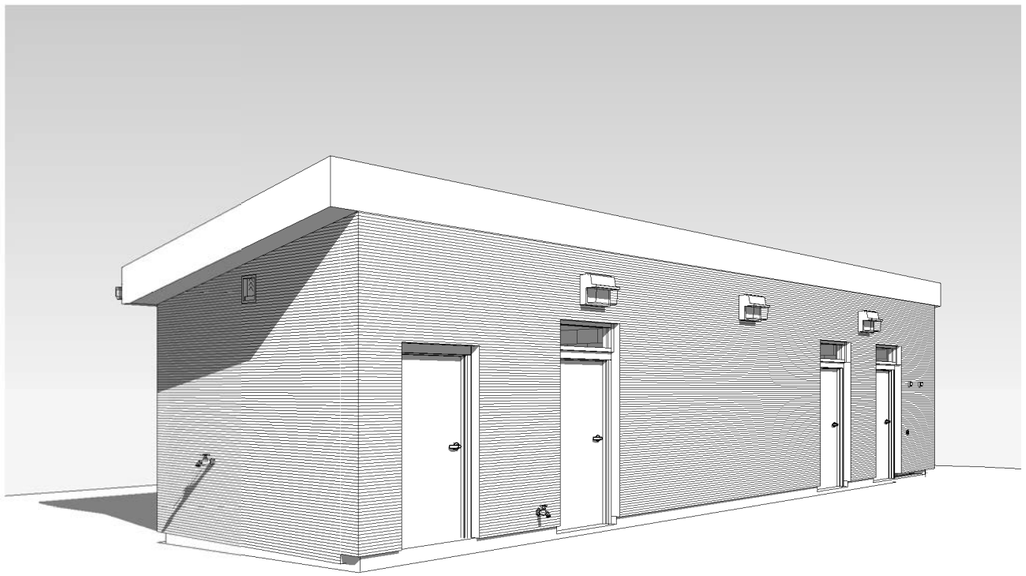


WHITBY IROQUOIS SOCCER WASHROOM FACILITY

695 ROSSLAND ROAD W.
WHITBY, ON
L1R 2P2

ARCHITECT:

organica studio + inc.
architecture | interiors | design | research

7-145 BIRMINGHAM STREET, TORONTO ON M8V 3Z8
T: 905-832-5758 E: INFO@ORGANICASTUDIO.CA

STRUCTURAL:

ATKINS + VAN GROLL
CONSULTING ENGINEERS

130 BRIDGELAND AVE., SUITE 101, TORONTO ON M6A 1Z4
T: 416-489-7888 E: HELLO@ATKINSVANGROLL.COM

MECHANICAL & ELECTRICAL:

SHARMA & PARTNERS

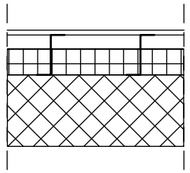
85 CURLEW DR., #108, NORTH YORK ON M3A 2P8
T: 416-291-8822
E: KRIS.SHARMA@SHARMAANDPARTNERS.COM

CIVIL:

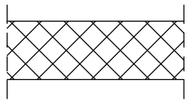
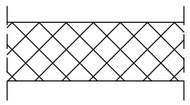
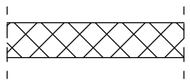
Stantec

300W-675 COCHRANE DRIVE, MARKHAM ON L3R 0B8
T: 905-944-6204 E: ASKSTANTEC@STANTEC.COM

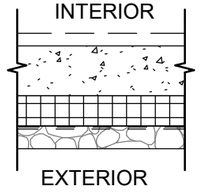
EXTERIOR WALL TYPES LEGEND

TYPE		DESCRIPTION	FIRE RATING	STC RATING	ULC No.
W1		EXTERIOR WALL: 13MM PREFINISHED CORRUGATED METAL PANEL 100MM Z-GIRT 75MM SPRAY FOAM CLOSED CELL INSULATION 190MM CONCRETE BLOCK **INSULATION VALUE: R18**			

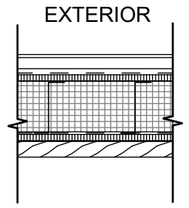
INTERIOR WALL TYPES LEGEND

P1		190MM CONCRETE BLOCK WALL - 75% SOLID	1 HR.		U906
P2		190MM CONCRETE BLOCK WALL			
P3		90MM CONCRETE BLOCK WALL			

FLOOR TYPES

F1		PORCELAIN TILE FINISH SLAB ON GRADE 75mm EXTRUDED POLYSTYRENE INSULATION 10 MIL POLY VAPOR BARRIER- SEE SPEC MIN 4" GRAVEL FILL **R-VALUE: R15**			

ROOF TYPES LEGEND

TYPE		DESCRIPTION	FIRE RATING	ULC No.
R1		40mm GALVALUME PLUS METAL STANDING SEAM ROOF AIR SPACE AIR PERMEABLE MEMBRANE 19MM TONGUE & GROOVE PLYWOOD SHEATHING 152mm GALVALUME METAL "Z" GIRTS 152mm RIGID INSULATION (POLYISOCYANURATE) AIR/VAPOUR BARRIER MEMBRANE 19mm TONGUE & GROOVE PLYWOOD SHEATHING PRE-FAB TRUSSES - REFER TO STRUCTURE **R-VALUE: R35**		

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ONTARIO ASSOCIATION OF ARCHITECTS
JULIO CESAR CIFUENTES
LICENCE
8187

No.	Description	Date
1	ISSUED FOR REVIEW	2019.04.11
2	ISSUED FOR PERMIT CO-ORDINATION	2019.04.18
3	ISSUED FOR PERMIT/TENDER	2019.05.03
4	REV. 1 - ISSUED FOR CO-ORDINATION	2019.05.24
5	REV. 1 - ISSUED FOR PERMIT/TENDER	2019.05.31

WHITBY IROQUOIS SOCCER WASHROOM FACILITY

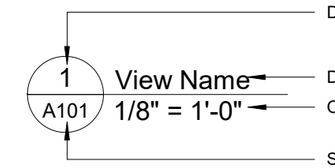
695 Rossland Rd. W.
Whitby ON
L1R 2P2

LEGENDS

Project number	19014
Date	02.04.2019
Drawn by	OS+
Checked by	JC/PA
Scale	N.T.S.

A0.1

DRAWING ANNOTATIONS:

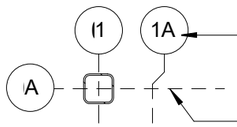


DRAWING IDENTIFICATION NO.

DRAWING IDENTIFICATION TITLE

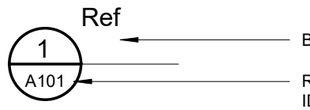
ORIGINAL SCALE

SHEET NO.



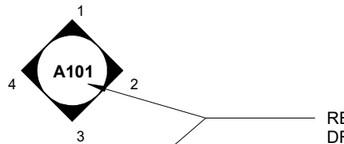
COLUMN GRID NUMBER

COLUMN CENTER LINE



BUILDING/ WALL SECTION REFERENCE

REFER TO THIS DRAWING IDENTIFICATION



REFER TO THIS DRAWING IDENTIFICATION

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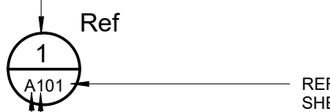


REFER TO THIS SHEET IDENTIFICATION:
SHEET NO.

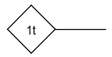
CATEGORY

DISCIPLINE

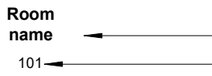
SPOT ELEVATION

FL ELEVATION

FLOOR/ROOF TAG

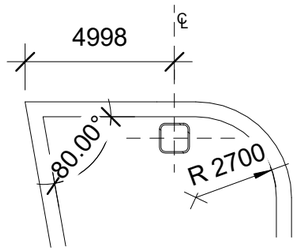


WALL TAG

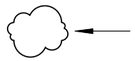


UNIT/ROOM NAME

UNIT/ROOM NO.



REVISION SYMBOLS:



REVISED AREA

REVISION NUMBER

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ONTARIO ASSOCIATION OF ARCHITECTS
JULIO CESAR CIFUENTES
LICENCE
8187

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WHITBY IROQUOIS SOCCER WASHROOM FACILITY

695 Rossland Rd. W.
Whitby ON
L1R 2P2

DRAWING ANNOTATIONS

Project number	19014
Date	02.04.2019
Drawn by	Author
Checked by	Checker
Scale	N.T.S.

A0.2

GENERAL NOTES

A. GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE COMPLETE PROJECT SYSTEMS AND COMPONENTS AND COMPLY WITH ALL REQUIREMENTS INDICATED ON THE PROJECT DOCUMENTS.

2. WORK WITHIN THE AREA BOUNDARIES INDICATED IN THE PROJECT DOCUMENTS, AND COMPLY WITH ALL APPLICABLE BUILDING CODE, REGULATION, & ORDINANCE REQUIREMENTS. OCCUPANTS ADJACENT TO THE PROJECT AREA BOUNDARIES SHALL CONTINUE UNINTERRUPTED OCCUPANCY DURING CONSTRUCTION OF THE PROJECT

3. VERIFY FIELD CONDITIONS AND COORDINATION WITH THE PROJECT DOCUMENTS PRIOR TO PROCEEDING WITH THE WORK.

4. COORDINATE THE WORK WITH ALL REQUIREMENTS INDICATED IN THE PROJECT DOCUMENTS.

5. COORDINATE THE WORK WITH EQUIPMENT, FURNISHINGS, AND SYSTEMS PROVIDED BY THE OWNER.

B. DEFINITIONS:

1. "TYPICAL" OR "TYP" INDICATES IDENTICAL COMPLETE SYSTEM SHALL BE PROVIDED FOR EACH OCCURRENCE OF THE CONDITION NOTED.

2. "SIMILAR" OR "SIM" INDICATES COMPLETE SYSTEM AND COMPONENTS SHALL BE PROVIDED COMPARABLE TO THE CHARACTERISTICS FOR THE CONDITION NOTED.

3. "AS REQUIRED" INDICATES COMPONENTS REQUIRED TO COMPLETE THE NOTED, SYSTEM AS INDICATED IN THE PROJECT DOCUMENTS, SHALL BE PROVIDED.

4. "ALIGN" INDICATES ACCURATELY PROVIDE FINISH FACES OF MATERIALS IN STRAIGHT, TRUE, AND PLUMB RELATION TO ADJACENT MATERIALS.

C. DIMENSIONS:

1. DIMENSIONS ARE INDICATED TO THE CENTERLINE OF THE STRUCTURAL GRID, FACE OF CONCRETE WALL, NOMINAL FACE OF CMU WALL, CENTRELINE OF PARTITION TYPE AS SCHEDULED, UNLESS OTHERWISE NOTED.

2. ALIGNMENT OF PARTITIONS AND FINISHES AS SCHEDULED SHALL BE STRAIGHT, TRUE & PLUMB. THE PRIORITY FOR PROJECT DIMENSIONS SHALL BE IN THE FOLLOWING ORDER:

   A . MIN DIMENSION FOR ACCESSIBILITY CLEARANCE & BUILDING CODE REQMT
   B . LARGE SCALE DETAILS
   C . SMALL SCALE DETAILS
   D . ENLARGED VIEWS
   E . FLOOR PLANS AND ELEVATIONS

3. FLOOR ELEVATIONS ARE INDICATED TO THE FACE OF THE STRUCTURAL SLAB, UNLESS OTHERWISE NOTED.

4. VERTICAL DIMENSIONS ARE INDICATED FROM THE FLOOR ELEVATION TO FACE OF FINISHED MATERIAL AT THE DIMENSION POINT, UNLESS NOTED ABOVE FINISH FLOOR -"AFF".

5. CEILING HEIGHTS ARE INDICATED FROM THE FLOOR ELEVATION TO THE FACE OF SUSPENDED SUSPENDED CEILING SYSTEM OR FACE OF FINISH MATERIAL AS SCHEDULED

6. DIMENSIONS SHOWN ON THE DRAWINGS SHALL INDICATE THE REQUIRED SIZE, CLEARANCE, AND DIMENSIONAL RELATIONSHIP BETWEEN PROJECT SYSTEMS AND COMPONENTS. DIMENSIONS SHALL NOT BE DETERMINED BY SCALING THE DRAWINGS.

D. DRAWING SET ORGANIZATION:

1. EACH DRAWING SET SHEET IS IDENTIFIED BY THE SHEET NUMBER IN THE LOWER RIGHT HAND CORNER OF THE DRAWING TITLE BLOCK. THE SHEET TITLE PROVIDES A GENERAL DESCRIPTION OF THE CONTENTS OF THE SHEET.
   SHEET NUMBER EXAMPLE: A201
   "A" INDICATES THE DISCIPLINE THAT CREATED THE DRAWING
   "2" INDICATES THE DRAWING CATEGORY CONTAINED ON THE SHEET
   "01" INDICATES THE SHEET NUMBER

2. SHEET NUMBERS MAY INCLUDE SUPPLEMENTAL CHARACTERS TO PROVIDE ADDITIONAL INFORMATION, SUCH AS DRAWING CONTENT, PROJECT SECTOR OR PHASE. REFER TO THE DRAWING INDEX FOR A COMPLETE LIST OF SHEETS INCLUDED IN THE DOCUMENT SET.
   EXAMPLE: EL201A
   "EL" INDICATES THE DISCIPLINE THAT CREATED THE DRAWING AND THE DRAWING CONTENT = ELECTRICAL LIGHTING
   "A" INDICATES SECTOR "A" OF PLAN SHEET "201". REFER TO THE PROJECT KEY PLAN OR COMPOSITE PLAN INDICATING THE RELATIONSHIP OF THE SECTORS.

3. DRAWING SET INDEX INDICATES THE COMPLETE LIST OF SHEETS CONTAINED IN THE DRAWING SET, INDEXED BY DISCIPLINE, SHEET NUMBER AND SHEET TITLE, IN SEQUENTIAL ORDER. NOTE THAT ALL SEQUENTIAL SHEET NUMBERS MAY BE NOT USED IN THE DRAWING SET.

4. DISCIPLINE IDENTIFICATION, IN ORDER BOUND IN THE DRAWING SET. REFER TO THE DRAWING SET INDEX FOR DISCIPLINE CONTAINED IN THIS DRAWING SET:

G	GENERAL INFORMATION	Q	EQUIPMENT
C	CIVIL	F	FIRE PROTECTION
L	LANDSCAPE	P	PLUMBING
S	STRUCTURAL	M	MECHANICAL
A	ARCHITECTURAL	E	ELECTRICAL
I	INTERIORS	T	TELECOMMUNICATIONS

5. DRAWING CATEGORY IDENTIFICATION. REFER TO THE DRAWING SET INDEX FOR DISCIPLINES, CATEGORIES, AND SHEET NUMBERS CONTAINED IN THIS DRAWING SET:

A2.0
- SHEET INDEX
- DISCIPLINE (ARCHITECTURAL)

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ONTARIO ASSOCIATION OF ARCHITECTS
JULIO CESAR CIFUENTES
LICENCE
8187

No.	Description	Date
1	ISSUED FOR PERMIT CO-ORDINATION	2019.04.18
2	ISSUED FOR PERMIT/TENDER	2019.05.03
3	REV. 1 - ISSUED FOR PERMIT/TENDER	2019.05.31

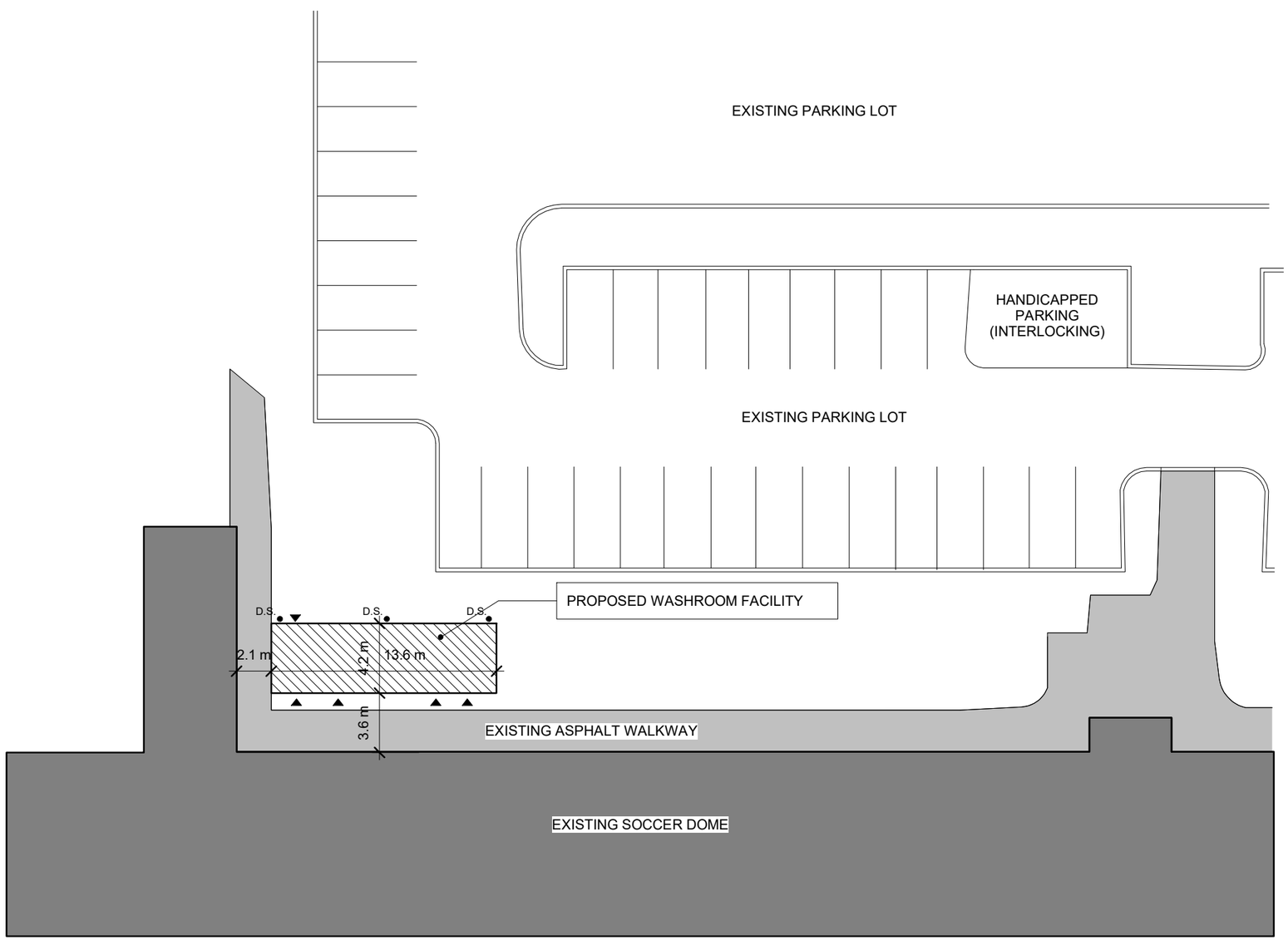
WHITBY IROQUOIS SOCCER WASHROOM FACILITY

695 Rossland Rd. W.
Whitby ON
L1R 2P2

GENERAL NOTES

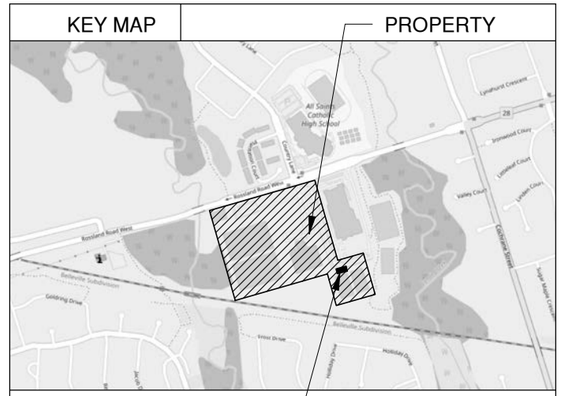
Project number	19014
Date	02.04.2019
Drawn by	Author
Checked by	Checker
Scale	1 : 10

A0.3



1 **Site Plan**

1 : 300



LEGEND:

- PROPOSED BUILDING
- EXISTING SOCCER DOME
- EXISTING ASPHALT WALKWAY
- ENTRANCE ARROW
- D.S. DOWNSPOUT w. CONCRETE SPLASH PAD

SITE INFO TAKEN FROM SURVEY PREPARED BY
J.D. BARNES LTD. O.L.S.
DATED: 10/12/2018

LEGAL DESCRIPTION:
PART OF LOT 30, CONCESSION 2
TOWN OF WHITBY
REGIONAL MUNICIPALITY OF DURHAM

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8187

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4	REV. 1 - ISSUED FOR CO-ORDINATION	2019.05.24
5	REV. 1 - ISSUED FOR PERMIT/TENDER	2019.05.31

WHITBY IROQUOIS SOCCER WASHROOM FACILITY

695 Rossland Rd. W.
Whitby ON
L1R 2P2

PARTIAL SITE PLAN

Project number	19014
Date	02.04.2019
Drawn by	OS+
Checked by	JC/PA
Scale	As indicated

A1.0

Organica Studio +
7-145 Birmingham St. Toronto ON M8V 3Z8
t 905 832 5758 t info@organicastudio.ca

Project Description:
STANDALONE WASHROOM FACILITY

Location:
695 ROSSLAND ROAD W., WHITBY ON

Item	Ontario's 2012 Building Code Data Matrix Part 3 or 9			OBC Reference (References are to Division B unless noted [A] for Division A or [C] for Division C.)	
1	Project Descriptions: New Building	[X] New [ ] Addition [ ] Change of Use [ ] Alteration	[ ] Part 11 11.1 to 11.4	[ ] Part 3 1.1.2. [A]	[ ] Part 9 1.1.2. [A] & 9.10.1.3.
2	Major Occupancy(s)	GROUP A, DIVISION 2		3.2.2.51.(1).c.iii	9.10.2.
3	Building Area (m²)	Existing	New 50m2 Total 50m2	1.4.1.2.[A]	1.4.1.2.[A]
4	Renovation Area	Existing N/A	New Total	1.4.1.2.[A]	1.4.1.2.[A]
5	Number of Storeys	Above Grade 1	Below Grade 0	1.4.1.2.[A] & 3.2.1.1.	1.4.1.2.[A] & 9.10.4.
6	Number of Streets/Fire Fighter Access	1		3.2.2.10. & 3.2.5.	9.10.20.
7	Building Classification	Group A, Division 2 - 3.2.2.27		3.2.2.20.-.83	9.10.2.
8	Sprinkler System Proposed	[ ] entire building [ ] selected compartments [ ] selected floor areas	[ ] basement [ ] in lieu of roof rating [X] not required	3.2.2.20.-.83 3.2.1.5. 3.2.2.17. INDEX	9.10.8.2. INDEX
9	Standpipe required (Siamese Only)	[ ] Yes [X] No		3.2.9.	N/A
10	Fire Alarm required	[ ] Yes [X] No		3.2.4.	9.10.18.
11	Water Service/Supply is Adequate	[X] Yes [ ] No		3.2.5.7.	N/A
12	High Building	[ ] Yes [X] No		3.2.6.	N/A
13	Construction Restrictions Actual Construction:	[ ] Combustible permitted [ ] Combustible	[ ] Non-combustible required [X] Non-combustible	[X] Both [ ] Both	3.2.2.20.-.83	9.10.6.
14	Mezzinine(s) Area (m²)	N/A			3.2.1.1.(3)-(8)	9.10.4.1.
15	Occupant load based on Level 1 Occupancy Load: 200	[ ] m²/person	[X] design of building		3.1.17.	9.9.1.3.
16	Barrier-free Design	[X] Yes [ ] No (Explain)			3.8.	9.5.2.
17	Hazardous Substances	[ ] Yes [X] No			3.3.1.2. & 3.3.1.19.	9.10.1.3.(4)

18 Required Fire Resistance Rating (FRR)

Horizontal Assemblies FRR (Hours)	Listed Design No. or Description (SG-2)
Floors 0 hr Hours	N/A
Roof 0 hr Hours	N/A
Mezzinine N/A Hours	N/A

3.2.2.20.-.83 & 3.2.1.4. — 9.10.8. 9.10.9.

19 Spatial Separation - Construction of Exterior Walls: — 3.2.3. — 9.10.14.

Wall	Area of EBF (m²)	L.D. (m)	L/H or H/L	Permitted Max. % of Openings	Proposed % of Openings	FRR (Hours)	Listed Design or Description	Comb Const	Comb. Constr. Nonc. Cladding	Non-comb. Constr.
North	40	3.5		20	.02	N/A				X
South	33	N/A		100	0	N/A				X
East	13	N/A		100	0	N/A				X
West	13	2.1		21	0	N/A				X

20 Plumbing Fixture Requirements

Male/Female Count @ 70 %/ 30 ____%,
except as noted otherwise
1st Floor: Occupancy

				OBC Reference ☒ Part 3 ☐ Part 9
Occupant Load	OBC Table Number	Fixtures Required	Fixtures Provided	
200 persons	3.7.4.3.A	2 FOR MALE 4 FOR FEMALE	2 FOR MALE 4 FOR FEMALE	

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No.	Description	Date
1	ISSUED FOR PERMIT/TENDER	2019.05.03
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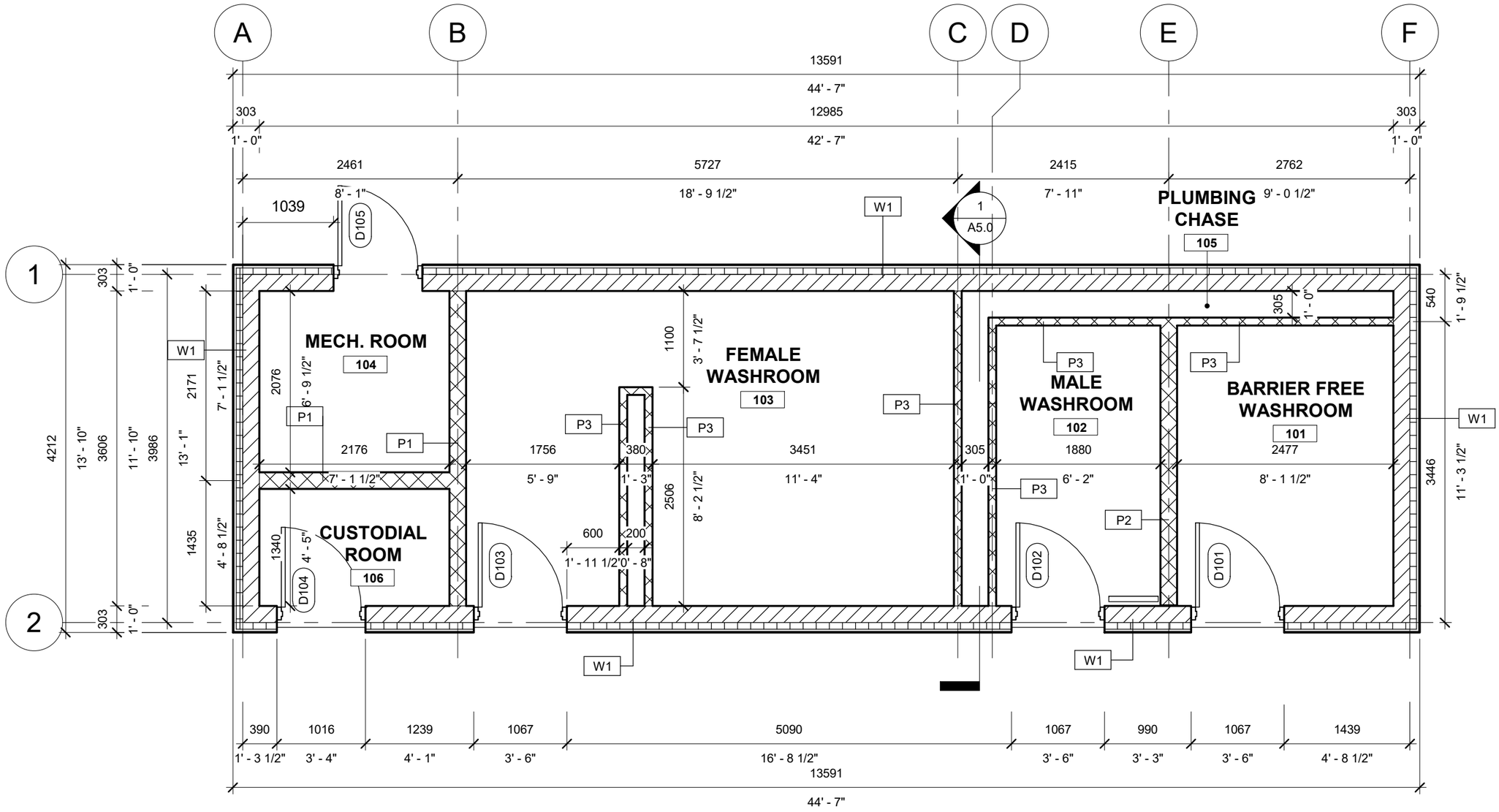
WHITBY IROQUOIS SOCCER WASHROOM FACILITY

695 Rossland Rd. W.
Whitby ON
L1R 2P2

PARTIAL SITE PLAN, OBC MATRIX

Project number	19014
Date	02.04.2019
Drawn by	OS+
Checked by	JC/PA
Scale	

A1.1



1 PROPOSED GROUND FLOOR

1 : 50

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ONTARIO ASSOCIATION OF ARCHITECTS
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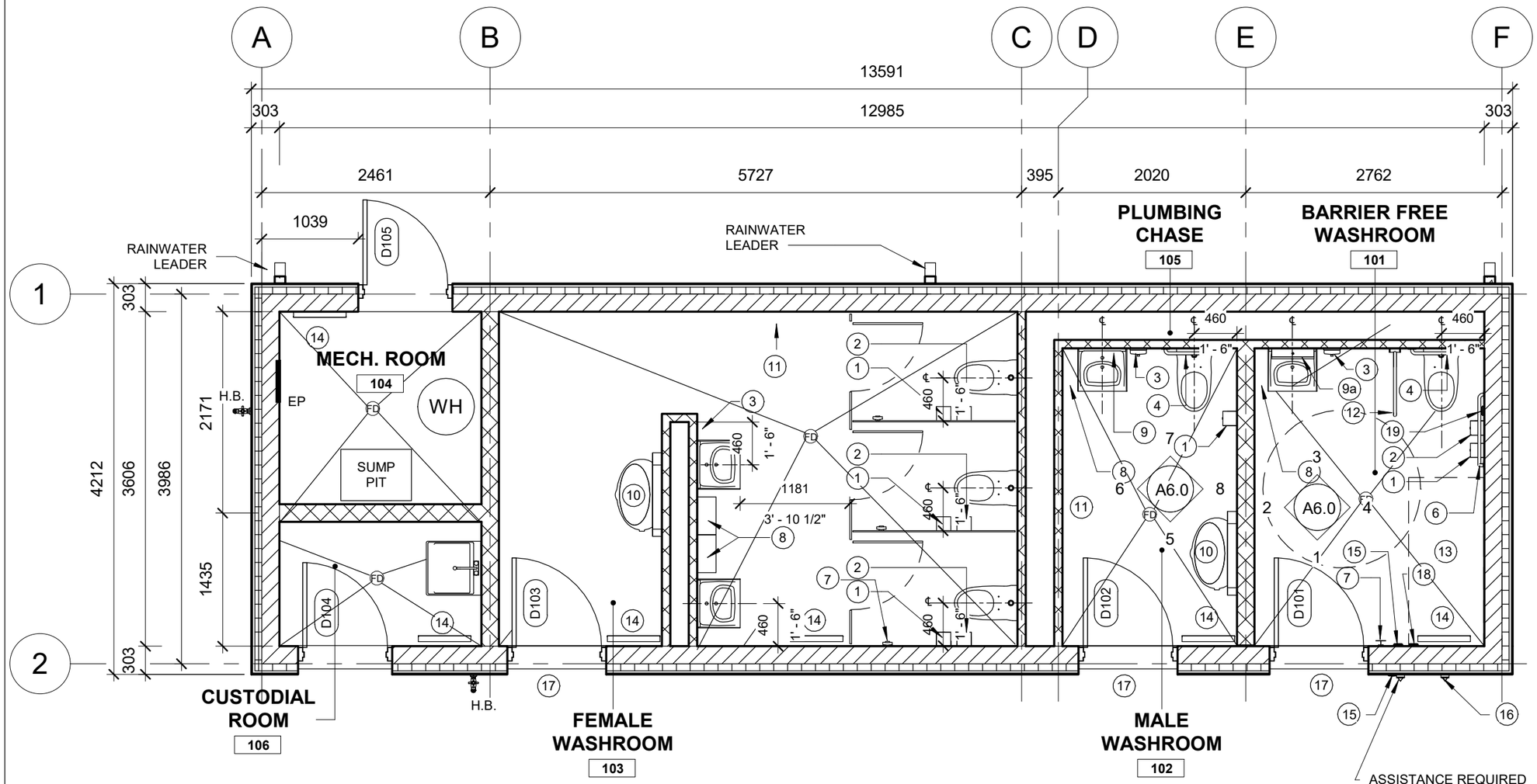
WHITBY IROQUOIS SOCCER WASHROOM FACILITY

695 Rossland Rd. W.
Whitby ON
L1R 2P2

GROUND FLOOR PLAN

Project number	19014
Date	02.04.2019
Drawn by	OS+
Checked by	JC/PA
Scale	1 : 50

A2.0



1 FIXTURES PLAN

1 : 50

H.B.	INDICATES HOSE BIB - REFER TO MECH. DWGS.
F.D.	INDICATES FLOOR DRAIN - REFER TO MECH. DWGS.
WH	INDICATES WATER HEATER - REFER TO MECH. DWGS.
EP	INDICATES ELECTRICAL PANEL - REFER TO ELEC. DWGS.

ACCESSORY LEGEND:

1	TOILET TISSUE DISPENSER
2	FEMININE NAPKIN DISPOSAL
3	LIQUID SOAP DISPENSER
4	TOILET GRAB BAR (HORZONTAL) SEE ELEV.
5	TOILET GRAB BAR (VERTICAL) SEE ELEV.
6	TOILET GRAB BAR (760 LONG x 760 HIGH)
7	STAINLESS STEEL CLOTHES HOOK
8	STAINLESS STEEL UTILITY SHELF
9	FRAMED MIRROR
9a	TILTED MIRROR
10	BABY CHANGING STATION
11	PAPER TOWEL DISPENSER
12	FOLDDOWN GRAB BAR
13	ADULT CHANGE TABLE
14	BASEBOARD HEATER
15	BARRIER FREE DOOR OPERATOR PUSH PAD
16	AUDIO/VISUAL ALERT SYSTEM COMBINED W. OCCUPIED LIGHT
17	WASHROOM SIGNAGE
18	PUSH "LOCK" BUTTON
19	EMERGENCY CALL PUSH BUTTON

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LICENCE
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No.	Description	Date
1	ISSUED FOR REVIEW	2019.04.11
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3	ISSUED FOR PERMIT/TENDER	2019.05.03
4	REV. 1 - ISSUED FOR CO-ORDINATION	2019.05.24
5	REV. 1 - ISSUED FOR PERMIT/TENDER	2019.05.31

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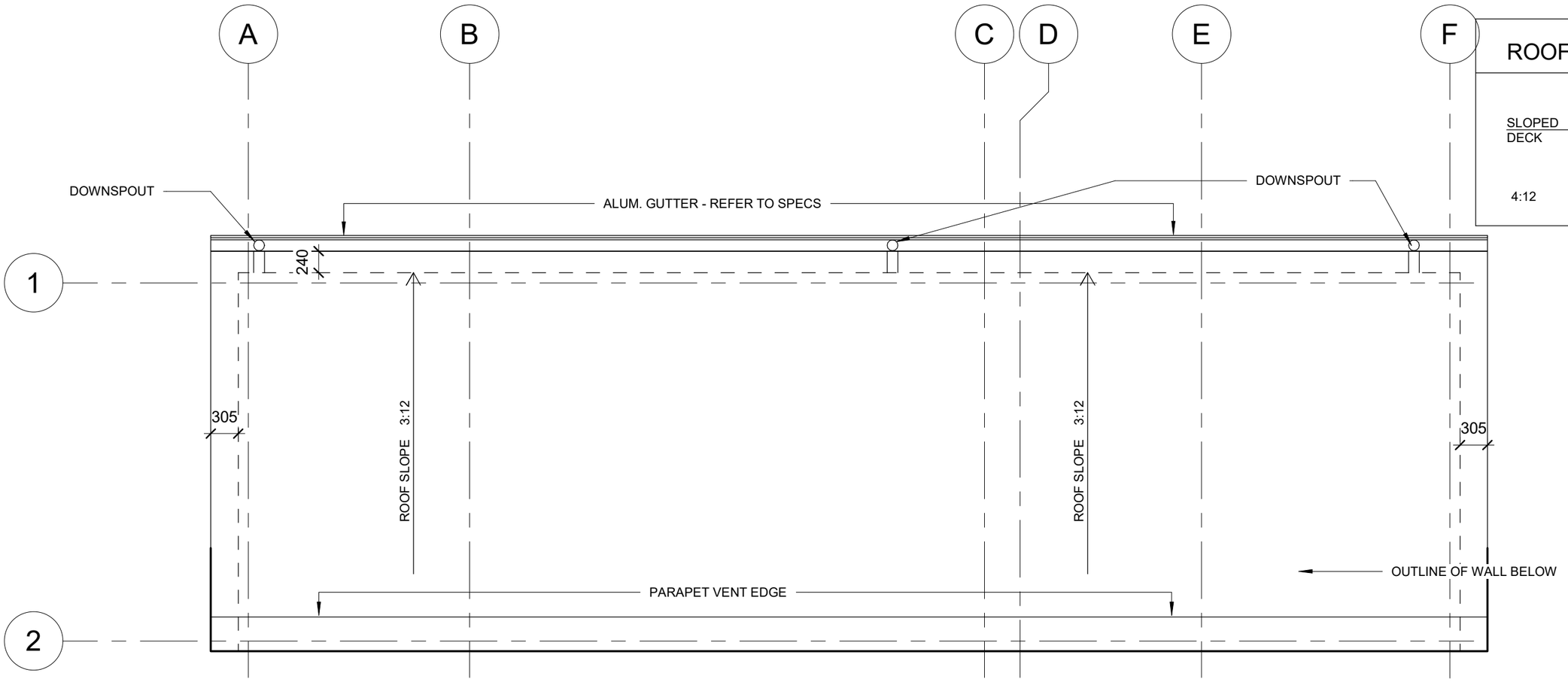
L1R 2P2

FIXTURES PLAN

Project number	19014
Date	02.04.2019
Drawn by	P.A.
Checked by	J.C.
Scale	As indicated

A2.2



ROOF SYMBOL LEGEND

SLOPED DECK →	ROOF DECK AND STRUCTURE TO SLOPE TOWARDS DRAIN
4:12	INDICATES ROOF PITCH

1 PROPOSED ROOF PLAN

1 : 50

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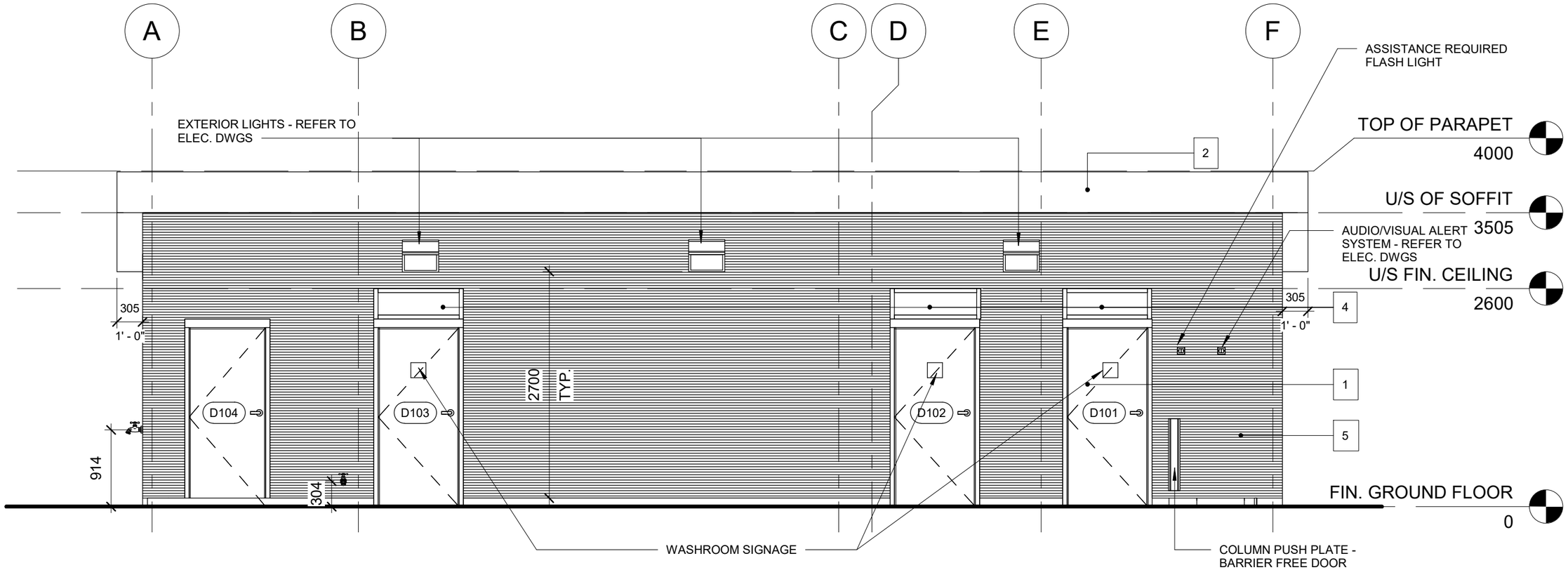
ROOF PLAN

Project number	19014
Date	02.04.2019
Drawn by	OS+
Checked by	JC/PA
Scale	As indicated

A2.3



1 BUILDING ELEVATION - NORTH

1 : 50

ELEVATION MATERIAL LEGEND:

[1] PREFINISHED METAL PANEL (HORIZONTAL)

[2] PREFINISHED ALUMINIUM FLASHING

[3] PREFINISHED METAL ROOF (STANDING SEAM)

[4] THERMOPANE TRANSOM VISION PANEL

[5] CAST IN PLACE CONCRETE

[6] PRE-FINISHED ALUM. EAVES TROUGH AND DOWNSPOUTS

[7] PREFINISHED METAL ROOF

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BUILDING ELEVATIONS

Project number	19014
Date	02.04.2019
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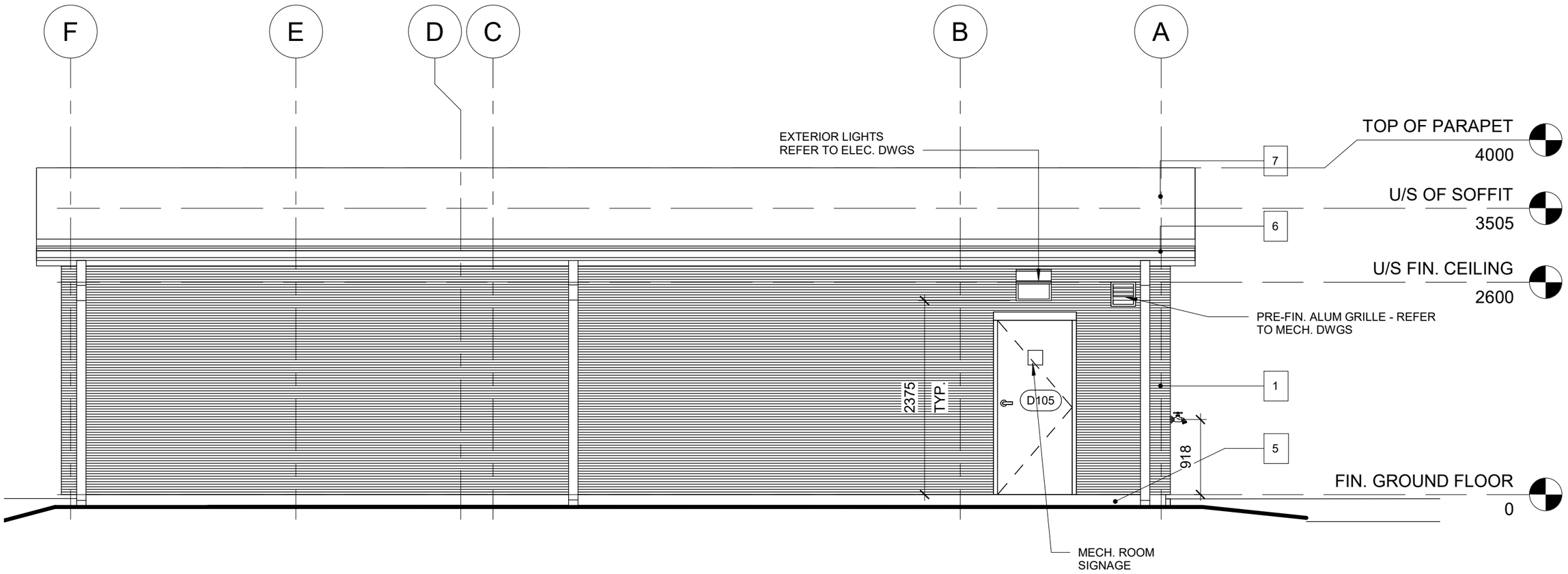

1 BUILDING ELEVATION - SOUTH

1 : 50

ELEVATION MATERIAL LEGEND:

[1]	PREFINISHED METAL PANEL (HORIZONTAL)
[2]	PREFINISHED ALUMINIUM FLASHING
[3]	PREFINISHED METAL ROOF (STANDING SEAM)
[4]	THERMOPANE TRANSOM VISION PANEL
[5]	CAST IN PLACE CONCRETE
[6]	PRE-FINISHED ALUM. EAVES TROUGH AND DOWNSPOUTS
[7]	PREFINISHED METAL ROOF

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BUILDING ELEVATIONS

Project number	19014
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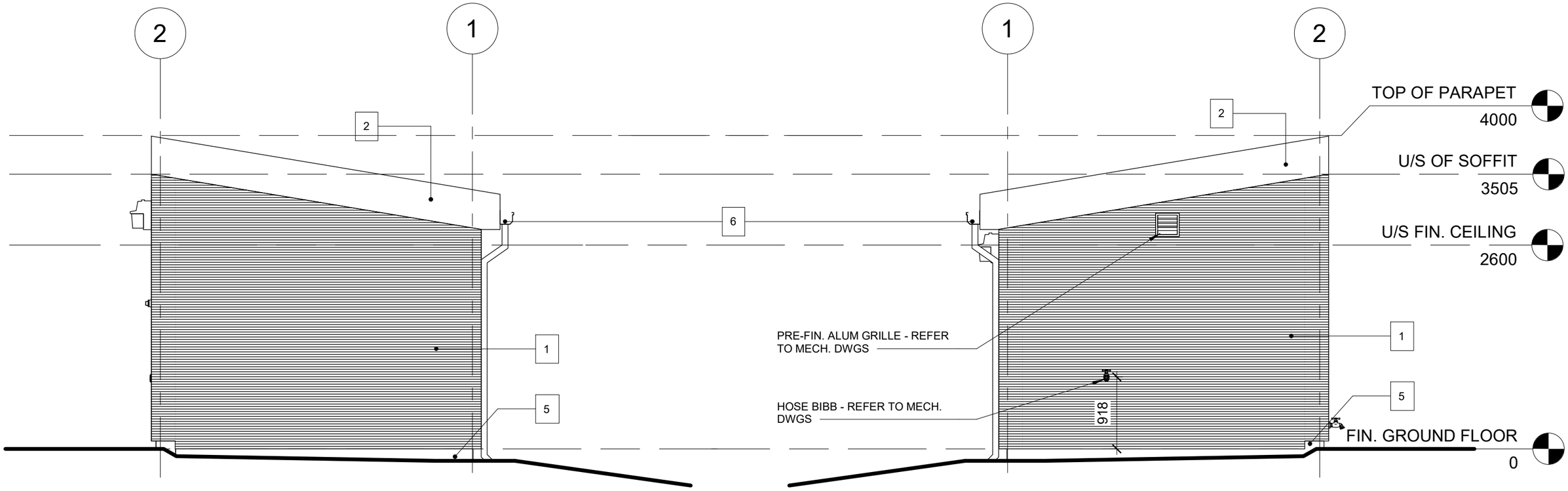
Checked by	JC/PA
Scale	As indicated

A3.1



1 BUILDING ELEVATION - WEST

1 : 50

2 BUILDING ELEVATION - EAST

1 : 50

ELEVATION MATERIAL LEGEND:

[1]	PREFINISHED METAL PANEL (HORIZONTAL)
[2]	PREFINISHED ALUMINIUM FLASHING
[3]	PREFINISHED METAL ROOF (STANDING SEAM)
[4]	THERMOPANE TRANSOM VISION PANEL
[5]	CAST IN PLACE CONCRETE
[6]	PRE-FINISHED ALUM. EAVES TROUGH AND DOWNSPOUTS
[7]	PREFINISHED METAL ROOF

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BUILDING ELEVATIONS

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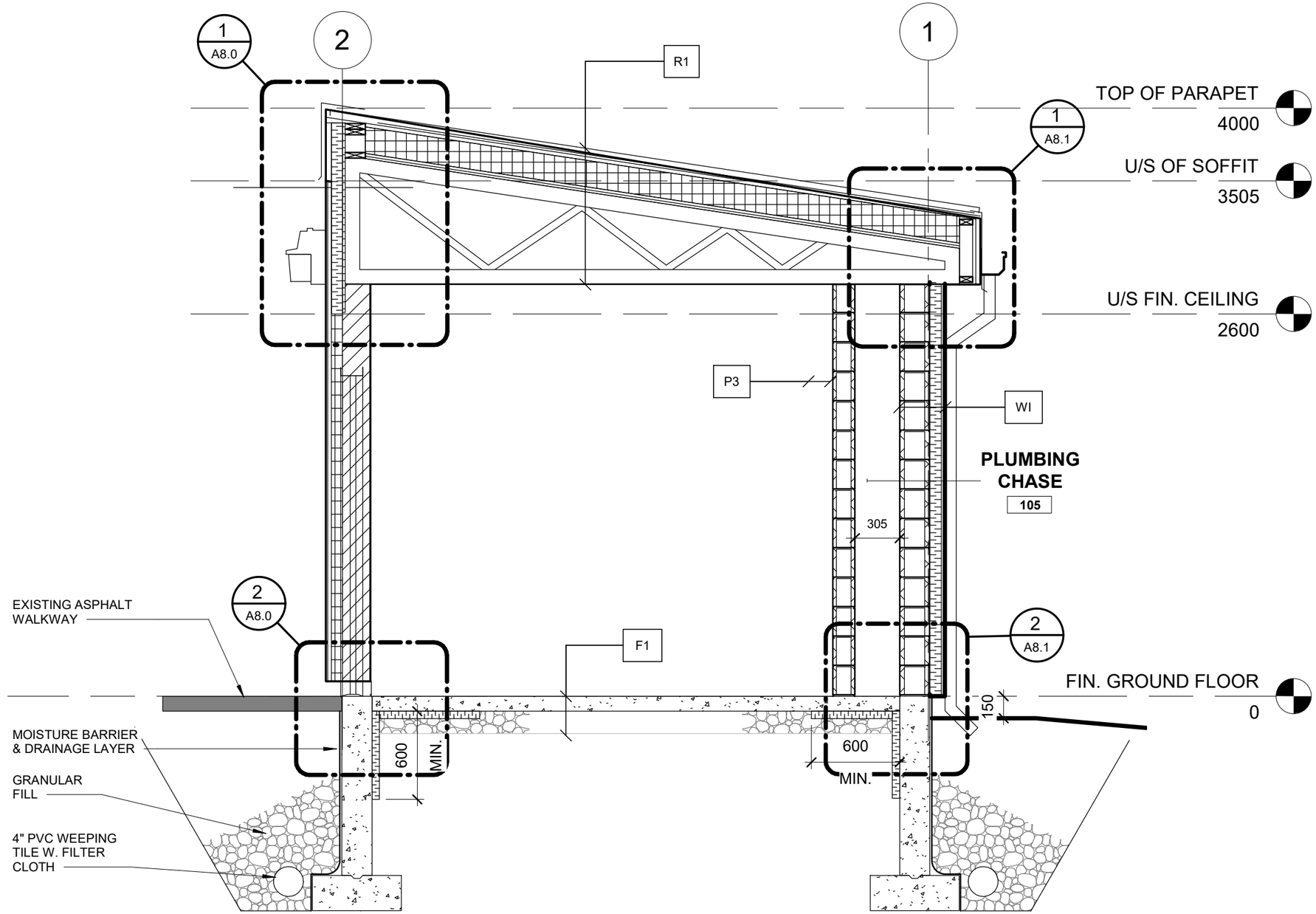
Drawn by	Author
Checked by	Checker
Scale	As indicated

A3.2



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WHITBY IROQUOIS SOCCER WASHROOM FACILITY

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BUILDING SECTIONS

Project number	19014
Date	02.04.2019
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Checked by	JC/PA
Scale	1 : 30

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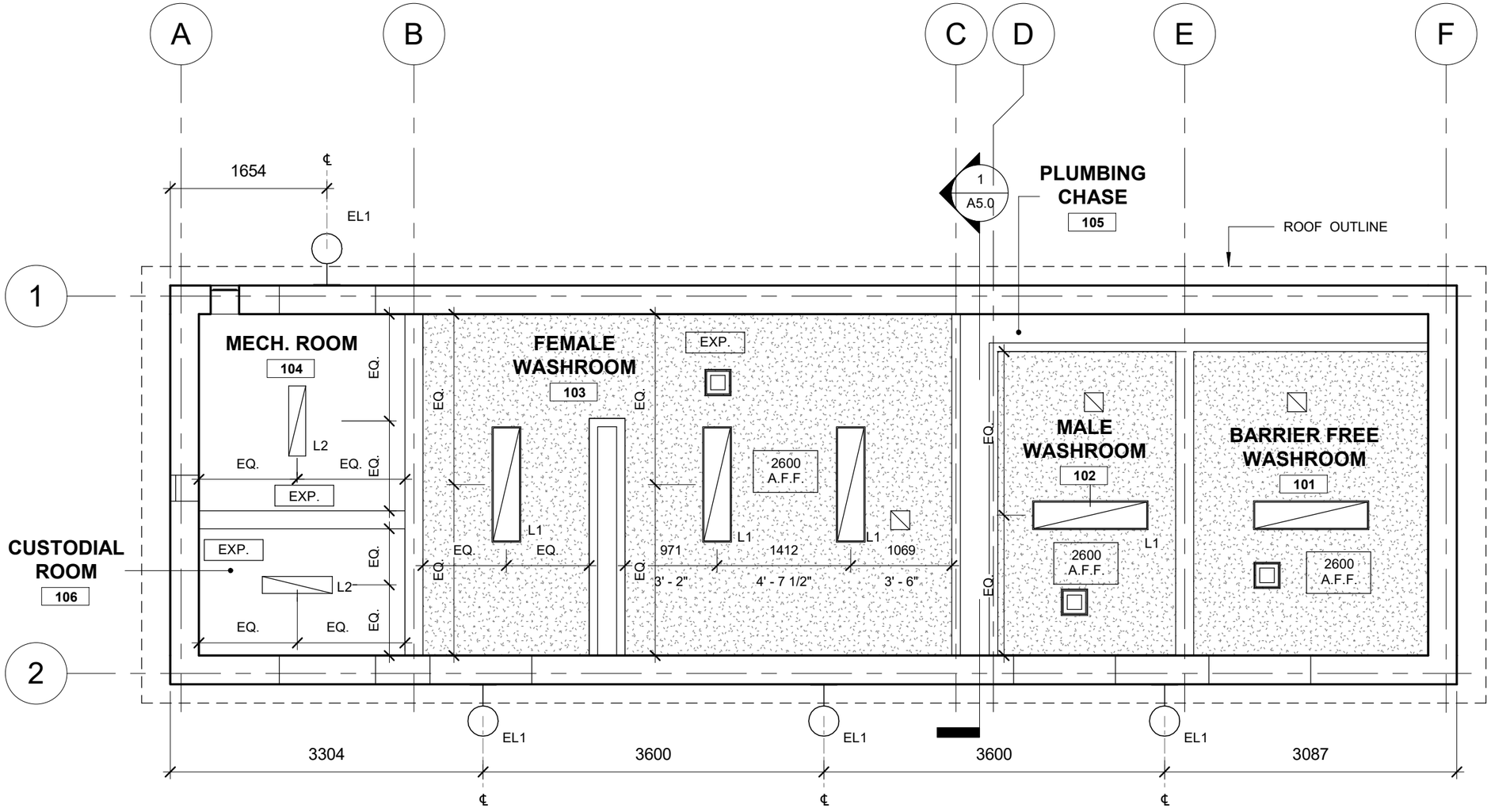

CEILING FINISH LEGEND:

- EXPOSED TO STRUCTURE ABOVE
- GYPSUM BOARD CEILING FINISH
- ACOUSTICAL CEILING TILE FINISH
- EL1 — EXTERIOR LUMINAIRE 1 (SURFACE MOUNTED PACK)
- EL2 — EXTERIOR LUMINAIRE 2 (RECESSED WALL MOUNTED)
- L1 — INTERIOR LUMINAIRE 1 RECESSED - REFER TO ELEC. DWG
- L2 — INTERIOR LUMINAIRE 2 PENDANT - REFER TO ELEC. DWG
- EXP. — EXPOSED DECK
- 2600 A.F.F. — CEILING HEIGHT FROM FIN. FLOOR
- DIFFUSER - REFER TO MECH.
- FAN - REFER TO MECH.

1 PROPOSED REFLECTED CEILING PLAN

1 : 50

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REFLECTED CEILING PLAN

Project number	19014
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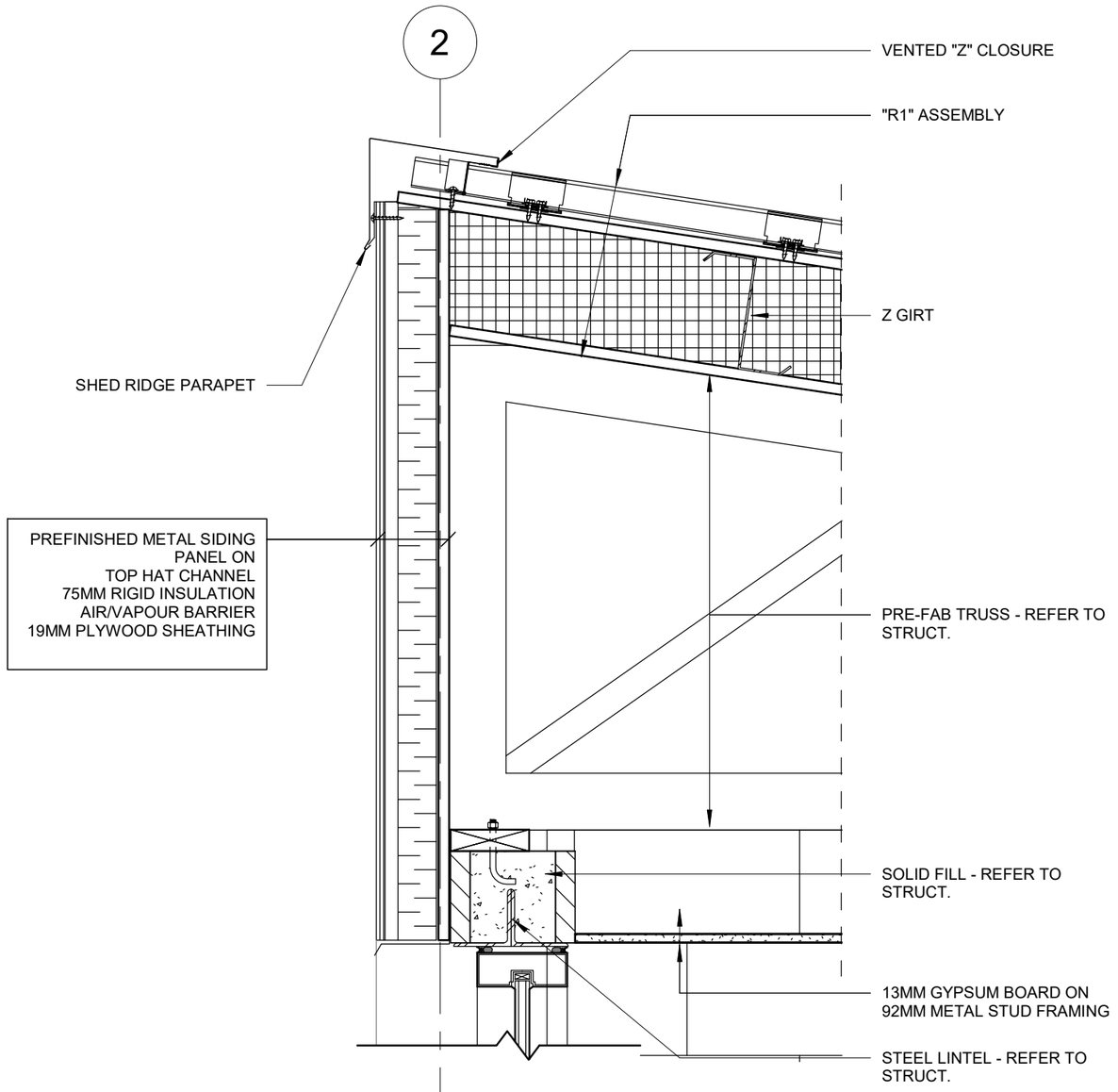
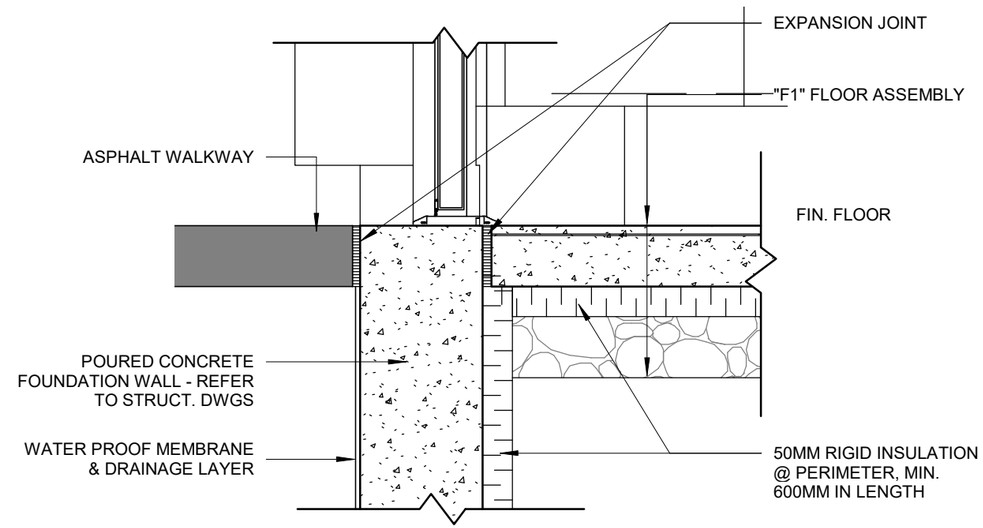
Drawn by	OS+
Checked by	JC/PA
Scale	As indicated

A7.0



1 SECTION THRU PARAPET

1 : 10



2 SECTION AT DOOR

1 : 10

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SECTION DETAILS

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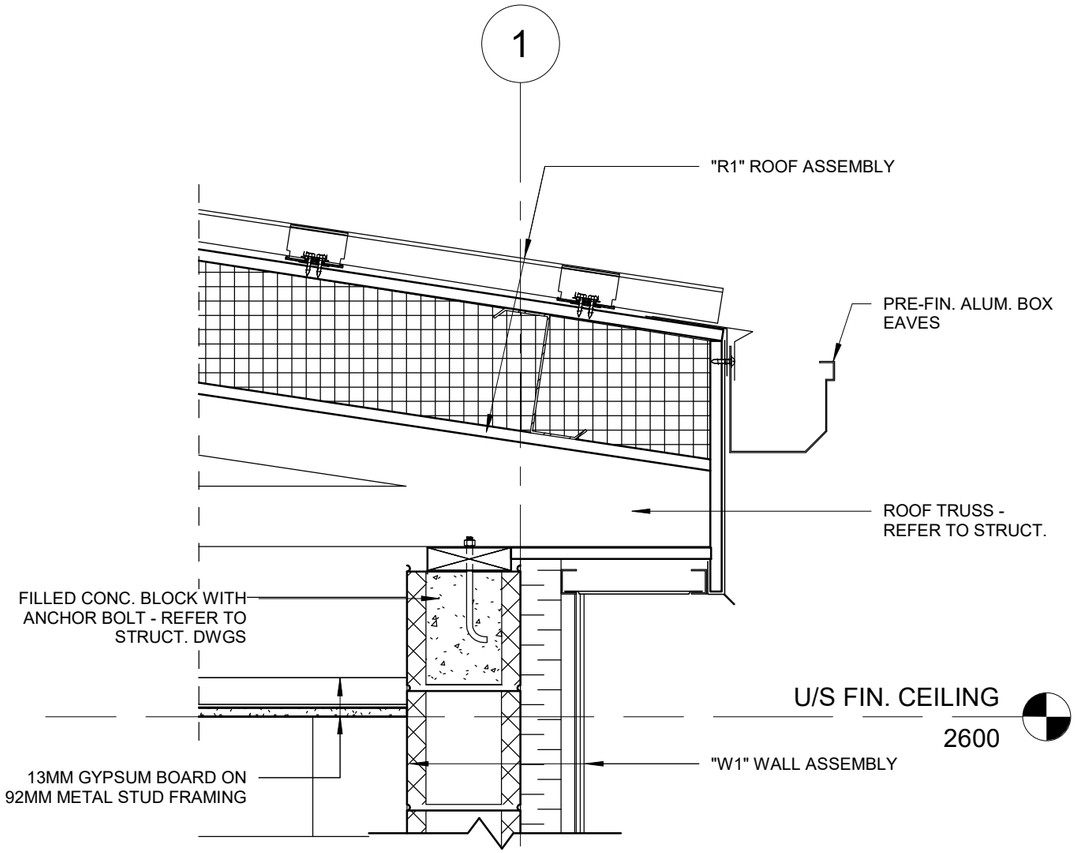
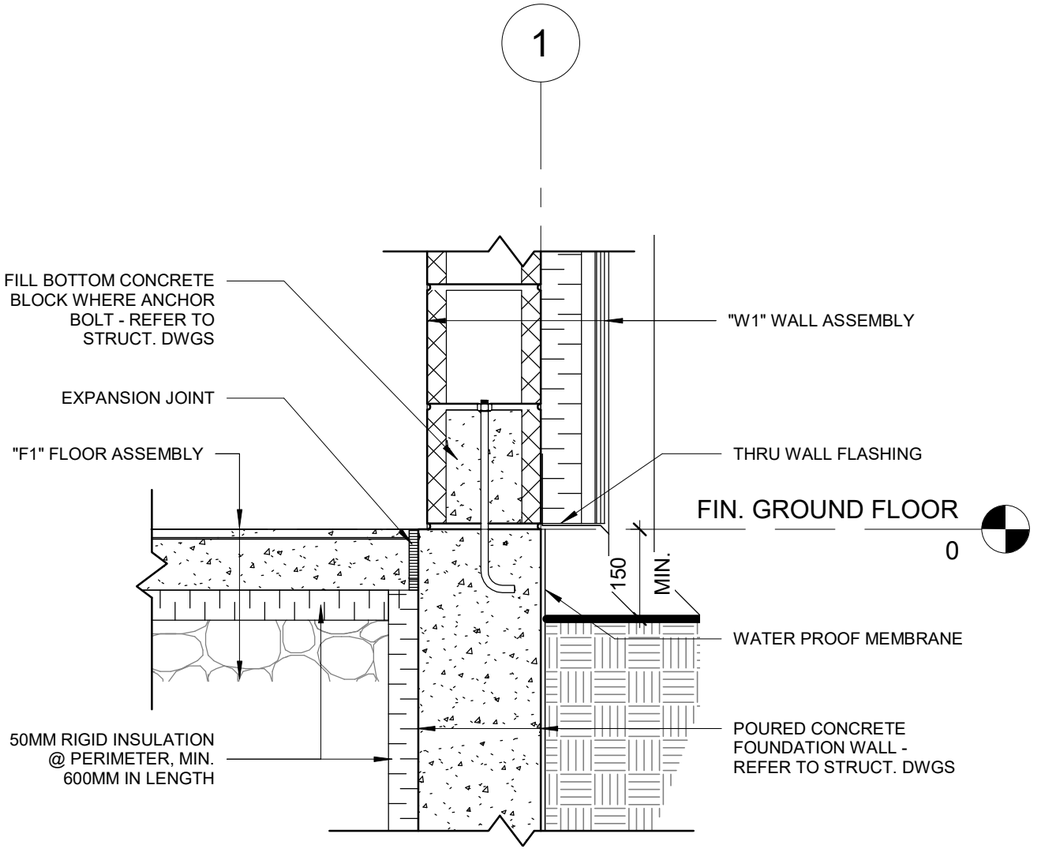


1 SECTION THRU ROOF EDGE/EAVES

1 : 10



2 WALL SECTION AT GRADE

1 : 10

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SECTION DETAILS

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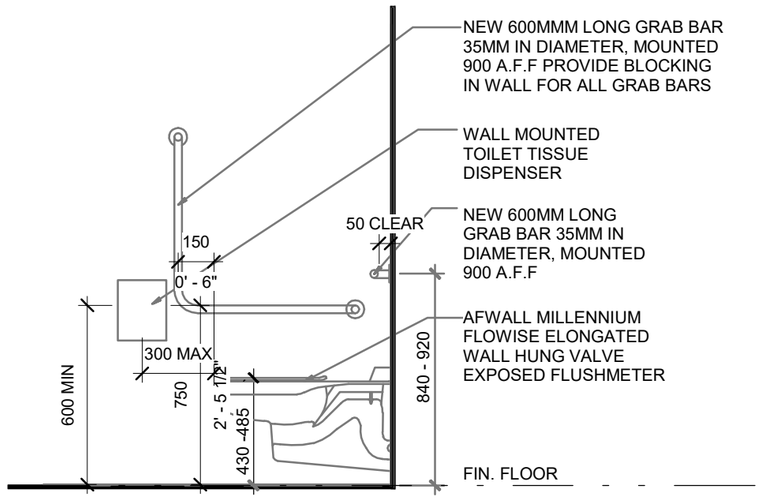
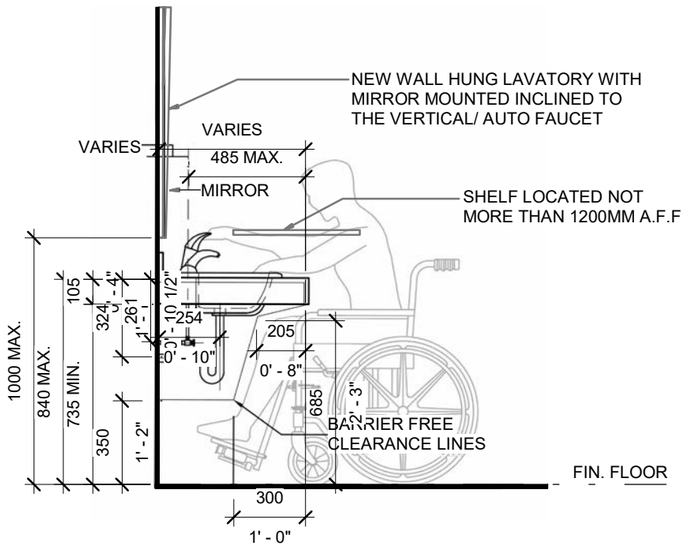
A8.1



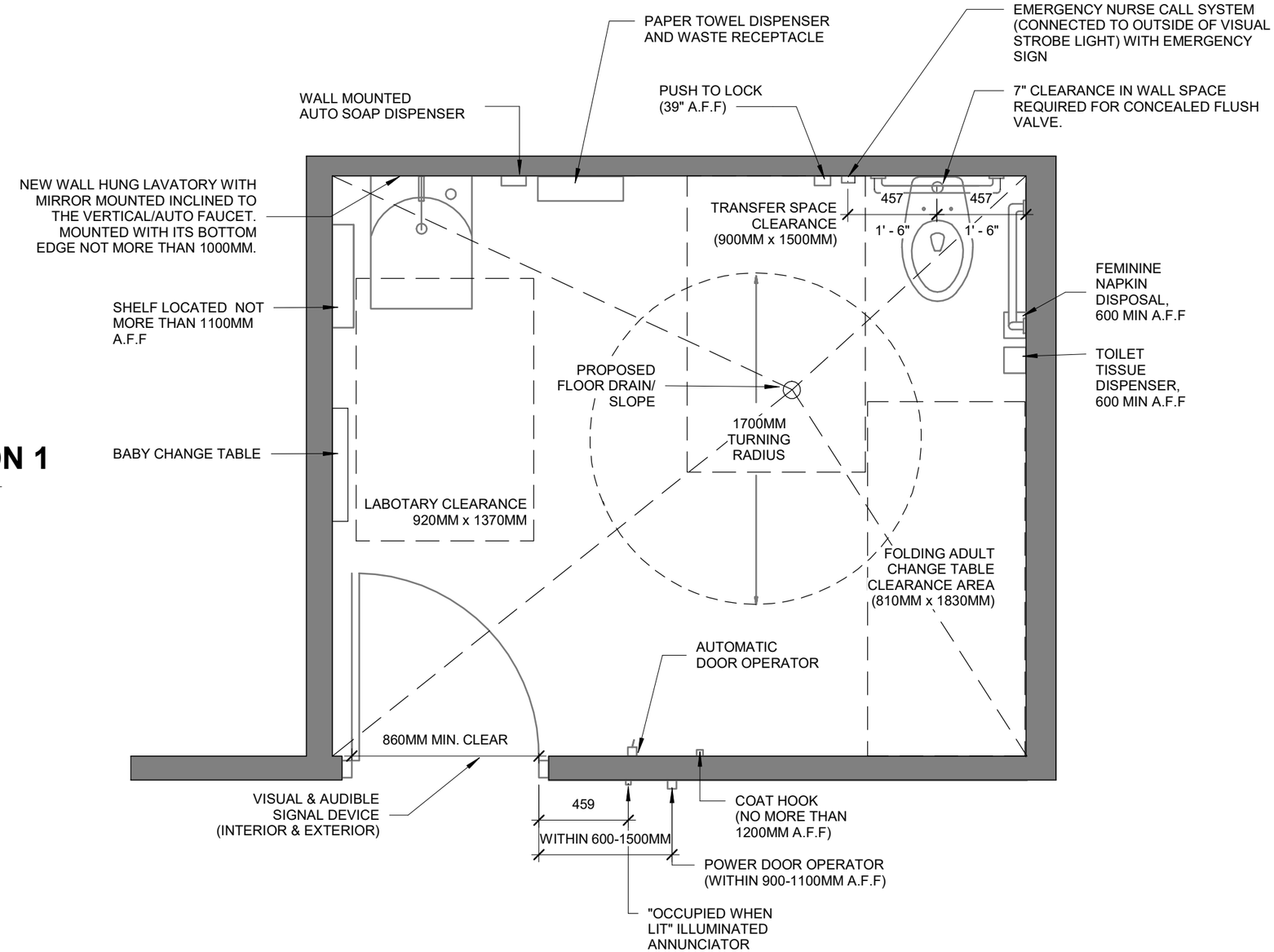
TYP. UNIVERSAL WASHROOM ELEVATION 1

1 : 25



TYP. UNIVERSAL WASHROOM ELEVATION 2

1 : 25



UNIVERSAL WASHROOM PLAN - ENLARGED

1 : 25

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ACCESSIBILITY DETAILS

Project number	19014
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Scale	1 : 25

A8.2

Room Schedule							
Number	Name	Area	Floor Finish	Base Finish	Wall Finish	Ceiling Finish	Comments
101	BARRIER FREE WASHROOM	7.9 m²	CT	CT	PT 1	PT 1	
102	MALE WASHROOM	6.0 m²	CT	CT	PT 1	PT 1	
103	FEMALE WASHROOM	19.2 m²	CT	CT	PT 1	PT 1	
104	MECH. ROOM	4.5 m²	CONC.		PT 1	-	
105	PLUMBING CHASE	2.5 m²	CONC.		-	-	
106	CUSTODIAL ROOM	2.9 m²	CONC.		PT 1	-	

BASE BUILDING DOOR SCHEDULE											
WTWTWT	Width	Height	Door Type	Door Material	Door Finish	Frame Material	Frame Finish	Frame Type	Fire Rating	Lockset	Comments
D101	965	2134	TYPE B	HM	PT 2	HM	PT 2	TYPE 1			1,2,3,4,5,6,7,8,9,10 - ELECTRIC STRIKE
D102	965	2134	TYPE B	HM	PT 2	HM	PT 2	TYPE 1			1,2,3,4,5,8,9,10
D103	965	2134	TYPE B	HM	PT 2	HM	PT 2	TYPE 1			1,2,3,4,5,8,9,10
D104	914	2134	TYPE A	HM	PT 2	HM	PT 2	TYPE 1			1,2,3,4,5,8,10
D105	914	2134	TYPE A	HM	PT 2	HM	PT 2	TYPE 1			1,2,3,4,5,8,10

FINISHES LEGEND:

ABBREV.	MATERIAL	MANUFACTURER	TYPE
ACT	ACOUSTIC CEILING TILE	TBD	TBD
CT	CERAMIC/PORCELAIN TILE	OLYMPIA TILE	60x60cm - REGAL - COLOUR T.B.D.
PT 1	PAINT	SHERWIN WILLIAMS	PROMAR 200 (0 VOC)-EGGSHELL FIN.; #7757 (HIGH REFLECTIVE WHITE)
PT 2	PAINT	SHERWIN WILLIAMS	PROMAR 400 (0 VOC)-EGGSHELL FIN.; COLOUR: TBD
WB	WALL BASE	OLYMPIA TILE	REGAL - REL TRIM - COLOUR T.B.D.
PLAM	PLASTIC LAMINATE	TBD	TBD
CONC	EXPOSED CONCRETE	TBD	SEALER
WD	SOLID WOOD	TBD	TBD

DOOR SCHEDULE REMARK

1. THERMALLY BROKEN FRAME
2. WEATHER STRIPPING
3. INSULATED DOOR AND FRAME
4. CLOSER
5. LEVER HANDLE
6. DOOR OPERATOR
7. PUSH TO LOCK
8. LOCK SET
9. WALL STOP
10. KICK PLATE

DOOR HARDWARE NOTES

1. SUBMIT HARDWARE SCHEDULE PREPARED BY A QUALIFIED ARCHITECTURAL HARDWARE CONSULTANT ON BEHALF OF THE HARDWARE SUPPLIER FOR REVIEW BY THE OWNER.
2. ALL FASTENERS SHALL MATCH HARDWARE
3. ALL DOOR HANDLES TO BE LEVER TYPE MEETING REQUIREMENTS OF AODA AND THE ONTARIO BUILDING CODE.
4. KEYING SCHEDULE IS TO BE PROVIDED BY THE TOWN TO THE G.C.
5. ALL LOCK CYLINDERS AND CORES SHALL BE SUPPLIED COMPLETE BY THE HARDWARE SUPPLIER, TO SUIT THE EXISTING BUILDING KEYING SYSTEM (ASSA ABLOY). INSTALLATION OF HARDWARE SHALL BE IN ACCORDANCE WITH ANSI A115.1G.
6. DOOR OPERATOR PUSH BUTTON MIN. 381MM FORM FLOOR AND MAX. 1219MM FROM FINISHED FLOOR.

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WHITBY IROQUOIS SOCCER WASHROOM FACILITY

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SCHEDULES

Project number	19014
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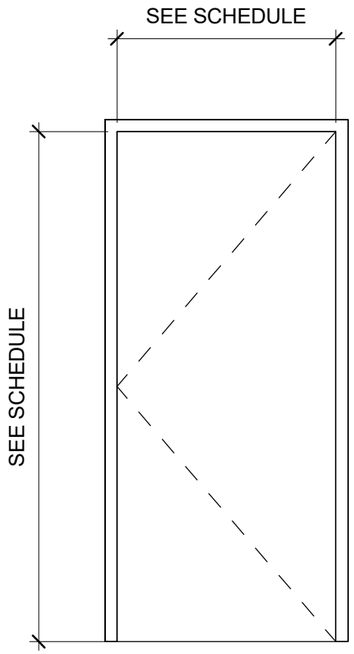
Scale	1 : 1

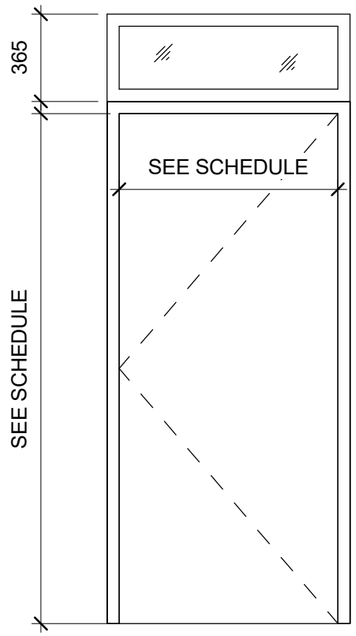
A9.0

DOOR TYPES:



DOOR TYPE A

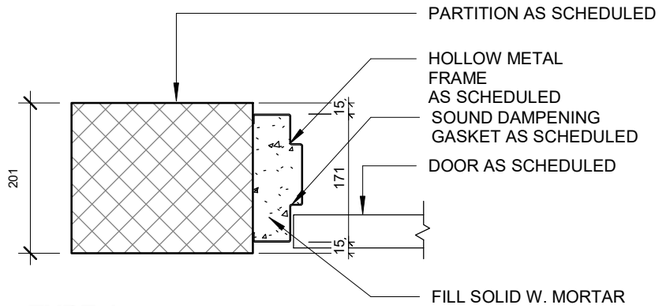
44mm THICK (SEE SCHED. FOR DIMS.)
INSULATED METAL DOOR
FRAMES TO BE PAINTED INSULATED
HOLLOW METAL



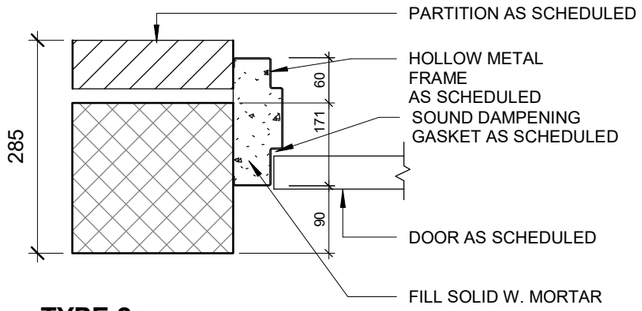
DOOR TYPE B

44mm THICK (SEE SCHED. FOR DIMS.)
INSULATED METAL DOOR WITH
THERMOPANE DOUBLE PANE GLASS
TRANSOM, THERMALLY BROKEN,
TEMPERED COMPLETE WITH PRIVACY
WINDOW FILM (3M OR APPROVED EQUIV.)
FRAMES TO BE PAINTED INSULATED
HOLLOW METAL

DOOR FRAME TYPES



TYPE 1 :



TYPE 2 :

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No.	Description	Date
1	ISSUED FOR REVIEW	2019.04.11
2	ISSUED FOR PERMIT CO-ORDINATION	2019.04.18
3	ISSUED FOR PERMIT/TENDER	2019.05.03
4	REV. 1 - ISSUED FOR CO-ORDINATION	2019.05.24
5	REV. 1 - ISSUED FOR PERMIT/TENDER	2019.05.31

WHITBY IROQUOIS SOCCER
WASHROOM FACILITY

695 Rossland Rd. W.
Whitby ON
L1R 2P2

DOOR SCHEDULE

Project number	19014
Date	02.04.2019
Drawn by	Author
Checked by	Checker
Scale	As indicated

A9.1

GENERAL REQUIREMENTS

1 GENERAL NOTES

.1 THE STRUCTURAL DRAWINGS ARE TO BE READ IN CONJUCTION WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND SITE SERVICING DRAWINGS. CHECK ALL DIMENSIONS ON THESE DRAWINGS WITH ARCHITECTURAL DRAWINGS. REPORT ANY INCONSISTENCIES TO ARCHITECT OR ENGINEER BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE THESE DRAWINGS.

.2 BUILDING FROM THESE DRAWINGS SHALL PROCEED ONLY WHEN MARKED "ISSUED FOR CONSTRUCTION".

.3 PROTECT ALL FOOTINGS, WALLS, SLABS ON GRADE AND ADJACENT SOIL AGAINST FROST ACTION AND FREEZING AT ALL TIMES DURING CONSTRUCTION.

.4 ALL EXTERIOR WALLS AND FOOTINGS SUBJECT TO FREEZING WHEN THE CONSTRUCTION IS COMPLETED SHALL BE FOUNDED AT STRATA SAFELY SUPPORTING THE DESIGN BEARING PRESSURE BUT NOT LESS THAN 1220mm (4'-0") (OR DEPTH OTHERWISE PRESCRIBED BY LOCAL AUTHORITIES) BELOW FINISHED GRADE OR AS OTHERWISE INDICATED ON PLANS OR SECTIONS. ALL OTHER FOOTINGS SHOULD BE FOUNDED ON SOIL AS DESCRIBED ABOVE BUT NOT LESS THAN 610mm (2'-0") BELOW THE ORIGINAL GRADE.

.5 THE LINE OF SLOPE BETWEEN ADJACENT EXCAVATIONS FOR FOOTINGS OR ALONG STEPPED FOOTINGS OR TRENCHES SHALL NOT EXCEED A RISE OF 7 IN A RUN OF 10, MAXIMUM STEP TO BE 610mm (2'-0").

.6 KEEP EXCAVATIONS CONTINUOUSLY DRY BEFORE CONCRETE IS PLACED. REMOVE ANY LOOSE MATERIAL OR SOIL SOFTENED BY WATER PRIOR TO PLACING CONCRETE.

.7 CENTRE FOOTINGS AND PIERS UNDER CENTROID OF COLUMNS UNLESS OTHERWISE NOTED.

.8 DO NOT BACKFILL AGAINST WALLS RETAINING EARTH UNTIL ELEMENTS PROVIDING LATERAL SUPPORT ARE COMPLETE. PLACE BACKFILL SIMULTANEOUSLY ON BOTH SIDES OF OTHER WALLS BELOW GRADE.

.9 THESE DRAWINGS SHOW THE COMPLETED STRUCTURE. THE CONTRACTOR IS TO PROVIDE ALL NECESSARY BRACING AND SHORING REQUIRED DURING CONSTRUCTION. THE CONTRACTOR SHALL ALSO PROVIDE ALL NECESSARY BRACING, SHORING AND OTHER TEMPORARY SUPPORT TO PROTECT ALL EXISTING AND ADJACENT STRUCTURES AFFECTED BY THIS WORK. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ALL SUCH MEASURES.

.10 PROVIDE CONTINUOUS GALVANIZED VERTICAL DOVETAIL ANCHOR SLOTS AT 610mm (2'-0") IN ALL CONCRETE SURFACES WITH VENEER AND ABUTTING CONCRETE BLOCK WALLS.

.11 ALL BEAMS BEARING ON WALLS SHALL HAVE A MINIMUM BEARING OF 203mm (8") UNLESS OTHERWISE NOTED. CONCRETE SLABS SHALL HAVE A MINIMUM BEARING OF 102mm (4"). VOIDS IN MASONRY UNITS UNDER BEAMS AND JOISTS SHALL BE PREFILLED WITH 20MPa CONCRETE OR GROUT TO A MINIMUM DEPTH OF 203mm (8") AND A MINIMUM LENGTH OF 203mm (8") BEYOND THE BEARING SURFACE UNLESS OTHERWISE NOTED. LEAVE CHASES AND POCKETS IN WALLS FOR SEATING OF SLABS AND BEAMS.

.12 BARS MARKED CONTINUOUS SHALL BE DEVELOPED BY A CLASS C TENSION LAP WHERE SPLICED.

.13 T.D. SECTIONS REFER TO TYPICAL DETAILS. THEY SHOW STRUCTURAL INTENT RATHER THAN ACTUAL CONDITIONS FOR THIS PROJECT.

.14 UNLESS OTHERWISE SHOWN ON THE DRAWINGS, PROVIDE LOOSE LINTELS OVER ALL OPENINGS IN NON-BEARING CONCRETE BLOCK WALLS OR VENEER AS FOLLOWS: FOR OPENINGS UP TO 1200mm (3'-11") WIDE, USE L89x89x6 (L3.5x3.5x1/4) FOR EACH 102mm (4") OF MASONRY. FOR OPENINGS BETWEEN 1200mm (3'-11") AND 1800mm (5'-11"), USE L102x89x8 (L4x3.5x5/16) LLV FOR EACH 102mm (4") OF MASONRY. FOR OPENINGS BETWEEN 1800mm (5'-11") AND 2400mm (7'-10"), USE L127x89x8 (L5x3.5x5/16) LLV FOR EACH 102mm(4") OF MASONRY. AND FOR OPENINGS BETWEEN 2400mm (7'-10") AND 3000mm (9'-10") PROVIDE L152x102x10 (L6x4x3/8) LLV FOR EACH 102mm (4") OF MASONRY. PROVIDE MINIMUM OF 102mm (4") BEARING OF EACH END FOR OPENINGS UP TO 1200mm (3'-11"), 152mm (6") FOR OPENINGS BETWEEN 1200mm (3'-11") AND 1800mm (5'-11") AND 203mm (8") FOR OPENINGS BETWEEN 1800mm (5'-11") AND 3000mm (9'-10"). LINTELS IN EXTERIOR MASONRY WALLS ARE TO BE HOT DIPPED GALVANIZED.

2 SHOP DRAWINGS, INSPECTION AND TESTING

.1 FOR ALL STRUCTURAL COMPONENTS SHOWN ON THESE DRAWINGS SUBMIT COPIES OF SHOP DRAWINGS AS DIRECTED BY THE ENGINEER. SHOP DRAWINGS ARE TO SHOW COMPLETE INFORMATION FOR THE FABRICATION AND ERECTION OF THE STRUCTURAL COMPONENTS. THE SUBSEQUENT REVIEW BY THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR MAKING THE WORK ACCURATE AND IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

.2 AN INDEPENDENT INSPECTION AND TESTING COMPANY OR A SOILS CONSULTANT ARE TO BE ENGAGED TO CARRY OUT THE FOLLOWING SERVICES:

a) SOIL: PREPARATION OF A SOIL REPORT BY THE SELECTED SOILS CONSULTANT AND INSPECTION OF BEARING SOILS PRIOR TO INSTALLATION OF FOUNDATIONS.
b) SUB-BASE FOR SLAB ON GRADE: INSPECTION FOR ADEQUACY OF COMPACTION AND QUALITY OF FILL USED.
c) STRUCTURAL STEEL, STEEL DECK AND OWSJ: ROUTINE SHOP AND FIELD INSPECTION AS DIRECTED BY CSA S16-09.
d) CAST IN PLACE AND PRECAST CONCRETE: ROUTINE INSPECTION OF MATERIALS, COMPRESSIVE STRENGTH, AIR ENTRAINMENT, SLUMP AND REINFORCING STEEL TEST WHEN REQUIRED AND AS DIRECTED BY CSA A23.1-09 AND CSA A23.2-09.
e) MASONRY: AS DIRECTED, CONCRETE BLOCKS AND BRICKS ARE TO BE TESTED BY APPROPRIATE STANDARDS (SEE ALSO MASONRY MATERIAL GUIDELINES). MORTAR AND GROUT IN ACCORDANCE WITH CAN/CSA-A179-04.

.3 ALL INSPECTION AND TESTING SERVICES ARE TO BE PERFORMED BY COMPANIES CERTIFIED BY THE CANADIAN STANDARDS ASSOCIATION AND FOR WELDING, THE WELDING BUREAU.

3 MATERIAL DATA

.1 STRUCTURAL LUMBER TO BE GRADE MARKED TO CONFORM TO CSA O141-05.

.2 CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS: 30MPa UNLESS, NOTED. CONFORM TO CSA A23.1-09 AND CAN/CSA-A23.3-04 (R2010), AND THE RSIO MANUAL OF STANDARD PRACTICE. (CONCRETE SHALL BE READY MIXED USING PORTLAND GU CEMENT (FORMERLY TYPE 10). AIR-ENTRAINING AGENTS AND CHEMICAL ADMIXTURES SHALL CONFORM TO CSA A23.1-09. ALL CONCRETE SHALL CONTAIN A WATER REDUCING AGENT. ALL CONCRETE EXPOSED TO THE EXTERIOR SHALL HAVE AN AIR CONTENT CONFORMING TO A23.1-09. USE VIBRATORS FOR THE PLACEMENT OF CONCRETE. DO NOT PLACE CONCRETE IN THE RAIN.

READ THIS DRAWING IN CONJUNCTION WITH CONTRACT DRAWINGS, ALL MATERIAL AS CONTRACT DRAWINGS UNLESS NOTED.

NO.	DESCRIPTION	DATE
3	RE-ISSUED FOR PERMIT	MAY. 31/19
2	FOR PERMIT AND TENDER	MAY. 03/19
1	FOR REVIEW	SEPT. 25/18

REVISIONS/ISSUES

LICENSED PROFESSIONAL ENGINEER
R.J. VAN GROLL
MAY. 31/19
PROVINCE OF ONTARIO

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WASHROOM FACILITY OPTION A
695 ROSSLAND ROAD WEST,
WHITBY, ONTARIO

GENERAL REQUIREMENTS AND SPECIFICATIONS

DRAWN BY	SCALE	DATE	PROJECT No.
NW	N/A	MAY 2019	18-3314A

DRAWING No. **S0.1**

.3 REINFORCING STEEL: CSA G30.18-09, GRADE 400. USE PLASTIC OR CONCRETE BAR SUPPORTS IN EXPOSED LOCATIONS.

.4 STRUCTURAL STEEL: CSA G40.20-13/G40.21-13.
a) ROLLED SHAPES AND PLATES: GRADE 350W
b) HOLLOW STRUCTURAL SECTIONS: CLASS H GRADE 350W
c) ANGLES: GRADE 300W
d) WELDING ELECTRODES: E49XX
e) FASTENERS: A325/A325M
f) ANCHOR RODS: CSA G40.21-13 GRADE 300W

.5 MASONRY MATERIALS:
a) LOAD BEARING CONCRETE BLOCK: TO CAN/CSA STANDARD A165 SERIES-04. (R2009).
WEIGHT: NORMAL WEIGHT
HOLLOW: H/15/A/M
SOLID: S/15/A/M
b) LOAD BEARING BRICK: TO CAN/CSA-A82-06 (R2011)
c) BELOW GRADE MORTAR: TYPE S UNLESS NOTED.

4 CODES AND STANDARDS

.1 CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE BUILDING CODE OF THE GOVERNING PROVINCE AND THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.

.2 CONCRETE MATERIALS AND DESIGN: TO CSA STANDARD A23.1-09 AND CAN/CSA A23.3-04 (R2010) RESPECTIVELY.

.3 CONCRETE CONSTRUCTION: TO CSA STANDARD A23.1-09.

.4 MASONRY DESIGN AND CONSTRUCTION: TO CSA S304.1-04 (R2010) AND CAN/CSA-A371-04 (R2009) RESPECTIVELY.

.5 STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION: TO CSA S16-09.

.6 WELDING: TO CSA W59-03 (R2008), CSA S16-09 AND CSA W47.1-09.

.7 PAINT AND PRIMER: TO CISC/CPMA STANDARDS 1-73A, 1975 AND CISC/CPMA STANDARDS 2-75, 1975 RESPECTIVELY.

5 DESIGN DATA FOR WHITBY

.1 ALL LOADS SHOWN ON DRAWINGS ARE UNFACTORED SERVICE LOADS IN kN (kips) AND kPa (psf) UNLESS OTHERWISE NOTED.

.2 THE WIND, EARTHQUAKE & SNOW LOADS MUST BE MULTIPLIED BY AN IMPORTANCE FACTOR WHICH IS BASED UPON THE BUILDING IMPORTANCE CATEGORY. THE IMPORTANCE CATEGORY OF THIS BUILDING IS NORMAL.

IMPORTANCE CATEGORY	IMPORTANCE FACTORS					
	WIND, Iw		SNOW, Is		EARTHQUAKE, Ie	
	ULS	SLS	ULS	SLS	ULS	SLS
LOW	0.8	0.75	0.8	0.9	0.8	REFER TO COMMENTARY J OF NBC 2010 USERS GUIDE
NORMAL	1.0	0.75	1.0	0.9	1.0	
HIGH	1.15	0.75	1.15	0.9	1.3	
POST-DISASTER	1.25	0.75	1.25	0.9	1.5	

.3 FOR FACTORED SOIL BEARING CAPACITY FOR FOOTING DESIGN, SEE FOUNDATION PLAN.

.4 LATERAL LOADS ON STRUCTURAL FRAME THE STRUCTURE HAS BEEN DESIGNED TO RESIST THE HORIZONTAL 1/50 AVERAGE HOURLY WIND PRESSURE AND THE LIVE LOADS DUE TO EARTHQUAKE IN ACCORDANCE WITH THE BUILDING CODE OF THE GOVERNING PROVINCE, WHICHEVER PRODUCES THE MORE UNFAVOURABLE EFFECT. THE DESIGN PARAMETERS FOR WIND AND EARTHQUAKE ARE AS NOTED BELOW:
a) WIND LOADS
q1/50 = 0.48kPa. Ce, Cg & Cp HAVE BEEN CALCULATED IN ACCORDANCE WITH THE STATIC PROCEDURE DESCRIBED IN THE USER'S GUIDE TO THE NBC 2010 STRUCTURAL COMMENTARIES.
b) EARTHQUAKE LOADS:
SITE CLASS: D, T.B.C.
TYPE OF SFRS: CONVENTIONAL CONSTRUCTION OF MASONRY SHEAR WALLS ANALYSIS: EQUIVALENT LATERAL FORCE PROCEDURE (STATIC)
Sa(0.2)=0.190, Sa(0.5)=0.120, Sa(1.0)=0.071, Sa(2.0)=0.022, PGA=0.075.

.5 LATERAL LOADS ON FOUNDATION WALLS
a) WALLS RETAINING EARTH ARE DESIGNED TO SAFELY WITHSTAND A HORIZONTAL PRESSURE (P IN kPa) AT ANY DEPTH (H IN m) GIVEN BY THE EXPRESSION (VALUES AS NOTED UNLESS OTHERWISE STATED IN A SOILS REPORT):
P = Ka(gh + q)
WHERE THE SOIL PRESSURE COEFFICIENT, Ka = 0.4 (T.B.C.)
UNIT FORCE OF SOIL, g = 21.0kN/cu.m (133pcf)
SURCHARGE q = 5kPa (105psf) FOR NON VEHICULAR TRAFFIC AREAS.
q = 12kPa (250psf) FOR VEHICULAR TRAFFIC AREAS
(INCLUDING CONSTRUCTION VEHICLES)

b) THE WALLS HAVE BEEN DESIGNED ASSUMING FREE DRAINING BACKFILL, WHICH DOES NOT PERMIT THE BUILD-UP OF HYDROSTATIC PRESSURE.

.6 LIVE LOADS ON ROOFS
a) THE ROOF AREAS HAVE BEEN DESIGNED TO RESIST SNOW, RAIN AND WIND LOADS IN ACCORDANCE WITH THE BUILDING CODE OF THE GOVERNING PROVINCE, WHICHEVER PRODUCES THE MORE UNFAVOURABLE EFFECT. THE DESIGN PARAMETERS FOR THESE LOADS ARE AS NOTED BELOW.
b) SNOW LOADS WITH A 1 IN 50 PROBABILITY OF EXCEEDANCE PER YEAR.
i) THE GROUND SNOW LOAD OF 1.2kPa AND THE ASSOCIATED RAIN LOAD OF 0.4kPa, MODIFIED AS REQUIRED OR PERMITTED BY CODE, HAVE BEEN CONSIDERED IN THE DESIGN OF THE ROOF AREAS.
ii) ADDITIONAL SNOW ACCUMULATION ADJACENT TO HIGHER WALLS, ROOFS AND MECHANICAL UNITS IS INDICATED ON THE PLANS.
c) RAIN LOADS WITH A 1 IN 50 PROBABILITY OF EXCEEDANCE PER YEAR.
i) THE TOTAL LOAD ASSOCIATED WITH THE 24-HOUR RAINFALL, IN ACCORDANCE WITH THE BUILDING CODE OF THE GOVERNING PROVINCE IS EQUIVALENT TO 86mm OF WATER OVER THE ENTIRE ROOF AREA.
ii) THE ACTUAL DISTRIBUTION OF THIS LOAD HAS BEEN ADJUSTED TO ACCOUNT FOR THE ACTUAL ROOF SLOPES AND PROFILE.

END OF SECTION

READ THIS DRAWING IN CONJUNCTION WITH CONTRACT DRAWINGS, ALL MATERIAL AS CONTRACT DRAWINGS UNLESS NOTED.

NO.	DESCRIPTION	DATE
3	RE-ISSUED FOR PERMIT	MAY. 31/19
2	FOR PERMIT AND TENDER	MAY. 03/19
1	FOR REVIEW	SEPT. 25/18

REVISIONS/ISSUES

LICENSED PROFESSIONAL ENGINEER
R.J. VAN GROLL
MAY. 31/19
PROVINCE OF ONTARIO

ATKINS + VAN GROLL INC.
CONSULTING ENGINEERS
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WASHROOM FACILITY OPTION A
695 ROSSLAND ROAD WEST, WHITBY, ONTARIO

GENERAL REQUIREMENTS AND SPECIFICATIONS

DRAWN BY	SCALE	DATE	PROJECT No.
NW	N/A	MAY 2019	18-3314A

DRAWING No. **S0.2**

CAST-IN-PLACE CONCRETE

1 GENERAL

.1 CONFORM TO THE GENERAL REQUIREMENTS ON THE DRAWINGS.

.2 INCLUDE IN THE WORK OF THIS SECTION ALL CONCRETE INCORPORATED IN THE PROJECT.

.3 CONFORM TO CSA STANDARDS A23.1-09/A23.2-09 AND A23.3-04 (R2010), AND THE RSIC MANUAL OF STANDARD PRACTICE (4TH ED. 2004).

.4 INSTALL, OR SUPPLY AND INSTALL, ANCHORAGE, FASTENINGS AND BLOCKING AS REQUIRED, FOR WORK OF OTHER SECTIONS.

.5 MATERIALS SHOWN ON THE DRAWINGS OR IN THIS SPECIFICATION ARE TO ESTABLISH THE REQUIRED DEGREE OF QUALITY OR PERFORMANCE. SUBSTITUTION MAY BE PERMITTED UPON PROOF OF EQUIVALENCE. SUBMIT WRITING IN ADVANCE OF SHOP DRAWINGS. EACH ITEM SHALL BE CLEARLY IDENTIFIED. DO NOT PROCEED WITH PROPOSAL UNLESS IT IS ACCEPTED IN WRITING BY THE ENGINEER.

.6 TOLERANCES: CONFORM TO CSA STANDARD A23.1-09.

.7 SUBMIT FOUR (4) WHITE PRINTS OF BAR LISTS AND PLACING DIAGRAMS TO ENGINEER TO REVIEW PRIOR TO FABRICATION OF REINFORCING STEEL. DRAW DIAGRAMS TO A SCALE OF NOT LESS THAN 1 : 50 (1/4"=1'-0"). REVIEW OF SHOP DRAWINGS IS A PRECAUTION AGAINST OVERSIGHT OR ERROR. IT IS NOT A DETAILED CHECK AND SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR OF RESPONSIBILITY FOR MAKING THE WORK ACCURATE AND IN CONFORMITY WITH THE CONTRACT DOCUMENTS. MAINTAIN A SET OF REVIEWED DRAWINGS ON SITE.

2 PRODUCTS

.1 MATERIALS:

a) CEMENT: PORTLAND GU CEMENT (FORMERLY TYPE 10) TO CAN/CSA-A3000-08.
b) WATER, FINE AGGREGATES, COARSE AGGREGATES: TO A23.1-09.
c) AIR-ENTRAINING ADMIXTURE: TO ASTM C260/C260M-10a.
d) CHEMICAL ADMIXTURES: TO ASTM C494/C494M-13.
e) CURING-SEALING COMPOUND: CLEAR LIQUID TO ASTM C309-11, TYPE 1. USE SEALTIGHT CR-26 BY W.R. MEADOWS OF CANADA LTD.
f) WATERSTOP: DURAJOINT P.V.C. WATERSTOP, TYPE 3.
g) REINFORCING STEEL: NEW, DEFORMED, BILLET-STEEL BARS TO CAN/CSA-G30.18-09, GRADE 400.
h) WELDED WIRE REINFORCEMENT: TO ASTM A1064/A1064M-13, SIZE AS INDICATED. SUPPLY IN FLAT SHEETS ONLY.
i) FORMWORK: CAN/CSA-S269.3-M92 (R2013)
j) PLYWOOD FOR FORMWORK: COFI EXTERIOR GRADE, TO CSA O121-08 (R2013). DO NOT USE INSERT PATCHES ON CONTACT FACE.
k) SAW-CUT JOINT FILLER: USE CEMENT GROUT. USE GRAY POLYSULPHIDE CAULKING IN EXPOSED LOCATIONS.
l) PREMOULDED JOINT FILLER: USE 6mm (1/4") THICK "KONOBOARD" FROM GOODCO.
m) NON-METALLIC FLOOR SURFACE HARDENER: COLOURCRON BY MASTER BUILDERS' COMPANY LIMITED

.2 USE READY-MIXED CONCRETE TO GIVE 28 DAY COMPRESSIVE STRENGTH AS SPECIFIED IN "CONCRETE REQUIREMENTS" TABLE ON SHEET S0.4. MINIMUM CEMENT CONTENT FOR SLABS IS 285 kg/cu.m, EXCEPT FOR SIDEWALKS AND PARKING AREAS THE MINIMUM CEMENT CONTENT IS 320 kg/cu.m.

3 EXECUTION

.1 NOTIFY THE ARCHITECT AND THE ENGINEER 48 HOURS IN ADVANCE OF PLACING CONCRETE TO PERMIT VIEWING REINFORCEMENT AND PLACING OF CONCRETE. DO NOT CLOSE FORMS UNTIL THE REINFORCEMENT HAS BEEN REVIEWED.

.2 USE VIBRATORS FOR PLACEMENT OF CONCRETE. DO NOT PLACE CONCRETE IN THE RAIN.

.3 USE PLASTIC OR CONCRETE BAR SUPPORTS IN EXPOSED LOCATIONS AND PARKING AREAS.

.4 EXPOSED CONCRETE SHALL BE FREE FROM HONEYCOMBING, VOIDS, LOSS OF FINES, VISIBLE FLOW LINES AND COLD JOINTS, CHIPS AND SPALLS. EXPOSED CONCRETE SHALL BE RUBBED SMOOTH USING WATER AND CARBORUNDUM BRICK. PATCH DEFECTS AND TIE HOLES. REMOVE FINS.

.5 PROVIDE MINIMUM CONCRETE COVER FOR REINFORCING BARS AS INDICATED IN TABLE ON SHEET S0.4. IF FIRE RATING IS NOT AVAILABLE PROVIDE MIN. COVER FOR 2 HOURS UNLESS NOTED.

.6 ALL ADDITIVES REQUIRED IN THE CONCRETE MIX TO MEET THE FINISHING SPECIFICATION, SHOWN IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND THE TECHNICAL SPECIFICATIONS SHOWN IN THE TABLES BELOW ARE THE RESPONSIBILITY OF THE

.7 PLACE 19mm (3/4") CHAMFER STRIPS AT ALL EXPOSED CORNERS.

.8 MAXIMUM DISTANCE BETWEEN CONSTRUCTION JOINTS ARE:
a) WALLS AND FRAMED SLABS: 9.0m (29'-6"), OR 18.0m (59'-0") ALTERNATING WITH CONTROL JOINTS AT SAME SPACING.
b) SLABS-ON-GRADE: 4.5m (15'-0"), OR 13.5m (44'-3") WITH 5mm x 19mm (3/16" x 3/4") SAW CUT JOINTS AT 4.5m (15'-0") CENTRES.
c) PROVIDE WATERSTOPS IN ALL CONSTRUCTION JOINTS IN WALLS BELOW GRADE, AND SLABS WHERE INDICATED.

.9 SURFACE FINISHING - PROVIDE FINAL FINISH IN ACCORDANCE WITH PROPOSED USE. REFER TO ROOM SCHEDULE:
a) SKIM COATS, PITS: SCREEDED AND BULL FLOATED.
b) BASE SLAB FOR TERRAZZO, TILE OR BONDED TOPPING: SCREEDED, BULL FLOATED AND SCORED WITH WIRE BRUSH.
c) FLOORS WHICH RECEIVE RESILIENT FLOOR OR CARPET, FUTURE FLOORS: POWERED STEEL TROWEL FINISH.
d) INTERIOR EXPOSED SLABS: POWERED STEEL TROWEL FINISH WITH NON-SLIP SWIRLS.
e) EXTERIOR EXPOSED SLABS: WOOD FLAT FINISH WITH BROOMING.

.10 PROTECT FRESH CONCRETE FROM PREMATURE DRYING, SUNSHINE, EXCESSIVELY HOT OR COLD TEMPERATURES AND MECHANICAL INJURY. MAINTAIN AT A RELATIVELY CONSTANT TEMPERATURE FOR AS LONG AS IS REQUIRED FOR HYDRATION OF THE CEMENT AND CURING OF THE CONCRETE.

.11 APPLY CURING-SEALING COMPOUND OR FLOOR SURFACE HARDENER AS PER MANUFACTURERS INSTRUCTIONS.

.12 INDEPENDENT INSPECTION AND TESTING: THE GENERAL CONTRACTOR WILL APPOINT AN INDEPENDENT INSPECTION AND TESTING AGENCY TO UNDERTAKE CONCRETE STRENGTH TESTS. THE COST OF TESTING SHALL BE PAID BY THE OWNER. LABORATORY CURING AND TESTING OF SAMPLES WILL BE CARRIED OUT IN ACCORDANCE WITH CSA STANDARDS A23.1-09 AND A23.2-09 EXCEPT THAT STRENGTH TESTS, INCLUDING AIR ENTRAINMENT AND SLUMP TESTS, WILL BE REQUIRED FOR EACH 40 cu.m, BUT NOT LESS THAN ONE TEST, FOR EACH CLASS OF CONCRETE PLACED EACH DAY. PROVIDE A GROUP OF THREE CYLINDERS FOR EACH STANDARD STRENGTH TEST. ONE SPECIMEN WILL BE TESTED AT 7 DAYS AND TWO AT 28 DAYS. PROVIDE ONE ADDITIONAL FIELD CURED CYLINDER FOR TESTING AT 7 DAYS WHEN CONCRETE IS PLACED UNDER COLD WEATHER CONDITIONS. RESULTS WILL BE ON THE FORM APPROVED BY R.M.C.A.O. AND WILL BE REPORTED TO THE ARCHITECT WITH COPIES TO THE STRUCTURAL ENGINEER, THE CONTRACTOR AND THE MUNICIPAL AUTHORITIES.

END OF SECTION

READ THIS DRAWING IN CONJUNCTION WITH CONTRACT DRAWINGS, ALL MATERIAL AS CONTRACT DRAWINGS UNLESS NOTED.

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GENERAL REQUIREMENTS AND SPECIFICATIONS

DRAWING No. **S0.3**

DRAWN BY	SCALE	DATE	PROJECT No.
NW	N/A	MAY 2019	18-3314A

MIN CONCRETE COVER FOR REINFORCING

STRUCTURAL MEMBER/ LOCATION	EXPOSED TO WEATHER, EARTH, DEICING, CHEMICALS	NOT EXPOSED FIRE RATING (H)			
		0	1.5	2.0	3.0
MEMBERS CAST AGAINST EARTH (i.e. FOOTINGS, GRADE BEAMS, CAISSON CAPS - ALL BARS)	75	-	-	-	-
BEAMS, GIRDERS LONGITUDINAL BARS, < 35M ≥ 45M	 50 60	 40 45	 40 45	 40 45	 40 45
COLUMNS, (LONGITUDINAL BARS) ≤ 35M ≥ 45M	 50 60	 40 45	 40 45	 50 50	 50 50
SLABS AND WALLS ≤ 20M 25M 30M 35M 40M	 30 40 45 55 60	 20 25 30 35 45	 20 25 30 35 45	 25 25 30 35 45	 35 35 35 35 45
TIES AND STIRRUPS	40	30	-	-	-

CONCRETE REQUIREMENTS				
STRUCTURAL MEMBER	EXPOSURE CLASS	MIN. 28 DAY STRENGTH (MPa)	MAX. WATER/CEMENT RATIO	% AIR ENTRAINMENT
INTERIOR/EXTERIOR FOOTINGS	N	25	0.55	N/A
EXTERIOR SLAB ON GRADE (ie. UN- HEATED GARAGE FLOORS, STEPS)	C-2	32	0.45	5 TO 8
INTERIOR SLAB ON GRADE	N	25	0.55	N/A
HEATED PARKING GARAGE SLAB ON GRADE	C-4	25	0.55	4 TO 7
EXTERIOR STRUCT. SLAB	C-1	35 (AT 56 DAYS)	0.40	5 TO 8
INTERIOR STRUCT. SLAB	N	30	0.55	N/A
PARKING DECKS/RAMPS	C-1	35 (AT 56 DAYS)	0.40	5 TO 8
EXTERIOR CONC. ON STEEL DECK	F-1	30	0.50	5 TO 8
INTERIOR CONC. ON STEEL DECK	N	30	0.55	N/A
EXTERIOR BASEMENT/FOUND. WALLS	F-2	30	0.55	4 TO 7
EXTERIOR WALLS	C-1	35 (AT 56 DAYS)	0.40	5 TO 8
EXTERIOR PIERS/COLUMNS	F-2	30	0.55	4 TO 7
INTERIOR WALLS	N	30	0.55	N/A
INTERIOR PIERS/COLUMNS	N	30	0.55	N/A
CAISSONS	N	25	0.55	N/A
EXTERIOR CAISSON CAP	F-2	25	0.55	4 TO 7
INTERIOR CAISSON CAP	N	30	0.55	N/A
EXTERIOR GRADE BEAM	F-2	30	0.55	4 TO 7
INTERIOR GRADE BEAM	N	30	0.55	N/A

READ THIS DRAWING IN CONJUNCTION WITH CONTRACT DRAWINGS, ALL MATERIAL AS CONTRACT DRAWINGS UNLESS NOTED.

NO.	DESCRIPTION	DATE
3	RE-ISSUED FOR PERMIT	MAY. 31/19
2	FOR PERMIT AND TENDER	MAY. 03/19
1	FOR REVIEW	SEPT. 25/18

REVISIONS/ISSUES

LICENSED PROFESSIONAL ENGINEER
R.J. VAN GROLL
MAY. 31/19
PROVINCE OF ONTARIO

ATKINS + VAN GROLL INC.
CONSULTING ENGINEERS
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WASHROOM FACILITY OPTION A
695 ROSSLAND ROAD WEST, WHITBY, ONTARIO

GENERAL REQUIREMENTS AND SPECIFICATIONS

DRAWN BY	SCALE	DATE	PROJECT No.
NW	N/A	MAY 2019	18-3314A

DRAWING No. **S0.4**

MASONRY

1 GENERAL

.1 CONFORM TO CSA-S304.1-04 (R2010), DESIGN OF MASONRY STRUCTURES, CSA-A370-14, CONNECTORS FOR MASONRY AND CAN/CSA-A371-04 (R2014), MASONRY CONSTRUCTION FOR BUILDINGS.

.2 THESE NOTES ARE BASED ON STRUCTURAL MASONARY REQUIREMENTS BASED ON EMPIRICAL REQUIREMENTS IF "ENGINEERED MASONRY" IS ALSO INDICATED REFER TO PLAN NOTES. SEE ALSO ARCHITECTURAL REQUIREMENTS.

2 PRODUCTS

.1 LOAD-BEARING CONCRETE BLOCK: NORMAL-WEIGHT, UNITS TO CAN/CSA-A165.1-04 (R2010). USE TYPE H/15/A/M FOR HOLLOW UNITS AND TYPE S/15/A/M FOR SOLID UNITS.

.2 LOAD-BEARING BRICK: TO CSA STANDARD A82-14.

.3 MORTAR: TO CSA STANDARD CAN/CSA-A179-04 (R2014). USE TYPE S FOR CONCRETE BLOCKS. TYPE N FOR CLAY BRICKS UNLESS NOTIFIED.

.4 GROUT: TO CSA STANDARD CAN/CSA-A179-04 (R2014). USE 20MPa READY-MIXED CONCRETE WITH 9mm (3/8") COARSE AGGREGATE MAX. OR MIX 1:3:2 CEMENT:SAND:PEA GRAVEL BY VOLUME. PROVIDE 170mm (6 1/2") SLUMP.

.5 HORIZONTAL JOINT BLOCK REINFORCING: FOR REINFORCED OR GROUTED MASONRY WALLS, USE LADDER TYPE (GALVANIZED, 3/16" LONGITUDINAL WIRE AND 9 GA. CROSSWIRE). FOR UNREINFORCED, USE TRUSS TYPE (GALVANIZED, 3/16" LONGITUDINAL WIRE AND 9 GA. CROSSWIRE).

3 EXECUTION

.1 DAMPEN UNITS BEFORE LAYING TO PREVENT EXCESSIVE SUCTION ON MORTAR. DO NOT LAY MORE THAN 1600mm (5'-3") IN HEIGHT IN ONE DAY. REJECT ALL CHIPPED UNITS.

.2 INSTALL REINFORCING FOR REINFORCED MASONRY IN ACCORDANCE WITH CAN/CSA-A371-04 (R2014) AND S304.1-04 (R2010).

.3 INSTALL GROUT IN HIGH LIFTS OR LOW LIFTS IN ACCORDANCE WITH CAN/CSA-A371-04 (R2014), AND AS SHOWN ON DRAWINGS.

.4 PROVIDE HORIZONTAL JOINT REINFORING IN EVERY THIRD COURSE OF SOLID MASONRY. PROVIDE HORIZONTAL JOINT REINFORCEMENT IN EVERY SECOND COURSE OF HOLLOW BLOCK MASONRY. PROVIDE HORIZONTAL JOINT REINFORCEMENT IN EVERY SECOND COURSE AND USE ADJUSTABLE TIES FOR CAVITY WALLS.

.5 PROVIDE CONTROL JOINTS IN MASONRY AT 7500mm (24'-6") CENTRES MAX. SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF CONTROL JOINTS.

.6 MASONRY BEARING SHALL BE OF SOLID BLOCKS OR FULLY GROUTED HOLLOW BLOCKS. ALL JOINTS ARE TO BE FILLED WITH TYPE S MORTAR.

.7 NO MASONRY WORK SHALL BE PERMITTED WITH TEMPERATURE BELOW 5°C UNLESS PROVISIONS ARE MADE FOR HEATING THE MATERIALS AND PROTECTING THE WORK.

.8 WHEN REQUESTED, SAMPLING AND TESTING SHALL CONFORM TO CSA STANDARD S304.1-04 (R2010).

END OF SECTION

STRUCTURAL STEEL AND STEEL JOISTS

1 GENERAL

.1 CONFORM TO THE GENERAL REQUIREMENTS AND SPECIAL CONDITIONS CONTAINED IN GENERAL REQUIREMENTS.

.2 SUPPLY AND DELIVER THE FOLLOWING TO OTHER TRADES TOGETHER WITH LAYOUT DRAWINGS: ANCHOR RODS, CONNECTION ASSEMBLES FOR SETTING IN CONCRETE, LOOSE LINTELS, SHELF ANGLES AND BEARING PLATES.

.3 CONFORM TO CSA STANDARDS CSA S16-09, CSA S136-12 PACKAGE, CSA W47.1-09, CSA W48-06(R2011), CSA W55.3-08, CSA W59-03 (R2008) AND CSA G40.20-13/G40.21-13.

.4 MATERIALS SHOWN ON THE DRAWINGS OR IN THIS SPECIFICATION ARE TO ESTABLISH THE REQUIRED DEGREE OF QUALITY OR PERFORMANCE. SUBSTITUTION MAY BE PERMITTED UPON PROOF OF EQUIVALENCE. SUBMIT ALL PROPOSALS FOR SUBSTITUTION TO THE ENGINEER IN WRITING IN ADVANCE OF SHOP DRAWINGS. EACH ITEM WILL BE CLEARLY IDENTIFIED. DO NOT PROCEED WITH PROPOSAL UNLESS IT IS ACCEPTED IN WRITING BY THE ENGINEER.

.5 TOLERANCES: FABRICATION AND ERECTION TOLERANCES SHALL MEET THE REQUIREMENTS OF CSA S16-09.

.6 WORK SHALL BE CARRIED OUT BY A MEMBER OF THE CANADIAN INSTITUTE OF STEEL CONSTRUCTION. WELDING SHALL BE PERFORMED BY FIRMS FULLY APPROVED BY THE CANADIAN WELDING BUREAU UNDER THE REQUIREMENTS OF CSA W47.1-09.

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WASHROOM FACILITY OPTION A
695 ROSSLAND ROAD WEST,
WHITBY, ONTARIO

GENERAL REQUIREMENTS AND SPECIFICATIONS

DRAWING No. S0.5

DRAWN BY	SCALE	DATE	PROJECT No.
NW	N/A	MAY 2019	18-3314A

.7 DESIGN CONNECTIONS TO CONFORM TO CSA S16-09 AND THE CISC HANDBOOK OF STEEL CONSTRUCTION FOR A MINIMUM OF 50% OF THE BEAM SHEAR CAPACITY UNLESS A GREATER REACTION IS NOTED ON THE DRAWINGS. DESIGN ALL SPLICES AND CONNECTIONS OF TENSION OR COMPRESSION MEMBERS FOR THEIR FULL CAPACITY. ARRANGE AND PAY FOR NONDESTRUCTIVE TESTING OF ALL UNSPECIFIED SPLICES IN COLUMNS, BEAMS AND JOIST COMPONENTS. ALL CONNECTIONS AND DETAILS SHALL BE DESIGNED BY A SUITABLE QUALIFIED REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE GOVERNING PROVINCE, WHOSE STAMP AND SIGNATURE SHALL BE AFFIXED TO THE SHOP DRAWINGS.

.8 DESIGN AND PROVIDE BEARING PLATES FOR A MAXIMUM PRESSURE OF 3.8MPa (550psi) ON MASONRY AND 7.7MPa (1100 psi) ON CONCRETE.

.9 SUBMIT FOR REVIEW, PRIOR TO FABRICATION, SHOP DRAWINGS CONSISTING OF ERECTION DIAGRAMS AND SHOP DETAILS. REVIEW OF SHOP DRAWINGS IS A PRECAUTION AGAINST OVERSIGHT OR ERROR. IT IS NOT A DETAILED CHECK AND SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR OF RESPONSIBILITY FOR MAKING THE WORK ACCURATE AND IN CONFORMITY WITH THE CONTRACT DOCUMENTS. MAINTAIN A SET OF REVIEWED DRAWINGS ON SITE.

2 PRODUCTS

.1 MATERIALS:
- a) W, WWF AND C (CHANNELS): GRADE 350W
- b) S SHAPES: TO ASTM A572 GR.50
- c) L (ANGLES) AND PLATES: GRADE 300W
- d) HSS SHAPES: GRADE 350W (CLASS H)
- e) FASTENERS/BOLTS: ASTM 325M
- f) ANCHOR RODS: 300W OR ASTM 307
- g) WELDING ELECTRODES: E49XX
- h) PRIMER PAINT:
  - ONE-COAT SYSTEM: CISC/CPMA STANDARD 1-73a, 1975
  - PRIME COAT FOR TOP COATS: CISC/CPMA STANDARD 2-75, 1975
- i) ZINC-RICH SHOP PRIMER PAINT: CAN/CGSB-1.181-99
- j) HOT DIP GALVANIZING: CAN/CSA-G164-M92(R2003)

.2 FABRICATION SHALL CONFORM TO CSA STANDARDS CSA S16-09, CSA W59-03(R2008) AND CSA W55.3-08.

.3 SHELF ANGLES, HANGERS AND LINTELS IN EXTERIOR WALLS AND EXPOSED EXTERIOR STEEL MEMBERS SHALL BE CLEANED TO SP6 AND RECEIVE TWO COATS OF ZINC RICH PRIMER PAINT.

3 EXECUTION

.1 ERECTION SHALL BE CARRIED OUT BY FORCES OF THE STEEL FABRICATOR. PROVIDE ALL TEMPORARY BRACING TO KEEP THE STRUCTURE STABLE UNTIL THE ENTIRE STRUCTURE IS COMPLETE.

.2 PROVIDE CONTINUOUS WELDING AT EXPOSED JOINTS SUCH AS DOOR JAMBS AND HEADS, AND GRIND SMOOTH.

.3 INDEPENDENT INSPECTION AND TESTING: THE GENERAL CONTRACTOR WILL APPOINT AN INDEPENDENT INSPECTION AND TESTING AGENCY, CERTIFIED BY THE CANADIAN WELDING BUREAU TO CSA W178.1-08(R2013) AND W178.2-08(R2013). THE COST OF INSPECTION SHALL BE PAID BY THE OWNER. WORK WILL BE INSPECTED IN THE SHOP AND WHEN ERECTED TO DETERMINE CONFORMANCE TO THE DRAWINGS AND SPECIFICATIONS.

END OF SECTION

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WASHROOM FACILITY OPTION A
695 ROSSLAND ROAD WEST, WHITBY, ONTARIO

GENERAL REQUIREMENTS AND SPECIFICATIONS

DRAWING No. **S0.6**

DRAWN BY	SCALE	DATE	PROJECT No.
NW	N/A	MAY 2019	18-3314A

TIMBER

1 GENERAL

.1 CONFORM TO THE GENERAL REQUIREMENTS AND SPECIAL CONDITIONS CONTAINED IN DIVISION 1.

.2 CONFORM TO THE REQUIREMENTS OF CAN/CSA-O86-09, AND THE GOVERNING PROVINCIAL BUILDING CODE.

.3 MATERIALS SHOWN ON THE DRAWINGS OR IN THIS SPECIFICATION ARE TO ESTABLISH THE REQUIRED DEGREE OF QUALITY OR PERFORMANCE. SUBSTITUTION MAY BE PERMITTED UPON PROOF OF EQUIVALENCE. SUBMIT ALL PROPOSALS FOR SUBSTITUTION TO THE ENGINEER IN WRITING IN ADVANCE OF SHOP DRAWINGS. EACH ITEM MUST BE CLEARLY IDENTIFIED. DO NOT PROCEED WITH PROPOSAL UNLESS IT IS ACCEPTED IN WRITING BY THE ENGINEER.

.4 SUBMIT FOUR (4) WHITE PRINTS OF ERECTION DIAGRAMS AND SHOP DETAILS FOR STRUCTURAL COMPOSITE LUMBER (LVL, PSL, ETC.), GLULAM, PREFABRICATED WOOD I-JOISTS AND PRE-ENGINEERED TRUSSES FOR REVIEW PRIOR TO FABRICATION. REVIEW OF SHOP DRAWINGS IS A PRECAUTION AGAINST OVERSIGHT OR ERROR. IT IS NOT A DETAILED CHECK AND MUST NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR OF RESPONSIBILITY FOR MAKING THE WORK ACCURATE AND IN CONFORMITY WITH THE CONTRACT DOCUMENTS. MAINTAIN A SET OF REVIEWED DRAWINGS ON SITE.

.5 SHOP DRAWINGS SHALL BEAR THE STAMP OF A PROFESSIONAL ENGINEER LICENSED IN THE GOVERNING PROVINCE, AND SHALL SHOW COMPLETE DETAILS OF CONNECTIONS, HANGERS, BRACING, BEARINGS, AND BRIDGING.

2 PRODUCTS

.1 MATERIALS

a) STRUCTURAL LUMBER TO BE GRADE MARKED TO CONFORM TO CSA STANDARD CSA-0141-05. ALL TIMBER STUDS, JOISTS AND BRIDGING SHALL BE SPF NO. 2 MINIMUM UNLESS OTHERWISE NOTED ON THE DRAWINGS. LUMBER TO BE GRADE STAMPED ACCORDING TO NLGA GRADING RULES AND SHALL BE KILN DRIED.

b) FASTENINGS: NAILS, BOLTS, STEEL STRAPS AND WELDED CONNECTIONS TO CONFORM TO CSA-086-09. USE HOT-DIP GALVANIZED FASTENERS FOR EXTERIOR WORK AND FOR CONNECTIONS IN EXTERIOR WALLS.

c) JOIST HANGERS AND FRAMING ANCHORS: USE JOIST HANGERS AND FRAMING ANCHORS MANUFACTURED BY SIMPSON STRONG-TIE OR APPROVED EQUIVALENT.

d) STRUCTURAL COMPOSITE LUMBER: USE LAMINATED VENEER LUMBER (LVL) 2.0x10e6 psi, PARALLEL STRAND LUMBER (PSL) 2.0x10e6 psi BY WEYERHAEUSER OR APPROVED EQUIVALENT.

e) WOOD I-JOIST: USE PRODUCTS BY WEYERHAEUSER OR APPROVED EQUIVALENT.

3 EXECUTION

.1 SET AND SECURE WOOD BEAMS AND JOISTS LEVEL, PLUMB AND TO CORRECT LOCATIONS INDICATED ON DRAWINGS. ENSURE HORIZONTAL BOWING IS KEPT TO A MINIMUM.

.2 PROVIDE TEMPORARY BRACING AND ANCHORAGE REQUIRED TO HOLD WOOD STRUCTURE IN PLACE UNTIL PERMANENTLY SECURED. ENSURE BEAMS AND JOISTS ENDS HAVE SUFFICIENT BEARING AREA.

.3 INSTALL PERMANENT BRACING AND BRIDGING PRIOR TO APPLICATION OF ANY LOADS.

.4 CUTTING AND ALTERING OF MEMBERS IS NOT PERMITTED WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER.

.5 ALL FLOOR JOISTS SHALL HAVE SOLID BRIDGING 2100mm (7'-0") CENTRES UNLESS NOTED OTHERWISE.

.6 TIMBER TO TIMBER CONNECTIONS IN SAME PLANE SHALL BE MADE WITH JOIST HANGERS OR FRAMING ANCHORS.

.7 ALL DETAILS NOT OTHERWISE REQUIRED IN PART 4 OR SHOWN ON DRAWINGS OR IN SPECIFICATIONS SHALL CONFORM TO PART 9 OF THE NATIONAL BUILDING CODE OF CANADA.

END OF SECTION

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LICENSED PROFESSIONAL ENGINEER
R.J. VAN GROLL
MAY. 31/19
PROVINCE OF ONTARIO

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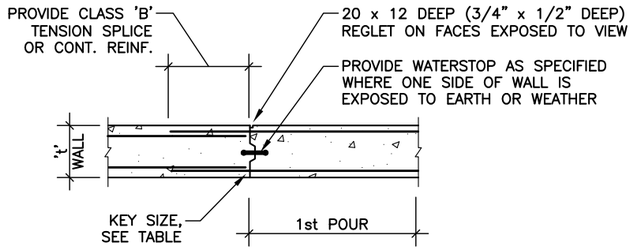
WASHROOM FACILITY OPTION A
695 ROSSLAND ROAD WEST, WHITBY, ONTARIO

GENERAL REQUIREMENTS AND SPECIFICATIONS

DRAWING No. S0.7

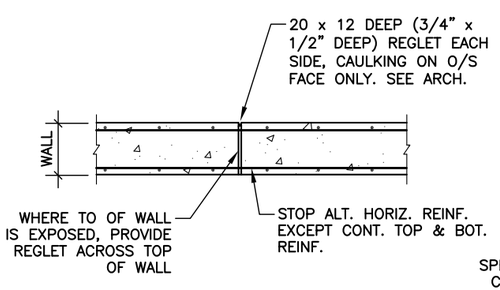
DRAWN BY	SCALE	DATE	PROJECT No.
NW	N/A	MAY 2019	18-3314A



KEY SIZE	WALL THICKNESS 't'
20 x 40 (1x2)	100 (4") ≦ 't' < 150 (6")
20 x 60 (1x3)	150 (6") ≦ 't' < 230 (9")
40 x 90 (2x4)	230 (9") ≦ 't'

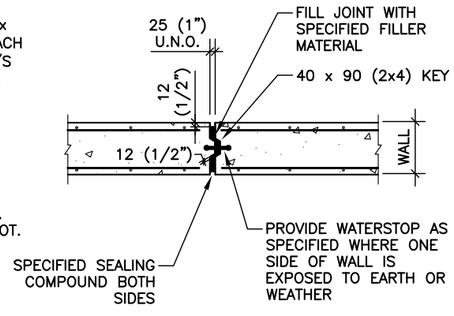
NOTES:
1. TO BE PROVIDED AT 10m (32'–6") c/c MAX. OR AT 20m (65'–6") c/c MAX. ALT. WITH CONTROL JOINTS.
2. LOCATIONS TO BE APPROVED BY ARCHITECT WHERE EXPOSED TO VIEW.

VERTICAL CONSTRUCTION JOINT IN CONCRETE WALL



NOTES:
1. TO BE PROVIDED AT 20m (65'–6") c/c MAX. ALT. WITH CONTROL JOINTS.
2. LOCATIONS TO BE APPROVED BY ARCHITECT WHERE EXPOSED TO VIEW.

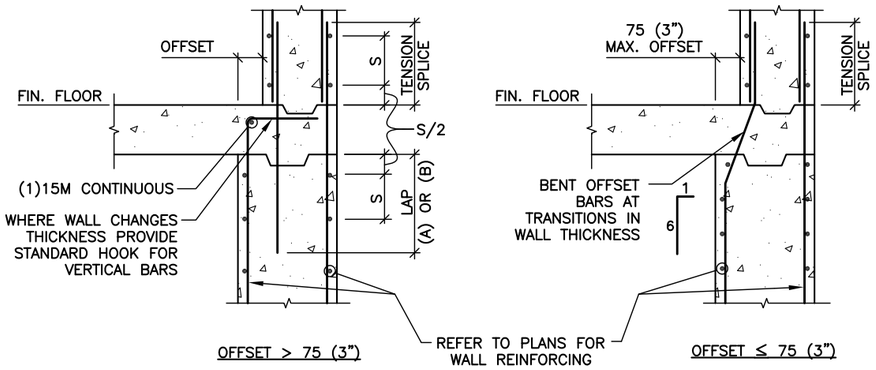
VERTICAL CONTROL JOINT IN CONCRETE WALL



KEYED EXPANSION JOINT IN CONCRETE WALL

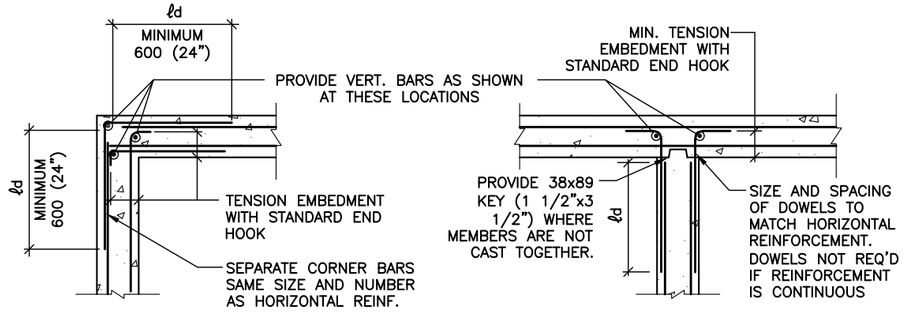
TYPICAL DETAIL OF CONCRETE JOINTS

ATKINS + VAN GROLL INC. | TD C.2



NOTES:
1. 'S' DENOTES BAR SPACING
2. LAP (A) = CLASS 'B' (TOP) TENSION SPLICE WHERE OFFSET IS ≤ 150 (6")
   LAP (B) = 1.5 x CLASS 'B' (TOP) TENSION SPLICE WHERE OFFSET IS > 150 (6")

TYPICAL REINFORCING AT WALL THICKNESS TRANSITIONS



WALL REINFORCING AT CORNERS/INTERSECTIONS

NOTES:
1. 'ℓd' DENOTES TENSION DEVELOPMENT LENGTH.
2. ALL TENSION LAPS ARE CLASS 'B' TENSION LAP SPLICES.
3. PROVIDE (1)15M BAR x NO. OF SHEETS OF REINFORCING AT ALL WALL EDGES AND OPENINGS. EXTEND MIN. 2 x DEVELOPMENT LENGTH BEYOND EDGE OF OPENING.
4. PROVIDE CLEAR COVER TO BARS AS PER CONCRETE SPECIFICATIONS.
5. UNLESS NOTED OTHERWISE, MINIMUM REINFORCING FOR ANY WALL IS TO BE AS FOLLOWS:

WALL THICKNESS	REINFORCING
150(6")	10M @ 300(12") HORIZ. + VERT.
200(8") OR	15M @ 400(16") H. + V.E.F.
250(10") 300(12")	15M @ 300(12") H. + V.E.F.

TYPICAL CONCRETE WALL DETAILS

ATKINS + VAN GROLL INC. | TD C.3

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REVISIONS/ISSUES

LICENSED PROFESSIONAL ENGINEER — R.J. VAN GROLL — MAY. 31/19 — PROVINCE OF ONTARIO

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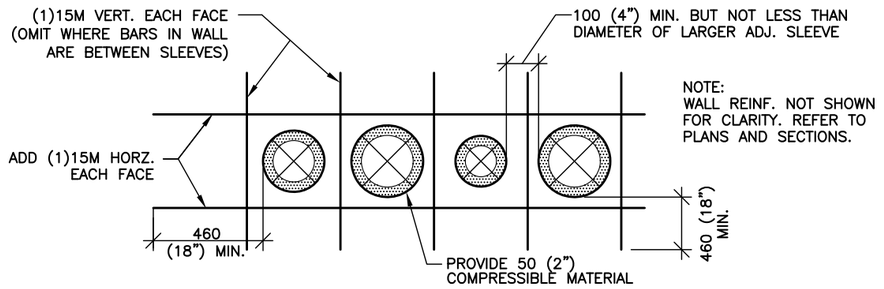
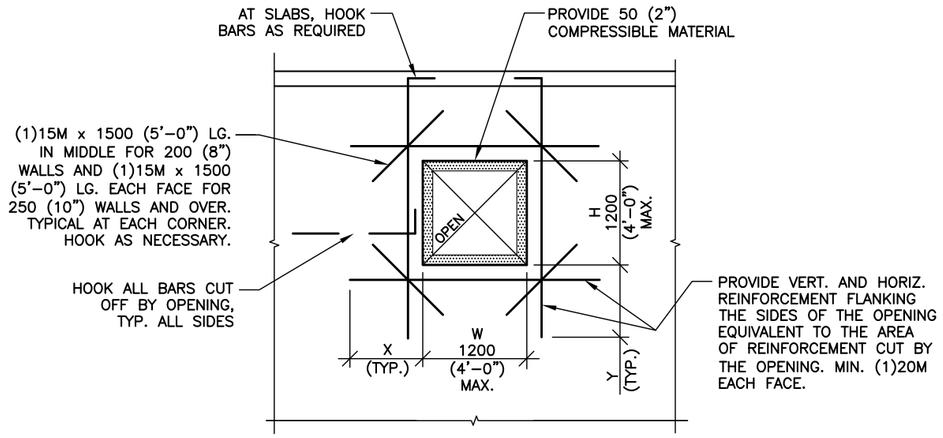
WASHROOM FACILITY OPTION A
695 ROSSLAND ROAD WEST,
WHITBY, ONTARIO

TYPICAL DETAILS

DRAWN BY	SCALE	DATE	PROJECT No.	DRAWING No.
NW	N.T.S.	MAY 2019	18–3314A	S0.8



REINFORCING AT SLEEVES



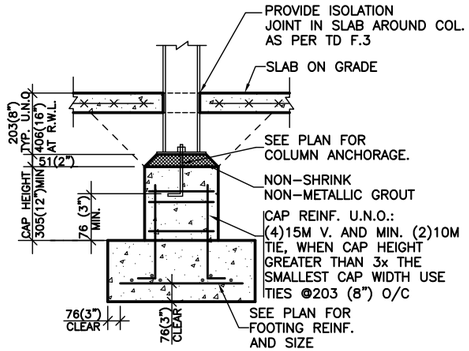
'X' = CLASS 'B' TENSION LAP SPLICE + H/2, BUT NOT LESS THAN 600 (2'–0")
'Y' = CLASS 'B' TENSION LAP SPLICE + W/2, BUT NOT LESS THAN 600 (2'–0")

REINFORCING AROUND BASEMENT/FOUNDATION WALL OPENING

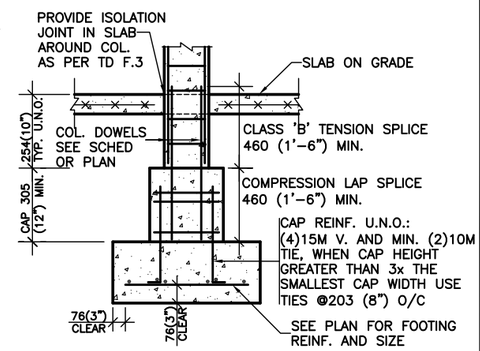
TYPICAL DETAIL OF OPENINGS IN CONCRETE WALLS

ATKINS + VAN GROLL INC.
UNLESS NOTED OTHERWISE, ALL DIMENSIONS SHOWN ARE MIN. FOR USE WHEN PLAN OR SECTION DIMENSIONS ARE NOT GIVEN.

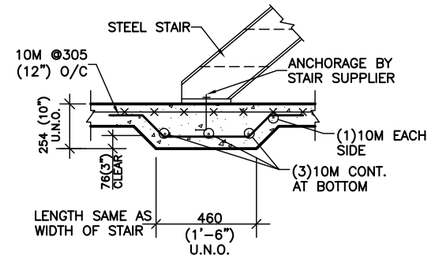
TD C.6



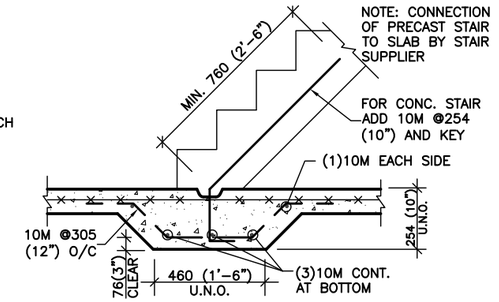
FOOTING FOR STEEL COLUMN



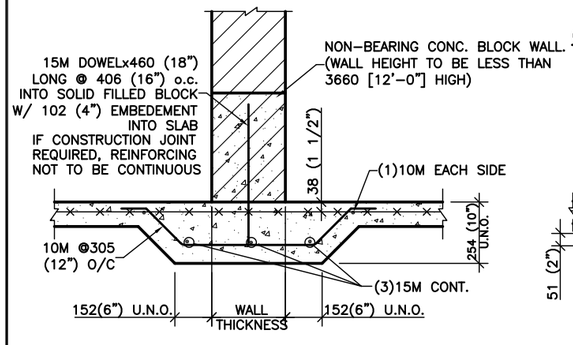
FOOTING FOR CONCRETE COLUMN



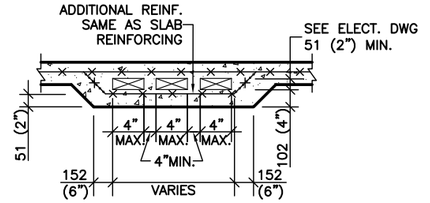
SLAB THICKENING UNDER STAIR STRINGER



THICKENED SLAB UNDER CONCRETE/PRECAST STAIR



THICKENED SLAB UNDER NON–BEARING CONCRETE BLOCK WALL



UNDERFLOOR DUCTS & CONDUITS GREATER THAN 25mm (1")

TYPICAL FOUNDATION DETAILS

ATKINS + VAN GROLL INC.
ALL TYPICAL DETAILS DIMENSIONS SHOWN ARE MIN. FOR USE WHEN PLAN OR SECTION DIMENSIONS ARE NOT GIVEN.

TD F.1

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2	FOR PERMIT AND TENDER	MAY. 03/19
1	FOR REVIEW	SEPT. 25/18

REVISIONS/ISSUES

LICENSED PROFESSIONAL ENGINEER
R.J. VAN GROLL
MAY. 31/19
PROVINCE OF ONTARIO

ATKINS + VAN GROLL INC.
CONSULTING ENGINEERS
130 Bridgeland Avenue, Suite 101
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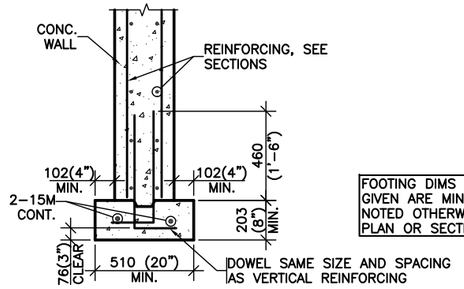
WASHROOM FACILITY OPTION A
695 ROSSLAND ROAD WEST,
WHITBY, ONTARIO

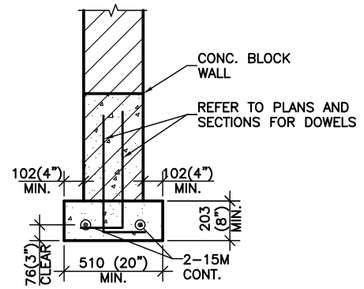
TYPICAL DETAILS

DRAWING No. **S0.9**

DRAWN BY	SCALE	DATE	PROJECT No.
NW	N.T.S.	MAY 2019	18–3314A

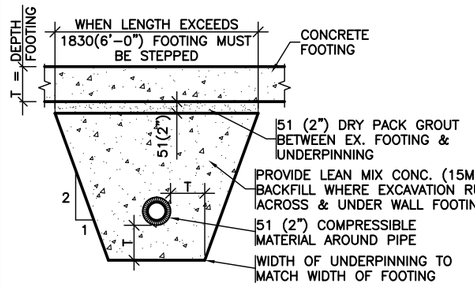


FOOTING DIMS & REINF. GIVEN ARE MIN. UNLESS NOTED OTHERWISE ON PLAN OR SECTION.

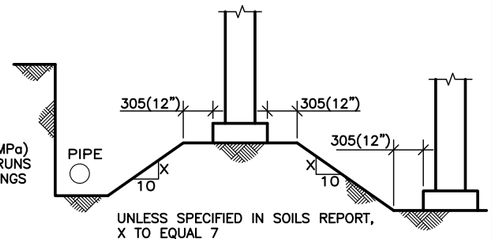


CONCRETE WALL FOOTING

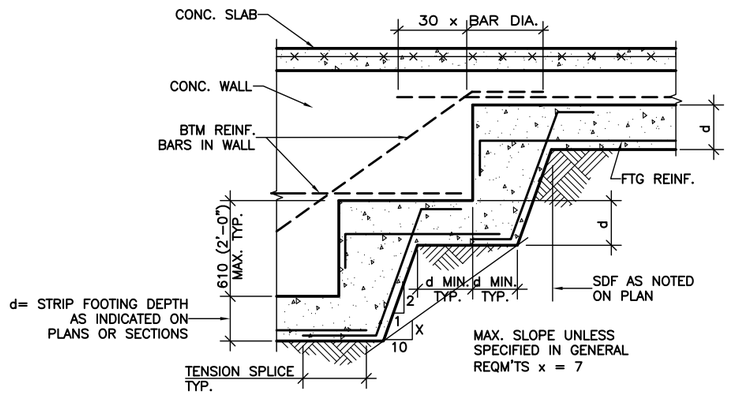
CONC. BLOCK WALL FOOTING



SERVICE PIPE UNDER FOOTING



ELEVATIONS OF ADJACENT FOOTINGS & EXCAVATIONS

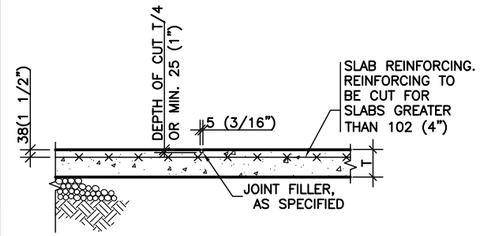


STEPPED WALL FOOTING

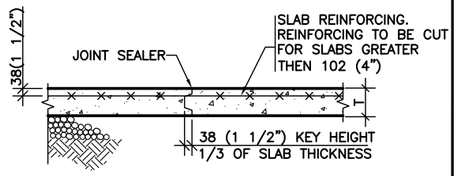
TYPICAL FOUNDATION DETAILS

ATKINS + VAN GROLL INC.
ALL TYPICAL DETAILS DIMENSIONS SHOWN ARE MIN. FOR USE WHEN PLAN OR SECTION DIMENSIONS ARE NOT GIVEN

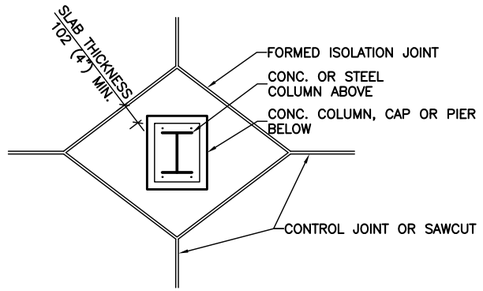
TD F.2



CONTROL (SAW-CUT) JOINT



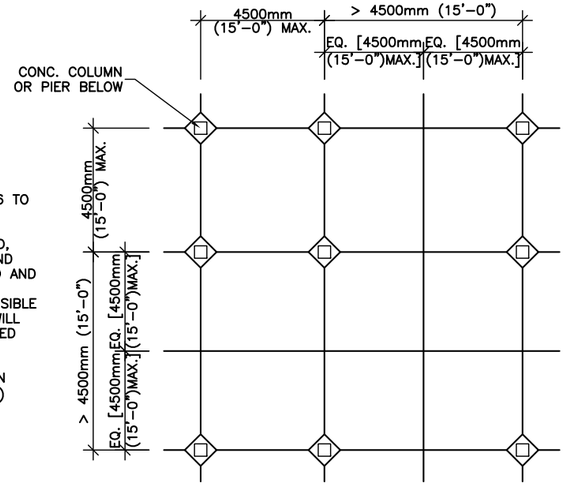
CONSTRUCTION JOINT



SLAB JOINT AT COLUMN

NOTES:

1. SAW CUTTING SHALL BE COMPLETED WITHIN 6 TO 18 HOURS OF PLACING CONCRETE.
2. AFTER THE SLAB IS A MINIMUM 60 DAYS OLD, REMOVE ALL DEBRIS FROM THE SAW CUTS AND FILL WITH MORTAR CONTAINING CEMENT, SAND AND LATEX BONDING AGENT, OR AS NOTED IN SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT CONSTRUCTION ACTIVITIES WILL NOT REDUCE QUALITY OR DURABILITY OF FILLED JOINTS.
3. MAXIMUM SPACING OF SAW CUTS IN SLAB ON GRADE SHALL NOT EXCEED 4500mm (15'-0") UNLESS NOTED OTHERWISE.



TYPICAL SAWCUT PATTERN IN SLAB ON GRADE

TYPICAL DETAILS FOR SLAB ON GRADE

ATKINS + VAN GROLL INC.
ALL TYPICAL DETAILS DIMENSIONS SHOWN ARE MIN. FOR USE WHEN PLAN OR SECTION DIMENSIONS ARE NOT GIVEN

TD F.3

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WASHROOM FACILITY OPTION A
695 ROSSLAND ROAD WEST, WHITBY, ONTARIO

TYPICAL DETAILS

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DRAWING No. **S0.10**

@	AT
ø	DIAMETER
A. BOLT	ANCHOR BOLT
A. ROD	ANCHOR ROD
ABV.	ABOVE
ADJ.	ADJUSTABLE
ALT.	ALTERNATE
ARCH.	ARCHITECTURAL OR ARCHITECT
ASL	ACCUMULATED SNOW LOAD
B.PL.	BASE PLATE
BR.PL.	BEARING PLATE
B.C.E.	BOTTOM CHORD EXTENSION
B.L.L.	BOTTOM LOWER LAYER
B.U.L.	BOTTOM UPPER LAYER
BLDG	BUILDING
BLW.	BELOW
BM.	BEAM
BOT., B.	BOTTOM
BSMT.	BASEMENT
C. JT.	CONSTRUCTION JOINT
C/C, O/C	CENTRE TO CENTRE
C/W	COMPLETE WITH
CANT., CANT'L	CANTILEVER
Cf	FACTORED DESIGN FORCE (COMPRESSION)
CL OR ℄	CENTERLINE
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECT OR CONNECTION
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
DET.	DETAIL
DEMO.	DEMOLISH OR DEMOLISHED
DIA.	DIAMETER
DIAG.	DIAGONAL
DIM	DIMENSION
DL	DEAD LOAD
DN	DOWN
DO	REPEAT
DP.	DEEP
DWG.	DRAWING
DWL(S)	DOWEL(S)
D.J.	DOUBLE JOIST
EA.	EACH
E.E.	EACH END
E.F.	EACH FACE
EL., ELEV.	ELEVATION OR ELEVATOR
ELECT.	ELECTRICAL
E.O.S	EDGE OF SLAB
EQ.	EQUAL
E.S.	EACH SIDE
E.W.	EACH WAY
EXIST., EX.	EXISTING
EXP. JT.	EXPANSION JOINT
EXT.	EXTERIOR
ft	FOOT OR FEET
FAC.	FACTORED
FDN	FOUNDATION
F.F.	FAR FACE
F.F.E.	FINISHED FLOOR ELEVATION
FIN.	FINISH OR FINISHED
FLG.	FLANGE
FLR.	FLOOR
FTG.	FOOTING
F.S.	FAR SIDE
ft. KIPS	FOOT KIPS
ft. lbs	FOOT POUNDS
Fy	YIELD STRESS
GA.	GAUGE
GALV.	GALVINIZED
G.B.	GRADE BEAM
G.T.	GIRDER TRUSS
GR.	GRADE

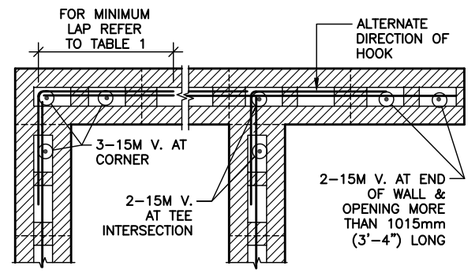
H., HORIZ.	HORIZONTAL
H.E.E.	HOOKED EACH END
H.E.F.	HORIZONTAL EACH FACE
H.I.F.	HORIZONTAL INSIDE FACE
HK.	HOOK
H.O.F.	HORIZONTAL OUTSIDE FACE
H.P.	HIGH POINT
H.S.C	HORIZONTALLY SLOTTED CONNECTION
H.S.S.	HOLLOW STEEL SECTION
HT.	HEIGHT
I.D.	INSIDE DIAMETER
INT	INTERIOR
J.T.	JACK TRUSS
kg	KILOGRAM
klf	KIPS PER LINEAR FOOT
kN	KILONEWTON
kN/m	KILONEWTON PER METRE
kNm	KILONEWTON METRE
kPa	KILOPASCAL
ksf	KIPS PER SQUARE FOOT
lbs	POUNDS
L.E.	LEFT END
L.P.	LOW POINT
L.W.	LONG WAY
LG.	LONG
LL	LIVE LOAD
L.L.H.	LONG LEG HORIZONTAL
L.L.V.	LONG LEG VERTICAL
L.S.H.	LONG SIDE HORIZONTAL
L.S.V.	LONG SIDE VERTICAL
m	METRE
M.C.	MOMENT CONNECTION
MAX.	MAXIMUM
MECH.	MECHANICAL
MEZZ.	MEZZANINE
Mf	FACTORED DESIGN MOMENT
MIN.	MINIMUM
MISC.	MISCELLANEOUS
M.L.	MIDDLE LAYER
mm	MILLIMETRE
MOM.	MOMENT
MPa	MEGAPASCAL
N	NEWTON
N.I.C.	NOT IN CONTRACT
N.S.	NEAR SIDE
N.T.S.	NOT TO SCALE
N.F.	NEAR FACE
No.	NUMBER
O.C., O/C	ON CENTRE
O.D.	OUTSIDE DIAMETER
OPNG.	OPENING
OPP.	OPPOSITE
OWSJ	OPEN WEB STEEL JOIST
Pa	PASCAL
PL.	PLATE
plf	POUNDS PER LINEAR FOOT
PROJ.	PROJECTION
psf	POUNDS PER SQUARE FOOT
R	REACTION OR RADIUS
R.C.	REINFORCED CONCRETE
R.D.	ROOF DRAIN
R.E.	RIGHT END
R/W	REINFORCE WITH
REF.	REFERENCE
REINF.	REINFORCING OR REINFORCE
REQ'D	REQUIRED
REV	REVISION OR REVISED
RTU	ROOF TOP UNIT

S.C.	SHEAR CONNECTION, SAWCUT
S.O.G.	SLAB ON GRADE
S.W.	SHORT WAY
S.D.F	STEP DOWN FOOTING
SDL	SUPERIMPOSED DEAD LOAD
SEC., SECT.	SECTION
SL	SNOW LOAD
SIM.	SIMILAR
SPEC'S	SPECIFICATIONS
SQ.	SQUARE
SST.	STAINLESS STEEL
STD.	STANDARD
STIFF.	STIFFENER
STRUCT.	STRUCTURE OR STRUCUTRAL
SYMM.	SYMMETRICAL
T.	TOP
T.C.E.	TOP CHORD EXTENSION
T.B.C.	TO BE CONFIRMED
Tf	FACTORED DESIGN FORCE (TENSION)
T.J.	TIE JOIST OR TRIPLE JOIST
T.L.L.	TOP LOWER LAYER
T.U.L.	TOP UPPER LAYER
THK., THKNS.	THICK OR THICKNESS
THRU'OUT	THROUGH OUT
T/O	TOP OF
T.O.F.	TOP OF FOOTING
T.O.S.	TOP OF STEEL
T.S.	TOP OF SLAB
TD	TYPICAL DETAIL
TEMP.	TEMPERATURE
TYP.	TYPICAL
U.N.O., U/N	UNLESS NOTED OTHERWISE
U/S	UNDERSIDE
UNFAC.	UNFACTORED
V.E.F.	VERTICAL EACH FACE
V.I.F.	VERTICAL INSIDE FACE
V.O.F.	VERTICAL OUTSIDE FACE
VA.	VARIES
VERT., V.	VERTICAL
V.S.C.	VERTICALLY SLOTTED CONNECTION
W.PL.	WALL PLATE
W.P.	WORK POINT
W.W.F.	WELDED WIRE FABRIC
W/	WITH

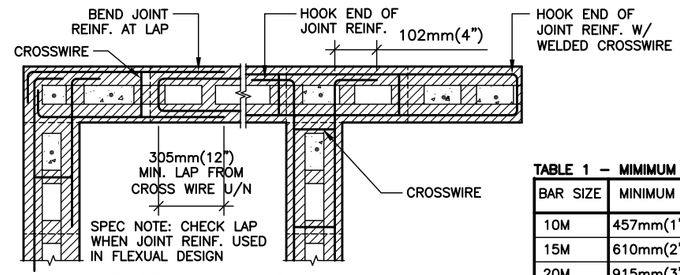
ABBREVIATIONS

ATKINS + VAN GROLL INC.
ALL TYPICAL DETAILS DIMENSIONS SHOWN ARE MIN. FOR USE WHEN PLAN OR SECTION DIMENSIONS ARE NOT GIVEN.

TD G.1



WALL REINF. LAYOUT (SINGLE LAYER)



JOINT REINF. LAYOUT

TABLE 1 – MIMIMUM LAP

BAR SIZE	MINIMUM LAP
10M	457mm(1'–6")
15M	610mm(2'–0")
20M	915mm(3'–0")

TABLE 2 – MINIMUM REINFORCEMENT FOR REINFORCED WALLS

WALL THICKNESS	VERTICAL REINF.	HORIZONTAL REINF.
140mm (5 ½")	15M @ 813mm(2'–8")	STANDARD 9 GAUGE (3.6mm) JOINT REINF. @ 203mm(8")
190mm (7 ½")	15M @ 813mm(2'–8")	HEAVY DUTY (4.76mm SIDE WIRE) LADDER TYPE JOINT REINF. @ 203mm(8")
240mm (9 ½")	20M @ 1015mm(3'–4")	HEAVY DUTY (4.76mm SIDE WIRE) LADDER TYPE JOINT REINF. @ 203mm(8") AND 10M@1220mm(4'–0")
290mm (11 ½")	(2)15M @ 1015mm(3'–4") (ONE EACH FACE)	STANDARD 9 GAUGE (3.6mm) JOINT REINF. @ 406mm(16") & (2)15M IN BOND BEAM @2440mm(8'–0")

NOTES:

1. PROVIDE MINIMUM REINFORCING AS INDICATED, UNLESS SHOWN ON DRAWINGS.
2. REINFORCEMENT TO BE SUPPORTED TO PREVENT DISPLACEMENT DURING PLACEMENT OF GROUT OR MORTAR. AS A MINIMUM PROVIDE WIRE POSITIONERS OR SIMILAR DEVICE AT THE TOP, BOTTOM, ENDS AND AT INTERVALS NOT EXCEEDING 200 BAR DIAMETERS.
3. AT INTERSECTIONS, BOND WALLS TOGETHER BY INTERLOCKING ALTERNATIVE COURSES (RUNNING BOND), UNLESS NOTED OTHERWISE.

DETAILS OF REINFORCED MASONRY WALLS

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TD M.1

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LOOSE LINTEL SCHEDULE FOR NON–BEARING MASONRY WALLS & VENEER

MARK	MAX. SPAN	MINIMUM END BEARING	WALL/VENEER THICKNESS	
			FOR EACH 102 (4") OF MASONRY OR VENEER	FOR EACH 152 (6") OF MASONRY OR VENEER
LL1	UP TO 1200 (3'–11")	102 (4")	L89x89x6.4 (L3½x3½x1/4)	L127x89x7.9 (L5x3½x5/16) L.L.H.
LL2	1200 TO 1800 (3'–11" TO 5'–11")	152 (6")	L102x89x7.9 (L4x3½x5/16) L.L.V.	L127x127x7.9 (L5x5x5/16)
LL3	1800 TO 2400 (5'–11" TO 7'–10")	203 (8")	L127x89x7.9 (L5x3½x5/16) L.L.V.	L127x127x7.9 (L5x5x5/16)
LL4	2400 TO 3000 (7'–10" TO 9'–10")	203 (8")	L152x102x9.5 (L6x4x3/8) L.L.V.	L127x127x13 (L5x5x1/2)

NOTES:

1. STRUCTURAL STEEL CONTRACTOR MUST CHECK ALL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS REQUIRING LINTELS.
2. PROVIDE LINTELS OVER ALL OPENINGS IN MASONRY WALLS AS SHOWN ABOVE, UNLESS OTHERWISE NOTED ON PLAN OR WHERE OTHER LINTEL TYPE REQUIRED TO SUIT ARCHITECTURAL DRAWING.
3. L.L.V. DENOTES LONG LEG VERTICAL. L.L.H. DENOTES LONG LEG HORIZONTAL.
4. FOR WALLS/VENEER WIDTHS LARGER THAN 152 (6"), COMBINE LOOSE LINTELS AS REQUIRED TO SUIT WIDTH.
5. DOUBLE STEEL LINTELS OVER 1800 (5'–11") SHALL BE BOLTED OR WELDED TOGETHER.
6. SUPPLY STEEL PACKING PLATES TO ENSURE EVEN BEARING.
7. FOR LINTELS ABUTTING CONCRETE WALLS, CONCRETE COLUMNS OR STEEL COLUMNS, CAST IN (2) 3/4"ø x 305 LG. (12" LG.) A.BOLTS OR WELD TO WALL OR COLUMNS. TO BE SUPPLIED BY STRUCTURAL STEEL CONTRACTOR.
8. LOOSE LINTELS EXPOSED TO THE EXTERIOR ARE TO BE HOT DIPPED GALVANIZED.

LOOSE LINTEL SCHEDULE

ATKINS + VAN GROLL INC.
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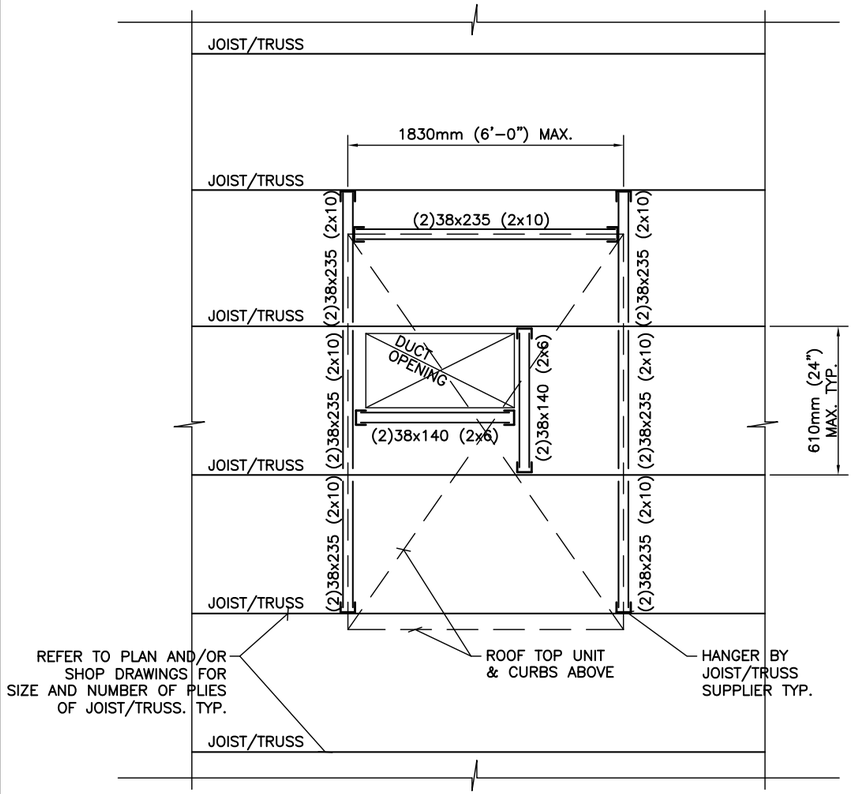
TD S.9



NOTES:

1. SEE PLANS FOR UNIT WEIGHTS & SNOW ACCUMULATION.
2. ASSUME "WORST CASE LOADING" OF JOISTS/TRUSSES IF MECHANICAL UNIT LAYOUT NOT AVAILABLE.
3. SEE ARCHITECTURAL & MECHANICAL DRAWINGS FOR CURB DETAILS.
4. ORIENT UNITS TO SPREAD LOAD OVER MAXIMUM NUMBER OF JOISTS.
5. JOIST/TRUSS HANGERS TO BE BY JOIST/TRUSS SUPPLIER.

TYPICAL DETAIL OF FRAMING AT ROOF TOP UNIT

ATKINS + VAN GROLL INC.

TD W.5

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WASHROOM FACILITY OPTION A
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TYPICAL DETAILS

DRAWING No. **S0.12**

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FOUNDATION PLAN NOTES

1 SEE ALSO GENERAL REQUIREMENTS, TYPICAL DETAILS AND SPECIFICATIONS.

2 GROUND FLOOR DATUM ELEVATION IS TOP OF FINISHED SLAB ON GRADE WHICH IS SET AT 100.86m, UNLESS CROSSED AND NOTED.

3 FOR CONCRETE REQUIREMENTS, REFER TO CAST-IN-PLACE CONCRETE SPECIFICATION.

4 PROVIDE 1220mm (4'-0") MINIMUM FROST COVER FOR ALL EXTERIOR FOOTINGS.

5 FOOTINGS SHALL BE CARRIED DOWN TO NATURAL UNDISTURBED SOIL FREE OF ORGANIC MATTER AND CAPABLE OF SUSTAINING 100 kPa (2100 psf) UNDER SLS (SERVICEABILITY LIMIT STATES) AND 150 kPa (3100 psf) UNDER ULS (ULTIMATE LIMIT STATES).

6 REFER TO SOIL REPORT #5893-001 PREPARED BY CAMBIUM AND DATED MARCH 02, 2017.

7 SOIL AT THE UNDERSIDE OF THE FOOTINGS IS TO BE INSPECTED AND APPROVED BY A REPRESENTATIVE OF A GEOTECHINICAL CONSULTANT BEFORE PLACING CONCRETE FOUNDATIONS.

8 ALL FOOTING ELEVATIONS SHOWN ON PLAN OR SECTIONS ARE THOSE FOR THE ASSUMED SOIL AND DESIGN CONDITION. ANY VARIATIONS SHOULD BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

9 WHERE DRAINAGE PIPE INVERT ELEVATIONS ARE BELOW SPREAD FOOTING ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS, THE FOOTING SHOULD BE LOWERED SO THAT IN NO CASE DRAINAGE PIPES PASS UNDER FOOTING. FOR INVERT ELEVATIONS SEE MECHANICAL DRAWINGS. SEE TYPICAL DETAILS.

10 BACKFILLING OF FOUNDATION WALLS IS TO BE DONE SIMULTANEOUSLY ON BOTH SIDES UP TO SLAB ON GRADE LEVEL.

11 PROVIDE LATERAL BRACING FOR FOUNDATION WALLS AS REQUIRED FOR ALL CONSTRUCTION LOADS.

12 ALL BACKFILL MATERIALS AND INSTALLATION SHALL BE REVIEWED BY A CERTIFIED GEOTECHINICAL ENGINEER TO ENSURE COMPLIANCE TO THE RECOMMENDATIONS AS NOTED IN THE SOILS REPORT.

13 DUE CARE AND PRECAUTION SHOULD BE TAKEN FOR THE PROTECTION OF FOOTINGS AGAINST FROST ACTION DURING WINTER CONSTRUCTION AND IS TO BE TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.

14 SLAB ON GRADE TO BE 102mm (4") THICK REINFORCED WITH 152x152 MW18.7 x MW18.7 (6x6 6x6) WELDED WIRE FABRIC, PLACED 38mm (1 1/2") FROM TOP OF SLAB, EXCEPT AS CROSSED AND NOTED.

15 AS A MINIMUM, SUB-GRADE CONSTRUCTION TO BE AS FOLLOWS, UNLESS OTHERWISE DESCRIBED IN A SOILS REPORT;

a) SLAB ON GRADE SHALL BE CONSTRUCTED ON A CUSHION OF 204mm (8") GRANULAR "A" COMPACTED TO AT LEAST 98% SPDD.

b) PRIOR TO PLACING GRANULAR FILL, ALL TOP SOIL MUST BE STRIPPED OFF AND THE EXPOSED SUB-GRADE SHALL BE PROOF ROLLED, SEEKING SOFT OR HEAVING AREAS WHICH IF THEY OCCUR SHALL BE SUB-EXCAVATED AND REPLACED WITH COMPACTED GRANULAR FILL.

c) IN AREAS WHERE FILL IS ENCOUNTERED, ALL FILL MUST BE SUB-EXCAVATED AND REPLACED WITH APPROVED FILL WHICH SHOULD BE PLACED IN SHALLOW LIFTS AND COMPACTED TO A MINIMUM OF 98% OF ITS MAXIMUM STANDARD PROCTOR DENSITY.

16 EQUIPMENT PADS AND FOUNDATIONS ARE NOT TO BE LOCATED ABOVE NEW OR EXISTING FOOTINGS, WITHOUT REVIEW BY THE STRUCTURAL ENGINEER.

17 PROVIDE SLAB THICKENING FOR NON-LOAD BEARING CONCRETE BLOCK WALLS AS PER TYPICAL DETAILS.

18 SHORING DRAWINGS TO BE PREPARED BY AN ENGINEER AND SUBMITTED TO STRUCTURAL ENGINEER FOR REVIEW.

19 EXCAVATION IS NOT TO UNDERMINE ADJACENT PROPERTY OR ADJACENT BUILDINGS. PROVIDE SHORING IF REQUIRED.

20 THE STEPPED DOWN FOOTING NOTATION 'SDF' ON PLAN INDICATES ONLY THE LIKELY REQUIREMENT OF STEPPED DOWN FOOTINGS, AND DOES NOT SPECIFY AN EXACT STEP LOCATION, NOR DOES IT SPECIFY A NUMBER OF STEPS. THE EXACT LOCATION AND NUMBER OF STEPS WILL BE BASED UPON THE ELEVATION OF BEARING SOILS, SLAB ELEVATION, FROST PROTECTION REQUIREMENTS, ETC.

END OF SECTION

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REVISIONS/ISSUES

LICENSED PROFESSIONAL ENGINEER
R.J. VAN GROLL
MAY. 31/19
PROVINCE OF ONTARIO

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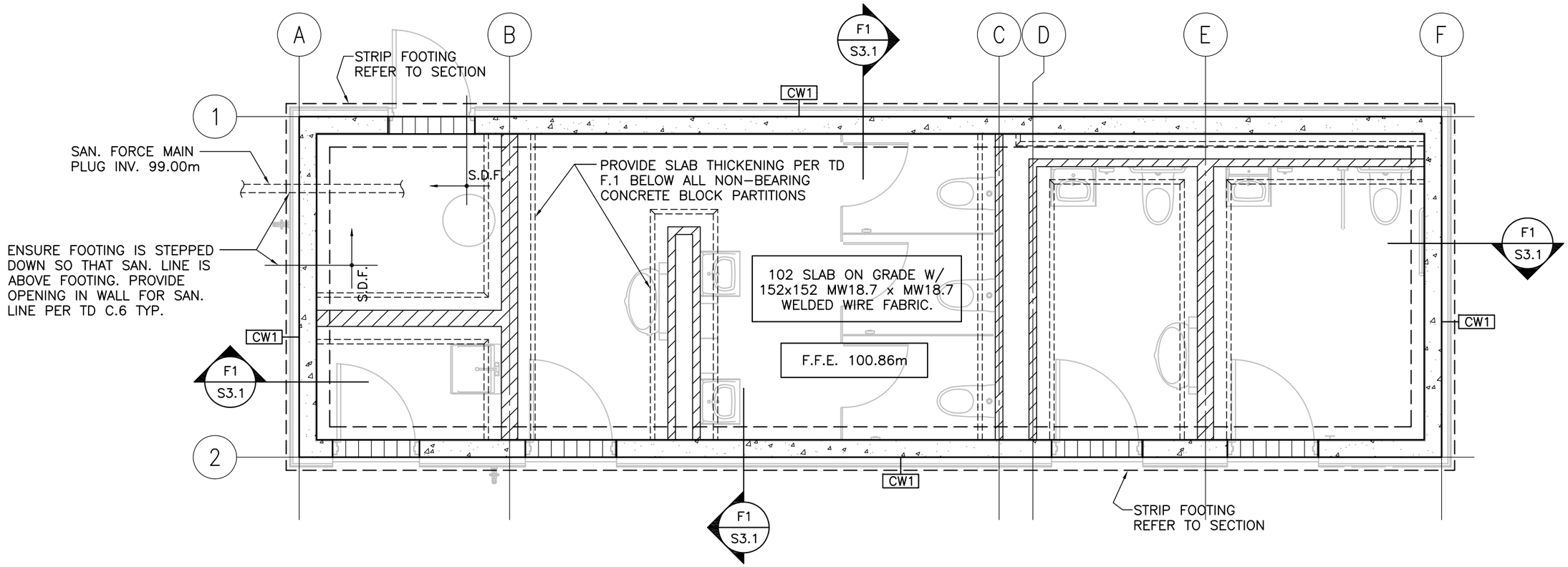
WASHROOM FACILITY OPTION A
695 ROSSLAND ROAD WEST, WHITBY, ONTARIO

FOUNDATION NOTES

DRAWING No. **S1.0**

DRAWN BY	SCALE	DATE	PROJECT No.
NW	N/A	MAY 2019	18-3314A



WALL SCHEDULE		
MARK	SIZE (mm)	REINFORCING
CW1	203 CONC. WALL	15M @ 406mm o.c. H.&V. W/ (2)15M @ TOP
MW1	190 CONC. BLOCK WALL	15M @ 406mm o.c. FULL HEIGHT WITH VOIDS FILLED SOLID W/ CONC.

READ THIS DRAWING IN CONJUNCTION WITH CONTRACT DRAWINGS, ALL MATERIAL AS CONTRACT DRAWINGS UNLESS NOTED.

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WASHROOM FACILITY OPTION A
695 ROSSLAND ROAD WEST,
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FOUNDATION PLAN

DRAWING No. **S1.1**

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ROOF FRAMING PLAN NOTES

1 SEE ALSO GENERAL REQUIREMENTS, TYPICAL DETAILS AND SPECIFICATIONS.

2 BASED ON A NORMAL BUILDING IMPORTANCE CATEGORY, THE ROOF SNOW LOAD AND SNOW ACCUMULATION MUST BE FACTORED BY THE IMPORTANCE FACTOR, Is OF 1.0 FOR ULS (ULTIMATE LIMIT STATES) AND 0.9 FOR SLS (SERVICEABILITY LIMIT STATES). DESIGN ROOF SNOW LOAD IS 1.44 kPa (30.0 psf) + SNOW ACCUMULATION. NET UPLIFT IS 0.72 kPa (15.0 psf). LIVE & SNOW LOAD DEFLECTION IS TO BE LIMITED TO L/360.

3 DESIGN SUPERIMPOSED DEAD LOAD IS 0.72 kPa (15.0 psf) PLUS MECHANICAL UNITS WHERE APPLICABLE. FOR LOCATION, SIZE AND WEIGHT OF MECHANICAL UNITS SEE PLAN AND MECHANICAL DRAWINGS. TOTAL LOAD DEFLECTION IS TO BE LIMITED TO L/240.

4 ROOF TRUSS LOADS:
TOP CHORD SNOW LOAD = 1.44 kPa (30.0 psf).
TOP CHORD DEAD LOAD = 0.72 kPa (15.0 psf).
BOTTOM CHORD LIVE LOAD = 0.48 kPa (10.0 psf).
BOTTOM CHORD DEAD LOAD = 0.48 kPa (10.0 psf).

5 CONNECT 38mmx140mm (2x6) WOOD PLATE TO TOP OF MASONRY WALLS WHICH SUPPORT WOOD TRUSSES. REFER TO SECTIONS.

6 ALL STEEL EXPOSED TO THE EXTERIOR IS TO BE HOT DIPPED GALVANIZED.

7 ALL TIMBER EXPOSED TO THE EXTERIOR IS TO BE PRESSURE TREATED.

8 ALL CONVENTIONAL WOOD FRAMING MEMBERS TO BE S.P.F. #2 MIN, UNLESS NOTED OTHERWISE.

9 ALL LVL AND PSL LUMBER TO BE 2.0x10e6 psi.

10 DESIGN TRUSSES IN ACCORDANCE WITH PART 4 OF OBC, LIMIT STATES DESIGN.

11 PROVIDE TO ENGINEER FOR REVIEW, WOOD ROOF TRUSS, ENGINEERED JOIST AND BEAM SHOP DRAWINGS (STAMPED BY P. ENG.) WHICH INCLUDE SPECS FOR ALL REQUIRED JOIST AND BEAM HANGERS.

12 ROOF TRUSS DESIGNER TO PROVIDE HURRICANE CLIPS AT ALL ROOF TRUSSES FOR UPLIFT AT TOP PLATE.

13 CONNECT INTERIOR NON-LOAD BEARING WALLS TO TRUSSES USING A SLIDING CONNECTION.

14 PROVIDE MIN. 19mm (3/4") EXTERIOR GRADE PLYWOOD ROOF SHEATHING COMPLETE WITH H-CLIPS. PROVIDE NAILING AT 152mm(6") c/c ALONG ALL SHEET EDGES AND 305mm (12") c/c ON INTERMEDIATE FRAMING MEMBERS. PROVIDE 3mm (1/8") GAP BETWEEN SHEATHING PIECES.

15 TRIM ALL SIDES OF FRAMED OPENINGS WITH (2) 38mmx140mm (2x6) UNLESS OTHERWISE NOTED ON PLAN. REFER ALSO TO TD W.5.

16 REFER TO TYPICAL DETAIL TD S.9 FOR LOOSE LINTEL SIZING OF ON-BEARING CONCRETE BLOCK AND VENEER.

17 FOR SUPPORT FRAMING OF ROOF TOP UNITS AND OPENINGS, REFER TO TYPICAL DETAIL TDW.5. REFER TO MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF UNITS AND OPENINGS.

18 ALL FIREWALLS ARE TO BE DESIGNED TO MEET CLAUSE 4.1.5.17. OF THE MOST CURRENT OBC. FOR FIREWALL LOCATIONS, REFER TO ARCHITECTURAL DRAWINGS. PROVIDE SHOP DRAWINGS, COMPLETE WITH P.ENG STAMP FOR REVIEW.

END OF SECTION

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ROOF FRAMING NOTES

DRAWING No. **S2.0**

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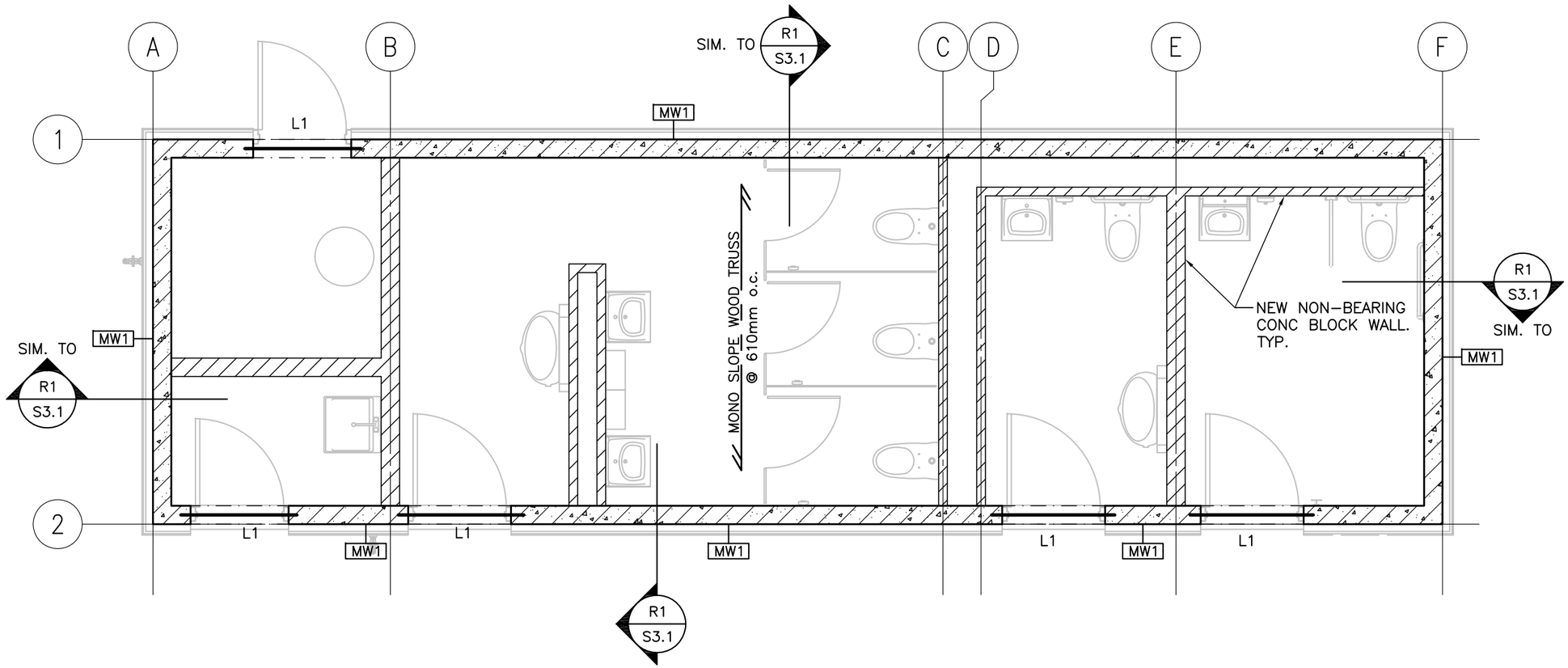

LINTEL SCHEDULE		
MARK	SIZE	NOTES
L1	(2) L 89x89x7.9	102mm MIN. BEARING EACH END

WALL SCHEDULE		
MARK	SIZE (mm)	REINFORCING
CW1	203 CONC. WALL	15M @ 406mm o.c. H.&V. W/ (2)15M @ TOP
MW1	190 CONC. BLOCK WALL	15M @ 406mm o.c. FULL HEIGHT WITH VOIDS FILLED SOLID W/ CONC.

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WASHROOM FACILITY OPTION A

695 ROSSLAND ROAD WEST, WHITBY, ONTARIO

ROOF FRAMING PLAN

DRAWING No. S2.1

DRAWN BY	SCALE	DATE	PROJECT No.
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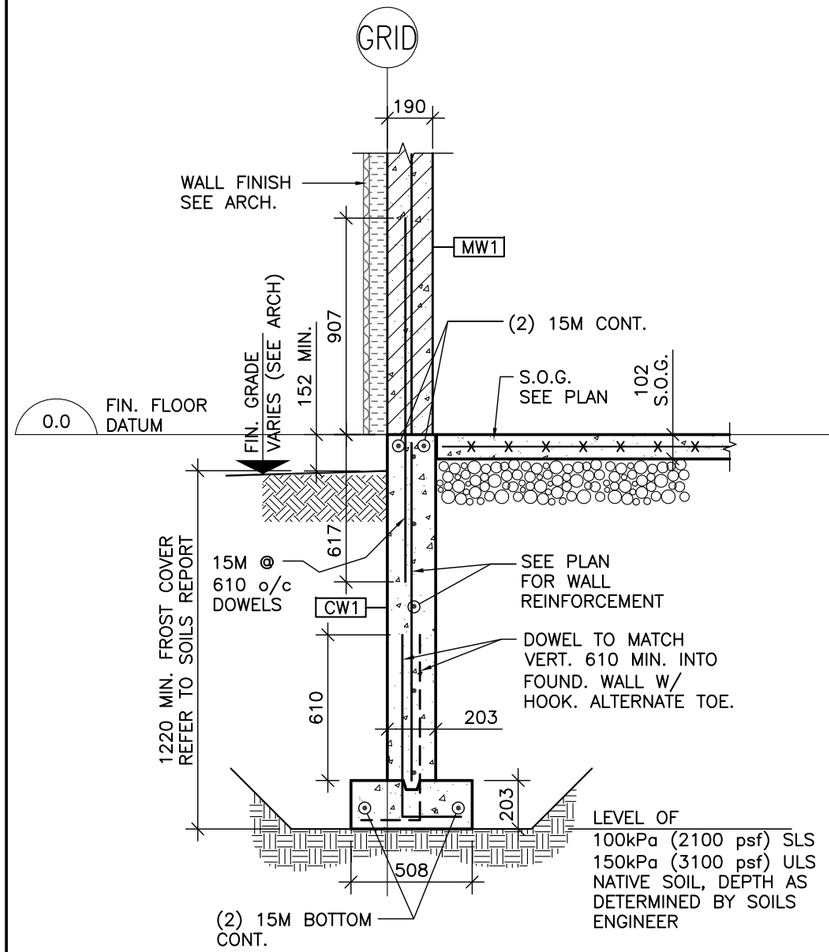
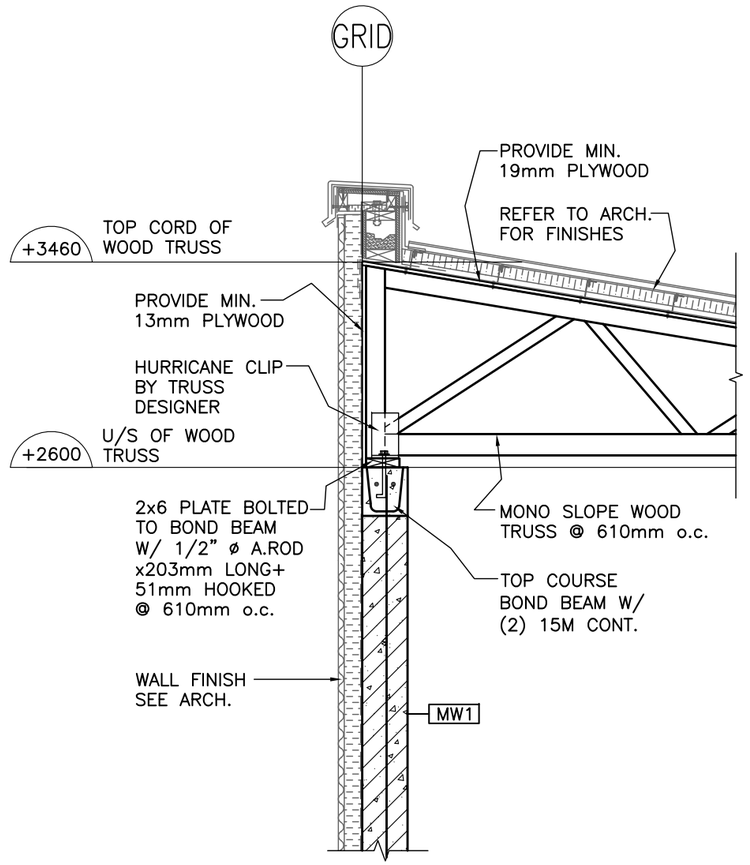


F1 / S3.1 **TYPICAL FOUNDATION WALL**

@ MASONRY WALL SCALE: 1:25



R1 / S3.1 **TYPICAL ROOF SECTION**

@ MASONRY WALL SCALE: 1:25

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WASHROOM FACILITY OPTION A
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SECTIONS

DRAWING No. **S3.1**

DRAWN BY	SCALE	DATE	PROJECT No.
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LEGEND

"L1"	LED 2'X4' LUMINAIRE, CEILING MOUNTED LETTER DENOTES TYPE.
"F1"	FLUORESCENT 2'X2' LUMINAIRE, CEILING MOUNTED RESPECTIVELY. LETTER DENOTES TYPE.
"A" "B"	CEILING OR WALL MOUNTED LUMINAIRE RESPECTIVELY. LETTER DENOTES TYPE.
A1 NL A2 NL	LUMINAIRE AS ABOVE BUT CONNECTED TO NIGHT LIGHT CIRCUIT.
	CEILING OR WALL MOUNTED ILLUMINATED EXIT SIGN RESPECTIVELY. SINGLE OR DOUBLE FACED AS INDICATED BY FILLED IN PORTION(S) WITH ARROW(S) AS INDICATED.
	SURFACE MOUNTED SINGLE OF DOUBLE EMERGENCY LIGHTING REMOTE HEAD. CEILING OR WALL MOUNTED AS SHOWN.
$ $ $	15A/20A 120V SINGLE POLE TOGGLE SWITCH(ES) WITH ONE, TWO OR THREE-GANG COVERPLATE RESPECTIVELY. SWITCHES RATING TO SUIT LIGHTING LOADS & BREAKER SIZE.
	125V, 15A DUPLEX U-GROUND RECEPTACLE UNLESS OTHERWISE NOTED.
	RECEPTACLES AS ABOVE BUT MOUNTED ABOVE COUNTER OR 42"AFF.
GFI WP TL	RECEPTACLE AS ABOVE SUBSCRIPTS DENOTE SPECIAL TYPE AS PER ABBREVIATION LIST.
	UNFUSED DISCONNECT SWITCH. SIZE TO SUIT OR AS NOTED. SEE ABBREVIATION FOR OTHER SUBCRIPTS.
PL	120V DIRECT CONNECTION FOR USE AS NOTED. INCLUDE FINAL CONNECTION. 'PL' DENOTES FOR ELECTRONIC PLUMBING FIXTURES.
	ELECTRIC HEATER. BASEBOARD/FORCED-AIR RESPECTIVELY. TYPE AS INDICATED.
M	STANDARD METERING CABINET
30/20A	FUSED DISCONNECT SWITCH. SIZE AS NOTE. (EG. 30A/3PSN WITH 20A FUSES)
	BREAKER. SIZE AS NOTED.
	MOTOR AS INDICATED. INCLUDE FINAL CONNECTION.
LP"A" LP"B"	FLUSH OR SURFACE MOUNTED ELECTRICAL PANEL RESPECTIVELY.
A 500W	ELECTRIC HEATER DESCRIPTION. LETTER DENOTES TYPE. NUMBER DENOTES WATTAGE.
	PUSHBUTTON FOR USE AS NOTED.
OS	OCCUPANCY SENSOR. NUMBER DENOTES TYPE. REFER TO SCHEDULE.
DC	SECURITY SYSTEM, DOOR CONTACT.
DO	SECURITY SYSTEM, DOOR OPERATOR
ES	SECURITY SYSTEM, ELECTRIC STRIKE

GENERAL NOTES (APPLY TO ALL DRAWINGS)

1. ELECTRICAL DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS AND MECHANICAL DRAWINGS.
2. FOR EXACT LOCATION OF LIGHTING FIXTURES REFER TO ARCHITECTURAL DRAWINGS.
3. FOR EXACT LOCATION OF ALL ERV UNITS, PUMPS, MOTORS, HEATERS, EXHAUST FANS ETC..., SEE MECHANICAL DRAWINGS. CO-ORDINATE ALL WORK WITH MECHANICAL CONTRACTOR.
4. EXACT LOCATION FOR ALL RECEPTACLES AND OUTLETS SHALL BE DETERMINED BY THE ARCHITECT OR OWNER PRIOR TO ROUGHING-IN. CONTRACTOR TO VERIFY.
5. ELECTRICAL CONTRACTOR SHALL CO-ORDINATE THEIR WORK TO SUIT THE PROJECT PHASE SCHEDULE.
6. ALL CUTTING, PATCHING AND PAINTING SHALL BE DONE BY THIS ELECTRICAL CONTRACTOR.
7. DRILLING OF FLOORS, WALLS AND CEILINGS SHALL BE BY THIS CONTRACTOR, WHO SHALL OBTAIN WRITTEN APPROVAL FOR THE LOCATIONS OF THE DRILLING FROM THE GENERAL CONTRACTOR.
8. CUTTING EFFECTING STRUCTURAL INTEGRITY OF THE BUILDING SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER.
9. CO-ORDINATE LIGHTING LAYOUT ON SITE WITH OTHER TRADES TO AVOID CONFLICTS WITH SPRINKLERS, PIPES, DUCTS, ETC...

EMERGENCY BATTERY UNIT SPECIFICATIONS

BATTERY UNITS C/W REMOTE HEAD AND EXIT SIGN

BATTERY UNIT SHALL BE QUADRA COMBO CAT. # QR-RM SERIES WITH 12V, CAPACITY AS INDICATED ON DRAWING OR EQUAL BY EMERGILITE, DUALITE OR BEGHELLI. UNITS SHALL BE FOR OPERATION ON 120 VOLT – 10 YEARS LIFE BATTERY – WITH NUMBER OF HEADS INDICATED ON THE DRAWINGS. UNITS SHALL BE PLUG-IN TYPE WITH SEALED PURE LEAD BATTERIES. THE CHARGER SHALL BE COMPLETELY AUTOMATIC, SOLID STATE TYPE BROWN OUT FEATURE, CAPABLE OF FULLY RECHARGING DISCHARGED BATTERY IN 24 HOURS. TRANSFER DEVICE SHALL AUTOMATICALLY SWITCH LOAD ON AT POWER FAILURE AND OFF ON RETURN OF NORMAL POWER. UNITS SHALL HAVE LOW VOLTAGE DISCONNECT FEATURE.

REMOTE HEADS

DC-1

SINGLE AND DOUBLE REMOTE HEADS SHALL BE MR16 LED 5W, EMERGENCY LIGHTING REMOTE HEADS SHALL BE WHITE.
BEGHELLI CAT. #LED MR16 SERIES OR APPROVED EQUAL.

EXIT SIGN 'X1'

SINGLE FACE OR DOUBLE FACE AS PER DRAWING, SHOULD BE 1 HR RATED LIFE UNIVERSAL MOUNTED LED SIGN, GREEN METAL BODY WITH RUNNING MAN 2W MR16 LED LAMPS,120VAC & 12VDC INPUT. GREEN RUNNING MAN QUADRA SERIES CAT.# QR-RM SERIES OR APPROVED EQUAL

DRAWING LIST

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REVISIONS/ISSUES

LICENCE PROFESSIONAL ENGINEER K.K.SHARMA 03/05/19 PROVINCE OF ONTARIO

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Mechanical and Electrical Engineers
85 Curlew Drive, Unit 108
Toronto, Ontario,
M3A 2P8
Tel.: (416) 291-8822
Fax: 1-888-832-7160

SPI PROJECT NUMBER: 2018-1064

WASHROOM FACILITY OPTION A
695 ROSLAND ROAD WEST,
WHITBY, ONTARIO

ELECTRICAL DETAILS, NOTES AND LEGEND

DRAWING No. E1-1

DRAWN BY	SCALE	DATE	PROJECT No.
A.A	1:50	03/05/19	2018-1064

OCCUPANCY SENSOR SCHEDULE

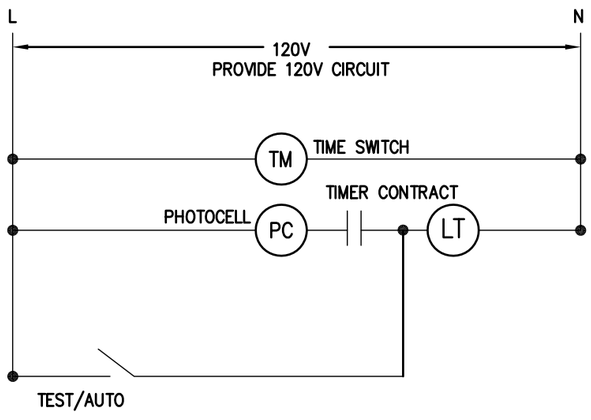
OS 1

FLUSH WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH:
- AUTO-ON WITH MANUAL OFF SWITCH.
- FITS A STANDARD SWITCH BOX WITH DECORA COVER PLATE.
- ADJUSTABLE TIME DELAY BETWEEN 30 SECONDS AND 30 MINUTES.
- ADJUSTABLE INTEGRATED NATURAL LIGHT LEVEL SENSOR BETWEEN 2 AND 200 FOOT CANDLES.
- 5 YEAR WARRANTY.

WATT-STOPPER CAT.# DW-100-120-1.

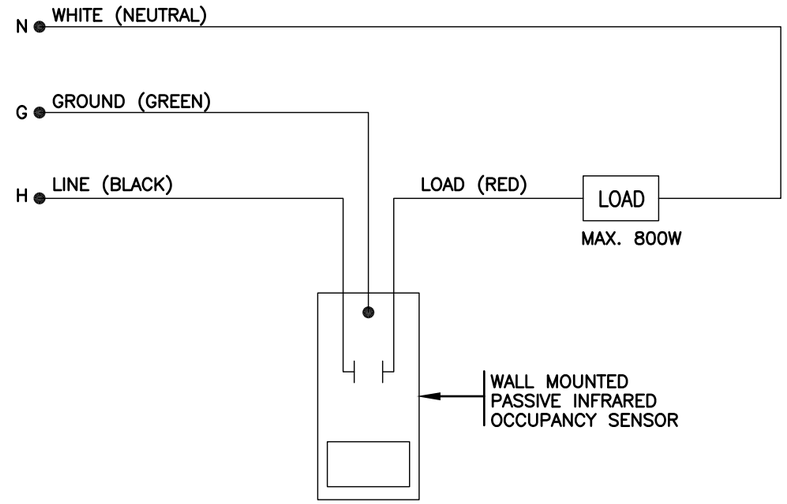
NOTES:

1. ADJUST SENSITIVITY OF SENSORS TO SUIT ROOM SIZE AND CONFIGURATION TO PREVENT SENSORS FROM "SEEING" OUTSIDE THE ROOM.
2. ADJUST LIGHT LEVEL SENSORS TO 65 FOOT CANDLES.
3. ADJUST TIME DELAY TO 30 MINUTES.
4. ALLOW IN CONTRACT LABOUR TO ADJUST SENSORS A SECOND TIME TO OWNER'S DIRECTIVES.
5. PROVIDE MINIMUM TWO TIMES SETTING BY WATTS-STOPPER REPRESENTATIVE.
6. COORDINATE WITH WATTS-STOPPER AND ALLOW IN CONTRACTOR TO HIRE WATTS-STOPPER REPRESENTATIVE FOR SETTING, PROGRAM, TRAINING OWNER STAFF, ETC.. TO INSURE WATTS-STOPPER CONTROL SYSTEM IN GOOD OPERATIONAL CONDITION.
7. FINAL LOCATIONS OF SENSORS SHALL BE AS RECOMMENDED BY MANUFACTURERS. AVOID CLOSE PROXIMITY TO DIFFUSERS.
8. WHERE ROOM/AREA THERE IS TWO BUTTONS WITHOUT CEILING SENSOR, TWO BUTTONS SHALL BE BUILT-IN WITH DUAL TECHNOLOGY SENSOR. IF THERE IS CEILING SENSOR, TWO BUTTONS SHALL BE LMSW SERIES.



1 / E1-2 EXTERIOR LIGHTING CONTROL WIRING DIAGRAM

SCALE: N.T.S.



2 / E1-2 WALL MOUNTED OCCUPANCY SENSOR CONTROL WIRING DIAGRAM

SCALE: N.T.S.

ELECTRIC HEATER SCHEDULE

TYPE	DESCRIPTION
A	120V, 1PH ELECTRIC BASE BOARD HEATER, WHITE FINISH C/W BUILT-IN THERMOSTAT. KILOWATTAGE AS INDICATED ON DRAWING. OUELLET CAT.# OPR SERIES OR APPROVED EQUAL.

ABBREVIATION

n / DWG	DETAIL # DRAWING WHERE DETAIL IS SHOWN.
WP	WEATHERPROOF.
GFI	GROUND FAULT INTERRUPTER.
MD	MOTORIZED DAMPER.
A-1	PANEL "A", CIRCUIT #1.
NIEC	NOT IN THIS ELECTRICAL CONTRACT.

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WHITBY, ONTARIO

ELECTRICAL DETAILS, NOTES AND LEGEND

DRAWING No. E1-2

DRAWN BY	SCALE	DATE	PROJECT No.
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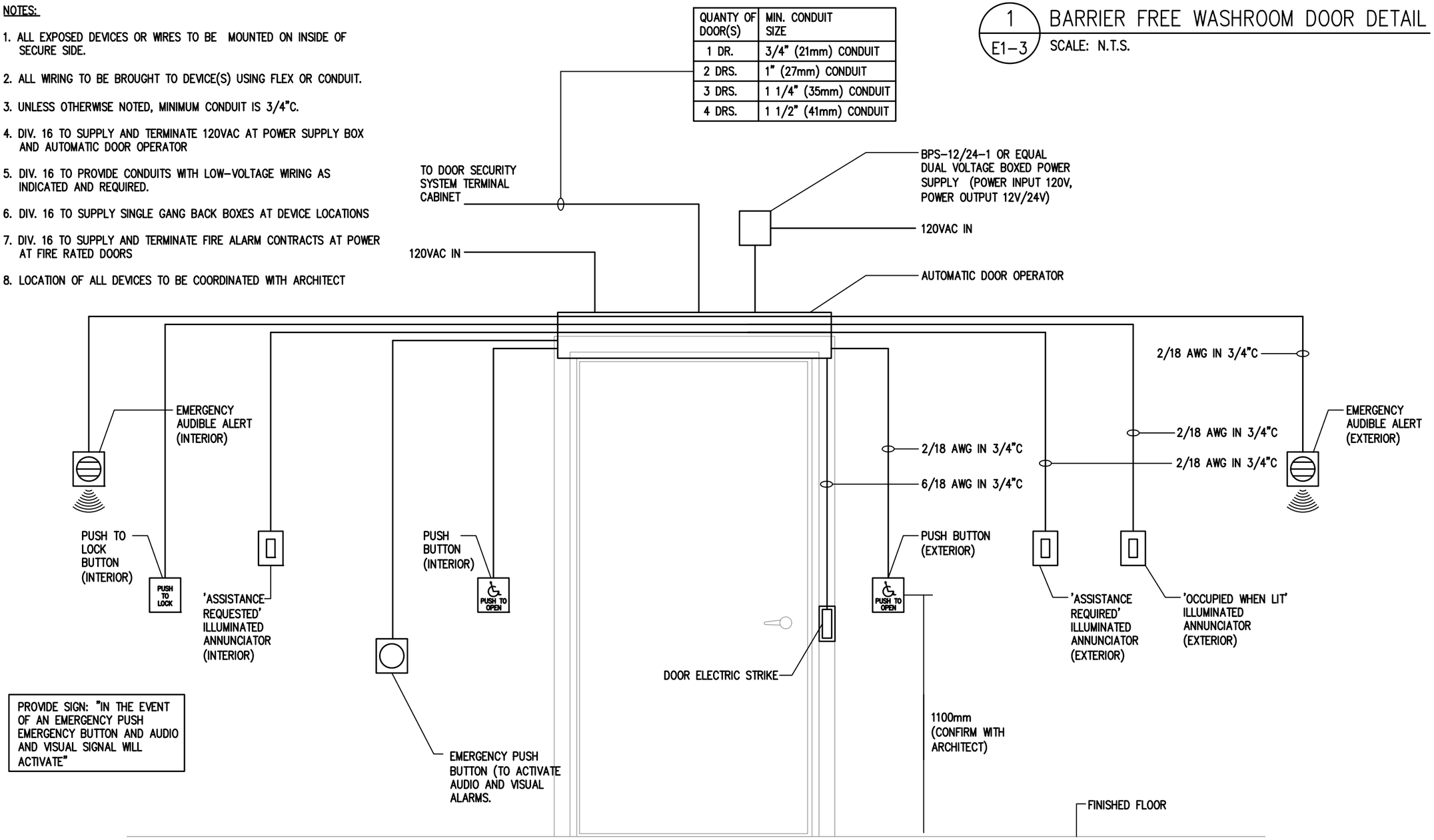
NOTES:

1. ALL EXPOSED DEVICES OR WIRES TO BE MOUNTED ON INSIDE OF SECURE SIDE.
2. ALL WIRING TO BE BROUGHT TO DEVICE(S) USING FLEX OR CONDUIT.
3. UNLESS OTHERWISE NOTED, MINIMUM CONDUIT IS 3/4"C.
4. DIV. 16 TO SUPPLY AND TERMINATE 120VAC AT POWER SUPPLY BOX AND AUTOMATIC DOOR OPERATOR
5. DIV. 16 TO PROVIDE CONDUITS WITH LOW-VOLTAGE WIRING AS INDICATED AND REQUIRED.
6. DIV. 16 TO SUPPLY SINGLE GANG BACK BOXES AT DEVICE LOCATIONS
7. DIV. 16 TO SUPPLY AND TERMINATE FIRE ALARM CONTRACTS AT POWER AT FIRE RATED DOORS
8. LOCATION OF ALL DEVICES TO BE COORDINATED WITH ARCHITECT

QUANTY OF DOOR(S)	MIN. CONDUIT SIZE
1 DR.	3/4" (21mm) CONDUIT
2 DRS.	1" (27mm) CONDUIT
3 DRS.	1 1/4" (35mm) CONDUIT
4 DRS.	1 1/2" (41mm) CONDUIT

1 / E1-3 BARRIER FREE WASHROOM DOOR DETAIL

SCALE: N.T.S.



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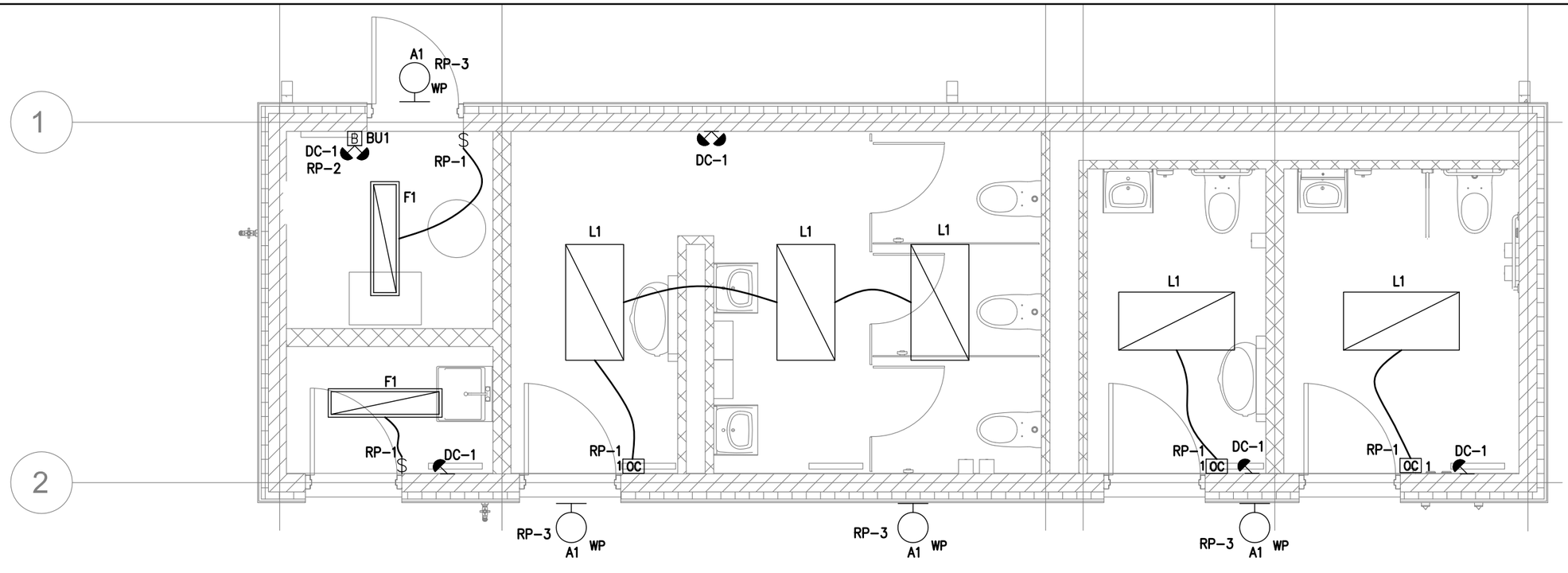

LUMINARE SCHEDULE

REF #	ITEM	LOCATION	MANUFACTURER	MODEL	COLOUR	NOTES
L-1	2'X4' RECESSED LIGHT	INSIDE OF WASHROOMS	VISCOR	VRU SERIES, VANDAL RESISTANT	WHITE	LED LIGHT, 4000K, 4500 LUMENS, 120V.
F-1	4FT LONG, GRADE DUST AND WATER RESISTANT EXTRUDED ALUMINUM WITH DIE-CAST, POLYCARBONATE LENS	ELECT/MECH ROOM CUSTODIAL ROOM	VISCOR	CAT.# VRSE SERIES OR APPROVED EQUAL	WHITE	LED, 4000K, 4500 LUMENS, CEILING OR WALL MOUNTED, 120V.
A-1	DURABLE DIE-CAST ALUMINUM HOUSING AND CAGE PROVIDE PROTECTION AGAINST VAPOUR AND DUST.	OUTSIDE OF BUILDING TOP OF THE WASHROOM DOOR	EATON	VT1730	WHITE	LED TYPE, 17W, 120V, 3500K, 1450 LUMENS.

OUTSIDE WALL MOUNTED LIGHTING FIXTURES SHALL BE CONTROLED BY PHOTOCELL AND TIME SWITCH.

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WASHROOM FACILITY OPTION A
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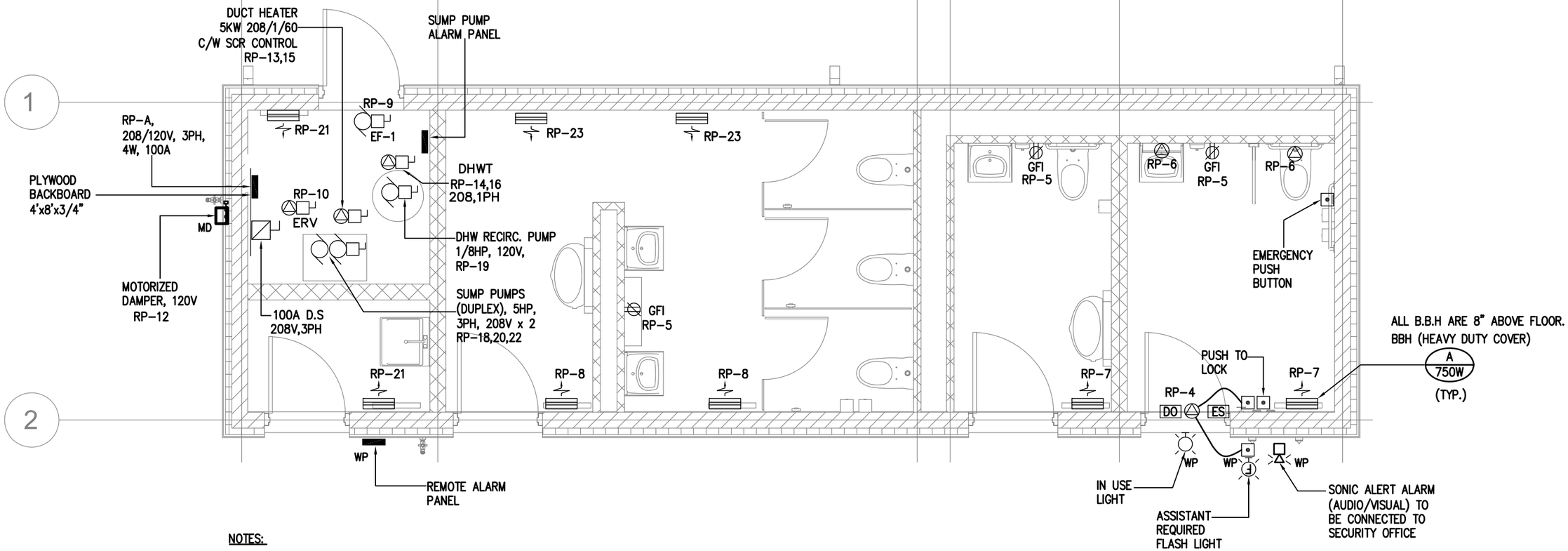
LIGHTING LAYOUT AND SCHEDULE

DRAWING No. E2

DRAWN BY	SCALE	DATE	PROJECT No.
A.A	1:50	03/05/19	2018-1064



NOTES:

1. ERV & EF-1 COMPLETE WITH TIMER FOR PROGRAMMED OPERATION.
2. CONTRACTOR TO SEAL ANY PENETRATION ON THE WALLS AS PER CODE.
3. CONTRACTOR TO PROVIDE NEW BURIED CONDUITS 2-2"C FROM NEW WASHROOM TO EXISTING ELECTRICAL BUNKER THEN RUN THE ALARM SIGNAL CABLES OF UNIVERSAL WASHROOM ALSO RUN THE ALARM SIGNAL CABLE OF SUMP PUMPS THROUGH THIS CONDUITS TO OVER THERE.
4. CONTRACTOR TO PULL BACK THE EXISTING POWER CABLE OF EXISTING WASHROOM FROM EXISTING ELECTRICAL BUNKER THEN RUN THE NEW POWER CABLE FROM EXSITING ELECTRICAL BUNKER TO NEW WASHROOM THROUGH EXISING BURIED CONDUIT. PROVIDE EXTENSION PVC CONDUIT TO SUIT THE ROUTE.

READ THIS DRAWING IN CONJUNCTION WITH CONTRACT DRAWINGS, ALL MATERIAL AS CONTRACT DRAWINGS UNLESS NOTED.

NO.	DESCRIPTION	DATE
2	REISSUED FOR PERMIT AND TENDER	MAY 03/19
1	ISSUED FOR REVIEW	NOV 12/18

REVISIONS/ISSUES

LICENCE PROFESSIONAL ENGINEER K.K.SHARMA 03/05/19 PROVINCE OF ONTARIO

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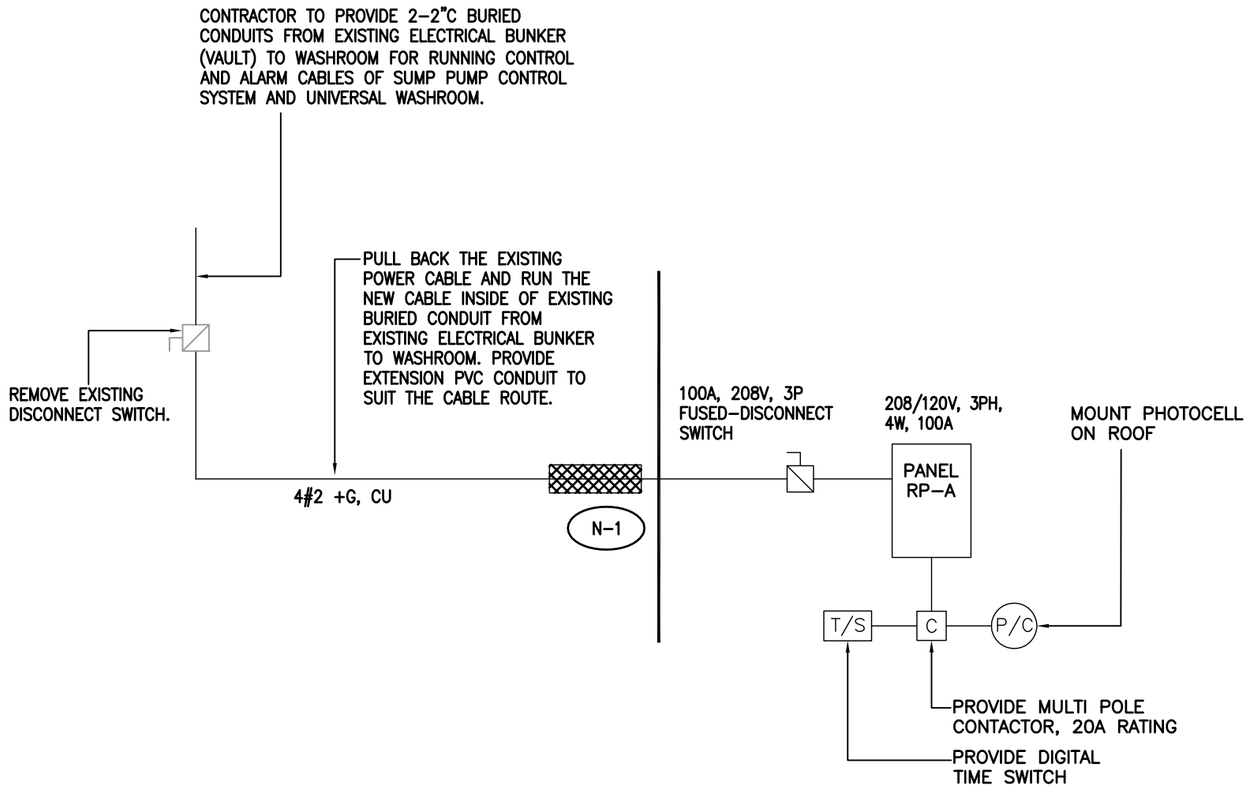
SPI PROJECT NUMBER: 2018-1064

WASHROOM FACILITY OPTION A
695 ROSLAND ROAD WEST,
WHITBY, ONTARIO

ELECTRICAL POWER LAYOUT

DRAWING No. E3

DRAWN BY	SCALE	DATE	PROJECT No.
A.A	1:50	03/05/19	2018-1064



N–1 — 3–2"C PVC UNDER SLAB FROM OUTSIDE BURIED CONDUITS TRENCH TO ELECT/MECH ROOM AT WASHROOM FOR POWER AND SIGNAL.

NOTES:

1. WASHROOM CONTRACTOR TO PROVIDE 3–2"C PVC CONDUITS FOR POWER AND CONTROL TO TIE IN TO SITE BURIED CONDUITS TRENCH. COORDINATE WITH SITE/CIVIL FOR EXACT LOCATION AND DETAIL OF THE CABLE TRENCH AT OUTSIDE OF WASHROOM.

PANEL 'RP–A' 120/208V, 3PH, 4W		TYPE: BOLT ON MAINS: 100 AMPS MOUNTING: SURFACE				LOCATION: ELECT/MECH ROOM	
LOAD	DESCRIPTION	BREAKER	CIRCUITS		BREAKER	DESCRIPTION	LOAD
–	INSIDE LIGHTING	15A	1	2	15A	BATTERY UNIT	
	OUTSIDE WALL MOUNTED LIGHTING	15A	3	4	15A	DOOR OPERATOR	
	GFI RECEPTACLE	15A	5	6	15A	ELEC. FAUCET DEVICE	
1500W	BASEBOARD HEATER	20A	7	8	20A	BASEBOARD HEATER	1500W
	EF–1	15A	9	10	15A	ERV	
	SPARE	15A	11	12	15A	MOTORIZED DAMPER	
5000W	DUCT HEATER	30A/2P	13	14	15A/2P	DHWT	
			15	16			
	SUMP PUMP ALARM PANEL	15A	17	18	15A/3P	SUMP PUMPS	
	DHW–RECIRC. PUMP	15A	19	20			
1500W	BASEBOARD HEATER	20A	21	22			
1500W	BASEBOARD HEATER	20A	23	24	15A	SPARE	
	SPARE	20A	25	26	15A	SPARE	
	SPARE	20A	27	28	15A	SPARE	
	SPACE		29	30		SPACE	
	SPACE		31	32		SPACE	
	SPACE		33	34		SPACE	

READ THIS DRAWING IN CONJUNCTION WITH CONTRACT DRAWINGS, ALL MATERIAL AS CONTRACT DRAWINGS UNLESS NOTED.

NO.	DESCRIPTION	DATE
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1	ISSUED FOR REVIEW	NOV 12/18

REVISIONS/ISSUES

PROFESSIONAL ENGINEER — K.K.SHARMA — 03/05/19 — PROVINCE OF ONTARIO — LICENSED

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SPI PROJECT NUMBER: 2018–1064

WASHROOM FACILITY OPTION A
695 ROSLAND ROAD WEST,
WHITBY, ONTARIO

POWER DISTRIBUTION AND PANEL SCHEDULE

DRAWING No. E4

DRAWN BY	SCALE	DATE	PROJECT No.
A.A	1:50	03/05/19	2018–1064

GENERAL ELECTRICAL CONDITIONS – SECTION 16050

1. COMPLY WITH GENERAL CONDITIONS OF THE CONTRACT AND DIVISION 15, MECHANICAL SPECIFICATIONS. DIVISION 15 SHALL BE THE PRIME CONTRACTOR.

2. THIS SECTION APPLIES TO ALL SECTIONS OF DIVISION 16.

3. PROVIDE EACH ITEM MENTIONED OR INDICATED OF QUALITY AND SUBJECT TO QUALIFICATIONS NOTED; PERFORM ACCORDING TO CONDITIONS STATED EACH OPERATION PRESCRIBED; AND PROVIDE THEREFORE ALL LABOUR, MATERIAL, EQUIPMENT, INCIDENTALS AND SERVICES REQUIRED TO COMPLETE THE INSTALLATION.

4. WORK BY OTHER DIVISIONS

1. PAINTING OF EXPOSED CONDUITS, DUCTS AND UNFINISHED ELECTRICAL EQUIPMENT: UNDER DIVISION 15.
2. CONCRETE WORK – UNDER DIVISION 16.
3. CUTTING AND PATCHING WILL BE BY DIVISION 16. PATCHING SHALL BE OF SAME MATERIAL AS SURROUNDING AREA AND SHALL BE PAINTED OR FINISHED TO MATCH EXISTING.

5. MAKE A SET OF WHITE PRINTS AND AS THE JOB PROGRESSES, MARK ON CHANGES MADE THROUGH ANY APPROVED CHANGE ORDER AS WELL AS THE LOCATION OF FEEDERS, CONDUIT RUNS, JUNCTION BOXES, AND ALL CHANGES IN CIRCUITING, LOCATION OF EQUIPMENT, RUNS OF CONDUITS, WIRING, ETC. FROM THAT ORIGINALLY SHOWN, SO THAT ON THE COMPLETION OF THE JOB THE RECORD DRAWINGS WILL SHOW THE EXACT LOCATION AS ACTUALLY INSTALLED. RECORD DRAWINGS SHALL BE KEPT AT THE SITE AND SHALL BE BROUGHT UP TO DATE AS THE WORK PROGRESSES. SUBMIT COMPLETED RECORD DRAWINGS BEFORE FINAL CERTIFICATE OF JOB ACCEPTANCE IS ISSUED.

6. THE FOLLOWING DOCUMENTS SHALL BE SUBMITTED TO THE CONSULTANT ON THE COMPLETION OF THE PROJECT AS DESCRIBED ABOVE:

– ELECTRICAL INSPECTION CERTIFICATE
– AS_BUILT DRAWINGS
– DATA BOOKS
– GUARANTEE
– OTHER CERTIFICATES SPECIFIED.

7. ALL MATERIAL SHALL BE STORED NEATLY AND OUT OF THE WAY. CLEAN UP DAILY ALL REFUSE CAUSED BY WORK.

8. BIND WITHIN A HARD_COVERED, LOOSE_LEAF BINDER, A COMPLETE SET OF MANUFACTURER'S OPERATING AND MAINTENANCE INSTRUCTIONS SHOWING ALL MAJOR ELECTRICAL EQUIPMENT AND SYSTEMS. INCLUDE SHOP DRAWINGS AND DETAIL DRAWINGS. INSTRUCTIONS SHALL BE COMPLETE FOR INSTALLATION, OPERATION AND MAINTENANCE. SPARE PART SUPPLIERS, LISTS AND ADDRESSES SHALL BE INCLUDED. MAKE ANY ADDITIONS AND/OR CORRECTIONS REQUIRED BY THE CONSULTANT AND SUBMIT TWO CORRECT COPIES TO THE CONSULTANT. INSTRUCTIONS SHALL BE REVIEWED WITH THE OPERATING PERSONNEL TO ENSURE A THOROUGH UNDERSTANDING OF THE EQUIPMENT AND ITS OPERATION.

9. EXAMINE THE SITE, EXISTING EQUIPMENT AND THE LOCAL CONDITIONS AFFECTING THE WORK UNDER THIS CONTRACT. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY FOR ANY OBVIOUS CONSIDERATIONS OVERLOOKED.

10. AFTER THE WORK IS COMPLETE BUT BEFORE FINAL PAYMENT, GIVE THE OWNER A WRITTEN GUARANTEE THAT YOU WILL, AT NO CHARGE TO THE OWNER, REPLACE OR REPAIR ANY DEFECTS IN WORKMANSHIP AND MATERIALS NOT DUE, IN THE OPINION OF THE ARCHITECT TO MISUSE OR NEGLECT. GUARANTEE SHALL COVER A PERIOD OF 12 MONTHS FROM THE DATE OF ACCEPTANCE OF THE WORK BY THE ARCHITECT. THIS GUARANTEE SHALL IN NO WAY SUPPLANT ANY OTHER GUARANTEE OR GUARANTEES OF LONGER PERIOD, BUT SHALL BE BINDING ON ALL OTHER WORK NOT OTHERWISE COVERED.

11. ALL WORK SHALL COMPLY STRICTLY TO THE REQUIREMENTS OF THE LATEST EDITIONS OF THE CANADIAN ELECTRICAL CSA CODE AS ADOPTED AND AMENDED BY PROVINCIAL REGULATIONS AND THE BUILDING CODE. THESE CODES AND ANY ADDITIONAL REQUIREMENTS OF THE POWER UTILITY SHALL FORM AN INTEGRAL PART OF THIS SPECIFICATION. WHERE DRAWINGS CALL FOR EQUIPMENT, WIRING OR OTHER REQUIREMENTS EXCEEDING THE MINIMUM REQUIREMENTS OF THE CODE, THE DRAWINGS SHALL BE FOLLOWED.

12. BEFORE STARTING ANY WORK, SUBMIT THE REQUIRED NUMBER OF COPIES OF THE ELECTRICAL DRAWINGS TO THE POWER AUTHORITY AND ELECTRICAL INSPECTION DEPARTMENT REGIONAL OFFICE, FOR THEIR APPROVAL AND COMMENTS.

13. PAY ALL FEES FOR EXAMINATION OF DRAWINGS AND OBTAIN ALL PERMITS REQUIRED AND PAY ALL PERMIT AND INSPECTION FEES.

14. ARRANGE FOR INSPECTION OF ALL WORK BY THE POWER AUTHORITY AND INSPECTION DEPARTMENT. ON COMPLETION OF THE WORK, PRESENT TO THE OWNER THE FINAL UNCONDITIONAL CERTIFICATE OF APPROVAL.

15. ON AWARD OF CONTRACT, SUBMIT FOR REVIEW LIST OF DELIVERY DATES AND 7 COPIES OF SHOP DRAWINGS FOR ALL EQUIPMENT.

16. ALL MATERIALS SHALL BE NEW AND FREE FROM DEFECTS, NOISE AND VIBRATION. ALL EQUIPMENT SHALL BE CSA APPROVED.

17. SCHEDULE AND COORDINATE ALL WORK WITH OTHER TRADES. RELOCATE OR REPLACE CONDUIT OR EQUIPMENT WHICH INTERFERES WITH OTHER TRADES DUE TO LACK OF COORDINATION WITH OTHER TRADES.

18. THE OWNER SHALL HAVE TEMPORARY USE OF INSTALLATION PRIOR TO FINAL ACCEPTANCE.

19. ALL CLAIMS FOR EXTRAS SHALL BE SUPPORTED BY WRITTEN AUTHORIZATION AND SHALL BE SUBMITTED WITH ITEMIZED MATERIAL AND LABOUR COSTS BREAKDOWNS. THE FORMAT OF THE BREAKDOWN SHALL FOLLOW THAT OF THE CHANGE DOCUMENT (I.E. THAT OF THE NOTICE OF CHANGE, SITE INSTRUCTION, CHANGE DIRECTIVE, ETC.). MATERIALS SHALL BE PRICED AT COST INCLUDING ANY DISCOUNT. LABOUR UNITS SHALL BE BASED ON CECA AND NECA LABOUR UNIT TABLES SUITABLE FOR THE TYPE OF WORK INVOLVED. THERE SHALL BE NO EXTRA CLAIM FOR RELOCATION OF ANY EQUIPMENT WITHIN 10 FEET (3M) FROM THE ORIGINAL LOCATION, PROVIDED THAT THE CHANGE IS MADE BEFORE INSTALLATION.

20. ALL ELECTRICAL EQUIPMENT MOUNTED AND CONNECTED BY THIS CONTRACTOR, WHETHER SUPPLIED BY HIM OR NOT, SHALL BE IDENTIFIED BY MEANS OF PLASTIC NAMEPLATES.

21. WIRING
1. ALL WIRING SHALL BE CONCEALED EXCEPT IN UNFINISHED AREAS AND IN AREAS NOTED WHERE WIRING MAY BE INSTALLED IN SURFACE CONDUITS.
2. RIGID STEEL CONDUITS SHALL BE USED IN:
• ALL EXPOSED WIRING SUBJECT TO MECHANICAL DAMAGE,
• ALL AREAS REQUIRED BY CODE.
3. EMT CONDUITS MAY BE USED WHERE PERMITTED BY CODE:
• EXPOSED WIRING,
• IN FURRED WALLS.
4. ARMOURED FLEXIBLE CABLE TYPE AC90 (BX CABLE) MAY BE USED AS DROP CABLE FROM JUNCTION BOX TO LIGHT FIXTURES, RECEPTACLES AND MOTORS IF RUN IN HOLLOW PARTITIONS OR IN DRY ACCESSIBLE CEILING SPACES. MAXIMUM LENGTH 20FT.
5. FLEXIBLE CONDUIT SHALL BE USED FOR FINAL SHORT CONNECTIONS BETWEEN OUTLET AND ELECTRICAL EQUIPMENT SUCH AS RECESSED FIXTURES, MOTORS, TRANSFORMERS, MOTORIZED EQUIPMENT AND FIXED APPLIANCES. FLEXIBLE CONDUIT IN MECHANICAL ROOMS AND ON THE EXTERIOR WALL SHALL BE PVC JACKETED, LIQUID TIGHT.
6. HOME RUNS OF WIRING TO PANELS SHALL BE IN CONDUITS.

22. ALL LOW VOLTAGE AND MULTI CONDUCTOR CABLES SHALL BE INSTALLED IN CONDUIT.

23. ALL CONDUCTORS SHALL BE COPPER 600 VOLT GRADE WITH INSULATION TYPE RW90. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG AND COLOUR CODED. WIRE CONNECTIONS SHALL BE MADE WITH PRESSURE TYPE SOLDERLESS CONNECTORS WITH VINYL INSULATING CAPS AND LOCKING RINGS.

1. MAXIMUM LENGTH FOR 15 AMP, 120/208 VOLT BRANCH CIRCUIT HOME RUNS SHALL BE AS FOLLOWS:

LOAD	#12 AWG	#10 AWG
RECEPTACLE	65 FT (20M)	OVER 65 FT (20M)
LIGHTING	90 FT (27M)	OVER 90 FT (27M)

24. UNLESS OTHERWISE NOTED ON THE ARCHITECTURAL AND ELECTRICAL DRAWINGS, MOUNTING HEIGHTS OF EQUIPMENT ABOVE FINISHED FLOOR FROM CENTRE LINE OF THE MOUNTING BOX SHALL BE AS FOLLOWS:

1. TOP OF PANEL BOARD – 78" (1980MM)
2. LIGHT SWITCH – 43" (1100MM)
3. MOTOR STARTER/THERMOSTAT – SAME AS LIGHT SWITCH
4. RECEPTACLE, TELEPHONE, DATA, ETC. – 18" (460MM)
5. RECEPTACLES IN MECHANICAL ROOMS AND OTHER UNFINISHED AREAS – 47" (1200MM)

25. IF NUMBER OF CONDUCTORS IN ANY ONE CONDUIT EXCEEDS 6 LINE CONDUCTORS, CONDUCTOR SIZE SHALL BE INCREASED TO ALLOW FOR DERATING AS REQUIRED BY CODE.
26. MECHANICAL TRADE WILL SUPPLY ALL STARTERS, CONTROL TRANSFORMERS AND CONTROLS FOR EQUIPMENT SUPPLIED BY THEM AND WILL MOUNT ALL THESE EXCEPT FOR WALL MOUNTED STARTERS AND WALL MOUNTED LINE VOLTAGE CONTROLS, WHICH SHALL BE MOUNTED BY ELECTRICAL TRADE. ELECTRICAL TRADE SHALL DO ALL POWER WIRING, WHICH IS WIRING THAT CARRIES THE LOAD CURRENT OF THE MOTOR, HEATER, HOT WATER TANK OR OTHER EQUIPMENT SUPPLIED BY MECHANICAL TRADE. MECHANICAL TRADE WILL DO ALL OTHER RELATED WIRING.

27. ALL CONDUITS AND OUTLET BOXES SHALL BE SUPPORTED FROM THE BUILDING SURFACES AND SHALL NOT BE SUPPORTED FROM OTHER CONDUITS, DUCTS OR PIPES.

28. PROVIDE FIRE STOPS. FIRE STOPS SHALL SEAL OFF ALL FIRE RATED WALLS AND CEILINGS. FIRE STOPS SHALL BE CSA AND UL LISTED AND SHALL BE DESIGNED FOR APPLICATION REQUIRED TO MEET THE VARIOUS FIRE RATED SEPARATIONS. FIRE STOP SHALL BE HILTI, TREMSTOP MANUFACTURED BY TREMCO, 3M OR EQUAL.

RACEWAY, ELECTRICAL DEVICES AND CONTROLS – SECTION 16100

1. PROVIDE ALL MATERIAL, EQUIPMENT AND LABOUR REQUIRED FOR A COMPLETE AND ADEQUATE INSTALLATION OF ELECTRICAL MATERIALS AS SHOWN ON THE DRAWINGS AND AS DESCRIBED HEREIN.

2. SWITCHES SHALL BE UNLESS OTHERWISE INDICATED, PASS & SEYMOUR, WHITE, DECORA TYPE AS FOLLOWS:

.1 SPECIFICATION GRADE	15A	20A
SINGLE POLE 120V	2601–W	2621–W
3_WAY 120V	2603–W	2623–W
4_WAY 120V	2604–W	2624–W

.2 SWITCHES OF EQUAL QUALITY AS MANUFACTURED BY BRYANT, ARROW HART, LEVITON,HUBBLE.

3. COVERPLATES FOR RECEPTACLES, LIGHT SWITCHES, TELEPHONE, DATA AND TV OUTLETS SHALL BE SMOOTH THERMOPLASTIC FROM THE SAME MANUFACTURER AS FOR WIRING DEVICES. COLOUR SHALL MATCH COLOUR OF WIRING DEVICES.

4. OUTLET BOXES SHALL BE ELECTRO GALVANIZED AND MADE OF CODE GAUGE STEEL, WHERE MORE THAN ONE DEVICE IS SHOWN ON PLAN, A MULTI–GANG BOX SHALL BE USED. OFFSET OUTLET BOXES, SHOWN BACK TO BACK IN PARTITIONS, HORIZONTALLY TO MINIMIZE NOISE TRANSMISSION BETWEEN ADJACENT AREAS. OUTLET BOX FOR DEVICES MOUNTED SIDE BY SIDE OR ONE ABOVE THE OTHER SHALL BE SEPARATED BY A MINIMUM OF ONE INCH (25MM).

SERVICES AND DISTRIBUTION – SECTION 16400

1. PROVIDE ALL MATERIAL, EQUIPMENT AND LABOUR REQUIRED FOR A COMPLETE AND ADEQUATE DISTRIBUTION SYSTEM AS DESCRIBED HEREIN.

2. POWER PANELS SHALL CONTAIN CIRCUIT BREAKERS OR FUSIBLE UNITS. FUSIBLE UNITS WILL NOT BE ACCEPTED IN LIEU OF BREAKERS AND VICE VERSA. PANELS SHALL BE AS MANUFACTURED BY SCHNEIDER, CUTLER–HAMMER OR SIEMENS.

3. FUSIBLE UNITS SHALL HAVE QUICK–MAKE, QUICK–BREAK MECHANISM AND SHALL BE FRONT OPERATED. UNIT SHALL BE INDIVIDUALLY ENCLOSED WITH INSULATED END BARRIERS. FUSE CLIPS SHALL BE HIGH PRESSURE TYPE SUITABLE FOR AND COMPLETE HRC FUSES.

4. CIRCUIT BREAKERS SHALL HAVE AMPACITY AND FRAME SIZE SHOWN ON THE DRAWINGS. BREAKERS SHALL HAVE DEFINITE OFF AND TRIP POSITIONS WITH PROVISIONS FOR PADLOCKING. BREAKERS SHALL BE BOLTED TO THE BUS. TWO AND THREE POLE BREAKERS SHALL HAVE COMMON TRIPS.

5. UNLESS OTHERWISE NOTED, TWO AND THREE POLE MOULDED CASE CIRCUIT BREAKERS SHALL HAVE A MINIMUM INTERRUPTING CAPACITY OF 22KA RMS SYMMETRICAL, AND 10KA RMS SYMMETRICAL FOR SINGLE POLE.

6. EACH FUSIBLE UNIT OR BREAKER SHALL HAVE A LAMACOID NAMEPLATE ATTACHED WITH CONTACT CEMENT OR SCREWS. NAMEPLATE SHALL CARRY NAME OF EQUIPMENT OR PANEL SERVED BY THE UNIT OR BREAKER.

7. DISCONNECT SWITCHES SHALL BE TYPE A, HORSEPOWER RATED, 'SWITCHMATIC' BY FEDERAL PIONEER OR EQUAL BY SQUARE D, CUTLER–HAMMER, SIEMENS.

8. FUSES SHALL BE HRC FORM 1. FUSES PROTECTING MOTORS OR TRANSFORMERS SHALL BE TIME DELAY TYPE.

9. SUBMIT SHOP DRAWINGS FOR SWITCHBOARD, PANELS, TRANSFORMERS. SUBMIT SHORT CIRCUIT CALCULATIONS AT PANELS AND PROVIDE ALL REQUIRED ADJUSTMENT ON EQUIPMENT TO SUIT.

SECTION 16450 – LIGHTING

1. SUPPLY AND INSTALL ALL LIGHTING FIXTURES, LAMPS, AND ALL REQUIRED ACCESSORIES AS INDICATED ON THE DRAWINGS BY LETTER TYPE AND AS HEREINAFTER SPECIFIED.

2. SUBMIT SHOP DRAWINGS FOR EACH LIGHTING FIXTURE TYPE COMPLETE WITH LUMENS (WATTS EQUIVALENT), VOLTAGE, CONTROLS ETC..

3. REPLACE AND INSTALL WITHOUT EXTRA COST TO THE OWNER:

– ALL DEFECTIVE LIGHT FIXTURES OR DRIVERS FOR A PERIOD OF ONE YEAR

4. ALL LIGHTING FIXTURES SHALL BE 4000K WITH CRI OF 85, INITIAL LUMENS OF 3000 , AS MANUFACTURED BY ACUITY., PHILIPS, PEERLESS OR APPROVED EQUAL UNLESS OTHERWISE NOTED.

5. DRIVERS FOR LED LIGHTS TO BE DIMMABLE (0–10) WHERE DIMMING CONTROL IS SHOWN

6. ALL LIGHTING FIXTURES, INCLUDING THOSE MOUNTED IN SUSPENDED CEILING, TO BE SUPPORTED FROM BUILDING STRUCTURE.

7. COORDINATE THE INSTALLATION OF LIGHTING FIXTURE WITH ALL TRADES TO PROVIDE SPACING INTENDED.

8. FIXTURES SHALL BE PROPERLY CLEANED AND LEFT CLEAN AND DUST_FREE. ANY FIXTURE SHOWING MARKS OR SCRATCHES DUE TO HANDLING OR TOOL MARKS SHALL BE REPLACED.

READ THIS DRAWING IN CONJUNCTION WITH CONTRACT DRAWINGS, ALL MATERIAL AS CONTRACT DRAWINGS UNLESS NOTED.

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REVISIONS/ISSUES

PROFESSIONAL ENGINEER K.K.SHARMA 03/05/19 PROVINCE OF ONTARIO LICENSED

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SPI PROJECT NUMBER: 2018–1064

WASHROOM FACILITY OPTION A
695 ROSLAND ROAD WEST,
WHITBY, ONTARIO

ELECTRICAL SPECIFICATION

DRAWING No. E5

DRAWN BY	SCALE	DATE	PROJECT No.
A.A	1:50	03/05/19	2018–1064

VENTILATION

	DUCTWORK (SINGLE LINE)
	EXISTING DUCTWORK (SINGLE LINE)
	FLEXIBLE DUCT
	EXISTING FLEXIBLE DUCT
	SUPPLY DUCT UP (RECTANGULAR)
	ROUND DUCT UP
	RETURN DUCT UP
	SUPPLY DUCT DOWN
	ROUND DUCT DOWN
	RETURN DUCT DOWN
BD — BD	MANUAL BALANCING DAMPER
FD — FD	FIRE DAMPER
MD — MD	AUTOMATIC (MOTORIZED) DAMPER
SD — SD	SMOKE (MOTORIZED) DAMPER
	RETURN OR EXHAUST AIR GRILLE
	EXISTING RETURN OR EXHAUST AIR GRILLE
	SQUARE SUPPLY AIR DIFFUSER
	EXISTING SQUARE SUPPLY AIR DIFFUSER
	LIGHT TROFFER DIFFUSER (FOUR SIDED)
	EXISTING LIGHT TROFFER DIFFUSER (FOUR SIDED)
©	ROUND SUPPLY AIR DIFFUSER
©	EXISTING ROUND SUPPLY AIR DIFFUSER
	LIGHT TROFFER DIFFUSER (DOUBLE SIDED)
	EXISTING LIGHT TROFFER DIFFUSER (DOUBLE SIDED)
	LIGHT TROFFER DIFFUSER (SINGLE SIDED)
	EQUIPMENT
	EXISTING EQUIPMENT
T	THERMOSTAT
T	EXISTING THERMOSTAT

PLUMBING & PIPE FITTINGS

SYMBOL	DESCRIPTION
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RECIRCULATION
SANB	BURIED SANITARY DRAIN
CO	CLEANOUT PLUG
	ELBOW, TURNED DOWN AND TURNED UP
FD	FLOOR DRAIN
M	DOMESTIC COLD WATER METER
	GATE VALVE
	PUMP
CTE	CONNECT NEW SERVICES TO EXISTING

PLUMBING FIXTURES

JANITOR'S MOP RECEPTOR TYPE "JS"

.1 'STERN WILLIAMS' MTB 2424 MOP SINK, 24" X 24" X 10" (610MM X 610MM X 254MM) DEEP, FLOOR MOUNTED.

.2 'CHICAGO' FAUCETS #305VB-R-XK-HOSE FAUCET, C.P. 8" (203MM) C.C., WALL MOUNTED, SOLID CAST BRASS LEADFREE BODY, 1/4 TURN CERAMIC DISC VALVE CARTRIDGES, CAST BRASS LEVER HANDLES, BODY MOUNTED VACUUM BREAKER, INTEGRAL STOPS, 36" (915MM) HOSE AND HANGER.

.3 BUMPER GUARDS, ALUMINUM. 'STERN WILLIAMS' S.S. MOP HANGER, TRIPLE.

.4 MOP SINK DRAIN GASKET, CONNECTION FOR 3" (75MM) PIPE.

.5 #BP S.S. BACK SPLASH PANELS, ON TWO SIDES.

LAVATORY TYPE 'L-1' BARRIER FREE WALL HUNG

.1 AMERICAN STANDARD WHEELCHAIR USERS SINK #9141 011

.2 BASIN: VITREOUS CHINA, WALL HUNG BASIN CONCEALED ARMS SUPPORT CARRIER, DRILLED FOR FAUCET HOLES ON 4" (102MM) CENTERS, FRONT OVERFLOW, WHITE IN COLOUR, SUPPLIES WITH STOP.

.3 FAUCET: MOEN COMMERICAL MANUAL FACUET MODEL # 8217 BRASS CONSTRUCTION WITH CHROME PLATED FINISH 4" CENTERSET 1/4" TURN OPERATIONS. CERTIFIED TO ANSI/ NSF 61/9

.4 TRAP: 1 1/4" (32MM) CP CAST BRASS ADJUSTABLE P-TRAP- POLISHED CHROME "P" TRAP WITH CLEANOUT SLIP JOINT INLET AND FEMALE OUTLET. (PROVIDE NPS 1- 1/4 M.I.P ADAPTOR COMPLETE WITH CP DEEP ESCUTCHEON.

.5 CARRIER: CONCEALED ARMS SUPPORT CARRIER

LAVATORY TYPE 'L-2' BARRIER FREE WALL HUNG

.1 AMERICAN STANDARD WHEELCHAIR USERS SINK #9141 011

.2 BASIN: VITREOUS CHINA, WALL HUNG BASIN CONCEALED ARMS SUPPORT CARRIER, DRILLED FOR FAUCET HOLES ON 4" (102MM) CENTERS, FRONT OVERFLOW, WHITE IN COLOUR, SUPPLIES WITH STOP.

.3 FAUCET: AMERICAN STANDARD SELECTRONIC FAUCET MODEL # 6056.102 AC POWERED PLUG IN UNIVERSAL LOW VOLTAGE TRANSFORMER (80-250 VAC, 50-60HZ) WITH 6 FOOT LONG CORD. WITH CAST SPOUT 1.5 GPM PRESSURE COMPENSATION. CONNECT WITH MIXING VALVE MODEL # 605XTMV THERMOSTATIC MIXING VALVE.

.4 TRAP: 1 1/4" (32MM) CP CAST BRASS ADJUSTABLE P-TRAP- POLISHED CHROME "P" TRAP WITH CLEANOUT SLIP JOINT INLET AND FEMALE OUTLET. (PROVIDE NPS 1- 1/4 M.I.P ADAPTOR COMPLETE WITH CP DEEP ESCUTCHEON.

.5 CARRIER: CONCEALED ARMS SUPPORT CARRIER

WATER CLOSET TYPE 'WC-1' BARRIER FREE

.1 AMERICAN STANDARD "AFWALL" ELONGATED 3351 001 OR EQUAL, BOWL: VITREOUS CHINA, ELONGATED WALL HUNG BOWL LOW CONSUMPTION 4.8L (1.07 IMP. GAL.) FLUSH, SYPHON JET ACTION, 1-1/2" TOP SPUD MOUNTED SO THAT RIM IS 425MM (17") AFF.

.2 SEAT: AMERICAN STANDARD #5324 019 "RISE AND SHINE" (WITH EASY TO CLEAN LIFT-OFF HINGE SYSTEM) SOLID PLASTIC, OPEN FRONT, ELONGATED SEAT WITHOUT COVER

.3 FLUSH VALVE: MANUAL FLOWISE AMERICAN STANDARD /6047 121 022 FLUSH VALVE FOR 11 1/2'(295MM) SUPPLY C/L TO TOP OF BOWL, FOR 1 1/2" TOP SPUD BOWL, EXPOSED TYPE WITH VACUUM BREAKER, 1" I.P.S ANGLE STOP WITH BACK FLOW PROTECTION, COVER TUBE AND WALL FLANGE.

.4 CARRIER

WATER CLOSET TYPE 'WC-2' BARRIER FREE

.1 AMERICAN STANDARD "AFWALL" ELONGATED 3351 001 OR EQUAL, BOWL: VITREOUS CHINA, ELONGATED WALL HUNG BOWL LOW CONSUMPTION 4.8L (1.07 IMP. GAL.) FLUSH, SYPHON JET ACTION, 1-1/2" TOP SPUD MOUNTED SO THAT RIM IS 425MM (17") AFF.

.2 SEAT: AMERICAN STANDARD #5324 019 "RISE AND SHINE" (WITH EASY TO CLEAN LIFT-OFF HINGE SYSTEM) SOLID PLASTIC, OPEN FRONT, ELONGATED SEAT WITH COVER

.3 FLUSH VALVE: ELECTRONIC FLUSH VALVE AMERICAN STANDARD SENSOR OPERATED SELCETRONIC AC POWER #6067.161.002.

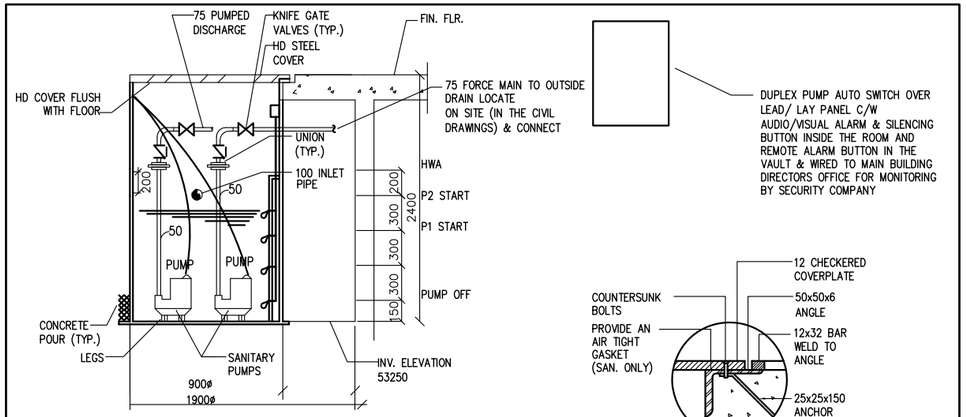
.4 CARRIER

FLOOR DRAIN 'FD'

.1 WATTS FD-120 O-L FLOOR DRAIN WITH SQUARE ON GRADE S.S STEEL STRAINER, ANCHOR FLANGE, S.S STEEL GRILLE (ADJUSTABLE) AND NO HUB OUTLET

ELECTRIC DUCT HEATER:
5 KW 208/1/60V, SCR CONTROL, AIE PROVIDING /SAFETIES, SIZE TO SUIT MIN 500 FPM VELOCITY, SPACE 'T' STAT IN LOCKABLE/ VENTED S.S. STEEL VANDAL FREE ENCLOSURE

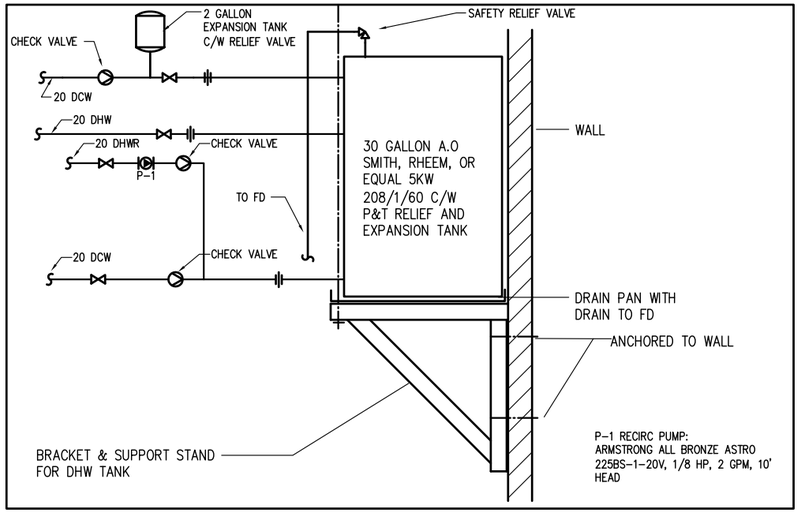
ERV: RENEWABLE OR EQUAL EV300/HE SERIES C/W O.A FILTER, MERUS R.A FILTER S.A/E.A FIXED SPEED ODP/ DIRECT DRIVE, LINE CORD POWER CONNECTION S.A 350 CFM EAT -5'F, LAT 40'F E.A 450 CFM EAT 70'F, LAT 45'F FANS: 1/2 HP, 120V, INTERNAL ON/OFF CONTROLS



SUMP PITS:
900ø, 2100 DEEP, HD FIBERGLASS REINFORCE PVC PIT WITH HEAVY CHECKERED STEEL (GALV.) COVER. BOLTED. SEALED/ TIGHT WITH GASKET/ FLAT SCREWS, ANTIFLOATATION RING. GOOD FOR HYROSTATIC PRESSURE, HEAVY BOTTOM PLATE THAT SUITS PUMPS (DUPLEX) WEIGHT. TOPP OR EQUAL

GRINDER DUPLEX SUMP PUMPS:
MYERS VS 50 OR APPROVED EQUAL, 20GPM, 100 FEET HEAD, 5HP. 3 PHASE, 200/3/60V, FLOATS, LEAD/LAG/AUTO SWITCH OVER PANEL WITH AUDIO/ VISUAL ALARM & SILENCING BUTTON & REMOTE AUDIO/ VISUAL ALARM PANEL, LEGS OR APPROVED EQUAL

2 / M-1 DETAIL OF SANITARY SUMPS & PUMPS
SCALE: N.T.S.



1 / M-1 TYPICAL DETAIL OF HOT WATER TANK
SCALE: N.T.S.

READ THIS DRAWING IN CONJUNCTION WITH CONTRACT DRAWINGS, ALL MATERIAL AS CONTRACT DRAWINGS UNLESS NOTED.

NO.	DESCRIPTION	DATE
2	REISSUED FOR PERMIT AND TENDER	MAY 03/19
1	ISSUED FOR REVIEW	NOV 12/18

REVISIONS/ISSUES

LICENSED PROFESSIONAL ENGINEER K.K.SHARMA 03/05/19 PROVINCE OF ONTARIO

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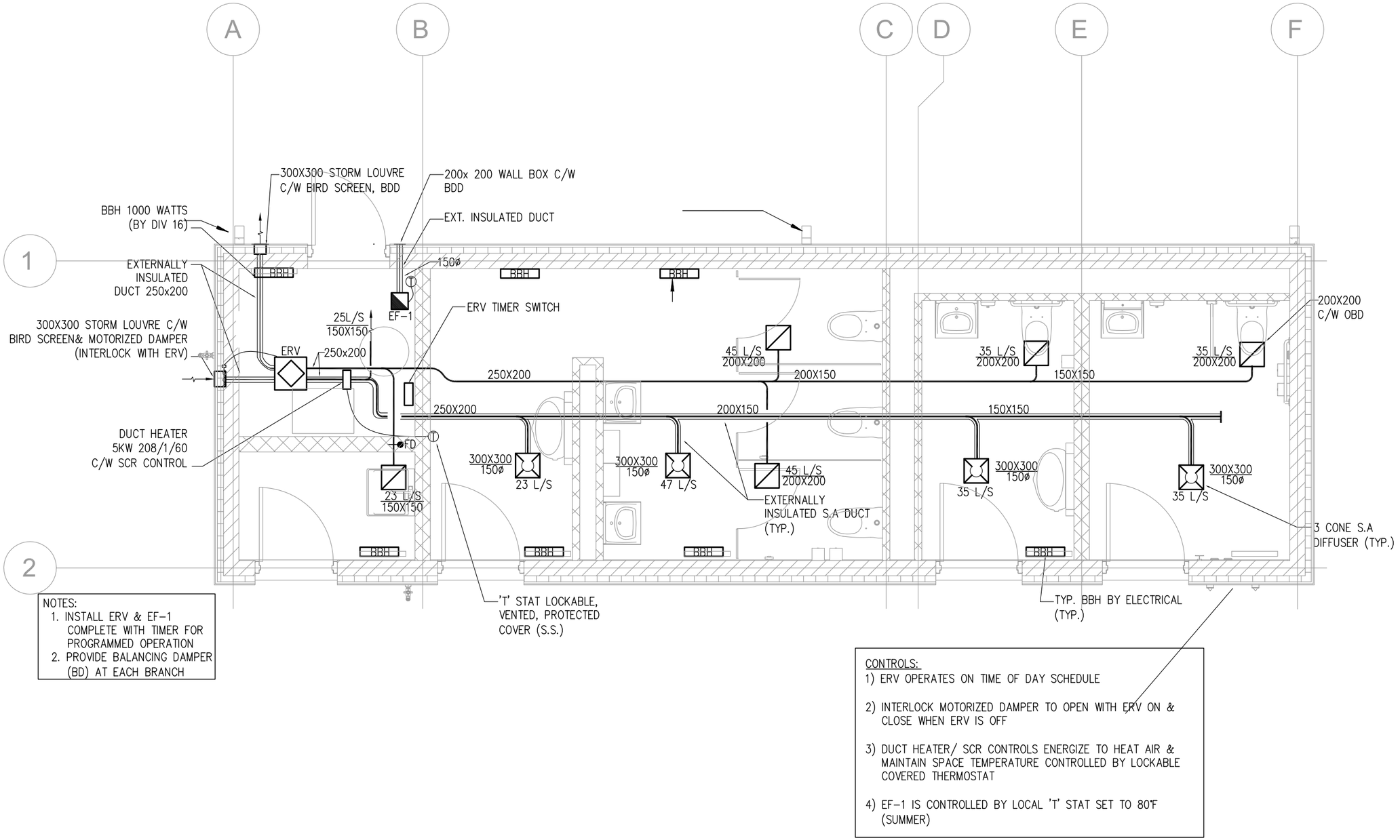
SPI PROJECT NUMBER: 2018-1064

WASHROOM FACILITY OPTION A
695 ROSLAND ROAD WEST,
WHITBY, ONTARIO

MECHANICAL LEGEND

DRAWING No. M1

DRAWN BY	SCALE	DATE	PROJECT No.
	1:50	03/05/19	2018-1064



NOTES:
1. INSTALL ERV & EF-1 COMPLETE WITH TIMER FOR PROGRAMMED OPERATION
2. PROVIDE BALANCING DAMPER (BD) AT EACH BRANCH

CONTROLS:
1) ERV OPERATES ON TIME OF DAY SCHEDULE
2) INTERLOCK MOTORIZED DAMPER TO OPEN WITH ERV ON & CLOSE WHEN ERV IS OFF
3) DUCT HEATER/ SCR CONTROLS ENERGIZE TO HEAT AIR & MAINTAIN SPACE TEMPERATURE CONTROLLED BY LOCKABLE COVERED THERMOSTAT
4) EF-1 IS CONTROLLED BY LOCAL 'T' STAT SET TO 80°F (SUMMER)

READ THIS DRAWING IN CONJUNCTION WITH CONTRACT DRAWINGS, ALL MATERIAL AS CONTRACT DRAWINGS UNLESS NOTED.

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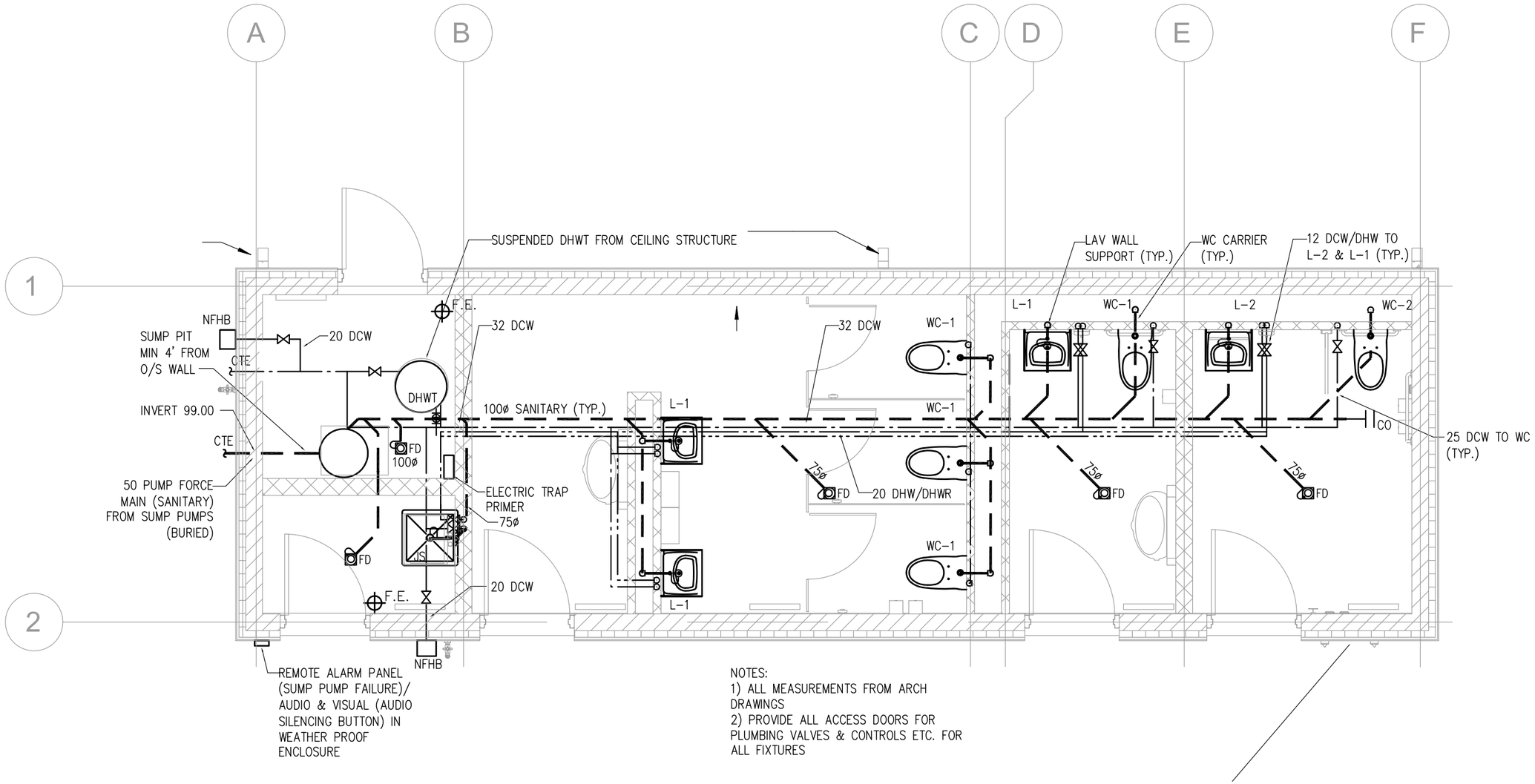
WASHROOM FACILITY OPTION A
695 ROSLAND ROAD WEST,
WHITBY, ONTARIO

HVAC LAYOUT

DRAWN BY	SCALE	DATE	PROJECT No.	DRAWING No.
	1:50	03/05/19	2018-1064	M2



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SPI PROJECT NUMBER: 2018-1064

WASHROOM FACILITY OPTION A
695 ROSLAND ROAD WEST,
WHITBY, ONTARIO

PLUMBING LAYOUT

DRAWING No. M3

DRAWN BY	SCALE	DATE	PROJECT No.
	1:50	03/05/19	2018-1064

GENERAL MECHANICAL CONDITIONS – SECTION 15050

1. CONFORM TO INSTRUCTIONS TO TOWN OF WHITBY BIDDERS, GENERAL CONDITIONS AND GENERAL REQUIREMENTS.

2. THIS SECTION 15050 SHALL APPLY TO ALL DIVISION 15 SECTIONS.

3. BEFORE SUBMITTING TENDERS, EXAMINE SITE, EXISTING SERVICES AND ALL DRAWINGS. EXTRAS WILL NOT BE ALLOWED FOR FAILURE TO DO SO.

4. PROVIDE ALL LABOUR, MATERIALS AND EQUIPMENT NECESSARY TO EXECUTE THE WORK SHOWN AND DESCRIBED. INSTALLATION OF MATERIALS SHALL MEET ALL APPLICABLE PROVINCIAL, FEDERAL AND MUNICIPAL REQUIREMENTS.

5. OBTAIN PERMITS AND PAY ALL FEES FOR WORK AND REQUIRED INSPECTIONS.

6. MAINTAIN LIABILITY INSURANCE TO PROTECT OWNER AND THE CONTRACTOR FROM ANY AND ALL CLAIMS UNDER THE WORKER'S COMPENSATION ACT.

7. THE DRAWINGS SHALL BE CONSIDERED DIAGRAMMATIC ONLY. ALL MEASUREMENTS SHALL BE TAKEN FROM BUILDING SITE AND ARCHITECT'S DRAWINGS.

8. ALL MATERIALS SHALL CONFORM TO CSA, HEPC AND CEC REQUIREMENTS AND SHALL BEAR CSA LABEL.

9. TEMPORARY LIGHT, POWER AND WATER BY GENERAL CONTRACTOR.

10. ALL CUTTING AND PATCHING FOR MECHANICAL WORK WILL BE THE RESPONSIBILITY OF THIS SUB–CONTRACTOR.

11. PROVIDE TEMPORARY BUILDINGS AND MATERIAL STORAGE AS REQUIRED AND BE RESPONSIBLE FOR ANY LOSS OR DAMAGE THERETO.

12. SUBMIT SAMPLES OF MATERIALS WHEN REQUIRED.

13. SUBMIT ELECTRONIC COPIES OF SHOP DRAWINGS FOR REVIEW COVERING MAJOR MANUFACTURED ITEMS, I.E. FANS, ERVS, PLUMBING FIXTURES, HOT WATER TANK, ETC.

14. WHERE SUBSTITUTIONS ARE MADE FOR EQUIPMENT SPECIFIED BY NAME OR MODEL NUMBER, BE FULLY RESPONSIBLE FOR CAPACITIES AS WELL AS PHYSICAL FIT OF SUBSTITUTED MATERIALS.

15. SUPPLY AND LOCATE ALL BASES, SUPPORTS, SLEEVES, CURBS, ETC. REQUIRED FOR THIS WORK. FLASHING BY ROOF TRADES. COUNTERFLASHING BY THIS CONTRACTOR.

16. UNLESS OTHERWISE NOTED, ALL MOTORS 1/2 HP AND UNDER SHALL BE 115/1/60, MOTORS OVER 1/2 HP SHALL BE OF 3 PHASE VOLTAGE AVAILABLE ON PROJECT.

17. SUPPLY PROPER STARTERS WITH OVERLOAD PROTECTION AND DISCONNECT SWITCHES FOR POWERED MECHANICAL EQUIPMENT AND HAND OVER TO ELECTRICAL CONTRACTOR FOR INSTALLATION. THIS DOES NOT INCLUDE ISOLATION SWITCHES, UNLESS STATED SPECIFICALLY. PROVIDE LOCATION OF ALL MECHANICAL EQUIPMENT REQUIRING POWER, VOLTAGES AND AMPS TO ELECTRICAL CONTRACTOR COMPLETE WITH SWITCHES AND STARTS FOR INSTALLATION ON OR REMOTE LOCATIONS.

18. ALL POWER WIRING BY ELECTRICAL CONTRACTOR, CONTROL AND INTERLOCK WIRING BY MECHANICAL CONTRACTOR. CONTROL WIRING IN RETURN AIR CEILING SPACES SHALL BE FT–6 OR INSTALLED IN CONDUIT.

A. UNLESS SPECIFICALLY NOTED, OTHERWISE ALL WIRING BY THIS CONTRACTOR.

19. SUPPLY AND INSTALL ALL NECESSARY ACCESS DOORS FOR MECHANICAL EQUIPMENT INCLUDING ENTERING AND LEAVING SIDES OF ALL COILS, FIRE DAMPERS ETC.. WHERE NECESSARY, DOORS SHALL BE RATED TO SUIT FIRE ASSEMBLY RATING.

20. DO ALL EXCAVATING AND BACKFILLING FOR MECHANICAL WORK.

A. BACKFILL FROM BOTTOM OF TRENCH, AROUND PIPE AND TO 600MM (24") ABOVE PIPE SHALL BE CLEAN SAND, COMPACTED MECHANICALLY IN 150MM (6") LAYERS TO 95% MODIFIED PROCTOR DENSITY. REMAINDER OF TRENCH SHALL BE BACKFILLED UTILIZING NATIVE MATERIAL COMPACTED IN 6" LAYERS.

B. EXTERIOR BACKFILL ABOVE 600MM (24") ABOVE PIPES IN AREAS TO HAVE CONCRETE WALKS OR ASPHALT PAVING SHALL BE D.H.O. GRANULAR CLASS B COMPACTED IN MAXIMUM 150MM (6"). REMAINDER OF TRENCH SHALL BE BACKFILLED UTILIZING NATIVE MATERIAL COMPACTED IN 6" LAYERS.

C. EXTERIOR BACKFILL ABOVE 600MM (24") ABOVE PIPES IN AREAS TO RECEIVE SOD OR SEED SHALL BE CLEAN FILLED, FREE FROM ORGANIC MATERIAL AND DEBRIS, PLACED IN MAXIMUM 300MM (12") LAYERS.

D. ALL UNUSED EXCAVATED MATERIAL SHALL BE REMOVED FROM SITE.

21. EXCAVATION AND BACKFILLING FOR MECHANICAL WORK WILL BE CARRIED OUT BY DIVISION 15. FOLLOW DIV. 2 SPEC. FOR MATERIALS AND METHODS.

22. PIPE HANGERS SHALL BE CLEVIS SPLIT TYPE WITH MILD STEEL RODS. FOR COPPER PIPE USE PLASTIC INSERTS. USE OVERSIZED HANGERS AND SADDLES FOR DOMESTIC COLD WATER PIPING. DO NOT SUPPORT EQUIPMENT, DUCTS OR PIPING FROM ROOF DECK WITHOUT PERMISSION FROM ARCHITECTS. SUPPLY AND INSTALL NECESSARY STEEL TO TRANSFER LOAD TO STRUCTURAL MEMBERS.

23. ALL DISSIMILAR METAL (STEEL–COPPER, ETC.) SHALL BE SEPARATED USING GASKETS AND INSULATING WASHERS OR WATTS "DI–ELECTRIC" FITTINGS.

24. INSTALL CHROME–PLATED ESCUTCHEONS WHERE BRANCH PIPES PASS THROUGH FINISHED SURFACE.

25. KEEP ACCURATE RECORD OF "AS–BUILT" DRAWINGS AND SUBMIT THESE BEFORE FINAL CERTIFICATE OF COMPLETION. BURIED SERVICES MUST BE DIMENSIONED. PROVIDE A CAD DISK OF THE AS_BUILT DRAWINGS TO CONSULTANT FOR REVIEW AND VERIFICATION.

26. ALL SURFACES MUST BE LEFT CLEAN AND SMOOTH, READY FOR PAINTING BY GENERAL TRADES.

27. IDENTIFY ALL PIPING. USE STENCILS OR COLOUR CODES AND DIRECTIONAL ARROWS.

28. IDENTIFY ALL FANS, STARTERS, REMOTE CONTROL AND ALL OTHER EQUIPMENT AS TO SERVICE BY A BLACK LAMACOID ENGRAVED NAMEPLATE WITH WHITE CORE, FIRMLY AFFIXED WITH SCREWS TO EACH UNIT.

29. PROVIDE FIRE STOPPING AND SMOKE SEALS.
A. PRIMERS TO MANUFACTURER'S RECOMMENDATIONS FOR SPECIFIC MATERIAL, SUBSTRATE, AND END USE.
B. DAMMING AND BACKUP MATERIALS, SUPPORTS AND ANCHORING DEVICES TO BE TO MANUFACTURER'S RECOMMENDATIONS; AND IN ACCORDANCE WITH TESTED ASSEMBLY BEING INSTALLED AS ACCEPTABLE TO AUTHORITY HAVING JURISDICTION.
C. SEALANTS FOR VERTICAL JOINTS TO BE NON–SAGGING.
D. FIRESTOP AND SMOKE SEAL AROUND MECHANICAL AND ELECTRICAL ASSEMBLIES PENETRATING NON–RATED FIRE SEPARATIONS.
E. RIGID DUCTS WITH DIMENSIONS GREATER THAN 1300 MM TO BE FIRE STOPPED BY BEAD OF FIRE STOPPING MATERIAL BETWEEN RETAINING ANGLE AND FIRE SEPARATION, AND BETWEEN RETAINING ANGLE AND DUCT, ON EACH SIDE OF FIRE SEPARATION.
F. REMOVE EXCESS MATERIALS AND DEBRIS AND CLEAN ADJACENT SURFACES IMMEDIATELY AFTER APPLICATION.
G. REMOVE TEMPORARY DAMS AFTER INITIAL SET OF FIRE STOPPING AND SMOKE SEAL MATERIALS

30. ON COMPLETION OF THE WORK, REMOVE FROM THE PREMISES ALL TOOLS, DEBRIS, SURPLUS AND WASTE MATERIALS RESULTING FROM OPERATIONS UNDER THIS SECTION. CLEAN ALL EQUIPMENT AND LEAVE ALL ITEMS IN PERFECT ORDER READY FOR OPERATION.

31. AFTER ACCEPTANCE, INSTRUCT OWNER IN EQUIPMENT OPERATION AND PROVIDE HIM WITH OPERATING AND MAINTENANCE MANUALS STANDARDS AND EXTENDED WARRANTY DOCUMENTS, INSPECTION CERTIFICATES AND COPIES OF SHOP DRAWINGS OF INSTALLED EQUIPMENT.

32. THE CONTRACTOR SHALL, BEFORE FINAL PAYMENT IS MADE, GUARANTEE ALL MATERIALS AND WORKMANSHIP SUPPLIED BY HIM IN THE PERFORMANCE OF THIS CONTRACT FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE AND SHALL, WHEN CALLED UPON, MAKE GOOD WITHOUT FURTHER COST TO THE OWNER SUCH DEFECTS AS MAY APPEAR WITHIN THIS PERIOD.

33. SHOULD ANY DISCREPANCY APPEAR BETWEEN THESE SPECIFICATIONS AND THE DRAWINGS TO CAUSE DOUBT AS TO THE TRUE MEANING AND INTENT OF THE DRAWINGS AND SPECIFICATIONS, A RULING SHALL BE OBTAINED FROM THE ARCHITECT CONSULTANT BEFORE SUBMITTING THE TENDER. IF THIS IS NOT DONE IT WILL BE ASSUMED THAT THE MORE EXPENSIVE ALTERNATIVE HAS BEEN INCLUDED IN THE CONTRACT.

34. ANY ERROR OR INCONSISTENCY IN THE DRAWINGS OR SPECIFICATIONS NOTED AFTER AWARD OF CONTRACT MUST BE REPORTED TO THE ARCHITECT CONSULTANT BEFORE COMMENCING WORK.

35. THE OMISSION OR INCORRECT MENTION OF WORK, MATERIALS, ETC. THAT ARE INDISPENSABLE TO THE COMPLETED WORK, IS NOT TO BE INTERPRETED AS RELIEVING OF THE NECESSITY OF PROVIDING SUCH WORK, MATERIALS, ETC. AT NO EXPENSE TO THE OWNER.

36. ALLOW FOR CONNECTIONS TO EXISTING SYSTEMS DURING AFTER HOURS OR WEEKENDS, INCLUDING BUT NOT LIMITED TO PLUMBING AND DRAINAGE, WATER PIPING, HEATING SYSTEMS, ELECTRICAL AND CONTROL CONNECTIONS. COORDINATE WITH THE CLIENT FOR ANY SHUT DOWN IN ADVANCE IN WRITING. FOR CONNECTIONS TO HEATING / COOLING WATER PIPES ALLOW FOR FREEZING OF PIPES – DRAINAGE OF THE EXISTING SYSTEMS WILL NOT BE PERMITTED.

37. WHERE NEW CONNECTION IS MADE TO EXISTING PIPING OR DUCTWORK INCLUDE FOR NEW THERMAL INSULATION AND JACKETING ON THE EXISTING DUCT / PIPE

PLUMBING & DRAINAGE INSIDE THE BUILDING _ SECTION 15400

1. ALL WORK SHALL BE EXECUTED BY LICENSED PLUMBERS.

2. ALL PLUMBING AND DRAINAGE WORK SHALL BE INSTALLED AS REQUIRED BY ONTARIO BUILDING CODE, REVISED TO DATE, AND SHALL MEET THE REQUIREMENTS OF ALL PROVINCIAL AND MUNICIPAL AUTHORITIES HAVING JURISDICTION.

3. INCLUDE ALL PIPING, FITTINGS AND EQUIPMENT SHOWN ON DRAWINGS OR DESCRIBED IN SPECIFICATIONS. ALL ITEMS NOT MENTIONED BUT UNDERSTOOD TO BE NECESSARY TO COMPLETE THE PLUMBING SYSTEM SHALL BE INCLUDED.

4. CONTRACT EXTENDS TO 5'–0" (1500MM) OUTSIDE THE BUILDING.

5. MAKE ALL NECESSARY CONNECTIONS TO CITY SERVICES PROVIDED BY CIVIL CONTRACTOR APPROXIMATELY 5 FEET FROM THE NEW BUILDING FOUNDATIONS. COORDINATE ON SITE FOR LOCATION, INVERTS AND SIZES TO MATCH BUILDING SERVICES.

6. ALL BURIED SANITARY AND STORM DRAINAGE PIPING SHALL BE PVC SDR 35 WITH SOLVENT JOINTS (CAST IRON MECHANICAL JOINTS). 8" (200MM) AND OVER USE GASKETTED JOINTS.

7. ALL ABOVE GROUND SANITARY AND STORM DRAINAGE PIPING SHALL BE IPEX SYSTEM 15 PVC– DWV WITH ONE STEP CEMENT, CAST IRON MECHANICAL JOINT OR DWV COPPER.

8
A) FORCE MAINS (SANITARY) SHALL BE STEEL SEALED SUITED FOR 100 P.S.I PRESSURE

B) ABOVE GROUND WATER PIPING SHALL BE TYPE 'L" COPPER C/W 95/5 SOLDER JOINTS. FOR 2" (50MM) AND OVER, VITAULIC ROLL–GROOVED JOINTING WILL BE ACCEPTED.

9. BURIED DOMESTIC WATER PIPING SHALL BE COPPER TYPE "K" OR PVC APPROVED FOR MUNICIPAL POTABLE WATER.

10. ALL ABOVE GROUND VENT PIPING SHALL BE IPEX SYSTEM 15 PVC–DWV WITH ONE STEP CEMENT, CAST IRON WITH MECHANICAL JOINT OR DWV COPPER.

11. BURIED VENT PIPING MAY BE ABS PLASTIC SOLVENT WELD.

12. VALVES UP TO 2" (50MM) SHALL BE FULL THROAT BRONZE BALL VALVES. 2 1/2" (65MM) AND OVER SHALL BE BUTTERFLY VALVES.

13. SUPPLY AND INSTALL ALL SUMP PITS, SUMP PUMPS, SUMP PIT COVERS, PLUMBING FIXTURES, CLEANOUTS, HOSE BIBBS, FLOOR DRAINS, COMBINATION DRAINS, ROOF DRAINS, HOT WATER TANKS, PUMPS, ETC. AS SHOWN ON DRAWINGS AND SPECIFICATIONS..

14. VISIBLE SINK DRAINAGE TRAPS AND SUPPLY PIPING SHALL BE CHROME PLATED.

15. CLEANOUTS SHALL BE INSTALLED AS REQUIRED BY CODE AND WHERE SHOWN AND SHALL SUIT FLOORING MATERIAL.

16. PROVIDE ELECTRONIC OR CITY WATER PRESSURE ACTIVATED TRAP SEAL PRIMERS FOR ALL FLOOR DRAINS.

17. PROVIDE HAMMER ARRESTORS ON DCW AND DHW SUPPLIES TO FIXTURES (OR GROUP OF FIXTURES) AND WHERE REQUIRED.

18. SUPPLY AND INSTALL ALL HOT AND COLD WATER, WASTE AND VENT CONNECTIONS REQUIRED IN THE IN ANY OTHER LOCATIONS WHERE SHOWN OR REQUIRED FOR ALL ITEMS SHOWN ON MECHANICAL OR ARCHITECTURAL DRAWINGS, INCLUDING "NOT–IN–CONTRACT" (N.I.C.) ITEMS. "CASH ALLOWANCE" ITEMS, "SUPPLIED BY OWNERS" (S.B.O.) ITEMS. COOPERATE WITH ALL OTHER TRADES TO THE EXTENT OF PROPERLY LOCATING ANY CONNECTIONS THEY REQUIRE AND CONNECT UP COMPLETE TO ALL PIECES OF APPARATUS SO SERVED, INSTALLING A VALVE ON EACH WATER CONNECTION CLOSE TO EACH PIECE OF APPARATUS.

19. SUPPLY AND INSTALL ALL NECESSARY WATER PRESSURE REGULATORS WHERE REQUIRED BY INDIVIDUAL APPARATUS AND EQUIPMENT.

20. PROVIDE APPROVED BACKFLOW PREVENTORS ON ALL INSIDE AND OUTSIDE HOSE BIBBS.

21. DOMESTIC COLD AND HOT WATER PIPING SHALL BE INSULATED WITH 1" (25MM) THICK FIBREGLAS PIPE INSULATION WITH ASJ. USE 1 1/2" (40MM) MATERIAL FOR PIPING 2" AND OVER. HORIZONTAL RUNS OF SANITARY AND STORM DRAINS SHALL BE INSULATED IN A SIMILAR MANNER. IN EXPOSED AREAS FINISH WITH CANVAS OR P.V.C. JACKETTING. INSULATE ALSO COLD WATER METERS. PVC DRAINAGE PIPING NEED NOT BE INSULATED. COLD WATER PIPING AND EQUIPMENT SHALL BE INSULATED WITH LINER OF VAPOUR BARRIER.

22. ROOF DRAIN BODIES TO BE INSULATED, AND AREAS EXPOSED TO BE FINISHED WITH CANVAS OR PVC JACKETTING.

23. SUPPLY ALL NECESSARY FRAMES AND GAS TIGHT HEAVY DUTY COVERS FOR ALL SUMP PITS. VENT AS REQUIRED. SUMP PITS MAY BE HEAVY DUTY PVC WITH PLASTIC RINGS AT THE BOTTOM TO AVOID SUMP PIT STAY IN GROUND AGAINST HYDROSTATIC PRESSURE. REFER TO DRAWINGS FOR SUMP PIT AND PUMP MOUNTING AND OPERATIONAL DETAIL.

24. SUPPLY ALL SUBMERSIBLE SUMPS, EACH PUMP C/W GATE AND CHECK VALVE ON DISCHARGE LINE. ALL CONNECTIONS TO BE BELOW FLOOR. SUMP PUMPS SHALL BE DUPLEX GRINDER TYPE, COMPLETE WITH AUTOMATIC CONTROL PANEL WITH LEAD/ LAG AND ALARM FEATURE TO START LAG PUMP ON LEAD PUMP FAILURE AND INDICATE AUDIO/ VISUAL ALARM INSIDE THE WATER METER ROOM AND A REMOTE ALARM PANEL AT THE DOOR TO THE JANITOR ROOM CLEARLY VISIBLE TO THE WASHROOM USERS. PROVIDE AUDIO SILENCING FEATURE, VISUAL INDICATOR SHALL REMAIN TILL FAULT CORRECTED.

25. SUPPLY ALL ELECTRIC HOT WATER TANKS AS SHOWN ON DRAWINGS.

26. SUPPLY AND INSTALL ALL FIRE EXTINGUISHERS AS REQUIRED BY CODE, IN THE MECHANICAL ROOM AND JANITOR ROOM COMPLETE WITH WALL BRACKET.

27. SEE FIXTURE SCHEDULE ON DRAWINGS FOR PLUMBING FIXTURE TYPES (WCS, LAVS, JANITOR SINK ETC.). FIXTURES SHALL BE ELECTRONIC OR MANUAL FLUSH AND FAUCETS AS INDICATED ON THE DRAWINGS. ANY SUBSTITUTIONS SHALL MEET THE BASIC LAYOUT AND DESIGN ON THE DRAWINGS AND SPECIFICATIONS.

28. COORDINATE WITH ELECTRICAL CONTRACTOR FOR CONCEALED WIRING REQUIRED FOR EACH ELECTRONIC FLUSH VALVE AND FAUCET. ALL WIRING (LINE AND CONTROLS) SHALL BE CONCEALED AND IN CONDUITS FOR PUBLIC SAFETY AND AVOID DAMAGE TO WIRING BY PUBLIC.

29. SUPPLY AND INSTALL WHEEL HANDLE OR SCREW FIXTURES STOP VALVE ON THE HOT AND COLD WATER SUPPLY TO EVERY FIXTURE ON THE JOB, IN ADDITION TO THE VALVE OR FAUCET ON THE FIXTURE ITSELF.

30. PROTECT ALL FIXTURES UNTIL HANDED OVER TO THE OWNER. ALL FIXTURES SHALL BE C/W NECESSARY TRIM, TRAP SUPPLIES, STOPS, TAIL PIECES, TRAPS, GASKETS, ETC.

WARM AIR HEATING, VENTILATING & AIR CONDITIONING – SECTION 15850

1. SUPPLY AND INSTALL ALL HEATING, VENTILATION AND AIR HANDLING EQUIPMENT AS SHOWN ON DRAWINGS.

2. SUPPLY AND INSTALL DUCTWORK AS INDICATED ON DRAWING. DUCTWORK SHALL BE FABRICATED AND INSTALLED IN STRICT ACCORDANCE WITH LATEST SMACNA STANDARDS AND SHALL BE MANUFACTURED OF GALVANIZED STEEL UNLESS SPECIFICALLY NOTED OTHERWISE.

3. INSTALL MANUAL BALANCING DAMPERS AT ALL BRANCH TAKEOFFS AND IN OTHER LOCATIONS WHERE NECESSARY FOR SYSTEM BALANCING.

4. FLEXIBLE DUCTS SHALL BE ALUMINUM HELICALLY WOUND SPIRAL DUCT, EQUAL TO FLEXMASTER T/L, MAXIMUM 10 FT. LENGTH. PROVIDE ACOUSTIC FLEX EQUAL TO FLEXMASTER MODEL T/L–A, WHERE DUCTS ARE TO BE INTERNALLY INSULATED.

5. INSTALL UL LABELLED FIRE DAMPERS AND FIRE STOP FLAPS WHERE SHOWN AND WHERE REQUIRED. THESE SHALL BE INSTALLED IN ACCORDANCE WITH ULC APPROVED METHODS. FOR DUCTS UNDER 12" (300MM), USE 100% FREE AIR DAMPERS. DAMPERS IN ALUMINUM AND STAINLESS STEEL DUCT SHALL BE MANUFACTURED OF STAINLESS STEEL. ADVISE DRYWALL TRADES OF APPROVED INSTALLATION METHODS IN DRYWALL PARTITIONS.

6. ENERGY RECOVERY VENTILATORS SHALL BE AS INDICATED ON THE DRAWINGS WITH AIRFLOW AND HEAT EXCHANGE RATE AND FANS ETC SHOWN. EQUAL ERVS SHALL BE ACCEPTABLE MEETING DESIGN CRITERIA. UNITS SHALL BE INSTALLED INSIDE MECHANICAL ROOM SUSPENDED WITH VIBRATION ISOLATING SPRINGS AS HIGH AS POSSIBLE AND DUCTED TO WASHROOMS AND OUTSIDE WALL. MINIMUM EFFICIENCY SHALL BE 75% HEAT RECOVERED WITH ALL INTERNAL CONTROLS AND CONNECTIONS OF POWER AT ONE POINT.

7. EXHAUST FANS SHALL BE INLINE GREENHECK MODEL CSP OR EQUAL.

8. INSTALL 6" (150MM) APPROVED FLEXIBLE CONNECTOR ON DUCT CONNECTIONS TO RESILIENTLY MOUNTED FANS.

9. ALL SUPPLY DUCTWORK SHALL BE LINED INTERNALLY WITH 1" (25MM) FACED FLEXIBLE DUCT LINER. SHOWN SIZES ARE CLEAR INSIDE DIMENSIONS, INCREASE DUCT SIZE ACCORDINGLY. ALL FRESH AIR INTAKE DUCTS SHALL BE EXTERNALLY INSULATED WITH 1.5" THICK INSULATION WITH CANVAS COVER.

10. SUPPLY ALL GRILLES AND DIFFUSERS WHERE SHOWN ON DRAWINGS. FINISH SHALL BE OFF–WHITE BAKED ENAMEL.
SUPPLY GRILLES – DOUBLE DEFLECTION VERTICAL FACE BARS, OPPOSED BLADE DAMPER, SCREW FASTENING.
EXHAUST GRILLES – FIXED 45 BARS, LONG WAY, OPPOSED BLADE DAMPER, SCREW FASTENING.
LAY–IN RETURN GRILLES – 1/2" ALUMINUM EGG CRATE. FRAME, NO DAMPER, NO BORDER.
SURFACE MOUNT RETURN – SAME AS ABOVE EXCEPT WITH BORDER.
DIFFUSERS – SQUARE OR ROUND OF NECK SIZE SHOWN ON DRAWING C/W GRID AND DAMPER. SEE CEILING SCHEDULE AND DRAWING FOR MOUNTING TYPE AND MODULE SIZE.

11. INCLUDE FOR STARTUP OF ALL UNITS AND FANS FOR START UP AND COMMISSIONING.

12. ALL BACKDRAFT AND ELECTRIC MOTORIZED DAMPERS SHALL BE LOW LEAKAGE TYPE.

13. EXHAUST AIR DUCTWORK WITHIN 5 FT. (1500MM) OF A WALL OR ROOF, AND ALL OUTSIDE AIR INTAKE DUCTWORK, SHALL BE EXTERNALLY INSULATED WITH 1 1/2" (38MM) THICK FOIL FACED FLEXIBLE FIBREGLAS DUCT INSULATION (R–10). APPLY USING RECOMMENDED ADHESIVE AND TAPE ALL JOINTS USING VAPOUR BARRIER TAPE. ALL AIR SUPPLY DUCTWORK, UNLESS SPECIFICALLY NOTED OTHERWISE, SHALL BE INSULATED IN A SIMILAR MANNER USING 1" MATERIAL.

14. SUPPLY AND INSTALL ELECTRIC DUCT HEATERS OF SIZE AND TYPE AS SHOWN ON DRAWINGS. INCLUDE AIR FLOW SWITCH, CONTACTORS, SAFETY CUTOUTS, CONTROL TRANSFORMER, SCR CONTROLLER ETC.

15. PROVIDE ALL MOTORIZED DAMPERS TO OPEN AND CLOSE AS RESPECTIVE FANS START AND STOP. PROVIDE MOTORIZED DAMPER ON THE INTAKE OUTDOOR AIR WALL OPENING AND BACK DRAFT DAMPER ON THE ERV EXHAUST DUCT AT THE ROOM WALL.

16. SUPPLY AND INSTALL ALUMINUM WEATHER LOUVRES WHERE SHOWN. 4" (100MM) STORMPROOF BLADE C/W BIRDSCREEN, LOUVRE COLOUR TO ARCHITECT'S APPROVAL. BLANK OFF ALL UNUSED SECTIONS WITH INSULATED SHEETMETAL FOR THE INTAKE AND EXHAUST AIT OPENINGS OF ERV UNIT AND AND EXHAUST FANS.

17. ADJUST ALL FAN SPEEDS TO DELIVER SHOWN AIR QUANTITIES. BALANCE ALL AIR SYSTEMS AND SUPPLY WRITTEN AIR BALANCING REPORTS IN TRIPLICATE. INCLUDE NECESSARY SPARE BELTS PULLEYS FOR FIELD ADJUSTMENT AND REPLACEMENT OF FILTERS. SET AIR SYSTEMS CONTROLS AND DEMONSTRATE OPERATION TO OWNER'S REPRESENTATIVE.

READ THIS DRAWING IN CONJUNCTION WITH CONTRACT DRAWINGS, ALL MATERIAL AS CONTRACT DRAWINGS UNLESS NOTED.

NO.	DESCRIPTION	DATE
2	REISSUED FOR PERMIT AND TENDER	MAY 03/19
1	ISSUED FOR REVIEW	NOV 12/18

REVISIONS/ISSUES

LICENSED PROFESSIONAL ENGINEER
K.K.SHARMA
03/05/19
PROVINCE OF ONTARIO

SHARMA & PARTNERS INC.
Mechanical and Electrical Engineers
85 Curlew Drive, Unit 108
Toronto, Ontario,
M3A 2P8
Tel.: (416) 291–8822
Fax: 1–888–832–7160

SPI PROJECT NUMBER: 2018–1064

WASHROOM FACILITY OPTION A
695 ROSLAND ROAD WEST,
WHITBY, ONTARIO

MECHANICAL SPECIFICATIONS

DRAWN BY	SCALE	DATE	PROJECT No.
	1:50	03/05/19	2018–1064

DRAWING No. M4

CONTROLS – SECTION 15950

1. ALL CONTROL WIRING SHALL BE CARRIED BY DIV.15; POWER WIRING SHALL BE BY DIV.16. THE CONTROL SYSTEM SHALL BE SUPPLIED AND INSTALLED COMPLETE IN ALL RESPECT AND FULLY FUNCTIONAL. DEMONSTRATE TO THE MECHANICAL CONSULTANT ON COMPLETION OF WORK.

2. ALL CONTROLS WORK SHALL BE PERFORMED BY THE OWNER'S / LANDLORD'S CONTROL CONTRACTOR OR A CONTRACTOR APPROVED BY THE OWNER / LANDLORD. THIS MECHANICAL CONTRACTOR TO HIRE AND PAY FOR APPROVED CONTROL CONTRACTOR.

3. PROVIDE ALL CONTROLS AND WIRING INCLUDING APPURTENANCES NECESSARY FOR COMPLETE AND OPERATING SYSTEMS. PROVIDE MOTORIZED DAMPERS, BELIMO MOTORS, ACTUATORS. OPERATORS, INTERLOCKING WITH THE ERV OPERATION.

4. PROVIDE ALL CONTROLS FOR THE ERV UNIT TO MAINTAIN SUPPLY AIR TEMPERATURE DURING WINTER AT ALL TIME DURING OCCUPIED HOURS. PROVIDE DUCT MOUNTED TEMPERATURE SENSOR TO MAINTAIN MINIMUM 80 OF SUPPLY AIR TEMPERATURE WITH OUTDOOR LESS THAN 50 OF. ON UNIT START UP, FRESH AIR MOTORIZED DAMPER SHALL OPEN AND UNIT SHALL START. UNIT OPERATES DURING PRESET OCCUPIED HOURS AND MAINTAIN THE HEAT RECOVERED SUPPLY AIR BASED ON EXHAUST AIR TEMPERATURE. ON SENSING SUPPLY AIR TEMPERATURE BELOW 80 OF, ELECTRIC DUCT HEATER SHALL START TO MAINTAIN SET POINT BY ACTUATING ELECTRIC HEATER SCR CONTROLS. PROVIDE ALL WIRING OF ALL COMPONENTS FROM ERV TO DUCT HEATER, INTAKE MOTORIZED DAMPER ETC. TO SUIT. SET SYSTEM AND DEMONSTRATE OPERATION.

5. WIRE ALL CONTROLS FOR THE SUMP PUMPS LEAD/ LAG/ ALARM PANEL, LOCAL AND REMOTE CONTROLS FOR ALARMS. SET SYSTEM AND DEMONSTRATE OPERATION.

6. NEW THERMOSTATS SHALL MATCH BASE BUILDING (WITH LOCKABLE VENTILATED TAMPER–PROF COVER)

7. MOUNTING HEIGHT OF THERMOSTATS SHALL BE 5'–0"(1500MM) FROM FINISHED FLOOR OR 43"(1100MM) IF IN BARRIER FREE PATH OF TRAVEL. COORDINATE LOCATION WITH ARCHITECT / INTERIOR DESIGNER. DO NOT INSTALL IN VICINITY OF ELECTRICAL LIGHTING DIMMER OR HEAT GENERATED APPLIANCES / DEVICES OR ON EXTERIOR WALL.

8. PROVIDE ALL NECESSARY EMT CONDUIT, FITTINGS AND WIRE TO PROVIDE A COMPLETE AND OPERATING CONTROL SYSTEM. HARD WIRE ALL ELECTRICAL CONTROL DEVICES INTO THE ASSOCIATED SYSTEM MAGNETIC STARTER. PROVIDE POWER TO CONTROL PANEL FROM THE NEAREST NORMAL POWER ELECTRICAL DISTRIBUTION PANEL.

9. MINIMUM SETTINGS FOR VAV BOXES SERVING PERIMETER ZONES SHALL BE 40% OF DESIGN. MINIMUM SETTINGS FOR VAV BOXES SERVING INTERIOR ZONES SHALL BE 20% UNLESS INDICATED OTHERWISE.

10. PROVIDE CONTROLS SYSTEMS TRAINING FOR OWNER / LANDLORD WHEN SYSTEM HAS BEEN COMPLETED AND VERIFIED AS PER SPECIFICATIONS. PROVIDE FOUR HOURS MINIMUM FOR NEW HVAC CONTROL SYSTEMS.

READ THIS DRAWING IN CONJUNCTION WITH CONTRACT DRAWINGS, ALL MATERIAL AS CONTRACT DRAWINGS UNLESS NOTED.

NO.	DESCRIPTION	DATE
2	REISSUED FOR PERMIT AND TENDER	MAY 03/19
1	ISSUED FOR REVIEW	NOV 12/18

REVISIONS/ISSUES

LICENSED PROFESSIONAL ENGINEER
K.K.SHARMA
03/05/19
PROVINCE OF ONTARIO

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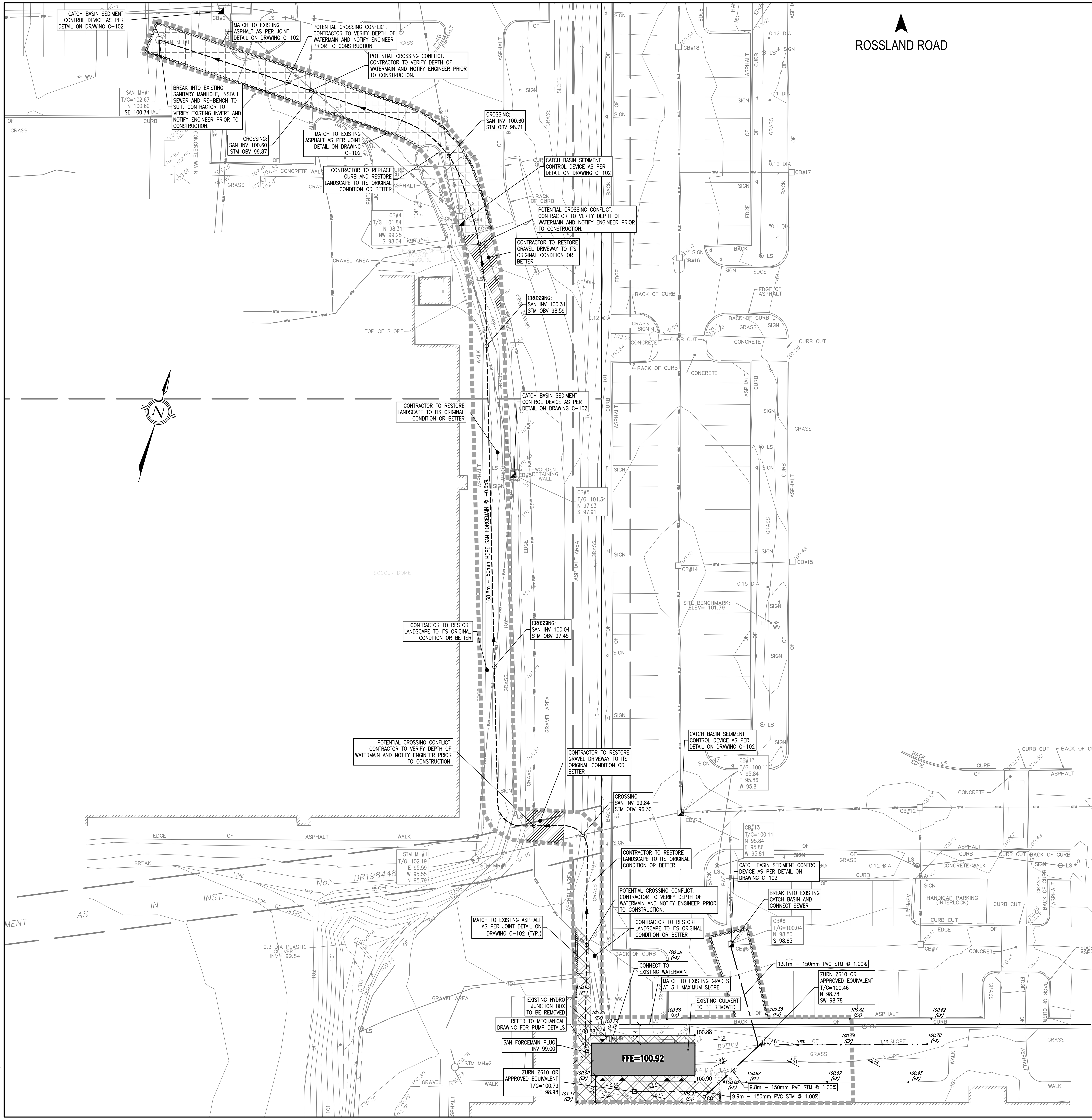
SPI PROJECT NUMBER: 2018–1064

WASHROOM FACILITY OPTION A
695 ROSLAND ROAD WEST,
WHITBY, ONTARIO

MECHANICAL SPECIFICATIONS

DRAWING No. M5

DRAWN BY	SCALE	DATE	PROJECT No.
	1:50	03/05/19	2018–1064



GENERAL NOTES:

1. ALL WORK SHALL BE CARRIED OUT IN COMPLIANCE WITH THE APPLICABLE HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
2. ALL WORK AND MATERIALS TO CONFORM WITH THE CURRENT PROVINCIAL BUILDING CODE, MINISTRY OF THE ENVIRONMENT AND CLIMATE CHANGE OF ONTARIO, REGIONAL MUNICIPALITY OF DURHAM, TOWN OF WHITBY, ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS. LOCAL UTILITY STANDARDS AND MINISTRY OF TRANSPORTATION STANDARDS WILL APPLY.
3. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL UTILITIES DURING CONSTRUCTION. ALL EXISTING UTILITIES MUST BE LOCATED PRIOR TO COMMENCEMENT OF WORK. ANY VARIANCE IN LOCATION (VERTICAL OR HORIZONTAL) IS TO BE REPORTED TO THE SITEWORK ENGINEER OF RECORD 48 HRS PRIOR TO CONSTRUCTION. LOST TIME AND/OR ANY ADDITIONAL WORKS DUE TO FAILURE OF THE CONTRACTOR TO CONFIRM UTILITY LOCATIONS AND ELEVATIONS AND NOTIFY THE SITEWORK ENGINEER OF RECORD OF ANY CONFLICTS 48 HRS PRIOR TO CONSTRUCTION WILL BE AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL INSTALL ALL SEDIMENT CONTROL DEVICES PRIOR TO THE COMMENCEMENT OF SITE GRADING WORK. SILT LADEN WATER MUST NOT BE PERMITTED TO ENTER INTO ANY EXISTING CATCH BASINS, INLETTING STRUCTURES, OR WATERCOURSES. ADDITIONAL CONTROLS AS DEEMED REQUIRED BY THE AUTHORITIES AND/OR THE SITEWORK ENGINEER OF RECORD DURING CONSTRUCTION ACTIVITIES SHALL BE PROVIDED BY THE CONTRACTOR. THE CONTRACTOR MUST INSPECT SEDIMENT CONTROLS ON A REGULAR BASIS AND AFTER EVERY RAINFALL EVENT. REPAIRS MUST BE COMPLETED IN A TIMELY MANNER TO PREVENT SEDIMENT FROM ENTERING ANY WATER SYSTEMS. ADDITIONAL SILT FENCING MUST BE AVAILABLE IN CASE IMMEDIATE REPAIR IS REQUIRED. REFER TO DRAWING C-102 FOR EROSION AND SEDIMENT CONTROL REQUIREMENTS.
5. CONTRACTOR WILL BE RESPONSIBLE FOR ALL REMOVALS REQUIRED TO FACILITATE NEW CONSTRUCTION. REFER TO DRAWING C-101 AND TOPOGRAPHIC SURVEY FOR EXISTING CONDITION INFORMATION. ALL EXISTING SERVICE STRUCTURES, VALVES AND HYDRANTS ARE TO BE ADJUSTED TO PROPOSED ELEVATIONS.
6. THE CONTRACTOR SHALL PROVIDE TO THE SITEWORK ENGINEER OF RECORD 1 (ONE) SET OF SITE SERVICING, AND GRADING RECORD DRAWINGS.

GRADING:

1. ALL GRANULAR BASE AND SUB BASE COURSE MATERIALS SHALL BE COMPACTED TO 100% STANDARD PROCTOR MAXIMUM DRY DENSITY.
2. ALL DISTURBED GRASSED AREAS SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER, WITH SOD ON MINIMUM 150mm TOPSOIL. THE RELOCATION OF TREES AND SHRUBS SHALL BE SUBJECT TO APPROVAL BY THE SITEWORK ENGINEER OF RECORD.
3. LIGHT DUTY PAVEMENT STRUCTURE TO BE CONSTRUCTED AS RECOMMENDED BY CANBIUM INC., REPORT DATED MARCH 2, 2017 AS FOLLOWS:
   40mm SURFACE COURSE ASPHALT (HL3 OR HL4)
   50mm BASE COURSE ASPHALT (HL8)
   150mm BASE COURSE (GRAN."A" OR OPSS 1010)
   300mm SUB BASE (GRAN."B" TYPE I OR OPSS 1010)
4. HEAVY DUTY PAVEMENT STRUCTURE TO BE CONSTRUCTED AS RECOMMENDED BY CANBIUM INC., REPORT DATED MARCH 2, 2017 AS FOLLOWS:
   40mm SURFACE COURSE ASPHALT (HL3 OR HL4)
   90mm BASE COURSE ASPHALT (HL8)
   200mm BASE COURSE (GRAN."A" OR OPSS 1010)
   300mm SUB BASE (GRAN."B" TYPE I OR OPSS 1010)
5. GRAVEL ROAD STRUCTURE TO BE RESTORED AS PER THE CORPORATION OF THE TOWN OF WHITBY ENGINEERING DESIGN STANDARD DWG NO. 214:
   40mm HL3 ASPHALT
   50mm HL8 ASPHALT
   300mm BASE COURSE (GRAN. "A")
6. JOINTS ARE TO BE USED WHERE PROPOSED ASPHALT MEETS EXISTING ASPHALT AS PER C-102. ALL JOINTS MUST BE MACHINED AND SEALED AS PER DETAIL.
7. EMBANKMENTS TO BE SLOPED AT MAX. 3:1, UNLESS OTHERWISE NOTED ON THIS DRAWING.
8. EXISTING ELEVATIONS AT MATCH POINTS AS SHOWN ON THIS DRAWING ARE TO BE CONFIRMED BY THE CONTRACTOR 72 HOURS PRIOR TO MOBILIZATION OF FORCES. LOST TIME AND/OR ANY ADDITIONAL WORKS DUE TO FAILURE OF THE CONTRACTOR TO CONFIRM EXISTING ELEVATIONS AND NOTIFY THE SITEWORK ENGINEER OF RECORD OF POSSIBLE CONFLICTS 72 HOURS PRIOR TO MOBILIZATION WILL BE AT THE EXPENSE OF THE CONTRACTOR.

STORM AND SANITARY SEWERS:

1. ALL AREA DRAINS TO BE ZURN Z610 AS PER DETAIL ON DRAWING C-102, OR EQUIVALENT APPROVED BY THE SITEWORK ENGINEER OF RECORD.
2. CONCRETE AND PVC PIPE SEWER BEDDING SHALL BE CLASS "B" AS PER OPSD 802.010. NATIVE TRENCH BACKFILL TO BE COMPACTED AS PER GEOTECHNICAL RECOMMENDATIONS, WITH A MINIMUM 300mm SAND COVER OVER PIPE.
3. ALL STORM SEWER PIPES UP TO 450mm DIA. SHALL BE PVC SDR-35.
4. SANITARY SEWER FORCEMAIN SHALL BE HDPE OR ENGINEER APPROVED EQUIVALENT.
5. SANITARY MANHOLES SHALL BE BENCHED TO OBVERT. MINIMUM WIDTH OF ALL BENCHING TO BE 230mm.
6. FOR CONSTRUCTION DETAILS NOT SHOWN ON PLANS, REFERENCE SHALL BE MADE TO THE LOCAL PROVINCIAL STANDARDS DRAWINGS AND MUNICIPAL STANDARDS.
7. SERVICES TO BUILDINGS TO BE TERMINATED 1.5m FROM THE FACE OF BUILDING UNLESS OTHERWISE SHOWN ON THIS DRAWING. CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH BUILDING MECHANICAL DRAWINGS PRIOR TO CONSTRUCTION OF SERVICES. ALL DISCREPANCIES ARE TO BE CLARIFIED BY SITEWORK ENGINEER OF RECORD PRIOR TO INSTALLATION.
8. THE CONTRACTOR IS TO COMPLETE AND PROVIDE CCTV CAMERA INSPECTIONS IN ACCORDANCE WITH OPSS 405 OF ALL STORM AND SANITARY SEWERS PRIOR TO SUBSTANTIAL PERFORMANCE AND AGAIN PRIOR TO EXPIRATION OF THE WARRANTY PERIOD, INCLUDING WRITTEN PICTORIAL REPORT AND TWO (2) DVD COPIES IN A FORMAT SATISFACTORY TO THE SITEWORK ENGINEER OF RECORD. ALL SEWERS ARE TO BE FLUSHED PRIOR TO CAMERA INSPECTION. ALL CATCH BASIN LEADS ARE TO RECEIVE CCTV CAMERA INSPECTIONS.
9. LASER ALIGNMENT CONTROL TO BE UTILIZED ON ALL SEWER INSTALLATIONS.

ALTERNATE CONSTRUCTION METHODS:

1. BASE CONTRACT PRICING TO BE OPEN CUT INSTALLATION IN THE ALIGNMENT SHOWN.
2. OPTIONAL PRICE FOR TRENCHLESS INSTALLATION SHOULD BE PROVIDED IN THE BID SUBMISSION. CONTRACTOR TO PROPOSE ALTERNATIVE ALIGNMENT TO ACCOMMODATE THE TRENCHLESS INSTALLTION METHODOLOGY.

TOPOGRAPHIC SURVEYOR:

SURVEY PREPARED BY: J.D. BARNES LIMITED
DATED OCTOBER 12, 2018

BENCHMARK:

TOWN OF WHITBY BENCHMARK No. W0005

LOCATED ON ROSSLAND ROAD WEST 150m WEST OF BROCK STREET NORTH, ON THE NORTH FOUNDATION OF THE PUMPHOUSE. TABLET IS SET 2.18m WEST OF THE NORTHEAST CORNER, 2.76m EAST OF THE NORTHWEST CORNER, 18cm ABOVE GRADE.

ELEVATION = 103.502m (CGVD 1928:1978)

SITE BENCHMARK

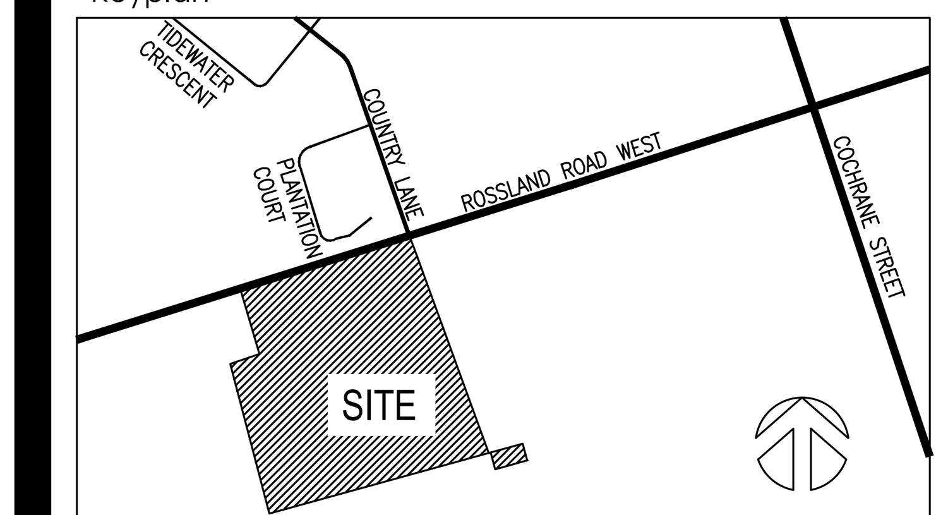
TOP NUT OF THE HYDRANT LOCATED IN THE PARKING MEDIAN DIRECTLY EAST OF THE WESTERLY SOCCER DOME

ELEVATION= 101.79

Stantec

300 - 675 Cochrane Drive West Tower
Markham, Ontario L3R 0B8
Tel. 905.944.7777
www.stantec.com

Keyplan



NTS

Legend

- 100.00 — PROPOSED GRADE
- 100.00 (EX) — EXISTING GRADE
- CATCH BASIN SEDIMENT CONTROL DEVICE
- SANITARY FORCEMAIN
- STORM SEWER
- AREA DRAIN
- LIGHT DUTY ASHPHALT
- HEAVY DUTY ASPHALT
- GRAVEL DRIVEWAY
- ASPHALT JOINT
- LIMIT OF CONSTRUCTION
- PROPERTY LINE
- CO — STORM CLEANOUT
- ACCESS DOOR
- DRAINAGE SWALE

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
B ISSUED FOR TENDER AND PERMIT	BS	HS	19.05.31
A ISSUED FOR COORDINATION	BS	HS	18.10.30

File Name: | Dwn. | Chkd. | Dsgn. | YY.MM.DD

Permit-Seal

LICENSED PROFESSIONAL ENGINEER
H. SCOTT
100113974
2019/05/31
PROVINCE OF ONTARIO

Client/Project

TOWN OF WHITBY

WHITBY SOCCER DOME WASHROOM FACILITY
695 ROSSLAND ROAD WEST
WHITBY, ONTARIO

Title

GRADING/SERVICING PLAN

Project No. 160622671

Scale 1:250 (0, 2.5, 7.5, 12.5m)

Drawing No. C-101

Sheet of

Revision 0

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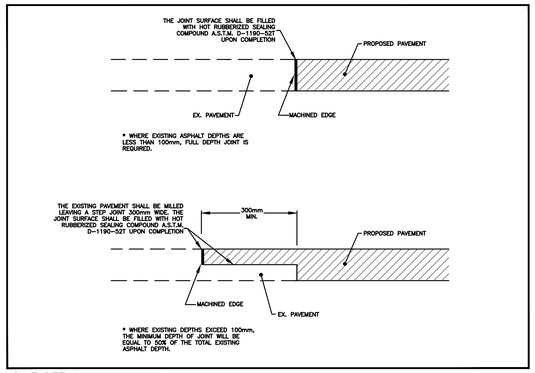
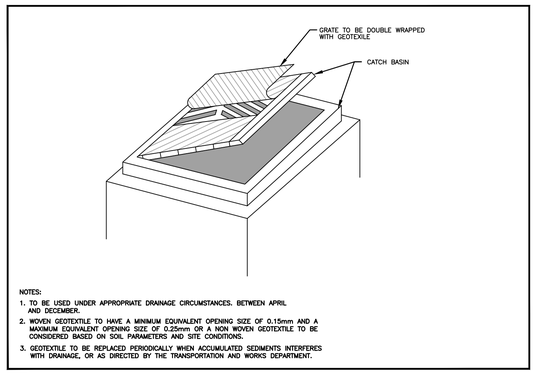
2019/05/31 2:17 PM By: Sureshkumar, Barathan

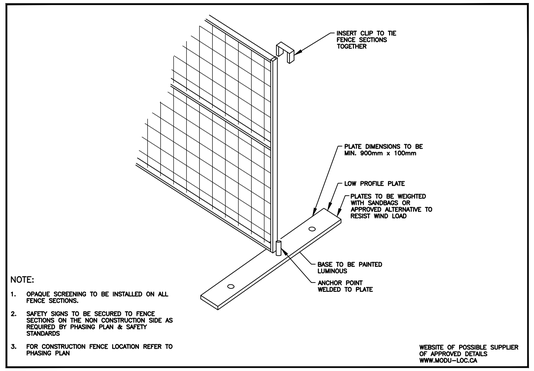
ORIGINAL SHEET - ARCH D



JOINT DETAIL
SCALE: N.T.S.



ROADWAY CATCH BASIN SEDIMENT CONTROL DEVICE
SCALE: N.T.S.

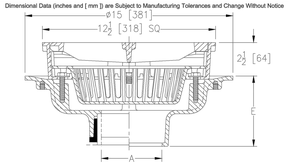


CONSTRUCTION FENCE DETAIL
SCALE: N.T.S.

ZURN **Z610**
12-1/2 [318] SQUARE TOP HEAVY-DUTY DRAIN

SPECIFICATION SHEET
TAG _____

Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



A Pipe Size In.[mm]	Approx. Wt. Lbs. [kg]	Grate Open Area Sq. In. [cm²]
2, 3, 4, 6[51, 76, 102, 152]	54 [24]	42 [271]
8 [203]	56 [25]	

ENGINEERING SPECIFICATION: ZURN Z610
12-1/2" [305mm] Square top drain, Dura-Coated cast iron body with bottom outlet, seepage pan and combination membrane flashing clamp and frame for heavy-duty cast iron loose slotted grate, with suspended polypropylene sediment bucket.

OPTIONS (Check/specify appropriate options)

PIPE SIZE
3, 4, 6 [76, 102, 152]
3, 4, 6 [76, 102, 152]
2, 3, 4, 6, [51, 76, 102, 152]
2, 3, 4, 6, 8 [51, 76, 102, 152, 203]
2, 3, 4 [51, 76, 102]

(Specify size/type) **OUTLET**
____ IC Inside Caulk
____ IG Inside Gasket
____ IP Threaded
____ NH No-Hub
____ NL Neo-Loc

'E' BODY HT. DIM.
5-1/4 [133]
5-1/4 [133]
3-3/4 [95]
5-1/4 [133]
4-5/8 [117]

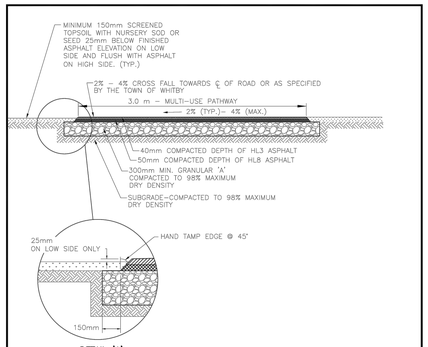
PREFIXES
____ Z D.C.C.I. Body and Top*
____ ZB D.C.C.I Body w/Polished Bronze Top (Add 3/16 [5] to 2-1/2 [64] Dim. and 3/4 [19] to 12-1/2 [318] Dim.)
____ ZN D.C.C.I Body w/Polished Nickel Bronze Top (Add 3/16 [5] to 2-1/2 [64] Dim. and 3/4 [19] to 12-1/2 [318] Dim.)

SUFFIXES
____ -AR Acid Resistant Epoxy Coated Cast Iron
____ -DG Duresist Grate
____ -DS Ductile Iron Solid Cover
____ -DX Dex-o-tex Flange (ZB, ZN Only)
____ -F 2 [51] High Extension
____ -G Galvanized Cast Iron
____ -H Hinged Grate
____ -HC Hinged Solid Cover
____ -HL Hinged Locking Grate
____ -HLC Hinged Locking Cover
____ -LY (Less) Sediment Bucket
____ -P Trap Primer Connection
____ -S Secondary Strainer
____ -SC Solid Cover
____ -SS Stainless Steel Mesh Liner for Bucket
____ -TC Neo-Loc Test Cap Gasket (2, 3, 4 [51, 76, 102] NL Bottom Outlet Only)
____ -TS Top Secured with Slotted Screws
____ -V Backwater Valve (See Z1099)
____ -VP Vandal-Proof Secured Top
____ -YA Aluminum Sediment Bucket
____ -YC Cast Iron Sediment Bucket
____ -90 90° Threaded Side Outlet Body

* Regularly furnished unless otherwise specified.

Zurn Industries, LLC | Specification Drainage Operation
1801 Pittsburgh Avenue, Erie, PA U.S.A. 16502 · Ph. 855-663-9876, Fax 814-454-7929
In Canada | **Zurn Industries Limited**
3544 Nashua Drive, Mississauga, Ontario L4V 1L2 · Ph. 905-405-8272, Fax 905-405-1292
www.zurn.com

Rev. H
Date: 09/27/2017
C.N. No. 137929
Prod. | Dwg. No. Z610



DETAIL 'A'

NOTES:

1. BACKFILL MATERIAL ADJACENT TO THE ASPHALT EDGE SHALL BE WELL COMPACTED
2. LANDSCAPING TO BLEND WITH CONTOUR OF EXISTING GROUND.
3. RUNNING SLOPE MAX.=5.0%.
4. HEAD ROOM CLEARANCE FROM SIDEWALK TO VEGETATION/ OBSTRUCTION MIN.=2.1m.
5. THE STANDARD 3.0m WIDTH MAY BE REDUCED UPON APPROVAL BY THE TOWN.

ALL DIMENSIONS IN MILLIMETRES EXCEPT WHERE NOTED

THE CORPORATION OF THE TOWN OF WHITBY		PUBLIC WORKS DEPARTMENT
CHECKED	MULTI-USE PATHWAY	ORIG. DATE: JANUARY 2009
APPROVED		REVISION No.: 2
SCALE: N.T.S		REVISION DATE: OCTOBER 2018
		DWG No. 214

Stantec
300 - 675 Cochrane Drive West Tower
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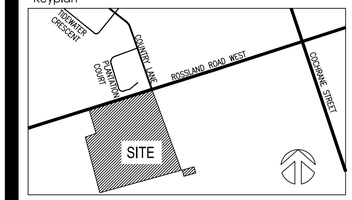
www.stantec.com

Keyplan



NTS

Legend

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Issued | By | Appd. | YY.MM.DD

File Name: | Dwn. | Chkd. | Dsgn. | YY.MM.DD

Permit-Seal

Client/Project
TOWN OF WHITBY

WHITBY SOCCER DOME WASHROOM FACILITY
695 ROSSLAND ROAD WEST
WHITBY, ONTARIO

Title
DETAILS

Project No. 160622671
Scale

Drawing No. C-102
Sheet
of
Revision 0

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ORIGINAL SHEET - ARCH D