

Item	Ontario's 2016 Building Code Data Matrix - Part 11 - Renovation of Existing Building				OBC Reference			
11.1	Existing Building classification:	Describe Existing Use: - Construction Index: - Hazard Index: - ☑ Not Applicable (no change of major occupancy)			11.2.1 T 11.2.1.1A T 11.2.1.1B to N 4.2.1.(3) & 5.2.2.(2)			
11.2	Alteration to Existing Building is:	Basic Renovation    ☐ Extensive Renovation    ☑			11.3.3.1 11.3.3.2			
11.3	Reduction in Performance Level:	Structural: By increase in occupant load: by change of major occupancy: Plumbing: Sewage - system:	☑ No    ☐ Yes ☑ No    ☐ Yes ☑ No    ☐ Yes ☑ No    ☐ Yes ☑ No    ☐ Yes	11.4.2.1 11.4.2.2 11.4.2.3 11.4.2.4 11.4.2.5				
11.4	Compensating Construction:	Structural:	☑ No    ☐ Yes (explain)	11.4.3				
		-		11.4.3.2				
		-						
		Increase in occupant load:	☑ No    ☐ Yes (explain)	11.4.3.3				
		-						
		-						
		Change of major occupancy:	☑ No    ☐ Yes (explain)	11.4.3.4				
		-						
11.5	Compliance Alternatives Proposed:	☑ No		11.5.1				
		☐ Yes (give number (s)) -						
11.6	Plumbing Fixture Requirements							
	Male/Female Count @ 50 % / 50 %, except as noted otherwise				Building Code Reference ☐ Part 3    ☐ Part 9			
		Occupant Load (M/F)	OBC Table Number	Fixtures Required (M/F)	Fixtures Provided			
	Basement: Occupancy	-	-	-	-	-	3.7.4	9.31.1.1
	Occupancy	-	-	-	-	-		
	1st Floor: Occupancy	580	290 M	-	10 M	13 M		
	Occupancy	580	290 F	-	12F	14 F		
	2nd Floor: Occupancy	-	-	-	-	-		
	Occupancy	-	-	-	-	-		
	3rd Floor: Occupancy	-	-	-	-	-		
	Occupancy	-	-	-	-	-		
	(Adjust as Required for Additional Floors or Occupancies)	-	-	-	-	-	-	-

## LEGEND:

lobby 100	INDICATES ROOM NAME AND NUMBER. REFER TO ROOM FINISH SCHEDULE. SECTION D14 IN VOLUME #3 OF THE PROJECT MANUAL FOR FINISHES.
1 A0	INDICATES BUILDING SECTION REFERENCE SECTION NUMBER DRAWING WHERE SECTION LOCATED
1 A0	INDICATES WALL SECTION REFERENCE SECTION NUMBER DRAWING WHERE SECTION LOCATED
b A0	INDICATES ELEVATION REFERENCE ELEVATION NUMBER DRAWING WHERE ELEVATION LOCATED
△	INDICATES WALL TYPE CONSTRUCTION.
1	INDICATES CEILING TYPE CONSTRUCTION.
#	INDICATES DOOR NUMBER.
VCT CPT	INDICATES FLOOR FINISH TRANSITION.
0 D0	INDICATES DRAWING NUMBER INDICATES DETAIL BOOK SECTION
0.6 100 A.F.F.	INDICATES CEILING FINISH AND CEILING ELEVATION ABOVE FINISHED FLOOR
□	INDICATES RECESSED LIGHT FIXTURE. REFER TO ELECTRICAL
□	INDICATES DIFFUSER. REFER TO MECHANICAL.
■	INDICATES RETURN AIR GRILLE. REFER TO MECHANICAL.
■	INDICATES NEW CONCRETE BLOCK. REFER TO PLAN FOR THICKNESSES.
■	INDICATES FLOOR DRAIN
---	INDICATES ¾ HR FIRE RATING

## GENERAL NOTES:

- Read architectural drawings in conjunction with mechanical and electrical drawings.
- Interior dimensions are taken from o/s face of gypsum wallboard to o/s face of gypsum wallboard unless noted otherwise.
- Contractor to site verify all dimensions prior to starting work. Report all discrepancies to the consultant for required action.
- All new and existing penetrations through walls, floors and/or ceilings designated as a fire separation, new or existing, shall be fire stopped and smoke sealed using ULC tested and approved system. Contractor to provide ULC documentation of proposed system prior to installation for review.
- Existing building to remain occupied and operational during the work. Maintain existing services to ensure other spaces remain operational. take all necessary security and safety precautions to ensure safe access to remaining building areas by existing occupants. Coordinate permitted work hours with building manager. Exit facilities to remain clean and accessible at all times. All existing partitions that are patched or added to are to be taped, sanded & smoke sealed.
- Fire alarm verification conducted by owner prior to school commencement - contractor to coordinate with owner for access and timing.
- Any finishes that are completed prior to all construction being completed are to be protected to avoid any possible damage to the new finish.
- ALL NEW CONCRETE BLOCK IS TO MATCH THE EXISTING CONCRETE BLOCK SIZE. THE COMBINATION OF IMPERIAL AND METRIC BLOCK WILL NOT BE ACCEPTED.

## DEMOLITION NOTES:

- Contractor to verify extent of demolition, alteration and removals on site. Drawings indicate intent of extent of existing construction to be removed.
- All existing areas affected by demolition/alteration are to be made good.
- Where existing walls do not enclose spaces to be renovated, provide dust-tight barriers and temporary protection to separate work areas from occupied spaces. abide by all TLDSB policies relating to dust control.
- Contractor to inform the owner and the architect of areas of disrepair if uncovered during demolition for direction regarding acceptable remedial work.
- All door hardware being removed is to be handed over to the owner.
- All existing washroom accessories are to be retained for reuse unless noted otherwise. Refer to specification section 010800.
- Chipping of floors as required to meet slopes.

## ASSEMBLIES:

WALL ASSEMBLIES:	
△	INTERIOR PARTITION WALL: CERAMIC TILE WALL FINISH (REFER TO ROOM FINISH SCHEDULE) 140mm CONCRETE BLOCK CERAMIC TILE WALL FINISH (REFER TO ROOM FINISH SCHEDULE)
△	INTERIOR PARTITION WALL: CERAMIC TILE WALL FINISH (REFER TO ROOM FINISH SCHEDULE) 140mm CONCRETE BLOCK
* ALL NEW WALLS TO RUN TO U/S OF DECK. REFER TO SPECIFICATION SECTION 05500 FOR ATTACHMENT DETAIL.	

CEILING ASSEMBLIES:	
□	ACT CEILING (RATING ABOVE): ACOUSTIC CEILING TILES VOID (HEIGHT VARIES) 2 LAYERS OF 12.7mm TYPE-X GWB FASTENED TO U/S STRUCTURE EXISTING STRUCTURE

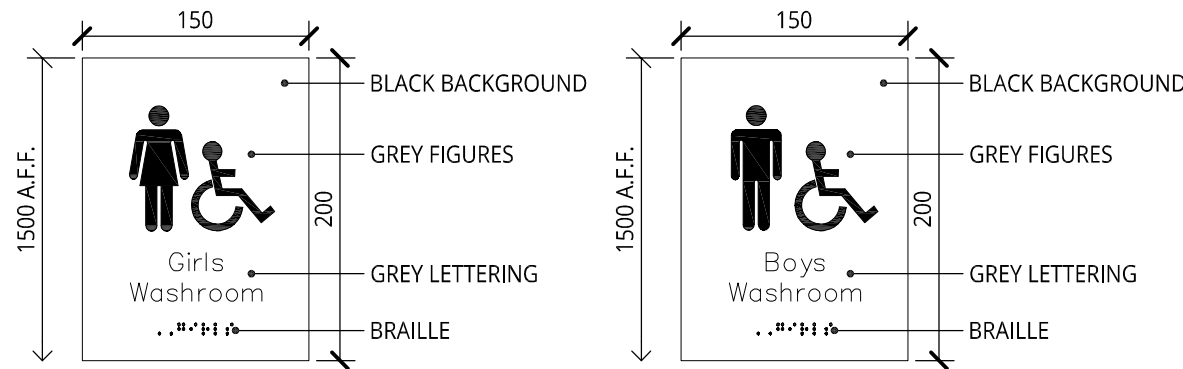
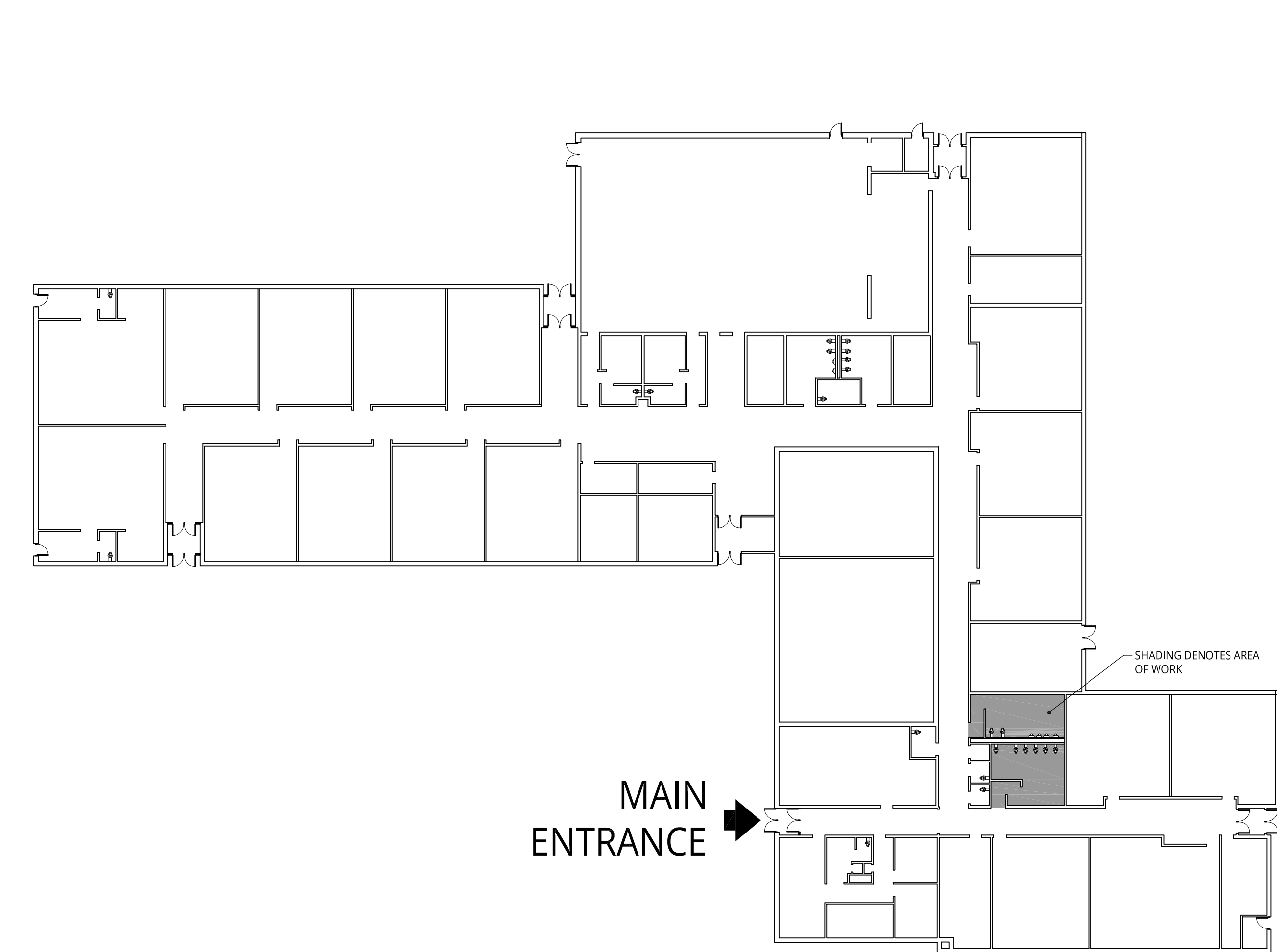
## ABBREVIATIONS:

GWB	GYPSUM WALLBOARD
GW2	TYPE-X GYPSUM WALLBOARD
GW3	GYPSUM SHEATHING
A.F.F.	ABOVE FINISHED FLOOR
ACT	ACOUSTIC CEILING TILE
EX	EXISTING TO REMAIN
PT	PAINT
HTD	HAND TOWEL DISPENSER
HD	HAND DRYER
TP	TOILET PAPER DISPENSER
MIR	TILT MIRROR
MIR2	MIRROR
SD	SOAP DISPENSER
GB	GRAB BAR
SND	SANITARY NAPKIN DISPOSAL
SND2	SANITARY NAPKIN DISPENSER
BR	BACKREST
WB	WALL BUMPER
RH	ROBE HOOK

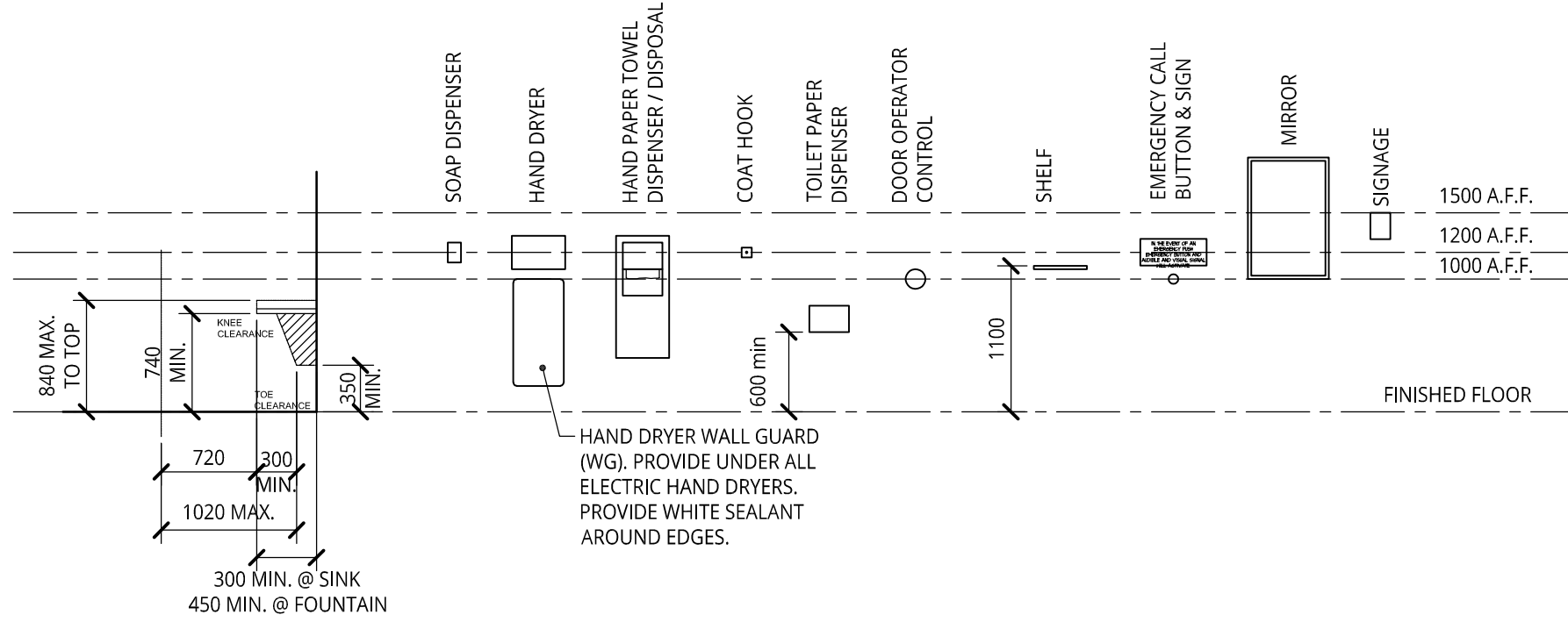
ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR		BASE	WALLS			CEILING		REMARKS
		material	finish		material	finish	prot.	material	finish	
142 & 134	CORRIDOR	EX.	EX.	EX.	EX/CB	EX/CT1/CT2/CT3/PT	-	EX/ACT	-	PATCH AND REPAIR EXISTING ACT AS REQUIRED. TOUCH UP EXISTING PAINT AS REQUIRED.
143	GIRLS WASHROOM	CT	PCT1	PCT1	EX/CB	CT1/CT2	-	GWB2	PT	ALL WALLS ARE TO RECEIVE NEW TILE UNLESS NOTED OTHERWISE. REFER TO 4/A2 FOR TILE LAYOUT.
138	BOYS WASHROOM	CT	PCT1	PCT1	EX/CB	CT1/CT3	-	GWB2	PT	ALL WALLS ARE TO RECEIVE NEW TILE UNLESS NOTED OTHERWISE. REFER TO 4/A2 FOR TILE LAYOUT.

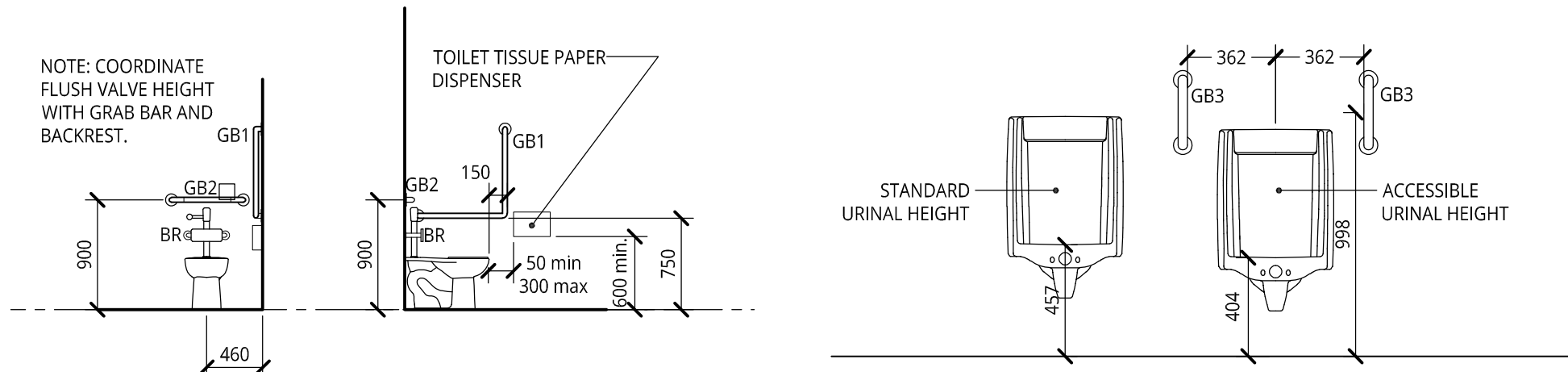
LEGEND: CT - CERAMIC TILE    CONC - CONCRETE    CB - CONCRETE BLOCK    GWB - GYPSUM WALLBOARD    PT - PAINT    ACT - ACOUSTIC CEILING TILE    EX - EXISTING TO REMAIN



2 A1 Signage WS1 – Refer to specification Section 10800  
SCALE: 1:5



3 A2 Fixture/Accessories Mounting Standards  
SCALE: 1:50



4 A2 Grab Bar Mounting Standards  
SCALE: 1:50

5 A2 Urinal & Grab Bar Mounting  
SCALE: 1:25

1 A1 Key Plan  
SCALE: 1:300

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PROJECT NORTH:

KEY PLAN:

ONTARIO ASSOCIATION OF ARCHITECTS  
JASON MICHAEL THOMAS LOWE  
LICENCE 8623

# Trillium Lakelands District School Board Bobcayeon Public School Washroom Renovation

Bobcayeon, ON.

## MITCHELL JENSEN ARCHITECTS

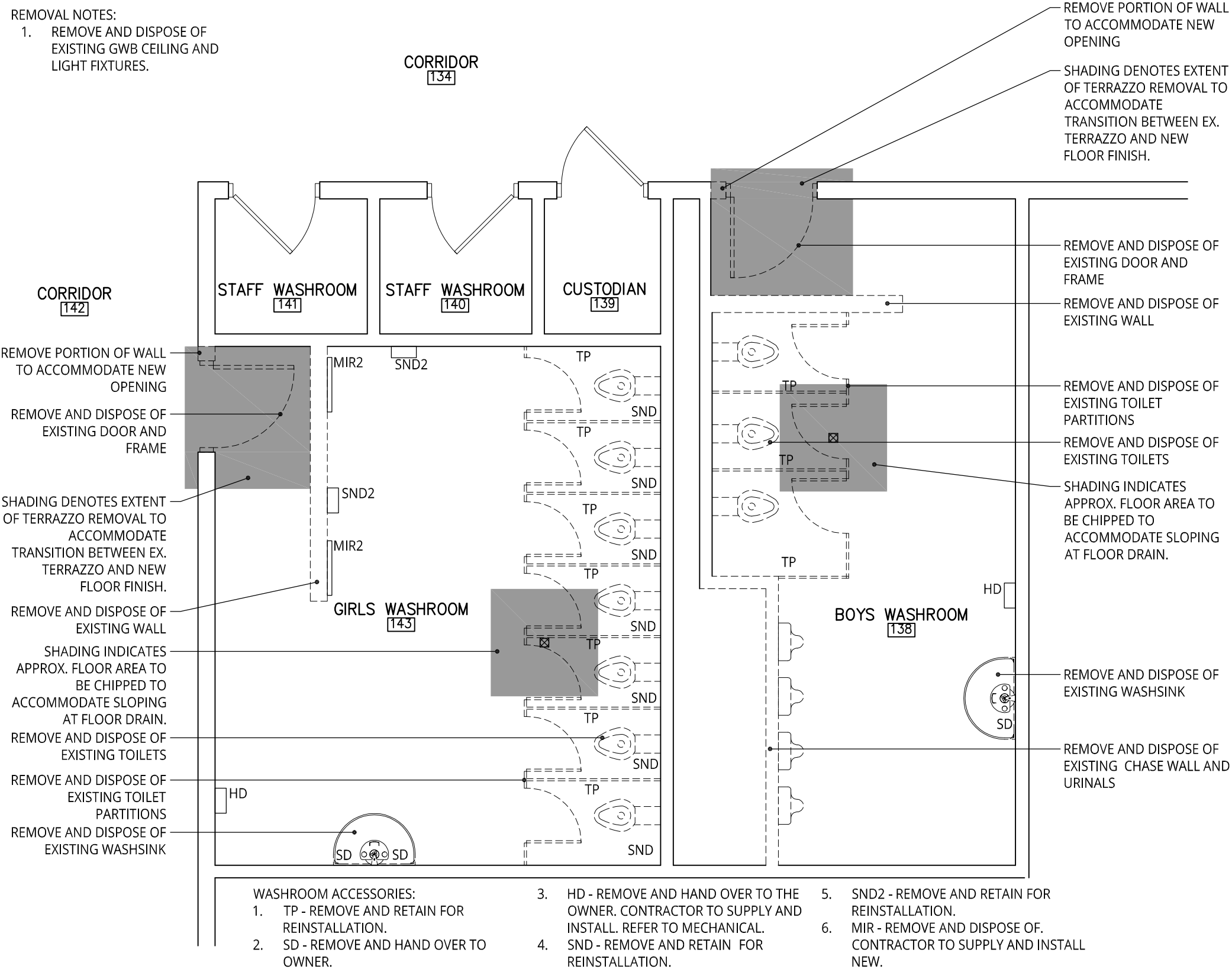
Mitchell Jensen Architects  
7 John St. Unit #3,  
Huntsville, ON, P1H 1H2  
705.788.0650

PROJECT NO:	218011	
LIBRARY NO:	218011-FP	
DRAWN BY:	MK	
SCALE:	AS NOTED	
<hr/>		
NO.	ISSUE	DATE
①	Issued for Review	October 31, 2018
②	Issued for Tender/Permit	November 23, 2018

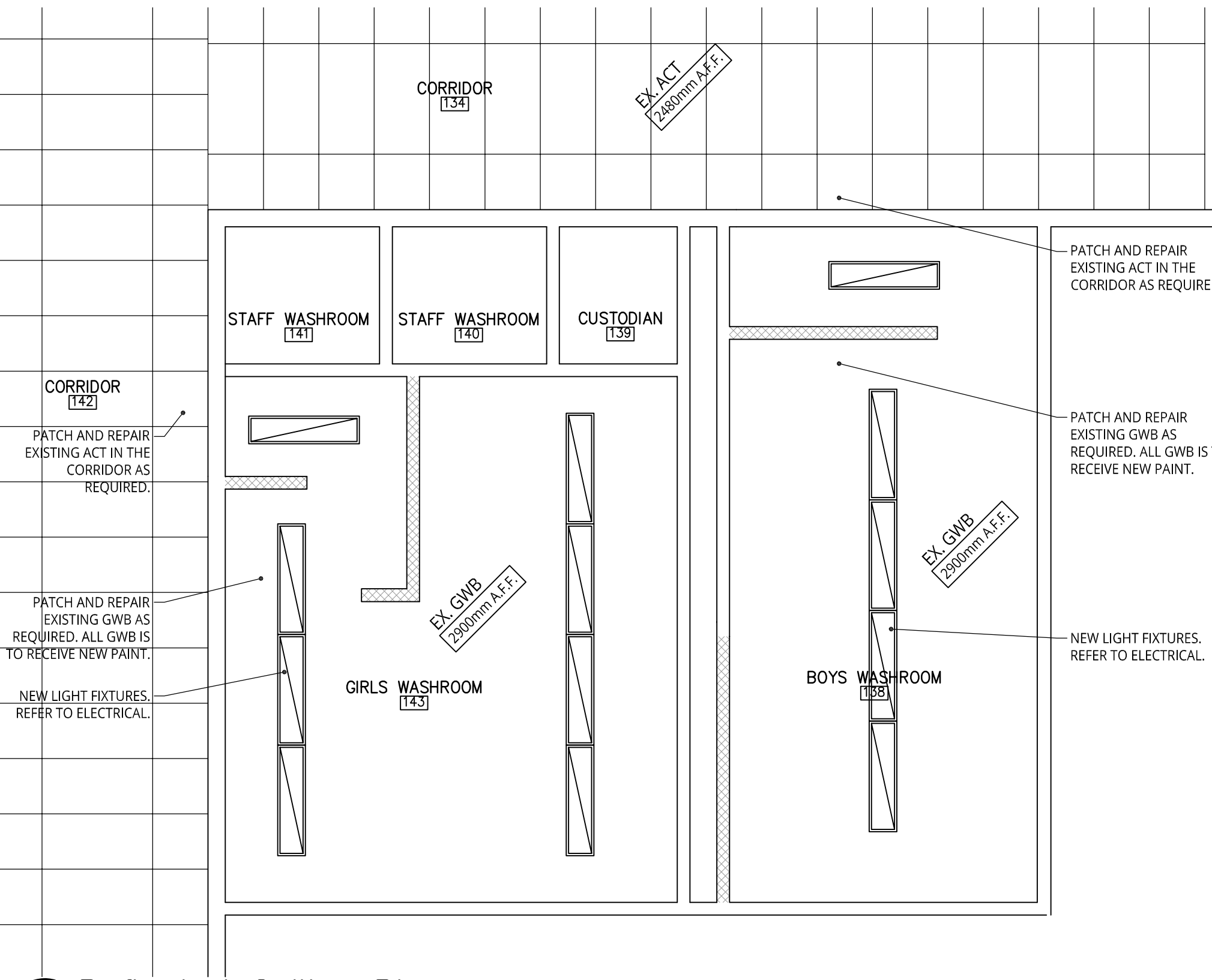
Matrix, Legend, Notes, Key Plan, Mounting Standards, Schedules & Signage

DRAWING NO:

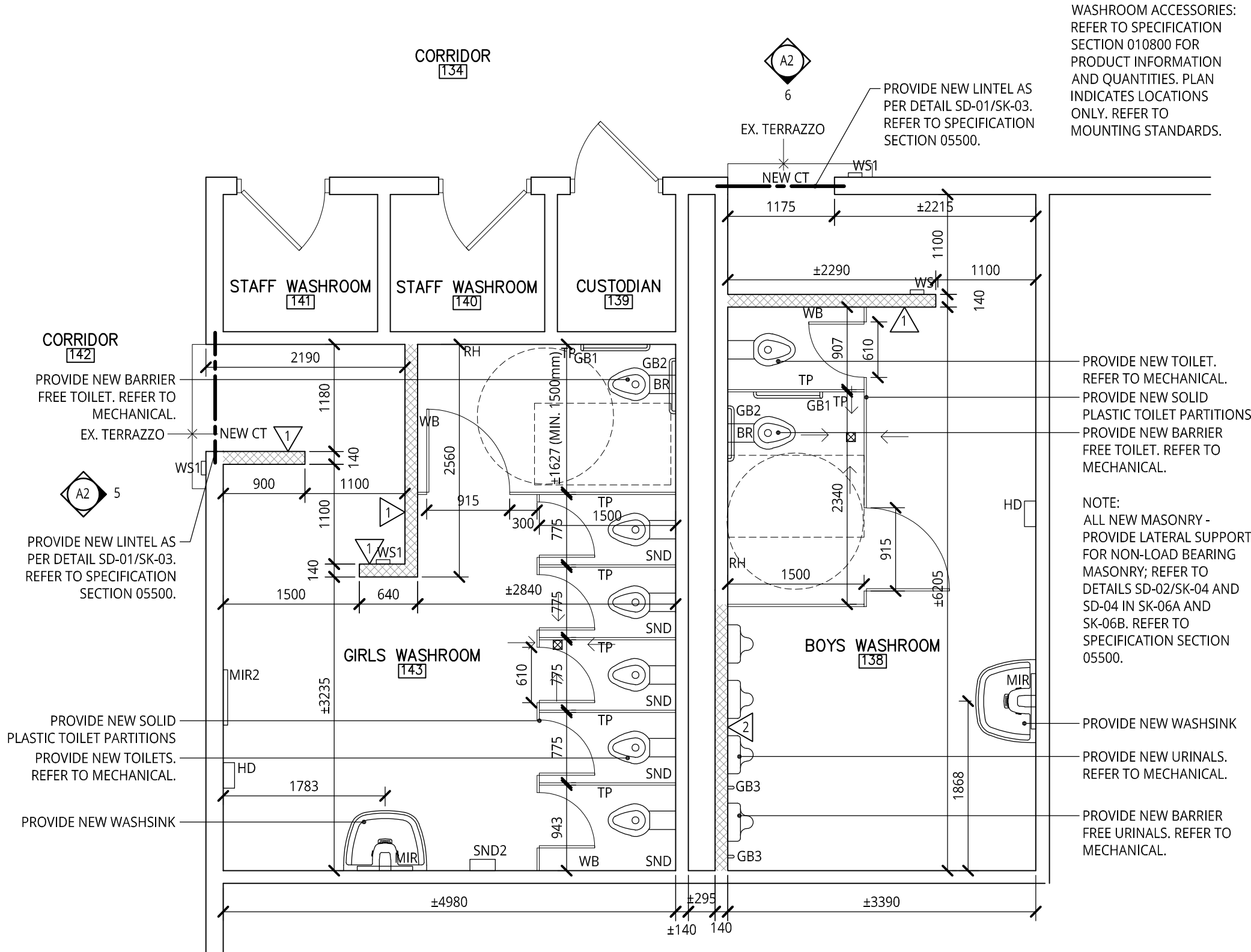
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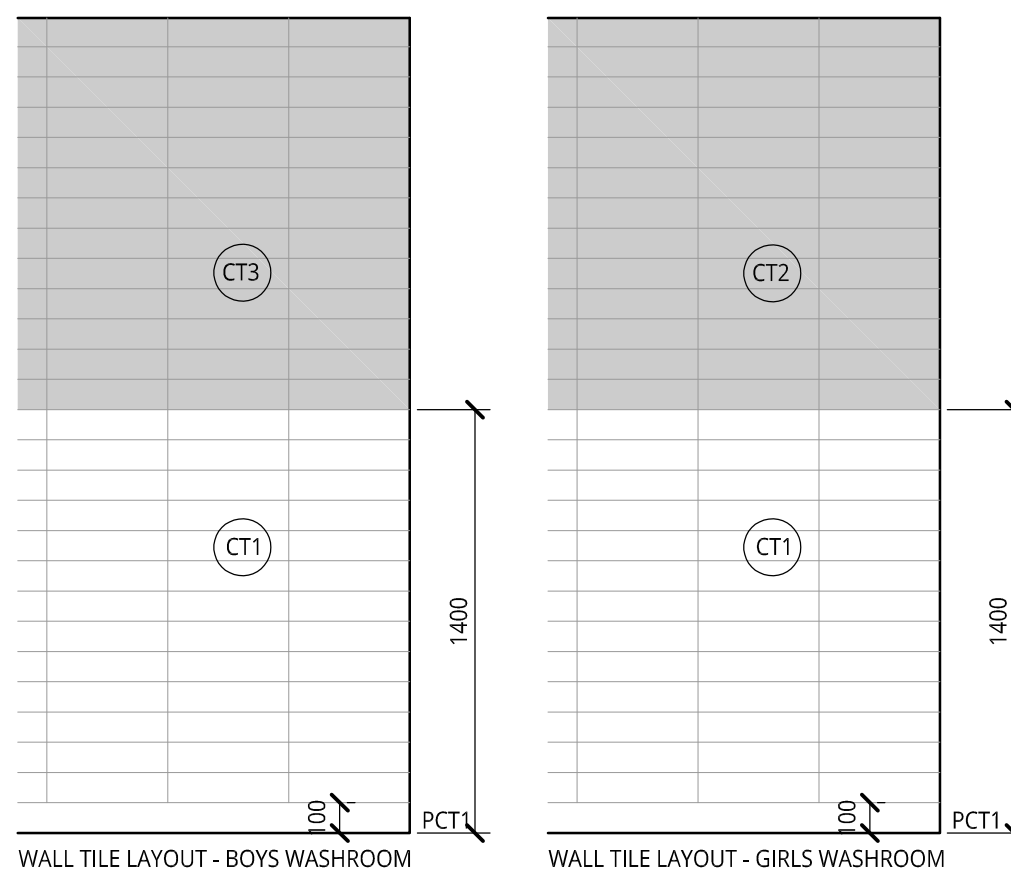
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SCALE: 1:50



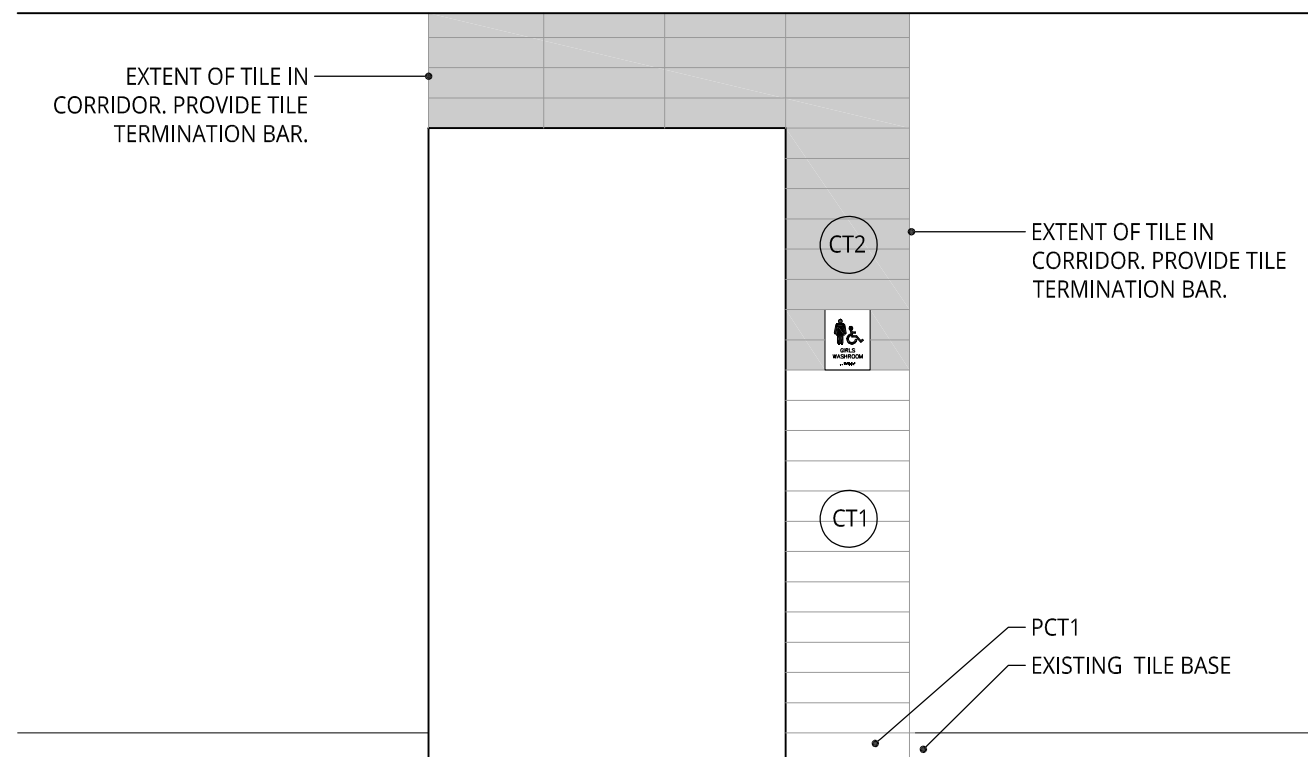
**3 Reflected Ceiling Plan**  
SCALE: 1:50



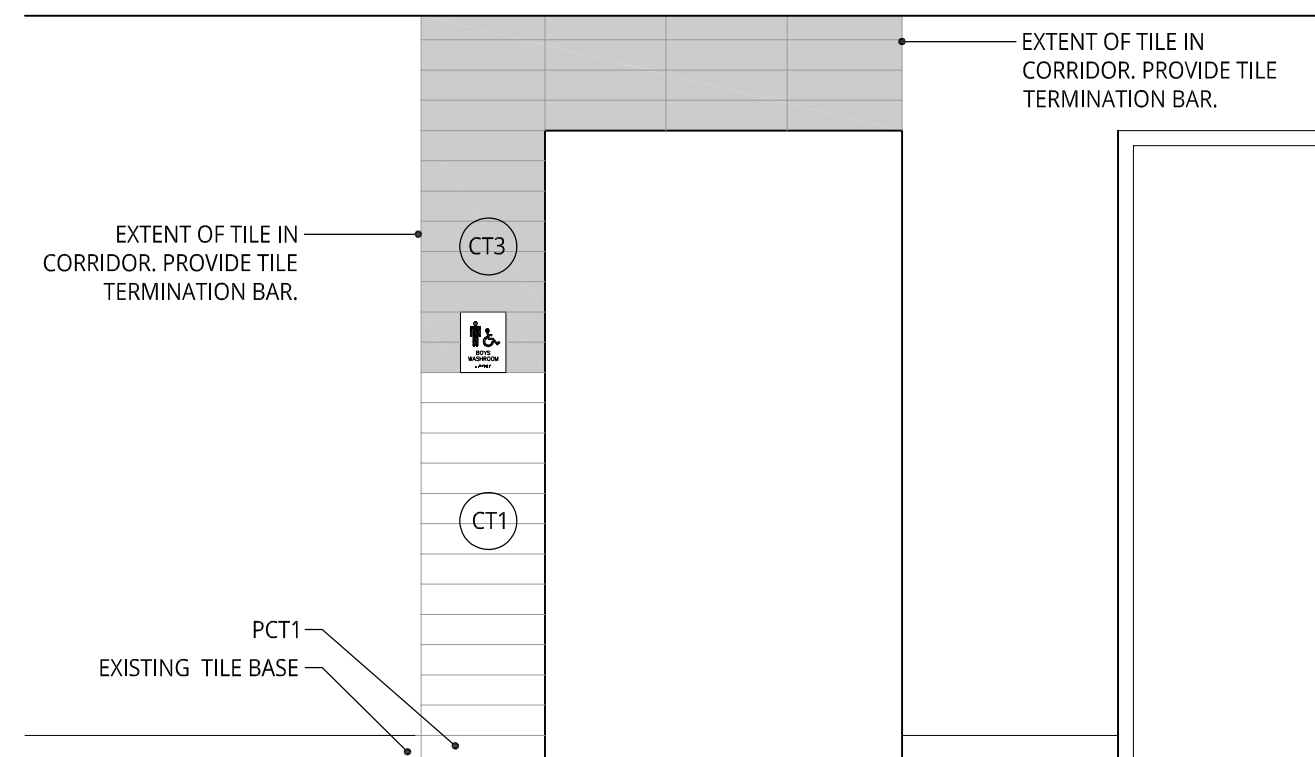
**2 Proposed Plan**  
SCALE: 1:50



**4 Tile Layout**  
SCALE: 1:25



**5 Corridor Elevation - Girls**  
SCALE: 1:25



**6 Corridor Elevation - Boys**  
SCALE: 1:25

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PROJECT NORTH:

KEY PLAN:

# Trillium Lakelands District School Board Bobcayeon Public School Washroom Renovation

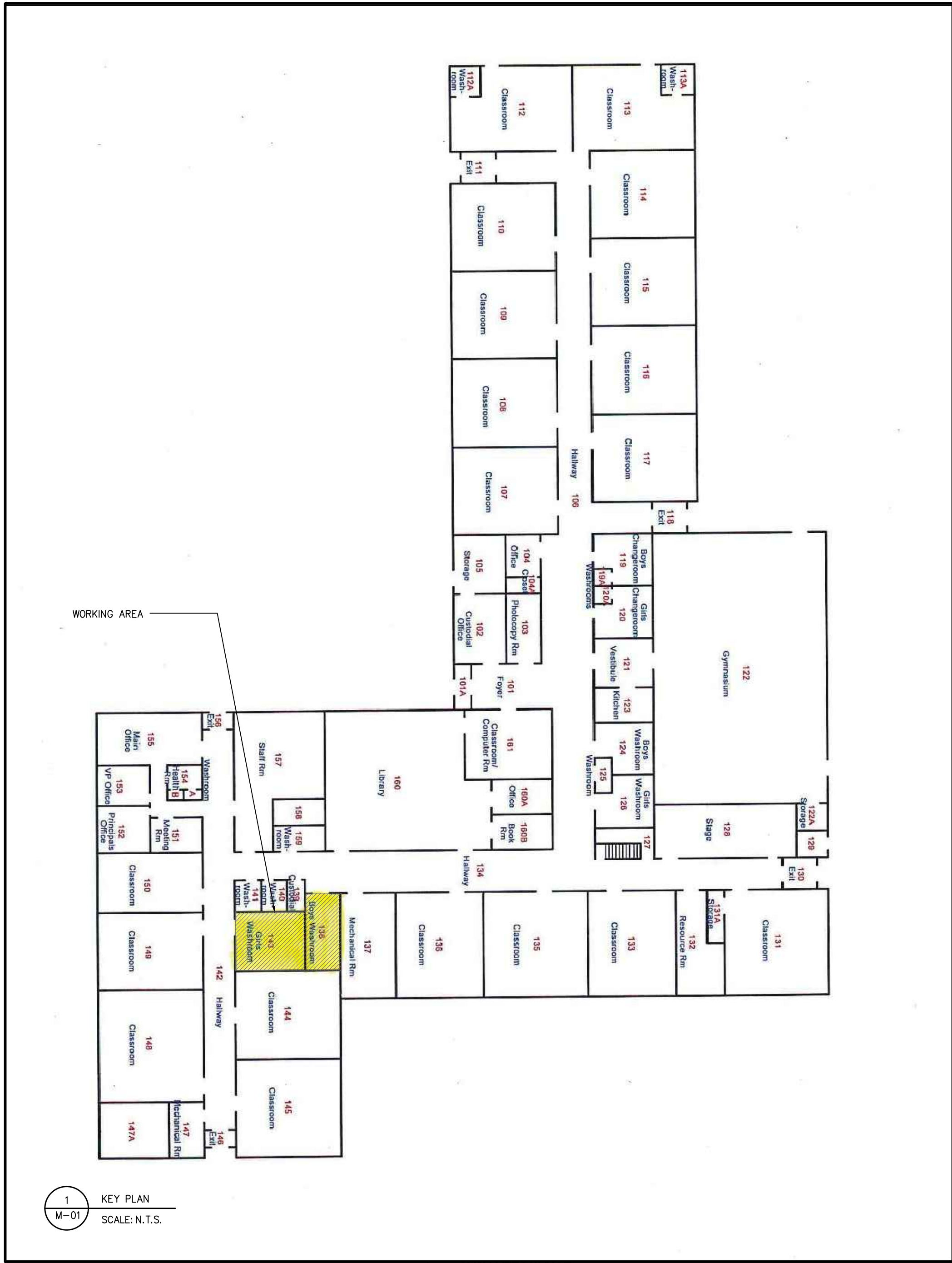
Bobcayeon, ON.

**MITCHELL JENSEN ARCHITECTS**

PROJECT NO:	218011	DATE
LIBRARY NO:	218011-FP	
DRAWN BY:	MJK	
SCALE:	AS NOTED	
NO.	ISSUE	DATE
△	Issued for Review	October 31, 2018
△	Issued for Tender/Permit	November 23, 2018

## Demolition Plan, Proposed Plan, Reflected Ceiling Plan, Elevations





ALLOW FIVE THOUSAND DOLLARS CASH ALLOWANCE TO EXAM ALL SANITARY DRAIN LINES BEFORE AND AFTER CONSTRUCTION IN WORKING AREA. ALL DRAIN LINES IN AREA TO BE INSPECTED BY CAMERA AND VIDEO RECORDED UNTIL A CONNECTION TO A MAIN LINE IS MADE. SUBMIT VIDEO RECORD BY USB ALONG WITH WRITTEN REPORTS FOR BEFORE AND AFTER CONSTRUCTION.

#### PLUMBING FIXTURE SPECIFICATION

1. "T-1", FLOOR MOUNTED TOILET - VITREOUS CHINA - FOR FLUSHOMETER - EXPOSED - BATTERY POWERED.

AMERICAN STANDARD MADERA FLOWISE ELONGATED #3451.001.020 HET TOILET, 381 MM HIGH, VITREOUS CHINA WITH EVERCLEAN ANTIMICROBIAL SURFACE WHICH INHIBITS THE GROWTH OF STAIN AND ODOR CAUSING BACTERIA MOLD AND MILDEW, WHITE FINISH, FLOOR MOUNTED, SIPHON JET FLUSH ACTION, OPERATES IN THE RANGE OF 4.2 L TO 6 L (1.1 US GAL TO 1.6 US GAL) PER FLUSH, CONDENSATE CHANNEL, ELONGATED BOWL, 54 MM (2-1/8") FULLY GLAZED INTERNAL TRAPWAY, FLOOR OUTLET, BOLT CAPS, 38 MM (1-1/2") DIA. TOP SPUD. CENTOCO #500STSC0.001 TOILET SEAT, HEAVY DUTY, FOR ELONGATED BOWL, OPEN FRONT, SOLID PLASTIC, LESS COVER, STAINLESS STEEL CHECK HINGES, METAL FLAT WASHERS STAINLESS STEEL POSTS AND NUTS.

MOEN COMMERCIAL 1-1/2" BATTERY POWERED EXPOSED STYLE CLOSET FLUSH VALVE MODEL 8310DF16, BRASS CONSTRUCTION W/CHROME PLATED FINISH, 1" IPS SUPPLY, 1-1/2" TOP SPUD, ADJUSTABLE SENSOR EYES, BATTERY POWERED (4) STANDARD AA (INCLUDED), SELF-DIAGNOSTIC ELECTRONICS, PISTON FLUSHING MECHANISM, SELF-CLEANING FILTER SYSTEM, LOW BATTERY INDICATOR LIGHT, OPERATING PRESSURE 10 TO 125 PSI, 1.0 GPF UP TO 60 SECONDS/1.6 GPF AFTER 60 SECONDS, 24 HOUR SENTINEL FLUSH, MANUAL OVERRIDE BOTTOM.

2. "T-2", FLOOR MOUNTED TOILET - VITREOUS CHINA - FOR FLUSHOMETER - EXPOSED - BATTERY POWERED - BARRIER FREE.

AMERICAN STANDARD MADERA FLOWISE RIGHT HEIGHT ELONGATED #3461.001.020 HET TOILET, 419 MM HIGH, VITREOUS CHINA WITH EVERCLEAN ANTIMICROBIAL SURFACE WHICH INHIBITS THE GROWTH OF STAIN AND ODOR CAUSING BACTERIA MOLD AND MILDEW, WHITE FINISH, FLOOR MOUNTED, SIPHON JET FLUSH ACTION, OPERATES IN THE RANGE OF 4.2 L TO 6 L (1.1 US GAL TO 1.6 US GAL) PER FLUSH, CONDENSATE CHANNEL, 305 MM X 254 MM (12" X 10") WATER SURFACE, SIPHON JET FLUSH ACTION, CONDENSATE CHANNEL, ELONGATED BOWL, 54 MM (2-1/8") FULLY GLAZED INTERNAL TRAPWAY, FLOOR OUTLET, BOLT CAPS, 38 MM (1-1/2") DIA. TOP SPUD. CENTOCO #820STS.001 TOILET SEAT, EXTRA HEAVY DUTY, FOR ELONGATED BOWL, OPEN FRONT, SOLID PLASTIC, WITH COVER, STAINLESS STEEL CHECK HINGES, METAL FLAT WASHERS STAINLESS STEEL POSTS AND NUTS.

MOEN COMMERCIAL 1-1/2" BATTERY POWERED EXPOSED STYLE CLOSET FLUSH VALVE MODEL 8310DF16, BRASS CONSTRUCTION W/CHROME PLATED FINISH, 1" IPS SUPPLY, 1-1/2" TOP SPUD, ADJUSTABLE SENSOR EYES, BATTERY POWERED (4) STANDARD AA (INCLUDED), SELF-DIAGNOSTIC ELECTRONICS, PISTON FLUSHING MECHANISM, SELF-CLEANING FILTER SYSTEM, LOW BATTERY INDICATOR LIGHT, OPERATING PRESSURE 10 TO 125 PSI, 1.0 GPF UP TO 60 SECONDS/1.6 GPF AFTER 60 SECONDS, 24 HOUR SENTINEL FLUSH, MANUAL OVERRIDE BOTTOM.

3. "U-1", WALL HUNG URINAL - FOR FLUSHOMETER - EXPOSED - BATTERY POWERED.

AMERICAN STANDARD WASHBROOK FLOWISE #5590.001.020 URINAL, VITREOUS CHINA, OPERATES IN THE RANGE OF 0.5 L TO 3.8 L (0.125 US GAL TO 1.0 US GAL) PER FLUSH, WALL HUNG, EXTENDED SIDES FOR PRIVACY, WASHDOWN ACTION, WASHBROOK FLOWISE, FLUSHING RIM, 19 MM (3/4") DIA. TOP SPUD, ELONGATED RIM, INTEGRAL P-TRAP, OUTLET CONNECTION 51 MM (2"). 2 WALL HANGERS, #7301242-100 CHROME PLATED, NON-METALLIC STRAINER, WHITE FINISH.

MOEN COMMERCIAL MODEL 8312 CHROME PLATED, CAST BRASS BODY, 3/4" TOP SPUD WITH A 3/4" IPS SUPPLY. PISTON FLUSHING MECHANISM WITH ADJUSTABLE SENSOR RANGE AND FLOW CONTROL, LOW BATTERY INDICATOR LIGHT, SELF-CLEANING FILTER SYSTEM, MECHANICAL MANUAL OVERRIDE BUTTON AND VANDAL RESISTANT POLYCARBONATE SENSOR LENS, 1.0GPF (3.8L/FLUSH). WATTS #CA-321 FIXTURE CARRIER, MOUNTED ON CONCRETE FLOOR, EPOXY COATED TOP AND BOTTOM UNIVERSAL STEEL HANGER PLATES, HEAVY GAUGE EPOXY COATED STEEL OFFSET UPRIGHTS WITH WELDED FEET SUPPORTS. FOR ONE UNIT: 102 MM (4") FOR TWO TO SIX UNITS IN A ROW: 152 MM (6") FINISHED METAL STUD WALL TO BACK OF PIPE SPACE. WATTS #WUCO URINAL WALL ACCESS CLEANOUT, TWO (2) PIECE EXPANDABLE PLUG WITH 102 MM (4") DIAMETER STAINLESS STEEL ACCESS COVER, SECURED WITH VANDAL PROOF STAINLESS STEEL SCREW, CHAMPION MI-X SERIES #MI-X HUB DRAIN COUPLING, COUPLING, NO-HUB, TYPE 304 AISI STAINLESS STEEL BAND, TYPE 304 AISI STAINLESS STEEL EYELET, ELASTOMERIC COMPOUND GASKET MEETING THE REQUIREMENTS OF ASTM C-564, TYPE 304 AISI STAINLESS STEEL SHIELD, PAINTED RED FOR EASY IDENTIFICATION, TESTED TO MAINTAIN 15 PSI MAXIMUM LINE PRESSURE AT 80 INCH LB MIN TO 100 INCH LB MAXIMUM TORQUE BOLT TIGHTNESS, TESTED BY IAPMO TO COMPLY TO FM 1680-1989 STANDARD (EXCEPT FOR MARKINGS) AND CSA B602-2010 STANDARD (UP TO 10"). THEY ARE TESTED AND CERTIFIED TO ASTM C1540-2011 STANDARD. PER OSHD CODE APPLICATION NOTICE 5-311.9 REVISED 6/29/2011, SIGNED BY PAUL COLEMAN; SECTION 1 (A) STATES THAT: "THE USE OF COUPLINGS THAT HAVE BEEN TESTED TO CONFORM TO THE PERFORMANCE REQUIREMENTS OF FM APPROVALS, APPROVAL STANDARD 1680, CLASS 1, BY FM APPROVALS OR BY A NATIONALLY RECOGNIZED INDEPENDENT TESTING AGENCY" ARE ACCEPTABLE.

4. "U-2", WALL HUNG URINAL - FOR FLUSHOMETER - BARRIER FREE - BATTERY POWERED.

AMERICAN STANDARD WASHBROOK FLOWISE #5590.001.020 URINAL, VITREOUS CHINA, OPERATES IN THE RANGE OF 0.5 L TO 3.8 L (0.125 US GAL TO 1.0 US GAL) PER FLUSH, WALL HUNG, EXTENDED SIDES FOR PRIVACY, WASHDOWN ACTION, WASHBROOK FLOWISE, FLUSHING RIM, 19 MM (3/4") DIA. TOP SPUD, ELONGATED RIM, INTEGRAL P-TRAP, OUTLET CONNECTION 51 MM (2"). 2 WALL HANGERS, #7301242-100 CHROME PLATED, NON-METALLIC STRAINER, WHITE FINISH, MOUNT FIXTURE BETWEEN 19-1/4" AND 20-1/8" (488MM AND 512MM) ABOVE FINISH FLOOR TO FRONT RIM OF URINAL (OR AS REQUIRED TO MEET LOCAL CODES).

MOEN COMMERCIAL MODEL 8312 CHROME PLATED, CAST BRASS BODY, 3/4" TOP SPUD WITH A 3/4" IPS SUPPLY. PISTON FLUSHING MECHANISM WITH ADJUSTABLE SENSOR RANGE AND FLOW CONTROL, LOW BATTERY INDICATOR LIGHT, SELF-CLEANING FILTER SYSTEM, MECHANICAL MANUAL OVERRIDE BUTTON AND VANDAL RESISTANT POLYCARBONATE SENSOR LENS, 1.0GPF (3.8L/FLUSH). WATTS #CA-321 FIXTURE CARRIER, MOUNTED ON CONCRETE FLOOR, EPOXY COATED TOP AND BOTTOM UNIVERSAL STEEL HANGER PLATES, HEAVY GAUGE EPOXY COATED STEEL OFFSET UPRIGHTS WITH WELDED FEET SUPPORTS. FOR ONE UNIT: 102 MM (4") FOR TWO TO SIX UNITS IN A ROW: 152 MM (6") FINISHED METAL STUD WALL TO BACK OF PIPE SPACE. WATTS #WUCO URINAL WALL ACCESS CLEANOUT, TWO (2) PIECE EXPANDABLE PLUG WITH 102 MM (4") DIAMETER STAINLESS STEEL ACCESS COVER, SECURED WITH VANDAL PROOF STAINLESS STEEL SCREW, CHAMPION MI-X SERIES #MI-X HUB DRAIN COUPLING, COUPLING, NO-HUB, TYPE 304 AISI STAINLESS STEEL BAND, TYPE 304 AISI STAINLESS STEEL EYELET, ELASTOMERIC COMPOUND GASKET MEETING THE REQUIREMENTS OF ASTM C-564, TYPE 304 AISI STAINLESS STEEL SHIELD, PAINTED RED FOR EASY IDENTIFICATION, TESTED TO MAINTAIN 15 PSI MAXIMUM LINE PRESSURE AT 80 INCH LB MIN TO 100 INCH LB MAXIMUM TORQUE BOLT TIGHTNESS, TESTED BY IAPMO TO COMPLY TO FM 1680-1989 STANDARD (EXCEPT FOR MARKINGS) AND CSA B602-2010 STANDARD (UP TO 10"). THEY ARE TESTED AND CERTIFIED TO ASTM C1540-2011 STANDARD. PER OSHD CODE APPLICATION NOTICE 5-311.9 REVISED 6/29/2011, SIGNED BY PAUL COLEMAN; SECTION 1 (A) STATES THAT: "THE USE OF COUPLINGS THAT HAVE BEEN TESTED TO CONFORM TO THE PERFORMANCE REQUIREMENTS OF FM APPROVALS, APPROVAL STANDARD 1680, CLASS 1, BY FM APPROVALS OR BY A NATIONALLY RECOGNIZED INDEPENDENT TESTING AGENCY" ARE ACCEPTABLE.

4. "S-1", TRI-FOUNT FLOOR MOUNTED WASHFOUNTAIN, HARDWIRED.

FLOOR MOUNTED, ACCESSIBLE, 3 USER WASHFOUNTAIN- CONSTRUCTED WITH INTEGRAL CONTINUOUS BOWL, COMPACT DECK, AND BACKSPASH LEDGE CONTAINING CONCEALED, VANDAL-RESISTANT SPRAY HEAD AND INTEGRATED LIQUID SOAP DISPENSER. UNIT INCLUDES WASTE AND SUPPLY CONNECTIONS TO WALL WITH STOP, STRAINER, AND CHECK VALVES, AND STEEL SUPPORT FRAME, CONCEALED BY TAMPER-RESISTANT STAINLESS STEEL ACCESS PANEL.

1. BASIS OF DESIGN MANUFACTURER/MODEL: BRADLEY, MULTI-FOUNT WASHFOUNTAIN SYSTEM, MF2933.  
2. UNIT SIZE: 36 BY 26 INCH (914 BY 660 MM)  
3. SPRAY HEAD: INDEPENDENT WATER STREAM FORMER WITH FLOW RATE OF 0.5 GPM (0.032 L/S) AT OPERATING RANGE OF 20 TO 80 PSI (138 TO 552 KPA).  
A. SPRAY HEAD VALVE OPERATION: INFRARED SENSING MODULE AND SOLENOID WITH ADJUSTABLE TURN OFF DELAY AND AUTOMATIC SHUT-OFF, WITH 110/24 VAC PLUG-IN TRANSFORMER, RECEPTACLES TO BE CONCEALED BEHIND WASHSINK.  
4. WATER SUPPLY: SINGLE ADJUSTABLE THERMOSTATIC MIXING VALVE.  
5. COLOR: SHALL BE APPROVED BY ARCH.

5. "FD", FLOOR DRAIN.

WATTS #FD-100-C-L5-1-5-6-7 FLOOR DRAIN - EPOXY COATED, CAST IRON BODY, REVERSIBLE FLASHING CLAMP WITH PRIMARY AND SECONDARY WEEPHOLES, SEDIMENT BUCKET/VANDAL PROOF TRAP PRIMER CONNECTION WITH PLUG, NO HUB OUTLET. WATTS -L5-1 5" X 5" (127 MM X 127 MM) NICKEL BRONZE, HEAVY DUTY, SQUARE STRAINER.

6. "CO", CLEANOUT.
- WATTS #CO-200-RX-34G-6 CLEANOUT - EPOXY COATED, CAST IRON BODY, 5" (127 MM) ROUND ADJUSTABLE GASKETED HEAVY DUTY NICKEL BRONZE TOP, ABS PLUG WITH NEOPRENE GASKET, VANDAL PROOF, NO HUB OUTLET.

#### PLUMBING FIXTURE SCHEDULE

TYPE	FIXTURE	D.H.W.	D.C.W.	VENT	SANITARY	NOTES
T-1	TOILET	-	1"	1-1/2"	3"	FLOOR MOUNTED, FLUSH VALVE
T-2	TOILET	-	1"	1-1/2"	3"	BARRIER FREE, FLOOR MOUNTED, FLUSH VALVE
S-1	WASH STATION SINK	1/2"	1/2"	1-1/4"	1-1/4"	TRI-FOUNT WASHFOUNTAIN
U-1	URINAL	-	3/4"	1-1/4"	2"	WALL MOUNTED, FLUSH VALVE
U-2	URINAL	-	3/4"	1-1/4"	2"	BARRIER FREE, WALL MOUNTED, FLUSH VALVE

#### GRILLE & DIFFUSER SCHEDULE

REF. LETTER	TYPE	MAKE/MODEL	DAMPER	FINISH	REMARKS
A	EXHAUST AIR GRILLE	E.H. PRICE MODEL 630	N	B-12	ALUMINUM LOUVERED FACE GRILLE SIZE AS SHOWN ON DRAWING

NOTES: 1. ALL DIFFUSERS/GRILLE COLOR TO BE WHITE FINISH.

#### MECHANICAL DRAWING LIST

DWG. NO.	DRAWING TITLE
M-01	MECHANICAL DRAWING LIST, LEGEND, SCHEDULE, DETAIL, SPECIFICATION AND KEY PLAN
M-02	MECHANICAL PLANS
M-03	MECHANICAL SPECIFICATION

#### HVAC LEGEND

SYMBOL	DESCRIPTION
	DUCTWORK (DOUBLE LINE)
	DUCTWORK (SINGLE LINE)
	FLEXIBLE DUCT
	CONTROL WIRE
	POSITIVE PRESSURE DUCT UP
	RETURN/EXHAUST DUCT UP
	POSSUPPLY DUCT DOWN
	RETURN/EXHAUST DUCT DOWN
	THERMOSTAT
	DOOR GRILLE
	DOOR UNDERCUT
	BALANCING DAMPER
	FIRE DAMPER
	MOTORIZED DAMPER
	SQUARE SUPPLY AIR DIFFUSER
	RETURN OR EXHAUST AIR GRILLE
	DENOTE AIR FLOW RATE XX L/S
	DIFFUSER/GRILLE TYPE
	X - TYPE
	Y - SIZE (MM)
	Z - AIR VOLUME (L/S)

#### PLUMBING LEGEND

SYMBOL	DESCRIPTION
	DOMESTIC COLD WATER (DCW)
	DOMESTIC HOT WATER (DHW)
	BURIED SANITARY DRAIN OR IN CEILING SPACE/FLOOR BELOW
	SUSPENDED SANITARY DRAIN
	CLEANOUT PLUG
	FLOOR CLEANOUT
	VALVE SHUT-OFF
	WATER METER
	CHECK VALVE
	BALL VALVE
	HOSE BIBB
	CAPPED CONNECTION
	FLANGED CONNECTION
	BRANCH - TOP CONNECTION
	BRANCH - BOTTOM CONNECTION
	FLOOR DRAIN
	HUB DRAIN
	PIPE CUT
	PIPE DOWN
	PIPE UP
	SANITARY ROUGH-IN

#### FIRE PROTECTION

SYMBOL	DESCRIPTION
	PENDANT SPRINKLER HEAD
	UPRIGHT SPRINKLER HEAD
	CONCEALED TYPE SPRINKLER HEAD

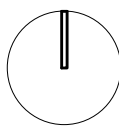
#### ABBREVIATIONS

ABBREV.	DESCRIPTION
DN	DOWN
S/A	SUPPLY AIR
R/A	RETURN AIR
E/A	EXHAUST AIR
F/A	FRESH AIR
EF	EXHAUST FAN
CV	CONTROL VALVE
NIC	NOT IN CONTRACT
AFF	ABOVE FINISHED FLOOR
CTE	CONNECT TO EXISTING
RE	DENOTES EXISTING DEVICE(S) IN RELOCATED POSITION
R	DENOTES EXISTING DEVICE(S) TO BE RELOCATED
D	DENOTES EXISTING DEVICE(S) TO BE REMOVED
EX	DENOTES EXISTING DEVICE(S) TO REMAIN
N	DENOTES PROVIDE NEW DEVICE(S)
	DENOTES DRAWING REFERENCE NOTES # 1
	EXISTING SERVICES OR EQUIPMENTS TO BE REMOVED
	EXISTING SERVICES OR EQUIPMENTS TO BE RELOCATED
	REFER TO DETAIL No. ON DRAWING No.

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PROJECT NORTH:



KEY PLAN:

Trillium Lakelands  
District School  
Board  
Bobcayeon Public  
School  
Washroom  
Renovation

Bobcayeon, ON.



**HL ENGINEERING LTD**  
14721 WOODBINE AVE, STOUFFVILLE, ON  
L4A 2G7 905-713-0003 www.hlengineering.ca

PROJECT NO: 18027-A2  
LIBRARY NO: 218011-FP  
DRAWN BY: BXL  
SCALE: AS NOTED

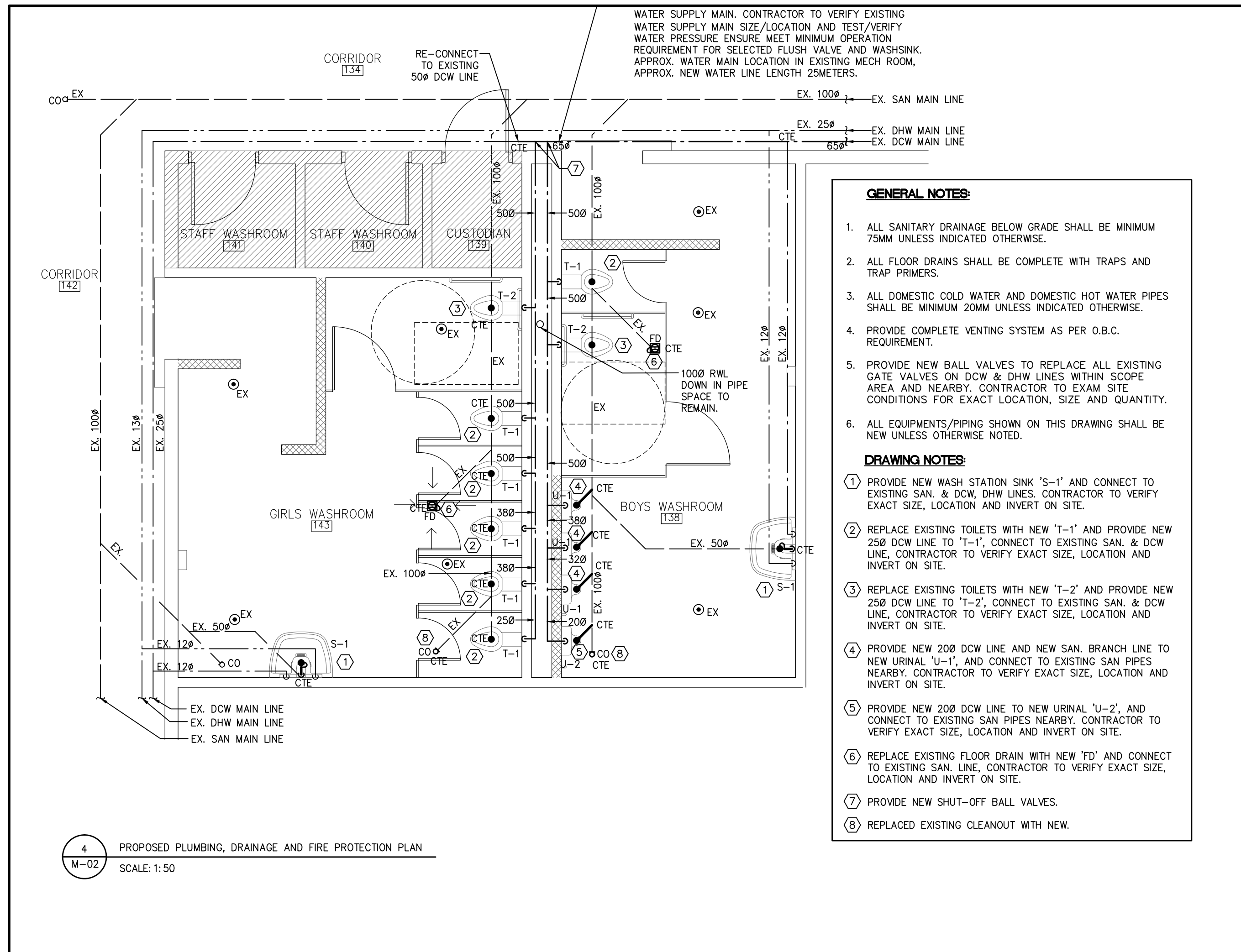
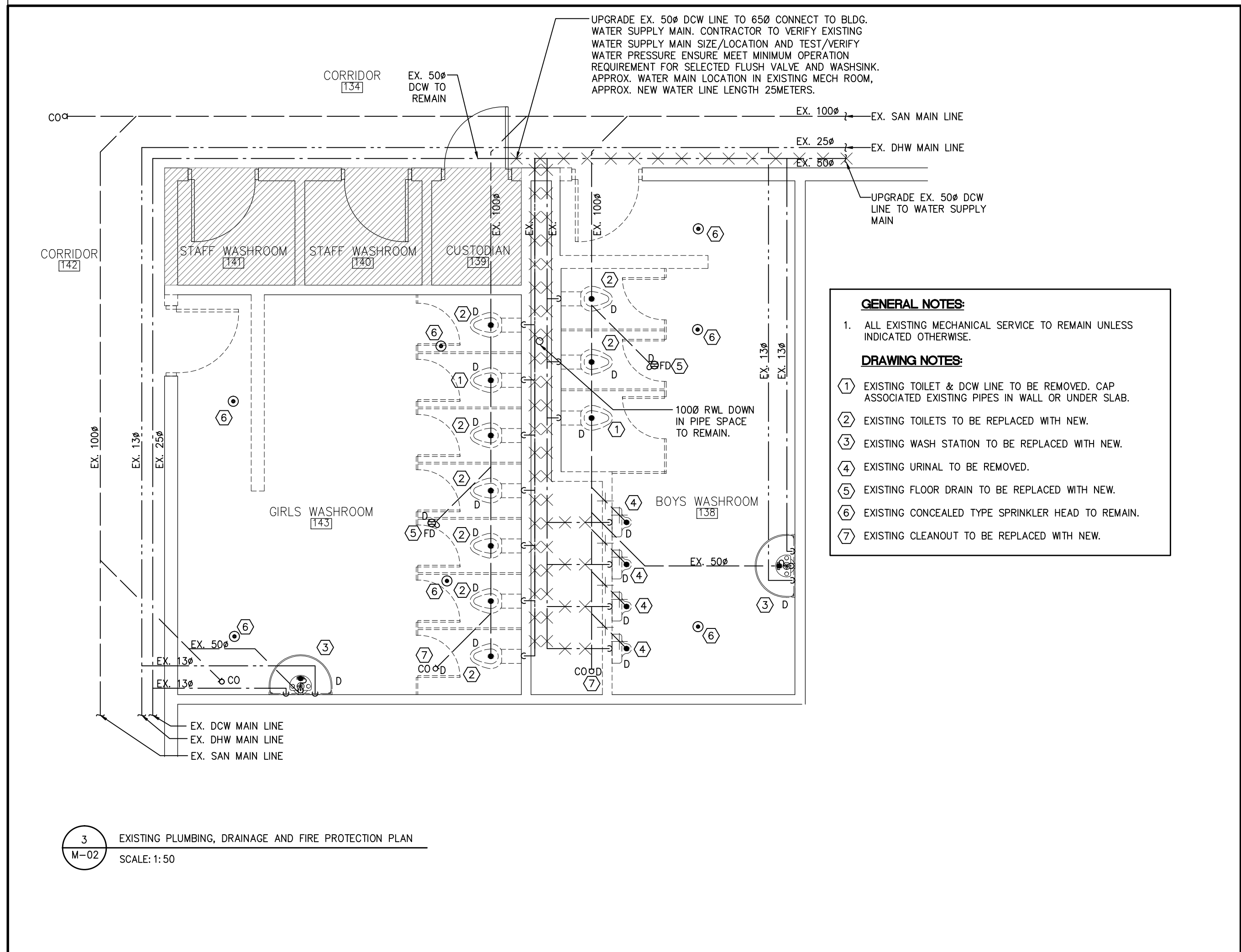
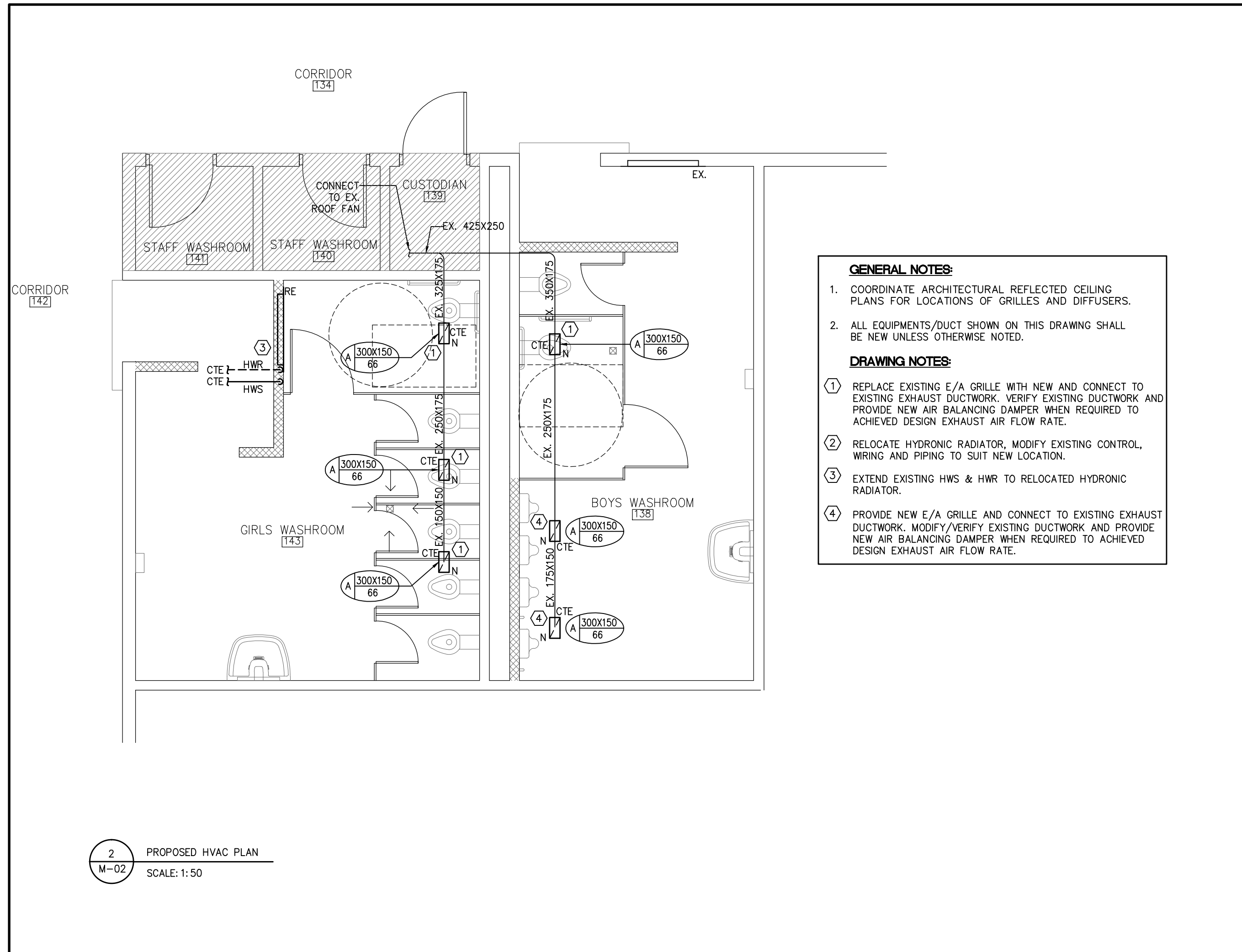
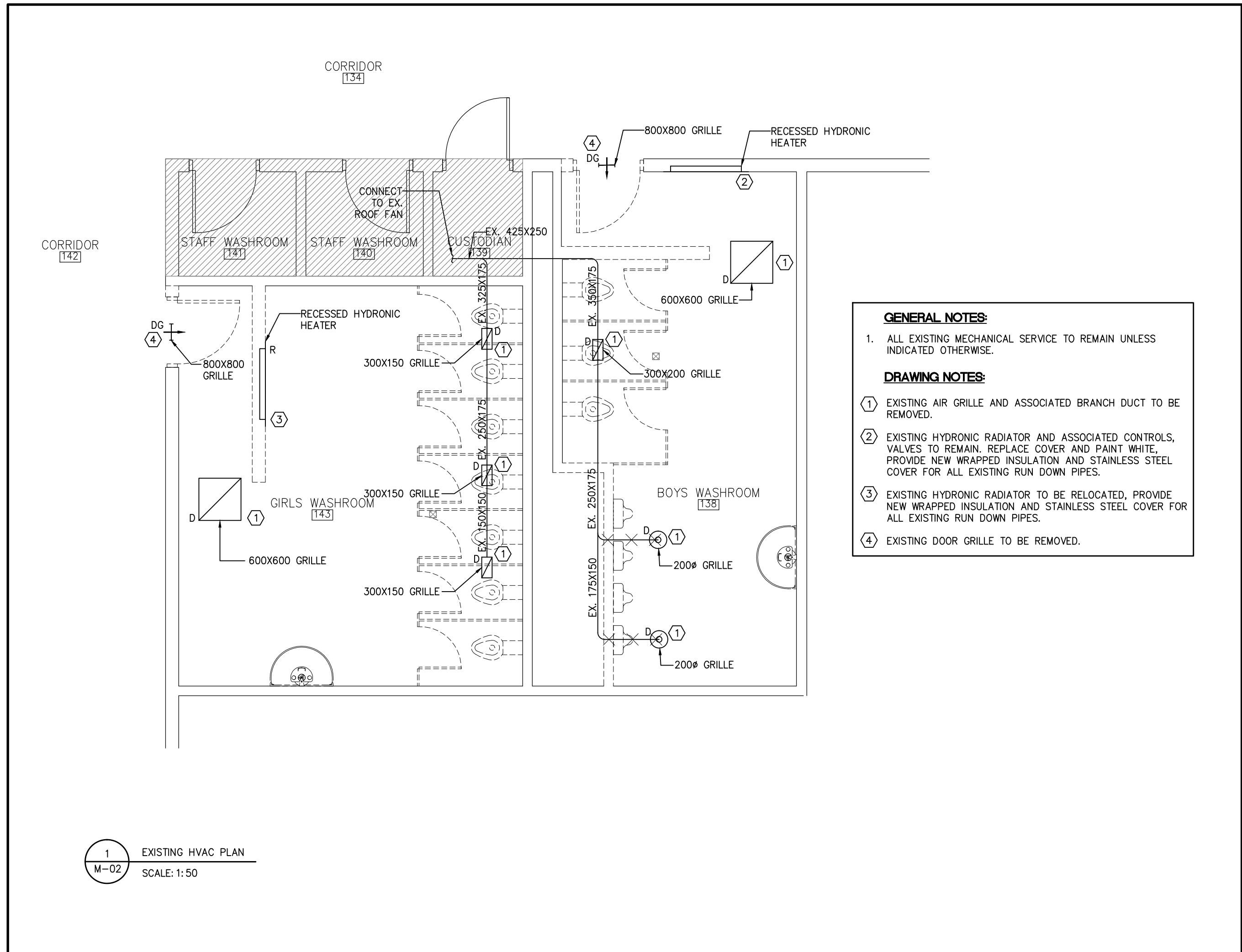
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 Issued for Review 2018/04/19  
 Issued for Permit & Tender 2018/05/07  
 Issued for Permit & Tender 2018/11/26

MECHANICAL DRAWING LIST,  
LEGEND, SCHEDULE, DETAIL,  
SPECIFICATION AND KEY PLAN

DRAWING NO:

M-01





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PROJECT NORTH:




KEY PLAN:

# Trillium Lakelands District School Board Bobcayeon Public School Washroom Renovation

Bobcayeon, ON.

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PROJECT NO:	18027-A2
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MECHANICAL PLANS

DRAWING NO: M-02

MECHANICAL SPECIFICATION:

1. GENERAL
1. COMPLY WITH GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, AND ALL DOCUMENTS REFERRED TO THEREIN.
2. THE DOCUMENTS ARE NOT INTENDED TO DELEGATE FUNCTIONS NOR TO DELEGATE WORK TO ANY TRADE.
3. THE DRAWINGS AND SPECIFICATIONS SHALL BE READ IN CONJUNCTION WITH BASE BUILDING DRAWINGS AND SPECIFICATIONS. DO ALL WORK IN ACCORDANCE WITH THE OWNER GUIDELINES. MAXIMUM CONDITIONS WILL GOVERN.
4. PRIOR TO SUBMITTING THE TENDER, CAREFULLY EXAMINE AND VERIFY THE SITE AND CONDITIONS OF THE PROPOSED WORK TOGETHER WITH THE WORK BY ALL OTHER TRADES, INCLUDING LOCATIONS AND DIMENSIONS OF ALL EXISTING SERVICES (INCLUDING SERVICES IN CONCEALED SPACE), AND ALLOW FOR ANY RE-ROUTING OF EXISTING AND/OR NEW SERVICES AND EQUIPMENT, CUTTING AND PATCHING IN TENDER PRICE. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY. SUBMISSION OF A TENDER CONFIRMS THAT THE CONTRACT DOCUMENTS AND EXISTING PROJECT CONDITIONS ARE COMPLETELY UNDERSTOOD, CONFIRMED AND ACCEPTED BY THE CONTRACTOR.
5. REPORT TO THE ENGINEER ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM BUILDING BYLAWS AND/OR FROM GOOD PRACTICE PRIOR TO TENDER CLOSING.
6. DRAWINGS ARE DIAGRAMMATIC, SHOW GENERAL PERFORMANCE AND ARRANGEMENT OF WORK, AND DO NOT SHOW STRUCTURAL AND RELATED DETAILS. REFER TO ARCHITECTURAL AND/OR INTERIOR DESIGNER'S DRAWINGS. TAKE INFORMATION INVOLVING ACCURATE MEASUREMENT OF BUILDING. MAKE, WITHOUT ADDITIONAL CHARGE, ANY NECESSARY CHANGES OR ADDITIONS TO WORK OR EQUIPMENT LOCATIONS TO ACCOMMODATE STRUCTURAL CONDITIONS. EQUIPMENT LOCATIONS MAY BE ALTERED BY ENGINEER WITHOUT EXTRA CHARGE PROVIDED CHANGE IS MADE BEFORE INSTALLATION AND DOES NOT NECESSITATE MAJOR MATERIAL.
7. PROVIDE ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING AUTHORITIES, LOCAL BY-LAWS, LATEST EDITIONS OF APPLICABLE CODES, STANDARDS, AND REGULATIONS.
8. APPLY FOR, OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED PRIOR TO COMMENCEMENT OF CONSTRUCTION. INCLUDE ALL PROVINCIAL AND GENERAL SALES TAXES.
9. 'SUPPLY' SHALL MEAN FURNISHING TO SITE IN LOCATION REQUIRED OR DIRECTED COMPLETE WITH ACCESSORY PARTS. 'INSTALL' SHALL MEAN SET IN PLACE AND SECURED OR AFFIXED TO BUILDING STRUCTURE AS NOTED OR DIRECTED. 'PROVIDE' SHALL MEAN SUPPLY AND INSTALL AND INCLUDE ALL LABOR, MATERIAL, EQUIPMENT, TOOLS, CONNECTIONS, TESTING AND INSPECTION AS EACH IS DESCRIBED.
10. PROVIDE WORK IN SUCH A MANNER AS TO LEAVE EACH OF THE SYSTEMS COMPLETE AND IN SATISFACTORY OPERATION CONDITION. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE SATISFACTORY COMPLETION OF ALL WORK BEARING UPON THIS TRADE, INCLUSIVE OF ALL INSTALLATIONS ACCEPTABLE TO ARCHITECT.
11. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPROVED SCHEDULE TO MEET THE PROJECT COMPLETION DATE AND ALL SPECIFIED INTERIM SCHEDULES. COMPLY WITH THE GENERAL CONTRACTOR'S CONSTRUCTION SCHEDULE.
12. PROVIDE ALL CUTTING, PATCHING, FLASHING WORK AND CLEAN-UP OF FLOORS, WALLS, CEILINGS, ETC.
13. PROVIDE PROPER SHOP DRAWINGS OF ALL SPECIFIED PRODUCTS AND SUBMIT FOR REVIEW TO THE ARCHITECT AND ENGINEER IN ACCORDANCE WITH GENERAL REQUIREMENTS. SHOP DRAWINGS SHALL BE REVIEWED, STAMPED, AND CORRECTED BY CONTRACTOR PRIOR TO SUBMISSION.
14. REVIEW OF SHOP DRAWINGS BY CONSULTANT IS FOR SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH GENERAL DESIGN CONCEPT. THIS REVIEW SHALL NOT MEAN THAT ARCHITECT OR ENGINEER APPROVES DETAIL DESIGN INHERENT IN SHOP DRAWINGS, RESPONSIBILITY FOR WHICH SHALL REMAIN WITH CONTRACTOR AND SUCH REVIEW SHALL NOT RELIEVE CONTRACTOR OF HIS RESPONSIBILITY FOR MEETING ALL REQUIREMENTS OF CONTRACT DOCUMENTS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED AT SITE. FOR INFORMATION THAT PERTAINS SOLELY TO FABRICATION PROCESSES OR TO TECHNIQUES OF CONSTRUCTION AND INSTALLATION AND FOR CO-ORDINATION OF WORK WITH ALL TRADES.
15. SUBSTITUTE PRODUCTS WILL ONLY BE CONSIDERED WHEN TENDERED PRODUCTS BECOME UNOBTAINABLE AND WRITTEN PROOF IS SUBMITTED. THE QUALITY AND PERFORMANCE CHARACTERISTICS OF SUBSTITUTE PRODUCTS SHALL BE EQUAL TO THE SPECIFIED PRODUCTS. IMPLEMENTATION OF SUBSTITUTE PRODUCTS IS SUBJECT TO THE REVIEW OF PROPERLY SUBMITTED SHOP DRAWINGS TO THE ARCHITECT AND ENGINEER. CONTRACTOR TO BE FULLY RESPONSIBLE FOR CAPABILITIES AS WELL AS PHYSICAL FIT OF SUBSTITUTED MATERIALS.
16. ASSUME RESPONSIBILITY AND PAY FOR ANY ADDITIONAL INSTALLATION COSTS INCURRED BY ALL DIVISIONS RESULTING FROM THE ALTERNATES AND/OR SUBSTITUTIONS. MAKE REVISIONS TO RECORD DRAWINGS INCORPORATING ALL ALTERNATES AND/OR SUBSTITUTIONS AND ALL RELATED CHANGES.
17. ALL MATERIAL AND EQUIPMENT USED SHALL BE NEW AND OF UNIFORM PATTERN AND CSA APPROVED. WHERE MANUFACTURER IS NOT SPECIFIED, PRODUCTS SHALL BE OF HIGH COMMERCIAL QUALITY. ALL EQUIPMENT, MATERIALS AND ASSOCIATED CONTROLS NOT USED IN THIS CONTRACT SHALL BE RETURNED TO OWNER.
18. SUPPLY JOB SITE OFFICE, WORKSHOP, TOOLS, SCAFFOLDS AND MATERIAL STORAGE TO COMPLETE THE WORK OF THIS DIVISION. LOCATION OF TEMPORARY BUILDING, USE OF SPACE ON SITE OR WITHIN BUILDING SHALL BE TO LATER DIRECTION.
19. PROVIDE ALL MISCELLANEOUS METALS AS NECESSARY FOR MECHANICAL WORK.
20. TEMPORARY OR TRIAL USAGE OF ANY EQUIPMENT OR MATERIALS SHALL NOT BE CONSTRUED AS EVIDENCE OF ACCEPTANCE OF SAME AND NO CLAIM FOR DAMAGE SHALL BE MADE FOR INJURY TO OR BREAKING OF ANY PART OF SUCH WORK WHICH MAY BE SO USED.
21. PROVIDE A COMPLETE BREAKDOWN OF MATERIALS, EQUIPMENT AND LABOUR WITH EACH ITEM OF EACH SUBMISSION FOR EXTRA OR DELETED WORK.
22. ADJUST THE LOCATION OF MATERIALS AND/OR EQUIPMENT AS DIRECTED WITHOUT ADJUSTMENT TO CONTRACT PRICE, PROVIDED THAT THE CHANGES ARE REQUESTED BEFORE INSTALLATION AND DO NOT AFFECT QUANTITY OF MATERIALS.
23. IDENTIFY ALL SYSTEMS AND LABEL ALL EQUIPMENT WITH LAMACOD LABELS. IDENTIFY REMOTE CONTROLS FOR ALL PERTINENT EQUIPMENT INCLUDING ALL ASSOCIATED DISCONNECTS. THE IDENTIFICATION AND LABELS SHALL MEET BASE BUILDING STANDARDS.
24. PRIOR TO COMPLETION REVIEW/INSPECTION, MECHANICAL CONTRACTOR SHALL SUBMIT A LETTER CONFIRMING THAT ALL MECHANICAL WORK IS COMPLETED AS PER MECHANICAL TENDER DOCUMENT. CONTRACTOR IS RESPONSIBLE FOR THE COST OF THE SECOND COMPLETION REVIEW/INSPECT IF ITS REQUIRED.
25. PROVIDE THE OWNER WITH A WRITTEN WARRANTY, FOR ALL LABOUR, MATERIALS, AND EQUIPMENT IN THIS CONTRACT, FOR A PERIOD OF TWO YEAR COMMENCING AT SUCH TIME AS THE OWNER, OR HIS REPRESENTATIVE, DEEMS THE WORK ACCEPTABLE.
26. CONTRACTOR SHALL OBTAIN CLEAN SET OF PRINTS FROM CONSULTANT AT START OF CONTRACT WORK AND SHALL KEEP THESE PRINTS UP-TO-DATE AT JOBSITE, ACCURATELY RECORDING ALL CHANGES MADE ON PROJECT AND LOCATING ALL SERVICES, EQUIPMENT, ETC. WHICH MAY HAVE BEEN SHOWN ONLY DIAGRAMMATICALLY ON CONTRACT DOCUMENTS. UPON COMPLETION OF CONTRACT WORK, SUBMIT THREE (3) PRINTS SETS AND ONE (1) CD CONTAINING ACAD FILES OF AS-BUILT DRAWINGS.
27. ASSEMBLE THREE (3) MANUALS, EACH CONTAINING DATA SHEETS, BROCHURES, OPERATING, MAINTENANCE, RECOMMENDED SPARE PARTS, AND LUBRICATING INSTRUCTIONS AND A COMPLETE SET OF REVERSED SHOP DRAWINGS AND BMD IN HARD COVER. IDENTIFY COVER "OPERATION AND MAINTENANCE MANUAL". MANUALS SHALL BE SEPARATED WITH DIVIDERS IN LOGICAL SECTIONS AND VOLUMES. PRESENT ONE (1) COPY FOR REVIEW BY CONSULTANT. MAKE ALL CORRECTIONS REQUESTED BY THE CONSULTANT AND RESUBMIT FOR REVIEW.
28. PROVIDE SLEEVES FOR ALL NEW PIPING THROUGH EXISTING SLAB, BEAMS, SLAB TO SLAB WALL, ETC. WHERE INDICATED AND/OR REQUIRED. OBTAIN BASE BUILDING STRUCTURAL ENGINEER'S APPROVAL PRIOR TO COMMENCEMENT OF WORK.
29. ALL WALL AND FLOOR OPENINGS SHALL BE PACKED AND SEALED WITH AN APPROVED FIRE RESISTANT INSULATION TO 25 MM (1") FROM END SIDE OF OPENING ON BOTH SIDES OF FLOOR OR WALL. REMAINING PORTION SHALL BE SEALED WITH AN APPROVED FIRE STOP SUBSTANCE EQUAL TO "DOW CORNING" #3-6548 SILICON RTV FOAM PENETRATION SEALANT, TO CAN4-S115 AND ULC LISTED.
30. IN ALL AREAS REQUIRING CORE DRILLING THROUGH EXISTING FLOOR SLAB FOR MECHANICAL SERVICES, ETC. ALLOW FOR ALL NECESSARY RADIOGRAPHY TO LOCATE HIDDEN ELECTRICAL SERVICES, STRUCTURAL REINFORCING, ETC. AND INCLUDE ALL COSTS IN TENDER PRICE. CO-ORDINATE THIS WORK WITH LANDLORD AND/OR TENANT CO-ORDINATOR FOR TIME, DURATION AND LOCATIONS REQUIRED, AND ADHERE TO THE LANDLORD'S REQUIREMENTS. SUBMIT CORE DRILLING PLAN TO BASE BUILDING STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK.
31. PROVIDE ALL ACCESS DOORS WHERE SHOWN AND/OR REQUIRED BY SITE CONDITIONS, IN CEILINGS OR WALLS. ACCESS DOORS SHALL BE EQUAL TO MILCOR OR LEHAGE, AND MUST BE COMPATIBLE WITH CEILING/WALL TYPE AND FINISH. INSTALLATION TO COMPLY WITH INTERIOR DESIGNER'S APPROVAL. ACCESS DOORS IN RATED CEILINGS OR WALLS SHALL BE ULC APPROVED FOR THE APPLICATION.
32. MECHANICAL CONTRACTOR SHALL CO-ORDINATE WITH GENERAL CONTRACTOR FOR SIZE, LOCATION AND INSTALLATION OF ACCESS PANELS IN DRYWALL CEILINGS TO EQUIPMENT WHERE INDICATED ON PLAN AND/OR REQUIRED FOR PROPER SERVICING OF EQUIPMENT. CEILING ACCESS PANELS SHALL BE SUPPLIED AND INSTALLED BY THE MECHANICAL CONTRACTOR. FINAL LOCATION TO COMPLY WITH THE INTERIOR DESIGNER'S AND/OR ARCHITECT'S APPROVAL.
33. FLASH AND COUNTER-FLASH ALL PIPES AND DUCTS PASSING THROUGH ROOFS, OUTSIDE WALLS AND WATERPROOF FLOORS. ENSURE WATERPROOF INSTALLATION.
34. SUPPLY AND LOCATE ALL BASES, SUPPORTS, SLEEVES, CURBS, ETC. REQUIRED FOR THIS WORK.
35. 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.
36. 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.
37. ALL MATERIALS, INCLUDING BUT NOT LIMITED TO, PIPING, DUCTWORK AND CONDUITS IN CONCEALED SPACE USED AS A PLENUM SHALL HAVE A FLAME-SPREAD RATING NOT MORE THAN 25 AND A SMOKE DEVELOPED CLASSIFICATION NOT MORE THAN 50.
38. FIRESTOP AND SMOKE SEAL AROUND MECHANICAL ASSEMBLIES PENETRATING RATED FIRE SEPARATIONS, WITH FIRE AND TEMPERATURE RATINGS SUITABLE FOR ASSEMBLY IN WHICH THEY ARE TO BE INSTALLED.

2. WORK IN EXISTING BUILDING

1. EXAMINE THE SITE AND LOCAL CONDITIONS PRIOR TO TENDER SUBMISSION. SUBMISSION OF A TENDER CONFIRMS THAT THE CONTRACT DOCUMENTS AND SITE CONDITIONS ARE COMPLETELY UNDERSTOOD AND ACCEPTED UNLESS EXCEPTIONS ARE SPECIFICALLY INDICATED IN THE BID FORM.
2. PRIOR TO COMMENCEMENT OF THE CONTRACT WORK, AND WITHIN ONE WEEK OF THE CONTRACT AWARDED, EXAMINE AND VERIFY ON SITE, THE COMPLETE EXISTING MECHANICAL SYSTEM, AND SUBMIT DETAILED EXISTING MECHANICAL SYSTEM DRAWINGS SHOWING COMPLETE AND ACCURATE EXISTING SYSTEM CONDITIONS, LOCATIONS OF ALL DEVICES, EQUIPMENTS, DUCTS AND PIPES OF HVAC, PLUMBING AND SPRINKLER SYSTEMS.
3. DO NOT ORDER AND/OR FABRICATE MATERIALS (PIPING AND DUCTWORK) PRIOR TO A FULL REVIEW OF THE SITE CONDITIONS AND INTERFERENCES IN THE CEILING SPACE.
4. CO-ORDINATE WITH OWNER FOR SCHEDULING OF WORKS REQUIRED TO BE DONE BEFORE/AFTER NORMAL OCCUPANCY HOUR, INCLUDING BUT NOT LIMITED TO: DRILLING THROUGH SLAB; POWER SHUTDOWN; INTERFERENCE TO LIFE SAFETY SYSTEM. ALL COST INVOLVED, INCLUDING WORK TO BE DONE BY OWNER, SHALL BE INCLUDED IN TENDER PRICE.
5. INCLUDE COST OF PREMIUM TIME IN TENDER PRICE FOR WORK DURING NIGHTS, WEEKENDS OR OTHER TIME OUTSIDE NORMAL WORKING HOURS NECESSARY TO MAINTAIN ALL MECHANICAL SERVICES IN OPERATION, AND TO COMPLETE THE WORK.
6. CHECK AND VERIFY ON SITE FOR ROUTING OF NEW DUCTWORK, PIPING AND LOCATION OF NEW EQUIPMENT AND INCLUDE IN TENDER PRICE FOR ANY RELOCATIONS OF EXISTING SERVICES OR ADJUSTMENTS OF NEW SERVICES OR EQUIPMENT AS REQUIRED TO SUIT SITE CONDITIONS. PROVIDE OFFSETS IN PIPING AND DUCTWORK AS REQUIRED TO AVOID INTERFERENCES.
7. CHECK AND VERIFY LOCATION OF EXISTING MECHANICAL AND ELECTRICAL INTERFERENCES IN CEILING SPACE OF FLOOR BELOW AND/OR BELOW FLOOR SLAB IN ALL AREAS REQUIRING CORE DRILLING AND/OR CUTTING OF FLOOR SLAB ON GRADE AND ENSURE COMPATIBILITY OF AREA BELOW TO THE SATISFACTION OF THE LANDLORD.
8. X-RAY OR ULTRASOUND OF EXISTING BUILDING FRAMED SLAB WHERE NEW HOLES ARE DRILLED FOR PIPING PENETRATIONS, AND FOR NEW BURIED PIPE LINES.
9. MAINTAIN THE LIFE SAFETY SYSTEMS AND FIRE ALARM SYSTEMS IN FULL OPERATION AT ALL TIMES DURING CONSTRUCTION, UNLESS OTHERWISE NOTED.

10. MAINTAIN ALL SYSTEMS IN FULL OPERATION DURING NORMAL OCCUPANCY HOURS, UNLESS OTHERWISE NOTED. MAINTAIN ALL SYSTEMS ADJACENT TO CONSTRUCTION AREA IN FULL OPERATION AT ALL TIME DURING CONSTRUCTION, UNLESS OTHERWISE NOTED.
11. PROTECT WORK OF THIS AND OTHER TRADES, EXISTING FINISHES, SYSTEMS AND SERVICES WHICH MUST REMAIN IN OPERATION. REPLACE AND/OR REINSTALL ANY EXISTING SERVICES WHICH ARE TO REMAIN THAT ARE IMPROPERLY INSTALLED OR MAY CREATE ANY INTERFERENCES WITH NEW CONSTRUCTION.
12. ALL NOISE GENERATING WORKS THAT DISRUPT THE BUILDING OPERATIONS SHALL BE CARRIED OUT BEFORE/AFTER NORMAL OCCUPANCY HOURS.
3. HEATING, VENTILATION AND AIR CONDITIONING
1. ALL DUCTWORK AND SUPPORTS SHALL BE FABRICATED IN ACCORDANCE WITH THE LATEST ASHRAE AND SMACNA RECOMMENDATIONS.
2. MAKE GOOD ALL EXISTING INSULATION WHEN CONNECTING TO EXISTING SERVICES.
3. PROVIDE DUCT ACCESS DOORS, MINIMUM 375 MM X 300 MM (15" X 12") SIZE FOR EQUIPMENT SUCH AS COILS (BOTH SIDES OF COIL), FIRE AND/OR SMOKE DAMPERS, CONTROL AND/OR BALANCING DAMPERS, HEAT AND/OR SMOKE DETECTORS, BACKDRAFT DAMPERS, ETC. AS REQUIRED FOR PROPER SERVICING.
4. PROVIDE FLEXIBLE CONNECTORS BETWEEN ALL FANS AND ADJACENT DUCTWORK CONSISTING OF A PREASSEMBLED UNIT WITH 75 MM (3") LONG GALVANIZED DUCT CONNECTOR AND 150 MM (6") WIDE HEAVY GLASS FIBRE FABRIC WITH ELASTOMER COATING EQUAL TO DURO DYNE "DUROLON".
5. FLEXIBLE DUCTS SHALL BE OF SIZE EQUAL TO DIFFUSER NECK SIZE. USE GEAR CLAIPS FOR SECURING FLEXIBLE DUCTS TO RIGID DUCT CONNECTIONS SUCH AS SPIN-ON FITTINGS, ETC. AND NECKS OF DIFFUSERS AND SEAL AIR TIGHT WITH DUCT TAPE. ROUND FLEXIBLE DUCTS SHALL BE MAXIMUM 3.0 M (10') LONG AND REMAINDER SHALL BE ROUND RIGID SPIRAL DUCT.
6. KITCHEN EXHAUST DUCTWORK SHALL BE 16 GA. WELDED CARBON STEEL. INSTALLATION, CLEARANCE AND FAN ARRANGEMENT SHALL BE IN ACCORDANCE WITH NFPA 96 AND OBC.
7. FINAL LOCATION OF NEW SUPPLY AIR DIFFUSERS, BOOTS, LIGHT TROFFERS, REGISTERS, RETURN AND EXHAUST AIR GRILLES SHALL BE CO-ORDINATED WITH THE LATEST ARCHITECTURAL REFLECTED CEILING PLANS.
8. PROVIDE NEW BALANCING DAMPERS FOR ALL NEW DUCT BRANCHES, AND IN ALL LOCATIONS NECESSARY FOR BALANCING THE AIR SYSTEMS, WITH SUITABLE MEANS OF CEILING ACCESS. PROVIDE VOLUME DAMPERS FOR ALL NEW SUPPLY AIR DIFFUSERS AND REGISTERS.
9. IN PROJECT CONSTRUCTION AREA, REPAIR ALL EXISTING LEAKED OR BROKEN DUCT AND CONNECTION. RE-BRACE AND RE-STIFFEN ALL THE EXISTING DUCTS SO THAT THEY WILL NOT BREATHE, RATTLE, VIBRATE OR SAG. EXISTING FLEXIBLE DUCTS LYING ON SUSPENDED CEILING ARE NOT ACCEPTABLE.
10. PROVIDE 25 MM (1") THICK INSULATION FOR ALL NEW SUPPLY DUCTWORK, 48.06 KG/M3 (3 LB DENSITY NEOPRENE FACED) FIBERGLASS INSULATION AND ALUMINUM FOIL VAPOUR BARRIER.
11. WHERE SHOWN, DUCTWORK SHALL BE LINED INTERNALLY WITH 1" (25MM) FACED FLEXIBLE DUCT LINER. SHOWN SIZES ARE CLEAR INSIDE DIMENSIONS. INCREASE DUCT SIZE ACCORDINGLY WHERE INDICATED SUPPLY AND RETURN DUCTS FROM ROOFTOP UNITS AND INDOOR AIR HANDLERS/HEAT PUMPS SHALL BE PROVIDED WITH SIMILAR ACOUSTIC LINING.
12. ALL EXTERIOR DUCTWORK SHALL BE INSULATED WITH 2 LAYER OF 2" (50MM) THICK FLEXIBLE ELASTOMERIC INSULATION WITH FACTORY APPLIED COATING. PROVIDE SLOPED EXTRUDED POLYSTYRENE INSULATION SUPPORTED ON TOP OF DUCTWORK TO MAINTAIN SLOPE AT A MINIMUM OF 5%. ALL FLANGES SHALL BE COVERED BY A MINIMUM OF 1/2" (12MM). DUCTWORK IN UNHEATED SPACE SHALL BE INSULATED TO R-12.
13. EXHAUST DUCTWORK WITHIN 5 FT (1.5 M) OF EXTERIOR WALL OR ROOF, AND ALL OUTSIDE AIR INTAKE DUCTWORK, SHALL BE EXTERNALLY INSULATED WITH 1-1/2" (38MM) THICK FOIL FACES FLEXIBLE FIBERGLASS DUCT INSULATION. APPLY USING RECOMMENDED ADHESIVE AND TAPE ALL JOINTS USING VAPOUR BARRIER TAPE.
14. PROVIDE '3M' DUCT SEALANT TO SEAL ALL JOINTS AND FITTINGS OF SUPPLY, RETURN AND EXHAUST AIR DUCTS.
15. PROVIDE ALL CONTROLS, WIRING IN CONDUITS, RELAYS, APPURTENANCES AND CONNECTIONS NECESSARY FOR COMPLETE AND OPERATING SYSTEMS. NEW EQUIPMENT SHALL MATCH EXISTING BASE BUILDING STANDARD UNLESS NOTED OTHERWISE.
16. FOR RELOCATION OF EXISTING THERMOSTATS, MODIFY (REMOVE, EXTEND AND PROVIDE NEW WHERE NECESSARY) THE EXISTING WIRING (POWER AND CONTROL) IN CONDUITS TO SUITE NEW LAYOUT.
17. RECALIBRATE EXISTING THERMOSTATS THAT ARE NOTED TO BE RELOCATED. TEST AND COMMISSIONING ALL NEW AND RELOCATED THERMOSTATS AND SUBMIT WRITTEN REPORT TO ENGINEER.
18. PROVIDE TESTING, BALANCE AND COMMISSIONING OF ALL AIR SYSTEMS. COMMISSIONING SHALL INCLUDE PUTTING INTO SERVICE, ADJUSTING, CALIBRATING AND VERIFYING ALL SYSTEMS, BOTH NEW AND EXISTING. THE WORK SHALL BE PROVIDED BY AN INDEPENDENT COMPANY APPROVED BY THE OWNER.
19. PRIOR TO COMMENCEMENT OF THE CONTRACT WORK, TEST AND VERIFY ON SITE, THE SUPPLY AIR QUANTITY PRESENTLY AVAILABLE FROM MAIN AIR SUPPLY DUCTS, EACH FAN POWERED BOX/FAN COIL/HEAT PUMP, AND EACH SUPPLY AIR DIFFUSER WITHIN THE PROJECT SPACES. SUBMIT THE TEST RESULTS READING REPORT.
20. MARK THE FINAL BALANCE POSITION ON ALL BALANCING DAMPERS AND ADJUSTABLE AIR TURNING DEVICES AND BALANCE FITTINGS.
21. PROVIDE AIR BALANCE IN ACCORDANCE TO 10% OF DESIGN REQUIREMENTS, AND TO MEET BASE BUILDING STANDARDS.
22. SUBMIT AIR SYSTEMS TEST AND BALANCE REPORT.
23. FOR HEATING, CHILLED AND CONDENSING WATER PIPING, SUPPLY AND INSTALL STANDARD BLACK STEEL SCHEDULE 40 PIPE STRETCH REDUCED CONTINUOUS WELD UP TO AND INCLUDING 100MM (4"), PIPING 50 MM (2") AND SMALLER MAY BE SORREWED WITH CAST IRON WEALEABLE FITTINGS UNLESS NOTED OTHERWISE. BRANCH PIPING TWO SIZES SMALLER THAN THE MAIN MAY BE CUT DIRECTLY INTO MAIN AND WELDED, IN AN APPROVED MANNER. USE LONG RADIUS FORGED WELDING ELBOWS AT ALL TURNS, EQUAL TO TUBE-TURN.
24. PROVIDE AUTOMATIC AIR VENTS AT ALL HIGH POINTS IN THE WATER PIPING SYSTEM WITH 20 MM X 150 MM (3/4" X 6") LONG COLLECTING CHAMBER EQUAL TO SARCO OR MAID-O-MIST.
25. COVER ALL CHILLED AND HEATING WATER PIPING INSTALLED INDOORS WITH PREFORMED GLASS FIBRE TYPE FIBERGLASS INSULATION 88.10 KG/M3 (5.5 LB DENSITY) WITH FACTORY APPLIED FIRE RESISTIVE GLASS FIBRE REINFORCED KRAFT PAPER AND ALUMINUM FOIL VAPOUR BARRIER. MINIMAL INSULATION THICKNESS SHALL COMPLY WITH THE LATEST ASHRAE 90.1 REQUIREMENTS. HOLD INSULATION IN PLACE WITH 18 MM (3/4") ALUMINUM BANDS, 450 MM (18") APART. COVER PIPING INSTALLED OUTDOORS WITH 50 MM (2") THICK INSULATION.
26. ALL FITTINGS, VALVES AND FLANGES CONNECTED TO CHILLED WATER, HEATING WATER AND REFRIGERATION PIPING UP TO 65 MM (2-1/2"), COVER WITH 18.42 KG/M3 (1.5 LB/CUFT) DENSITY INSULATION, UNDER COMPRESSION TO SAME DENSITY AND THICKNESS AS PIPING INSULATION. VAPOUR SEAL WITH SUITABLE MASTIC AND FINISH WITH GLASS FIBRE REINFORCED KRAFT PAPER AND ALUMINUM FOIL (.002) PASTED DOWN. OVER 65 MM (2-1/2") COVER WITH BLOCK OR SECTIONAL INSULATION COVERED WITH 6 MM (1/4") THICK HARD SETTING CEMENT. FINISH TO MATCH JACKET ON PIPING. VAPOUR SEAL WITH FIBRE TAPE, AND FINISHED WITH A SECOND COAT OF VAPOUR BARRIER MASTIC TROWELLED NEATLY OVER FITTINGS. FINISH ALL STRAINERS TO EXPOSE REMOVABLE HEAD, AND PROVIDE INSULATED GALVANIZED STEEL COVERS. COVER EXPANSION JOINTS WITH 4.882 KG/M2 (24 GAUGE) GALVANIZED METAL SLEEVE. INSULATE OTHER SLEEVE TO THICKNESS SPECIFIED.
27. RECOVER ALL CHILLED WATER, HEATING WATER WATER AND REFRIGERATION PIPE, FITTINGS, FLANGES AND VALVE INSULATION IN 'EXPOSED' AREAS (MECHANICAL/FAN ROOMS AND AREAS WITHOUT CEILINGS) WITH CLOSE WEAVE, SMOOTH FINISH, 205 GM/SQ.M (6 OZ/SQ.YD.) CANVAS. FASTEN CANVAS COVERING TO INSULATION WITH FIRE RESISTIVE LAGGING ADHESIVE. COAT SURFACE OF CANVAS COVER WITH A HEAVY BRUSH COAT OF UNDILUTED LAGGING ADHESIVE. COVER ELBOWS, FITTINGS, FLANGES AND VALVES IN ALL AREAS WITH CANVAS JACKET AS SPECIFIED ABOVE OR WITH PREFORMED FITTING.
28. PROVIDE ISOLATING GATE VALVES, BALANCING GLOBE VALVES, FLOW CONTROL VALVES, AUTOMATIC CONTROL VALVES, ETC. AS INDICATED ON PLAN AND/OR REQUIRED FOR OPERATING AND SERVICING OF EQUIPMENTS. ALL VALVES SHALL BE SUITABLE FOR THE OPERATION PRESSURE OF THE SYSTEM IN WHICH THEY ARE INSTALLED. MAKE AND MODEL SHALL BE AS PER BASE BUILDING STANDARD AND SPECIFICATIONS, UNLESS NOTED OTHERWISE. INSTALL ALL VALVES IN AN ACCESSIBLE LOCATION AND ENSURE EASE OF MAINTENANCE AND OPERATION. SIZE CONTROL VALVES FOR A MAXIMUM OF 2 PSI PRESSURE DROP AT DESIGN FLOW.
29. MAKE GOOD ALL EXISTING INSULATION WHEN CONNECTING TO EXISTING SERVICES.
30. REFRIGERANT SUCTION LINES SHALL BE INSULATED WITH 3/4" (19MM) THICK ARMAFLEX INSULATION, WITH CEMENTED JOINTS. LIQUID LINES OUTDOOR EXPOSED TO SUNLIGHT SHALL ALSO BE SIMILARLY INSULATED. COVER EXTERIOR INSULATION WITH ALUMINUM JACKETING.

4. PLUMBING & DRAINAGE

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 AUTHORITIES HAVING JURISDICTION.
3. CONTRACT EXTENDS TO 5' (1.5M) OUTSIDE THE BUILDING.
4. ALL ABOVE GROUND DOMESTIC WATER PIPING SHALL BE TYPE 'L' COPPER WITH CAST BRASS OR WROUGHT COPPER FITTINGS. WHERE PERMITTED BY OBC AND FIRE CODE, UPONOR #PEX-A PLUMBING SYSTEM ARE ALLOWED TO BE USED.
5. BURIED DOMESTIC WATER PIPING SHALL BE TYPE 'K' COPPER OR CEMENT LINED DUCTILE IRON, OR PVC (BY UPONOR) APPROVED FOR MUNICIPAL POTABLE WATER.
6. ABOVE GROUND SANITARY AND STORM DRAINS, 75MM (3") DIA. AND UNDER SHALL BE COPPER DRAINAGE TUBE (DWV), CAST BRASS FITTINGS AND 50/50 SOLDER JOINTS. DRAINS 100MM (4") DIA. AND OVER SHALL BE STANDARD WEIGHT CAST IRON PIPE AND FITTINGS WITH MECHANICAL JOINTS. WHEN PVC IS USED, THE PIPING AND FITTINGS SHALL HAVE THE PHYSICAL CHEMICAL AND OTHER PROPERTIES FOR SEWER AND DRAINAGE APPLICATIONS AND SHALL MEET THE QUALITY ASSURANCE TEST REQUIREMENTS OF THIS STANDARD WITH REGARD TO PRESSURE RATING, MATERIAL, WORKMANSHIP, BURST PRESSURE, FLATTENING, IMPACT RESISTANCE, AND EXTRUSION QUALITY. THE PIPING AND FITTINGS SHALL MEET OBC AND FIRE CODE.
7. ALL BURIED STORM AND SANITARY DRAINAGE PIPING SHALL BE PVC SDR 35 WITH SOLVENT JOINTS. 8" (200MM) AND OVER USE GASKETTED JOINTS.
8. PROVIDE ISOLATING BALL VALVES ON MAIN AND/OR BRANCH LINES AND FOR ALL EQUIPMENT SERVED WITH HOT AND COLD WATER LINES. ALL VALVES SHALL BE SUITABLE FOR THE OPERATING PRESSURE OF THE SYSTEM IN WHICH THEY ARE INSTALLED. MAKE AND MODEL SHALL BE AS PER BASE BUILDING STANDARDS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE.
9. FINAL LOCATION OF ALL NEW PLUMBING FIXTURES SHALL BE CO-ORDINATED ON SITE WITH ALL TRADES. REFER TO ARCHITECTURAL DRAWINGS AND DETAILS FOR EXACT LOCATION OF PLUMBING FIXTURES.
10. PROVIDE NEW PLUMBING FIXTURES WHERE INDICATED ON PLAN OF MAKE AND MODEL AS SPECIFIED. ALL FIXTURES SHALL BE OF FIRST QUALITY, BEST GRADE OBTAINABLE, CLEANED AND IN PERFECT CONDITION FOR THE TENANT OWNER TAKEOVER. FIXTURES SHALL BE PIPED COMPLETE IN A FIRST CLASS MANNER WITH ALL NECESSARY APPURTENANCES FOR A COMPLETE FIXTURE IN EVERY RESPECT. INSTALL ALL COMPONENTS IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
11. DISCONNECT AND CAP ALL EXISTING DRAIN, VENT, HOT AND COLD WATER PIPES NOT USED IN THIS CONTRACT AT FLOOR, WALL OR CEILING.
12. PROVIDE ACCESS DOORS TO ALL PLUMBING EQUIPMENT WHERE INDICATED AND/OR REQUIRED OF SIZE TO SUIT CONVENIENT MAINTENANCE REQUIREMENTS.
13. CLEANOUTS SHALL BE INSTALLED AS REQUIRED BY CODE AND WHERE SHOWN AND SHALL SUIT FLOORING MATERIAL.
14. COVER ALL HOT AND COLD WATER AND CONDENSATE DRAIN PIPING WITH 25 MM (1") PRE-MOULDED LOW PRESSURE GLASS FIBRE INSULATION. FOR COLD WATER PIPING USE A VAPOUR BARRIER JACKET ADHERED AT LONGITUDINAL LAPS AND JOINTS. SEAL STRIPS WITH A SUITABLE VAPOUR BARRIER LAP CEMENT. RECOVER ALL INSULATION IN "EXPOSED" AREAS (AREAS WITHOUT CEILINGS) WITH 250 GM/SQ.M (6 OZ/SQ.YD.) CANVAS.
15. COVER ALL FITTINGS, VALVES, WATER METERS AND APPURTENANCES CONNECTED TO HOT AND COLD WATER PIPING AND CONDENSATE DRAIN PIPING WITH 25 MM (1") INSULATION CEMENT OR AEROCOR. SEAL INSULATION FOR COLD WATER FITTINGS WITH A VAPOUR BARRIER ADHESIVE AND REINFORCE WITH GLASS OPEN WEAVE FIBRE TAPE AND FINISH SMOOTH WITH A COAT OF MASTIC. RECOVER FITTINGS AND APPURTENANCES IN "EXPOSED" AREAS (AREAS WITHOUT CEILINGS) WITH 250 GM/SQ.M (6 OZ/SQ.YD.) CANVAS.

16. ALL HORIZONTAL SANITARY AND STORM PIPING AND FITTINGS SHALL BE COVERED WITH 25 MM (1") THICK FIBERGLASS DUAL TEMPERATURE INSULATION, 88.10 KG/M3 (5.5 LB DENSITY), FACTORY APPLIED, FIRE RESISTIVE FIBERGLASS REINFORCED KRAFT PAPER AND ALUMINUM FOIL VAPOUR BARRIER OR EQUAL. RECOVER PIPING IN "EXPOSED" AREAS WITH 250 GM/SQ.M (6 OZ/SQ.YD.) CANVAS.
17. PROVIDE COMPLETE VENTING SYSTEM AS PER O.B.C. REQUIREMENT.
5. SPRINKLERS
1. ALL SPRINKLER WORK TO BE TO THE APPROVAL OF THE OWNER'S INSURANCE UNDERWRITER AND CONFORM TO THE BASE BUILDING SPECIFICATIONS, AND ALL GOVERNING AUTHORITIES.
2. ALL SPRINKLER WORK SHALL CONFORM TO THE EXISTING BASE BUILDING DESIGN CRITERIA, NFPA #13, FACTORY MUTUAL AND/OR IAO STANDARDS COMPLETE WITH TEST AND DRAIN CONNECTIONS WHERE REQUIRED.
3. ALL SPRINKLER WORK IN THIS CONTRACT SHALL BE PERFORMED BY A CERTIFIED SPRINKLER CONTRACTOR APPROVED BY THE OWNER AND/OR THE CONSULTANT.
4. WHERE ALL SPRINKLER HEADS WITHIN THE SCOPE OF WORK ARE NEW, THEY SHALL BE THE QUICK RESPONSE TYPE.
5. WHERE ONLY A PORTION OF THE HEADS WITHIN THE SCOPE OF WORK AREA REPLACED, THEY SHALL MATCH THE EXISTING SPRINKLER "THERMAL SENSITIVITY" (QUICK RESPONSE OR STANDARD RESPONSE) IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA #13.
6. PROVIDE A COPY OF THE SPRINKLER SHOP DRAWINGS (INCLUDING HYDRAULIC CALCULATIONS) BEARING THE STAMP OF APPROVAL FROM IAO, FACTORY MUTUAL OR OTHER AUTHORITIES HAVING JURISDICTION AND SUBMIT TO THE ENGINEER AND OWNER PRIOR TO COMMENCE OF INSTALLATION.
7. CO-ORDINATE SPRINKLER CHANGES OF EXISTING SPRINKLER SYSTEM WITH ALL TRADES (HVAC, ELECTRICAL, ARCHITECTURAL AND STRUCTURAL) PRIOR TO INSTALLATION. MODIFY EXISTING HYDRAULICALLY DESIGNED SPRINKLER PIPING AS REQUIRED TO SUIT NEW SPRINKLER HEAD LAYOUT AND TO AVOID INTERFERENCE WITH NEW HVAC DUCTWORK AND EQUIPMENT. ALLOWANCES FOR ADDITIONAL WORK AND MATERIALS REQUIRED TO SUIT SITE CONDITIONS AND REROUTING OF EXISTING AND/OR NEW SERVICES SHALL BE INCLUDED IN TENDER PRICE.
8. NEW SPRINKLER LINES SHALL BE STANDARD BLACK STEEL SCHEDULE 40 COMPLETE WITH ALL FITTINGS, HANGERS AND APPURTENANCES AS PER BASE BUILDING SPECIFICATIONS AND STANDARDS. SCHEDULE 10 BLACK STEEL PIPE WITH WELDED OR ROLL-GROOVED JOINING IS ACCEPTABLE PER NFPA 13 REQUIREMENTS.
9. MAINTAIN GENERALLY A GOOD APPEARANCE OF CEILING SYSTEMS. CO-ORDINATE LOCATIONS OF SPRINKLER HEADS WITH ALL DIFFUSERS AND LIGHTING FIXTURES AND LATEST ARCHITECTURAL REFLECTED CEILING PLANS AND FINISHES.
10. SUBMIT A SEPARATE PRICE FOR THE ADDITION AND/OR DELETION OF ONE (1) SPRINKLER HEAD OF EACH TYPE SPECIFIED INCLUDING 10 FEET OF PIPING. ANY NUMBER OF HEADS MAY BE INCORPORATED AT THE UNIT PRICE.
11. MAINTAIN ALL SPRINKLER AND OTHER FIRE AND LIFE SAFETY PROTECTION SERVICES IN OPERATION AT ALL TIMES.
12. SPRINKLER HEADS IN SERVER/TELEPHONE ROOM SHALL BE OF HIGH TEMPERATURE RATING. WITH WIRE GUARD PROTECTION.
13. PROVIDE WIRE GAUROS OVER SPRINKLER HEADS IN ALL STORAGE AREAS AND OTHER AREAS WHERE SPRINKLER HEADS MAY BE DAMAGED.
14. PROVIDE PORTABLE FIRE EXTINGUISHERS (F.E.) AND MOUNTING BRACKETS. NEW F.E. SHALL MATCH EXISTING, AND SHALL BE MINIMUM 2A10BC MULTI-PURPOSE DRY CHEMICAL EXTINGUISHER AND ULC LABELED.

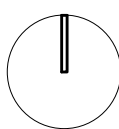
6. SUBMISSION

1. PRIOR TO COMMENCEMENT OF THE CONTRACT WORK, SUBMIT: - EXISTING MECHANICAL SYSTEMS DRAWINGS - EXISTING AIR SYSTEM TEST REPORT
2. SUBMIT SHOP DRAWINGS: - SPRINKLER SYSTEM - PLUMBING FIXTURES - HVAC SYSTEMS
3. PRIOR TO COMPLETION INSPECTION/REVIEW, SUBMIT THE FOLLOWS: - AIR BALANCE REPORT - PLUMBING SYSTEM LETTER OF CERTIFICATE - SPRINKLER SYSTEM LETTER OF CERTIFICATE
4. COMPLETION SUBMISSIONS: - AS-BUILT DRAWINGS - OPERATION MANUALS
7. HVAC EQUIPMENT SPECIFICATION
1. GRILLES AND DIFFUSERS
1. SUPPLY AND INSTALL ALL GRILLES AND DIFFUSERS AS REQUIRED AND AS SHOWN ON THE DRAWINGS.
2. DIFFUSERS SHALL BE OF TYPE, PERFORMANCE AND SIZE INDICATED ON THE DRAWINGS.
3. PROVIDE BATTLES TO DIRECT AIR AWAY FROM WALLS, COLUMNS OR OTHER OBSTRUCTIONS WITHIN THE RADIUS OF DIFFUSER OPERATION.
4. FINISH AND COLOUR SHALL BE APPROVED BY ARCH.
5. ACCEPTABLE MANUFACTURERS: E.H. PRICE, TITUS, NALOR INDUSTRIES.

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PROJECT NORTH:






KEY PLAN:

Trillium Lakelands District School Board Bobcaygeon Public School Washroom Renovation Bobcaygeon, ON.



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PROJECT NO:	18027-A2
LIBRARY NO:	218011-FP
DRAWN BY:	BXL
SCALE:	AS NOTED

NO.	ISSUE	DATE
	Issued for Review	2018/04/19
	Issued for Permit & Tender	2018/05/07
	Issued for Permit & Tender	2018/11/26

MECHANICAL SPECIFICATION

DRAWING NO:

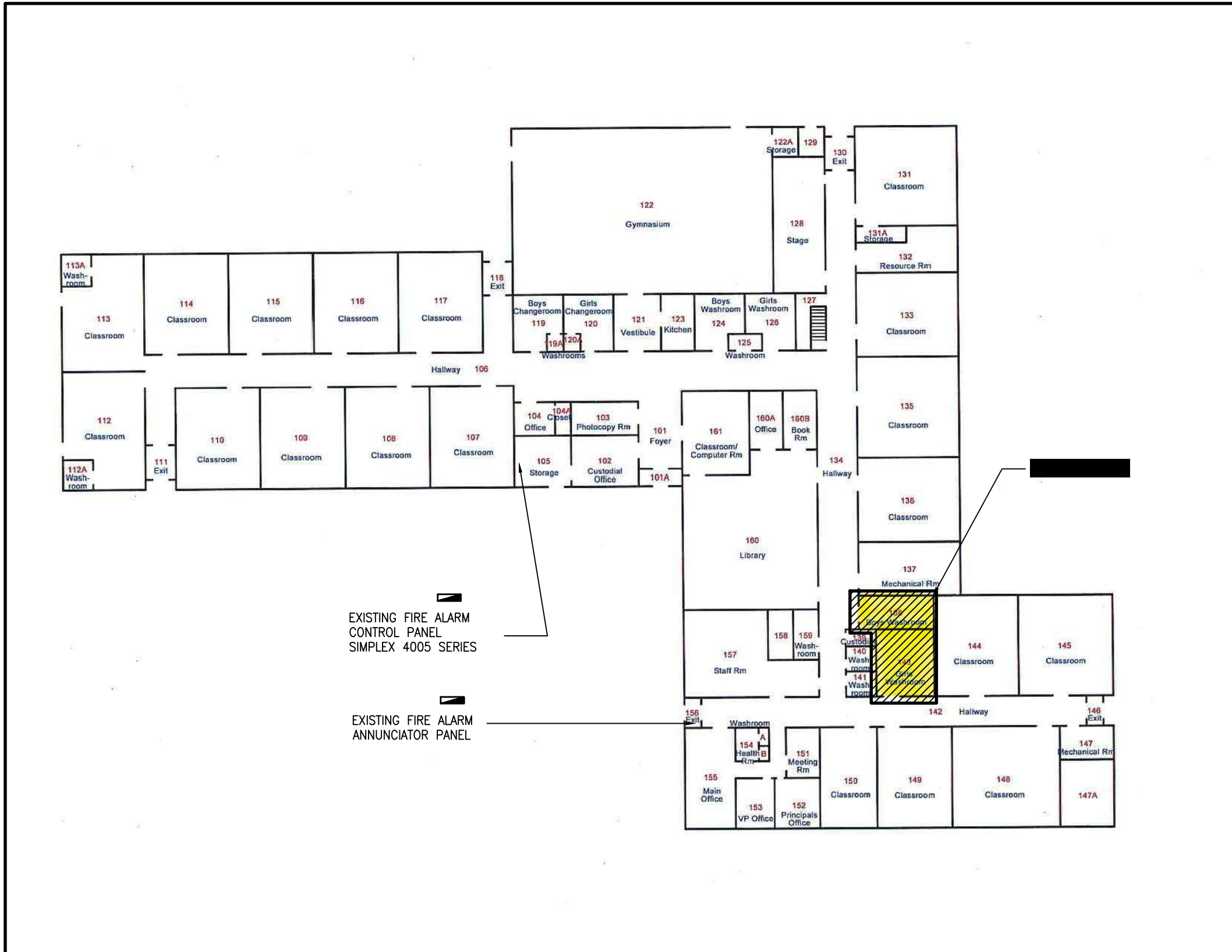
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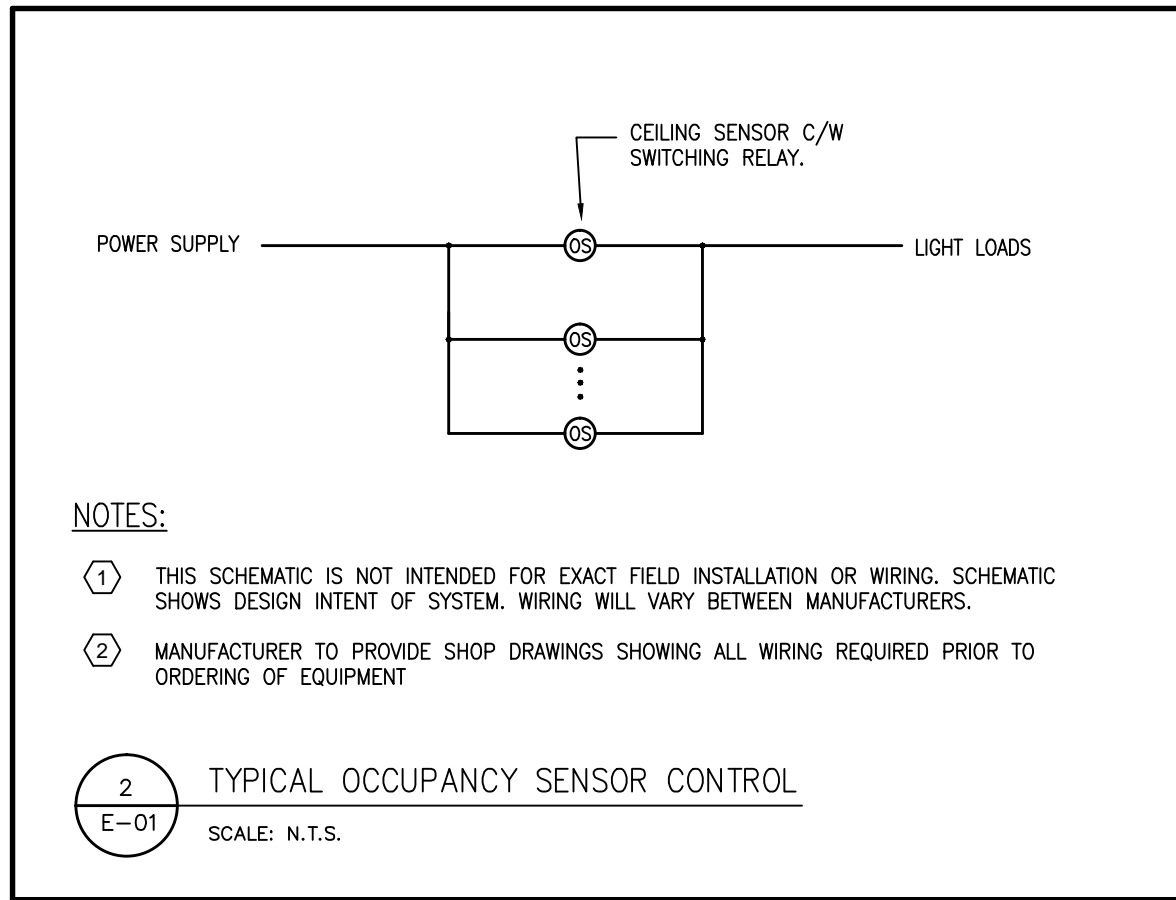
ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
	LED OR FLUORESCENT LUMINAIRES, RECESSED IN CEILING, LETTER DENOTES FIXTURE TYPE PER SCHEDULE
	LED OR FLUORESCENT LUMINAIRES, SURFACE MOUNTED ON CEILING, LETTER DENOTES FIXTURE TYPE PER SCHEDULE
	120V SINGLE POLE TOGGLE SWITCHES, RESPECTIVELY WITH ONE, TWO, OR THREE GANG COVER PLATE, AMPERAGE RATING TO MATCH CIRCUIT BREAKER
	120V SINGLE POLE TOGGLE SWITCHES AS ABOVE, '3' DENOTES 3-WAY, '4' DENOTES 4-WAY, 'K' DENOTES KEY OPERATED
	CEILING MOUNTED OCCUPANCY SENSOR FOR LIGHTING CONTROL
	EMERGENCY LIGHTING REMOTE HEADS, CEILING OR WALL MOUNTED, WITH DOUBLE OR SINGLE HEADS RESPECTIVELY
	EMERGENCY LIGHTING BATTERY UNIT
	EMERGENCY LIGHTING BATTERY UNIT C/W INTEGRAL HEADS
	WALL MOUNTED DUPLEX RECEPTACLE, U-GROUND, CSA 5-15R TYPE (15A, 120V) UNLESS OTHERWISE NOTED
	15A, 125V DUPLEX GROUND FAULT INTERRUPTER RECEPTACLE (CSA 5-15R)
	15A, 125V DUPLEX GROUND FAULT INTERRUPTER RECEPTACLE (CSA 5-15R), MOUNTED 150mm ABOVE COUNTER
	DIRECT CONNECTION TO EQUIPMENT AS NOTED.
	DIRECT CONNECTION C/W DISCONNECT SWITCH
	SURFACE MOUNTED PANEL
	FIRE ALARM STROBE
	FIRE ALARM DOOR HOLDER
	FIRE ALARM HORN C/W STROBE LIGHT
	FIRE ALARM SMOKE DETECTOR, CEILING OR WALL MOUNTED
	FIRE ALARM CONTROL PANEL OR ANNUNCIATOR PANEL, RECESSED OR SURFACE MOUNTED
	HAND DRYER
	CEILING MOUNTED P.A. SPEAKER
AFF	ABOVE FINISHED FLOOR
GFI	GROUND FAULT INTERRUPTER
NIC	NOT IN CONTRACT
WP	WEATHER PROOF
EX	DENOTES EXISTING DEVICE(S) TO REMAIN
R	DENOTES EXISTING DEVICE(S) TO BE RELOCATED
D	DENOTES EXISTING DEVICE(S) TO BE REMOVED
RE	DENOTES EXISTING DEVICE(S) IN RELOCATED POSITION
N	DENOTES PROVIDE NEW DEVICE(S)
RR	DENOTES EXISTING DEVICE(S) TO BE REMOVED AND RE-INSTALLED IN SAME LOCATION
	DENOTES DRAWING REFERENCE NOTES # 2
	DENOTES REFER TO DETAIL #1 ON DRAWING #E-02.

LUMINAIRE SCHEDULE				
TYPE	DESCRIPTION	LAMP	BALLAST	REMARKS
F1	1' x 4' CEILING SURFACE MOUNTED LED FIXTURE FOR DAMP AREA, EXTRUDED ALUMINUM HOUSING, C/W ACRYLIC LENS, WHITE FINISH. C/W SURFACE MOUNT KIT. APPLICATION: WASHROOM.	33W, LED LAMP, 4000K 3649 LM	120V LED DRIVER	RAB DESIGN #CPL14 SERIES OR APPROVED EQUAL
E1	EMERGENCY REMOTE UNIT, C/W ONE(1) OR TWO(2) 6W MR16 LED HEADS, CEILING OR SURFACE MOUNTED, WITH A CLEAR POLYCARBONATE UV AND IMPACT RESISTANT LENS, DIE CAST ALUMINUM BACK PLATE, WHITE FINISH, 12VDC.	2 x 6W		EMERGI-LITE #EF40 SERIES OR APPROVED EQUAL
E2	EMERGENCY LIGHTING BATTERY UNIT, 1/2HR BATTERY, C/W ONE(1) OR TWO(2) 6W MR16 LED HEADS, WALL MOUNTED, 12DC/120VAC, WHITE FINISH. MOUNT @ 200MM BELOW CEILING.			EMERGI-LITE #ESL SERIES OR APPROVED EQUAL

DRAWING LIST	
DWG. NO.	DRAWING TITLE
E-01	LEGEND AND DETAILS - ELECTRICAL
E-02	FLOOR PLANS - ELECTRICAL
E-03	SPECIFICATIONS - ELECTRICAL



1  
E-01  
KEY PLAN - ELECTRICAL  
SCALE: N.T.S.



- NOTES:
- THIS SCHEMATIC IS NOT INTENDED FOR EXACT FIELD INSTALLATION OR WIRING. SCHEMATIC SHOWS DESIGN INTENT OF SYSTEM. WIRING WILL VARY BETWEEN MANUFACTURERS.
  - MANUFACTURER TO PROVIDE SHOP DRAWINGS SHOWING ALL WIRING REQUIRED PRIOR TO ORDERING OF EQUIPMENT

2  
E-01  
TYPICAL OCCUPANCY SENSOR CONTROL  
SCALE: N.T.S.

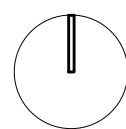
PROJECT NOTES:

ALL WIRES/CONDUITS SHALL BE CONCEALED IN WALLS, OR IN CEILING SPACES, EXCEPT IN ELEC/MECH ROOM.

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PROJECT NORTH:



KEY PLAN:

# Trillium Lakelands District School Board Bobcayeon Public School Washroom Renovation

Bobcayeon, ON.



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L4A 2G7 905-713-0003 [www.hlengineering.ca](http://www.hlengineering.ca)

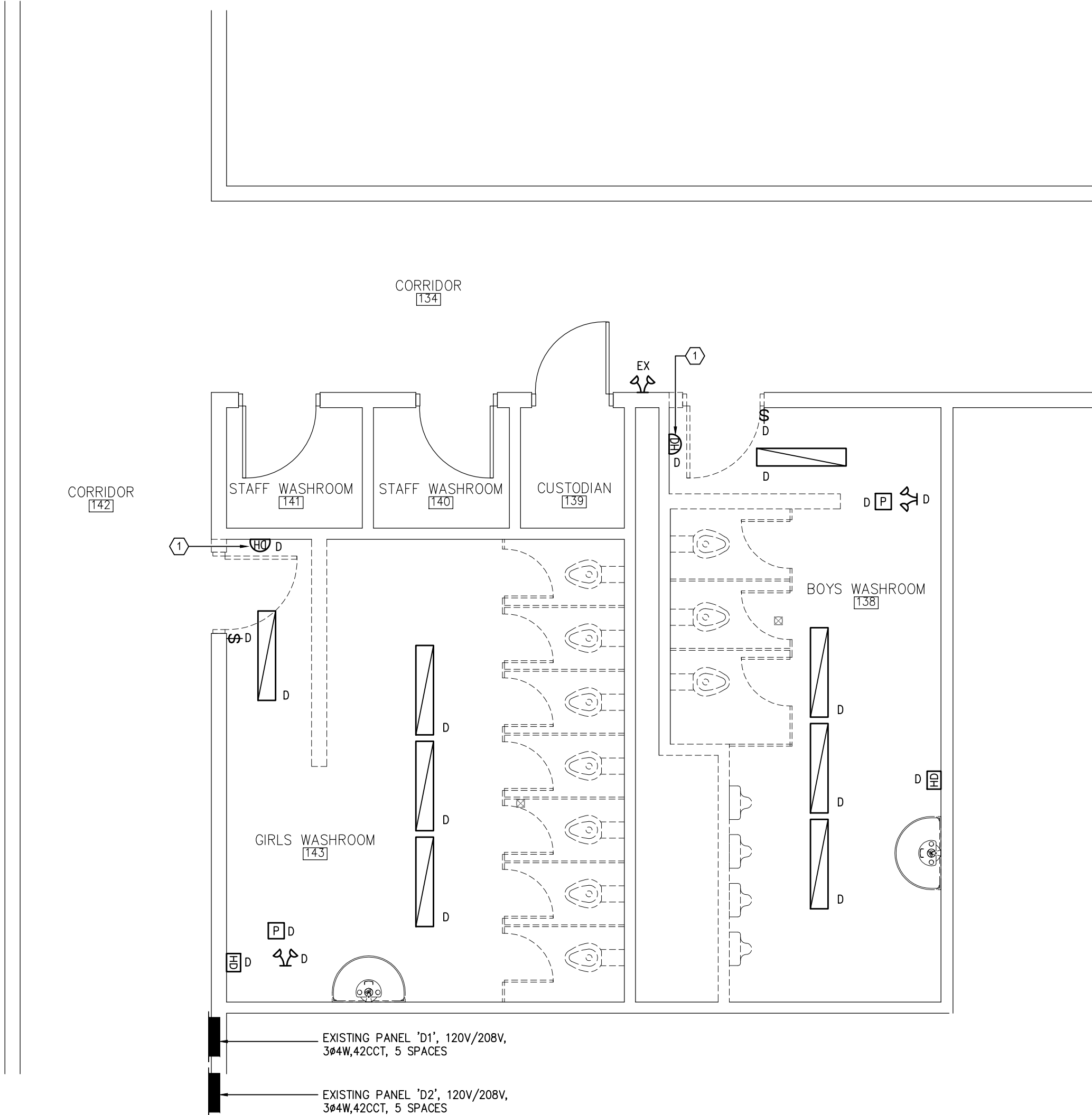
PROJECT NO: 18027-A2  
LIBRARY NO: 218011-FP  
DRAWN BY: LS  
SCALE: AS SHOWN

NO.	ISSUE	DATE
	Issued for Review	April 19th, 2018
	Issued for Permit & Tender	2018/05/07
	Issued for Permit & Tender	2018/11/26

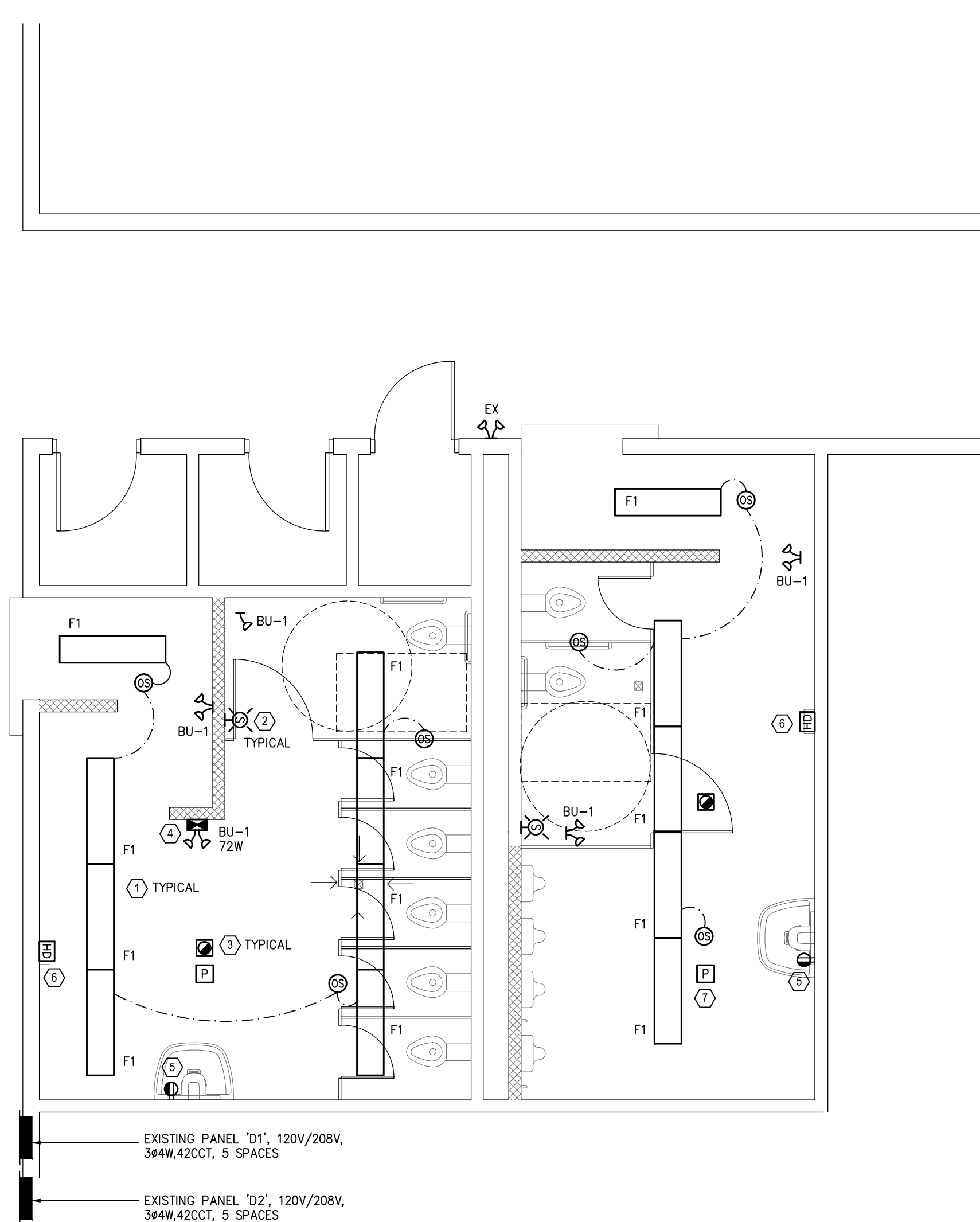
## LEGEND AND DETAILS - ELECTRICAL

DRAWING NO:

E-01



- GENERAL NOTES:
- UNLESS NOTED OTHERWISE, ALL ELECTRICAL DEVICES/EQUIPMENT SHOWN ARE EXISTING TO REMAIN.
  - REGARDLESS SHOWN OR NOT, REMOVE (OR RELOCATE AS REQUIRED) ALL EXISTING ELECTRICAL DEVICES/EQUIPMENT C/W WIRES/CONDUITS AND BOXES AFFECTED BY DEMOLITION OF EXISTING PARTITIONS.
  - EXISTING LIGHTING CIRCUITS OF REMOVED LIGHTS & LIGHTING CONTROL ARE ALLOWED TO BE REUSED.
- NOTES:
- CONTRACTOR TO REMOVE THE EXISTING FIRE ALARM DOOR HOLDERS AND TO MODIFY EXISTING FIRE ALARM DOOR HOLDER CIRCUITS TO MAKE SURE OTHER EXISTING FIRE ALARM DOOR HOLDERS WORK FULLY FUNCTIONAL.



- GENERAL NOTES:
- UNLESS NOTED OTHERWISE, ALL ELECTRICAL DEVICES/EQUIPMENT SHOWN ARE NEW.
  - REWIRING ALL EXISTING LIGHTS IN EACH ROOM OR SPACE TO BE CONTROLLED BY NEW OR RELOCATED WALL/CEILING MOUNTED OCCUPANCY SENSORS IN THE ROOM OR SPACE.
  - ALL NEW WIRES SHALL BE INSTALLED IN RECESSED CONDUITS. WIREMOLD SURFACE INSTALLATION IS NOT ACCEPTABLE.
  - ALL WIRING DEVICES TO BE INSTALLED IN RECESSED GANG BOX; SURFACE MOUNTED INSTALLATION IS NOT ACCEPTABLE.
  - PROVIDE ONE(1) NEW FIRE ALARM SIGNALING STROBE CIRCUIT (MODULES) FROM EXISTING FIRE ALARM CONTROL PANEL TO THIS WASHROOM AREA.
- NOTES:
- ALL NEW LIGHTS TYPE 'F1' TO BE CONNECTED TO EXISTING LIGHTING CIRCUITS IN THIS AREA.
  - PROVIDE NEW FIRE ALARM STROBE TO MATCH EXISTING, CONNECT TO THE NEW FIRE ALARM STROBE CIRCUIT.
  - PROVIDE NEW FIRE ALARM SMOKE DETECTOR TO MATCH EXISTING, CONNECT TO EXISTING FIRE ALARM INITIATING CIRCUIT IN THIS AREA.
  - PROVIDE UNSWITCHED HOT CONDUCTOR FROM THE EXISTING WASHROOM LIGHTING CIRCUIT TO THE NEW BATTERY UNIT BU-1.
  - PROVIDE NEW GFI RECEPTACLE UNDER SINK FOR SENSOR, CONFIRM EXACT LOCATION AND MOUNTING HEIGHT ON SITE PRIOR TO ROUGH-IN. CONTRACTOR TO MAKE SURE THE RECEPTACLE TO BE CONCEALED BEHIND WASH SINK. PROVIDE ONE(1) NEW 15A/1P BREAKER TO MATCH EXISTING IN PANEL 'D1' FOR THIS CIRCUIT, PROVIDE FEEDERS: 2#12+GRD-21mmC FROM THIS BREAKER TO NEW GFI RECEPTACLES.
  - PROVIDE ONE(1) 15A/1P GFI BREAKER TO MATCH EXISTING IN POWER PANEL 'D1' FOR EACH NEW HAND DRYER (TOTAL TWO(2) BREAKERS), PROVIDE DEDICATED FEEDER: 2#12+GRD-21mmC FROM BREAKER TO HAND DRYER.
  - PROVIDE NEW PA SPEAKER TO MATCH EXISTING, CONNECT TO NEAREST EXISTING PA SPEAKER CIRCUITS IN THIS AREA. SCOPE OF PA SPEAKER SHALL BE UNDER CASH ALLOWANCE.

PROJECT NORTH:

KEY PLAN:




Trillium Lakelands  
District School  
Board  
Bobcayeon Public  
School  
Washroom  
Renovation

Bobcayeon, ON.

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PROJECT NO:	18027-A2
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	Issued for Permit & Tender	2018/05/07
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FLOOR PLANS –  
ELECTRICAL

DRAWING NO: E-02



ELECTRICAL SPECIFICATION:

1. GENERAL
- 1.1 COMPLY WITH GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, AND ALL DOCUMENTS REFERRED TO THEREIN.
- 1.2 THE DOCUMENTS ARE NOT INTENDED TO DELEGATE FUNCTIONS NOR TO DELEGATE WORK TO ANY TRADE.
- 1.3 THE DRAWINGS AND SPECIFICATIONS SHALL BE READ IN CONJUNCTION WITH BASE BUILDING DRAWINGS AND SPECIFICATIONS. DO ALL WORK IN ACCORDANCE WITH THE OWNER GUIDELINES. MAXIMUM CONDITIONS WILL GOVERN.
- 1.4 PRIOR TO SUBMITTING THE TENDER, CAREFULLY EXAMINE AND VERIFY THE SITE AND CONDITIONS OF THE PROPOSED WORK TOGETHER WITH THE WORK OR ALL OTHER TRADES, INCLUDING LOCATIONS AND DIMENSIONS OF ALL EXISTING SERVICES (INCLUDING SERVICES IN CONCEALED SPACE), AND ALLOW FOR ANY RE-ROUTING OF EXISTING AND/OR NEW SERVICES AND EQUIPMENT, CUTTING AND PATCHING IN TENDER PRICE. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY. SUBMISSION OF A TENDER CONFIRMS THAT THE CONTRACT DOCUMENTS AND EXISTING PROJECT CONDITIONS ARE COMPLETELY UNDERSTOOD, CONFIRMED AND ACCEPTED BY THE CONTRACTOR.
- 1.5 REPORT TO THE ENGINEER ALL AMBIGUITIES, DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM BUILDING BYLAWS AND/OR FROM GOOD PRACTICE PRIOR TO TENDER CLOSING.
- 1.6 DRAWINGS ARE DIAGRAMMATIC, SHOW GENERAL PERFORMANCE AND ARRANGEMENT OF WORK, AND DO NOT SHOW STRUCTURAL AND RELATED DETAILS. REFER TO ARCHITECTURAL AND/OR INTERIOR DESIGNER'S DRAWINGS. TAKE INFORMATION INVOLVING ACCURATE MEASUREMENT OF BUILDING, MAKE, WITHOUT ADDITIONAL CHARGE, ANY NECESSARY CHANGES OR ADDITIONS TO WORK OR EQUIPMENT LOCATIONS TO ACCOMMODATE STRUCTURAL CONDITIONS. EQUIPMENT LOCATIONS MAY BE ALTERED BY ENGINEER WITHOUT EXTRA CHARGE PROVIDED CHANGE IS MADE BEFORE INSTALLATION AND DOES NOT NECESSITATE MAJOR MATERIAL.
- 1.7 PROVIDE ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING AUTHORITIES, LOCAL BY-LAWS, LATEST EDITIONS OF APPLICABLE CODES, STANDARDS, AND REGULATIONS.
- 1.8 APPLY FOR, OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED PRIOR TO COMMENCEMENT OF CONSTRUCTION. INCLUDE ALL PROVINCIAL AND GENERAL SALES TAXES.
- 1.9 'SUPPLY' SHALL MEAN FURNISHING TO SITE IN LOCATION REQUIRED OR DIRECTED COMPLETE WITH ACCESSORY PARTS. 'INSTALL' SHALL MEAN SET IN PLACE AND SECURED OR AFFIXED TO BUILDING STRUCTURE AS NOTED OR DIRECTED. 'PROVIDE' SHALL MEAN SUPPLY AND INSTALL AND INCLUDE ALL LABOR, MATERIAL, EQUIPMENT, TOOLS, CONNECTIONS, TESTING AND INSPECTION AS EACH IS DESCRIBED.
- 1.10 PROVIDE WORK IN SUCH A MANNER AS TO LEAVE EACH OF THE SYSTEMS COMPLETE AND IN SATISFACTORY OPERATION CONDITION. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE SATISFACTORY COMPLETION OF ALL WORK BEARING UPON THIS TRADE, INCLUSIVE OF ALL INSTALLATIONS ACCEPTABLE TO ARCHITECT.
- 1.11 ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPROVED SCHEDULE TO MEET THE PROJECT COMPLETION DATE AND ALL SPECIFIED INTERIM SCHEDULES. COMPLY WITH THE GENERAL CONTRACTOR'S CONSTRUCTION SCHEDULE.
- 1.12 PROVIDE ALL CUTTING, PATCHING, FLASHING WORK AND CLEAN-UP OF FLOORS, WALLS, CEILINGS, ETC. SEAL (FIRE RATED IF NECESSARY) ALL OPENING AND PENETRATION BY THIS DIVISION.
- 1.13 PROVIDE PROPER SHOP DRAWINGS OF ALL SPECIFIED PRODUCTS AND SUBMIT FOR REVIEW TO THE ARCHITECT AND ENGINEER IN ACCORDANCE WITH GENERAL REQUIREMENTS. SHOP DRAWINGS SHALL BE REVIEWED, STAMPED, AND CORRECTED BY CONTRACTOR PRIOR TO SUBMISSION.
- 1.14 REVIEW OF SHOP DRAWINGS BY CONSULTANT IS FOR SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH GENERAL DESIGN CONCEPT. THIS REVIEW SHALL NOT MEAN THAT ARCHITECT OR ENGINEER APPROVES DETAIL DESIGN INHERENT IN SHOP DRAWINGS. RESPONSIBILITY FOR WHICH SHALL REMAIN WITH CONTRACTOR AND SUCH REVIEW SHALL NOT RELIEVE CONTRACTOR OF HIS RESPONSIBILITY FOR MEETING ALL REQUIREMENTS OF CONTRACT DOCUMENTS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED AT SITE, FOR INFORMATION THAT PERTAINS SOLELY TO FABRICATION PROCESSES OR TO TECHNIQUES OF CONSTRUCTION AND INSTALLATION AND FOR CO-ORDINATION OF WORK WITH ALL TRADES.
- 1.15 SUBSTITUTE PRODUCTS WILL ONLY BE CONSIDERED WHEN TENDERED PRODUCTS BECOME UNOBTAINABLE AND WRITTEN PROOF IS SUBMITTED. THE QUALITY AND PERFORMANCE CHARACTERISTICS OF SUBSTITUTE PRODUCTS SHALL BE EQUAL TO THE SPECIFIED PRODUCTS. IMPLEMENTATION OF SUBSTITUTE PRODUCTS IS SUBJECT TO THE REVIEW OF PROPERLY SUBMITTED SHOP DRAWINGS TO THE ARCHITECT AND ENGINEER.
- 1.16 ASSUME RESPONSIBILITY AND PAY FOR ANY ADDITIONAL INSTALLATION COSTS INCURRED BY ALL DIVISIONS RESULTING FROM THE ALTERNATES AND/OR SUBSTITUTIONS. MAKE REVISIONS TO RECORD DRAWINGS INCORPORATING ALL ALTERNATES AND/OR SUBSTITUTIONS AND ALL RELATED CHANGES.
- 1.17 TEMPORARY OR TRIAL USAGE OF ANY EQUIPMENT OR MATERIALS SHALL NOT BE CONSTRUED AS EVIDENCE OF ACCEPTANCE OF SAME AND NO CLAIM FOR DAMAGE SHALL BE MADE FOR INJURY TO OR BREAKING OF ANY PART OF SUCH WORK WHICH MAY BE SO USED.
- 1.18 ALL MATERIAL AND EQUIPMENT USED SHALL BE NEW AND OF UNIFORM PATTERN AND CSA APPROVED. WHERE MANUFACTURER IS NOT SPECIFIED, PRODUCTS SHALL BE OF HIGH COMMERCIAL QUALITY.
- 1.19 SUPPLY JOB SITE OFFICE, WORKSHOP, TOOLS, SCAFFOLDS AND MATERIAL STORAGE TO COMPLETE THE WORK OF THIS DIVISION. LOCATION OF TEMPORARY BUILDING, USE OF SPACE ON SITE OR WITHIN BUILDING SHALL BE TO LATER DIRECTION.
- 1.20 PROVIDE A COMPLETE BREAKDOWN OF MATERIALS, EQUIPMENT AND LABOUR WITH EACH ITEM OF EACH SUBMISSION FOR EXTRA OR DELETED WORK.
- 1.21 TEST, VERIFY AND COMMISSION ALL SYSTEMS INSTALLED. SUBMIT LETTER OF CERTIFICATION STATING THAT THE SYSTEMS HAVE BEEN TESTED. SUBMIT MANUFACTURER'S CERTIFICATION FOR ALL EQUIPMENT PROVIDED STATING THAT THEY HAVE INSPECTED, TESTED AND ARE SATISFIED WITH THE INSTALLATION AND OPERATION. WHERE EXISTING SYSTEM ARE EXTENDED, LETTER SHOULD COVER BOTH EXISTING AND NEW INTERFACED EQUIPMENT AND CONNECTIONS.
- 1.22 CONTRACTOR SHALL OBTAIN CLEAN SET OF PRINTS FROM CONSULTANT AT START OF CONTRACT WORK AND SHALL KEEP THESE PRINTS UP-TO-DATE AT JOBSITE. ACCURATELY RECORDING ALL CHANGES MADE ON PROJECT AND LOCATING ALL SERVICES, EQUIPMENT, ETC. WHICH HAVE BEEN SHOWN ONLY DIAGRAMMATICALLY ON CONTRACT DOCUMENTS. UPON COMPLETION OF CONTRACT WORK, SUBMIT THREE (3) PRINTS SETS AND ONE (1) CD CONTAINING ACAD FILES OF AS-BUILT DRAWINGS.
- 1.23 ASSEMBLE THREE (3) MANUALS, EACH CONTAINING DATA SHEETS, BROCHURES, OPERATING, MAINTENANCE, RECOMMENDED SPARE PARTS, AND LUBRICATING INSTRUCTIONS AND A COMPLETE SET OF REVIEWED SHOP DRAWINGS AND BIND IN HARD COVER. IDENTIFY COVER "OPERATION AND MAINTENANCE MANUAL". MANUALS SHALL BE SEPARATED WITH DIVIDERS IN LOGICAL SECTIONS AND VOLUMES. PRESENT ONE (1) COPY FOR REVIEW BY CONSULTANT. MAKE ALL CORRECTIONS REQUESTED BY THE CONSULTANT AND RESUBMIT FOR REVIEW.
- 1.24 PROVIDE THE OWNER WITH A WRITTEN WARRANTY, FOR ALL LABOUR, MATERIALS, AND EQUIPMENT IN THIS CONTRACT, FOR A PERIOD OF TWO YEAR COMMENCING AT SUCH TIME AS THE OWNER, OR HIS REPRESENTATIVE, DEEMS THE WORK ACCEPTABLE.
- 1.25 IDENTIFY ALL SYSTEMS AND LABEL ALL EQUIPMENT WITH LAMACOID LABELS. IDENTIFY REMOTE CONTROLS FOR ALL PERTINENT EQUIPMENT INCLUDING ALL ASSOCIATED DISCONNECTS. THE IDENTIFICATION AND LABELS SHALL MEET BASE BUILDING STANDARDS.
- 1.26 PROVIDE ALL MISCELLANEOUS METALS AS NECESSARY FOR MECHANICAL WORK.
- 1.27 PRIOR TO COMPLETION REVIEW/INSPECTION, ELECTRICAL CONTRACTOR SHALL SUBMIT A LETTER CONFIRMING THAT ALL ELECTRICAL WORK IS COMPLETED AS PER ELECTRICAL TENDER DOCUMENT. CONTRACTOR IS RESPONSIBLE FOR THE COST OF THE SECOND COMPLETION REVIEW/INSPECT IF ITS REQUIRED.
- 2.0 WORK IN EXISTING BUILDING
- 2.1 EXAMINE THE SITE AND LOCAL CONDITIONS PRIOR TO TENDER SUBMISSION. SUBMISSION OF A TENDER CONFIRMS THAT THE CONTRACT DOCUMENTS AND SITE CONDITIONS ARE COMPLETELY UNDERSTOOD AND ACCEPTED UNLESS EXCEPTIONS ARE SPECIFICALLY INDICATED IN THE BID FORM.
- 2.2 PRIOR TO COMMENCEMENT OF THE CONTRACT WORK, AND WITHIN ONE WEEK OF THE CONTRACT AWARDED, EXAMINE AND VERIFY ON SITE, THE COMPLETE EXISTING ELECTRICAL SYSTEM, AND SUBMIT DETAILED EXISTING ELECTRICAL SYSTEM DRAWINGS SHOWING COMPLETE AND ACCURATE EXISTING SYSTEM CONDITIONS, LOCATIONS OF ALL DEVICES, EQUIPMENTS, POWER, LIGHTING, FIRE ALARM, DATA/VOICE, P.A. AND SECURITY SYSTEMS. MAINTAIN THE LIFE SAFETY SYSTEMS IN EXISTING BUILDING IN FULL OPERATION AT ALL TIMES DURING CONSTRUCTION, UNLESS OTHERWISE NOTED.
- 2.3 MAINTAIN ALL SYSTEMS IN FULL OPERATION DURING NORMAL OCCUPANCY HOURS, UNLESS OTHERWISE NOTED. MAINTAIN ALL SYSTEMS ADJACENT TO CONSTRUCTION AREA IN FULL OPERATION AT ALL TIME DURING CONSTRUCTION, UNLESS OTHERWISE NOTED.
- 2.4 PROTECT WORK OF HIS AND OTHER TRADES, EXISTING FINISHES, SYSTEMS AND SERVICES WHICH MUST REMAIN IN OPERATION. REPLACE AND/OR REINSTALL ANY EXISTING SERVICES WHICH ARE TO REMAIN THAT ARE IMPROPERLY INSTALLED OR MAY CREATE ANY INTERFERENCES WITH NEW CONSTRUCTION.
- 2.5 ELECTRICAL CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DISRUPTION CAUSED BY HIS FORCES TO OPERATIONAL BUILDING SERVICES. REPAIR ANY SYSTEM DAMAGED DURING THE EXECUTION OF THE WORK INCLUDING DRYWALL AND CEILING TILE WORK. RE-PAINT WALL AND CEILING TO MATCH EXISTING.
- 2.7 ALL NOISE GENERATING WORKS THAT DISRUPT THE BUILDING OPERATIONS SHALL BE CARRIED OUT BEFORE/AFTER NORMAL OCCUPANCY HOURS.
- 2.8 CO-ORDINATE WITH OWNER FOR SCHEDULING OF WORKS REQUIRED TO BE DONE BEFORE/AFTER NORMAL OCCUPANCY HOUR, INCLUDING BUT NOT LIMIT TO: DRILLING THROUGH SLAB; POWER SHUTDOWN; INTERFERENCE TO LIFE SAFETY SYSTEM. ALL COST INVOLVED, INCLUDING WORK TO BE DONE BY OWNER, SHALL BE INCLUDED IN TENDER PRICE.
- 2.9 WHERE EXISTING TO BE REMOVED AS REQUIRED, AND/OR AS SHOWN, DISCONNECT AND REMOVE MATERIALS AND EQUIPMENT, DISCONNECT AND REMOVE FEEDERS/CIRCUITS, CONDUITS BACK TO PANELS. MAKE SAFE CIRCUIT AND UPDATE PANEL DIRECTORIES. PROVIDE BLANK STAINLESS STEEL COVER PLATE FOR ALL LEFT OVER HOLE ON THE WALL IN FINISHED AREA.
- 2.10 ANY EXISTING ELECTRICAL CONDUITS/WIRING TO REMAIN IN CEILING SPACE INTERFERING WITH NEW INSTALLATION, SHALL BE RAISED OR RE-MOUNTED.
- 2.11 ALL NEW CONDUIT INSTALLATIONS IN CEILING SHALL BE FASTENED TIGHT TO THE CEILING STRUCTURE OR ROD SUSPENDED AT HIGH LEVEL TO THE UNDERSIDE OF THE CEILING SLAB.
- 2.12 MAKE SAFE ALL CIRCUITS TO BE CUT OFF. CAP-OFF ALL REDUNDANT CONDUITS.
- 2.13 MAINTAIN CONTINUITY OF EXISTING SERVICES FOR OTHER CIRCUITS/DEVICES SERVING AREAS OUTSIDE THE CONSTRUCTION AREA. PROVIDE ADDITIONAL WIRING/CONDUITS/BOXES ETC. TO SUIT EXISTING SERVICES TO BE MAINTAINED AND ALSO IMPLEMENT NEW WORK AS DETAILED.
- 2.14 CHECK AND INSPECT EXISTING DISTRIBUTION EQUIPMENT TO BE RE-USED (I.E., PANEL BREAKERS, DISCONNECT SWITCHES, ETC.) FOR ABNORMAL THERMO-GRAPHIC SCAN UNDER ACTUAL LOADS IN OPERATION AND SUBMIT SCAN RESULTS INDICATING PROBLEMS HAVE BEEN CORRECTED.
- 2.15 VERIFY OPERATION AND RE-USE THE DEVICES TO BE RELOCATED. DO NOT USE UNSAFE OR DAMAGED DEVICES. REPLACE BURNED OUT LAMPS AND BALLASTS.
- 2.16 REMOVE AND DISPOSE OFF-SITE, ALL MATERIALS REMOVED, ABANDONED, AND NOT TO REMAIN, DESIGNATED FOR SALVAGE, OR BE RE-USED IN AN APPROPRIATE MANNER ACCEPTABLE TO LOCAL AUTHORITIES HAVING JURISDICTION, SPECIFICALLY EQUIPMENT AND MATERIALS CONSIDERED HAZARDOUS TO THE ENVIRONMENT, UNLESS OTHERWISE NOTED TO BE TURNED OVER TO THE OWNER.
- 2.17 PROTECT ALL REMOVED EQUIPMENT TO BE TURNED OVER TO OWNER FROM DAMAGE. REPLACE DAMAGED EQUIPMENT AT NO COST TO THE OWNER.
- 2.18 NO EQUIPMENT MAY BE BURNED ON SITE OR SOLD ON SITE.
- 2.19 REMOVE ALL DUST, DIRT, AND OTHER FOREIGN MATTER FROM INTERNAL SURFACES OF ENCLOSED ELECTRICAL APPARATUS AND EQUIPMENT REMOVE ALL TEMPORARY PROTECTIVE COVERINGS AND COATINGS, AND TEMPORARY LABELS, CLEAN, REPAIR, LUBRICATE, AND ADJUST ALL MECHANISMS AND MOVEABLE PARTS OF APPARATUS AND EQUIPMENT LEAVING IT NEW CONDITION AND OPERATION PROPERLY.

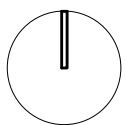
- 2.20 WHERE EXISTING TELECOMMUNICATION OUTLETS TO BE REMOVED AS REQUIRED, AND/OR AS SHOWN, DISCONNECT AND REMOVE ALL MATERIALS AND EQUIPMENT, INCLUDING OUTLET BOXES, JACKETS, COVER PLATES, CONDUITS AND CABLES BACK TO TELECOMMUNICATION CLOSET. PROVIDE BLANK STAINLESS STEEL COVER PLATE.
- 2.21 X-RAY OR ULTRASOUND OF EXISTING BUILDING FRAMED SLAB WHERE NEW HOLES ARE DRILLED FOR NEW PENETRATIONS, AND FOR NEW BURIED LINES.
- 3.0 INSTALLATION
- 3.1 SCHEDULE AND COORDINATE ALL WORK WITH OTHER TRADES BEFORE INSTALLATION OF EQUIPMENT TO AVOID CONFLICT DURING OR AFTER INSTALLATION.
- 3.2 ALL SERVICES PENETRATING THE FLOOR SLAB SHALL BE IN CONDUIT UNLESS SPECIFIED OTHER WISE. ALL EXISTING OR NEW PENETRATIONS THROUGH FLOOR SLAB AND FIRE RATED WALL, FOR CONDUITS OR SERVICES SHALL BE SEALED WITH AN APPROVED NON-SHRINK, WATERPROOF AND FIREPROOF SEALANT AND APPROVED BY DESIGN CONSULTANT, AND OWNER PRIOR TO DRILLING. FLOOR SLABS SHALL BE X-RAYED, CONTRACTOR MUST REPAIR ANY DAMAGED SERVICES. INCLUDE ALL PREMIUM TYPE CHARGES.
- 3.3 ALL WIRING, DEVICES, LUMINARIES AND EQUIPMENT SHALL BE NEW AND CSA APPROVED UNLESS OTHERWISE NOTED. EQUIPMENT OF SAME TYPE SHALL BE OF SAME MANUFACTURER.
- 3.4 ALL WIRING SHALL BE COLOUR CODED SOLID COPPER MINIMUM #12 AWG (190 NYLON 90° RATED PVC INSULATED) FOR RUNS UP TO 100 FEET AND #10 AWG FOR RUNS OVER 100 FEET UNLESS NOTED OTHERWISE. WIRE SHALL BE RUN CONCEALED IN CONDUIT, SUPPORT ALL CONDUIT FROM STRUCTURE. DO NOT SUPPORT FROM CEILING HANGERS. PROVIDE STEEL SET-SCREW FITTINGS. AC-90 MAY BE USED FOR DOWNDROPS FROM OUTLET TO LUMINARIES AND IN PARTITIONS UNLESS PROHIBITED BY CODE OR OTHERWISE NOTED. AS-90 SHALL BE RUN MAXIMUM 10 FEET IN CEILING SPACE. ALL AC-90 CABLE AND CONDUIT SHALL BE SUPPORTED AS HIGH AS POSSIBLE ABOVE CEILING TO ALLOW REMOVAL OF ALL CEILING TILES, LUMINARIES, ETC. CABLES ARE NOT PERMITTED TO REST ON SUSPENDED CEILING. RMU COPPER CONDUCTOR IN CONDUIT FOR OUT DOOR APPLICATION. NO SURFACE WIRES/CONDUITS ARE ALLOWED IN FINISHED AREA.
- 3.5 PROVIDE A SUITABLE INDEPENDENTLY SUPPORTED, AND APPROVED OUTLET BOX FOR EACH LUMINAIRE, SWITCH, RECEPTACLE, OR OTHER DEVICE. OUTLET BOX SHALL BE COMPLETE WITH COVER PLATE. WHERE OUTLETS ARE SHOWN GROUPED TOGETHER, POWER, TELEPHONE, SIGNAL, ETC., THEY SHALL BE MOUNTED IN A COMMON OUTLET BOX WITH SUITABLE BARRIERS BETWEEN POWER AND SIGNAL SECTIONS. PROVIDE COMMON COVER PLATES OVER ALL DEVICES, UNLESS SPECIFIED OTHERWISE. OUTLETS AND RECEPTACLES MOUNTED ON ADJOINING PARTITIONS SHALL NOT BE MOUNTED BACK TO BACK. STAGGER SLIGHTLY TO PREVENT SOUND TRANSFER.
- 3.6 ELECTRICAL CONTRACTOR SHALL VERIFY AVAILABLE SPARES AND SPACES IN PANELS AND SHALL PROVIDE NECESSARY MODIFICATION TO EACH PANEL. CIRCUITING SHOWN FROM PANEL IS FOR INFORMATION PURPOSES ONLY. BALANCE ALL PANEL PHASES TO LESS THEN 10% UNBALANCED LOAD.
- 3.7 PROVIDE GROUND TO THE ELECTRICAL SAFETY CODE REQUIREMENTS. PROVIDE A SEPARATE GROUNDING (BONDING) CONDUCTOR IN ALL ELECTRICAL CONDUITS.
- 3.8 PANELBOARDS AND SPLITTERS SHALL HAVE TINPLATED COPPER MAINS, BOLT-ON BREAKER, AND SHALL BE OF THE CHARACTERISTIC AS NOTED ON THE DRAWINGS. PROVIDE THREE (3) 27MM EMPTY CONDUITS FROM FLUSH MOUNTED PANELBOARDS AND CAP ENDS IN ACCESSIBLE LOCATIONS IN CEILING SPACE FOR FUTURE WIRING. PROVIDE AN ISOLATED GROUND BAR WITH GROUND JUMPER TO PANEL TUB WHERE SPECIFIED. MANUFACTURER OF PANELBOARDS SHALL BE EQUAL TO EXISTING BUILDING STANDARD. AFTER COMPLETION OF WIRING, PROVIDE NEW TYPED DIRECTORY SHOWING A CLEAR DESCRIPTION OF EACH CIRCUIT BEING CONTROLLED FROM PANEL AND PLACE IN METAL FRAME INSIDE DOOR.
- 3.9 FUSIBLE DEVICES SHALL BE OF HEAVY DUTY TYPE WITH FUSE CLIPS AND CLASS 'J' FUSES, (TO BE TIME DELAY FUSES FOR MOTOR LOADS).
- 3.11 ALL DIMENSIONS ARE TO CENTER OF OUTLETS OR GROUP OF OUTLETS AS APPLICABLE.
- 3.12 PROVIDE LAMACOID NAMEPLATES FOR ALL NEW AND EXISTING TRANSFORMERS AND PANEL BOARDS DETAILING NAME AND SOURCE OF FEED.
- 3.13 IDENTIFY ALL EQUIPMENT TO MATCH BASE BUILDING IDENTIFICATION STANDARD. OTHERWISE USE COLOR CODING AS DEFINED IN CSA STANDARD.
- 3.14 ADJUST THE LOCATION OF DEVICES AND/OR EQUIPMENT (UP TO 10FT IN ANY DIRECTION) AS DIRECTED BY THE DESIGNER AND ENGINEER WITHOUT ADJUSTMENT TO CONTRACTOR PRICE, PROVIDED THAT THE CHANGES ARE REQUESTED BEFORE INSTALLATION.
- 3.15 TEST NEW AND EXISTING INTERFACED SYSTEMS TO ENSURE PROPER OPERATION AND CORRECT ALL DEFICIENCIES.
- 3.16 PROVIDE IDENTIFIED OR TAGGED FISH WIRES IN ALL EMPTY CONDUITS AND BOXES FOR WIRING BY OTHER TRADES.
- 3.17 INSTALL ELECTRICAL EQUIPMENT AT FOLLOWING HEIGHTS (CENTRE OF DEVICE) ABOVE FINISHED FLOOR UNLESS INDICATED OTHERWISE.
- 3.18 CABLES/WIRES LOCATED IN PLENUM CEILING OR FLOOR SPACES SHALL MEET ONTARIO BUILDING CODE REQUIREMENTS:
- 4.0 LIGHTING
- 4.1 ALL LED FLUORESCENT LUMINARIES SHALL BE INDEPENDENTLY SUPPORTED FROM BUILDING STRUCTURE BY MEANS OF CHAINS SECURED TO BOTH ENDS OF LUMINARIES. DROP CEILING SUPPORT LIGHTS IS NOT ACCEPTABLE.
- 4.2 REVISE EXISTING LIGHTING CIRCUITS TO ACCOMMODATE NEW LIGHTING LAYOUTS. INCLUDING WORK OF WIRES IN CONDUITS. CHECK LOAD ON EACH CIRCUIT TO AVOID OVER LOADING.
- 4.3 EXISTING LOW VOLTAGE LIGHTING CONTROL SYSTEM TO REMAIN. DO NOT MODIFY THE BASE BUILDING LIGHTING ZONES. CHECK LOAD ON EACH CIRCUIT TO AVOID OVER LOADING.
- 4.4 WHERE FIXTURE TO BE RELOCATED, REMOVED, OR NEW FIXTURE TO BE INSTALLED INCLUDE COST OF MODIFICATIONS OF CEILING TILE TO ACCOMMODATE NEW LIGHTING SYSTEM.
- 5.0 EMERGENCY LIGHTING
- 5.1 REMOTE HEADS
- 5.2 BATTERY UNIT
- 5.3 ALL EMERGENCY LIGHTING DEVICES SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE FOLLOWING:
- 6.0 FIRE ALARM SYSTEM
- 7.0 WIRING DEVICES

- 7.2 RECEPTACLES
- 7.3 CEILING SENSORS
- 8.0 HAND DRYER
- 9.0 SUBMISSION

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PROJECT NORTH:



KEY PLAN:

Trillium Lakelands District School Board Bobcayeon Public School Washroom Renovation

Bobcayeon, ON.



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3	Issued for Permit & Tender	2018/11/26

SPECIFICATIONS – ELECTRICAL

DRAWING NO:

E-03