	702	MCC 6000B	600	3	4 HP	PS	M	E	G	TYPE 73	3/E020	E	E	E	G	E	E													

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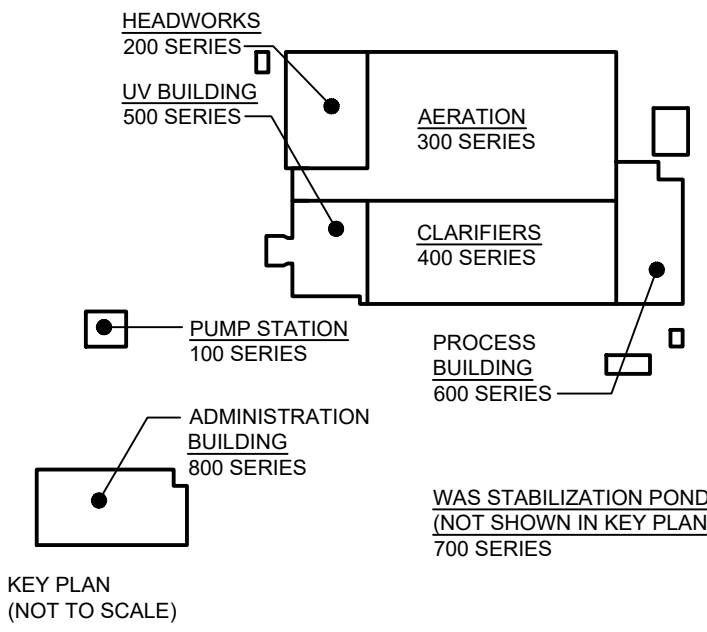
MOTOR STARTER AND CONTROL LIST																													
GENERAL				MOTOR									CONTROL DETAILS & RESPONSIBILITIES																
													STARTER					AT MOTOR				AUTOMATION				COMMENTS			
DEVICE TAG	PROJECT PHASE	DESCRIPTION	GENERATOR SEQUENCE	DEVICE LOCATION	POWER SOURCE	VOLTAGE	PHASE	LOAD	SUPPLIED BY	INSTALLED BY	WIRED BY	COMMISSIONED BY	TYPE	DETAIL REFERENCE	SUPPLIED BY	INSTALLED BY	WIRED BY	COMMISSIONED BY	SUPPLIED BY	INSTALLED BY	WIRED BY	COMMISSIONED BY	SUPPLIED BY	INSTALLED BY	CONTROL WIRED BY	COMMISSIONED BY	STARTER NOTES		
P 9502		UV SANITARY DRAINAGE PUMP NO.2	0	500	LCP 9501	120	1	0.33 HP	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		SCADA MONITORED, MRS BY DIV 16	
P 9601		PROCESS SANITARY DRAINAGE PUMP NO. 1	0	604	LCP 9601	120	1	0.5 HP	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		SCADA MONITORED, MRS BY DIV 16	
P 9602		PROCESS SANITARY DRAINAGE PUMP NO. 2	0	604	LCP 9601	120	1	0.5 HP	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G		SCADA MONITORED, MRS BY DIV 16	
P 9903	38.5%	EFFLUENT WATER PUMP NO.1	0	301	FCP 9901	600	3	7.5 HP	PS	M	E	G			M	M	E	G	E	E	E	G	E	E	E	G		SCADA CONTROLLED	
P 9904	38.5%	EFFLUENT WATER PUMP NO.2	0	301	FCP 9901	600	3	7.5 HP	PS	M	E	G			M	M	E	G	E	E	E	G	E	E	E	G		SCADA CONTROLLED	
P 9906		EFFLUENT WATER PUMP NO.3	0	301	FCP 9901	600	3	7.5 HP	PS	M	E	G			M	M	E	G										SCADA CONTROLLED	
SCV 2101		SCREW CONVEYOR	0	200	MCP 2100	600	3	1 HP	PS	M	E	G			G	E	E	G	E	E	E	G	M	E	E	G		OEM CONTROLLED, SCADA MONITORED	
SCV 2102		SCREW CONVEYOR (FUTURE)	0	200		600	3	1 HP	F	F	F	F			F	F	F	F	F	F	F	F	F	F	F	F			
SF 9201		VENTILATION SUPPLY FAN	0	201	LP 2002	120	1	0.019 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G		MRS BY DIV 16	
SF 9501		VENTILATION SUPPLY FAN	0	501	LP 5002	120	1	0.019 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G		MRS BY DIV 16	
SF 9601		VENTILATION SUPPLY FAN	0	601	LP 6002	120	1	0.019 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G		MRS BY DIV 16	
SF 9801		VENTILATION SUPPLY FAN	0	809	LP 8002	120	1	0.019 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G		MRS BY DIV 16	
SMP 2001		HEADWORKS BUILDING AUTOMATED SAMPLER	0	200	LP 2002	120	1	0	PS	M	E	O	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
SMP 4001		UV BUILDING AUTOMATED SAMPLER	0	500	LP 5002	120	1	0	PS	M	E	O	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
STA 9903		EFFLUENT WATER AUTOMATIC STRAINER	0	301	FCP 9900	120	1	0.25 HP	PS	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G		OEM CONTROLLED, SCADA MONITORED	
TF 9301		TRANSFER AIR FAN	0	301	LP 6002	120	1	0.186 KW	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
TSP 9201		TRAP SEAL PRIMER	0	202	LP 2002	120	1	0	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G			
TSP 9501		TRAP SEAL PRIMER	0	503	LP 5002	120	1	0	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G			
TSP 9601		TRAP SEAL PRIMER	0	601	LP 6003	120	1	0	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G			
TSP 9801		TRAP SEAL PRIMER	0	810	LP 8002	120	1	0	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	M	M	M	G			
UVD 4001		UV DISINFECTION BANK NO. 1A	0	500	DP 5001	480	3	14.2 KW	PS	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
UVD 4002		UV DISINFECTION BANK NO. 1B	0	500	DP 5001	480	3	14.2 KW	PS	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
UVD 4003		UV DISINFECTION BANK NO. 2A (FUTURE)	0	500	DP 5001	480	3	14.2 KW	F	F	F	F	INTEGRAL		F	F	F	F	F	F	F	F	F	F	F	F			
UVD 4004		UV DISINFECTION BANK NO. 2B (FUTURE)	0	500	DP 5001	480	3	14.2 KW	F	F	F	F	INTEGRAL		F	F	F	F	F	F	F	F	F	F	F	F			
VFC 2101		AUGER SCREEN EFFLUENT WATER SOLENOID VALVE	0	200	LP 2002	120	1	5 W	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
VFC 3301		AERATION TANK NO. 1 PROCESS AIR FLOW CONTROL VALVE 1	0	TNK-301	LP 2002	600	1	0.25 HP	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
VFC 3302		AERATION TANK NO. 1 PROCESS AIR FLOW CONTROL VALVE 2	0	TNK-301	LP 2002	600	1	0.25 HP	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
VFC 3303		AERATION TANK NO. 2 PROCESS AIR FLOW CONTROL VALVE 1	0	TNK-302	LP 2002	600	1	0.25 HP	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
VFC 3304		AERATION TANK NO. 2 PROCESS AIR FLOW CONTROL VALVE 2	0	TNK-302	LP 2002	600	1	0.25 HP	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
VFC 5101		SLUDGE FLOW CONTROL VALVE	0	604	LP 6002	120	1	0.25 HP	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
VFC 5201		SCUM PUMP FLOW CONTROL VALVE	0	EXT	DP 5001	600	1	0.25 HP	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
VFC 7101		FERRIC CHLORIDE STORAGE TANK NO. 1 OUTLET FLOW CONTROL VALVE	0	701	LP 6003	120	1	5 W	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
VFC 7102		FERRIC CHLORIDE STORAGE TANK NO. 2 OUTLET FLOW CONTROL VALVE	0	701	LP 6003	120	1	5 W	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
VFC 7103		FERRIC CHLORIDE PUMP INLET FLOW CONTROL VALVE	0	602	LP 6003	120	1	5 W	M	M	E	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			
VFC 9901		EFFLUENT WATER AUTOMATIC STRAINER FLOW CONTROL VALVE	0	301	FCP 9900	120	1	0.25 HP	M	M	N/A	G	INTEGRAL		M	M	E	G	E	E	E	G	E	E	E	G			

LEGEND:

GENERAL CONTRACTOR
ELECTRICAL CONTRACTOR
MECHANICAL CONTRACTOR
EXISTING
SYSTEMS INTEGRATOR
PROCESS EQUIPMENT SUPPLIER/CONTRACTOR

GENERAL NOTES:

- A. FOR ALL HOUSE SYSTEM EQUIPMENT PROVIDE CONDUIT AND WIRING FROM THE INDICATED SOURCE PANEL OR MCC TO THE LOAD AS PER THE HOUSE SYSTEM WIRING SCHEDULE E001B.
- B. FOR POWER SOURCES THAT ARE LABELLED LP OR BP THE PANEL SCHEDULES WILL GOVERN WHEN CONFLICTS EXIST
- C. FOR POWER SOURCES THAT ARE LABELLED DP OR BP, THE PANEL SCHEDULES WILL GOVERN WHEN CONFLICTS EXIST
- D. COORDINATE EXACT LOAD AND WIRE SIZE WITH ACTUAL EQUIPMENT REQUIREMENTS.
- E. WHERE CONFLICTS ARISE REFER TO LAYOUT DRAWINGS FOR EQUIPMENT/DEVICE LOCATIONS.
- F. FOR CONFLICTS BETWEEN THIS AND OTHER DRAWINGS REFER TO OTHER DRAWINGS FOR CLARIFICATION. ADVISE CONSULTANT.



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0 ISSUED FOR TENDER 25/04/25

No. ISSUE / REVISION DDMMYY

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25MM IF THIS IS A FULL SIZE DRAWING. 0 25mm

SCALE: N.T.S.

CLIENT:

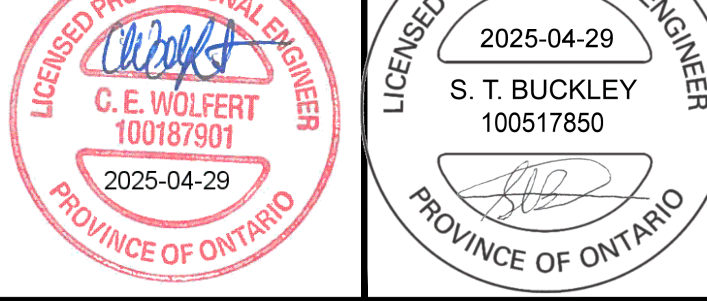


CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL SITE WIDE
MOTOR STARTER AND CONTROL LIST (3 OF 3)

DESIGN: SB

DRAWN: NB

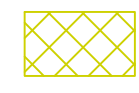
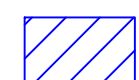
CHECKED: LO/BM

JLR #: 32296-001

DRAWING #:
ME003

PLOT DATE: Tuesday, April 29, 2025 1:13 PM

CLASSIFICATION LEGEND:

-  ZONE 1
-  ZONE 2

ZONE 2: 3m RADIUS AROUND GRIT CHANNELS, AND INLET CHANNELS TO AERATION TANK.

ZONE 2: INTERNAL TO ODOUR CONTROL AREAS WITHIN 0.9m (3 ft) OF LEAKAGE SOURCES SUCH AS FANS, DAMPERS, FLEXIBLE CONNECTIONS, FLANGES, PRESSURIZED UNWELDED DUCTWORK, AND ODOUR CONTROL VESSELS.

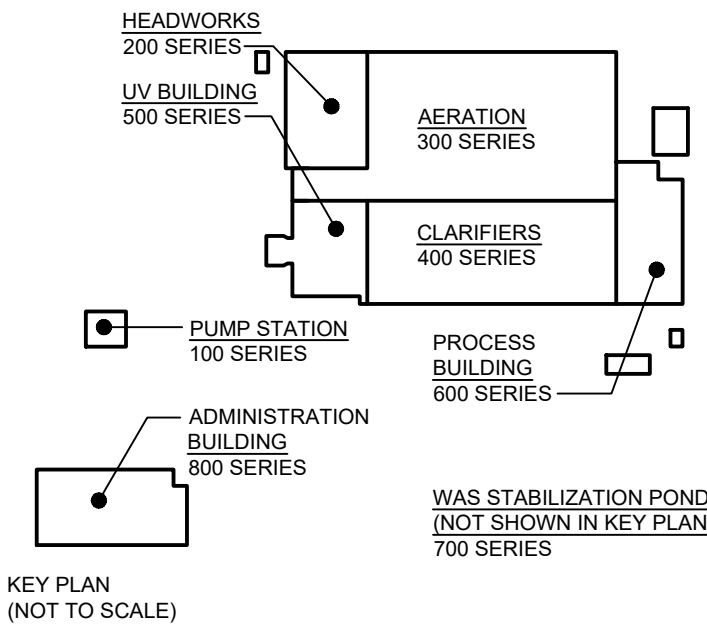
ZONE 1: INTERIOR OF HEADWORKS AND 1m RADIUS AROUND DOORS.
ZONE 2: 1.6m RADIUS AROUND DOORS.

ZONE 1: INTERIOR OF WET WELL, AND 0.9m RADIUS AROUND VENT OPENINGS.
ZONE 2: 0.9m RADIUS AROUND HATCHES, AND 1.5m RADIUS AROUND VENT OPENINGS.

ZONE 1: INTERIOR OF SCUM PIT.
ZONE 2: 3m RADIUS AROUND SCUM PIT.

ZONE 2: ENVELOPE 0.46 M ABOVE THE TOP OF THE TANK WALL; ENVELOPE 0.46 M ABOVE ADJACENT GRADE AND EXTENDING 3 M HORIZONTALLY FROM THE EXTERIOR TANK WALLS

ZONE 2: INTERIOR OF THE BERMED AREA EXTENDING 0.46 M ABOVE THE TOP OF THE TOP OF BERM; ENVELOPE 0.46 M EXTENDING 3 M HORIZONTALLY FROM THE FROM THE TOP OF BERM.



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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.

SCALE: 1:200

CLIENT:

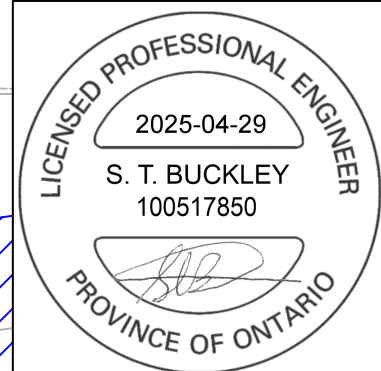

BRIGHTON

CONSULTANT:

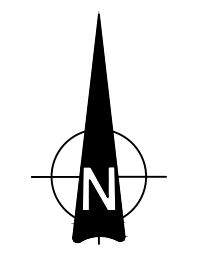

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

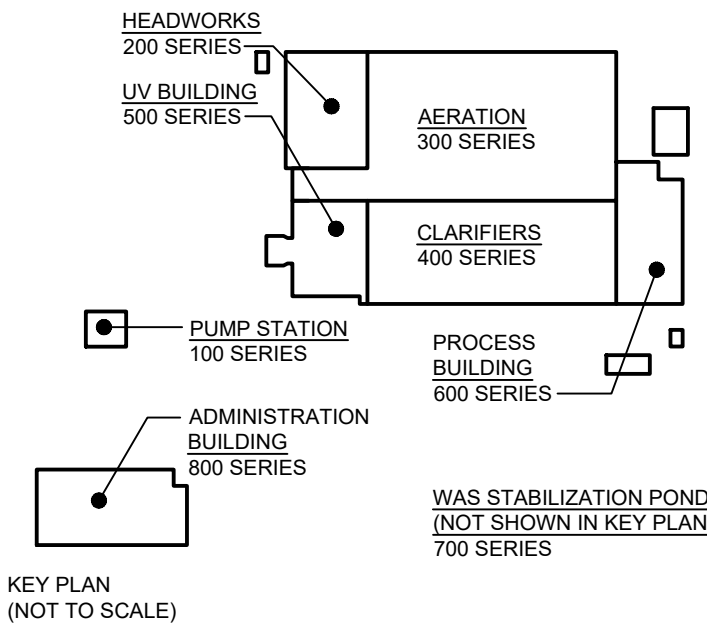
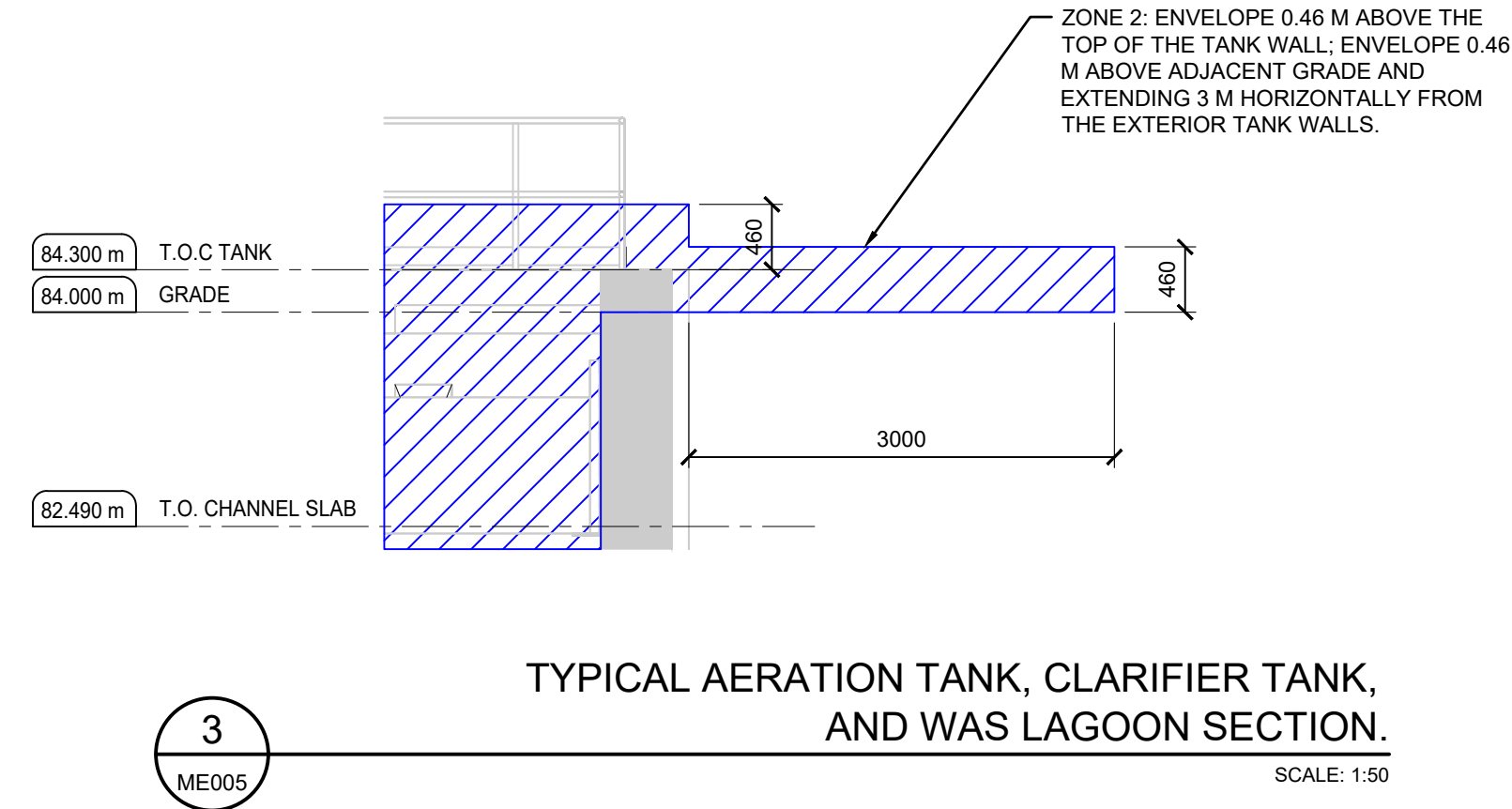
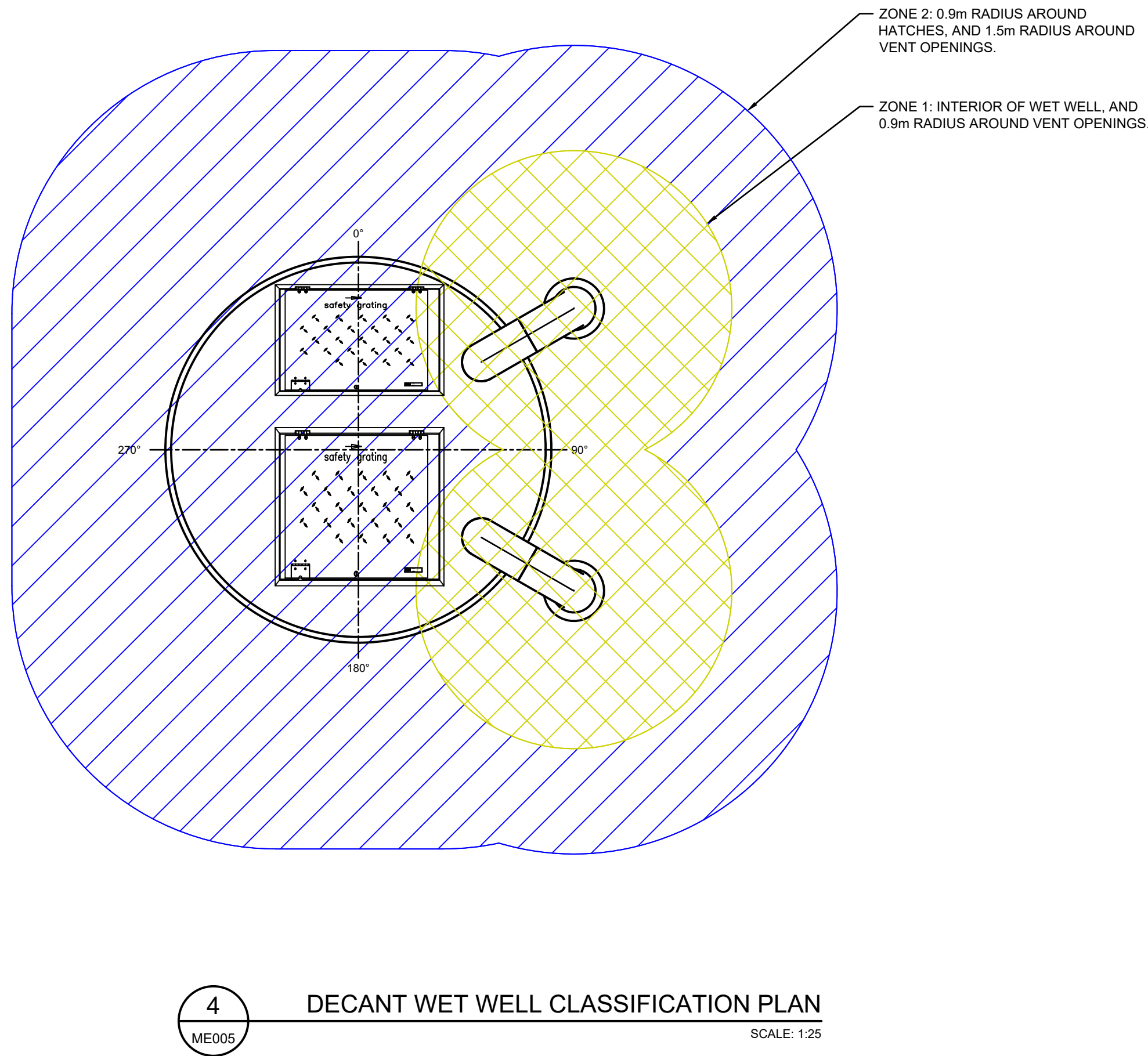
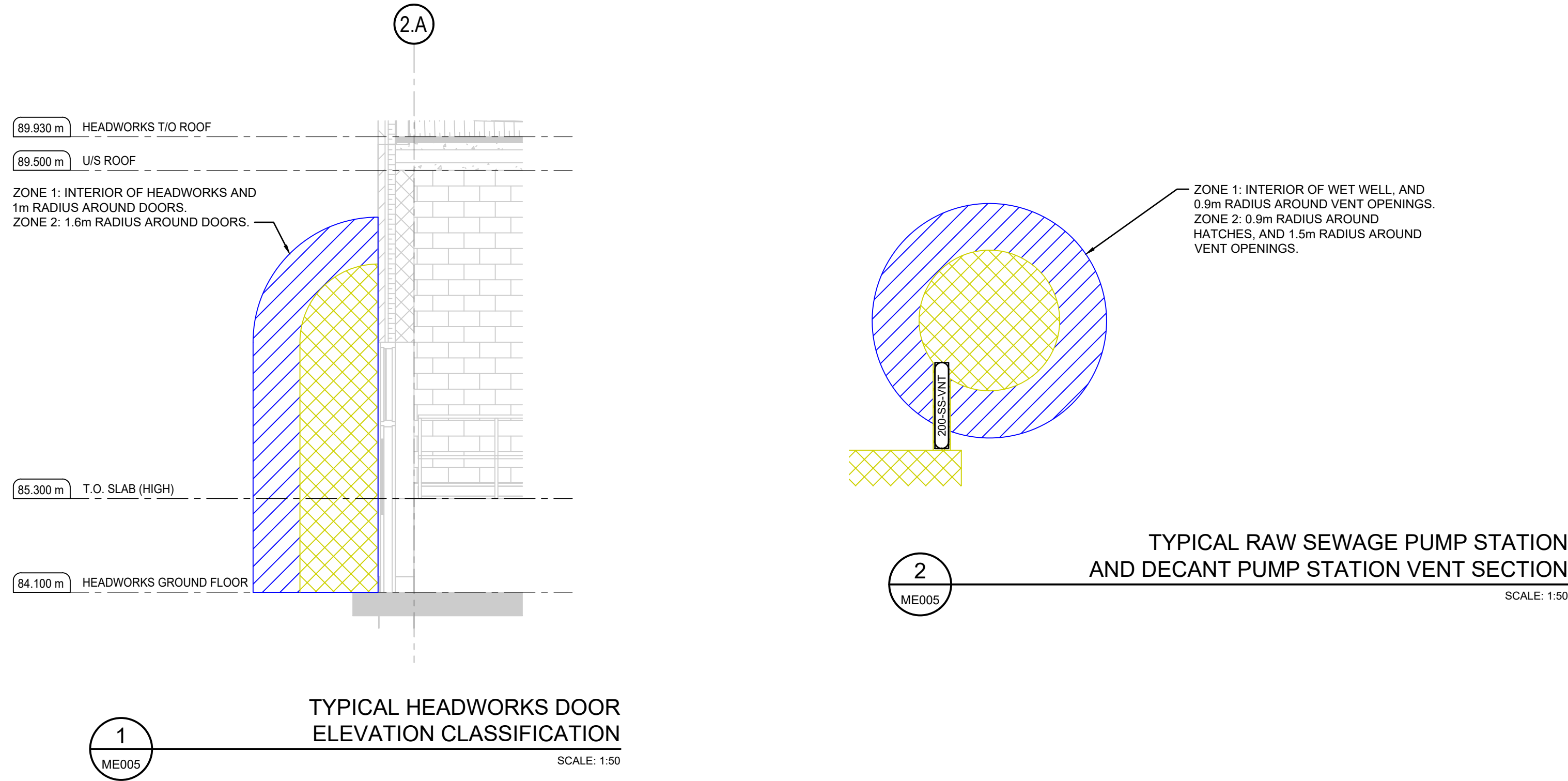
DRAWING:

MECHANICAL AND ELECTRICAL SITE-WIDE

SITE PLAN CLASSIFICATION DRAWING

DESIGN: CW	DRAWING #:
DRAWN: JV	ME004
CHECKED: TP	
JLR #: 32296-001	

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrade\03-Production\03-Electrical\ME005 CLASSIFICATION DRAWING.dwg



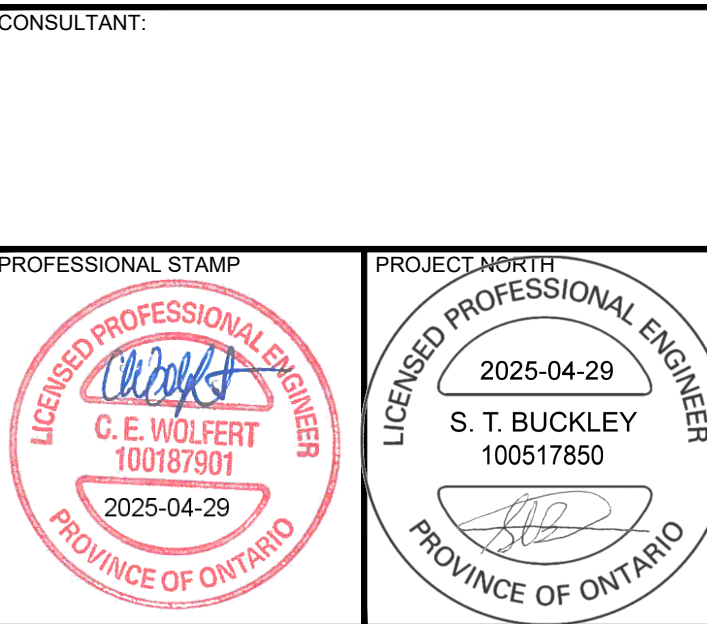
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SCALE: 1:50



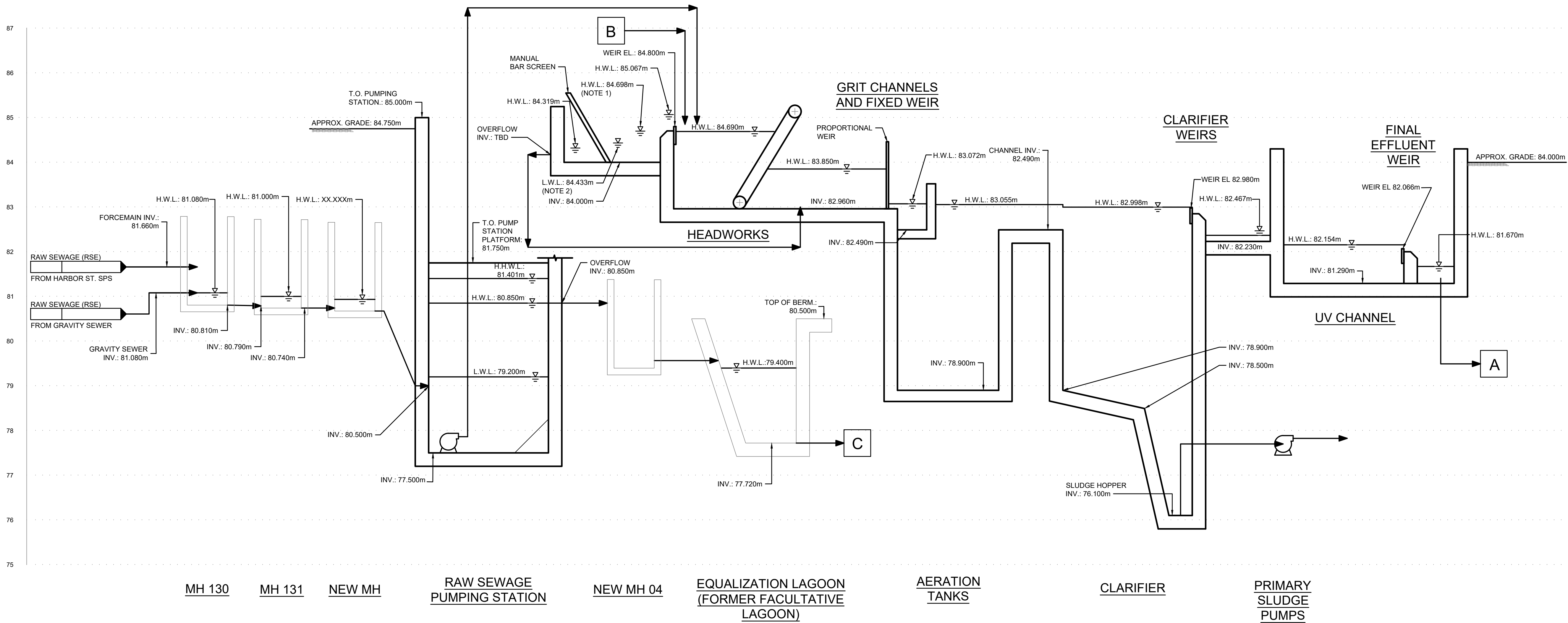
PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
MECHANICAL AND ELECTRICAL SITE-WIDE CLASSIFICATION DRAWING

DESIGN: CW	DRAWING #:
DRAWN: JV	ME005
CHECKED: TP	
JLR #: 32296-001	

PLOT DATE: Tuesday, April 29, 2025 1:41:41 PM

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrade\03-Production\04-Process\01 - HYDRAULIC PROFILE.dwg

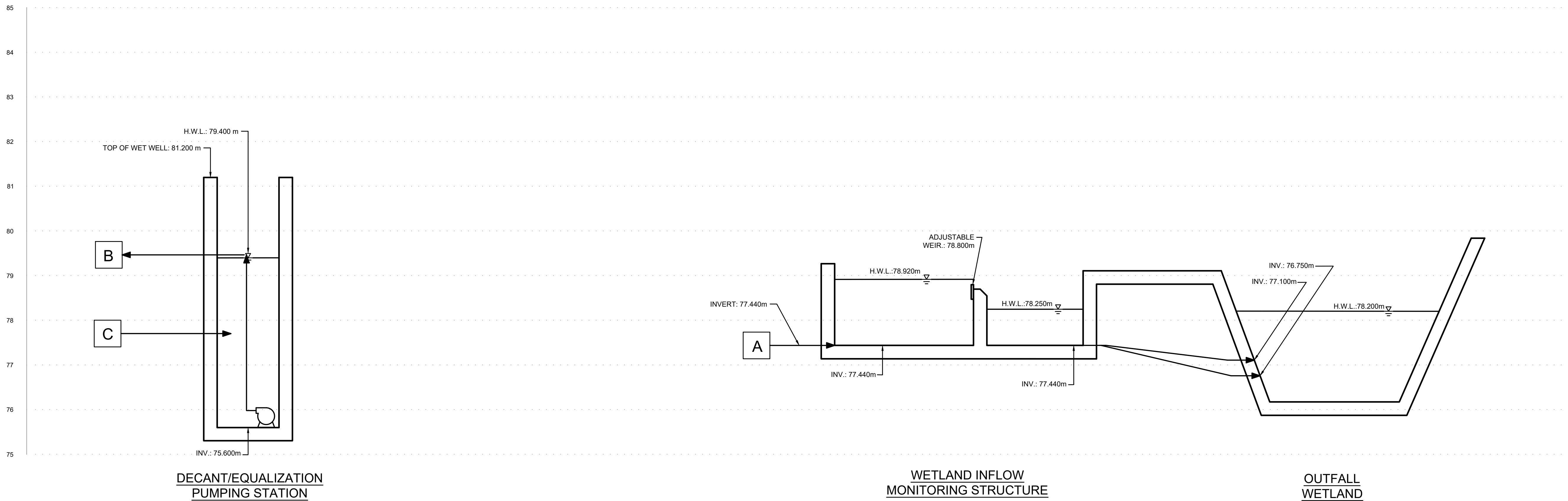


1
HP001

PROPOSED HYDRAULIC PROFILE

SCALE: 1:50 VERTICALLY
SCALE: NTS HORIZONTALLY

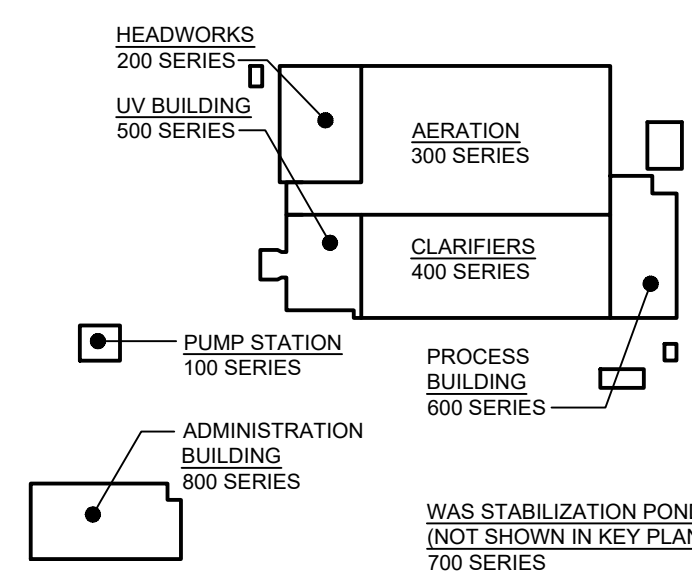
- NOTES:
1. HIGH WATER LEVEL ASSUMES A 40% SCREEN BLOCKAGE.
2. FLOW RATE IS PEAK INSTANTANEOUS FLOW THROUGH AN UNBLOCKED SCREEN.



2
HP001

PROPOSED HYDRAULIC PROFILE

SCALE: 1:50 VERTICALLY
SCALE: NTS HORIZONTALLY



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SCALE: 1:50 VERTICALLY

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

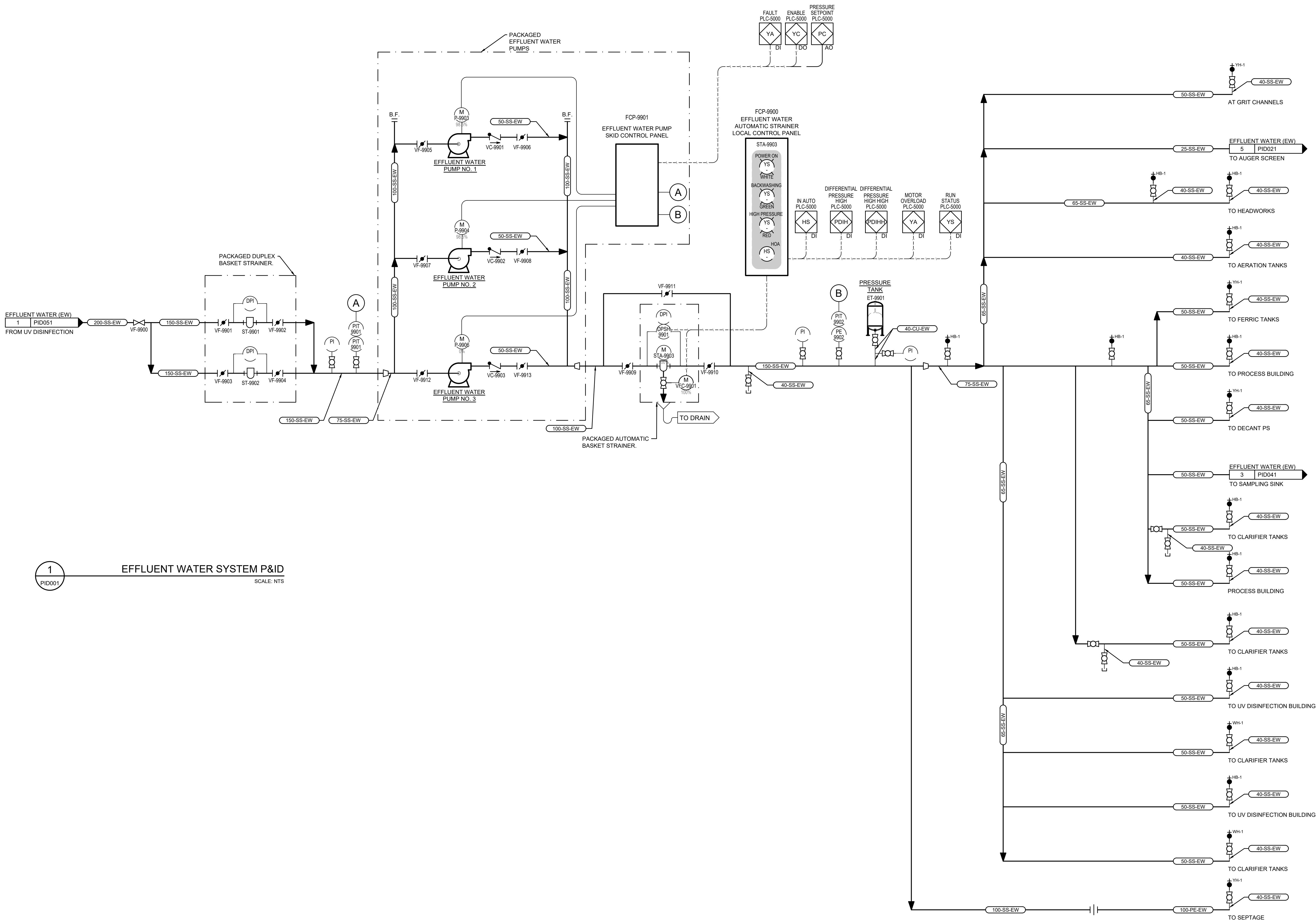
PROCESS AND INSTRUMENTATION SITE-WIDE

PROPOSED HYDRAULIC PROFILE

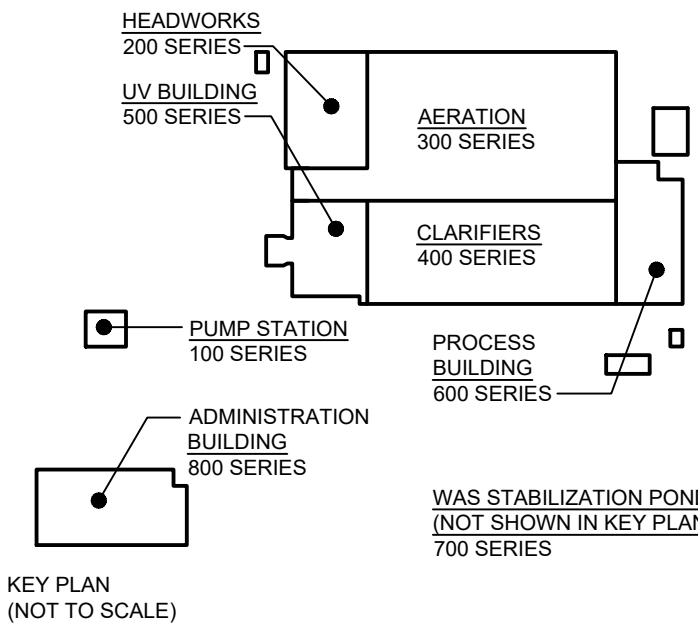
DESIGN: CW	DRAWING #:
DRAWN: CVR	HP001
CHECKED: TP	
JLR #:	32296-001

PLOT DATE: Tuesday, April 29, 2025 1:16:00 PM

File Location: \\jrichards\Corpl\Projects\32000\32296-001 - Brighton WWT System Upgrades\03-Production\04-Process\PID001 Effluent Water System.dwg



1 EFFLUENT WATER SYSTEM P&ID
SCALE: NTS



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SCALE: NTS

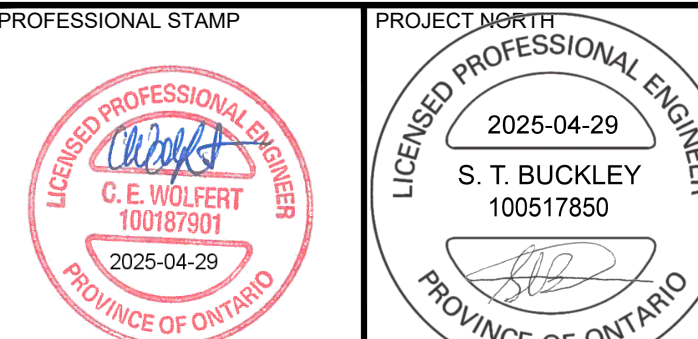
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:
BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
PROCESS AND INSTRUMENTATION
SITE-WIDE

EFFLUENT WATER SYSTEM P&ID

DESIGN: CW/CVR	DRAWING #:
DRAWN: JV/EH	
CHECKED: TP	
JLR #:	32296-001

PID001

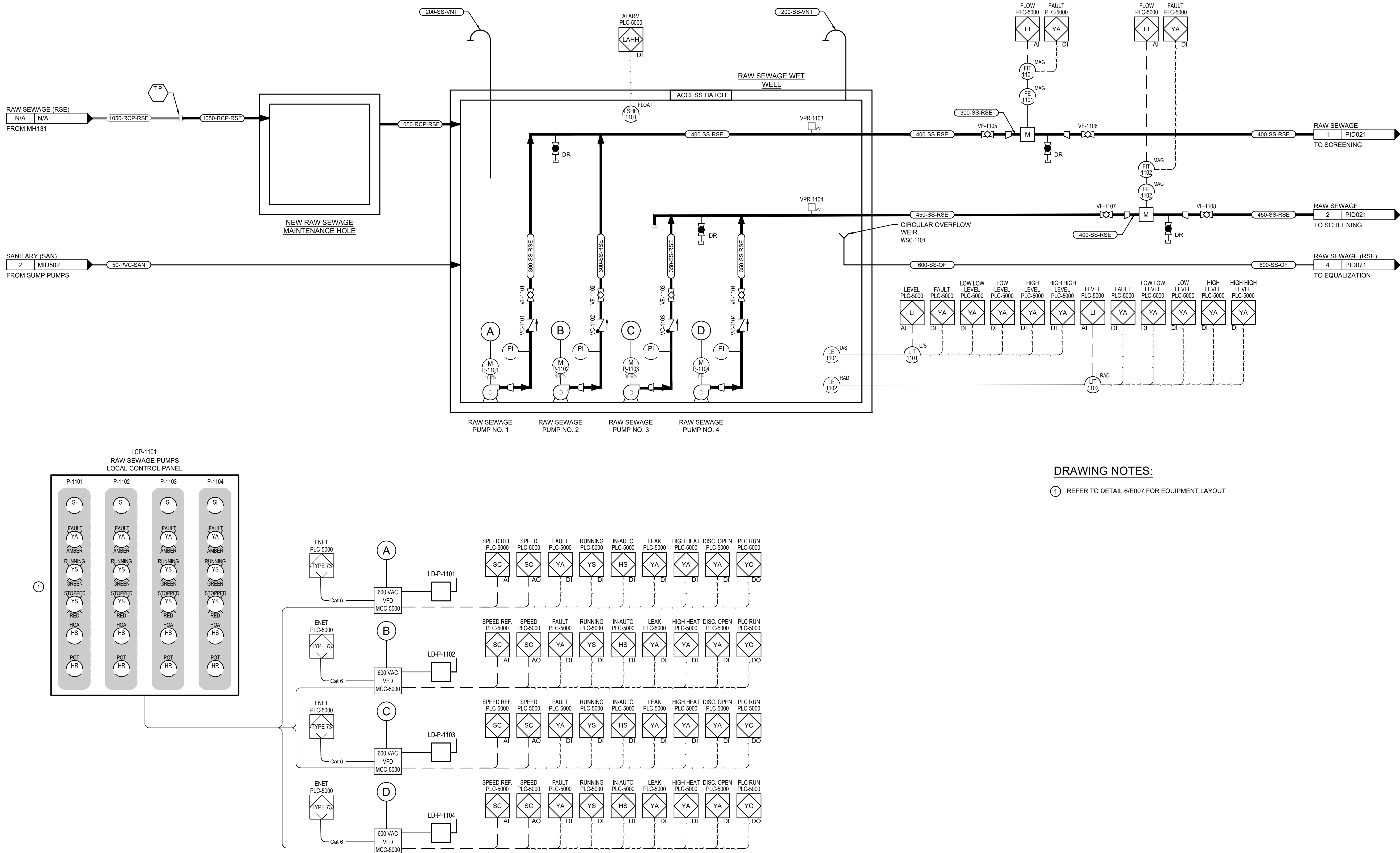
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PID011

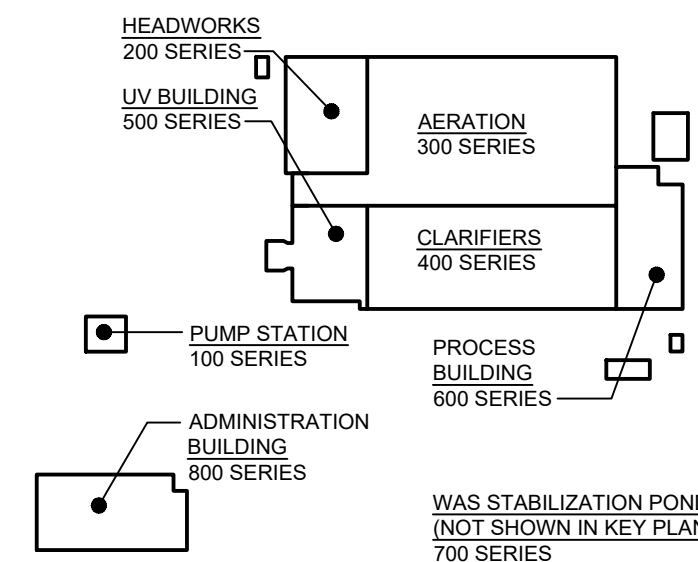
RAW SEWAGE PUMPING STATION & EQUALIZATION P&ID

SCALE: NTS



DRAWING NOTES:

- 1 REFER TO DETAIL 6/E007 FOR EQUIPMENT LAYOUT



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SCALE: NTS

CLIENT:

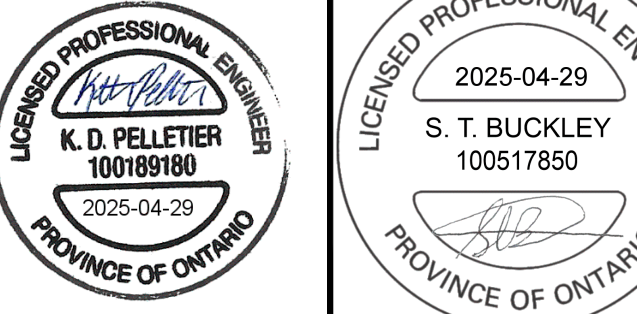


CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS AND INSTRUMENTATION SEPTAGE AND PUMP STATION
RAW SEWAGE PUMP STATION P&ID

DESIGN: KP/CW

DRAWN: JV/EH

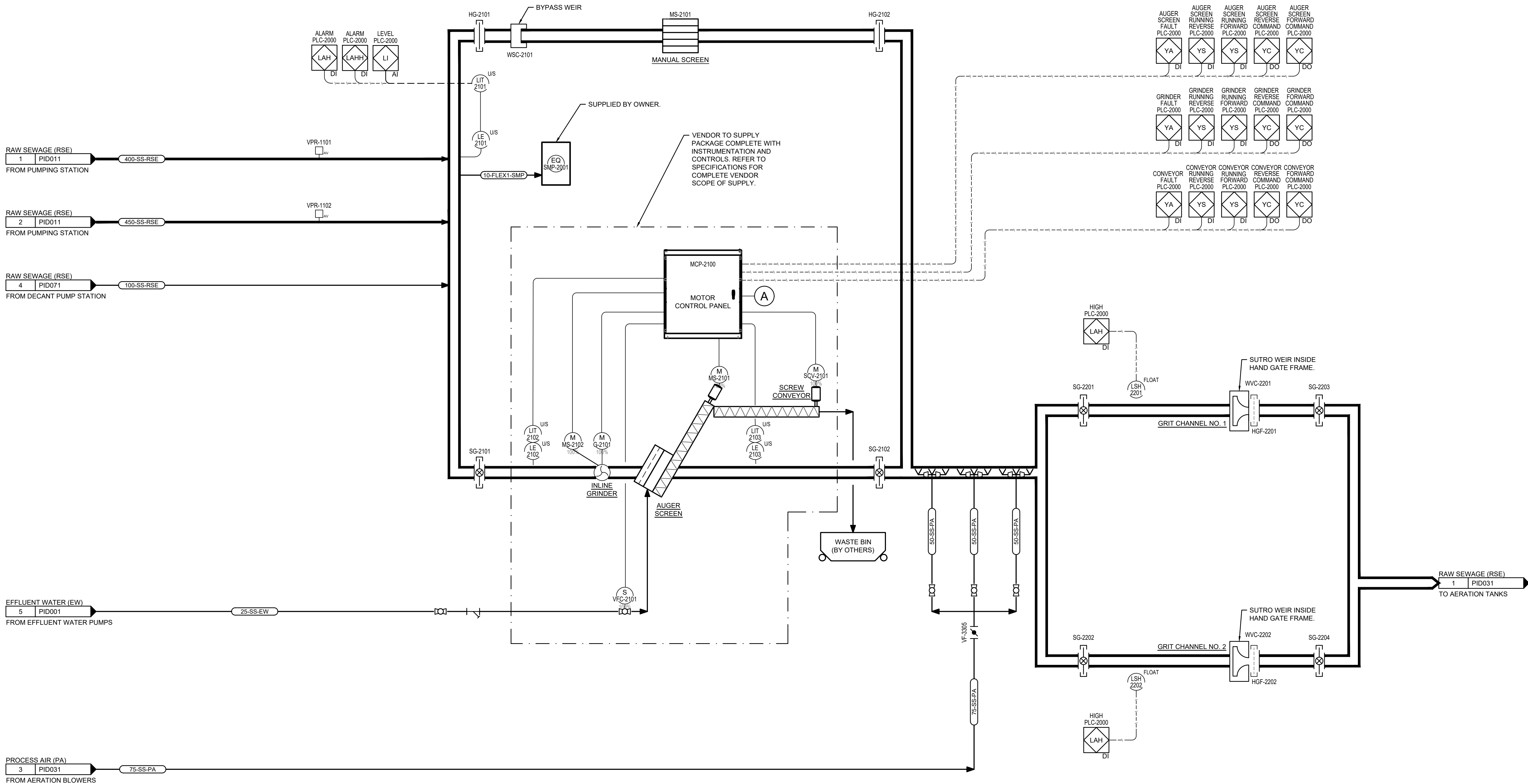
CHECKED: TP

JLR #: 32296-001

DRAWING #:
PID011

PLOT DATE: Tuesday, April 29, 2025 1:05:34 PM

File Location: \\jrichards\CorpNet\Projects\32000\32296-001 - Brighton WWT System Upgrades\03-Production\04-Process\PID201_SCREENING.dwg



1
PID021
SCREENING AND GRIT REMOVAL P&ID
SCALE: NTS

HEADWORKS
200 SERIES
UV BUILDING
500 SERIES
PUMP STATION
100 SERIES
ADMINISTRATION
BUILDING
800 SERIES
AERATION
300 SERIES
CLARIFIERS
400 SERIES
PROCESS
BUILDING
600 SERIES
WAS STABILIZATION POND
(NOT SHOWN IN KEY PLAN)
700 SERIES

KEY PLAN
(NOT TO SCALE)

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SCALE: NTS

CLIENT:

BRIGHTON
MUNICIPALITY

CONSULTANT:

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

K. D. PELLETIER
100189180
2025-04-29
PROVINCE OF ONTARIO

PROJECT NORTH

S. T. BUCKLEY
100517850
2025-04-29
PROVINCE OF ONTARIO

PROJECT:

**BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES**

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

**PROCESS AND INSTRUMENTATION
HEADWORKS**

HEADWORKS P&ID

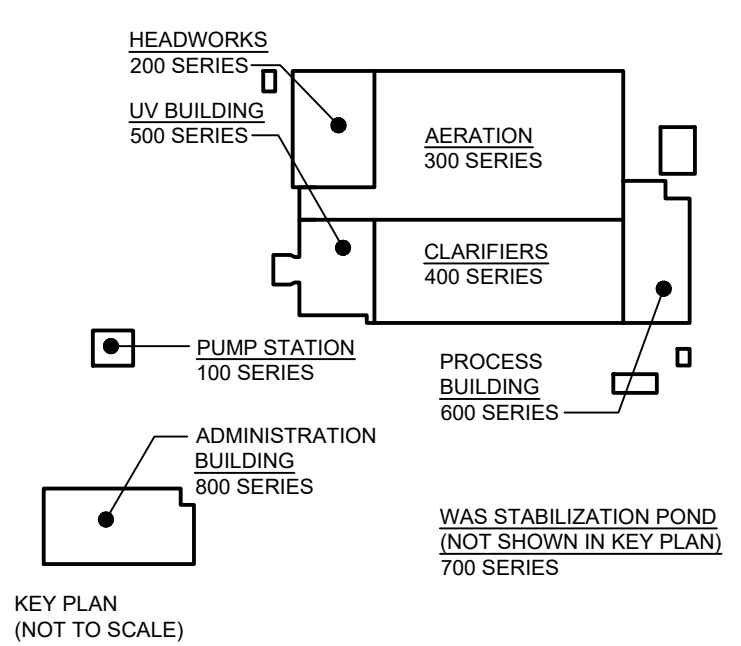
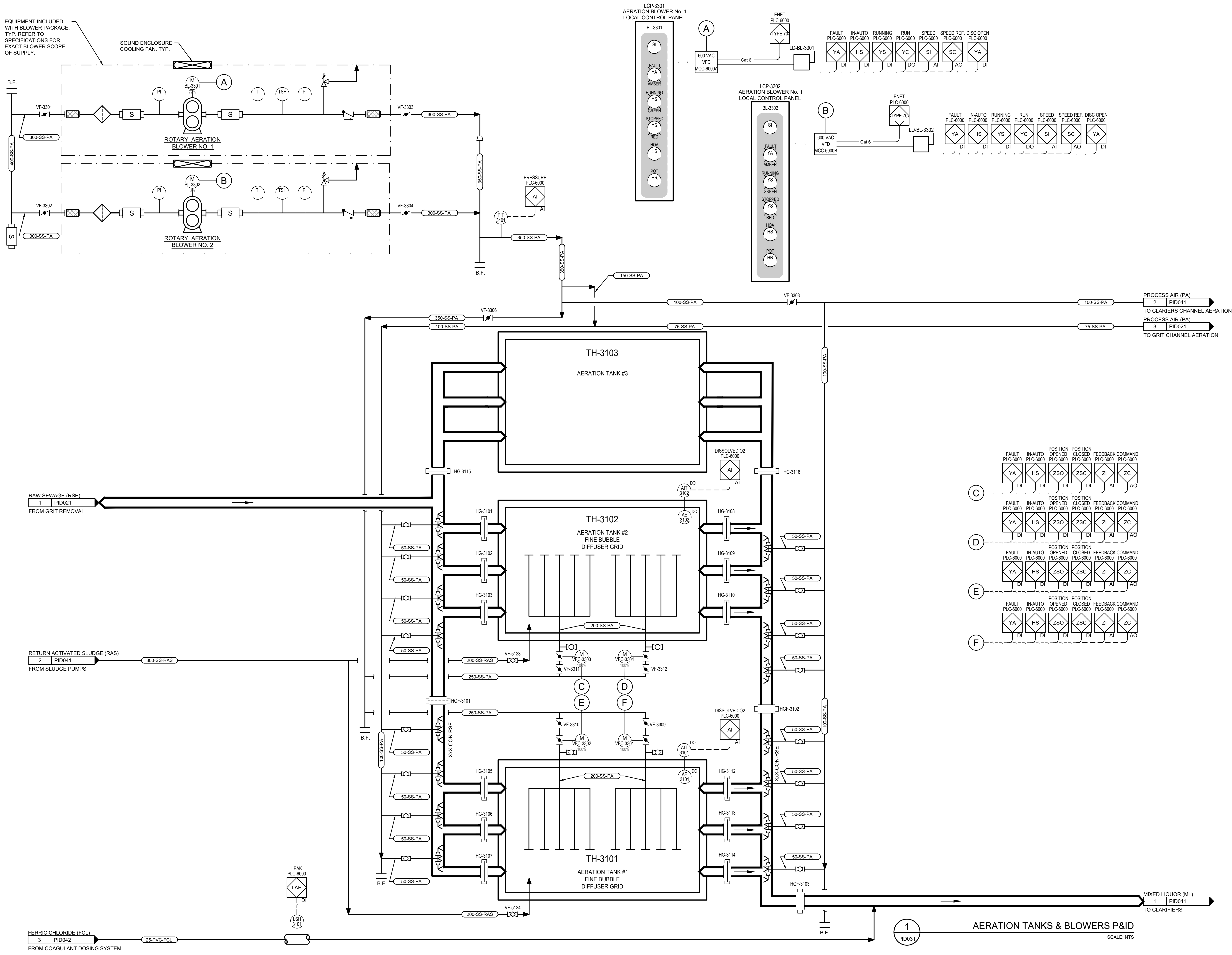
DESIGN:	KP/CW
DRAWN:	JV/CV/EH
CHECKED:	TP
JLR #:	32296-001

DRAWING #:

PID021

PLOT DATE: Tuesday, April 29, 2025 1:16:15 PM

File Location: \\jrichards\corp\projects\32000\32296-001 - Brighton WWT System Upgrades\03-Production\04-Process\PID301 - AERATION TANKS PID.dwg



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SCALE: NTS

CLIENT:

BRIGHTON MUNICIPALITY

CONSULTANT:

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

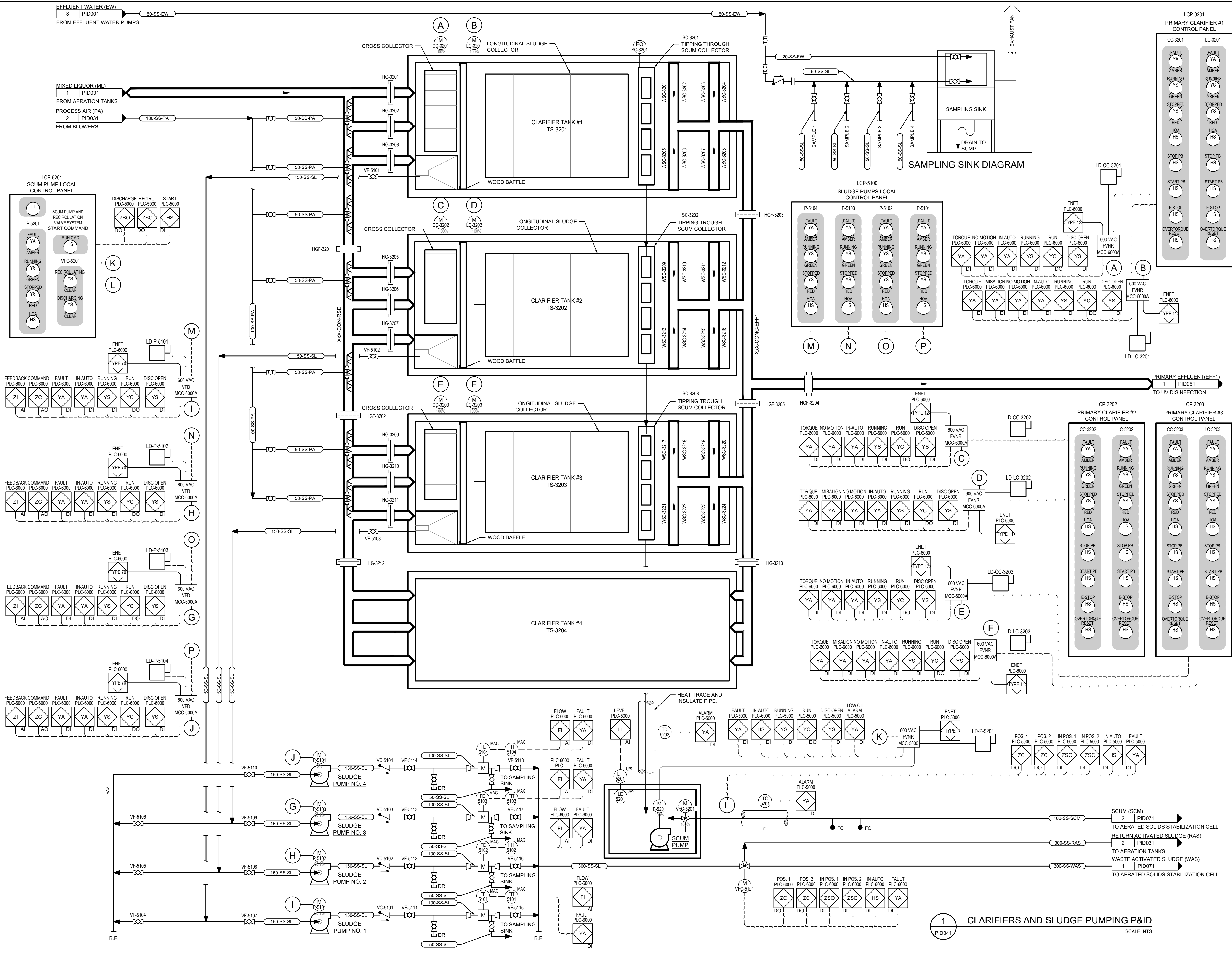
PROJECT NORTH

PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
PROCESS AND INSTRUMENTATION AERATION
AERATION P&ID

DESIGN: CW	DRAWING #:
DRAWN: CVR/EH	PID031
CHECKED: TP	
JLR #: 32296-001	

File Location: \\jrichards\corp\projects\32000\32296-001 - Brighton WWTF System Upgrades\03-Production\04-Process\PID\041 - CLARIFIERS.dwg



CLARIFIERS P&ID

DESIGN: CW
DRAWN: CVR/EH
CHECKED: TP
JLR #: 32296-001

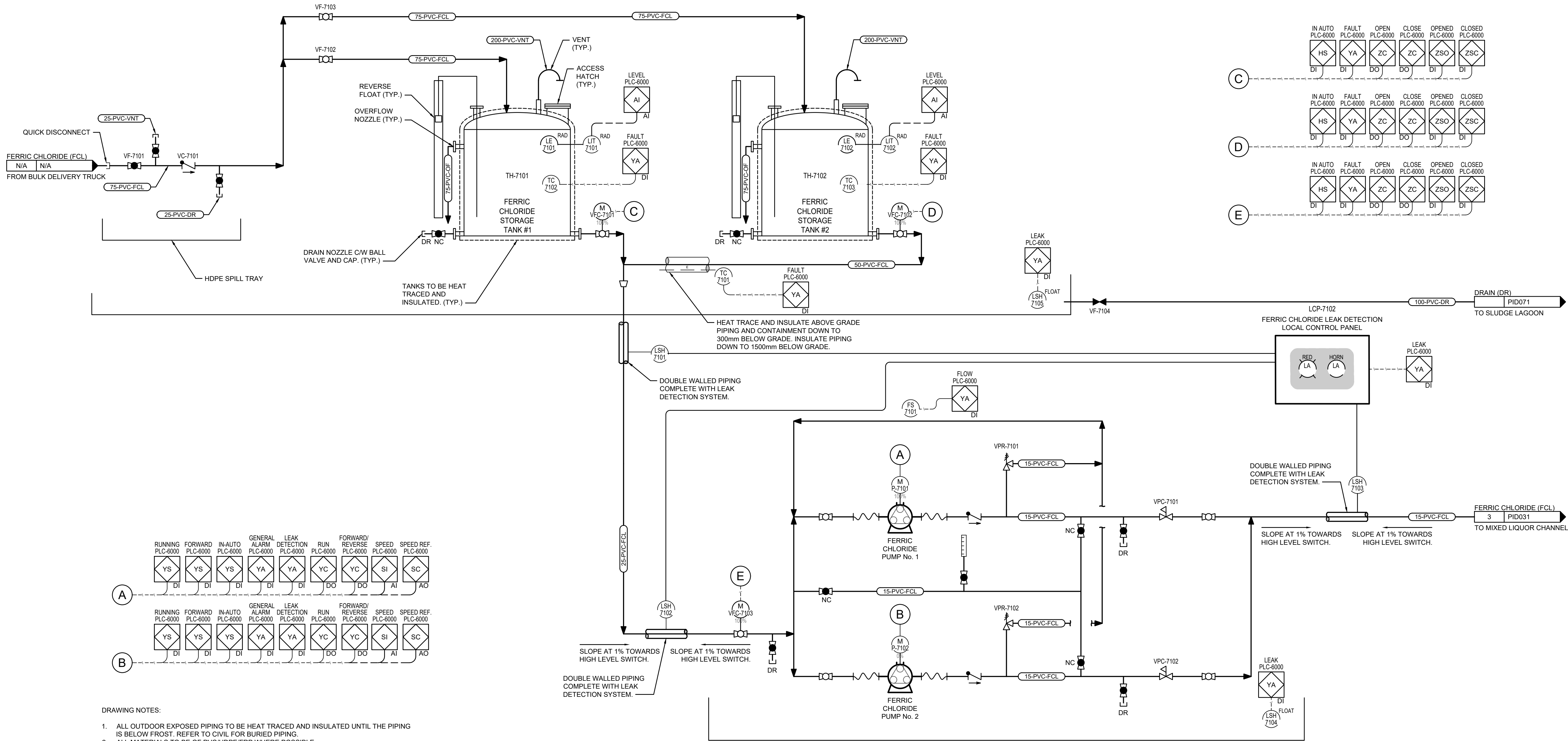
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PROJECT: BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

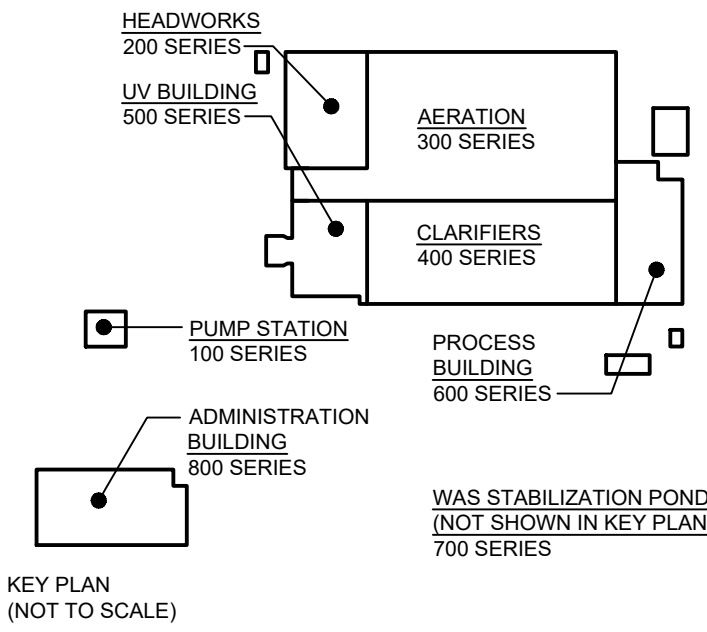
PROFESSIONAL STAMP
K. D. PELLETIER
100189180
2025-04-29
PROVINCE OF ONTARIO

PROJECT NORTH
S. T. BUCKLEY
100517850
2025-04-29
PROVINCE OF ONTARIO

File Location: \\jrichards\Corp\Projects\32000\32296-001 - Brighton WWT System Upgrades\03-Production\04-Process\PID402 - COAGULANT DOSING SYSTEM.dwg



1 COAGULANT DOSING SYSTEM P&ID
SCALE: NTS



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SCALE: NTS

CLIENT:

BRIGHTON
MUNICIPALITY
CONSULTANT: www.jrichards.ca

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP
PROJECT NORTH
LICENSED PROFESSIONAL ENGINEER
2025-04-29
S. T. BUCKLEY
100517850
PROVINCE OF ONTARIO

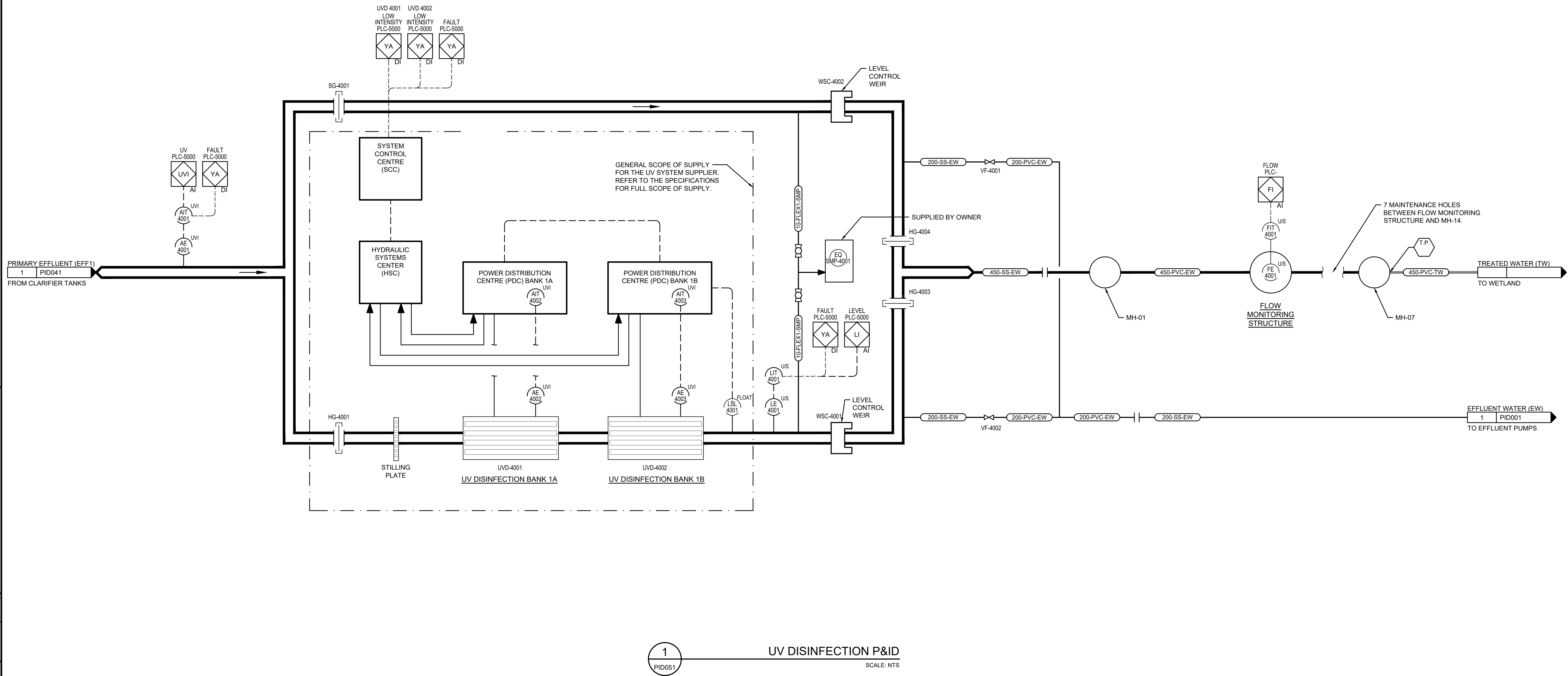
PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
PROCESS AND INSTRUMENTATION
PROCESS BUILDING
COAGULANT DOSING SYSTEM
P&ID

DESIGN: KP/CW
DRAWN: JV/EH
CHECKED: TP
JLR #: 32296-001
DRAWING #:
PID042

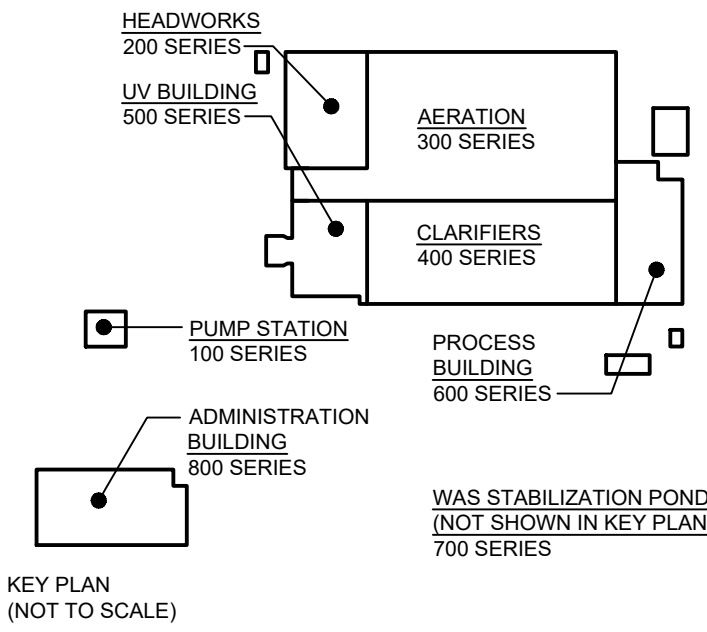
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File Location: \\jrichards\corp\projects\320000\32296-001 - Brighton WWT System Upgrades\03-Production\04-Process\PID501 UV DISINFECTION P&ID.dwg



1
PID051

UV DISINFECTION P&ID
SCALE: NTS



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SCALE: NTS

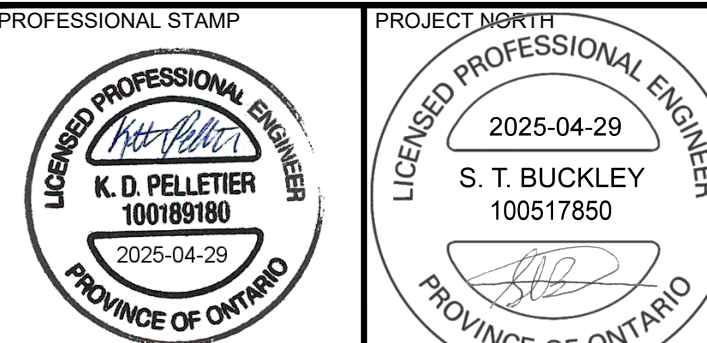
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS AND INSTRUMENTATION UV BUILDING

UV BUILDING P&ID

DESIGN: KP/CW

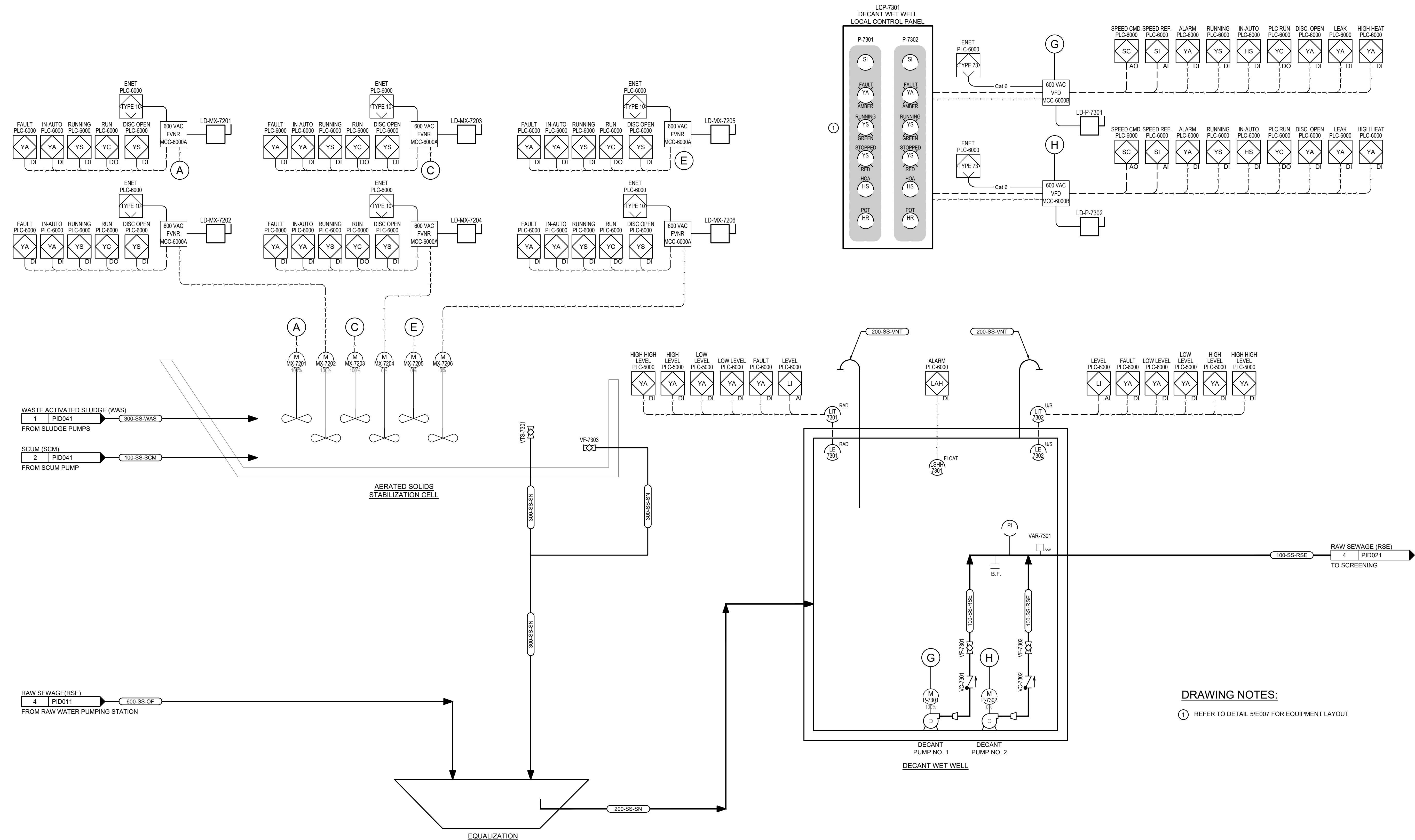
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CHECKED: TP

JLR #: 32296-001

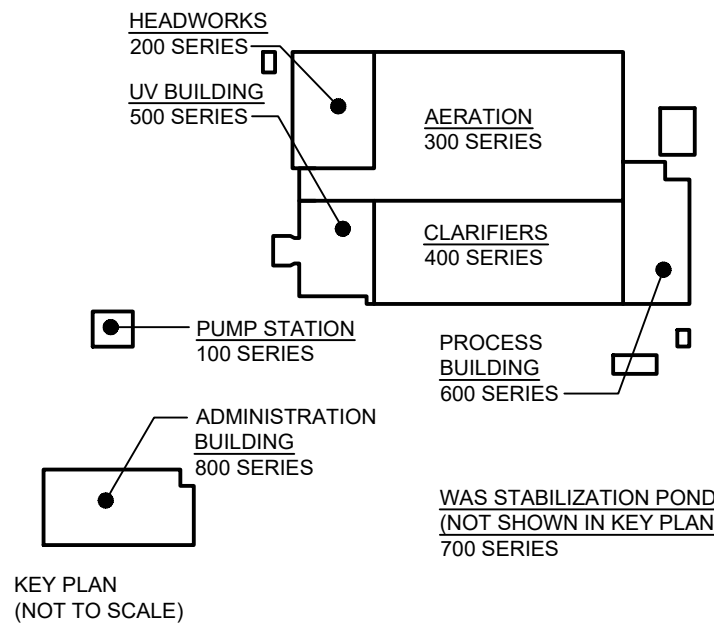
DRAWING #:
PID051

PLOT DATE: Tuesday, April 29, 2025 1:16:21 PM



DRAWING NOTES:

- ① REFER TO DETAIL 5/E007 FOR EQUIPMENT LAYOUT



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SCALE: NTS

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS AND INSTRUMENTATION
WAS STABILIZATION POND
SLUDGE STABILIZATION AND
DECANT PS P&ID

DESIGN: KP/CW

DRAWN: JV/EH

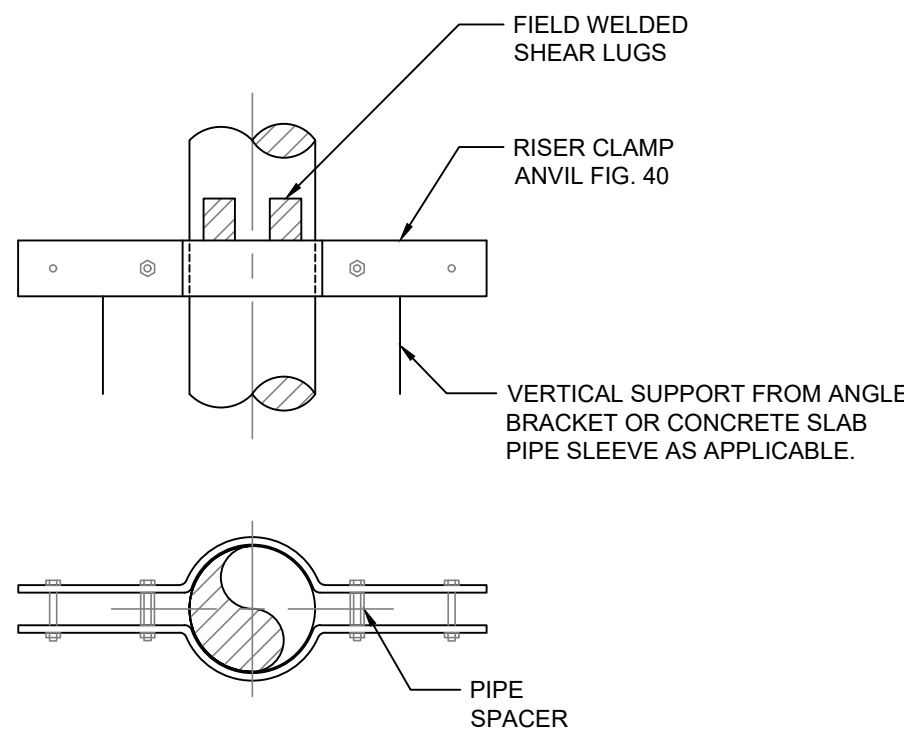
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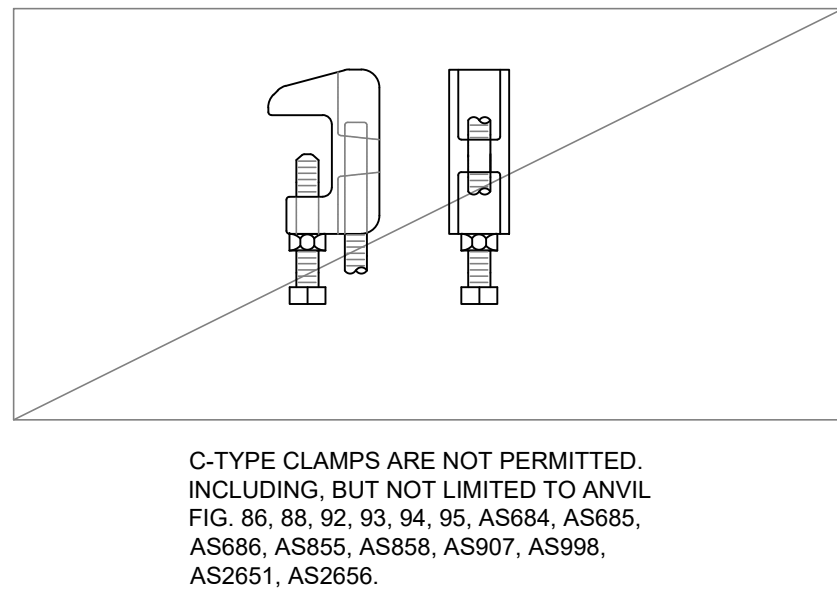
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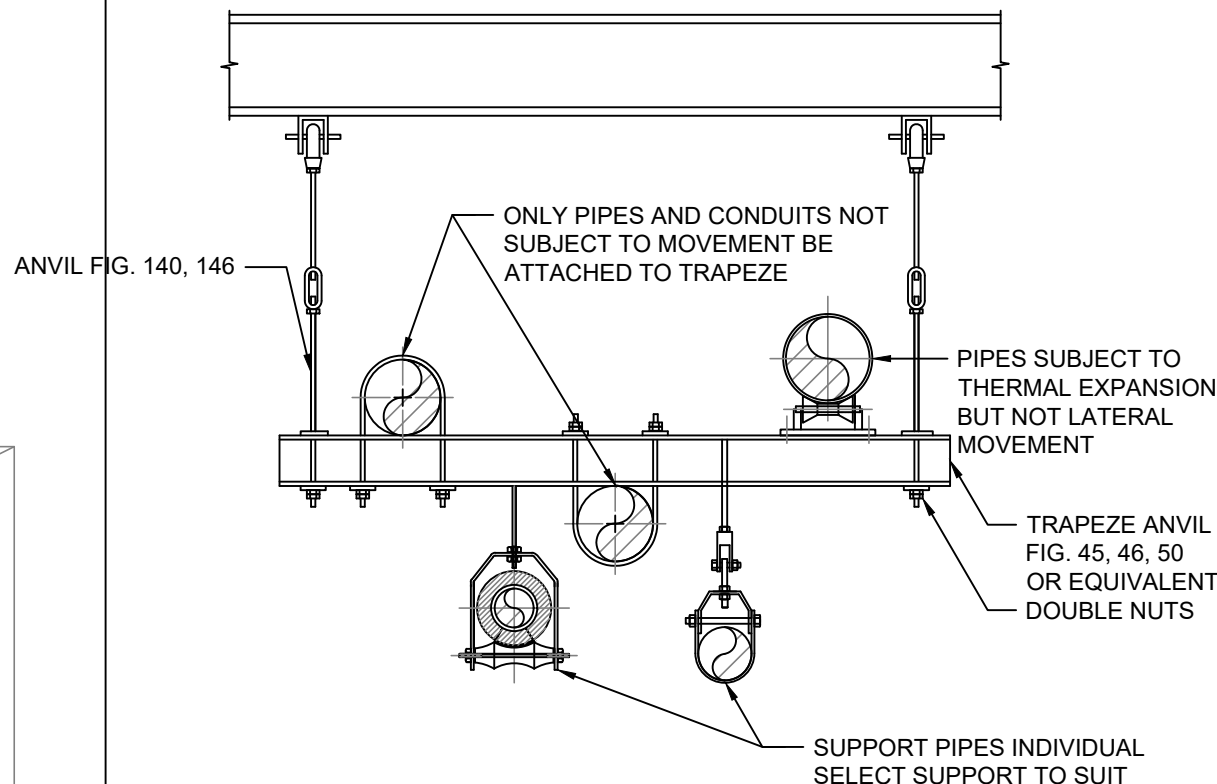
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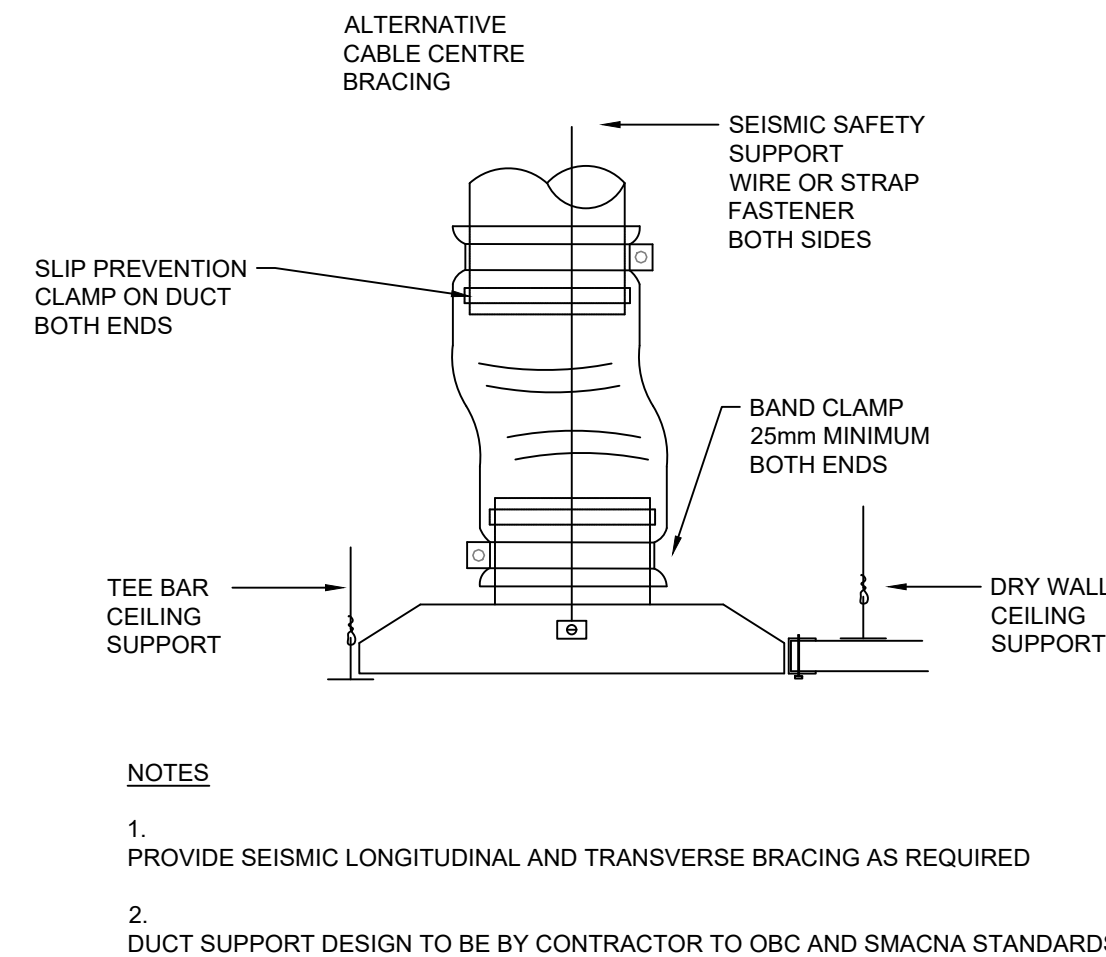
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PM001
**PIPE SUPPORT
RISER CLAMP**
SCALE: N.T.S.



2
PM001
**UNIVERSAL
C-TYPE CLAMP**
SCALE: N.T.S.

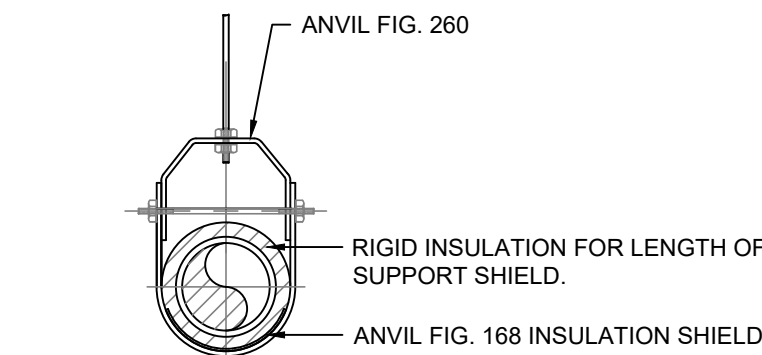


3
PM001
**EXAMPLE
TRAPEZE HANGER (1)**
SCALE: N.T.S.



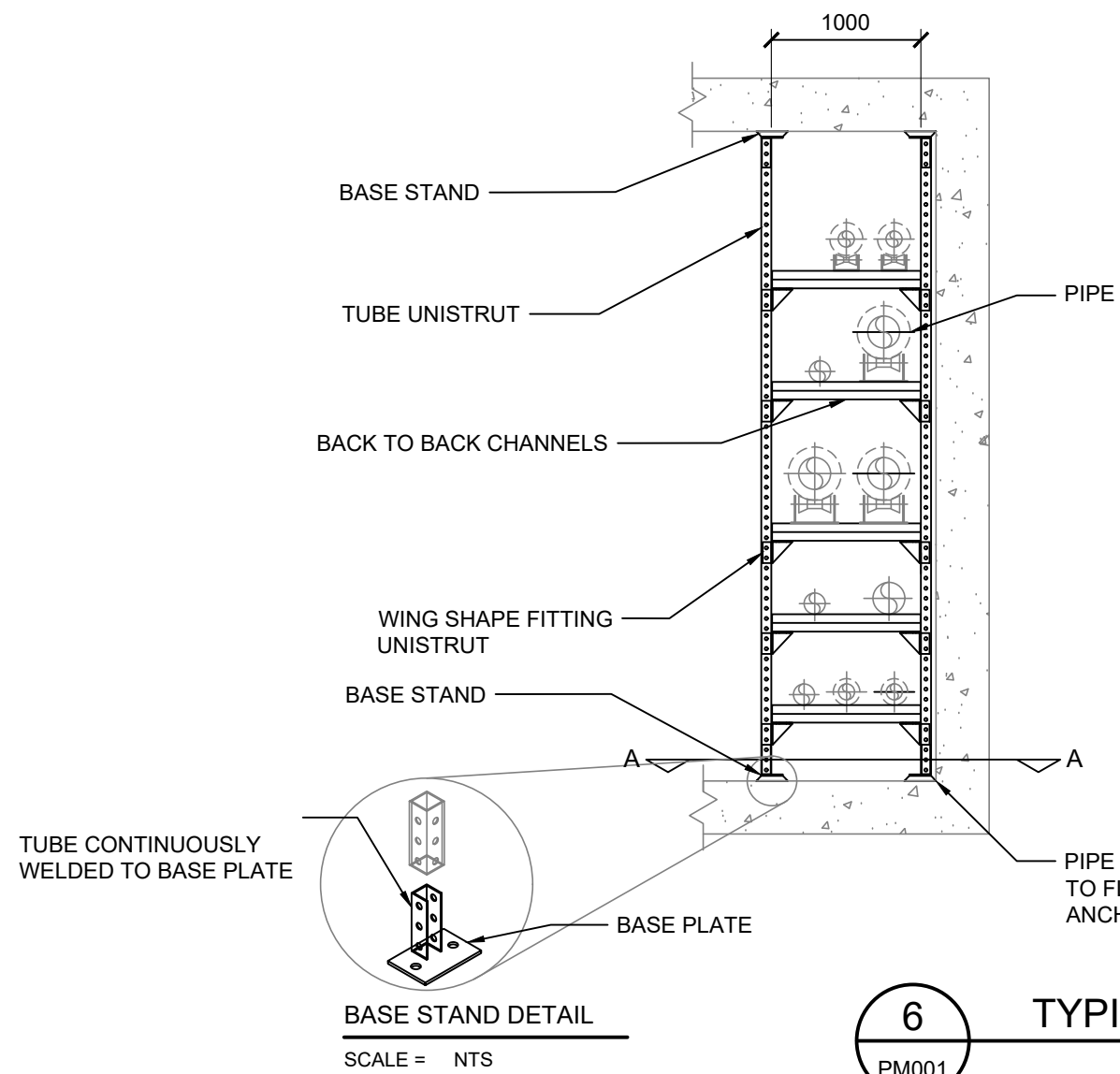
- NOTES
1. PROVIDE SEISMIC LONGITUDINAL AND TRANSVERSE BRACING AS REQUIRED
 2. DUCT SUPPORT DESIGN TO BE BY CONTRACTOR TO OBC AND SMACNA STANDARDS

4
PM001
**FLEXIBLE VERTICAL DUCT
CONNECTION & SUPPORT**
SCALE: N.T.S.

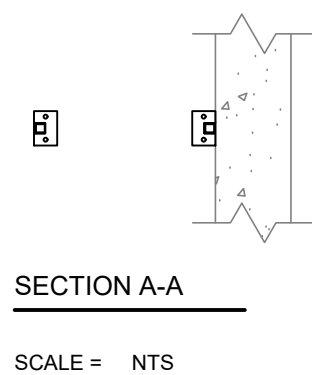


- APPLICATION:
1. COLD INSULATED PIPING WHERE VAPOUR BARRIER IS REQUIRED AND NOT SUBJECT TO SIGNIFICANT THERMAL MOVEMENT.
 2. PIPE ATTACHMENTS PIERCING VAPOUR BARRIER WILL NOT BE ACCEPTABLE.

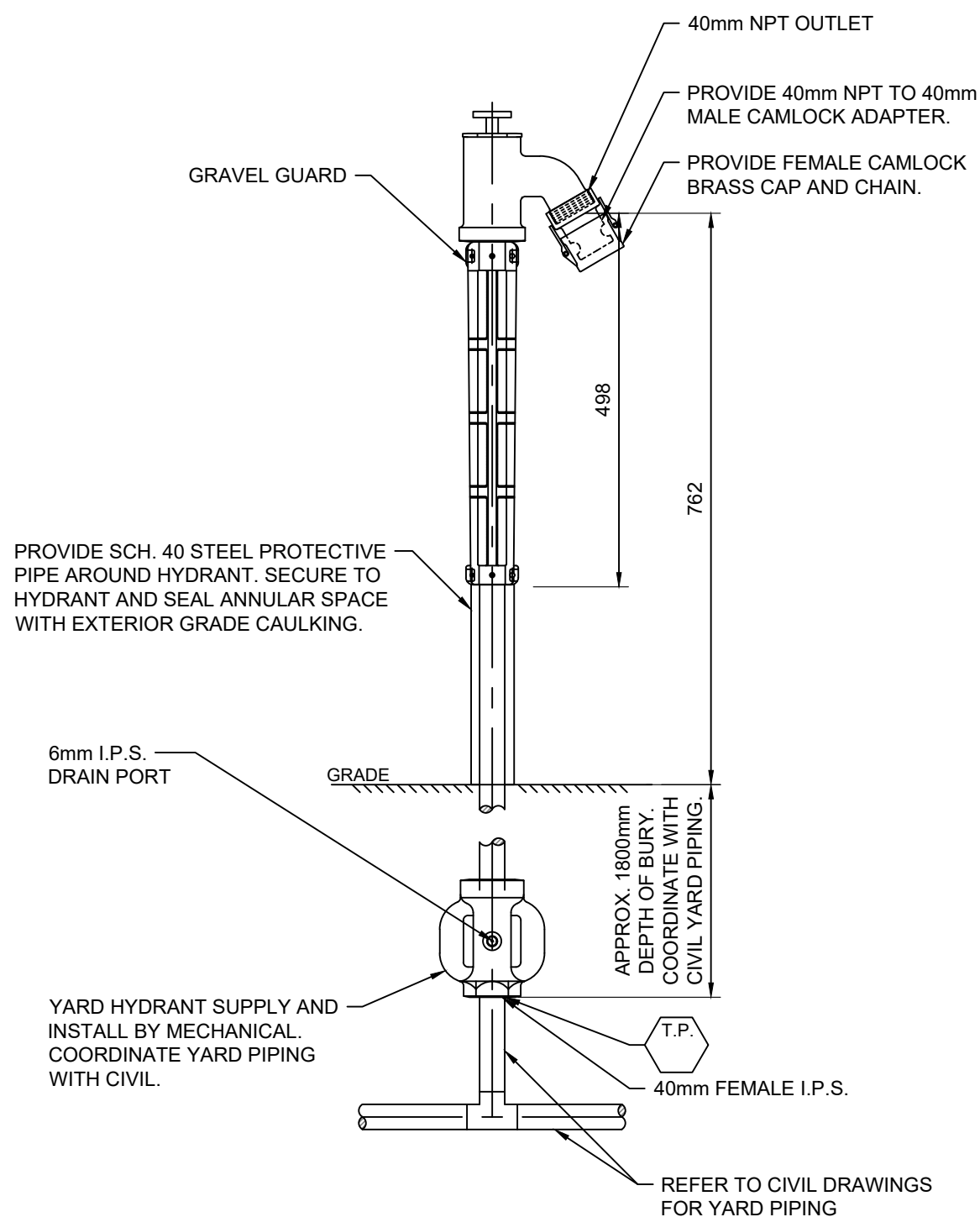
5
PM001
**ADJUSTABLE CLEVIS WITH
INSULATED PIPE LINE**
SCALE: N.T.S.



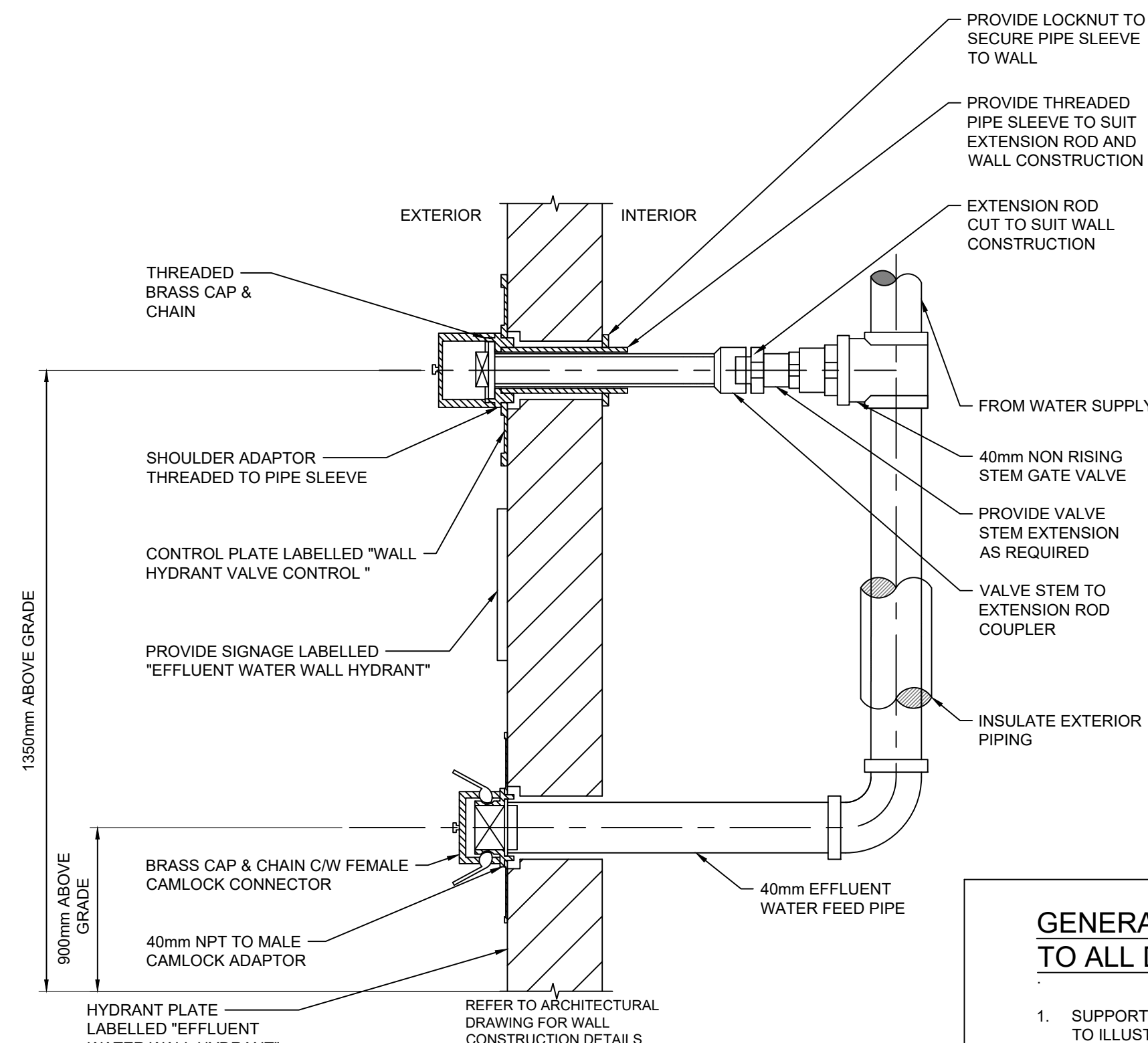
6
PM001
TYPICAL PIPE RACK DETAIL
SCALE: N.T.S.



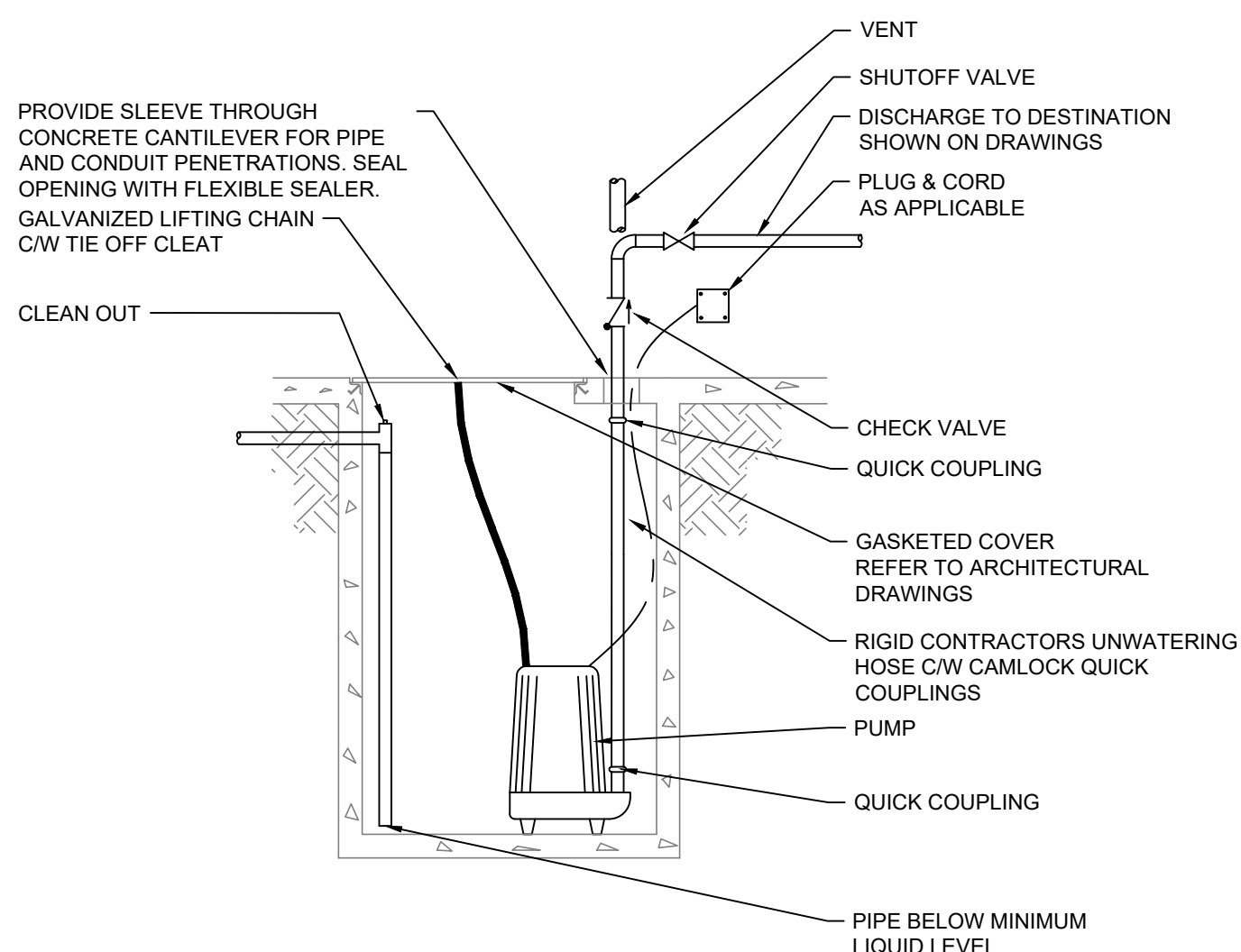
- NOTES:
1. MAXIMUM SPACING BETWEEN RACKS 2500mm.
 2. FINISH: HOT-DIPPED GALVANIZED (HG).
 3. PIPE RACK TO BE DESIGNED IN ACCORDANCE WITH SECTION 15060.
- APPLICATION:
1. PIPE RACK IN TUNNELS.



7
PM001
EFFLUENT WATER POST HYDRANT
SCALE: NTS



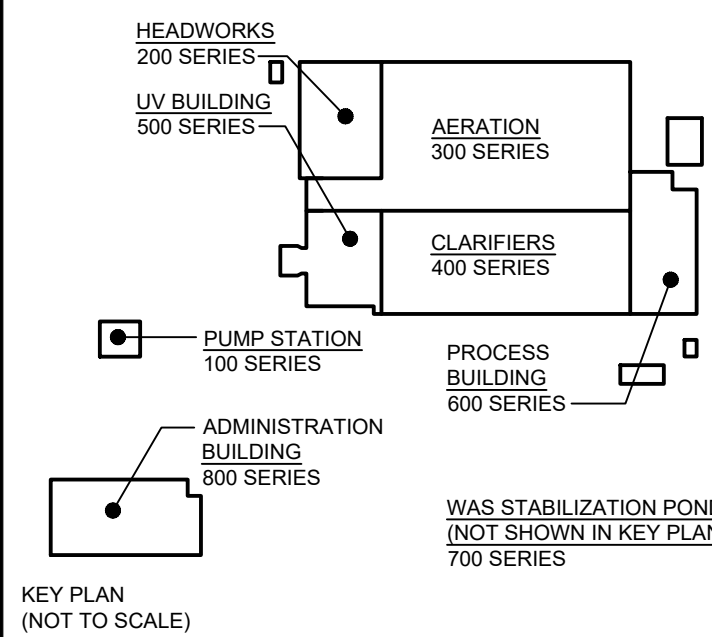
8
PM001
EFFLUENT WATER WALL HYDRANT
SCALE: NTS



9
PM001
SUMP PUMP DETAIL
SCALE: N.T.S.

GENERAL NOTES APPLICABLE TO ALL DETAIL SHEETS:

1. SUPPORTS AND ATTACHMENTS PROVIDED ARE INTENDED TO ILLUSTRATE TYPICAL PIPE AND DUCT SUPPORT METHODS AVAILABLE TO THE CONTRACTOR AND ESTABLISH A MINIMUM STANDARD OF ACCEPTANCE.
2. PIPING SUPPORT SYSTEM DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR. SUBMIT PIPING SUPPORT DESIGN DRAWINGS STAMPED BY A PROFESSIONAL ENGINEER.
3. MATERIALS:
 - 3.1. ALL SUPPORTS, RODS, ETC. INSTALLED IN PROCESS AREAS, PIPING GALLERIES AND OUTDOORS TO BE HOT DIPPED GALVANIZED.
 - 3.2. ALL SUPPORTS INSTALLED IN ENCLOSED TANKAGE AND CHANNELS TO BE 304 STAINLESS STEEL.
 - 3.3. ALL SUBMERGED SUPPORTS TO BE 304 STAINLESS STEEL.
 - 3.4. ALL BURIED PIPING SUPPORTS TO BE 304 STAINLESS STEEL.
 - 3.5. AS INDICATED IN INDIVIDUAL DESIGNS/DETAILS.
4. VALVE SUPPORTS: PROVIDE INDEPENDENT SUPPORT FOR EACH VALVE 150mm AND LARGER.
5. INLINE EQUIPMENT: PROVIDE INDEPENDENT SUPPORTS FOR ALL INLINE EQUIPMENT.
6. PROVIDE PIPING/DUCTING SUBJECT TO VERTICAL MOVEMENT, OR ATTACHED TO STRUCTURES SUBJECT TO VERTICAL MOVEMENT, WITH SPRING HANGER OR CONSTANT SUPPORT HANGER AS RECOMMENDED BY CONTRACTORS PIPE SUPPORT DESIGNER.
7. ALL VERTICAL SUPPORT HANGERS TO BE CAPABLE OF VERTICAL ADJUSTMENT.
8. WHERE ANGLE SIZES AND DIMENSIONS ARE INDICATED THEY ARE TO BE CONFIRMED BY SUPPORT DESIGNER. REFER TO SPECIFICATIONS.



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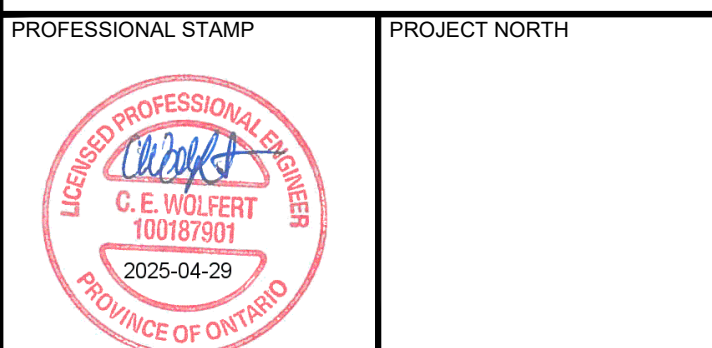
VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm

SCALE: NTS



CONSULTANT: J.L. Richards ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:



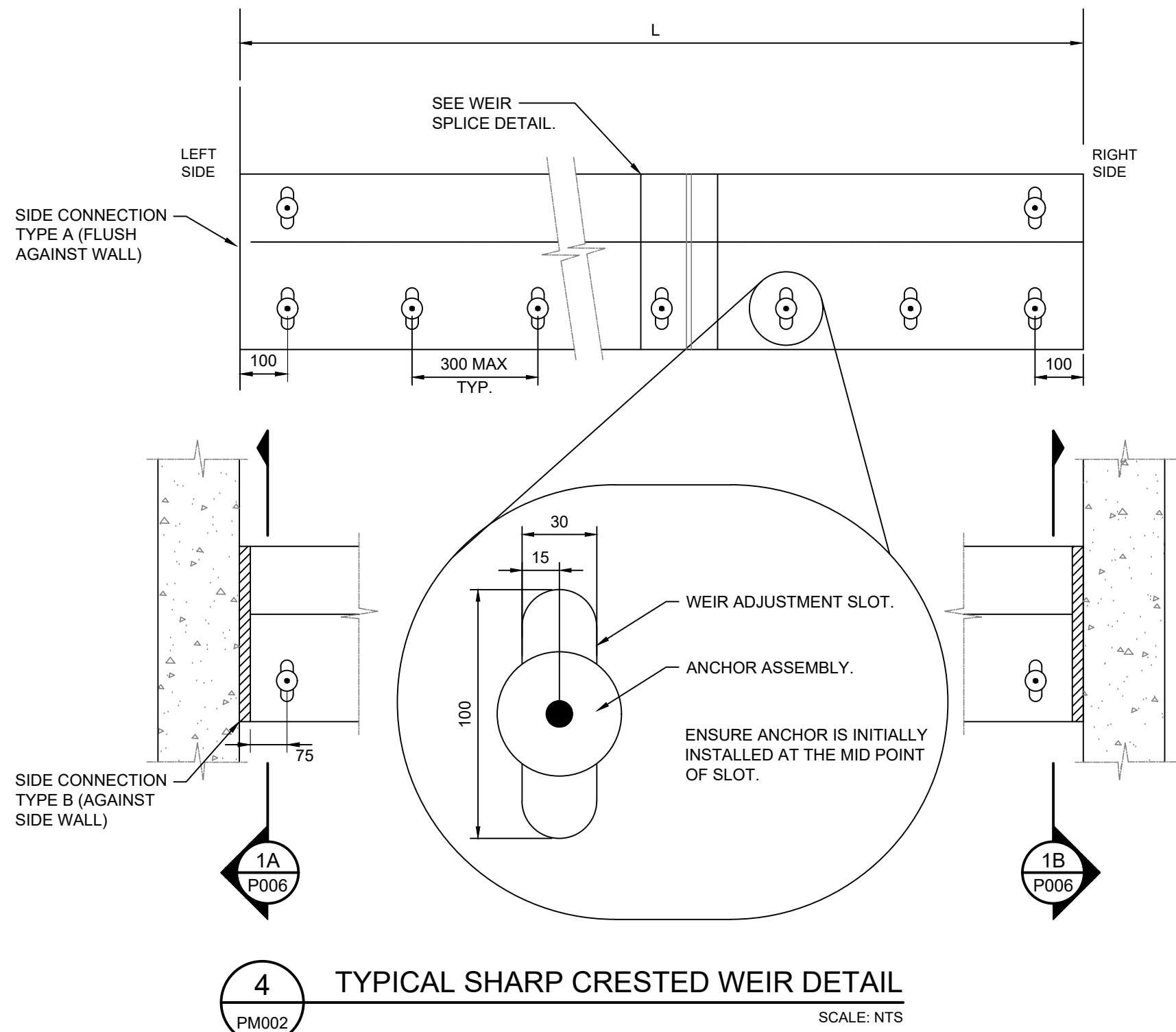
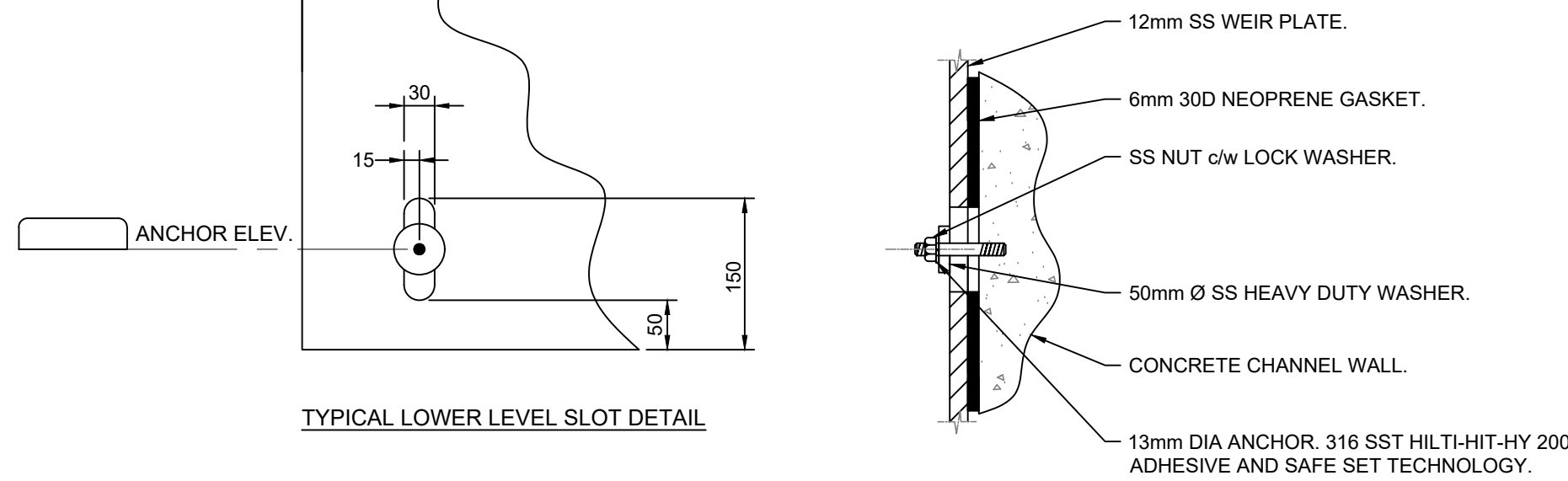
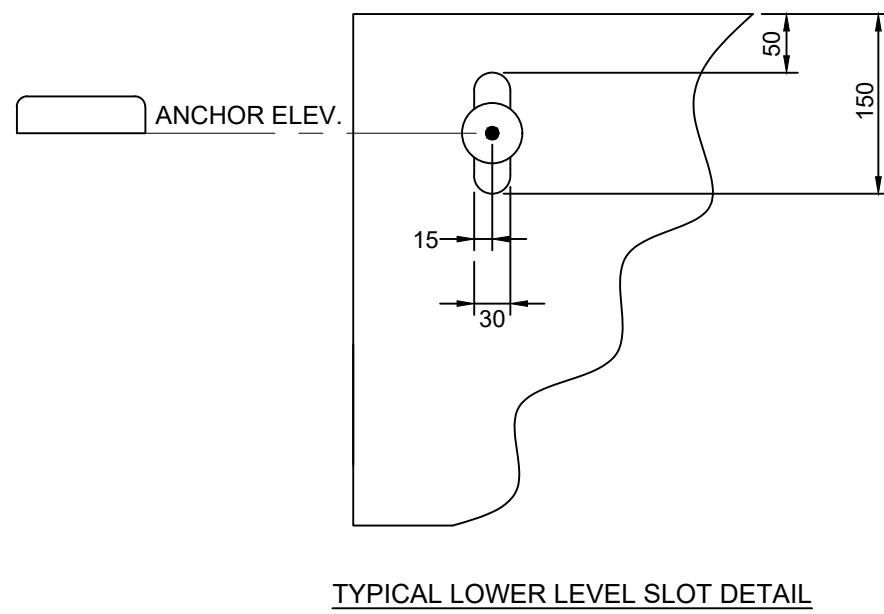
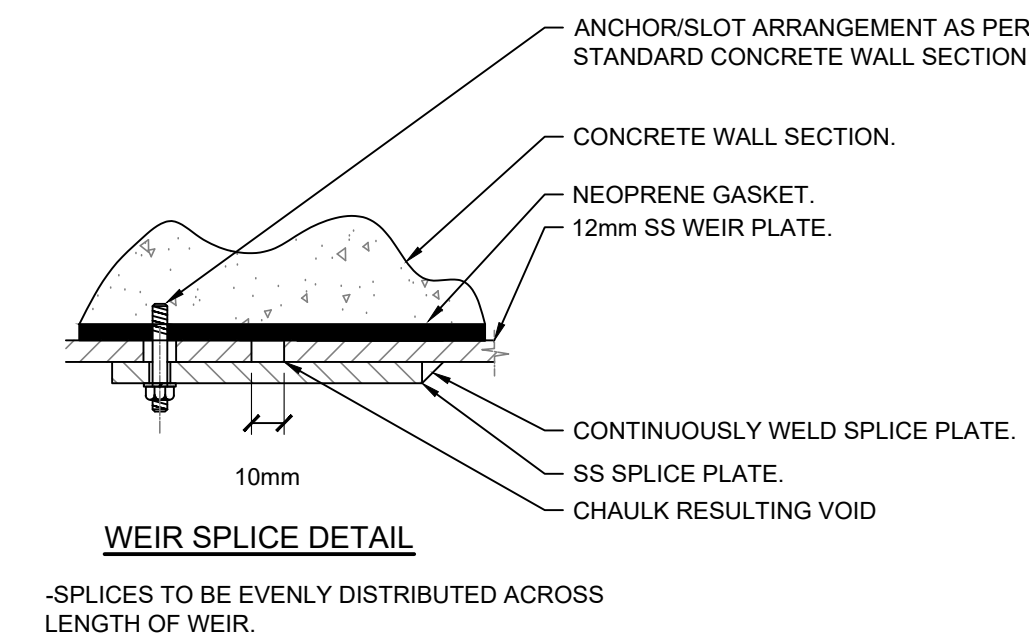
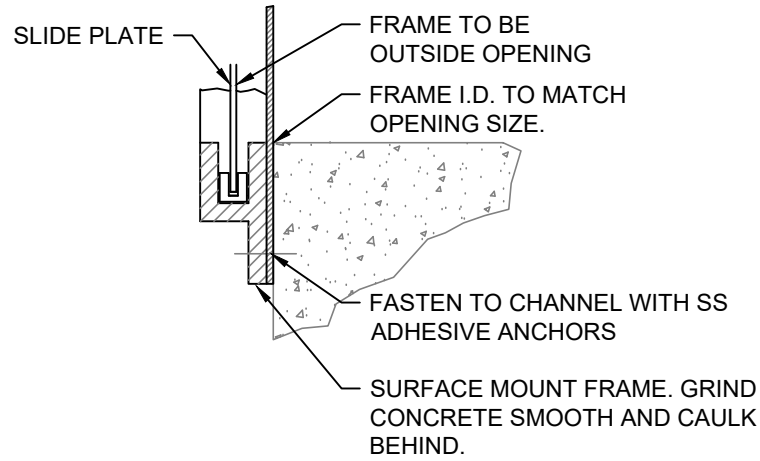
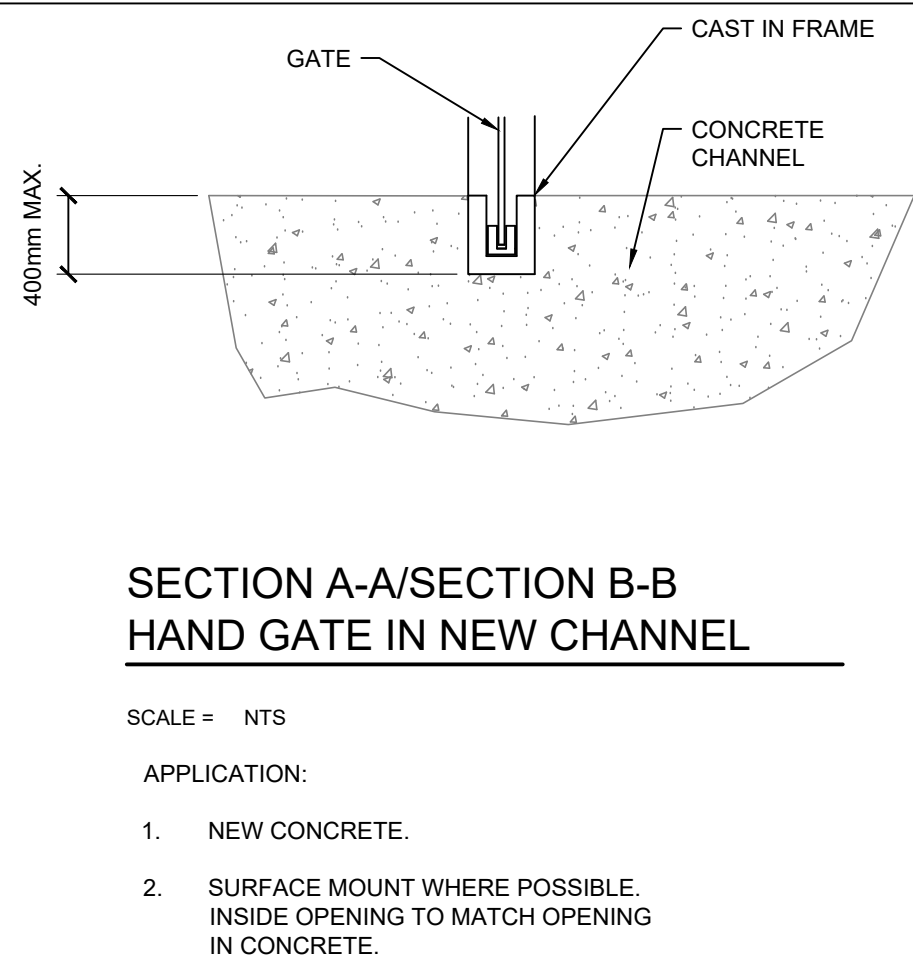
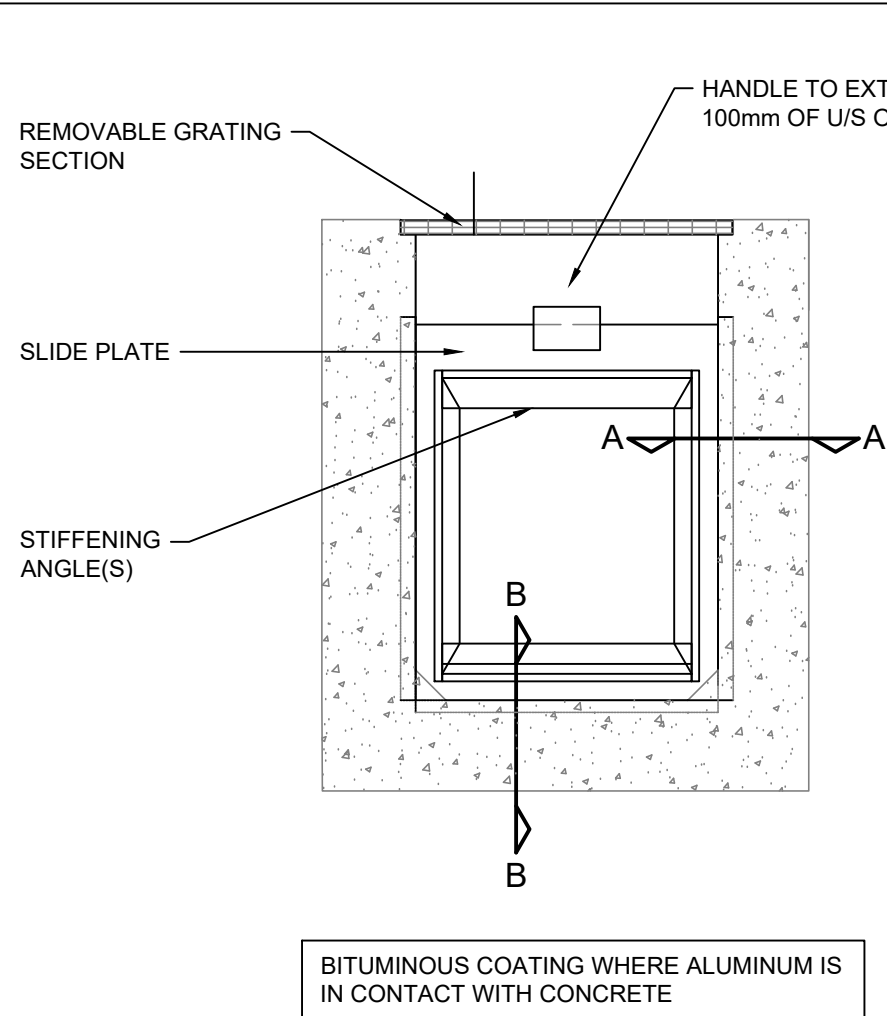
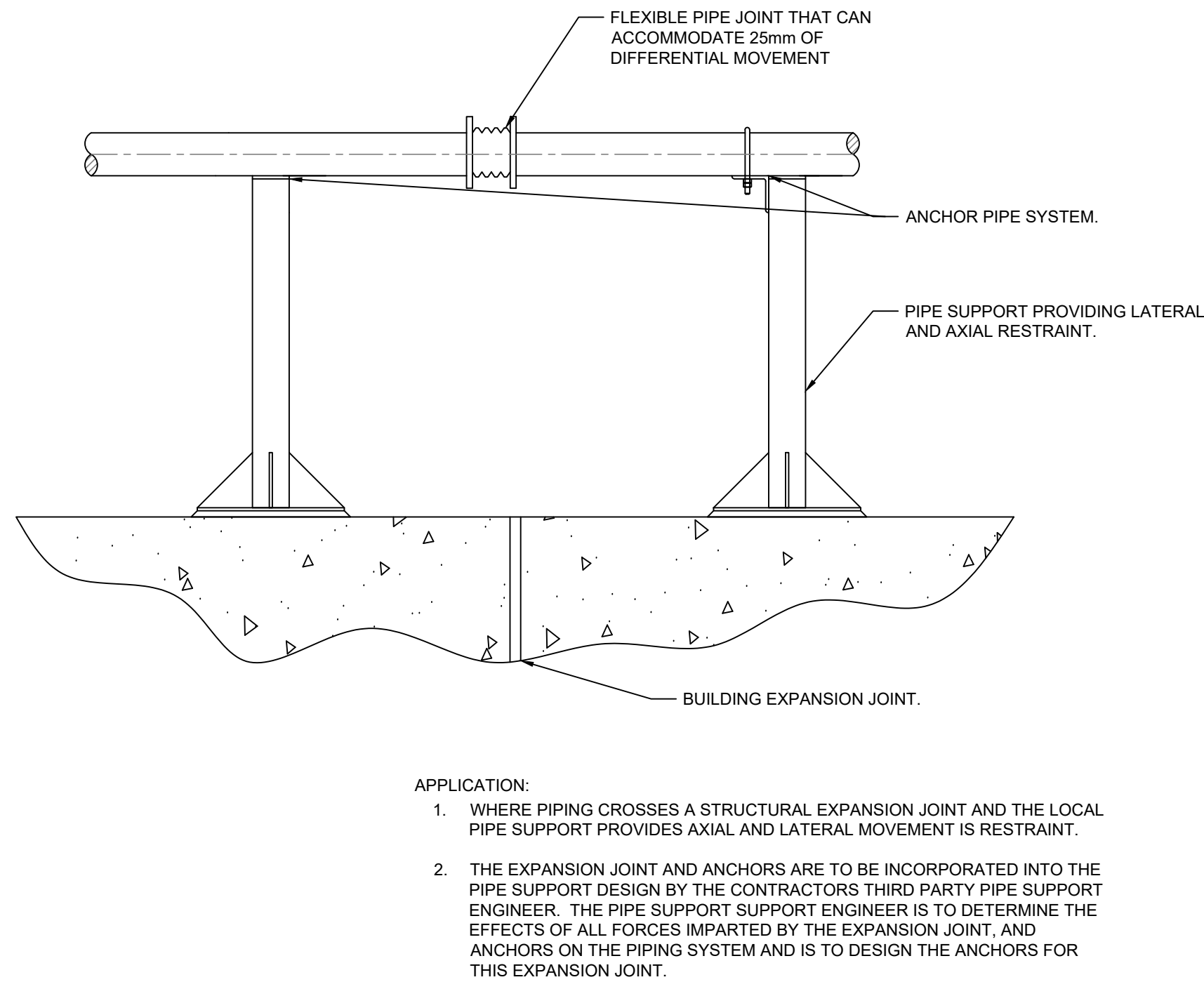
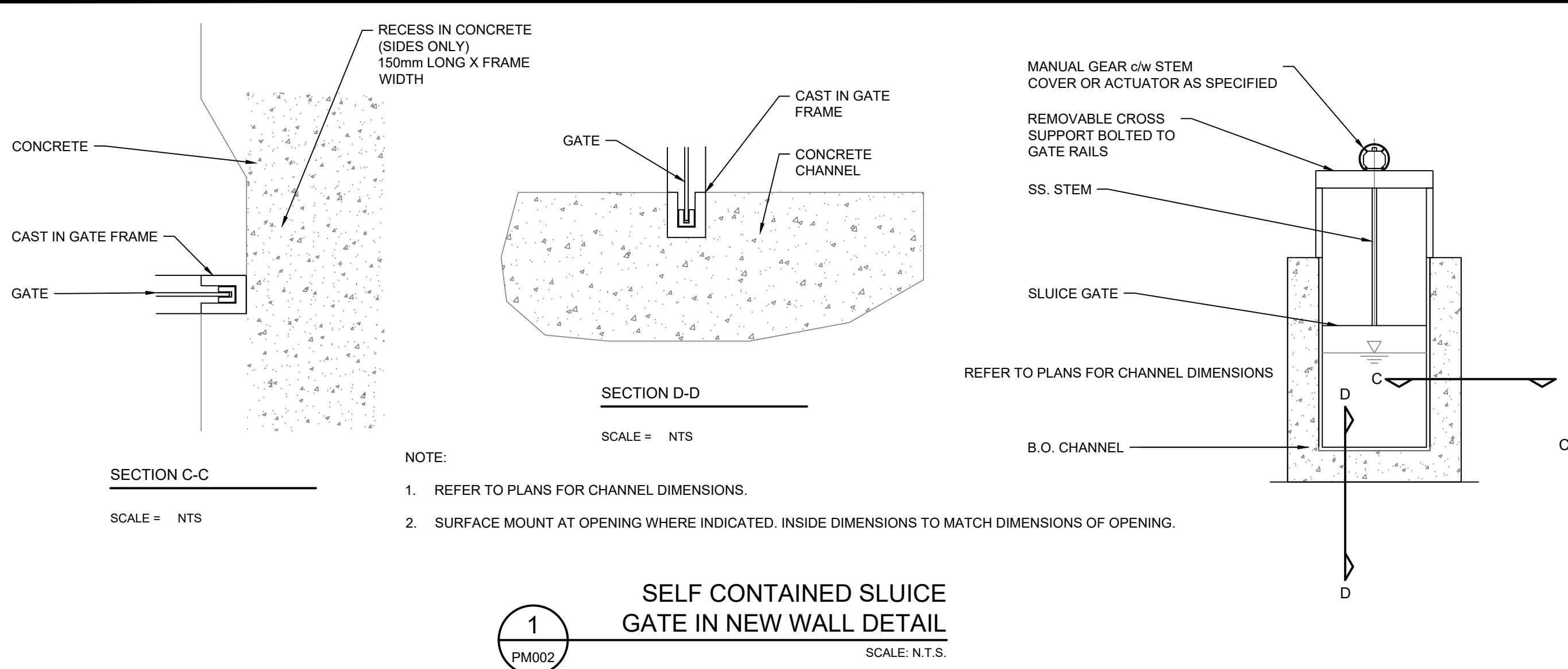
PROJECT: BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING: PROCESS AND INSTRUMENTATION SITE WIDE
PROCESS AND MECHANICAL STANDARD DETAILS

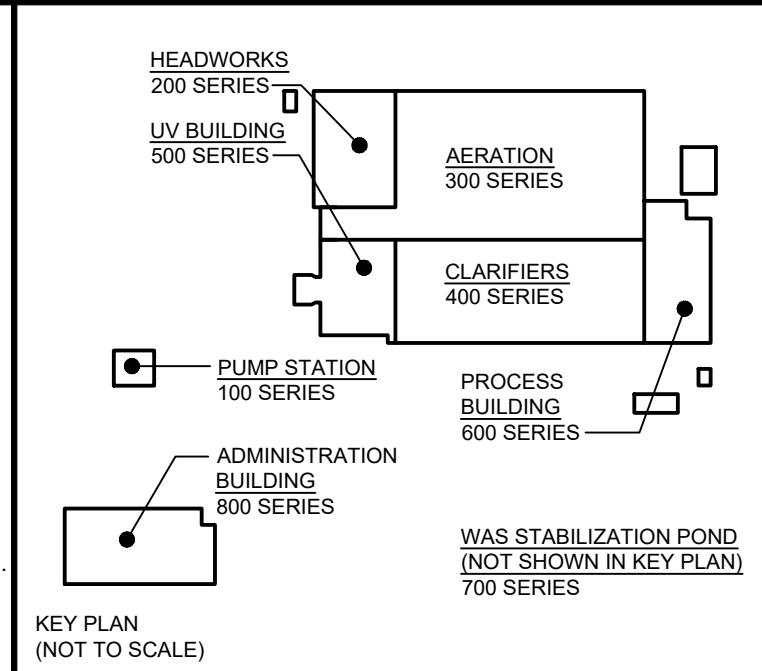
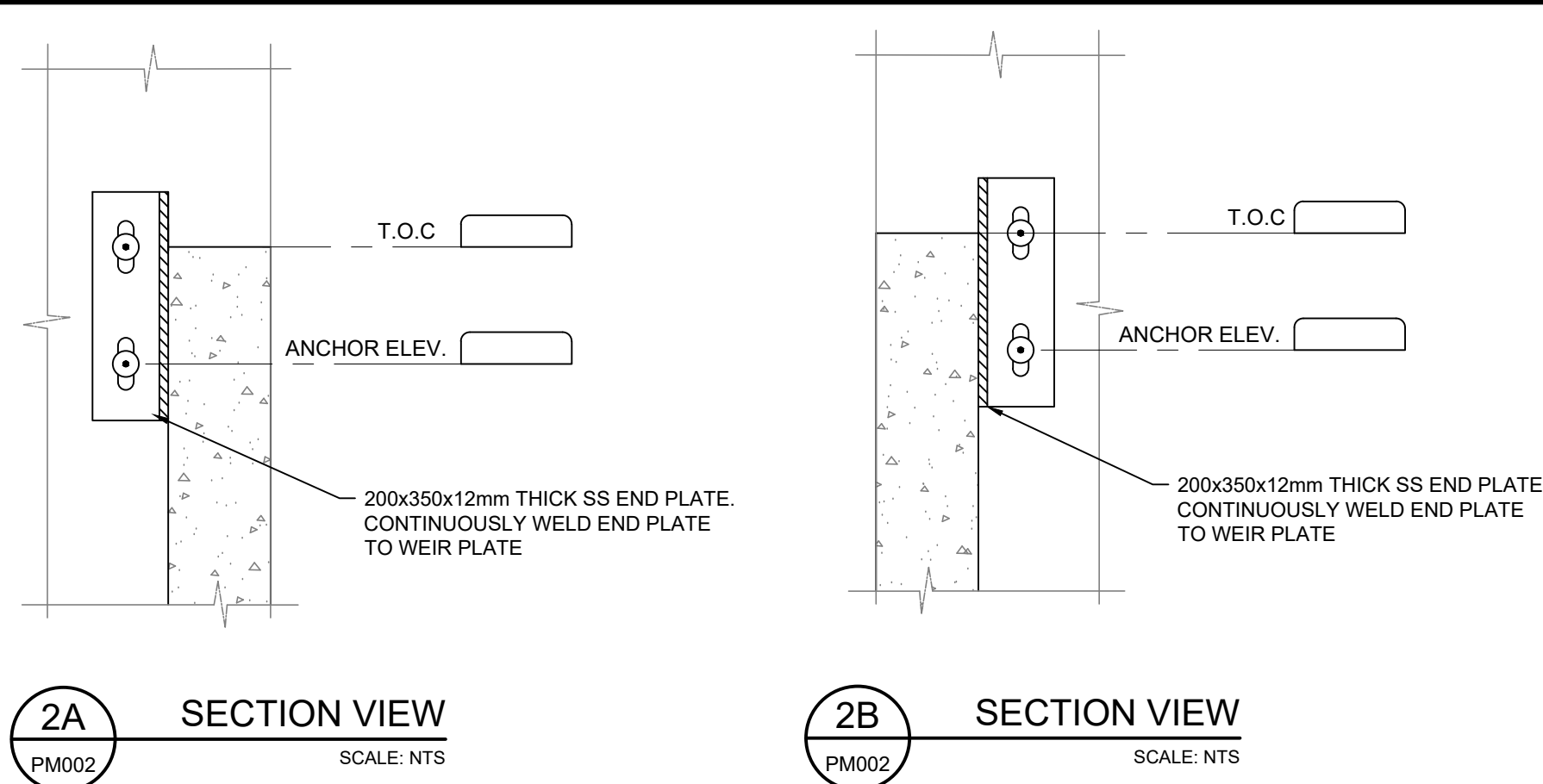
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DRAWN: JV/EH	PM001
CHECKED: TP	
JLR #:	
32296-001	

PLOT DATE: Tuesday, April 29, 2025 1:16:16 PM

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrade\03-Production\04-Process\PM002 PROCESS AND MECHANICAL STANDARD DETAILS.dwg



WEIR SCHEDULE										
I.D.	DESCRIPTION	LENGTH "L"	RIGHT SIDE CONNECTION	LEFT SIDE CONNECTION	NUMBER OF SPLICES REQUIRED	FIELD WORK				COMMENTS
		mm				SUPP. BY	INST. BY	WIRED BY	COMM. BY	
WSC-2101	HEADWORKS BYPASS WEIR	915	B	B	0	M	M	-	G	WEIR TO BE 750MM TALL SUCH THAT THE BOTTOM ANCHORS INTO THE SIDE OF THE BENCHING IN THE BYPASS CHANNEL, AND THE WEIR INVERT IS AS NOTED ON HP001. THREE (3) SIDE ANCHOR CONNECTIONS ARE REQUIRED INSTEAD OF TWO (2). SIDE ANCHORS TO BE AS PER THE DETAIL, WITH THE THIRD ANCHOR AT THE HEIGHT MIDPOINT OF THE WEIR PLATE.
WSC-3201TO WSC-3224	CLARIFIER WEIRS	1950	A	A	0	M	M	-	G	
WSC-40001, WSC-4002	UV WEIRS					M	M	-	G	UV WEIRS TO BE PROVIDED AS PART OF THE UV SYSTEM BY THE UV SYSTEM SUPPLIER. UV WEIRS TO BE ABLE TO FIT IN THE 1889mmX1900mm SPACE PROVIDED FOR THE WEIRS.



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SCALE: NTS

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS AND INSTRUMENTATION SITE WIDE

PROCESS AND MECHANICAL STANDARD DETAILS

DESIGN: KP/CW

DRAWN: JV/EH

CHECKED: TP

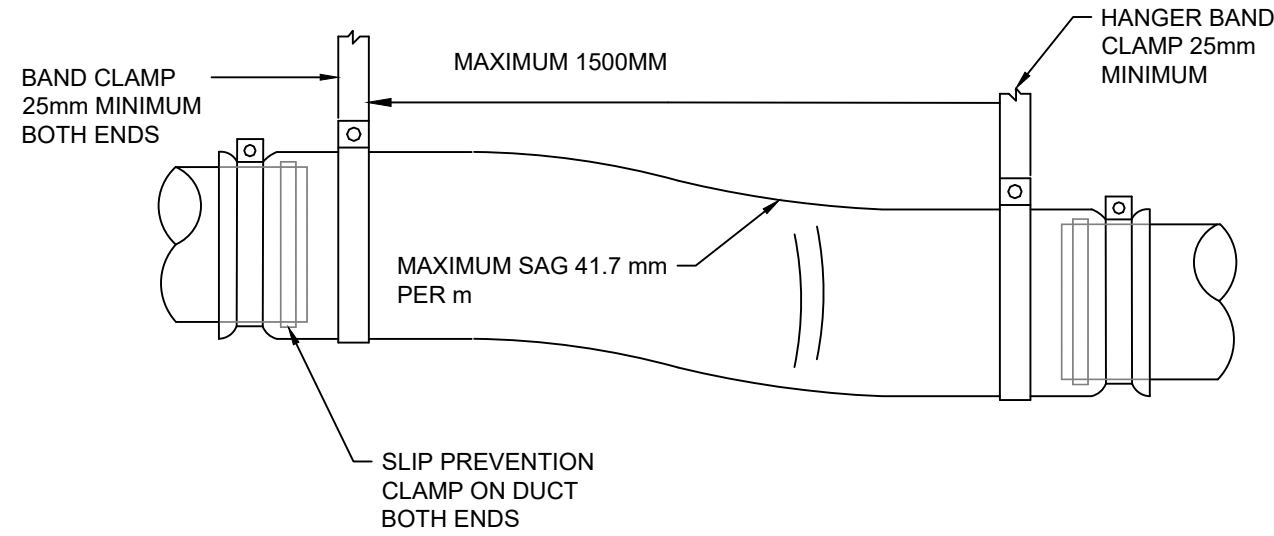
JLR #: 32296-001

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PM002

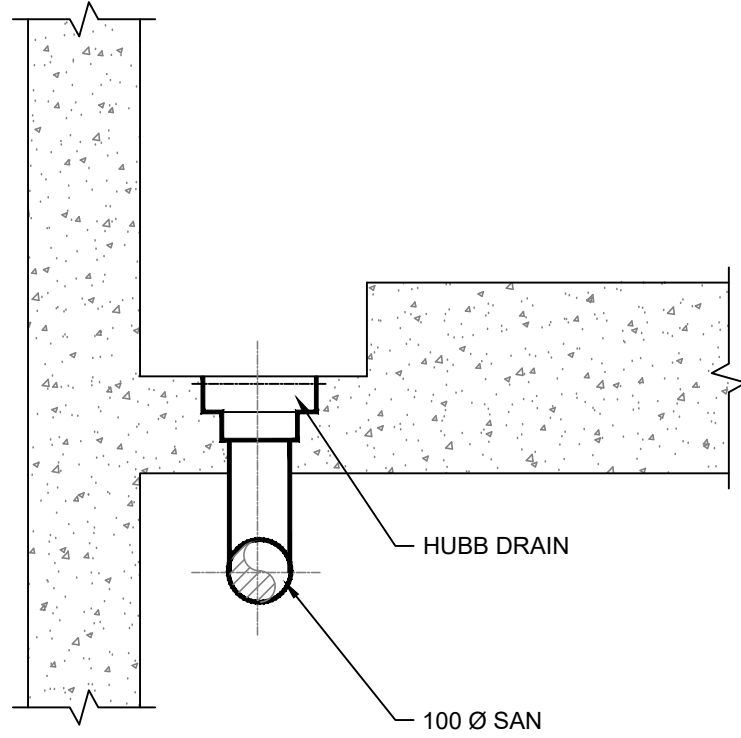
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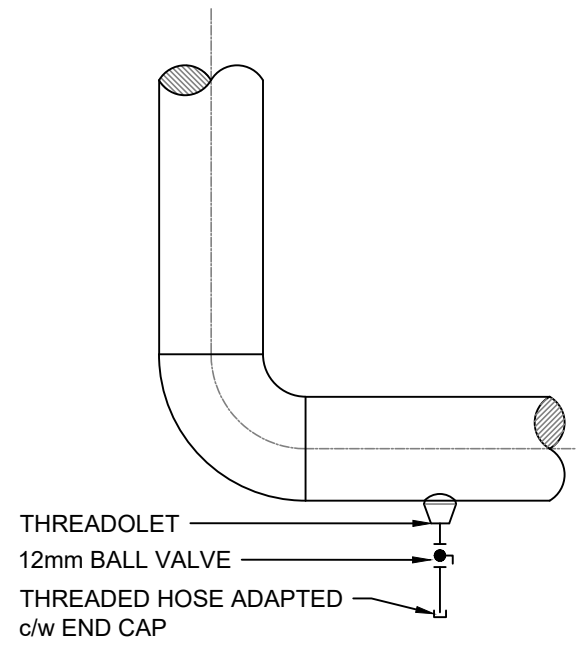


- NOTES:
1. PROVIDE SEISMIC LONGITUDINAL AND TRANSVERSE BRACING AS REQUIRED
 2. DUCT SUPPORT DESIGN TO BE BY CONTRACTOR TO OBC AND SMACNA STANDARDS

1 FLEXIBLE HORIZONTAL DUCT CONNECTION & SUPPORT
SCALE: N.T.S.
PM003

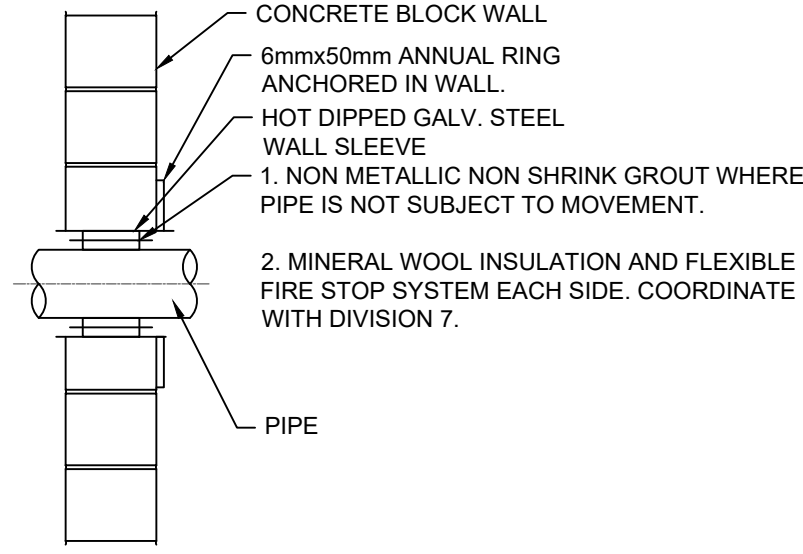


2 TYPICAL TRENCH DRAIN DETAIL
SCALE: N.T.S.
PM003



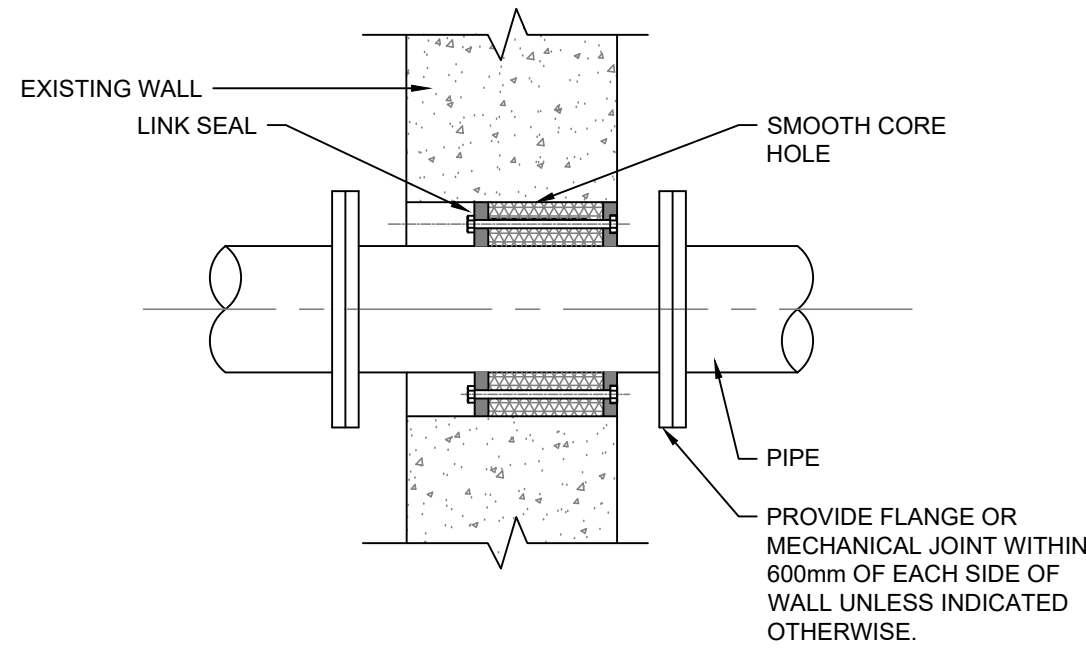
- NOTE:
1. PROVIDE FLUSH CONNECTION AT LOCAL LOW POINTS IN PIPING NETWORK.
- APPLICATION:
1. HEATING LINES
 2. EFFLUENT WATER
 3. CLEAR WATER

3 LIQUID LINE
SCALE: N.T.S.
PM003



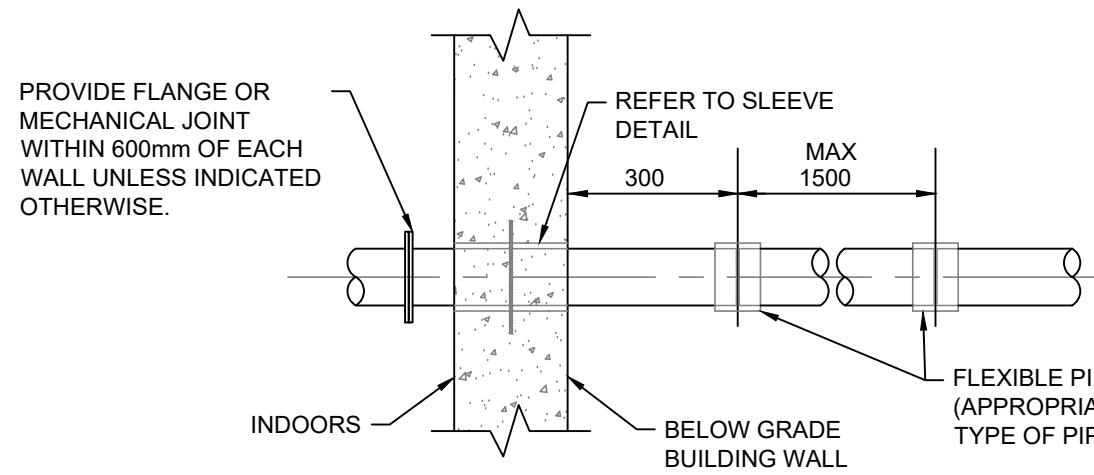
- APPLICATIONS:
- FOR PIPES NOT SUBJECT TO MOVEMENT
1. NON METALLIC NON SHRINK GROUT WHERE PIPE IS NOT SUBJECT TO MOVEMENT.
- FOR PIPES SUBJECT TO MOVEMENT
2. MINERAL WOOL INSULATION AND FLEXIBLE FIRE STOP SYSTEM EACH SIDE. COORDINATE WITH DIVISION 7.

4 TYPICAL PIPE ENTERING/LEAVING BUILDING THROUGH CONCRETE BLOCK WALL
SCALE: N.T.S.
PM003

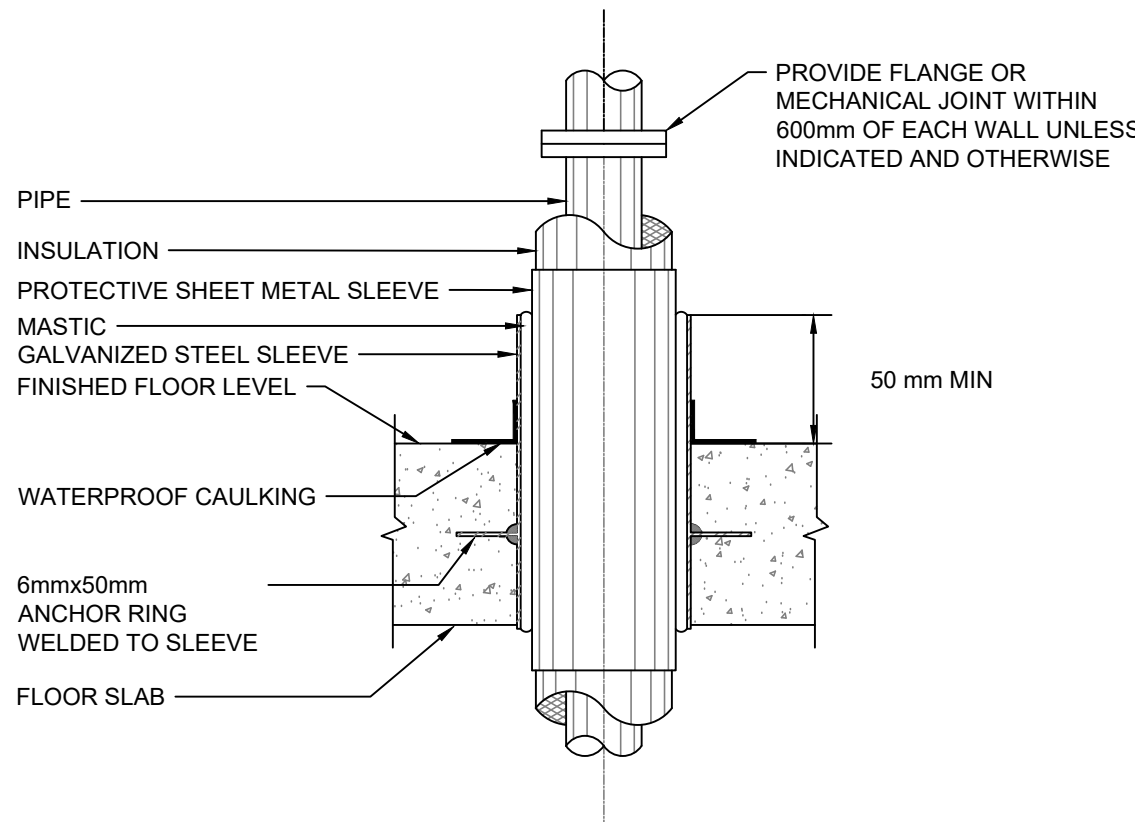


- NOTES:
1. CORE OPENING TO SUIT LINK-SEAL. LOCATE REINFORCING STEEL AND COORDINATE FINAL CORE LOCATION WITH ENGINEER.
 2. LINK-SEAL TO BE PROVIDED WITH STAINLESS STEEL BOLTS & HARDWARE.

5 SLEEVE THROUGH EXISTING CONCRETE TANK WALL DETAIL
SCALE: N.T.S.
PM003

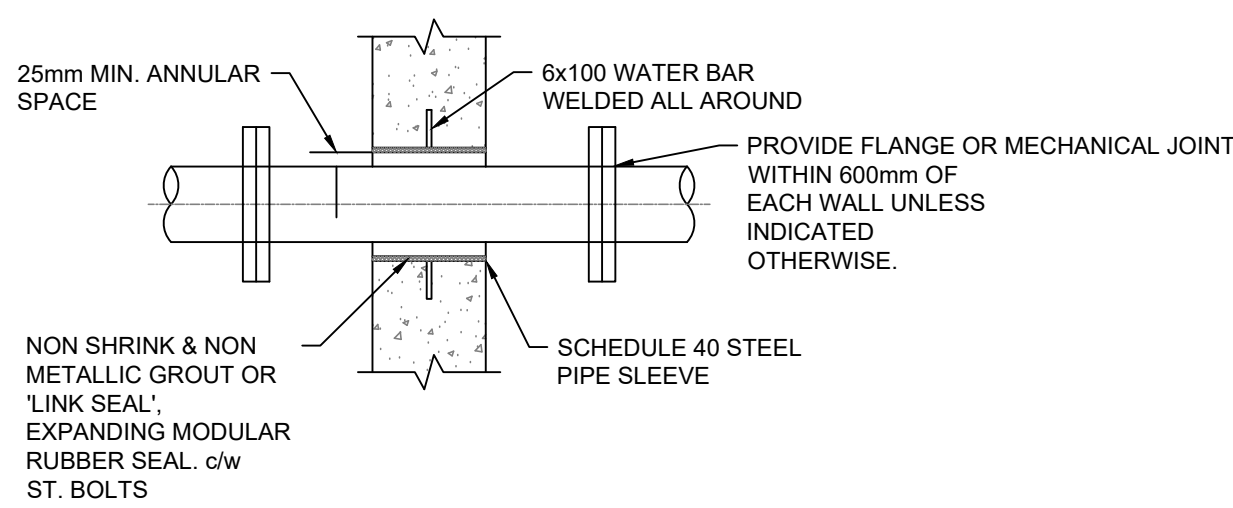


6 PIPE ENTERING/LEAVING BUILDING OR TANKS BELOW GRADE
SCALE: N.T.S.
PM003



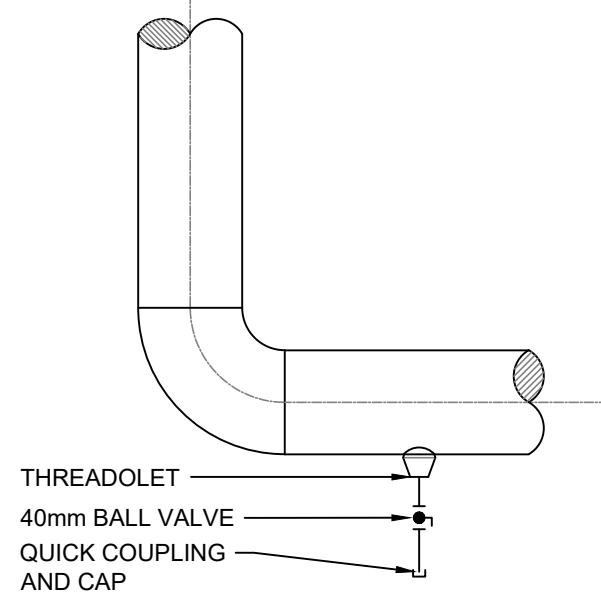
- APPLICATION:
1. INSULATED PIPE SLEEVE THROUGH A NEW CONCRETE FLOOR WHERE BOTH ABOVE AND BELOW THE FLOOR ARE INSIDE.

7 INTERNAL INSULATED PIPE SLEEVE
SCALE: N.T.S.
PM003



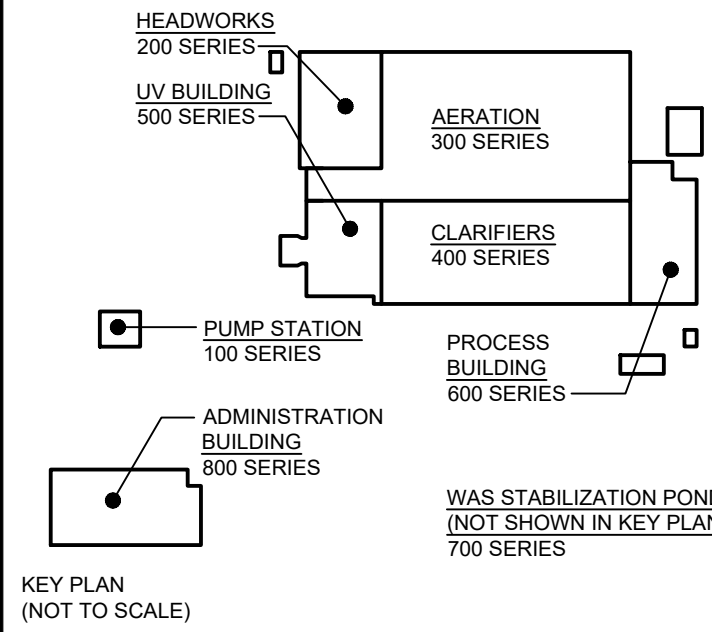
- APPLICATION:
1. UNINSULATED PIPING THROUGH CONCRETE WALLS.

8 WATERPROOF PENETRATION SLEEVE NEW CONCRETE WALL
SCALE: N.T.S.
PM003



- NOTE:
1. PROVIDE FLUSH CONNECTION AT LOCAL LOW POINTS IN PIPING NETWORK.
- APPLICATION:
1. SLUDGE LINES
 2. CENTRATE LINES

9 PROCESS / SLUDGE LINE
SCALE: N.T.S.
PM003



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SCALE: NTS

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS AND INSTRUMENTATION SITE WIDE
PROCESS AND MECHANICAL STANDARD DETAILS

DESIGN: KP/CW

DRAWN: JV/EH

CHECKED: TP

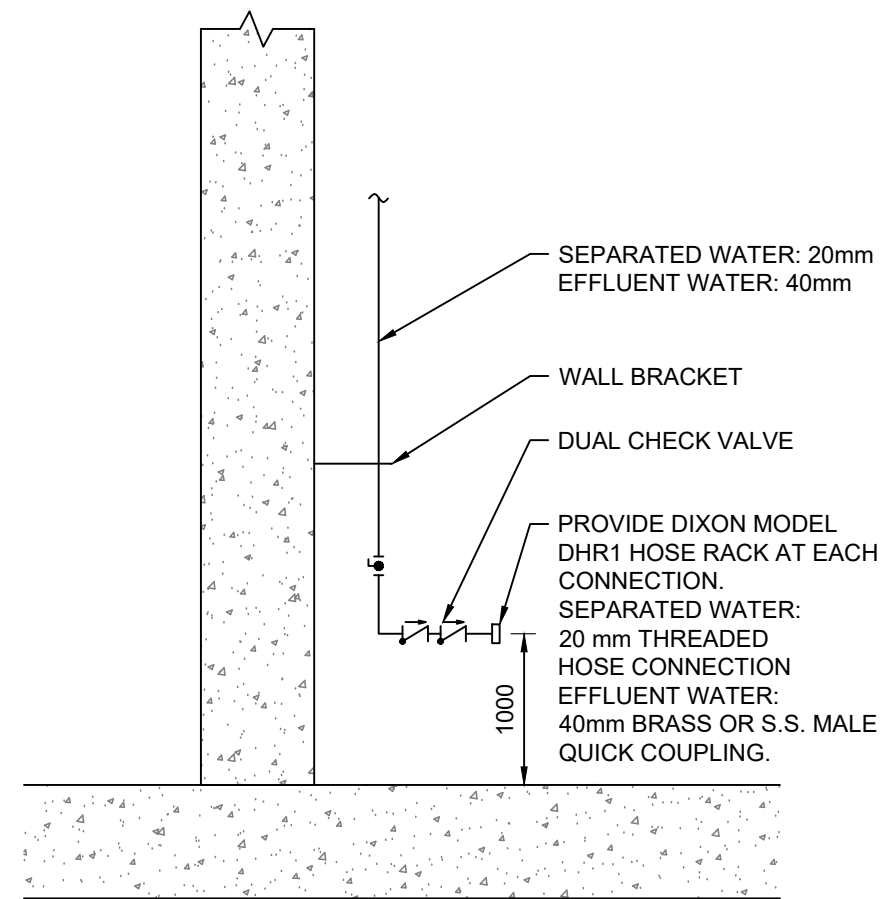
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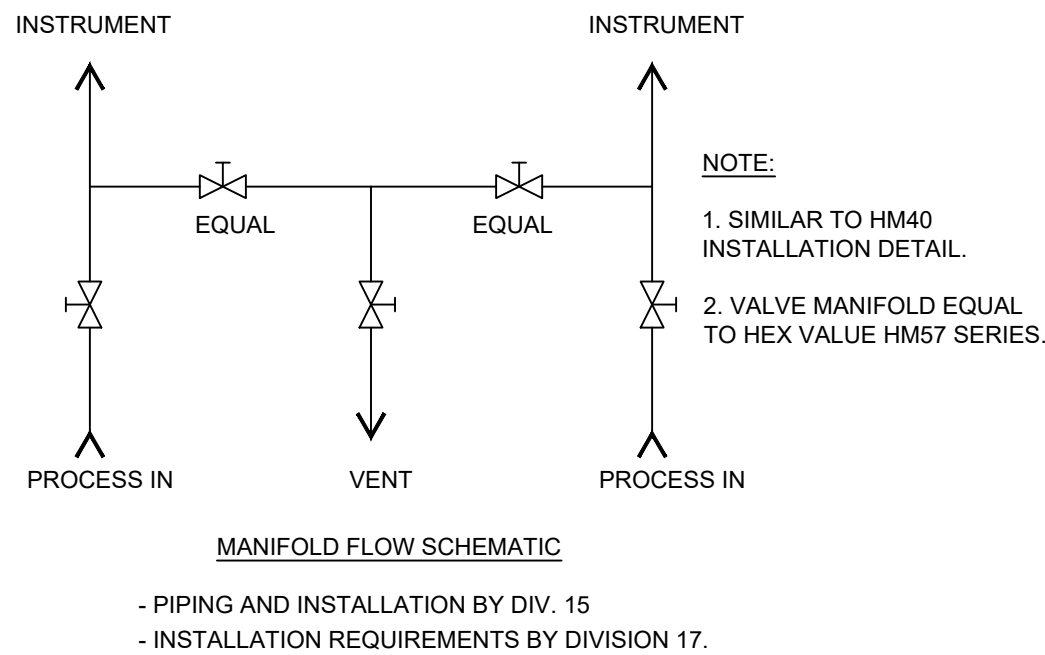
PM003

PLOT DATE: Tuesday, April 29, 2025 1:16:28 PM

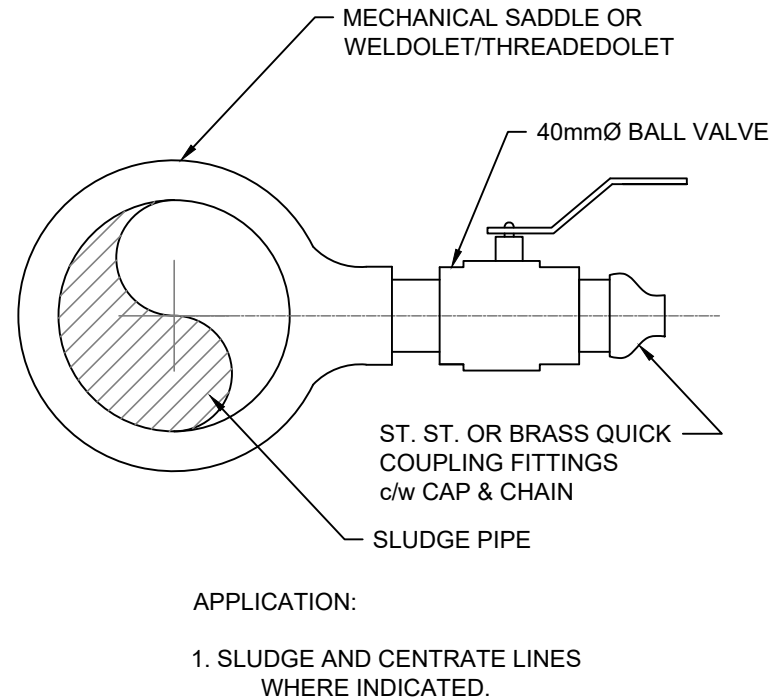
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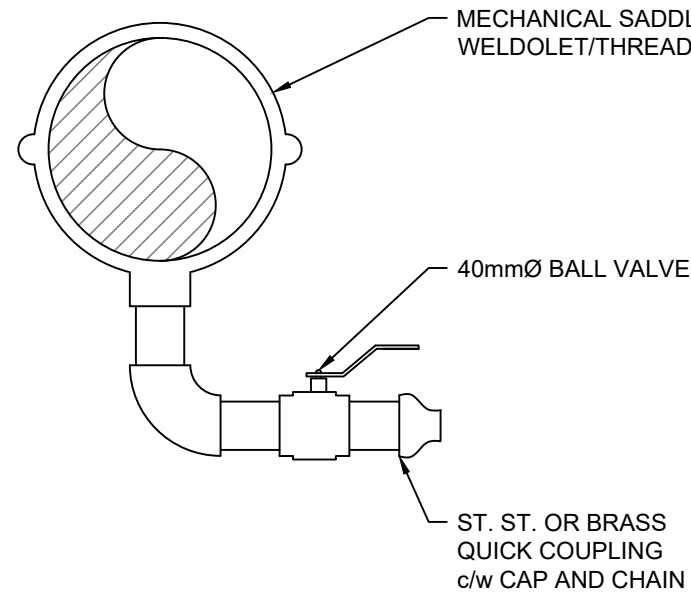
1 TYPICAL SEPARATED/EFFLUENT WATER HOSE CONNECTION
SCALE: N.T.S.
PM004



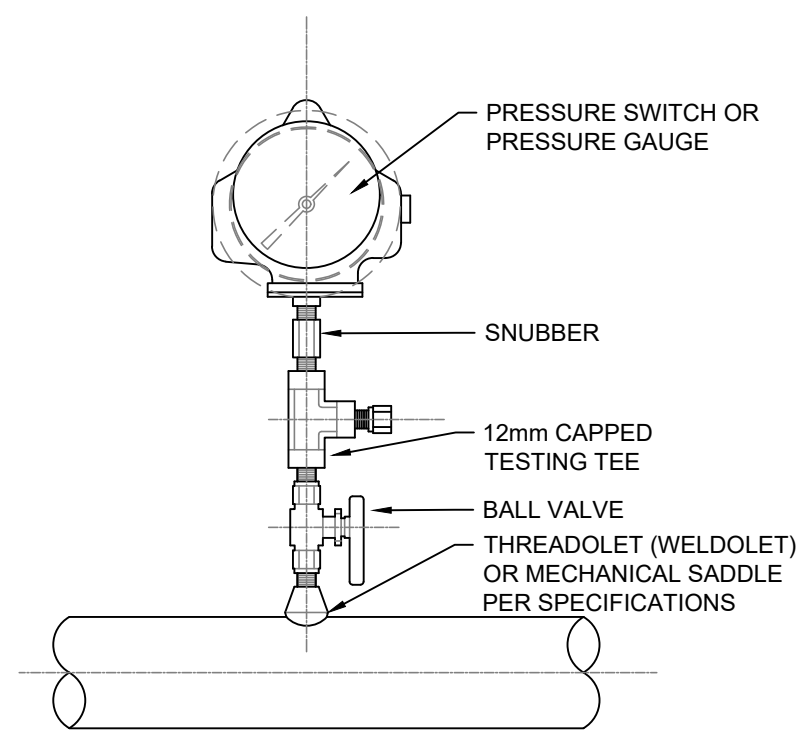
2 DIFFERENTIAL PRESSURE INSTRUMENT MOUNTING DETAIL
SCALE: N.T.S.
PM004



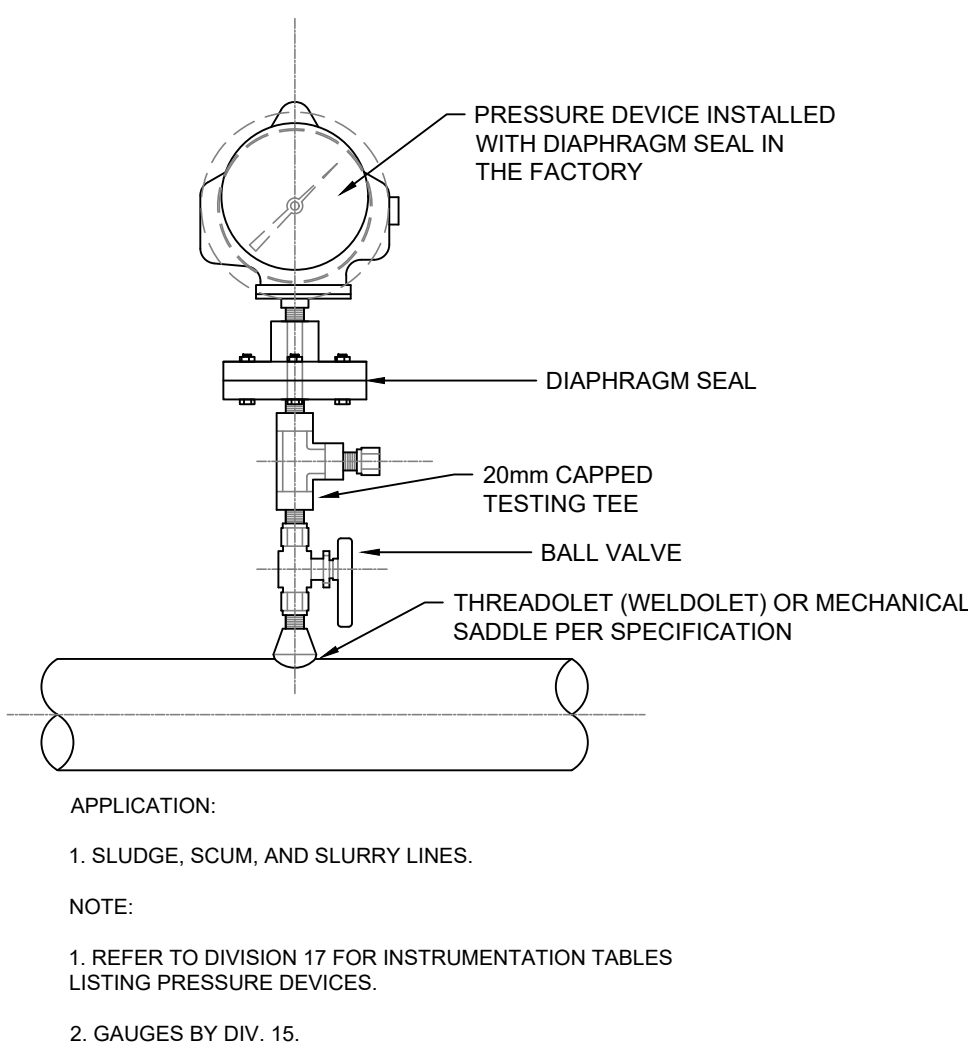
3 FLUSHING CONNECTION DETAIL
SCALE: N.T.S.
PM004



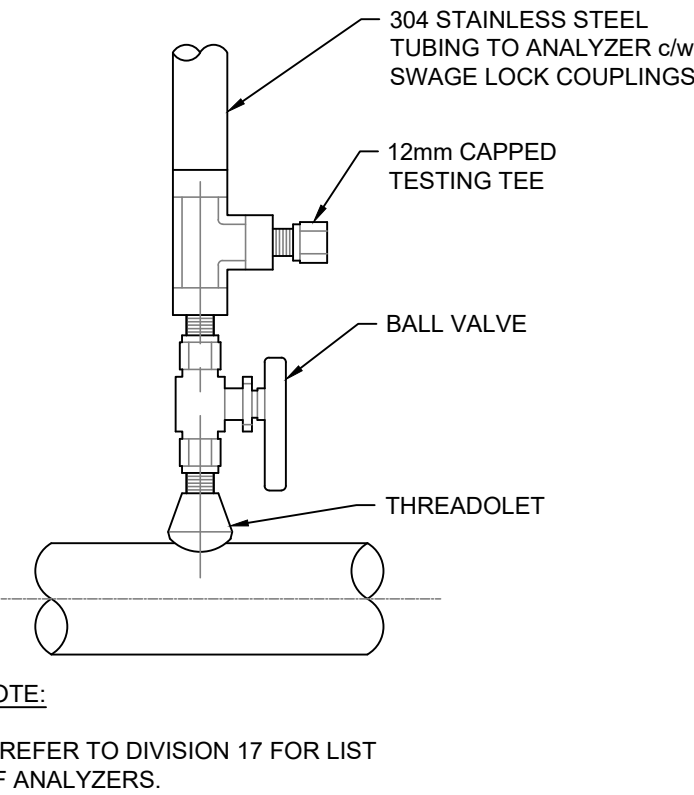
4 DRAIN OR FLUSHING CONNECTION
SCALE: N.T.S.
PM004



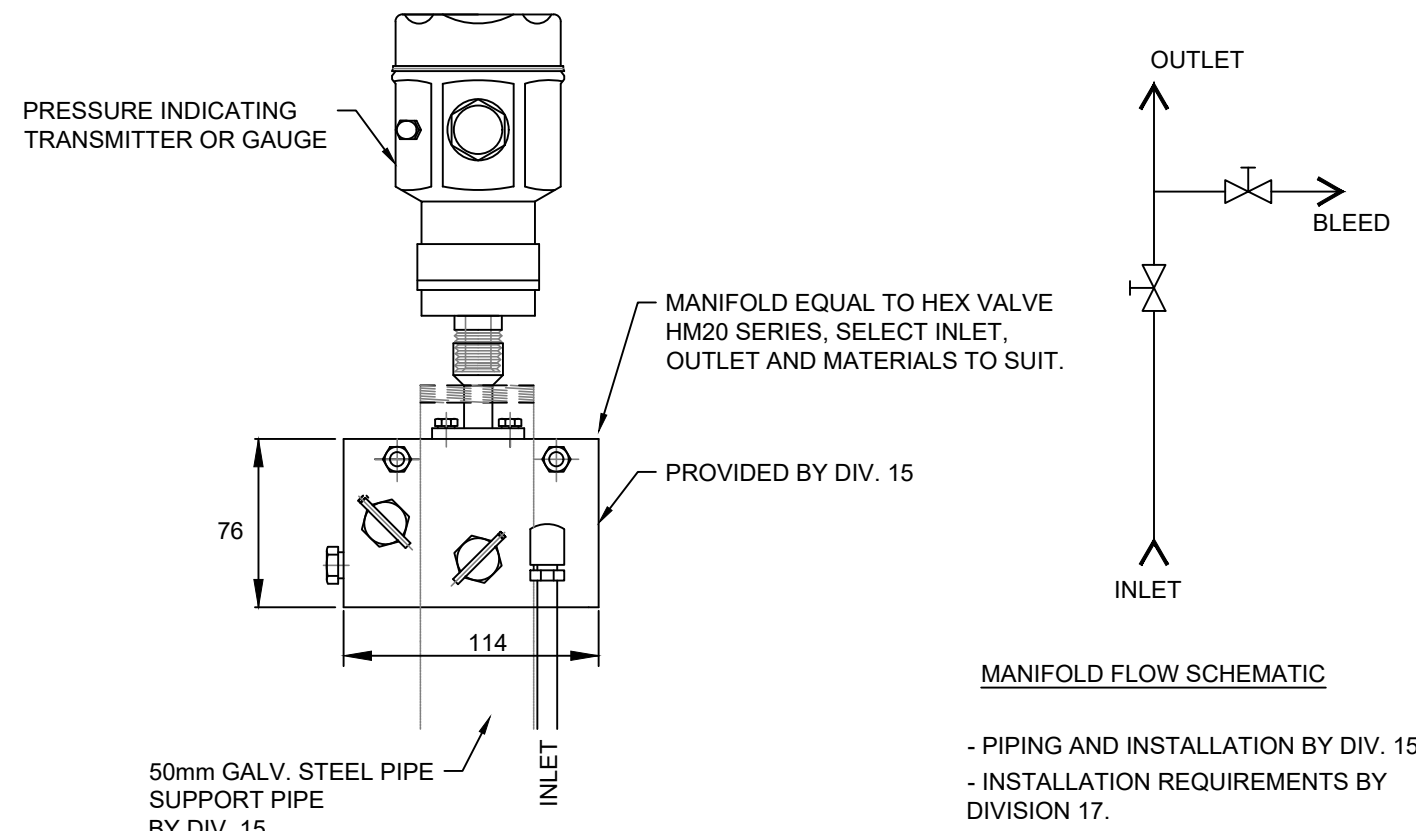
5 PRESSURE SWITCH OR GAUGE INSTALLATION
SCALE: N.T.S.
PM004



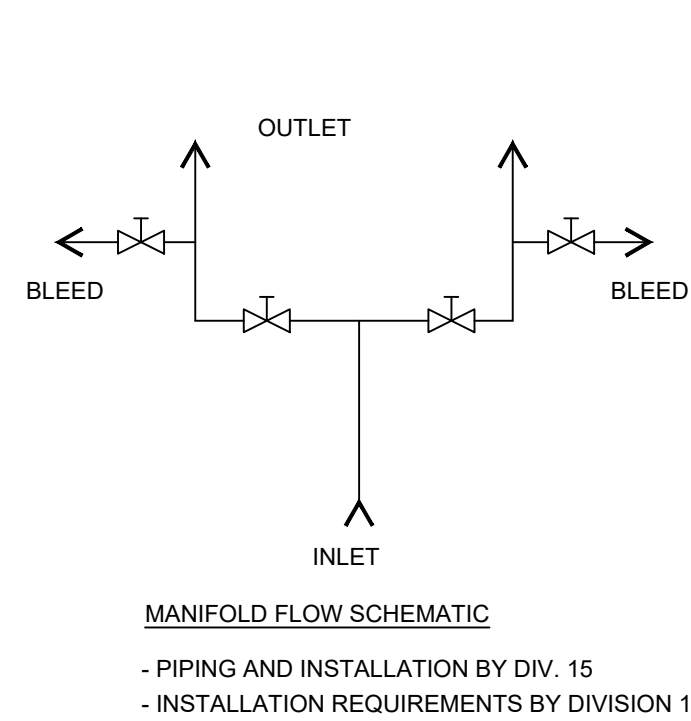
6 PRESSURE DEVICE WITH DIAPHRAGM SEAL
SCALE: N.T.S.
PM004



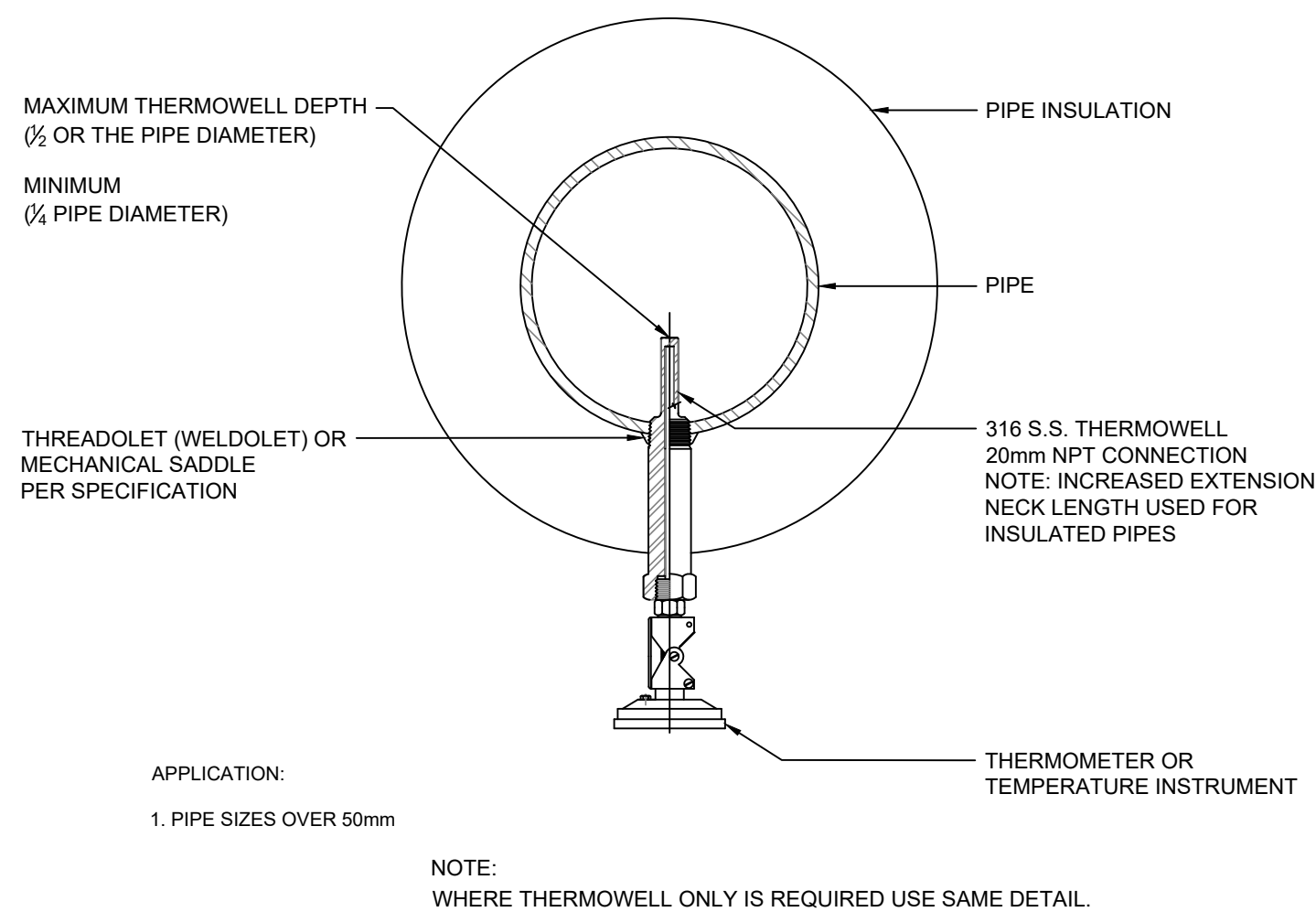
7 ANALYZER INSTALLATION
SCALE: N.T.S.
PM004



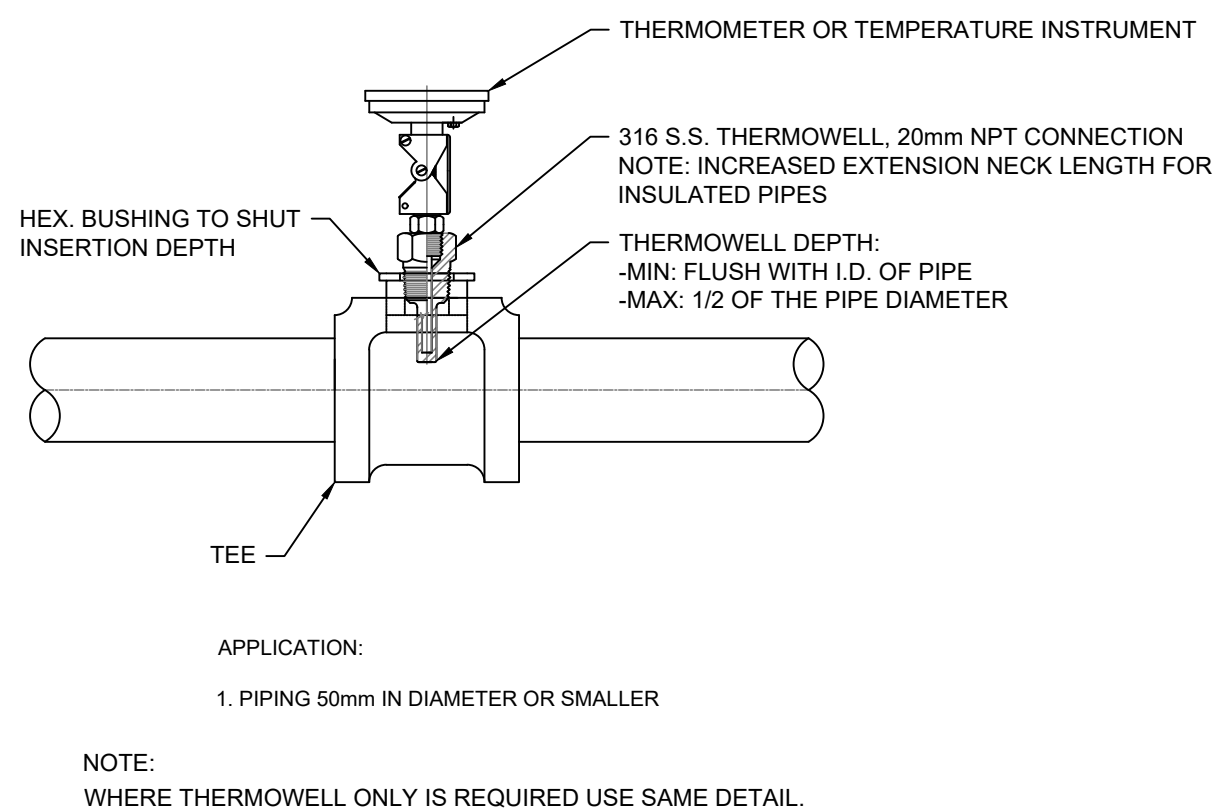
8 SINGLE PRESSURE INSTRUMENT MOUNTING DETAIL HM20
SCALE: N.T.S.
PM004



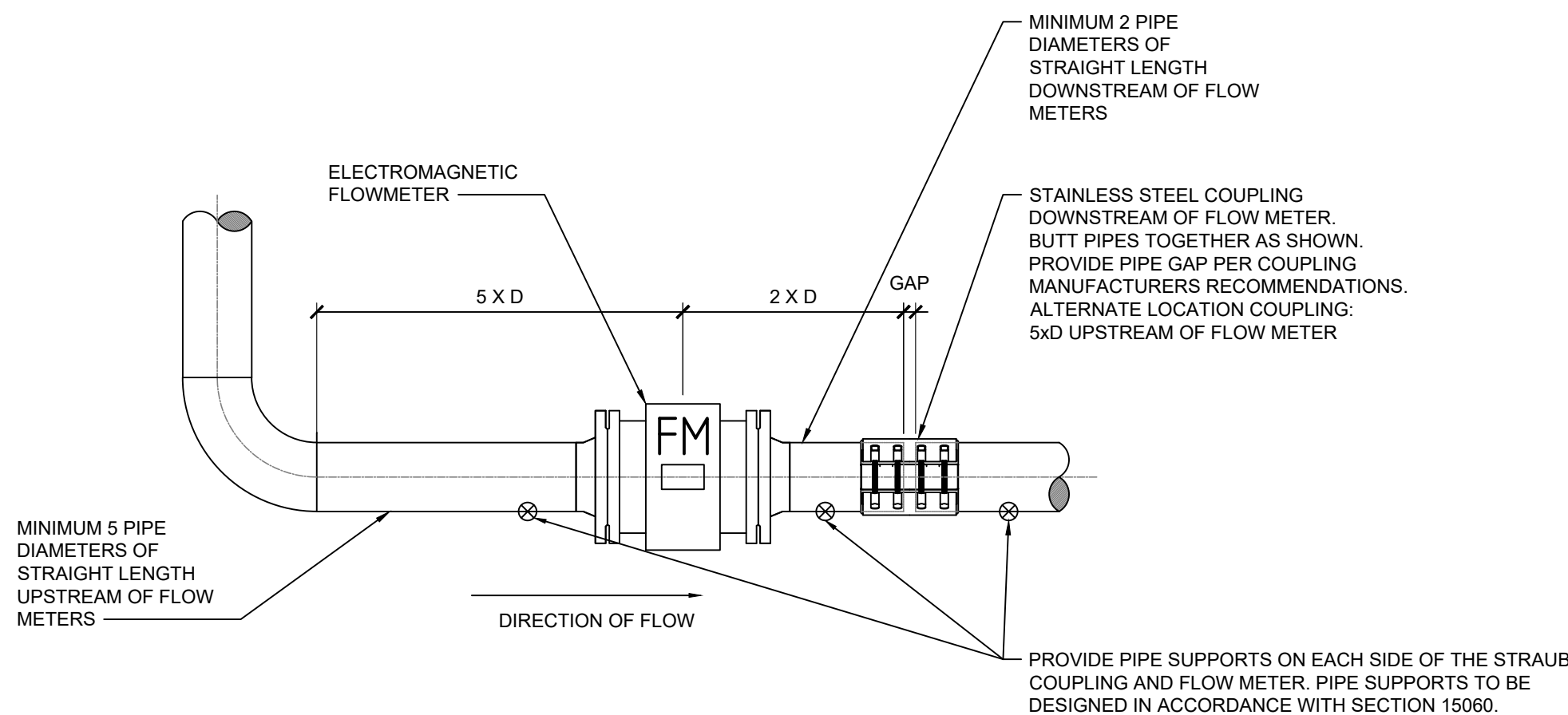
9 DOUBLE PRESSURE INSTRUMENT MOUNTING DETAIL HM40
SCALE: N.T.S.
PM004



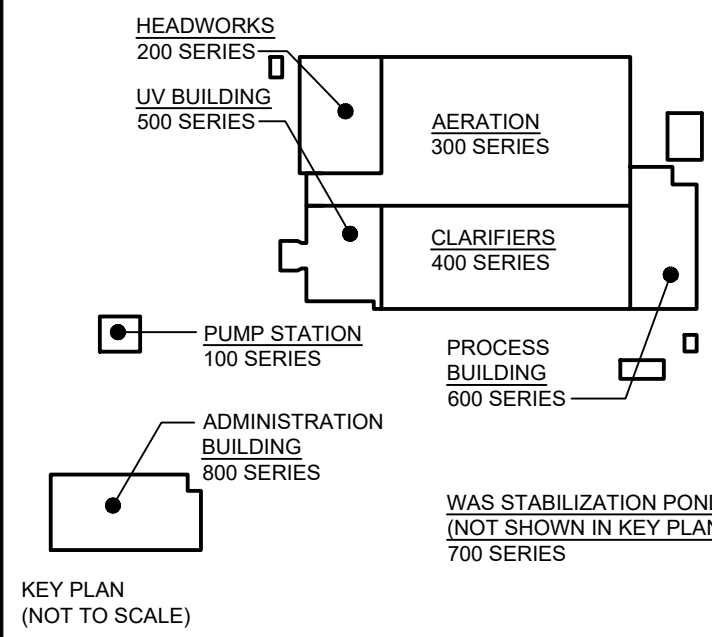
10 TEMPERATURE DEVICE ON LARGE DIAMETER PIPE
SCALE: N.T.S.
PM004



11 TEMPERATURE DEVICE ON SMALL DIAMETER PIPE
SCALE: N.T.S.
PM004



12 FLOW METER ARRANGEMENT DETAIL
SCALE: N.T.S.
PM004



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SCALE: NTS

CLIENT:

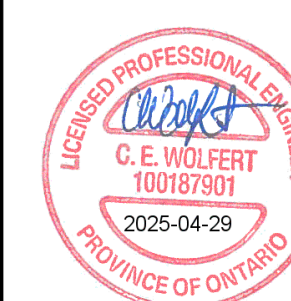


CONSULTANT: www.jlrichards.ca



CONSULTANT:

PROFESSIONAL STAMP



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS AND INSTRUMENTATION SITE WIDE

PROCESS AND MECHANICAL STANDARD DETAILS

DESIGN: KP/CW

DRAWN: JV

CHECKED: TP

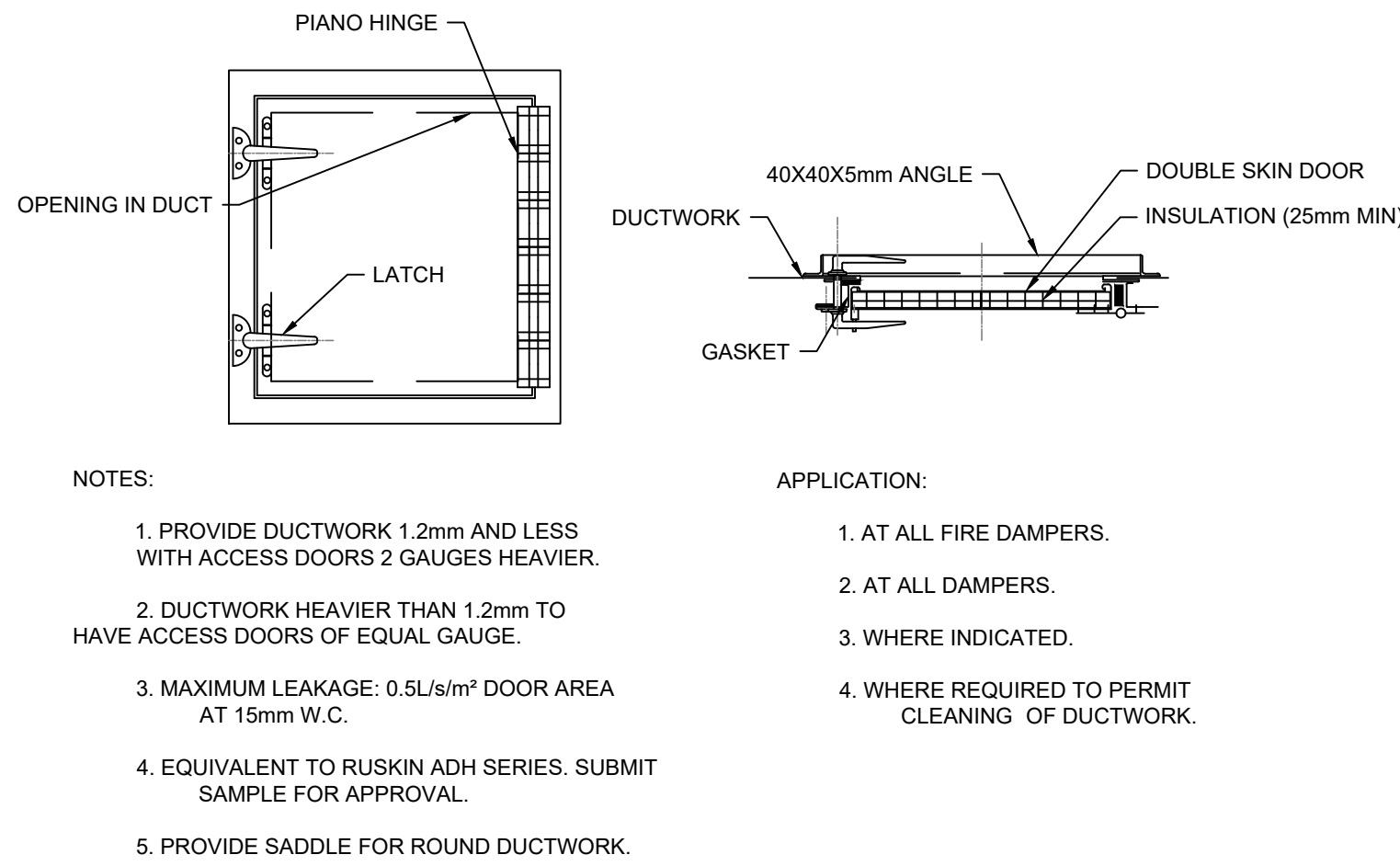
JLR #: 32296-001

DRAWING #:

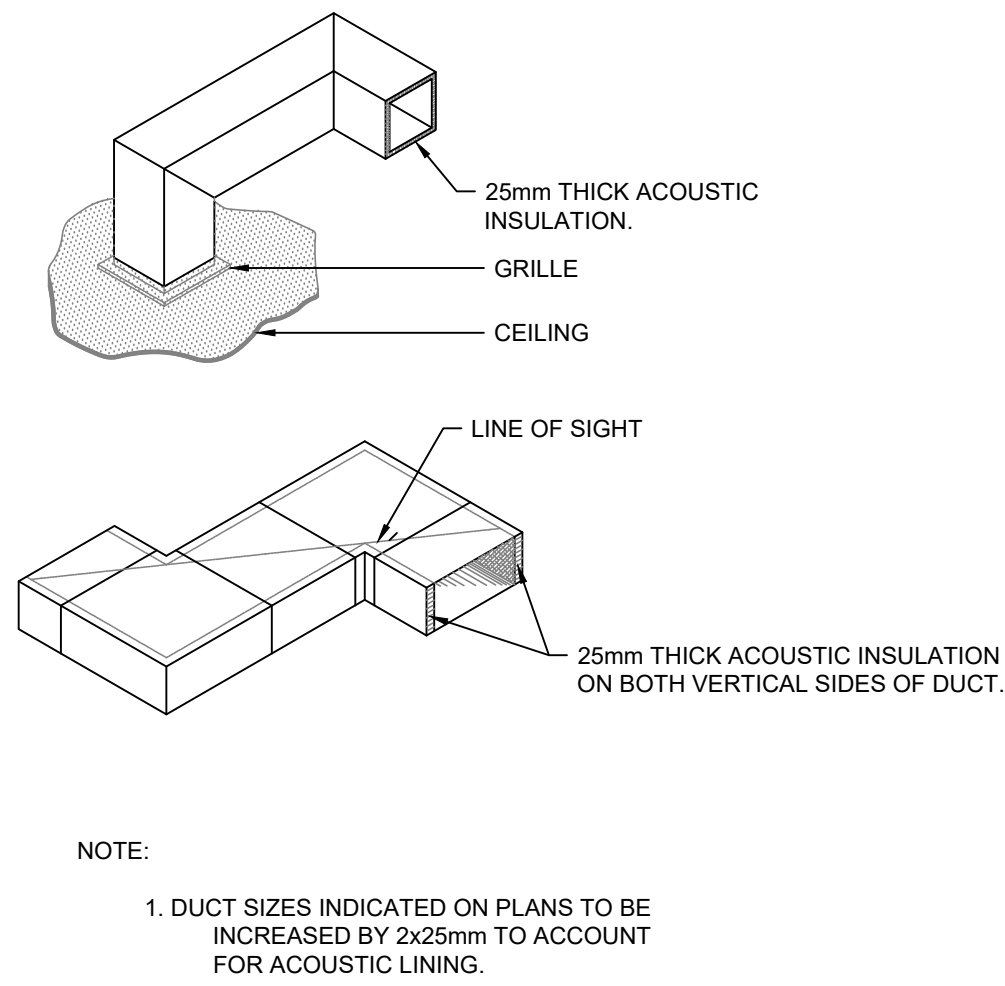
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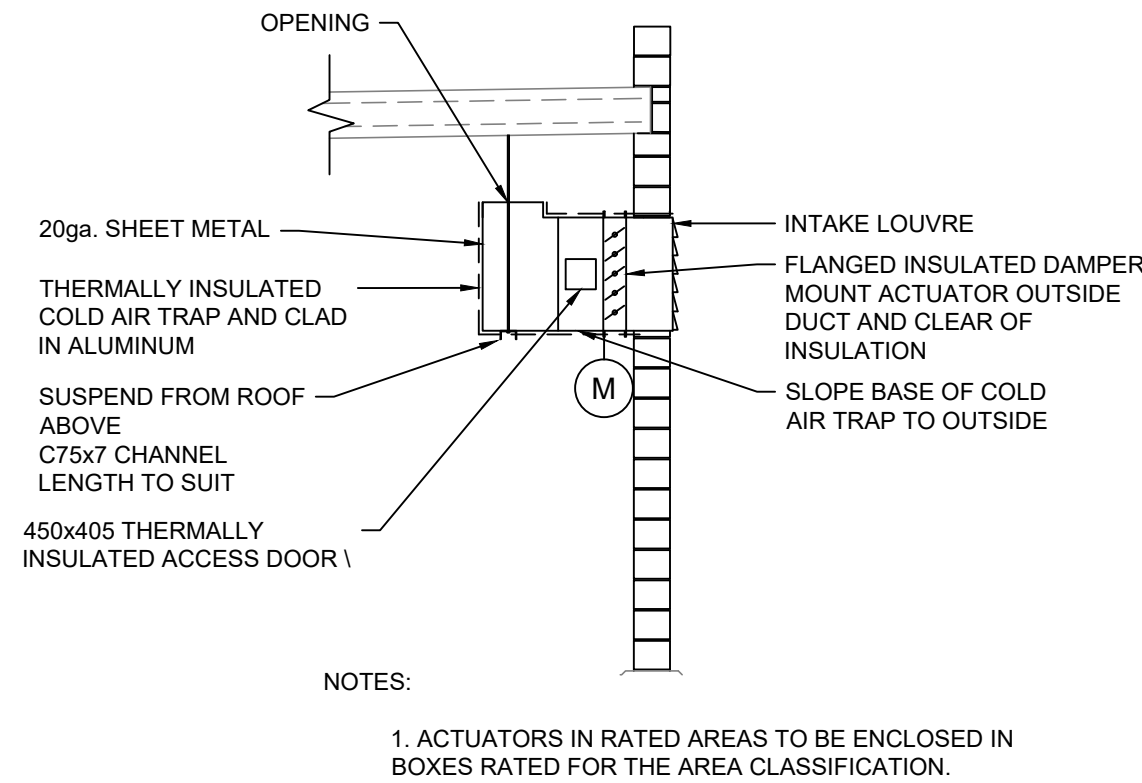
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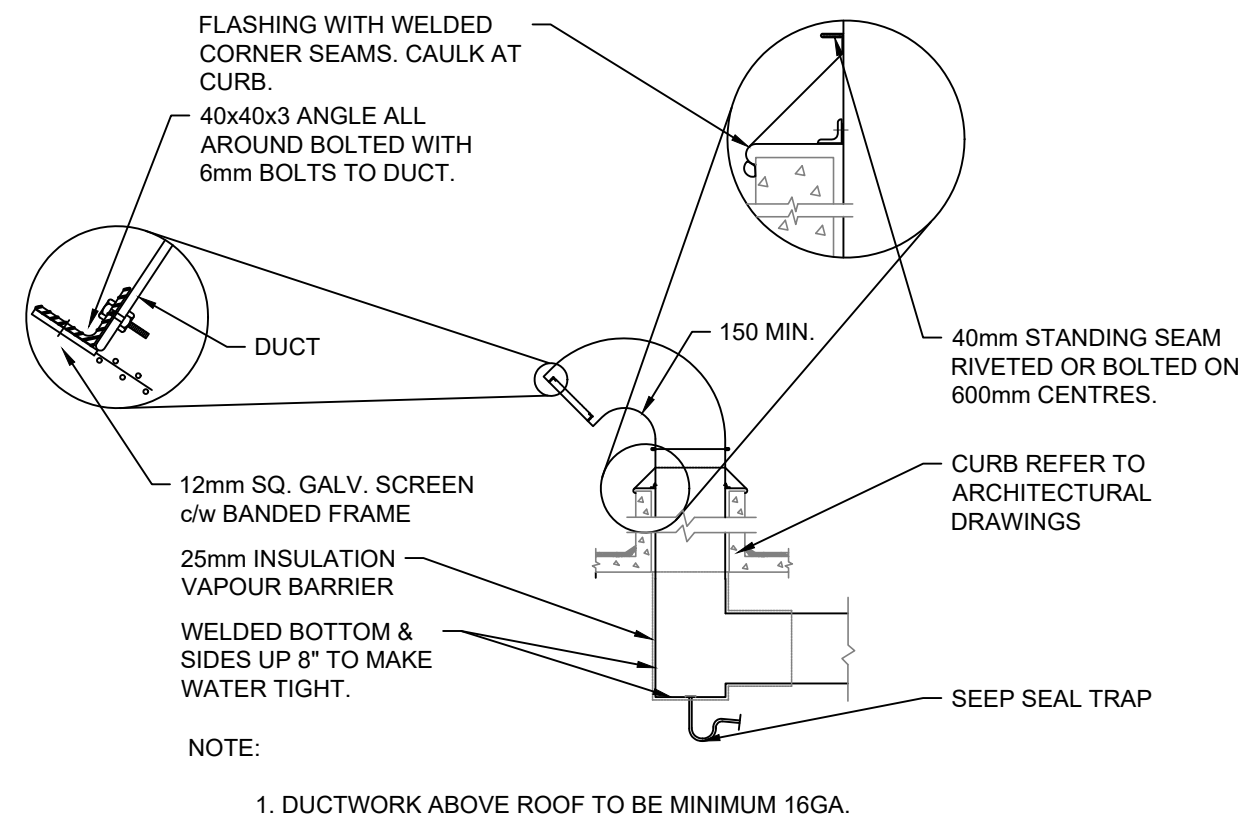
1 ACCESS DOOR
PM005 SCALE: N.T.S.



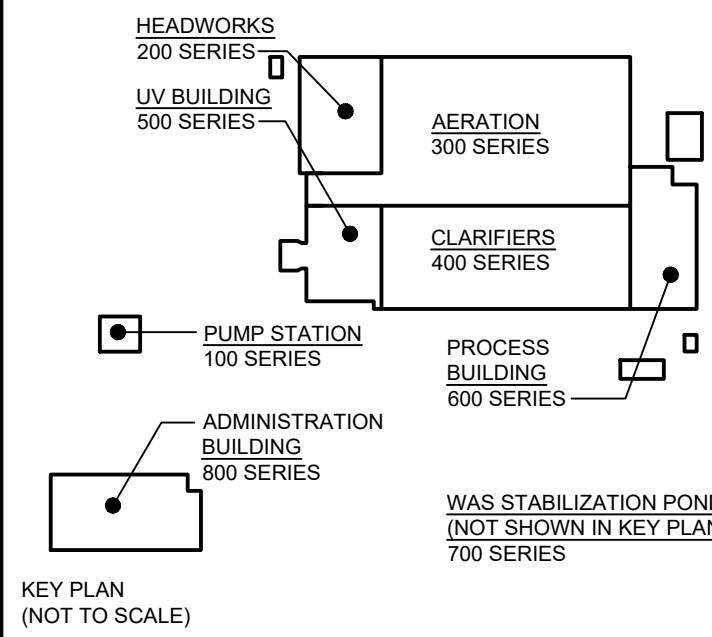
2 ACOUSTIC TRANSFER DUCT
PM005 SCALE: N.T.S.



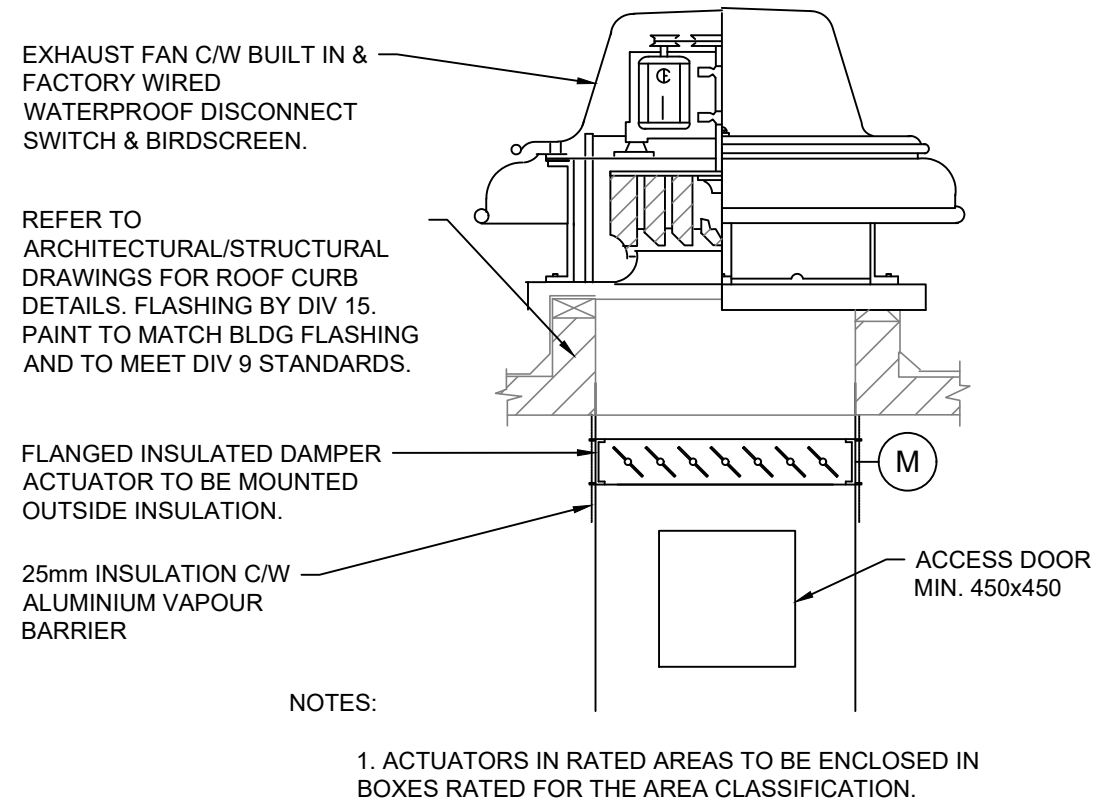
3 OUTDOOR AIR INTAKE DETAIL
PM005 SCALE: N.T.S.



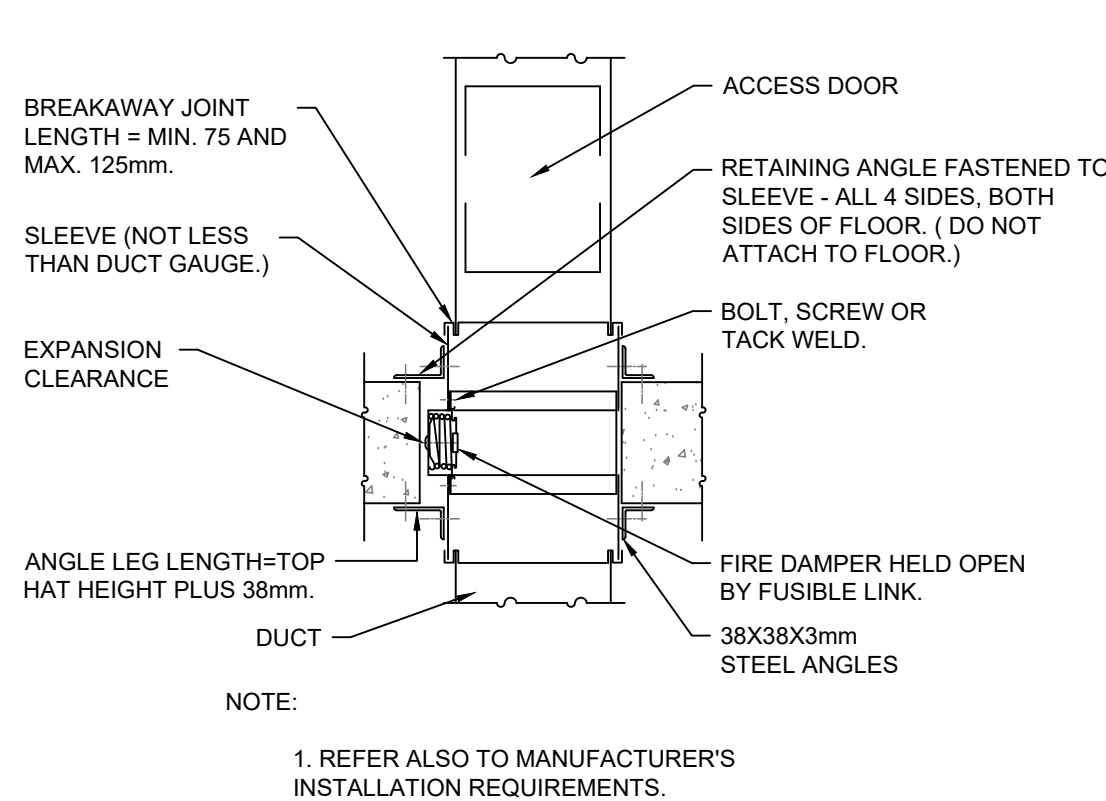
4 GOOSE NECK
PM005 SCALE: N.T.S.



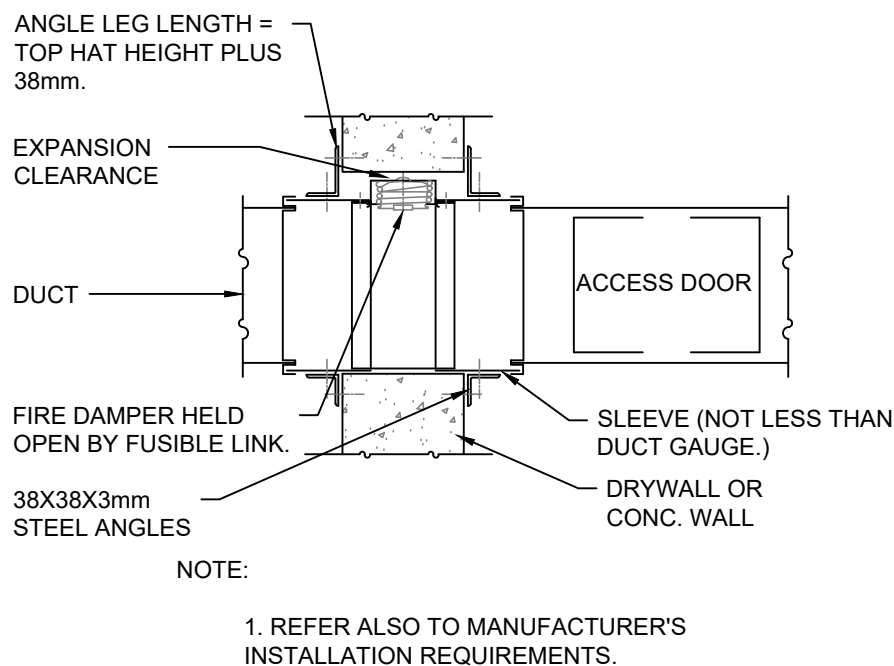
DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.



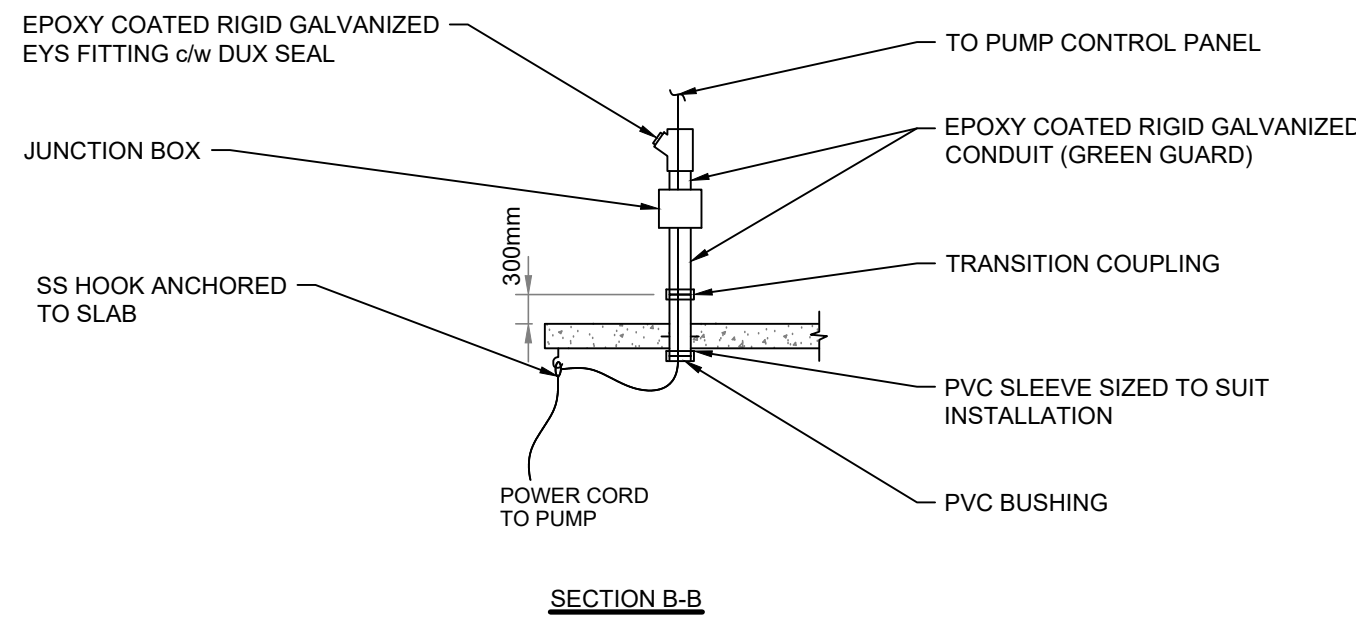
5 TYPICAL ROOF MOUNTED EXHAUST FAN
PM005 SCALE: N.T.S.



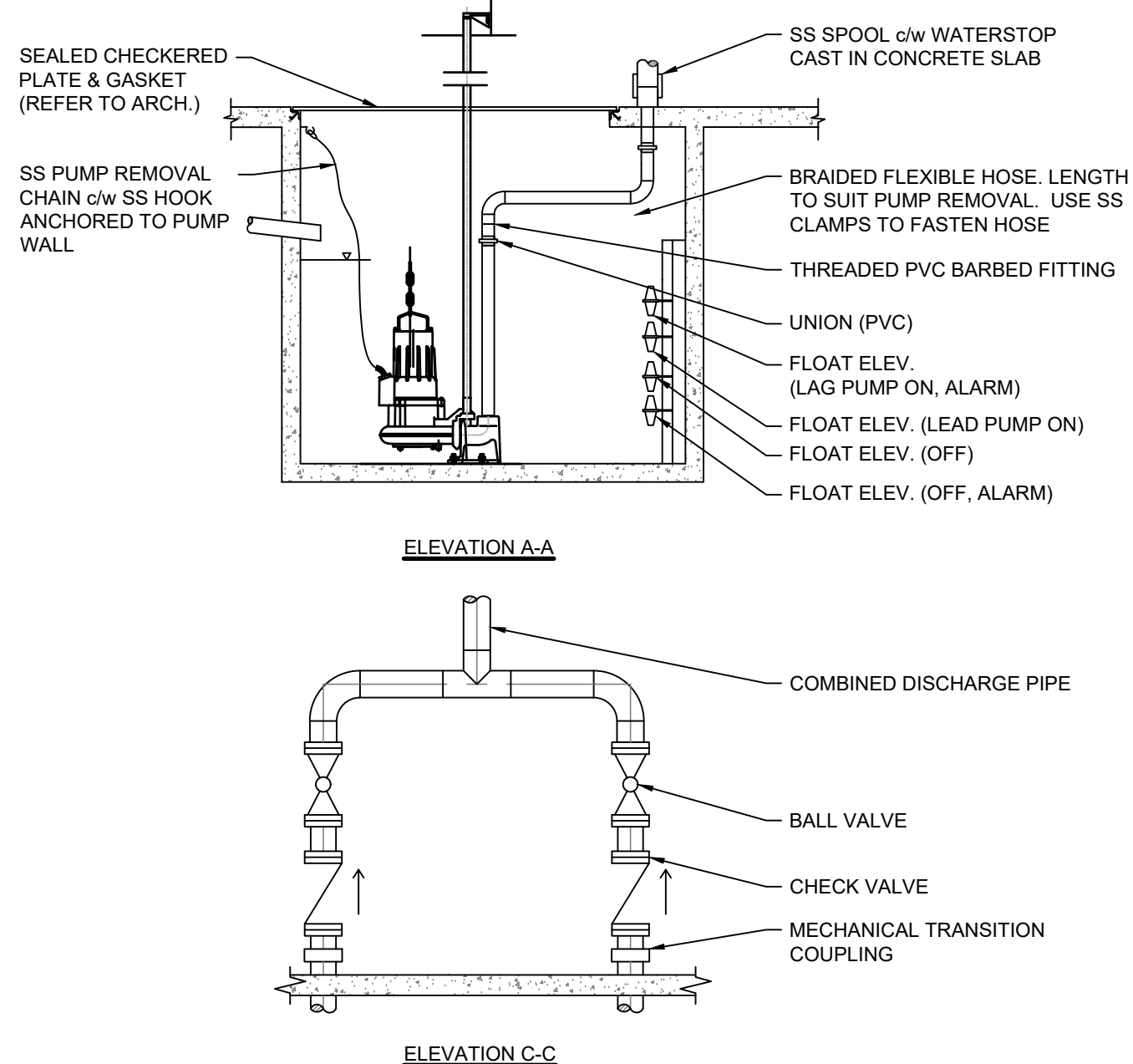
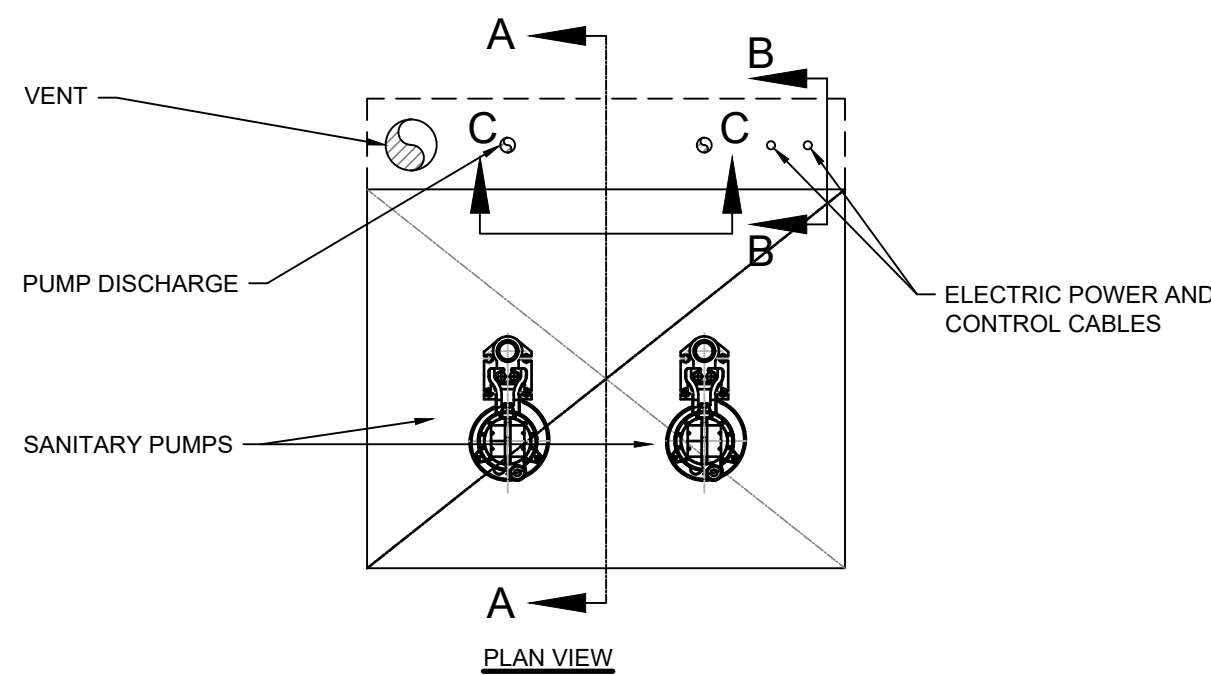
6 FIRE DAMPER VERTICAL TYPE
PM005 SCALE: N.T.S.



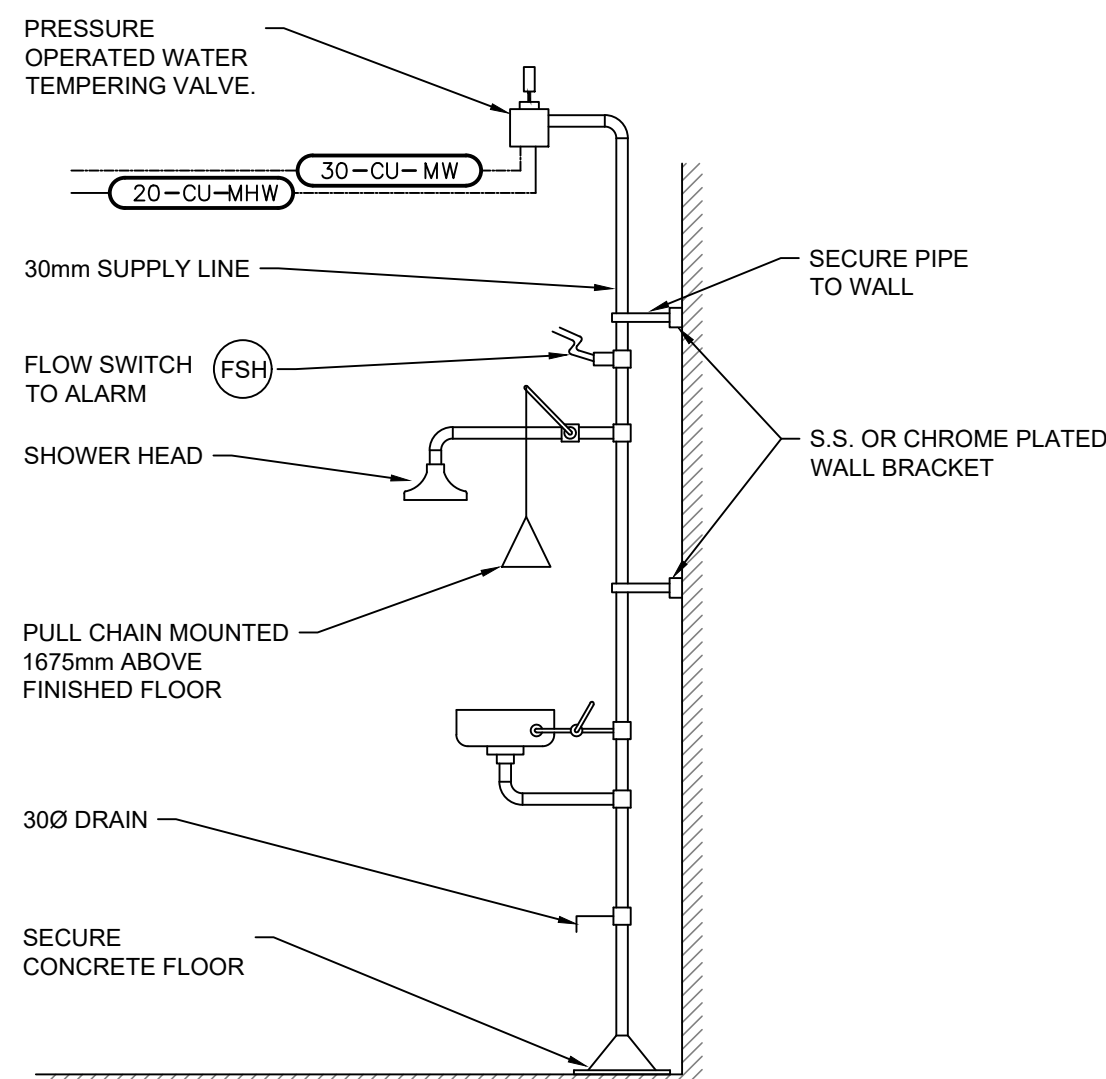
7 FIRE DAMPER HORIZONTAL TYPE
PM005 SCALE: N.T.S.



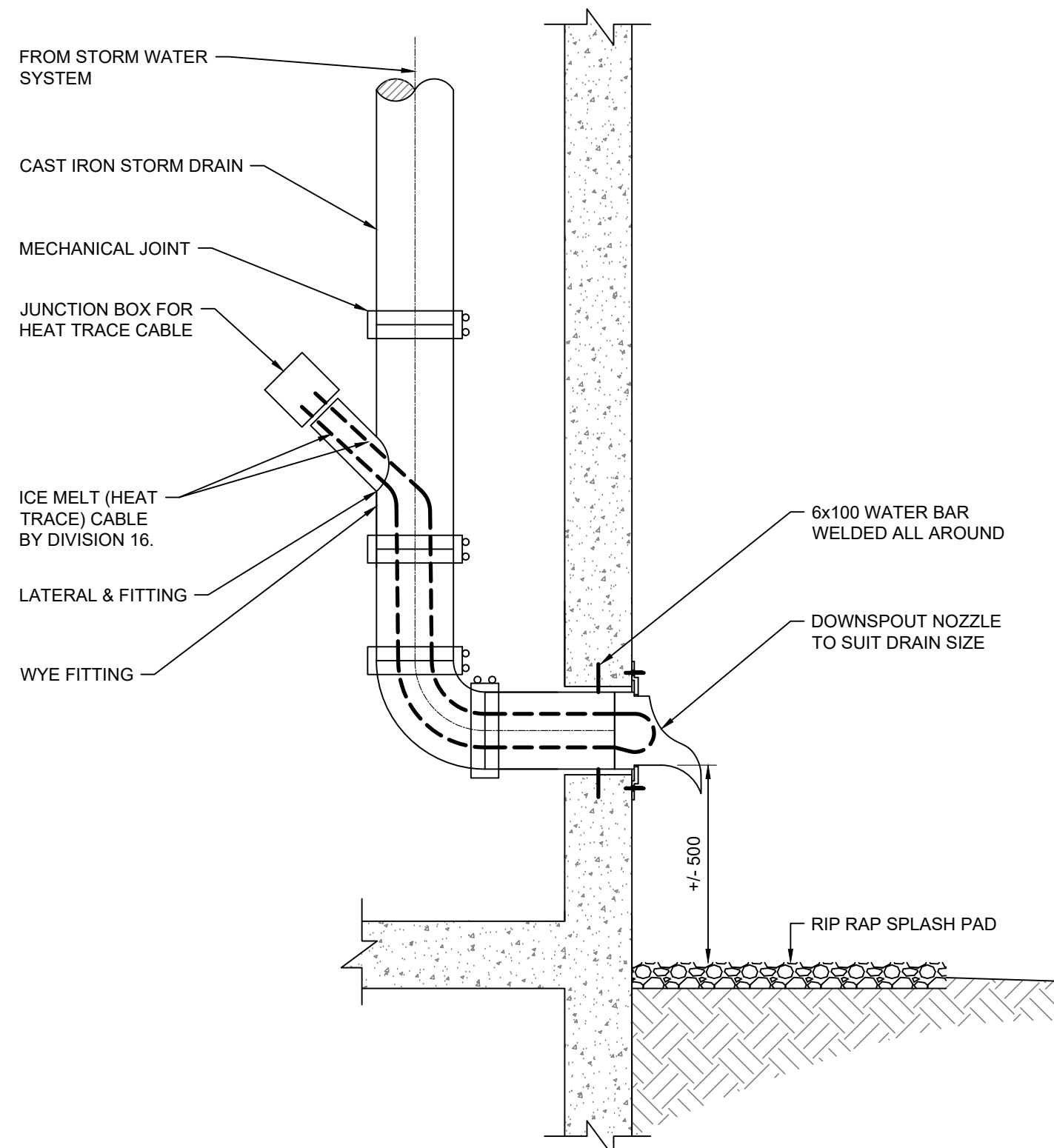
- NOTES:
1. TYPICAL INSTALLATION FOR PUMP MOTOR CABLES AND FLOAT CABLES.
 2. DEDICATED ASSEMBLY REQUIRED FOR PUMP MOTOR CABLE AND FLOAT CABLE.



11 SANITARY DUPLEX SUMP PUMP DETAIL
PM005 SCALE: N.T.S.



8 EMERGENCY EYE WASH & SHOWER
PM005 SCALE: N.T.S.



10 STORM WATER HEAT TRACE DRAIN DETAIL
PM005 SCALE: N.T.S.

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SCALE: NTS

CLIENT:

BRIGHTON

CONSULTANT: www.jrichards.ca

J.L. Richards
ENGINEERS • ARCHITECTS • PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

PROJECT NORTH

PROVINCE OF ONTARIO

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS AND INSTRUMENTATION SITE WIDE

PROCESS AND MECHANICAL STANDARD DETAILS

DESIGN: KP/CW

DRAWN: JV/EH

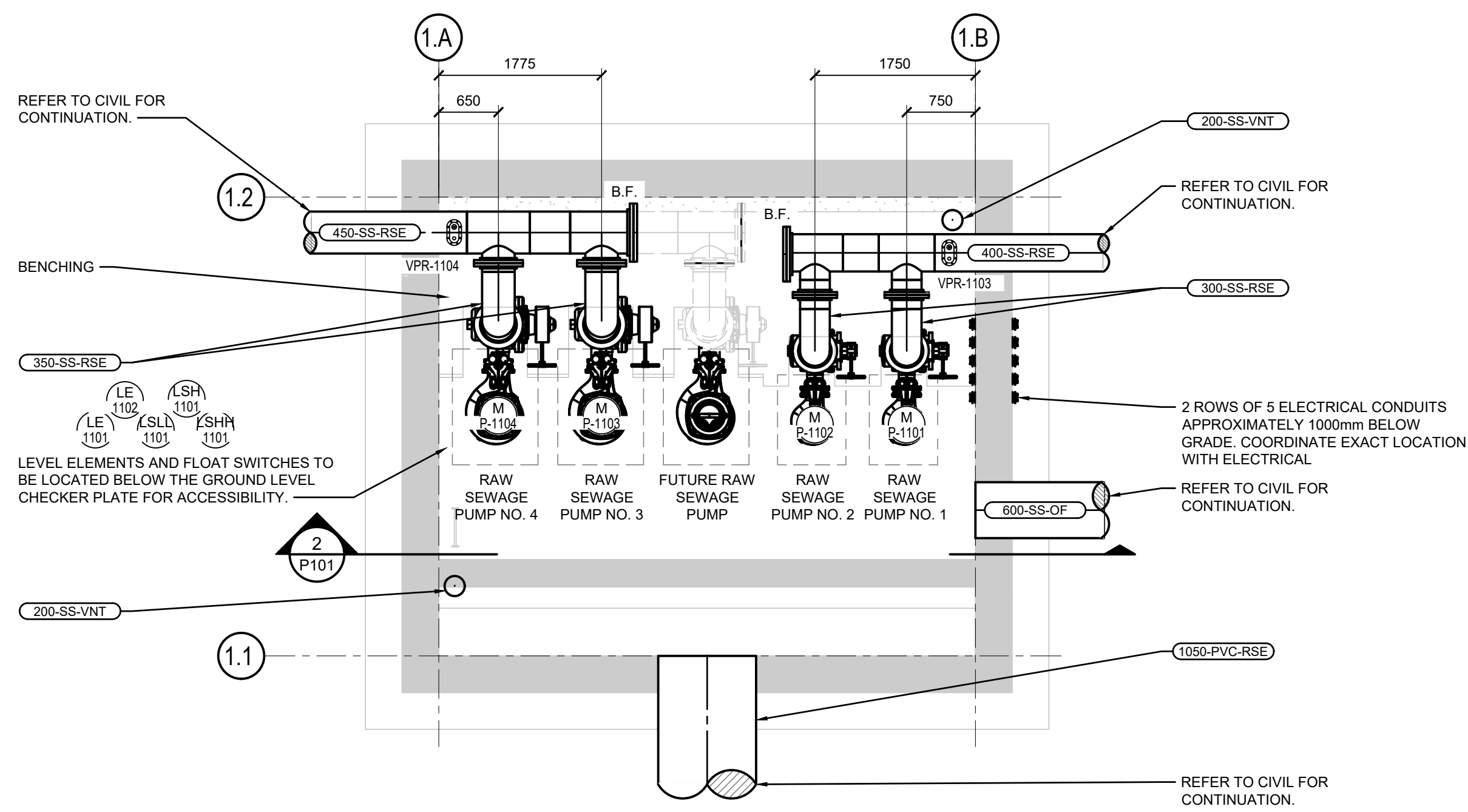
CHECKED: TP

JLR #: 32296-001

DRAWING #:

PM005

PLOT DATE: Tuesday, April 29, 2025 1:16:12 PM





RAW SEWAGE PUMP STATION PLAN

SCALE: 1:50



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CLIENT: _____



**MUNICIPALITY OF
BRIGHTON**


CONSILII TANT: www.brighton.ca



J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT: _____

PROFESSIONAL STAMP	PROJECT NORTH
--------------------	---------------



The image shows a circular professional engineer seal for the Province of Ontario. The seal contains the text "LICENSED PROFESSIONAL ENGINEER" at the top, "K. D. PELLETIER" in the center, "100189180" below the name, and "2025-04-29" below the number. The outer ring of the seal reads "PROVINCE OF ONTARIO". To the right of the seal is a north arrow pointing upwards, with a large "N" inside a circle.

PROJECT:	
----------	--

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS RAW SEWAGE PUMP STATION RAW SEWAGE PUMP STATION PLAN AND SECTIONS

DESIGN: KP/CW	
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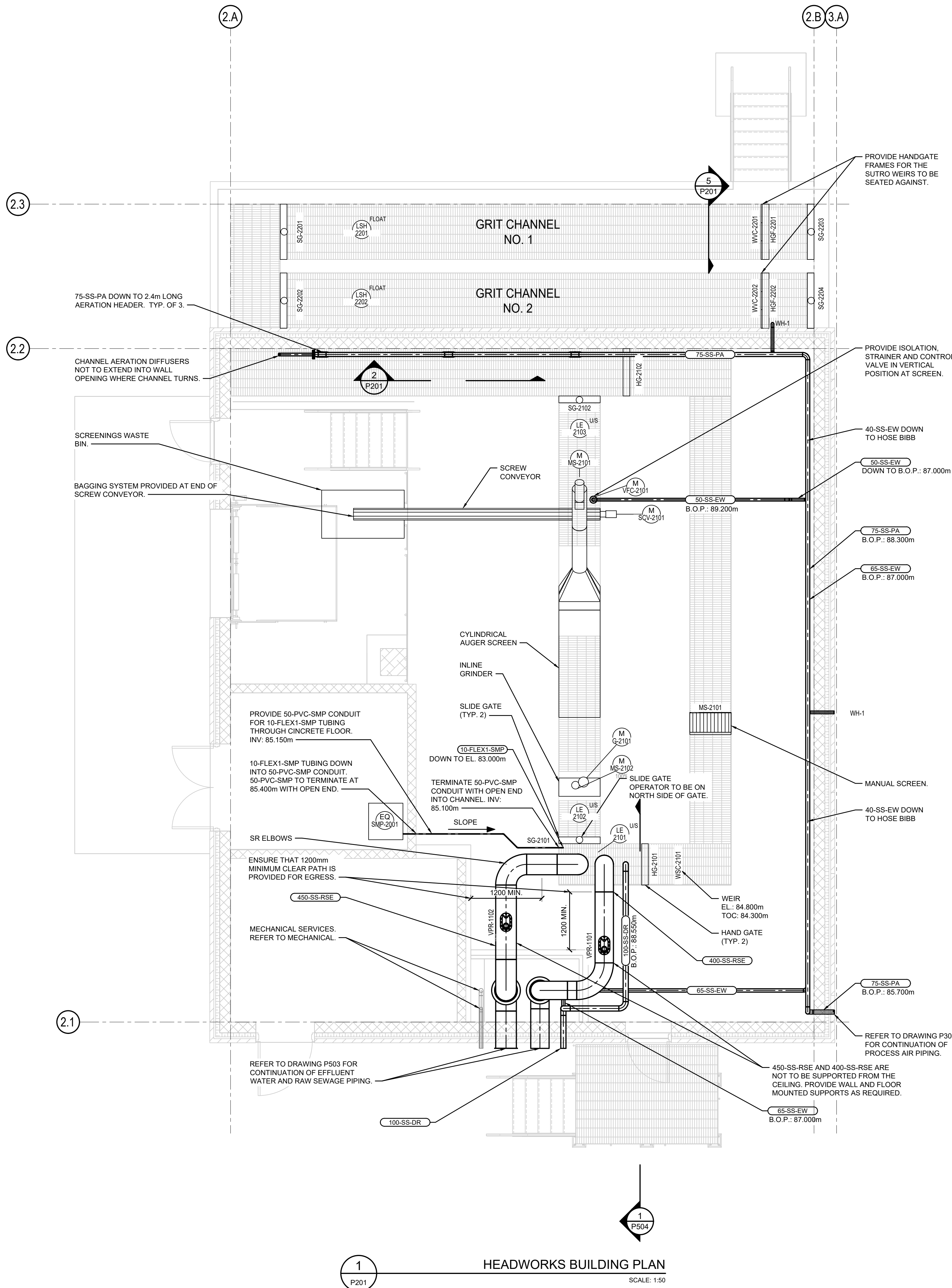
DRAWN: JV/EH	DRAWING #:
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CHECKED: TP	D101
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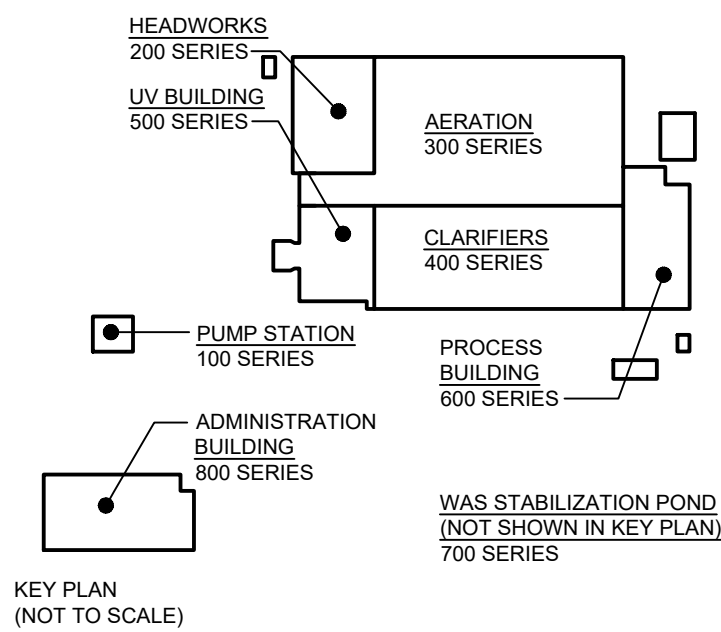
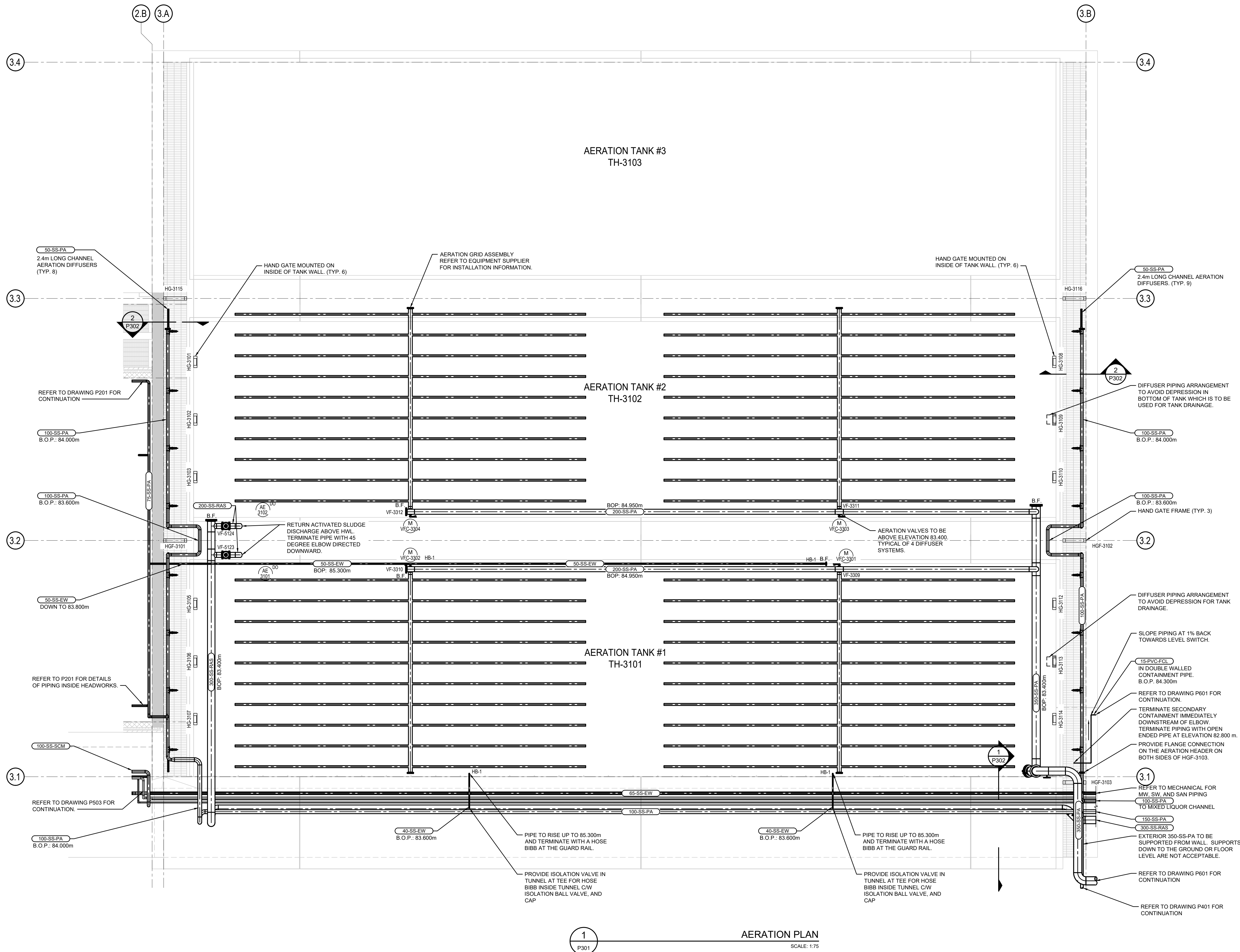
JLR #:	32296-001
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P101

File Location: \\jrichards\CorpNet\Projects\32000\32296-001 - Brighton WWTF System Upgrades\03-Production\04-Process\P201 HEADWORKS PLAN.dwg



File Location: \\jrichards\Corporal\Projects\32000\32296-001 - Brighton WWTF System Upgrades\03-Production\04-Process\P301 AERATION TANKS PLAN.dwg



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SCALE: 1:75

CLIENT:

BRIGHTON
MUNICIPALITY

CONSULTANT:

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

J.R.

PROFESSIONAL STAMP

G. E. WOLPERT
100167901
2025-04-29
PROVINCE OF ONTARIO

PROJECT NORTH

N

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS AERATION

AERATION PLAN

DESIGN: KP/CW

DRAWN: JV/EH

CHECKED: TP

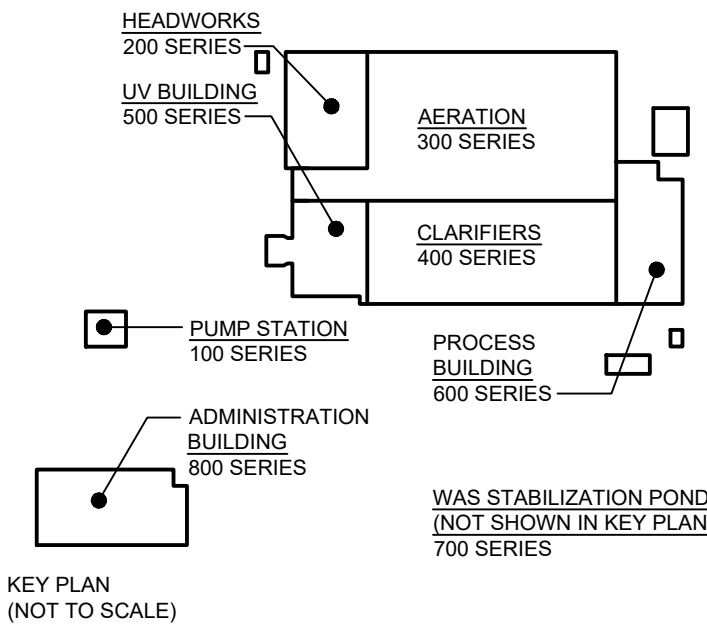
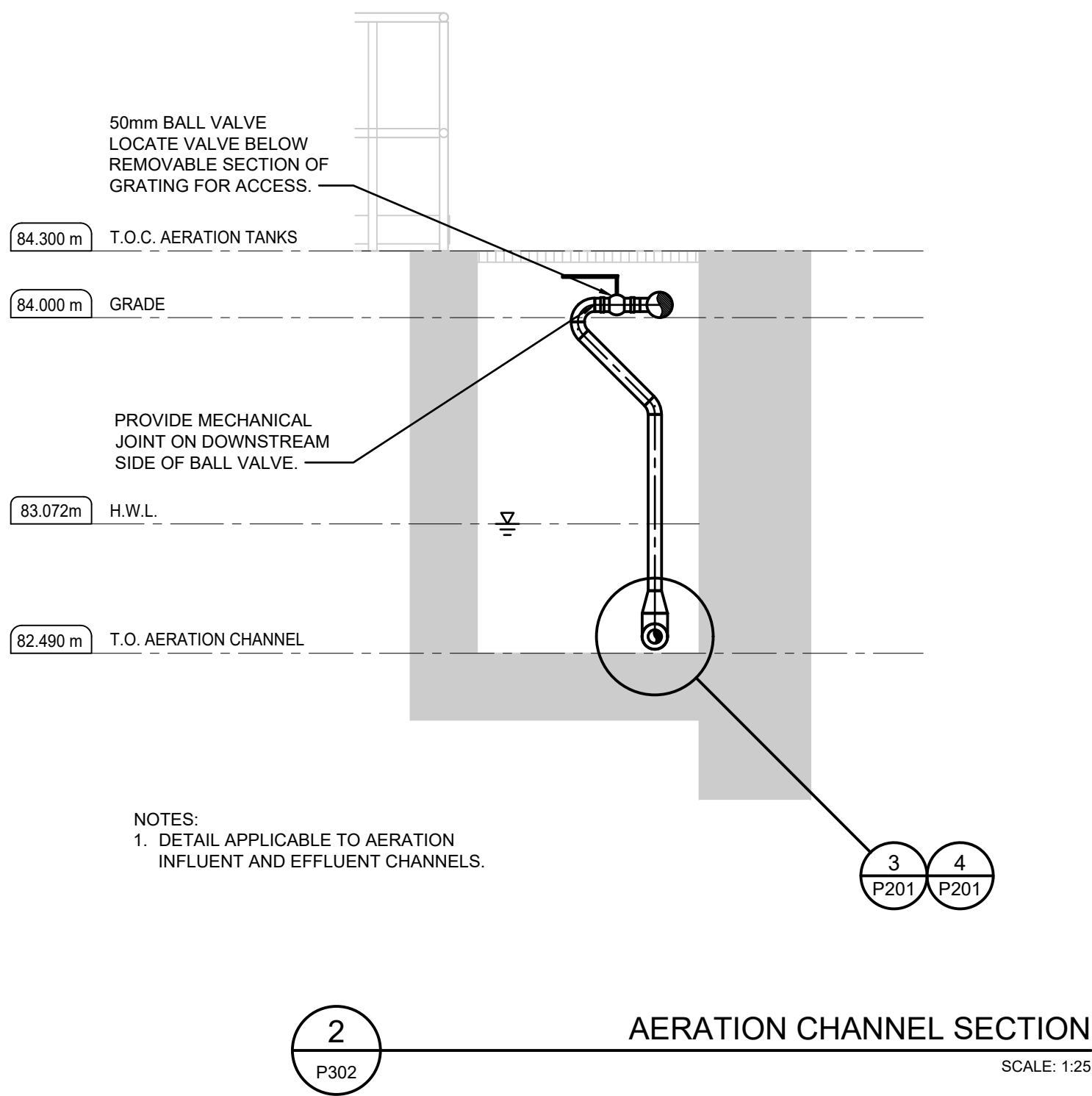
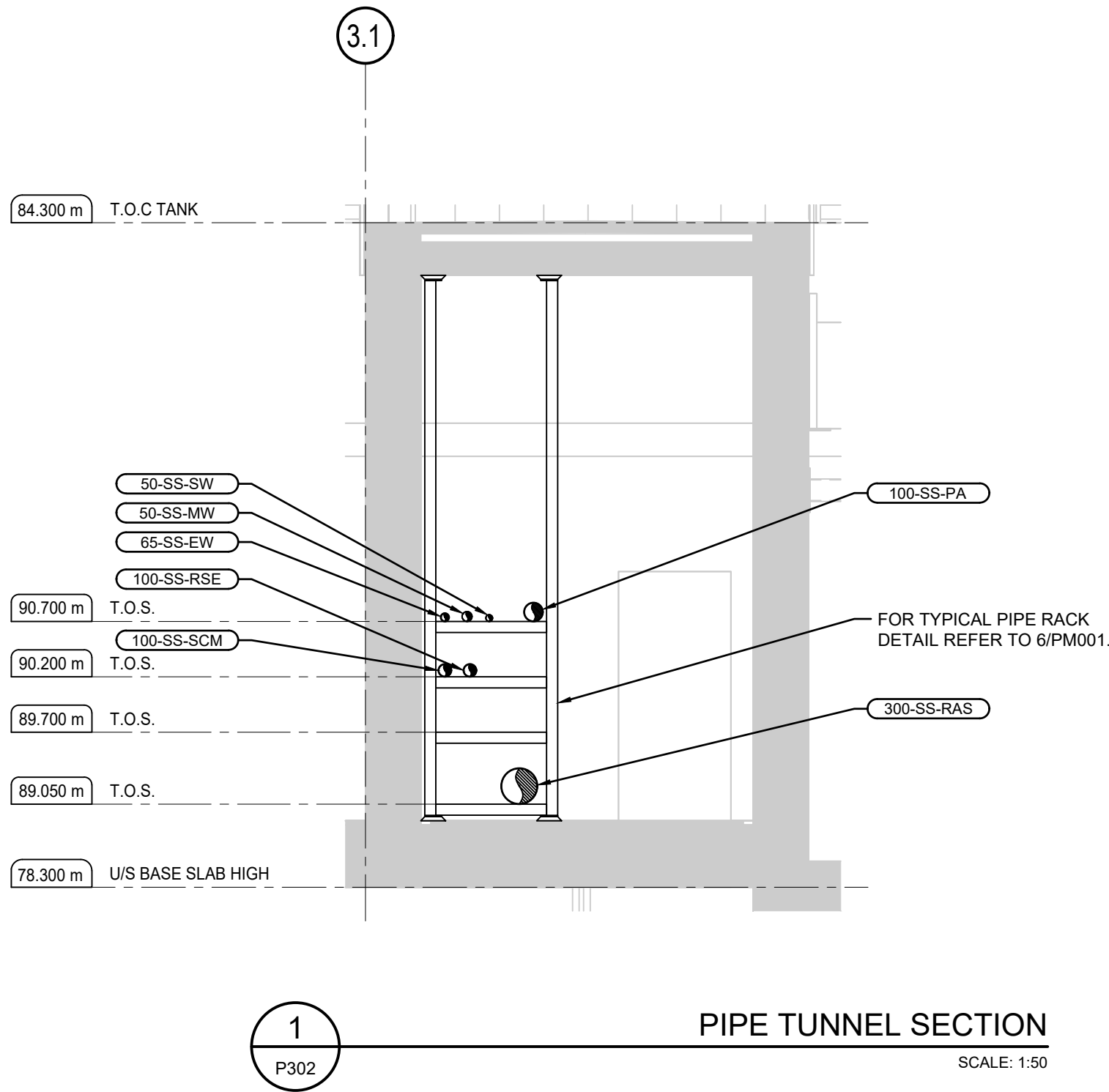
JLR #: 32296-001

DRAWING #:

P301

PLOT DATE: Tuesday, April 29, 2025 1:16:16 PM

File Location: P:\32000\32296-001 - Brighton WWT System Upgrades\03-Production\04-Process\P302 AERATION TANK SECTION.dwg



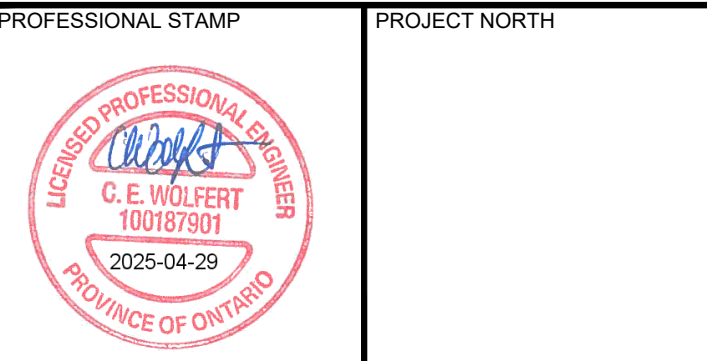
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SCALE: AS SHOWN



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS
UV BUILDING

AERATION SECTIONS

DESIGN:	KP/CW	DRAWING #:	P302
DRAWN:	JV/EH		
CHECKED:	TP		
JLR #:	32296-001		

PLOT DATE: Tuesday, April 29, 2025 1:16:22 PM

File Location: P:\320000\32296-001 - Brighton WWT System Upgrade\03-Production\04-Process\0401 CLARIFIERS PLAN.dwg

PROTECTIVE COVER FOR CLARIFIER WEIR AND LAUNDER AREAS. TYP.

COVER:
- HIGH STRENGTH UV-PROTECTED COATED FABRIC.
- FITTED ONE PIECE CONSTRUCTION TENSIONED ACROSS SUPPORT STRUCTURE.
- ACCESS HATCH FOR VISUAL MONITORING OF CLARIFIER WEIRS AND LAUNDERS.

SUPPORT STRUCTURE:
- ARCHED LOW PROFILE ALUMINUM FRAME SPANNING TANK OPENING.

SUPPLIER TO DESIGN SUPPORT STRUCTURE FOR COVER TO SUIT OPENINGS. CONTRACTOR TO SUBMIT STAMPED SHOP DRAWINGS FOR SUPPORTS.

PRIMARY EFFLUENT WEIR (TYP.)

350mm DIAMETER MANUALLY ROTATED SCUM PIPE. TYP.

LONGITUDINAL COLLECTOR. REFER TO EQUIPMENT SUPPLIER FOR INSTALLATION INFORMATION.

CLARIFIER TANK #1
TS-3201

CROSS COLLECTOR DRIVE AND ENCLOSURE. REFER TO EQUIPMENT SUPPLIER FOR INSTALLATION INFORMATION.

LONGITUDINAL COLLECTOR DRIVE AND ENCLOSURE. REFER TO EQUIPMENT SUPPLIER FOR INSTALLATION INFORMATION.

CLARIFIER TANK #2
TS-3202

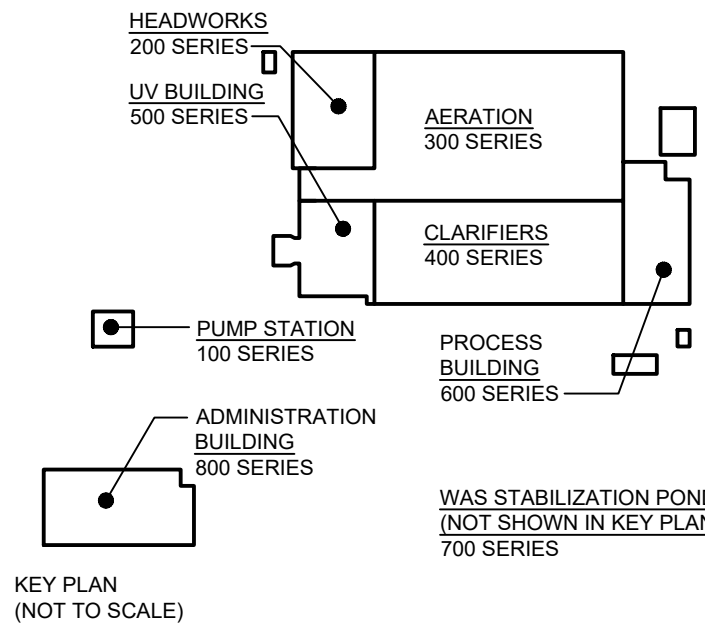
PIPE SLEEVE IN TANK WALL. COORDINATE WITH EQUIPMENT SUPPLIER.

CLARIFIER TANK #3
TS-3203

CLARIFIER TANK #4
TS-3204

CLARIFIERS PLAN

SCALE: 1:75



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SCALE: 1:75

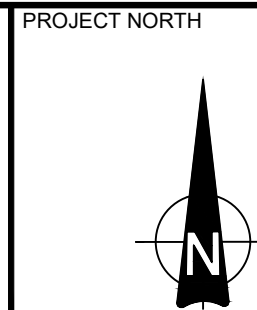
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS CLARIFIERS
CLARIFIERS PLAN

DESIGN: KP/CW

DRAWN: JV/EH

CHECKED: TP

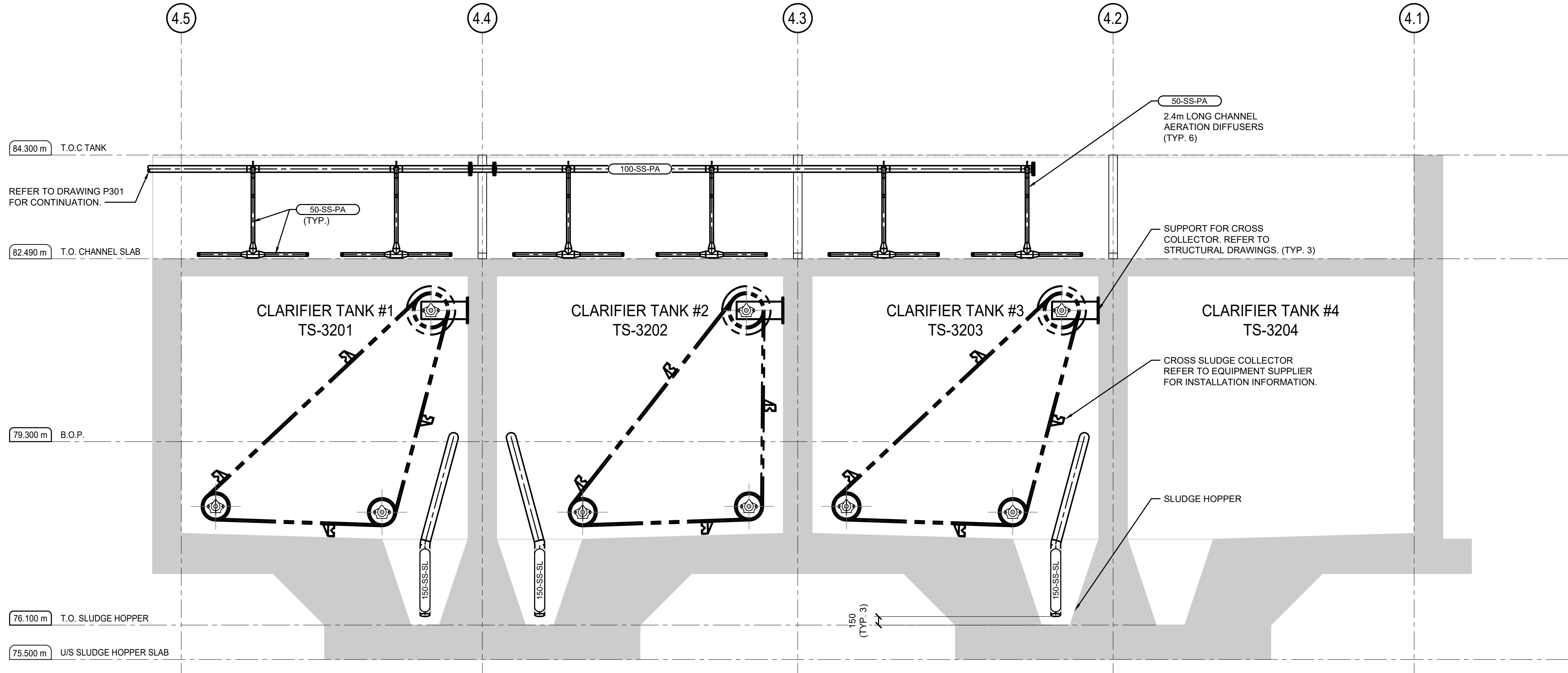
JLR #: 32296-001

DRAWING #:

P401

PLOT DATE: Tuesday, April 29, 2025 1:16:19 PM

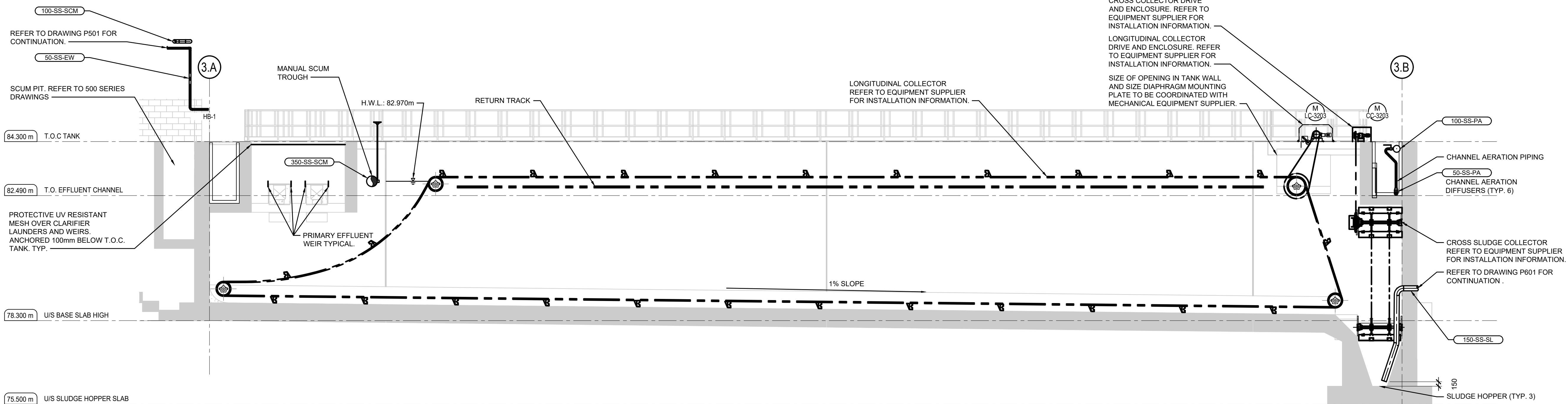
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1
P402

CLARIFIERS INFLUENT SECTION

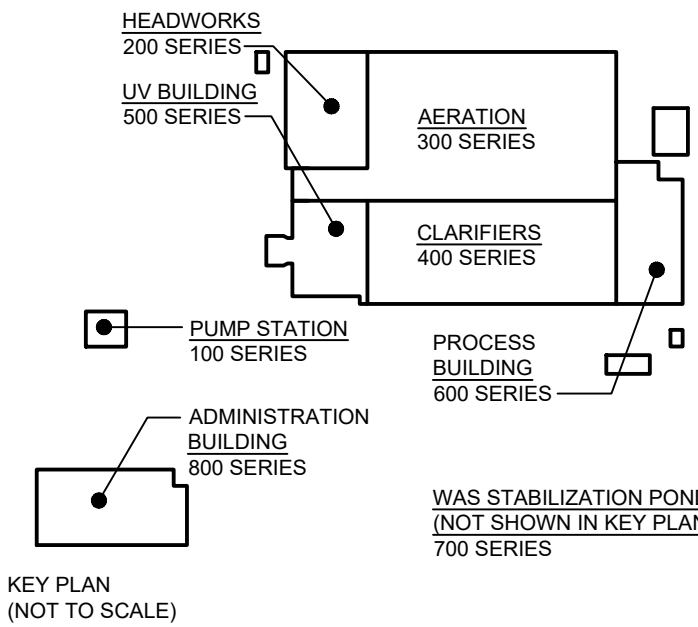
SCALE: 1:50



2
P402

CLARIFIERS SECTION

SCALE: 1:75



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SCALE: AS SHOWN

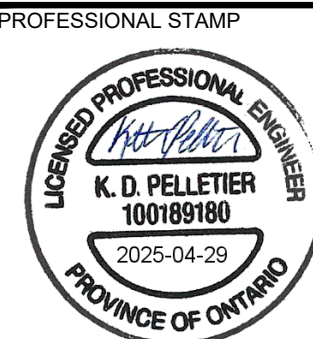
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS CLARIFIERS

CLARIFIERS SECTIONS

DESIGN: KP/CW

DRAWN: JV

CHECKED: TP

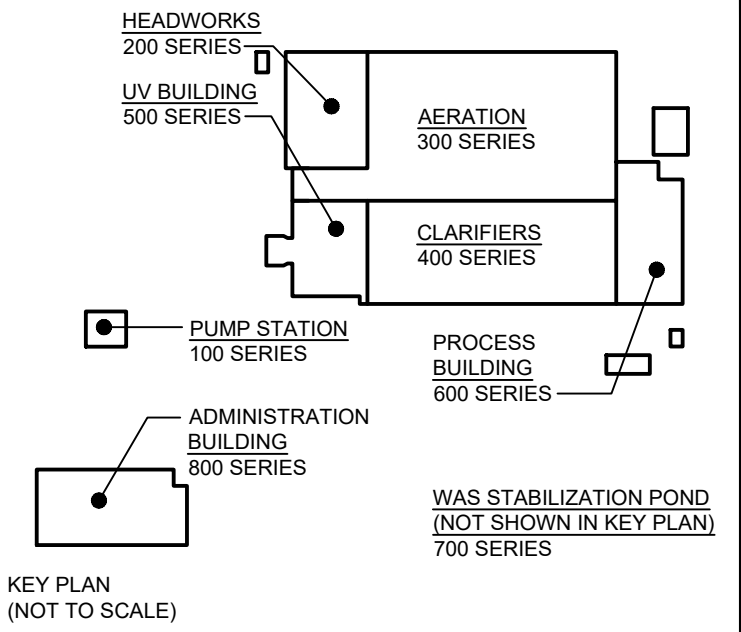
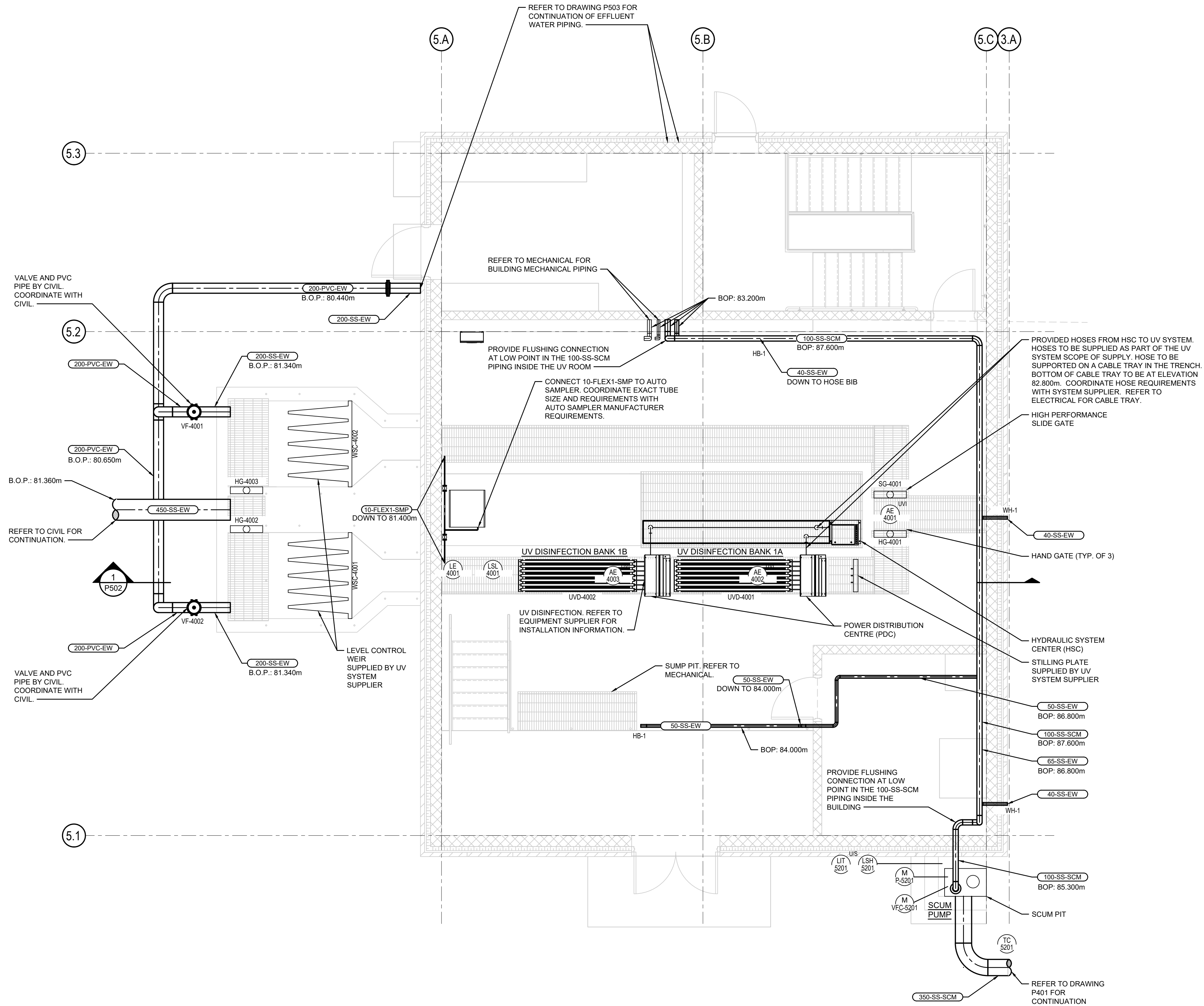
JLR #: 32296-001

DRAWING #:

P402

PLOT DATE: Tuesday, April 29, 2025 1:16:18 PM

File Location: P:\32000\32296-001 - Brighton WWT System Upgrade\03-Production\04-Process\P501 UV Disinfection Plan.dwg



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SCALE: 1:50

CLIENT:

BRIGHTON

CONSULTANT:

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

K. D. PELLETIER
100189180
2025-04-29
PROVINCE OF ONTARIO

PROJECT NORTH

N

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

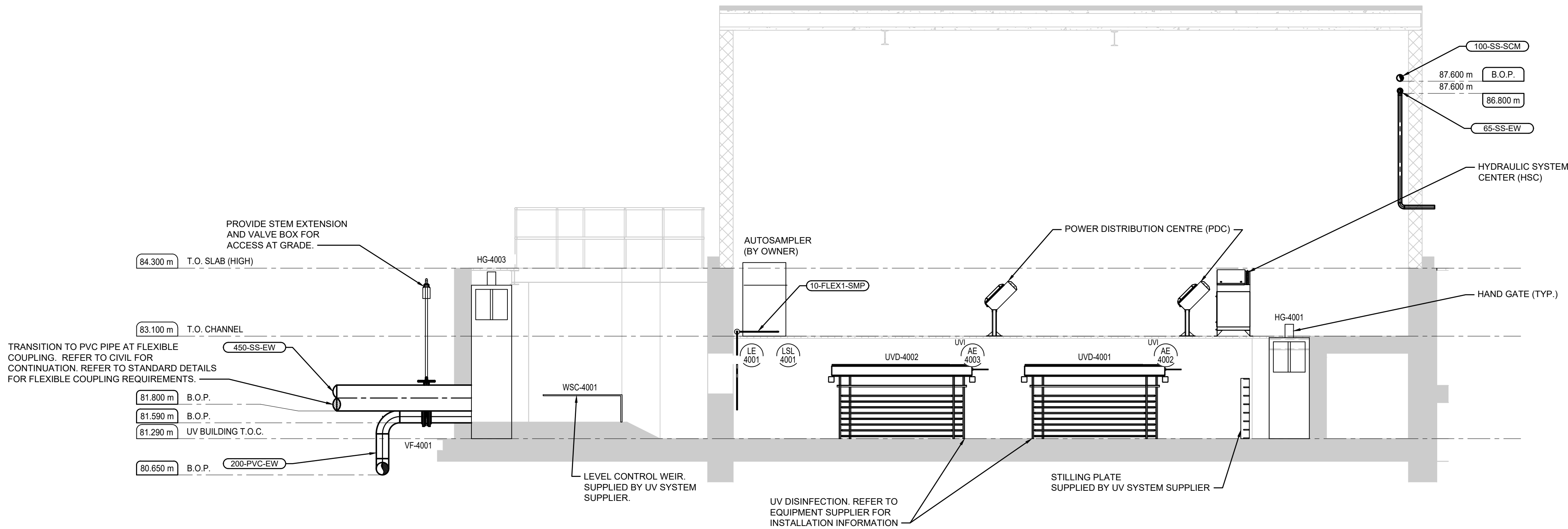
PROCESS UV BUILDING

UV BUILDING PLAN

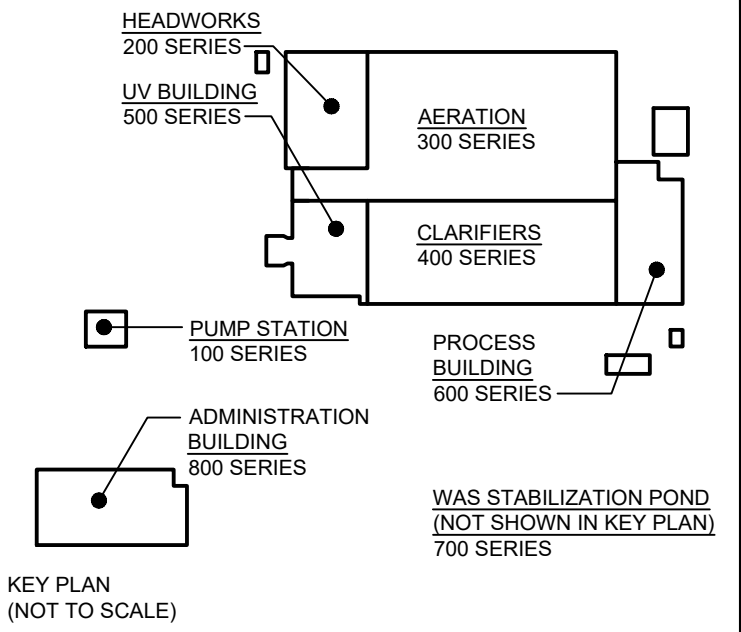
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CHECKED:	TP		
JLR #:	32296-001		

PLOT DATE: Tuesday, April 29, 2025 1:16:29 PM

File Location: P:\32000\32296-001 - Brighton WWT System Upgrade\03-Production\04-Process\P502 UV DISINFECTION SECTIONS.dwg



1 UV BUILDING GROUND FLOOR SECTION
P502 SCALE: 1:50



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SCALE: 1:50



CONSULTANT: www.jrichards.ca

JLR J.L.Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

PROJECT NORTH

LICENSED PROFESSIONAL ENGINEER
K. D. PELLETIER
100189180
2025-04-29
PROVINCE OF ONTARIO

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS UV BUILDING

UV BUILDING SECTIONS

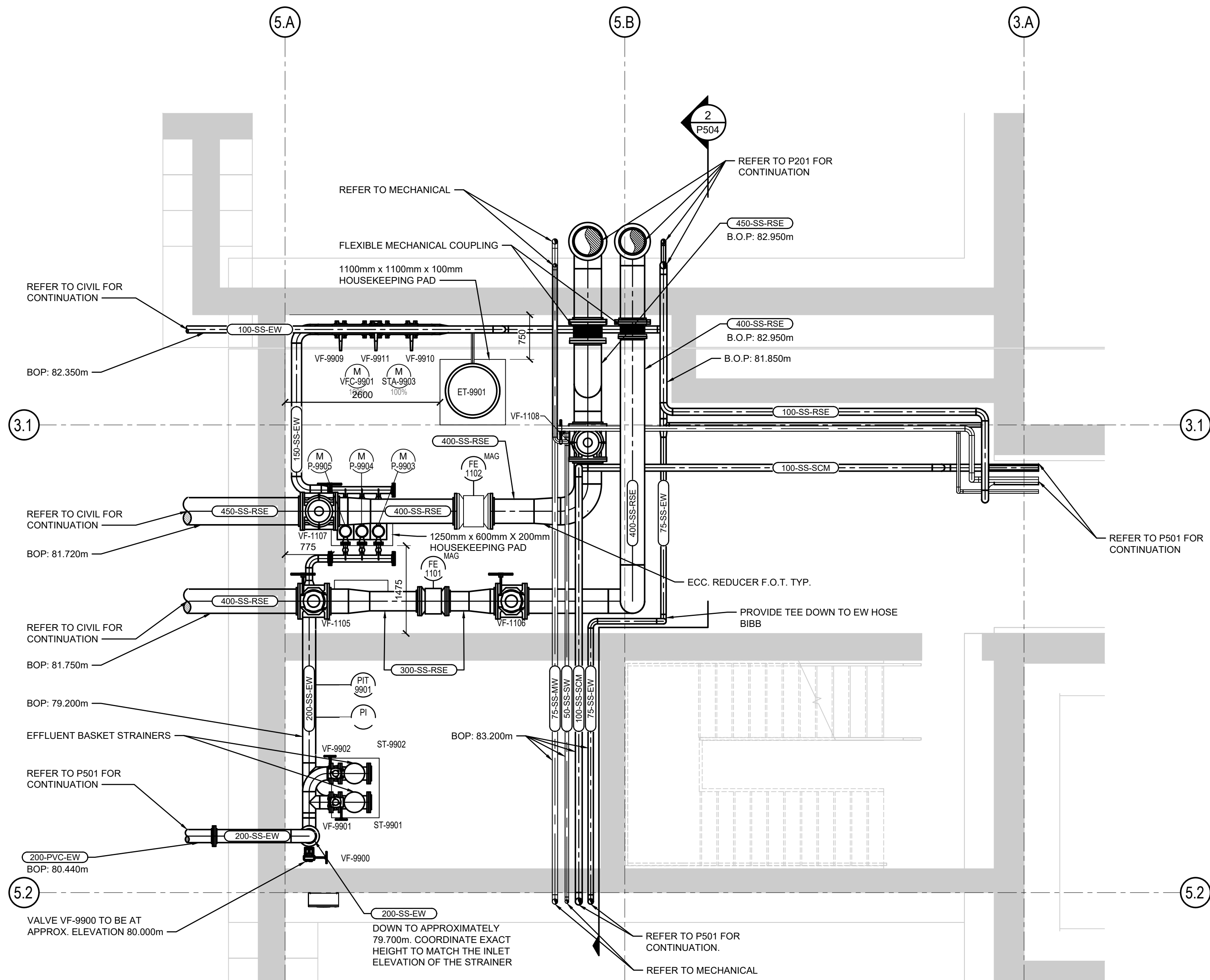
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DRAWN: EH	P502
CHECKED: TP	
JLR #: 32296-001	

PLOT DATE: Tuesday, April 29, 2025 1:16:08 PM

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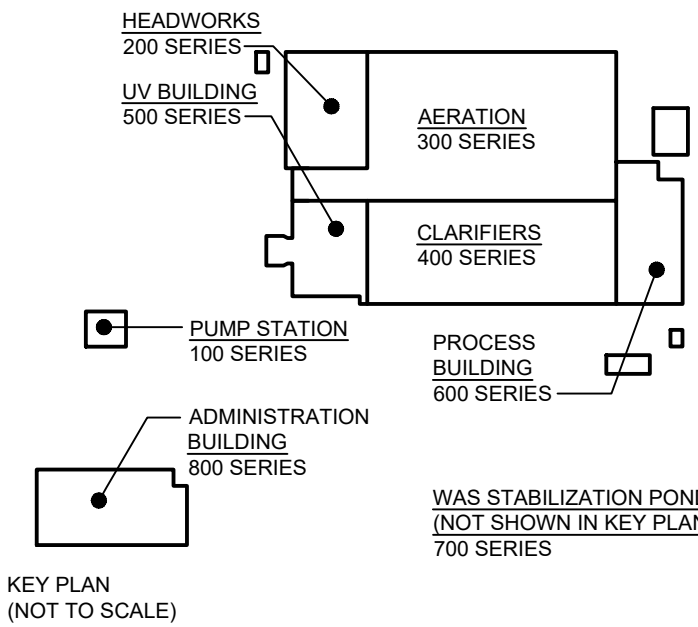
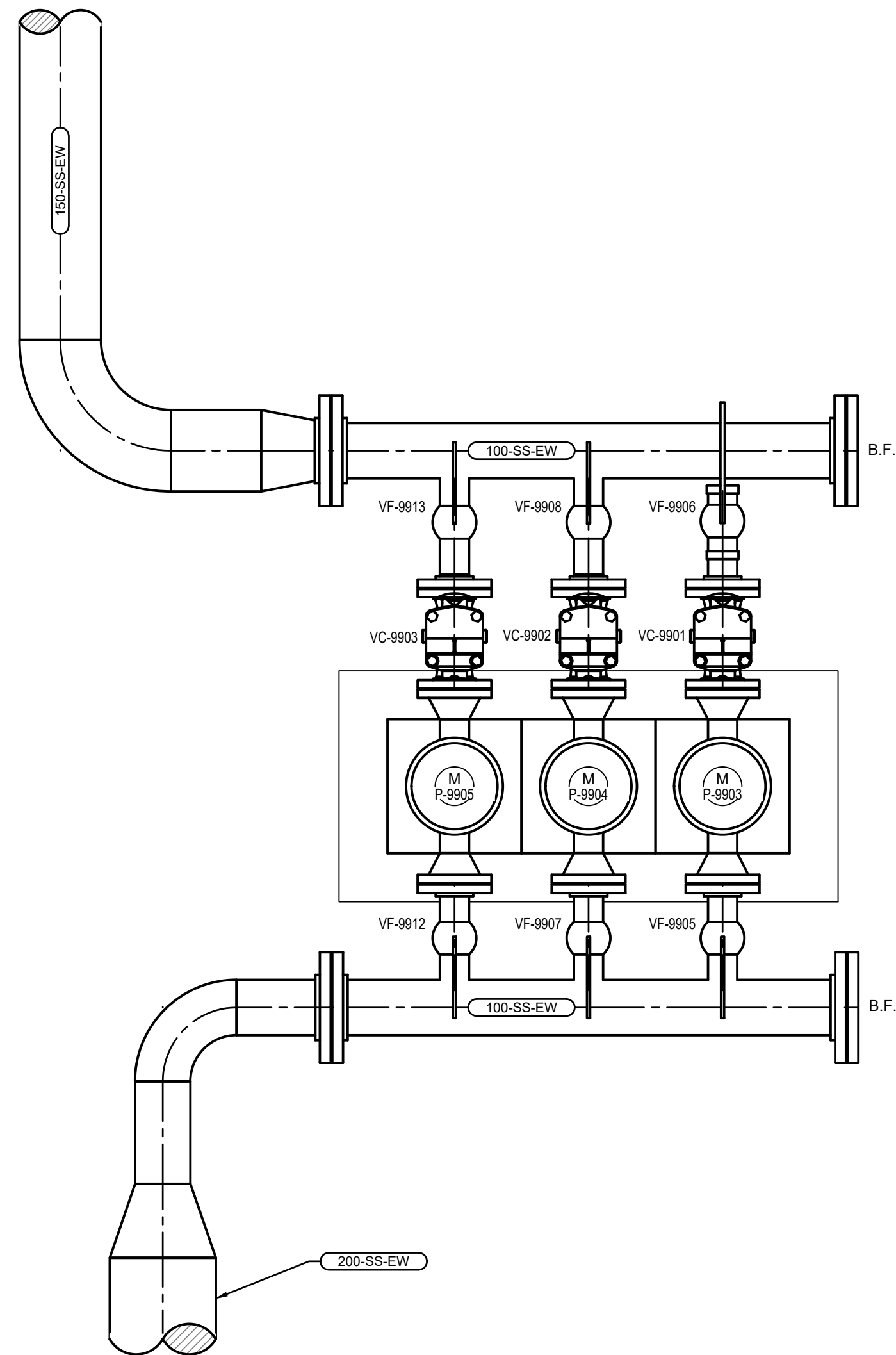
1
P503

EFFLUENT SYSTEM PLAN
SCALE: 1:50



2
P503

EFFLUENT WATER PUMP SKID
SCALE: 1:10



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SCALE: AS SHOWN

CLIENT:

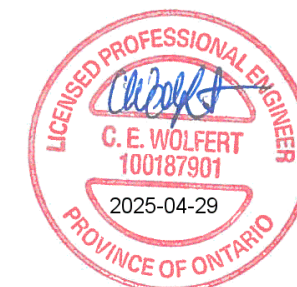


CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS
UV BUILDING
EFFLUENT SYSTEM PLAN

DESIGN: CW

DRAWN: EH

CHECKED: TP

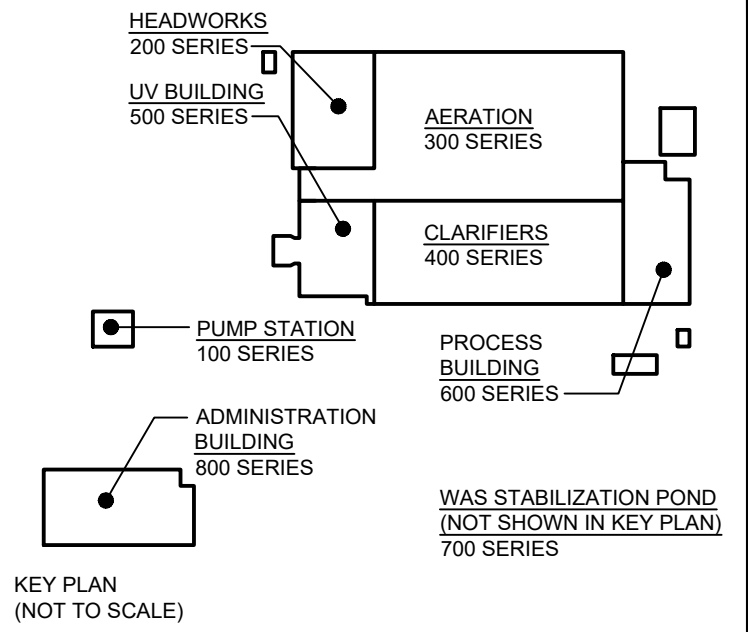
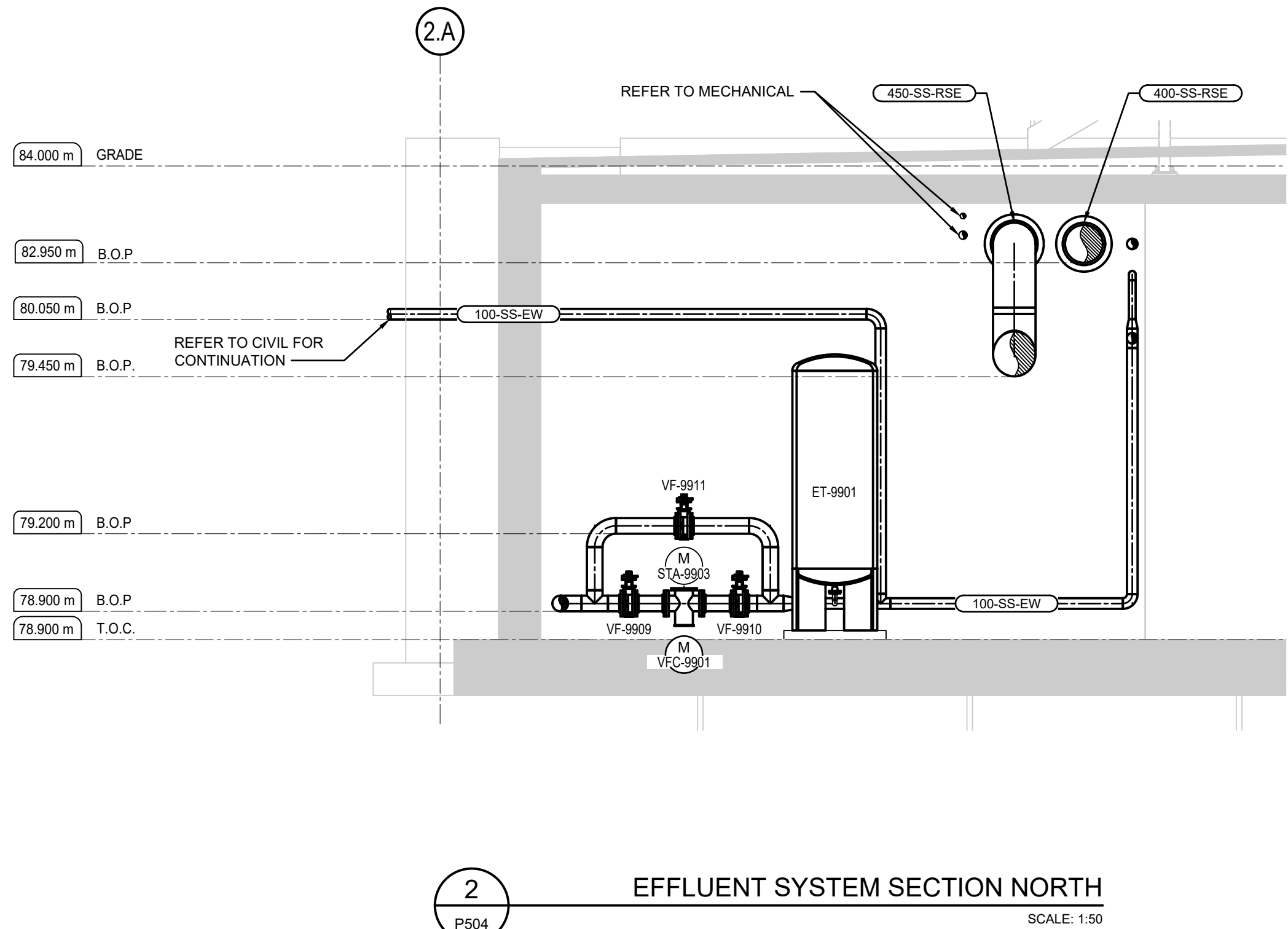
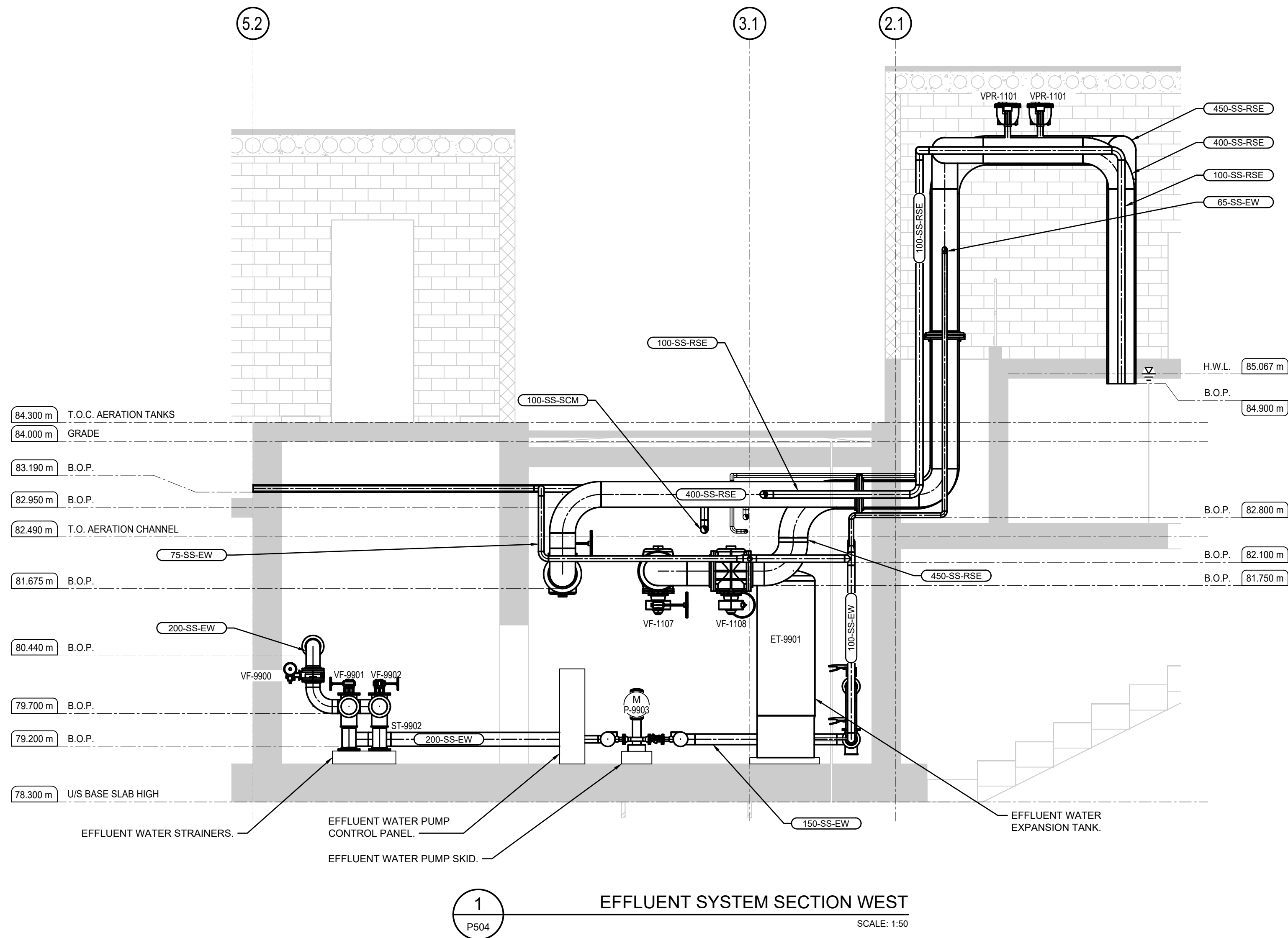
JLR #: 32296-001

DRAWING #:

P503

PLOT DATE: Tuesday, April 29, 2025 1:16:22 PM

File Location: \\jrichards\Corpl\Projects\32000\32296-001 - Brighton WWT System Upgrades\03-Production\04-Process\P002 Effluent System Sections.dwg



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SCALE: 1:50

CLIENT:
BRIGHTON
CONSULTANT: www.jrichards.ca

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP
C. E. WOLFERT
100167901
2025-04-29
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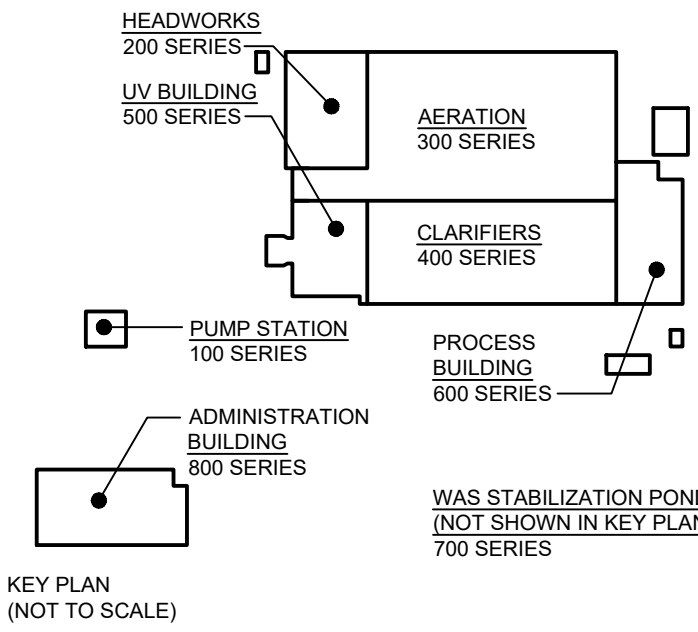
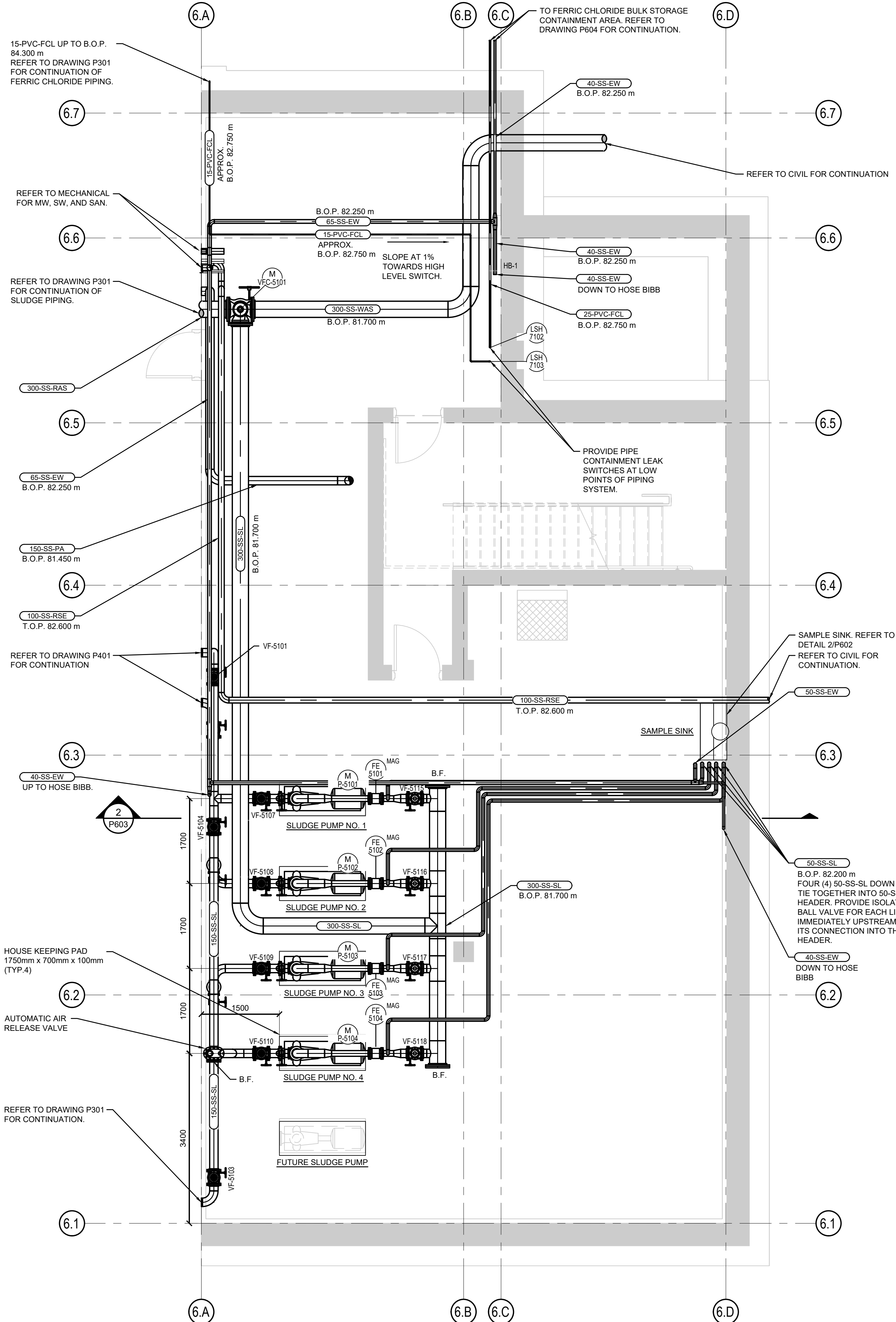
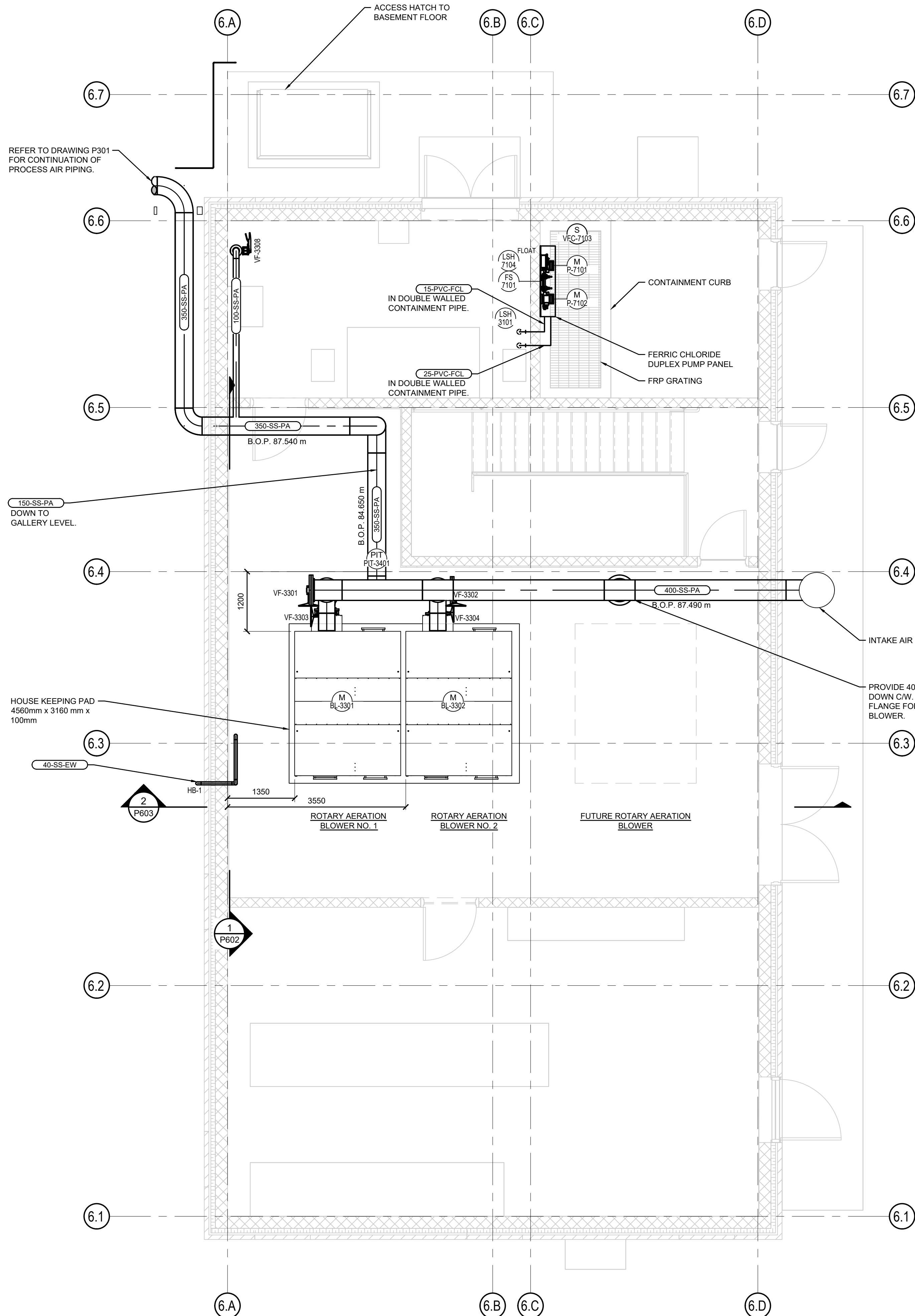
PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
PROCESS UV BUILDING
EFFLUENT SYSTEM SECTIONS

DESIGN: KP/CW	DRAWING #:
DRAWN: JV	P504
CHECKED: TP	
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PLOT DATE: Tuesday, April 29, 2025 1:16:29 PM

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SCALE: 1:50

CLIENT:



CONSULTANT: www.jrichards.ca

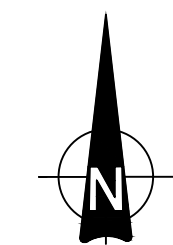


CONSULTANT:

PROFESSIONAL STAMP



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS
PROCESS BUILDING
PROCESS BUILDING PLAN

DESIGN: CW

DRAWN: JV/EH

CHECKED: TP

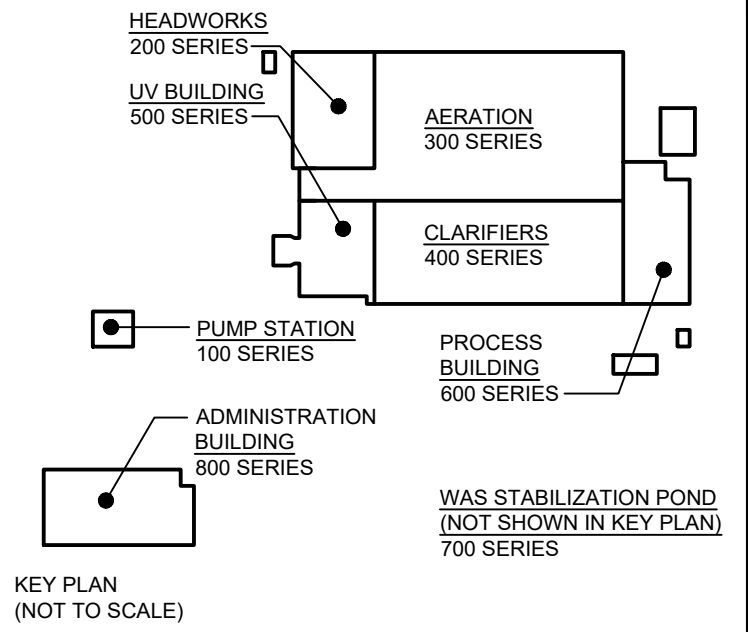
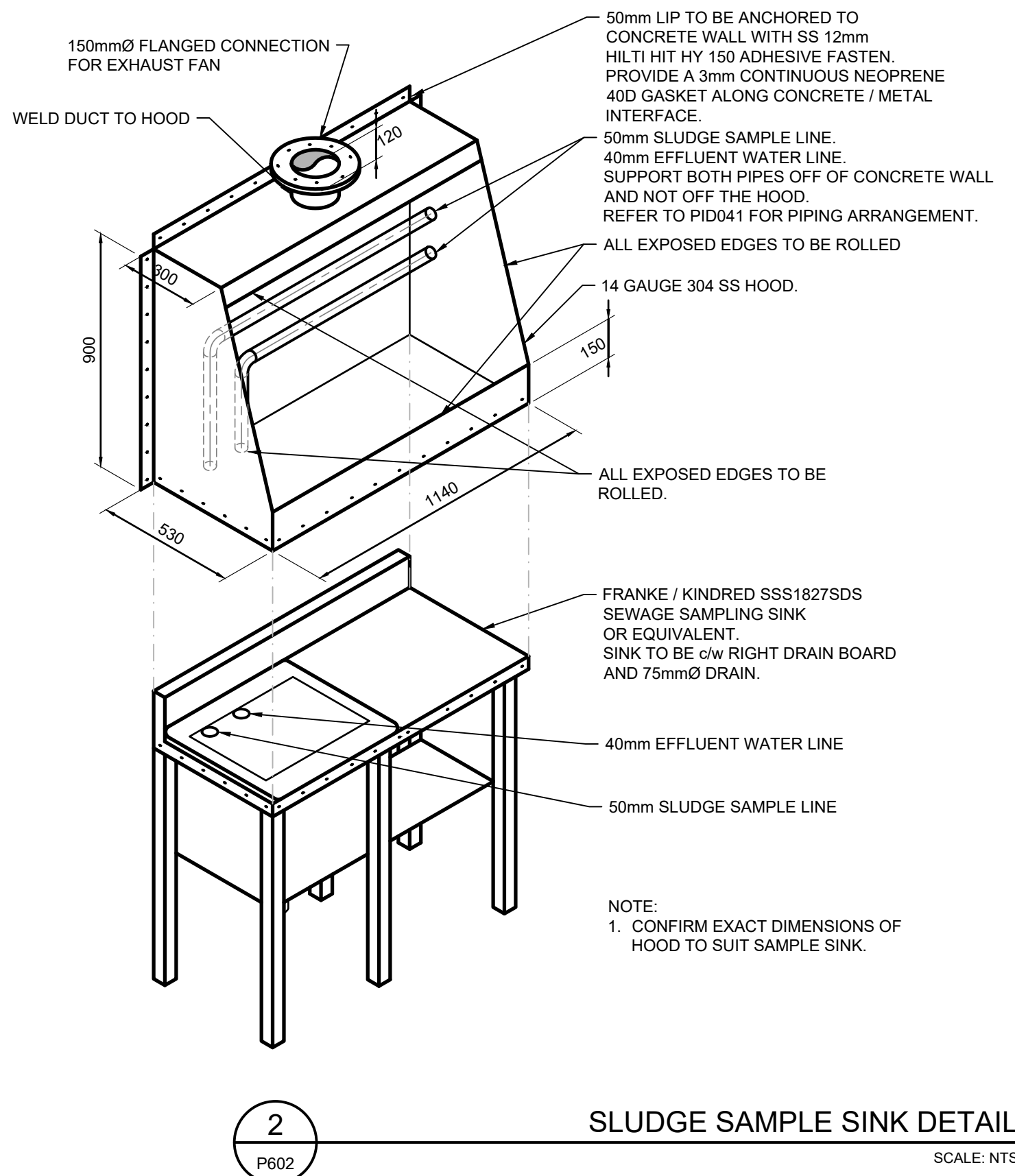
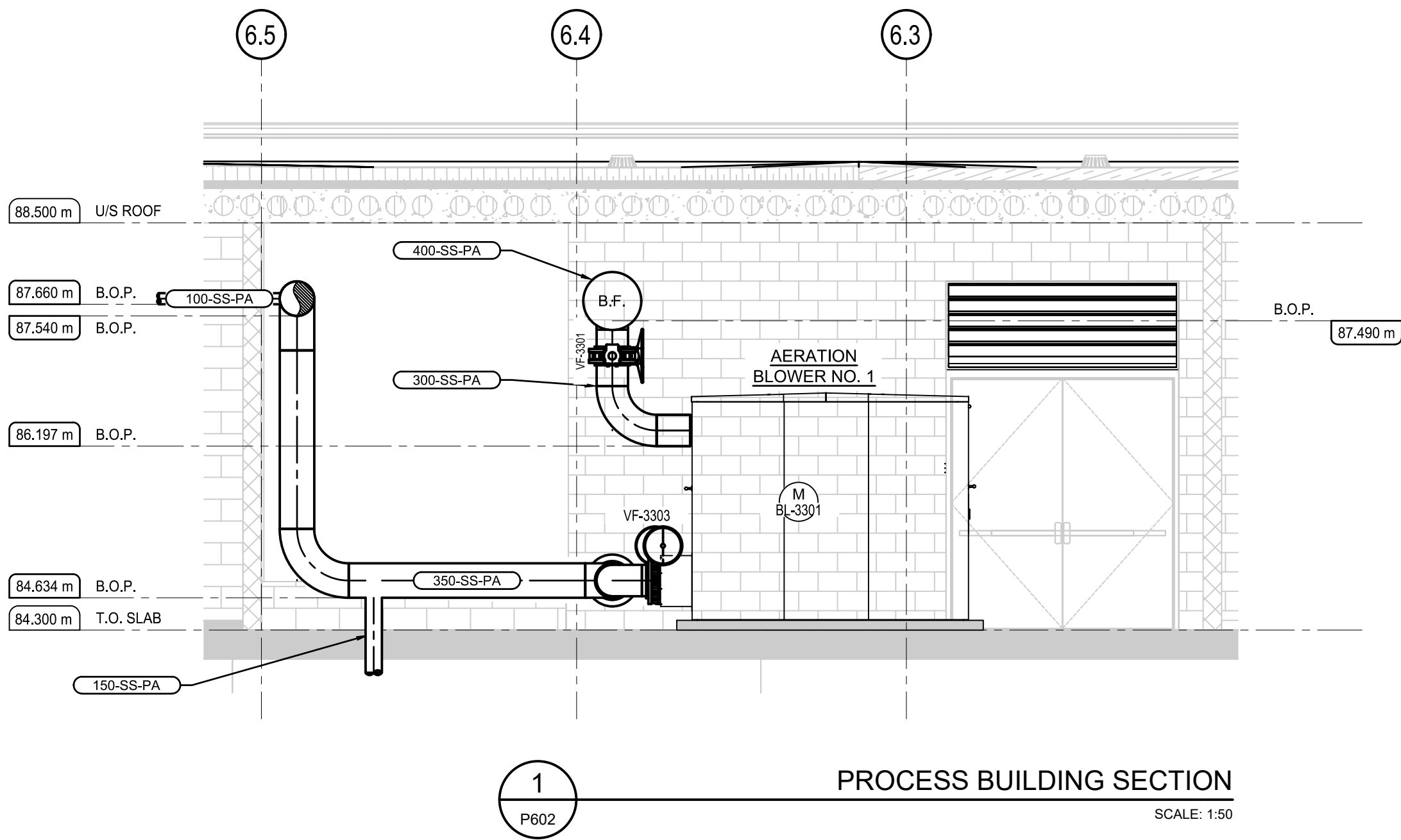
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PLOT DATE: Tuesday, April 29, 2025 1:16:08 PM

File Location: \\jrichards\Corpl\Projects\32000\32296-001 - Brighton WWT System Upgrades\03-Production\04-Process\p602 PROCESS BUILDING SECTIONS.dwg



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SCALE: AS SHOWN



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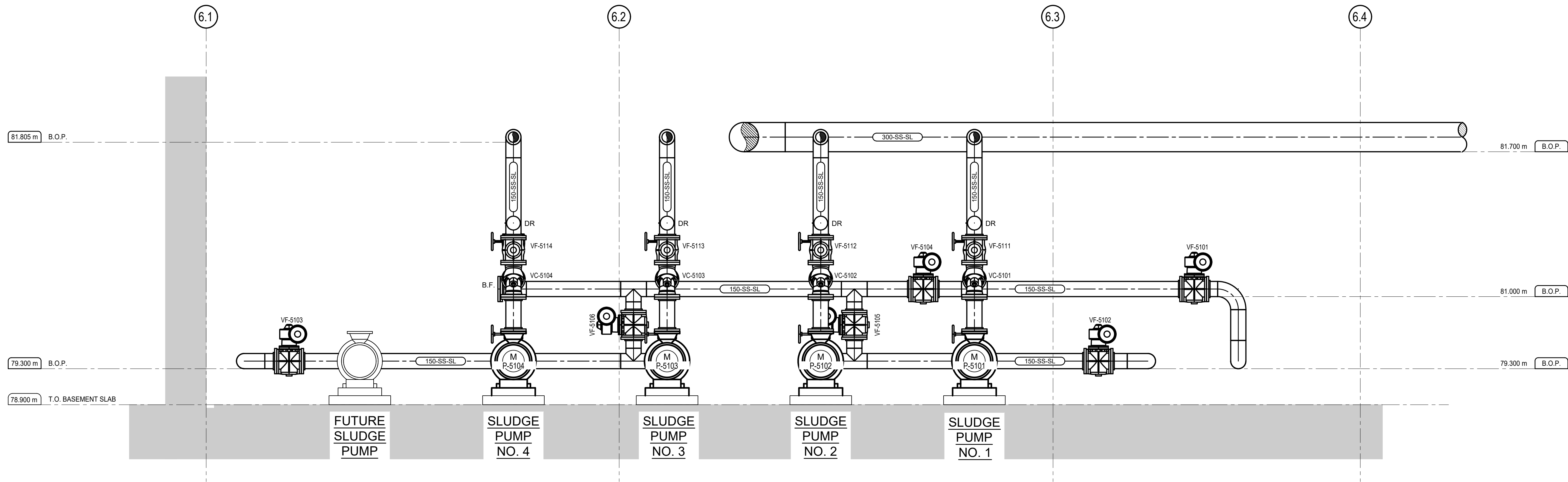
PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
**PROCESS
PROCESS BUILDING
PROCESS BUILDING SECTIONS**

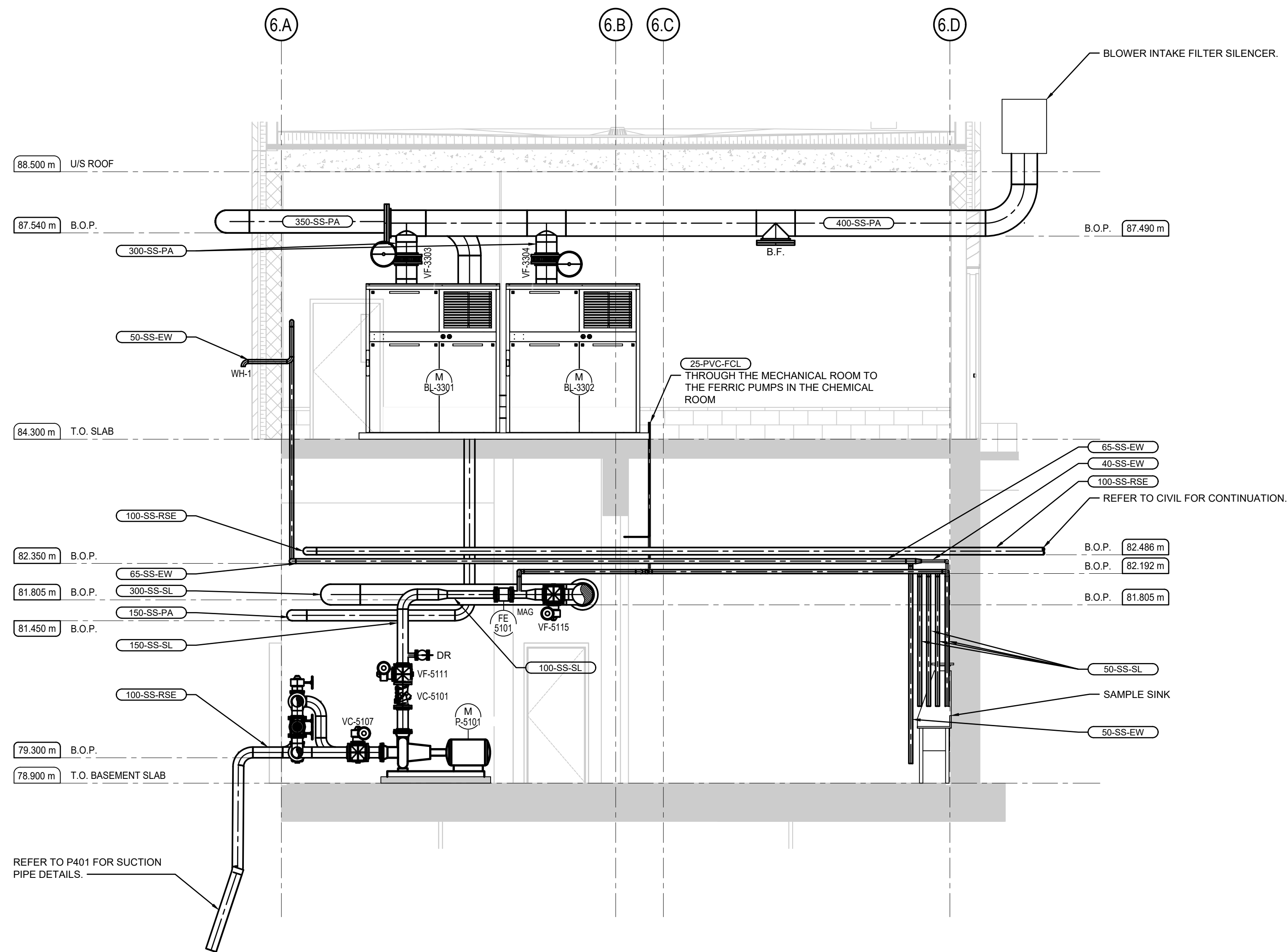
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PLOT DATE: Tuesday, April 29, 2025 1:16:04 PM

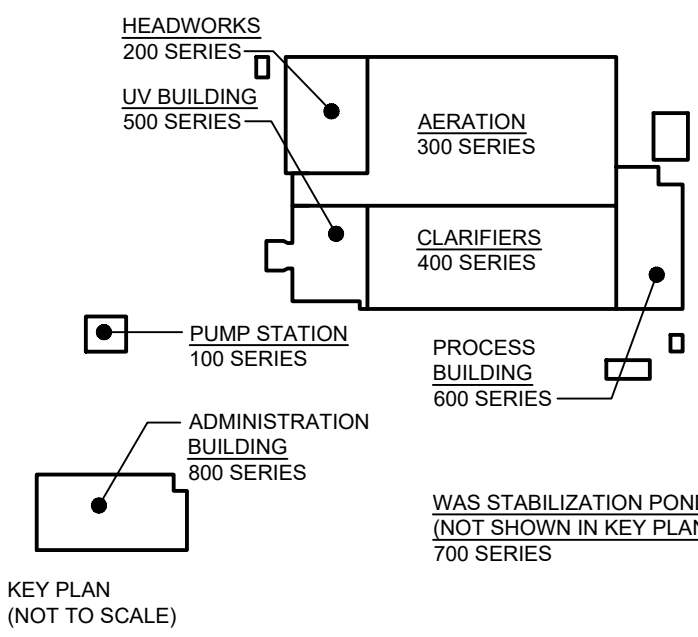
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1 PROCESS BUILDING PUMP ROOM SECTION
P603 SCALE: 1:25



2 PROCESS BUILDING SECTION
P603 SCALE: 1:50



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SCALE: AS SHOWN

CLIENT:



CONSULTANT: www.jlrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

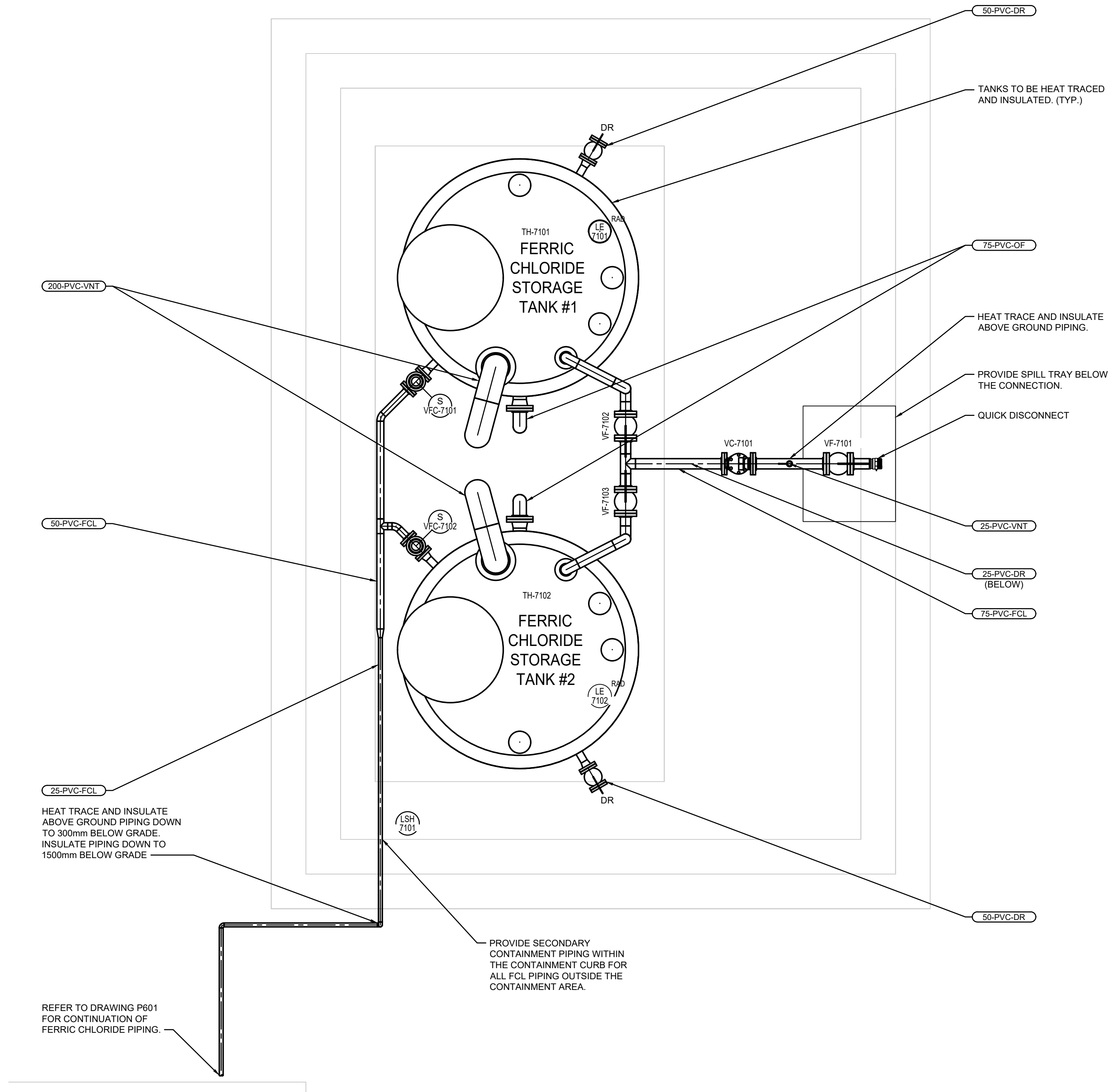
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PROCESS
PROCESS BUILDING
PROCESS BUILDING SECTIONS

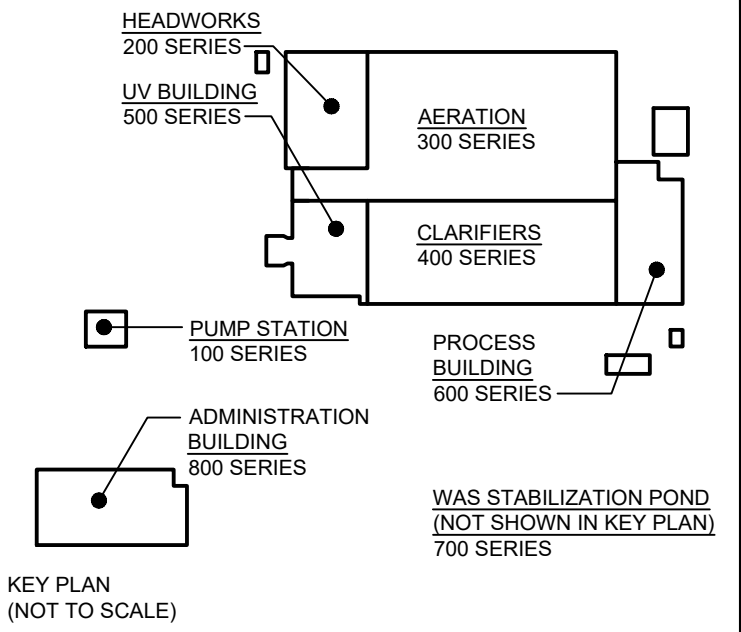
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DRAWN: JV	P603
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PLOT DATE: Tuesday, April 29, 2025 1:16:08 PM

File Location: \\jrichards\Corpl\Projects\32000\32296-001 - Brighton WWT System Upgrades\03-Production\04-Process\P403 FERRIC CHLORIDE TANK CONTAINMENT PLAN.dwg



1 FERRIC CHLORIDE TANK CONTAINMENT PLAN
P604 SCALE: 1:25



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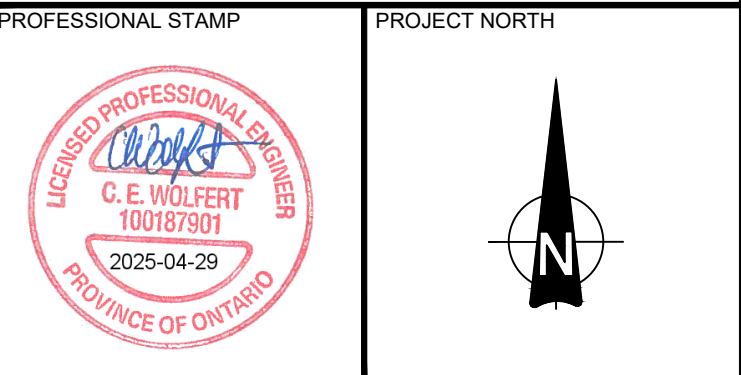
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SCALE: 1:25



CONSULTANT:



PROJECT: BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

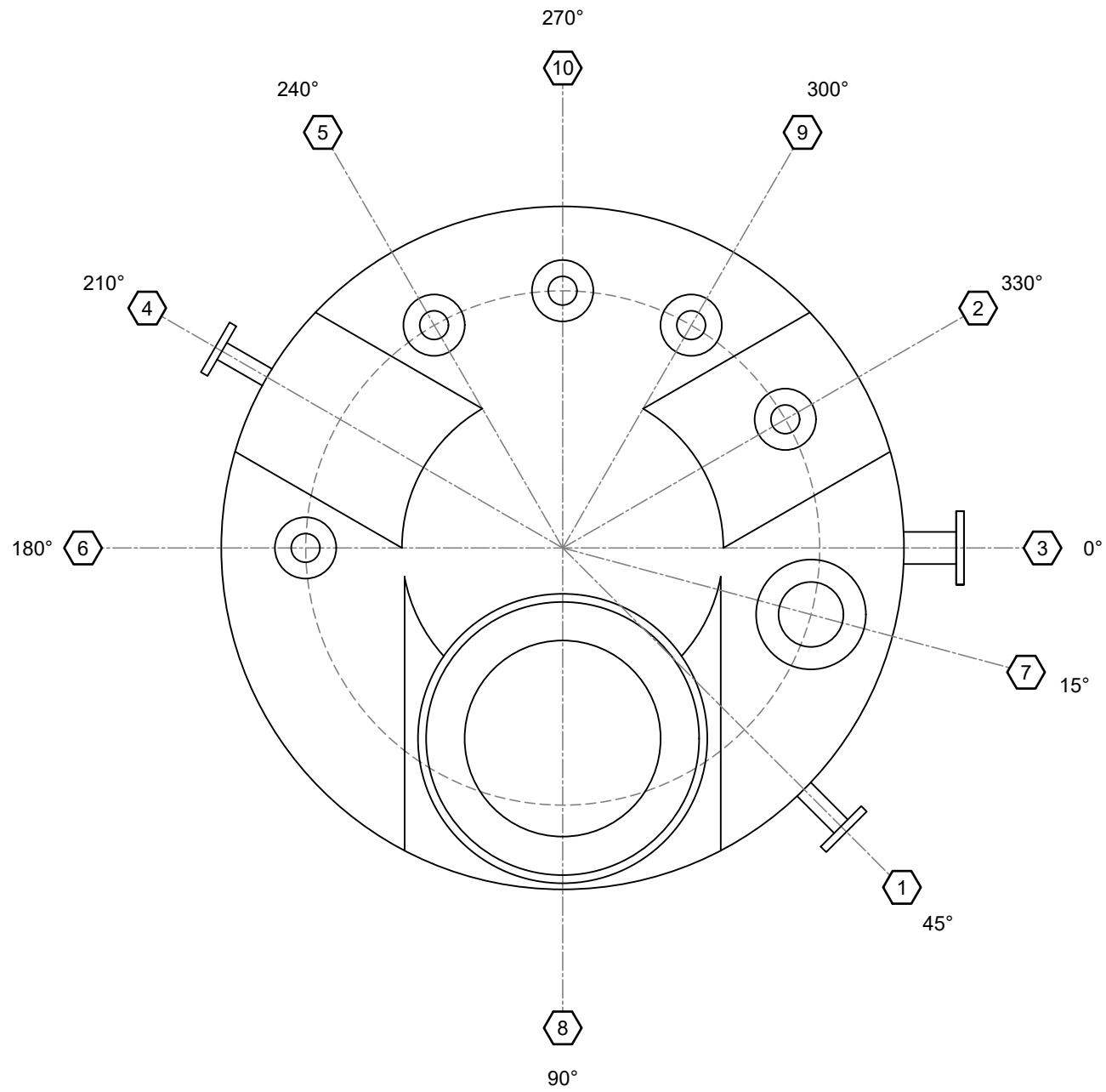
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FERRIC CHLORIDE TANK CONTAINMENT PLAN

DESIGN: KP/CW	DRAWING #:
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CHECKED: TP	
JLR #: 32296-001	

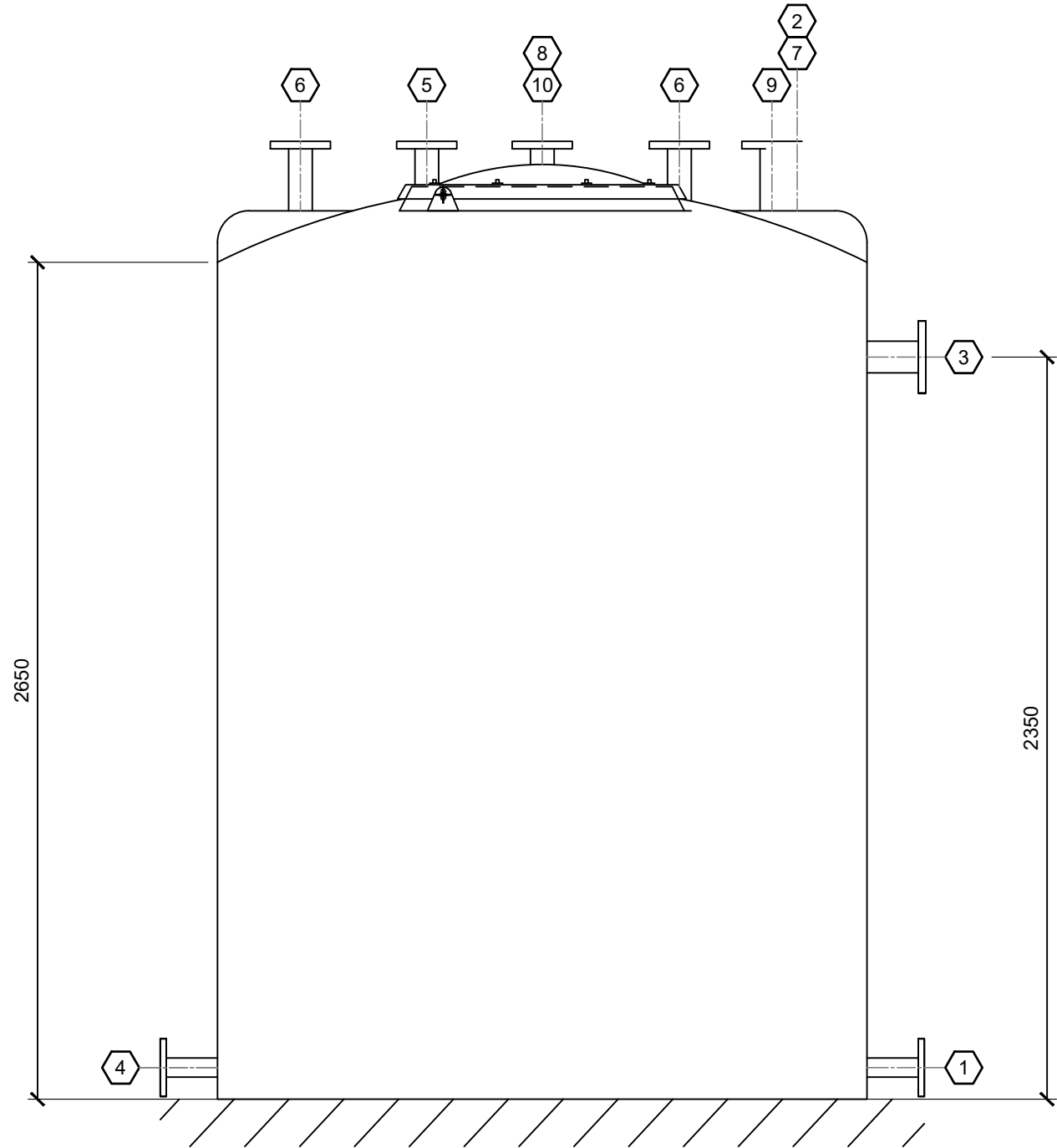
PLOT DATE: Tuesday, April 29, 2025 1:16:37 PM

File Location: \\jrichards\Corpl\Projects\32000\32296-001 - Brighton WWT System Upgrades\03-Production\04-Process\P404 FERRIC CHLORIDE TANKS.dwg

FERRIC SULFATE TANK NOZZLE SCHEDULE		
TAG	SIZE (mm)	DESCRIPTION
1	50	SUCTION
2	75	FILL
3	75	OVERFLOW
4	50	DRAIN
5	75	U/S LEVEL SENSOR
6	75	RADAR LEVEL SENSOR
7	200	VENT
8	600	HATCH
9	75	SPARE
10	75	REVERSE FLOAT

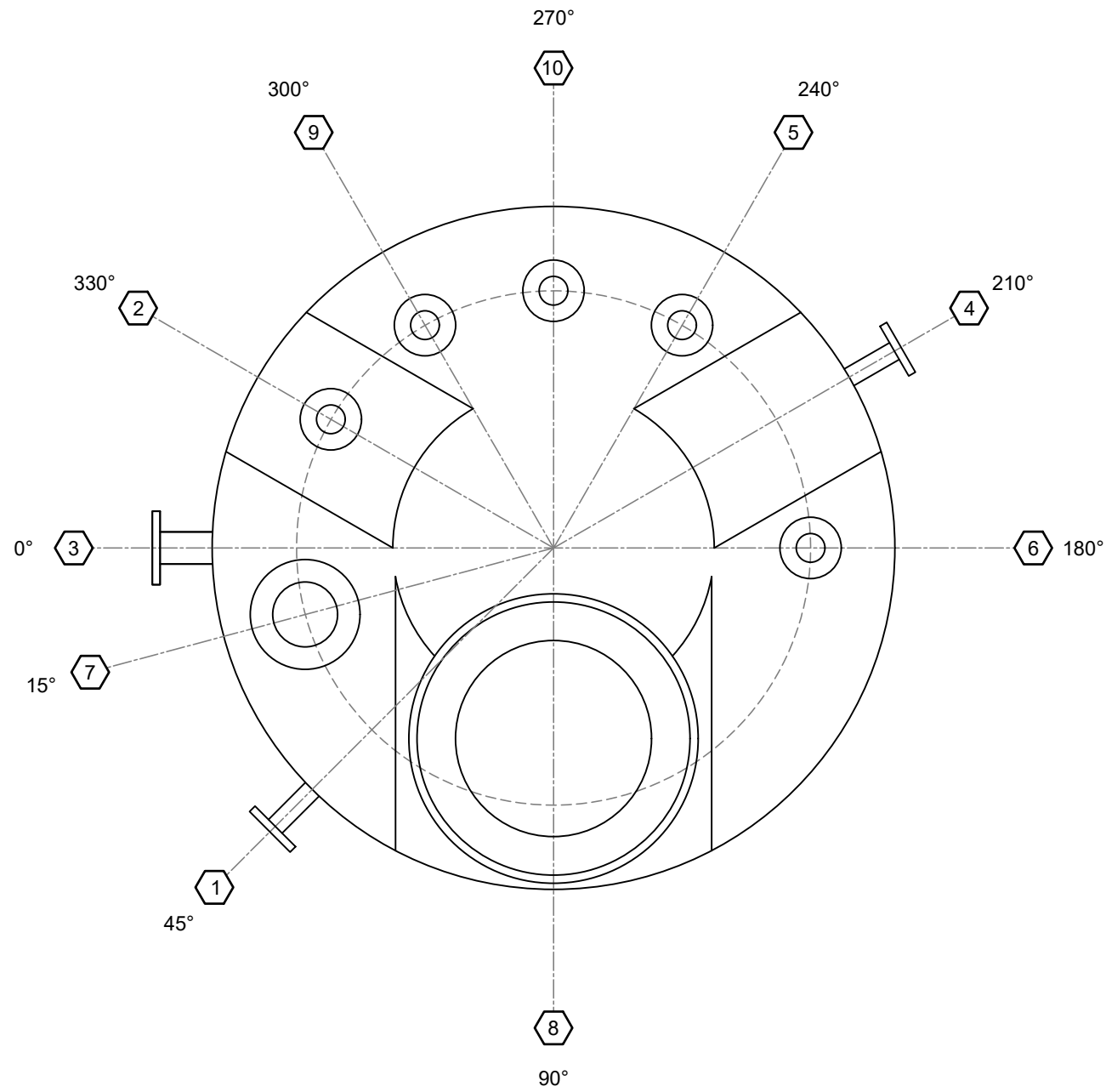


1 TH-701 PLAN
P605 SCALE: 1:20

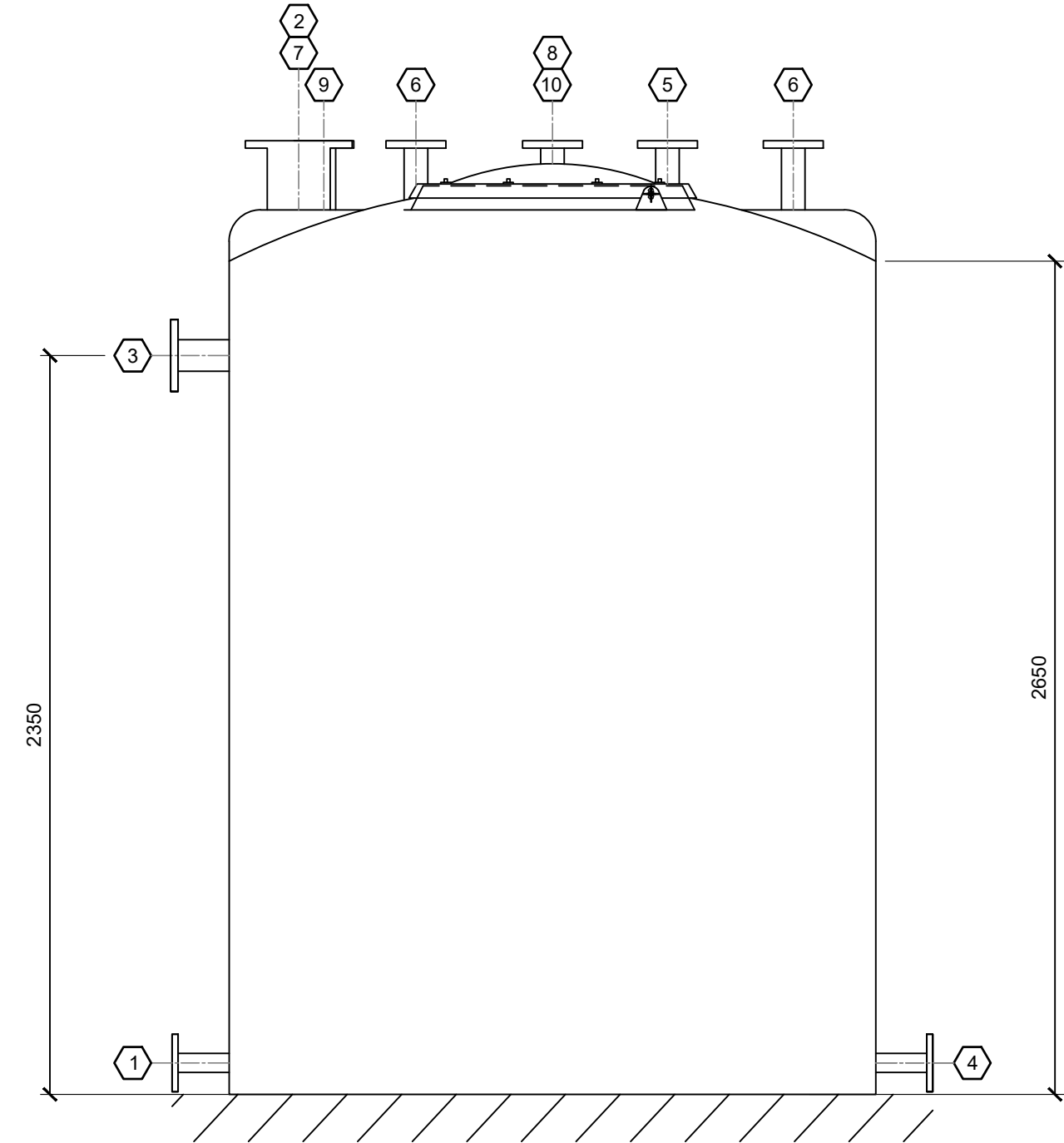


2 TH-701 ELEVATION
P605 SCALE: 1:20

NOTE: ELEVATION VIEW IS DIAGRAMMATIC IN NATURE AND INTENDED TO INDICATE SIDE PENETRATION ELEVATIONS. REFER TO PLAN VIEW FOR ORIENTATION OF NOZZLES AROUND THE TANK.

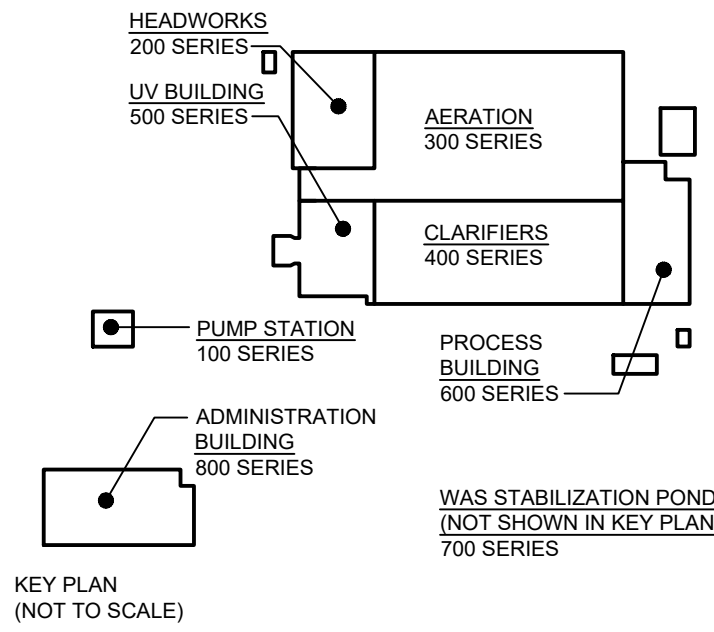


3 TH-702 PLAN
P605 SCALE: 1:20



4 TH-702 ELEVATION
P605 SCALE: 1:20

NOTE: ELEVATION VIEW IS DIAGRAMMATIC IN NATURE AND INTENDED TO INDICATE SIDE PENETRATION ELEVATIONS. REFER TO PLAN VIEW FOR ORIENTATION OF NOZZLES AROUND THE TANK.



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SCALE: 1:20
0 500 1000 1500mm

CLIENT:
BRIGHTON
MUNICIPALITY

CONSULTANT:
J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP
C. E. WOLFERT
100167901
2025-04-29
PROVINCE OF ONTARIO

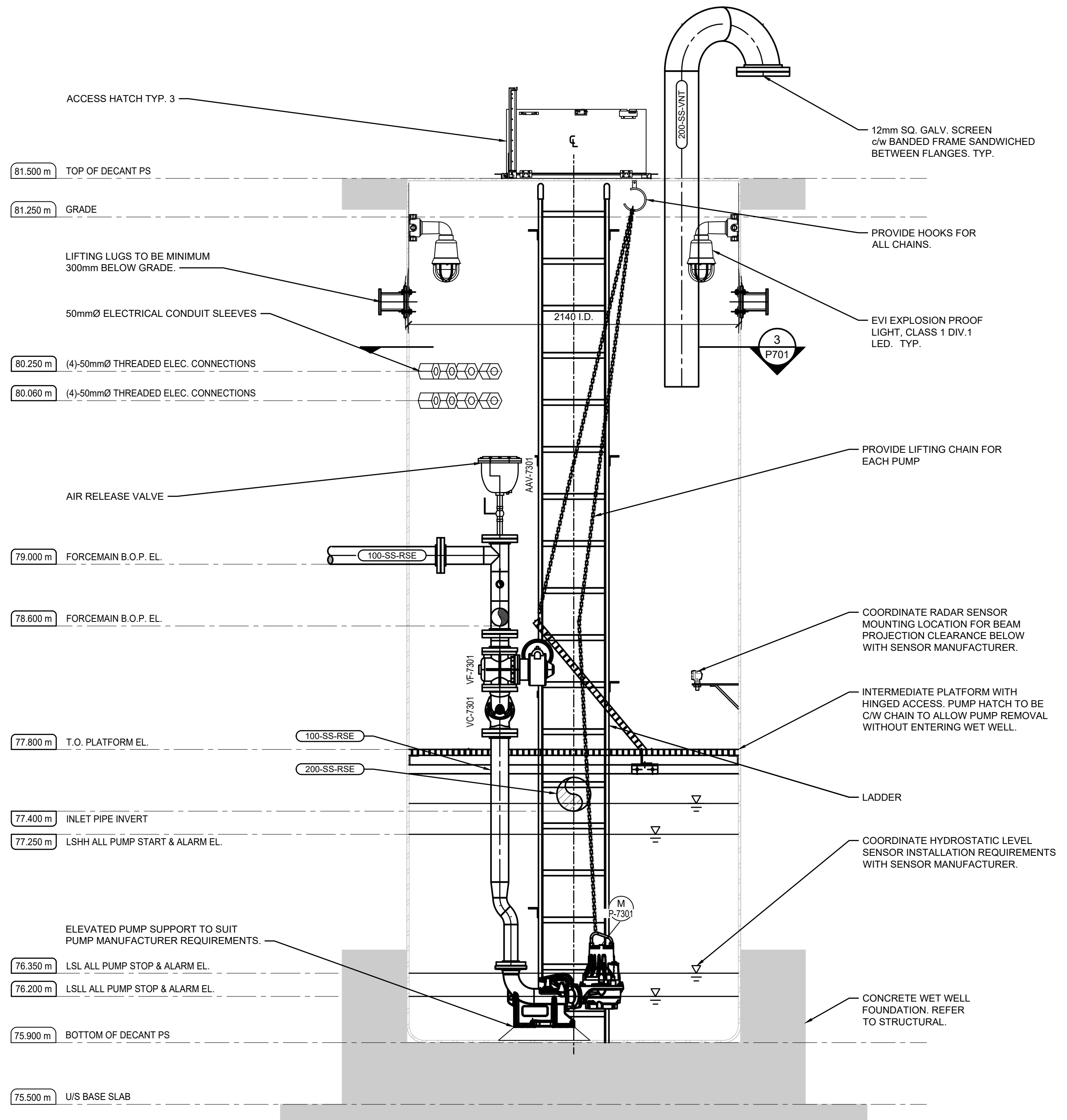
PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
PROCESS CLARIFIERS
FERRIC CHLORIDE TANKS

DESIGN: KP/CW
DRAWN: JV
CHECKED: TP
JLR #: 32296-001
DRAWING #:
P605

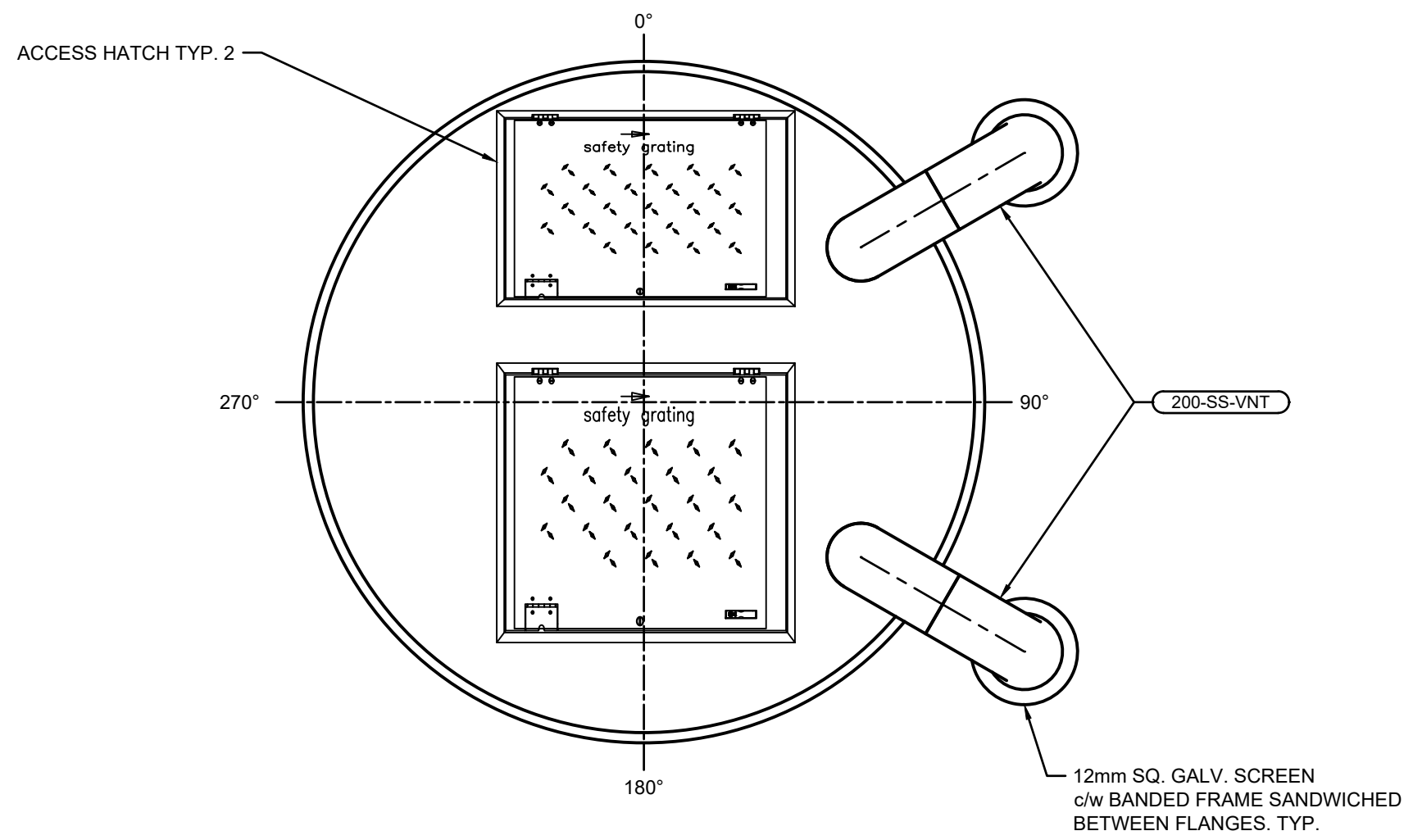
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File Location: \\jrichards\Corpl\Projects\32000\32296-001 - Brighton WWT System Upgrades\03-Production\04-Process\P701 DECANT PS PLAN AND SECTIONS.dwg

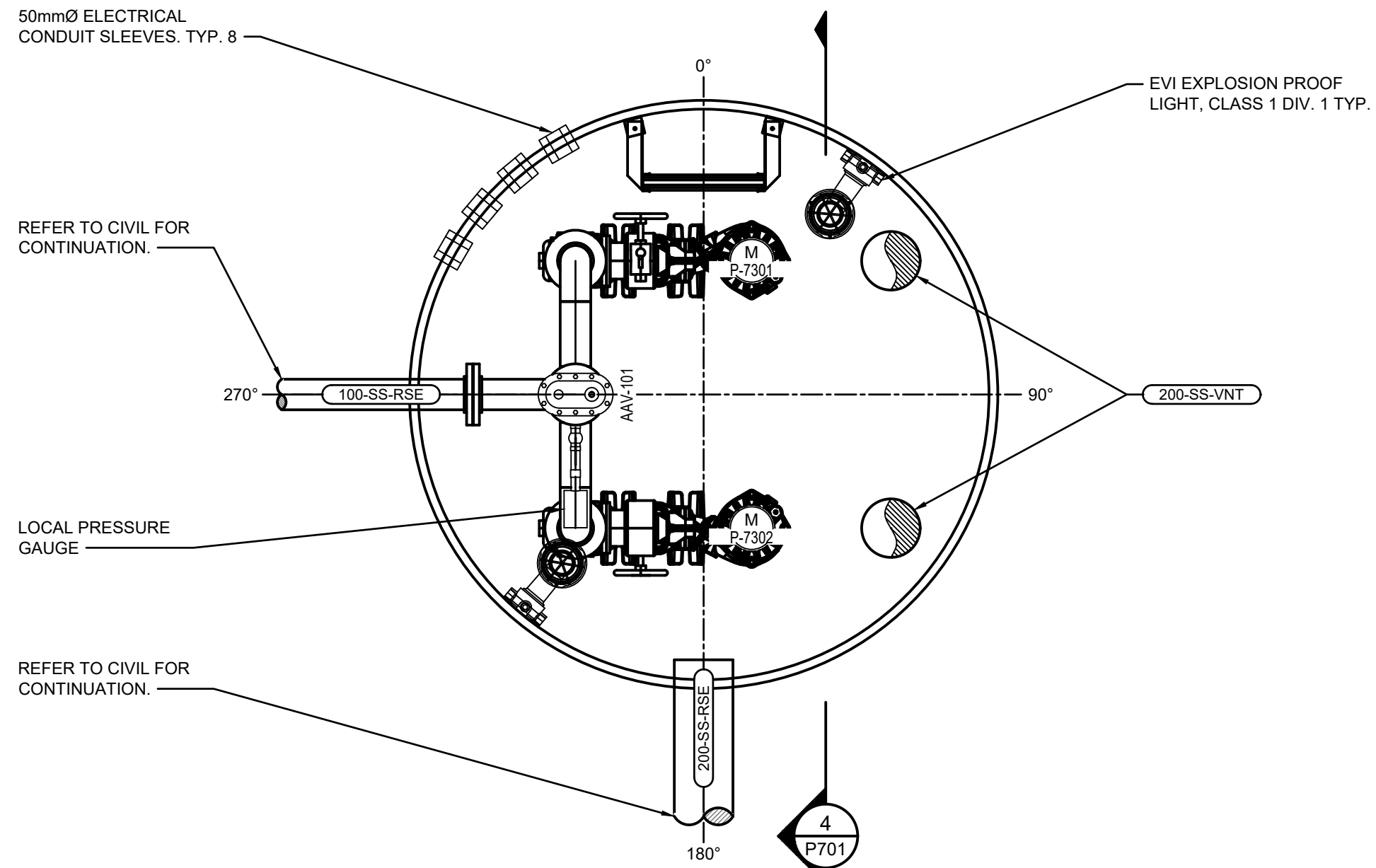


- NOTES:
- SEE PLAN VIEW FOR TRUE ORIENTATION. CONCRETE SHOWN FOR ILLUSTRATIVE PURPOSE ONLY. REFER TO STRUCTURAL FOR FOUNDATION.
 - ALL SUPPORT MEMBERS TO BE ALUMINUM UNLESS NOTED. GRATING TO BE FRP. PROVIDE HOLES THROUGH GRATING FOR ALL NECESSARY EQUIPMENT TO PASS THROUGH. RESIN SEAL ALL FRP EDGES.

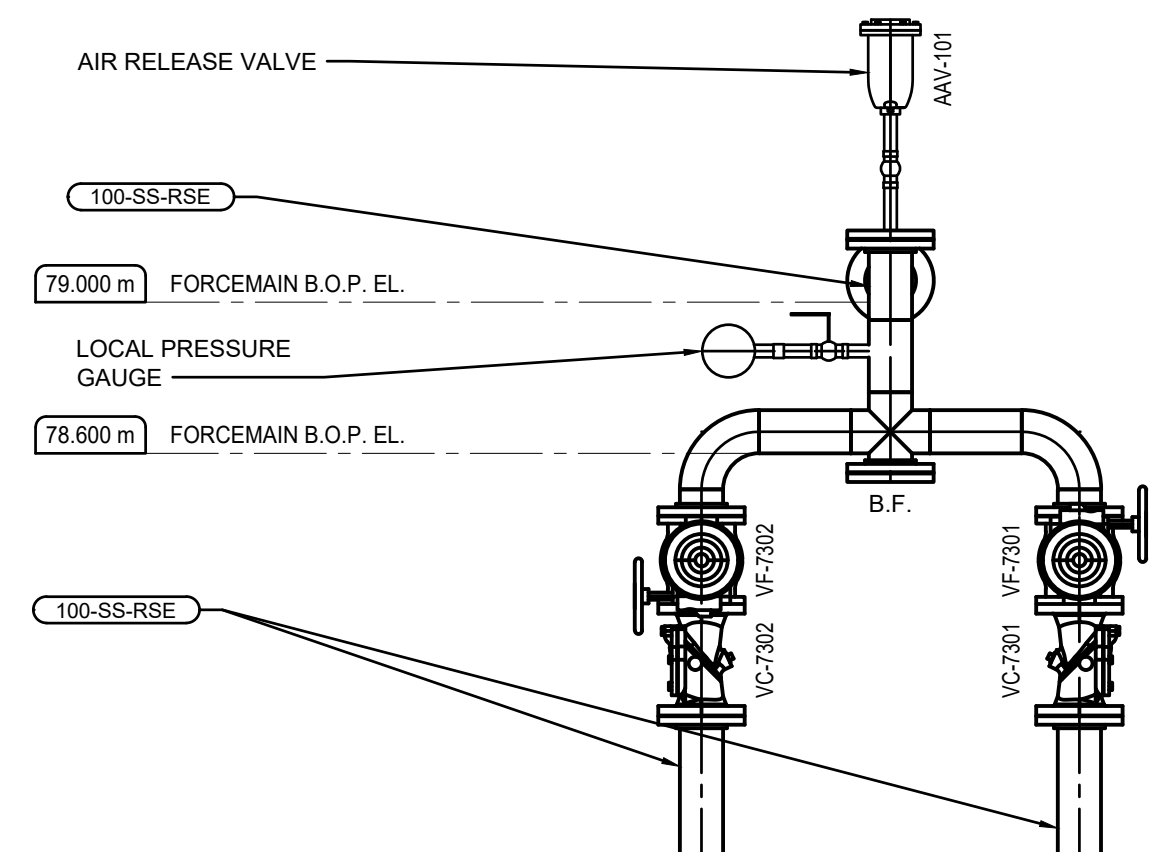
1 WET WELL ELEVATION SCALE: 1:20



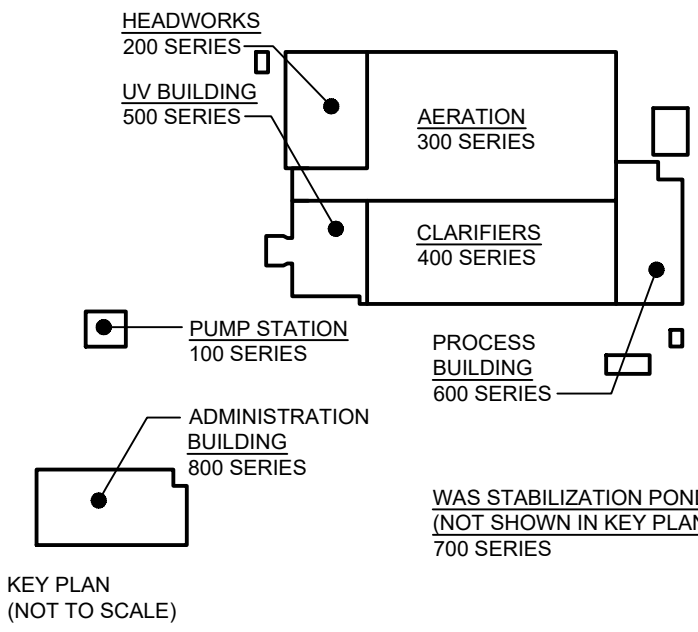
2 WET WELL ROOF PLAN SCALE: 1:20



3 WET WELL SECTION SCALE: 1:20



4 WET WELL SECTION SCALE: 1:20



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

0	ISSUED FOR TENDER	25/04/25
No.	ISSUE / REVISION	DD/MM/YY

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25MM IF THIS IS A FULL SIZE DRAWING.

SCALE: 1:20

CLIENT:

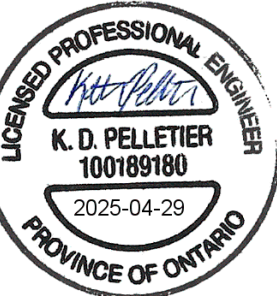


CONSULTANT: www.jrichards.ca



CONSULTANT:

PROFESSIONAL STAMP PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

PROCESS WAS STABILIZATION POND
DECANT PS PLAN AND SECTIONS

DESIGN: CW	DRAWING #:
DRAWN: JV	P701
CHECKED: TP	
JLR #:	32296-001

PLOT DATE: Tuesday, April 29, 2025 1:16:12 PM

GENERAL NOTES:

GENERAL NOTES APPLY TO ALL ELECTRICAL DRAWINGS

- CONTRACTOR TO COORDINATE WITH OTHER TRADES AND PROVIDE RECEPTABLES, BREAKERS, WIRING, CONDUIT AND OUTLET BOXES IN ORDER TO PROVIDE MAINTENANCE RECEPTABLES FOR HVAC AND SIMILAR EQUIPMENT THAT ARE LOCATED ON ROOFTOPS, IN COMPLIANCE WITH ONTARIO ELECTRICAL SAFETY CODE RULES 2-314, 26-702, 26-704 AND 26-710 AS WELL AS BULLETIN 26-27-0 AND 26-28-1. RECEPTABLES UNDER THIS PROVISION MAY NOT BE SHOWN ON DRAWINGS OR WITHIN LIGHTING PANEL SCHEDULES. RECEPTABLES UNDER THIS PROVISION ARE TO BE PROVIDED AS A HOUSE SYSTEM PLANNING INSTALLATION REQUIREMENT OF THE CONTRACTOR, IN COMPLIANCE WITH ONTARIO ELECTRICAL SAFETY CODE RULES AND BULLETINS.
- B. ALL EXXX, IXXX AND NXXX SERIES DRAWINGS TO BE READ IN CONJUNCTION WITH THIS DRAWING. SYMBOLS AND NOTES SHOWN ON THIS DRAWING APPLY TO THOSE DRAWINGS.
- C. NOT ALL SYMBOLS USED IN THE EXXX, IXXX AND NXXX SERIES DRAWINGS MAY BE SHOWN ON THIS LEGEND. IN SUCH CASES INDUSTRY STANDARD SYMBOLOLOGY WILL BE EMPLOYED AND A DESCRIPTION PROVIDED.
- D. WHERE CABLE TRAYS ARE NOT PROVIDED FOR TECK CABLES PROVIDE UNISTRUT OR OTHER ACCEPTABLE BRACKETS TO SUPPORT CABLES FOR A NEAT AND TIDY WORKSMANSHIP-LIKE INSTALLATION (SYMMETRICALLY FOLLOWING BUILDING LINES).
- E. EXXX AND IXXX SERIES DRAWINGS TO BE READ IN CONJUNCTION WITH MEXXX SERIES DRAWINGS, INCLUDING THE MOTOR STARTER AND CONTROLS LIST AS WELL AS THE HAZARDOUS AREA CLASSIFICATION DRAWINGS.
- F. WHERE CONDUITS ARE USED FOR WIRING EQUIPMENT THAT MAY VIBRATE, PROVIDE LIQUID-TIGHT METALLIC FLEXIBLE CONDUITS FOR THE FINAL CONNECTION TO SUCH EQUIPMENT, SUCH EQUIPMENT SHOULD INCLUDE TRANSFORMERS, MOTORS, VALVES AND UPSs. LENGTH OF THE FLEXIBLE CONDUIT MUST NOT EXCEED 450mm. REFER TO SECTION 1613.
- G. PROVIDE MECHANICAL PROTECTION FOR ALL CABLES TO MEET OR EXCEED THE REQUIREMENTS OF THE ONTARIO ELECTRICAL SAFETY CODE AND ITS BULLETINS.
- H. UNLESS OTHERWISE INDICATED, MINIMUM EMT, RGS, AND OCAL CONDUIT SIZE FOR CABLE 6 AND FIBRE CABLES TO BE 27mm.
- I. CONTRACTOR TO PROVIDE HOUSEKEEPING PADS FOR ALL FREESTANDING ELECTRICAL EQUIPMENT. REFER TO STRUCTURAL DRAWINGS FOR FURTHER DETAILS.

PROCESS PLANS

- B. PROVIDE ALUMINUM BARRIERS IN CABLE TRAYS TO SEPARATE CABLES OF DIFFERENT VOLTAGES. PROVIDE THE REQUIRED APPURTENANCES TO PREVENT GALVANIC CORROSION OF DISSIMILAR METALS. BARRIERS TO BE BONDED BACK TO GROUND.
- C. PROVIDE CABLE TRAY OR UNISTRUT SUPPORT FOR VERTICAL RUNS OF CABLES.
- D. ALL MOUNTING BRACKETS AND FASTENERS (INCLUDING UNISTRUT) TO BE STAINLESS STEEL WITH STAINLESS STEEL HARDWARE.
- E. COORDINATE ALL CORING WITH STRUCTURAL. X-RAY CONCRETE PRIOR TO CORING. ENSURE NO REINFORCING BARS OR STRUCTURAL STEEL IS DAMAGED WITHOUT PRIOR APPROVAL FROM THE CONSULTANT.
- F. COORDINATE FINAL ROUTING OF CABLE TRAYS WITH MECHANICAL, ELECTRICAL AND STRUCTURAL ELEMENTS. ENSURE CABLE TRAYS DO NOT OBSTRUCT ACCESS TO ANY PROCESS, MECHANICAL OR ELECTRICAL EQUIPMENT.
- G. CONDUCTOR AND CABLE TRAY SIZES INDICATED IN THE CONTRACT DOCUMENTS ARE PROVIDED AS MINIMUM SIZES FOR TENDER PURPOSES ONLY. THE CONTRACTOR IS TO REVIEW AND PLAN FINAL CABLE ROUTING, TRAY LOADING AND ADJUST ADJUST AS REQUIRED, WHILE ALSO COMPLYING WITH THE LATEST REVISION OF THE ONTARIO ELECTRICAL SAFETY CODE. DERATING HAS NOT BEEN FACTORED INTO THE DESIGN IN ORDER TO PROVIDE THE CONTRACTOR WITH THE FLEXIBILITY OF SELECTING THE FINAL ROUTE.
- H. ANY CHANGES REQUIRED TO THE CABLING AND CABLE TRAYS IDENTIFIED IN THESE DOCUMENTS ARE TO BE SUBMITTED FOR REVIEW PRIOR TO ORDERING ANY MATERIALS. ADJUSTMENTS TO THE CONTRACT WILL BE MADE FOR THE INCREASED COST IN MATERIALS ONLY, WHEN COMPARED WITH WHAT IS SPECIFIED IN THE CONTRACT DOCUMENTS. NO CONSIDERATION WILL BE GIVEN FOR ADDITIONAL COMPENSATION ARISING FROM THE CONTRACTORS FAILURE TO PLAN THEIR WORK PRIOR TO ORDERING AND INSTALLING ANY MATERIALS.
- I. PROVIDE 100% CABLE SPACING FOR POWER CABLES IN CABLE TRAYS. UPSIZE CABLE TRAY AS REQUIRED TO ACHIEVE THIS SPACING.
- J. UNLESS OTHERWISE INDICATED, SIZE ALL CONDUITS TO SUIT, IN ACCORDANCE WITH THE REQUIREMENTS OF THE OESC.
- K. PROVIDE A GROUND WIRE IN EACH CONDUIT CONTAINING POWER OR CONTROL CONDUCTORS. SIZE GROUND WIRES IN ACCORDANCE WITH THE REQUIREMENTS OF THE OESC.
- L. CONTRACTOR TO PRE-PLAN, DOCUMENT AND SUBMIT TO THE LOCAL INSPECTOR ALL AS-CONSTRUCTED AND COMPONENT SAFETY DATA REQUIRED FOR ALL INTRINSICALLY SAFE INSTALLATIONS PROVIDED, IN FULL COMPLIANCE WITH THE REQUIREMENTS OF THE ONTARIO ELECTRICAL SAFETY CODE AND ITS BULLETINS. FINAL AS ACCEPTED DOCUMENTATION MUST BE INCLUDED IN OPERATIONS AND MAINTENANCE MATERIALS.
- M. PROVIDE TWO (2) SEPARATE CONDUITS BETWEEN EACH MAGNETIC FLOWMETER SENSOR AND THE ASSOCIATED REMOTE TRANSMITTER - ONE CONDUIT FOR THE EXCITATION CABLE, THE OTHER FOR THE SIGNAL CABLE. COORDINATE DETAILS WITH THE MANUFACTURER.
- N. DESPITE THE HAZARDOUS CLASSIFICATION RATING OUTLINED IN DRAWING ME004, ALL ELECTRICAL INSTALLATIONS INSIDE THE AREAS IDENTIFIED ON DRAWING ME004 AS ZONE ENVIRONMENTS MUST BE RATED FOR A ZONE 1 ENVIRONMENT. REFER TO DRAWING ME004.
- O. CONTRACTOR TO ENSURE THAT THE DISPLAYS FOR ALL INSTRUMENTS, AS WELL AS THE DISPLAYS ON ALL PANELS, ARE FULLY VISIBLE AND ACCESSIBLE. COORDINATE WITH TRADES.





HOUSE SERVICES PLAN

- B. COORDINATE LIGHTING MOUNTING HEIGHTS WITH MECHANICAL EQUIPMENT. LIGHTING NOT TO BE OBSTRUCTED OR INTERFERE WITH ANY MECHANICAL OR ELECTRICAL EQUIPMENT.
- C. REFER TO E002 FOR HOUSE SERVICES WIRE, CABLE AND CONDUIT REQUIREMENTS.
- D. REFER TO SERIES DRAWINGS FOR PANEL SCHEDULES.
- E. REFER TO ARCHITECTURAL DRAWINGS FOR EXTERIOR LIGHTING AND DEVICE MOUNTING HEIGHTS.
- F. UNLESS OTHERWISE INDICATED, SIZE ALL CONDUITS TO MEET OR EXCEED THE REQUIREMENTS OF THE ONTARIO ELECTRICAL SAFETY CODE AND ITS BULLETINS.
- G. PROVIDE A GROUND WIRE IN EACH CONDUIT CONTAINING POWER OR CONTROL CONDUCTORS. SIZE GROUND WIRES TO MEET OR EXCEED THE REQUIREMENTS OF THE ONTARIO ELECTRICAL SAFETY CODE AND ITS BULLETINS.
- H. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING CHAINS AND OTHER APPURTENANCES TO SECURE LIGHTING FIXTURES TO AVOID INTERFERENCES WITH MECHANICAL, ARCHITECTURAL AND STRUCTURAL ELEMENTS AND TO PREVENT SUCH ITEMS FROM DIMINISHING THE LIGHTING LEVELS, WHETHER IT IS CALLED FOR EXPLICITLY OR NOT IN THE DRAWINGS. REFER TO SECTION 16500. AS NOTED IN SECTION 16500, ALL CHAINS FOR LIGHTING INSIDE PROCESS AND WET/DAMP AREAS SHALL BE STAINLESS STEEL *c/w* STAINLESS STEEL MOUNTING HARDWARE
- I. JUNCTION BOX, CONDUIT, TRAPEZE HANGER AND SUPPORT CHANNEL SYSTEMS ARE NOT PERMITTED TO BE INSTALLED AND / OR SECURED DIRECTLY TO UNDERSIDE OF STEEL ROOF DECK SYSTEM. SECURE SUCH SUPPORT CHANNEL AND / OR TRAPEZE HANGERS TO STRUCTURAL OPEN WEB STEEL JOIST.
- J. WALL MOUNTED EMERGENCY LIGHTS TO BE MOUNTED AT 2400mm A.F.F. COORDINATE WITH SITE CONDITIONS. THE ONTARIO ELECTRICAL SAFETY CODE REQUIRES RECEPTACLES TO WHICH UNIT EQUIPMENT IS TO BE CONNECTED SHALL NOT BE MORE THAN 1500mm FROM THE LOCATION OF THE UNIT EQUIPMENT. NOTE THAT SUCH RECEPTACLES MAY NOT BE SHOWN ON THE DRAWINGS. PROVIDE ALL SUCH RECEPTACLES.
- K. ALL DISCONNECTS FOR MECHANICAL LOADS MAY NOT BE SHOWN ON DRAWINGS. PROVIDE LOCAL DISCONNECTS TO MEET OR EXCEED THE REQUIREMENTS OF THE ONTARIO ELECTRICAL SAFETY CODE AND ITS BULLETINS. REFER TO SINGLE LINE DIAGRAMS, PIDs, MIDs, MOTOR STARTER AND CONTROL LIST AS WELL AS SPECIFICATION SECTION 16440 WHERE SUCH DEVICES ARE REQUIRED (FOR ANY REASON).
- L. COORDINATE THE LOCATION OF WASHROOM RECEPTACLES WITH ARCHITECTURE PRIOR TO THE INSTALLATION OF THE ASSOCIATED CONDUITS AND WIRING.
- M. PROVIDE BRACKETS AND FASTENERS, AS REQUIRED, FOR INDOOR DISCONNECTS. PROVIDE STAINLESS STEEL BRACKETS AND FASTENERS FOR ALL OUTDOOR EQUIPMENT.

ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
A.S.L.	ABOVE STAIR LANDING
ATS	AUTOMATIC TRANSFER SWITCH
B.O.C	BOTTOM OF CONDUIT
B.O.C.T.	BOTTOM OF CABLE TRAY ABOVE A.F.F
B.O.F.	BOTTOM OF FLOAT
DTT	DRY TYPE TRANSFORMER
E	EMERGENCY POWER
EP	EXPLOSION PROOF
ES	ETHERNET SWITCH
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND CONDUCTOR
HKP	HOUSEKEEPING PAD
IG	ISOLATED GROUND
K	KIRK KEY
L - A - H	LOW - AUTO - HIGH
LVPCB	LOW VOLTAGE POWER CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTRE
MCS	MOULDED CASE SWITCH
MIO	MODULAR PLC I/O
N	NORMAL POWER
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O/C	OVER COUNTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
TL	TWIST LOCK
U/C	UNDER COUNTER
UPS	UNINTERRUPTIBLE POWER SUPPLY
WP	WEATHER PROOF
JB	JUNCTION BOX (COMBINED ANALOG AND DISCRETE)
JBA	ANALOG JUNCTION BOX
JBD	DISCRETE JUNCTION BOX







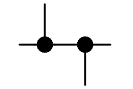


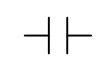

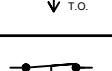




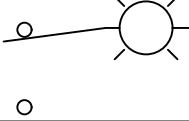

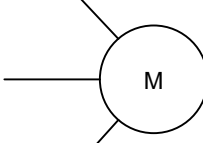
INSTRUMENTATION SYMBOLS

	SIGNALLING DEVICE
	MOTORIZED EQUIPMENT
	SOLENOID VALVE
	INSTRUMENT/DEVICE






CABLE LEGEND:

	Cat 6	Cat 6	CATEGORY 6
			DISCRETE
			POWER
			ANALOG
			EXISTING
	3M FIBR	3M FIBR	SINGLE MOD
	FIBR	FIBR	MULTI-MODE
	CO	CO	OVERHEAD
















CONTROLS SCHEMATICS SYMBOLS

	ADJUSTABILITY
	BATTERY
	CAPACITOR
	COIL, OPERATING
	CONDUCTOR, CROSSING OF PATHS OR CONDUCTORS NOT CONNECTED
	CONDUCTOR, JUNCTIONS OF CONNECTED PATHS, CONDUCTORS OR WIRES
	CONDUCTOR, SHIELDED
	CONTACT, NORMALLY CLOSED
	CONTACT, NORMALLY OPEN
	CONTACT, TIME DELAY, NORMALLY OPEN WITH TIME DELAY CLOSING (T.C.)
	CONTACT, TIME DELAY, NORMALLY OPEN WITH TIME DELAY OPENING (T.O.)
	CONTACT, TIME DELAY, NORMALLY CLOSED WITH TIME DELAY OPENING (T.O.)
	CONTACT, TIME DELAY, NORMALLY CLOSED WITH TIME DELAY CLOSING (T.C.)
	FUSE
	GROUND, CHASSIS OR FRAME
	LIGHT, INDICATING
	LIGHT, INDICATING, PUSH TO TEST
	METER (INSTRUMENT)
	MOTOR, THREE-PHASE, INDUCTION














RECEPTACLE SYMBOLS

	20A, 125V, NEMA 5-20R T-SLOT DUPLEX RECEPTACLE
 GFCI	20A, 125V, NEMA 5-20R T-SLOT GFCI DUPLEX RECEPTACLE
 GFCI/WP	20A, 125V, NEMA 5-20R T-SLOT GFCI WP "IN USE" DUPLEX RECEPTACLE
	MISCELLANEOUS, TYPE AS INDICATED
	DATA OUTLET





POWER SYMBOLS

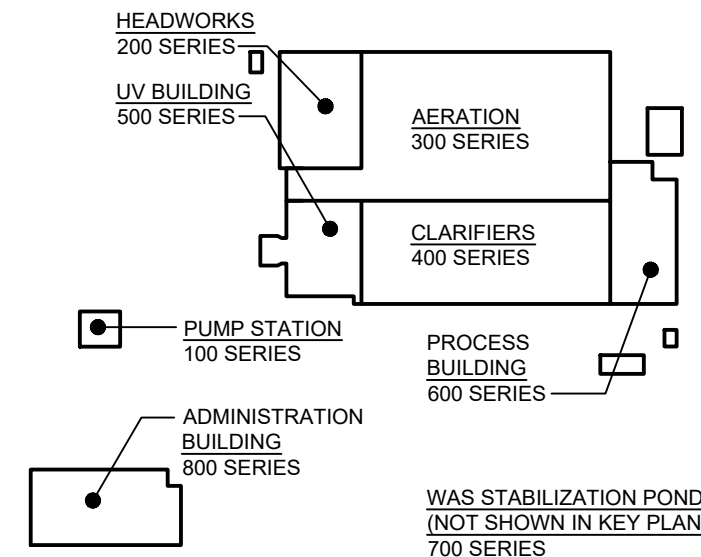
	JUNCTION BOX
	FUSED DISCONNECT SWITCH
	UNFUSED DISCONNECT SWITCH
	SINGLE PHASE MOTOR (INDICATED HP)
	THREE PHASE MOTOR (INDICATED HP)
	TRANSFORMER
	HARD WIRED
	PANELBOARD
	CABLE TRAY, SIZE AND # OF TIERS AS INDICATED
	SURGE PROTECTIVE DEVICE
	CIRCUIT BREAKER
	DRY TYPE TRANSFORMER, TYPE AS INDICATED
	GENERATOR
	POWER MONITOR WITH CT/PT
	EYS FITTING

LIGHTING SYMBOLS

	SWITCH (CIRCUIT AS INDICATED)
	3-WAY SWITCH (CIRCUIT AS INDICATED)
	MOTOR RATED SWITCH (CIRCUIT AS INDICATED)
	4-WAY SWITCH (CIRCUIT AS INDICATED)
	PHOTOCELL
	LED LIGHT FIXTURE, TYPE AS INDICATED
	NON-SWITCHED LED LIGHT FIXTURE, TYPE AS INDICATED
	WALL MOUNTED FIXTURE TYPE AS INDICATED
	POLE MOUNTED FIXTURE c/w CONCRETE BASE TYPE AS INDICATED
	DOUBLE EMERGENCY LIGHT HEAD c/w INTEGRAL BATTERY. 'X' INDICATES HAZARDOUS LOCATION RATED
	SINGLE REMOTE EMERGENCY LIGHT HEAD
	DOUBLE REMOTE EMERGENCY LIGHT HEAD. 'X' INDICATES HAZARDOUS LOCATION RATED
	OCCUPANCY SENSOR

MISCELLANEOUS

	THERMOSTAT
	VARIABLE FREQUENCY DRIVE
	ELECTRIC UNIT HEATER
	MOTOR CONTROL CENTRE SECTION



KEY PLAN
(NOT TO SCALE)

**DESIGN DOCUMENTS HEREIN HAVE
BEEN DESIGNED UNDER THE ONTARIO
BUILDING CODE 2012.**

0	ISSUED FOR TENDER	25/04/25
No.	ISSUE / REVISION	DD/MM/YY

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25MM IF THIS IS A FULL SIZE DRAWING.

SCALE: N.T.S.

CLIENT:

CONSULTANT: www.jlrichards.ca

CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL SITE WIDE

ELECTRICAL NOTES AND LEGENDS

DESIGN:	SB/NB	DRAWING #: E001
DRAWN:	NB	
CHECKED:	LO/BM	
JLR #:	32296-001	

File Location: \\jrichards\Corp\Projects\32000\32296-001 - Brighton WWTF System Upgrades\03-Production\06-Electrical\B2296-Electrical Notes and Legends.dwg

PICTOGRAM RUNNING MAN EGRESS LEGEND		
EGRESS SIGN TYPE #	EGRESS SIGN PICTOGRAM IMAGE GRAPHICAL SYMBOLS AND DESCRIPTION	LEGEND: FACEPLATE(S) S - SINGLE SIDED D - DOUBLE SIDED LEGEND: MOUNTING TYPE W - WALL MOUNTED C - CEILING MOUNTED WITH CANOPY E - END MOUNTED U - UNIVERSAL MOUNTED WITH CANOPY(S) ST - STEM MOUNTED WITH TIGHT RAIN FITTING
x1		EGRESS SIGN IDENTIFICATION EXAMPLES LETTER DENOTES FACEPLATE (SINGLE SIDED) -LETTER DENOTES MOUNTING TYPE (WALL MOUNTED) -x# DENOTES EGRESS SIGN FACE PLATE TYPE PICTOGRAM IMAGE EXAMPLE #1 LETTER DENOTES FACEPLATE (DOUBLE SIDED) -LETTER DENOTES MOUNTING TYPE (CEILING MOUNTED WITH CANOPY) -x# / x# DENOTES EGRESS SIGN FACEPLATE TYPES (PICTOGRAM IMAGE ON SIDE ONE AND PICTOGRAM IMAGE ON SIDE TWO) EXAMPLE #2
x2		
x3		

HOUSE SYSTEMS WIRING / CABLE GUIDES SCHEDULE		
COPPER CONDUCTORS IN A RACEWAY		
MAXIMUM CIRCUIT AMPERAGE	SINGLE PHASE CIRCUIT	THREE PHASE CIRCUIT
15 AMP.	2c-#12 AWG RW90 + GND IN 21mm C	3c-#12 AWG RW90 + GND IN 21mm C
20 AMP.	2c-#12 AWG RW90 + GND IN 21mm C	3c-#12 AWG RW90 + GND IN 21mm C
30 AMP.	2c-#10 AWG RW90 + GND IN 21mm C	3c-#10 AWG RW90 + GND IN 21mm C
40 AMP.	2c-#8 AWG RW90 + GND IN 21mm C	3c-#8 AWG RW90 + GND IN 21mm C
50 AMP.	2c-#6 AWG RW90 + GND IN 27mm C	3c-#6 AWG RW90 + GND IN 27mm C

PROCESS AND HOUSE SERVICES CONDUIT REQUIREMENTS		
ROOM NUMBER	ROOM DESCRIPTION	CONDUIT TYPE
ALL SERIES	PROCESS AREAS (INCLUDING STAIRWELLS IN PROCESS AREAS)	RGS CONDUIT AND MANUFACTURERS FITTINGS
ALL SERIES	CLASSIFIED AREA	OCAL CONDUIT AND RATED CONNECTORS
ALL SERIES	ELECTRICAL AND VC ROOMS	EMT CONDUIT c/w LIQUID TIGHT FITTINGS

ADDITIONAL CABLE REQUIREMENTS	
CABLE DESCRIPTION	CABLE SERIES
MULTI-CONDUCTOR ARMoured CABLES	ANIXTER 7TD SERIES, 600VAC, AL ARMoured
MULTI-PAIR ARMoured CABLES	ANIXTER 323-639-16XX SERIES
MULTI-PAIR UNARMoured CABLES	ANIXTER 323-631-16XX SERIES
MULTI-TRIAD UNARMoured CABLES	ANIXTER 323-679-16XX SERIES
PORTABLE CONTROL CABLES	ANIXTER 4DS SERIES SOOW
VARIABLE FREQUENCY DRIVE CABLES	BELDEN 2950X SERIES
JACKETED TYPE SOOW	ANIXTER 4AWO SERIES

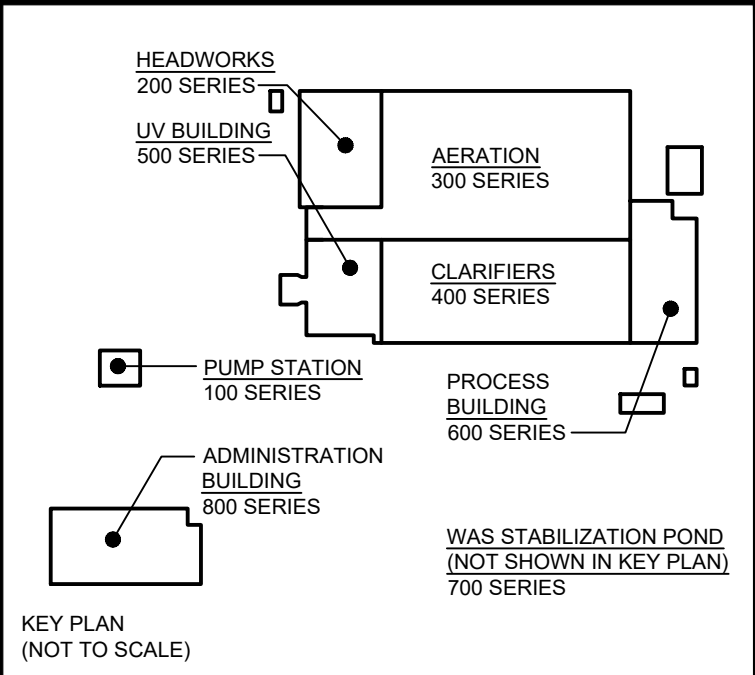
NOTES:

- ELECTRICAL CONTRACTOR IS TO PROVIDE ALL WIRE, CABLE AND RACEWAY FOR EQUIPMENT SUPPLIED UNDER THIS CONTRACT WHICH HAS NOT BEEN DETAILED WITHIN THE CABLE SCHEDULES. SUCH PROVISIONS IS TO BE GENERALLY CONSIDERED AS 'HOUSE SYSTEMS WIRING' REQUIREMENTS.
- ELECTRICAL CONTRACTOR IS TO PROVIDE WIRE AND RACEWAY FOR 'HOUSE SYSTEMS WIRING' AS DETAILED IN THE 'HOUSE SYSTEMS WIRING SCHEDULE' FOR NON-INDUCTIVE OR NON-CAPACITIVE CIRCUITS.
- FOR INDUCTIVE CIRCUITS, THE ELECTRICAL CONTRACTOR IS TO PROVIDE WIRE AND RACEWAY FOR 'HOUSE SYSTEMS WIRING' AS DETAILED IN THE 'HOUSE SYSTEMS WIRING SCHEDULE' WHERE THE SELECTED CIRCUIT AMPERAGE SHALL BE AT LEAST 125% THE FULL LOAD AMPERAGE OF THE INDUCTIVE DEVICE.
- FOR CAPACITIVE CIRCUITS, THE ELECTRICAL CONTRACTOR IS TO PROVIDE WIRE AND RACEWAY FOR 'HOUSE SYSTEMS WIRING' AS DETAILED IN THE 'HOUSE SYSTEMS WIRING SCHEDULE' WHERE THE SELECTED CIRCUIT AMPERAGE SHALL BE AT LEAST 135% THE FULL LOAD AMPERAGE OF THE CAPACITIVE DEVICE.
- ELECTRICAL CONTRACTOR IS TO PROVIDE INCREASED CONDUCTOR/CONDUIT SIZES WHERE REQUIRED TO ENSURE THE VOLTAGE DROP AT FULL BRANCH CIRCUIT LOAD IS NOT GREATER THAN 3% THE RATED CIRCUIT VOLTAGE.
- CONDUIT TO BE SUITABLE FOR THE ROOM CONDITIONS. CONDUIT TYPE AS OUTLINED IN THE SPECIFICATION.
- USE 1000V INSULATED WIRING FOR 600V MOTORIZED LOADS AND 600V INSULATED WIRING FOR 120/208V SYSTEMS.
- USE BELDEN 2950X SERIES VFD CABLE FOR VFD LOADS. WHERE LOCAL DISCONNECT IS PRESENT VFD CABLE TO BE USED BETWEEN VFD AND LOCAL DISCONNECT AND BETWEEN LOCAL DISCONNECT AND MOTOR.
- USE OCAL CONDUIT IN AREAS WHERE CHLORINE OR OTHER CORROSIVE GASES ARE PRESENT.

LUMINAIRE SCHEDULE			
TYPE:		SPECIFIED PRODUCT:	LAMP TYPE:
"A1"		7" x 4" POLYCARBONATE HOUSING AND LENS WITH SEAMLESS GASKET, HIGH PERFORMANCE METAL REFLECTOR, STAINLESS STEEL MOUNTING HARDWARE WITH TEN BUCKLE TYPE LATCHES, UV STABILIZED HIGH CLARITY LINEAR LENS, SEALED STRAIN RELIEF, CABLE GLAND KIT INCLUDED, INTEGRATED END ALIGNERS FOR ROW ALIGNMENT, SURFACE, IP65 RATED LED C/W LED DRIVER. LUMINAIRE TO BE CHAIN HUNG AT 3000mm A.F.F., UNLESS OTHERWISE INDICATED. LITHONIA LIGHTING: FEM L48 6000LM IMACD WD 80CRI 40K COOPER METALUX: VT3-SL3C3-W-UNV	LED 4000K, 6000 LUMENS OUTPUT, 80CRI, 38 W
"A2"		7" x 2" POLYCARBONATE HOUSING AND LENS WITH SEAMLESS GASKET, HIGH PERFORMANCE METAL REFLECTOR, STAINLESS STEEL MOUNTING HARDWARE WITH TEN BUCKLE TYPE LATCHES, UV STABILIZED HIGH CLARITY LINEAR LENS, SEALED STRAIN RELIEF, CABLE GLAND KIT INCLUDED, INTEGRATED END ALIGNERS FOR ROW ALIGNMENT, SURFACE, IP65 RATED LED C/W LED DRIVER. LUMINAIRE TO BE CHAIN HUNG AT 3000mm A.F.F., UNLESS OTHERWISE INDICATED. LITHONIA LIGHTING: FEM L24 2000LM IMACD MD 80CRI 35K COOPER METALUX: 2VT3-LD5-2-W-UNV	LED 3500K, 2000 LUMENS OUTPUT, 80CRI, 13 W
"A3"		7" x 4" POLYCARBONATE HOUSING AND LENS WITH SEAMLESS GASKET, HIGH PERFORMANCE METAL REFLECTOR, STAINLESS STEEL MOUNTING HARDWARE WITH TEN BUCKLE TYPE LATCHES, UV STABILIZED HIGH CLARITY LINEAR LENS, SEALED STRAIN RELIEF, CABLE GLAND KIT INCLUDED, INTEGRATED END ALIGNERS FOR ROW ALIGNMENT, SURFACE, IP65 RATED LED C/W LED DRIVER. LUMINAIRE TO BE CHAIN HUNG AT 3000mm A.F.F., UNLESS OTHERWISE INDICATED. LITHONIA LIGHTING: FEM L48 4000LM IMACD MD 80CRI 40K COOPER METALUX: VT3-SL3C3-W-UNV	LED 4000K, 4000 LUMENS OUTPUT, 80CRI, 24 W
"C1"		4" RECESSED DOWNLIGHT. DAMP LOCATION RATED. LITHONIA LIGHTING: LBR4 ALO2 (1000LM) SWW1 (3500K) AR LSS WD 80CRI COOPER: HC415D010-HM40525835	LED 3500K, 1000 LUMENS OUTPUT, 80 CRI, 13 W
"C2"		4" RECESSED DOWNLIGHT. WET LOCATION RATED. LITHONIA LIGHTING: LBR4 ALO2 (1500LM) SWW1 (3500K) AR LSS WD 80CRI COOPER: HC415D010-HM40525835	LED 3500K, 1500 LUMENS OUTPUT, 80 CRI, 19 W
"C3"		4" RECESSED DOWNLIGHT. LITHONIA LIGHTING: LBR4 ALO2 (1500LM) SWW1 (3500K) AR LSS WD 80CRI COOPER: HC415D010-HM40525835	LED 3500K, 1500 LUMENS OUTPUT, 80 CRI, 19 W
"B1"		2'X2' LED TROFFER WITH CURVED FROSTED ACRYLIC LENS, HIGH PERFORMANCE REFLECTOR. RECESSED MOUNT IN T-BAR CEILING. LITHONIA LIGHTING: 2BLT2 33L ADP 57VDC LP835 COOPER METALUX: 22CZSC73 COLUMBIA LIGHTING: LCAT22-40LWG-EDU	LED 3500K, 3300 LUMENS OUTPUT, 80 CRI, 27 W
"L1"		2FT LINEAR SLOT LIGHT. WALL MOUNTED. SUITABLE FOR DAMP LOCATION. LITHONIA LIGHTING: S1LWD 2FT 800LMF 35K STD COOPER: QS-S122DW-C865835-2F0-UDD-F	LED 3500K, 1800 LUMENS OUTPUT, 80 CRI, 17 W
"L2"		3FT LINEAR SLOT LIGHT. SUSPENDED AT 2500mm A.F.F. ALITE: AER34LS40USB COOPER:	LED 3500K, 1800 LUMENS OUTPUT, 80 CRI, 15 W
"L3"		UNDER CABINET LINEAR LED STRIP LIGHT. TO BE SURFACE MOUNTED TO UNDERSIDE OF CABINET. BL LIGHTING: DFD2-F-4000K-24-IP20 COOPER: HALO HU30MSCTDXXP	LED 4000K, 300lm/FT OUTPUT, 90 CRI, 4W/FT
"O1"		WALL MOUNTED LED LUMINAIRE WITH HEAVY-WALL, DIE CAST ALUMINIUM HOUSING AND REMOVABLE HINGED DOOR FRAME. HIGH EFFICIENCY LED OPTICS TO SHAPE THE LIGHT OUTPUT, MAXIMIZING EFFICIENCY AND APPLICATION SPACING. WIDE DISTRIBUTION WITH FULL CUTOFF. MOUNTED AT 3450mm (UNLESS OTHERWISE INDICATED) LITHONIA: WPX1 LED P2 40K MVOLT COOPER: XTOR3B-W	LED 4000K, 2600 LUMENS OUTPUT, MIN. 70 CRI, 24 W
"O2"		WALL MOUNTED LED LUMINAIRE WITH HEAVY-WALL, DIE CAST ALUMINIUM HOUSING AND REMOVABLE HINGED DOOR FRAME. HIGH EFFICIENCY LED OPTICS TO SHAPE THE LIGHT OUTPUT, MAXIMIZING EFFICIENCY AND APPLICATION SPACING. TYPE 1V WITH FORWARD THROW DISTRIBUTION. MOUNTED AT 3600mm. LITHONIA: DSWX1 LED P5 40K 70CRI TFTM MVOLT COOPER: ISW-SA1D-735-U-T4FT	LED 3500K, 5400 LUMENS OUTPUT, MIN. 70 CRI, 45 W
"S1"		LED AREA AND ROADWAY POLE MOUNT LUMINAIRE c/w STAINLESS STEEL STANCHION MOUNTED POLE. 120V, TYPE IV DISTRIBUTION, WIDE OPTICS LUMINAIRE. BLACK FINISH LITHONIA: DSXF1 LED P2 30K WFL COOPER LIGHTING: PRV-PA1B-730-U-T4W	LED 3000K, 4400 LUMENS OUTPUT, MIN. 70 CRI, 74 W
"S2"		LED AREA AND ROADWAY POLE MOUNT LUMINAIRE c/w STAINLESS STEEL STANCHION MOUNTED POLE. 120V, TYPE V DISTRIBUTION, WIDE OPTICS LUMINAIRE. BLACK FINISH LITHONIA: DSXF1 LED P2 30K WFL COOPER LIGHTING: PRV-PA1B-730-U-5WQ	LED 3000K, 4400 LUMENS OUTPUT, MIN. 70 CRI, 74 W
	PHOTOCELL	CADMIUM SULFIDE PHOTOCELL. SONIC-WELDED POLYCARBONATE HOUSING. DELAY ACTION. WEATHERPROOF SUS PLATE. -40°C to 70°C RATING. 120VAC. RATED FOR, AND COMPATIBLE WITH THE INTENDED LOAD. INTERMATIC K4021C SERIES, OR APPROVED EQUIVALENT.	BUILDING PERIMETER

LUMINAIRE SCHEDULE			
TYPE:		SPECIFIED PRODUCT:	LAMP TYPE:
EXIT SIGN / EBU "X"		LED RUNNING MAN EXIT SIGN AND EMERGENCY LIGHTING. CLASS 1, DIVISION 1 HAZARDOUS LOCATION RATED WITH EMERGENCY LIGHTING HEAD. CSA CERTIFIED TO C22.2 #137, C22.2 #141-15, C860-11. MOUNTING AND FACES AS INDICATED c/w 30 MIN. MAINTENANCE FREE BATTERY. STANPRO - PRMY SERIES	LED 5 W
EBU "X"		EMERGENCY LIGHTING WITH DOUBLE HEAD. CLASS 1, DIVISION 1 HAZARDOUS LOCATION c/w 30 MIN. MAINTENANCE FREE BATTERY. CSA CERTIFIED TO C22.2 #137, C22.2 #141-15, C860-11. STANPRO - PRMY SERIES	LED 5 W
"X"		REMOTE EMERGENCY LIGHTING WITH DOUBLE HEAD. CLASS 1, DIVISION 1 HAZARDOUS LOCATION. CSA CERTIFIED TO C22.2 #137, C22.2 #141-15, C860-11. EMERGI-LITE: EFXPRW12-XX	LED 6 W
EBU		120V EMERGENCY LIGHTING 12 VOLT BATTERY PACK c/w INTEGRAL AND REMOTE HEADS. SEALED LONG LIFE (10 YEARS) BATTERY SIZED TO MAINTAIN LOAD FOR 1/2 HOUR MINIMUM. READY-LITE: LDX12-360/2LD9-XX STANPRO: SLC-12360-2SM-3LJ-WHT-XX AIMLITE: EBST-12360-2SM-3LJ-WHT-XX STANPRO: SCL-12360-2SM-3LJ-WHT	LED EQUIVALENT TO 18 WATT HALOGEN
"H1"		ROBUST LED FIXTURE SUITABLE FOR HAZARDOUS CLASS 1, DIVISION 1 LOCATION, UL844 LISTED, IP66 RATED, NEMA4X, UL 1598 WET LOCATION. RUGGED AND DURABLE DESIGN FOR HAZARDOUS, HIGH VIBRATION, IMPACT AND HOSE DOWN APPLICATIONS. TO BE WALL MOUNTED @ 2500mm ABOVE PLATFORM.	LED 4000K 11200 LUMENS OUTPUT, 80 W
"H2"		LUMIGEN TECHNOLOGIES: HAW-EX-0080-277-4K0-70-120-WL-CL HOLOPHANE: HEXF1 P4 MV 5K T3M CL 4" LINEAR LED FOR HAZARDOUS CLASS 1, DIVISION 1 LOCATION, UL844 LISTED, IP66 RATED, NEMA4X, UL 1598 WET LOCATION. RUGGED AND DURABLE DESIGN FOR HAZARDOUS, HIGH VIBRATION, IMPACT AND HOSE DOWN APPLICATIONS. FLUSH MOUNT, CEILING/PENDANT MOUNT OR POLE MOUNTING OPTIONS. TO BE CEILING MOUNTED UNLESS OTHERWISE INDICATED. ACUITY BRANDS: HXPL 8L-5000K RIG-A-LITE: XP LED SERIES CROUSE-HINDS CAT: XPL4/UNV1S891 EM P	LED 5000K 7600 LUMENS OUTPUT, 60 W

POLE:
10" STAINLESS STEEL SWIVEL POLE c/w MANUFACTURER APPROVED STANCHION MOUNTING HARDWARE.
SWIVEL POLE: S3 M1



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No.	ISSUE / REVISION	DDMMYY

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SCALE: N.T.S.



CONSULTANT:

PROFESSIONAL STAMP
2025-04-29
S. T. BUCKLEY
100517850
PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

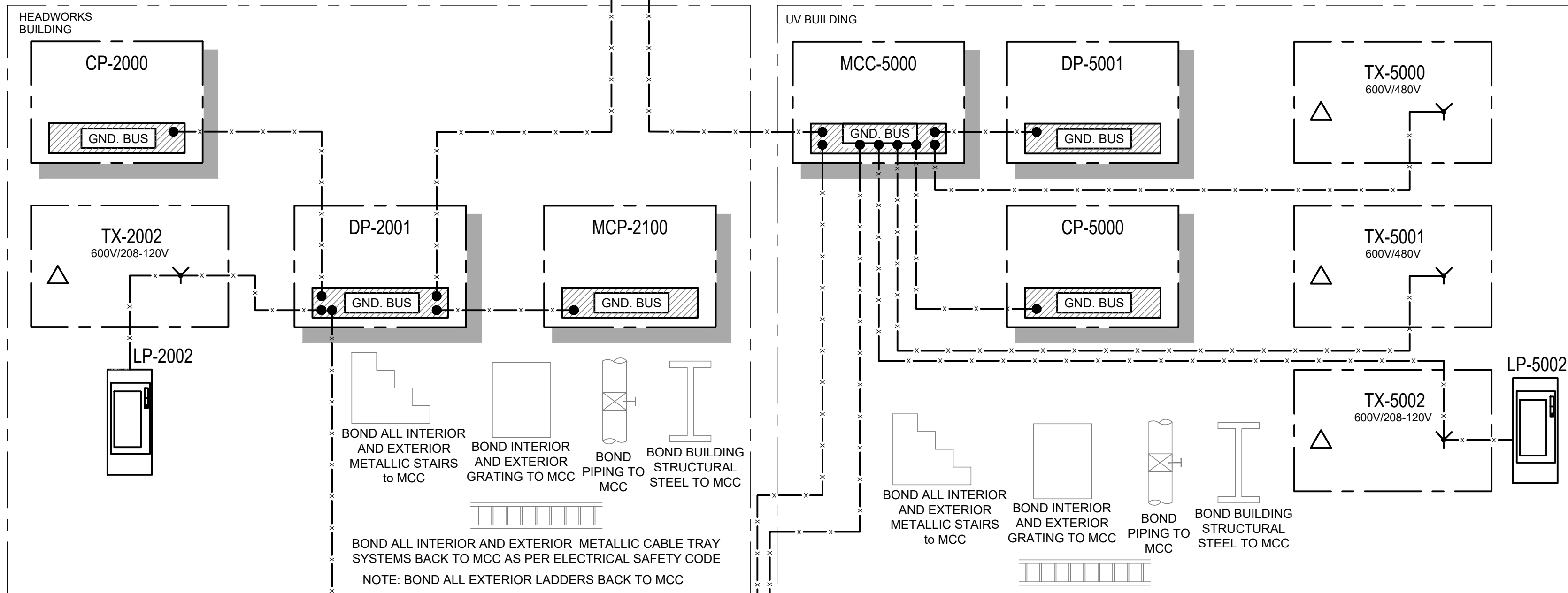
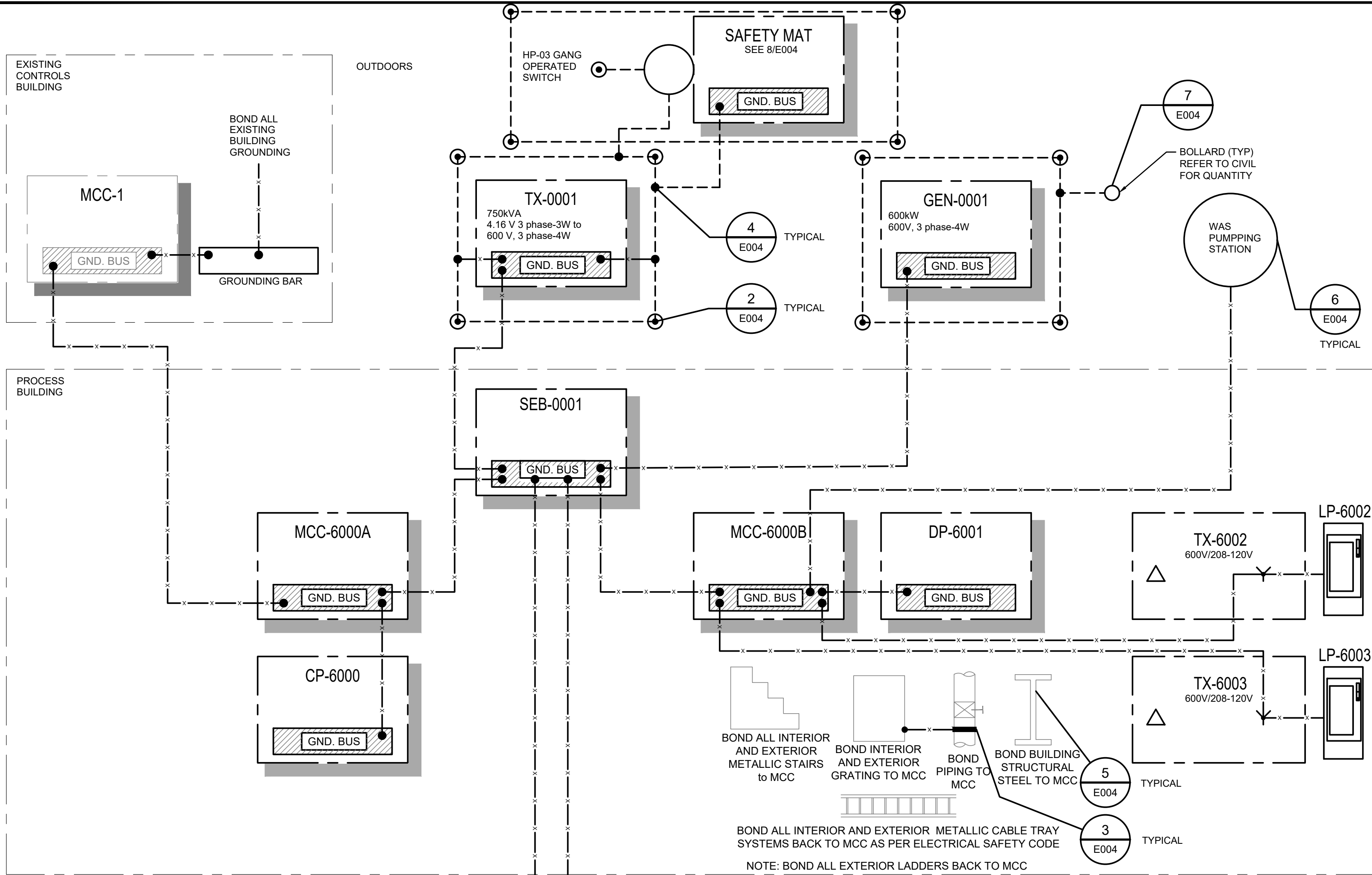
DRAWING:
ELECTRICAL SITE WIDE
ELECTRICAL TABLES AND SCHEDULES

DESIGN: SB/NB
DRAWN: NB
CHECKED: LO/BM
JLR #: 32296-001

DRAWING #:
E002

PLOT DATE: Tuesday, April 29, 2025 11:23:46 AM

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrade\03-Production\06-Electrical\2296-001 - GROUNDING DETAILS.dwg



GENERAL NOTES:

- A. REFER TO SINGLE LINE DIAGRAM E010.
- B. ALL WIRES NOT SHOWN ARE TO BE 4/0 GREEN INSULATED COPPER GROUND WIRE

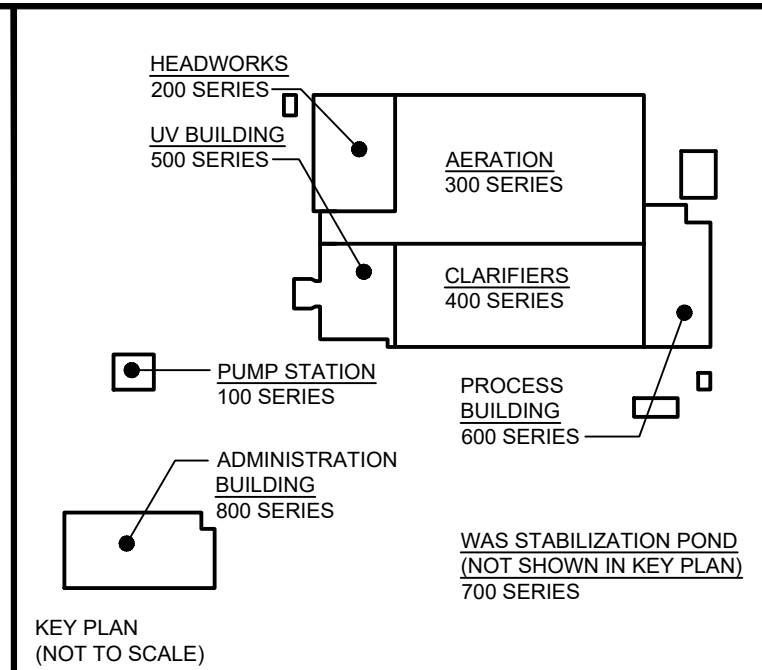
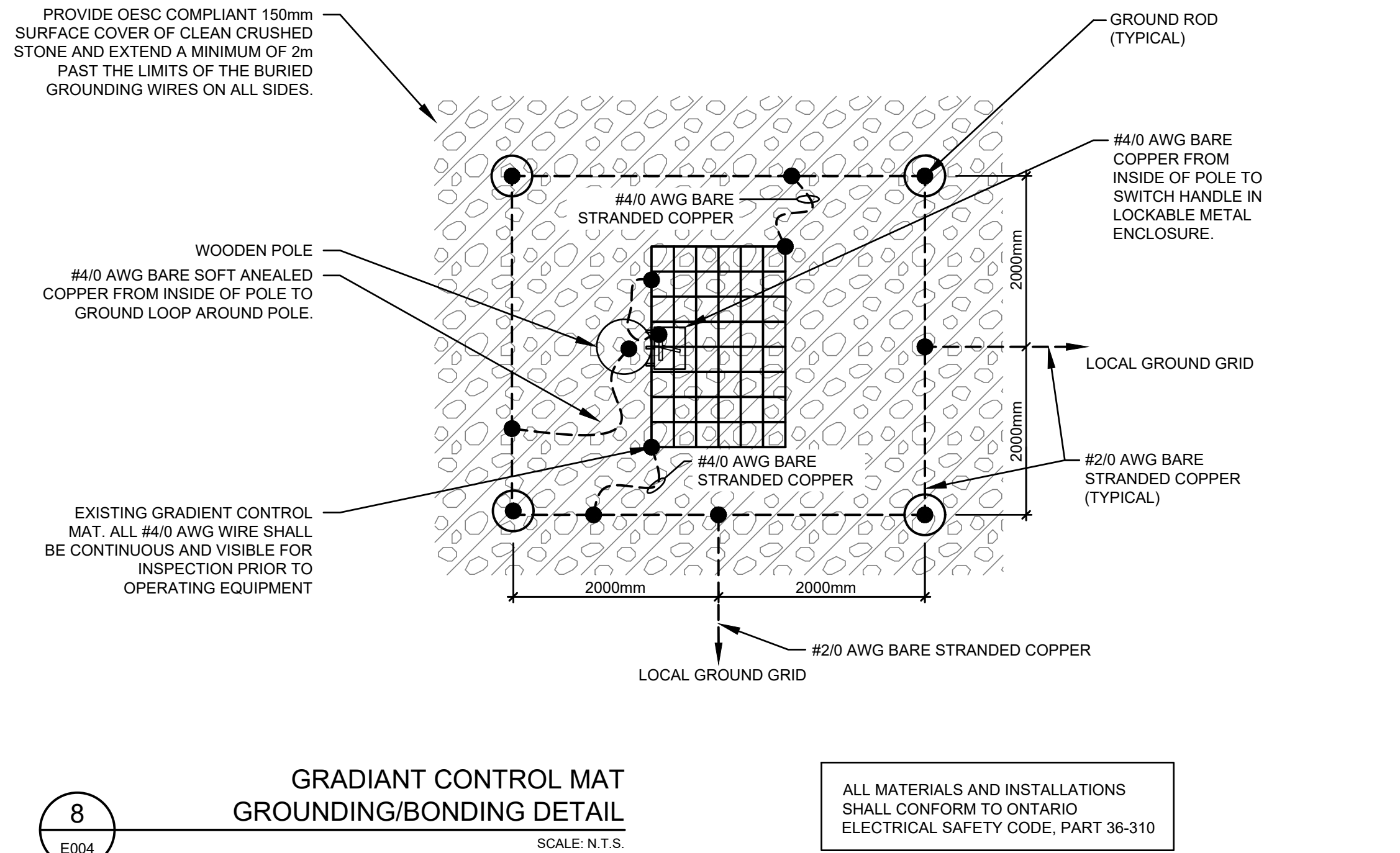
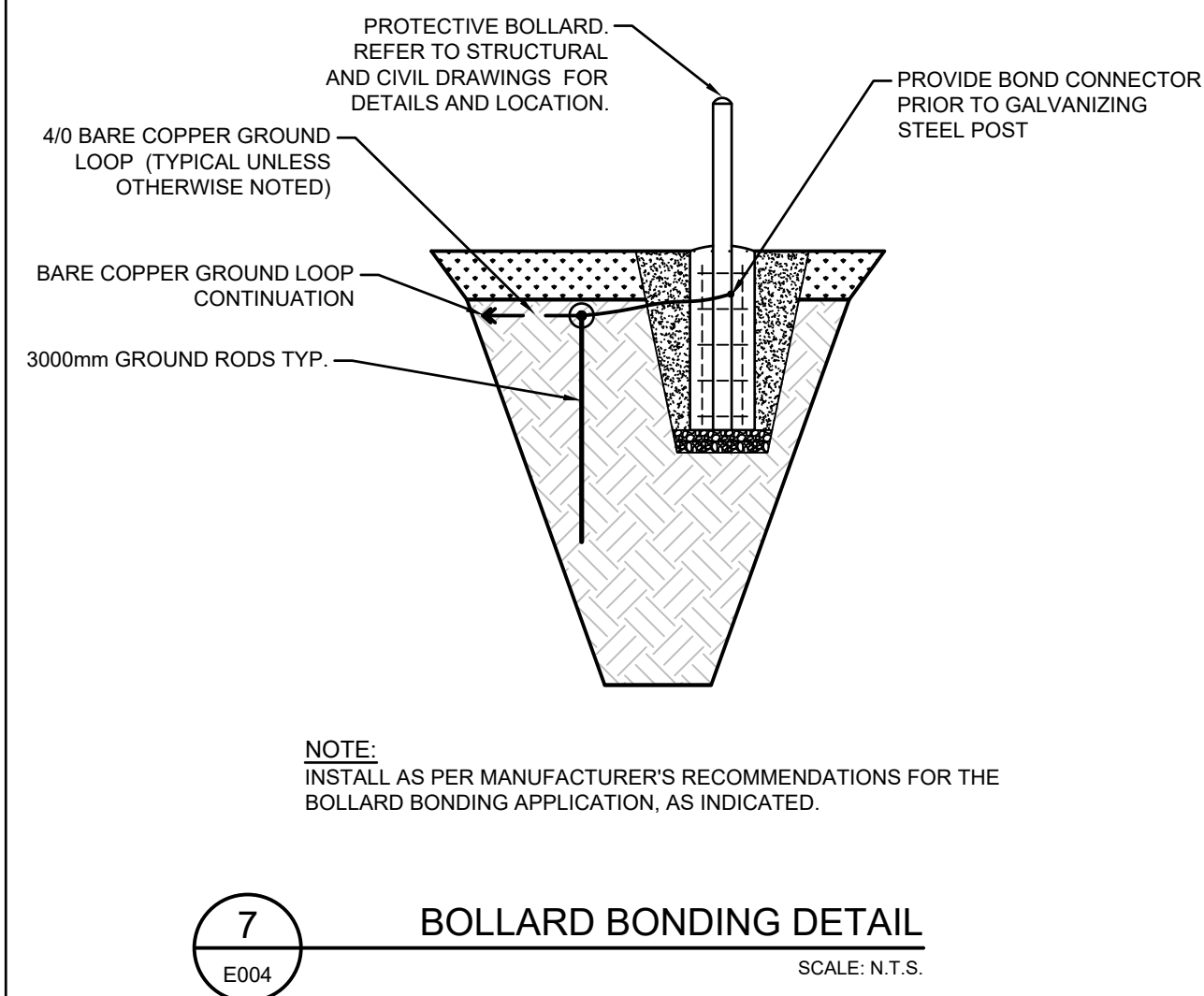
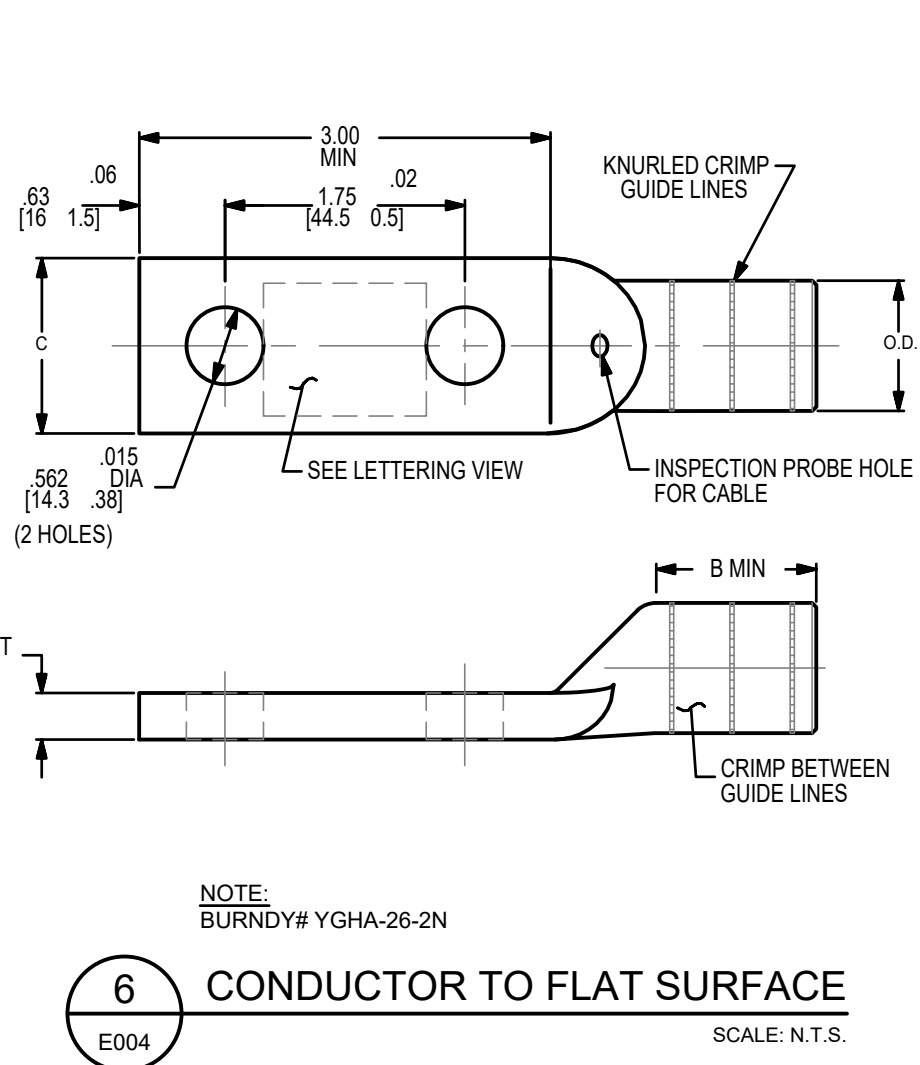
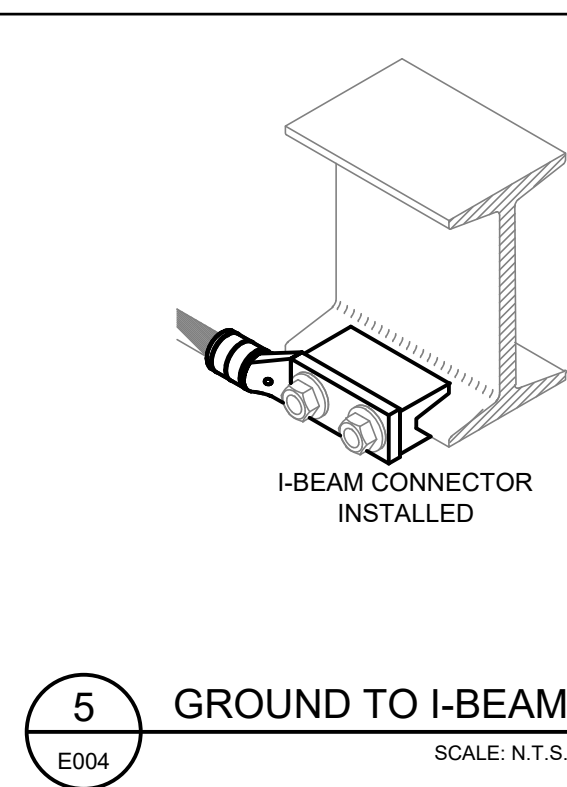
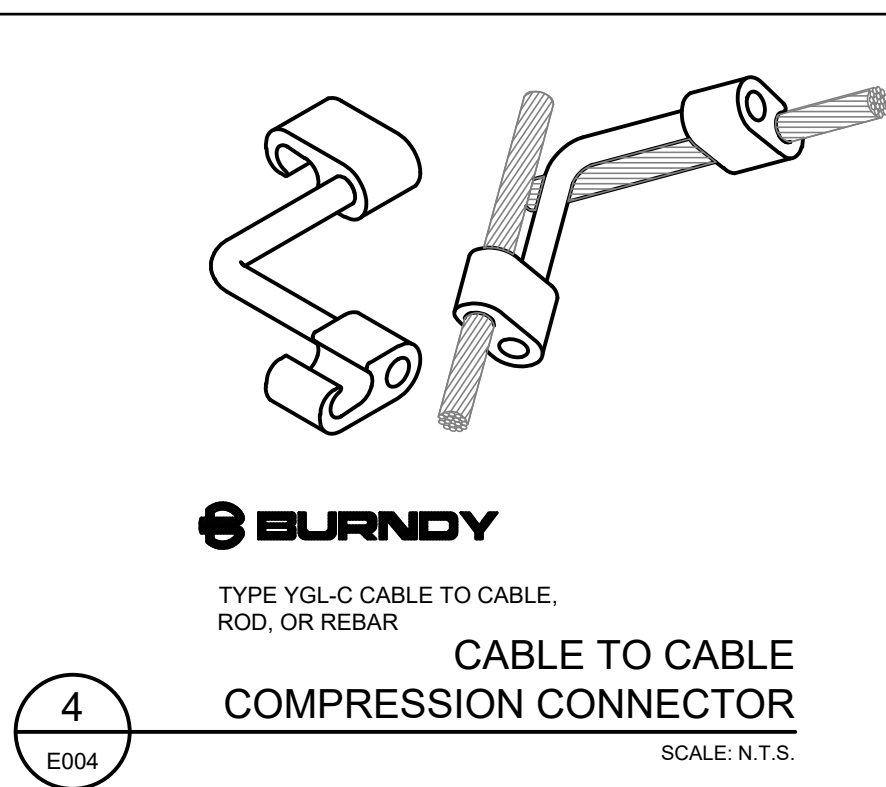
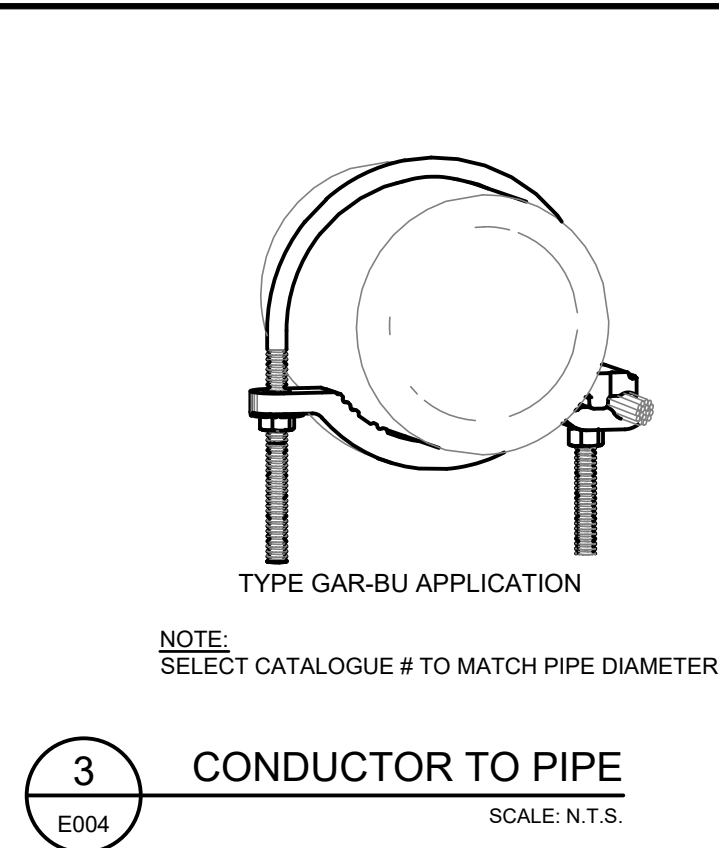
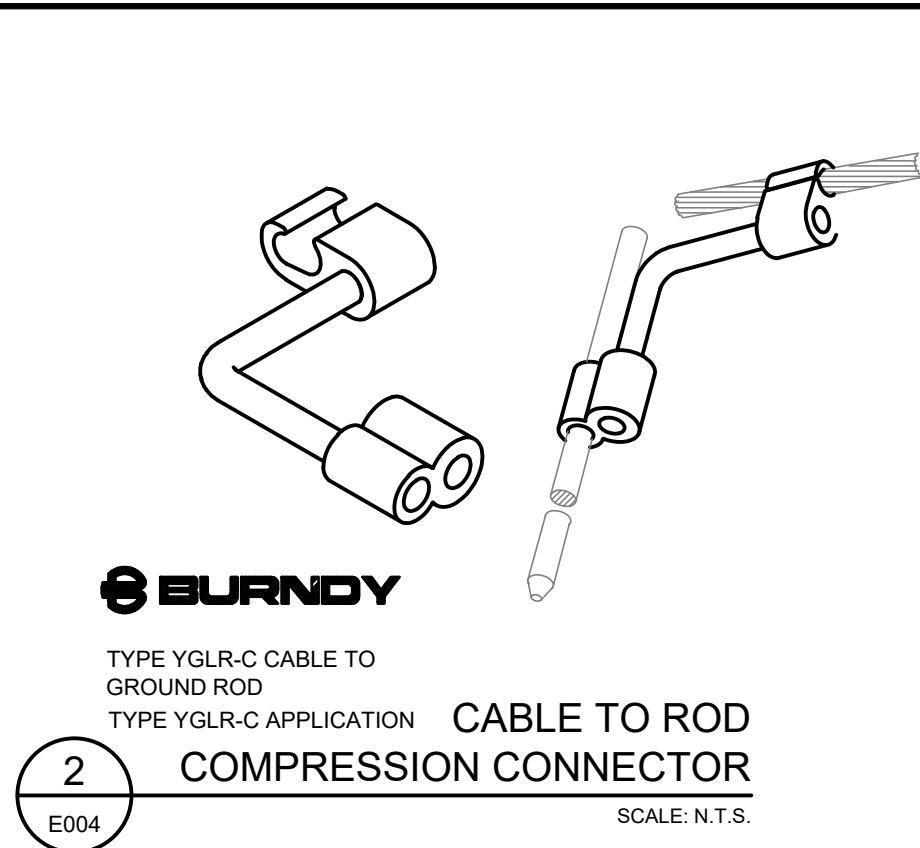
LINE TYPE LEGEND

- 4/0 BARE COPPER GROUND WIRE
- ROOM/ AREA BOUNDARY
- 4/0 GREEN INSULATED COPPER GROUND WIRE
- ⊙ 3000mm GROUND ROD

DRAWING NOTES:

- ① COORDINATE EXACT BONDING POINT WITH MANUFACTURER.

1 SITE GROUNDING SCHEMATIC
E004
SCALE: N.T.S.



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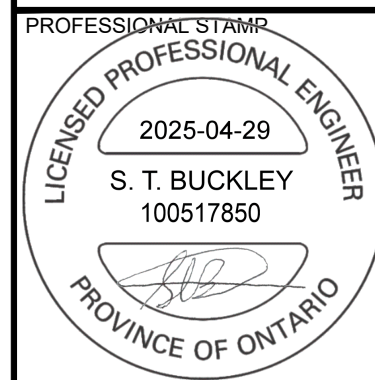
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SCALE: N.T.S.

CLIENT:



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL SITE WIDE GROUNDING AND BONDING DETAILS

DESIGN: SB	DRAWING #:
DRAWN: NB	E004
CHECKED: LO/BM	
JLR #:	32296-001

File Location: P:\32000\32296-001 - Brighton WWT System Upgrade\03-Production\06-Elect\32296-001 - ELECTRICAL MATRIX.dwg

Part	Specification 16031 Part Description	High Voltage Fuses	Substation Grounding	High Voltage Wiring	Low Voltage Wiring	Oil Filled Transformer	Dry Type Transformer	Neutral Gound Resistors	Power Monitors	Circuit Protection Relays	Automatic Transfer Switch (ATS)	Low Voltage Switchboard (SEB)	Low Voltage Distribution Panel (DP)	Low Voltage Panelboard (BP / LP)	Motor Control Panel (MCP)	Motor Control Centers (MCC)	Universal Power Supplies (UPS)	Low Voltage Molded Case Breakers	Low Voltage Fuses	Standby Power Generator	VFD Driven Process Motors
3.18	General Inspection & Pre-startup cleaning	N19	N5 / N12	N11 / N19	N1 / N11 / N19	N19	N19	N11 / N19	N19	N19	N19	N19	N19	N19	N19	N19	N19	N19	N19	N18 / N19 / N26 N2	N19 / N24
3.12	Provide Mechanical Assemblies Lubricate and Function Verification																				
	Lugging and Mechanical Assemblies Torque Check			N2 / N6 / N14	N2 / N6 / N14	N2 / N6 / N14	N2 / N6 / N14	N2 / N6 / N14			N2 / N6 / N14	N2 / N6 / N14	N2 / N6 / N14	N2 / N6 / N14	N2 / N6 / N14	N2 / N6 / N14	N2 / N6 / N14	N2 / N6 / N14			
	Provide Equipment Anchoring Check			X	X	X	X	N7			N7	N7	N7	N7	N7	N7	N7			X	X
3.11	AC Phase Sequencing Test / Verification of Markings			X	X	X	X	X	X	X	X	X	X	X	X	X				X	X
3.5	DC Resistance Measurement			X	X	X	X											N21		N25	N22
3.2	Insulation MegaOhm Resistance Test			X	N1	X	X				X	X	X	X	X	X		N2 / N21		N2 / N25	N22
3.3	DC High Potential Test			N2		N2	N2					N2								N2 / N25	N23
3.4	Surge Test of Winding Turns Insulation (IEEE 522)																			N2 / N25	N23
3.8	Low Resistance Ductor Tests			N10	N1 / N3 / N4	N3 / N4	N3 / N4 / N8	N3 / N4			N3 / N4	N3 / N4	N3 / N4	N3 / N4	N3 / N4	N3 / N4		N4 / N17 / N21		N3 / N4	N3 / N4 / N24
3.7	Turns Ratio Tests					N9	N9														
3.6	Doble AC Winding Insulation Resistance Tests					X															
3.9	Device Settings Calibration							N16	N16		N16						X		N15	N15 / N16	
3.10	Protective Settings Verification & Secondary Injection Test	N15								N15 / N16							N15 / N16	N15 / N16 / N21		X	N22
3.13	CT Saturation, Polarity, Ratio, Insulation and Winding Resistance Tests								X	X	X										
3.14	PT fusing, Ratio, Insulation and Winding Resistance Tests								X	X	X										
3.17	Thermographic Infrared Survey under design load conditions					N13	N13				X	X	X	X	X	X	X	X	X	N20 / N25	N20
3.15	Load Balancing Survey						X					X	X	X	X	X	X				
3.16	Harmonic Load Survey											X	X	X	X	X	X				
	Provide Manufacturer's Pre-startup and Installation Acceptance Letter							X							X					X	

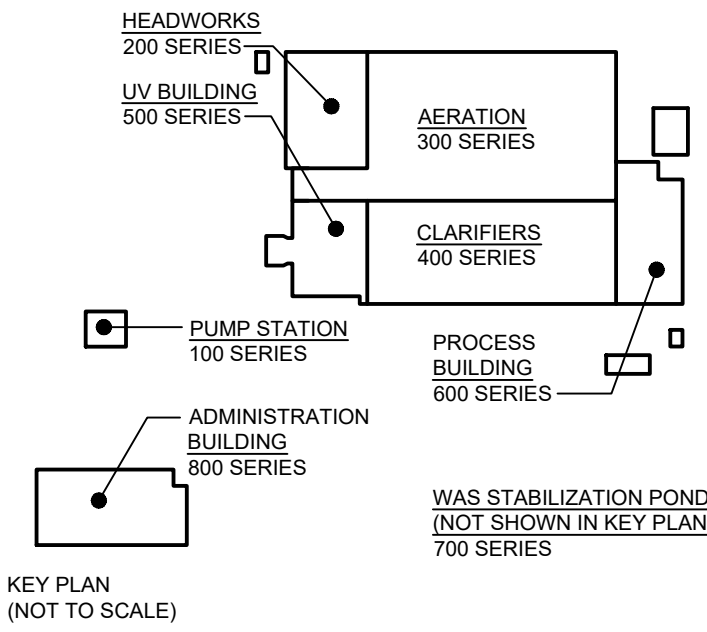
1
E005

ELECTRICAL TESTING AND INSPECTION MATRIX

SCALE: NTS

Notes:	
X	TO BE PROVIDED WITHOUT ADDITIONAL COMMENT
N1	ON ALL FEEDERS RATED FOR 100A OR MORE PER CONCUATOR
N2	COORDINATE WITH MANUFACTURER FOR ACCEPTABLE LIMITS
N3	DUCTOR LOW RESISTANCE TEST ALL GROUND LUG CONNECTIONS AFTER TOQUE CHECKS
N4	DUCTOR LOW RESISTANCE ALL PHASE CONNECTIONS AFTER TORQUE CHECKS
N5	REQUIRES ELECTRICAL SAFETY AUTHORITY INSPECTION AND ACCEPTANCE PRIOR TO BACKFILLING INSTALLATIONS
N6	TORQUE CHECK TO ELECTRICAL SAFETY CODE AND MANUFACTUER'S REQUIREMENTS PRIOR TO ENERGIZING
N7	CONFIRM IN ACCORDINCE WITH SIESMIC RESTRAINING PLAN
N8	DUCTOR LOW RESTANCE TEST CORE GROUNDING
N9	APPLIED TO ALL AVAILABLE TAPS / TAP POSITIONS, PER PHASE
N10	DUCTOR LOW RESISTANCE TEST STRESS CONE SHIELD CONNECTIONS
N11	VERIFY AND RECORD INSTALLED CONDUCTOR LENGHT, CONDUCTORS / PHASE, AWG SIZE, MATERIAL AND RATINGS
N12	FALL OF POTENTIAL TEST
N13	LOW VOLTAGE CONNECTIONS ONLY
N14	PROVIDE BOLT MARK ON MECHANICAL CONNECTIONS AFTER SUCCESSFUL TORQUE VERIFICATION
N15	VERIFY AGAINST COORDINATION REPORT
N16	RECORD & DATE INSTALLED "AS-COMMISSIONED" SETTINGS
N17	DUCTOR LOW RESISTANCE TEST INTERNAL CONTACT RESISTANCE
N18	VERIFY ALL MECHANICAL AND ELECTRICAL OPERATIONAL INTERLOCKS
N19	VERIFY EQUIPMENT RATINGS AND NAMEPLATE IDENTIFICATION AGAINST REVIEWED SHOP-DRAWINGS
N20	RECORD STEADY STATE MACHINE TEMPERATURE UNDER DESING LOAD CONDITIONS
N21	ON ALL MOLDED CASE CIRCUIT BREAKERS RATED 300A OR LARGER
N22	ON ALL PROCESS VFD DRIVEN MOTORS 15 HP OR LARGER
N23	ON ALL PROCESS VFD DRIVEN MOTORS 50 HP OR LARGER
N24	CHECK COMMON MODE SHAFT GROUNDING FOR PROPER OPERATION WITH INSULATED BEARING
N25	APPLIES TO GENERATOR ALTENATOR
N26	PROVIDE GENERATOR TESTING AS PER SECTION 16122

* REFER TO SPECIFICATION SECTION 16031 FOR ADDITIONAL TESTING DETAILS AND REQUIREMENTS.



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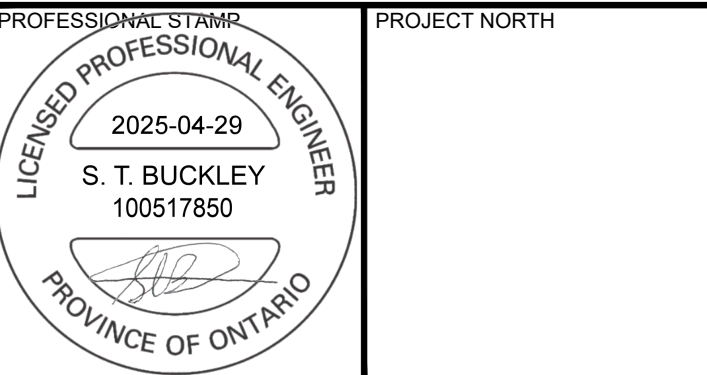
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

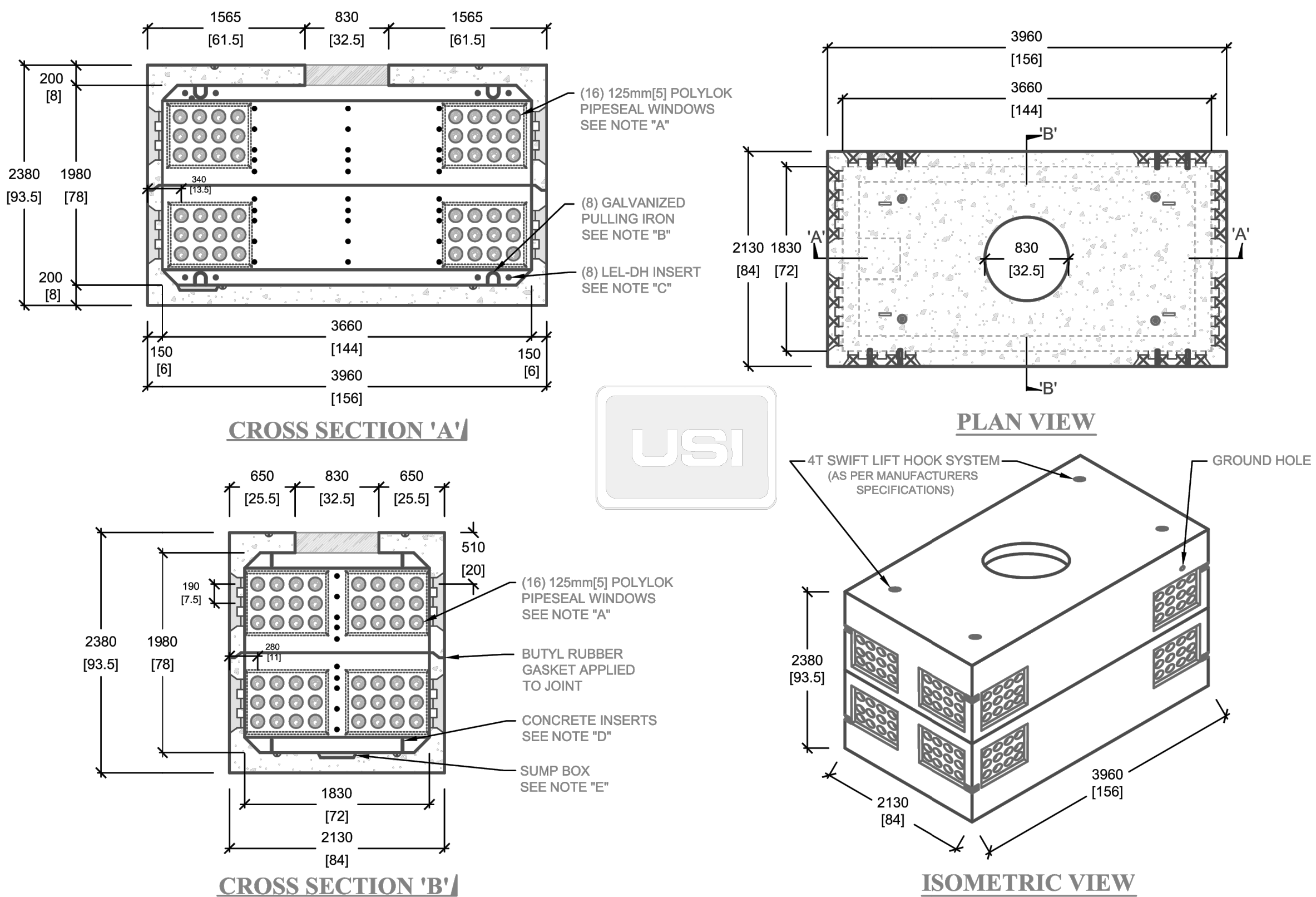
ELECTRICAL
SITE WIDE
ELECTRICAL TESTING AND
INSPECTION MATRIX

DESIGN: SB	DRAWING #:
DRAWN: NB	E005
CHECKED: LO/BM	
JLR #:	

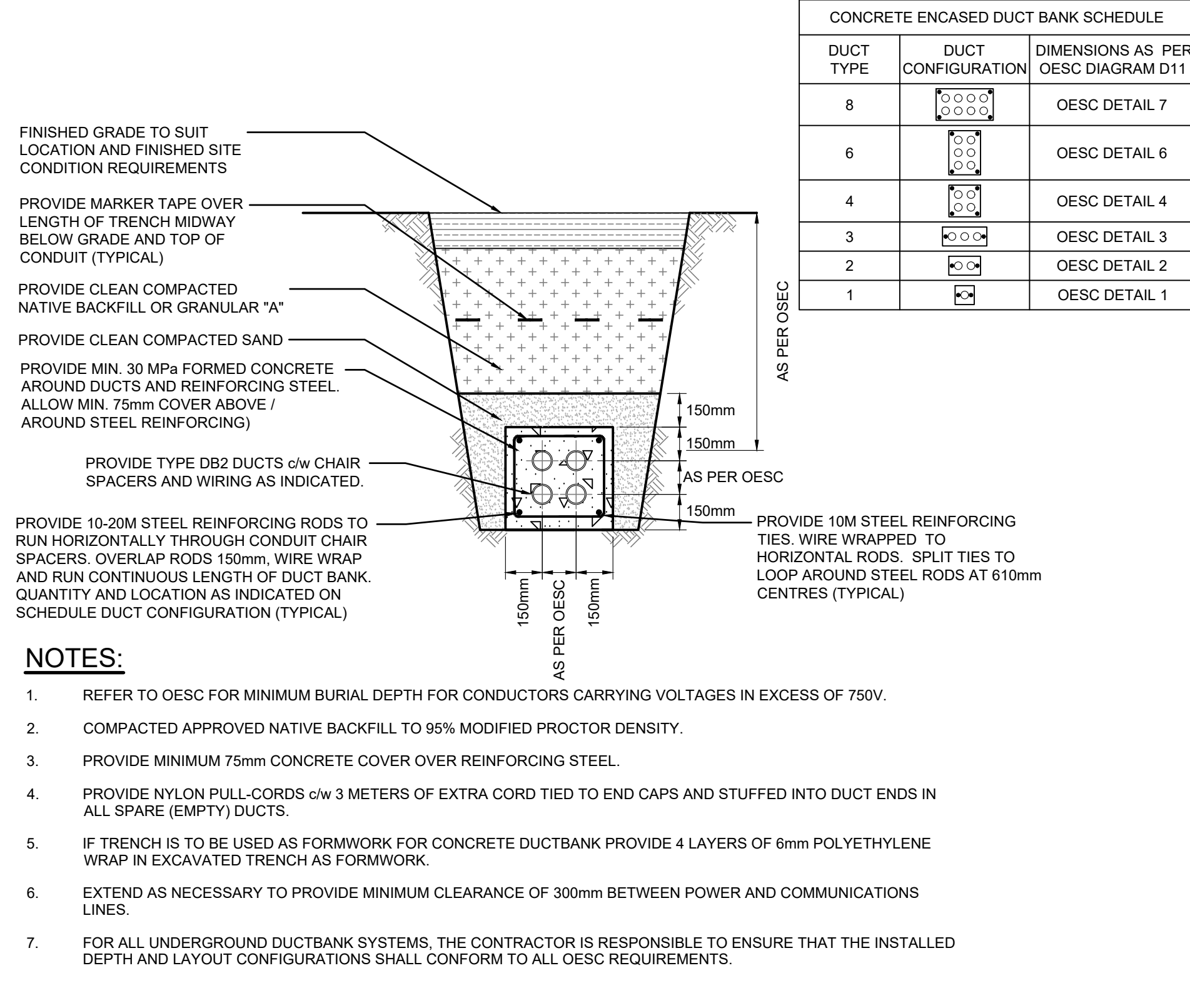
32296-001

PLOT DATE: Tuesday, April 29, 2025 11:24:05 AM

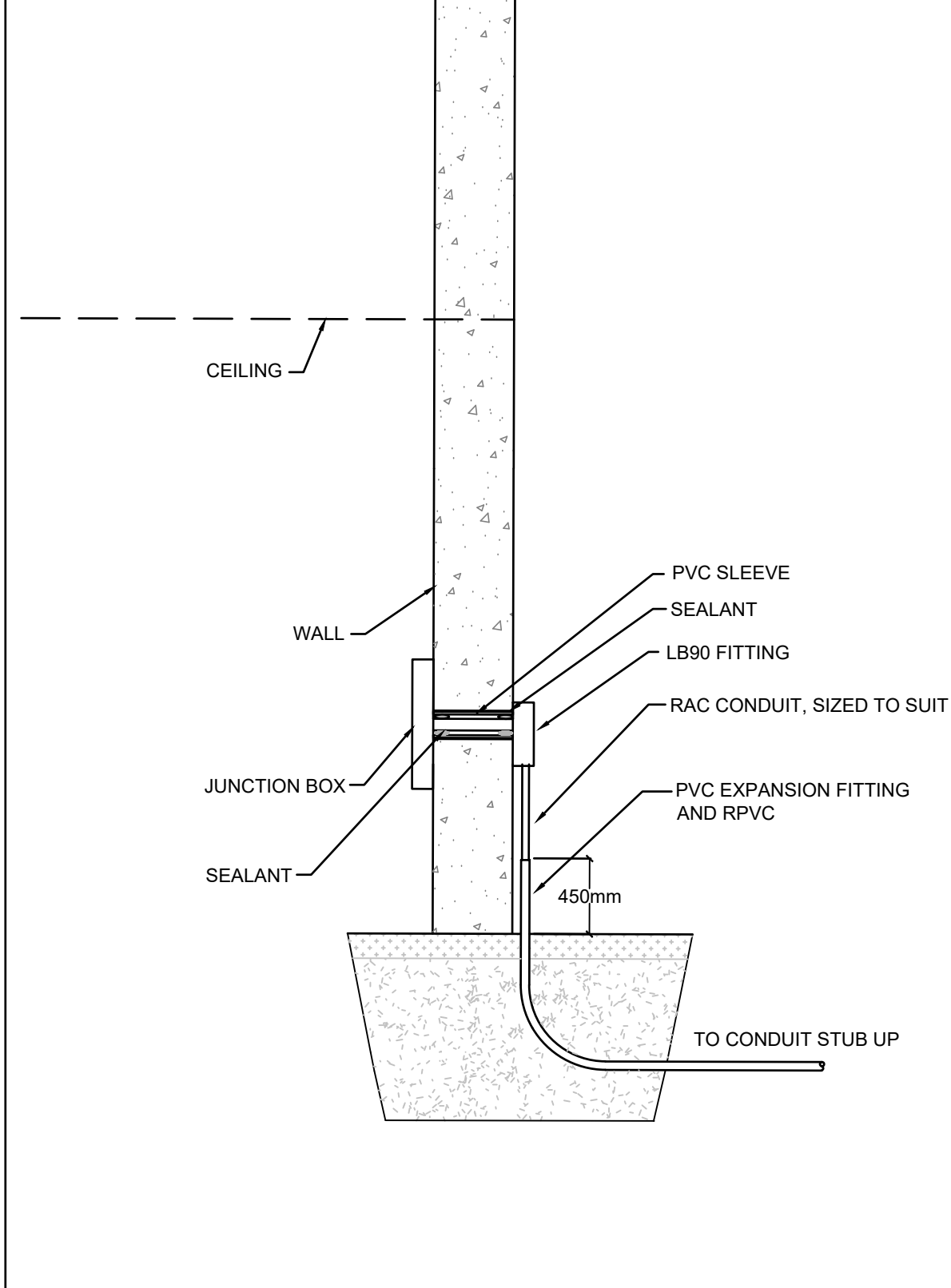
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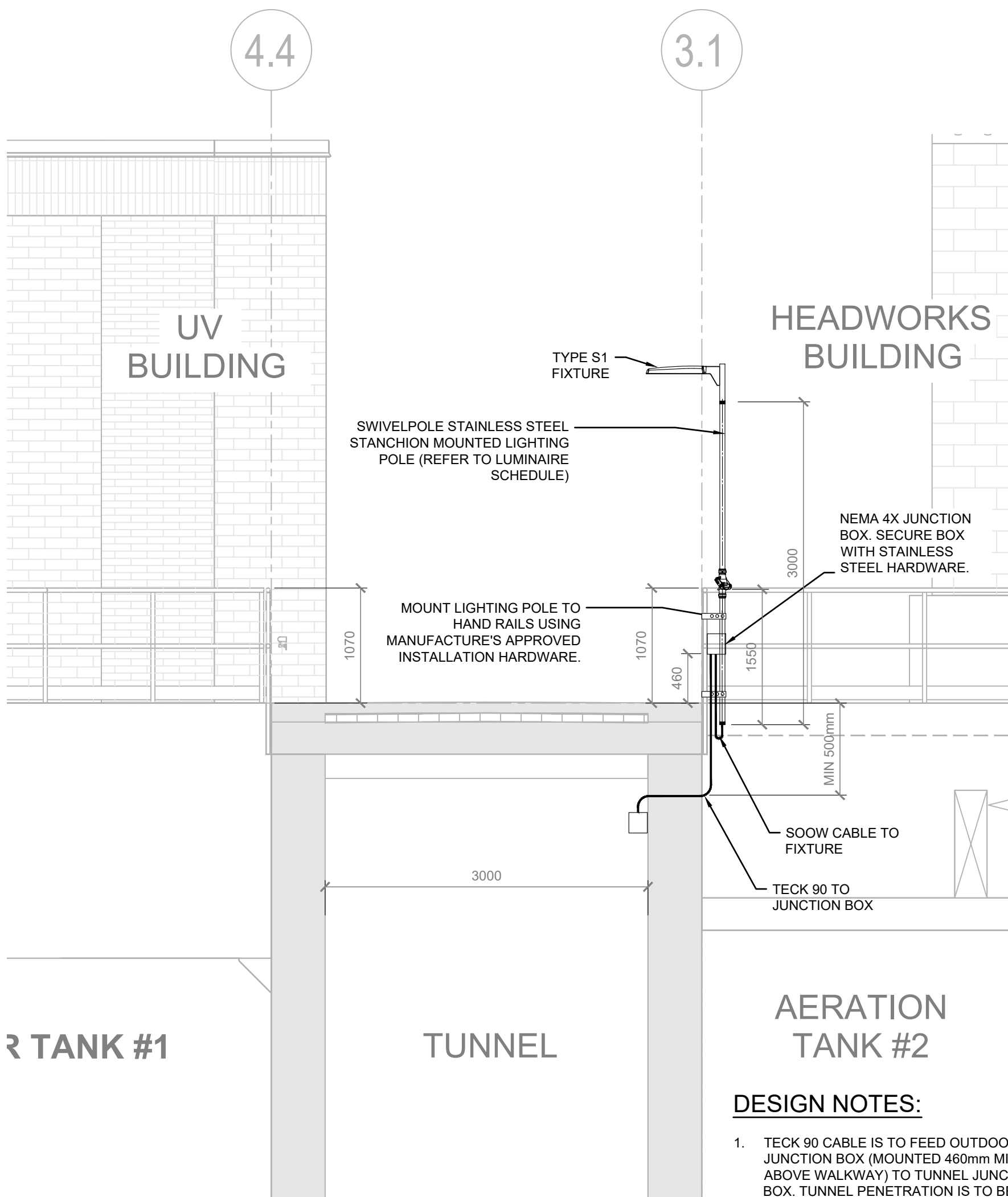
1 TYPICAL LARGE MANHOLE DETAIL
SCALE: N.T.S.



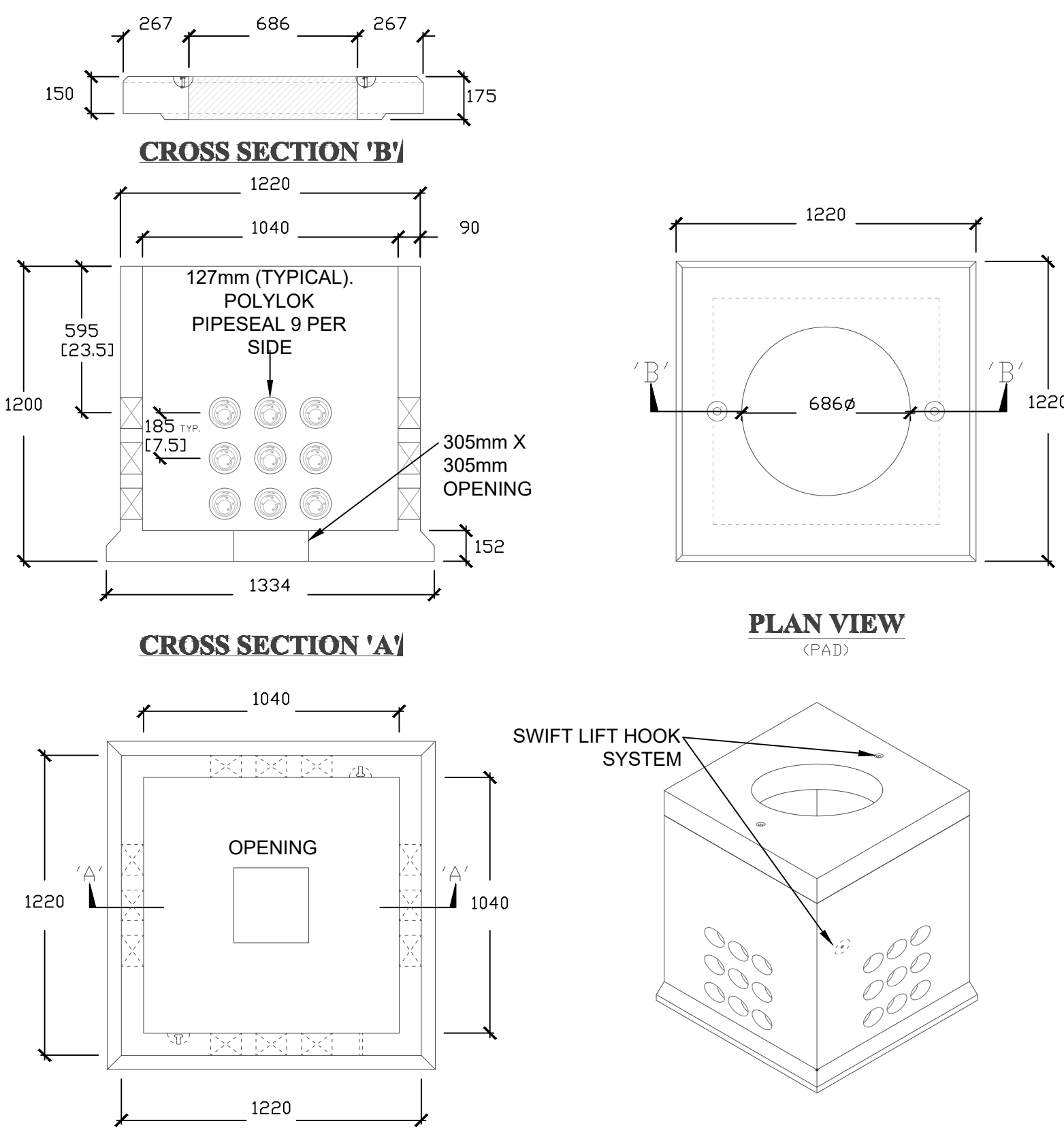
2 TYPICAL CONCRETE ENCASED TRENCHING DETAIL
SCALE: N.T.S.



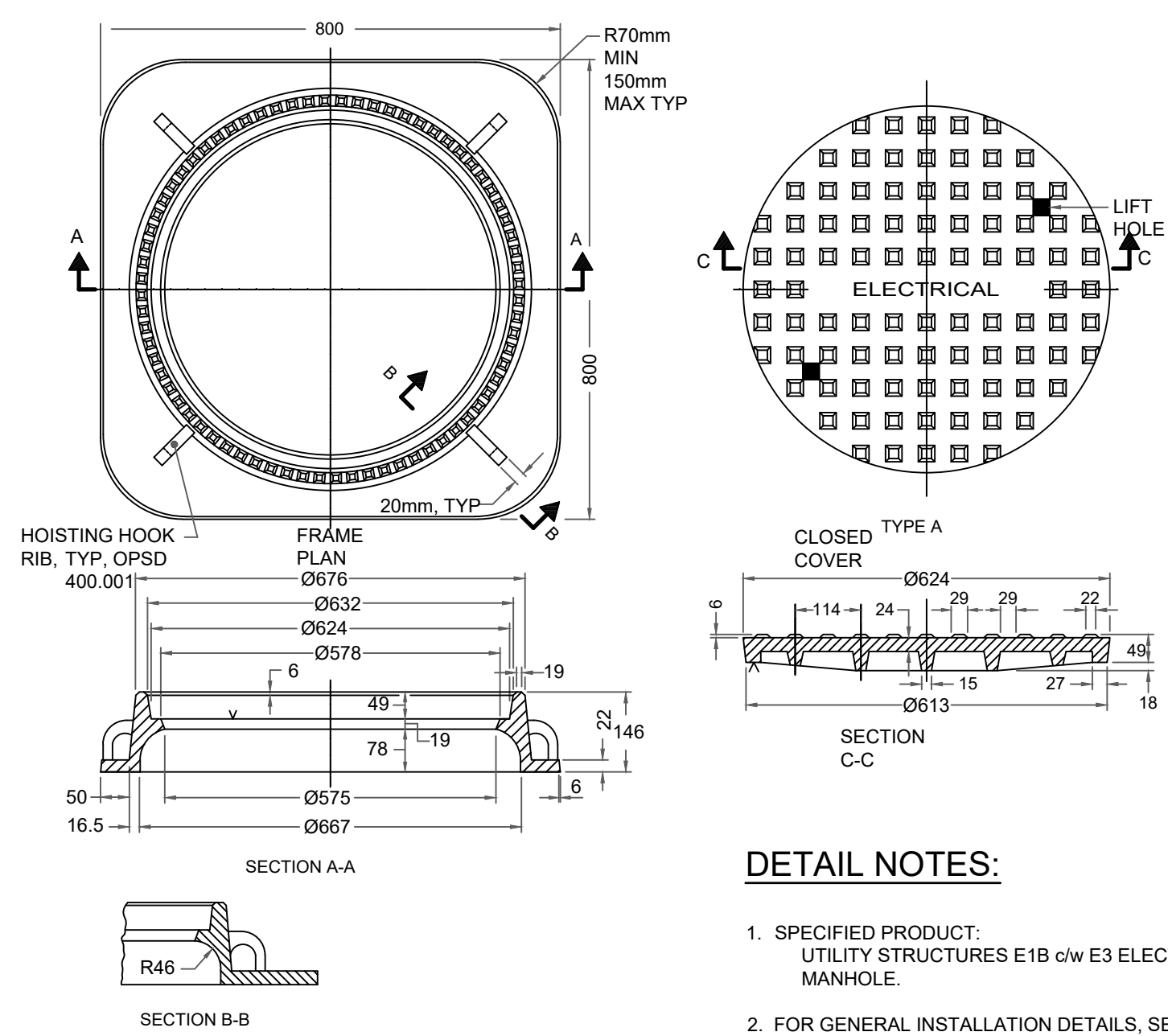
3 CONDUIT PENETRATION DETAIL
SCALE: N.T.S.



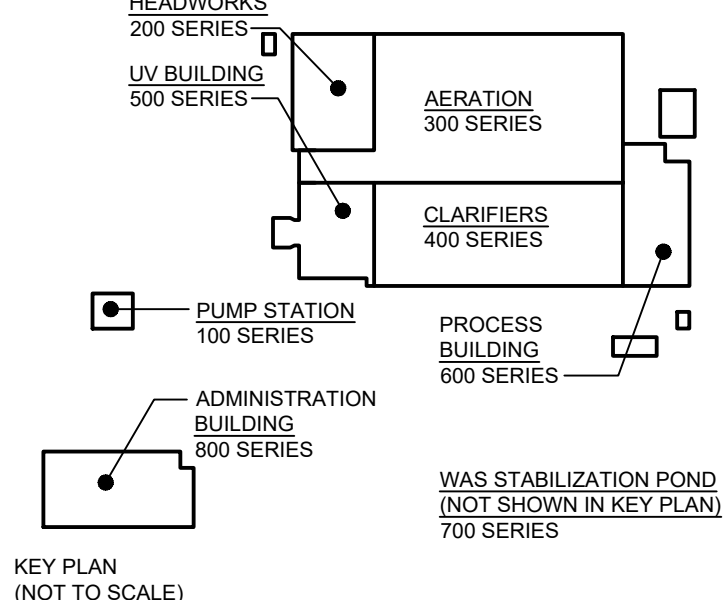
4 TYPICAL POLE MOUNTED LIGHT FIXTURE WITH PROTECTIVE BASE DETAIL
N.T.S.



5 TYPICAL SMALL MANHOLE DETAIL
SCALE: N.T.S.



- DETAIL NOTES:**
- SPECIFIED PRODUCT: UTILITY STRUCTURES E1B c/w E3 ELECTRICAL MANHOLE.
 - FOR GENERAL INSTALLATION DETAILS, SEE OPSD-2117.01.
 - FOR DUCT INSTALLATION PROFILES REFER TO OPSD-2103.02. ALL DIMENSIONS ARE IN MILLIMETRES OR METRES UNLESS OTHERWISE SHOWN.
 - COVERS SHALL BE TYPE A.



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

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No.	ISSUE / REVISION	DD/MM/YY

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25MM IF THIS IS A FULL SIZE DRAWING.

SCALE: N.T.S.

CLIENT:
BRIGHTON
CONSULTANT:
J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:
J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS
PROFESSIONAL STAMP
LICENSED PROFESSIONAL ENGINEER
2025-04-29
S. T. BUCKLEY
100517850
PROVINCE OF ONTARIO

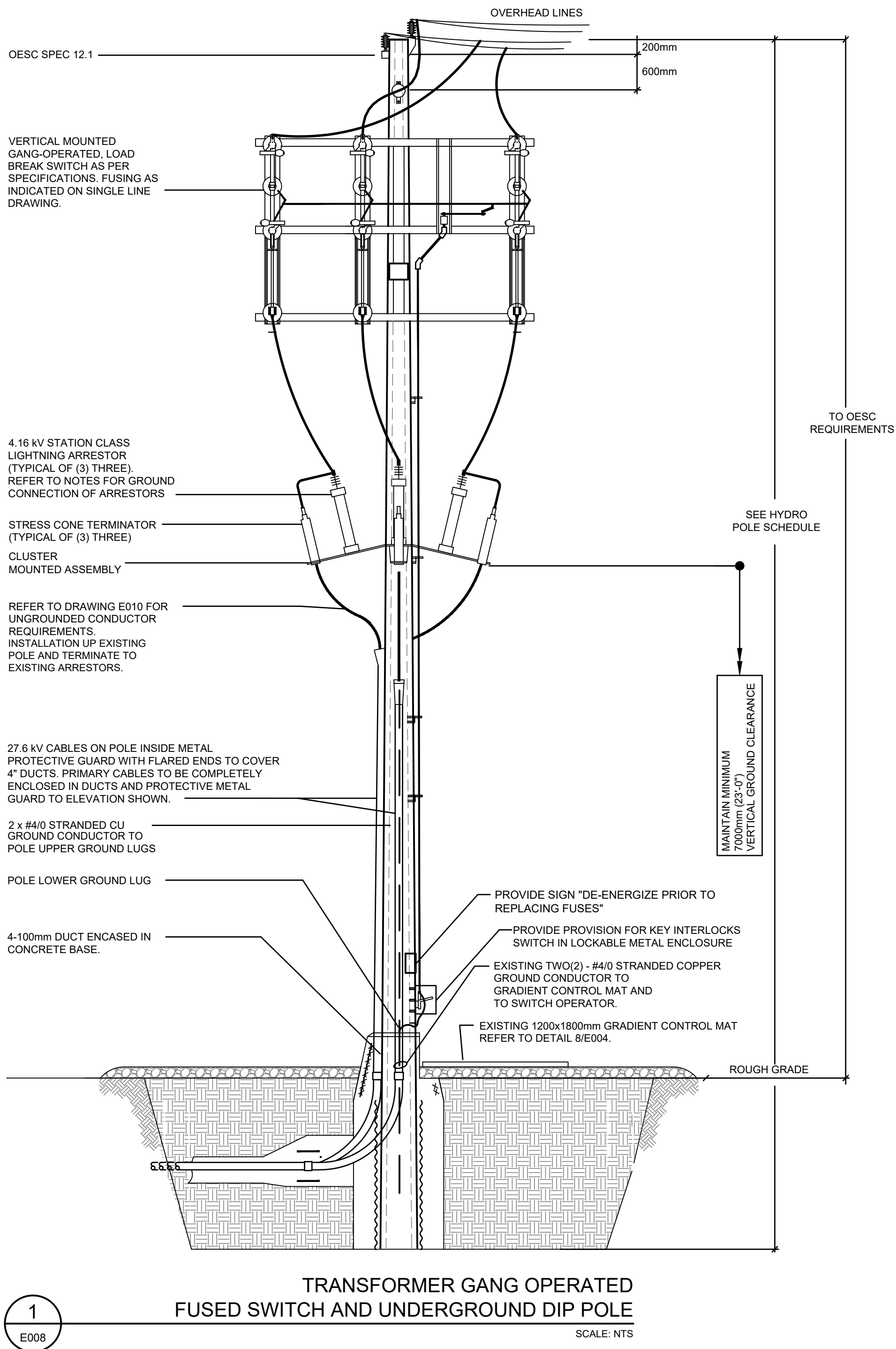
PROJECT:
BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
ELECTRICAL SITE WIDE
ELECTRICAL DETAILS (1 OF 3)

DESIGN: SB
DRAWN: NB
CHECKED: LO/BM
JLR #: 32296-001
DRAWING #: **E006**

PLOT DATE: Tuesday, April 29, 2025 11:24:37 AM

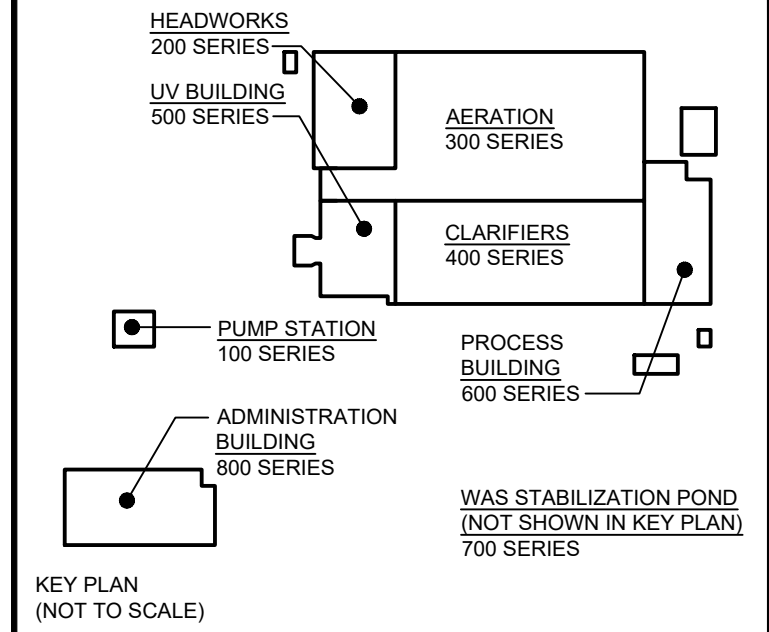
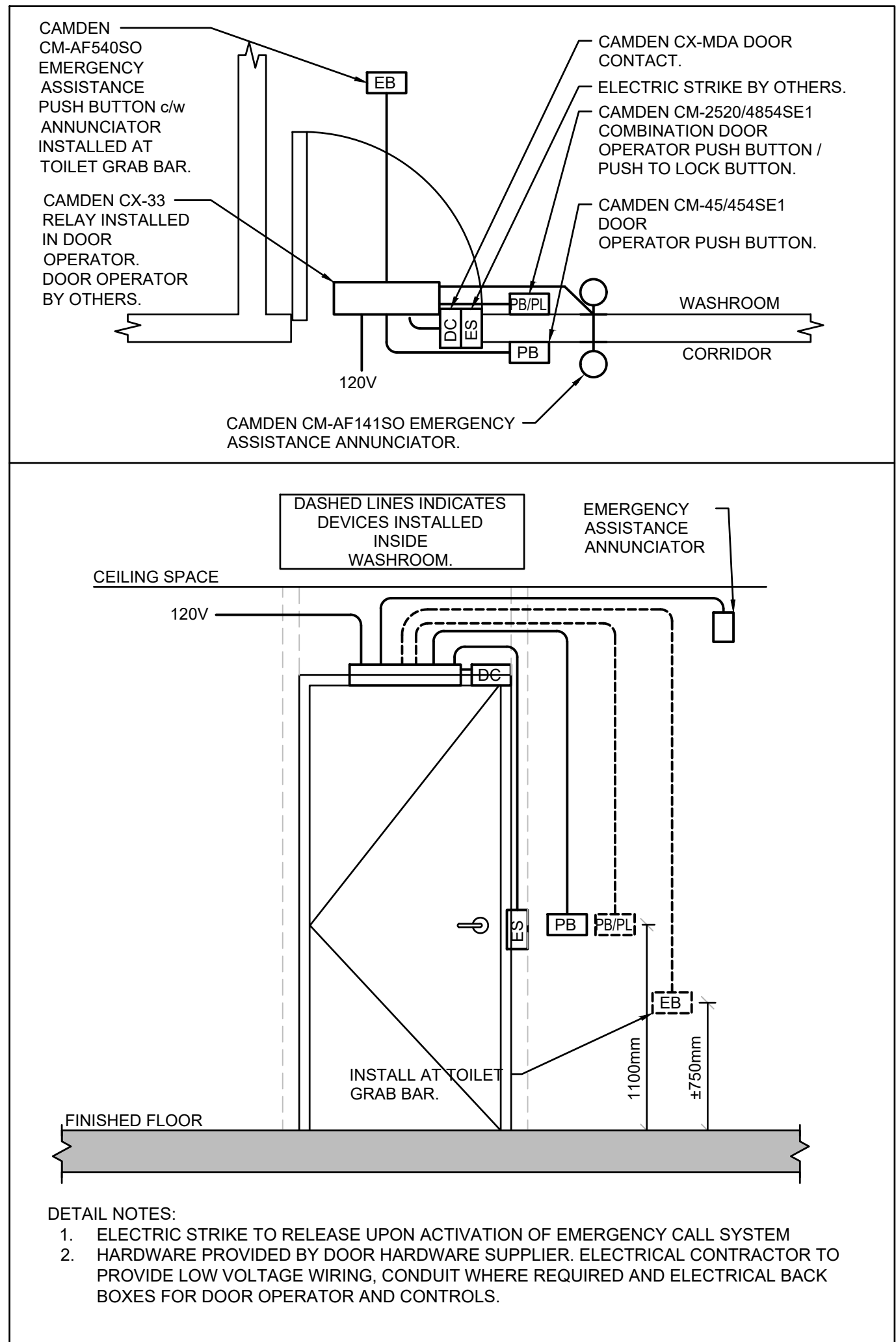
File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrades\03-Production\06-Elect\2296-001 - ELECTRICAL DETAILS.dwg



DETAIL NOTES:

- COORDINATE FINAL ROUTING OF TRENCHING WITH ELECTRICAL AND CIVIL ELEMENTS. ENSURE TRENCHING DOES NOT INTERFERE WITH ANY EXISTING EQUIPMENT.
- CONDUCTOR AND CONDUIT SIZES INDICATED IN THE CONTRACT DOCUMENTS ARE PROVIDED AS MINIMUM SIZES FOR TENDER PURPOSES ONLY. THE CONTRACTOR IS TO REVIEW AND PLAN FINAL CONDUIT AND WIRE SIZES AND ADJUST TO MEET THE LATEST REVISION OF THE ONTARIO ELECTRICAL SAFETY CODE. DERATING HAS NOT BEEN FACTORED INTO THE DESIGN IN ORDER TO PROVIDE THE CONTRACTOR WITH THE FLEXIBILITY OF SELECTING THE FINAL ROUTE.
- ANY CHANGES REQUIRED TO THE CABLING AND CONDUITS IDENTIFIED IN THESE DOCUMENTS ARE TO BE SUBMITTED FOR REVIEW PRIOR TO ORDERING ANY MATERIALS. ADJUSTMENTS TO THE CONTRACT WILL BE MADE FOR THE INCREASED COST IN MATERIALS ONLY, WHEN COMPARED WITH WHAT IS SPECIFIED IN THE CONTRACT DOCUMENTS. NO CONSIDERATION WILL BE GIVEN FOR ADDITIONAL COMPENSATION ARISING FROM THE CONTRACTOR'S FAILURE TO PLAN HIS WORK PRIOR TO ORDERING AND INSTALLING ANY MATERIALS.
- CAREFULLY COORDINATE ALL ELECTRICAL WORK WITH OTHER TRADES ON SITE TO ENSURE NO CONFLICTS AND/OR INTERFERENCES OCCUR.
- PROVIDE MECHANICAL PROTECTION FOR ALL WIRING TO MEET THE LATEST REVISION OF THE ONTARIO ELECTRICAL SAFETY CODE.
- PROVIDE BRACKETS AND SUPPORT ASSEMBLIES, AS REQUIRED.
- A MINIMUM LATERAL CLEARANCE BETWEEN BURIED ELECTRICAL TRENCHING AND OTHER SERVICES AND STRUCTURES OF 1.0M IS TO BE MAINTAINED AT ALL TIMES, UNLESS SPECIFIED OTHERWISE.

LEGEND	
[EB]	EMERGENCY BUTTON
[DC]	DOOR CONTACT
[ES]	ELECTRIC STRIKE
[PB]	DOOR OPERATOR PUSH BUTTON
[PBFL]	COMBINATION DOOR OPERATOR PUSH BUTTON/PUSH TO LOCK BUTTON



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

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SCALE: N.T.S.

CLIENT:

BRIGHTON

CONSULTANT: www.jlrichards.ca

J.L. Richards
ENGINEERS • ARCHITECTS • PLANNERS

CONSULTANT:

PROFESSIONAL STAMP
2025-04-29
S. T. BUCKLEY
100517850
PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL SITE WIDE

ELECTRICAL DETAILS (3 OF 3)

DESIGN: SB	DRAWING #:
DRAWN: NB	E008
CHECKED: LO/BM	
JLR #:	

32296-001

HYDRO POLE SCHEDULE

POLE NAME	POLE TYPE	MIN. POLE LENGTH	POLE HARDWARE	GUYED & ANCHORED	POLE GROUNDING	NOTES	VOLTAGE ON POLELINE	DETAIL	DEMOLITION BY	PROVIDED BY
HP-1	WOOD	UNKNOWN, HYDRO ONE TO DETERMINE	HYDRO ONE	YES	YES	HYDRO OTTAWA TO DEMOLISH EXISTING POLE AND REPLACE WITH NEW POLE AND HARDWARE, GC TO COORDINATE	4.16 KV	N/A	HYDRO ONE	HYDRO ONE
HP-2	WOOD	UNKNOWN	EXISTING	YES	UNKNOWN	CONTRACTOR DEMARCATON POINT CONTRACTOR TO PROVIDE OVERHEAD WIRES TO HP-3 AND HP-2 GUY WIRES. TRANSFORMER DEMOLITION BY HYDRO ONE	4.16 KV	N/A	HYDRO ONE	N/A
HP-3	WOOD, CLASS 1	13.7m MIN. PER OESC REQUIREMENTS	OESC SPEC 12.1	YES	YES	GANG OPERATED FUSED DISCONNECT AND UNDERGROUND DIP POLE. COORDINATE EXACT LOCATION WITH HYDRO ONE BEFORE INSTALLING.	4.16 KV	E008	N/A	GC / EC
HP-A	WOOD	UNKNOWN	EXISTING	NO	UNKNOWN	CONTRACTOR TO DEMOLISH POLE AND ASSOCIATED OVERHEAD WIRING UPON INSTALLATION OF NEW 750kVA SERVICE	4.16 KV	N/A	GC/EC	N/A
HP-B	WOOD	UNKNOWN	EXISTING	YES	UNKNOWN	CONTRACTOR TO DEMOLISH POLE AND ASSOCIATED OVERHEAD WIRING UPON INSTALLATION OF NEW 750kVA SERVICE.	4.16 KV	N/A	GC/EC	N/A

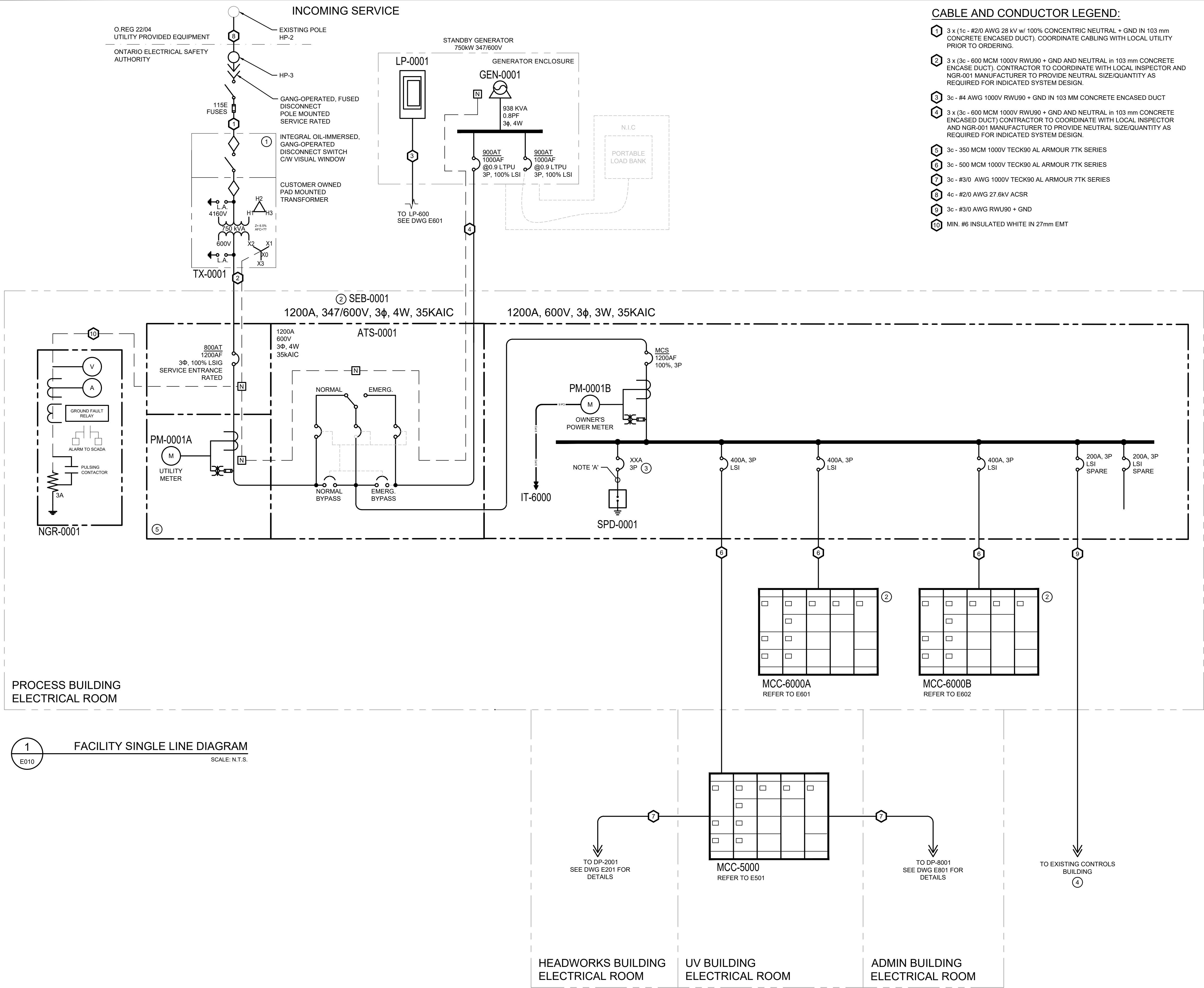
INDEX

HP	=>	Hydro Pole
OESC	=>	Ontario Electric Safety Code
GC	=>	General Contractor
EC	=>	Electrical Contractor

HYDRO POLE SCHEDULE

SCALE: NTS

PLOT DATE: Tuesday, April 29, 2025 11:24:05 AM



CABLE AND CONDUCTOR LEGEND:

- 3 x (1c - #2/0 AWG 28 kV w/ 100% CONCENTRIC NEUTRAL + GND IN 103 mm CONCRETE ENCASED DUCT), COORDINATE CABLING WITH LOCAL UTILITY PRIOR TO ORDERING.
- 3 x (3c - 600 MCM 1000V RWU90 + GND AND NEUTRAL IN 103 mm CONCRETE ENCASED DUCT), CONTRACTOR TO COORDINATE WITH LOCAL INSPECTOR AND NGR-001 MANUFACTURER TO PROVIDE NEUTRAL SIZE/QUANTITY AS REQUIRED FOR INDICATED SYSTEM DESIGN.
- 3c - #4 AWG 1000V RWU90 + GND IN 103 MM CONCRETE ENCASED DUCT
- 3 x (3c - 600 MCM 1000V RWU90 + GND AND NEUTRAL IN 103 mm CONCRETE ENCASED DUCT) CONTRACTOR TO COORDINATE WITH LOCAL INSPECTOR AND NGR-001 MANUFACTURER TO PROVIDE NEUTRAL SIZE/QUANTITY AS REQUIRED FOR INDICATED SYSTEM DESIGN.
- 3c - 350 MCM 1000V TECK90 AL ARMOUR 7TK SERIES
- 3c - 500 MCM 1000V TECK90 AL ARMOUR 7TK SERIES
- 3c - #3/0 AWG 1000V TECK90 AL ARMOUR 7TK SERIES
- 4c - #2/0 AWG 27.6kV ACSR
- 3c - #3/0 AWG RWU90 + GND
- MIN. #6 INSULATED WHITE IN 27mm EMT

DRAWING NOTES:

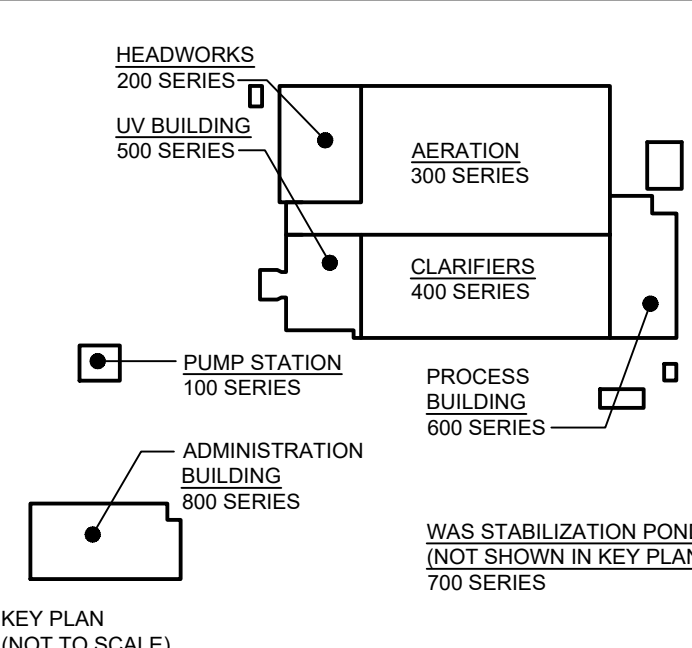
- CONTRACTOR TO PROVIDE 750 KVA 4-16-600V PADMOUNT TRANSFORMER COMPLETE WITH PRIMARY SIDE OIL IMMERSED, GANG-OPERATED LOAD BREAK SWITCH. TRANSFORMER TO BE PROVIDED WITH OIL-IMMERSED, CURRENT LIMITING FUSES, PRESSURE RELIEF DEVICE AS WELL AS OIL LEAK AND TEMPERATURE DETECTION.
- TECK CABLES ARE TO ENTER AND EXIT EQUIPMENT FROM BASEMENT CABLE TRAY BELOW.
- COORDINATE EXACT BREAKER SIZE WITH SPD MANUFACTURER.
- SWITCHBOARD TO RE-FEED EXISTING ELECTRICAL CONTROLS BUILDING. WIRING TO EXIT SEB-001 INTO BASEMENT AND RUN IN 63 mm CONDUIT STRAPPED TO THE BOTTOM OF THE CABLE TRAY. CONDUIT TO TRANSITION TO BURIED DUCTBANK AS INDICATED ON DRAWING E003. RE-FEED EXISTING 200A DISCONNECT. REFER TO DRAWING DE001.
- COORDINATE, SIZE AND LAYOUT CT/PT METERING AREA TO ALL UTILITY REQUIREMENTS.

GENERAL NOTES:

- PROVIDE GROUND AS PER SPD MANUFACTURER'S REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAIL.
- REFER TO MOTOR STARTER CONTROL LIST AND HAZARDOUS AREA CLASSIFICATIONS ON ME SERIES DRAWINGS.
- ALL SPECIFIED AWG OR MCM SIZED CONDUCTORS ARE TO BE COPPER.
- IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE WITH THE HYDRO ONE AND THE MUNICIPALITY OF BRIGHTON TO DEVELOP AND IMPLEMENT A HYDRO TRANSFER SCHEME.
- CONTRACTOR TO SUBMIT A REQUEST FOR SHUTDOWN EACH TIME AN OUTAGE IS REQUIRED. (WITHIN 5 DAYS NOTICE) WITH A DESCRIPTION OF THE WORK BEING COMPLETED, THE DURATION, AND CONTINGENCY PLAN IN THE EVENT THE PLANT DOWN TIME TIME LIMIT WILL EXPIRE.
- BREAKER SIZES SHOWN FOR QUOTATION PURPOSES ONLY. FINAL BREAKER SIZES TO BE DETERMINED BY MCC MANUFACTURER, SUBJECT TO THE APPROVAL OF THE ENGINEER. WHERE NECESSARY, CONTRACTOR TO ADJUST CABLE SIZING, AT NO EXTRA COST TO THE OWNER.

LEGEND:

- = NEUTRAL CARRYING CONDUCTOR
- = POWER CONDUCTOR(S)
- - - = ENCLOSURE
- [N] = NEUTRAL TERMINAL BLOCK



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25/04/25

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SCALE: N.T.S.

CLIENT:

BRIGHTON

CONSULTANT:

www.jrichards.ca

J.L. Richards

ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP

2025-04-29

S. T. BUCKLEY

100517850

PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER

TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL

SITE WIDE

FACILITY SINGLE LINE DIAGRAM

DESIGN: SB/NB

DRAWN: NB/RH

CHECKED: LO/BM

JLR #:

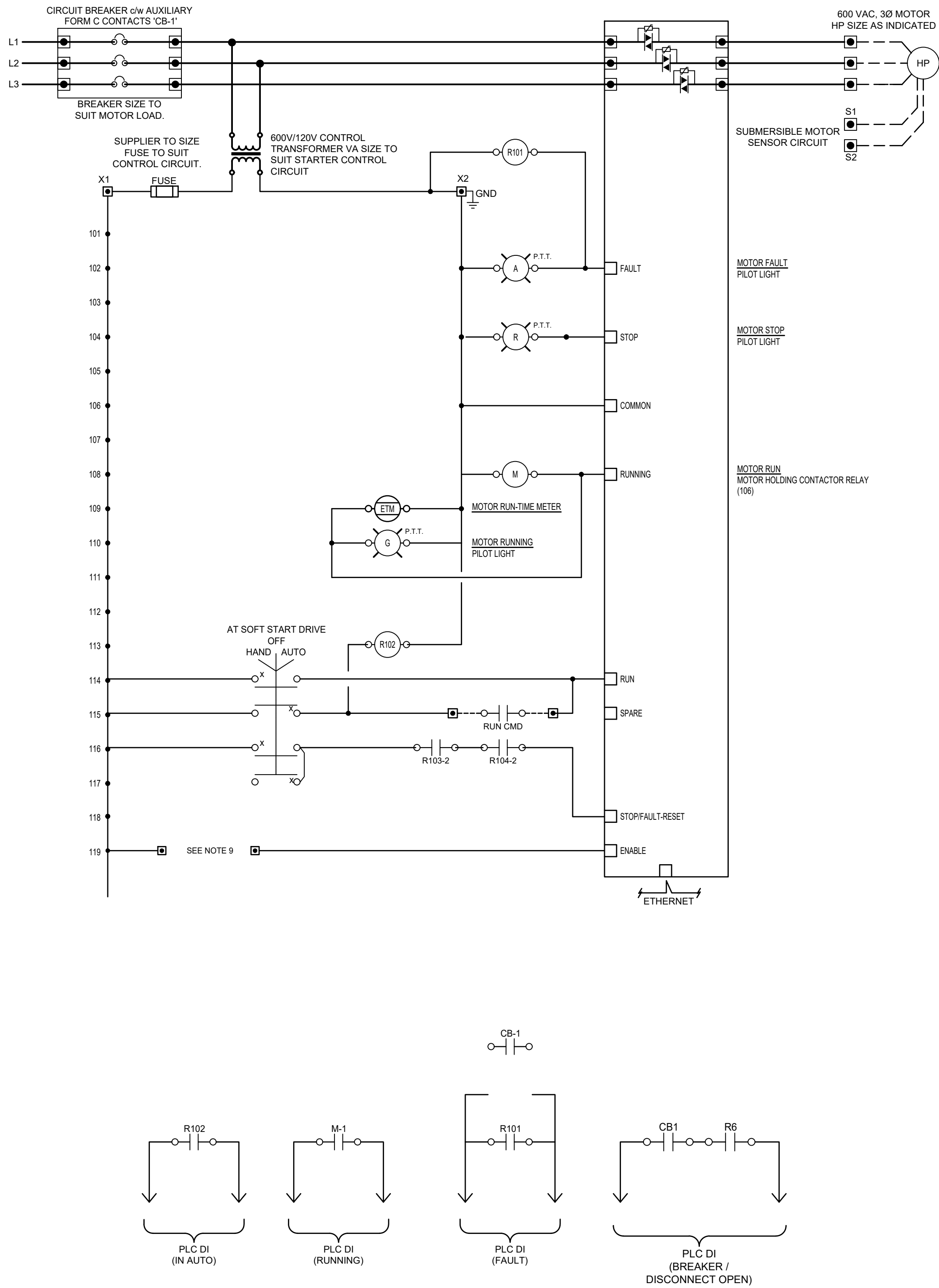
32296-001

DRAWING #:

E010

PLOT DATE: Tuesday, April 29, 2025 11:23:05 AM

File Location: P:\2020\032296-001 - Brighton WWT System Upgrade\03-Production\03-Elect\32296-001 - MOTOR STARTER WIRING LOGIC.dwg



NOTES:

- PILOT LIGHTS TO BE "PUSH TO TEST" (P.T.T.) 120V LED LAMPS. LAMP COLOURS TO BE CONFIRMED PRIOR TO MANUFACTURING. REFER TO SECTION 168033
- SOFT START FAULT RESET VIA PUSH BUTTON ON MCC CELL DOOR AS WELL AS VIA ETHERNET.
- REFER TO 2/E022 FOR SCHEMATIC SPECIFIC DETAIL NOTES.

1
E022

SOFT STARTER TYPE 50

SCALE: NTS

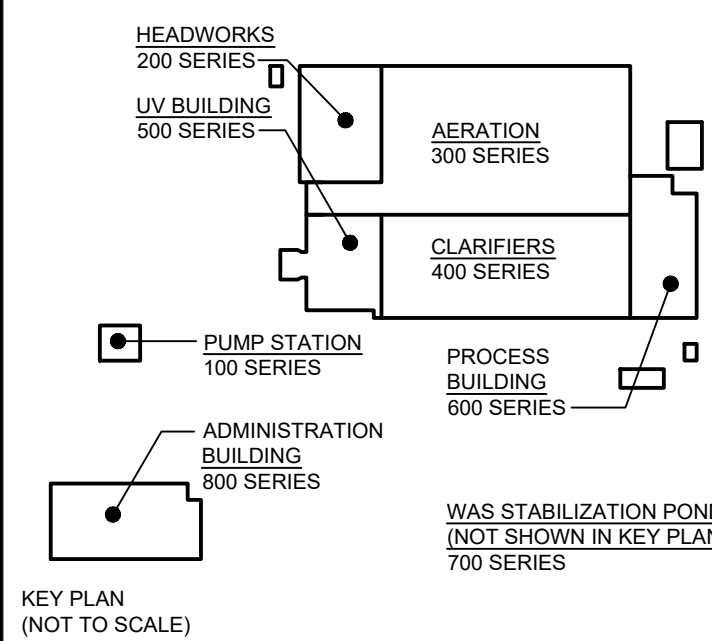
DETAIL NOTES:

- ELECTRONIC ETHERNET VFD DRIVE AS SPECIFIED IN SECTION 16812.
- REFER TO SECTION 17051 (PS) FOR THE REQUIREMENTS OF THE OPERATOR INTERFACE DEVICES.
- PROVIDE TERMINAL BLOCKS (T) TO SUIT.
- SIZE CIRCUIT BREAKERS/FUSIBLE DISCONNECTS TO SUIT MOTOR LOADS.
- STARTERS TO BE NEMA RATED, HEAVY DUTY.
- BREAKER TO BE UL 489 LISTED AS A BRANCH BREAKER - EQUIVALENT TO ALLEN-BRADLEY 1489-M SERIES.
- REFER TO PID6. IF LOCAL CONTROL PANEL DOES NOT CONTAIN AN H-O-A THEN LOGIC FOR THE H-O-A IS TO BE REMOVED.
- FOR STARTERS WITHOUT REMOTE CONTROL PANEL, ADD WIRE JUMPERS TO TERMINALS.
- FOR EACH STARTER, PROVIDE TERMINALS TO INTERLOCK THE STARTER VIA EXTERNAL HARDWIRED SIGNALS. CONTRACTOR TO PROVIDE JUMPERS IF THE INTERLOCKS ARE NOT USED. PROGRAM THE STARTERS TO IMMEDIATELY SHUTDOWN IF THE INTERLOCKS ARE REMOVED. NOTE SUCH INTERLOCKS MAY INCLUDE A LOCAL DISCONNECT, IN WHICH CASE AN EARLY BREAK CONTACT ON THE DISCONNECT WILL TRIGGER A SHUTDOWN OF THE STARTER AND THE STARTER SHOULD RESPOND ACCORDINGLY TO PREVENT EQUIPMENT DAMAGE. NOTE THAT MORE THAN ONE CONDITIONS MAY BE WIRED IN SERIES TO FORM STARTER INTERLOCK.
- MONITOR STATUS OF FIELD MOUNTED DISCONNECT INDEPENDENTLY OF OTHER STARTER INTERLOCKS, AS INDICATED. TWO SET OF CONTACTS WILL BE PROVIDED IN THE DISCONNECT. ONE WILL BE EARLY BREAK FOR INTERLOCKING THE STARTER. THE OTHER CONTACT IS INTENDED TO MONITOR THE STATUS IN THE STARTER. REFER TO PID6. IF DISCONNECT STATUS IS NOT REQUIRED THEN THIS STATUS IS TO BE OMITTED.
- MONITOR THE STATUS OF MOTOR DISCONNECTS OVER ETHERNET. PROVIDE ETHERNET RELAYS AS REQUIRED.
- ELECTRONIC ETHERNET SOFT START AS SPECIFIED IN SECTION 17051 (PS).
- PROVIDE CT(S), MOVs AND OTHER APPURTENANCES TO SUIT.
- MINI-CAS RELAY INTERLOCKS, PUMP TO SHUT DOWN UPON HIGH TEMPERATURE OR IF AN INTERNAL LEAK HAS BEEN DETECTED.
- ELECTRONIC ETHERNET READY OVERLOAD EQUIVALENT TO ALLEN-BRADLEY E300 PLUS OVERLOAD RELAY.
- PROVIDE STARTER DIGITAL I/O CARDS AND/OR ETHERNET RELAYS TO SUIT.
- COORDINATE EXACT WIRING REQUIREMENTS WITH THE MINICAS INSTALLATION INSTRUCTIONS. PROVIDE POWER TO THE MINICAS VIA DEDICATED CIRCUIT PROTECTED BY A UL489 LISTED BRANCH CIRCUIT BREAKER. PROVIDE CONTROL RELAY(S) AND LOGIC TO REMOVE POWER FROM THE MINICAS RELAY IF THE MOTOR DISCONNECT IS OPEN. USE THE EARLY BREAK AUXILIARY CONTACT INSIDE THE DISCONNECT FOR THIS PURPOSE.
- COORDINATE EXACT WIRING REQUIREMENTS WITH THE MAS 711 RELAY INSTALLATION INSTRUCTIONS. PROVIDE POWER TO THE MINICAS VIA DEDICATED CIRCUIT PROTECTED BY A UL489 LISTED BRANCH CIRCUIT BREAKER. PROVIDE CONTROL RELAY(S) AND LOGIC TO REMOVE POWER FROM THE MINICAS RELAY IF THE MOTOR DISCONNECT IS OPEN. USE THE EARLY BREAK AUXILIARY CONTACT INSIDE THE DISCONNECT FOR THIS PURPOSE.
- COORDINATE EXACT WIRING REQUIREMENTS WITH THE CONTROLLER INSTALLATION INSTRUCTIONS. PROVIDE POWER TO THE CONTROLLER VIA DEDICATED CIRCUIT PROTECTED BY A UL489 LISTED BRANCH CIRCUIT BREAKER. PROVIDE CONTROL RELAY(S) AND LOGIC TO REMOVE POWER FROM THE CONTROLLER RELAY IF THE MOTOR DISCONNECT IS OPEN. USE THE EARLY BREAK AUXILIARY CONTACT INSIDE THE DISCONNECT FOR THIS PURPOSE.
- CONTROLLER RELAY INTERLOCKS, PUMP TO SHUT DOWN UPON HIGH TEMPERATURE.
- NON ETHERNET VFD, SIMILAR TO PRODUCT SPECIFIED IN SECTION 16812, EXCEPT ETHERNET COMMUNICATION IS NOT REQUIRED. PROVIDE ADDITIONAL I/O CARDS, AS REQUIRED TO IMPLEMENT THE INTENDED LOGIC.
- PILOT LIGHTS TO BE "PUSH TO TEST" (P.T.T.) 120V LED LAMPS. LAMP COLOURS TO BE CONFIRMED PRIOR TO MANUFACTURING. REFER TO SECTION 168033.
- SOFT START FAULT RESET VIA PUSH BUTTON ON MCC CELL DOOR AS WELL AS VIA ETHERNET.

2
E022

DETAIL NOTES

SCALE: NTS



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SCALE: N.T.S.

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL
SITE-WIDE
MOTOR STARTER WIRING LOGIC
(3 OF 3)

DESIGN: SB	DRAWING #:
DRAWN: NB	E022
CHECKED: LO/BM	
JLR #: 32296-001	

PLOT DATE: Tuesday, April 29, 2025 11:24:14 AM

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrade\03-Production\06-Electrical\2296 - ELECTRICAL TABLES.dwg

TOTAL LINKS

TABLE OF PANELS AND ELECTRICAL EQUIPMENT										
DEVICE TAG IDENTIFIER	SERVICE DESCRIPTION	LOCATION	DWG DETAIL	DEVICE		FIELD WORK				
				VOLTS	Ø W	SUPPLY BY	INSTALL BY	WIRE BY	COMM BY	
ATS 0001	PROCESS BUILDING AUTOMATIC TRANSFER SWITCH	PROCESS BUILDING BASEMENT	E010	600	3 4	E	E	E	E	G
CP 2000	HEADWORKS BUILDING PLC CONTROL PANEL	HEADWORKS ELECTRICAL ROOM	I012	120	1 2	SI	E	E	E	G
CP 5000	UV BUILDING PLC CONTROL PANEL	UV BUILDING ELECTRICAL ROOM	I013	120	1 2	SI	E	E	E	G
CP 6000	PROCESS BUILDING PLC CONTROL PANEL	PROCESS BUILDING BASEMENT	I014	120	1 2	SI	E	E	E	G
CP 8000	ADMINISTRATION BUILDING BAS PANEL	ADMINISTRATION BUILDING ELECTRICAL ROOM	SECTION 15901	120	1 2	M	M	M	E	G
CP 8001	ADMINISTRATION BUILDING SECURITY PANEL	ADMINISTRATION BUILDING ELECTRICAL ROOM	SECTION 17051	120	1 2	SI	E	E	E	G
DP 2001	HEADWORKS BUILDING DISTRIBUTION PANEL	HEADWORKS ELECTRICAL ROOM	E201	600	3 3	E	E	E	E	G
DP 5001	UV BUILDING DISTRIBUTION PANEL	UV BUILDING ELECTRICAL ROOM	E501	600	3 3	E	E	E	E	G
DP 6001	PROCESS BUILDING DISTRIBUTION PANEL	PROCESS BUILDING BASEMENT	E602	600	3 4	E	E	E	E	G
DP 8001	ADMINISTRATION BUILDING DISTRIBUTION PANEL	ADMINISTRATION BUILDING ELECTRICAL ROOM	E801	600	3 3	E	E	E	E	G
FCP 4001	POWER DISTRIBUTION CENTRE 1A	UV DISINFECTION CHANNEL	PID051, SECTION 11347	0	0 0	M	M	E	E	G
FCP 4002	POWER DISTRIBUTION CENTRE 1B	UV DISINFECTION CHANNEL	PID051, SECTION 11347	0	0 0	M	M	E	E	G
FCP 4003	HYDRAULICS SYSTEM CENTRE	UV DISINFECTION CHANNEL	PID051, SECTION 11347	0	0 0	M	M	E	E	G
FCP 4004	UV SYSTEM CONTROL CENTRE	UV BUILDING ELECTRICAL ROOM	PID051, SECTION 11347	0	0 0	M	M	E	E	G
FCP 9201	HEADWORKS GAS DETECTION PANEL	HEADWORKS ELECTRICAL ROOM	11022, I011[1]	120	1 2	SI	E	E	E	G
FCP 9202	HEADWORKS LIGHTING & VENTILATION CONTROL PANEL	HEADWORKS ELECTRICAL ROOM	31022, I011[1],2,5,8,12,13,19,23]	120	1 2	SI	E	E	E	G
FCP 9601	PROCESS BUILDING ELECTRICAL ROOM GAS DETECTION PANEL	PROCESS BUILDING ELECTRICAL ROOM	11022, I011[1]	120	1 2	SI	E	E	E	G
FCP 9602	PROCESS BUILDING LIGHTING & VENTILATION CONTROL PANEL	PROCESS BUILDING BASEMENT	31022, I011[1],2,5,8,12,13,19,23]	120	1 2	SI	E	E	E	G
FCP 9900	EFFLUENT WATER AUTOMATIC STRAINER FIELD CONTROL PANEL	PROCESS BUILDING BASEMENT	PID001, SECTION 11424	120	0 0	M	M	E	E	G
FCP 9901	EFFLUENT WATER PUMP SKID CONTROL PANEL	PROCESS BUILDING BASEMENT	PID001, SECTION 11424	600	0 0	M	M	E	E	G
GEN 0001	STANDBY GENERATOR	PROCESS BUILDING EXTERIOR	E010, SECTION 16622	600	3 4	E	E	E	E	G
GEN ANNUN	GENERATOR ANNUNCIATION PANEL	PROCESS BUILDING ELECTRICAL ROOM	E600 AND E610	120	1 2	E	E	E	E	G
GEN REPO	GENERATOR REPO PANEL	PROCESS BUILDING ELECTRICAL ROOM	E600 AND E610	120	1 2	E	E	E	E	G
IB 5100	SLUDGE PUMPING INSTRUMENTATION BOARD	PROCESS BUILDING BASEMENT	2/E007	0	0 0	SI	E	E	E	G
IT 6000	PROCESS BUILDING SCADA IT CABINET	PROCESS BUILDING ELECTRICAL ROOM	N002	120	1 2	SI	E	E	E	G
IT 8000	ADMINISTRATION BUILDING SCADA IT CABINET	ADMINISTRATION BUILDING ELECTRICAL ROOM	N002	120	1 2	SI	E	E	E	G
JBA 1100	POWER JUNCTION BOX	SEWAGE PUMPING STATION	I011[10,25]	0	0 0	SI	E	E	E	G
JBA 2101	ANALOG JUNCTION BOX	SCREEN AND DEGRIT ROOM	I011[10,26]	0	0 0	SI	E	E	E	G
JBA 2102	ANALOG JUNCTION BOX	SCREEN AND DEGRIT ROOM	I011[10,26]	0	0 0	SI	E	E	E	G
JBA 2103	ANALOG JUNCTION BOX	SCREEN AND DEGRIT ROOM	I011[10,26]	0	0 0	SI	E	E	E	G
JBA 3101	ANALOG JUNCTION BOX	AERATION TANKS	I011[10,25]	0	0 0	SI	E	E	E	G
JBA 3102	ANALOG JUNCTION BOX	AERATION TANKS	I011[10,25]	0	0 0	SI	E	E	E	G
JBA 5100	ANALOG JUNCTION BOX	PROCESS BUILDING BASEMENT	I011[10,26]	0	0 0	SI	E	E	E	G
JBA 7101	ANALOG JUNCTION BOX	FERRIC CHLORIDE STORAGE PAD	I011[10,25]	0	0 0	SI	E	E	E	G
JBA 7300	ANALOG JUNCTION BOX	DECANT WET WELL	I011[10,25]	0	0 0	SI	E	E	E	G
JBA 9600	ANALOG JUNCTION BOX	PROCESS BUILDING BASEMENT	I011[10,26]	0	0 0	SI	E	E	E	G
JBD 1100	DISCRETE JUNCTION BOX	SEWAGE PUMPING STATION	I011[10,25]	0	0 0	SI	E	E	E	G
JBD 2100	DISCRETE JUNCTION BOX	SCREEN AND DEGRIT ROOM	I011[10,26]	0	0 0	SI	E	E	E	G
JBD 2101	DISCRETE JUNCTION BOX	SCREEN AND DEGRIT ROOM	I011[10,26]	0	0 0	SI	E	E	E	G
JBD 2102	DISCRETE JUNCTION BOX	SCREEN AND DEGRIT ROOM	I011[10,26]	0	0 0	SI	E	E	E	G
JBD 2202	DISCRETE JUNCTION BOX	HEADWORKS EXTERIOR	I011[10,25]	0	0 0	SI	E	E	E	G
JBD 4001	DISCRETE JUNCTION BOX	UV DISINFECTION CHANNEL	I011[10,25]	0	0 0	SI	E	E	E	G
JBD 5200	DISCRETE JUNCTION BOX	PROCESS BUILDING BASEMENT	I011[10,26]	0	0 0	SI	E	E	E	G
JBD 7100	DISCRETE JUNCTION BOX	PROCESS BUILDING CHEMICAL ROOM	I011[10,25]	0	0 0	SI	E	E	E	G
JBD 7101	DISCRETE JUNCTION BOX	PROCESS BUILDING CHEMICAL ROOM	I011[10,25]	0	0 0	SI	E	E	E	G
JBD 7102	DISCRETE JUNCTION BOX	PROCESS BUILDING CHEMICAL ROOM	I011[10,25]	0	0 0	SI	E	E	E	G
JBD 7300	DISCRETE JUNCTION BOX	DECANT WET WELL	I011[10,25]	0	0 0	SI	E	E	E	G
JBD 9203	DISCRETE JUNCTION BOX	SCREEN AND DEGRIT ROOM	I011[10,26]	0	0 0	SI	E	E	E	G
JBD 9600	DISCRETE JUNCTION BOX	PROCESS BUILDING BASEMENT	I011[10,26]	0	0 0	SI	E	E	E	G
JBP 1101	POWER JUNCTION BOX	SEWAGE PUMPING STATION	I011[10,22,25]	0	0 0	SI	E	E	E	G
JBP 1102	POWER JUNCTION BOX	SEWAGE PUMPING STATION	I011[10,22,25]	0	0 0	SI	E	E	E	G
JBP 1103	POWER JUNCTION BOX	SEWAGE PUMPING STATION	I011[10,22,25]	0	0 0	SI	E	E	E	G
JBP 1104	POWER JUNCTION BOX	SEWAGE PUMPING STATION	I011[10,22,25]	0	0 0	SI	E	E	E	G
JBP 7201	POWER JUNCTION BOX	PROCESS BUILDING EXTERIOR	I011[10,22,25]	0	0 0	SI	E	E	E	G
JBP 7202	POWER JUNCTION BOX	PROCESS BUILDING EXTERIOR	I011[10,22,25]	0	0 0	SI	E	E	E	G
JBP 7203	POWER JUNCTION BOX	PROCESS BUILDING EXTERIOR	I011[10,22,25]	0	0 0	SI	E	E	E	G
JBP 7204	POWER JUNCTION BOX	PROCESS BUILDING EXTERIOR	I011[10,22,25]	0	0 0	SI	E	E	E	G
JBP 7205	POWER JUNCTION BOX	PROCESS BUILDING EXTERIOR	I011[10,22,25]	0	0 0	SI	E	E	E	G
JBP 7206	POWER JUNCTION BOX	PROCESS BUILDING EXTERIOR	I011[10,22,25]	0	0 0	SI	E	E	E	G
JBP 7301	POWER JUNCTION BOX	DECANT WET WELL	I011[10,22,25]	0	0 0	SI	E	E	E	G
JBP 7302	POWER JUNCTION BOX	DECANT WET WELL	I011[10,22,25]	0	0 0	SI	E	E	E	G
LCP 1101	RAW SEWAGE PUMPS LOCAL CONTROL PANEL	SEWAGE PUMPING STATION	PID011, SECTION 17051	0	0 0	SI	E	E	E	G
LCP 1102	RAW SEWAGE LEVEL LOCAL CONTROL PANEL	SEWAGE PUMPING STATION	PID011, SECTION 17051, I011[10,15,16,24]	0	0 0	SI	E	E	E	G
LCP 2101	GRINDER AND SCREENING LOCAL CONTROL PANEL	SCREEN AND DEGRIT ROOM	PID021, DIVISION 11	0	0 0	M	E	E	E	G
LCP 3201	PRIMARY CLARIFIER #1 CONTROL PANEL	PROCESS BUILDING BASEMENT	PID041, SECTION 17051	0	0 0	M	M	E	E	G
LCP 3202	PRIMARY CLARIFIER #2 CONTROL PANEL	PROCESS BUILDING BASEMENT	PID041, SECTION 17051	0	0 0	M	M	E	E	G
LCP 3203	PRIMARY CLARIFIER #3 CONTROL PANEL	PROCESS BUILDING BASEMENT	PID041, SECTION 17051	0	0 0	M	M	E	E	G
LCP 3301	AERATION BLOWER NO. 1 LOCAL CONTROL PANEL	PROCESS BUILDING BLOWER ROOM	PID031, SECTION 17051, I011[4]	0	0 0	SI	E	E	E	G
LCP 3302	AERATION BLOWER NO. 2 LOCAL CONTROL PANEL	PROCESS BUILDING BLOWER ROOM	PID031, SECTION 17051, I011[4]	0	0 0	SI	E	E	E	G
LCP 5100	SLUDGE PUMPS LOCAL CONTROL PANEL	PROCESS BUILDING BASEMENT	PID041, SECTION 17051, I011[28]	0	0 0	SI	E	E	E	G
LCP 5201	SCUM PUMP CONTROL PANEL	PROCESS BUILDING BASEMENT	PID041, SECTION 17051, I011[4]	0	0 0	SI	E	E	E	G
LCP 7102	FERRIC CHLORIDE LEAK DETECTION LOCAL CONTROL PANEL	PROCESS BUILDING BASEMENT	PID042, SECTION 17051	0	0 0	M	E	E	E	G
LCP 7301	DECANT WET WELL PUMPS LOCAL CONTROL PANEL	DECANT WET WELL	PID071, SECTION 17051	0	0 0	SI	E	E	E	G
LCP 7302	DECANT WET WELL LEVEL LOCAL CONTROL PANEL	DECANT WET WELL	PID071, SECTION 17051, I011[10,15,16,24]	0	0 0	SI	E	E	E	G
LCP 9201	HEADWORKS SANITARY DRAINAGE SUMP LOCAL CONTROL PANEL	HEADWORKS SCREENINGS BIN ROOM	MID202, DIVISION 15	0	0 0	M	E	E	E	G
LCP 9601	UV BUILDING SANITARY DRAINAGE SUMP LOCAL CONTROL PANEL	UV DISINFECTION CHANNEL	MID502, DIVISION 15	0	0 0	M	M	E	E	G
LCP 9601	PROCESS BUILDING SANITARY DRAINAGE SUMP LOCAL CONTROL PANEL	PROCESS BUILDING BASEMENT	MID602, DIVISION 15	0	0 0	M	M	E	E	G
LCP 9605	BACKUP BASEMENT EXHAUST FAN LOCAL CONTROL PANEL	PROCESS BUILDING MECHANICAL ROOM		208	3 3	E	E	E	E	G
LD-BL 3301	ROTARY AERATION BLOWER NO. 1 LOCAL DISCONNECT	PROCESS BUILDING BLOWER ROOM	E601	600	3 3	E	E	E	E	G
LD-BL 3302	ROTARY AERATION BLOWER NO. 2 LOCAL DISCONNECT	PROCESS BUILDING BLOWER ROOM	E602	600	3 3	E	E	E	E	G
LD-CC 3201	PRIMARY CLARIFIER #1 CROSS COLLECTOR LOCAL DISCONNECT	CLARIFIER TANK NO. 1	E601, I401	600	3 3	E	E	E	E	G
LD-CC 3202	PRIMARY CLARIFIER #2 CROSS COLLECTOR LOCAL DISCONNECT	CLARIFIER TANK NO. 2	E601, I401	600	3 3	E	E	E	E	G
LD-CC 3203	PRIMARY CLARIFIER #3 CROSS COLLECTOR LOCAL DISCONNECT	CLARIFIER TANK NO. 3	E601, I401	600	3 3	E	E	E	E	G
LD-EF 9601	PROCESS BLOWER EXHAUST FAN NO. 1 LOCAL DISCONNECT	PROCESS BUILDING BLOWER ROOM	E601	600	3 3	E	E	E	E	G
LD-EF 9602	PROCESS BLOWER EXHAUST FAN NO. 2 LOCAL DISCONNECT	PROCESS BUILDING BLOWER ROOM	E602	600	3 3	E	E	E	E	G
LD-EF 9605	BACKUP BASEMENT EXHAUST FAN	PROCESS BUILDING MECHANICAL ROOM	E610	208	3 3	E	E	E	E	G
LD-ERV 9501	UV BUILDING ERV DISCONNECT	UV BUILDING MECHANICAL ROOM	E510	208	3 3	E	E	E	E	G
LD-HRV 9601	PROCESS HEAT RECOVERY UNIT LOCAL DISCONNECT	PROCESS BUILDING MECHANICAL ROOM	E602	600	3 3	E	E	E	E	G
LD-LC 3201	PRIMARY CLARIFIER #1 LONGITUDINAL COLLECTOR LOCAL DISCONNECT	CLARIFIER TANK NO. 1	E601	600	3 3	E	E	E	E	G
LD-LC 3202	PRIMARY CLARIFIER #2 LONGITUDINAL COLLECTOR LOCAL DISCONNECT	CLARIFIER TANK NO. 2	E601	600	3 3	E	E	E	E	G

TOTAL LINKS

TABLE OF PANELS AND ELECTRICAL EQUIPMENT										
DEVICE TAG IDENTIFIER	SERVICE DESCRIPTION	LOCATION	DWG DETAIL	DEVICE			FIELD WORK			
				VOLTS	Ø	W	SUPPLY BY	INSTALL BY	WIRE BY	COMM BY
LD-LC 3203	PRIMARY CLARIFIER #3 LONGITUDINAL COLLECTOR LOCAL DISCONNECT	CLARIFIER TANK NO. 3	E601	600	3	3	E	E	E	G
LD-MUA 9201	HEADWORKS MAKE-UP AIR UNIT LOCAL DISCONNECT	HEADWORKS MECHANICAL ROOM	E201	600	3	3	E	E	E	G
LD-MX 7201	AERATED SOLIDS STABILIZATION CELL FLOATING ASPIRATOR NO. 1 LOCAL DISCONNECT	WAS STABILIZATION POND	E601	600	3	3	E	E	E	G
LD-MX 7202	AERATED SOLIDS STABILIZATION CELL FLOATING ASPIRATOR NO. 2 LOCAL DISCONNECT	WAS STABILIZATION POND	E602	600	3	3	E	E	E	G
LD-MX 7203	AERATED SOLIDS STABILIZATION CELL FLOATING ASPIRATOR NO. 3 LOCAL DISCONNECT	WAS STABILIZATION POND	E601	600	3	3	E	E	E	G
LD-MX 7204	AERATED SOLIDS STABILIZATION CELL FLOATING ASPIRATOR NO. 4 LOCAL DISCONNECT	WAS STABILIZATION POND	E602	600	3	3	E	E	E	G
LD-MX 7205	AERATED SOLIDS STABILIZATION CELL FLOATING ASPIRATOR NO. 5 LOCAL DISCONNECT	WAS STABILIZATION POND	E601	600	3	3	E	E	E	G
LD-MX 7206	AERATED SOLIDS STABILIZATION CELL FLOATING ASPIRATOR NO. 6 LOCAL DISCONNECT	WAS STABILIZATION POND	E602	600	3	3	E	E	E	G
LD-OCU 9201	HEADWORKS ODOUR CONTROL UNIT LOCAL DISCONNECT	HEADWORKS EXTERIOR	E201	600	3	3	E	E	E	G
LD-P 1101	RAW SEWAGE PUMP NO. 1 LOCAL DISCONNECT	SEWAGE PUMPING STATION	E501	600	3	3	E	E	E	G
LD-P 1102	RAW SEWAGE PUMP NO. 1 LOCAL DISCONNECT	SEWAGE PUMPING STATION	E501	600	3	3	E	E	E	G
LD-P 1103	RAW SEWAGE PUMP NO. 1 LOCAL DISCONNECT	SEWAGE PUMPING STATION	E501	600	3	3	E	E	E	G
LD-P 1104	RAW SEWAGE PUMP NO. 1 LOCAL DISCONNECT	SEWAGE PUMPING STATION	E501	600	3	3	E	E	E	G
LD-P 5101	SLUDGE PUMP NO. 1 LOCAL DISCONNECT	PROCESS BUILDING BASEMENT	E601	600	3	3	E	E	E	G
LD-P 5102	SLUDGE PUMP NO. 2 LOCAL DISCONNECT	PROCESS BUILDING BASEMENT	E601	600	3	3	E	E	E	G
LD-P 5103	SLUDGE PUMP NO. 3 LOCAL DISCONNECT	PROCESS BUILDING BASEMENT	E601	600	3	3	E	E	E	G
LD-P 5104	SLUDGE PUMP NO. 4 LOCAL DISCONNECT	PROCESS BUILDING BASEMENT	E601	600	3	3	E	E	E	G
LD-P 5201	SCUM PUMP LOCAL DISCONNECT	UV BUILDING EXTERIOR	E501	600	3	3	E	E	E	G
LD-P 7301	DECANT PUMP NO. 1 LOCAL DISCONNECT	DECANT WET WELL	E602	600	3	3	E	E	E	G
LD-P 7302	DECANT PUMP NO. 2 LOCAL DISCONNECT	DECANT WET WELL	E602	600	3	3	E	E	E	G
LD-P 9601	PROCESS SANITARY DRAINAGE PUMP NO. 1 LOCAL DISCONNECT	PROCESS BUILDING BASEMENT	E602	208	3	3	M	M	E	G
LD-P 9602	PROCESS SANITARY DRAINAGE PUMP NO. 2 LOCAL DISCONNECT	PROCESS BUILDING BASEMENT	E602	208	3	3	M	M	E	G
LD-UV 4001	UV POWER DISTRIBUTION CENTRE FUSED DISCONNECT	UV DISINFECTION CHANNEL	E501	480	3	3	E	E	E	G
LD-UV 4002	UV POWER DISTRIBUTION CENTRE FUSED DISCONNECT	UV DISINFECTION CHANNEL	E501	480	3	3	E	E	E	G
LD-UV 4003	UV HYDREILIC SYSTEM CENTRE FUSED DISCONNECT	UV DISINFECTION CHANNEL	E501	480	3	3	E	E	E	G
LP 0001	GENERATOR SHORE PANEL	PROCESS BUILDING EXTERIOR	E010	208	3	4	E	E	E	G
LP 2002	HEADWORKS BUILDING LIGHTING PANEL	HEADWORKS ELECTRICAL ROOM	E201	208	3	4	E	E	E	G
LP 5002	UV BUILDING LIGHTING PANEL	UV BUILDING ELECTRICAL ROOM	E501	208	3	4	E	E	E	G
LP 6002	PROCESS BUILDING LIGHTING PANEL	PROCESS BUILDING ELECTRICAL ROOM	E602	208	3	3	E	E	E	G
LP 6003	PROCESS BUILDING LIGHTING PANEL	PROCESS BUILDING ELECTRICAL ROOM	E602	208	3	4	E	E	E	G
LP 8002	ADMINISTRATION BUILDING LIGHTING PANEL	ADMINISTRATION BUILDING ELECTRICAL ROOM	E801	208	3	4	E	E	E	G
LP 8003	ADMINISTRATION BUILDING LIGHTING PANEL	ADMINISTRATION BUILDING ELECTRICAL ROOM	E801	208	3	4	E	E	E	G
MCC 1	EXISTING CONTROLS BUILDING MCC			600	3	3	EX	EX	E	G
MCC 5000	UV BUILDING MOTOR CONTROL CENTER	UV BUILDING ELECTRICAL ROOM	E501	600	3	3	E	E	E	G
MCC 6000A	PROCESS BUILDING MOTOR CONTROL CENTER	PROCESS BUILDING ELECTRICAL ROOM	E601	600	3	3	E	E	E	G
MCC 6000B	PROCESS BUILDING MOTOR CONTROL CENTER	PROCESS BUILDING ELECTRICAL ROOM	E602	600	3	3	E	E	E	G
MCP 2100	SCREENING MOTOR CONTROL PANEL	HEADWORKS ELECTRICAL ROOM	E201, SECTION 11330	600	3	3	E	E	E	G
NGR 0001	NEUTRAL GROUNDING RESISTOR	PROCESS BUILDING ELECTRICAL ROOM	E010	600	1	1	E	E	E	G
PM 0001A	UTILITY POWER MONITOR	PROCESS BUILDING ELECTRICAL ROOM	E010	600	3	4	E	E	E	G
PM 0001B	OWNER POWER MONITORING	PROCESS BUILDING ELECTRICAL ROOM	E010	600	3	4	E	E	E	G
PM 5000	UV BUILDING MCC POWER MONITOR	UV BUILDING ELECTRICAL ROOM	E501	600	3	3	E	E	E	G
PM 6000A	PROCESS BUILDING MCC POWER MONITOR	PROCESS BUILDING ELECTRICAL ROOM	E601	600	3	3	E	E	E	G
PM 6000B	PROCESS BUILDING MCC POWER MONITOR	PROCESS BUILDING ELECTRICAL ROOM	E602	600	3	3	E	E	E	G
SEB 0001	PROCESS BUILDING SERVICE ENTRANCE BOARD	PROCESS BUILDING ELECTRICAL ROOM	E010	600	3	4	E	E	E	G
SPD 0001	SURGE PROTECTIVE DEVICE	PROCESS BUILDING ELECTRICAL ROOM	E010	208	3	4	E	E	E	G
SPD 2100	SURGE PROTECTIVE DEVICE	HEADWORKS ELECTRICAL ROOM	E201	600	3	3	E	E	E	G
SPD 5000	SURGE PROTECTIVE DEVICE	UV BUILDING ELECTRICAL ROOM	E501	600	3	3	E	E	E	G
SPD 5002	SURGE PROTECTIVE DEVICE	UV BUILDING ELECTRICAL ROOM	E501	208	3	4	E	E	E	G
SPD 6000A	SURGE PROTECTIVE DEVICE	PROCESS BUILDING ELECTRICAL ROOM	E601	600	3	3	E	E	E	G
SPD 6000B	SURGE PROTECTIVE DEVICE	PROCESS BUILDING ELECTRICAL ROOM	E602	600	3	3	E	E	E	G
SPD 6002	SURGE PROTECTIVE DEVICE	PROCESS BUILDING ELECTRICAL ROOM	E602	208	3	4	E	E	E	G
SPD 6003	SURGE PROTECTIVE DEVICE	PROCESS BUILDING ELECTRICAL ROOM	E602	208	3	4	E	E	E	G
SPD 8002	SURGE PROTECTIVE DEVICE	ADMINISTRATION BUILDING ELECTRICAL ROOM	E801	208	3	4	E	E	E	G
SPD 8003	SURGE PROTECTIVE DEVICE	PROCESS BUILDING ELECTRICAL ROOM	E801	208	3	4	E	E	E	G
SPD 2002	SURGE PROTECTIVE DEVICE	HEADWORKS ELECTRICAL ROOM	E201	208	3	4	E	E	E	G
SPT 5000	SPLITTER	UV BUILDING ELECTRICAL ROOM	E501	480	3	3	E	E	E	G
TX 0001	MAIN HYDRO SERVICE TRANSFORMER	PROCESS BUILDING EXTERIOR	E010	600	3	3	E	E	E	G
TX 2002	HEADWORKS BUILDING TRANSFORMER	HEADWORKS ELECTRICAL ROOM	E201	600	3	4	E	E	E	G
TX 5000	UV BUILDING UV DISTRIBUTION TRANSFORMER	UV BUILDING ELECTRICAL ROOM	E501	600	3	3	E	E	E	G
TX 5002	UV BUILDING TRANSFORMER	UV BUILDING ELECTRICAL ROOM	E501	600	3	4	E	E	E	G
TX 6002	PROCESS BUILDING TRANSFORMER	PROCESS BUILDING ELECTRICAL ROOM	E602	600	3	4	E	E	E	G
TX 6003	PROCESS BUILDING TRANSFORMER	PROCESS BUILDING ELECTRICAL ROOM	E602	600	3	4	E	E	E	G
TX 8002	ADMINISTRATION BUILDING TRANSFORMER	ADMINISTRATION BUILDING ELECTRICAL ROOM	E801	600	3	4	E	E	E	G
TX 8003	ADMINISTRATION BUILDING TRANSFORMER	ADMINISTRATION BUILDING ELECTRICAL ROOM	E801	600	3	4	E	E	E	G

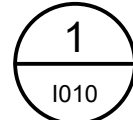
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TABLE OF DEVICES														FIELD WORK				
DEVICE TAG IDENTIFIER	PREVIOUS TAG	COMPONENT CODE	DEVICE DESCRIPTION	ELEMENT TAG	INS. TYPE	LOCATION	OPERATION	NOTES	SUPPLY BY	INSTALL BY	WIRE BY	COMM. BY						
AIT 3101		A02	AERATION TANK #1 DIFFUSER GRID DO ANALYZER	AE	DO	AERATION TANK NO. 1			SI	E	E	G						
AIT 3102		A02	AERATION TANK #2 DIFFUSER GRID DO ANALYZER	AE	DO	AERATION TANK NO. 2			SI	E	E	G						
AIT 4001		A03	EFFLUENT WATER ANALYZER	AE	UVI	UV DISINFECTION CHANNEL			SI	E	E	G						
AIT 4002			UV DISINFECTION BANK 1A ANALYZER	AE	UVI	UV DISINFECTION CHANNEL			M	E	E	G						
AIT 4003			UV DISINFECTION BANK 1B ANALYZER	AE	UVI	UV DISINFECTION CHANNEL			M	E	E	G						
AIT 9201		A01	HEADWORKS CH4 GAS MONITOR	AE	CH4	SCREEN AND DEGRIT ROOM			SI	E	E	G						
AIT 9202		A01	HEADWORKS CH4 GAS MONITOR	AE	CH4	SCREEN AND DEGRIT ROOM			SI	E	E	G						
AIT 9203		A01	HEADWORKS H2S GAS MONITOR	AE	H2S	SCREEN AND DEGRIT ROOM			SI	E	E	G						
AIT 9601		A01	PROCESS BUILDING CH4 GAS MONITOR	AE	CH4	PROCESS BUILDING BASEMENT			SI	E	E	G						
AIT 9602		A01	PROCESS BUILDING CH4 GAS MONITOR	AE	CH4	PROCESS BUILDING BASEMENT			SI	E	E	G						
AIT 9603		A01	PROCESS BUILDING H2S GAS MONITOR	AE	H2S	PROCESS BUILDING BASEMENT			SI	E	E	G						
DPSH 9201			MIST ELIMINATOR DIFFERENTIAL PRESSURE SWITCH			SCREEN AND DEGRIT ROOM			M	M	E	G						
DPSH 9901			AUTOMATIC STRAINER DIFFERENTIAL PRESSURE SWITCH			TUNNEL			M	M	E	G						
FIT 1101		F01	RAW SEWAGE FLOW TRANSMITTER #1	FE	MAG	TUNNEL			SI	E	E	G						
FIT 1102		F01	RAW SEWAGE FLOW TRANSMITTER #2	FE	MAG	TUNNEL			SI	E	E	G						
FIT 4001		F03	TREATED WATER FLOW METER	FE	UIS	UV BUILDING EXTERIOR			SI	E	E	G						
FIT 5101		F01	SLUDGE PUMP #1 FLOW METER	FE	MAG	PROCESS BUILDING BASEMENT			SI	E	E	G						
FIT 5102		F01	SLUDGE PUMP #2 FLOW METER	FE	MAG	PROCESS BUILDING BASEMENT			SI	E	E	G						
FIT 5103		F01	SLUDGE PUMP #3 FLOW METER	FE	MAG	PROCESS BUILDING BASEMENT			SI	E	E	G						
FIT 5104		F01	SLUDGE PUMP #4 FLOW METER	FE	MAG	PROCESS BUILDING BASEMENT			SI	E	E	G						
FS 7101		F02	FERRIC CHLORIDE FLOW SWITCH			FERRIC CHLORIDE STORAGE PAD			SI	E	E	G						
FSH 9501			UV BUILDING EYE WASH STATION FLOW SWITCH HIGH			UV DISINFECTION CHANNEL			M	M	E	G						
FSH 9601			PROCESS BUILDING EYE WASH STATIONS FLOW SWITCH HIGH			PROCESS BUILDING CHEMICAL ROOM			M	M	E	G						
HD 9201		T01	ELECTRICAL ROOM HEAT DETECTOR			HEADWORKS ELECTRICAL ROOM			SI	E	E	G						
HD 9501		T01	ELECTRICAL ROOM HEAT DETECTOR			UV BUILDING ELECTRICAL ROOM			SI	E	E	G						
HD 9601		T01	ELECTRICAL ROOM HEAT DETECTOR			PROCESS BUILDING ELECTRICAL ROOM			SI	E	E	G						
HD 9602		T01	ELECTRICAL ROOM HEAT DETECTOR			PROCESS BUILDING ELECTRICAL ROOM			SI	E	E	G						
HD 9801		T01	ELECTRICAL ROOM HEAT DETECTOR			ADMINISTRATION BUILDING ELECTRICAL ROOM			SI	M	M	G						
LIT 1101		L02	RAW SEWAGE WET WELL ULTRASONIC LEVEL TRANSMITTER	LE	UIS	SEWAGE PUMPING STATION			SI	E	E	G						
LIT 1102		L03	RAW SEWAGE WET WELL RADAR LEVEL TRANSMITTER	LE	RAD	SEWAGE PUMPING STATION			SI	E	E	G						
LIT 2101		L02	SCREENING RAW SEWAGE ULTRASONIC LEVEL TRANSMITTER	LE	UIS	SCREEN AND DEGRIT ROOM			SI	E	E	G						
LIT 2102			SCREENING GRINDER ULTRASONIC LEVEL TRANSMITTER	LE	UIS	SCREEN AND DEGRIT ROOM			PS	E	E	G						
LIT 2103			SCREENING GRINDER ULTRASONIC LEVEL TRANSMITTER	LE	UIS	SCREEN AND DEGRIT ROOM			PS	E	E	G						
LIT 4001			EFFLUENT WATER CHANNEL LEVEL TRANSMITTER	LE	UIS	UV DISINFECTION CHANNEL			SI	E	E	G						
LIT 5201			SCUM PIT LEVEL TRANSMITTER	LE	UIS	UV BUILDING EXTERIOR			SI	E	E	G						
LIT 7101		L05	FERRIC CHLORIDE STORAGE TANK #1 RADAR LEVEL TRANSMITTER	LE	RAD	FERRIC CHLORIDE STORAGE PAD			SI	E	E	G						
LIT 7102		L05	FERRIC CHLORIDE STORAGE TANK #2 RADAR LEVEL TRANSMITTER	LE	RAD	FERRIC CHLORIDE STORAGE PAD			SI	E	E	G						
LIT 7301		L03	DECANT WET WELL RADAR LEVEL TRANSMITTER	LE	RAD	DECANT WET WELL			SI	E	E	G						
LIT 7302			DECANT WET WELL ULTRASONIC LEVEL TRANSMITTER	LE	UIS	DECANT WET WELL			SI	E	E	G						
LSH 2201		L01	GRIT CHANNEL #1 HIGH LEVEL		FLOAT	GRIT CHANNEL NO. 1			SI	E	E	G						
LSH 2202		L01	GRIT CHANNEL #2 HIGH LEVEL		FLOAT	GRIT CHANNEL NO. 2			SI	E	E	G						
LSH 3101			FERRIC CHLORIDE SECONDARY CONTAINMENT LEAK LEVEL DETECTOR			PROCESS BUILDING CHEMICAL ROOM			SI	E	E	G						
LSH 7101			FERRIC CHLORIDE SECONDARY CONTAINMENT LEAK LEVEL DETECTOR			FERRIC CHLORIDE STORAGE PAD			SI	E	E	G						
LSH 7102			FERRIC CHLORIDE SECONDARY CONTAINMENT LEAK LEVEL DETECTOR			PROCESS BUILDING BASEMENT			SI	E	E	G						
LSH 7103			FERRIC CHLORIDE SECONDARY CONTAINMENT LEAK LEVEL DETECTOR			PROCESS BUILDING BASEMENT			SI	E	E	G						
LSH 7104		L05	FERRICE CHLORIDE PUMPS LEAK LEVEL DETECTOR		FLOAT	PROCESS BUILDING CHEMICAL ROOM			SI	E	E	G						
LSH 7105		L05	FERRIC CHLORIDE STORAGE TANK LEAK LEVEL DETECTOR		FLOAT	FERRIC CHLORIDE STORAGE PAD			SI	E	E	G						
LSHH 1101		L01	RAW SEWAGE WET WELL HIGH HIGH LEVEL FLOAT		FLOAT	SEWAGE PUMPING STATION			SI	E	E	G						
LSHH 7301		L04	DECANT WET WELL HIGH LEVEL		FLOAT	DECANT WET WELL			SI	E	E	G						
LSL 4001			EFFLUENT WATER CHANNEL LOW LEVEL		FLOAT	UV DISINFECTION CHANNEL			M	M	E	G						
PIT 3401		P01	ROTARY AERATION BLOWERS PRESSURE TRANSMITTER			PROCESS BUILDING BLOWER ROOM			SI	E	E	G						
PIT 9901		P01	EFFLUENT WATER PRESSURE TRANSMITTER 1	PE		TUNNEL			SI	E	E	G						
PIT 9902		P01	EFFLUENT WATER PRESSURE TRANSMITTER 2	PE		TUNNEL			SI	E	E	G						
TC 5201		16857	HEAT TRACE PIPING - CLARIFIER SCUM			UV BUILDING EXTERIOR			E	E	E	G						
TC 5202		16857	HEAT TRACE PIPING - CLARIFIER SCUM			UV BUILDING EXTERIOR			E	E	E	G						
TC 7101		16857	HEAT TRACE PIPING - FERRIC CHLORIDE			FERRIC CHLORIDE STORAGE PAD			E	E	E	G						
TC 7102		16857	HEAT TRACE PIPING - FERRIC CHLORIDE TANK #1			FERRIC CHLORIDE STORAGE PAD			E	E	E	G						
TC 7103		16857	HEAT TRACE PIPING - FERRIC CHLORIDE TANK #2			FERRIC CHLORIDE STORAGE PAD			E	E	E	G						
TC 9201		16857	HEAT TRACE PIPING - STORM DRAINAGE			HEADWORKS EXTERIOR			E	E	E	G						
TC 9202		16857	HEAT TRACE PIPING - ODOUR CONTROL			HEADWORKS EXTERIOR			E	E	E	G						
TC 9501		16857	HEAT TRACE PIPING - STORM DRAINAGE			UV BUILDING EXTERIOR			E	E	E	G						
TC 9601		16857	HEAT TRACE PIPING - STORM DRAINAGE			PROCESS BUILDING EXTERIOR			E	E	E	G						
TC 9602		16857	HEAT TRACE PIPING - FERRIC CHLORIDE CONTAINMENT PAD			FERRIC CHLORIDE STORAGE PAD			E	E	E	G						
TIT 9201		T03	SCREEN AND DEGRIT TEMPERATURE TRANSMITTER		RTD	SCREEN AND DEGRIT ROOM			SI	E	E	G						
TIT 9202		T02	ELECTRICAL ROOM TEMPERATURE TRANSMITTER		RTD	HEADWORKS ELECTRICAL ROOM			SI	E	E	G						
TIT 9501		T02	UV DISINFECTION CHANNEL TEMPERATURE TRANSMITTER		RTD	UV DISINFECTION CHANNEL			SI	E	E	G						
TIT 9502		T02	ELECTRICAL ROOM TEMPERATURE TRANSMITTER		RTD	UV BUILDING ELECTRICAL ROOM			SI	E	E	G						
TIT 9601		T02	BLOWER ROOM TEMPERATURE TRANSMITTER		RTD	PROCESS BUILDING BLOWER ROOM			SI	E	E	G						
TIT 9602		T03	BLOWER ROOM TEMPERATURE TRANSMITTER		RTD	PROCESS BUILDING BASEMENT			SI	E	E	G						
TIT 9603		T02	ELECTRICAL ROOM TEMPERATURE TRANSMITTER		RTD	PROCESS BUILDING ELECTRICAL ROOM			SI	E	E	G						
TIT 9604		T02	ELECTRICAL ROOM TEMPERATURE TRANSMITTER		RTD	PROCESS BUILDING ELECTRICAL ROOM			SI	E	E	G						
TIT 9605		T04	AMBIENT OUTDOOR AIR TEMPERATURE SENSOR		RTD	PROCESS BUILDING EXTERIOR			SI	E	E	G						
TIT 9801		T02	ELECTRICAL ROOM TEMPERATURE TRANSMITTER		RTD	ADMINISTRATION BUILDING ELECTRICAL ROOM			SI	M	M	G						
UAL 9200		O1	HEADWORKS GAS WARNING STACK LIGHT		RED	HEADWORKS EXTERIOR			SI	E	E	G						
UAL 9201		O1	HEADWORKS GAS WARNING STACK LIGHT		AMBER	HEADWORKS EXTERIOR			SI	E	E	G						
UAL 9202		O1	HEADWORKS GAS WARNING STACK LIGHT		CLEAR	HEADWORKS EXTERIOR			SI	E	E	G						
UAL 9203		O1	HEADWORKS GAS WARNING STACK LIGHT		BLUE	HEADWORKS EXTERIOR			SI	E	E	G						
UAL 9204		O2	HEADWORKS GAS WARNING STACK LIGHT		RED	SCREEN AND DEGRIT ROOM			SI	E	E	G						
UAL 9205		O2	HEADWORKS GAS WARNING STACK LIGHT		AMBER	SCREEN AND DEGRIT ROOM			SI	E	E	G						
UAL 9206		O2	HEADWORKS GAS WARNING STACK LIGHT		CLEAR	SCREEN AND DEGRIT ROOM			SI	E	E	G						
UAL 9207		O2	HEADWORKS GAS WARNING STACK LIGHT		BLUE	SCREEN AND DEGRIT ROOM			SI	E	E	G						
UAL 9208		O1	HEADWORKS GAS WARNING STACK LIGHT		RED	HEADWORKS EXTERIOR			SI	E	E	G						
UAL 9209		O1	HEADWORKS GAS WARNING STACK LIGHT		AMBER	HEADWORKS EXTERIOR			SI	E	E	G						
UAL 9210		O1	HEADWORKS GAS WARNING STACK LIGHT		CLEAR	HEADWORKS EXTERIOR			SI	E	E	G						
UAL 9211		O1	HEADWORKS GAS WARNING STACK LIGHT		BLUE	HEADWORKS EXTERIOR			SI	E	E	G						
UAL 9212		O2	HEADWORKS GAS WARNING STACK LIGHT		RED	SCREEN AND DEGRIT ROOM			SI	E	E	G						
UAL 9213		O2	HEADWORKS GAS WARNING STACK LIGHT		AMBER	SCREEN AND DEGRIT ROOM			SI	E	E	G						
UAL 9214		O2	HEADWORKS GAS WARNING STACK LIGHT		CLEAR	SCREEN AND DEGRIT ROOM			SI	E	E	G						
UAL 9215		O2	HEADWORKS GAS WARNING STACK LIGHT		BLUE	SCREEN AND DEGRIT ROOM			SI	E	E	G						
UAL 9600		O1	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		RED	PROCESS BUILDING EXIT STAIRS			SI	E	E	G						

TABLE OF DEVICES														
DEVICE TAG IDENTIFIER	PREVIOUS TAG	COMPONENT CODE	DEVICE DESCRIPTION	ELEMENT TAG	INS. TYPE	LOCATION	OPERATION	NOTES	FIELD WORK					
									SUPPLY BY	INSTALL BY	WIRE BY	COMM. BY		
UAL 9601		O1	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		AMBER	PROCESS BUILDING EXIT STAIRS			SI	E	E	G		
UAL 9602		O1	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		CLEAR	PROCESS BUILDING EXIT STAIRS			SI	E	E	G		
UAL 9603		O1	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		BLUE	PROCESS BUILDING EXIT STAIRS			SI	E	E	G		
UAL 9604		O2	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		RED	PROCESS BUILDING BASEMENT			SI	E	E	G		
UAL 9605		O2	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		AMBER	PROCESS BUILDING BASEMENT			SI	E	E	G		
UAL 9606		O2	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		CLEAR	PROCESS BUILDING BASEMENT			SI	E	E	G		
UAL 9607		O2	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		BLUE	PROCESS BUILDING BASEMENT			SI	E	E	G		
UAL 9608		O2	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		RED	PROCESS BUILDING BASEMENT			SI	E	E	G		
UAL 9609		O2	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		AMBER	PROCESS BUILDING BASEMENT			SI	E	E	G		
UAL 9610		O2	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		CLEAR	PROCESS BUILDING BASEMENT			SI	E	E	G		
UAL 9611		O2	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		BLUE	PROCESS BUILDING BASEMENT			SI	E	E	G		
UAL 9612		O1	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		RED	TUNNEL			SI	E	E	G		
UAL 9613		O1	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		AMBER	TUNNEL			SI	E	E	G		
UAL 9614		O1	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		CLEAR	TUNNEL			SI	E	E	G		
UAL 9615		O1	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		BLUE	TUNNEL			SI	E	E	G		
YA 9200		O3	HEADWORKS GAS WARNING STACK LIGHT		HORN	HEADWORKS EXTERIOR			SI	E	E	G		
YA 9201		O3	HEADWORKS GAS WARNING STACK LIGHT		HORN	SCREEN AND DEGRIT ROOM			SI	E	E	G		
YA 9202		O3	HEADWORKS GAS WARNING STACK LIGHT		HORN	HEADWORKS EXTERIOR			SI	E	E	G		
YA 9203		O3	HEADWORKS GAS WARNING STACK LIGHT		HORN	SCREEN AND DEGRIT ROOM			SI	E	E	G		
YA 9600		O3	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		HORN	PROCESS BUILDING EXIT STAIRS			SI	E	E	G		
YA 9601		O3	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		HORN	PROCESS BUILDING BASEMENT			SI	E	E	G		
YA 9602		O3	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		HORN	PROCESS BUILDING BASEMENT			SI	E	E	G		
YA 9603		O3	PROCESS BUILDING BASEMENT GAS WARNING STACK LIGHT		HORN	TUNNEL			SI	E	E	G		

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrade\03-Production\06-Elect\32296-001 - BILL OF MATERIALS.dwg

CONTROL PANELS BILL OF MATERIALS				
ITEM	MANUFACTURER	PART NUMBER	DESCRIPTION	COMMENTS
1	HAMMOND	FLK17LED	39" LED LIGHT KIT (120VAC).	1. PROVIDE REQUIRED MOUNTING APPURTENANCES. 2. HOFFMAN EQUIVALENT IS ACCEPTABLE.
2	HAMMOND	FLKDS	REMOTE DOOR SWITCH C/W FORM C CONTACT	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.
3	RALSTON	Z-5020	ANSI 61 GREY 18" X 18" LARGE FOLDING SHELF	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.
4	HAMMOND		SHEET POCKET. LARGE ENOUGH FOR UNFOLDED 11" X 17" SHEETS.	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.
5	RESERVED			
6	ALLEN-BRADLEY	PLC-X000	REFER TO SERIES DRAWINGS FOR PLC COMPONENT LIST AND I/O TABLES	
7	EATON POWERWARE		REFER TO SECTION 17100	1. UPS MOUNTED INSIDE PANEL
8	ALLEN-BRADLEY	1489-M1C SERIES	1-POLE MINIATURE CIRCUIT BREAKER (120VAC)	1. SCHNEIDER EQUIVALENT IS ACCEPTABLE.
9	ALLEN-BRADLEY	1489-D1C SERIES	1-POLE MINIATURE CIRCUIT BREAKER (24VDC)	1. SCHNEIDER EQUIVALENT IS ACCEPTABLE.
10	ALLEN-BRADLEY	700-HC24A1-3-4	120VAC 4-POLE MINIATURE SQUARE BASE RELAY C/W PUSH-TO-TEST AND LED. PROVIDE 700-HN104 MINI 14-BLADE SOCKET AND 700-AV3R VARISTOR LED SURGE SUPPRESSOR.	1. USED FOR POWER FAIL RELAY AND CONTROL
11	ALLEN-BRADLEY	700-HC24Z24-3-4	24VDC 4-POLE MINIATURE SQUARE BASE RELAY C/W PUSH-TO-TEST AND LED. PROVIDE 700-HN104 MINI 14-BLADE SOCKET AND 700-ADL1 DIODE LED SURGE SUPPRESSOR.	
12	ALLEN-BRADLEY	199-DR1	35mm X 15mm SYMMETRICAL ZINC PLATED DIN RAIL. PROVIDE MATCHING STAND-OFFS AS REQUIRED TO RAISE HEIGHT OF COMPONENTS.	1. PHOENIX CONTACT EQUIVALENT IS ACCEPTABLE.
13	ALLEN BRADLEY	100-C SERIES	CONTACTOR	
14	ALLEN BRADLEY	800TC SERIES	FINGER-SAFE PUSH-TO-TEST PILOT LIGHT c/w 800T SERIES ALUMINUM LEGEND PLATE	
15	ALLEN BRADLEY	800T SERIES	ALUMINUM LEGEND PLATE (STANDARD SIZE), ENGRAVED BY MANUFACTURER	
16	RESERVED			
17	HUBBELL	DRUB15 SERIES	DIN RAIL UTILITY BOX COMPLETE WITH 5-15R DUPLEX RECEPTACLE. BUILT-IN GFCI WHERE INDICATED ON DRAWINGS.	1. PROVIDE REQUIRED APPURTENANCES FOR MOUNTING HORIZONTALLY OR VERTICALLY, AS INDICATED.
18	GRACE ENGINEERED PRODUCTS, INC.	P-R62-73R70 SERIES	PLC ETHERNET (CAT6, RJ45F) PROGRAMMING PORT C/W DUPLEX GFCI RECEPTACLE, NEMA 4/12 HOUSING. CLEAR COVER. TEST/RESET GFCI BUTTONS ON OUTSIDE. NON-GFCI INSIDE/OUTSIDE VERSION.	1. CONFIRM EXACT PART NUMBER WITH MANUFACTURER.
19	PHOENIX CONTACT	PLC-RSC-24DC/21	24VDC TERMINAL STYLE RELAY C/W 1 FORM C CONTACT, SCREW CONNECTION	1. PROVIDE A RELAY PER DIGITAL OUTPUT POINT
20	PHOENIX CONTACT	PLC-RSC-120UC/21	120VAC TERMINAL STYLE RELAY C/W 1 FORM C CONTACT, SCREW CONNECTION	
21	HUBBELL	IG SERIES	UPS SINGLE RECEPTACLE, 30A, PROVIDE SUITABLE ACCESSORIES	1. PROVIDE REQUIRED APPURTENANCES FOR MOUNTING AS INDICATED.
22	RESERVED			
23	ALLEN BRADLEY	STRATIX 5200	10/100/1000 PORTS, MANAGED SWITCH, PROVIDE ETHERNET SWITCH WITH FOUR (4) SPARE PORTS.	
24	PHOENIX CONTACT	QUINT-PS1/ 1AC/24DC/ 10	SINGLE-PHASE PRIMARY-SWITCHED 10A 24VDC POWER SUPPLY	
25	PHOENIX CONTACT	QUINT-DIODE/12-24DC/ 2X20/1X40	24VDC REDUNDANCY MODULE	
26	BELDEN	MIPP/AD/C SERIES	PATCH PANEL C/W RJ45 KEYSTONE SINGLE COPPER MODULE(S)	1. NUMBER OF PORTS TO SUIT PLUS 25% SPARE. REFER TO SECTION 17060.
27	BELDEN	MIPP/AD/1 SERIES	FIBRE PATCH PANEL c/w LC DUPLEX MODULE(S)	1. NUMBER OF PORTS TO SUIT PLUS 25% SPARE. REFER TO SECTION 17060.
28	PHOENIX CONTACT	MINI MCR-SL-UI-UI-NC	CONFIGURABLE ANALOG SIGNAL CONDITIONER	1. PROVIDE A SIGNAL AMPLIFIER PER ANALOG INPUT AND OUTPUT
29	PHOENIX CONTACT	UT 4-L/HESILED 24	FUSE MODULAR TERMINAL BLOCK, PROVIDE 100mA GLASS FUSE FOR ALL ANALOG POINTS. 120KOHM, LED INDICATION FOR BLOWN FUSE	
30	PHOENIX CONTACT	UKK 5-MTK-P/P	2-TIER KNIFE DISCONNECT TERMINAL BLOCK, SCREW CONNECTION	
31	PHOENIX CONTACT	UK 6 N	UNIVERSAL TERMINAL BLOCK, SCREW CONNECTION	1. USED FOR HIGH CURRENT CONNECTIONS
32	PHOENIX CONTACT	UK 5 N	UNIVERSAL TERMINAL BLOCK, SCREW CONNECTION	1. USED FOR 120VAC/24VDC CONNECTIONS.



CONTROL PANEL BILL OF MATERIALS

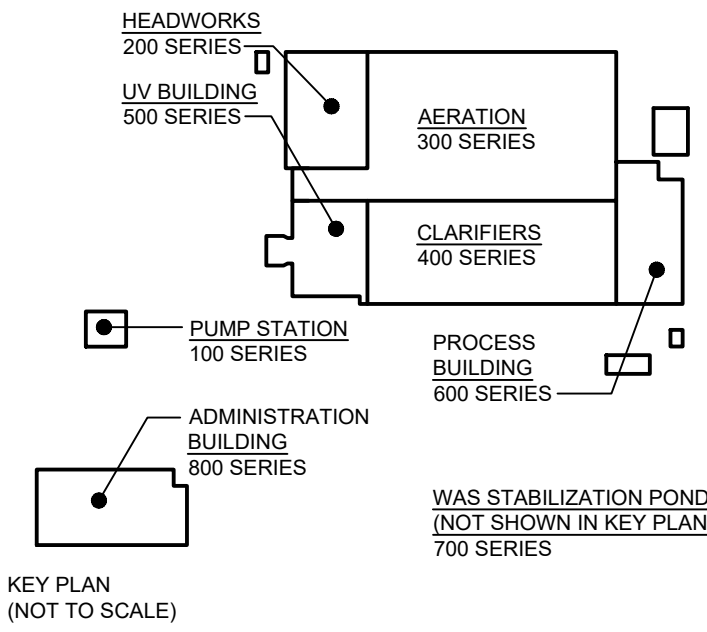
SCALE: N.T.S.

CONTROL PANELS BILL OF MATERIALS				
ITEM	MANUFACTURER	PART NUMBER	DESCRIPTION	COMMENTS
33	PHOENIX CONTACT	USLKG 5	GROUND TERMINAL BLOCK, SCREW CONNECTION	
34	PHOENIX CONTACT	CLIPFIX 35	SNAP-ON END BRACKET	
35	PHOENIX CONTACT	KLM + ESL 26X6	TERMINAL STRIP MARKERS / GROUP LABELS	
36	PHOENIX CONTACT	UTT8 4	DOUBLE LEVEL TERMINAL BLOCK PROVIDE END COVER TO SUIT.	
37	PANDUIT	CWD3LG6 SERIES	4.40" W X 3.57" H. 2" LIGHT GREY NARROW SLOT WIRING CORNER DUCT c/w MATCHING COVER	
38			ISOLATED COPPER GROUND BAR	1. USED FOR 24VDC CIRCUITS AND ANALOG SIGNALS
39	ILSCO		COPPER GROUND BAR	
40			TAPPED GROUND BUS c/w 20% SPARE CAPACITY	
41			50mm X 150mm LAMACOID WITH WHITE BACKGROUND AND BLACK 25mm HIGH CHARACTERS	
42			LAMACOID WITH RED BACKGROUND AND WHITE CHARACTERS. CHARACTER HEIGHT: 19mm FIRST LINE; 12mm SUBSEQUENT LINES.	1. SIZE LAMACOID TO SUIT
43			ESA SHOCK HAZARD STICKER	
44			PROVIDE A SCHEDULE OF BREAKERS AND RELAYS FOR EACH PANEL. SCHEDULE TO BE ON LAMINATED 8½" X 11" PAPER.	1. AFFIX THE SCHEDULE INSIDE THE ENCLOSURE.
45				
46	TOTAL PROTECTION SOLUTIONS	TK-LTE120-30A-DIN2	SURGE PROTECTIVE DEVICE, 20kA PER PHASE, 30A, 120VAC, C/W COMPONENT LEVEL FUSING.	1. SIZE SURGE PROTECTOR TO SUIT LOAD REQUIREMENT
47	ALLEN-BRADLEY	2711P-T12W22D9P	12" PANELVIEW PLUS 7 GRAPHIC TERMINAL, SERIES N, 24VDC	
48	PANDUIT	F7X7LG6 SERIES	7" X 7" LIGHT GREY NARROW SLOT WIRING DUCT c/w MATCHING COVER. SIZED TO SUIT	1. PROVIDE PANEL STANDOFFS. DUCT HEIGHTS TO MATCH THAT OF ADJACENT DUCTS.
49	FINDER	83 SERIES	MULTI-FUNCTION MODULAR TIMER WITH WATCHDOG FUNCTION	

SPARE COMPONENT LIST:

- A. PROVIDE THE SPARE COMPONENTS IN UNOPENED PACKAGING AS INDICATE BELOW AND TURN OVER TO THE MUNICIPALITY AT THE END OF THE PROJECT. THE CONTRACTOR SHALL PROVIDE THE LISTED ITEMS BELOW AND ALSO PROVIDE THE LIST OF SPARE COMPONENTS FROM SPECIFICATION SECTION 17051.

- A.A. ONE (1) PLC PROCESSOR. PER ITEM 6.
A.B. ONE (1) CARD OF EACH TYPE. REFER TO ITEM 6. ETHERNET, AS WELL AS I/O CARDS.
A.C. ONE (1) POWER SUPPLY. PER ITEM 24.
A.D. ONE (1) ETHERNET SWITCH. PER ITEM 23.
A.E. ONE (1) REDUNDANCY MODULE. PER ITEM 25.
A.F. ONE (1) PLC POWER SUPPLY. PER ITEM 6.



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

0	ISSUED FOR TENDER	25/04/25
No.	ISSUE / REVISION	DD/MM/YY

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25MM IF THIS IS A FULL SIZE DRAWING.

SCALE: N.T.S.

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL
SITE WIDE
CONTROL PANEL BILL OF MATERIALS

DESIGN: SB	DRAWING #:
DRAWN: NB	1010
CHECKED: LO/BM	
JLR #: 32296-001	

PLOT DATE: Tuesday, April 29, 2025 11:24:00 AM

File Location: P:\2020\032296-001 - Brighton WWT System Upgrade\03-Production\06-Elect\32296-001 - BILL OF MATERIALS.dwg

PANELS BILL OF MATERIALS				
GROUP 1	HAMMOND	ECLIPSE, EN4SD SERIES	NEMA 4X, STAINLESS STEEL, WALL MOUNT ENCLOSURE c/w MATCHING WHITE REAR PANEL. SIZE ENCLOSURE TO SUIT.	1. JUNIOR ECLIPSE EJ SERIES IS ACCEPTABLE. 2. HOFFMAN EQUIVALENT IS ACCEPTABLE.
	HOFFMAN	H2OMIT SERIES	CONTROL PANEL VENT DRAIN	
	HOFFMAN	EX E SERIES	CLASS 1 DIVISION 1 HAZARDOUS AREA CONTROL PANEL VENT DRAIN	1. AS REQUIRED PER AREA CLASSIFICATION
	PHOENIX CONTACT	USLKG 5	GROUND TERMINAL BLOCK, SCREW CONNECTION	
GROUP 2			LAMACOID WITH WHITE BACKGROUND AND BLACK 5mm HIGH CHARACTERS	1. SIZE LAMACOID TO SUIT.
	ALLEN-BRADLEY	199-DR1	35mm X 15mm SYMMETRICAL ZINC PLATED DIN RAIL. PROVIDE MATCHING STAND-OFFS AS REQUIRED TO RAISE HEIGHT OF COMPONENTS.	1. PHOENIX CONTACT EQUIVALENT IS ACCEPTABLE.
	ALLEN-BRADLEY	800TC SERIES	FINGER-SAFE PUSH-TO-TEST PILOT LIGHT c/w 800T SERIES ALUMINUM LEGEND PLATE	
	ALLEN-BRADLEY	800T SERIES	ALUMINUM LEGEND PLATE (STANDARD SIZE). ENGRAVED BY MANUFACTURER.	
GROUP 3	ALLEN-BRADLEY	800TC SERIES	FINGER SAFE MULTI-POSITION SELECTOR SWITCH, BLACK W/ WHITE INSERT. NUMBER OF CONTACTS TO SUIT.	
	ALLEN-BRADLEY	800T SERIES	ALUMINUM LEGEND PLATE (STANDARD SIZE). ENGRAVED BY MANUFACTURER.	
GROUP 4	ALLEN BRADLEY	800TC SERIES	FINGER-SAFE POTENTIOMETER c/w 800T SERIES ALUMINIUM LEGEND PLATE. SELECT IMPEDANCE RANGE TO SUIT	
GROUP 5	PRECISION DIGITAL	PD6000 SERIES	DIGITAL DATA DISPLAY. c/w SUNBRIGHT 0.6" DUAL LINE, 6 DIGIT, LED DISPLAY; 4 RELAYS AND 4-20 mA OUTPUT.	1. VOLTAGE TO SUIT.
	ALLEN-BRADLEY	700-HK32Z24-3-4	24VDC 2-POLE SLIM LINE RELAY C/W PUSH-TO-TEST, MANUAL OVERRIDE AND LED. PROVIDE 700-HN2Z2 SOCKET AND 700-ADL1R DIODE WITH LED SURGE SUPPRESSOR.	1. QUANTITY AND NUMBER OF POLE TO SUIT.
	ALLEN-BRADLEY	700-HC24Z24-3-4	24VDC 4-POLE MINIATURE SQUARE BASE RELAY C/W PUSH-TO-TEST AND LED. PROVIDE 700-HN104 MINI 14-BLADE SOCKET AND 700-ADL1 DIODE LED SURGE SUPPRESSOR.	1. QUANTITY AND NUMBER OF POLE TO SUIT.
	ALLEN-BRADLEY	700-HK32A1-3-4	120VAC 2-POLE SLIM LINE RELAY C/W PUSH-TO-TEST, MANUAL OVERRIDE AND LED. PROVIDE 700-HN2Z2 SOCKET AND 700-ADL1R DIODE WITH LED SURGE SUPPRESSOR.	1. QUANTITY AND NUMBER OF POLE TO SUIT.
GROUP 6	ALLEN-BRADLEY	700-HC24A1-3-4	120VAC 4-POLE MINIATURE SQUARE BASE RELAY C/W PUSH-TO-TEST AND LED. PROVIDE 700-HN104 MINI 14-BLADE SOCKET AND 700-AV3R VARISTOR LED SURGE SUPPRESSOR.	1. QUANTITY AND NUMBER OF POLE TO SUIT.
	ALLEN-BRADLEY	855T SERIES (70mm)	STACK LIGHTS	
GROUP 7	ALLEN-BRADLEY	800TC/800H	2- POSITION PUSH-PULL MUSHROOM HEAD EMERGENCY STOP BUTTON	
GROUP 8	ALLEN-BRADLEY	1489-M SERIES	CIRCUIT BREAKER (120VAC)	1. SCHNEIDER EQUIVALENT IS ACCEPTABLE.
	ALLEN BRADLEY	100L SERIES	LIGHTING CONTACTOR	
GROUP 9	ALLEN-BRADLEY	1489-M SERIES	CIRCUIT BREAKER (120VAC)	1. SCHNEIDER EQUIVALENT IS ACCEPTABLE.
	ALLEN-BRADLEY	1492-SP SERIES	SUPPLEMENTARY PROTECTOR (24VDC)	1. SCHNEIDER EQUIVALENT IS ACCEPTABLE.
GROUP 12	ALLEN-BRADLEY	100 C SERIES	CONTACTOR	
GROUP 13	ILSCO		COPPER LUG FOR TWO (2) 12AWG TO 2/0 GROUND WIRE	
GROUP 14	ALLEN-BRADLEY	800TC SERIES	PUSH BUTTON	1. PUSHBUTTON TO BE FLUSH HEAD UNLESS OTHERWISE NOTED.
GROUP 15	HOFFMAN	DAH SERIES	120VAC ELECTRIC HEATER WITH BUILT-IN FAN AND THERMOSTAT. BRUSHED ALUMINUM FINISH. THERMOSTAT RANGE: -18°C TO 38°C.	1. HAMMOND EQUIVALENT IS ACCEPTABLE. 2. SIZE HEATER TO SUIT ENCLOSURE. PROVIDE HEAT CALCULATIONS FOR REVIEW.
	HAMMOND	SKTD SERIES	TWIN THERMOSTAT WITH TWO INDEPENDENTLY SWITCHABLE THERMOSTATS. RANGE: 0°C TO 60°C (MINIMUM). UNIT IN CELSIUS.	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.
GROUP 16	HAMMOND	ECLIPSE, EN4SD SERIES	SINGLE DOOR NEMA 4 ANSI 61 GREY ENCLOSURE WITH WINDOW. SIZE ENCLOSURE TO SUIT.	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.
	HAMMOND	EP SERIES	INNER PANEL FOR ECLIPSE EN4SD SERIES PANEL. SIZE ENCLOSURE TO SUIT.	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.
GROUP 17	ALLEN BRADLEY	700-FS SERIES	24VDC FLASHER (REPEAT CYCLE STARTS W/ PULSE) HIGH PERFORMANCE TIMER (0.15 TO 3 SECONDS) C/W FORM C CONTACT.	
GROUP 18	ALLEN BRADLEY	700-FS SERIES	24VDC ONE SHOT HIGH PERFORMANCE TIMER (0.5 TO 10MIN) C/W FORM C CONTACT.	
GROUP 19	ALLEN-BRADLEY	E100 SERIES	ELECTRONIC OVERLOAD RELAY	1. PROVIDE REMOTE RESET ACCESSORY c/w PUSHBUTTON ON PANEL DOOR
GROUP 20	FERRAZ SHAWMUT (MERSEN)	FSPDB SERIES	FINGER-SAFE POWER DISTRIBUTION BLOCKS	1. REFER TO SPECIFICATIONS SECTION 17051. 2. PROVIDE FSPIN1 (PIN) AND FSCAPX (CAP PLUG) SERIES ACCESSORIES.
GROUP 21	ALLEN-BRADLEY	140 U SERIES	H-FRAME MOULDED CASE SWITCH PROVIDE AUXILIARY CONTACT FOR CIRCUIT BREAKER STATUS 140MT SERIES	1. c/w ROTARY VARIABLE DEPTH OPERATING MECHANISM AND OPERATING ROD, SIZED TO SUIT 2. EATON EQUIVALENT IS ACCEPTABLE
	FERRAZ SHAWMUT (MERSEN)	ULTRASAFE SERIES	FUSE HOLDER	1. c/w MATCHING BUSSMAN FUSES
	ALLEN-BRADLEY	1497 SERIES	CONTROL CIRCUIT TRANSFORMER	1. c/w IP2X APPURTENANCES, AS REQUIRED FOR IP2X WIRING RATING 2. OR APPROVED EQUIVALENT

GENERAL NOTES FOR MISCELLANEOUS PANELS:

- REFER TO PANEL WIRING LOGIC DIAGRAMS.
- PROVIDE SHOP DRAWINGS FOR EACH PANEL. SHOP DRAWING PACKAGE TO INCLUDE DETAILED PROPOSED FACEPLATE AND REAR PANEL LAYOUTS, DETAILED WIRING DIAGRAMS AND DATASHEETS FOR EACH PROPOSED COMPONENT.
- THE PANEL BUILDER IS RESPONSIBLE FOR THE REAR PANEL LAYOUTS.
- WIRE EACH PANEL PER THE INTENT OF THE WIRING LOGIC PROVIDED.
- PROVIDE A LAMACOID FOR EACH PANEL.
- FOR EACH 800T SERIES OPERATOR INTERFACE DEVICE PROVIDE THE CORRESPONDING MANUFACTURER ENGRAVED LEGEND PLATE PER GROUP 2.
- REFER TO DRAWING I010 AND SECTION 17051 FOR FURTHER DETAILS.
- PROVIDE TERMINAL BLOCKS, WIRE DUCTS, GROUND BARS AND OTHER ACCESSORIES, AS REQUIRED, FOR A COMPLETE INSTALLATION, PER DRAWING I010. PROVIDE TERMINALS AND WIRE DUCTS FOR ALL LOCAL CONTROL PANELS AND ALL CONTROL PANELS. PROVIDE END ANCHORS TO SECURE TERMINALS.
- PROVIDE ENOUGH TERMINAL BLOCKS TO TERMINATE ALL CONDUCTORS OF ALL CABLES CONNECTED TO THE PANEL. REFER TO BLOCK DIAGRAMS AND OTHER PERTINENT DRAWINGS.
- SIZE DIN RAILS TO ACCOMMODATE ALL THE TERMINALS AND COMPONENTS PLUS 10% SPARE.
- LABEL TERMINAL BLOCKS NUMERICALLY, STARTING AT 1 AND INCREMENTING BY 1.
- PROVIDE AT LEAST 50mm SPACE BETWEEN WIRE DUCT AND TERMINALS.

DETAIL NOTES:

- NEMA 4 ENCLOSURES ARE ACCEPTABLE IN ELECTRICAL ROOMS. ALL OTHER AREAS EXCEPT HAZARDOUS AREAS TO BE NEMA 4X STAINLESS STEEL.
 - ENCLOSURES IN HAZARDOUS AREAS SHALL BE RATED NEMA 7.
- PROVIDE H2OMIT PANEL VENT DRAIN FOR ALL EXTERIOR PANELS EXCEPT HAZARDOUS AREAS.
 - EX E SERIES FOR HAZARDOUS AREA PANEL VENT DRAIN.
- RELAY VOLTAGES AND NUMBER OF POLES TO SUIT APPLICATION.
- PROVIDE R5, R FOIL INSULATION IN ALL HEATED ENCLOSURES.
- ENCLOSURES SERVICING POWER CABLES ARE TO HAVE TERMINAL BLOCKS SIZED TO SUIT.

JUNCTION BOX BILL OF MATERIALS			
PHOENIX CONTACT	UK 5 N	UNIVERSAL TERMINAL BLOCK, SCREW CONNECTION	1. USED FOR 120VAC/24VDC CONNECTIONS.
PHOENIX CONTACT	USLKG 5	GROUND TERMINAL BLOCK, SCREW CONNECTION	
PHOENIX CONTACT	CLIPFIX 35	SNAP-ON END BRACKET	
PHOENIX CONTACT	KLM + ESL 26X6	TERMINAL STRIP MARKERS / GROUP LABELS	
		COPPER GROUND BAR	
ALLEN-BRADLEY	199-DR1	35mm X 15mm SYMMETRICAL ZINC PLATED DIN RAIL. PROVIDE MATCHING STAND-OFFS AS REQUIRED TO RAISE HEIGHT OF COMPONENTS.	1. PHOENIX CONTACT EQUIVALENT IS ACCEPTABLE.
		50mm X 150mm LAMACOID WITH WHITE BACKGROUND AND BLACK 25mm HIGH CHARACTERS	
HOFFMAN	EX E SERIES	CLASS 1 DIVISION 1 HAZARDOUS AREA CONTROL PANEL VENT DRAIN	
ALLEN-BRADLEY	1489-M SERIES	MINIATURE CIRCUIT BREAKER (120VAC)	1. SCHNEIDER EQUIVALENT IS ACCEPTABLE.
ALLEN-BRADLEY	1492-SP SERIES	SUPPLEMENTARY PROTECTOR (24VDC)	1. SCHNEIDER EQUIVALENT IS ACCEPTABLE.
PEPPERS + FUCHS	K SERIES	INTRINSICALLY SAFE RELAY	1. VOLTAGE AND NUMBER OF CONTACTS TO SUIT.
PHOENIX CONTACT	UK 6N	UNIVERSAL TERMINAL BLOCK, SCREW CONNECTION	1. USED FOR 120VAC/24VDC CONNECTIONS 40A > 20A.
PHOENIX CONTACT	UK 5N	UNIVERSAL TERMINAL BLOCK, SCREW CONNECTION	1. USED FOR 120VAC/24VDC CONNECTIONS <20A.
SIEMENS	LT500	LEVEL TRANSMITTER	
HAMMOND	ECLIPSE, EN4SD SERIES	NEMA 4X, STAINLESS STEEL, WALL MOUNT ENCLOSURE c/w MATCHING WHITE REAR PANEL. SIZE ENCLOSURE TO SUIT.	1. JUNIOR ECLIPSE EJ SERIES IS ACCEPTABLE. 2. HOFFMAN EQUIVALENT IS ACCEPTABLE.
	HOFFMAN	H2OMIT SERIES	CONTROL PANEL VENT DRAIN
CROUSE-HINDS		CLASS 1 DIV 1, NEMA 7 ENCLOSURE, SIZE TO SUIT.	1. EMERSON EQUIVALENT IS ACCEPTABLE.

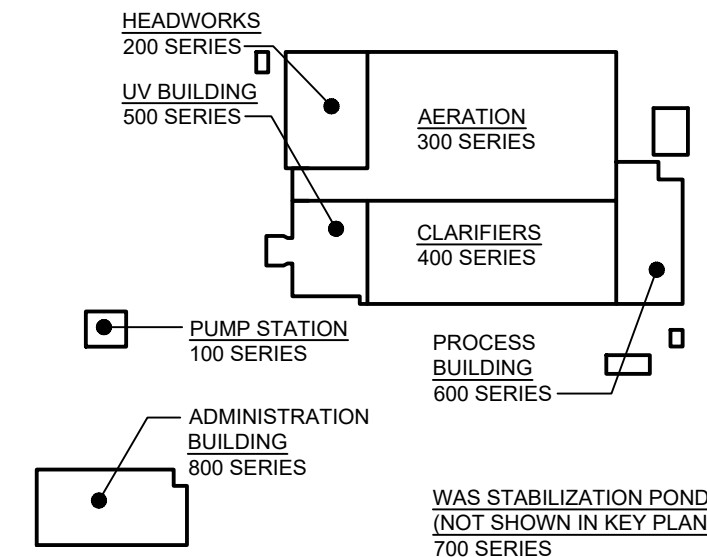
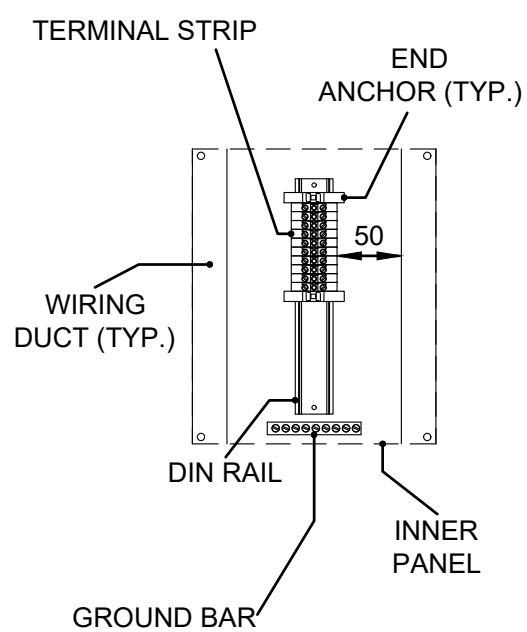
GENERAL DRAWING NOTES:

- REFER TO TABLE OF PANELS ON DRAWINGS I001 AS WELL AS CONTROL PANEL BILL OF MATERIALS ON I010.

DETAIL NOTES:

GENERAL NOTES FOR JUNCTION BOXES:

- PROVIDE ENOUGH TERMINALS TO TERMINATE ALL CONDUCTORS OF ALL CABLES CONNECTED TO THE JUNCTION BOX. REFER TO BLOCK DIAGRAMS.
 - SIZE EACH JUNCTION BOX TO ACCOMMODATE THE NUMBER OF TERMINALS.
 - SIZE THE DIN RAIL TO ACCOMMODATE THE NUMBER OF TERMINALS PLUS 10% SPARE.
 - ALTERNATIVE LAYOUT MAY BE CONSIDERED AT TIME OF SHOP DRAWINGS REVIEW.
 - PROVIDE AT LEAST 50mm SPACE BETWEEN WIRE DUCT AND TERMINAL.
 - TERMINAL BLOCKS TO BE LABELED NUMERICALLY, STARTING AT 1 AND INCREMENTING BY 1.
 - JUNCTION BOX WIRING SHALL BE IP2X. PROVIDE ALL ACCESSORIES REQUIRED FOR A IP2X RATING.
 - PROVIDE A LAMACOID LABEL AS INDICATED ON THE DRAWINGS.
 - USE SUITABLE CONSTRUCTION GRADE ADHESIVE TO SECURE LAMACOID TO JUNCTION BOX. ENSURE ADHESIVE IS RATED FOR THE INTENDED ENVIRONMENTAL CONDITIONS. SCREWS, OR OTHER MEANS REQUIRING PUNCTURING OF THE ENCLOSURE, IS NOT ACCEPTABLE.
 - REFER TO DRAWING I010 AND SECTION 17051 FOR FURTHER DETAILS.
- NEMA 4 ENCLOSURES ARE ACCEPTABLE IN ELECTRICAL ROOMS. ALL OTHER AREAS EXCEPT HAZARDOUS AREAS TO BE NEMA 4X STAINLESS STEEL.
 - JUNCTION BOXES IN HAZARDOUS AREAS SHALL BE RATED NEMA 7.
 - PROVIDE H2OMIT PANEL VENT DRAIN FOR ALL EXTERIOR JUNCTION BOXES EXCEPT HAZARDOUS AREAS.
 - EX E SERIES FOR HAZARDOUS AREA PANEL VENT DRAIN.
 - ALL ITEMS LISTED ABOVE TO BE USED AS REQUIRED FOR A COMPLETE ASSEMBLY.
 - JUNCTION BOXES SERVICING POWER CABLES ARE TO HAVE TERMINAL BLOCKS SIZED TO SUIT.



KEY PLAN
(NOT TO SCALE)

DESIGN DOCUMENTS HEREIN HAVE
BEEN DESIGNED UNDER THE ONTARIO
BUILDING CODE 2012.

0 ISSUED FOR TENDER 25/04/25

No. ISSUE / REVISION DDMMYY

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SCALE: NTS

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL
SITE WIDE
MISCELLANEOUS CONTROL
PANELS

DESIGN: SB

DRAWN: NB

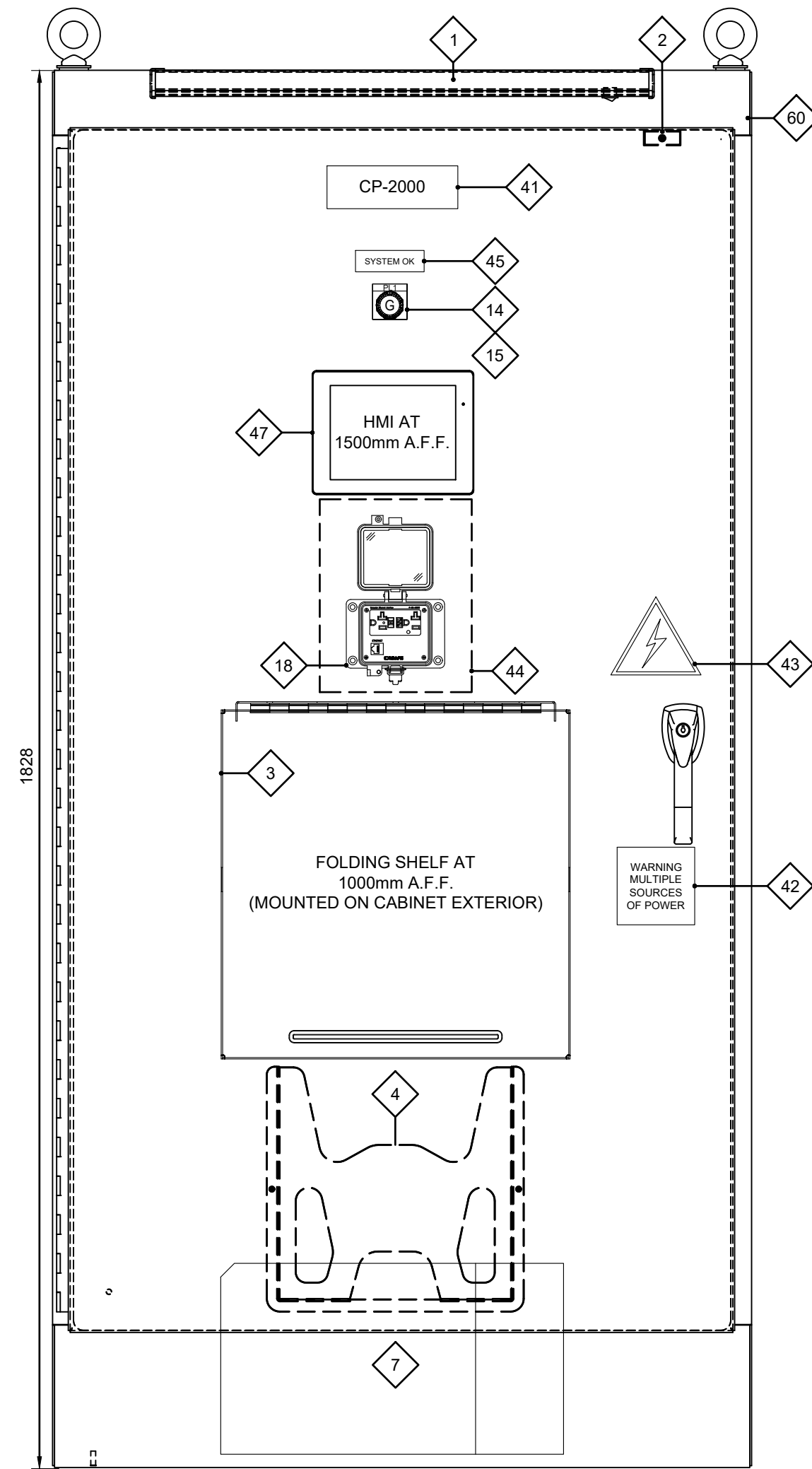
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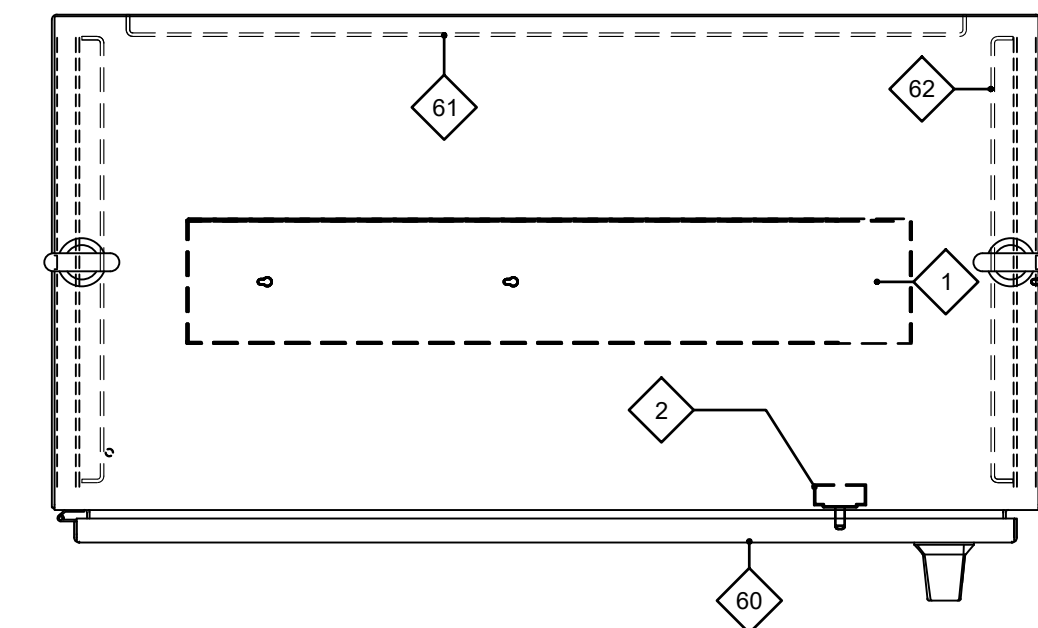
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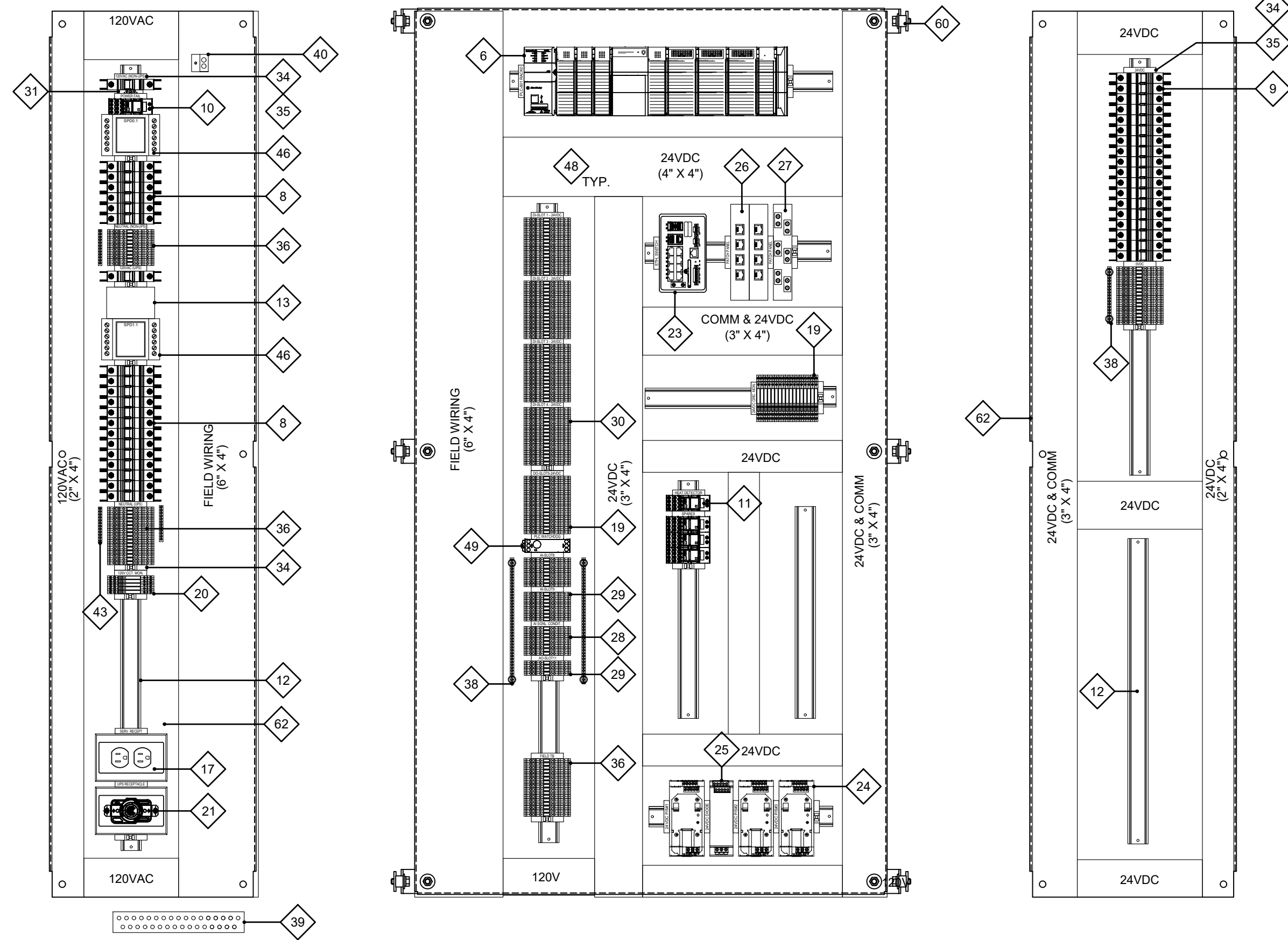
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1 CP-2000 FRONT VIEW
SCALE: NTS



2 TOP VIEW
SCALE: N.T.S.



3 LEFT DEPTH PANEL
SCALE: NTS

4 REAR PANEL
SCALE: NTS

5 RIGHT DEPTH PANEL
SCALE: NTS

NOTES:

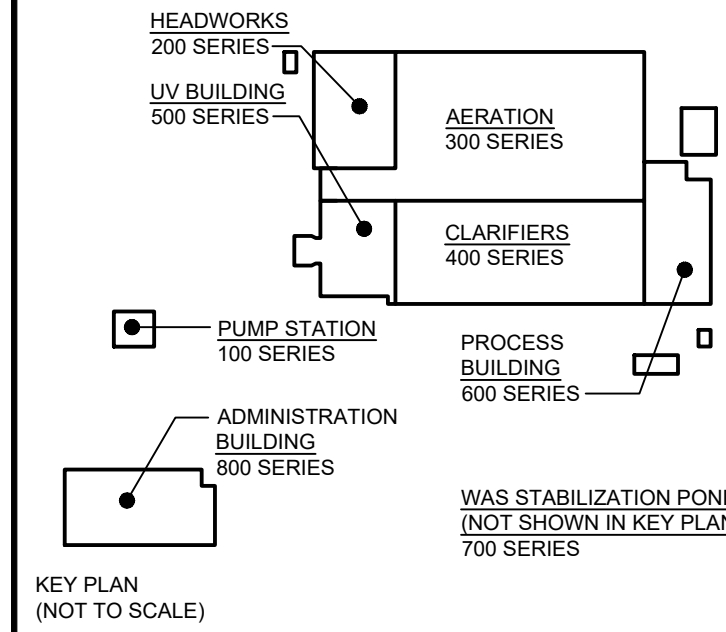
- EACH DEPTH PANEL TO BE MOUNTED AS FAR FORWARD AS POSSIBLE IN THE CABINET TO MINIMIZE OBSTRUCTION OF THE ITEMS ON THE REAR PANEL.
- DUCTING FOR PLC COMMUNICATIONS CABLING TO BE ELEVATED USING PANEL STANDOFFS (OR EQUIVALENT). FINAL HEIGHT OF COMMUNICATIONS DUCTING TO MATCH THAT OF ADJACENT DUCTING. PLC I/O WIRING TO BE ROUTED BENEATH PLC COMMUNICATIONS DUCTING.
- EXPANSION AND SFP MODULES NOT SHOWN. PROVIDE EXPANSION MODULES TO SUIT. PROVIDE SFP MODULES, AS SPECIFIED REFER TO N001 AND SECTION 17051.

GENERAL NOTES:

- PROVIDE A SUFFICIENT NUMBER OF RELAYS AS REQUIRED IN EACH PLC PANEL FOR VOLTAGE CHANGES AS WELL AS TO IMPLEMENT HARDWIRED LOGIC.
- REFER TO BILL OF MATERIALS ON DRAWING I010 AS WELL AS SPECIFICATIONS 17051.
- REFER TO DRAWINGS I020, I021 AND I022 FOR FURTHER REQUIREMENTS. IN ADDITION, REFER TO PERTINENT I/O TABLES FOR ADDITIONAL DETAILS.
- CONTRACTOR TO USE CORNER WIRING DUCT AS REQUIRED, PER BOM ITEM 37.

CONTROL PANELS BILL OF MATERIALS				
ITEM	MANUFACTURER	PART NUMBER	DESCRIPTION	COMMENTS
60	HAMMOND	1418 TD FS SERIES	72" X 36" X 18" SINGLE DOOR FREE STANDING NEMA 12 ANSI 61 GREY ENCLOSURE.	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.
61	HAMMOND	72YFW	60" X 32" WHITE STEEL REAR PANEL FOR 72" X 36" X 18" FOR 1418 FS SERIES ENCLOSURE	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.
62	HAMMOND	72FD14	60" X 14" WHITE STEEL SIDE (DEPTH) PANEL FOR 1418 FS SERIES ENCLOSURE.	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.

REFER TO I010 FOR TYPICAL CONTROL PANEL BOM LIST FOR OTHER DEPICTED ITEMS.



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

0	ISSUED FOR TENDER	25/04/25
No.	ISSUE / REVISION	DD/MM/YY

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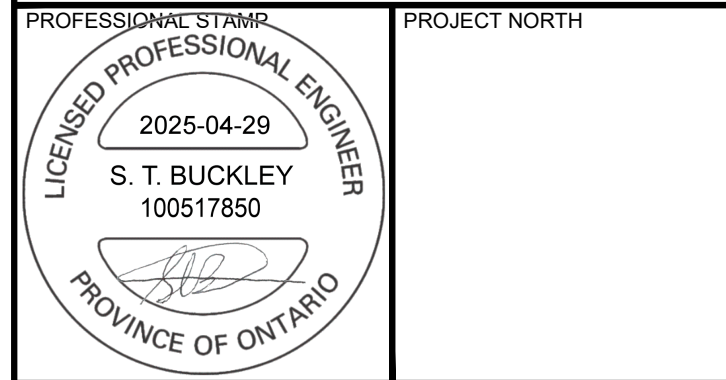
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

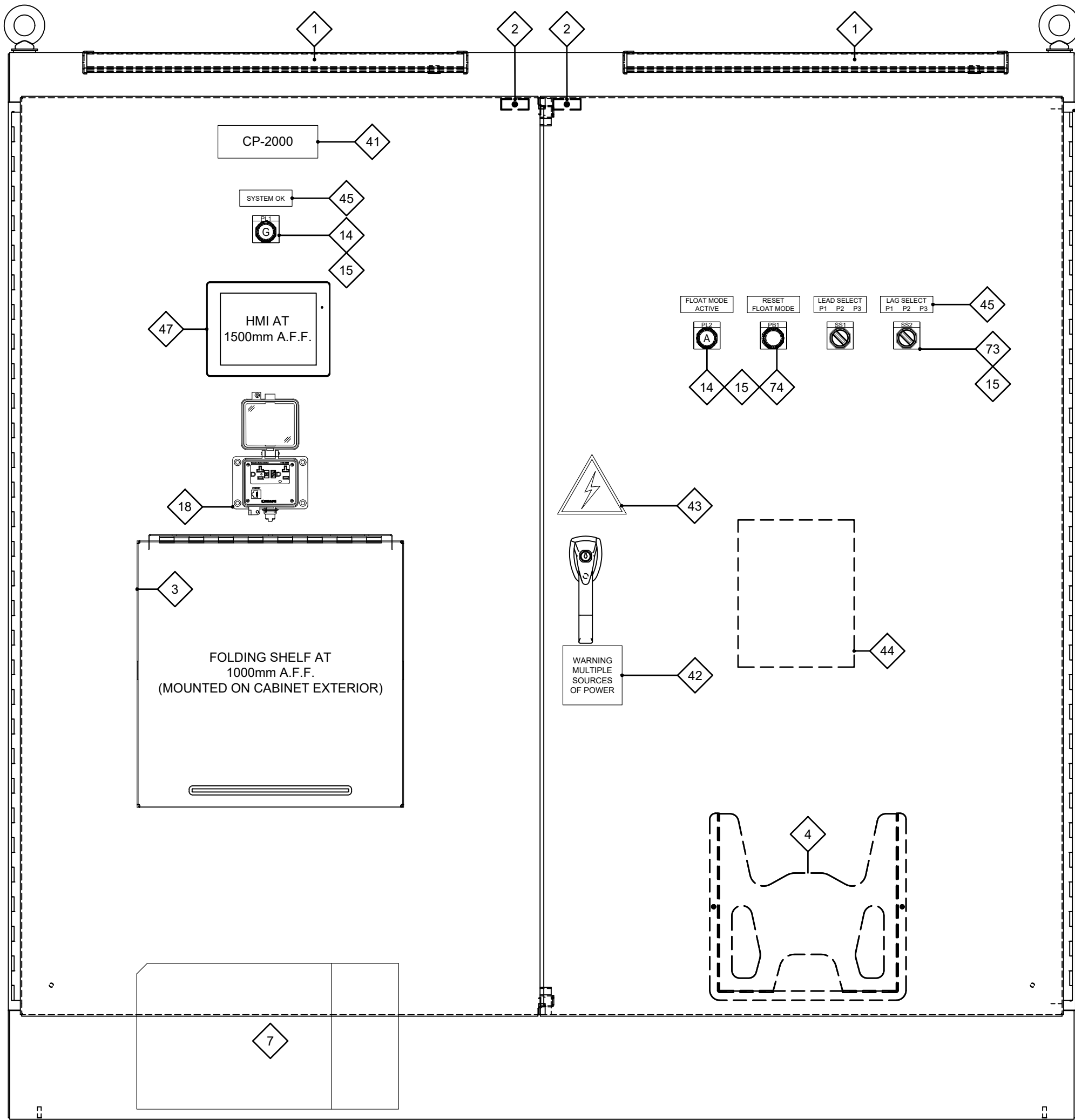
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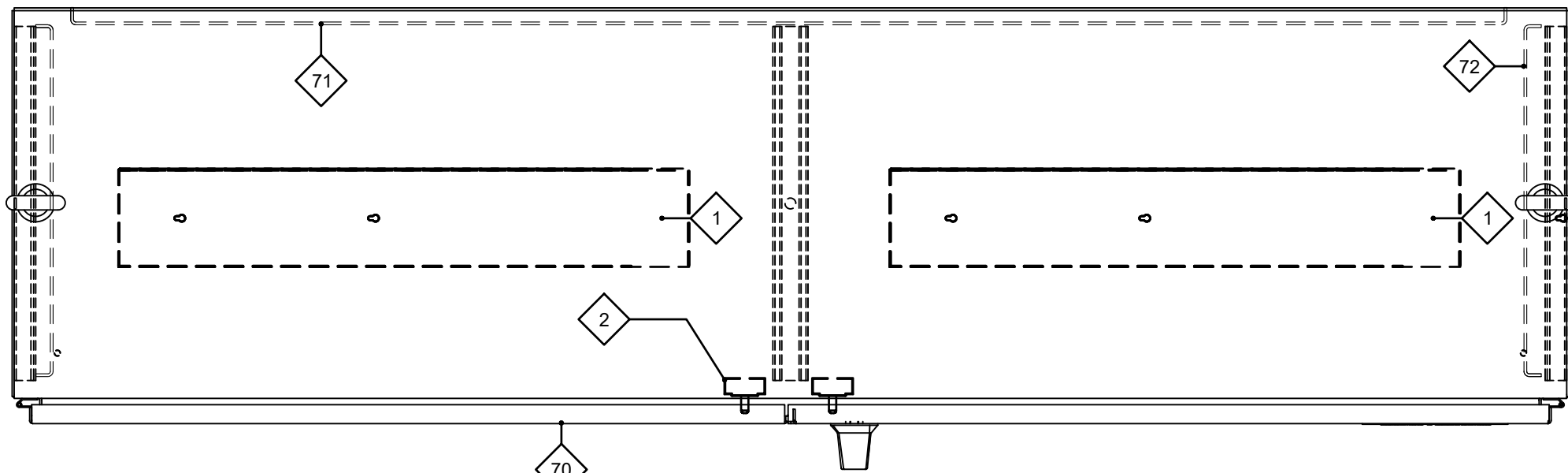
ELECTRICAL SITE WIDE

CP-2000 CONTROL PANEL LAYOUT

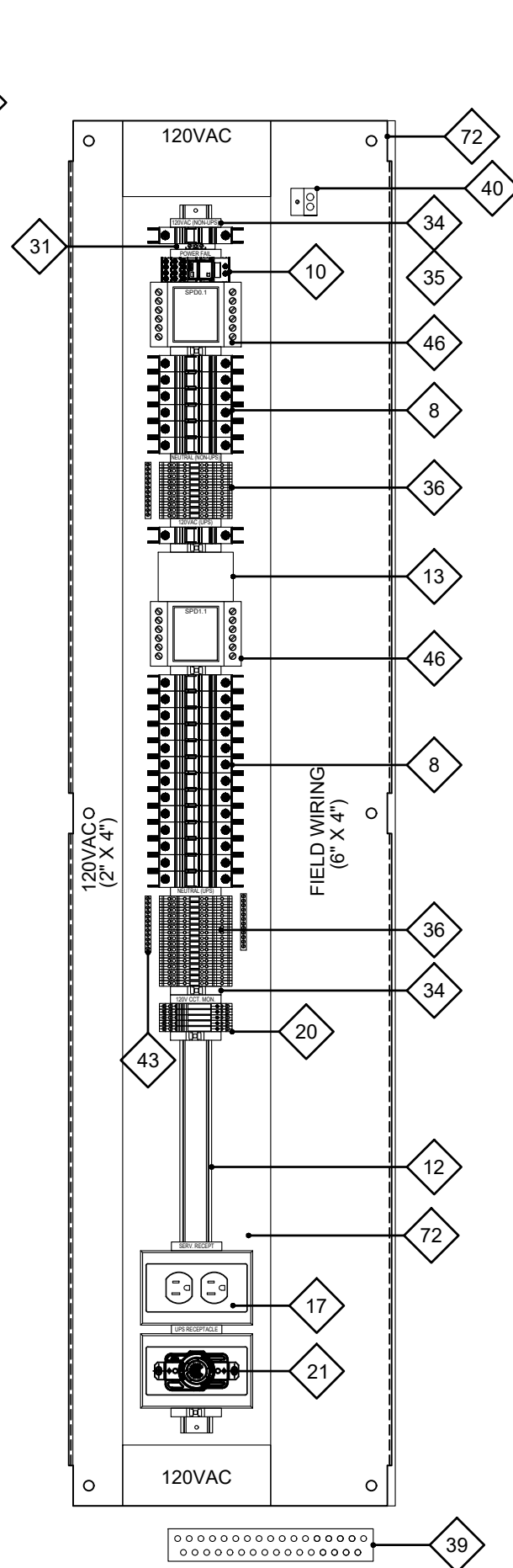
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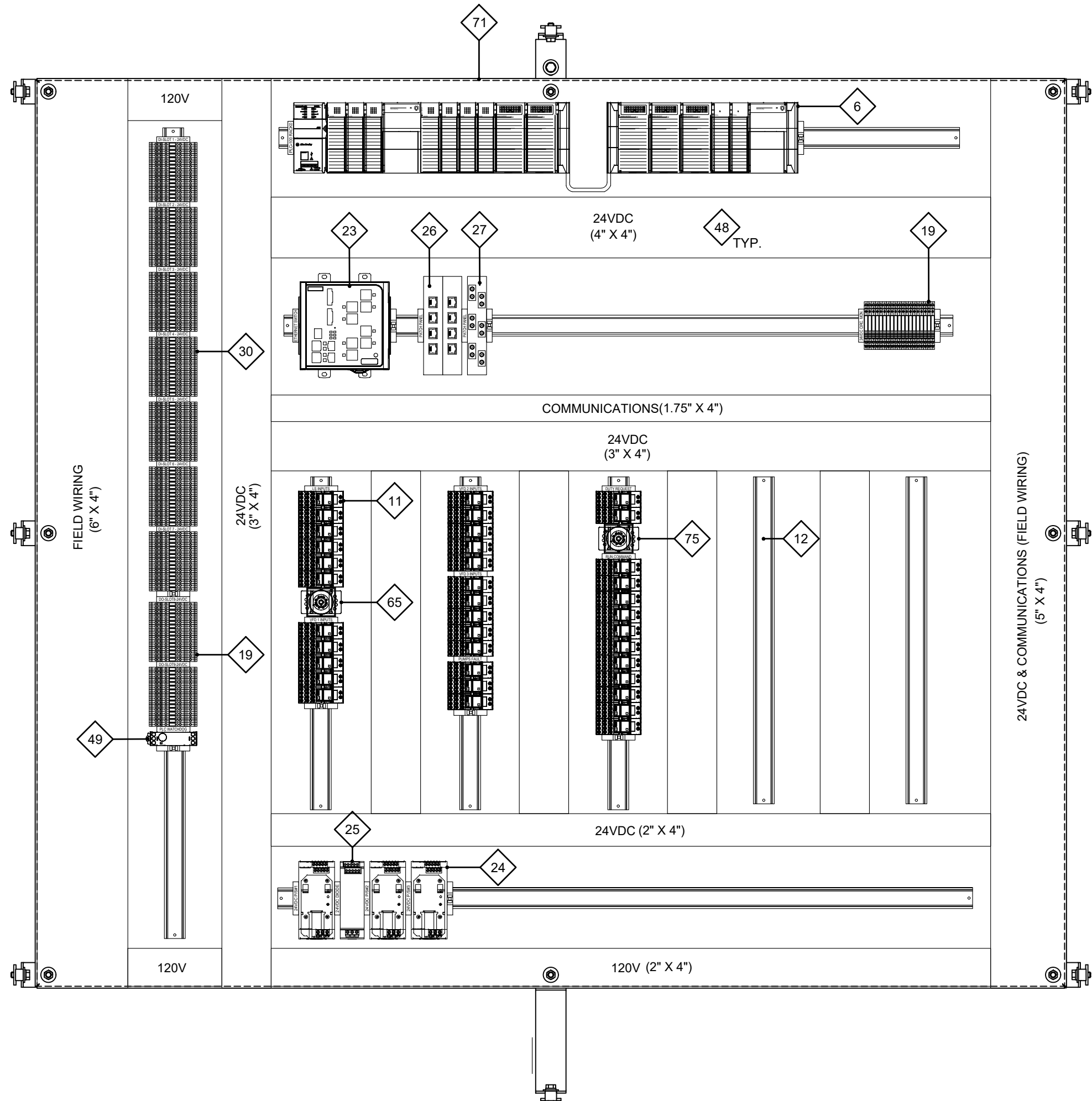
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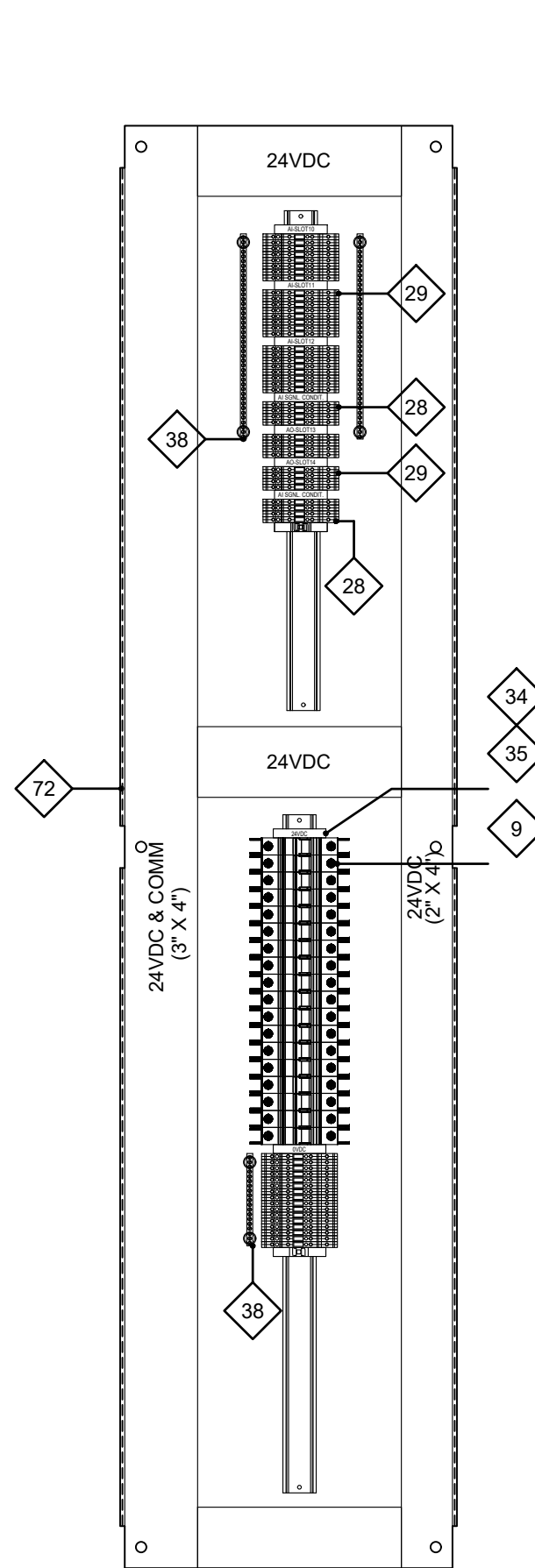
2 TOP VIEW
SCALE: N.T.S.



3 LEFT DEPTH PANEL
SCALE: NTS



4 REAR PANEL
SCALE: NTS



5 RIGHT DEPTH PANEL
SCALE: NTS

NOTES:

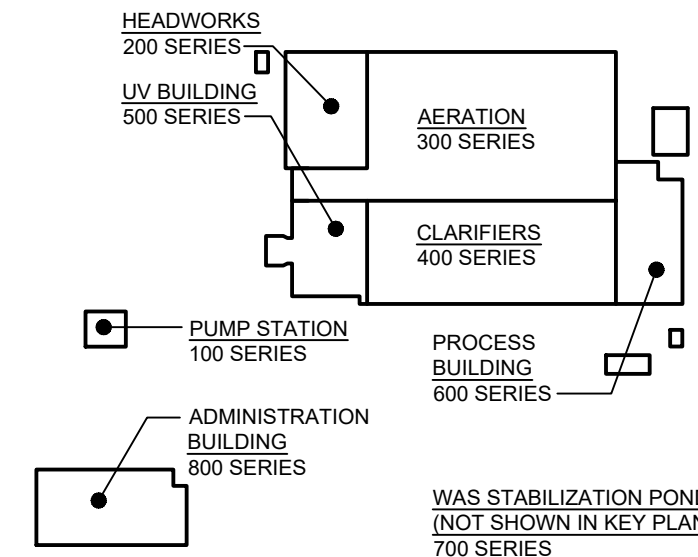
- 1 EACH DEPTH PANEL TO BE MOUNTED AS FAR FORWARD AS POSSIBLE IN THE CABINET TO MINIMIZE OBSTRUCTION OF THE ITEMS ON THE REAR PANEL.
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- 3 EXPANSION AND SFP MODULES NOT SHOWN. PROVIDE EXPANSION MODULES TO SUIT. PROVIDE SFP MODULES, AS SPECIFIED REFER TO N001 AND SECTION 17051.

GENERAL NOTES:

- A. PROVIDE A SUFFICIENT NUMBER OF RELAYS AS REQUIRED IN EACH PLC PANEL FOR VOLTAGE CHANGES AS WELL AS TO IMPLEMENT HARDWIRED LOGIC.
- B. REFER TO BILL OF MATERIALS ON DRAWING I010 AS WELL AS SPECIFICATIONS 17051.
- C. REFER TO DRAWINGS I020, I021, I022 AND I023 FOR FURTHER REQUIREMENTS. IN ADDITION, REFER TO PERTINENT I/O TABLES FOR ADDITIONAL DETAILS.
- D. CONTRACTOR TO USE CORNER WIRING DUCT AS REQUIRED, PER BOM ITEM 37.

CONTROL PANELS BILL OF MATERIALS				
ITEM	MANUFACTURER	PART NUMBER	DESCRIPTION	COMMENTS
70	HAMMOND	1418 TD FS SERIES	72" X 72" X 18" DOUBLE DOOR FREE STANDING NEMA 12 ANSI 61 GREY ENCLOSURE.	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.
71	HAMMOND	72YFW	60" X 68" WHITE STEEL REAR PANEL FOR 72" X 72" X 18" FOR 1418 FS SERIES ENCLOSURE	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.
72	HAMMOND	72FD14	60" X 14" WHITE STEEL SIDE (DEPTH) PANEL FOR 1418 FS SERIES ENCLOSURE.	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.
73	ALLEN-BRADLEY	800TC SERIES	FINGER-SAFE 3-POSITION SELECTOR SWITCH, BLACK w/ WHITE INSERT. NUMBER OF CONTACTS TO SUIT.	
74	ALLEN-BRADLEY	800TC-A7	BLUE FLUSH HEAD MOMENTARY PUSHBUTTON	
75	ALLEN-BRADLEY	700-HR SERIES	PLUG-IN SOCKET TIMING RELAY MULTI RANGE. FUNCTION AND NUMBER OF CONTACTS TO SUIT.	1. PROVIDE 700-HN SERIES RELAY BASE.

REFER TO I010 FOR TYPICAL CONTROL PANEL BOM LIST FOR OTHER DEPICTED ITEMS.



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No. ISSUE / REVISION DDMMYY

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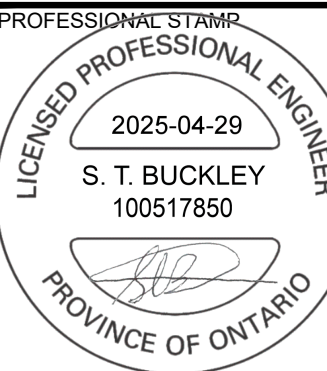
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CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL SITE WIDE

CP-5000 CONTROL PANEL LAYOUT

DESIGN: SB

DRAWN: NB

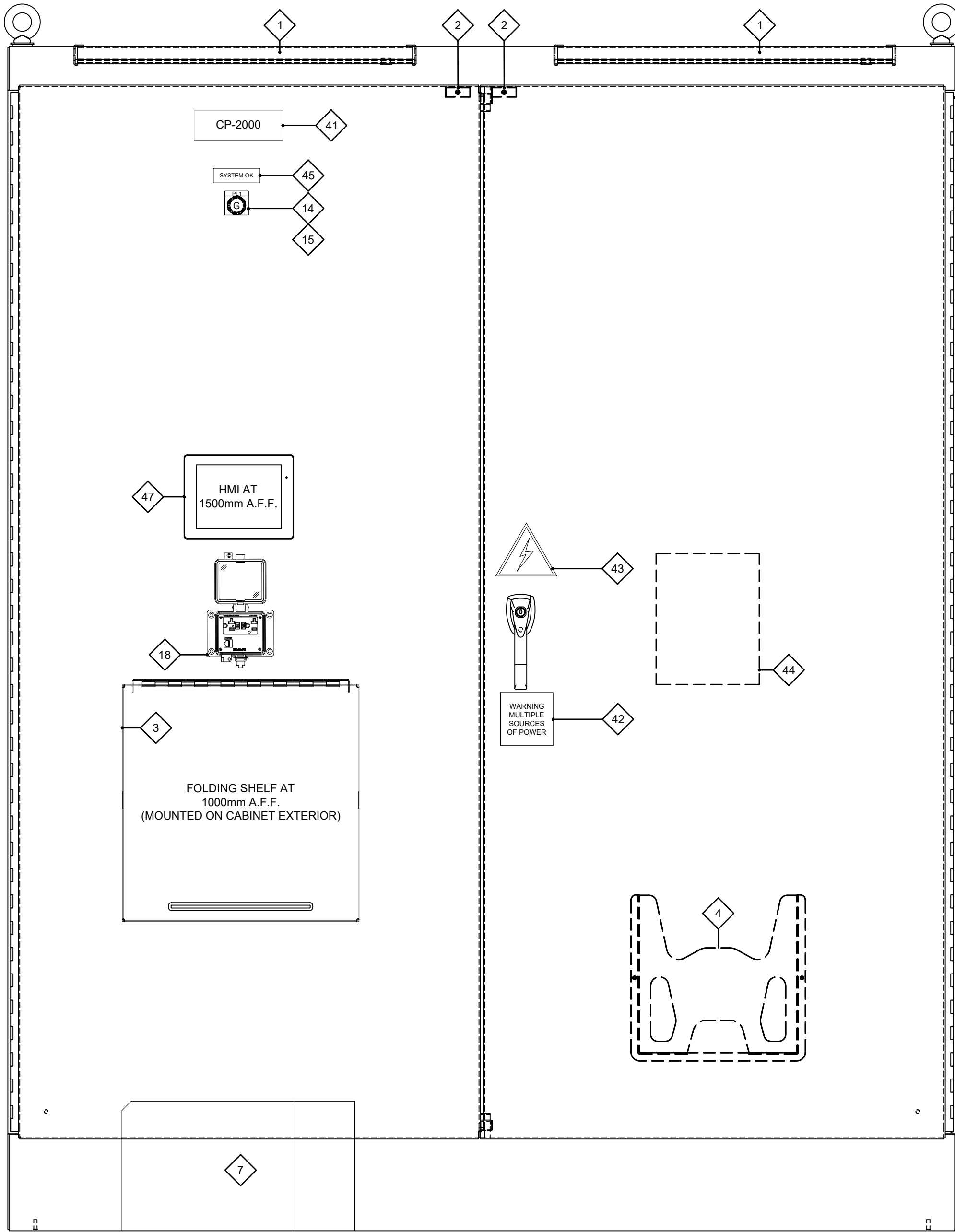
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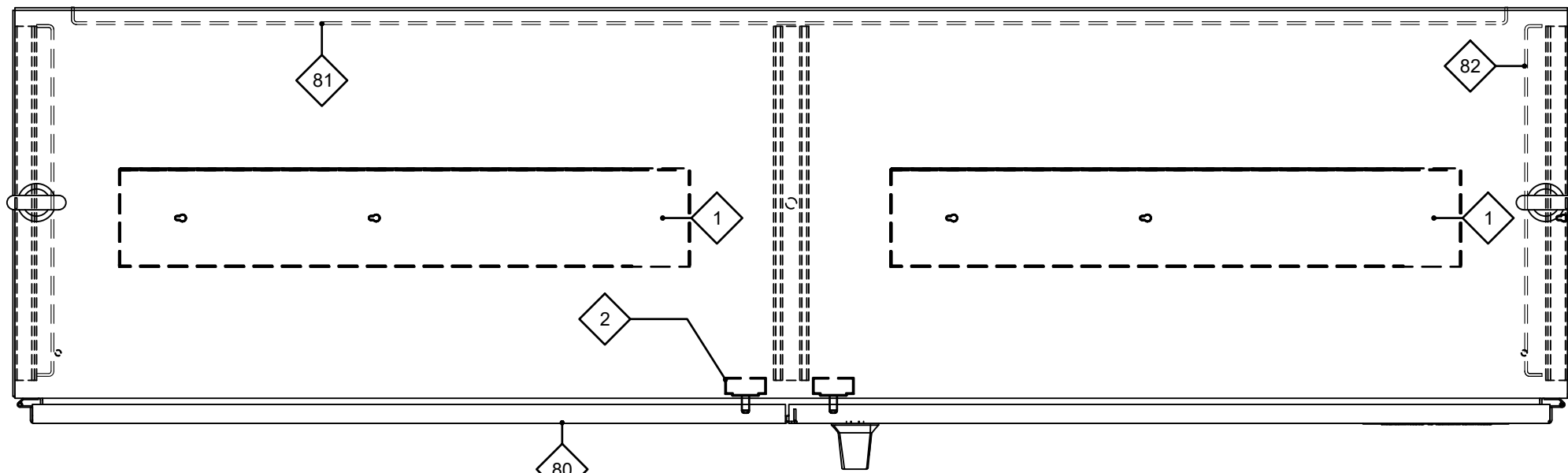
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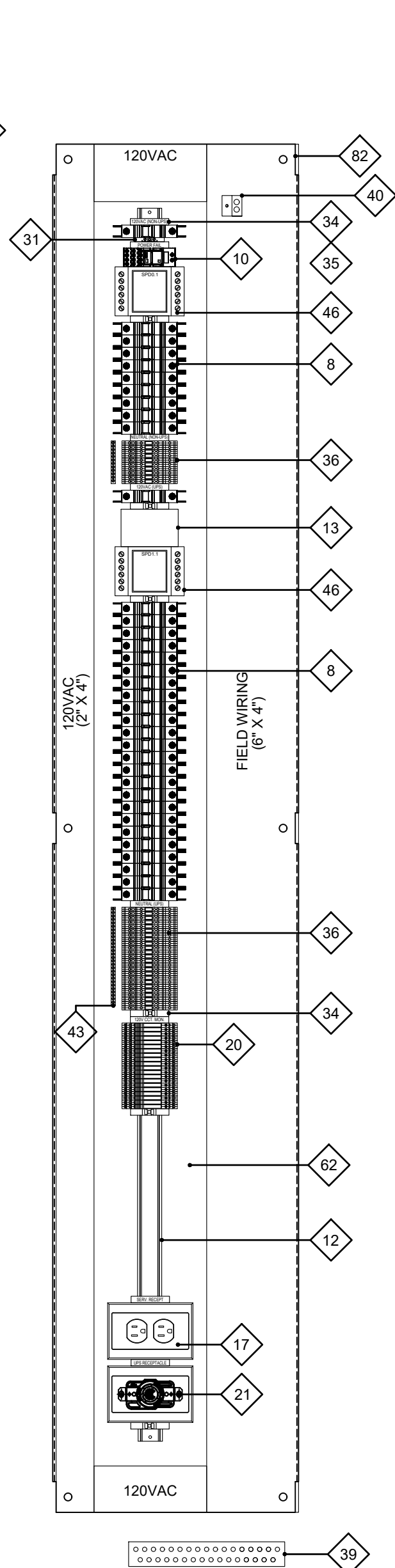
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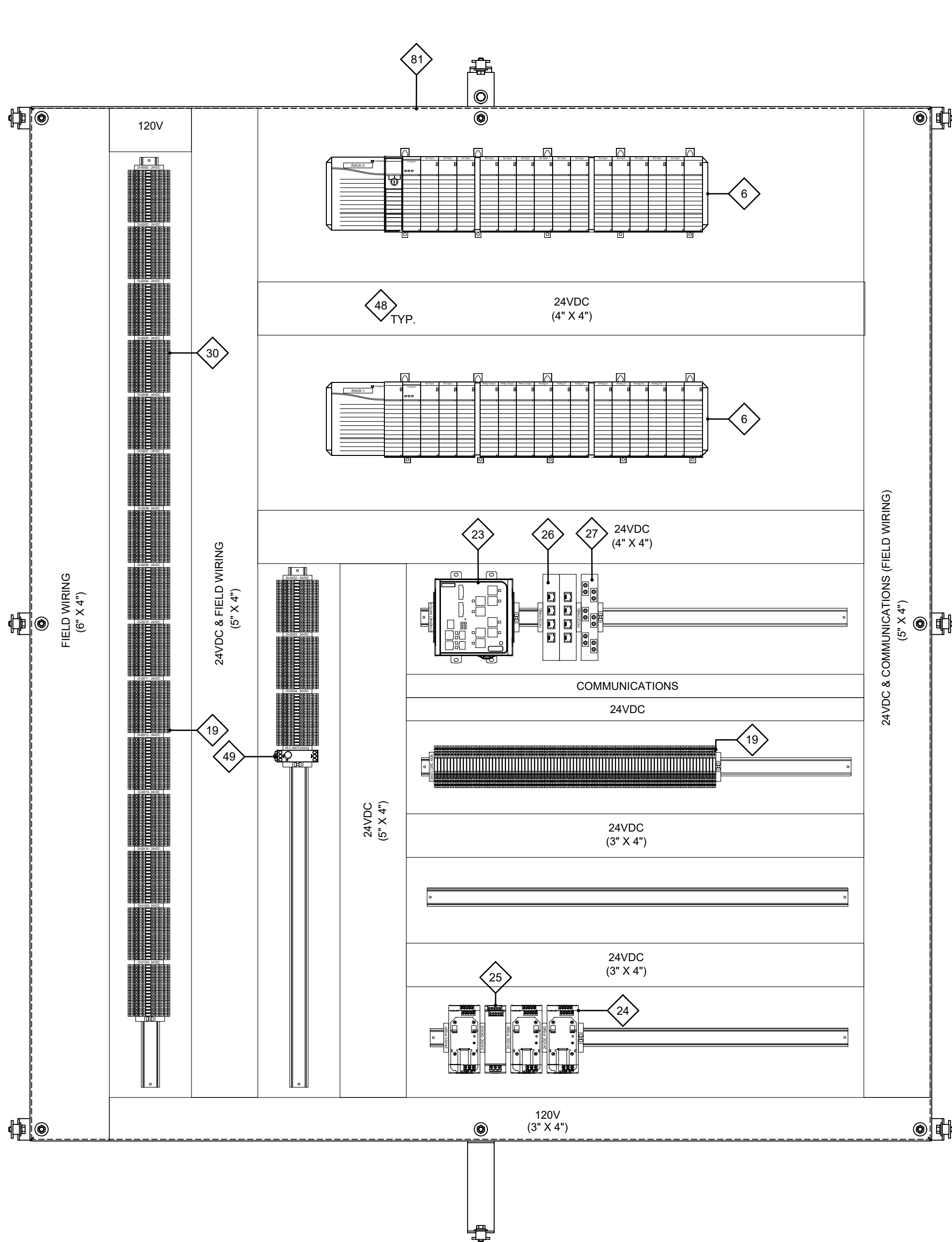
1 CP-6000 FRONT VIEW
SCALE: NTS



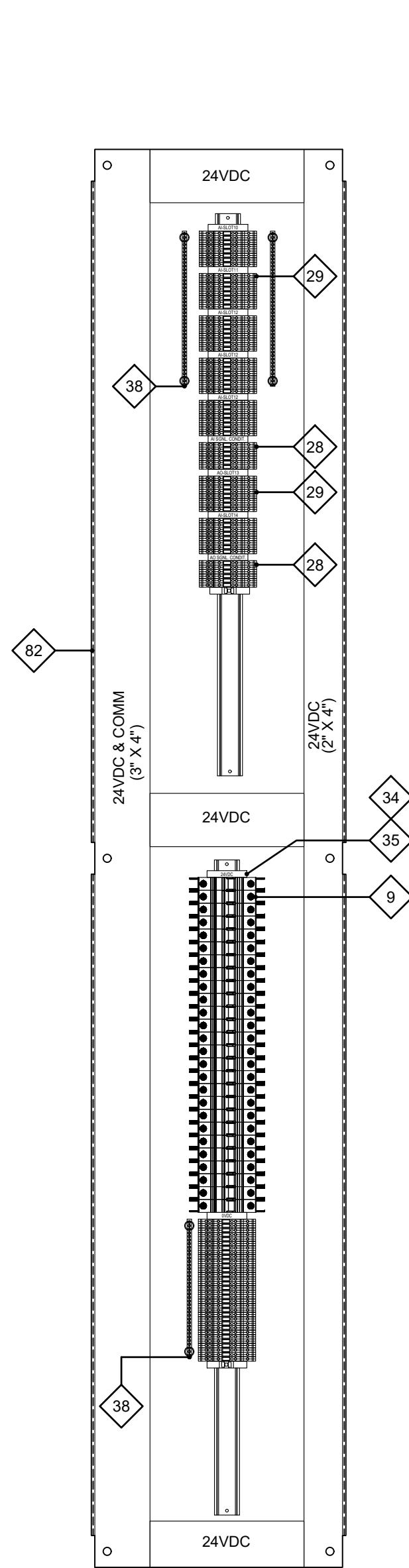
2 TOP VIEW
SCALE: N.T.S.



3 LEFT DEPTH PANEL
SCALE: NTS



4 REAR PANEL
SCALE: NTS



5 RIGHT DEPTH PANEL
SCALE: NTS

NOTES:

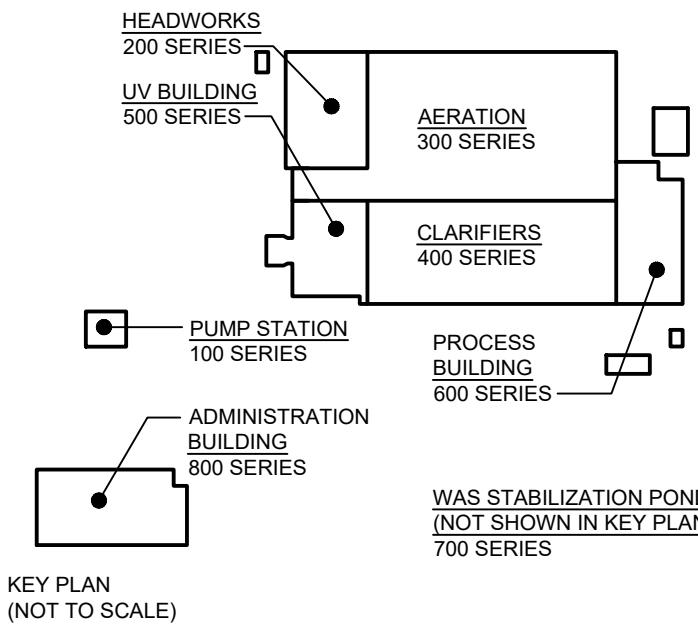
- EACH DEPTH PANEL TO BE MOUNTED AS FAR FORWARD AS POSSIBLE IN THE CABINET TO MINIMIZE OBSTRUCTION OF THE ITEMS ON THE REAR PANEL.
- DUCTING FOR PLC COMMUNICATIONS CABLEING TO BE ELEVATED USING PANEL STANDOFFS (OR EQUIVALENT). FINAL HEIGHT OF COMMUNICATIONS DUCTING TO MATCH THAT OF ADJACENT DUCTING. PLC I/O WIRING TO BE ROUTED BENEATH PLC COMMUNICATIONS DUCTING.
- EXPANSION AND SFP MODULES NOT SHOWN. PROVIDE EXPANSION MODULES TO SUIT. PROVIDE SFP MODULES, AS SPECIFIED REFER TO N001 AND SECTION 17051.

GENERAL NOTES:

- PROVIDE A SUFFICIENT NUMBER OF RELAYS AS REQUIRED IN EACH PLC PANEL FOR VOLTAGE CHANGES AS WELL AS TO IMPLEMENT HARDWIRED LOGIC.
- REFER TO BILL OF MATERIALS ON DRAWING I010 AS WELL AS SPECIFICATIONS 17051.
- REFER TO DRAWINGS I020, I021 AND I022 FOR FURTHER REQUIREMENTS. IN ADDITION, REFER TO PERTINENT I/O TABLES FOR ADDITIONAL DETAILS.
- CONTRACTOR TO USE CORNER WIRING DUCT AS REQUIRED, PER BOM ITEM 37.

CONTROL PANELS BILL OF MATERIALS				
ITEM	MANUFACTURER	PART NUMBER	DESCRIPTION	COMMENTS
80				
81	HAMMOND	1418 TD FS SERIES	90" X 72" X 18" DOUBLE DOOR FREE STANDING NEMA 12 ANSI 61 GREY ENCLOSURE.	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.
82	HAMMOND	90BYFW	78" X 68" WHITE STEEL REAR PANEL FOR 72" X 36" X 18" FOR 1418 FS SERIES ENCLOSURE	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.
	HAMMOND	90FD14	78" X 14" WHITE STEEL SIDE (DEPTH) PANEL FOR 1418 FS SERIES ENCLOSURE.	1. HOFFMAN EQUIVALENT IS ACCEPTABLE.

REFER TO I010 FOR TYPICAL CONTROL PANEL BOM LIST FOR OTHER DEPICTED ITEMS.



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

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No.	ISSUE / REVISION	DD/MM/YY

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25MM IF THIS IS A FULL SIZE DRAWING.

SCALE: N.T.S.

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL SITE WIDE

CP-6000 CONTROL PANEL LAYOUT

DESIGN: SB

DRAWN: NB

CHECKED: LO/BM

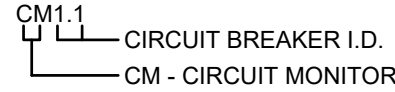
JLR #: 32296-001

DRAWING #:

I014

PLOT DATE: Tuesday, April 29, 2025 11:23:53 AM

File Location: P:\2020\032296-001 - Brighton WWT System Upgrade\03-Production\06-Electrical\32296-001 - BILL OF MATERIALS.dwg

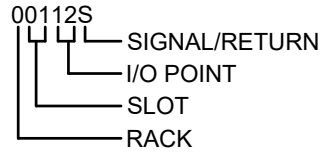


NOTES:

1. UNUSED RELAYS TO BE LABELLED "SPARE".
2. RELAYS TO BE ARRANGED IN NUMERICAL ORDER FROM TOP TO BOTTOM (OR LEFT TO RIGHT). UNUSED RELAYS TO BE PLACED AT THE BOTTOM.

1 TYPICAL LABELLING OF CIRCUIT MONITORS

SCALE: NTS

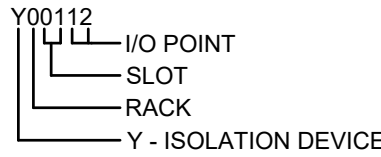


NOTES:

1. TWO-TIER KNIFE DISCONNECT TERMINALS ARE USED. THE "SIGNAL" TERMINAL SHALL BE THE KNIFE TERMINAL (TOP TIER) AND THE "RETURN" TERMINAL SHALL BE THE BOTTOM (STRAIGHT-THROUGH) TERMINAL.
2. TERMINALS TO BE ARRANGED IN NUMERICAL ORDER FROM TOP TO BOTTOM (OR LEFT TO RIGHT).

2 TYPICAL LABELLING OF I/O TERMINALS

SCALE: NTS

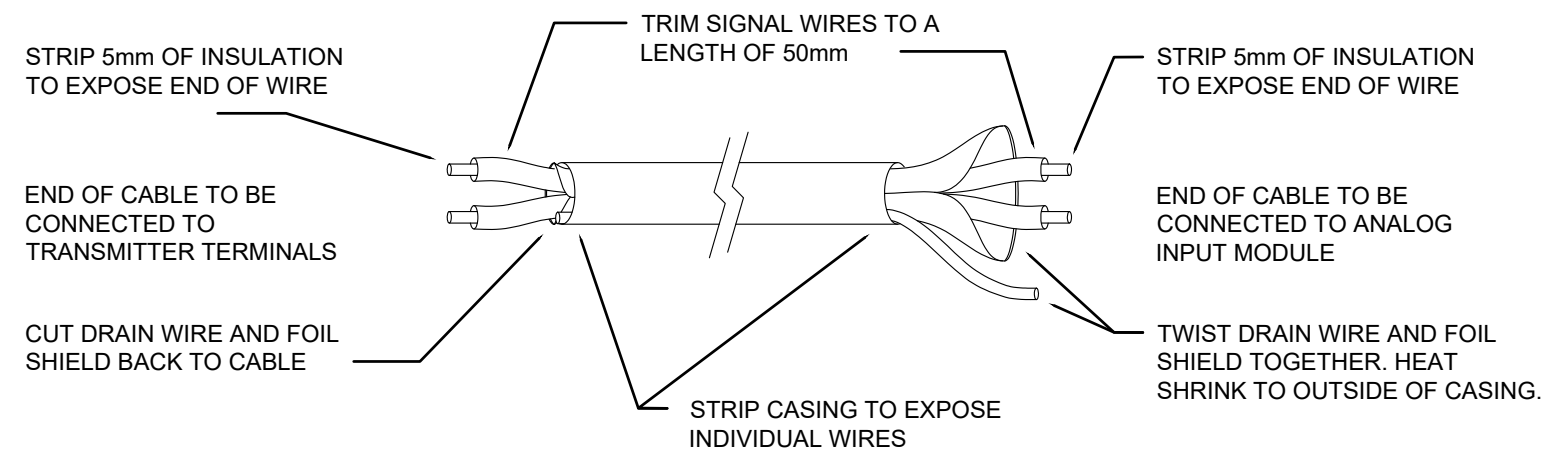


NOTES:

1. ISOLATORS TO BE ARRANGED IN NUMERICAL ORDER FROM TOP TO BOTTOM (OR LEFT TO RIGHT).

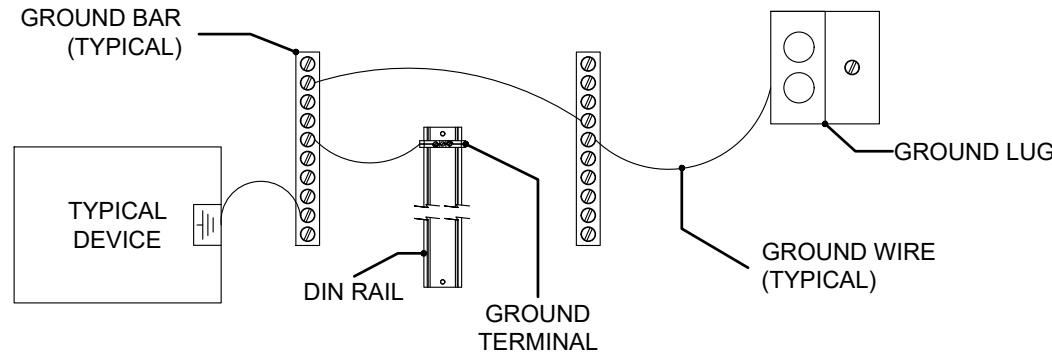
3 TYPICAL LABELLING OF ISOLATION DEVICES

SCALE: NTS



4 ANALOG CABLE PREPERATION DETAIL

SCALE: NTS



NOTES:

1. ENCLOSURE AND COMPONENTS TO BE BONDED AS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S ACCESSORIES AS REQUIRED.
2. ENSURE BONDING IS IN ACCORDANCE WITH THE LATEST REVISION OF THE ONTARIO ELECTRICAL CODE.
3. ALL GROUND BARS TO BE BONDED WITH GROUND WIRE.
4. ALL ENCLOSURE DOORS AND PANELS TO BE BONDED.
5. EACH DIN RAIL TO BE BONDED WITH PHOENIX CONTACT USLKG 5 GROUND TERMINAL.

5 BONDING DETAIL

SCALE: NTS

GENERAL NOTES:

1. PROVIDE REQUIRED ACCESSORIES/COMPONENTS TO ASSURE IP2X DEGREE OF PROTECTION (FINGER-SAFE RATING) FOR ALL ENCLOSURES.
2. ENSURE THAT ENCLOSURE NEMA RATINGS ARE PRESERVED.
3. COORDINATE INSTALLATION OF DEVICES WITHIN THE ENCLOSURES TO ENSURE NO CONFLICTS NOR INTERFERENCES OCCUR DURING PANEL BUILDING AND BEFORE FINAL INSTALLATION OF DEVICES.
4. QUANTITIES TO BE DETERMINED FROM CONTRACT DOCUMENTS.
5. ENCLOSURES TO BE BUILT IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURERS OF THE COMPONENTS USED.
6. USE SUITABLE CONSTRUCTION GRADE ADHESIVE TO SECURE LAMACOIDS TO ENCLOSURES. ENSURE ADHESIVE IS RATED FOR THE INTENDED ENVIRONMENTAL CONDITIONS. SCREWS OR OTHER MEANS REQUIRING PUNCTURING OF THE ENCLOSURES/PANELS/DOORS, ARE NOT ACCEPTABLE.

INSPECTION:

1. ENCLOSURES TO PASS ESA INSPECTION. PROVIDE ESA LABELS IN CONSPICUOUS LOCATIONS.

PLC/MIO:

1. REFER TO THE PLC/MIO CONFIGURATION SCHEDULES FOR PLC/MIO CARD ARRANGEMENT.

INSTALLATION NOTES:

1. PROVIDE CABLE/CONDUIT ENTRIES ONLY AS REQUIRED.
2. UNLESS OTHERWISE INDICATED, 120VAC WIRING ENTER THE ENCLOSURE ON THE LEFT; 24VDC AND COMMUNICATION WIRING ENTER THE ENCLOSURE ON THE RIGHT. CABLE ENTRIES SHALL BE FROM TOP OR BOTTOM OF ENCLOSURES ONLY.
3. ENCLOSURE INSTALLER TO COVER ALL COMPONENTS IN THE ENCLOSURE TO PREVENT METAL FILINGS FROM ENTERING THE COMPONENTS DURING CABLE/CONDUIT INSTALLATION.
4. ENCLOSURES AND ALL COMPONENTS TO BE PROTECTED FROM FOREIGN PARTICLES DURING CONSTRUCTION.
5. AFTER INSTALLATION, ENCLOSURES TO BE CLEANED, INSIDE AND OUT, AND ALL DUCT COVERS REPLACED.
6. APPLY TOUCH-UP PAINT TO ALL EXPOSED ENCLOSURE AND PANEL AREAS THAT HAVE BEEN SCRATCHED, PENETRATED, ETC., TO PREVENT CORROSION. TOUCH-UP PAINT TO BE THE SAME COLOUR AS THE AREA AND TO BE SUPPLIED BY THE ENCLOSURE MANUFACTURER. APPLY TOUCH-UP PAINT AS PER MANUFACTURER'S RECOMMENDATIONS.

SPARE DIN RAIL SPACE:

1. PROVIDE SUFFICIENT SPARE DIN RAIL SPACE AS INDICATED.

LENGTH OF EXPOSED WIRES/CABLES:

1. LAYOUT THE COMPONENTS ON THE PANEL SUCH THAT THERE IS SUFFICIENT EXPOSED WIRE/CABLE BETWEEN THE COMPONENT AND THE WIRE DUCT TO FACILITATE COMFORTABLE HANDLING OF THE WIRE/CABLE AS WELL AS FULL EXPOSURE OF THE WIRE/CABLE LABEL. TYPICALLY, AN EXPOSED LENGTH OF AT LEAST 32mm IS RECOMMENDED.

JUMPERS:

1. GENERALLY, ALL JUMPERS SHALL BE INSULATED WIRE. COMB STYLE JUMPERS ARE NOT ACCEPTABLE UNLESS PRE-APPROVED BY THE ENGINEER. PROVIDE SHOP DRAWINGS DETAILING ALL ACCESSORIES TO BE USED FOR WIRING.
2. EACH WIRE JUMPER TO EXTEND INTO WIRING DUCT.

SHOP DRAWINGS:

1. CONSULT THE SHOP DRAWINGS OF ALL RELATED EQUIPMENT PRIOR TO PREPARING THE PANEL SHOP DRAWINGS.
2. SHOP DRAWINGS TO INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:
 - 2.1. I/O DIAGRAMS
 - 2.2. DETAILED ENCLOSURE/PANEL LAYOUT DRAWINGS, LABELLING AND DIMENSIONS
 - 2.3. DETAILED WIRING DIAGRAMS, INCLUDING WIRE LABELS AND WIRE SPECIFICATIONS
 - 2.4. TAGS TO BE USED
 - 2.5. DETAILED SHOP DRAWINGS/DATA SHEET FOR EACH COMPONENT/ACCESSORY (INCLUDING WIRES AND CABLES) TO BE USED

VOLTAGE SEPARATION/ELECTROMAGNETIC INTERFERENCE (EMI):

1. ENSURE PROPER VOLTAGE SEPARATION IS OBSERVED.
2. ROUTE WIRES AND CABLES IN A MANNER SUCH THAT EMI IS MINIMIZED.
3. PROVIDE FERRITE COLLARS/BEADS AND OTHER ACCESSORIES AS REQUIRED TO MINIMIZE EMI.
4. FOLLOW MANUFACTURERS' RECOMMENDATIONS WITH RESPECT TO EMI.
5. ADVISE THE ENGINEER OF ANY ISSUES ARISING WITH RESPECT TO EMI.

WIRE LABELS:

1. INTERNAL PANEL WIRES TO BE LABELLED ACCORDING TO THE COMPONENT AT THE HIGHER POTENTIAL. INCLUDE TERMINAL DESIGNATION IN THE WIRE LABEL WHERE APPLICABLE. FOR EXAMPLE, A WIRE FROM CB1.1 THAT FEEDS THE 24VDC POWER SUPPLY SHOULD BE LABELLED AS "CB1.1". ALSO, A WIRE FROM TERMINAL 12 ON R100 THAT ACTIVATES ANOTHER RELAY SHOULD BE LABELLED AS "R100-12".
2. BOTH ENDS OF EACH WIRE TO BE LABELLED (WITH THE SAME LABEL).
3. WIRE LABEL MATERIAL TO BE APPROVED PRIOR TO INSTALLATION.

CIRCUIT BREAKERS AND SUPPLEMENTARY PROTECTORS:

1. SIZE CIRCUIT BREAKERS AND SUPPLEMENTARY PROTECTORS TO SUIT. PROVIDE SIZES IN SHOP DRAWINGS FOR REVIEW.

GENERAL LABELLING:

1. ALL COMPONENTS TO BE LABELLED AS SPECIFIED.
2. LABELS TO BE PRINTED BY MACHINE AND SHOULD BE DONE IN A NEAT ORGANIZED MANNER.
3. PHOENIX CONTACT DEVICES TO BE LABELLED USING PRE-APPROVED PHOENIX CONTACT LABELLING SYSTEMS.
4. WHERE PHOENIX CONTACT LABELLING SYSTEM IS NOT APPLICABLE, LABELLING SHALL BE DONE USING A BRADY STYLE SELF-ADHESIVE TAPE OR MANUFACTURER RECOMMENDED METHOD.
5. BOTH SIDES OF EACH TERMINAL TO BE LABELLED AS SHOWN, UNLESS OTHERWISE INDICATED.
6. LABEL EACH WIRE DUCT TO INDICATE THE WIRING CLASS (e.g. 120VAC, 24VDC, OR COMMUNICATIONS).

LOOSE COMPONENTS:

PROVIDE THE FOLLOWING LOOSE COMPONENTS IN A "ZIPLOCK" BAG SECURED INSIDE EACH CABINET:

- FIVE (5) OF EACH TYPE OF TERMINAL BLOCK
- TWO (2) OF EACH TYPE OF RELAY
- FOUR (4) SNAP-ON END BRACKETS
- ONE (1) ANALOG SIGNAL ISOLATING AMPLIFIER

ETHERNET PATCH CORDS:

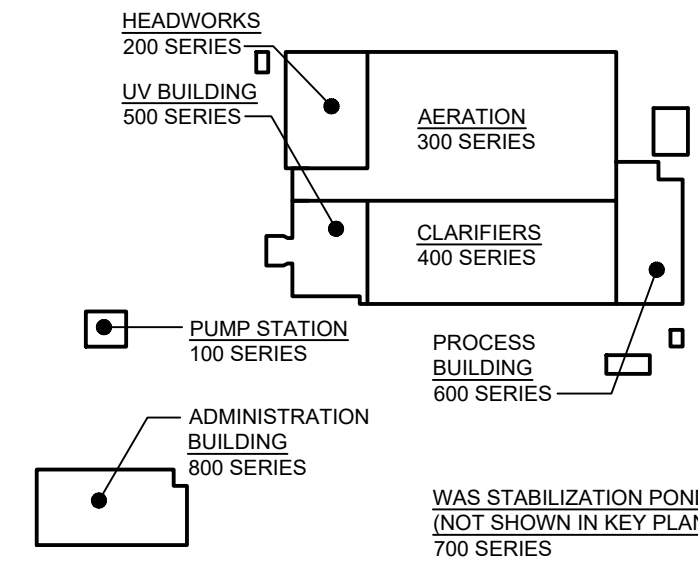
1. PROVIDE SUFFICIENT NUMBER OF PATCH CORDS FOR INTERNAL ETHERNET CONNECTIONS. PATCH CORDS AS PER SECTION 17060.
2. SELECT PATCH CORD LENGTHS TO SUIT. PATCH CORDS TO BE AS SHORT AS POSSIBLE.
3. PROVIDE ONE (1) SPARE 3m PATCH CORD. PLACE IT IN THE ZIPLOCK BAG CONTAINING THE LOOSE COMPONENTS.
4. PROVIDE A LABEL FOR EACH END OF EACH PATCH CORD.

TELEPHONE PATCH CORDS:

1. PROVIDE TELEPHONE PATCH CORDS FOR AS REQUIRED FOR INTERNAL TELEPHONE CONNECTIONS - INCLUDING EQUIPMENT MOUNTED ON THE CABINET EXTERIOR. PATCH CORDS AS PER EQUIPMENT MANUFACTURERS' RECOMMENDATIONS.
2. PROVIDE A LABEL FOR EACH END OF EACH PATCH CORD.

FACTORY ACCEPTANCE TEST (FAT)

1. SUBMIT DIGITAL PHOTOGRAPHS OF THE PANEL FOR REVIEW BEFORE SCHEDULING THE FAT TEST.
2. ADVISE THE ENGINEER TWO (2) WEEKS BEFORE REQUESTING THE FAT TEST.
3. ENCLOSURE TO BE FULLY ASSEMBLED PRIOR TO FAT TEST
4. PANEL BUILDER TO PERFORM CERTAIN BASIC TESTS ON THE PANELS AND SUBMIT THE RESULTS TO THE ENGINEER PRIOR TO SCHEDULING A FAT TEST. THESE TESTS INCLUDE, BUT NOT LIMITED TO:
 - 4.1. "PULL TEST". ENSURE WIRES ARE SECURELY CONNECTED.
 - 4.2. RESISTANCE CHECKS. CHECK FOR CONTINUITY TO CONFIRM WIRING IS DONE AS INTENDED.
 - 4.3. VOLTAGE CHECKS. ENSURE THAT VOLTAGES MEET MANUFACTURERS' REQUIREMENTS.
5. FAT TEST SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:
 - 5.1. GENERAL CONFORMANCE TO THE CONTRACT SPECIFICATIONS AND DRAWINGS.



KEY PLAN
(NOT TO SCALE)

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BUILDING CODE 2012.

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SCALE: N.T.S.

CLIENT:



CONSULTANT: www.jlrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

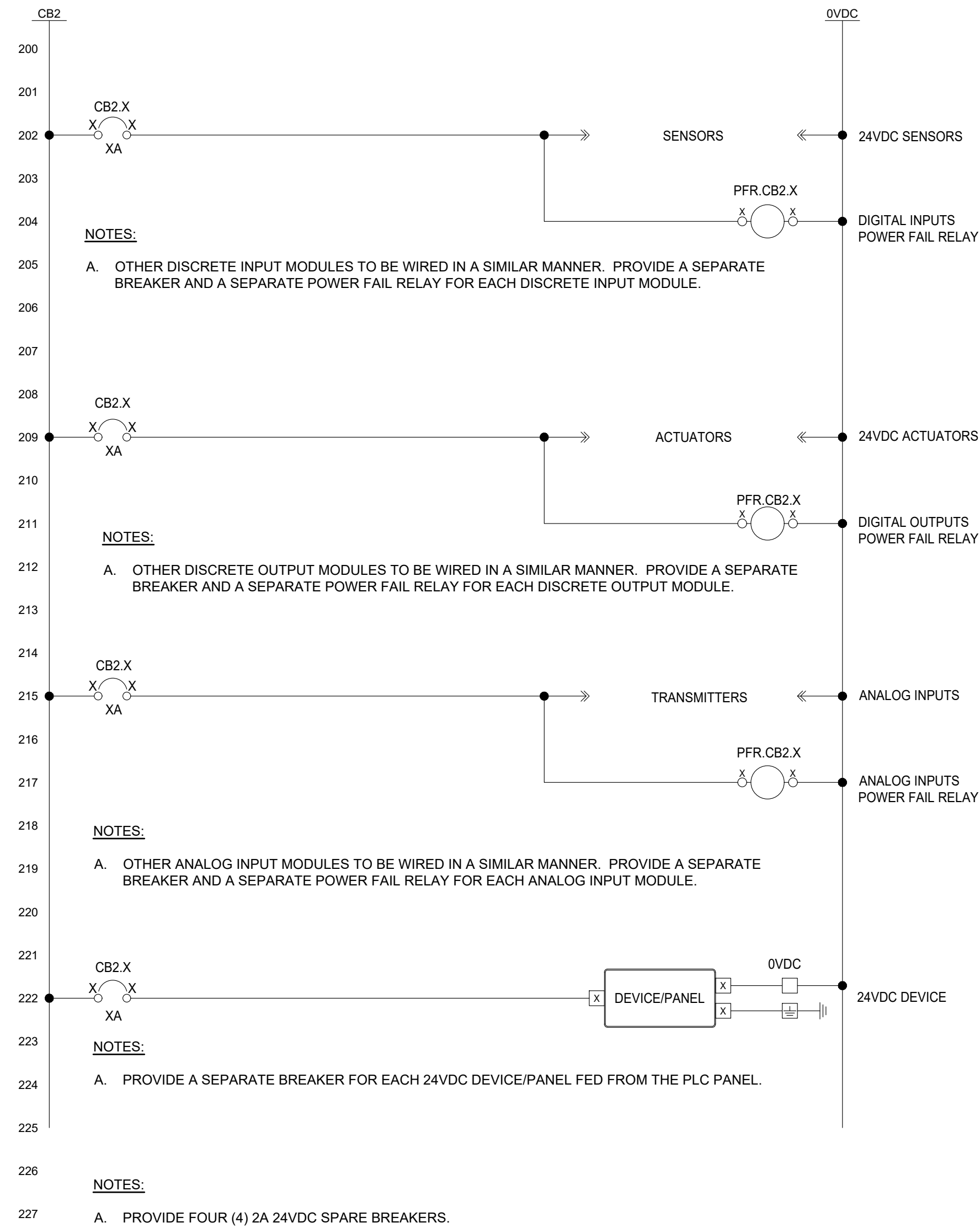
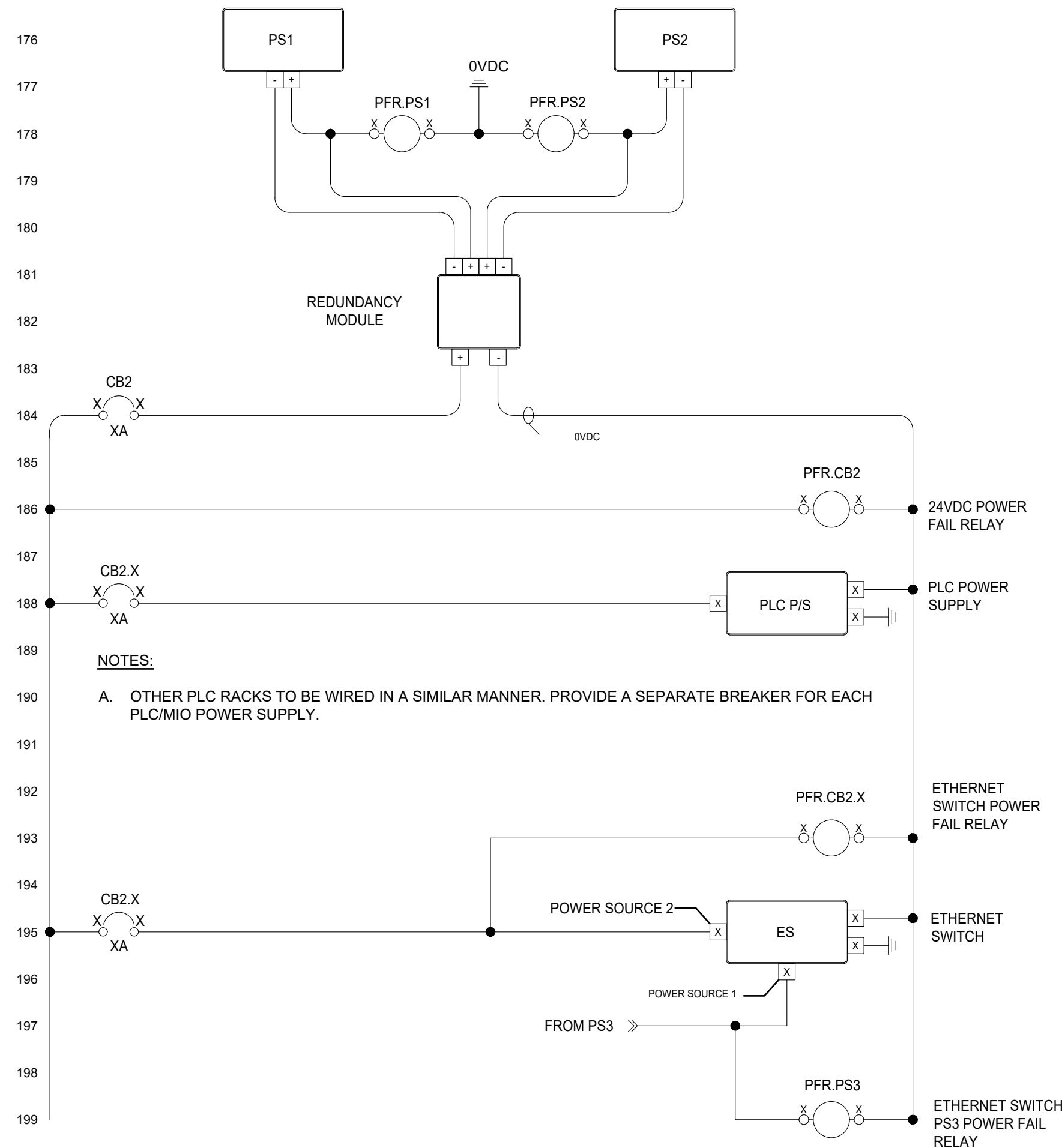
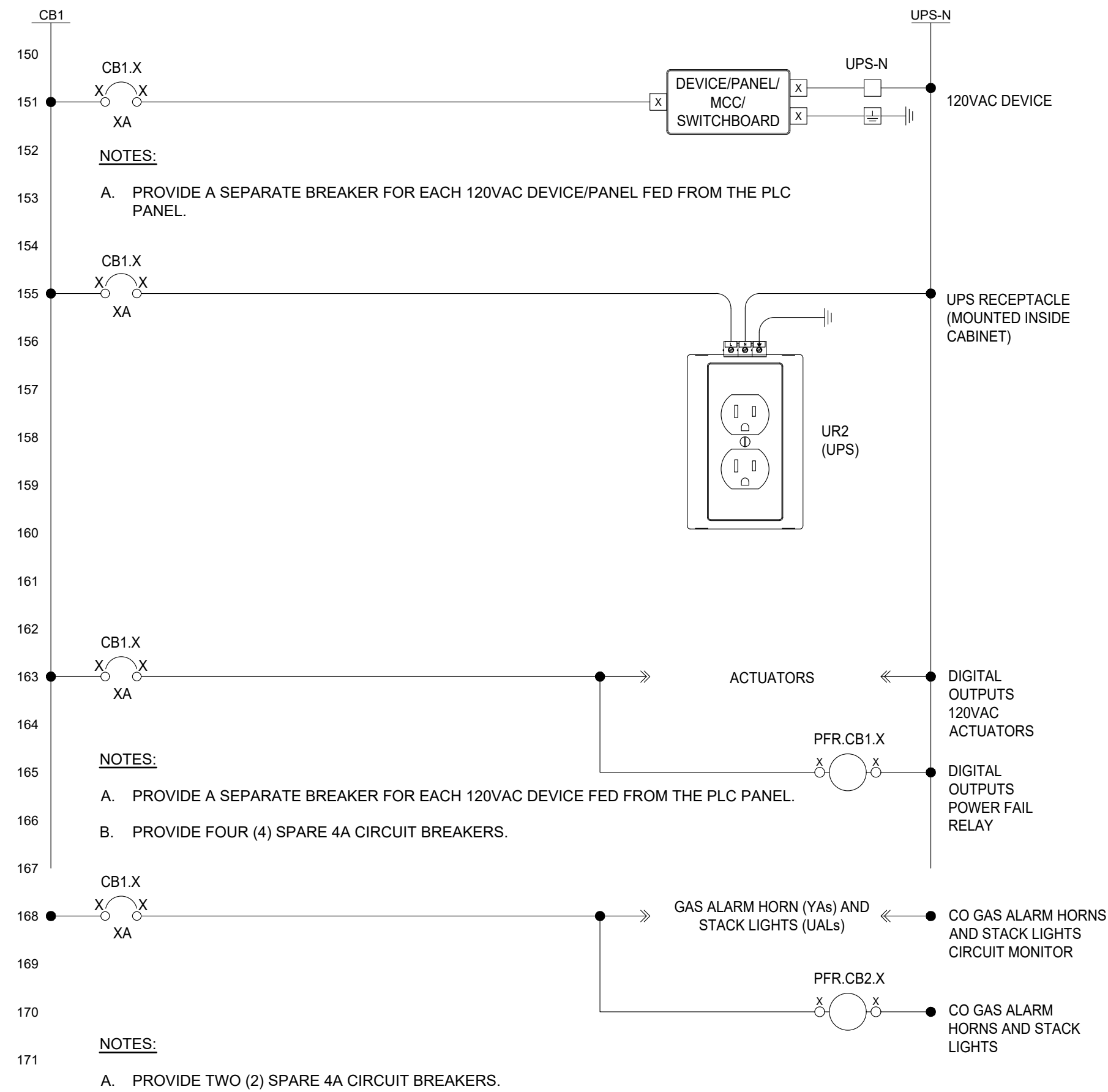
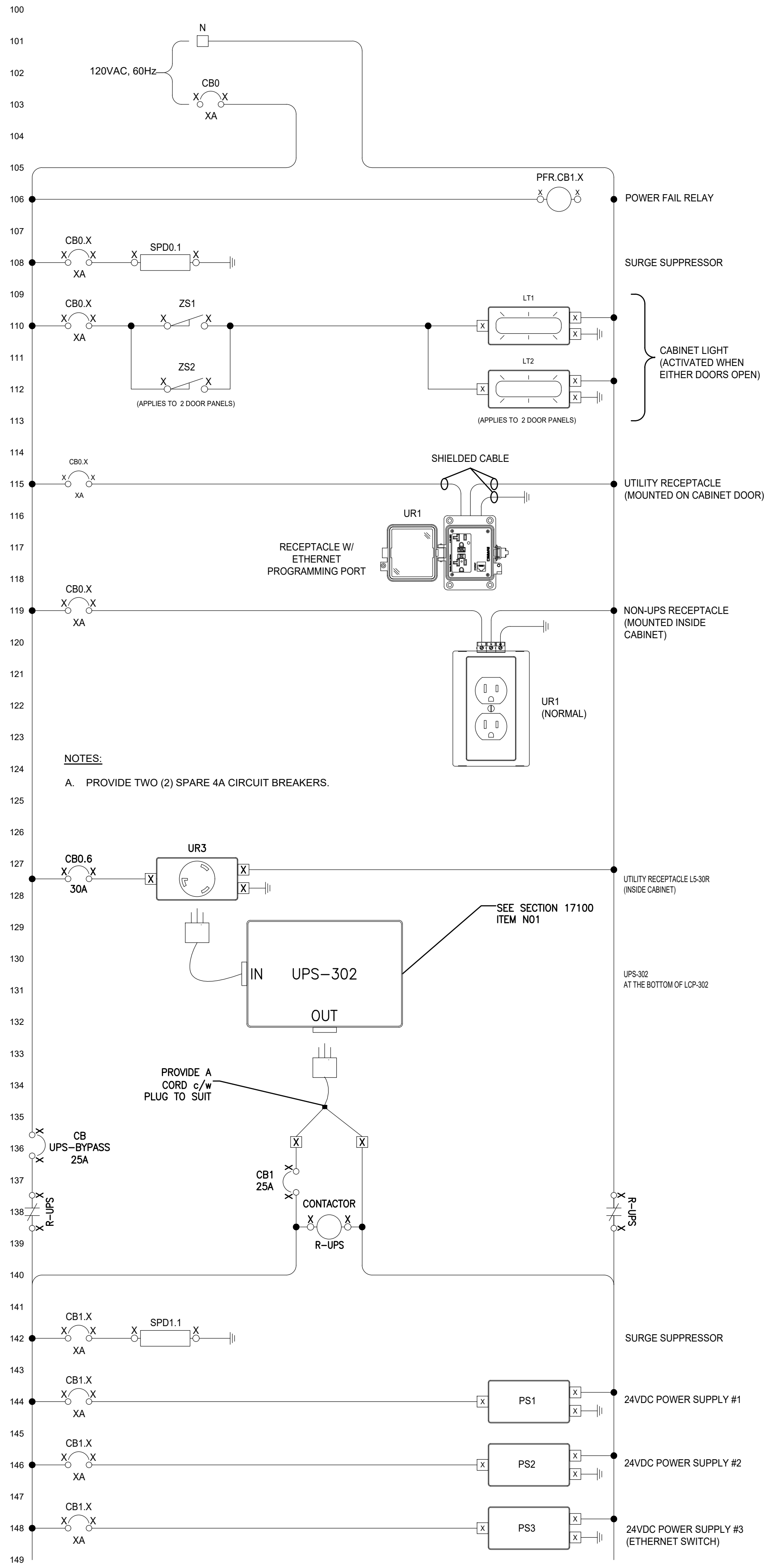
ELECTRICAL
SITE WIDE

CONTROL PANEL DETAILS

DESIGN: SB	DRAWING #:
DRAWN: NB	1015
CHECKED: LO/BM	
JLR #:	

32296-001

PLOT DATE: Tuesday, April 29, 2025 11:24:44 AM



HEADWORKS
200 SERIES
UV BUILDING
500 SERIES
PUMP STATION
100 SERIES
ADMINISTRATION
BUILDING
800 SERIES
AERATION
300 SERIES
CLARIFIERS
400 SERIES
PROCESS
BUILDING
600 SERIES
WAS STABILIZATION POND
(NOT SHOWN IN KEY PLAN)
700 SERIES

KEY PLAN
(NOT TO SCALE)

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SCALE: N.T.S.

CLIENT:

BRIGHTON
MUNICIPALITY OF

CONSULTANT:

JLR J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP
LICENSED PROFESSIONAL ENGINEER
2025-04-29
S. T. BUCKLEY
100517850
PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT:

**BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES**

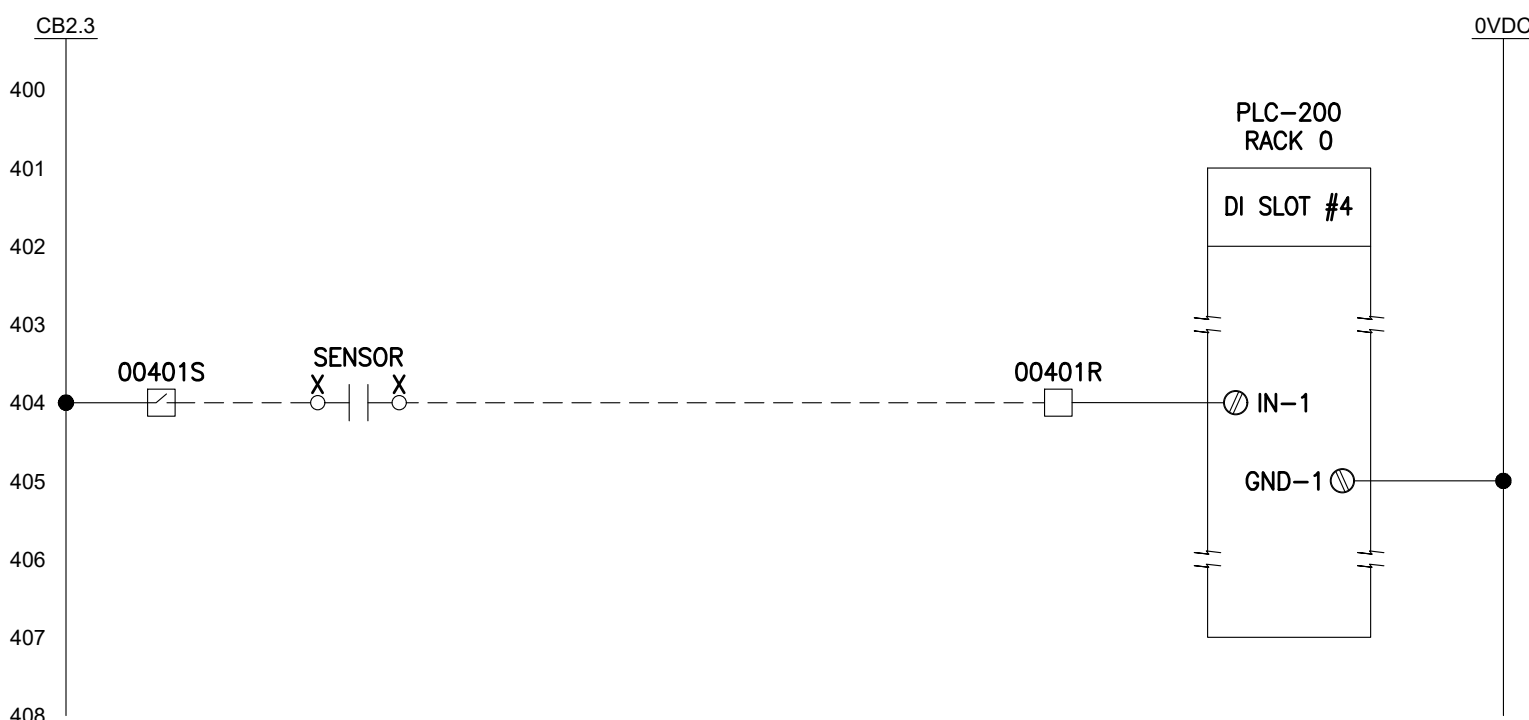
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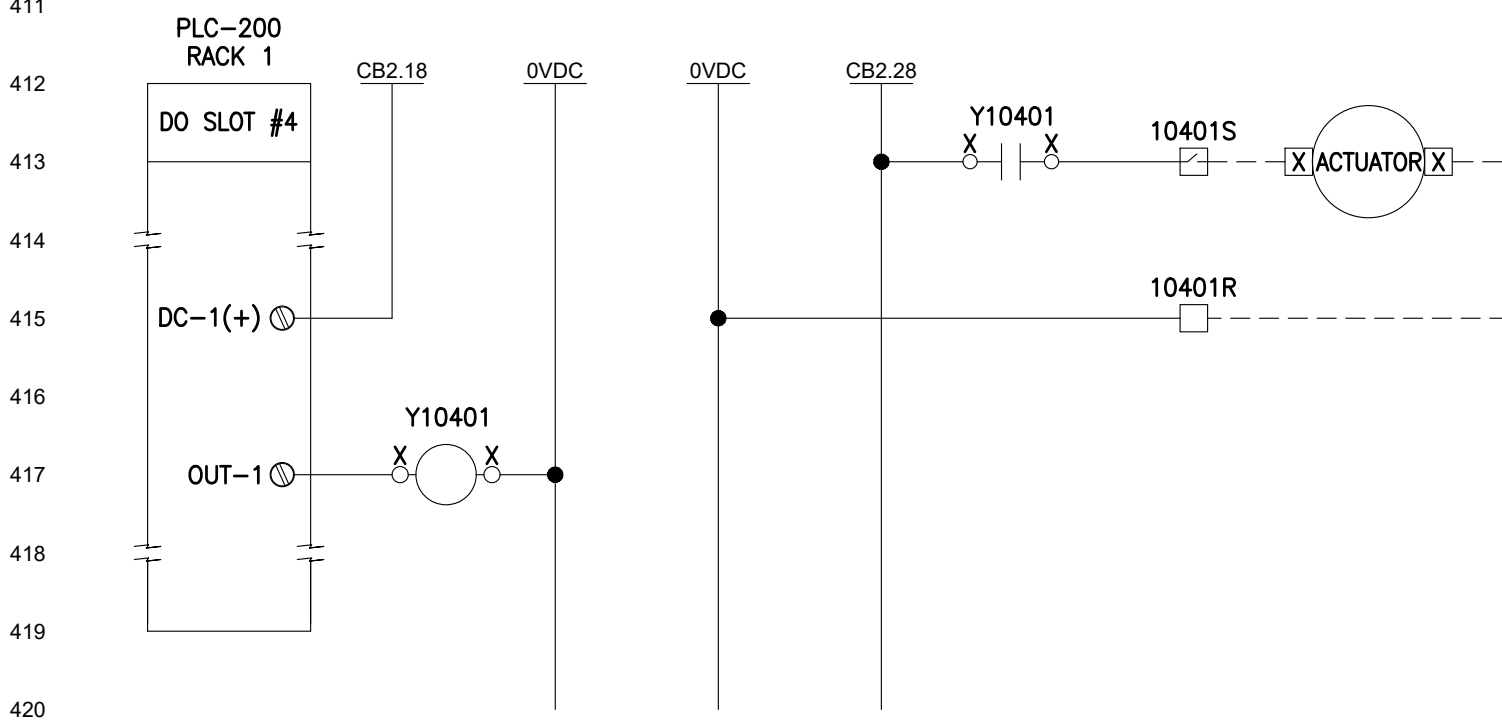
**ELECTRICAL
SITE WIDE
TYPICAL PLC CONTROL PANEL
POWER WIRING LOGIC**

DESIGN:	SB	DRAWING #:	
DRAWN:	NB		
CHECKED:	LO/BM		
JLR #:	32296-001		

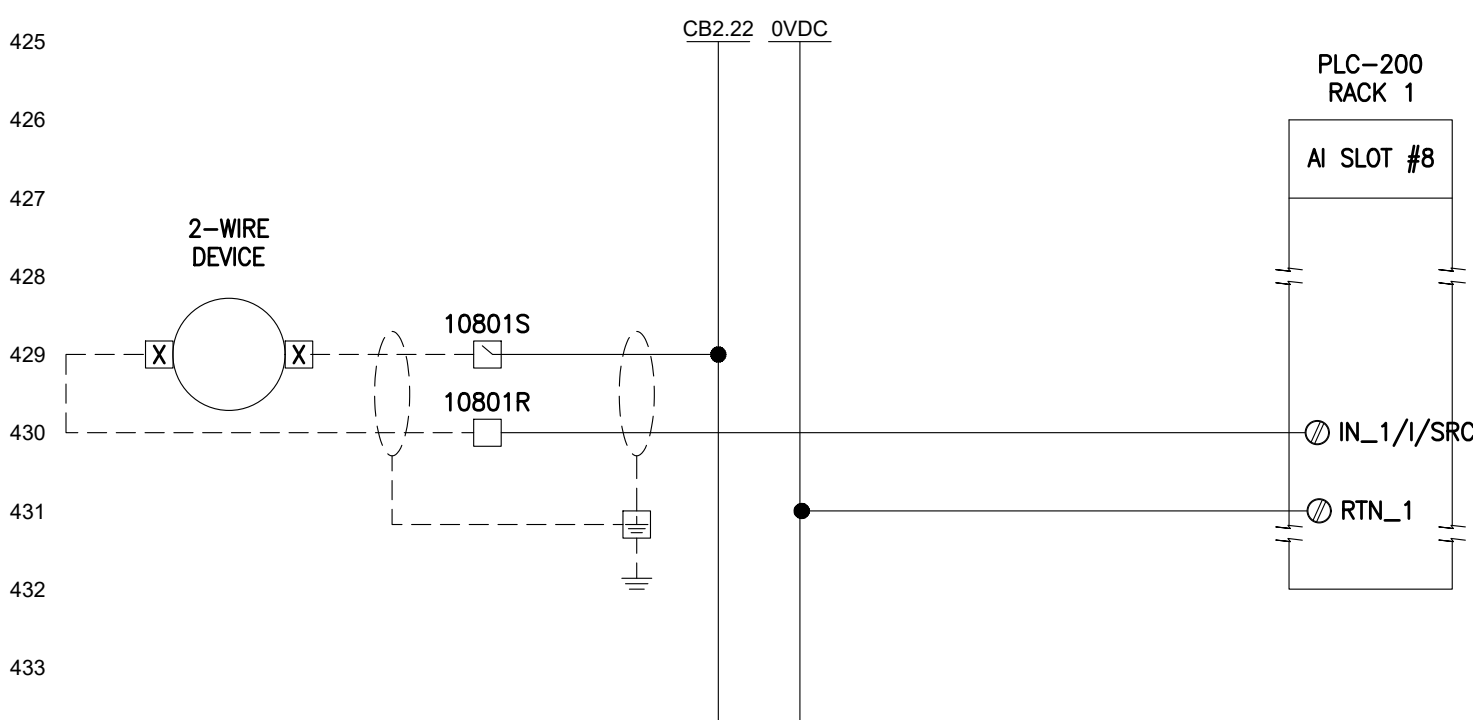
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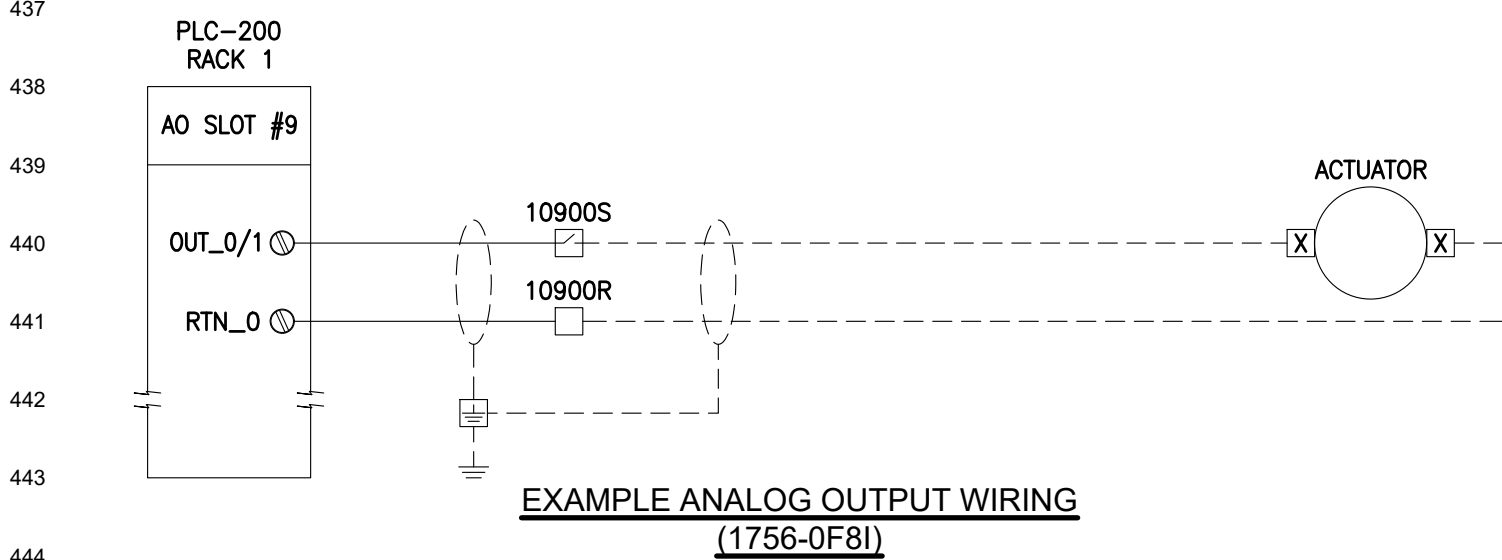
EXAMPLE DIGITAL INPUT WIRING
(1756-B16I)



EXAMPLE DIGITAL OUTPUT WIRING
(POWER SOURCED FROM PLC PANEL)
(1756-OB16I)



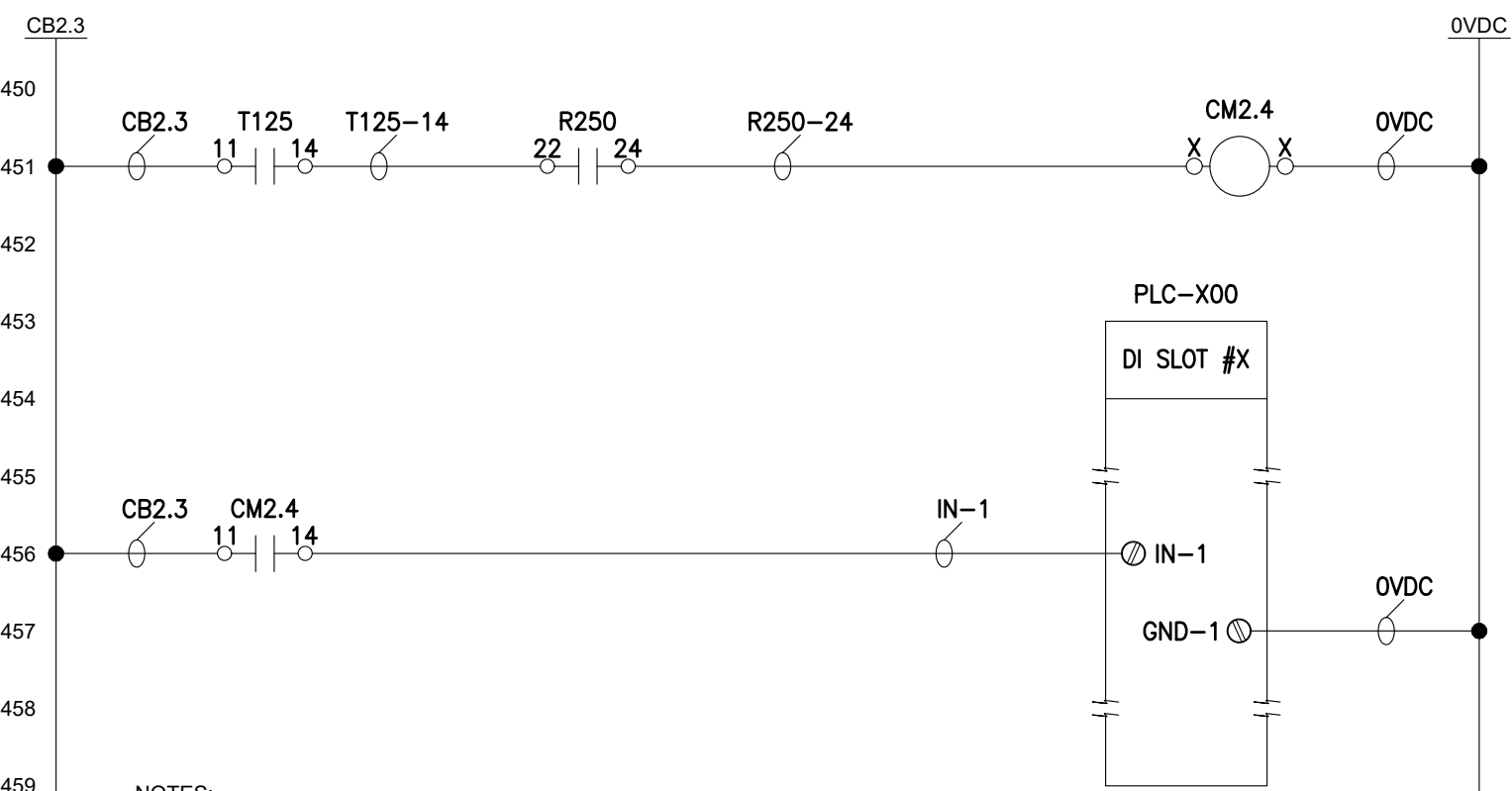
EXAMPLE ANALOG INPUT WIRING (FOR 2-WIRE DEVICE)
(1756-IF8I)



EXAMPLE ANALOG OUTPUT WIRING
(1756-OF8I)

NOTES:

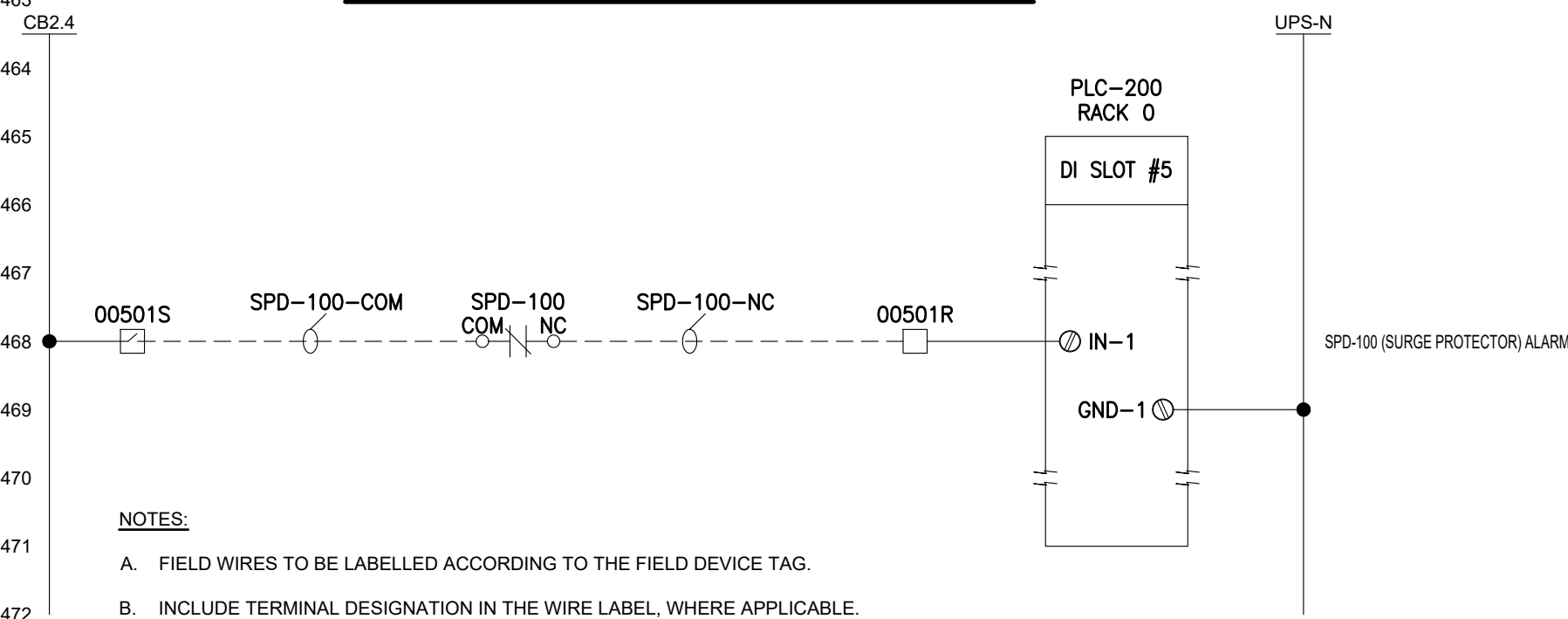
- A. COORDINATE EXACT REQUIREMENTS OF I/O CARDS WITH MANUFACTURER. RECOMMENDATION LOGIC SHOWN FOR REFERENCE ONLY.



NOTES:

- A. INTERNAL PANEL WIRES TO BE LABELLED ACCORDING TO THE COMPONENT AT THE HIGHER POTENTIAL. THE EXCEPTION TO THIS BEING THE PLC I/O WIRING WHICH IS TO MATCH THE PLC I/O LABEL.
- B. INCLUDE TERMINAL DESIGNATION IN THE WIRE LABEL, WHERE APPLICABLE.
- C. BOTH ENDS OF EACH WIRE TO HAVE THE SAME LABEL.

EXAMPLE LABELLING OF INTERNAL PANEL WIRING



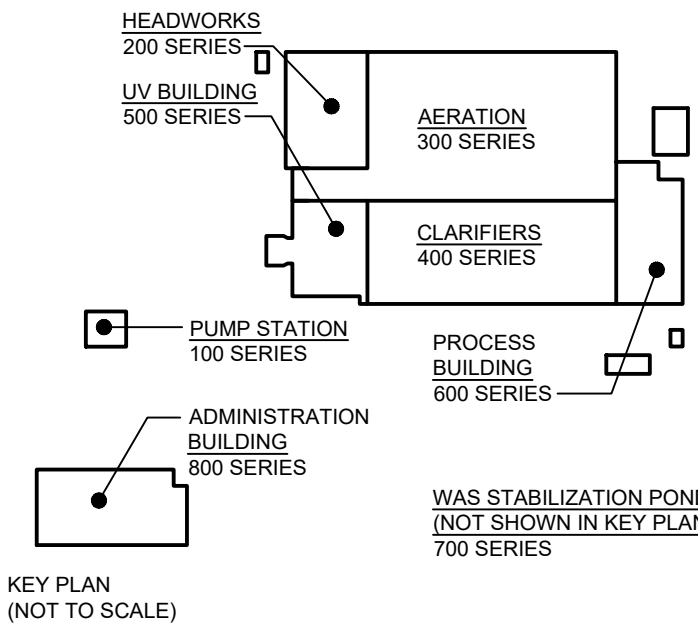
NOTES:

- A. FIELD WIRES TO BE LABELLED ACCORDING TO THE FIELD DEVICE TAG.
- B. INCLUDE TERMINAL DESIGNATION IN THE WIRE LABEL, WHERE APPLICABLE.
- C. BOTH ENDS OF EACH WIRE TO HAVE THE SAME LABEL.
- D. INCLUDE JUNCTION BOX TERMINALS, WHERE APPLICABLE.

EXAMPLE LABELLING OF FIELD WIRING

GENERAL NOTES:

- A. REFER TO OTHER DRAWINGS FOR OTHER REQUIRED LOGIC, INCLUDING OCCUPANCY DETECTION, EXTERIOR LIGHTING CONTROL AS WELL AS VENTILATION CONTROL.



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CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

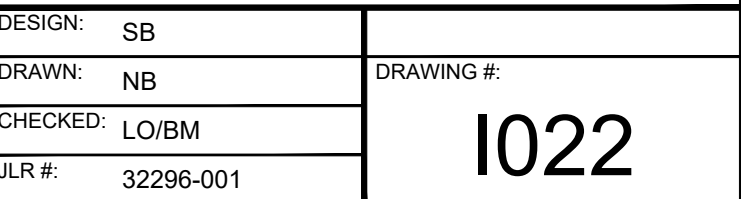
ELECTRICAL
SITE WIDE

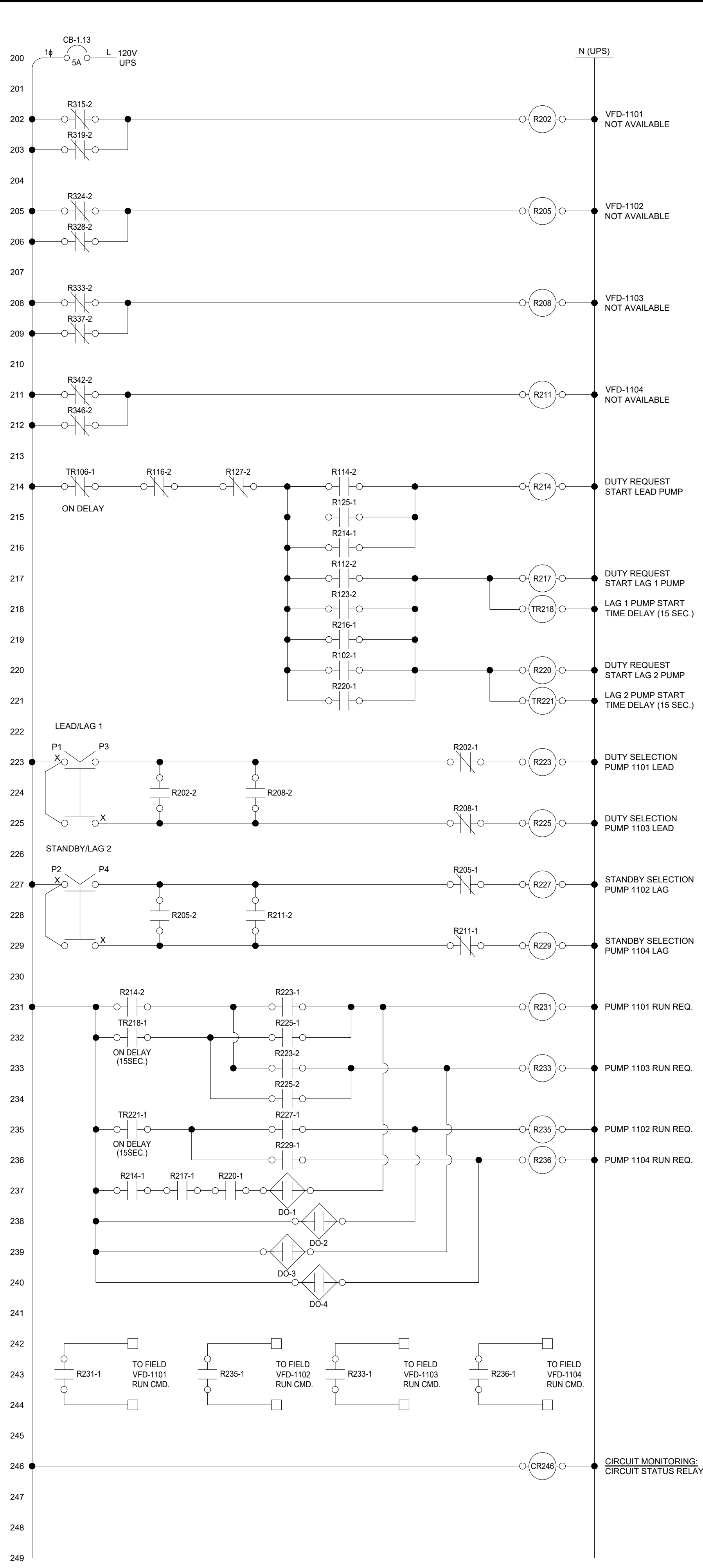
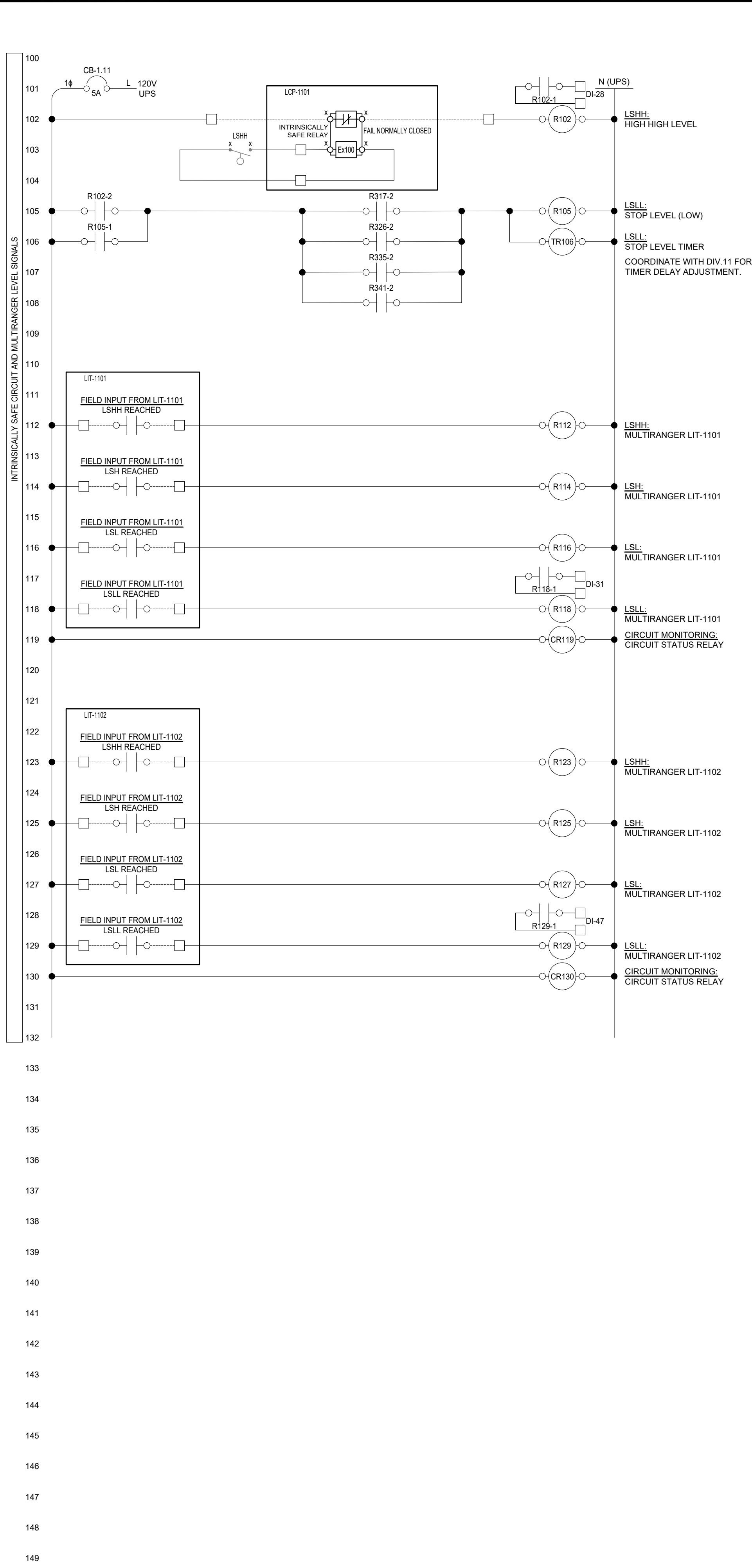
CONTROL WIRING EXAMPLES

DESIGN: SB	DRAWING #:
DRAWN: NB	1021
CHECKED: LO/BM	
JLR #:	

32296-001

- A. WIRE TO MEET THE REQUIREMENTS OF THE COMPONENT MANUFACTURERS
- B. PROVIDE SHOP DRAWINGS FOR WIRES TO BE USED.





HEADWORKS
200 SERIES
UV BUILDING
500 SERIES
PUMP STATION
100 SERIES
ADMINISTRATION
BUILDING
800 SERIES
AERATION
300 SERIES
CLARIFIERS
400 SERIES
PROCESS
BUILDING
600 SERIES
WAS STABILIZATION POND
(NOT SHOWN IN KEY PLAN)
700 SERIES

KEY PLAN
(NOT TO SCALE)

DESIGN DOCUMENTS HEREIN HAVE
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SCALE: N.T.S.

CLIENT:
BRIGHTON MUNICIPALITY

CONSULTANT:
J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:
J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

PROFESSIONAL STAMP
LICENSED PROFESSIONAL ENGINEER
2025-04-29
S. T. BUCKLEY
100517850
PROVINCE OF ONTARIO

PROJECT NORTH

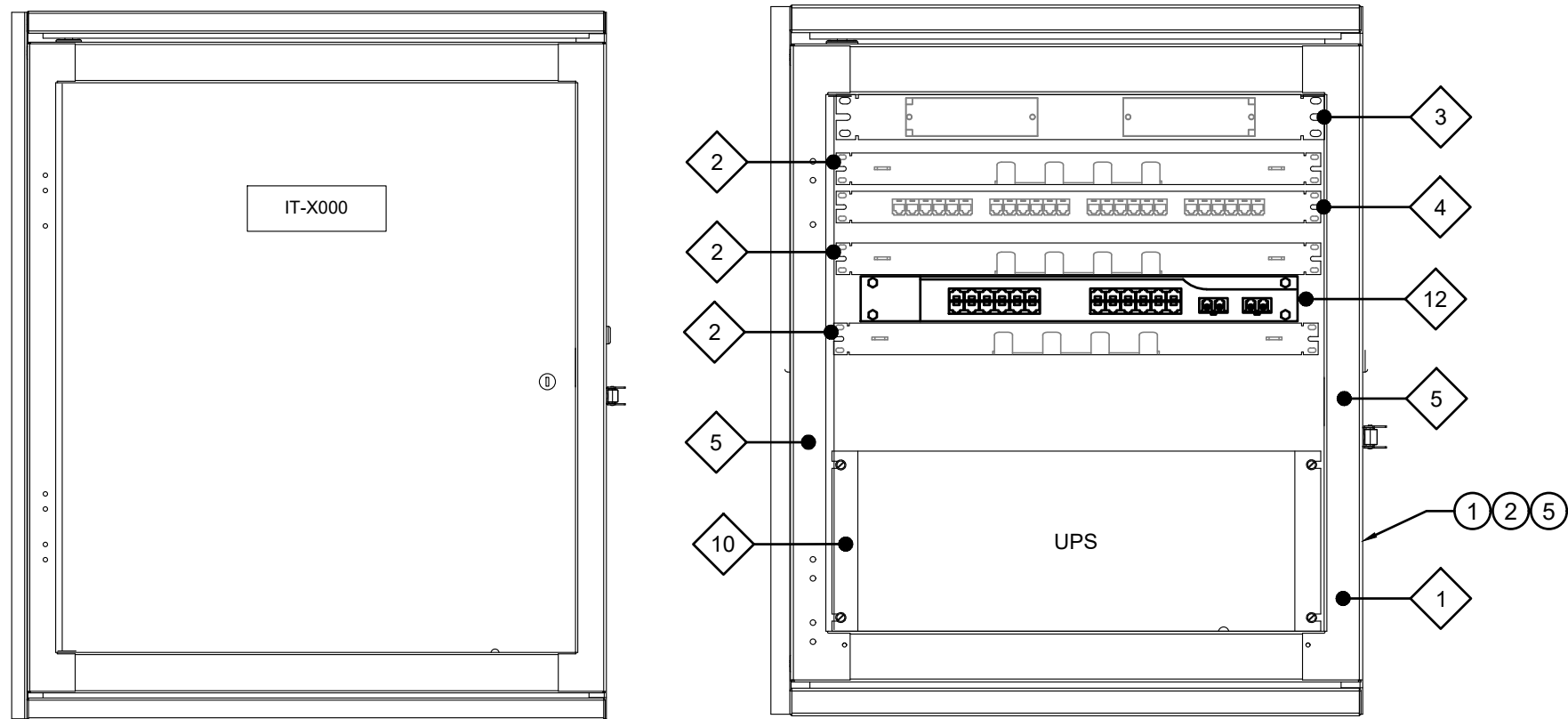
PROJECT:
**BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES**
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
**ELECTRICAL
SITE WIDE
CP-5000 CONTROL WIRING LOGIC**

DESIGN:	SB	DRAWING #:
DRAWN:	NB	1023
CHECKED:	LO/BM	
JLR #:	32296-001	

PLOT DATE: Tuesday, April 29, 2025 11:23:50 AM

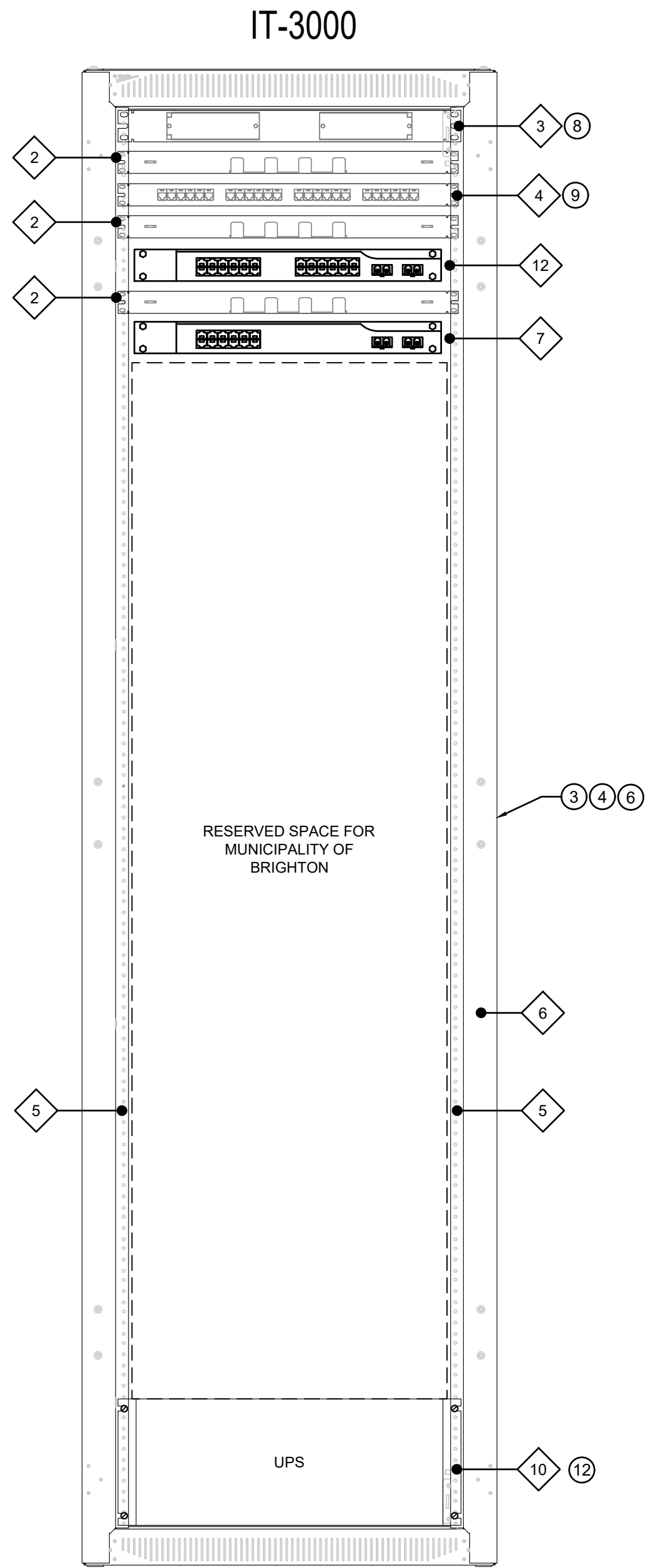
File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrades\03-Production\06-Electrical\N002 IT PANELS ELEVATION AND DETAILS.dwg



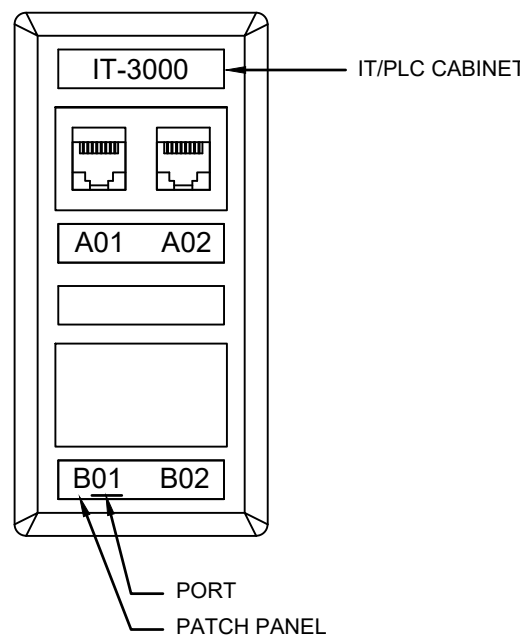
DETAIL NOTES:

- THIS DETAIL APPLIES TO THE FOLLOWING IT-CABINETS:
 - IT-2000
 - IT-8000

1
N002
ADMIN BUILDING
IT CABINET ELEVATION
SCALE: N.T.S.



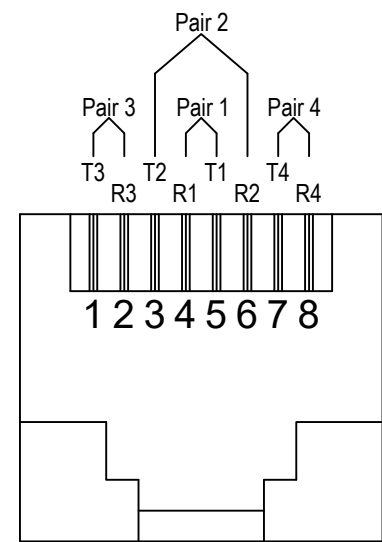
2
N002
PROCESS BUILDING
IT CABINET (IT-6000)
SCALE: N.T.S.



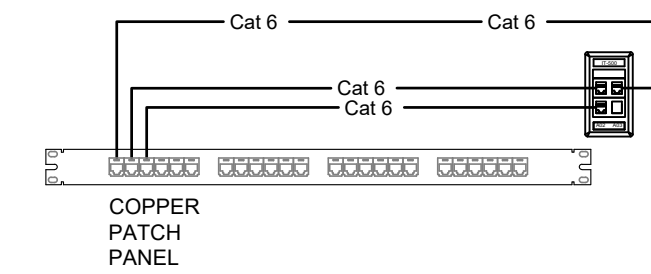
NOTES:

- PROVIDE BLANKS FOR UNUSED PORTS.
- ACTUAL NUMBER OF PORTS AS INDICATED ON PLANS.

4
N002
TYPICAL DATA
OUTLET FACEPLATE LABELLING
SCALE: N.T.S.



5
N002
T568A WIRING FORMAT
SCALE: N.T.S.



DETAIL NOTES:

CABLE LENGTHS:

- CABLE LENGTHS NOT TO EXCEED 90m AS PER ANSI/TIA/EIA-586-B.

POINT OF SERVICE (POS):

- EACH POS HAS CATEGORY 6 PERMANENT LINKS IN A SINGLE GANG FACE PLATE. NUMBER OF LINKS AS INDICATED ON HOUSE SERVICES PLANS FOR EACH OF THE DRAWING SERIES.
- TERMINATE UTP CABLES ON RJ45 JACKS USING T568A CONFIGURATION.
- RJ45 JACKS TO BE KEYSTONE PHYSICAL MOUNTING STYLE.
- NETWORK CABLE TO BE UTP CATEGORY 6, REFER TO SECTION 17060.
- REFER TO HOUSE SERVICES FLOOR PLANS FOR PORT CONNECTIONS AND ACTUAL NUMBER OF CONNECTIONS PER OUTLET.

6
N002
TYPICAL HORIZONTAL DISTRIBUTION/POS
SCALE: N.T.S.

DRAWING NOTES:

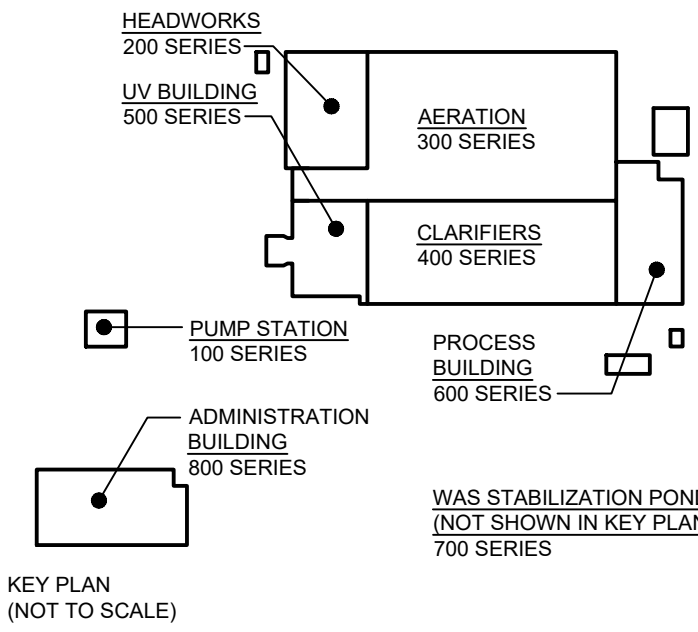
- PROVIDE A 5-15R RECEPTACLE ON A DEDICATED UP CIRCUIT INSIDE THE IT CABINET.
- PROVIDE A TYPE 1 PDU INSIDE THE CABINET. PDU TO BE POWERED FROM THE RECEPTACLE.
- PROVIDE TWO L14-30R RECEPTACLES INSIDE THE IT CABINET. ONE RECEPTACLE TO BE FED FROM UP-390, THE OTHER RECEPTACLE TO BE FED FROM LP-305 VIA DEDICATED CIRCUITS.
- PROVIDE TWO TYPE 2 PDUs. ONE PDU TO BE PLUGGED INTO THE RECEPTACLE FED FROM UP-390. WHILE THE OTHER PDU IS TO BE FED FROM THE UPS INSIDE THE IT CABINET. THIS UPS IS TO BE PLUGGED INTO THE RECEPTACLE FED FROM LP-305.
- BOND IT CABINET TO THE SOURCE UP PANELBOARD USING TYPE G1 BONDING CONDUCTOR. REFER TO SECTION 17060.
- REFER TO SECTION 17060 AND ASSOCIATED HOUSE SERVICES DRAWINGS FOR BONDING REQUIREMENTS. BOND THE IT CABINET TO THE TGB. REFER TO DRAWING #####.
- RESERVED.
- INTENDED FOR THE TERMINATION OF ANY FUTURE INCOMING FIBRE CABLES.
- INTENDED FOR FIBRE CABLES TO THE OTHER IT CABINETS AS WELL AS THE PLC PANELS IN THE PLANT.
- ETHERNET SWITCH FOR SCADA SYSTEM.
- RESERVED.
- PROVIDE CAT6 PATCH CORD TO CONNECT THE UPS TO THE SCADA/PLC NETWORK.

IT-CABINET BILL OF MATERIALS		
ITEM	DESCRIPTION	COMMENTS
1	WALL MOUNTED IT CABINET	
2	1 U HORIZONTAL CABLE MANAGER	
3	1 U FIBRE PATCH PANEL	1. NUMBER OF PORTS TO SUIT
4	1 U 24-PORT COPPER PATCH PANEL	
5	LACE STRIP VERTICAL CABLE MANAGER	
6	FREESTANDING IT CABINET	
7	VPN ROUTER	1. CISCO CATALYST IE SERIES
8	RESERVED	
9	RESERVED	
10	RACK MOUNT UPS	1. PER COMPONENT CODE N02, SPECIFICATIONS SECTION 17100
11	RESERVED	
12	RACK MOUNT ETHERNET SWITCH, EACH c/w SIXTEEN (16) GIGE IND SFP FIBRE TRANSCEIVERS	1. PROVIDED BY SI
13	RESERVED	
14	RESERVED	

3
N002
IT CABINET BILL OF MATERIALS
SCALE: N.T.S.

GENERAL NOTES:

- REFER TO SECTION 17060 FOR IT CABINET EQUIPMENT SPECIFICATION.
- PROVIDE LACE STRIP VERTICAL MANAGERS FOR EACH IT CABINET.
- IN ADDITION TO THE PATCH PANELS INDICATED, PROVIDE ADDITIONAL PATCH PANELS AS REQUIRED TO TERMINATE THE SPECIFIED CABLES.
- PROVIDE A S
- HELP INSIDE EACH IT CABINET. REFER TO SECTION 17060.
- SCADA SERVERS NOT SHOWN. SI TO PROVIDE SCADA SERVERS, INSTALLED INSIDE IT-3000. REFER TO DIVISION 17 SPECIFICATIONS.
- CONTRACTOR TO REVIEW THE REQUIREMENTS OF ALL EQUIPMENT TO BE INSTALLED INSIDE EACH IT CABINET PRIOR TO FINALIZING THE SELECTION OF THE PDUS FOR THE CABINETS. THE PDU SHOP DRAWING TO INCLUDE A LIST OF ALL EQUIPMENT TO BE CONNECTED TO EACH PDU ALONG WITH THE ELECTRICAL DATA (VOLTAGE, CURRENT, ETC.) AND PLUG CONFIGURATIONS. NOTE THAT SOME EXISTING EQUIPMENT WILL BE RE-INSTALLED INSIDE THE NEW IT CABINET (IT-3000); THE CONTRACTOR TO ENSURE THAT THE REQUIREMENTS FOR SUCH EQUIPMENT ARE ALSO FACTORED INTO THE FINAL PDU SELECTION.



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CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

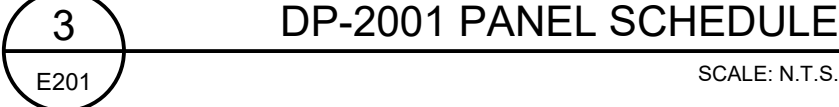
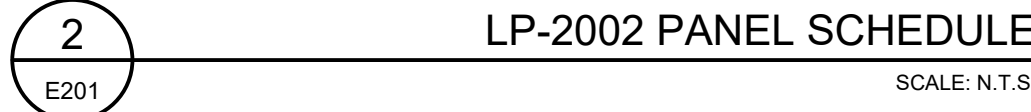
DRAWING:

ELECTRICAL
SITE WIDE
IT PANELS ELEVATION AND
DETAILS

DESIGN: SB	DRAWING #:
DRAWN: JH	N002
CHECKED: LO/BM	
JLR #:	

32296-001

PLOT DATE: Tuesday, April 29, 2025 11:24:11 AM



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PROJECT: _____

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING: _____

ELECTRICAL HEADWORKS SINGLE LINE DIAGRAM AND PANEL SCHEDULES

DESIGN: SB	DRAWING #: E201
DRAWN: NB/RH	
CHECKED: LO/BM	
JLR #: 32296-001	

File Location: P:\32000\32296-001 - Brighton WWT System Upgrades\03-Production\06-Elect\32296-001 - HEADWORKS SLD.dwg

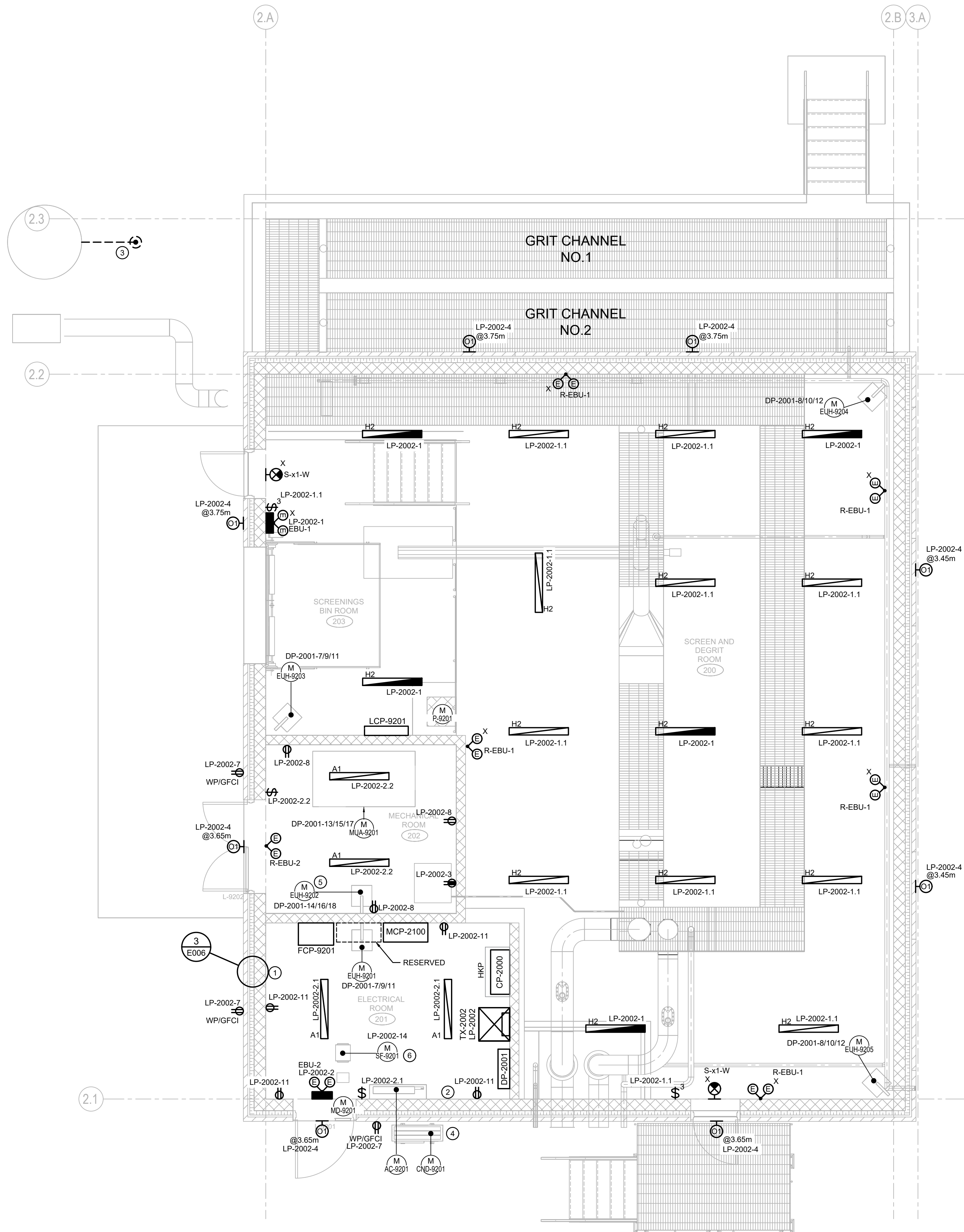
GENERAL NOTES:

- A. PROVIDE GROUND AS PER SPD MANUFACTURER'S REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAIL.
- B. ALL INDICATED CABLES SHOWN AS "ARMoured BELDEN VFD CABLE" TO BE ALUMINUM ARMoured BELDEN VFD CABLE 1225X55 SERIES.
- C. MCP BREAKER SIZES SHOWN FOR QUOTATION PURPOSES ONLY. FINAL BREAKER SIZES TO BE DETERMINED BY MCC MANUFACTURER, SUBJECT TO THE APPROVAL OF THE ENGINEER.
- D. REFER TO DRAWING N001 FOR CAT6 NETWORK DETAILS.
- E. MCP ETHERNET SWITCH POWER SUPPLIES TO BE FED FROM AN EXTERNAL 120VAC UPS POWER SOURCE. MCP MANUFACTURER TO MAKE THE NECESSARY ARRANGEMENTS TO DISTRIBUTE THIS POWER INSIDE THE MCP. REFER TO CONTROL PANEL WIRING DIAGRAM.
- F. LOCATION OF MCP ETHERNET SWITCHES NOT SHOWN. MCP MANUFACTURER TO IDENTIFY THIS LOCATION.
- G. REFER TO DIV 11 FOR MCP REQUIREMENTS.
- H. REFER TO DRAWING E020 AND E021 FOR MOTOR STARTER SCHEMATICS. REFER TO MSLCL AND P050MDS FOR FURTHER DETAILS ON MOTOR STARTER TYPES.
- I. WHERE CONDUIT IS NOTED WITHOUT TRADE SIZE, CONTRACTOR TO PROVIDE SIZE IN COMPLIANCE WITH ONTARIO ELECTRICAL SAFETY CODE REQUIREMENTS.
- J. ALL SPECIFIED AWG OR MCM SIZE CONDUCTORS ARE TO BE COPPER.

<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-right: 10px;">4</div> <div>STARTER TYPES</div> </div>	
TYPE	DESCRIPTION
TYPE 10	FVNR IN MCC WITH LOCAL CONTROL PANEL
TYPE 70	VFD IN MCC WITH LOCAL CONTROL PANEL C/W LOCAL SPEED INDICATOR
TYPE 73	VFD IN MCC WITH LOCAL CONTROL PANEL C/W LOCAL SPEED INDICATOR + MINICAS RELAY INTERLOCK

DRAWING NOTES:

- ① COORDINATE EXACT BREAKER SIZE WITH SPD MANUFACTURER.
- ② RESERVED.
- ③ REFER TO DRAWING E009 FOR HEAT TRACE REQUIREMENTS.
- ④ REFER TO DRAWING E020 FOR MOTOR STARTER WIRING LOGIC.
- ⑤ CONTRACTOR TO CONFIRM ACTUAL BREAKER SIZE WITH MOTOR CONTROL PANEL MANUFACTURER PRIOR TO ORDERING. MODIFY FEEDER SIZE AS REQUIRED.
- ⑥ LIGHTING IS TO BE ROUTED THROUGH CONTACTORS IN OCCUPANCY CONTROL PANEL, FCP-2002.

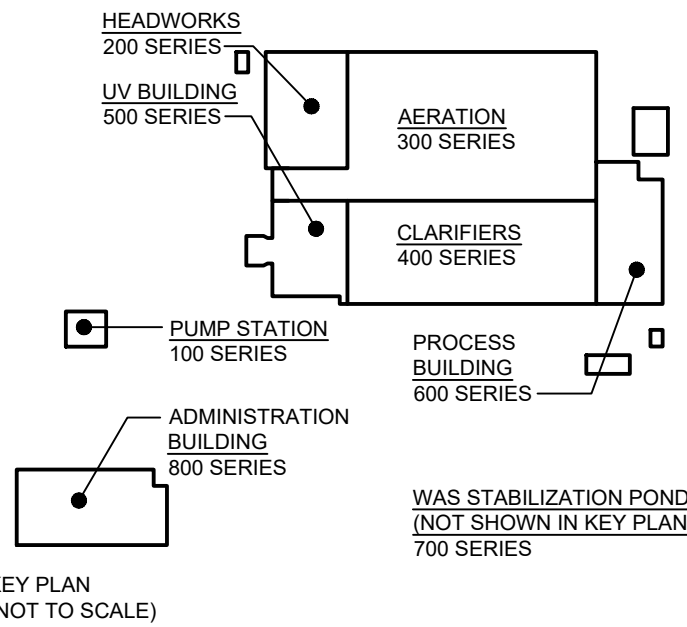


GENERAL NOTES:

- | | |
|----|---|
| A. | REFER TO DRAWING E002 FOR LIGHTING FIXTURE TYPES. |
| B. | REFER TO DRAWING E002 FOR LIGHT FIXTURE MOUNTING HEIGHTS AND OTHER REQUIREMENTS. |
| C. | REFER TO MOTOR STARTER CONTROL LIST AND HAZARDOUS AREA CLASSIFICATIONS ON ME SERIES DRAWINGS. |
| D. | REFER TO DRAWING E001 FOR FURTHER HOUSE SERVICES REQUIREMENTS, INCLUDING DISCONNECTS AND RECEPTACLES. |
| E. | REFER TO M SERIES DRAWINGS FOR FURTHER HVAC WIRING REQUIREMENTS, INCLUDING SEQUENCE OF OPERATIONS. |
| F. | PROVIDE HOUSEKEEPING PAD FOR ALL FLOOR MOUNTED EQUIPMENT. REFER TO STRUCTURAL DETAIL 1/S005 |

DRAWING NOTES

- 1 CONDUIT PENETRATION LOCATION TO ODOUR CONTROL. REFER TO DETAIL 3/E006.
- 2 CONDUIT PENETRATION IN THIS LOCATION TO THE TUNNEL BELOW.
- 3 CONTRACTOR TO PROVIDE GROUNDING ROD, LOCAL EARTHING AND BOND TO EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. REFER TO DRAWING E004.
- 4 INDOOR EVAPORATOR UNIT IS TO BE FED FROM THE OUTDOOR UNIT. ELECTRICAL CONNECTION IS TO PROVIDE POWER AND CONTROL WIRING BETWEEN THE OUTDOOR CONDENSING UNIT AND THE INDOOR EVAPORATOR UNIT. WIRING TO BE RUN IN EMT LIQUIDS, OIL AND METALLIC LIGHT-TIGHT FLEXIBLE CONDUITS. MINIMUM LENGTH OF LIQUID-TIGHT CONDUITS NOT TO EXCEED 450mm. COORDINATE THE EXACT WIRING REQUIREMENTS WITH THE MANUFACTURER. SIZE POWER WIRING TO SUIT. PROVIDE A NEMA 6X CONDUIT FOR EACH UNIT. PROVIDE SEPARATE CONDUITS FOR POWER AND CONTROL WIRING.
- 5 PROVIDE PADLOCKABLE UNFUSED DISCONNECT SWITCH, SIZED TO SUIT EQUIPMENT. COORDINATE WITH MANUFACTURER FOR EXACT DISCONNECT SIZE.
- 6 PROVIDE MOTOR RATED SWITCH, SIZED TO SUIT EQUIPMENT. COORDINATE WITH MANUFACTURER FOR EXACT SIZE.



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SCALE: AS INDICATED

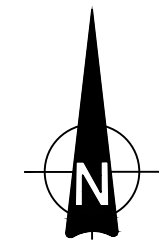
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CONSULTANT: www.jlrichards.ca

CONSULTANT:



PROJECT NORTH



PROJECT:

**BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES**

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL
HEADWORKS

HOUSE SERVICES PLAN

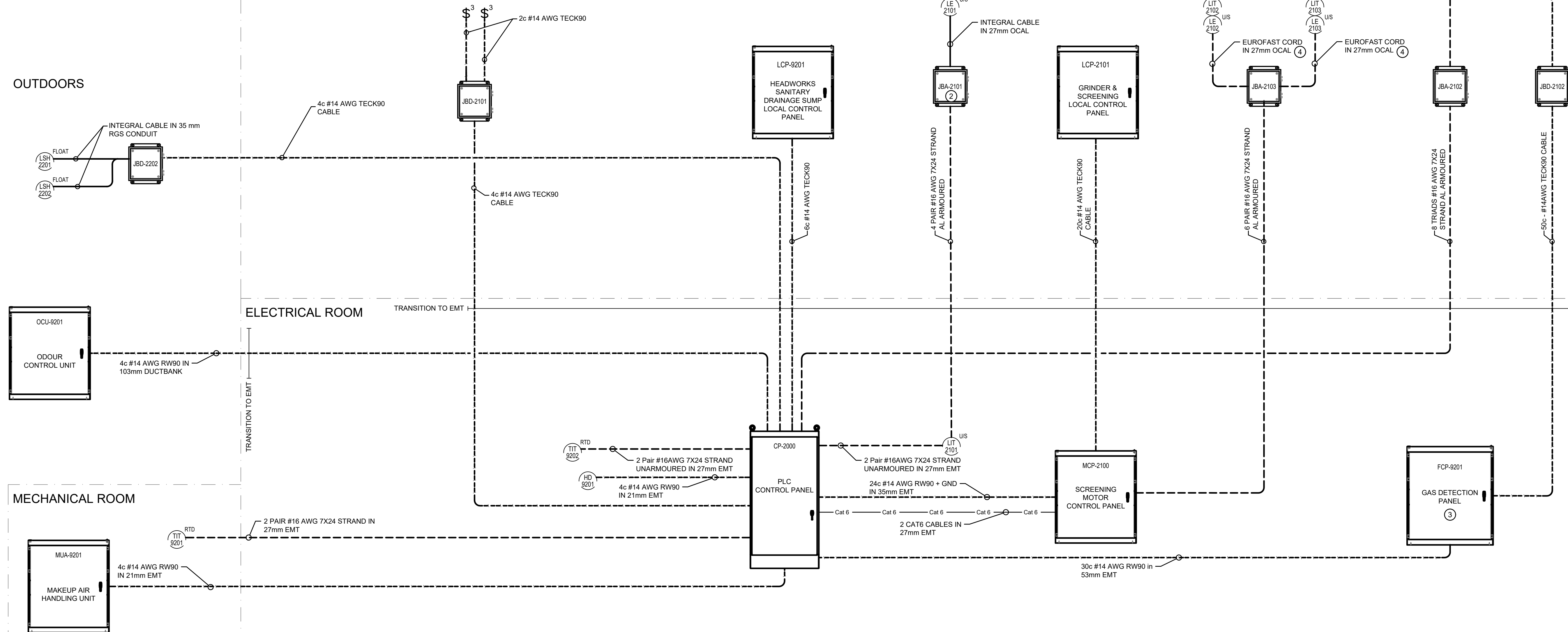
DESIGN: SB	DRAWING #: E210
DRAWN: NB/RH	
CHECKED: LO/BM	
JLR #: 32296-001	

- ① DAISY CHAIN TO NEXT STACK LIGHT USING THE SAME CONDUIT AND WIRING REQUIREMENTS AS THE FIRST LIGHT.
- ② PROVIDE SERVICE LOOP INSIDE JUNCTION BOX FOR FUTURE TERMINATION.
- ③ CONTRACTOR TO PROVIDE A 120VAC UPS CIRCUIT TO THIS PANEL.
- ④ COORDINATE WITH MANUFACTURER FOR EXACT CABLE TYPE.

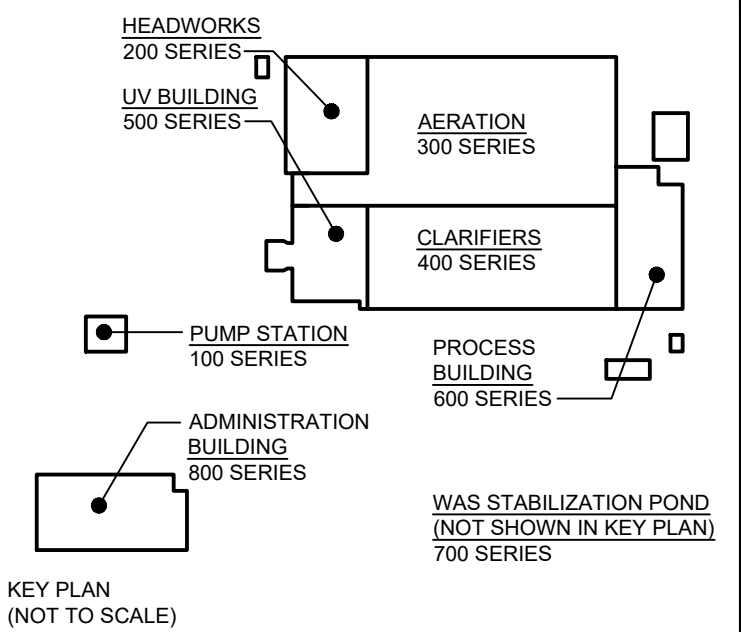
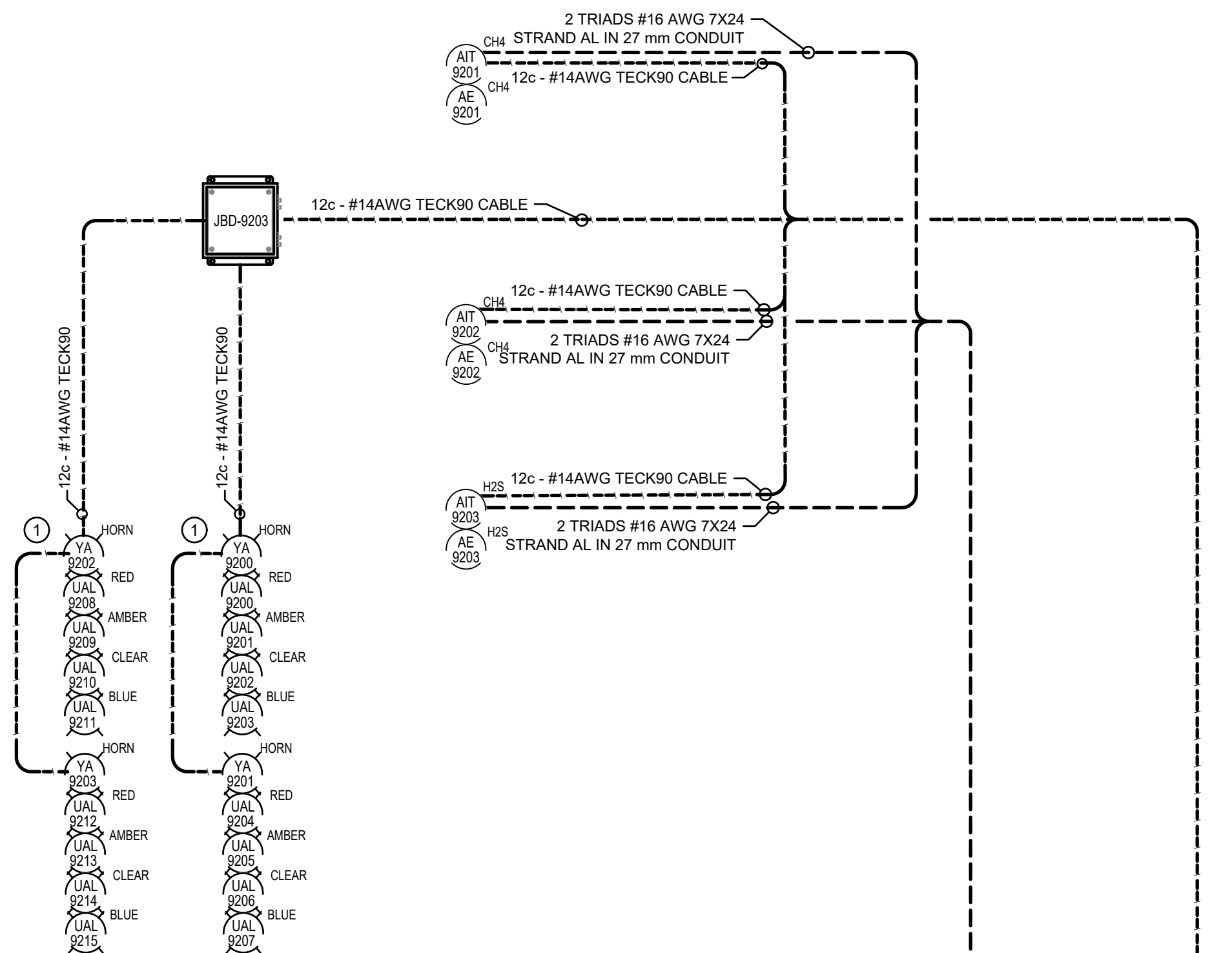
A. REFER TO I011 FOR PANEL DETAILS AND CLASSIFICATIONS.

B. REFER TO TABLE OF ELECTRICAL EQUIPMENT FOR SCOPE OF SUPPLY.

OUTDOORS



MECHANICAL ROOM



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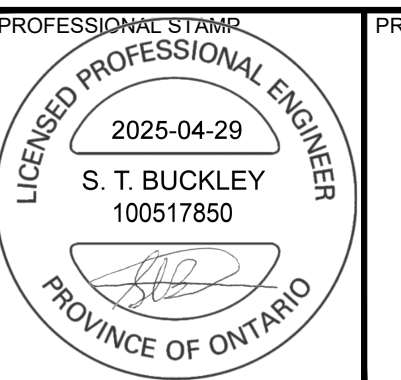
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CLIENT:

CONSULTANT: www.jlrichards.ca

CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL
HEADWORKS

CONTROL BLOCK DIAGRAM

DESIGN: SB	
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DRAWN: NB	DRAWING #:
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CHECKED: LO/BM 1200

JLR #: 32296-001

200

File Location: P:\320003\2296-001 - Brighton WWT System Upgrade\03-Production\06-Elect\32296-001 - HEADWORKS PLC AND IO LIST.dwg

PLC-2000 COMPONENT SUMMARY							
SLOT NUMB.	CATALOG NUMBER	MANUFACTURER	DESCRIPTION	IO TYPE	IO RACK	IO COUNT	COMMENTS
0	1769-L33ER	AB/RA	CompactLogix Processor, 3mB c/w Ethernet	Processor	0	0	
1	1769-IA16	AB/RA	16 Point 120 VAC Input Module	Digital Input	0	16	
2	1769-IA16	AB/RA	16 Point 120 VAC Input Module	Digital Input	0	16	
3	1769-IA16	AB/RA	16 Point 120 VAC Input Module	Digital Input	0	16	
4	1769-PA4	AB/RA	120V Power Supply (4A @ 5VDC, 2A @ 24VDC)	Power Supply	0	0	
5	1769-IA16	AB/RA	16 Point 120 VAC Input Module	Digital Input	0	16	
6	1769-OV16	AB/RA	16 Point 120 VAC Output Module	Digital Output	0	16	
7	1769-IF8	AB/RA	8 Channel Analog Input Module	Analog Input	0	8	
8	1769-IF8	AB/RA	8 Channel Analog Input Module	Analog Input	0	8	
9	1769-OF4	AB/RA	4 Channel Analog Output Module	Analog Output	0	4	
10	1769-ECR	AB/RA	Right End Cap/Terminator	Miscellaneous	0	0	

1

PLC-2000 COMPONENTS

I201

COMPONENT I/O LIST									
CONTROLLER IO TAG	ISA TAG	EQUIPMENT	DESCRIPTION	LOCATION	OPERATION	RACK	SLOT	POINT	COMMENTS
DI - 0	YA	CP-2000	Rack 0 DI Card 1 24 VDC Failure	Headworks PLC Panel	0 = FAILURE	0	1	0	
DI - 1	YA	CP-2000	Rack 0 DO Card 6 24 VDC Failure	Headworks PLC Panel	0 = FAILURE	0	1	1	
DI - 2	YA	CP-2000	Rack 0 AI Card 7 24 VDC Failure	Headworks PLC Panel	0 = FAILURE	0	1	2	
DI - 3	YA	CP-2000	Rack 0 AI Card 8 24 VDC Failure	Headworks PLC Panel	0 = FAILURE	0	1	3	
DI - 4	YA	CP-2000	Rack 0 AO Card 9 24 VDC Failure	Headworks PLC Panel	0 = FAILURE	0	1	4	
DI - 5	YA	UPS-2000	UPS AC Line Failure	Headworks Electrical Room	0 = FAILURE	0	1	5	
DI - 6	YA	UPS-2000	UPS Battery Low	Headworks Electrical Room	0 = LOW	0	1	6	
DI - 7	YA	UPS-2000	UPS Alarm	Headworks Electrical Room	0 = ALARM	0	1	7	
DI - 8	YA	UPS-2000	UPS On Bypass	Headworks Electrical Room	0 = BYPASS	0	1	8	
DI - 9						0	1	9	
DI - 10	YA	SPD-2000	SPD-2000 (MCC-2000) Alarm	Headworks Electrical Room	0 = ALARM	0	1	10	
DI - 11	YA	SPD-2002	SPD-2002 (LP-2002) Alarm	Headworks Electrical Room	0 = ALARM	0	1	11	
DI - 12						0	1	12	
DI - 13						0	1	13	
DI - 14	YA	LCP-9201	Sump Controller Fault	Headworks Screen And Degrit Room	0 = ALARM	0	1	14	
DI - 15	YA	LCP-9201	Sump Level High	Headworks Screen And Degrit Room	0 = ALARM	0	1	15	
DI - 16	YA	CP-2000	Rack 0 DI Card 2 24 VDC Failure	Headworks PLC Panel	0 = FAILURE	0	2	0	
DI - 17	LAH	LIT-2101	Sewage Receiving Channel Level Alarm High	Headworks Screen And Degrit Room	0 = ALARM	0	2	1	
DI - 18	LAHH	LIT-2101	Sewage Receiving Channel Level Alarm High High	Headworks Screen And Degrit Room	0 = ALARM	0	2	2	
DI - 19	LAH	LSH-2201	Grit Channel No. 1 Level Alarm High	Headworks Screen And Degrit Room	0 = ALARM	0	2	3	
DI - 20	LAH	LSH-2202	Grit Channel No. 2 Level Alarm High	Headworks Screen And Degrit Room	0 = ALARM	0	2	4	
DI - 21	YA	HD-9201	Headworks Electrical Room Heat Detector Alarm	Headworks Screen And Degrit Room	0 = ALARM	0	2	5	
DI 22	YA	P-9201	Headworks Sanitary Drainage Pump Fault	Headworks Screen And Degrit Room	0 = ALARM	0	2	6	
DI - 23	YA	OCU-9201	Headworks Odour Control Unit - Fault	Outdoors	0 = FAULT	0	2	7	
DI - 24	YA	OCU-9201	Mist Eliminator Differential Pressure High	Outdoors	0 = ALARM	0	2	8	
DI - 25	YA	FCP-9201	Headworks H2S Analysis - Alarm	Headworks Electrical Room	0 = ALARM	0	2	9	
DI - 26	YA	FCP-9201	Headworks Gas Sensor Fault	Headworks Electrical Room	0 = ALARM	0	2	10	
DI - 27	YA	FCP-9201	Headworks H2S Analysis - Warning	Headworks Electrical Room	0 = ALARM	0	2	11	
DI - 28	YA	FCP-9201	Headworks CH4 Analysis 1 - Alarm	Headworks Electrical Room	0 = ALARM	0	2	12	
DI - 29	YA	FCP-9201	Headworks CH4 Analysis 1 - Warning	Headworks Electrical Room	0 = ALARM	0	2	13	
DI - 30	YA	FCP-9201	Headworks CH4 Analysis 2 - Alarm	Headworks Electrical Room	0 = ALARM	0	2	14	
DI - 31	YA	FCP-9201	Headworks CH4 Analysis 2 - Warning	Headworks Electrical Room	0 = ALARM	0	2	15	
DI - 32	YA	CP-2000	Rack 0 DI Card 3 24 VDC Failure	Headworks PLC Panel	0 = FAILURE	0	3	0	
DI - 33	YS	FCP-9201	Occupancy Lamp On	Headworks Electrical Room	1 = ON	0	3	1	
DI - 34	YS	FCP-9201	Gas Warning Lamp On	Headworks Electrical Room	1 = ON	0	3	2	
DI - 35	YS	FCP-9201	Gas Alarm/Horn Lamp On	Headworks Electrical Room	1 = ON	0	3	3	
DI - 36						0	3	4	
DI - 37	YA	MAU-201	Headworks Make-up Air Unit - Fault	Headworks Screen And Degrit Room	0 = ALARM	0	3	5	
DI - 38	YS	MCP-2100	Headworks Grinder Fault	Headworks Electrical Room	1 = ALARM	0	3	6	
DI - 39	YS	MCP-2100	Headworks Grinder Running Forward	Headworks Electrical Room	1 = RUNNING	0	3	7	
DI - 40	YS	MCP-2100	Headworks Grinder Running Reverse	Headworks Electrical Room	1 = RUNNING	0	3	8	
DI - 41	YS	MCP-2100	Headworks Auger Fault	Headworks Electrical Room	1 = ALARM	0	3	9	
DI - 42	YS	MCP-2100	Headworks Auger Running Forward	Headworks Electrical Room	1 = RUNNING	0	3	10	
DI - 43	YS	MCP-2100	Headworks Auger Running Reverse	Headworks Electrical Room	1 = RUNNING	0	3	11	
DI - 44	YS	MCP-2100	Headworks Grinder Fault	Headworks Electrical Room	1 = ALARM	0	3	12	
DI - 45	YS	MCP-2100	Headworks Grinder Running Forward	Headworks Electrical Room	1 = RUNNING	0	3	13	
DI - 46	YS	MCP-2100	Headworks Grinder Running Reverse	Headworks Electrical Room	1 = RUNNING	0	3	14	
DI - 47						0	3	15	
DI - 0	YA	CP-2000	Rack 0 DI Card 5 24 VDC Failure	Headworks PLC Panel	0 = FAILURE	0	5	0	
DI - 1						0	5	1	
DI - 2						0	5	2	
DI - 3						0	5	3	
DI - 4						0	5	4	
DI - 5						0	5	5	
DI - 6						0	5	6	
DI - 7						0	5	7	
DI - 8						0	5	8	
DI - 9						0	5	9	
DI - 10						0	5	10	
DI - 11						0	5	11	
DI - 12						0	5	12	
DI - 13						0	5	13	
DI - 14						0	5	14	
DI - 15						0	5	15	
DO - 0	YC	MCP-2100	MCP-2100 Run Permissive	Headworks Electrical Room	1 = RUN	0	6	0	Provide interposing relay to suit
DO - 1						0	6	1	Provide interposing relay to suit
DO - 2						0	6	2	Provide interposing relay to suit
DO - 3						0	6	3	Provide interposing relay to suit
DO - 4						0	6	4	Provide interposing relay to suit
DO - 5						0	6	5	Provide interposing relay to suit
DO - 6						0	6	6	Provide interposing relay to suit
DO - 7						0	6	7	Provide interposing relay to suit
DO - 8						0	6	8	Provide interposing relay to suit
DO - 9						0	6	9	Provide interposing relay to suit
DO - 10						0	6	10	Provide interposing relay to suit
DO - 11						0	6	11	Provide interposing relay to suit
DO - 12						0	6	12	Provide interposing relay to suit
DO - 13						0	6	13	Provide interposing relay to suit
DO - 14						0	6	14	Provide interposing relay to suit
DO - 15						0	6	15	Provide interposing relay to suit
AI - 0	FI	LIT-2101	Sewage Receiving Channel Flow Over Weir	Headworks Screen And Degrit Room		0	7	0	Provide analog signal duplicator
AI - 1	TI	TIT-9201	Headworks Air Temperature Indicator	Headworks Screen And Degrit Room		0	7	1	Provide analog signal duplicator
AI - 2	TI	TIT-9202	Electrical Room Air Temperature Indicator	Headworks Electrical Room		0	7	2	Provide analog signal duplicator
AI - 3	AI	AIT-2001	Headworks H2S Analysis	Headworks Screen And Degrit Room		0	7	3	Provide analog signal duplicator
AI - 4	AI	AIT-2002	Headworks CH4 Analysis 1	Headworks Screen And Degrit Room		0	7	4	Provide analog signal duplicator
AI - 5	AI	AIT-2003	Headworks CH4 Analysis 2	Headworks Screen And Degrit Room		0	7	5	Provide analog signal duplicator
AI - 6						0	7	6	Provide analog signal duplicator
AI - 7						0	7	7	Provide analog signal duplicator
AI - 8						0	8	8	Provide analog signal duplicator
AI - 9						0	8	9	Provide analog signal duplicator
AI - 10						0	8	10	Provide analog signal duplicator
AI - 11						0	8	11	Provide analog signal duplicator
AI - 12						0	8	12	Provide analog signal duplicator
AI - 13						0	8	13	Provide analog signal duplicator
AI - 14						0	8	14	Provide analog signal duplicator
AI - 15						0	8	15	Provide analog signal duplicator
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AO - 1						0	9	1	
AO - 2						0	9	2	
AO - 3						0	9	3	

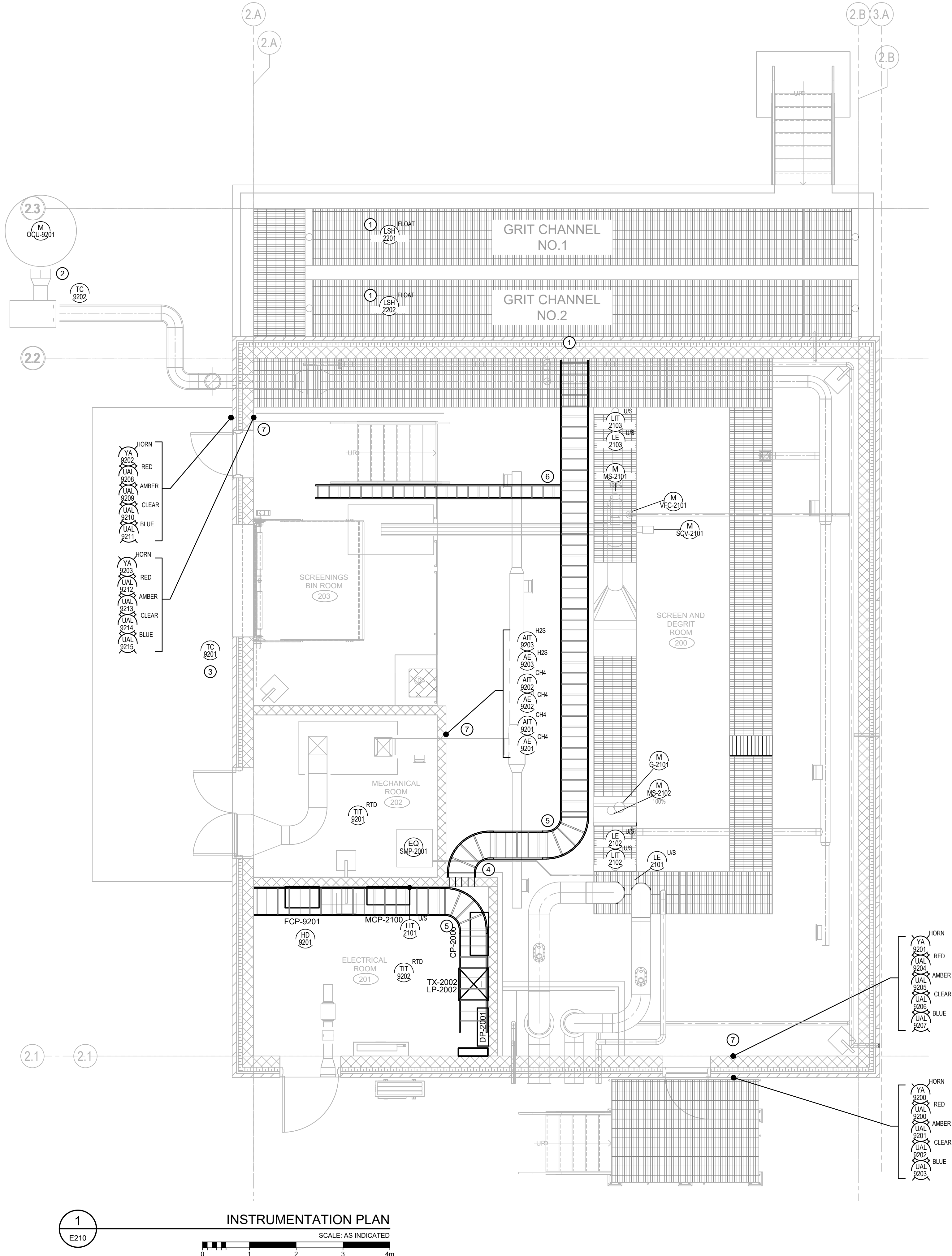
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PLC-2000 IO TABLES

I201

COMPONENT I/O LIST									
CONTROLLER IO TAG	ISA TAG	EQUIPMENT	DESCRIPTION	LOCATION	OPERATION	RACK	SLOT	POINT	COMMENTS
DI - 15	YA	LCP-9201	Sump Level High	Headworks Screen And Degrit Room	0 = ALARM	0	1	15	
DI - 16	YA	CP-2000	Rack 0 DI Card 2 24 VDC Failure	Headworks PLC Panel	0 = FAILURE	0	2	0	
DI - 17	LAH	LIT-2101	Sewage Receiving Channel Level Alarm High	Headworks Screen And Degrit Room	0 = ALARM	0	2	1	
DI - 18	LAHH	LIT-2101	Sewage Receiving Channel Level Alarm High High	Headworks Screen And Degrit Room	0 = ALARM	0	2	2	
DI - 19	LAH	LSH-2201	Grit Channel No. 1 Level Alarm High	Headworks Screen And Degrit Room	0 = ALARM	0	2	3	
DI - 20	LAH	LSH-2202	Grit Channel No. 2 Level Alarm High	Headworks Screen And Degrit Room	0 = ALARM	0	2	4	
DI - 21	YA	HD-9201	Headworks Electrical Room Heat Detector Alarm	Headworks Screen And Degrit Room	0 = ALARM	0	2	5	
DI 22	YA	P-9201	Headworks Sanitary Drainage Pump Fault	Headworks Screen And Degrit Room	0 = ALARM	0	2	6	
DI - 23	YA	OCU-9201	Headworks Odour Control Unit - Fault	Outdoors	0 = FAULT	0	2	7	
DI - 24	YA	OCU-9201	Mist Eliminator Differential Pressure High	Outdoors	0 = ALARM	0	2	8	
DI - 25	YA	FCP-9201	Headworks H2S Analysis - Alarm	Headworks Electrical Room	0 = ALARM	0	2	9	
DI - 26	YA	FCP-9201	Headworks Gas Sensor Fault	Headworks Electrical Room	0 = ALARM	0	2	10	
DI - 27	YA	FCP-9201	Headworks H2S Analysis - Warning	Headworks Electrical Room	0 = ALARM	0	2	11	
DI - 28	YA	FCP-9201	Headworks CH4 Analysis 1 - Alarm	Headworks Electrical Room	0 = ALARM	0	2	12	
DI - 29	YA	FCP-9201	Headworks CH4 Analysis 1 - Warning	Headworks Electrical Room	0 = ALARM	0	2	13	
DI - 30	YA	FCP-9201	Headworks CH4 Analysis 2 - Alarm	Headworks Electrical Room	0 = ALARM	0	2	14	
DI - 31	YA	FCP-9201	Headworks CH4 Analysis 2 - Warning	Headworks Electrical Room	0 = ALARM	0	2	15	
DI - 32	YA	CP-2000	Rack 0 DI Card 3 24 VDC Failure	Headworks PLC Panel	0 = FAILURE	0	3	0	
DI - 33	YS	FCP-9201	Occupancy Lamp On	Headworks Electrical Room	1 = ON	0	3	1	
DI - 34	YS	FCP-9201	Gas Warning Lamp On	Headworks Electrical Room	1 = ON	0	3	2	
DI - 35	YS	FCP-9201	Gas Alarm/Horn Lamp On	Headworks Electrical Room	1 = ON	0	3	3	
DI - 36						0	3	4	
DI - 37	YA	MAU-201	Headworks Make-up Air Unit - Fault	Headworks Screen And Degrit Room	0 = ALARM	0	3	5	
DI - 38	YS	MCP-2100	Headworks Grinder Fault	Headworks Electrical Room	1 = ALARM	0	3	6	
DI - 39	YS	MCP-2100	Headworks Grinder Running Forward	Headworks Electrical Room	1 = RUNNING	0	3	7	
DI - 40	YS	MCP-2100	Headworks Grinder Running Reverse	Headworks Electrical Room	1 = RUNNING	0	3	8	
DI - 41	YS	MCP-2100	Headworks Auger Fault	Headworks Electrical Room	1 = ALARM	0	3	9	
DI - 42	YS	MCP-2100	Headworks Auger Running Forward	Headworks Electrical Room	1 = RUNNING	0	3	10	
DI - 43	YS	MCP-2100	Headworks Auger Running Reverse	Headworks Electrical Room	1 = RUNNING	0	3	11	
DI - 44	YS	MCP-2100	Headworks Grinder Fault	Headworks Electrical Room	1 = ALARM	0	3	12	
DI - 45	YS	MCP-2100	Headworks Grinder Running Forward	Headworks Electrical Room	1 = RUNNING	0	3	13	
DI - 46	YS	MCP-2100	Headworks Grinder Running Reverse	Headworks Electrical Room	1 = RUNNING	0	3	14	
DI - 47						0	3	15	
DI - 0	YA	CP-2000	Rack 0 DI Card 5 24 VDC Failure	Headworks PLC Panel	0 = FAILURE	0	5	0	
DI - 1						0	5	1	
DI - 2						0	5	2	
DI - 3						0	5	3	
DI - 4						0	5	4	
DI - 5						0	5	5	
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DI - 12						0	5	12	
DI - 13						0	5	13	
DI - 14						0	5	14	
DI - 15						0	5	15	
DO - 0	YC	MCP-2100	MCP-2100 Run Permissive	Headworks Electrical Room	1 = RUN	0	6	0	Provide interposing relay to suit
DO - 1						0	6	1	Provide interposing relay to suit
DO - 2						0	6	2	Provide interposing relay to suit
DO - 3						0	6	3	Provide interposing relay to suit
DO - 4						0	6	4	Provide interposing relay to suit
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DO - 6						0	6	6	Provide interposing relay to suit
DO - 7						0	6	7	Provide interposing relay to suit
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DO - 11						0	6	11	Provide interposing relay to suit
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DO - 13						0	6	13	Provide interposing relay to suit
DO - 14						0	6	14	Provide interposing relay to suit
DO - 15						0	6	15	Provide interposing relay to suit
AI - 0	FI	LIT-2101	Sewage Receiving Channel Flow Over Weir	Headworks Screen And Degrit Room		0	7	0	Provide analog signal duplicator
AI - 1	TI	TIT-9201	Headworks Air Temperature Indicator	Headworks Screen And Degrit Room		0	7	1	Provide analog signal duplicator
AI - 2	TI	TIT-9202	Electrical Room Air Temperature Indicator	Headworks Electrical Room		0	7	2	Provide analog signal duplicator
AI - 3	AI	AIT-2001	Headworks H2S Analysis	Headworks Screen And Degrit Room		0	7	3	Provide analog signal duplicator
AI - 4	AI	AIT-2002	Headworks CH4 Analysis 1	Headworks Screen And Degrit Room		0	7	4	Provide analog signal duplicator
AI - 5	AI	AIT-2003	Headworks CH4 Analysis 2	Headworks Screen And Degrit Room		0	7	5	Provide analog signal duplicator
AI - 6						0	7	6	Provide analog signal duplicator
AI - 7						0	7	7	Provide analog signal duplicator
AI - 8						0	8	8	Provide analog signal duplicator
AI - 9						0	8	9	Provide analog signal duplicator
AI - 10						0	8	10	Provide analog signal duplicator
AI - 11						0	8	11	Provide analog signal duplicator
AI - 12						0	8	12	Provide analog signal duplicator
AI - 13						0	8	13	Provide analog signal duplicator
AI - 14						0	8	14	Provide analog signal duplicator
AI - 15						0	8	15	Provide analog signal duplicator
AO - 0						0	9	0	
AO - 1						0	9	1	
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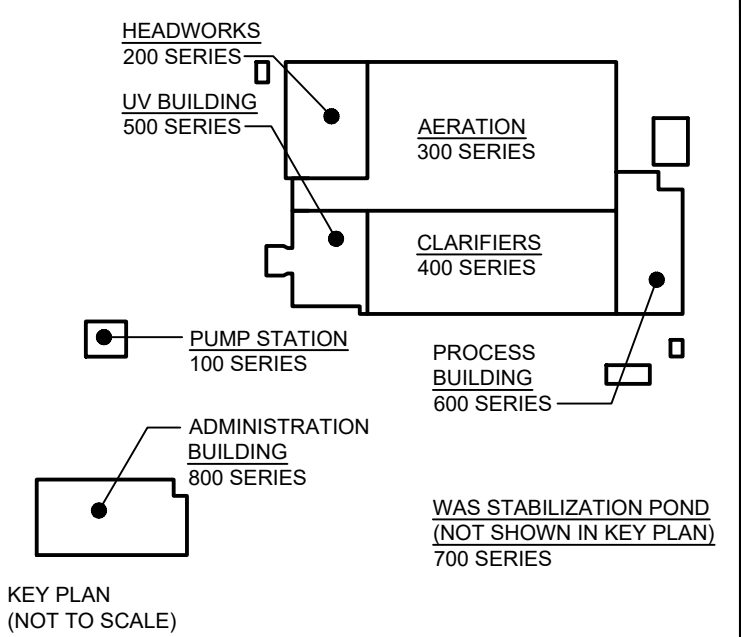


GENERAL NOTES:

- CABLE TRAY ELEVATIONS AND ROUTES, AS WELL AS CONDUIT PATHS AND PULL BOX LOCATIONS, ARE APPROXIMATE. CONTRACTOR TO COORDINATE THE EXACT LOCATIONS AND ELEVATIONS WITH SITE CONDITIONS. ADVISE THE CONSULTANT OF THE PROPOSED LOCATIONS AND ELEVATIONS PRIOR TO INSTALLATION.
- ALL CABLES NOT SHOWN. REFER TO BLOCK DIAGRAM AND SINGLE LINE DIAGRAM FOR COMPLETE LIST OF CABLES.
- CONTRACTOR TO COORDINATE CABLE TRAY ROUTE WITH MECHANICAL AND ELECTRICAL EQUIPMENT. CABLE TRAY BRACKETS NOT TO EXTEND MORE THAN 50mm BEYOND CABLE TRAYS.
- COORDINATE FINAL DIMENSIONS OF HOUSEKEEPING PADS WITH ACTUAL EQUIPMENT DIMENSIONS. PROVIDE A MINIMUM OF 100mm CLEARANCE ON FRONT AND SIDES. EACH HOUSEKEEPING PAD TO BE 100mm HIGH.
- ALL PULL BOXES MAY NOT BE SHOWN. ADDITIONAL PULL BOXES MAY BE REQUIRED BASED ON THE INSTALLATION REQUIREMENTS. CONTRACTOR TO PROVIDE ADDITIONAL PULL BOXES, AS REQUIRED.

DRAWING NOTES:

- PROVIDE MECHANICAL PROTECTION FOR INTEGRAL PUMP CABLE. CABLE TO TRANSITION TO TECK90 VIA A NEMA 4X JUNCTION BOX, 500mm ABOVE GRIT CHANNEL CONTAINMENT STRUCTURE. TECK90 CABLE IS TO PENETRATE THROUGH HEADWORKS BUILDING WALL TO CABLE TRAY. REFER TO DRAWING I200.
- HEAT TRACE ODOUR CONTROL UNIT FAN DRAIN AND VESSEL DRAIN. REFER TO MID201 FOR EXACT LOCATION.
- HEAT TRACE HEADWORKS STORM DRAINAGE.
- PROVIDE SUITABLE WALL PENETRATIONS FOR CABLES FROM ELECTRICAL ROOM TO SCREENING AND BINS AREA (CLASS 1 DIV 1). QUANTITY AND SIZE TO SUIT. ONLY CABLES TO PASS THROUGH WALL. SCAN CONCRETE PRIOR TO CORING. COORDINATE WITH STRUCTURAL.
- CABLE TRAY:
TIER 1 - 450mm POWER TRAY B.O.C.T. 2550mm A.F.F.
TIER 2 - 300mm CONTROLS TRAY B.O.C.T. 2250mm A.F.F.
- 300mm CONTROLS TRAY B.O.C.T. 2250mm A.F.F.
- MOUNT LIGHTS AND HORN VERTICALLY TO THE FACEPLATE OF A NEMA4 JUNCTION BOX SUCH THAT ALL LOSE CABLES ARE CONTAINED.



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

0	ISSUED FOR TENDER	25/04/25
No.	ISSUE / REVISION	DD/MM/YY

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25MM IF THIS IS A FULL SIZE DRAWING. 0 25mm

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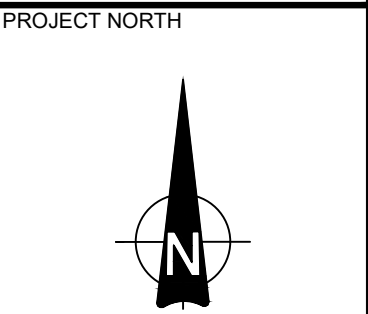
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

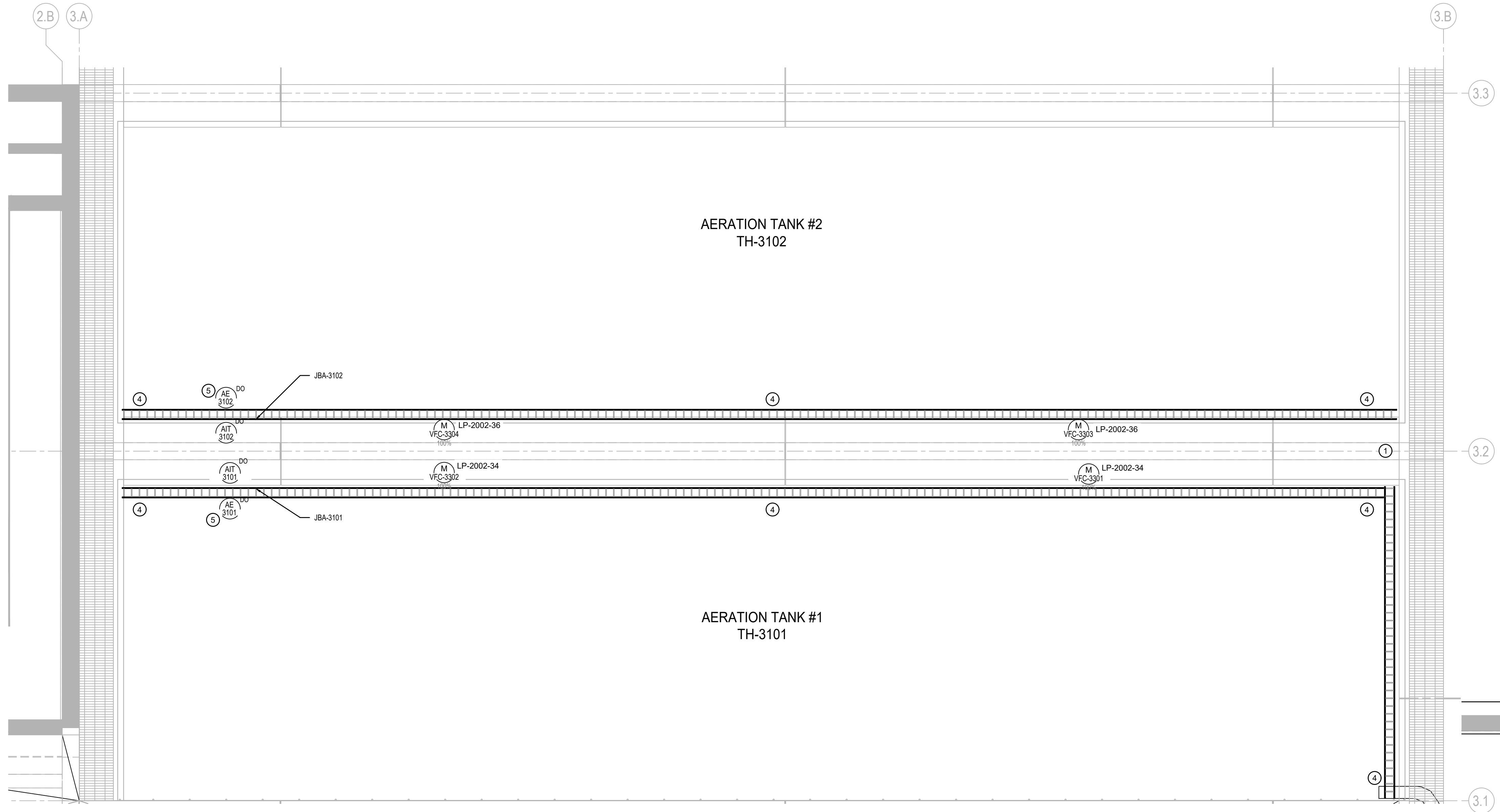
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL HEADWORKS
INSTRUMENTATION PLAN

DESIGN: SB	DRAWING #:
DRAWN: NB	I210
CHECKED: LO/BM	
JLR #: 32296-001	

PLOT DATE: Tuesday, April 29, 2025 11:25:00 AM



GENERAL NOTES:

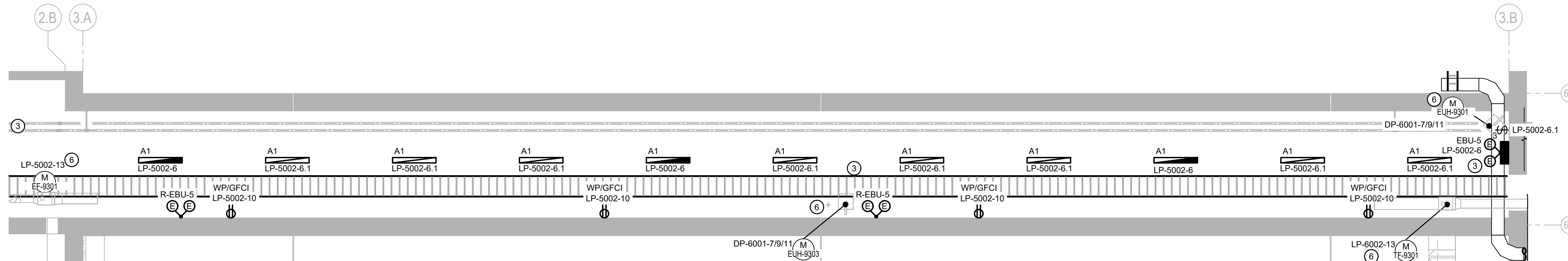
- REFER TO DETAIL 3/E007 FOR CABLE TRAY MOUNTING DETAILS.
- CABLE TRAY ELEVATIONS AND ROUTES, AS WELL AS CONDUIT PATHS AND PULL BOX LOCATIONS, ARE APPROXIMATE. CONTRACTOR TO COORDINATE THE EXACT LOCATIONS AND ELEVATIONS WITH SITE CONDITIONS. ADVISE THE CONSULTANT OF THE PROPOSED LOCATIONS AND ELEVATIONS PRIOR TO INSTALLATION.
- ALL CABLES NOT SHOWN. REFER TO BLOCK DIAGRAM AND SINGLE LINE DIAGRAM FOR COMPLETE LIST OF CABLES.
- CONTRACTOR TO COORDINATE CABLE TRAY ROUTE WITH MECHANICAL AND ELECTRICAL EQUIPMENT. CABLE TRAY BRACKETS NOT TO EXTEND MORE THAN 50mm BEYOND CABLE TRAYS.
- COORDINATE FINAL DIMENSIONS OF HOUSEKEEPING PADS WITH ACTUAL EQUIPMENT DIMENSIONS. PROVIDE A MINIMUM OF 100mm CLEARANCE ON FRONT AND SIDES. EACH HOUSEKEEPING PAD TO BE 100mm HIGH.
- ALL PULL BOXES MAY NOT BE SHOWN. ADDITIONAL PULL BOXES MAY BE REQUIRED BASED ON THE INSTALLATION REQUIREMENTS. CONTRACTOR TO PROVIDE ADDITIONAL PULL BOXES, AS REQUIRED.

DRAWING NOTES:

- PROVIDE PVC SLEEVE MOUNTED BELOW SLAB FOR CABLE TRANSITION BETWEEN TANKS. QUANTITY AND SIZE TO SUIT.
- JUNCTION BOXES ARE TO BE MOUNTED TO UNISTRUT FRAME ATTACHED TO THE RAILING UTILIZING STAINLESS STEEL HARDWARE.
- CABLE TRAY:
TIER 1 - 450mm POWER TRAY B.O.C.T. 2550mm A.F.F.
TIER 2 - 300mm CONTROLS TRAY B.O.C.T. 2250mm A.F.F.
- 450mm POWER AND CONTROLS CABLE TRAY. PROVIDE ALUMINIUM DIVIDER BETWEEN POWER AND CONTROLS CABLES. CABLE TRAY IS TO BE MOUNTED TO RAILING. REFER TO DETAIL 3/E007.
- MOUNT PROBE MODULE TO STAINLESS STEEL UNISTRUT FRAME FASTENED TO SIDE RAIL. PROBE MODULE TO BE MOUNTED 1200mm A.F.F. PROVIDE MOUNTING HARDWARE AS REQUIRED. COORDINATE EXACT PROBE LOCATION WITH MANUFACTURER.
- PROVIDE MOTOR RATED SWITCH. COORDINATE EXACT SIZE WITH MANUFACTURER.

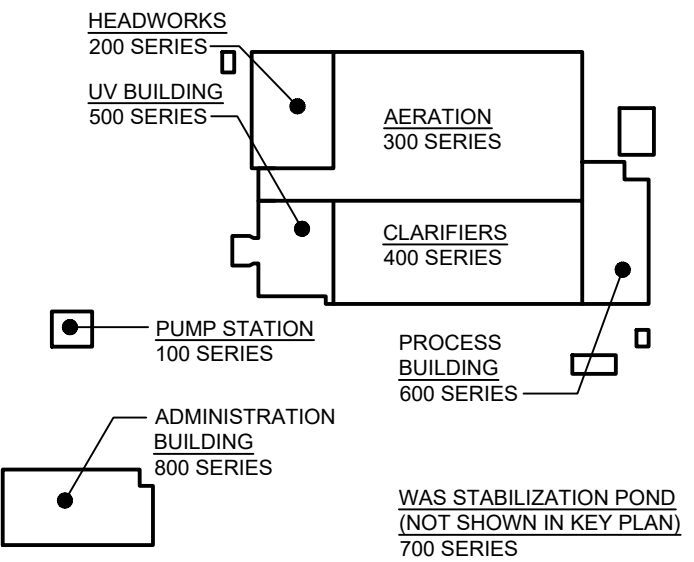
1 AERATION TANKS POWER AND INSTRUMENTATION PLAN

SCALE: AS INDICATED



2 TUNNEL POWER AND INSTRUMENTATION PLAN

SCALE: AS INDICATED



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

0	ISSUED FOR TENDER	25/04/25
No.	ISSUE / REVISION	DD/MM/YY

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25MM IF THIS IS A FULL SIZE DRAWING.

SCALE: AS INDICATED

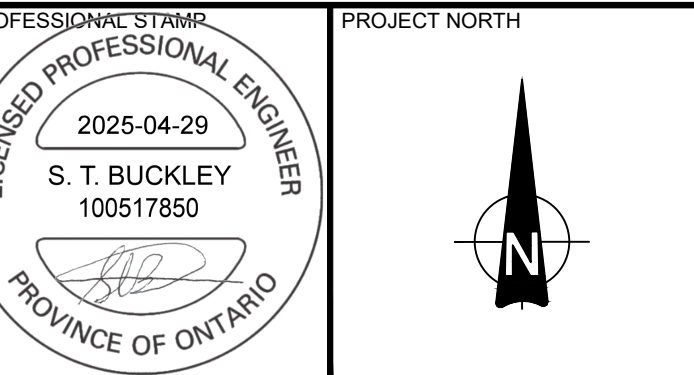
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

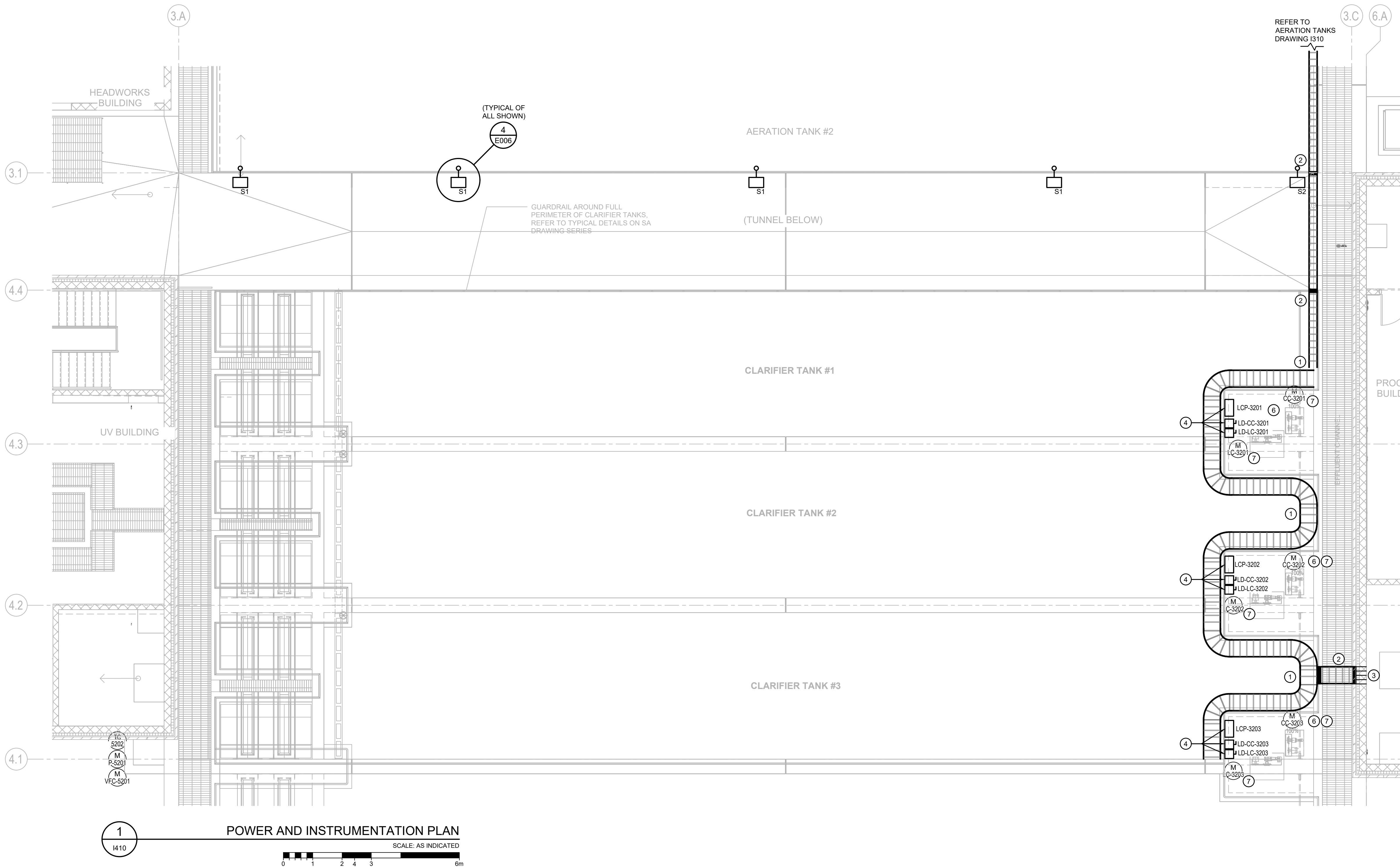
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL AERATION POWER AND INSTRUMENTATION PLAN

DESIGN: SB	DRAWING #:
DRAWN: NB/RH	I310
CHECKED: LO/BM	
JLR #:	

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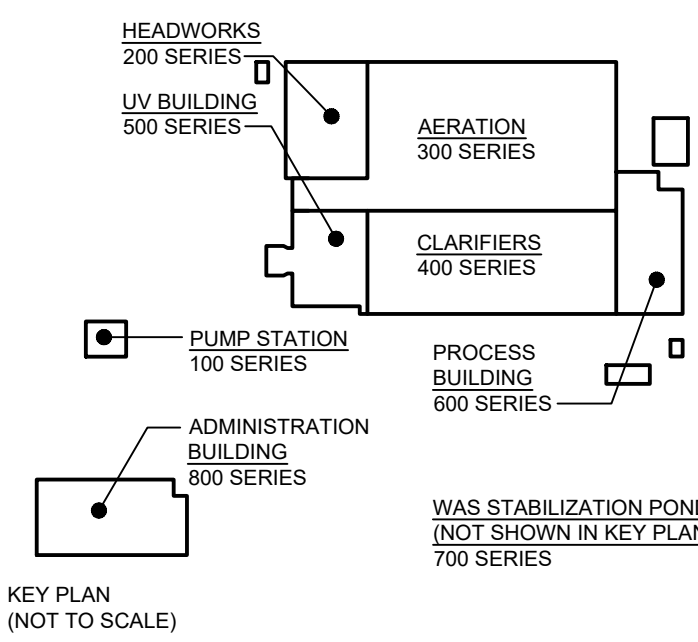


GENERAL NOTES:

- REFER TO DRAWING E002 FOR LIGHTING FIXTURE TYPES.
- REFER TO DRAWING E002 FOR LIGHT FIXTURE MOUNTING HEIGHTS AND OTHER REQUIREMENTS.
- REFER TO MOTOR STARTER CONTROL LIST AND HAZARDOUS AREA CLASSIFICATIONS ON ME SERIES DRAWINGS.
- REFER TO DRAWING E001 FOR FURTHER HOUSE SERVICES REQUIREMENTS, INCLUDING DISCONNECTS AND RECEPTACLES.
- REFER TO DETAIL 3/E007 FOR CABLE TRAY MOUNTING DETAILS.
- CABLE TRAY ELEVATIONS AND ROUTES, AS WELL AS CONDUIT PATHS AND PULL BOX LOCATIONS, ARE APPROXIMATE. CONTRACTOR TO COORDINATE THE EXACT LOCATIONS AND ELEVATIONS WITH SITE CONDITIONS. ADVISE THE CONSULTANT OF THE PROPOSED LOCATIONS AND ELEVATIONS PRIOR TO INSTALLATION.
- ALL CABLES NOT SHOWN. REFER TO BLOCK DIAGRAM AND SINGLE LINE DIAGRAM FOR COMPLETE LIST OF CABLES.
- CONTRACTOR TO COORDINATE CABLE TRAY ROUTE WITH MECHANICAL AND ELECTRICAL EQUIPMENT. CABLE TRAY BRACKETS NOT TO EXTEND MORE THAN 50mm BEYOND CABLE TRAYS.
- COORDINATE FINAL DIMENSIONS OF HOUSEKEEPING PADS WITH ACTUAL EQUIPMENT DIMENSIONS. PROVIDE A MINIMUM OF 100mm CLEARANCE ON FRONT AND SIDES. EACH HOUSEKEEPING PAD TO BE 100mm HIGH.
- ALL PULL BOXES MAY NOT BE SHOWN. ADDITIONAL PULL BOXES MAY BE REQUIRED BASED ON THE INSTALLATION REQUIREMENTS. CONTRACTOR TO PROVIDE ADDITIONAL PULL BOXES, AS REQUIRED.

DRAWING NOTES:

- 450mm POWER AND CONTROLS CABLE TRAY. PROVIDE ALUMINIUM DIVIDER BETWEEN POWER AND CONTROLS CABLES. CABLE TRAY IS TO BE MOUNTED TO RAILING, REFER TO DETAIL 3/E007.
- CABLE TRAY IS TO BRIDGE OVER WALKWAY. PROVIDE 2200mm HEIGHT BETWEEN WALKWAY FLOOR AND BOTTOM OF TRAY.
- PROVIDE PVC SLEEVES MOUNTED BELOW SLAB FOR CABLE PENETRATION BETWEEN CLARIFIERS AND PROCESS BUILDING. QUANTITY AND SIZE TO SUIT. WEATHER SEAL CABLES IN SLEEVES UPON COMPLETION OF INSTALLATION.
- MOUNT TO STAINLESS STEEL UNISTRUT FRAME FASTENED TO SIDE RAIL. CENTER OF EQUIPMENT TO BE MOUNTED 1500mm A.F.F.
- REFER TO DRAWING P401 FOR EXTENT OF PIPE BEING HEAT TRACED.
- PROVIDE 2C #14AWG TECK 90 + GND BETWEEN CP-6000 AND CLARIFIER CONTROL PANEL. PROVIDE UPS CIRCUIT.
- PROVIDE 2C #14AWG TECK 90 + GND BETWEEN LP-6003 AND EQUIPMENT HEATERS. COORDINATE WITH MANUFACTURER FOR ALL REQUIRED CONNECTIVE EQUIPMENT.



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

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No.	ISSUE / REVISION	DD/MM/YY

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SCALE: AS INDICATED

CLIENT:



CONSULTANT: www.jlrichards.ca



CONSULTANT:



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

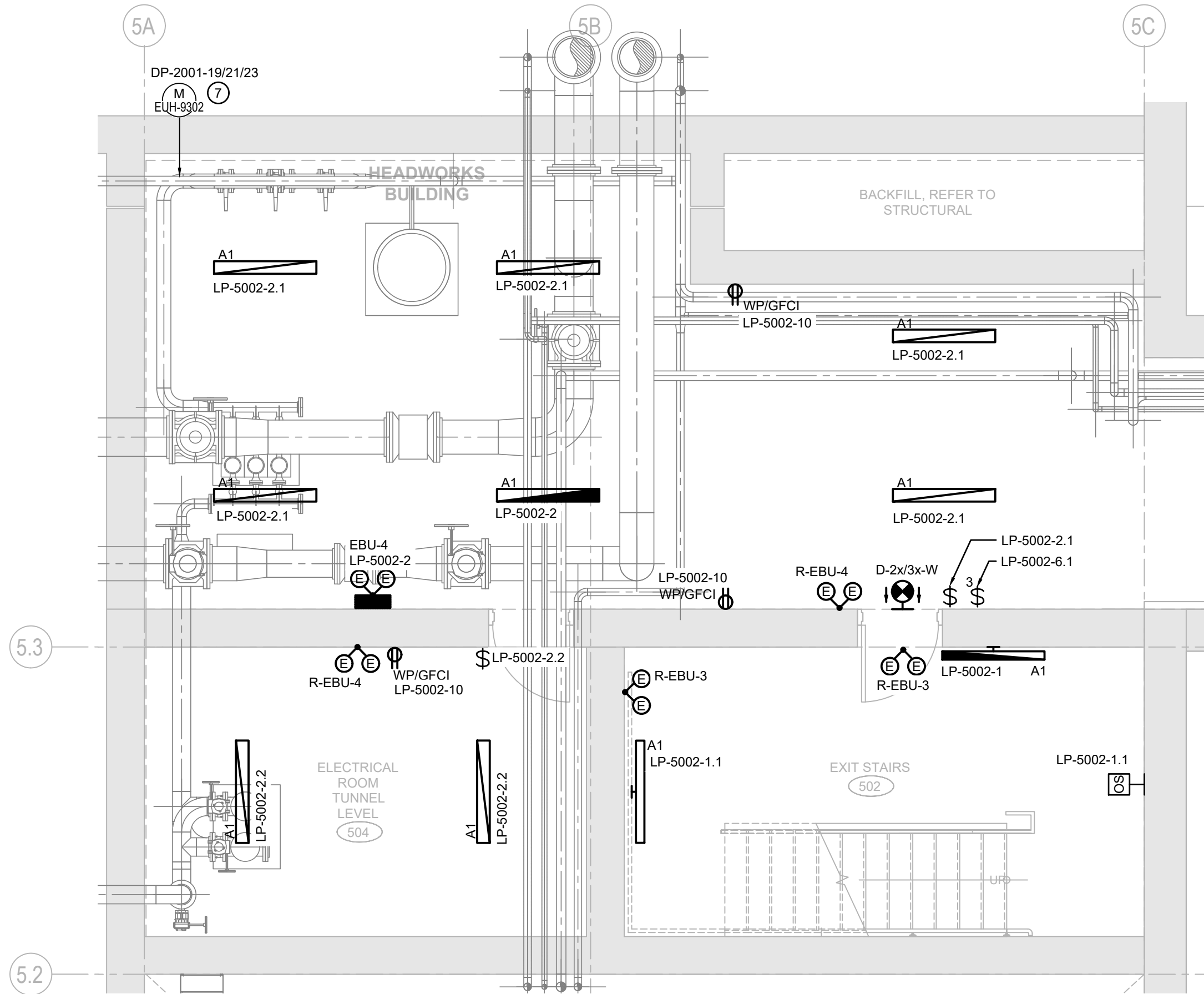
ELECTRICAL CLARIFIERS
POWER AND INSTRUMENTATION PLAN

DESIGN: SB
DRAWN: NB/RH
CHECKED: LO/BM
JLR #: 32296-001

DRAWING #:

1410

PLOT DATE: Tuesday, April 29, 2025 11:24:59 AM



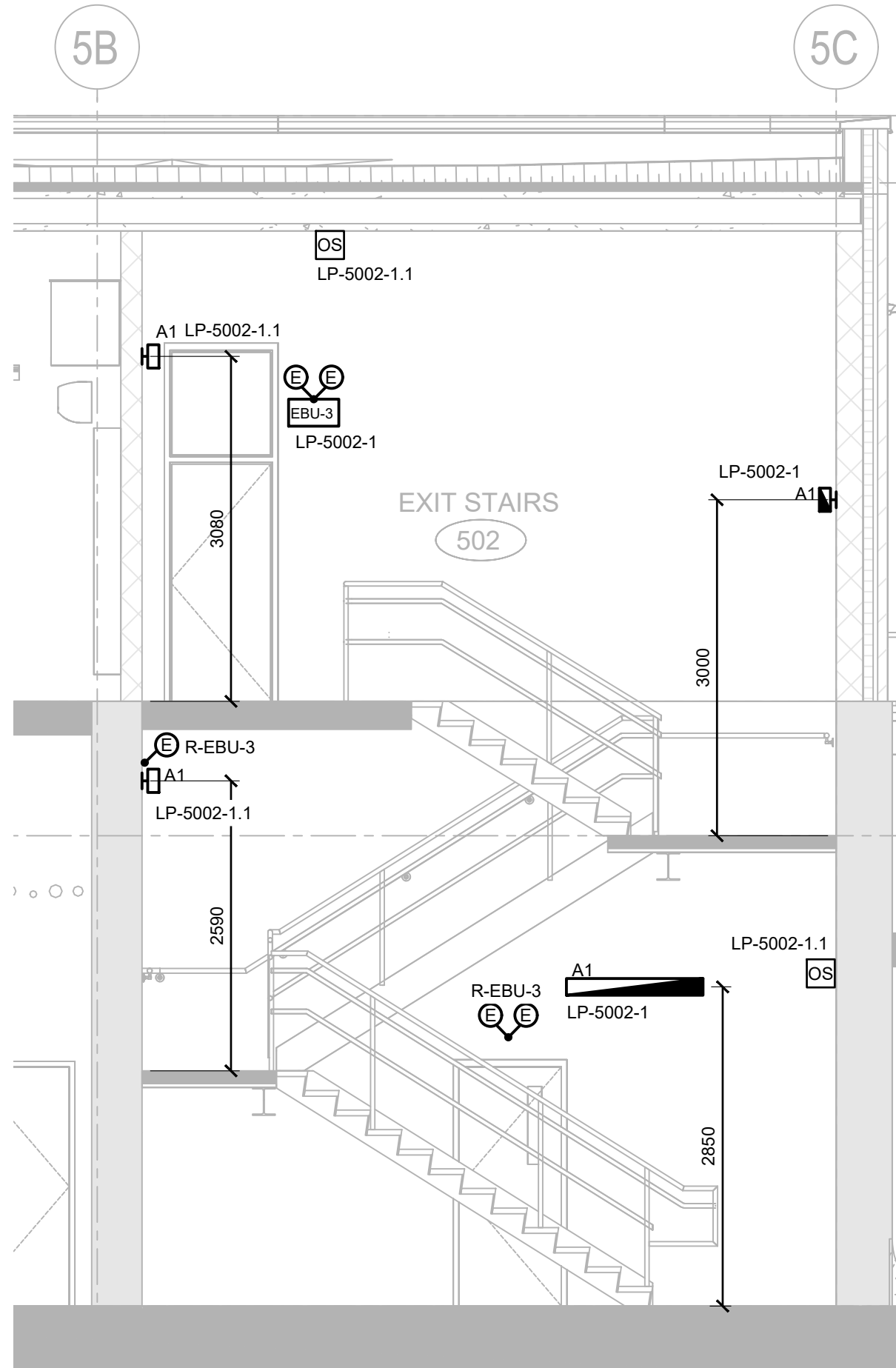
1 BASEMENT HOUSE SERVICES PLAN
E510
SCALE: AS INDICATED

GENERAL NOTES:

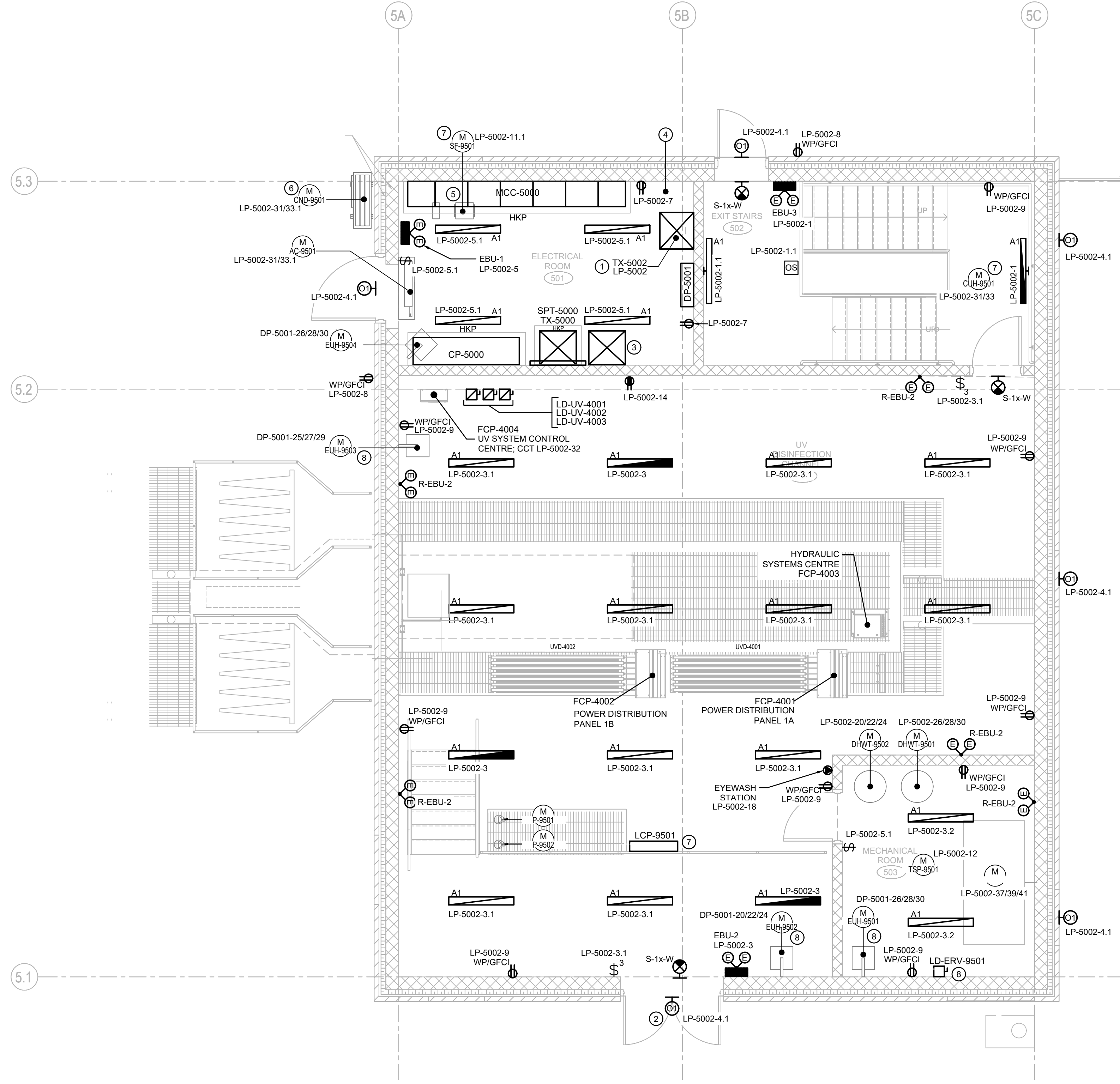
- REFER TO DRAWING E002 FOR LIGHTING FIXTURE TYPES.
- REFER TO DRAWING E002 FOR LIGHT FIXTURE MOUNTING HEIGHTS AND OTHER REQUIREMENTS.
- REFER TO MOTOR STARTER CONTROL LIST AND HAZARDOUS AREA CLASSIFICATIONS ON ME SERIES DRAWINGS.
- REFER TO DRAWING E001 FOR FURTHER HOUSE SERVICES REQUIREMENTS, INCLUDING DISCONNECTS AND RECEPTACLES.
- REFER TO M SERIES DRAWINGS FOR FURTHER HVAC WIRING REQUIREMENTS, INCLUDING SEQUENCE OF OPERATIONS.
- PROVIDE HOUSEKEEPING PAD FOR ALL FLOOR MOUNTED EQUIPMENT. REFER TO STRUCTURAL DETAIL 1/S005

DRAWING NOTES:

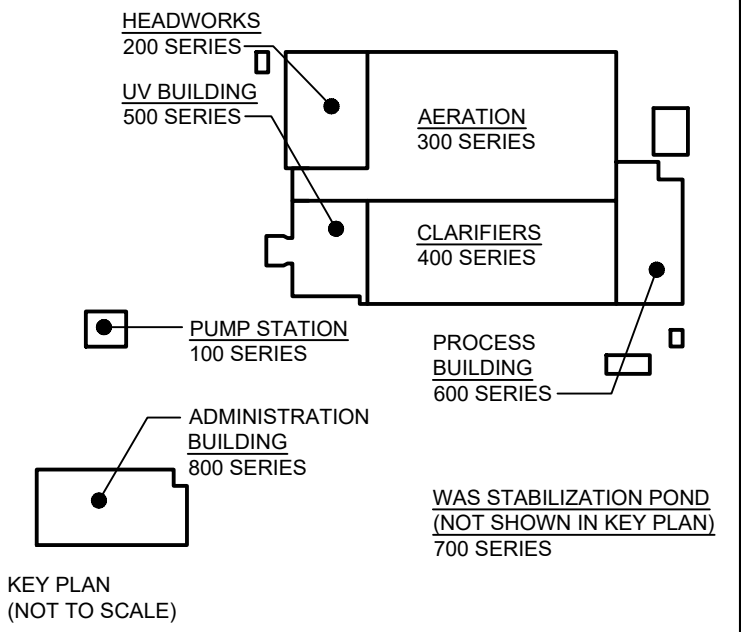
- TRANSFORMERS TO BE MOUNTED AT HIGH LEVEL.
- TYPICAL TYPE O1 FIXTURES TO BE MOUNTED AT 3.45M ABOVE FINISHED GRADE.
- SPACE FOR FUTURE TRANSFORMER AT HIGH LEVEL.
- ELECTRICAL CABLE PENETRATION LOCATION FROM TUNNEL BELOW.
- MCC FEEDERS SERVICING RAW WATER PUMPING STATION, SEPTAGE RECEIVING AND ADMIN BUILDING ARE TO DROP INTO CABLE TRAY IN TUNNEL BELOW.
- INDOOR EVAPORATOR UNIT IS TO BE FED FROM THE OUTDOOR UNIT. ELECTRICAL CONTRACTOR IS TO PROVIDE POWER AND CONTROL WIRING BETWEEN THE OUTDOOR CONDENSING UNIT AND THE INDOOR EVAPORATOR UNIT. WIRING TO BE RUN IN EMT INDOORS; OCAL AND METALLIC LIQUID-TIGHT FLEXIBLE CONDUITS OUTDOORS. LENGTH OF LIQUID-TIGHT CONDUITS NOT TO EXCEED 450mm. COORDINATE THE EXACT WIRING REQUIREMENTS WITH THE MANUFACTURER. SIZE POWER WIRING TO SUIT. PROVIDE A NEMA 4X DISCONNECT FOR EACH UNIT. PROVIDE SEPARATE CONDUITS FOR POWER AND CONTROL WIRING.
- PROVIDE MOTOR RATED SWITCH, SIZED TO SUIT EQUIPMENT. COORDINATE WITH MANUFACTURER FOR EXACT SIZE.
- PROVIDE PADLOCKABLE NEMA 4X UNFUSED DISCONNECT SWITCH, SIZED TO SUIT EQUIPMENT. COORDINATE WITH MANUFACTURER FOR EXACT DISCONNECT SIZE.



2 STAIR LIGHTING SECTION
E510
SCALE: AS INDICATED



3 GROUND FLOOR HOUSE SERVICES PLAN
E510
SCALE: AS INDICATED



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SCALE: AS INDICATED

CLIENT:

BRIGHTON
MUNICIPALITY

CONSULTANT:

J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

CONSULTANT:

PROFESSIONAL STAMP
2025-04-29
S. T. BUCKLEY
100517850
PROVINCE OF ONTARIO

PROJECT NORTH

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES
100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:
ELECTRICAL UV BUILDING
HOUSE SERVICES PLAN

DESIGN: SB	DRAWING #:
DRAWN: RH	
CHECKED: LO/BM	
JLR #:	32296-001
	E510

File Location: P:\2020032296-001 - Brighton WWT System Upgrade\03-Production\06-Elect\32296-001 - UV PLC AND IO LIST.dwg

PLC-5000 COMPONENT SUMMARY						
SLOT NUMB.	CATALOG NUMBER	MANUFACTURER	DESCRIPTION	IO TYPE	IO RACK	IO COUNT
0	1769-L33R	AB/RA	CompactLogix Processor, 3mB c/w Ethernet	Processor	0	0
1	1769-IA16	AB/RA	16 Point 120 VAC Input Module	Digital Input	0	16
2	1769-IA16	AB/RA	16 Point 120 VAC Input Module	Digital Input	0	16
3	1769-IA16	AB/RA	16 Point 120 VAC Input Module	Digital Input	0	16
4	1769-PA4	AB/RA	120V Power Supply (4A @ 5VDC, 2A @ 24VDC)	Power Supply	0	0
5	1769-IA16	AB/RA	16 Point 120 VAC Input Module	Digital Input	0	16
6	1769-IA16	AB/RA	16 Point 120 VAC Input Module	Digital Input	0	16
7	1769-IA16	AB/RA	16 Point 120 VAC Input Module	Digital Input	0	16
8	1769-IA16	AB/RA	16 Point 120 VAC Input Module	Digital Input	0	16
9	1769-QW16	AB/RA	16 Point 120 VAC Output Module	Digital Output	0	16
10	1769-QW16	AB/RA	16 Point 120 VAC Output Module	Digital Output	0	16
11	1769-IF8	AB/RA	8 Channel Analog Input Module	Analog Input	0	8
12	1769-IF8	AB/RA	8 Channel Analog Input Module	Analog Input	0	8
13	1769-IF8	AB/RA	8 Channel Analog Input Module	Analog Input	0	8
14	1769-OF4	AB/RA	4 Channel Analog Output Module	Analog Output	0	4
15	1769-OF4	AB/RA	4 Channel Analog Output Module	Analog Output	0	4
16	1769-ECR	AB/RA	Right Enc Cap/Terminator	Miscellaneous	0	0

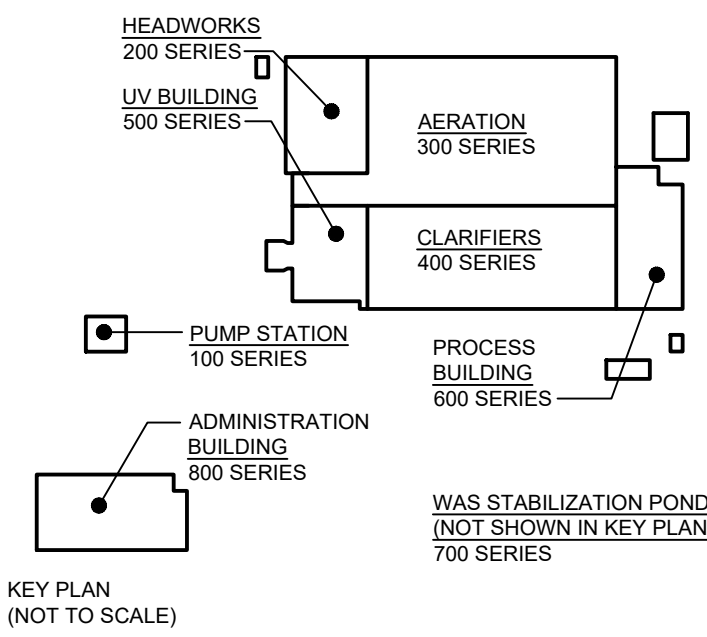
1
ISO1

PLC-5000 COMPONENTS

COMPONENT I/O LIST										
CONTROLLER IO TAG	ISA TAG	EQUIPMENT	DESCRIPTION	LOCATION	OPERATION	RACK	SLOT	POINT	COMMENTS	
DI - 0	YA	CP-5000	Rack 0 DI Card 1 24 VDC Failure	UV Building PLC Panel	0 = FAILURE	0	1	0		
DI - 1	YA	CP-5000	Rack 0 DO Card 9 24 VDC Failure	UV Building PLC Panel	0 = FAILURE	0	1	1		
DI - 2	YA	CP-5000	Rack 0 DO Card 10 24 VDC Failure	UV Building PLC Panel	0 = FAILURE	0	1	2		
DI - 3	YA	CP-5000	Rack 0 AI Card 11 24 VDC Failure	UV Building PLC Panel	0 = FAILURE	0	1	3		
DI - 4	YA	CP-5000	Rack 0 AI Card 12 24 VDC Failure	UV Building PLC Panel	0 = FAILURE	0	1	4		
DI - 5	YA	CP-5000	Rack 0 AI Card 13 24 VDC Failure	UV Building PLC Panel	0 = FAILURE	0	1	5		
DI - 6	YA	CP-5000	Rack 0 AO Card 14 24 VDC Failure	UV Building PLC Panel	0 = FAILURE	0	1	6		
DI - 7							0	1	7	
DI - 8							0	1	8	
DI - 9							0	1	9	
DI - 10	YA	UPS-5000	UPS AC Line Failure	UV Building Electrical Room	0 = FAILURE	0	1	10		
DI - 11	YA	UPS-5000	UPS Battery Low	UV Building Electrical Room	0 = LOW	0	1	11		
DI - 12	YA	UPS-5000	UPS Alarm	UV Building Electrical Room	0 = ALARM	0	1	12		
DI - 13	YA	UPS-5000	UPS On Bypass	UV Building Electrical Room	0 = BYPASS	0	1	13		
DI - 14	YA	SPD-5000	SPD-5000 (MCC-5000) Alarm	UV Building Electrical Room	0 = ALARM	0	1	14		
DI - 15	YA	SPD-5002	SPD-5002 (LP-5002) Alarm	UV Building Electrical Room	0 = ALARM	0	1	15		
DI - 16	YA	CP-5000	Rack 0 DI Card 2 24 VDC Failure	UV Building PLC Panel	0 = FAILURE	0	2	0		
DI - 17	YA	P-1101	Raw Sewage Pump 1 Fault	Raw Sewage Pump Station	0 = ALARM	0	2	1		
DI - 18	YS	P-1101	Raw Sewage Pump 1 Running	Raw Sewage Pump Station	1 = RUNNING	0	2	2		
DI - 19	YS	P-1101	Raw Sewage Pump 1 In Auto	Raw Sewage Pump Station	1 = IN AUTO	0	2	3		
DI - 20	YA	P-1101	Raw Sewage Pump 1 Leak	Raw Sewage Pump Station	0 = ALARM	0	2	4		
DI - 21	YA	P-1101	Raw Sewage Pump 1 High Heat	Raw Sewage Pump Station	0 = ALARM	0	2	5		
DI - 22	YA	P-1101	Raw Sewage Pump 1 Disconnect Open	Raw Sewage Pump Station	0 = ALARM	0	2	6		
DI - 23							0	2	7	
DI - 24	YA	P-1103	Raw Sewage Pump 3 Fault	Raw Sewage Pump Station	0 = ALARM	0	2	8		
DI - 25	YS	P-1103	Raw Sewage Pump 3 Running	Raw Sewage Pump Station	1 = RUNNING	0	2	9		
DI - 26	YS	P-1103	Raw Sewage Pump 3 In Auto	Raw Sewage Pump Station	1 = IN AUTO	0	2	10		
DI - 27	YA	P-1103	Raw Sewage Pump 3 Leak	Raw Sewage Pump Station	0 = ALARM	0	2	11		
DI - 28	YA	P-1103	Raw Sewage Pump 3 High Heat	Raw Sewage Pump Station	0 = ALARM	0	2	12		
DI - 29	YA	P-1101	Raw Sewage Pump 3 Disconnect Open	Raw Sewage Pump Station	0 = ALARM	0	2	13		
DI - 30					0 = ALARM	0	2	14		
DI - 31					0 = ALARM	0	2	15		
DI - 32	YA	CP-5000	Rack 0 DI Card 3 24 VDC Failure	UV Building PLC Panel	0 = FAILURE	0	3	0		
DI - 33	YA	P-1102	Raw Sewage Pump 2 Fault	Raw Sewage Pump Station	0 = ALARM	0	3	1		
DI - 34	YS	P-1102	Raw Sewage Pump 2 Running	Raw Sewage Pump Station	1 = RUNNING	0	3	2		
DI - 35	YS	P-1102	Raw Sewage Pump 2 In Auto	Raw Sewage Pump Station	1 = IN AUTO	0	3	3		
DI - 36	YA	P-1102	Raw Sewage Pump 2 Leak	Raw Sewage Pump Station	0 = ALARM	0	3	4		
DI - 37	YA	P-1102	Raw Sewage Pump 2 High Heat	Raw Sewage Pump Station	0 = ALARM	0	3	5		
DI - 38	YA	P-1101	Raw Sewage Pump 2 Disconnect Open	Raw Sewage Pump Station	0 = ALARM	0	3	6		
DI - 39							0	3	7	
DI - 40	YA	P-1104	Raw Sewage Pump 4 Fault	Raw Sewage Pump Station	0 = ALARM	0	3	8		
DI - 41	YS	P-1104	Raw Sewage Pump 4 Running	Raw Sewage Pump Station	1 = RUNNING	0	3	9		
DI - 42	YS	P-1104	Raw Sewage Pump 4 In Auto	Raw Sewage Pump Station	1 = IN AUTO	0	3	10		
DI - 43	YA	P-1104	Raw Sewage Pump 4 Leak	Raw Sewage Pump Station	0 = ALARM	0	3	11		
DI - 44	YA	P-1104	Raw Sewage Pump 4 High Heat	Raw Sewage Pump Station	0 = ALARM	0	3	12		
DI - 45	YA	P-1101	Raw Sewage Pump 4 Disconnect Open	Raw Sewage Pump Station	0 = ALARM	0	3	13		
DI - 46					0 = ALARM	0	3	14		
DI - 47					0 = ALARM	0	3	15		
DI - 48	YA	CP-5000	Rack 0 DI Card 5 24 VDC Failure	UV Building PLC Panel	0 = FAILURE	0	5	0		
DI - 49	YA	FIT-1101	Raw Water Discharge 1 Flow Meter Fault	Raw Sewage Pump Station	0 = ALARM	0	5	1		
DI - 50	YA	FIT-1102	Raw Water Discharge 2 Flow Meter Fault	Raw Sewage Pump Station	0 = ALARM	0	5	2		
DI - 51	YA	AIT-4001	Primary Effluent Transmittance Meter Fault	UV Building	0 = ALARM	0	5	3		
DI - 52	YA	LIT-4001	UV Channel Level Level Fault	UV Building	0 = ALARM	0	5	4		
DI - 53	YA	FIT-4001	Treated Water Flow Meter Fault	Flow Monitoring Structure	0 = ALARM	0	5	5		
DI - 54	YA	FCP-4004	UVD-4001 Low Intensity	UV Building	0 = ALARM	0	5	6		
DI - 55	YA	FCP-4004	UVD-4001 Low Intensity	UV Building	0 = ALARM	0	5	7		
DI - 56	YA	FCP-4004	UV Fault	UV Building	0 = ALARM	0	5	8		
DI - 57	YA	P-5021	Scum Pump Fault	Scum Pit	0 = ALARM	0	5	9		
DI - 58	YS	P-5021	Scum Pump Running	Scum Pit	1 = RUNNING	0	5	10		
DI - 59	YS	P-5021	Scum Pump In Auto	Scum Pit	1 = IN AUTO	0	5	11		
DI - 60	YA	P-5021	Scum Pump Disconnect Open	Scum Pit	0 = ALARM	0	5	12		
DI - 61	YA	P-5021	Scum Pump Low Oil	Scum Pit	0 = ALARM	0	5	13		
DI - 62	YS	LCP-5201	Scum Pump LCP Run	Scum Pit	1 = RUN	0	5	14		
DI - 63	YA	TC-5201	Scum Pump Process Pipe Heat Trace Fault	Scum Pit	0 = ALARM	0	5	15		
DI - 64	YA	CP-5000	Rack 0 DI Card 6 24 VDC Failure	UV Building PLC Panel	0 = FAILURE	0	6	0		
DI - 65	YS	FCP-9900	Effluent Water Strainer In-Auto	Service Tunnel	1 = IN AUTO	0	6	1		
DI - 66	YA	FCP-9900	Effluent Water Strainer Differential Pressure High	Service Tunnel	0 = ALARM	0	6	2		
DI - 67	YA	FCP-9900	Effluent Water Strainer Differential Pressure High High	Service Tunnel	0 = ALARM	0	6	3		
DI - 68	YA	FCP-9900	Effluent Water Strainer Motor Overload	Service Tunnel	0 = ALARM	0	6	4		
DI - 69	YA	FCP-9901	Effluent Water Skid Motor Fault	Service Tunnel	0 = ALARM	0	6	5		
DI - 70	YA	TC-5202	Scum Pump Process Pipe Heat Trace Fault	Scum Pit	0 = ALARM	0	6	6		
DI - 71							0	6	7	
DI - 72							0	6	8	
DI - 73							0	6	9	
DI - 74	YA	ERV-9501	UV Building Energy Recovery Unit Fault	UV Building	0 = ALARM	0	6	10		
DI - 75	YA	HD-9501	UV Building Electrical Room High Heat	UV Building	0 = ALARM	0	6	11		
DI - 76	YA	FSH-9501	UV Building Eye Wash Station Flow High	UV Building	0 = ALARM	0	6	12		
DI - 77	YA	LCP-9501	UV Bulb Washdown Sump Pump Fault	UV Building	0 = ALARM	0	6	13		
DI - 78	YA	LCP-9501	UV Bulb Washdown Sump Level High	UV Building	0 = ALARM	0	6	14		
DI - 79	YA	LIT-5201	Scum Pit U/S Fault	Scum Pit	0 = ALARM	0	6	15		
DI - 80	YA	CP-5000	Rack 0 DI Card 7 24 VDC Failure	UV Building PLC Panel	0 = FAILURE	0	7	0		
DI - 81	YS	VFC-5201	3-way Scum Valve In Position 1	Scum Pit	1 = POSITION	0	7	1		
DI - 82	YS	VFC-5201	3-way Scum Valve In Position 2	Scum Pit	1 = POSITION	0	7	2		
DI - 83	YS	VFC-5201	3-way Scum Valve In-Auto	Scum Pit	1 = IN AUTO	0	7	3		
DI - 84	YA	VFC-5201	3-way Scum Valve Fault	Scum Pit	0 = ALARM	0	7	4		
DI - 85	YA	LIT-1101	Raw Sewage U/S Level Fault	Raw Sewage Pump Station	1 = ALARM	0	7	5		

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PLC-5000 IO TABLES



DESIGN DOCUMENTS HEREIN HAVE
BEEN DESIGNED UNDER THE ONTARIO
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0	ISSUED FOR TENDER	25/04/25
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SCALE: N.T.S.

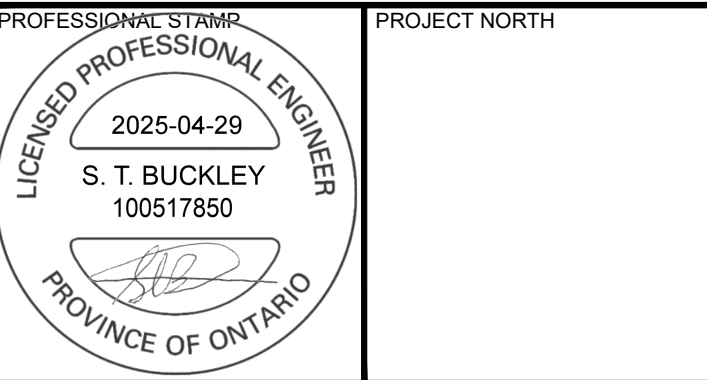
CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL
UV BUILDING
PLC-500 - COMPONENT LIST AND
IO LIST (1 OF 2)

DESIGN: SB	DRAWING #: 1501
DRAWN: NB	
CHECKED: LO/BM	
JLR #:	

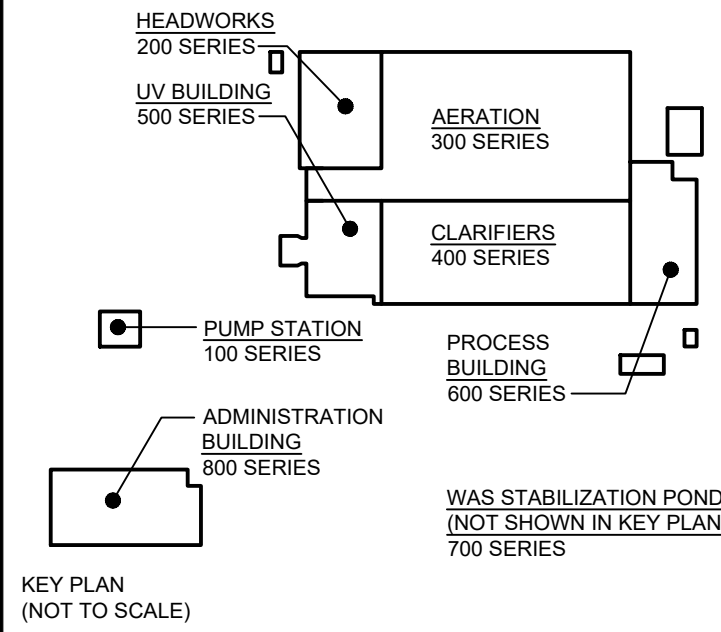
32296-001

PLOT DATE: Tuesday, April 29, 2025 11:23:56 AM

File Location: P:\32000\32296-001 - Brighton WWT System Upgrade\03-Production\06-Elect\32296-001 - UV PLC AND IO LIST.dwg

COMPONENT I/O LIST									
CONTROLLER IO TAG	ISA TAG	EQUIPMENT	DESCRIPTION	LOCATION	OPERATION	RACK	SLOT	POINT	COMMENTS
DI - 86	YA	LIT 1101	Raw Sewage U/S Level Low Low	Raw Sewage Pump Station	0 = ALARM	0	7	6	
DI - 87	YA	LIT 1101	Raw Sewage U/S Level Low	Raw Sewage Pump Station	1 = STATUS	0	7	7	
DI - 88	YA	LIT 1101	Raw Sewage U/S Level High	Raw Sewage Pump Station	1 = STATUS	0	7	8	
DI - 89	YA	LIT 1101	Raw Sewage U/S Level High High	Raw Sewage Pump Station	0 = ALARM	0	7	9	
DI - 90	YA	LIT 1102	Raw Sewage Radar Level Fault	Raw Sewage Pump Station	1 = ALARM	0	7	10	
DI - 91	YA	LIT 1102	Raw Sewage Radar Level Low Low	Raw Sewage Pump Station	0 = ALARM	0	7	11	
DI - 92	YA	LIT 1102	Raw Sewage Radar Level Low	Raw Sewage Pump Station	1 = STATUS	0	7	12	
DI - 93	YA	LIT 1102	Raw Sewage Radar Level High	Raw Sewage Pump Station	1 = STATUS	0	7	13	
DI - 94	YA	LIT 1102	Raw Sewage Radar Level High High	Raw Sewage Pump Station	0 = ALARM	0	7	14	
DI - 95						0	7	15	
DI - 96	YA	CP-5000	Rack 0 DI Card 8 24 VDC Failure	UV Building PLC Panel	0 = FAILURE	0	8	0	
DI - 97						0	8	1	
DI - 98						0	8	2	
DI - 99						0	8	3	
DI - 100						0	8	4	
DI - 101						0	8	5	
DI - 102						0	8	6	
DI - 103						0	8	7	
DI - 104						0	8	8	
DI - 105						0	8	9	
DI - 106						0	8	10	
DI - 107						0	8	11	
DI - 108						0	8	12	
DI - 109						0	8	13	
DI - 110						0	8	14	
DI - 111						0	8	15	
DO - 0	YC	FCP-9901	Effluent Water Skid Enable	Service Tunnel	1 = RUN	0	9	0	Provide interposing relay to suit
DO - 1	YC	P-1101	Raw Sewage Pump 1 Run	Raw Sewage Pump Station	1 = RUN	0	9	1	Provide interposing relay to suit
DO - 2	YC	P-1102	Raw Sewage Pump 2 Run	Raw Sewage Pump Station	1 = RUN	0	9	2	Provide interposing relay to suit
DO - 3	YC	P-1103	Raw Sewage Pump 3 Run	Raw Sewage Pump Station	1 = RUN	0	9	3	Provide interposing relay to suit
DO - 4	YC	P-1104	Raw Sewage Pump 4 Run	Raw Sewage Pump Station	1 = RUN	0	9	4	Provide interposing relay to suit
DO - 5	YC	P-5021	Scum Pump Run	Scum Pit	1 = RUN	0	9	5	Provide interposing relay to suit
DO - 6	YS	LCP-5201	Scum Pump LCP Discharge Cycle Status Light	Scum Pit	1 = STATUS	0	9	6	Provide interposing relay to suit
DO - 7	YS	LCP-5201	Scum Pump LCP Recirculation Cycle Status Light	Scum Pit	1 = STATUS	0	9	7	Provide interposing relay to suit
DO - 8	YC	VFC-5201	3-way Scum Valve Position 1	Scum Pit	1 = MOVE	0	9	8	Provide interposing relay to suit
DO - 9	YC	VFC-5201	3-way Scum Valve Position 2	Scum Pit	1 = MOVE	0	9	9	Provide interposing relay to suit
DO - 10						0	9	10	Provide interposing relay to suit
DO - 11						0	9	11	Provide interposing relay to suit
DO - 12						0	9	12	Provide interposing relay to suit
DO - 13						0	9	13	Provide interposing relay to suit
DO - 14						0	9	14	Provide interposing relay to suit
DO - 15						0	9	15	Provide interposing relay to suit
DO - 16						0	10	0	Provide interposing relay to suit
DO - 17						0	10	1	Provide interposing relay to suit
DO - 18						0	10	2	Provide interposing relay to suit
DO - 19						0	10	3	Provide interposing relay to suit
DO - 20						0	10	4	Provide interposing relay to suit
DO - 21						0	10	5	Provide interposing relay to suit
DO - 22						0	10	6	Provide interposing relay to suit
DO - 23						0	10	7	Provide interposing relay to suit
DO - 24						0	10	8	Provide interposing relay to suit
DO - 25						0	10	9	Provide interposing relay to suit
DO - 26						0	10	10	Provide interposing relay to suit
DO - 27						0	10	11	Provide interposing relay to suit
DO - 28						0	10	12	Provide interposing relay to suit
DO - 29						0	10	13	Provide interposing relay to suit
DO - 30						0	10	14	Provide interposing relay to suit
DO - 31						0	10	15	Provide interposing relay to suit
AI - 0	PI	PIT-9901	Effluent Water Inlet Pressure	Service Tunnel		0	11	0	
AI - 1	PI	PIT-9902	Effluent Water Discharge Pressure	Service Tunnel		0	11	1	
AI - 2	SI	P-1101	Raw Sewage Pump 1 Speed Indicator	Raw Sewage Pump Station		0	11	2	
AI - 3	SI	P-1102	Raw Sewage Pump 2 Speed Indicator	Raw Sewage Pump Station		0	11	3	
AI - 4	SI	P-1103	Raw Sewage Pump 3 Speed Indicator	Raw Sewage Pump Station		0	11	4	
AI - 5	SI	P-1104	Raw Sewage Pump 4 Speed Indicator	Raw Sewage Pump Station		0	11	5	
AI - 6	LI	LIT 1101	Raw Sewage U/S Level	Raw Sewage Pump Station		0	11	6	
AI - 7	LI	LIT 1102	Raw Sewage Radar Level	Raw Sewage Pump Station		0	11	7	
AI - 8	FI	FIT-1101	Raw Water Discharge 1 Flow	Raw Sewage Pump Station		0	12	0	
AI - 9	FI	FIT-1102	Raw Water Discharge 2 Flow	Raw Sewage Pump Station		0	12	1	
AI - 10	AI	AIT-4001	Primary Effluent Transmittance	UV Building		0	12	2	
AI - 11	LI	LIT-4001	UV Channel Level Level	UV Building		0	12	3	
AI - 12	FI	FIT-4001	Treated Water Flow	Flow Monitoring Structure		0	12	4	
AI - 13						0	12	5	
AI - 14						0	12	6	
AI - 15	TI	TIT-9501	UV Building Disinfection Room Temperature	UV Building		0	12	7	
AI - 16	TI	TIT-9502	UV Building Electrical Room Temperature	UV Building		0	13	0	
AI - 17	LI	LIT-5201	Scum Pit U/S Level	Scum Pit		0	13	1	
AI - 18						0	13	2	
AI - 19						0	13	3	
AI - 20						0	13	4	
AI - 21						0	13	5	
AI - 22						0	13	6	
AI - 23						0	13	7	
AO - 0	SC	FCP-9901	Effluent Water Skid Setpoint	Service Tunnel		0	14	0	
AO - 1	SC	P-1101	Raw Sewage Pump 1 Speed Control	Raw Sewage Pump Station		0	14	1	
AO - 2	SC	P-1102	Raw Sewage Pump 2 Speed Control	Raw Sewage Pump Station		0	14	2	
AO - 3	SC	P-1103	Raw Sewage Pump 3 Speed Control	Raw Sewage Pump Station		0	14	3	

COMPONENT I/O LIST									
CONTROLLER IO TAG	ISA TAG	EQUIPMENT	DESCRIPTION	LOCATION	OPERATION	RACK	SLOT	POINT	COMMENTS
AO - 4	SC	P-1104	Raw Sewage Pump 4 Speed Control	Raw Sewage Pump Station		0	15	4	
AO - 5						0	15	5	
AO - 6						0	15	6	
AO - 7						0	15	7	



DESIGN DOCUMENTS HEREIN HAVE
BEEN DESIGNED UNDER THE ONTARIO
BUILDING CODE 2012.

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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25MM IF THIS IS A FULL SIZE DRAWING.

SCALE: NTS

CLIENT:



CONSULTANT: www.jlrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

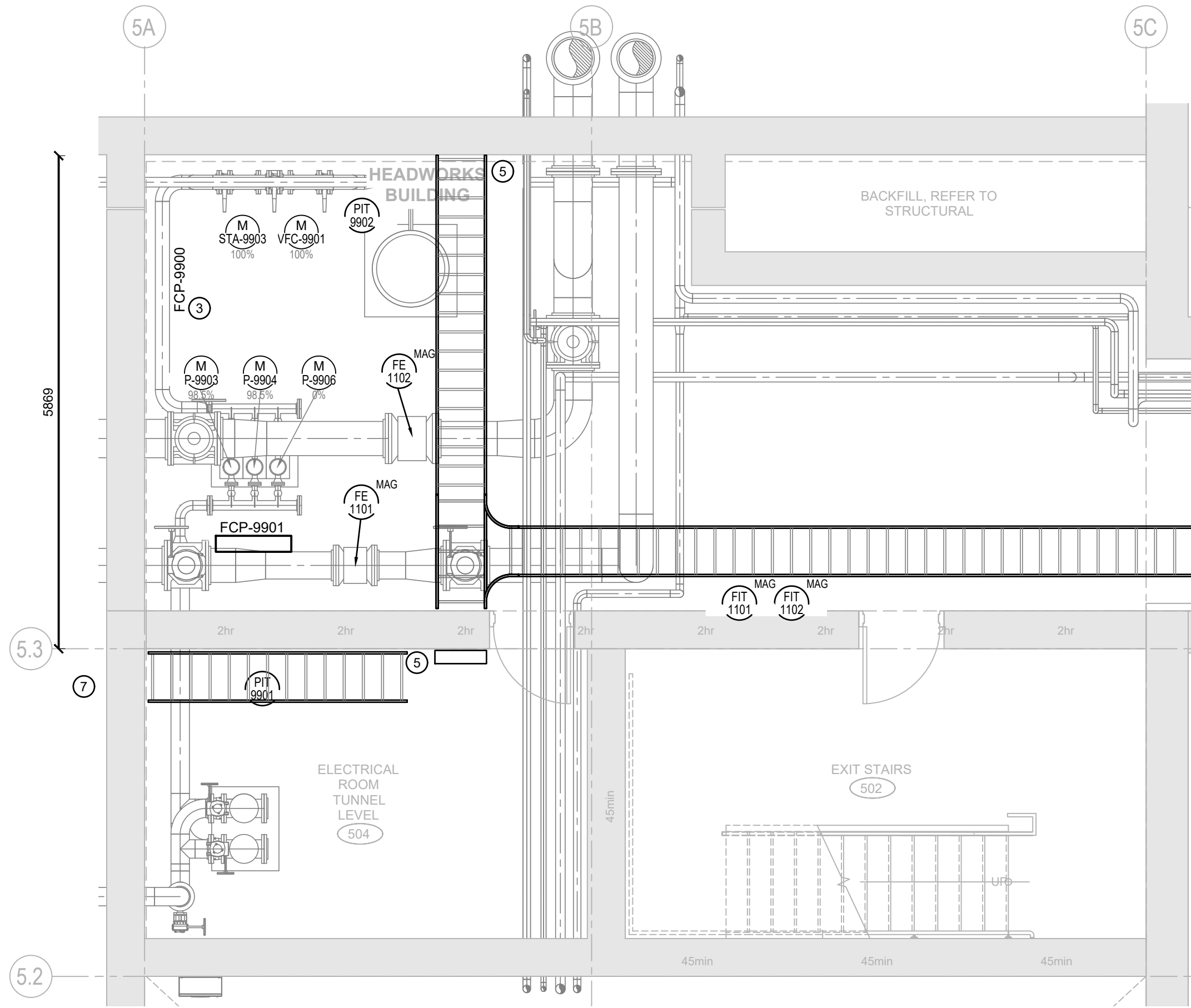
ELECTRICAL
UV BUILDING

PLC-500 - IO LIST CONT'D (2 OF 2)

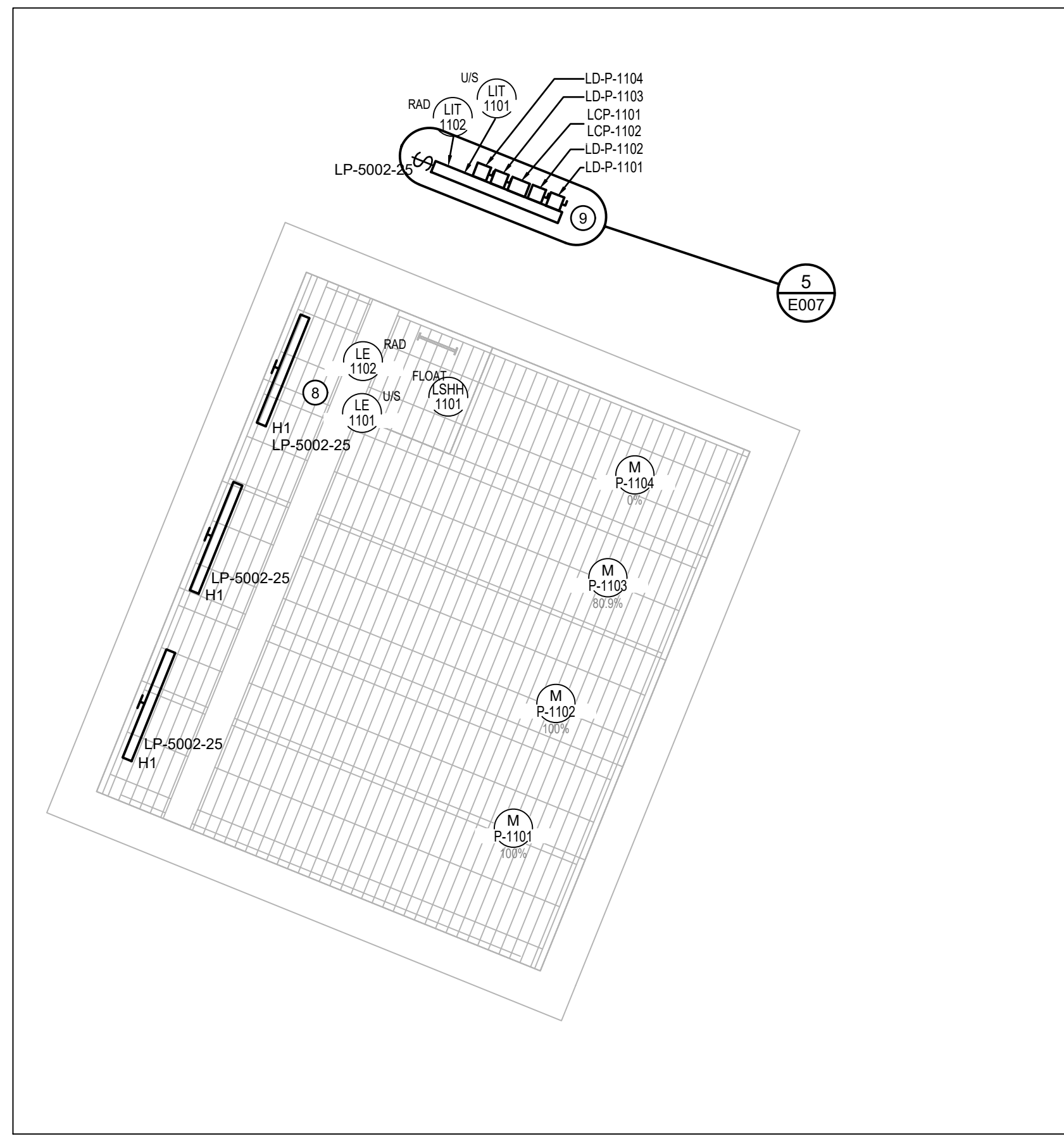
DESIGN: SB	DRAWING #:
DRAWN: NB	1502
CHECKED: LO/BM	
JLR #: 32296-001	

PLOT DATE: Tuesday, April 29, 2025 11:24:48 AM

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrades\03-Production\06-Elect\32296-001 - UV INSTRUMENTATION PLAN.dwg



1
E510
BASEMENT HOUSE SERVICES PLAN
SCALE: AS INDICATED



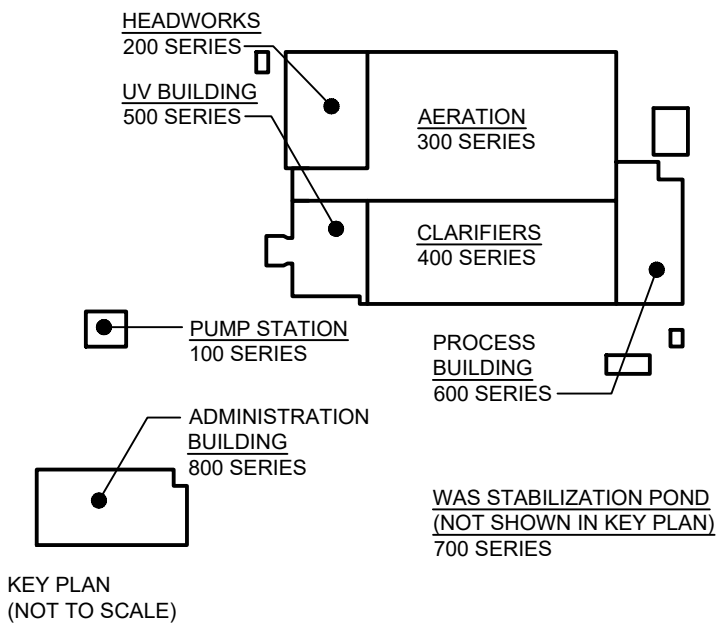
1
I510
RAW SEWAGE PUMPING STATION
SCALE: AS INDICATED

DRAWING NOTES:

- 1 EXTEND HEAT TRACE COMPLETE SPAN OF PIPING TO CLARIFIER.
- 2 MOUNT SENSOR TO CHANNEL BELOW GRATING. PROVIDE MANUFACTURERS APPROVED MOUNTING BRACKET.
- 3 COORDINATE EXACT PANEL PLACEMENT ON SITE.
- 4 PROVIDE SLEEVES THROUGH WALLS FOR WIRE PENETRATION INTO UV BUILDING.
- 5 CABLES ARE TO BE FASTENED TO THE WALL AND PENETRATE THROUGH CEILING TO ROOM ABOVE. PROVIDE OPENINGS THROUGH FLOOR SLAB, QUANTITY AND SIZE TO SUIT. COORDINATE WITH STRUCTURAL. PROVIDE A DIMENSIONED SHOP DRAWING FOR THE PROSED OPENINGS FOR REVIEW PRIOR TO MAKING ANY OPENINGS IN THE FLOOR. COORDINATE EXACT LOCATIONS OF OPENINGS ON-SITE WITH FINAL LOCATIONS OF TARGET EQUIPMENT AND SITE CONDITIONS.
- 6 TRAY FOR MECHANICAL TUBING. COORDINATE MOUNTING HEIGHT WITH MECHANICAL.
- 7 DUCT BANK TO RAW WATER PUMPING STATION AND ADMIN BUILDING PENETRATION LOCATION.
- 8 LEVEL ELEMENTS AND FLOAT SWITCHES TO BE LOCATED BELOW THE GROUND LEVEL CHECKER PLATE FOR ACCESSIBILITY.
- 9 PROVIDE UNISTRUT FRAME. SEE DETAIL 5/E007.
- 10 CABLE TRAY:
TIER 1 - 450mm POWER TRAY B.O.C.T. 2550mm A.F.F.
TIER 2 - 300mm CONTROLS TRAY B.O.C.T. 2250mm A.F.F.

GENERAL NOTES:

- A. CABLE TRAY ELEVATIONS AND ROUTES, AS WELL AS CONDUIT PATHS AND PULL BOX LOCATIONS, ARE APPROXIMATE. CONTRACTOR TO COORDINATE THE EXACT LOCATIONS AND ELEVATIONS WITH SITE CONDITIONS. ADVISE THE CONSULTANT OF THE PROPOSED LOCATIONS AND ELEVATIONS PRIOR TO INSTALLATION.
- B. ALL CABLES NOT SHOWN. REFER TO BLOCK DIAGRAM AND SINGLE LINE DIAGRAM FOR COMPLETE LIST OF CABLES.
- C. CONTRACTOR TO COORDINATE CABLE TRAY ROUTE WITH MECHANICAL AND ELECTRICAL EQUIPMENT. CABLE TRAY BRACKETS NOT TO EXTEND MORE THAN 50mm BEYOND CABLE TRAYS.
- D. COORDINATE FINAL DIMENSIONS OF HOUSEKEEPING PADS WITH ACTUAL EQUIPMENT DIMENSIONS. PROVIDE A MINIMUM OF 100mm CLEARANCE ON FRONT AND SIDES. EACH HOUSEKEEPING PAD TO BE 100mm HIGH.
- E. ALL PULL BOXES MAY NOT BE SHOWN. ADDITIONAL PULL BOXES MAY BE REQUIRED BASED ON THE INSTALLATION REQUIREMENTS. CONTRACTOR TO PROVIDE ADDITIONAL PULL BOXES, AS REQUIRED.



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SCALE: AS INDICATED

CLIENT:



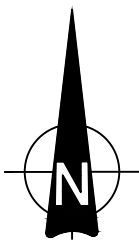
CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL UV BUILDING
INSTRUMENTATION PLAN

DESIGN: SB

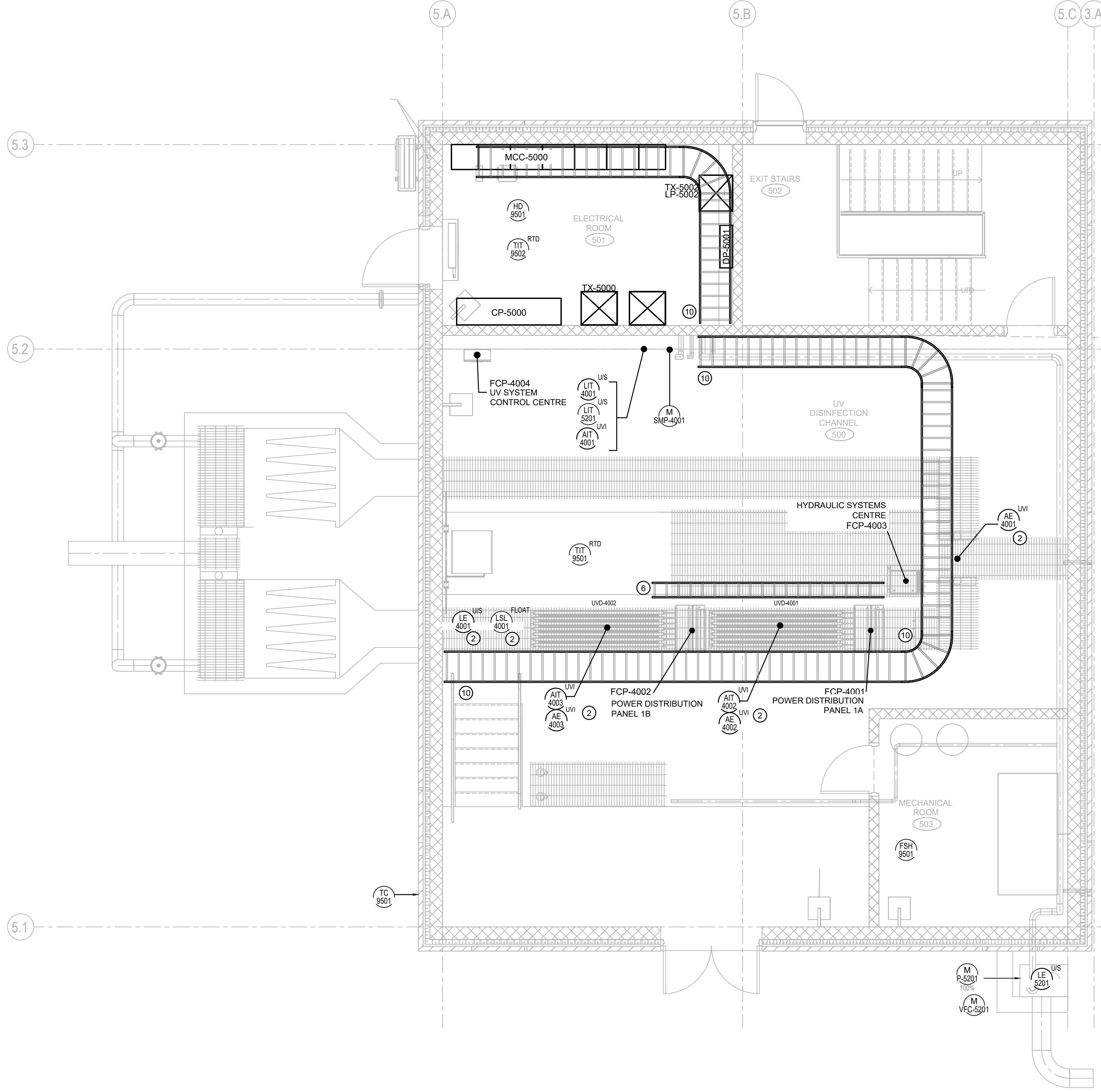
DRAWN: NB

CHECKED: LO/BM

JLR #: 32296-001

DRAWING #:

I510



2
I510
GROUND FLOOR INSTRUMENTATION PLAN
SCALE: AS INDICATED

PLOT DATE: Tuesday, April 29, 2025 11:24:44 AM

File Location: \\jrichards\Corp\Projects\32000\32296-001 - Brighton WWTF System Upgrades\03-Production\06-Electrical\32296-E000.dwg

GENERAL NOTES:

- PROVIDE GROUND AS PER SPD MANUFACTURER'S REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAIL.
- ALL INDICATED CABLES SHOWN AS "ARMoured BELDEN VFD CABLE" TO BE ALUMINUM ARMoured BELDEN VFD CABLE 12295XX SERIES.
- REFER TO MOTOR STARTER AND CONTROL LIST AND HAZARDOUS AREA CLASSIFICATIONS ON THE ME SERIES DRAWINGS FOR ADDITIONAL DETAILS.
- PROVIDE AN ETHERNET POWER MONITOR FOR MCC BEING SUPPLIED.
- THE POWER MONITOR WILL BE FED FROM AN EXTERNAL 120VAC UPS POWER SOURCE. REFER TO CONTROL PANEL DRAWINGS FOR DETAILS. PROVIDE ALL APPURTENANCES REQUIRED TO FACILITATE THIS.
- MOTOR STARTERS TO BE HARDWIRED TO PLC I/O. STARTERS TO ALSO BE CONNECTED VIA ETHERNET.
- MCC BREAKER SIZES SHOWN FOR QUOTATION PURPOSES ONLY. FINAL BREAKER SIZES TO BE DETERMINED BY MCC MANUFACTURER. SUBJECT TO THE APPROVAL OF THE ENGINEER. WHERE NECESSARY, CONTRACTOR TO ADJUST CABLE SIZING, AT NO EXTRA COST TO THE OWNER.
- REFER TO DRAWING N001 FOR CAT6 NETWORK DETAILS.
- MCC ETHERNET SWITCH POWER SUPPLIES TO BE FED FROM AN EXTERNAL 120VAC UPS POWER SOURCE. MCC MANUFACTURER TO MAKE THE NECESSARY ARRANGEMENTS TO DISTRIBUTE THIS POWER INSIDE THE MCC. REFER TO THE CONTROL PANEL WIRING DIAGRAM.
- LOCATION OF MCC ETHERNET SWITCHES NOT SHOWN. MCC MANUFACTURER TO IDENTIFY THIS LOCATION.
- REFER TO SECTION 16801 FOR MCC REQUIREMENTS. REFER TO SECTION 16812 FOR VFD REQUIREMENTS.
- REFER TO E020 AND E021 FOR MOTOR STARTER SCHEMATICS. REFER TO MSGCL AND PIDSMIDS FOR FURTHER DETAILS ON MOTOR STARTER TYPES.
- CONTRACTOR TO COORDINATE SHIPPING SPLITS TO ENSURE MCC CAN BE MOVED TO ITS FINAL LOCATION INSIDE THE ELECTRICAL ROOM.
- MCC SUPPLIER TO PROVIDE DRY FORM C CONTACTS INSIDE THE MCC FOR MONITORING OF THE 24VDC PIS. REFER TO SECTION 16801.
- WHERE CONDUIT IS NOTED WITHOUT TRADE SIZE, CONTRACTOR TO PROVIDE SIZE IN COMPLIANCE WITH ONTARIO ELECTRICAL SAFETY CODE REQUIREMENTS.

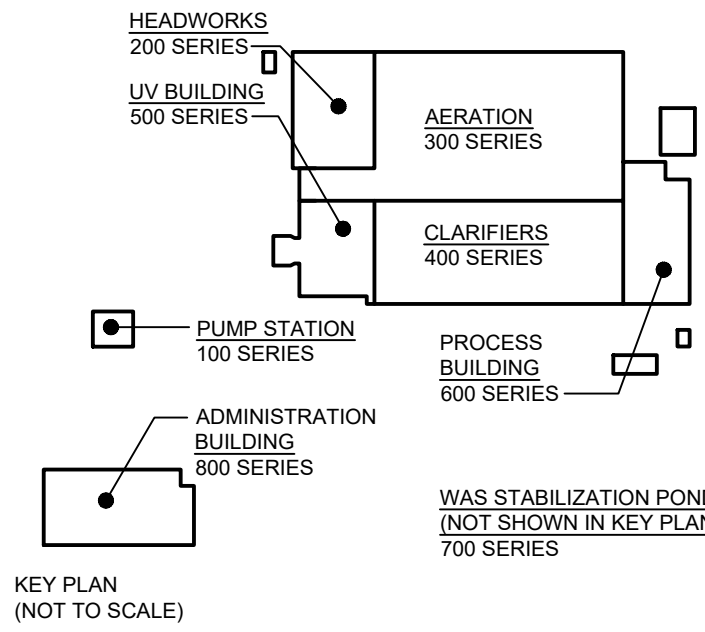
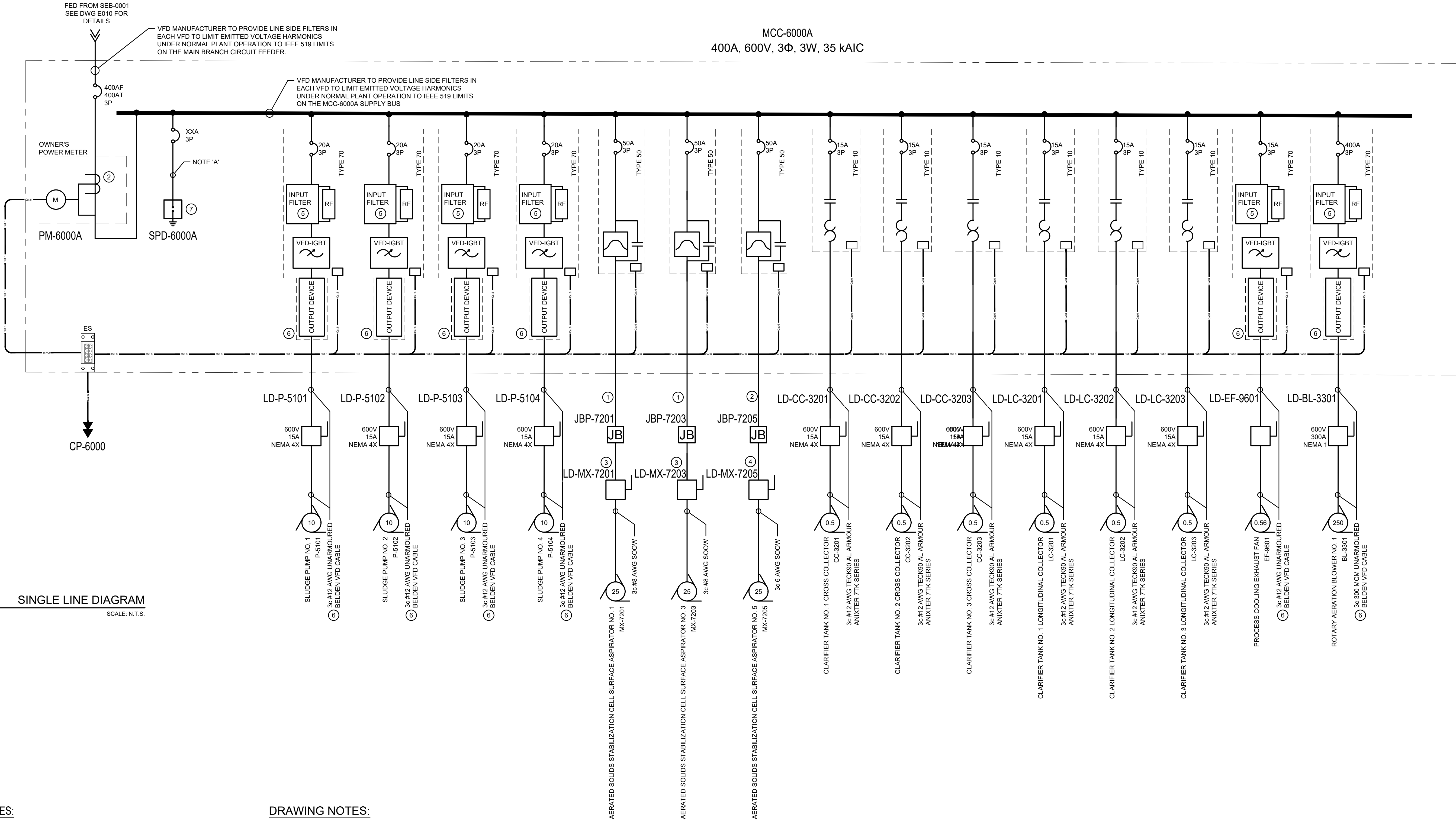
DRAWING NOTES:

- 3C #8 AWG RWU90 + GND IN 27MMC. CONDUIT IS TO RUN OUT OF THE BOTTOM OF THE MCC AND ATTACH ITSELF TO THE UNDERSIDE OF THE CABLE TRAY. CONDUIT IS TO TRANSITION INTO UNDERGROUND DUCT SHOWN ON DRAWING E003.
- 3C #6 AWG RWU90 + GND IN 27MMC. CONDUIT IS TO RUN OUT OF THE BOTTOM OF THE MCC AND ATTACH ITSELF TO THE UNDERSIDE OF THE CABLE TRAY. CONDUIT IS TO TRANSITION INTO UNDERGROUND DUCT SHOWN ON DRAWING E003.
- 3C #8 TECK 90 IN TRAY.
- 3C #6 TECK 90 IN TRAY.
- VFD MANUFACTURER TO SIZE AND ENSURE ALL LINE SIDE FILTERS WILL ONLY DRAW REAL AND REACTIVE POWER IN TO THE DRIVE UNDER ALL MODES OF OPERATION AND MOTOR OUTPUT FREQUENCY.
- VFD MANUFACTURER TO CO-REVIEW MOTOR SHOP DRAWINGS AND INDICATE THEIR ACCEPTANCE BEFORE SUBMITTING. VFD MANUFACTURER'S DESIGN SHALL PROVIDE OUTPUT FILTERS TO MEET OR EXCEED THE OPERATIONAL REQUIREMENTS FOR NEMA MG-1, PART 31 RATED MOTORS. WHERE NECESSARY, THIS SHALL INCLUDE FOR SECONDARY CABLE LENGTHS TO ENSURE MOTOR VOLTAGE AND CURRENT RATINGS AT THE MOTOR ARE BEING MAINTAINED. IF REQUIRED, THE CONTRACTOR SHALL ADJUST THE SIZE OF THE SECONDARY CABLE UNDER THE VFD MANUFACTURER'S GUIDANCE AT NO ADDED COST TO THE OWNER.
- COORDINATE EXACT BREAKER SIZE WITH SPD MANUFACTURER PRIOR TO ORDERING.

STARTER TYPES

TYPE	DESCRIPTION
TYPE 10	FVNR IN MCC WITH LOCAL CONTROL PANEL
TYPE 70	VFD IN MCC WITH LOCAL CONTROL PANEL C/W LOCAL SPEED INDICATOR
TYPE 73	VFD IN MCC WITH LOCAL CONTROL PANEL C/W LOCAL SPEED INDICATOR + MINICAS RELAY INTERLOCK

1 SINGLE LINE DIAGRAM
SCALE: N.T.S.



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SCALE: N.T.S.

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL
PROCESS BUILDING
SINGLE LINE DIAGRAM AND PANEL
SCHEDULES (1 OF 2)

DESIGN: SB/NB

DRAWN: NB/RH

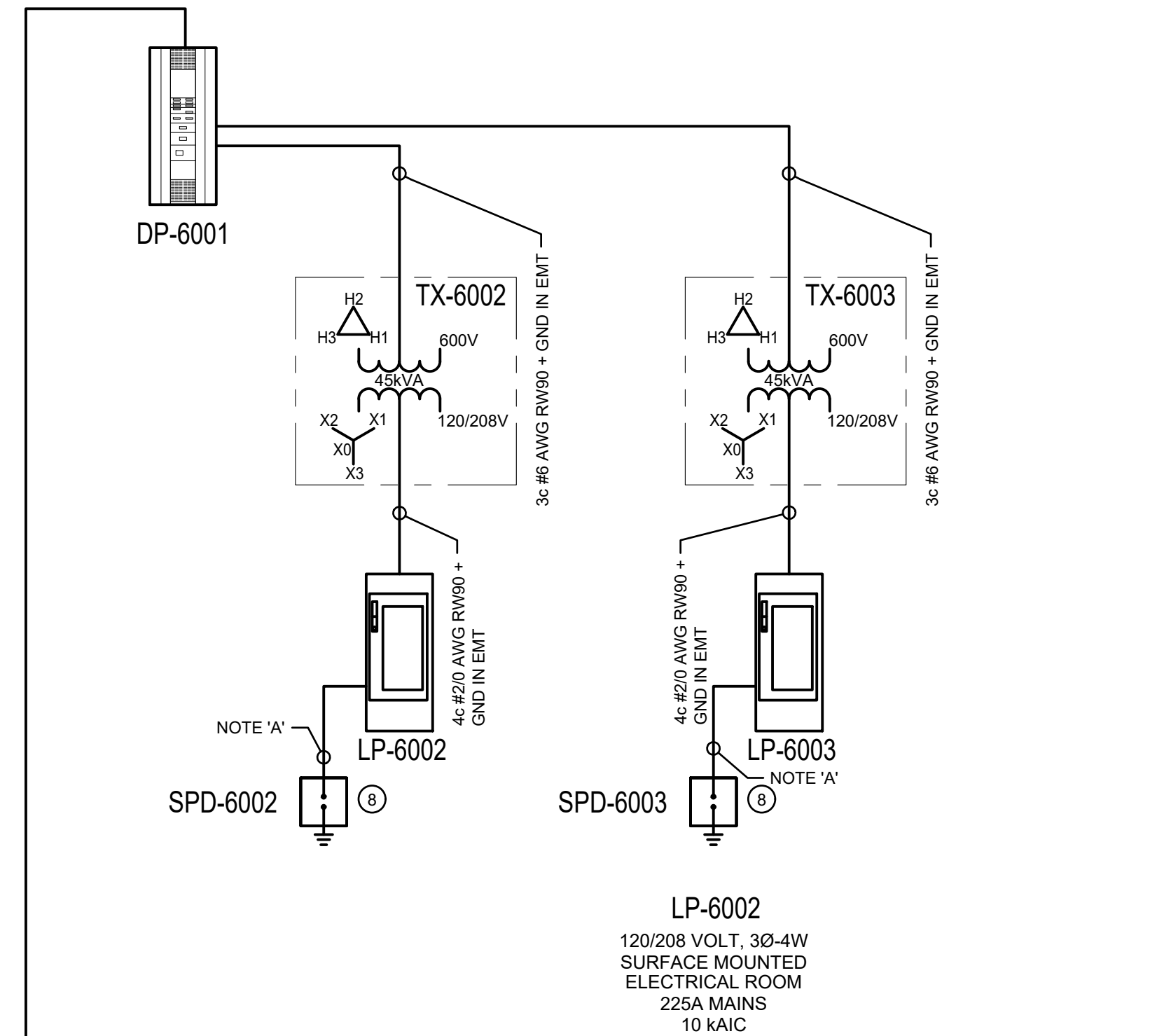
CHECKED: LO/BM

JLR #: 32296-001

DRAWING #:

E601

PLOT DATE: Tuesday, April 29, 2025 11:24:16 AM



TOTAL CONNECTED LOAD:		LOAD_TOT
PHASE LOAD TO BE FILLED IN BY CONTRACTOR: LOAD PHASE A: LOAD PHASE B: LOAD PHASE C:		
REMARKS		
1.	ALL LOADS ARE IN WATTS, UNLESS OTHERWISE NOTED.	NOTE: PROVIDE PADLOCKABLE CLASP FOR ALL BREAKERS PROVIDED.
2.	↑ DEDICATED NEUTRAL	
3.	★ GFI	
4.	■ LOOKED	
5.	▲ ARC FAULT CIRCUIT INTERRUPTER	

LP-6003
120/208 VOLT, 3Ø-4W
SURFACE MOUNTED
ELECTRICAL ROOM
225A MAINS
10 kAIC

TOTAL CONNECTED LOAD:		LOAD_TOT
PHASE LOAD TO BE FILLED IN BY CONTRACTOR: LOAD PHASE A: LOAD PHASE B: LOAD PHASE C:		
REMARKS		
1. ALL LOADS ARE IN WATTS, UNLESS OTHERWISE NOTED.		NOTE: PROVIDE PADLOCKABLE CLASP FOR ALL BREAKERS PROVIDED.
2. † DEDICATED NEUTRAL		
3. ★ GFI		
4. ■ LOOKED		
5. ▲ ARC FAULT CIRCUIT INTERRUPTER		

4
E602

LP-6003 PANEL SCHEDULE

SCALE: N.T.S.



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CLIENT:  MUNICIPALITY OF BRIGHTON

CONSULTANT: www.jirichards.ca

CONSULTANT:

PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL
PROCESS BUILDING
SINGLE LINE DIAGRAM AND PANEL
SCHEDULES (2 OF 2)

DESIGN: BM	DRAWING #: E602
DRAWN: RH	
CHECKED: LO/BM	
JLR #: 32296-001	

File Location: P:\32000\32296-001 - Brighton WWT System Upgrades\03-Production\06-Elect\32296-E000.dwg

- A. PROVIDE GROUND AS PER SPD MANUFACTURER'S REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAIL.
- B. ALL INDICATED CABLES SHOWN AS "ARMOURED BELDEN VFD CABLE" TO BE ALUMINUM ARMORED BELDEN VFD CABLE 12285XX SERIES.
- C. REFER TO MOTOR STARTER AND CONTROL LIST AND HAZARDOUS AREA CLASSIFICATIONS ON THE ME SYSTEM DRAWINGS FOR ADDITIONAL DETAILS.
- D. PROVIDE AN ETHERNET POWER MONITOR FOR MCC BEING SUPPLIED.
- E. THE POWER MONITOR WILL BE FED FROM AN EXTERNAL 120VAC UPS POWER SOURCE. REFER TO CONTROL PANEL DRAWINGS FOR DETAILS. PROVIDE ALL APPURTENANCES REQUIRED TO FACILITATE THIS.
- F. MOTOR STARTERS TO BE HOOKED UP TO PLC I/O. STARTERS TO ALSO BE CONNECTED VIA ETHERNET.
- G. MCC BREAKER SIZES SHOWN FOR QUOTATION PURPOSES ONLY. FINAL BREAKER SIZES TO BE DETERMINED BY MCC MANUFACTURER, SUBJECT TO THE APPROVAL OF THE ENGINEER. WHERE NECESSARY, CONTRACTOR TO ADJUST CABLE SIZING, AT NO EXTRA COST TO THE OWNER.
- H. REFER TO DRAWING N001 FOR CAT6 NETWORK DETAILS.
- I. MCC ETHERNET SWITCH POWER SUPPLIES TO BE FED FROM AN EXTERNAL 120VAC UPS POWER SOURCE. MCC MANUFACTURER TO MAKE THE NECESSARY ARRANGEMENTS TO DISTRIBUTE THIS POWER INSIDE THE MCC. REFER TO THE CONTROL PANEL WIRING DIAGRAM.
- J. LOCATION OF MCC ETHERNET SWITCHES NOT SHOWN. MCC MANUFACTURER TO IDENTIFY THIS LOCATION.
- K. REFER TO SECTION 180101 FOR MCC REQUIREMENTS. REFER TO SECTION 18012 FOR VFD REQUIREMENTS.
- L. REFER TO E020 AND E021 FOR MOTOR STARTER SCHEMATICS. REFER TO MSCL AND PIDSMIDS FOR FURTHER DETAILS ON MOTOR STARTER TYPES.
- M. CONTRACTOR TO COORDINATE SHIPPING SPLITS TO ENSURE MCC CAN BE MOVED TO ITS FINAL LOCATION INSIDE THE ELECTRICAL ROOM.
- N. MCC SUPPLIER TO PROVIDE DRY FORM C CONTACTS INSIDE THE MCC FOR MONITORING OF THE 24VDC PIS FOR REFER TO SECTION 180101.
- O. WHERE CONDUIT IS NOTED WITHOUT TRADE SIZE, CONTRACTOR TO PROVIDE SIZE IN COMPLIANCE WITH ANTI ELECTRICAL SAFETY CODE REQUIREMENTS.

- ① 3C #6 AWG RWU90 + GND IN 27MM. CONDUIT IS TO RUN OUT OF THE BOTTOM OF THE MCC AND ATTACH ITSELF TO THE UNDERSIDE OF THE CABLE TRAY. CONDUIT IS TO TRANSITION INTO UNDERGROUND DUCT SHOWN ON DRAWING E003.
- ② 3C #6 AWG RWU90 + GND IN 27MM. CONDUIT IS TO RUN OUT OF THE BOTTOM OF THE MCC AND ATTACH ITSELF TO THE UNDERSIDE OF THE CABLE TRAY. CONDUIT IS TO TRANSITION INTO UNDERGROUND DUCT SHOWN ON DRAWING E003.
- ③ 3C #8 TECK 90 IN TRAY.
- ④ 3C #8 TECK 90 IN TRAY.
- ⑤ COORDINATE EXACT BREAKER SIZE WITH COLLECTOR MANUFACTURER PRIOR TO ORDERING.
- ⑥ VFD MANUFACTURER TO SIZE AND ENSURE ALL LINE SIDE FILTERS WILL ONLY DRAW REAL AND REACTIVE POWER IN TO THE DRIVE UNDER ALL MODES OF OPERATION AND MOTOR OUTPUT FREQUENCY.
- ⑦ VFD MANUFACTURER TO CO-REVIEW MOTOR SHOP DRAWINGS AND INDICATE THEIR ACCEPTANCE BEFORE SUBMITTING. VFD MANUFACTURER'S DESIGN SHALL PROVIDE OUTPUT FILTERS TO MEET OR EXCEED THE OPERATIONAL REQUIREMENTS FOR NEMA MG-1, PART 31 RATED MOTORS. WHERE NECESSARY, THIS SHALL INCLUDE FOR SECONDARY CABLE LENGTHS TO ENSURE MOTOR VOLTAGE AND CURRENT RATINGS AT THE MOTOR ARE BEING MAINTAINED. IF REQUIRED, THE CONTRACTOR SHALL ADJUST THE SIZE OF THE SECONDARY CABLE UNDER THE VFD MANUFACTURER'S GUIDANCE AT NO ADDED COST TO THE OWNER.
- ⑧ COORDINATE EXACT BREAKER SIZE WITH SPD MANUFACTURER PRIOR TO ORDERING.

DP-6001 PANEL SCHEDULE

TX-6002 LP-6002	1 2 3 5	4 5 6	60A, 3P BKR	TX-6003 LP-6003
EUH-9301 EUH-9303	7 8	9 10	60A, 3P BKR	EUH-9601 EUH-9602
	11 12	13 14	20A, 3P BKR	
EUH-9604 EUH-9607	15 16 17	18 19 20	20A, 3P BKR	EUH-9603
EUH-9605 EUH-9608	21 22 23	24 25 26	20A, 3P BKR	EUH-9606
	27 28 29	30 31 32	15A, 3P BKR	EUH-9609
	33 34 35	36 37 38	15A, 3P BKR	
	39 40 41	42 43 44	15A, 3P BKR	
	45 46 47	48 49 50	15A, 3P BKR	
	51 52 53	54 55 56	SPACE	
	57 58 59	60 61 62	SPACE	
	63 64 65	66 67 68	SPACE	

DP-6001 PANEL SCHEDULE

PLOT DATE: Tuesday, April 29, 2025 11:24:15 AM

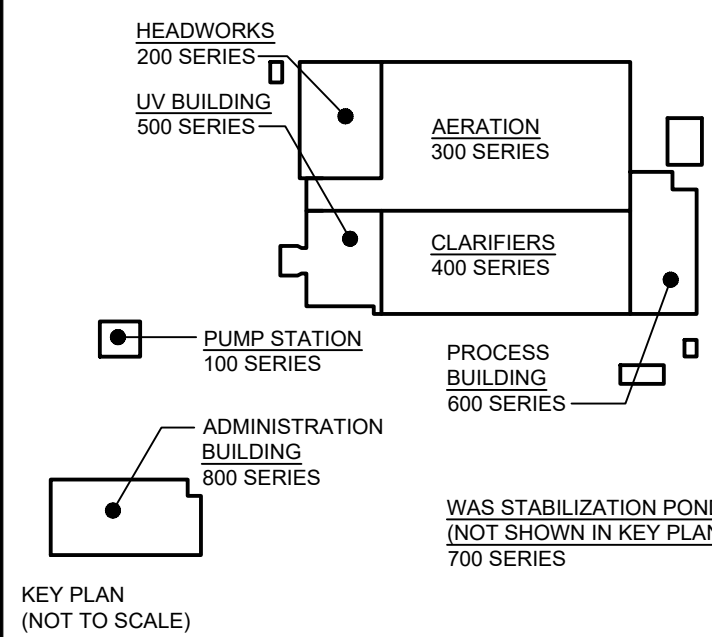


DRAWING NOTES:

- 1) PROVIDE ONE (1) MOTOR RATED SWITCH FOR EACH AC CASSETTE UNIT.
- 2) INDOOR EVAPORATOR UNIT IS TO BE FED FROM THE OUTDOOR UNIT. ELECTRICAL CONTRACTOR IS TO PROVIDE POWER AND CONTROL WIRING BETWEEN THE OUTDOOR CONDENSING UNIT AND THE INDOOR EVAPORATOR UNIT. WIRING TO BE RUN IN EMT INDOORS, OCAI, AND METALLIC LIQUID-TIGHT FLEXIBLE CONDUITS OUTDOORS. LENGTH OF LIQUID-TIGHT CONDUITS NOT TO EXCEED 450MM. COORDINATE THE EXACT WIRING REQUIREMENTS WITH THE MANUFACTURER. SIZE POWER WIRING TO SUIT. PROVIDE A NEMA 4X DISCONNECT FOR EACH UNIT. PROVIDE SEPARATE CONDUITS FOR POWER AND CONTROL WIRING.
- 3) PROVIDE TWO SEPARATE FEEDS TO SERVICE CONDENSING UNIT. ELECTRICAL CONTRACTOR IS TO PROVIDE POWER AND CONTROL WIRING BETWEEN THE OUTDOOR CONDENSING UNIT AND THE INDOOR CASSETTE UNIT. WIRING TO BE RUN IN EMT INDOORS, OCAI AND METALLIC LIQUID-TIGHT FLEXIBLE CONDUITS OUTDOORS. LENGTH OF LIQUID-TIGHT CONDUITS NOT TO EXCEED 450MM. COORDINATE THE EXACT WIRING REQUIREMENTS WITH THE MANUFACTURER. SIZE POWER WIRING TO SUIT. PROVIDE A NEMA 4X DISCONNECT FOR EACH UNIT. PROVIDE SEPARATE CONDUITS FOR POWER AND CONTROL WIRING.
- 4) PROVIDE MOTOR RATED SWITCH, SIZED TO SUIT EQUIPMENT. COORDINATE WITH MANUFACTURER FOR EXACT SIZE.
- 5) PROVIDE PADLOCKABLE UNFUSED DISCONNECT SWITCH, SIZED TO SUIT EQUIPMENT. COORDINATE WITH MANUFACTURER FOR EXACT DISCONNECT SIZE.
- 6) PROVIDE PADLOCKABLE NEMA 4X UNFUSED DISCONNECT SWITCH, SIZED TO SUIT EQUIPMENT. COORDINATE WITH MANUFACTURER FOR EXACT DISCONNECT SIZE.
- 7) PROVIDE TYPE 10 STARTER FOR SERVICE EF-9605. REFER TO PANEL SCHEDULE ON DRAWINGS E602 AND M601.

GENERAL NOTES:

- A. REFER TO DRAWING E002 FOR LIGHTING FIXTURE TYPES.
- B. REFER TO DRAWING E002 FOR LIGHT FIXTURE MOUNTING HEIGHTS AND OTHER REQUIREMENTS.
- C. REFER TO MOTOR STARTER CONTROL LIST AND HAZARDOUS AREA CLASSIFICATIONS ON ME SERIES DRAWINGS.
- D. REFER TO DRAWING E001 FOR FURTHER HOUSE SERVICES REQUIREMENTS, INCLUDING DISCONNECTS AND RECEPTACLES.
- E. REFER TO M SERIES DRAWINGS FOR FURTHER HVAC WIRING REQUIREMENTS, INCLUDING SEQUENCE OF OPERATIONS.



DESIGN DOCUMENTS HEREIN HAVE
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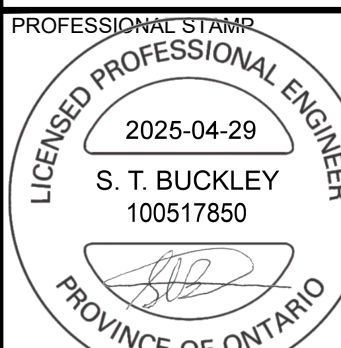
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SCALE: AS INDICATED

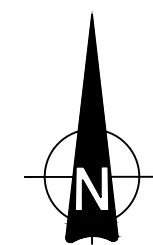
CLIENT:

CONSULTANT: www.jlrichards.com

CONSULTANT



PROJECT NORTH



PROJECT

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL
PROCESS BUILDING
GROUND FLOOR HOUSE SERVICE
PLAN

DESIGN: CR

DRAWN: _____

NB/RF

CHECKED:	LO/BM
JLR #:	32296-001

DRAWING #

E610

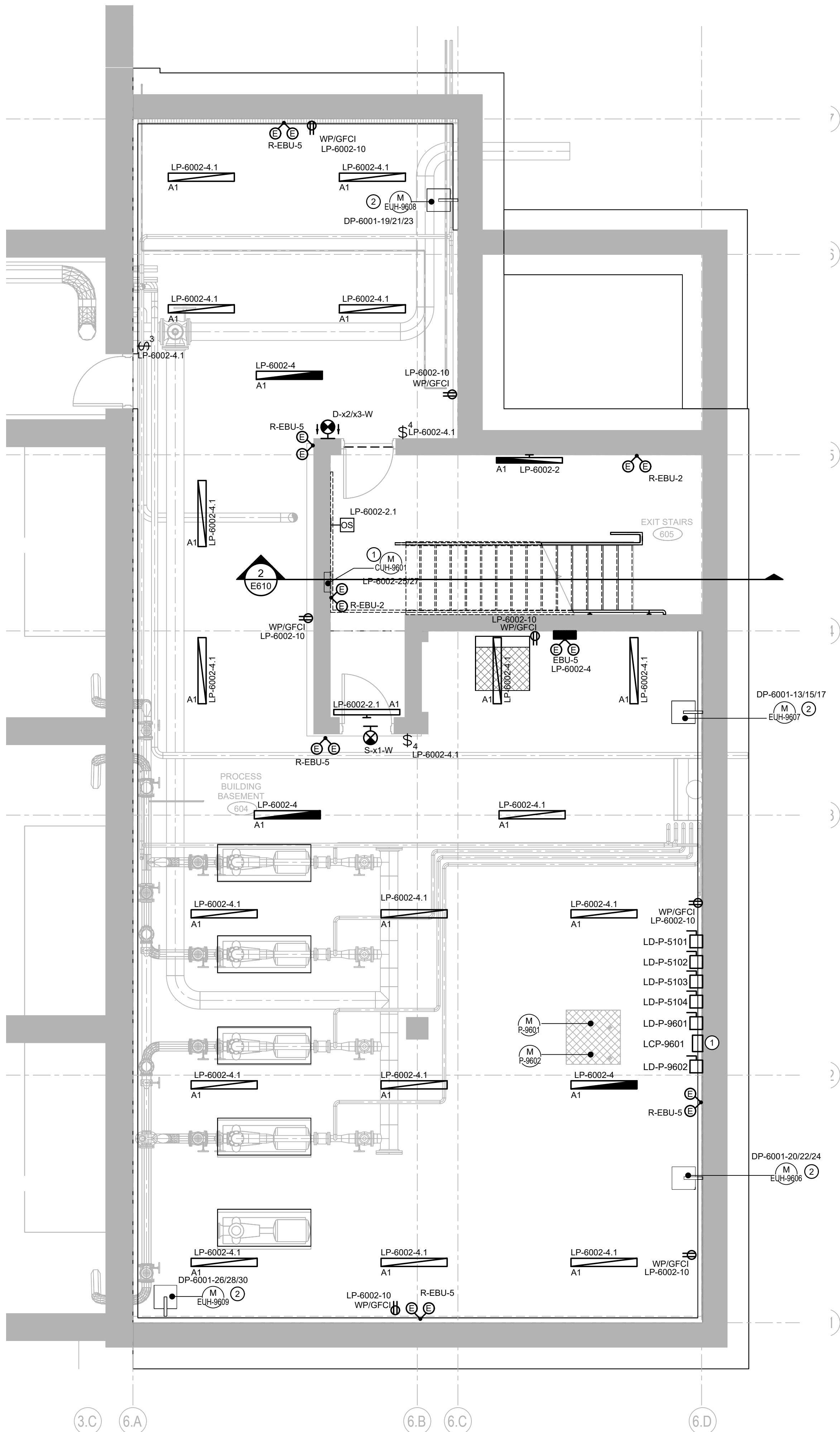
PRINT DATE: Tuesday April 29 2025 11:24:28 AM

File Location: P:\32296\32296-001 - Brighton WWT System Upgrade\03-Production\03-Elect\32296-001 - PROCESS BLDG BASEMENT SERVICES PLAN.dwg

1
E611

BASEMENT HOUSE SERVICES PLAN

SCALE: AS INDICATED
0 1 2 3 4m

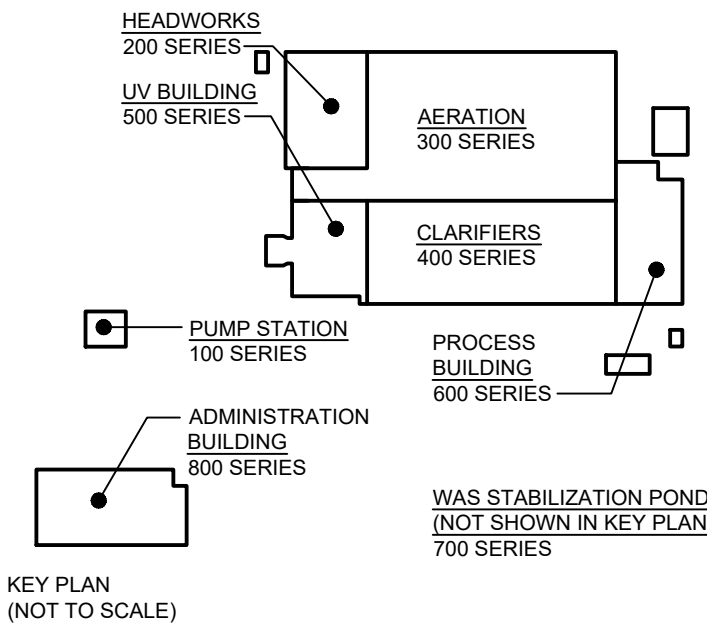


DRAWING NOTES:

- PROVIDE MOTOR RATED SWITCH, SIZED TO SUIT EQUIPMENT. COORDINATE WITH MANUFACTURER FOR EXACT SIZE.
- PROVIDE PADLOCKABLE NEMA 4X UNFUSED DISCONNECT SWITCH, SIZED TO SUIT EQUIPMENT. COORDINATE WITH MANUFACTURER FOR EXACT DISCONNECT SIZE.

GENERAL NOTES:

- REFER TO DRAWING E002 FOR LIGHTING FIXTURE TYPES.
- PROCESS BUILDING BASEMENT TYPE A1 FIXTURES TO BE MOUNTED AT 4M A.F.F. REFER TO DRAWING E002 FOR OTHER REQUIREMENTS.
- REFER TO MOTOR STARTER CONTROL LIST AND HAZARDOUS AREA CLASSIFICATIONS ON ME SERIES DRAWINGS.
- REFER TO DRAWING E001 FOR FURTHER HOUSE SERVICES REQUIREMENTS, INCLUDING DISCONNECTS AND RECEPTACLES.
- REFER TO M SERIES DRAWINGS FOR FURTHER HVAC WIRING REQUIREMENTS, INCLUDING SEQUENCE OF OPERATIONS.
- REFER TO STAIR LIGHTING SECTION DETAIL 2/E610.



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

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SCALE: AS INDICATED

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL
PROCESS BUILDING
BASEMENT HOUSE SERVICES
PLAN

DESIGN: SB

DRAWN: NB/RH

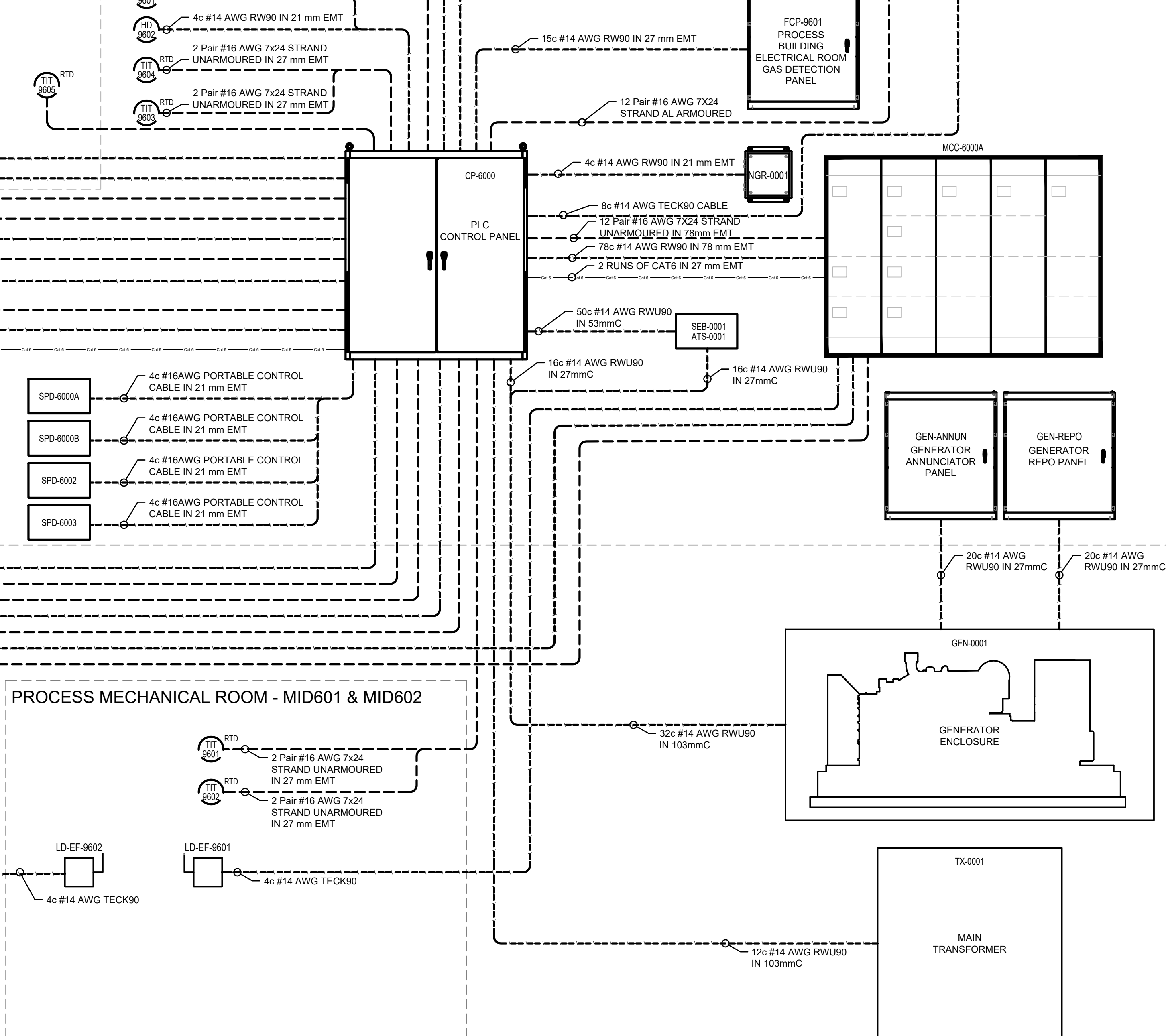
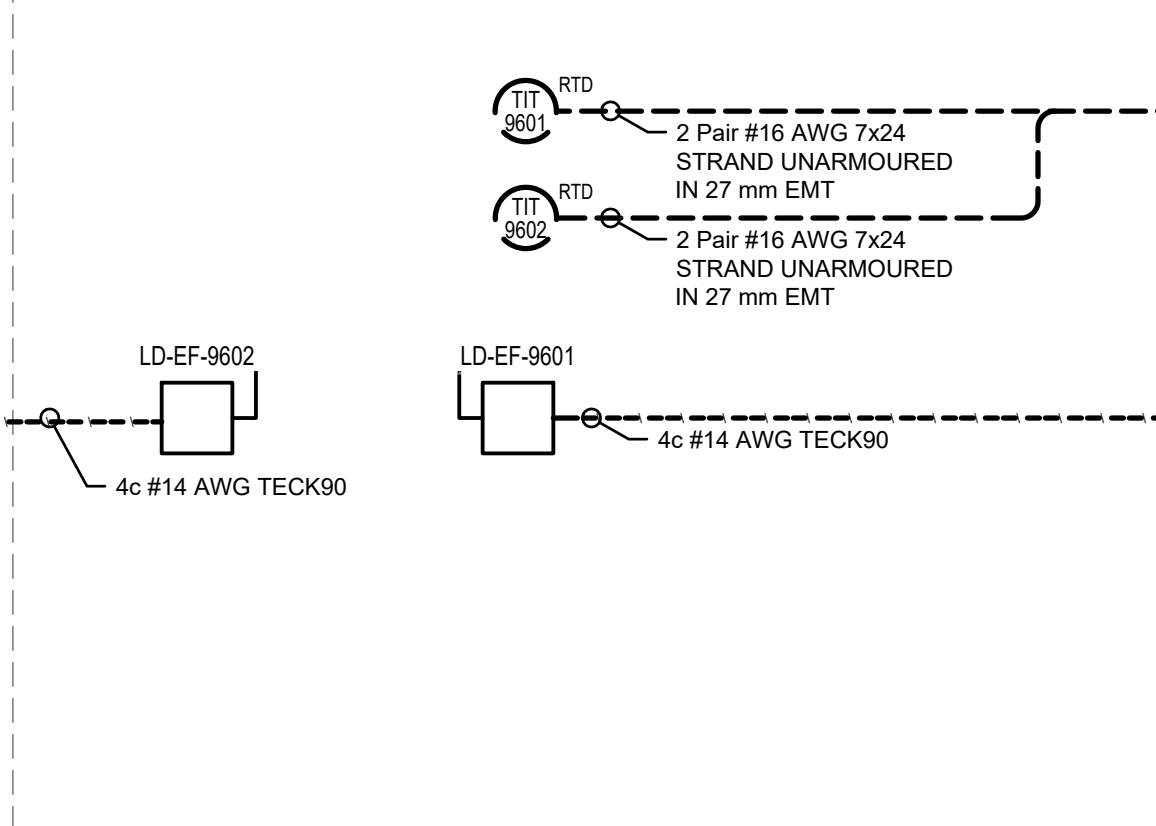
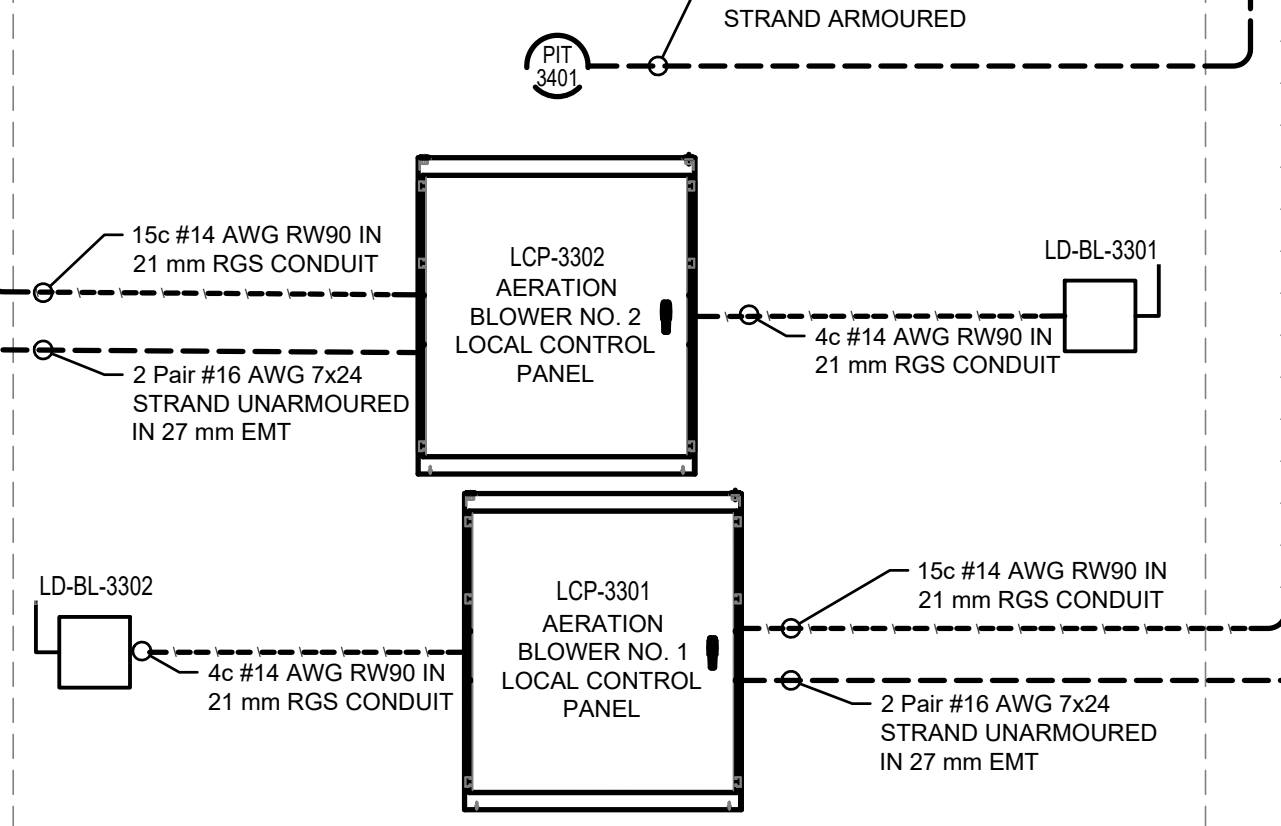
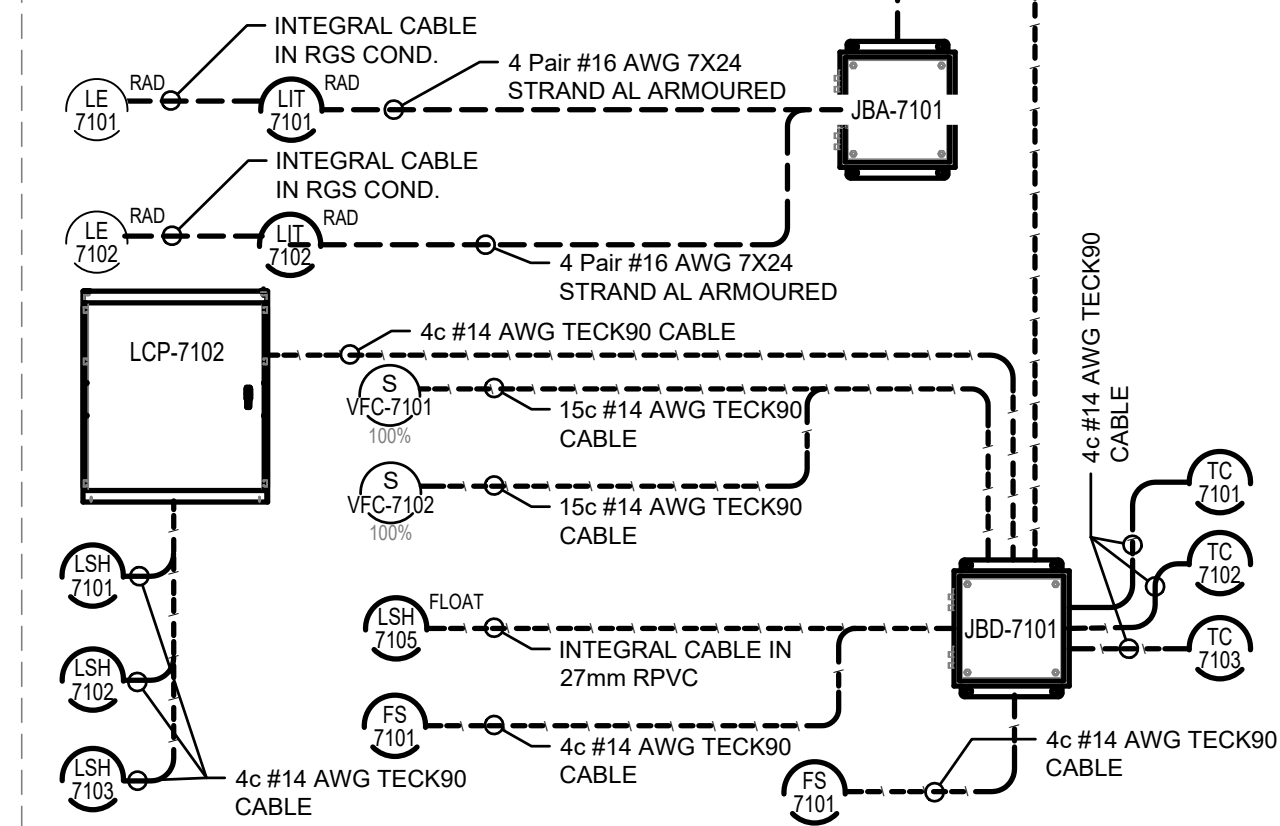
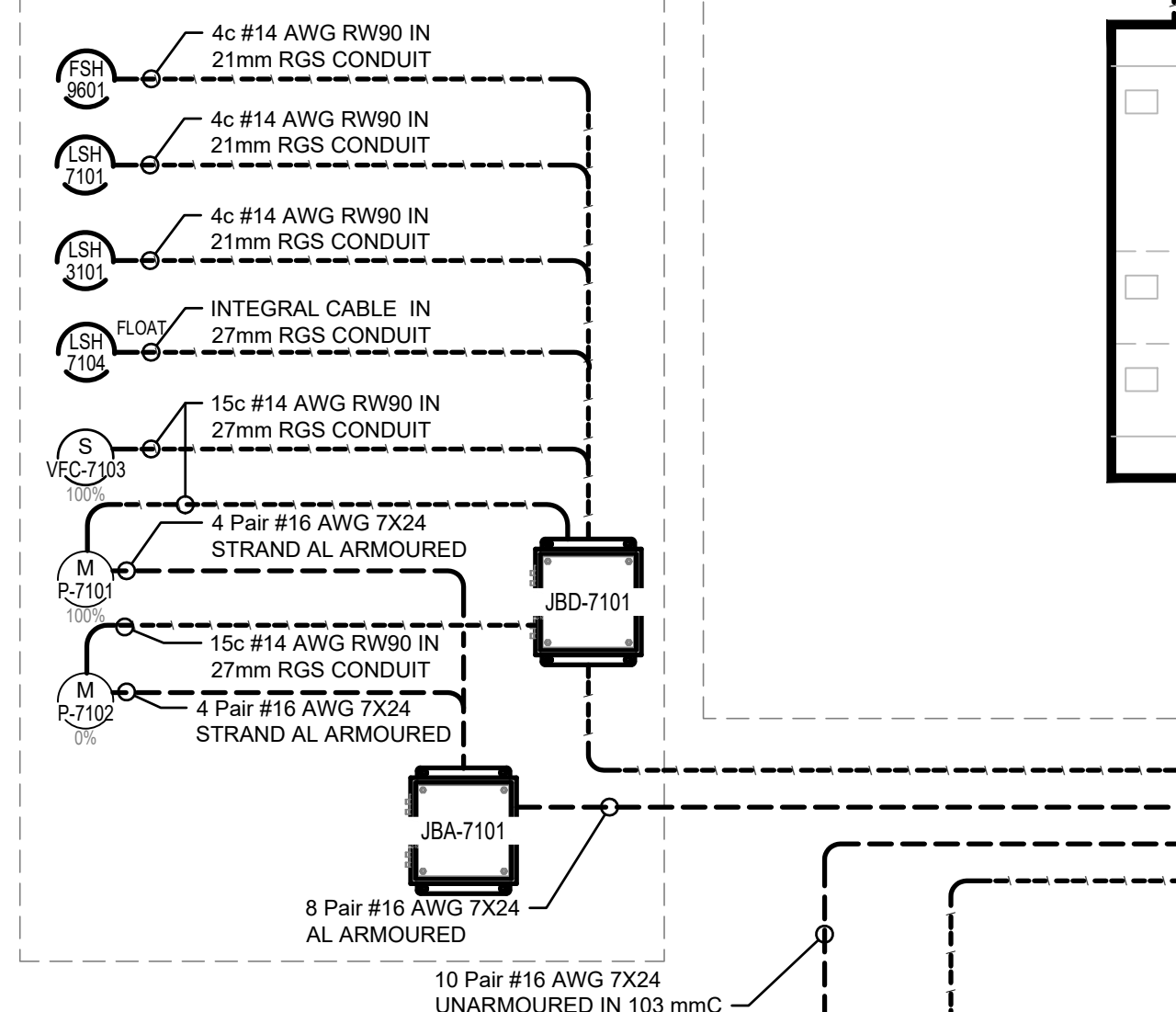
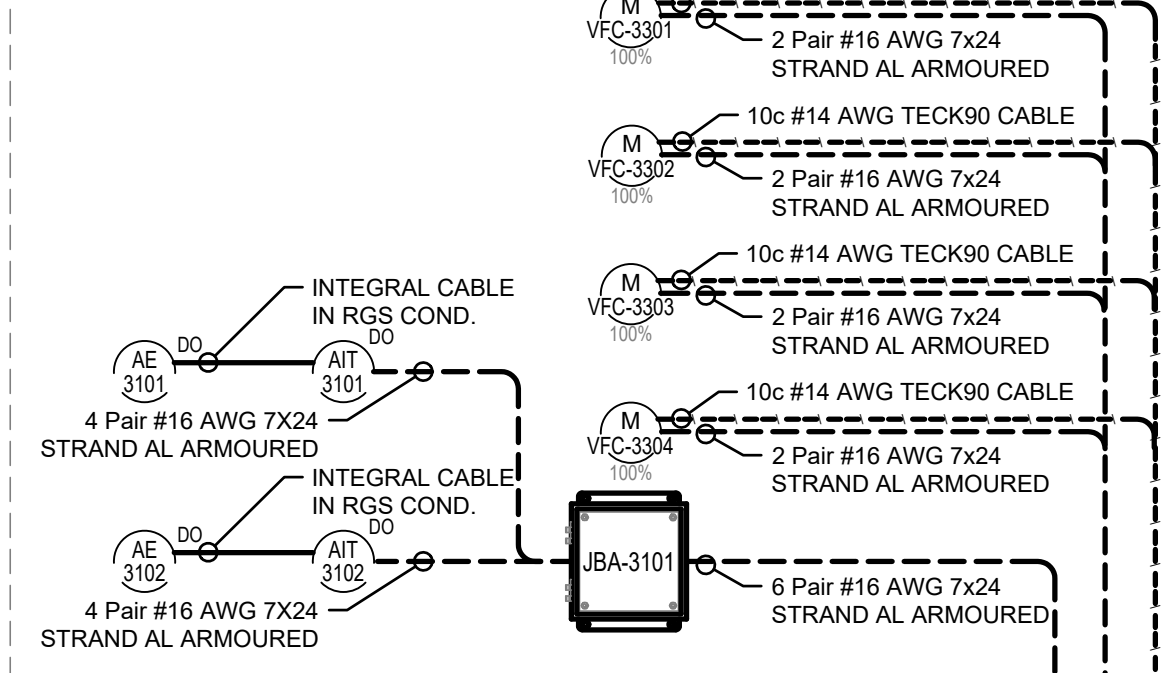
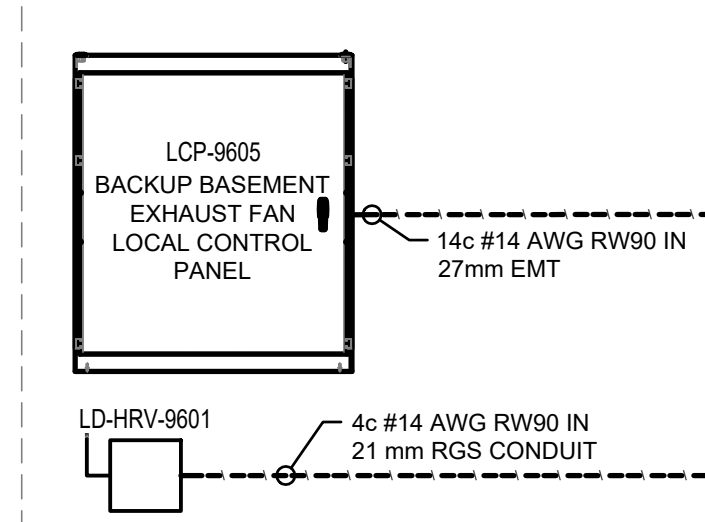
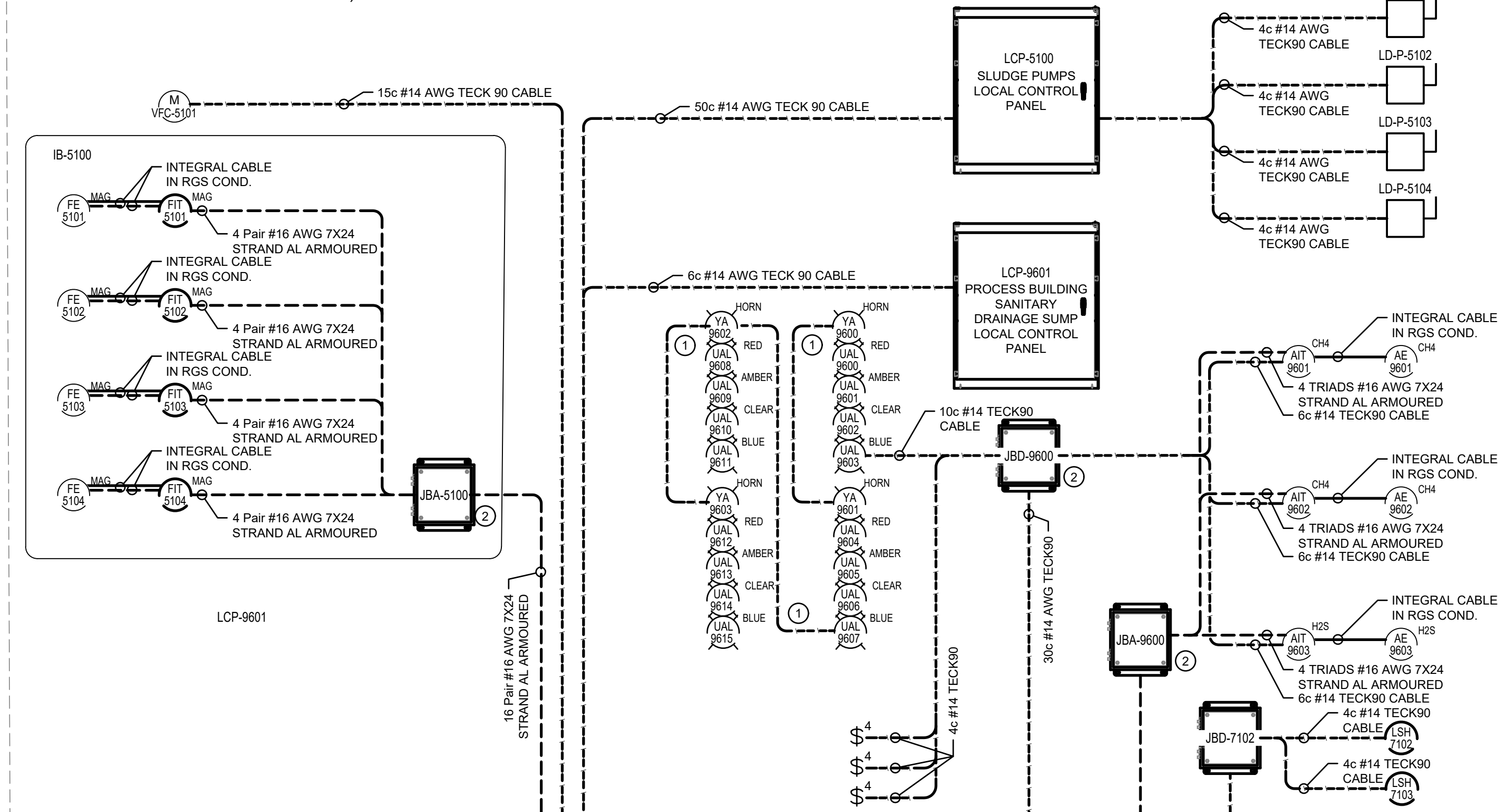
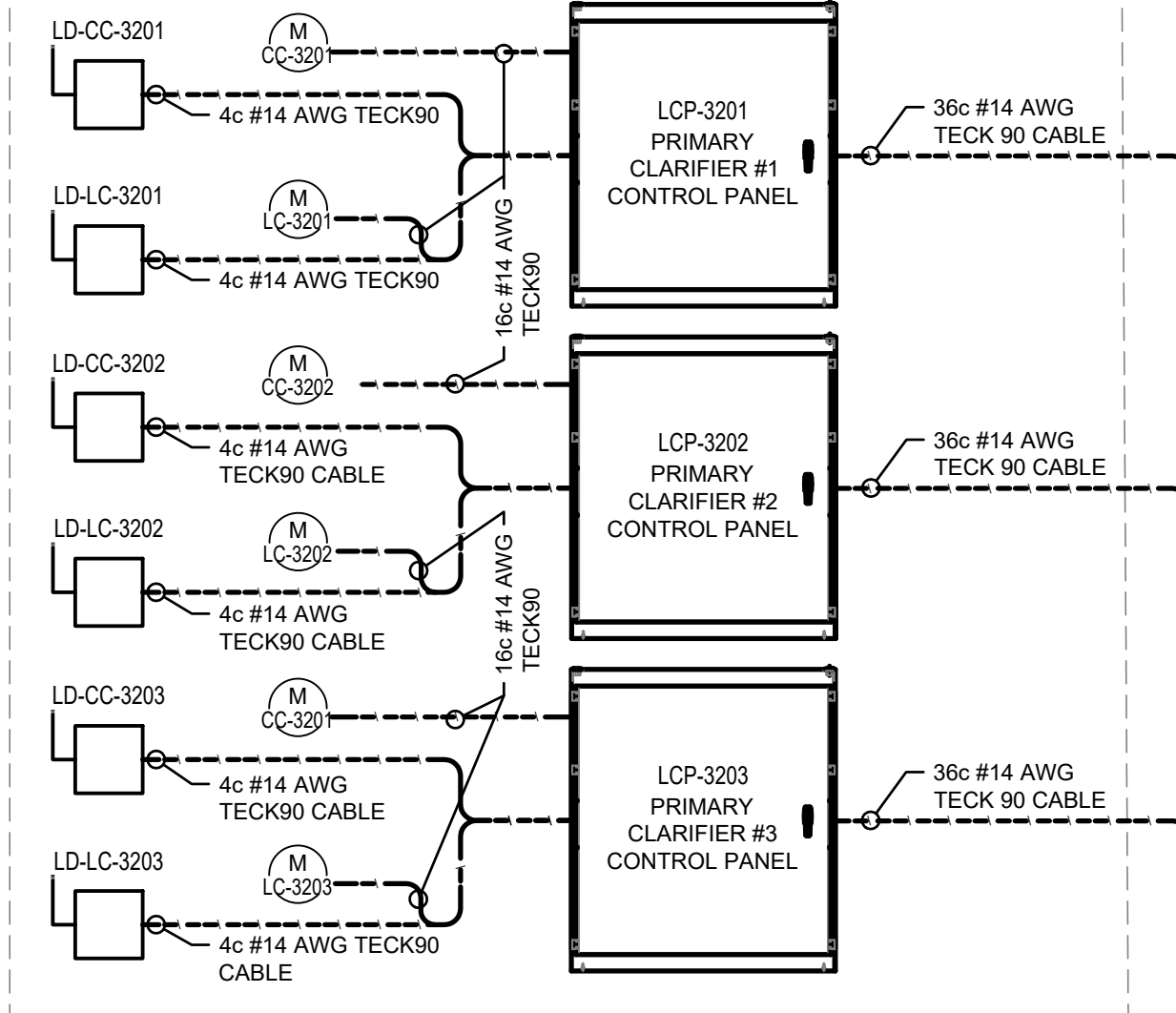
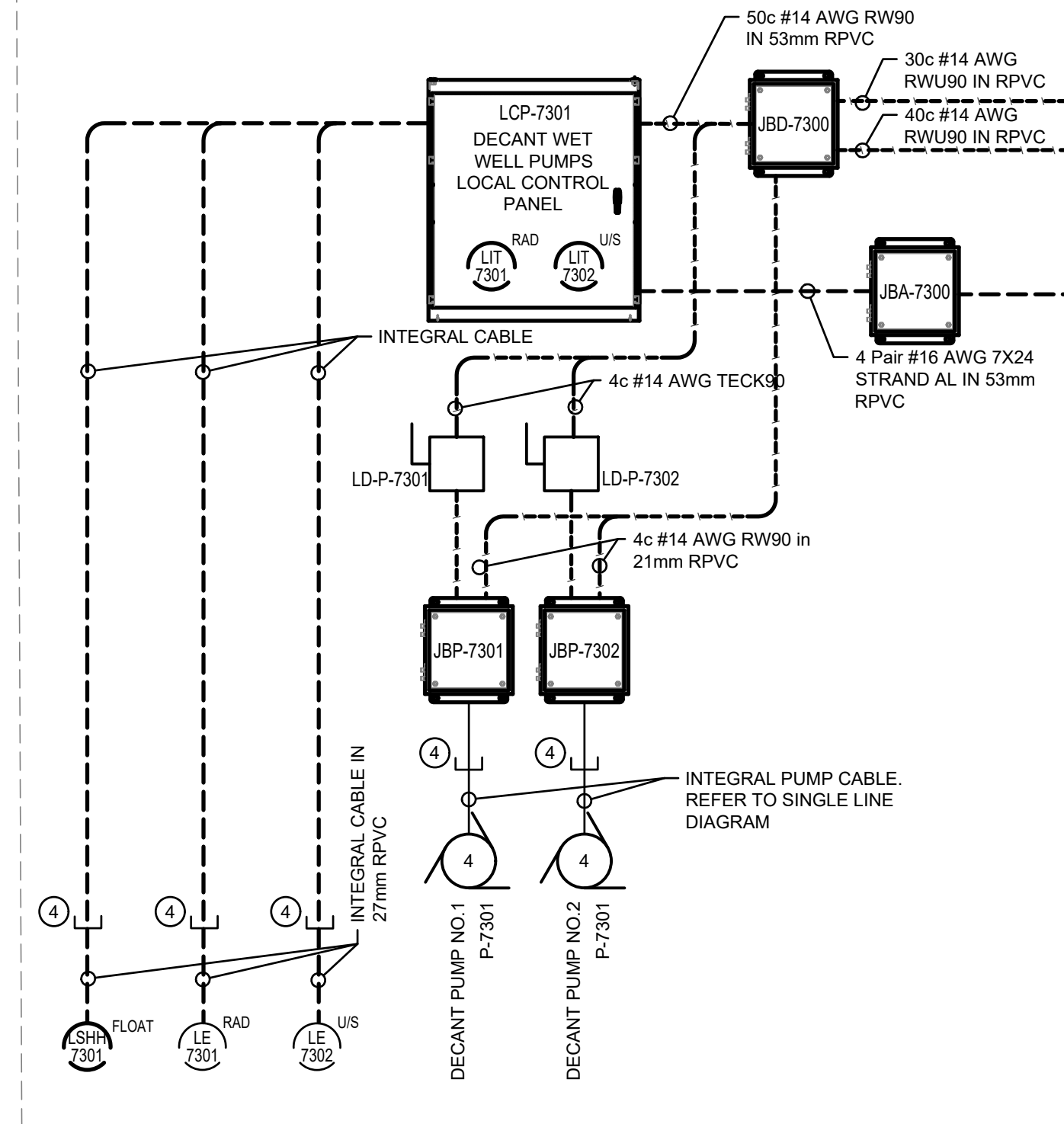
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JLR #: 32296-001

DRAWING #:

E611

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COMPONENT SUMMARY							
SLOT NUMB.	CATALOG NUMBER	MANUFACTURER	DESCRIPTION	IO TYPE	IO RACK	IO COUNT	COMMENTS
0	1756-A17	AB/RA	17 Slot ControlLogix Chassis	Miscellaneous	0	0	
0	1756-PB75	AB/RA	24VDC Power Supply (13A @ 5V)	Miscellaneous	0	0	
0	1756-L84E	AB/RA	ControlLogix Processor with 20MB NV Memory	Processor	0	0	
0	1784-SD2	AB/RA	2GB Secure Digital Memory Card	Miscellaneous	0	0	
1	1756-EN2T	AB/RA	Ethernet/IP 10/100 Bridge Module (128 TCP)	Network Card	0	0	
2	1756-EN2T	AB/RA	Ethernet/IP 10/100 Bridge Module (128 TCP)	Network Card	0	0	
3	1756-N2	AB/RA	Slot Filler	Miscellaneous	0	0	
4	1756-IB32i	AB/RA	32 Point 24 VDC Input Module Isolated	Digital Input	0	16	
5	1756-IB32i	AB/RA	32 Point 24 VDC Input Module Isolated	Digital Input	0	16	
6	1756-IB32i	AB/RA	32 Point 24 VDC Input Module Isolated	Digital Input	0	16	
7	1756-IB32i	AB/RA	32 Point 24 VDC Input Module Isolated	Digital Input	0	16	
8	1756-IB32i	AB/RA	32 Point 24 VDC Input Module Isolated	Digital Input	0	16	
9	1756-IB32i	AB/RA	32 Point 24 VDC Input Module Isolated	Digital Input	0	16	
10	1756-IB32i	AB/RA	32 Point 24 VDC Input Module Isolated	Digital Input	0	16	
11	1756-IB32i	AB/RA	32 Point 24 VDC Input Module Isolated	Digital Input	0	16	
12	1756-IB32i	AB/RA	32 Point 24 VDC Input Module Isolated	Digital Input	0	16	
13	1756-IB32i	AB/RA	32 Point 24 VDC Input Module Isolated	Digital Input	0	16	
14	1756-N2	AB/RA	Slot Filler	Miscellaneous	0	16	
15	1756-N2	AB/RA	Slot Filler	Miscellaneous	0	16	
16	1756-N2	AB/RA	Slot Filler	Miscellaneous	0	16	
0	1756-A17	AB/RA	17 Slot ControlLogix Chassis	Miscellaneous	0	0	
0	1756-PB75	AB/RA	24VDC Power Supply (13A @ 5V)	Miscellaneous	0	0	
1	1756-EN2T	AB/RA	Ethernet/IP 10/100 Bridge Module (128 TCP)	Network Card	0	0	
2	1756-OB16i	AB/RA	16 Point 24 VDC Output Module Isolated	Digital Output	1	16	
3	1756-OB16i	AB/RA	16 Point 24 VDC Output Module Isolated	Digital Output	1	16	
4	1756-OB16i	AB/RA	16 Point 24 VDC Output Module Isolated	Digital Output	1	16	
5	1756-IF8i	AB/RA	Isolated 8-Ch Analog Input Module	Analog Input	1	16	
6	1756-IF8i	AB/RA	Isolated 8-Ch Analog Input Module	Analog Input	1	16	
7	1756-IF8i	AB/RA	Isolated 8-Ch Analog Input Module	Analog Input	1	8	
8	1756-IF8i	AB/RA	Isolated 8-Ch Analog Input Module	Analog Input	1	8	
9	1756-IF8i	AB/RA	Isolated 8-Ch Analog Input Module	Analog Input	1	8	
10	1756-OF8i	AB/RA	Isolated 8-Ch Analog Output Module	Analog Output	1	8	
11	1756-OF8i	AB/RA	Isolated 8-Ch Analog Output Module	Analog Output	1	8	
12	1756-N2	AB/RA	Slot Filler	Miscellaneous	1	8	
13	1756-N2	AB/RA	Slot Filler	Miscellaneous	1	8	
14	1756-N2	AB/RA	Slot Filler	Miscellaneous	1	0	
15	1756-N2	AB/RA	Slot Filler	Miscellaneous	1	0	
16	MV56E-MNET/MNETXT	PROSOFT	Modbus TCP/IP Client/Server Enhanced Network Interface Module for ControlLogix	Miscellaneous	1	0	Contractor to coordinate with generator manufacturer.

1

PLC-6000 COMPONENTS

1601

COMPONENT I/O LIST									
CONTROLLER IO TAG	ISA TAG	EQUIPMENT	DESCRIPTION	LOCATION	OPERATION	RACK	SLOT	POINT	COMMENTS
DI - 0	YA	CP-6000	Rack 0 DI Card 4 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	4	0	
DI - 1	YA	CP-6000	Rack 1 DO Card 4 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	4	1	
DI - 2	YA	CP-6000	Rack 1 DO Slot 5 Card 5 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	4	2	
DI - 3	YA	CP-6000	Rack 1 DO Slot 6 Card 5 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	4	3	
DI - 4	YA	CP-6000	Rack 1 AI Card 7 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	4	4	
DI - 5	YA	CP-6000	Rack 1 AI Card 8 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	4	5	
DI - 6	YA	CP-6000	Rack 1 AI Card 9 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	4	6	
DI - 7	YA	CP-6000	Rack 1 AI Card 10 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	4	7	
DI - 8	YA	CP-6000	Rack 1 AI Card 11 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	4	8	
DI - 9	YA	CP-6000	Rack 1 AO Card 12 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	4	9	
DI - 10	YA	CP-6000	Rack 1 AO Card 13 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	4	10	
DI - 11	YA	SPD-6000A	SPD-2000 (MCC-6000A) Alarm	Process Building Electrical Room	0 = ALARM	0	4	11	
DI - 12	YA	SPD-6000B	SPD-2000 (MCC-6000B) Alarm	Process Building Electrical Room	0 = ALARM	0	4	12	
DI - 13	YA	SPD-6001	SPD-2000 (DP-2001) Alarm	Process Building Electrical Room	0 = ALARM	0	4	13	
DI - 14	YA	SPD-6002	SPD-6002 (LP-6002) Alarm	Process Building Electrical Room	0 = ALARM	0	4	14	
DI - 15	YA	SPD-6003	SPD-6003 (LP-6003) Alarm	Process Building Electrical Room	0 = ALARM	0	4	15	
DI - 16	YA	CP-6000	Rack 0 DI Card 5 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	4	16	
DI - 17	YA	BL-3301	Aeration Blower 1 Fault	Process Building Blower Room	0 = ALARM	0	4	17	
DI - 18	YS	BL-3301	Aeration Blower 1 In-Auto	Process Building Blower Room	1 = IN AUTO	0	4	18	
DI - 19	YS	BL-3301	Aeration Blower 1 Running	Process Building Blower Room	1 = RUNNING	0	4	19	
DI - 20	YA	BL-3301	Aeration Blower 1 Disc Open	Process Building Blower Room	0 = ALARM	0	4	20	
DI - 21							4	21	
DI - 22	YA	VFC-3301	Aeration Tank 1 Air Control Valve 1 Fault	Aeration Tank	0 = ALARM	0	4	22	
DI - 23	HS	VFC-3301	Aeration Tank 1 Air Control Valve 1 In-Auto	Aeration Tank	1 = IN AUTO	0	4	23	
DI - 24	ZSO	VFC-3301	Aeration Tank 1 Air Control Valve 1 Opened	Aeration Tank	1 = OPEN	0	4	24	
DI - 25	ZSC	VFC-3301	Aeration Tank 1 Air Control Valve 1 Closed	Aeration Tank	1 = CLOSED	0	4	25	
DI - 26							4	26	
DI - 27	YA	VFC-3303	Aeration Tank 2 Air Control Valve 1 Fault	Aeration Tank	0 = ALARM	0	4	27	
DI - 28	HS	VFC-3303	Aeration Tank 2 Air Control Valve 1 In-Auto	Aeration Tank	1 = IN AUTO	0	4	28	
DI - 29	ZSO	VFC-3303	Aeration Tank 2 Air Control Valve 1 Opened	Aeration Tank	1 = OPEN	0	4	29	
DI - 30	ZSC	VFC-3303	Aeration Tank 2 Air Control Valve 1 Closed	Aeration Tank	1 = CLOSED	0	4	30	
DI - 31							4	31	
DI - 32	YA	CP-6000	Rack 0 DI Card 6 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	5	0	
DI - 33	YA	BL-3302	Aeration Blower 2 Fault	Process Building Blower Room	0 = ALARM	0	5	1	
DI - 34	YS	BL-3302	Aeration Blower 2 In-Auto	Process Building Blower Room	1 = IN AUTO	0	5	2	
DI - 35	YS	BL-3302	Aeration Blower 2 Running	Process Building Blower Room	1 = RUNNING	0	5	3	
DI - 36	YA	BL-3302	Aeration Blower 2 Disc Open	Process Building Blower Room	0 = ALARM	0	5	4	
DI - 37							5	5	
DI - 38	YA	VFC-3302	Aeration Tank 1 Air Control Valve 2 Fault	Aeration Tank	0 = ALARM	0	5	6	
DI - 39	HS	VFC-3302	Aeration Tank 1 Air Control Valve 2 In-Auto	Aeration Tank	1 = IN AUTO	0	5	7	
DI - 40	ZSO	VFC-3302	Aeration Tank 1 Air Control Valve 2 Opened	Aeration Tank	1 = OPEN	0	5	8	
DI - 41	ZSC	VFC-3302	Aeration Tank 1 Air Control Valve 2 Closed	Aeration Tank	1 = CLOSED	0	5	9	
DI - 42							5	10	
DI - 43	YA	VFC-3304	Aeration Tank 2 Air Control Valve 2 Fault	Aeration Tank	0 = ALARM	0	5	11	
DI - 44	HS	VFC-3304	Aeration Tank 2 Air Control Valve 2 In-Auto	Aeration Tank	1 = IN AUTO	0	5	12	
DI - 45	ZSO	VFC-3304	Aeration Tank 2 Air Control Valve 2 Opened	Aeration Tank	1 = OPEN	0	5	13	
DI - 46	ZSC	VFC-3304	Aeration Tank 2 Air Control Valve 2 Closed	Aeration Tank	1 = CLOSED	0	5	14	
DI - 47							5	15	
DI - 48	YA	CP-6000	Rack 0 DI Card 7 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	5	16	
DI - 49	YA	LSH-3101	Ferric Chloride Pipe Leak Detection	Blower Building	0 = ALARM	0	5	17	
DI - 50	YA	LCP-7102	Ferric Chloride Pipe Leak Detection	Process Building Basement	0 = ALARM	0	5	18	
DI - 51	YA						5	19	
DI - 52	YA						5	20	
DI - 53	YA	LSH-7104	Ferric Chloride Containment Pad Leak Detection	Ferric Chloride Room	0 = ALARM	0	5	21	
DI - 54	YA	LSH-7105	Ferric Chloride Containment Pad Leak Detection	Ferric Chloride Tanks	0 = ALARM	0	5	22	
DI - 55	YA	CC-3201	Clarifier #1 Cross Collector No Motion	Clarifier Tanks	0 = ALARM	0	5	23	
DI - 56	YA	CC-3201	Clarifier #1 Cross Collector Overtorque	Clarifier Tanks	0 = ALARM	0	5	24	
DI - 57	YS	CC-3201	Clarifier #1 Cross Collector In-Auto	Clarifier Tanks	1 = IN AUTO	0	5	25	
DI - 58	YS	CC-3201	Clarifier #1 Cross Collector Running	Clarifier Tanks	1 = RUNNING	0	5	26	
DI - 59	YA	CC-3201	Clarifier #1 Cross Collector Disc Open	Clarifier Tanks	0 = ALARM	0	5	27	
DI - 60	YA	P-5101	Sludge Pump #1 Fault	Process Building Basement	0 = ALARM	0	5	28	
DI - 61	YS	P-5101	Sludge Pump #1 In-Auto	Process Building Basement	1 = IN AUTO	0	5	29	
DI - 62	YS	P-5101	Sludge Pump #1 Running	Process Building Basement	1 = RUNNING	0	5	30	
DI - 63	YA	P-5101	Sludge Pump #1 Disc Open	Process Building Basement	0 = ALARM	0	5	31	
DI - 64	YA	CP-6000	Rack 0 DI Card 8 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	6	0	
DI - 65	YA	CC-3202	Clarifier #2 Cross Collector No Motion	Clarifier Tanks	0 = ALARM	0	6	1	
DI - 66	YS	CC-3202	Clarifier #2 Cross Collector Overtorque	Clarifier Tanks	1 = IN AUTO	0	6	2	
DI - 67	YS	CC-3202	Clarifier #2 Cross Collector In-Auto	Clarifier Tanks	1 = RUNNING	0	6	3	
DI - 68	YA	CC-3202	Clarifier #2 Cross Collector Running	Clarifier Tanks	0 = ALARM	0	6	4	
DI - 69	YA	CC-3202	Clarifier #2 Cross Collector Disc Open	Clarifier Tanks	0 = ALARM	0	6	5	
DI - 70	YA	CC-3203	Clarifier #3 Cross Collector No Motion	Clarifier Tanks	0 = ALARM	0	6	6	
DI - 71	YS	CC-3203	Clarifier #3 Cross Collector Overtorque	Clarifier Tanks	1 = IN AUTO	0	6	7	
DI - 72	YS	CC-3203	Clarifier #3 Cross Collector In-Auto	Clarifier Tanks	1 = RUNNING	0	6	8	
DI - 73	YA	CC-3203	Clarifier #3 Cross Collector Running	Clarifier Tanks	0 = ALARM	0	6	9	
DI - 74	YA	CC-3203	Clarifier #3 Cross Collector Disc Open	Clarifier Tanks	0 = ALARM	0	6	10	
DI - 75							6	11	
DI - 76							6	12	
DI - 77							6	13	
DI - 78	YS	MD-9601	Mechanical Room Motorized Damper Open	Mechanical Room	1 = OPEN	0	6	14	
DI - 79	YS	MD-9601	Mechanical Room Motorized Damper Closed	Mechanical Room	1 = CLOSED	0	6	15	
DI - 80	YA	CP-6000	Rack 0 DI Card 9 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	6	16	
DI - 81	YA	LC-3201	Clarifier #1 Longitudinal Collector Over Torque	Clarifier Tanks	0 = ALARM	0	6	17	
DI - 82	YA	LC-3201	Clarifier #1 Longitudinal Collector Misalignment	Clarifier Tanks	0 = ALARM	0	6	18	
DI - 83	YA	LC-3201	Clarifier #1 Longitudinal Collector No Motion	Clarifier Tanks	0 = ALARM	0	6	19	
DI - 84	YS	LC-3201	Clarifier #1 Longitudinal Collector In-Auto	Clarifier Tanks	1 = IN AUTO	0	6	20	
DI - 85	YS	LC-3201	Clarifier #1 Longitudinal Collector Running	Clarifier Tanks	1 = RUNNING	0	6	21	

File Location: P:\2020\032296-001 - Brighton WWT System Upgrade\03-Production\06-Elect\32296-001 - PROCESS PLC AND IO LIST.dwg

COMPONENT I/O LIST									
CONTROLLER IO TAG	ISA TAG	EQUIPMENT	DESCRIPTION	LOCATION	OPERATION	RACK	SLOT	POINT	COMMENTS
DI - 86	YA	LC-3201	Clarifier #1 Longitudinal Collector Disc Open	Clarifier Tanks	0 = ALARM	0	6	22	
DI - 87	YA	P-5102	Sludge Pump #2 Fault	Process Building Basement	0 = ALARM	0	6	23	
DI - 88	YS	P-5102	Sludge Pump #2 In-Auto	Process Building Basement	1 = IN AUTO	0	6	24	
DI - 89	YS	P-5102	Sludge Pump #2 Running	Process Building Basement	1 = RUNNING	0	6	25	
DI - 90	YA	P-5102	Sludge Pump #2 Disc Open	Process Building Basement	0 = ALARM	0	6	26	
DI - 91	YA	LIT-7302	Decant Pit US Level High High	Decant Wet Well	0 = ALARM	0	6	27	
DI - 92	YA	LIT-7302	Decant Pit US Level High	Decant Wet Well	0 = ALARM	0	6	28	
DI - 93	YA	LIT-7302	Decant Pit US Level Low	Decant Wet Well	0 = ALARM	0	6	29	
DI - 94	YA	LIT-7302	Decant Pit US Level Low Low	Decant Wet Well	0 = ALARM	0	6	30	
DI - 95	YA	LIT-7302	Decant Pit US Fault	Decant Wet Well	0 = ALARM	0	6	31	
DI - 96	YA	CP-6000	Rack 0 DI Card 10 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	7	0	
DI - 97	YA	P-5102	Sludge Pump #3 Fault	Process Building Basement	0 = ALARM	0	7	1	
DI - 98	YS	P-5102	Sludge Pump #3 In-Auto	Process Building Basement	1 = IN AUTO	0	7	2	
DI - 99	YS	P-5102	Sludge Pump #3 Running	Process Building Basement	1 = RUNNING	0	7	3	
DI - 100	YA	P-5102	Sludge Pump #3 Disc Open	Process Building Basement	0 = ALARM	0	7	4	
DI - 101	YA	P-5102	Sludge Pump #4 Fault	Process Building Basement	0 = ALARM	0	7	5	
DI - 102	YS	P-5102	Sludge Pump #4 In-Auto	Process Building Basement	1 = IN AUTO	0	7	6	
DI - 103	YS	P-5102	Sludge Pump #4 Running	Process Building Basement	1 = RUNNING	0	7	7	
DI - 104	YA	P-5102	Sludge Pump #4 Disc Open	Process Building Basement	0 = ALARM	0	7	8	
DI - 105	YA	FIT-5101	Sludge Pump #1 Flow Metre Fault	Process Building Basement	0 = ALARM	0	7	9	
DI - 106	YA	FIT-5102	Sludge Pump #2 Flow Metre Fault	Process Building Basement	0 = ALARM	0	7	10	
DI - 107	YA	FIT-5103	Sludge Pump #3 Flow Metre Fault	Process Building Basement	0 = ALARM	0	7	11	
DI - 108	YA	FIT-5104	Sludge Pump #4 Flow Metre Fault	Process Building Basement	0 = ALARM	0	7	12	
DI - 109	YA	LIT-7101	Ferric Tank #1 Radar Fault	Ferric Chloride Tanks	0 = ALARM	0	7	13	
DI - 110	YA	LIT-7102	Ferric Tank #2 Radar Fault	Ferric Chloride Tanks	0 = ALARM	0	7	14	
DI - 111									
DI - 112	YA	CP-6000	Rack 0 DI Card 11 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	7	16	
DI - 113	YS	VFC-5101	3-way Sludge Valve In Position 1	Process Building Basement	1 = POSITION	0	7	17	
DI - 114	YS	VFC-5101	3-way Sludge Valve In Position 2	Process Building Basement	1 = POSITION	0	7	18	
DI - 115	YS	VFC-5101	3-way Sludge Valve In-Auto	Process Building Basement	1 = IN AUTO	0	7	19	
DI - 116	YA	VFC-5101	3-way Sludge Valve Fault	Process Building Basement	0 = ALARM	0	7	20	
DI - 117	YA	TC-7101	Ferric Chloride Process Pipe Heat Trace Fault	Ferric Chloride Tanks	0 = ALARM	0	7	21	
DI - 118	YA	LSH-7104	Ferric Chloride Tanks Area Leak	Ferric Chloride Room	0 = ALARM	0	7	22	
DI - 119	YA	LSH-7105	Ferric Chloride Pumps Area Leak	Ferric Chloride Tanks	0 = ALARM	0	7	23	
DI - 120	YS	VFC-7101	Ferric Tank #1 Valve In-Auto	Ferric Chloride Tanks	1 = IN AUTO	0	7	24	
DI - 121	YA	VFC-7101	Ferric Tank #1 Valve Fault	Ferric Chloride Tanks	0 = ALARM	0	7	25	
DI - 122	YS	VFC-7101	Ferric Tank #1 Valve Open	Ferric Chloride Tanks	1 = POSITION	0	7	26	
DI - 123	YS	VFC-7101	Ferric Tank #1 Valve Closed	Ferric Chloride Tanks	1 = POSITION	0	7	27	
DI - 124	YS	VFC-7102	Ferric Tank #2 Valve In-Auto	Ferric Chloride Tanks	1 = IN AUTO	0	7	28	
DI - 125	YA	VFC-7102	Ferric Tank #2 Valve Fault	Ferric Chloride Tanks	0 = ALARM	0	7	29	
DI - 126	YS	VFC-7102	Ferric Tank #2 Valve Open	Ferric Chloride Tanks	1 = POSITION	0	7	30	
DI - 127	YS	VFC-7102	Ferric Tank #2 Valve Closed	Ferric Chloride Tanks	1 = POSITION	0	7	31	
DI - 128	YA	CP-6000	Rack 0 DI Card 12 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	8	0	
DI - 129	YS	VFC-7103	Ferric Tank #3 Valve In-Auto	Ferric Chloride Room	1 = IN AUTO	0	8	1	
DI - 130	YA	VFC-7103	Ferric Tank #3 Valve Fault	Ferric Chloride Room	0 = ALARM	0	8	2	
DI - 131	YS	VFC-7103	Ferric Tank #3 Valve Open	Ferric Chloride Room	1 = POSITION	0	8	3	
DI - 132	YS	VFC-7103	Ferric Tank #3 Valve Closed	Ferric Chloride Room	1 = POSITION	0	8	4	
DI - 133	YA	TC-7102	Ferric Chloride Tank #1 Heat Trace Fault	Ferric Chloride Tanks	0 = ALARM	0	8	5	
DI - 134	YA	TC-7103	Ferric Chloride Tank #2 Heat Trace Fault	Ferric Chloride Tanks	0 = ALARM	0	8	6	
DI - 135	YA	MX-7201	Surface Aspirator #1 Fault	Aerate Solids Stabilization Cell	0 = ALARM	0	8	7	
DI - 136	YS	MX-7201	Surface Aspirator #1 In-Auto	Aerate Solids Stabilization Cell	1 = IN AUTO	0	8	8	
DI - 137	YS	MX-7201	Surface Aspirator #1 Running	Aerate Solids Stabilization Cell	1 = RUNNING	0	8	9	
DI - 138	YA	MX-7202	Surface Aspirator #2 Fault	Aerate Solids Stabilization Cell	0 = ALARM	0	8	10	
DI - 139	YS	MX-7202	Surface Aspirator #2 In-Auto	Aerate Solids Stabilization Cell	1 = IN AUTO	0	8	11	
DI - 140	YS	MX-7202	Surface Aspirator #2 Running	Aerate Solids Stabilization Cell	1 = RUNNING	0	8	12	
DI - 141	YA	MX-7203	Surface Aspirator #3 Fault	Aerate Solids Stabilization Cell	0 = ALARM	0	8	13	
DI - 142	YS	MX-7203	Surface Aspirator #3 In-Auto	Aerate Solids Stabilization Cell	1 = IN AUTO	0	8	14	
DI - 143	YS	MX-7203	Surface Aspirator #3 Running	Aerate Solids Stabilization Cell	1 = RUNNING	0	8	15	
DI - 144	YA	CP-6000	Rack 0 DI Card 13 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	8	16	
DI - 145	YA	MX-7204	Surface Aspirator #4 Fault	Aerate Solids Stabilization Cell	0 = ALARM	0	8	17	
DI - 146	YS	MX-7204	Surface Aspirator #4 In-Auto	Aerate Solids Stabilization Cell	1 = IN AUTO	0	8	18	
DI - 147	YS	MX-7204	Surface Aspirator #4 Running	Aerate Solids Stabilization Cell	1 = RUNNING	0	8	19	
DI - 148	YA	MX-7205	Surface Aspirator #5 Fault	Aerate Solids Stabilization Cell	0 = ALARM	0	8	20	
DI - 149	YS	MX-7205	Surface Aspirator #5 In-Auto	Aerate Solids Stabilization Cell	1 = IN AUTO	0	8	21	
DI - 150	YS	MX-7205	Surface Aspirator #5 Running	Aerate Solids Stabilization Cell	1 = RUNNING	0	8	22	
DI - 151	YA	MX-7206	Surface Aspirator #6 Fault	Aerate Solids Stabilization Cell	0 = ALARM	0	8	23	
DI - 152	YS	MX-7206	Surface Aspirator #6 In-Auto	Aerate Solids Stabilization Cell	1 = IN AUTO	0	8	24	
DI - 153	YS	MX-7206	Surface Aspirator #6 Running	Aerate Solids Stabilization Cell	1 = RUNNING	0	8	25	
DI - 154	YA	LIT-7301	Decant Pit Radar Level High High	Decant Wet Well	0 = ALARM	0	8	26	
DI - 155	YA	LIT-7301	Decant Pit Radar Level High	Decant Wet Well	0 = ALARM	0	8	27	
DI - 156	YA	LIT-7301	Decant Pit Radar Level Low	Decant Wet Well	0 = ALARM	0	8	28	
DI - 157	YA	LIT-7301	Decant Pit Radar Level Low Low	Decant Wet Well	0 = ALARM	0	8	29	
DI - 158	YA	LIT-7301	Decant Pit Radar Fault	Decant Wet Well	0 = ALARM	0	8	30	
DI - 159	YA	LSH-7301	Decant Pit Level High High	Decant Wet Well	0 = ALARM	0	8	31	
DI - 160	YA	CP-6000	Rack 0 DI Card 14 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	9	0	
DI - 161	YA	P-7301	Decant Pump #1 Fault	Decant Wet Well	0 = ALARM	0	9	1	
DI - 162	YS	P-7301	Decant Pump #1 Running	Decant Wet Well	1 = RUNNING	0	9	2	
DI - 163	YS	P-7301	Decant Pump #1 In-Auto	Decant Wet Well	1 = IN AUTO	0	9	3	
DI - 164	YA	P-7301	Decant Pump #1 Disc Open	Decant Wet Well	0 = ALARM	0	9	4	
DI - 165	YA	P-7301	Decant Pump #1 Leak Detection	Decant Wet Well	0 = ALARM	0	9	5	
DI - 166	YA	P-7301	Decant Pump #1 High Heat	Decant Wet Well	0 = ALARM	0	9	6	
DI - 167	YA	FSH-9601	Emergency Shower Flow	Mechanical Room		0	9	7	
DI - 168	YS		Basement Occupied	Process Building Basement	1 = OCC	0	9	8	
DI - 169	YA	EF-9601	Fan Fault	Blower Room	0 = ALARM	0	9	9	
DI - 170	YS	EF-9601	Fan Running	Blower Room	1 = RUNNING	0	9	10	
DI - 171	YS	EF-9601	Fan In-Auto	Blower Room	1 = IN AUTO	0	9	11	

1

1602

PLC-6000 IO TABLES CONT'D

COMPONENT I/O LIST									
CONTROLLER IO TAG	ISA TAG	EQUIPMENT	DESCRIPTION	LOCATION	OPERATION	RACK	SLOT	POINT	COMMENTS
DI - 172	YA	EF-9601	Fan Disc Open	Blower Room	0 = ALARM	0	9	12	
DI - 173							0	9	13
DI - 174	YA	HD-9601	Electrical Room High Heat	Electrical Room	0 = ALARM	0	9	14	
DI - 175	YA	HD-9602	Electrical Room High Heat	Electrical Room	0 = ALARM	0	9	15	
DI - 176	YA	CP-6000	Rack 0 DI Card 15 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	9	16	
DI - 177	YA	EF-9602	Fan Fault	Blower Room	0 = ALARM	0	9	17	
DI - 178	YS	EF-9602	Fan Running	Blower Room	1 = RUNNING	0	9	18	
DI - 179	YS	EF-9602	Fan In-Auto	Blower Room	1 = IN AUTO	0	9	19	
DI - 180	YA	EF-9602	Fan Disc Open	Blower Room	0 = ALARM	0	9	20	
DI - 181	YA	HRV-9601	Unit Fault	Mechanical Room	0 = ALARM	0	9	21	
DI - 182	YA	HRV-9601	Unit Disc Open	Mechanical Room	0 = ALARM	0	9	22	
DI - 183							0	9	23
DI - 184	YS	FCP-9601	Process Building Basement HVAC Fault	Process Building Basement	0 = ALARM	0	9	24	
DI - 185	YS	FCP-9601	Process Building Basement Gas Sensor Fault	Process Building Basement	0 = ALARM	0	9	25	
DI - 186	YA	FCP-9601	Process Building Basement H2S Analysis - Alarm	Process Building Basement	0 = ALARM	0	9	26	
DI - 187	YA	FCP-9601	Process Building Basement H2S Analysis - Warning	Process Building Basement	0 = ALARM	0	9	27	
DI - 188	YA	FCP-9601	Process Building Basement CH4 Analysis 1 - Alarm	Process Building Basement	0 = ALARM	0	9	28	
DI - 189	YA	FCP-9601	Process Building Basement CH4 Analysis 1 - Warning	Process Building Basement	0 = ALARM	0	9	29	
DI - 190	YA	FCP-9601	Process Building Basement CH4 Analysis 2 - Alarm	Process Building Basement	0 = ALARM	0	9	30	
DI - 191	YA	FCP-9601	Process Building Basement CH4 Analysis 2 - Warning	Process Building Basement	0 = ALARM	0	9	31	
DI - 192	YA	CP-6000	Rack 0 DI Card 16 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	10	0	
DI - 193	YA	FCP-9601	Process Building Basement Occupancy Light On	Process Building Basement	1 = OCC	0	10	1	
DI - 194	YA	FCP-9601	Process Building Basement Gas Warning Light On	Process Building Basement	0 = ALARM	0	10	2	
DI - 195	YA	FCP-9601	Process Building Basement Gas Alarm Light/Horn On	Process Building Basement	0 = ALARM	0	10	3	
DI - 196	YS	ATS-0001	Normal Power Source Available	Outdoors	1 = STATUS	0	10	4	
DI - 197	YS	ATS-0001	Emergency Power Source Available	Outdoors	1 = STATUS	0	10	5	
DI - 198	YA	ATS-0001	General Fault	Outdoors	0 = ALARM	0	10	6	
DI - 199	YA	ATS-0001	Switch In Emergency	Outdoors	0 = ALARM	0	10	7	
DI - 200	YA	ATS-0001	ATS Not in Auto	Outdoors	0 = ALARM	0	10	8	
DI - 201	YA	GEN-0001	Generator Fault	Outdoors	0 = ALARM	0	10	9	
DI - 202	YA	GEN-0001	Low Battery Warning	Outdoors	0 = ALARM	0	10	10	
DI - 203	YA	GEN-0001	Generator Not in Auto	Outdoors	0 = ALARM	0	10	11	
DI - 204	YA	GEN-0001	Generator Door Open	Outdoors	0 = ALARM	0	10	12	
DI - 205	YA	NGR-0001	NGR Fault	Electrical Room	0 = ALARM	0	10	13	
DI - 206							0	10	14
DI - 207							0	10	15
DI - 208	YA	CP-6000	Rack 1 DI Card 1 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	10	16	
DI - 209	YA	P-7302	Decant Pump #2 Fault	Decant Wet Well	0 = ALARM	0	10	17	
DI - 210	YS	P-7302	Decant Pump #2 Running	Decant Wet Well	1 = RUNNING	0	10	18	
DI - 211	YS	P-7302	Decant Pump #2 In-Auto	Decant Wet Well	1 = IN AUTO	0	10	19	
DI - 212	YA	P-7302	Decant Pump #2 Disc Open	Decant Wet Well	0 = ALARM	0	10	20	
DI - 213	YA	P-7302	Decant Pump #2 Leak Detection	Decant Wet Well	0 = ALARM	0	10	21	
DI - 214	YA	P-7302	Decant Pump #2 High Heat	Decant Wet Well	0 = ALARM	0	10	22	
DI - 215	YA	LCP-9601	Sump Pit Controller Fault	Process Building Basement	0 = ALARM	0	10	23	
DI - 216	YA	LCP-9601	Sump Pit Level High	Process Building Basement	0 = ALARM	0	10	24	
DI - 217	YA	EF-9605	Basement Exhaust Fan Fault	Process Building Mechanical Room	1 = IN AUTO	0	10	25	
DI - 218	YS	EF-9605	Basement Exhaust Fan In-Auto	Process Building Mechanical Room	1 = RUNNING	0	10	26	
DI - 219	YS	EF-9605	Basement Exhaust Fan Running	Process Building Mechanical Room	0 = ALARM	0	10	27	
DI - 220	YA	EF-9605	Basement Exhaust Fan Disc Open	Process Building Mechanical Room	0 = ALARM	0	10	28	
DI - 221	YA	TX-0001	Transformer Thermometer High	Outdoors	0 = ALARM	0	10	29	
DI - 222	YA	TX-0001	Transformer Oil Leak	Outdoors	0 = ALARM	0	10	30	
DI - 223	YA	TX-0001	Transformer Winding Temperature High	Outdoors	0 = ALARM	0	10	31	
DI - 224	YA	CP-6000	Rack 1 DI Card 2 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	11	0	
DI - 225	YA	LC-3202	Clarifier #2 Longitudinal Collector Over Torque	Clarifier Tanks	0 = ALARM	0	11	1	
DI - 226	YA	LC-3202	Clarifier #2 Longitudinal Collector Misalignment	Clarifier Tanks	0 = ALARM	0	11	2	
DI - 227	YA	LC-3202	Clarifier #2 Longitudinal Collector No Motion	Clarifier Tanks	0 = ALARM	0	11	3	
DI - 228	YS	LC-3202	Clarifier #2 Longitudinal Collector In-Auto	Clarifier Tanks	1 = IN AUTO	0	11	4	
DI - 229	YS	LC-3202	Clarifier #2 Longitudinal Collector Running	Clarifier Tanks	1 = RUNNING	0	11	5	
DI - 230	YA	LC-3202	Clarifier #2 Longitudinal Collector Disc Open	Clarifier Tanks	0 = ALARM	0	11	6	
DI - 231							0	11	7
DI - 232	YA	LC-3203	Clarifier #3 Longitudinal Collector Over Torque	Clarifier Tanks	0 = ALARM	0	11	8	
DI - 233	YA	LC-3203	Clarifier #3 Longitudinal Collector Misalignment	Clarifier Tanks	0 = ALARM	0	11	9	
DI - 234	YA	LC-3203	Clarifier #3 Longitudinal Collector No Motion	Clarifier Tanks	0 = ALARM	0	11	10	
DI - 235	YS	LC-3203	Clarifier #3 Longitudinal Collector In-Auto	Clarifier Tanks	1 = IN AUTO	0	11	11	
DI - 236	YA	LC-3203	Clarifier #3 Longitudinal Collector Running	Clarifier Tanks	1 = RUNNING	0	11	12	
DI - 237	YA	LC-3203	Clarifier #3 Longitudinal Collector Disc Open	Clarifier Tanks	0 = ALARM	0	11	13	
DI - 238							0	11	14
DI - 239							0	11	15
DI - 240	YA	CP-6000	Rack 1 DI Card 3 24 VDC Failure	Process Building PLC Panel	0 = FAILURE	0	11	16	
DI - 241	YS	P-7101	Ferric Chloride Pump #1 Reverse	Ferric Chloride Room	1 = REV	0	11	17	
DI - 242	YS	P-7101	Ferric Chloride Pump #1 Forward	Ferric Chloride Room	1 = FOR	0	11	18	
DI - 243	YS	P-7101	Ferric Chloride Pump #1 In-Auto	Ferric Chloride Room	1 = AUTO	0	11	19	
DI - 244	YA	P-7101	Ferric Chloride Pump #1 General Alarm	Ferric Chloride Room	0 = ALARM	0	11	20	
DI - 245	YA	P-7101	Ferric Chloride Pump #1 Leak Detected	Ferric Chloride Room	0 = ALARM	0	11	21	
DI - 246	YA	P-7101	Ferric Chloride Pump #1 High Heat	Ferric Chloride Room	0 = ALARM	0	11	22	
DI - 247	YS	P-7102	Ferric Chloride Pump #2 Reverse	Ferric Chloride Room	1 = REV	0	11	23	
DI - 248	YS	P-7102	Ferric Chloride Pump #2 Forward	Ferric Chloride Room	1 = FOR	0	11	24	
DI - 249	YS	P-7102	Ferric Chloride Pump #2 In-Auto	Ferric Chloride Room	1 = AUTO	0	11	25	
DI - 250	YA	P-7102	Ferric Chloride Pump #2 General Alarm	Ferric Chloride Room	0 = ALARM	0	11	26	
DI - 251	YA	P-7102	Ferric Chloride Pump #2 Leak Detected	Ferric Chloride Room	0 = ALARM	0	11	27	
DI - 252	YA	P-7102	Ferric Chloride Pump #2 High Heat	Ferric Chloride Room	0 = ALARM	0	11	28	
DI - 253							0	11	29
DI - 254							0	11	30
DI - 255							0	11	31
DI - 256							0	12	0
DI - 257							0	12	1

File Location: P:\2020032296-001 - Brighton WWT System Upgrade\03-Production\06-Elect\32296-001 - PROCESS PLC AND IO LIST.dwg

COMPONENT I/O LIST									
CONTROLLER IO TAG	ISA TAG	EQUIPMENT	DESCRIPTION	LOCATION	OPERATION	RACK	SLOT	POINT	COMMENTS
DI 258						0	12	2	
DI 259						0	12	3	
DI 260						0	12	4	
DI 261						0	12	5	
DI 262						0	12	6	
DI 263						0	12	7	
DI 264						0	12	8	
DI 265						0	12	9	
DI 266						0	12	10	
DI 267						0	12	11	
DI 268						0	12	12	
DI 269						0	12	13	
DI 270						0	12	14	
DI 271						0	12	15	
DI 272						0	12	16	
DI 273						0	12	17	
DI 274						0	12	18	
DI 275						0	12	19	
DI 276						0	12	20	
DI 277						0	12	21	
DI 278						0	12	22	
DI 279						0	12	23	
DI 280						0	12	24	
DI 281						0	12	25	
DI 282						0	12	26	
DI 283						0	12	27	
DI 284						0	12	28	
DI 285						0	12	29	
DI 286						0	12	30	
DI 287						0	12	31	
DI 288						0	13	0	
DI 289						0	13	1	
DI 290						0	13	2	
DI 291						0	13	3	
DI 292						0	13	4	
DI 293						0	13	5	
DI 294						0	13	6	
DI 295						0	13	7	
DI 296						0	13	8	
DI 297						0	13	9	
DI 298						0	13	10	
DI 299						0	13	11	
DI 300						0	13	12	
DI 301						0	13	13	
DI 302						0	13	14	
DI 303						0	13	15	
DI 304						0	13	16	
DI 305						0	13	17	
DI 306						0	13	18	
DI 307						0	13	19	
DI 308						0	13	20	
DI 309						0	13	21	
DI 310						0	13	22	
DI 311						0	13	23	
DI 312						0	13	24	
DI 313						0	13	25	
DI 314						0	13	26	
DI 315						0	13	27	
DI 316						0	13	28	
DI 317						0	13	29	
DI 318						0	13	30	
DI 319						0	13	31	
DO - 0	YC	BL-3301	Aeration Blower 1 Run	Process Building Blower Room	1 = RUN	1	2	0	Provide interposing relay to suit
DO - 1	YC	BL-3302	Aeration Blower 2 Run	Process Building Blower Room	1 = RUN	1	2	1	Provide interposing relay to suit
DO - 2	YC	CC-3201	Clarifier #1 Cross Collector Run	Clarifier Tanks	1 = RUN	1	2	2	Provide interposing relay to suit
DO - 3	YC	LC-3201	Clarifier #1 Longitudinal Collector Run	Clarifier Tanks	1 = RUN	1	2	3	Provide interposing relay to suit
DO - 4	YC	CC-3202	Clarifier #2 Cross Collector Run	Clarifier Tanks	1 = RUN	1	2	4	Provide interposing relay to suit
DO - 5	YC	LC-3202	Clarifier #2 Longitudinal Collector Run	Clarifier Tanks	1 = RUN	1	2	5	Provide interposing relay to suit
DO - 6	YC	CC-3203	Clarifier #3 Cross Collector Run	Clarifier Tanks	1 = RUN	1	2	6	Provide interposing relay to suit
DO - 7	YC	LC-3203	Clarifier #3 Longitudinal Collector Run	Clarifier Tanks	1 = RUN	1	2	7	Provide interposing relay to suit
DO - 8	YC	P-5101	Sludge Pump #1 Run	Process Building Basement	1 = RUN	1	2	8	Provide interposing relay to suit
DO - 9	YC	P-5102	Sludge Pump #2 Run	Process Building Basement	1 = RUN	1	2	9	Provide interposing relay to suit
DO - 10	YC	P-5103	Sludge Pump #3 Run	Process Building Basement	1 = RUN	1	2	10	Provide interposing relay to suit
DO - 11	YC	P-5104	Sludge Pump #4 Run	Process Building Basement	1 = RUN	1	2	11	Provide interposing relay to suit
DO - 12	YC	VFC-5101	3-way Sludge Valve Position 1	Process Building Basement	1 = POSITION	1	2	12	Provide interposing relay to suit
DO - 13	YC	VFC-5101	3-way Sludge Valve Position 2	Process Building Basement	1 = POSITION	1	2	13	Provide interposing relay to suit
DO - 14	YC	VFC-7101	Ferric Tank #1 Valve Open	Ferric Chloride Tanks	1 = POSITION	1	2	14	Provide interposing relay to suit
DO - 15	YC	VFC-7101	Ferric Tank #1 Valve Close	Ferric Chloride Tanks	1 = POSITION	1	2	15	Provide interposing relay to suit
DO - 16	YC	VFC-7102	Ferric Tank #2 Valve Open	Ferric Chloride Tanks	1 = POSITION	1	3	0	Provide interposing relay to suit
DO - 17	YC	VFC-7102	Ferric Tank #2 Valve Close	Ferric Chloride Tanks	1 = POSITION	1	3	1	Provide interposing relay to suit
DO - 18	YC	VFC-7103	Ferric Tank #3 Valve Open	Ferric Chloride Room	1 = POSITION	1	3	2	Provide interposing relay to suit
DO - 19	YC	VFC-7103	Ferric Tank #3 Valve Close	Ferric Chloride Room	1 = POSITION	1	3	3	Provide interposing relay to suit
DO - 20	YC	MX-7201	Surface Aspirator #1 Run	Aerate Solids Stabilization Cell	1 = RUN	1	3	4	Provide interposing relay to suit
DO - 21	YC	MX-7202	Surface Aspirator #2 Run	Aerate Solids Stabilization Cell	1 = RUN	1	3	5	Provide interposing relay to suit
DO - 22	YC	MX-7203	Surface Aspirator #3 Run	Aerate Solids Stabilization Cell	1 = RUN	1	3	6	Provide interposing relay to suit
DO - 23	YC	MX-7204	Surface Aspirator #4 Run	Aerate Solids Stabilization Cell	1 = RUN	1	3	7	Provide interposing relay to suit

1

1603

PLC-6000 IO TABLES CONT'D

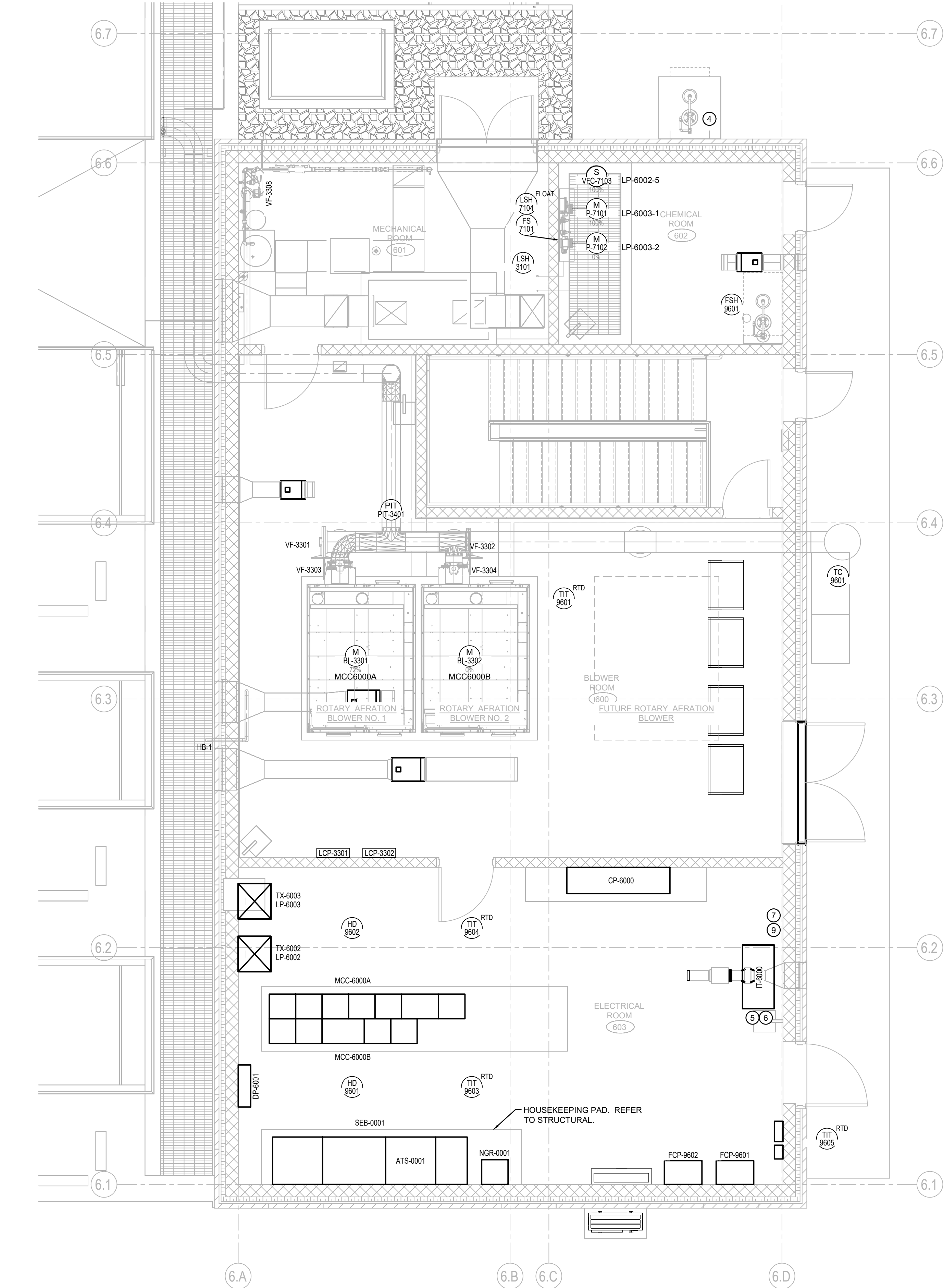
COMPONENT I/O LIST									
CONTROLLER IO TAG	ISA TAG	EQUIPMENT	DESCRIPTION	LOCATION	OPERATION	RACK	SLOT	POINT	COMMENTS
DO - 24	YC	MX-7205	Surface Aspirator #5 Run	Aerate Solids Stabilization Cell	1 = RUN	1	3	8	Provide interposing relay to suit
DO - 25	YC	MX-7206	Surface Aspirator #6 Run	Aerate Solids Stabilization Cell	1 = RUN	1	3	9	Provide interposing relay to suit
DO - 26	YC	P-7301	Decant Pump #1 Run	Decant Wet Well	1 = RUN	1	3	10	Provide interposing relay to suit
DO - 27	YC	P-7302	Decant Pump #2 Run	Decant Wet Well	1 = RUN	1	3	11	Provide interposing relay to suit
DO - 28	YC	EF-9601	Fan Run	Blower Room	1 = RUN	1	3	12	Provide interposing relay to suit
DO - 29	YC	EF-9602	Fan Run	Blower Room	1 = RUN	1	3	13	Provide interposing relay to suit
DO - 30	YC	HRV-9601	Building Occupied	Mechanical Room	1 = RUN	1	3	14	Provide interposing relay to suit
DO - 31	YC	FCP-9601	Process Building Basement HVAC Fault	Process Building Basement	1 = FAULT	1	3	15	Provide interposing relay to suit
DO - 32	YA	EF-9605	Basement Exhaust Fan Run	Process Building Mechanical Room	1 = RUN	1	4	0	Provide interposing relay to suit
DO - 33	YC	P-7101	Ferric Chloride Pump #1 Run	Ferric Chloride Room	1 = RUN	1	4	1	Provide interposing relay to suit
DO - 34	YC	P-7101	Ferric Chloride Pump #1 Forward/Reverse	Ferric Chloride Room	1 = SWAP	1	4	2	Provide interposing relay to suit
DO - 35						1	4	3	Provide interposing relay to suit
DO - 36	YC	P-7102	Ferric Chloride Pump #2 Run	Ferric Chloride Room	1 = RUN	1	4	4	Provide interposing relay to suit
DO - 37	YC	P-7102	Ferric Chloride Pump #2 Forward/Reverse	Ferric Chloride Room	1 = SWAP	1	4	5	Provide interposing relay to suit
DO - 38						1	4	6	Provide interposing relay to suit
DO - 39						1	4	7	Provide interposing relay to suit
DO - 40						1	4	8	Provide interposing relay to suit
DO - 41						1	4	9	Provide interposing relay to suit
DO - 42						1	4	10	Provide interposing relay to suit
DO - 43						1	4	11	Provide interposing relay to suit
DO - 44						1	4	12	Provide interposing relay to suit
DO - 45						1	4	13	Provide interposing relay to suit
DO - 46						1	4	14	Provide interposing relay to suit
DO - 47						1	4	15	Provide interposing relay to suit
AI - 0	SI	BL-3301	Aeration Blower 1 Speed Control	Process Building Blower Room		1	5	0	
AI - 1	SI	BL-3302	Aeration Blower 2 Speed Control	Process Building Blower Room		1	5	1	
AI - 2	PI	PIT-3401	Rotary Aeration Blower Pressure Transmitter	Process Building Blower Room		1	5	2	
AI - 3	ZI	VFC-3301	Aeration Tank 1 Air Control Valve 1 Feedback	Aeration Tank		1	5	3	
AI - 4	ZI	VFC-3302	Aeration Tank 1 Air Control Valve 2 Feedback	Aeration Tank		1	5	4	
AI - 5	ZI	VFC-3303	Aeration Tank 2 Air Control Valve 1 Feedback	Aeration Tank		1	5	5	
AI - 6	ZI	VFC-3304	Aeration Tank 2 Air Control Valve 2 Feedback	Aeration Tank		1	5	6	
AI - 7	SI	HRV-9601	Unit Speed Feedback	Mechanical Room		1	5	7	
AI - 8	AI	AIT-3101	Aeration Tank 1 Dissolved Oxygen Content	Aeration Tank		1	6	0	
AI - 9	AI	AIT-3102	Aeration Tank 2 Dissolved Oxygen Content	Aeration Tank		1	6	1	
AI - 10	AI	FIT-5101	Sludge Pump #1 Flow	Process Building Basement		1	6	2	
AI - 11	AI	FIT-5102	Sludge Pump #2 Flow	Process Building Basement		1	6	3	
AI - 12	AI	FIT-5103	Sludge Pump #3 Flow	Process Building Basement		1	6	4	
AI - 13	AI	FIT-5104	Sludge Pump #4 Flow	Process Building Basement		1	6	5	
AI - 14	AI	LIT-7101	Ferric Tank #1 Radar	Ferric Chloride Tanks		1	6	6	
AI - 15	AI	LIT-7102	Ferric Tank #2 Radar	Ferric Chloride Tanks		1	6	7	
AI - 16	SI	P-7101	Ferric Chloride Pump #1 Speed Feedback	Ferric Chloride Room		1	7	0	
AI - 17	SI	P-7102	Ferric Chloride Pump #2 Speed Feedback	Ferric Chloride Room		1	7	1	
AI - 18	LI	LIT-7301	Decant Pit U/S Level	Decant Wet Well		1	7	2	
AI - 19	LI	LIT-7302	Decant Pit Radar Level	Decant Wet Well		1	7	3	
AI - 20	SI	P-7301	Decant Pump #1 Speed Feedback	Decant Wet Well		1	7	4	
AI - 21	SI	P-7302	Decant Pump #2 Speed Feedback	Decant Wet Well		1	7	5	
AI - 22	SI	EF-9601	Fan Speed Feedback	Blower Room		1	7	6	
AI - 23	SI	EF-9602	Fan Speed Feedback	Blower Room		1	7	7	
AI - 24	TI	TIT-9601	Blower Room Temperature	Blower Room		1	8	0	
AI - 25	TI	TIT-9602	Process Building Basement Temperature	Process Building Basement		1	8	1	
AI - 26	AI	AIT-9601	Process Building Basement H2S	Process Building Basement		1	8	2	
AI - 27	AI	AIT-9602	Process Building Basement CH4 #1	Process Building Basement		1	8	3	
AI - 28	AI	AIT-9603	Process Building Basement CH4 #2	Process Building Basement		1	8	4	
AI - 29	TI	TIT-9603	Process Building Electrical Room Temperature	Process Building Electrical Room		1	8	5	
AI - 30	TI	TIT-9604	Process Building Electrical Room Temperature	Process Building Electrical Room		1	8	6	
AI - 31	TI	TIT-9605	Ambient Outdoor Temperature Sensor	Outdoors		1	8	7	
AI - 32	LI	LIT-5201	Sludge Pit Level	Sludge Pit		1	9	0	
AI - 33						1	9	1	
AI - 34						1	9	2	
AI - 35						1	9	3	
AI - 36						1	9	4	
AI - 37						1	9	5	
AI - 38						1	9	6	
AI - 39						1	9	7	
AO - 0	SC	BL-3301	Aeration Blower 1 Speed	Process Building Blower Room		1	10	0	
AO - 1	SC	BL-3302	Aeration Blower 2 Speed	Process Building Blower Room		1	10	1	
AO - 2	ZC	VFC-3301	Aeration Tank 1 Air Control Valve 1 Position	Aeration Tank		1	10	2	
AO - 3	ZC	VFC-3302	Aeration Tank 1 Air Control Valve 2 Position	Aeration Tank		1	10	3	
AO - 4	ZC	VFC-3303	Aeration Tank 2 Air Control Valve 1 Position	Aeration Tank		1	10	4	
AO - 5	ZC	VFC-3304	Aeration Tank 2 Air Control Valve 2 Position	Aeration Tank		1	10	5	
AO - 6	SC	P-7101	Ferric Chloride Pump #1 Speed	Ferric Chloride Room		1	10	6	
AO - 7	SC	P-7102	Ferric Chloride Pump #2 Speed	Ferric Chloride Room		1	10	7	
AO - 8	SC	P-7301	Decant Pump #1 Speed	Decant Wet Well		1	11	0	
AO - 9	SC	P-7302	Decant Pump #2 Speed	Decant Wet Well		1	11	1	
AO - 10	SC	EF-9601	Fan Speed	Blower Room		1	11	2	
AO - 11	SC	EF-9602	Fan Speed	Blower Room		1	11	3	
AO - 12	SC	HRV-9601	Unit Speed	Mechanical Room		1	11	4	
AO - 13						1	11	5	
AO - 14						1	11	6	
AO - 15						1	11	7	

2

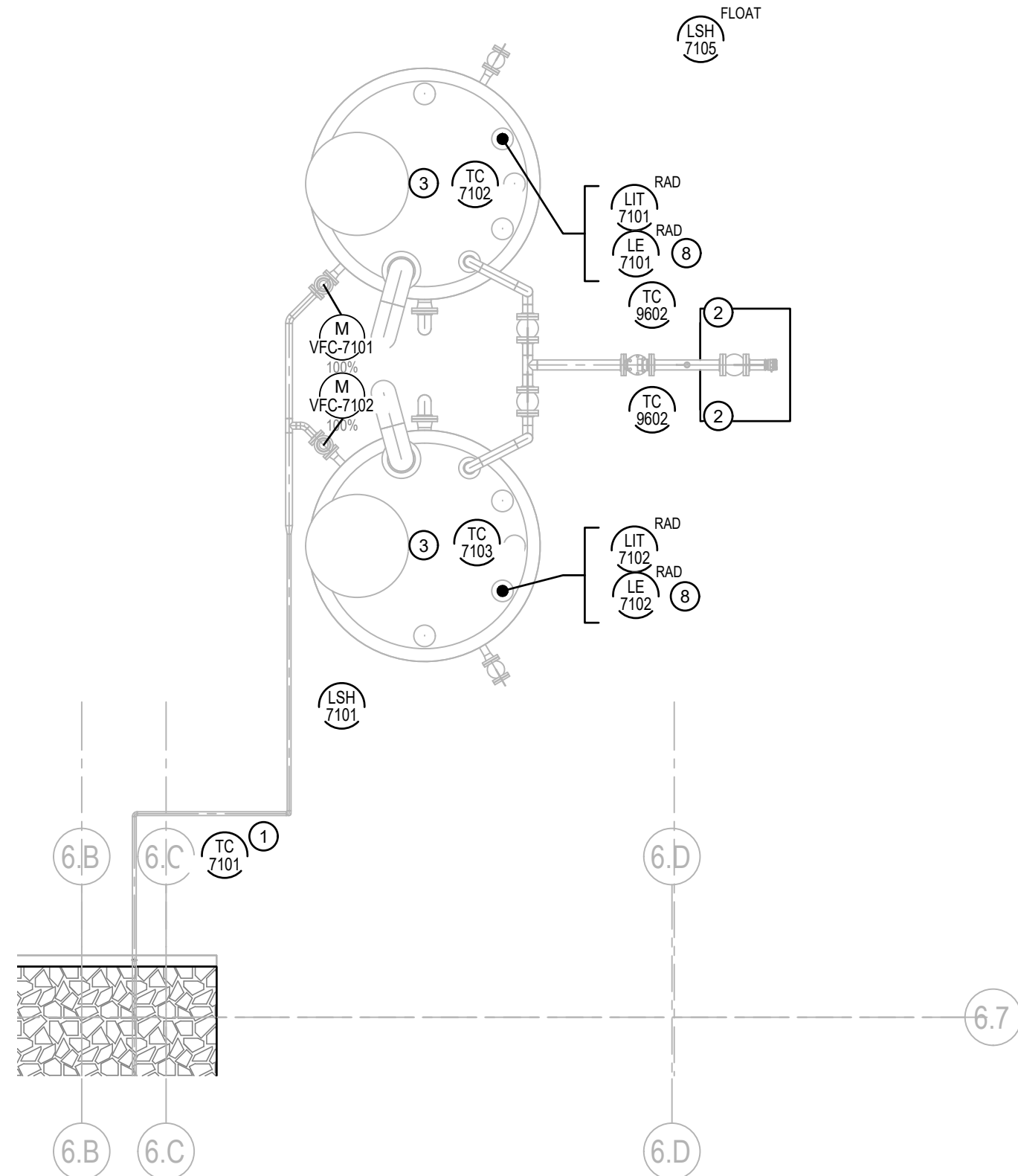
1603

PLC-6000 IO TABLES CONT'D

File Location: P:\2020\032296-001 - Brighton WWT System Upgrades\03-Production\03-Electrical\32296-001 - PROCESS GROUND FLOOR INSTRUMENT PLAN.dwg



1 GROUND FLOOR INSTRUMENTATION PLAN
SCALE: AS INDICATED



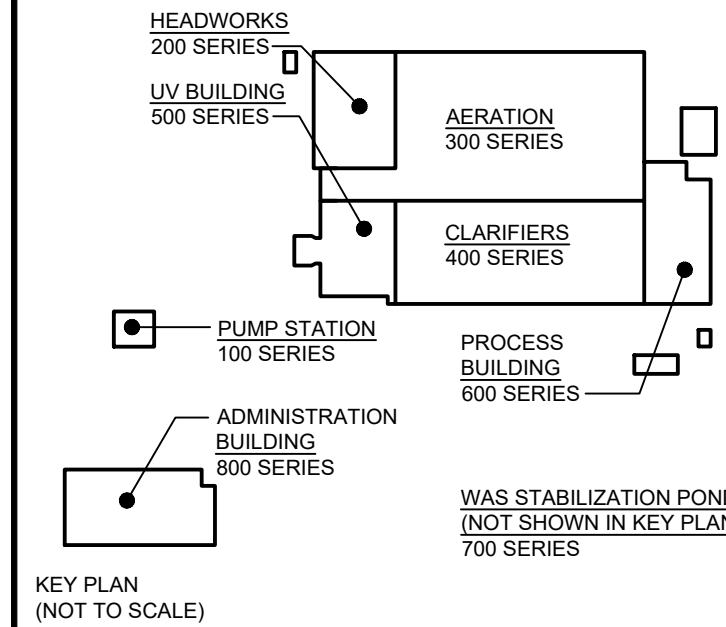
2 FERRIC STORAGE INSTRUMENTATION PLAN
SCALE: AS INDICATED

GENERAL NOTES:

- CABLE TRAY ELEVATIONS AND ROUTES, AS WELL AS CONDUIT PATHS AND PULL BOX LOCATIONS, ARE APPROXIMATE. CONTRACTOR TO COORDINATE THE EXACT LOCATIONS AND ELEVATIONS WITH SITE CONDITIONS. ADVISE THE CONSULTANT OF THE PROPOSED LOCATIONS AND ELEVATIONS PRIOR TO INSTALLATION.
- PULL BOXES TO BE NEMA 4 PAINTED STEEL, HAMMOND ECLIPSE SERIES, OR HOFFMAN EQUIVALENT.
- ALL CABLES NOT SHOWN. REFER TO BLOCK DIAGRAM AND SINGLE LINE DIAGRAM FOR COMPLETE LIST OF CABLES.
- CONTRACTOR TO COORDINATE CABLE TRAY ROUTE WITH MECHANICAL AND ELECTRICAL EQUIPMENT. CABLE TRAY BRACKETS NOT TO EXTEND MORE THAN 50mm BEYOND CABLE TRAYS.
- COORDINATE FINAL DIMENSIONS OF HOUSEKEEPING PADS WITH ACTUAL EQUIPMENT DIMENSIONS. PROVIDE A MINIMUM OF 100mm CLEARANCE ON FRONT AND SIDES. EACH HOUSEKEEPING PAD TO BE 100mm HIGH.
- ALL PULL BOXES MAY NOT BE SHOWN. ADDITIONAL PULL BOXES MAY BE REQUIRED BASED ON THE INSTALLATION REQUIREMENTS. CONTRACTOR TO PROVIDE ADDITIONAL PULL BOXES, AS REQUIRED.

DRAWING NOTES:

- CONTRACTOR IS TO HEAT TRACE PROCESS PIPING BETWEEN FERRIC CHLORIDE TANKS AND PROCESS BUILDING INCLUDING QUICK DISCONNECT, DRAINS, VENTS AND ALL ABOVE GROUND PROCESS PIPING.
- CONTRACTOR IS TO HEAT TRACE THE SURFACE AREA OF THE FERRIC CONTAINMENT PAD. CONTRACTOR IS TO LAY OUT HEAT TRACE MAT OVER REBAR PRIOR TO FINAL CONCRETE POUR. COORDINATE WITH STRUCTURAL CONTRACTOR. REFER TO SPECIFICATION 16857.
- COORDINATE WITH TANK MANUFACTURER AND PROVIDE 208V/120V CIRCUIT TO SERVICE FERRIC TANK HEATING ELEMENTS. TRANSITION TO TECK90 UPON EXIT OF TRENCH. PROVIDE WEATHERPROOF JUNCTION POINTS AS REQUIRED.
- PROVIDE 2c - #14AWG RWU90 BETWEEN PROCESS BUILDING AND FERRIC CHLORIDE TANK SHOWER. TRANSITION TO TECK90 UPON EXIT OF TRENCH. PROVIDE WEATHERPROOF JUNCTION POINTS AS REQUIRED.
- FRONT OF IT CABINET HERE.
- REFER TO DRAWING N002 FOR RECEPTACLE REQUIREMENTS FOR IT-6000.
- TGB. BOND IT-6000 TO THE TGB. REFER TO SECTION 17060.
- INSTRUMENT IS TO BE THREADED THROUGH A BLIND FLANGE.
- PROVIDE METAL SHELF FOR BELL MODEM. COORDINATE EXACT PLACEMENT ON SITE.



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

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No.	ISSUE / REVISION	DD/MM/YY

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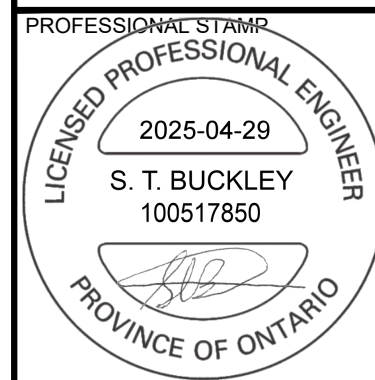
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SCALE: AS INDICATED

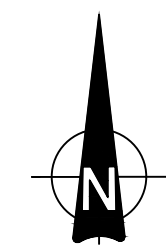
CLIENT:



CONSULTANT:



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

**ELECTRICAL
PROCESS BUILDING
GROUND FLOOR
INSTRUMENTATION PLAN**

DESIGN: SB

DRAWN: NB

CHECKED: LO/BM

JLR #: 32296-001

DRAWING #:

I610

PLOT DATE: Tuesday, April 29, 2025 11:24:49 AM



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SCALE: AS INDICATED



J.L. Richards
ENGINEERS - ARCHITECTS - PLANNERS

PROFESSIONAL STAMP

LICENSED PROFESSIONAL ENGINEER

2025-04-29

S. T. BUCKLEY
100517850

PROVINCE OF ONTARIO

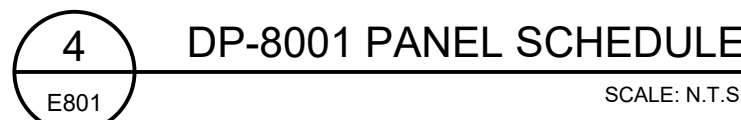
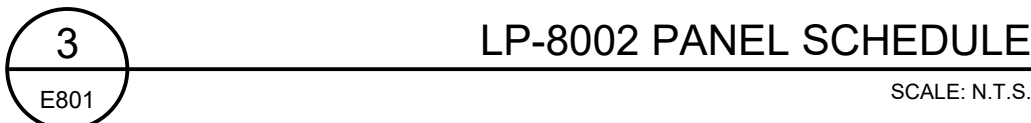
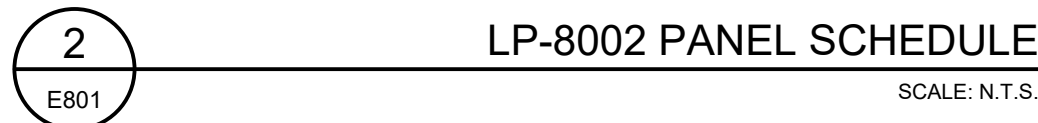
DRAWING:

ELECTRICAL
PROCESS BUILDING
BASEMENT INSTRUMENTATION
PLAN

DESIGN: SB	DRAWING #: I611
DRAWN: NB	
CHECKED: LO/BM	
JLR #: 32296-001	

- A. CABLE TRAY ELEVATIONS AND ROUTES, AS WELL AS CONDUIT PATHS AND PULL BOX LOCATIONS, ARE APPROXIMATE. CONTRACTOR TO COORDINATE THE EXACT LOCATIONS AND ELEVATIONS WITH SITE CONDITIONS. ADVISE THE CONSULTANT OF THE PROPOSED LOCATIONS AND ELEVATIONS PRIOR TO INSTALLATION.
- B. ALL CABLES NOT SHOWN. REFER TO BLOCK DIAGRAM AND SINGLE LINE DIAGRAM FOR COMPLETE LIST OF CABLES.
- C. CONTRACTOR TO COORDINATE CABLE TRAY ROUTE WITH MECHANICAL AND ELECTRICAL EQUIPMENT. CABLE TRAY BRACKETS NOT TO EXTEND MORE THAN 50mm BEYOND CABLE TRAYS.
- D. COORDINATE FINAL DIMENSIONS OF HOUSEKEEPING PADS WITH ACTUAL EQUIPMENT DIMENSIONS. PROVIDE A MINIMUM OF 100mm CLEARANCE ON FRONT AND SIDES. EACH HOUSEKEEPING PAD TO BE 100mm HIGH.
- E. ALL PULL BOXES MAY NOT BE SHOWN. ADDITIONAL PULL BOXES MAY BE REQUIRED BASED ON THE INSTALLATION REQUIREMENTS. CONTRACTOR TO PROVIDE ADDITIONAL PULL BOXES, AS REQUIRED.

- ① SERVICE CONDUCTORS FROM TRANSFORMER ARE TO TRANSITION BEND 90 DEGREES UP INTO SERVICE ENTRANCE BOARD. SEAL DUCT BANK PENETRATIONS.
 - ② SERVICE CONDUCTORS FROM GENERATOR ARE TO TRANSITION BEND 90 DEGREES UP INTO SERVICE ENTRANCE BOARD. SEAL DUCT BANK PENETRATIONS.
 - ③ SEAL DUCT BANK PENETRATIONS AROUND CABLES.
 - ④ MOUNT LIGHTS AND HORN VERTICALLY TO THE FACEPLATE OF A NEMA4 JUNCTION BOX SUCH THAT ALL LOSE CABLES ARE CONTAINED.
 - ⑤ CABLE TRAY:
TIER 1 - 450mm POWER TRAY B.O.C.T. 2550mm A.F.F.
TIER 2 - 300mm CONTROLS TRAY B.O.C.T. 2250mm A.F.F.
 - ⑥ 150mm COMMUNICATIONS CABLE TRAY B.O.C.T 2250mm A.F.F.
- Provide 2x #14AWG TECK 90 + GND BETWEEN CP-6000 AND LCP-2101. PROVIDE UPS CIRCUIT.



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100 COUNTY ROAD 64, BRIGHTON ONTARIO

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DRAWN: NB/RH	
CHECKED: LO/BM	
JLR #: 32296-001	

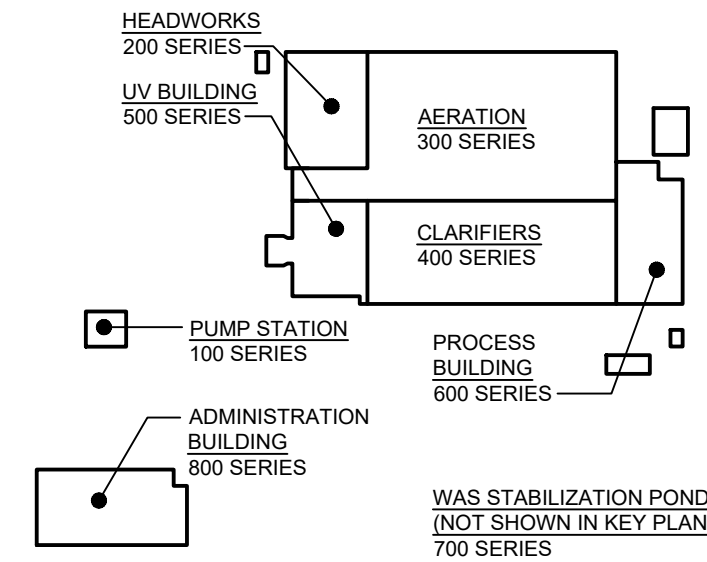
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PILOT DATE: Tuesday April 29 2025 11:24:09 AM

File Location: P:\2020\032296-001 - Brighton WWT System Upgrade\03-Production\03-Electrical\E802 LIGHTING CONTROL SCHEDULE.dwg

WALL SWITCH SCHEDULE		
TYPE	DESCRIPTION	LAYOUT EXAMPLE
⌘ _{T1}	ON/OFF - SINGLE SWITCH LEG	<div>ON OFF</div>
⌘ _{T2}	ON/OFF DIMMING - SINGLE SWITCH LEG	<div>ON/OFF ▲ ▼</div>
⌘ _{T3}	ON/OFF DIMMING - DOUBLE SWITCH LEG	<div>ON/OFF ▲▼ ON/OFF ▲▼</div>
⌘ _{T4}	ON/OFF DIMMING WITH INTEGRAL DUAL TECHNOLOGY SENSOR - SINGLE SWITCH LEG	<div>SNSR ON/OFF ▲▼</div>
⌘ _{T5}	ON/OFF WITH INTEGRAL PIR SENSOR - SINGLE SWITCH LEG	<div>SNSR ON/OFF</div>
⌘ _{T6}	ON/OFF - SINGLE SWITCH LEG, WET LOCATION RATED	<div>ON OFF</div>

LIGHTING CONTROL SCHEDULE																
ROOM	FIXTURE TYPE	MOUNTING - UNLESS OTHERWISE INDICATED.	MANUAL CONTROL		AUTOMATIC CONTROL							OTHER		NOTES		
			ON / OFF SWITCH	ON / OFF / DIMMER SWITCH	SWITCH TYPE	DEVICE			SETTINGS				DAYLIGHT HARVESTING		WIRELESS CONTROLS	
						SENSOR INTEGRAL TO FIXTURE	INDEPENDENT CEILING MOUNTED SENSOR	WALL MOUNTED COMBINATION SWITCH / SENSOR	FULL ON	PARTIAL ON TO 70%	MANUAL ON	FULL OFF				PARTIAL OFF AS INDICATED
CORRIDOR 800	B1	FLUSH IN CEILING					●			●				●	●	PARTIAL DIMMING TO 50% DURING BUSINESS HOURS / FULL OFF OVERNIGHT
PHOTOCOPIER AREA UIC LIGHT	L3	SURFACE MOUNTED UNDER CABINET	●			T1		●				●				
LUNCH / MEETING ROOM 801	C3	FLUSH IN CEILING		●		T2		●					●	●		PARTIAL DIMMING TO 50% DURING BUSINESS HOURS / FULL OFF OVERNIGHT
LUNCH / MEETING ROOM 801 UNDER CABINET	L3	SURFACE MOUNTED UNDER CABINET	●			T1				●			●			
OFFICE 802	C3	FLUSH IN CEILING		●		T2		●		●				●	●	
LABORATORY 803	B1	FLUSH IN CEILING		●		T2		●					●	●		
LABORATORY 803 UNDER CABINET	L3	SURFACE MOUNTED UNDER CABINET	●			T1				●			●			
UNIVERSAL WASHROOM 804	C1/L1	FLUSH IN CEILING / WALL MOUNT	●			T5			●	●			●			
DOCUMENT ROOM 805	B1	FLUSH IN CEILING		●		T2		●			●		●			
JANITOR CLOSET 806	A2	WALL MOUNTED	●			T5				●			●			
MEN'S WASHROOM / CHANGE ROOM 807	C1/C2/L1	FLUSH IN CEILING / WALL MOUNT	●			T2		●		●			●			
WOMEN'S WASHROOM / CHANGE ROOM 808	C1/C2/L1	FLUSH IN CEILING / WALL MOUNT	●			T2		●		●			●			
ELECTRICAL ROOM 809	A3	CHAIN HUNG	●			T1				●			●			
MECHANICAL ROOM 810	A3	CHAIN HUNG	●			T1				●			●			
SCADA ROOM 812	B1	FLUSH IN CEILING		●		T2		●		●			●		●	
IT CLOSET 813	B1	FLUSH IN CEILING	●			T5			●				●			
CONTROL ROOM 814	B1	FLUSH IN CEILING		●		T2		●		●			●		●	
PHOTOCOPIER AREA 815	B1	FLUSH IN CEILING						●		●			●	●		PARTIAL DIMMING TO 50% DURING BUSINESS HOURS / FULL OFF OVERNIGHT
LAUNDRY ROOM 816	B1	FLUSH IN CEILING	●			T5			●				●		●	
VESTIBULE 817	B1	FLUSH IN CEILING						●		●			●	●		PARTIAL DIMMING TO 50% DURING BUSINESS HOURS / FULL OFF OVERNIGHT



KEY PLAN
(NOT TO SCALE)

DESIGN DOCUMENTS HEREIN HAVE
BEEN DESIGNED UNDER THE ONTARIO
BUILDING CODE 2012.

0	ISSUED FOR TENDER	25/04/25
No.	ISSUE / REVISION	DD/MM/YY

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SCALE: N.T.S.

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH

PROJECT:

BRIGHTON WASTEWATER
TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

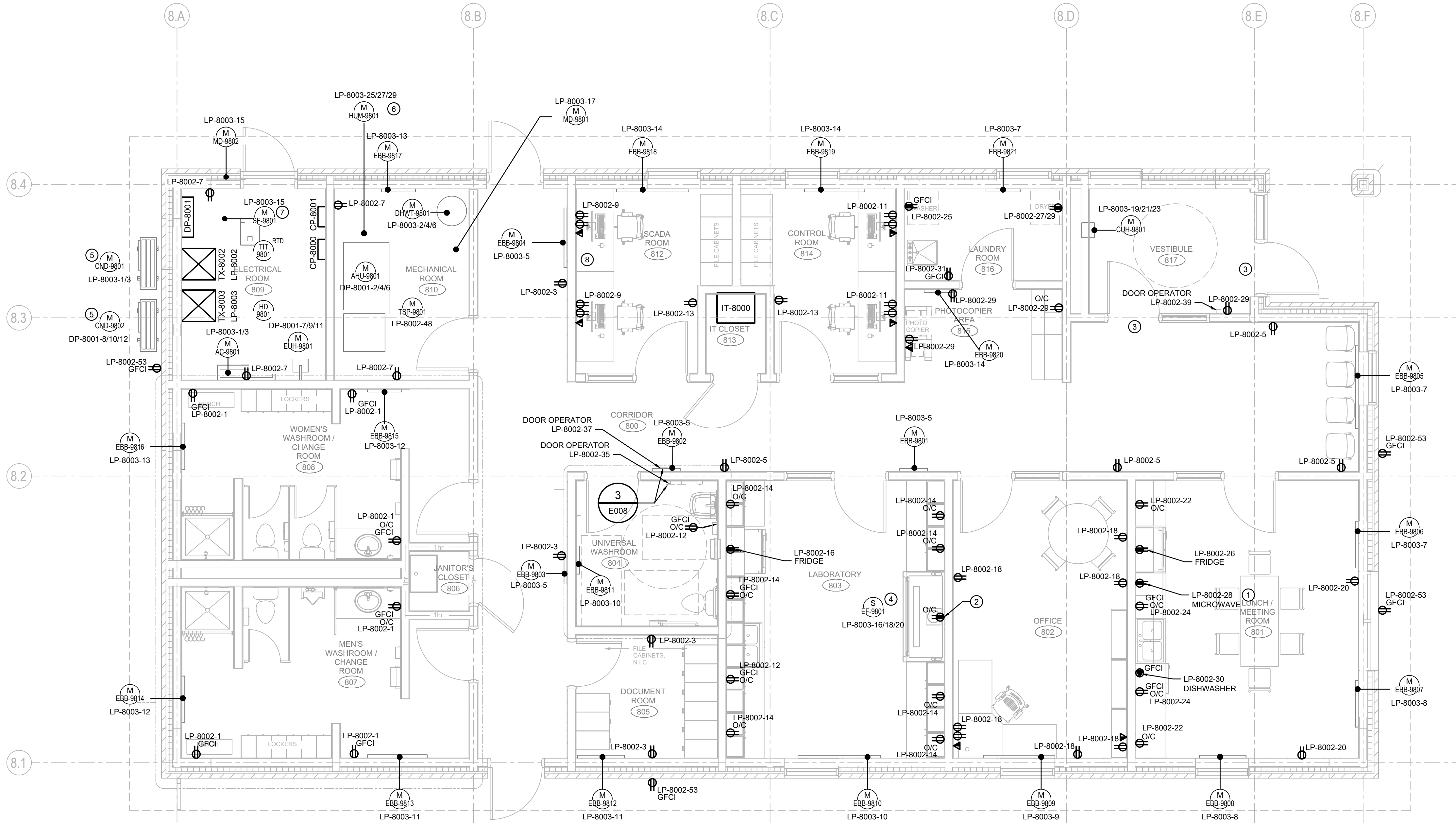
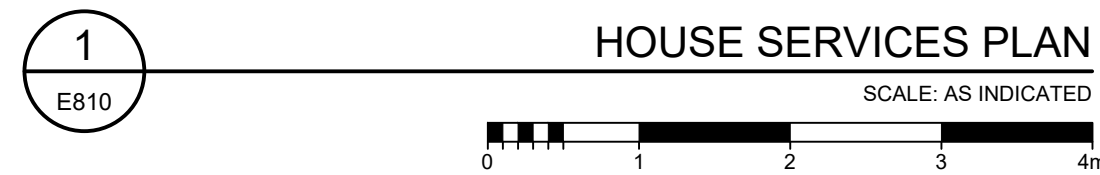
DRAWING:

ELECTRICAL
ADMINISTRATION BUILDING
LIGHTING CONTROL SCHEDULE

DESIGN: SB	DRAWING #:
DRAWN: JH	E802
CHECKED: LO/BM	
JLR #: 32296-001	

PLOT DATE: Tuesday, April 29, 2025 11:24:40 AM

File Location: P:\2020\03\2296-001 - Brighton WWT System Upgrade\03-Production\03-Elect\32296-001 - ADMIN BUILDING SERVICES PLAN.dwg

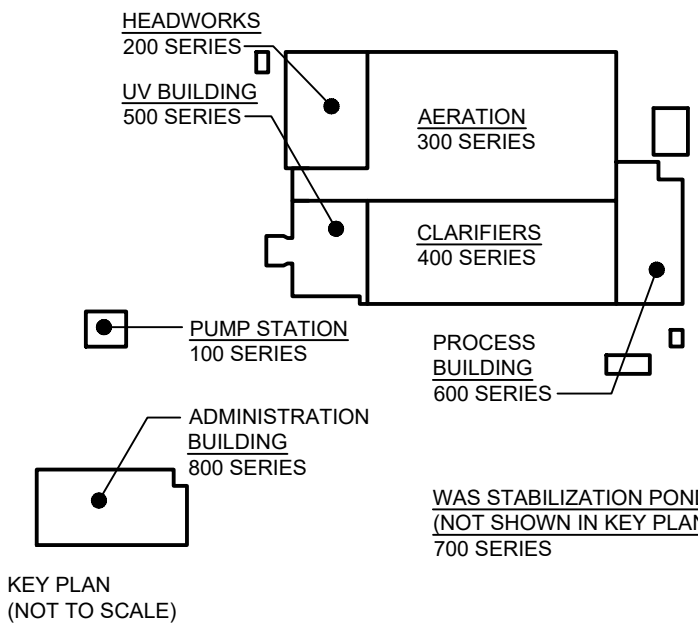


GENERAL NOTES:

- REFER TO DRAWING E002 FOR LIGHTING FIXTURE TYPES.
- REFER TO DRAWING E002 FOR LIGHT FIXTURE MOUNTING HEIGHTS AND OTHER REQUIREMENTS.
- REFER TO MOTOR STARTER CONTROL LIST ON THE ME SERIES DRAWINGS.
- REFER TO DRAWING E001 FOR FURTHER HOUSE SERVICES REQUIREMENTS, INCLUDING DISCONNECTS AND RECEPTACLES.
- REFER TO M SERIES DRAWINGS FOR FURTHER HVAC WIRING REQUIREMENTS, INCLUDING SEQUENCE OF OPERATIONS.
- REFER TO DRAWING E811 FOR REFLECTED CEILING PLAN.
- INTERIOR RECEPTACLES ARE TO BE RECESSED UNLESS LOCATED IN THE ELECTRICAL OR MECHANICAL ROOM.

DRAWING NOTES:

- COORDINATE WITH ARCHITECTURE FOR REQUIRED HEIGHT OF MICROWAVE RECEPTACLE
- COORDINATE WITH CLIENT FOR EXACT LOCATION OF RECEPTACLE FOR SAMPLE OVEN. UPDATE BREAKER SIZE TO SUIT.
- PROVIDE LOW VOLTAGE WIRING. CONDUIT WHERE REQUIRED AND ELECTRICAL BACK BOXES FOR DOOR OPERATOR AND CONTROLS. REFER TO ARCH DRAWINGS FOR AUTOMATIC DOOR CONTROLS LOCATIONS.
- WIRE CIRCUIT TO FUME HOOD/LIGHT SWITCH, PROVIDED BY MECHANICAL.
- INDOOR EVAPORATOR UNIT IS TO BE FED FROM THE OUTDOOR UNIT. ELECTRICAL CONTRACTOR IS TO PROVIDE POWER AND CONTROL WIRING BETWEEN THE OUTDOOR CONDENSING UNIT AND THE INDOOR EVAPORATOR UNIT. WIRING TO BE RUN IN EMT INDOORS; O/CAL AND METALLIC LIQUID-TIGHT FLEXIBLE CONDUITS OUTDOORS. LENGTH OF LIQUID-TIGHT CONDUITS NOT TO EXCEED 450MM. COORDINATE THE EXACT WIRING REQUIREMENTS WITH THE MANUFACTURER. SIZE POWER WIRING TO SUIT. PROVIDE A NEMA 4X DISCONNECT FOR EACH UNIT. PROVIDE SEPARATE CONDUITS FOR POWER AND CONTROL WIRING.
- PROVIDE PADLOCKABLE NONFUSED DISCONNECT SWITCH, SIZED TO SUIT EQUIPMENT. COORDINATE WITH MANUFACTURER FOR EXACT DISCONNECT SIZE.
- PROVIDE MOTOR RATED SWITCH, SIZED TO SUIT EQUIPMENT. COORDINATE WITH MANUFACTURER FOR EXACT SIZE.
- CONTRACTOR IS TO PROVIDE ONE (1) SCADA WORKSTATION. REFER TO SPECIFICATION 17100 FOR COMPUTER SPECIFICATIONS.



DESIGN DOCUMENTS HEREIN HAVE BEEN DESIGNED UNDER THE ONTARIO BUILDING CODE 2012.

0	ISSUED FOR TENDER	25/04/25
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No.	ISSUE / REVISION	DD/MM/YY
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VERIFY SHEET SIZE AND SCALES. THE BAR TO THE RIGHT IS 25MM IF THIS IS A FULL SIZE DRAWING. 0 25mm

SCALE: AS INDICATED

CLIENT:



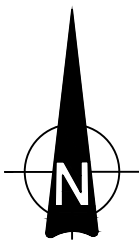
CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

ELECTRICAL
ADMINISTRATION BUILDING
HOUSE SERVICES PLAN

DESIGN: SB

DRAWN: NB/RH

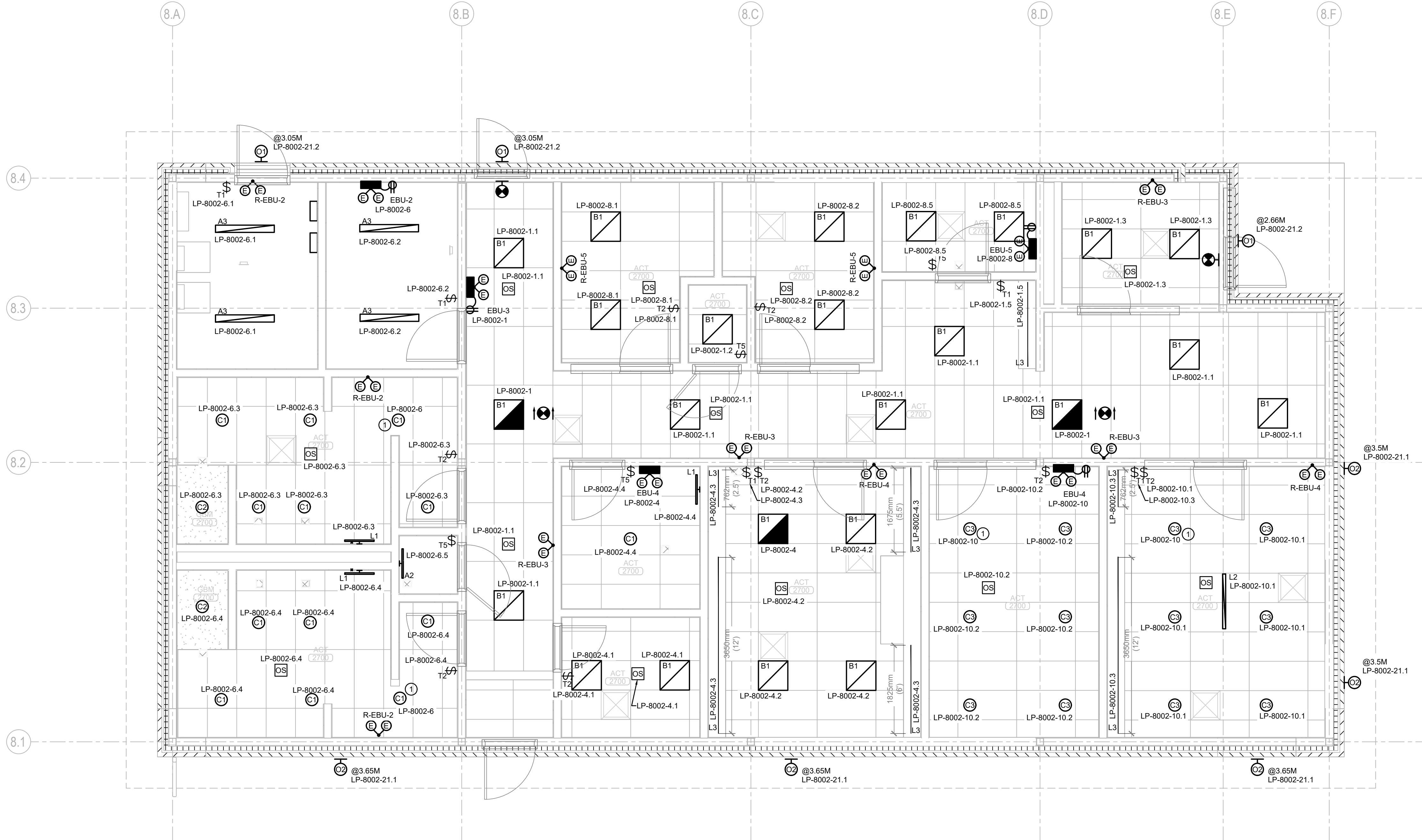
CHECKED: LO/BM

JLR #: 32296-001

DRAWING #:

E810

PLOT DATE: Tuesday, April 29, 2025 11:24:30 AM

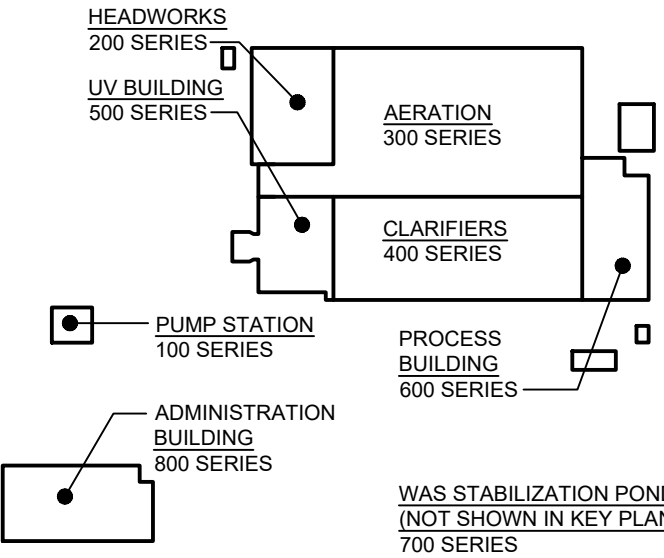


GENERAL NOTES:

- REFER TO DRAWING E002 FOR LIGHTING FIXTURE TYPES.
- REFER TO DRAWING E002 FOR LIGHT FIXTURE MOUNTING HEIGHTS AND OTHER REQUIREMENTS.
- REFER TO DRAWING E810 FOR HOUSE SERVICES PLANS.
- REFER TO DRAWING E001 FOR FURTHER HOUSE SERVICES REQUIREMENTS.

DRAWING NOTES:

- ① NON-SWITCHED LED LIGHT FIXTURE



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SCALE: AS INDICATED

CLIENT:



CONSULTANT: www.jrichards.ca



CONSULTANT:



PROJECT NORTH



PROJECT:

BRIGHTON WASTEWATER TREATMENT SYSTEM UPGRADES

100 COUNTY ROAD 64, BRIGHTON ONTARIO

DRAWING:

**ELECTRICAL
ADMINISTRATION BUILDING
REFLECTED CEILING PLAN**

DESIGN: SB

DRAWN: JH/RH

CHECKED: LO/BM

JLR #: 32296-001

DRAWING #:

E811