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ARCHITECTURAL

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A0.0 COVER SHEET A0.1 SCHEDULES AND ASSEMBLIES

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A5.1 INTERIOR ELEVATIONS A5.2 INTERIOR ELEVATIONS

MECHANICAL

AME CONSULTING GROUP LTD. 1100 - 808 W HASTINGS ST, **VANCOUVER BC V6C 2X4** P (604) 684-5995

KEVIN SHEA, ASSOCIATE, P.ENG., CPHD, LEED E KevinShea@amegroup.ca

MO.01 SITE PLAN M1.01 MAIN LEVEL DEMOLITION AND RENOVATION M2.01 SPECIFICATIONS

KEVIN PEARSON, ASSOCIATE, P.ENG., LEED AP

E0.0 TITLE PAGE, SYMBOL LEGEND AND DRAWING LIST

E0.1 DEMOLITION PLAN E1.0 POWER AND LOW TENSION PLAN

E2.0 LIGHTING PLAN E3.0 SCHEDULES AND DETAILS

E Kevin.Pearson@aesengr.com

E4.0 SPECIFICATION

ELECTRICAL

1330 GRANVILLE STREET,

VANCOUVER, BC V6Z 1M7

AES ENGINEERING

P (664) 569 6500

DESCRIPTION OF WORK

Renovated commercial retail space to provide capacity for various City of Vancouver departments to "hot-deak" for limited periods and also to accommodate general public viewing and engagement with City programming. Work includes limited demolition, new GWB partition walls, new carpet, acoustic baffles, millwork, new glazed entry doors, mechanical, and electrical work.

TRADES

DIVISION	LOA		SIGNED BY	DATE
DATA HUB, ACOUSTIC BAFFLES	ENGINEER REGISTERED IN PROVINCE OF BC TO DESIGN, REVIEW AND PROVIDE LETTERS OF ASSURANCE FOR RELOCATED DATA HUB AND NEW ACOUSTIC BAFFLES.	В	TBD	TBD
ELECTRICAL	ENGINEER REGISTERED IN PROVINCE OF BC TO REVIEW AND PROVIDE LETTERS OF ASSURANCE FOR THE SEISMIC RESTRAINT DESIGN AND IMPLEMENTATION OF THE ELECTRICAL SYSTEMS	В	TBD	TBD
MECHANICAL	ENGINEER REGISTERED IN PROVINCE OF BC TO REVIEW AND PROVIDE LETTERS OF ASSURANCE FOR THE SEISMIC RESTRAINT DESIGN AND IMPLEMENTATION OF THE MECHANICAL SYSTEMS	В	TBD	TBD

SEPARATE PRICES													
SP-1. HISTORIC PHOTO WALL.	IN	LIEU	OF	HISTORIC	РНОТО	WALL,	PAINT	NORTH	WALL	OF	STAFF	[01]	PT-1.



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SEPTEMBER 21, 2018

BUILDING PERMIT #3 BUILDING PERMIT#2

Carscadden

COV ENGAGEMENT VENUE 511 WEST BROADWAY

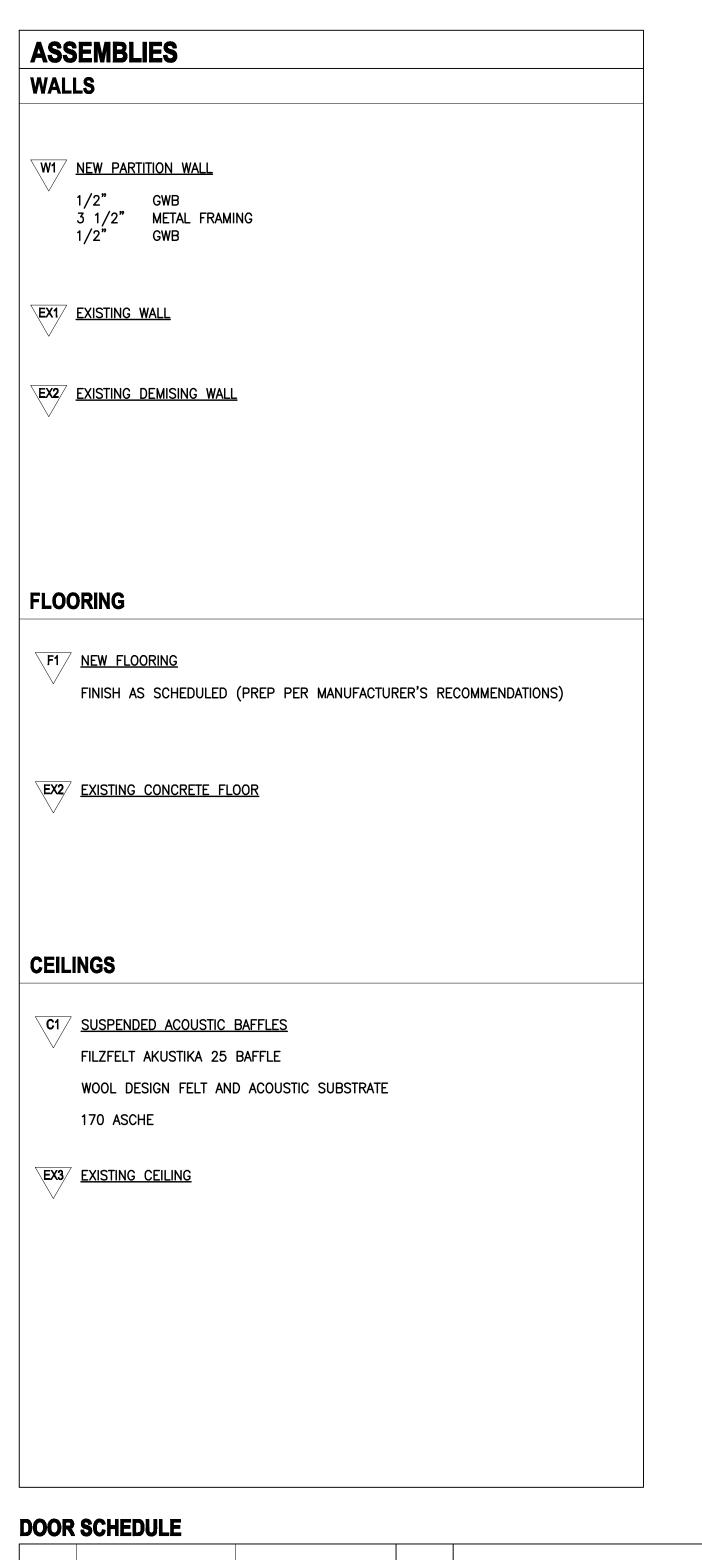
2017 JUN 02

SHEET TITLE

COVER

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JOB NO.	DATE
1713	SEPT 2018

1/8"=1'0"



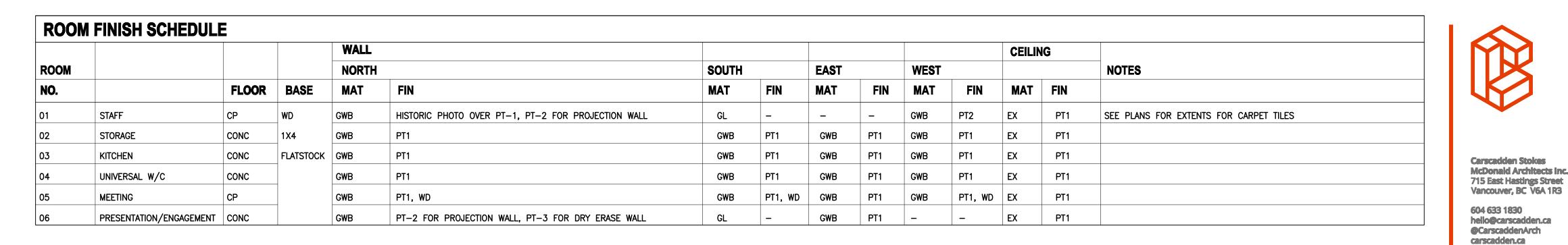
DOOR TYPES

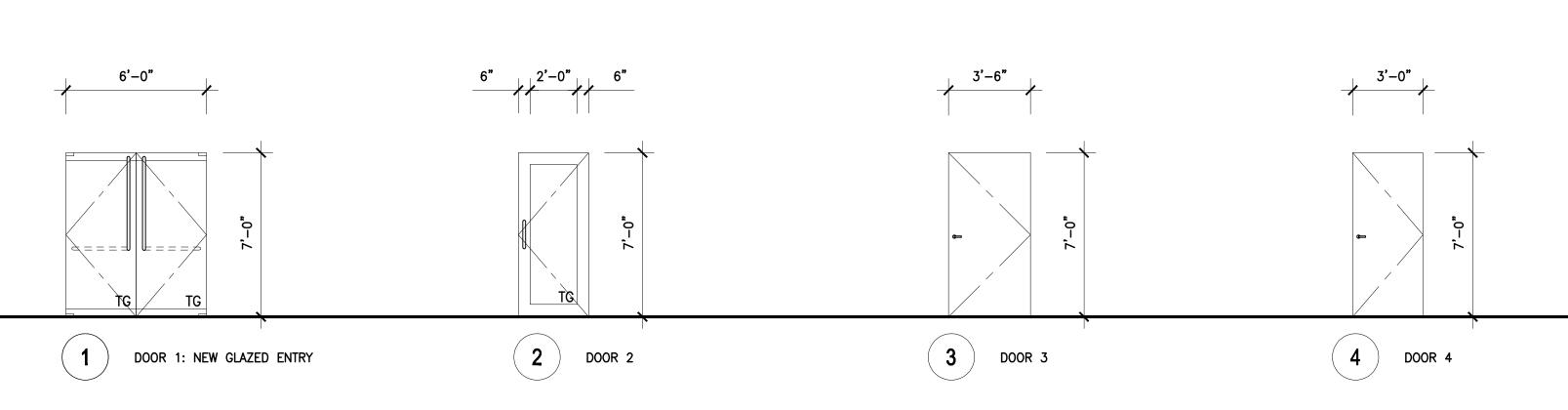
DOOR FRAMES

FRAME 1

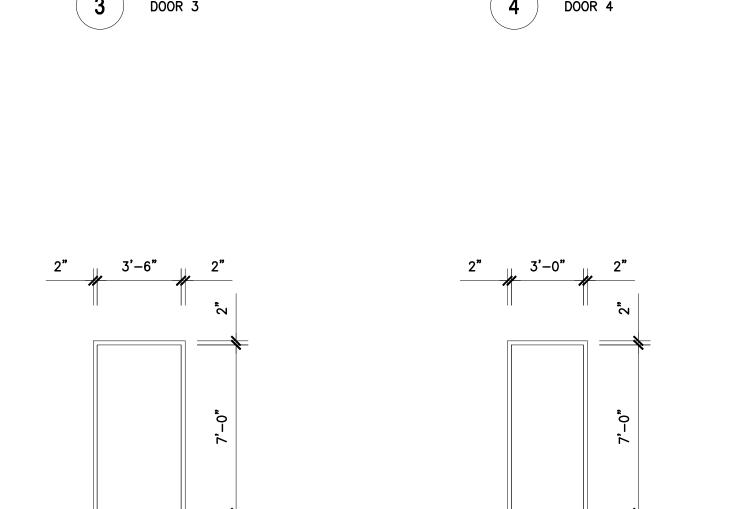
SCALE : 1/4" = 1'-0"

SCALE : 1/4" = 1'-0"





SIDELIGHT



FRAME 3

FRAME 4



ABBRE	EVIATIONS
ALUM ANOD BH BR BS CP CG CMUC COTILE EX FHC FRR GALV GJ GH PREFIN PS PT RB SS STLC TYP WB WF	ALUMINUM ANODIZED BULKHEAD BRUSHED (STEEL) BOTTOM OF STAIR CARPET CLEAR FINISH CLEAR GLASS CONCRETE MASONRY UNIT CONCRETE CERAMIC TILE EXISTING FELT FIRE HOSE CABINET FIRE RESISTANCE RATING GALVANIZED GLAZING JOINT GLAZING GRANITE TILE GYPSUM WALL BOARD HOLLOW METAL LEVEL (REFERS TO PAINT COLOUR) PLASTIC LAMINATE PREFINISHED PRESSED STEEL PAINTED

BUILDING PERMIT #4 2018 AUG 14 BUILDING PERMIT (13) 2017 JUN 02

ISSUED FOR TENDER

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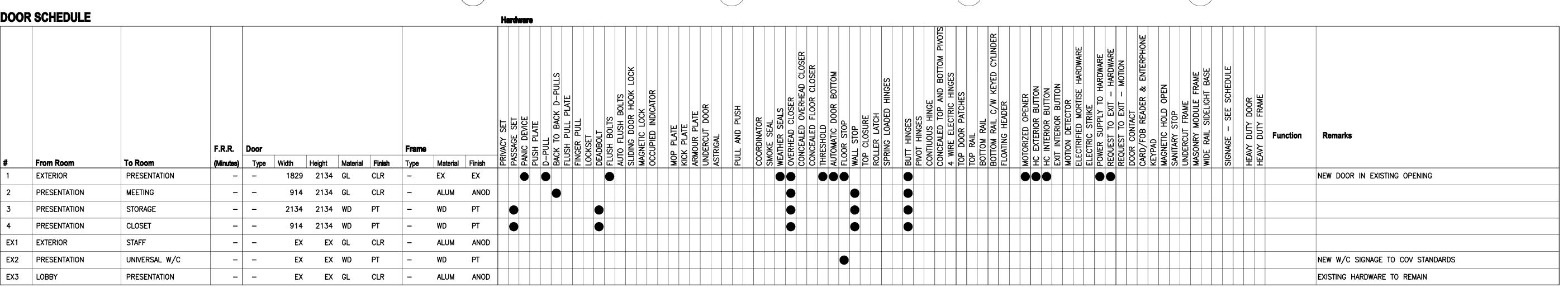
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SCHEDULES AND ASSEMBLIES

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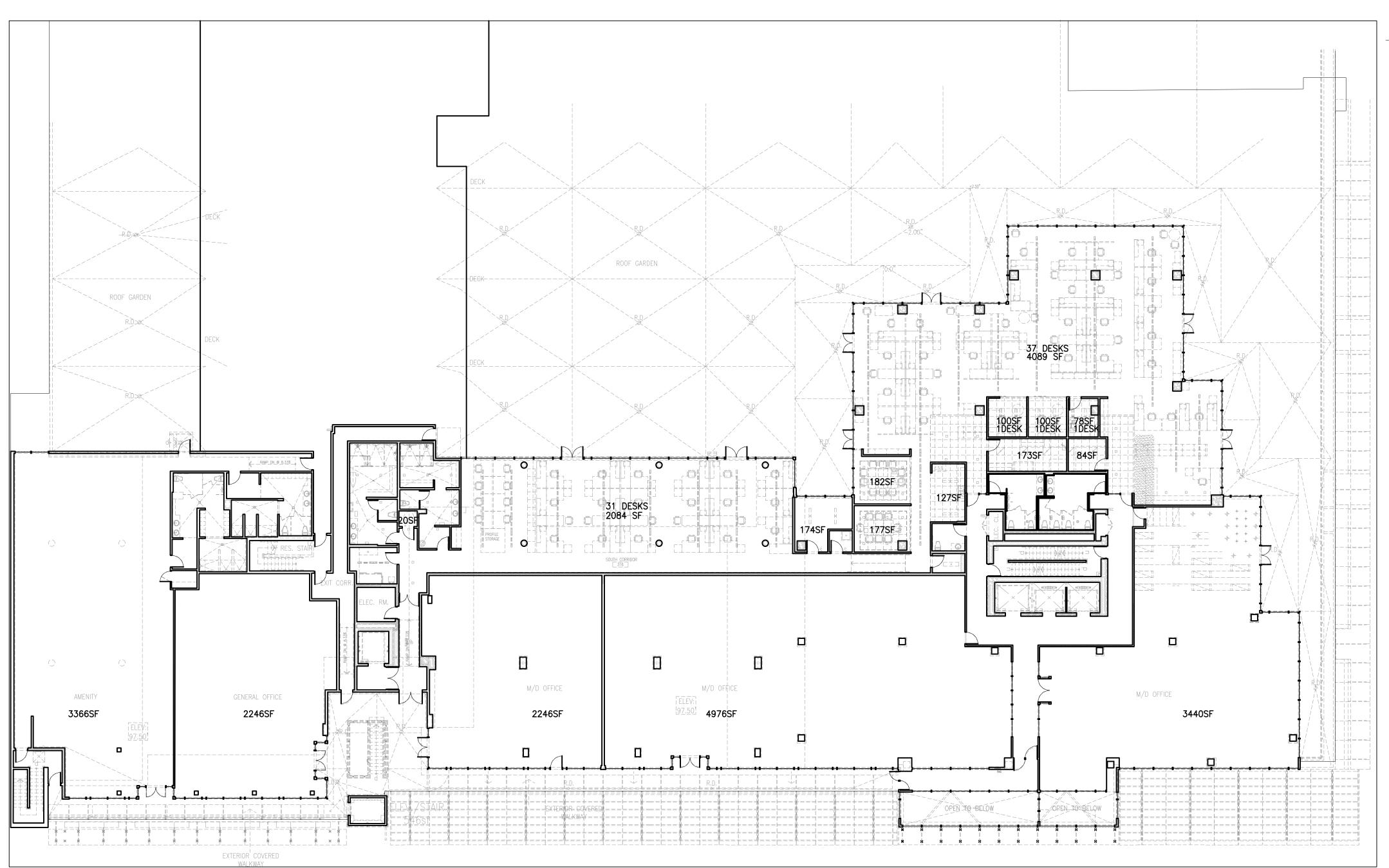
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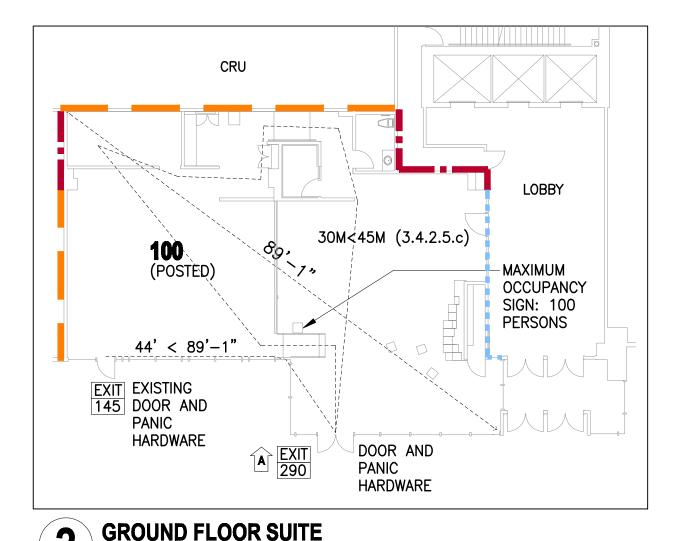


TG

FRAME 2



THIRD FLOOR PLAN - SUPPLEMENTARY WASHROOMS SCALE 1/16" = 1'0'



SCALE 1/16" = 1'0"

NOTES

DRAWINGS BASED ON OWNER'S PROVIDED DRAWINGS BY B+H ARCHITECTS AND BKA ARCHITECTS, "LULULEMON ATHLETICA CROSSROADS", BUSBY PERKINS + WILL "CROSSROADS", PCI "CROSSROADS", NEMETZ (S/A) & ASSOCIATES "CROSSROADS", GLOTMAN SIMPSON "CROSSROADS"

NO CHANGES TO EXISTING EXIT STAIRS PROPOSED. ALL PUBLIC CORRIDORS ARE MINIMUM 4' (1220 MM) WIDE CLEAR

- ALL NEW INTERIOR GLAZING TO BE TEMPERED TO MEET VBBL REQUIREMENTS.
- ALL DOOR HARDWARE TO BE ACCESSIBLE AND ALLOW FOR EGRESS TO COMPLY WITH VBBL

CODE DIAGRAM KEY

12 OCCUPANT LOAD

EXIT EXIT

150 EXIT CAPACITY

ACCESSIBLE ROUTE

• • • • • • • O MIN FRR FIRE SEPARATION 45 MIN FRR FIRE SEPARATION

60 MIN FRR FIRE SEPARATION

120 MIN FRR FIRE SEPARATION

PART 11 TRIGGERS

TABLE A-11.2.1.2.A REHABILITATION - FLOW CHART 1

MINOR RENOVATION F1 S2 N1 A2 E2

<u>CHANGE OF MAJOR OCCUPANCY - FLOW CHART 2</u> NOT APPLICABLE

ADDITION PROJECTS - FLOW CHART 3 NOT APPLICABLE

F1 EXISTING TO BE REVIEWED TO ENSURE THAT THE EXITS DO NOT PRESENT AN UNSAFE CONDITION. PROJECT AREA - EXITS TO BE UPGRADED WITH RESPECT TO NUMBER, CAPACITY, AND FIRE SEPARATIONS ONLY.

S2 LIMITED STRUCTURAL UPGRADE REQUIRED IN ORDER TO PROVIDE MINIMUM PROTECTION TO BUILDING OCCUPANTS DURING A SEISMIC EVENT WITHIN THE PROJECT AREA.

PROJECT AREA: NON-STRUCTURAL ELEMENTS AND FALLING HAZARDS MUST BE RESTRAINED TO RESIST LATERAL LOADS DUE TO EARTHQUAKE WITHIN PROJECT AREA.

N1 PROJECT AREA TO BE REVIEWED TO ENSURE SAFETY FROM OVERHEAD FALLING HAZARDS.

PROJECT AREA: RESTRAIN ALL CEILING SUPPORTING FRAMES, T-BAR ASSEMBLIES, CEILING GYPSUM WALL BOARDS, ALL OVERHEAD MECHANICAL DUCTS, AND EQUIPMENT, OVERHEAD ELECTRICAL CONDUITS AND LIGHTS.

A2 A LIMITED LEVEL OF UPGRADE SHALL BE PROVIDED WITHIN THE PROJECT AREA TO ENSURE ACCESS FOR PERSONS WITH

PROJECT AREA: DOOR CLEARANCES, DOOR HARDWARE, AND AREAS OF REFUGE.

E2 REVIEW AND MAINTAIN, OR UPGRADE A BASIC ENERGY EFFICIENCY SUBSYSTEMS, LIMIT THE PROBABILITY OF INEFFICIENT ENERGY PERFORMANCE OF BUILDINGS OR BUILDING COMPONENTS.

PROJECT AREA: 1-L2 IN TABLE 1-11.2.1.2.D

L2 HVAC (1) CLEAN AND BALANCE ALL AIR SYSTEMS (PER 6.7.2.3.2 OF ASHRAE 90.1 - 2010)

BUILDING CODE SYNOPSIS

PROJECT ADDRESS 511 WEST BROADWAY, VANCOUVER, BC

LOT 37 PLAN BCS3307 DISTRICT LOT 526 NWD GROUP LEGAL ADDRESS

1, TOGETHER WITH AN INTEREST IN THE COMMON PROPERTY IN PROPORTION TO THE UNIT ENTITLEMENT OF THE STRATA LOT AS SHOWN ON FORM

VANCOUVER BUILDING BYLAW

GOVERNING CODE PART 3

A-2 (ASSEMBLY) D (BUSINESS) E (MERCANTILE) MAJOR OCCUPANCY

BUILDING AREA

7 STOREYS BUILDING HEIGHT

CODE CLASSIFICATION

BUILDING CODE

3.2.2.23 (A2) ANY HEIGHT, ANY AREA, SPRINKLERED NON COMBUSTIBLE CONSTRUCTION, SPRINKLERED THROUGHOUT, FLOOR ASSEMBLIES REQUIRE FRR NOT LESS THAN 2H, MEZZANINES REQUIRE FRR NOT LESS THAN 1H, AND LOAD BEARING WALLS, COLUMNS, ARCHES SUPPORTING AN ASSEMBLY REQUIRE FRR NOT LESS THAN THAT FOR THE REQUIRED ASSEMBLY.

3.2.2.57 (D) ANY HEIGHT, ANY AREA, SPRINKLERED NON COMBUSTIBLE CONSTRUCTION, SPRINKLERED THROUGHOUT, FLOOR ASSEMBLIES REQUIRE FRR NOT LESS THAN 2H, MEZZANINES REQUIRE FRR NOT LESS THAN 1H. AND LOAD BEARING WALLS. COLUMNS. ARCHES SUPPORTING AN ASSEMBLY REQUIRE FRR NOT LESS THAN THAT FOR THE REQUIRED ASSEMBLY.

3.2.2.62 (E) ANY HEIGHT, ANY AREA, SPRINKLERED: NON COMBUSTIBLE CONSTRUCTION, SPRINKLERED THROUGHOUT, FLOOR ASSEMBLIES REQUIRE FRR NOT LESS THAN 2H, MEZZANINES REQUIRE FRR NOT LESS THAN 1H, AND LOAD BEARING WALLS, COLUMNS, ARCHES SUPPORTING AN ASSEMBLY REQUIRE FRR NOT LESS THAN THAT FOR THE REQUIRED ASSEMBLY.

FIRE SEPARATION BETWEEN MAJOR OCCUPANCIES (3.1.3.1) D TO E. NONE REQUIRED A2 TO E. 2H

A2 TO D. 1H

FIRE SEPARATION BETWEEN SUITES

FIRE SEPARATION BETWEEN SUITES 1 HR, OR 45 MIN IF FLOOR ASSEMBLIES ARE 45 MIN OR 0 HR IF

SPRINKLERED AND D/E OCCUPANCY FIRE SEPARATION BETWEEN SUITES PUBLIC CORRIDOR SEPARATIONS OH

0 MIN

AND CORRIDORS (3.3.1.4(3)) FIRE SEPARATION OF EXITS (3.4.4.1) 2H FRR OF CLOSURES (3.1.8.4) 45MIN

FIRE SEPARATION OF JANITOR (3.3.1.21)

NUMBER OF EXITS (3.4.2.1) 2 EXITS REQURIED

EXCEPT WHEN OCCUPANT LOAD IS LESS THAN 60, SUITE IS LESS THAN 300 SM AND TRAVEL DISTANCE IS LESS THAN 25M FOR GROUP D AND SUITE IS LESS THAN 200 SM AND TRAVEL DISTANCE IS LESS THAN

25M FOR GROUP F2

DISTANCE BETWEEN EXITS (3.4.2.3) THE LEAST DISTANCE BETWEEN 2 EXITS SHALL BE ONE

HALF THE MAXIMUM DIAGONAL DIMENSION OF TH FLOOR AREA BUT NORE MORE THAN 9M FOR A FLOOR AREA HAVING A PUBLIC CORRIDOR, AND NOT LESS THAN

EXISTING AND PROPOSED

9M FOR ALL OTHER FLOOR AREAS

TRAVEL DISTANCE (3.4.2.5) THE TRAVEL DISTANCE TO AT LEAST ONE EXIT SHALL

NOT BE MORE THAN C) 45 M IN A D C) 45 M IN AN

DISABLED ACCESS (3.8.2.1) REQUIRED IN NEW BUILDING AS PER 3.8.2.1

EXIT WIDTH (3.4.3.2.1) MIN 900 MM RAMPS AND STAIRS, 790 MM DOORS 6.1 MM / PERSON DOORWAYS 8 MM / PERSON STAIRS

STAIRS (3.4.6.7) RISE BETWEEN 125 MM TO 180 MM (5" TO 7") RUN MINIMUM OF 280 MM

BUILDING CHECKLIST

SPRINKLERS	YES
NON-COMBUSTIBLE CONSTRUCTION	YES
FIRE ALARM 3.2.4.1	YES
STANDPIPE REQUIRED 3.2.5.8	YES
EMERGENCY POWER DURATION 3.2.7.4	30 MIN
HIGH RISE BUILDING 3.2.6	YES
SMOKE CONTROL MEASURES 3.2.6.2	YES
EMERGENCY POWER REQUIRED 3.2.7.9	YES
EMERGENCY LIGHTING REQUIRED 3.2.7.3	YES
EXIT SIGNS REQUIRED	YES

ASHRAE 90.10 - 2010

ARCHITECTURAL BUILDING ENVELOP DESIGN (ENERGY)

VANCOUVER BUILDING BYLAW 2014 ENVELOPE DESIGN NOT APPLICABLE - NO ENVELOPE WORK

5.1.3 **ENVELOPE ALTERATIONS**

NO REPLACEMENT OF GLAZING, DOORS, NO ALTERATIONS TO EXTERIOR ENVELOPE, WALLS CEILINGS OR ROOF.

b. NEW DOOR TO MATCH EXISTING



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BUILDING PERMIT#4 2018 AUG 14 **BUILDING PERMIT #3** 2017 SEP 02 **BUILDING PERMIT #2** 2017 AUG 08 CHANGE OF USE BUILDING PERMIT 2017 JUN 02

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COV ENGAGEMENT VENUE 511 WEST BROADWAY

BUILDING CODE SYNOPSIS

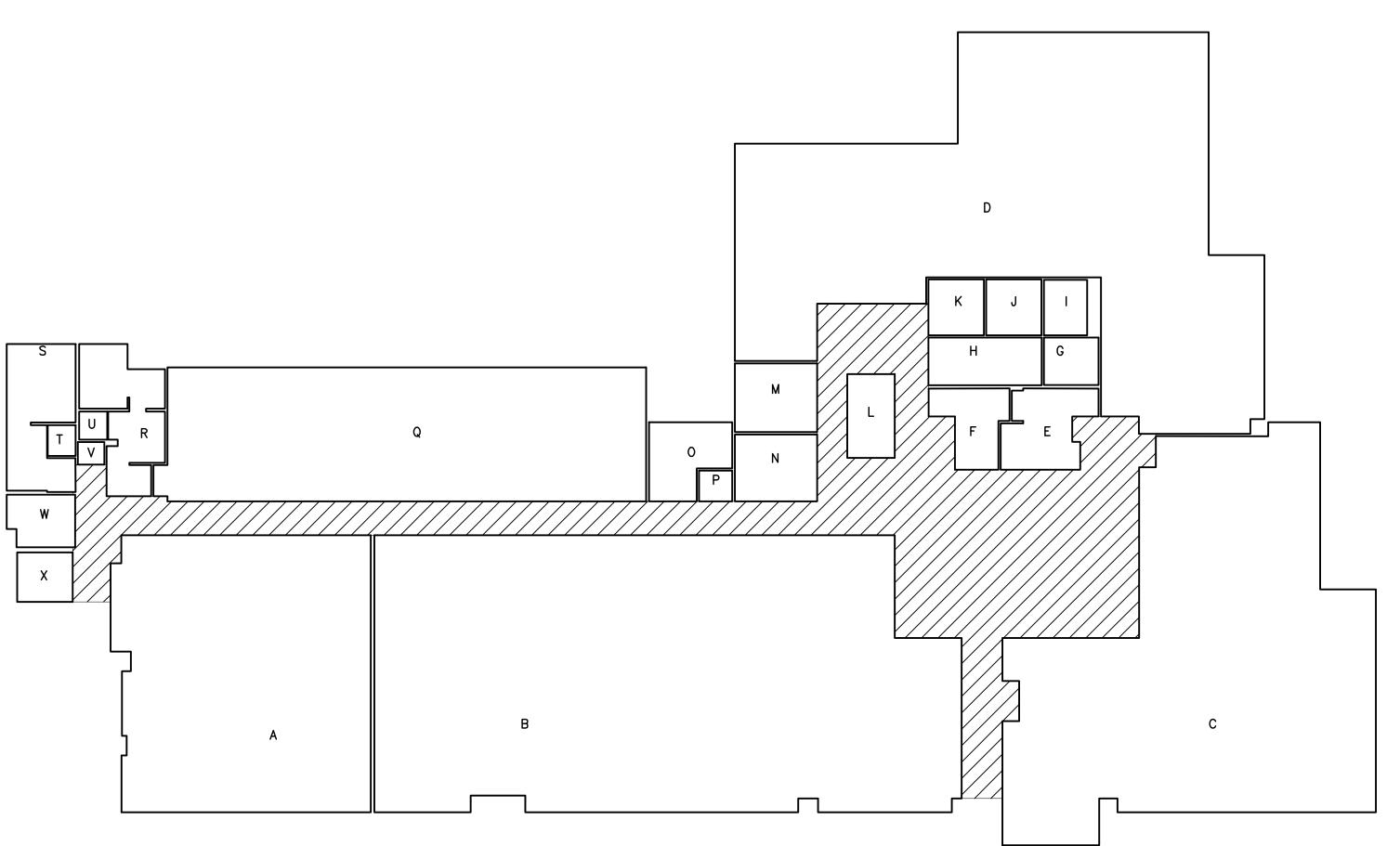
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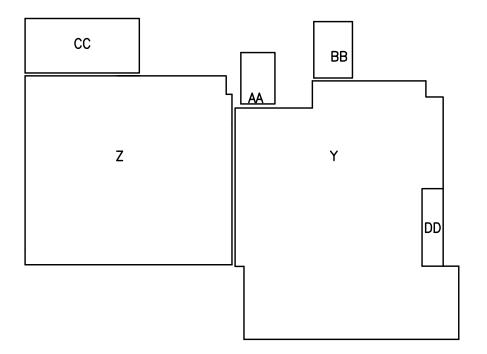
1/16"=1'0"



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ACCURATION LOAD CALCULATIONS

LDING BY-LAW TA	EA	AREA			
	SF	SM	AREA REQUIRED PER PERSON	PERSON COUNT FOR WASHROOMS	REQ'D W/C
AL UNIT 497	76	209 462 320	9.3 9.3 9.3	22.5 50 34	
TAIL 1066	62	991		106.5	
N -1066		991 –99.1		106.5 -10.65	
	96	892		96 48 48	$)\longrightarrow \bigcirc 2$
M 20 M 15 M 15 M 17 AL 17 AL 17 M 28 M 28 M 28 M 28 M 28 M 28 M 28 M 28	04 50 84 73 78 00 00 28 82 77 74 33 84 88 90 27 26 20	380 19 14 8 16 7 9 12 17 16 16 3 194 27 27 2 2.5 10 8	37 DESKS 0 0 46 0 1 DESK 1 DESK 1 DESK 1.85 1.85 46 46 31 DESKS 0 0 0 10 46	37 - 0.2 - 1 1 - 9 8.5 0.4 0.1 31 - - - - - 1 0.2	
	07	799.5		89 44.5 44.5	\longrightarrow $\stackrel{2}{\underset{2}{\bigcirc}}$
MBLY 128	84 73 60 22 45	121 120 7 6 2 4 260	0.4 0.4 46 0 46 46	303 300 0.15 - 0.04 0.1 603	
	60	2051		836	
IXTURES		MEN		WOMEN	UNIVERSAL
NLY	1	TOILET		1 TOILET	_
LOOR W/C				4 TOILETS	1 TOILET
	-			-	1 TOILET
	5	<u>;</u>		5	2
HIRD FLOOR	4			4	
BLE"	1	TOILET		1 TOILET	2 TOILETS
					4 TOILETS
	AL UNIT 497 AL UNIT 344 TAIL 1066 TION 1066 N -1066 N -1066 N 15 TAIL UNIT 958 TAIL 11 TAIL 12 TAIL 12 TAIL 13 TAIL 13 TAIL 13 TAIL 14 TAIL 15 TAIL 15 TAIL 16 TAIL 17 TAIL 16 TAIL 17 TAIL 17 TAIL 17 TAIL 18 TAIL 17 TAIL 18 TAIL	AL UNIT 4976 IAL UNIT 3440 TAIL 10662 TION 10662 N -1066.2) IAL UNIT 9596 IS AURIT 150 84 173 78 100 100 100 128 182 177 AL 174 33 2084 W 290 W 27 W 26 W 290 W 27 W 26 W 20 IL 88 UVER TOTALS 8607 IS IMBLY 1307 IMBLY 1284 IMBLY 1307 IMBLY 1307 IMBLY 1284 IMBLY 1307 IMBLY 1307 IMBLY 1284 IMBLY 1307 IMBLY	AL UNIT 4976 AL UNIT 3440 320 TTAIL 10662 991 TION 10662 991 TION 10662 991 AL UNIT 9596 892 TS AUTHOR 150 14 84 8 173 16 78 7 100 9 100 9 128 12 182 17 177 16 AL 174 16 33 3 2084 194 M 290 27 M 27 3 M 26 2 M 290 27 M 27 3 M 26 2 M 20 2.5 112 10 L 88 8 BUVER TOTALS 8607 799.5 TS TIMBLY 1284 120 73 7 M 60 6 22 2 45 4 UVER 2791 260 TIXTURES MEN WEN WEN WER THIRD ONLY CITY FLOOR W/C 2 TOILETS TOILETS TOILETS HIRD FLOOR 4	AL UNIT 4976	AL UNIT 4976 462 9.3 50 AL UNIT 3440 320 9.3 34 ETAIL 10662 991 106.5 IDON 1065 106.5 IDON 10662 991 106.5 IDON 10662 991 106.5 IDON 1065 106.5 IDON 1065 106.5 IDON 10662 991 106.5 IDON 1065 106.5 IDON 1065 106.5 IDON 10662 106.5 IDON 1065 106.5 IDON 10662 106.5 IDON 1065 106.5 IDON



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BUILDING PERMIT #4 BUILDING PERMIT #3 BUILDING PERMIT #2 2017 AUG 08 2017 JUN 02

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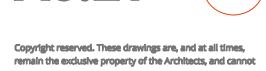
COV ENGAGEMENT VENUE 511 WEST BROADWAY

BUILDING CODE SYNOPSIS

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1/16"=1'0"

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NEW GLAZING EXISTING STOREFRONT EXISTING GLAZING GLASS ANODIZED ALUMINUM, NOT TEMPERED GLASS SUBJECT TO CHANGE **USED ON EXTERIOR USED FOR RENOVATED USED ON EXTERIOR GLAZING** ENTRANCE (1) AND **INTERIOR DOOR (3) GLAZING AND INTERIOR ENTRANCE** PAINT - TYPICAL, PT-1 (L3) **FLOORING - TYPICAL** SUSPENDED ACOUSTIC BAFFLES **BENJAMIN MOORE EXISTING CONCRETE DISTANT GRAY** FILZFELT **AKUSTIKA BAFFLE USED THROUGHOUT** OC-68, MPI #52 170 ASCHE **USED THROUGHOUT USED OVERHEAD** THROUGHOUT CABINETRY FORMICA P-LAM 912-AN STORM INFINITI FINISH FLOORING - CARPET **USED IN KITCHEN** INTERFACE SUPER FLOR 609008 GREY USED IN PRESENTATION 01 ADDITIONAL TO MATCH EXISTING **COV INVENTORY WORK SURFACES** PAINT - FINE FINISH, PT-2 (L5) CORIAN (MOLDED) **BENJAMIN MOORE DESIGNER WHITE DISTANT GRAY** OC-68, MPI #53 **USED IN KITCHEN FOR** COUNTER, SINK AND

USED FOR PRESENTATION

AND PROJECTION WALLS

BACKSPLASH



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2018 AUG 14

2017 JUN 02

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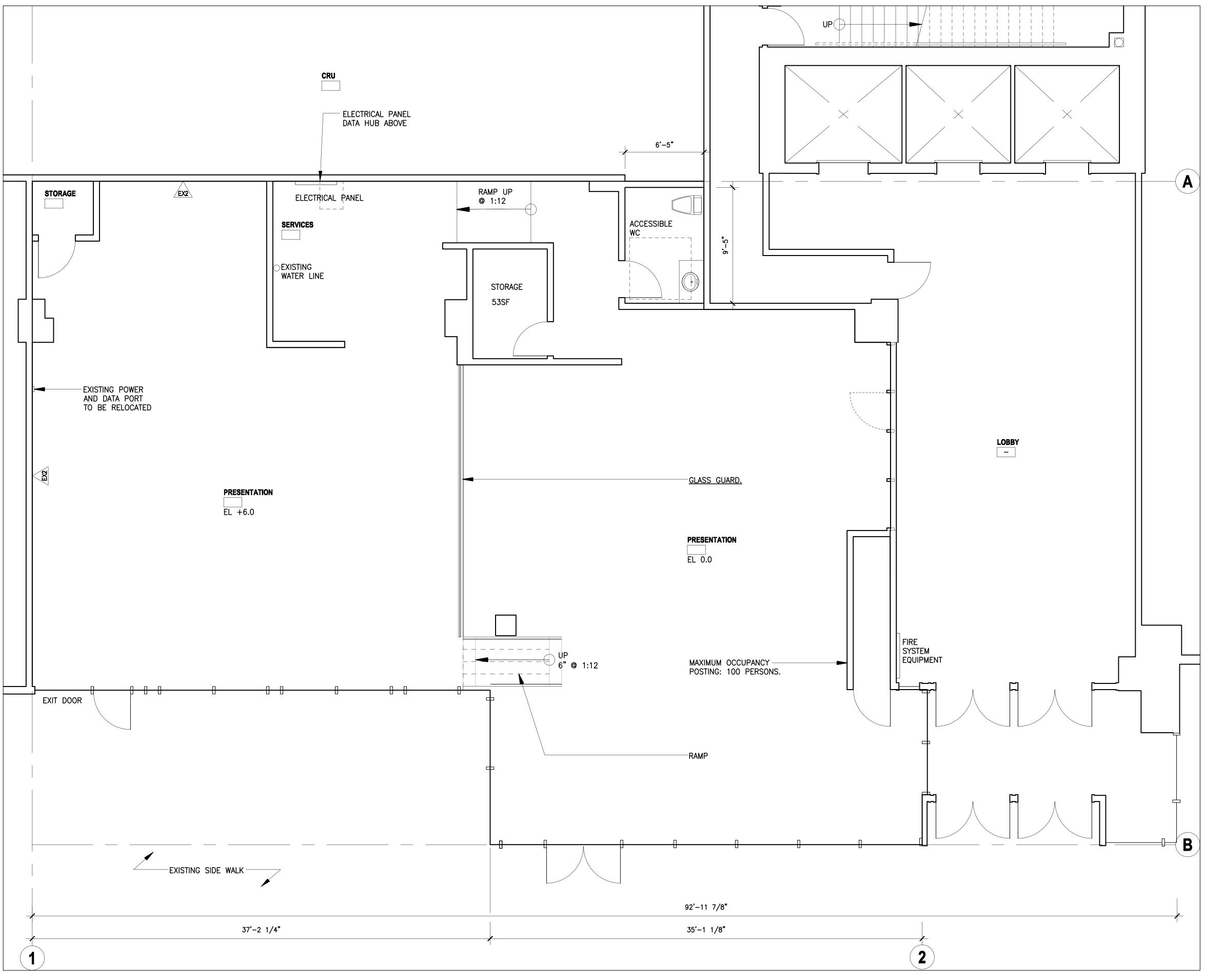
COV ENGAGEMENT VENUE

511 WEST BROADWAY

MATERIAL FINISHES

1713 SEPT 2018

A1.1



SMALL PLAN LEGEND

EXISTING WALL, FLOOR OR CEILING

NEW WALL OR FLOOR REFER TO DETAILS

EXISTING TO BE DEMOLISHED



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2017 SEP 02

BUILDING PERMIT #2
2017 AUG 08

CHANGE OF USE BUILDING PERMIT
2017 JUN 02

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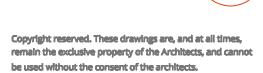
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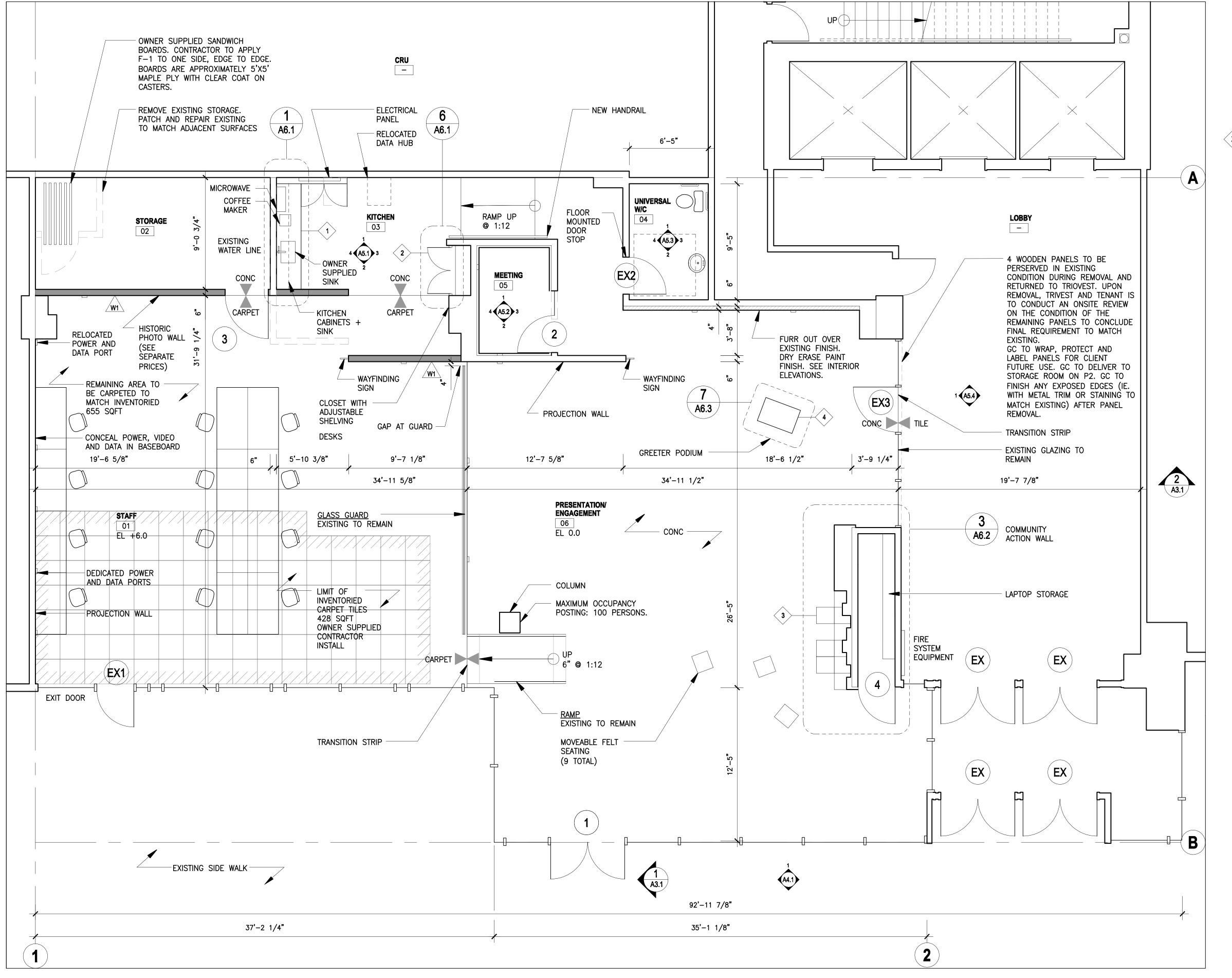
EXISTING PLAN

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OB NO.	DATE
1713	SEPT 2018

1/4"=1'0"

A2.1



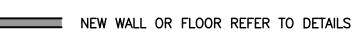


FLOOR SUITE

SCALE 1/4" = 1'0"

SMALL PLAN LEGEND

EXISTING WALL, FLOOR OR CEILING



EXISTING TO BE DEMOLISHED

MILLWORK LEGEND

1 KITCHEN COUNTER + CABINETRY

2 KITCHEN STORAGE CLOSET

3 COMMUNITY ACTION WALL

4 GREETER PODIUM



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2018 AUG 14
BUILDING PERMIT #3
2017 SEP 02
SUPPLMENTAL INSTRUCTION #1
2017 AUG 24
BUILDING PERMIT #2
2017 AUG 08
CHANGE OF USE BUILDING PERMIT
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COV ENGAGEMENT VENUE
511 WEST BROADWAY

SHEET TITLE

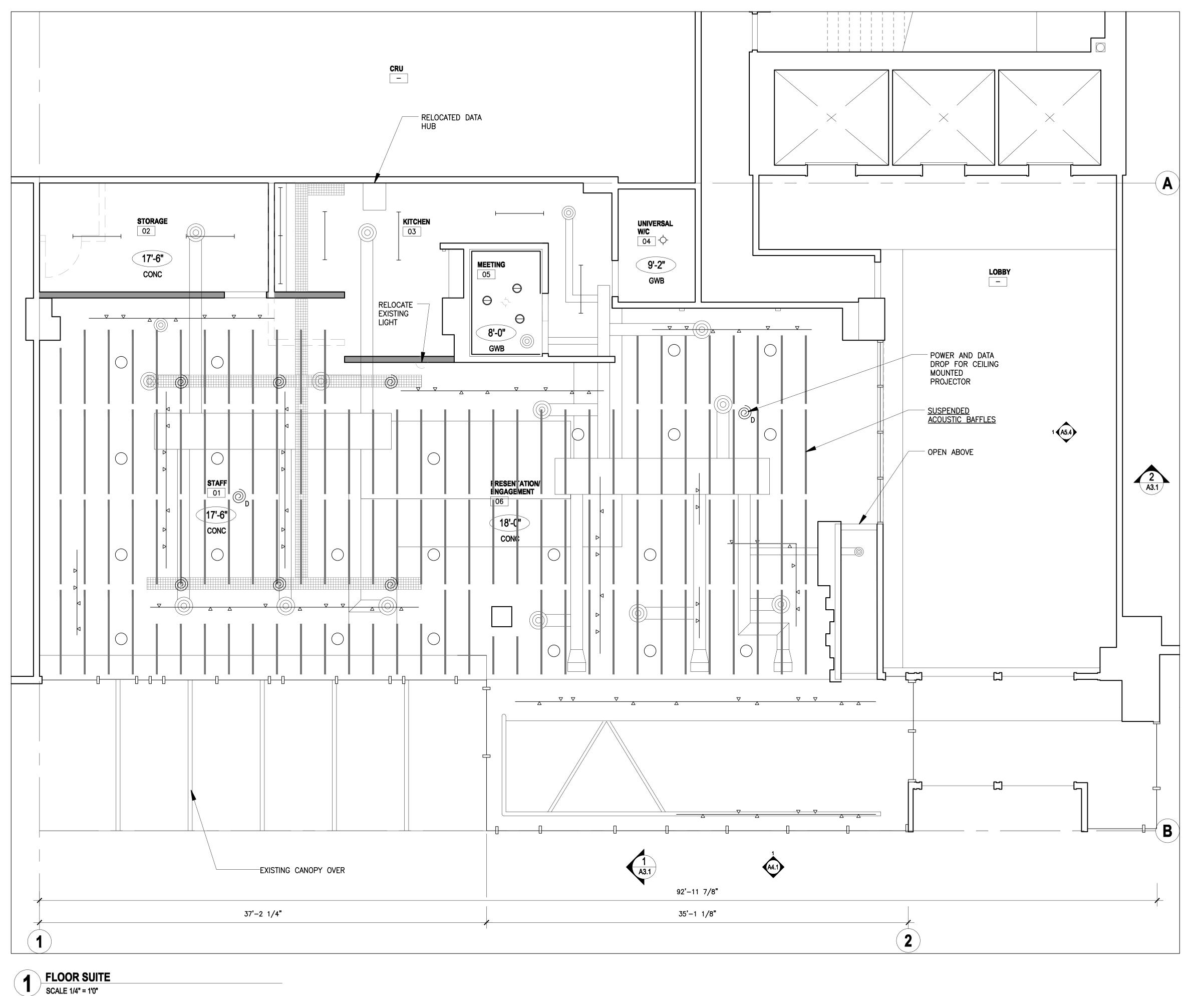
PROPOSED PLAN

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јов но.	DATE
1713	SEPT 2018

1/4"=1'0"

Д2.





SCALE 1/4" = 1'0"

SMALL PLAN LEGEND

EXISTING WALL, FLOOR OR CEILING NEW WALL OR FLOOR REFER TO DETAILS

EXISTING TO BE DEMOLISHED

 $\begin{tabular}{c|c} $\nabla & \nabla & \\ \hline & & & \\ \hline & \\ \hline & & \\ \hline &$

EXISTING OVERHEAD PENDANT FIXTURE, CONFIRM LOCATIONS ON SITE

EXISTING FIXTURE

⊢ LINEAR FIXTURE

NEW PENDANT LIGHTING FIXTURE

ELECTRICAL TRAY

ACOUSTIC BAFFLE

POWER DROPS

POWER AND DATA DROP

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ISSUED FOR TENDER **BUILDING PERMIT#4** 2018 AUG 14 BUILDING PERMIT#3 2017 SEP 02 SUPPLMENTAL INSTRUCTION #1 **BUILDING PERMIT #2** 2017 JUN 02

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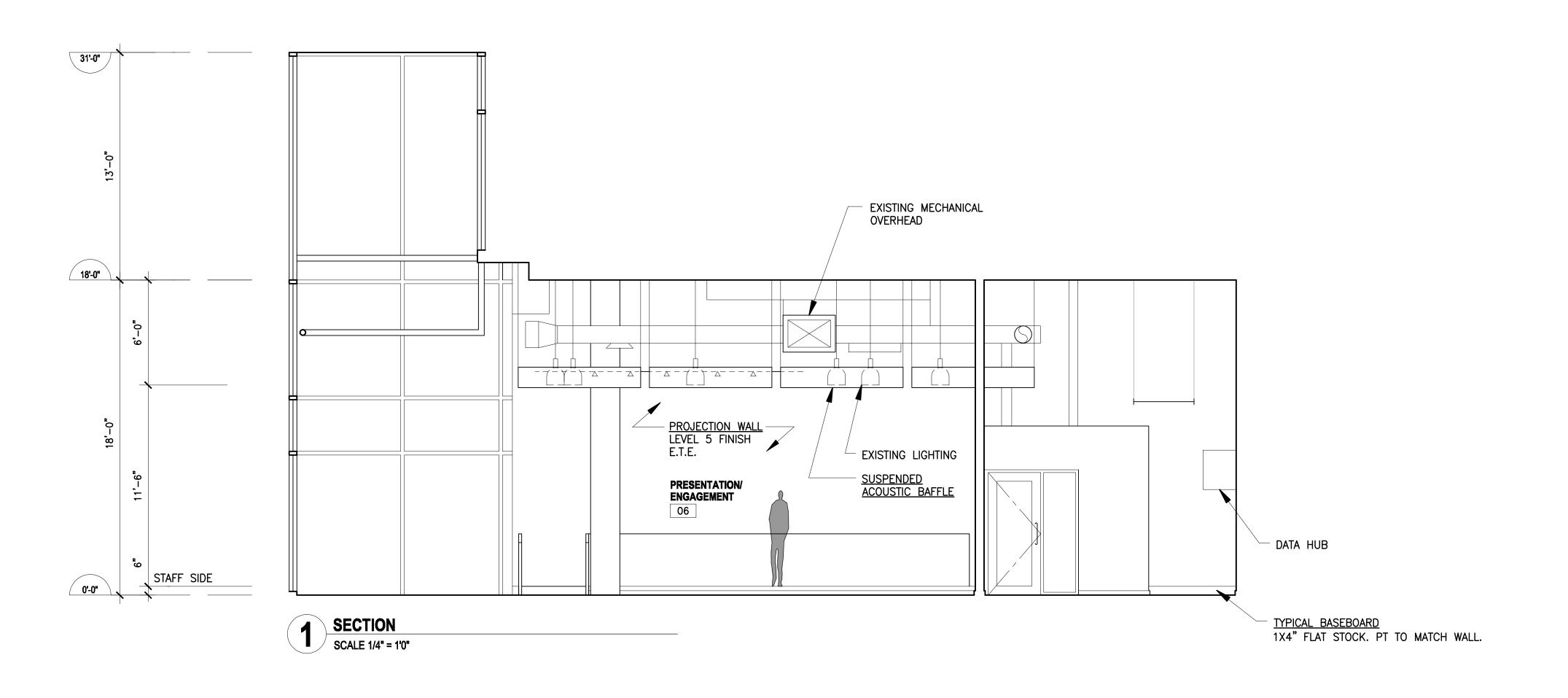
COV ENGAGEMENT VENUE 511 WEST BROADWAY

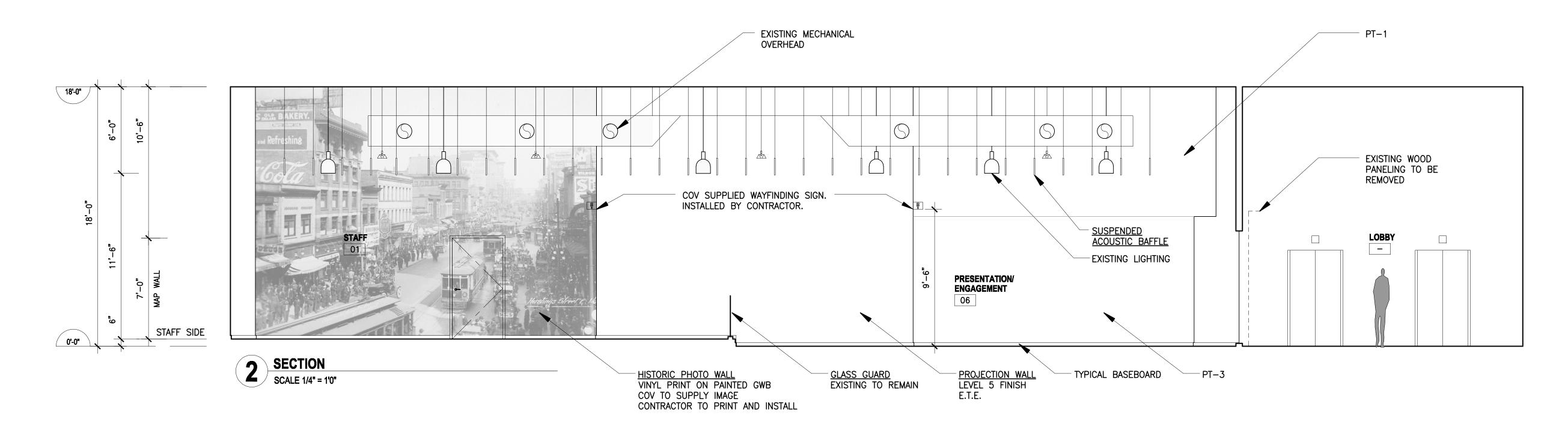
PROPOSED RCP

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BUILDING PERMIT #4

REVISIONS

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2018 SEP 21 2018 AUG 14

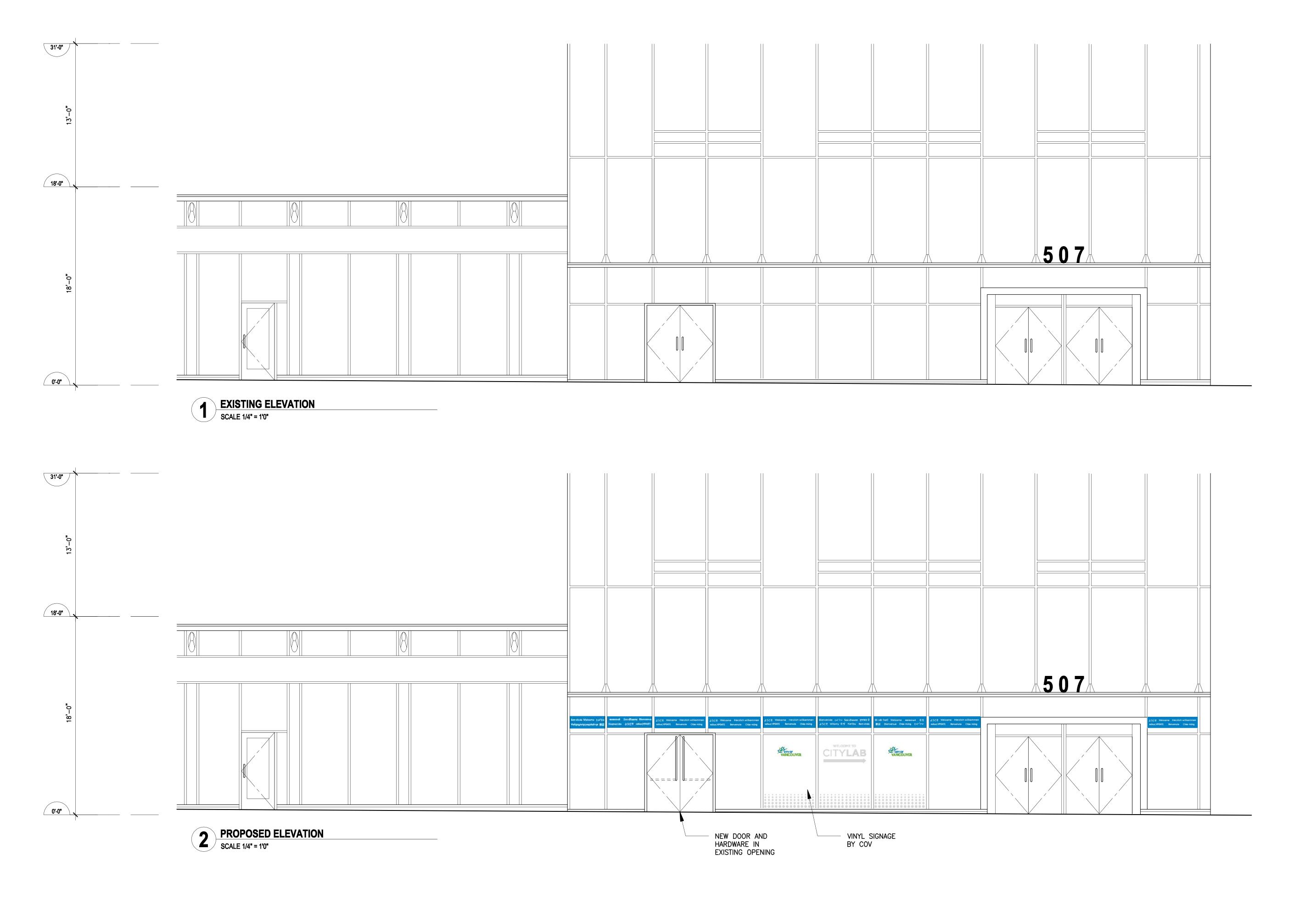
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PROPOSED SECTION

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ARM	IRM
јов но. 1713	SEPT 2018

1/4"=1'0"

A3.1





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COV ENGAGEMENT VENUE 511 WEST BROADWAY

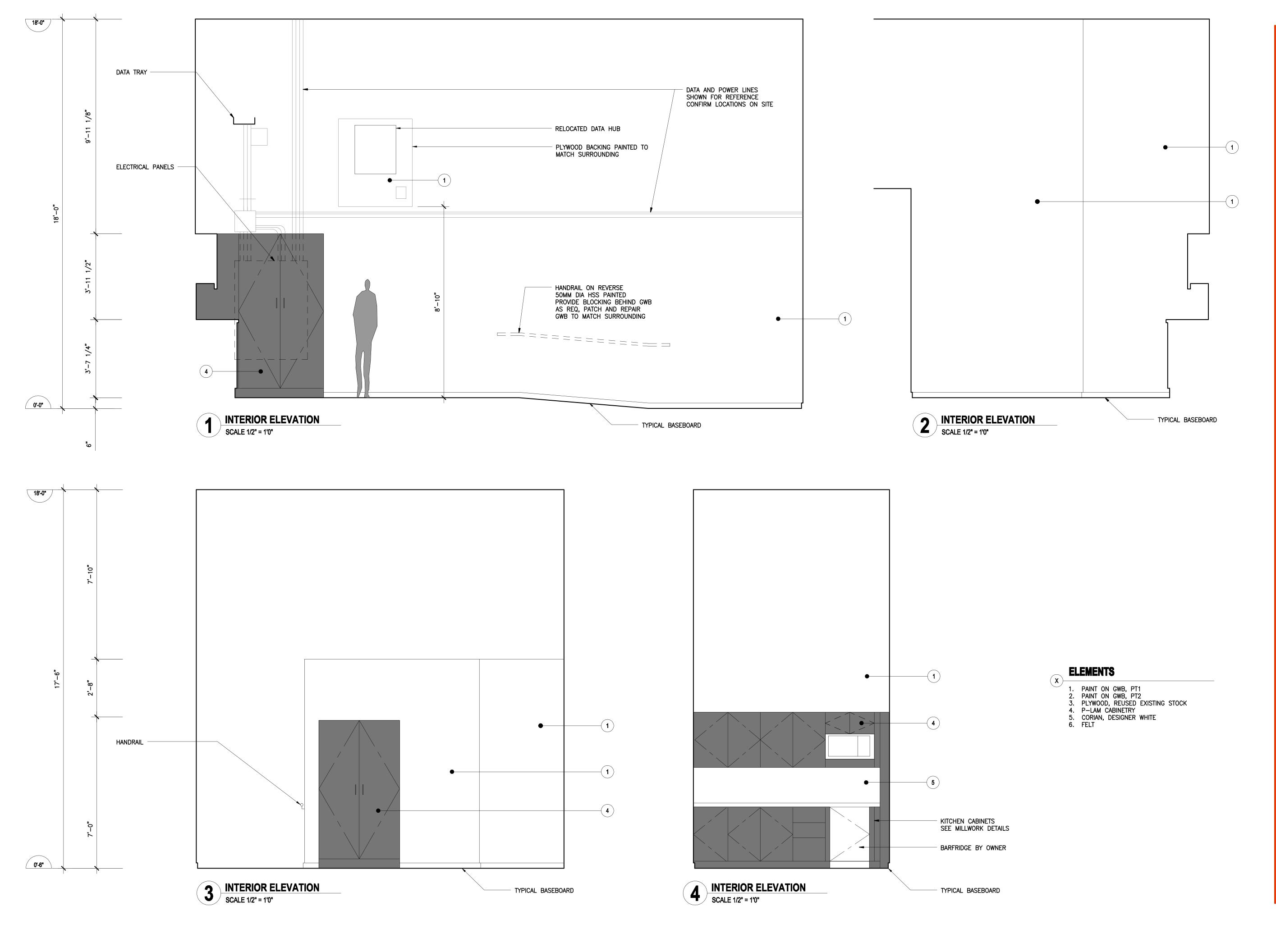
ET TITLE

BUILDING ELEVATIONS

ARM	CHECKED IRM
OB NO.	DATE
DD ITO:	DATE

1/4"=1'0"

A4.1





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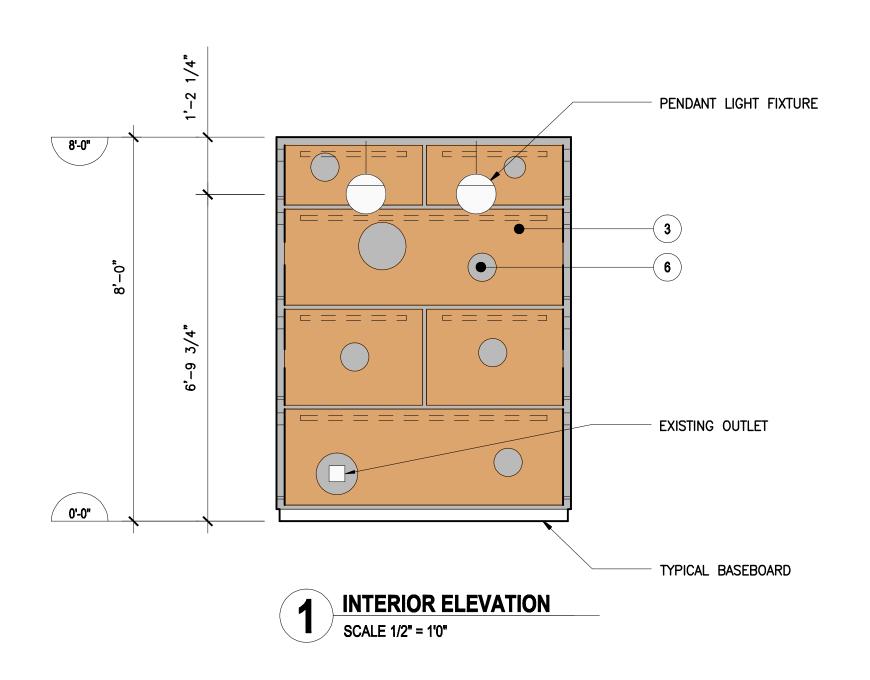
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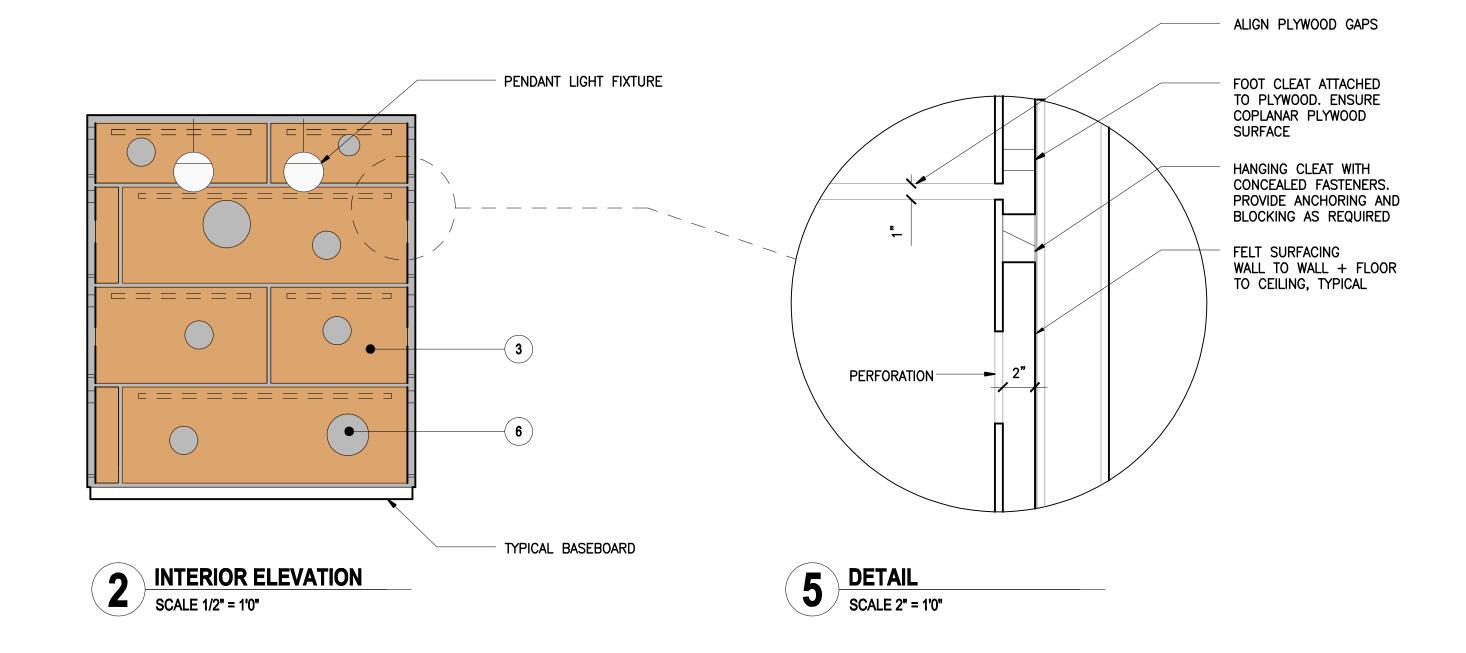
INTERIOR ELEVATIONS

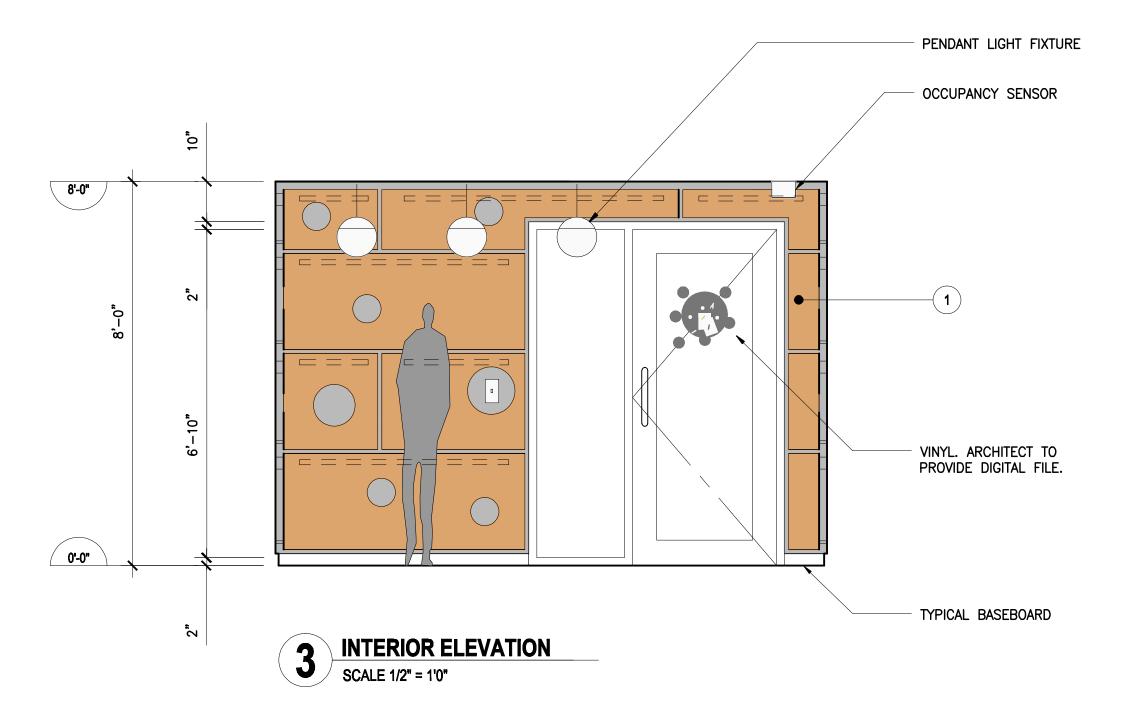
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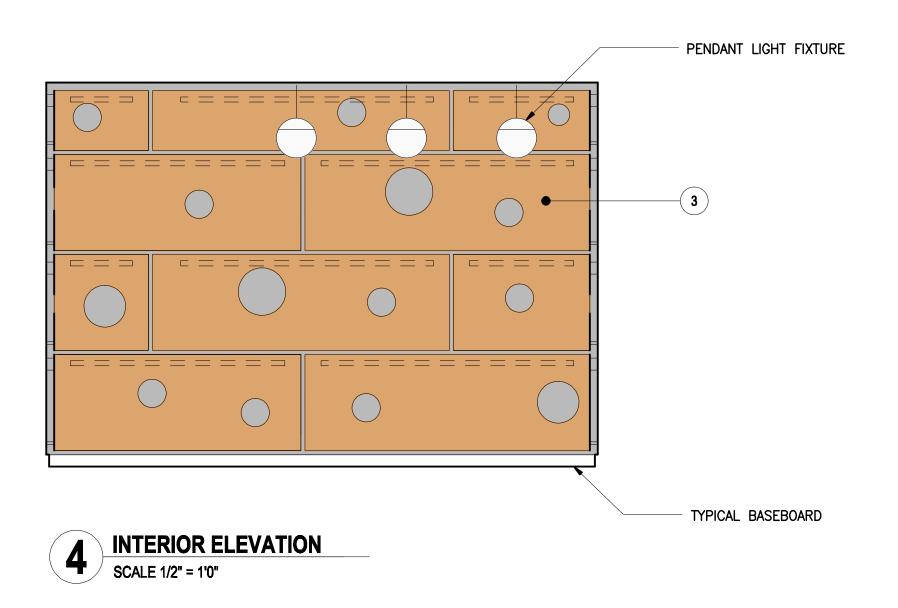
1/2"=1'0"

A5.1









ELEMENTS

- PAINT ON GWB, PT1
 PAINT ON GWB, PT2
 PLYWOOD, REUSED EXISTING STOCK
 P-LAM CABINETRY
 CORIAN, DESIGNER WHITE
 FELT

GENERAL NOTES

PLYWOOD REUSED FROM EXISTING STOCK

COORDINATE OUTLETS. SWITCHES WITH EXISTING PLYWOOD OPENINGS

PROVIDE ADDITIONAL HOLES WHERE EXISTING HOLES WILL NOT ACCOMMODATE SERVICES

NO HOLES WITHIN 2" OF PLYWOOD PANEL PERIMETER

EASE ALL NEW CUT EDGES

COV STOCK INCLUDES 8 FULL SIZED SHEETS PLYWOOD



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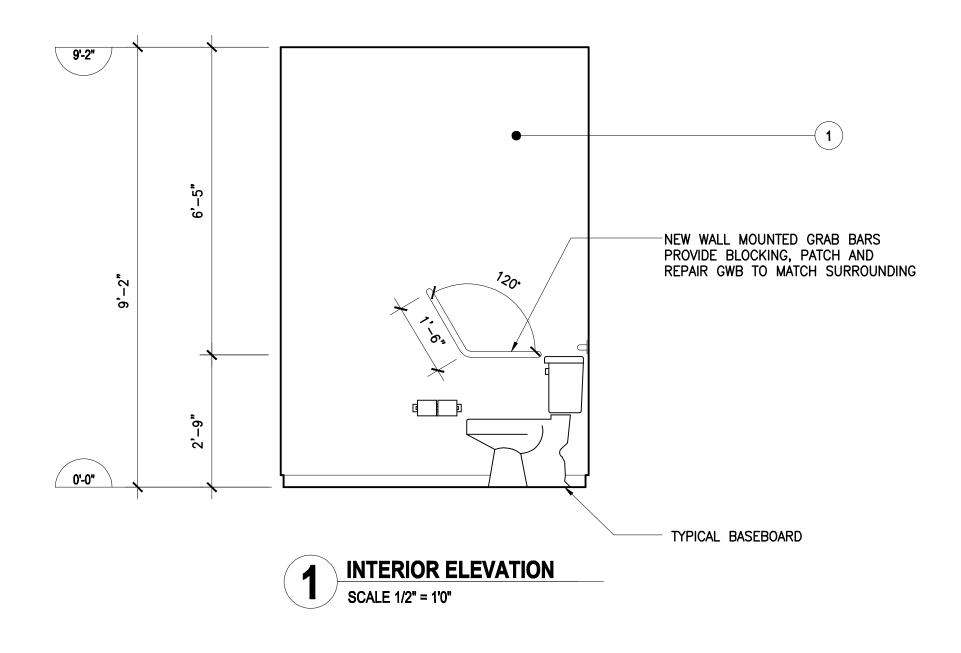
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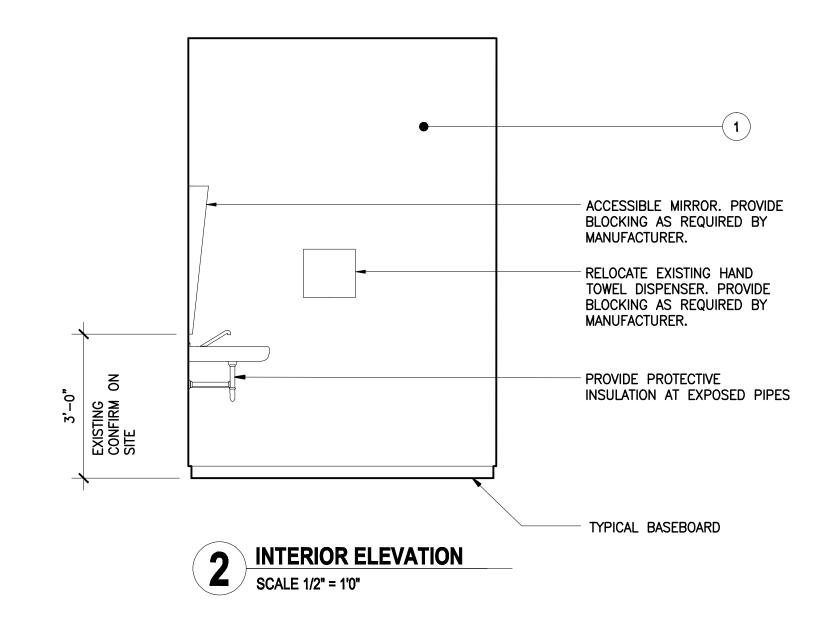
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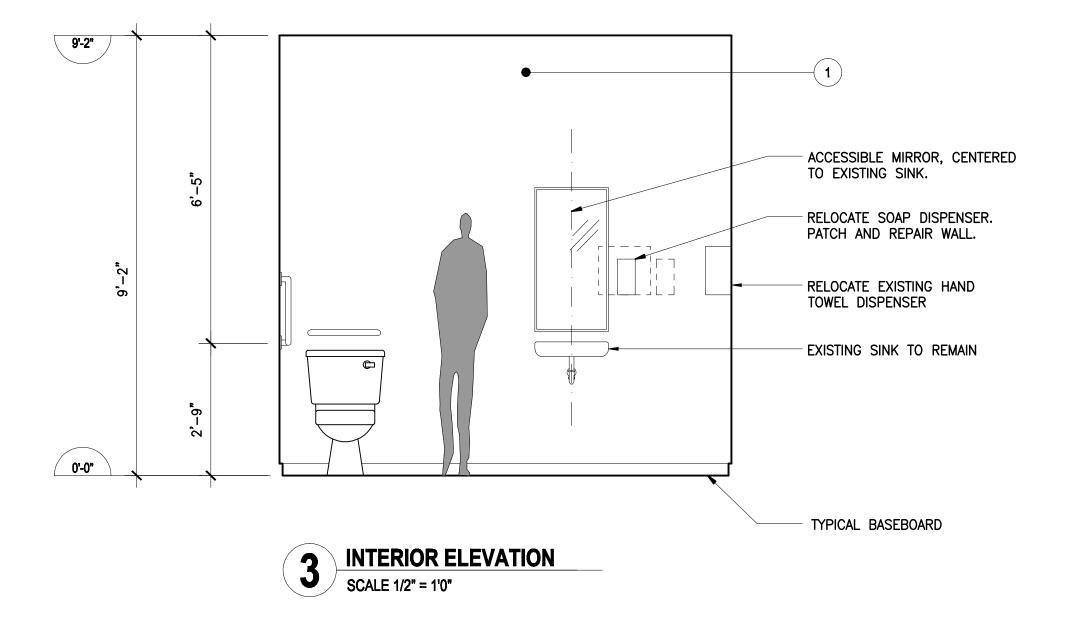
INTERIOR ELEVATIONS

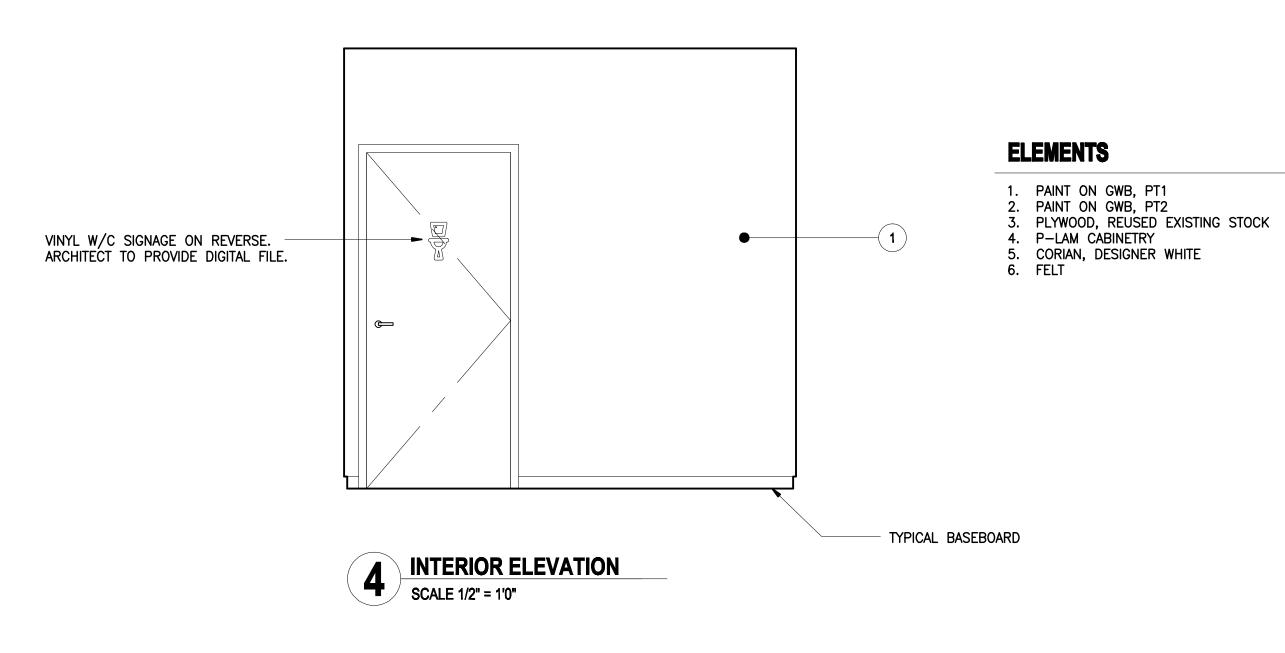
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1/2"=1'0"











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COV ENGAGEMENT VENUE
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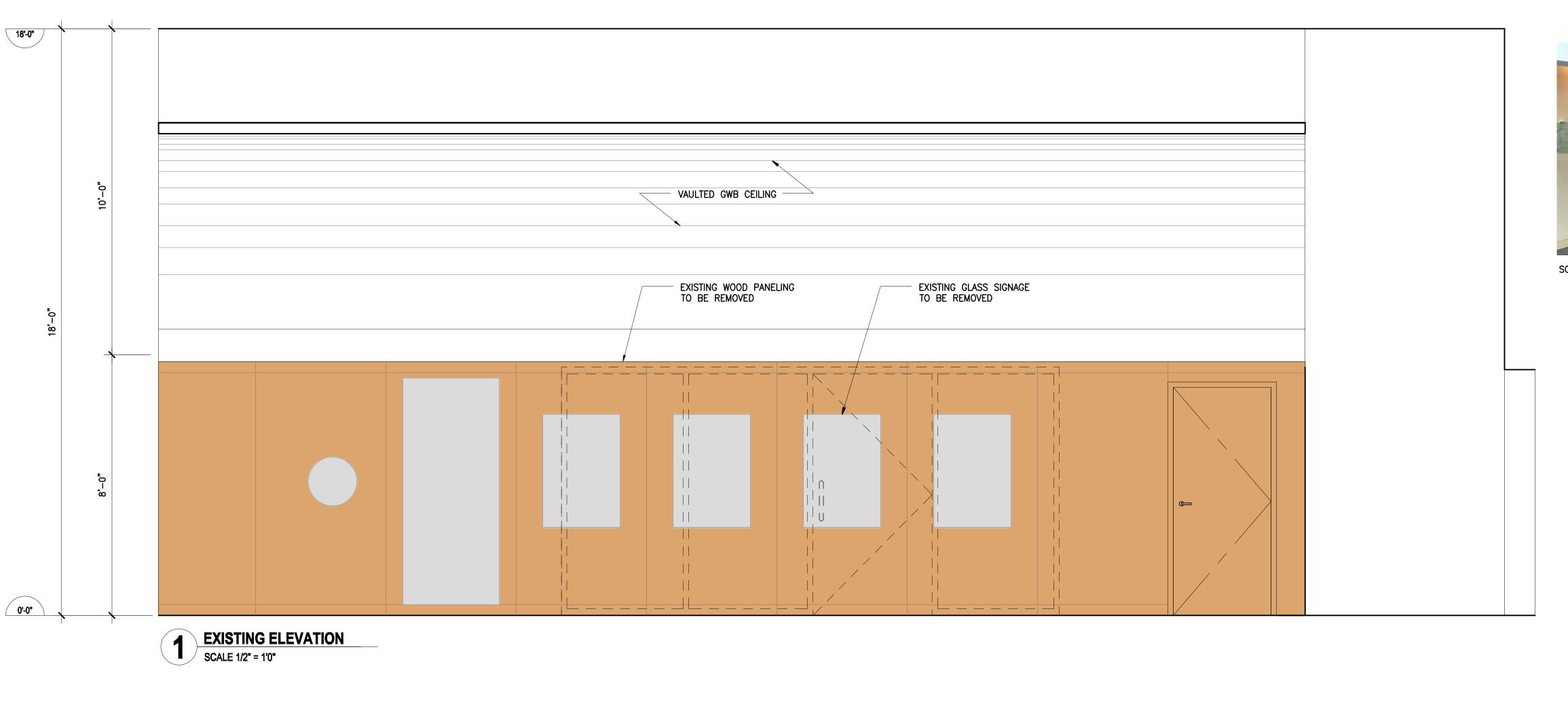
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SHEET TITLE

INTERIOR ELEVATIONS

ARM IRM	
OB NO. DATE	
1713 SEPT .	2018

A5.3





SCOPE OF WORK: REMOVAL OF WOOD PANELS IN FRONT OF DOORS



- PAINT ON GWB, PT1
 PAINT ON GWB, PT2
- 3. PLYWOOD, REUSED EXISTING STOCK

- 4. P-LAM CABINETRY
 5. CORIAN, DESIGNER WHITE
 6. FELT

INTERIOR ELEVATIONS

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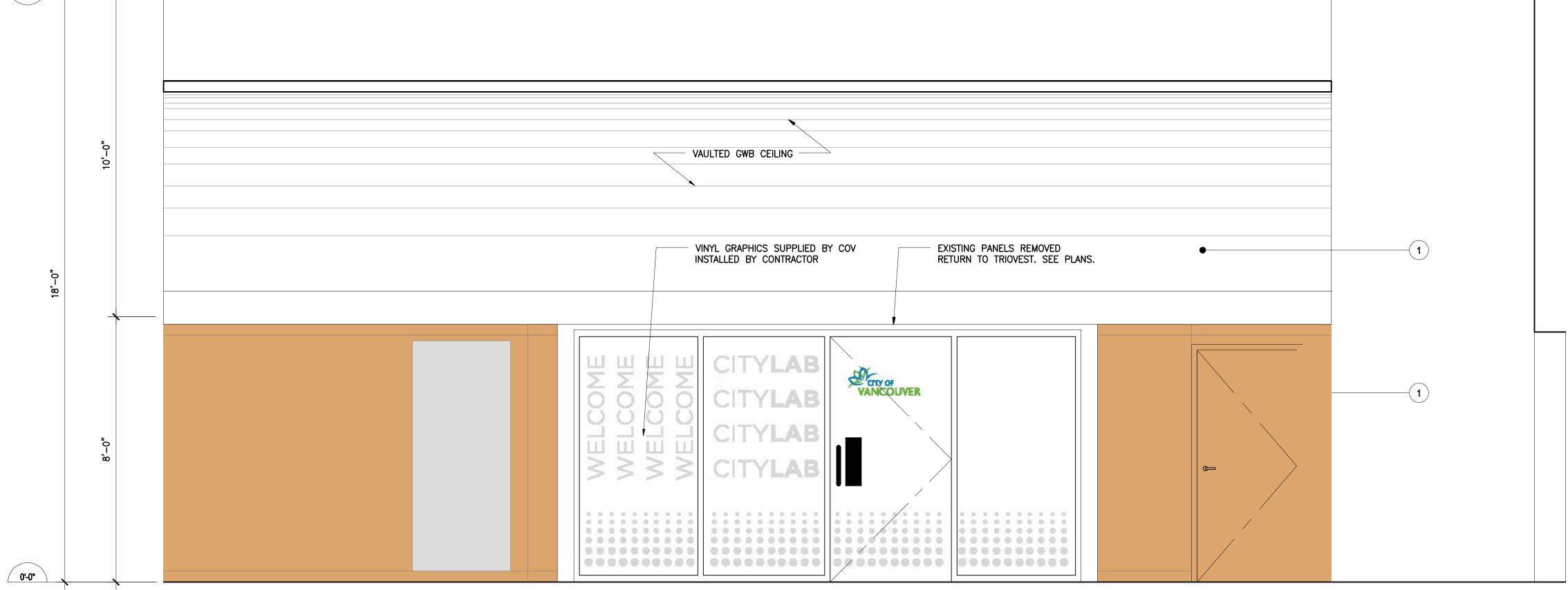
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COV ENGAGEMENT VENUE

511 WEST BROADWAY

1/2"=1'0"

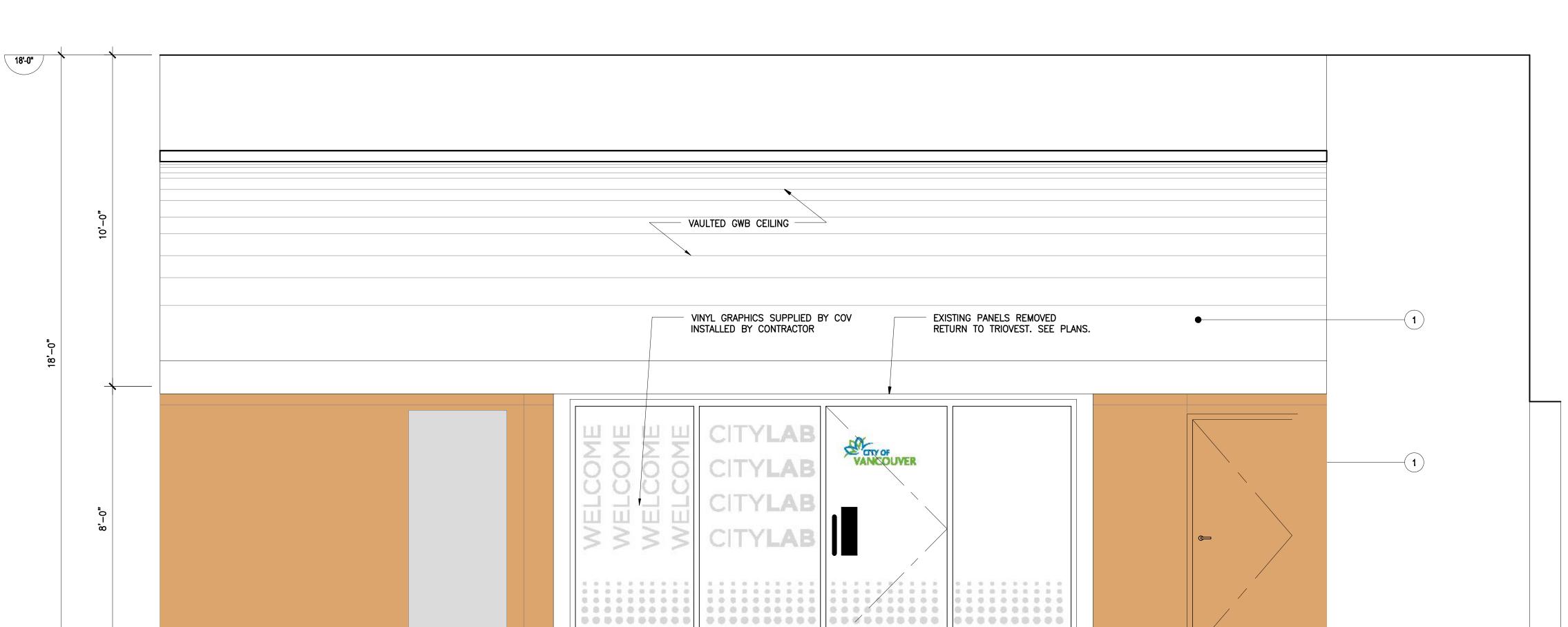
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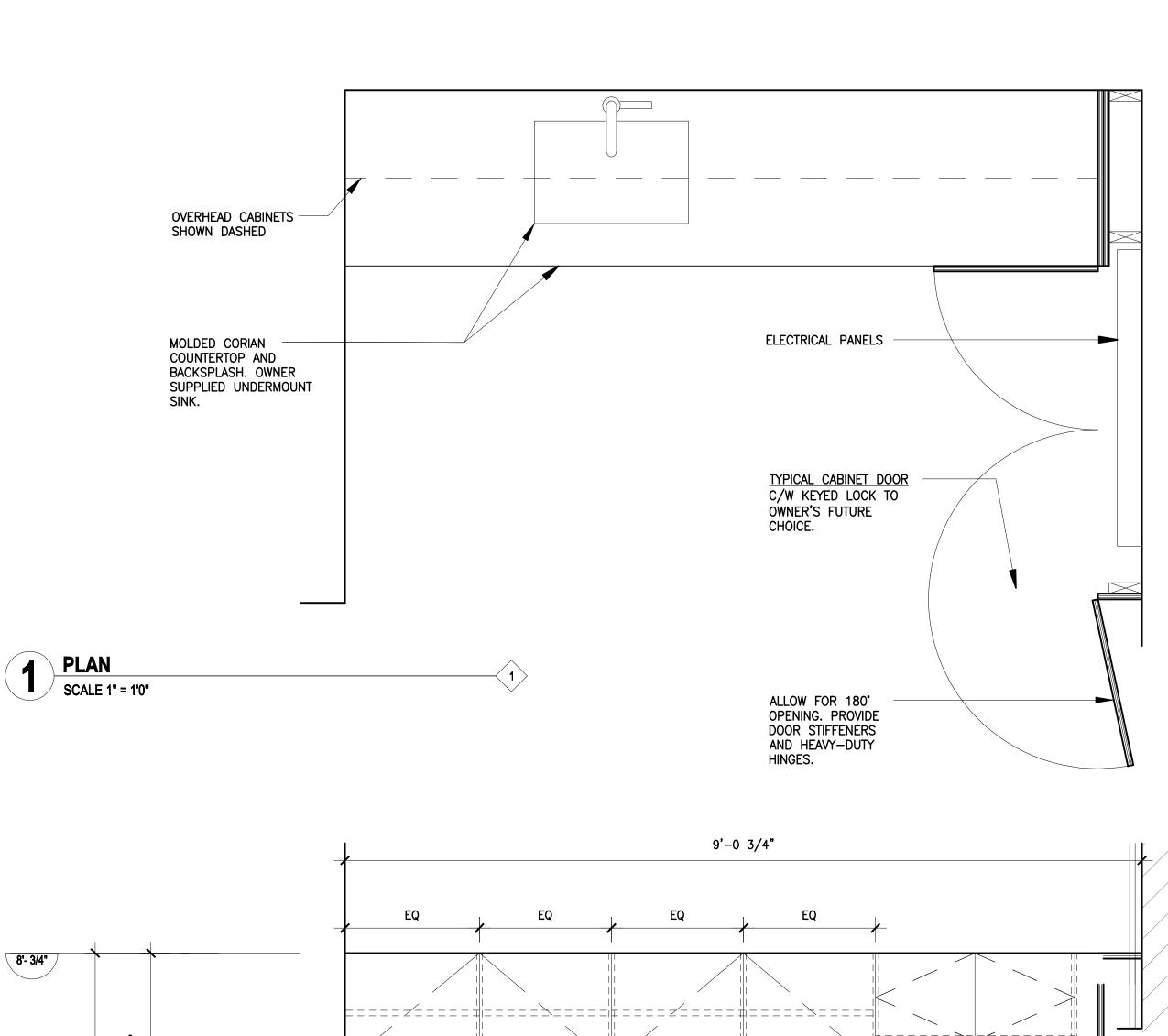


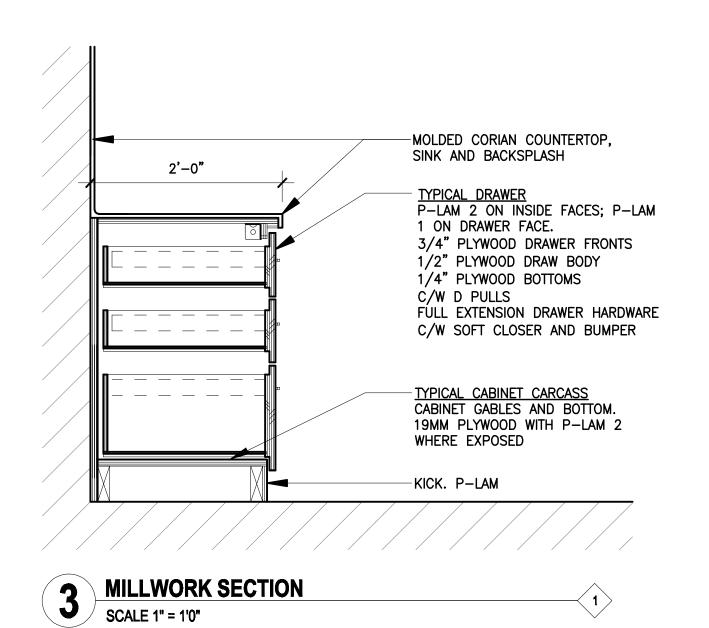
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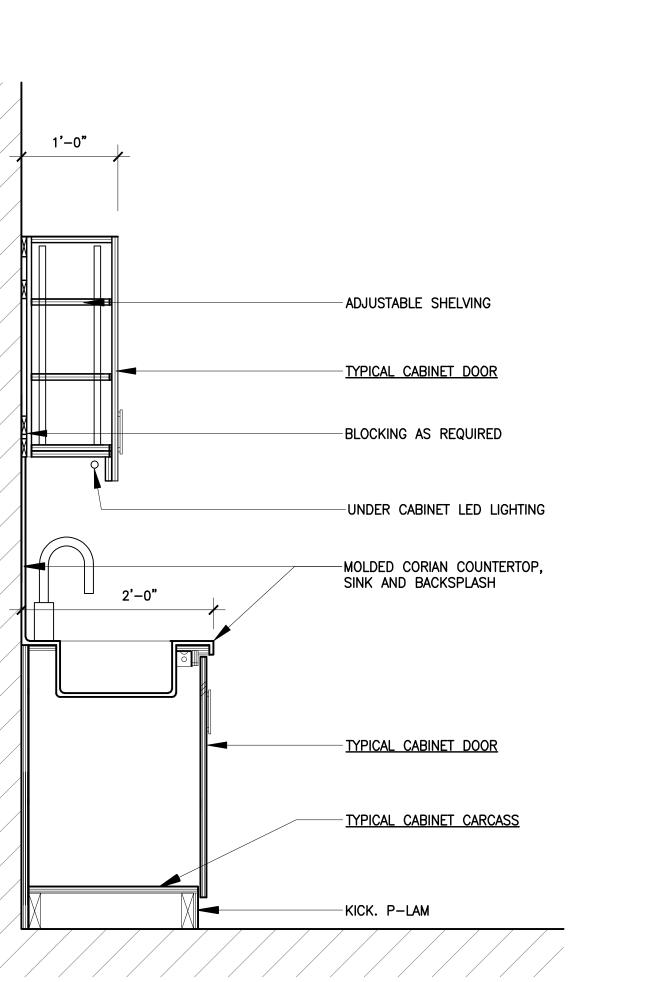
PROPOSED

SCALE 1/2" = 1'0"

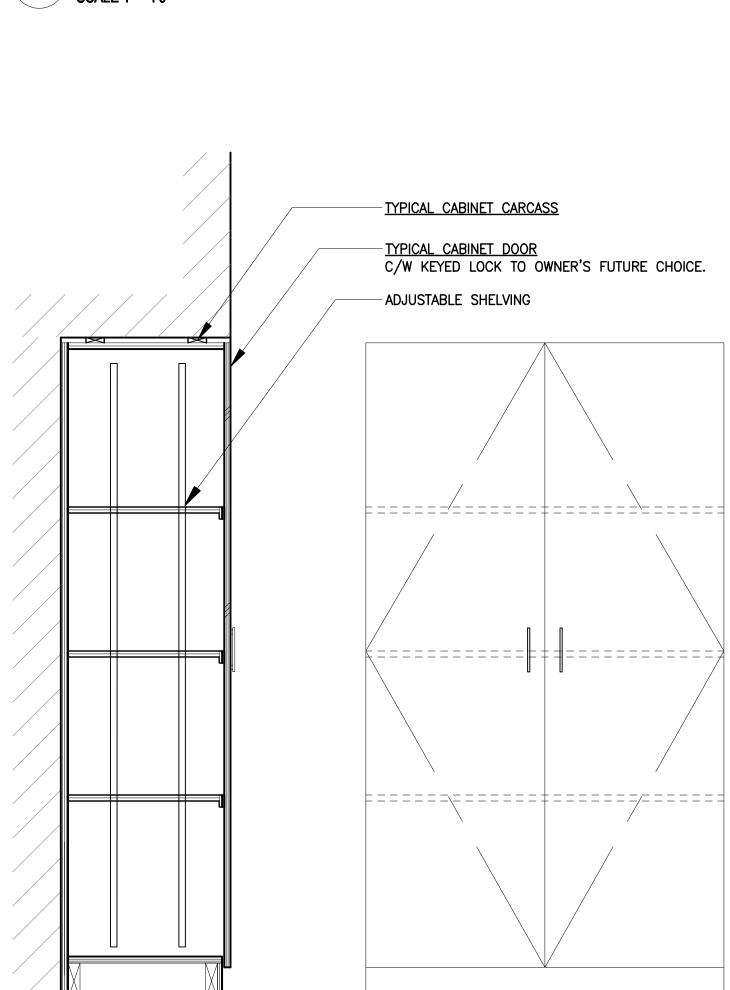








MILLWORK SECTION



-MOLDED CORIAN COUNTERTOP,

SINK AND BACKSPLASH

TYPICAL CABINET DOOR

TYPICAL CABINET CARCASS

-KICK. P-LAM

ADJUSTABLE SHELVING WITH METAL CLIPS ON SLOTTED STANDARDS.

2'-0"

MILLWORK SECTION

MILLWORK SECTION

6



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SHEET TITLE

MILLWORK DETAILS

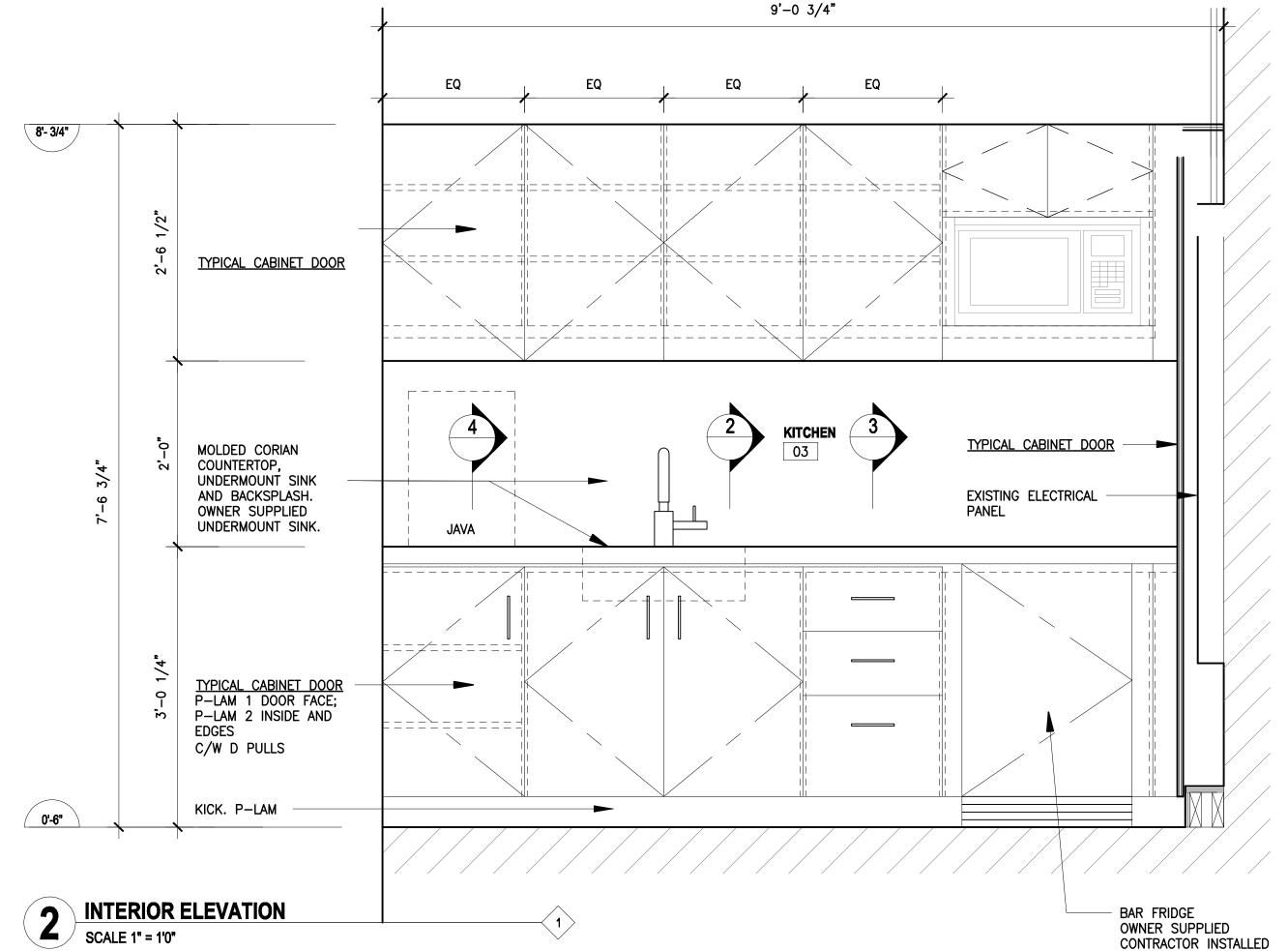
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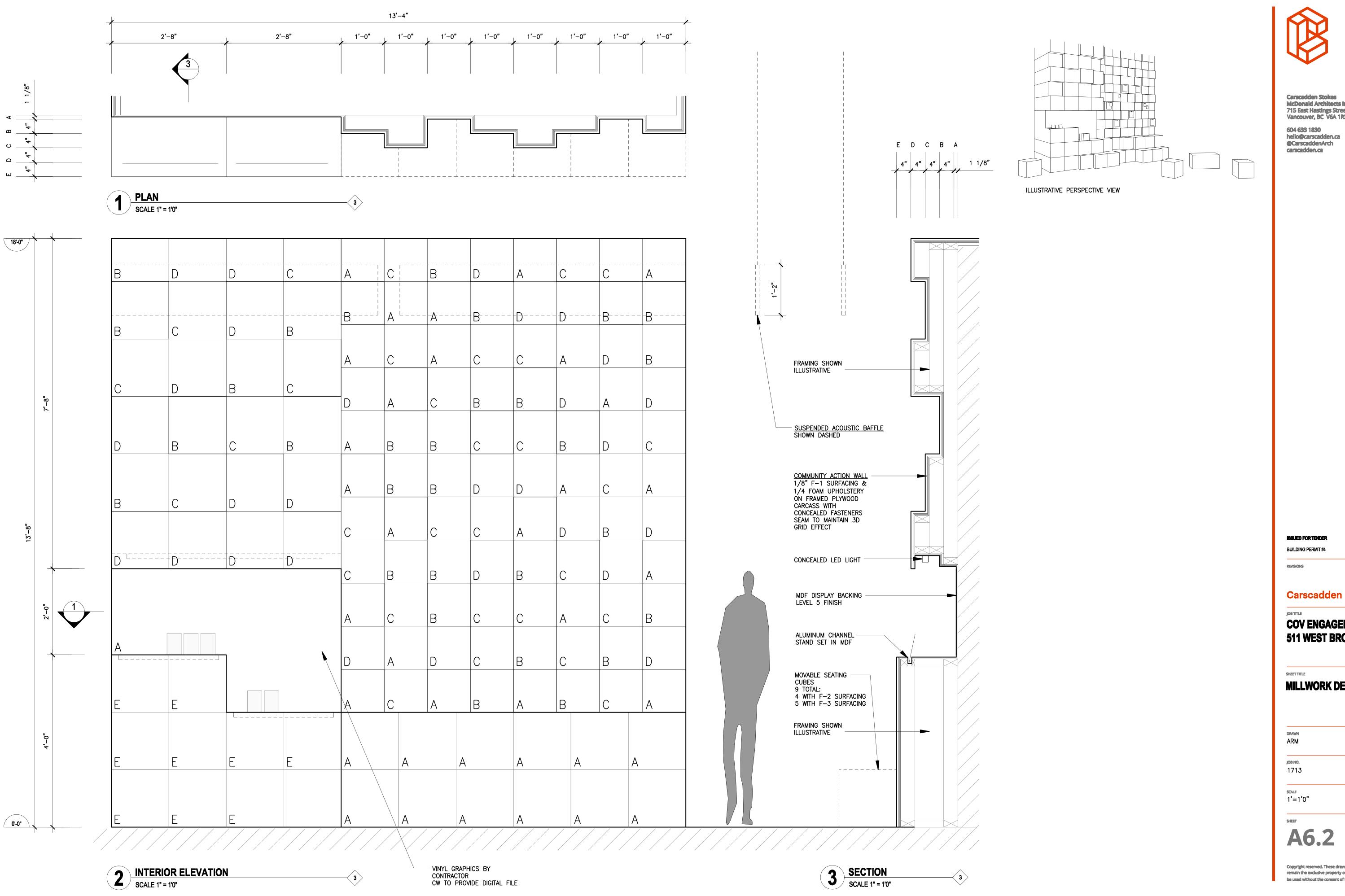
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1713

DATE
1713

SCALE
1'=1'0"

A6.1







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BUILDING PERMIT#4

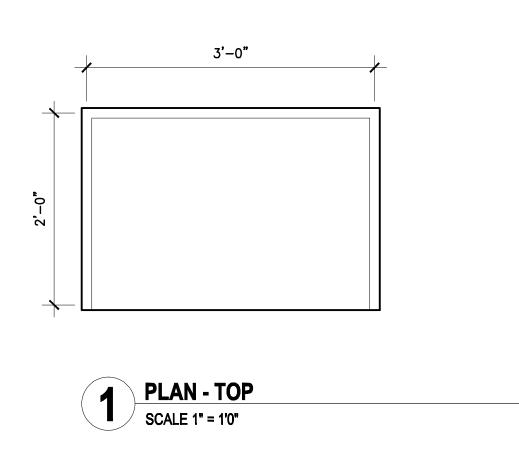
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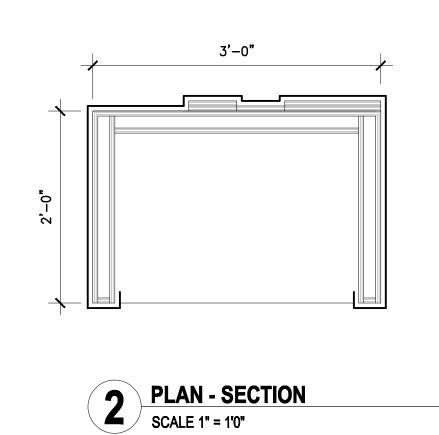
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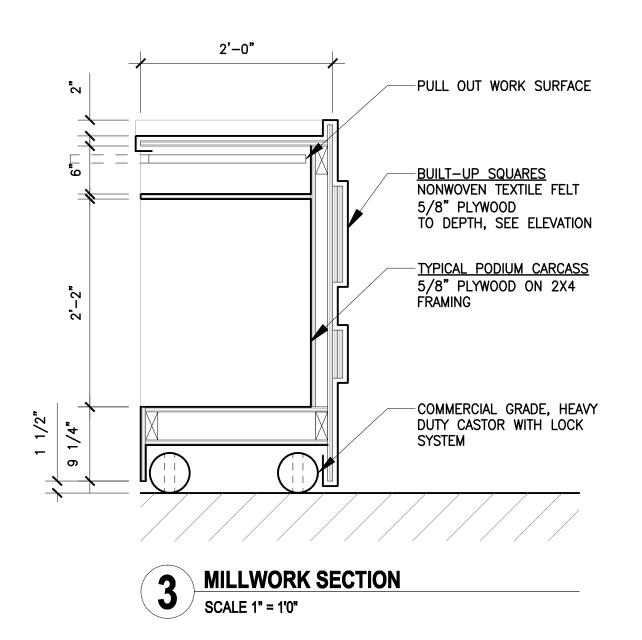
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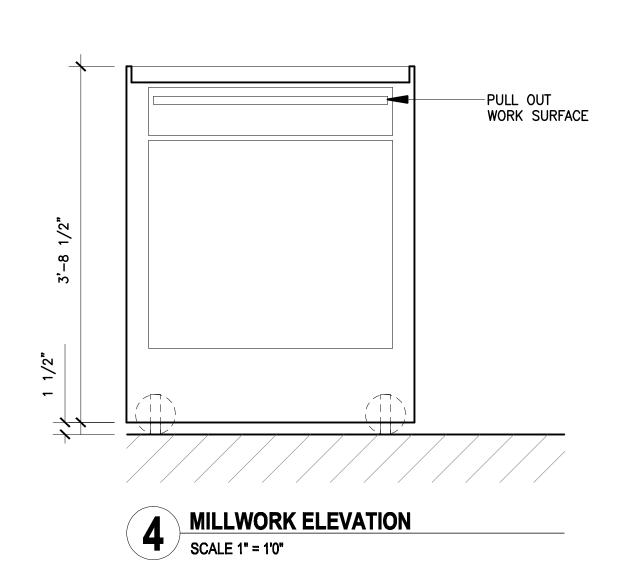
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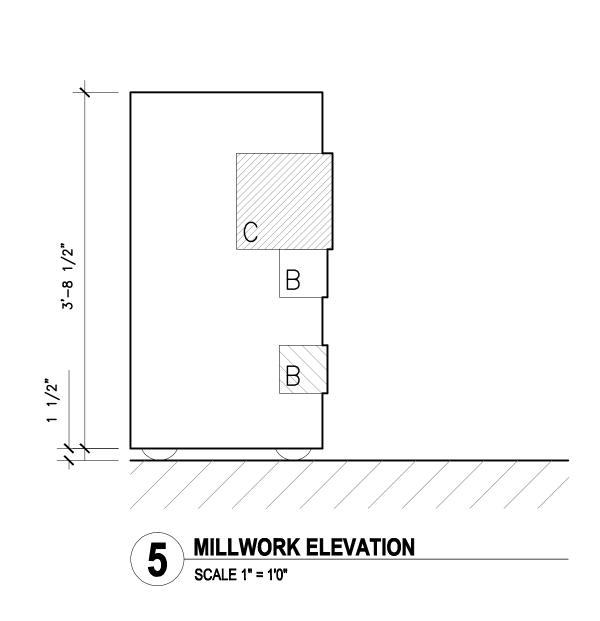
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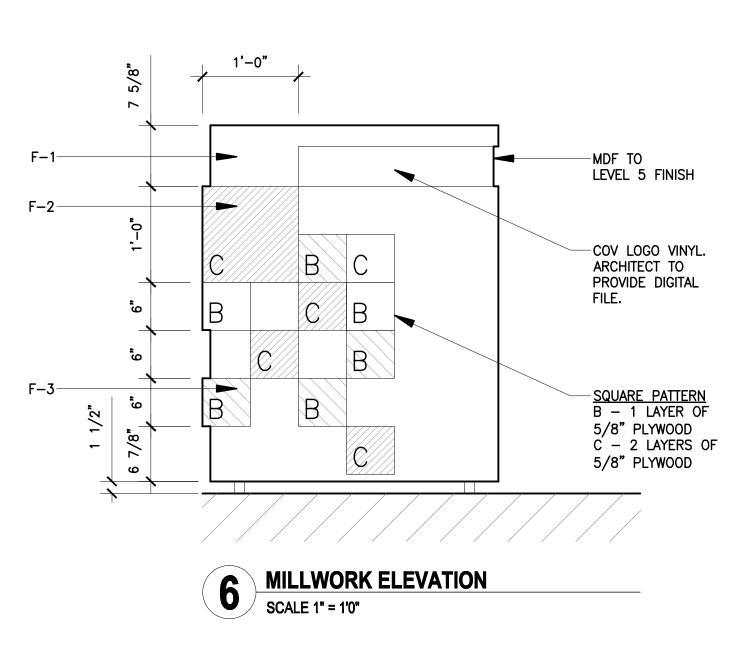


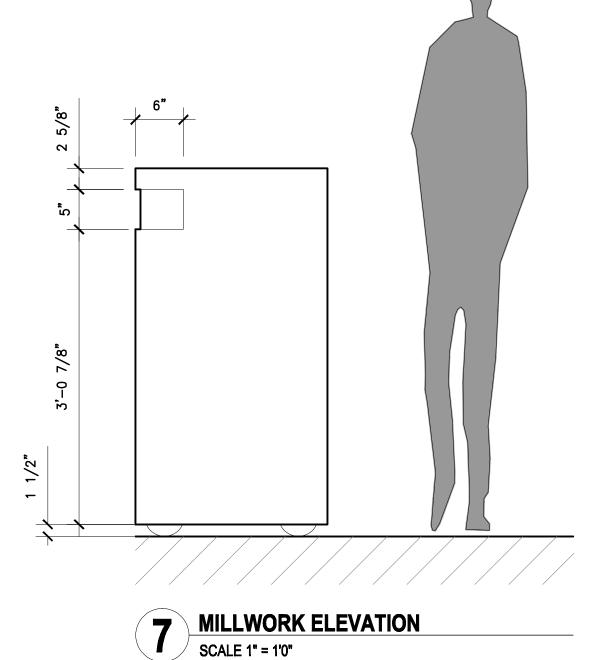












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MILLWORK DETAILS

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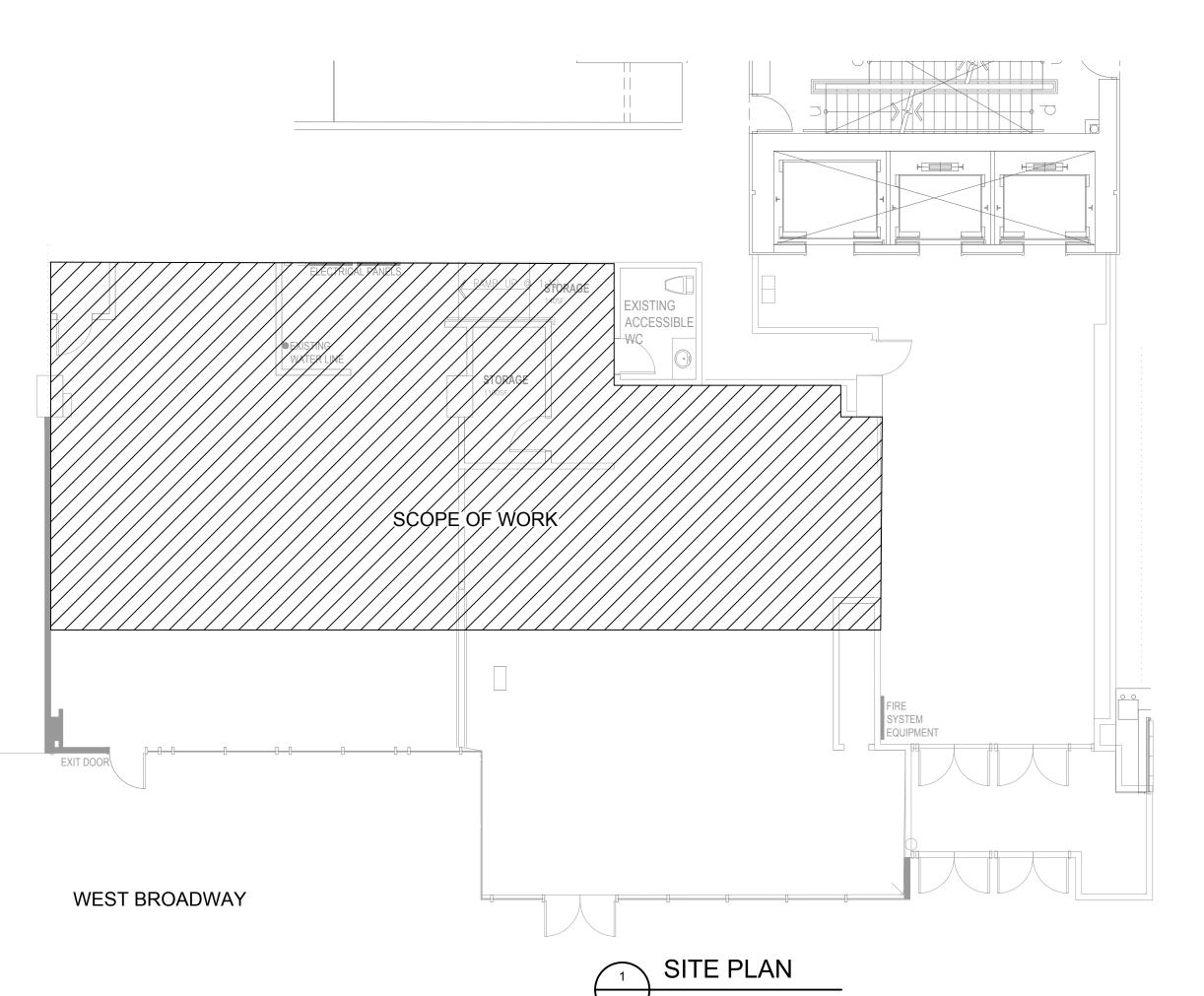
IRM

DATE

SEPT 2018

SCALE 1'=1'0"

A6.3



GENERAL NOTES:

- THE MECHANICAL CONTRACTOR IS TO REVIEW THE EXTENT OF MECHANICAL SYSTEMS ON SITE TO ENSURE THAT THE FULL SCOPE OF WORK IS UNDERSTOOD.
- CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND VERIFYING ACTUAL ONSITE CONDITIONS AND EQUIPMENT LOCATION PRIOR TO ANY AND ALL DEMOLITION WORK AND/OR EQUIPMENT REMOVAL.
- CONTRACTOR TO INCLUDE AS A PART OF THE BID ALL COSTS ASSOCIATED CONTRACTOR WITH CUTTING AND PATCHING THAT IS REQUIRED TO INSTALL ALL NEW MECHANICAL SYSTEMS AS REQUIRED TO MEET THE SITE CONDITIONS AS SHOWN ON THE DRAWINGS. PATCHING SHALL MEET THE AESTHETIC CONDITIONS WHICH WAS THE CONDITION PRIOR TO ANY CUTTING BEING PREFORMED.
- CONTRACTOR TO PROPERLY SEAL AND REPAIR ANY AND ALL DAMAGE THAT IS A RESULT OF REMOVAL OR DEMOLITION OF MECHANICAL EQUIPMENT. THIS INCLUDES BUT IS NOT LIMITED TO WALLS, DOORS, CEILINGS, ETC...
- CONTRACTOR AFTER INSTALLATION SHALL RE-BALANCE THE MECHANICAL HVAC SYSTEM. THIS INCLUDES ALL DUCTWORK SYSTEMS DOWNSTREAM OF SUPPLY AIR TERMINAL UNITS AND EXHAUST/RETURN AIR SYSTEMS SERVING THE AREA OF WORK.
- THE EXISTING DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. AS A RESULT THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THIS DOCUMENT. ANY DISCREPANCIES WHICH SUBSTANTIALLY AFFECT THE MECHANICAL INTENT AS LAID OUT ON THIS DRAWING IS TO BE REPORTED TO THE OWNER AND ENGINEER FOR REVIEW BEFORE COMMENCEMENT OF THE MECHANICAL DEMOLITION WORK.
- COORDINATE THE TIMING OF MECHANICAL SYSTEM MODIFICATIONS WITH ALL OTHER TRADES TO ENSURE CONTINUITY WITH THE OVERALL PROJECT SCHEDULE
- THE MECHANICAL PLANS ARE DIAGRAMMATIC IN NATURE AND DO NOT ATTEMPT TO SHOW ALL REQUIRED OFFSETS. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ADDITIONAL CONSTRUCTION DETAILS. COORDINATE THE DRAWINGS WITH THE SPECIFICATIONS AND IN CASES

WHERE CONFLICTS OCCUR THE MOST STRINGENT REQUIREMENT SHALL

- 0. CONTRACTOR TO PROVIDE NEC (NATIONAL ELECTRICAL CODE) CLEARANCE HORIZONTAL AND VERTICAL REQUIREMENTS FOR ALL INSTALLED EQUIPMENT.OFFSET MECHANICAL WORK AS REQUIRED TO MEET THIS REQUIREMENT.
- INSTALL ALL MECHANICAL WORK AS HIGH AS POSSIBLE TIGHT TO STRUCTURE.
- 2. COORDINATE EXACT LOCATIONS OF ALL ROOM THERMOSTATS AND/OR ROOM TEMPERATURE SENSORS WITH THE DESIGN ARCHITECT BEFORE FINAL INSTALLATION.
- 13. CONTRACTOR TO SUPPLY AND INSTALL VOLUME DAMPER FOR EACH SUPPLY, RETURN AND EXHAUST DUCTWORK RUN WITH TWO OR MORE OPENINGS ASSOCIATED WITH THE BRANCH. REFER TO THE DRAWINGS FOR ADDITIONAL VOLUME DAMPERS LOCATIONS AND REQUIREMENTS.
- 14. REFER TO ARCHITECTURAL DRAWING FOR ADDITIONAL SCOPE OF WORK AND WORK SCHEDULE.
- 5. CONTRACTOR TO COORDINATE MECHANICAL WORK WITH OCCUPIED HOURS TO CAUSE AS LITTLE INCONVENIENCE AS POSSIBLE

MECHANICAL DEMOLITION NOTES:

- .1 REMOVAL OF ALL EXISTING PIPING, EQUIPMENT AND DUCTWORK THAT IS REDUNDANT BECAUSE OF RENOVATIONS.
- 2. EXISTING CONDITIONS
- .1 VISIT AND EXAMINE THE SITE AND NOTE ALL CHARACTERISTICS AND IRREGULARITIES AFFECTING THE WORK OF THIS SECTION.
- PROTECTION .1 PREVENT DEBRIS FROM BLOCKING SURFACE
- DRAINAGE INLETS AND ALL TYPES OF DRAINAGE PIPING SYSTEMS WHICH REMAIN IN OPERATION. CONTRACTOR SHALL CONFIRM EXISTING CFM OF SUPPLY AND RETURN GRILLES/DIFFUSERS IN AREA OF WORK AND SUBMIT BALANCING REPORT FOR REVIEW PRIOR TO DEMOLITION.
- SALVAGEABLE MATERIALS
- .1 EXCEPT AS OTHERWISE INDICATED, SALVAGEABLE MATERIALS FROM AREA OF DEMOLITION SHALL BECOME THE PROPERTY OF THE OWNER AT HIS DISCRETION. CONTRACTOR TO COORDINATE SALVATION AND STORAGE ON SITE OF PLUMBING FIXTURES, AND MECHANICAL EQUIPMENT FOR RE-USE BY OWNER OR A CHARITY ORGANIZATION. ALL MATERIAL NOT TAKEN OVER BY THE OWNER OR REMOVED FROM THE BUILDING UNDER THIS CONTRACT SHALL BE REMOVED FROM SITE AND DISPOSED OF AS REQUIRED BY ANY APPLICABLE DISPOSAL REGULATIONS. EXECUTION
- **EXISTING SERVICES**
- DISCONNECT AND CAP ALL MECHANICAL SERVICES IN ACCORDANCE WITH REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION.
- .2 BUILDING MECHANICAL SERVICES: MAINTAIN ALL BUILDING SERVICES DURING DEMOLITION/REMOVAL
- .3 MAINTAIN ALL TRAP SEALS AND ENSURE NO SEWER GAS ENTERS THE BUILDING DURING RENOVATIONS OR DEMOLITION WORK. MAINTAIN ALL EXISTING SEWER PIPING IN A WET CONDITION DAILY.

DEMOLITION

- .1 COMPLETELY DEMOLISH THE ITEMS SCHEDULED AND REMOVE ALL MATERIALS FROM THE PREMISES. .2 CARRY OUT DEMOLITION IN A MANNER TO CAUSE AS LITTLE INCONVENIENCE TO THE OCCUPIED BUILDING AREA AS POSSIBLE. CO-ORDINATE THIS ACTIVITY
- WITH THE OWNER AND/OR THE CONSULTANT. .3 CARRY OUT DEMOLITION IN AN ORDERLY AND CAREFUL MANNER.
- .4 ALL CORING, PATCHING AND REMOVAL OF EXISTING EQUIPMENT, PIPES AND DUCTWORK WHICH MAY AFFECT OPERATION OF OCCUPIED AREAS OF THE BUILDING SHALL BE CARRIED OUT OUTSIDE OF REGULAR OFFICE HOURS OR AS SCHEDULED WITH THE OWNER.

PLUMBING GENERAL NOTES:

- THE MECHANICAL PLUMBING SYSTEM SHALL CONSIST OF ALL WORK SHOWN ON THE DRAWINGS, DIAGRAMS, SCHEMATICS AND AS DESCRIBED IN THE
- CONTRACTOR TO COORDINATE ALL PLUMBING WORK WITH THAT OF OTHER TRADES TO ENSURE PROPER AND ADEQUATE INTERFACE WITH THE WORK OUTLINED FOR
- COORDINATE EXACT MOUNTING HEIGHTS AND LOCATIONS OF ALL PLUMBING FIXTURES WITH THE CASEWORK AND ARCHITECTURAL DRAWINGS.
- NEW PIPING SHALL BE INSULATED TO MATCH EXISTING PIPE INSULATION OR BETTER.
- DISCONNECT AND CAP ALL MECHANICAL SERVICES IN ACCORDANCE WITH REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION.
- BUILDING MECHANICAL SERVICES: MAINTAIN ALL BUILDING SERVICES DURING DEMOLITION/REMOVAL OF
- MAINTAIN ALL TRAP SEALS AND ENSURE NO SEWER GAS ENTERS THE BUILDING DURING RENOVATION OR DEMOLITION WORK. MAINTAIN ALL EXISTING SEWER PIPING IN A WET CONDITION DAILY.

CONTROL DEVICE CODES:

ET = LINE VOLTAGE T'STAT

ES = END SWITCH

FA = FIRE ALARM

FS = FLOW SWITCH

GS = GAS SENSOR

TC = TIME CLOCK

TS = TAMPER SWITCH

WS = WALL SWITCH

FAP = FIRE ALARM PANEL

H = HUMIDITY SENSOR

I = INTERLOCK, SEE NOTES

T = LOW VOLTAGE T'STAT OR SENSOR

VS = VARIABLE SPEED SWITCH

SUPPLIER / INSTALL / WIRE CODES:

MAG = MAGNETIC STARTER W/ HOA

PCS = PACKAGED CONTROL SYSTEM

RVS = REDUCED VOLTAGE STARTER

PCS = PACKAGED CONTROL SYSTEM

VSD = VARIABLE SPEED DRIVE

SWITCH W/ AUX. CONTACTS

MRR = MOTOR RATED RELAY, 24 VAC COIL LS = LEVEL SWITCH

& MOTOR PROTECTION SWITCH PS = PRESSURE SWITCH

G = GENERAL CONTRACTOR

MAN = MANUAL STARTER

M = MECHANICAL

= ELECTRICAL

STARTER CODES

WS = WALL SWITCH

CP = CONTROL PANEL

HVAC GENERAL REQUIREMENTS:

- ALL OPEN DUCT ENDS SHALL BE SEALED DURING CONSTRUCTION.
- DIRECTIONAL AIRFLOW SHALL BE VERIFIED AS PART OF THE AIR BALANCING PROCEDURE.
- THE CONTRACTOR IS TO INSTALL AND MAINTAIN SEALED DUCT CAP-OFFS (HEAVY GAUGE PLASTIC WITH HEAVY DUTY TAPE SEALANT) FOR ALL DUCT OPENINGS AND GRILLES SERVING THE AREA OF CONSTRUCTION. THIS APPLIES TO ALL AREA OF CONSTRUCTION FOR THIS PROJECT, AND APPLIES TO SUPPLY AIR, EXHAUST AIR, AND TRANSFER AIR DUCTS AND GRILLES. THESE CAP-OFFS SHALL BE INSTALLED DURING CONSTRUCTION AND BE MAINTAINED UNTIL THE BALANCING OF THE SYSTEM. ONCE BALANCING IS COMPLETED, THE CAP-OFFS SHALL BE REINSTALLED UNTIL OCCUPANCY.
- THE NEW HVAC SYSTEMS SHALL BE COMMISSIONED AND RE-BALANCED.
- ALL INTERIOR DUCT SURFACES SHALL BE SMOOTH, NONPOROUS, AND FREE OF OBSTRUCTIONS TO AIR FLOW TO MINIMIZE THE POSSIBILITY FOR GROWTH AND DISSEMINATION OF MICROORGANISMS THROUGH THE
- GLASS OR MINERAL FIBRE ACOUSTIC DUCT LINING, ACOUSTIC MEDIA IN SILENCERS, INTERNAL INSULATION IN TERMINAL UNITS, AND OTHER COMPONENTS IN THE AIRSTREAM SHALL BE PROTECTED WITH AN IMPERVIOUS COVERING.

CIVIC ADDRESS	LEGAL ADDRESS
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EQUIPMENT	DESCRIPTION/TYPE	MANUFACTURER	SERVICE	MODEL NUMBER	NOTES
TAG					
EG-1	LOUVERED FACE RETURN GRILLE	EH PRICE	EXHAUST	500Z/N/L/Ø	ALL
R-1	LOUVERED FACE RETURN GRILLE	EH PRICE	RETURN	500/N/L/Ø	ALL

MECHANICAL DRAWING LIST									
DRAWINGS NO.	RAWINGS NO. DESCRIPTION								
M0.01	SITE PLAN, DRAWING NOTES AND SCHEDULES	AS NOTED							
M1.01	MAIN LEVEL DEMONLITION AND RENOVATION	AS NOTED							
M2.01	SPECIFICATIONS	N.T.S							

PLUMBING FIXTURE SCHEDULE:

KF-1: KITCHEN FAUCET

MOEN MODEL#7626 TILT SINGLE HANDLE PULLOUT KITCHEN FAUCET, PULLOUT SPRAY WITH 59" BRAIDED HOSE, FLEXIBLE SUPPLY LINES WITH 3/8" COMPRESSION FITTING, ADA FOR LEVER HANDLE, DESIGNED FOR INSTALLATION THRU 1 HOLE 1-1/2" MIN. DIA

SYMBOL SCHEDULE				
PIPING		DUCTWORK		
DEMOLITION EXISTING	NEW	(\$\frac{1}{2}\), (\$\phi\), (\$\bar{\phi}\), (\$\	• 🖂 	SUPPLY OR OUTDOOR AIR DUCT UP
	DOMESTIC COLD WATER (DCW) DOMESTIC HOT WATER (DHW) DOMESTIC HOT WATER RECIRC. (DHW SANITARY VENT SAN SAN SAN SANITARY SEWER ABOVE GRADE SANITARY SEWER BELOW GRADE			SUPPLY OR OUTDOOR AIR DUCT DOWN RETURN AIR DUCT UP RETURN AIR DUCT DOWN EXHAUST AIR DUCT UP EXHAUST AIR DUCT DOWN TURNING VANES ACOUSTIC INSULATION BALANCING DAMPER (BD)
	DIRECTION OF FLOW PIPE DROP PIPE RISE PIPE TEE UP PIPE TEE DOWN	BDD ABDD		BACKDRAFT DAMPER (BDD) MOTORIZED DAMPER (MD) FIRE DAMPER - VERTICAL (FD) FIRE DAMPER - HORIZONTAL (FD) DUCT OR PIPE CAP-OFF RETURN OR EXHAUST AIR GRILLE UNDER-CUT DOOR
TO TO THE REPORT OF THE PERSON	T ROOM TEMPERATURE SENSOR	EQUIPMENT TAGS	UC - ∕ √ -►	UNDER-CUT DOOR
FIRE PROTECTION	PENDANT SPRINKLER HEAD CONCEALED SPRINKLER HEAD UPRIGHT SPRINKLER HEAD	SOR		GRILLE TYPE NECK / GRILLE SIZE AIR VOLUME (cfm) EQUIPMENT / FIXTURE TYPE GENERAL NOTE DRAWING REVISION DETAIL NUMBER DRAWING NUMBER

EXHASUT FANS													
EQUIPMENT TAG	QTY	SERVICE	LOCATION	TYPE	MANUFACTURER	MODEL	AIR FLOW (CFM)	E. S. P. (IN.WG)	FAN (RPM)	DRIVE TYPE	SOUND LEVEL (SONES)	WEIGHT (LBS)	NOTES
	1	EVHALICT	MEETING DOOM (05)	INILINE CELLNO MOLINE	EU DDICE	20.00.1/0		0.2	, ,		2.0	, ,	ALL
EF-1	1	EXHAUST	MEETING ROOM (05)	INLINE CEILNG MOUNT	EH PRICE	SQ-90-VG	400	0.3	1,075	DIRECT	3.8	50.0	ALL

ACOUSTIC LINED CABINET.

LOCATION CODES:

3 = EQUIPMENT ROOM

4 = ELECTRICAL ROOM

MISCELLANEOUS CODES:

2 = MOTOR CONTROL CENTRE

5 = AS SHOWN ON DRAWINGS

FFCP = FIRE FIGHTERS CONTROL PANEL

BMS = BLDG MANAGEMENT SYSTEM1 = AT OR NEAR MOTOR

REFER TO MOTORLIST FOR ELECTRICAL REQUIREMENTS

VARI-GREEN MOTOR WITH SPEED CONTROL MOUNTED ON MOTOR FOR BALANCING PURPOSES ONLY C/W SPRING ISOLATORS AND PRE-WIRED MANUFACTURER DISCONNECT

MECHA	NICAL MOTORLIS	ST																					
NEW			EQUIPMEN ⁻	EQUIPMENT			DISCONNECT ST				STARTER				CONTROL								
																							ĺ
																						ı	
																						ı	İ
																							1
EQUIP. TAG	EQUIPMENT DESCRIPTION	LOCATION	SUPPLIED	H.P.	KW	MCA	FLA	VOLTAGE	PHASE	SUPPLIED	INSTALLED	WIRED	LOCATION	TYPE	SUPPLIED	INSTALLED	WIRED	LOCATION	TYPE	SUPPLIED	INSTALLED	WIRED	NOTES
																							· 1
EF-1	EXHAUST FAN	MEETING ROOM (05)	М	FRAC.				115	1	М	М	М	1	MRR	E	Е	Е	1	T	Е	E	E	ALL

1. REVERSE ACTING T'STAT 2. PRE-WIRED DISCONNECT

EN	KS
JOB NO.	DATE
040B-047-17	DECEMBER

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 T. 403-252-2333
 T. 403-252-3334

 721 JOHNSON ST VICTORIA, BC V8W 1M8
 VANCOUVER, BC V6C 2X4
 T00 - 1122 4TH STREET SW CALGARY, AB T2R 1M1

1/4"=1'0"

ISSUED FOR TENDER

REVISIONS

SHEET TITLE

SITE PLAN

ISSUED FOR BUILDING PERMIT

ISSUED FOR TENDER REVIEW

Carscadden

COV ENGAGEMENT VENUE

511 WEST BROADWAY

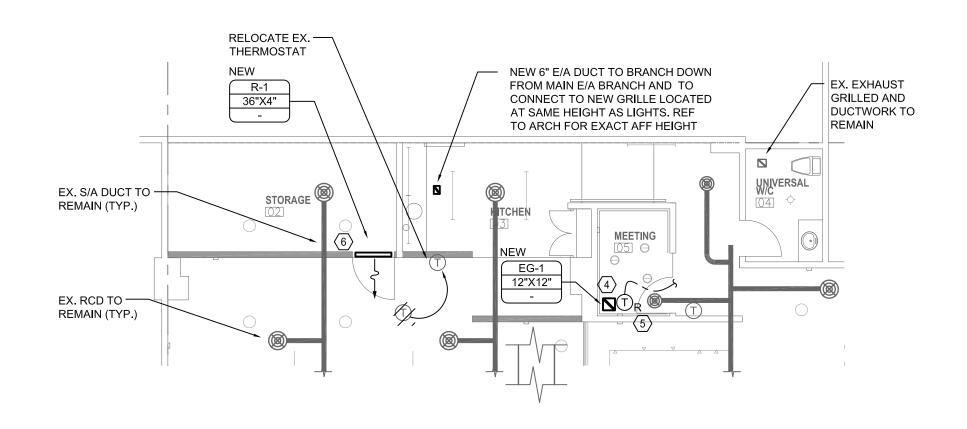
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2018 SEP 21

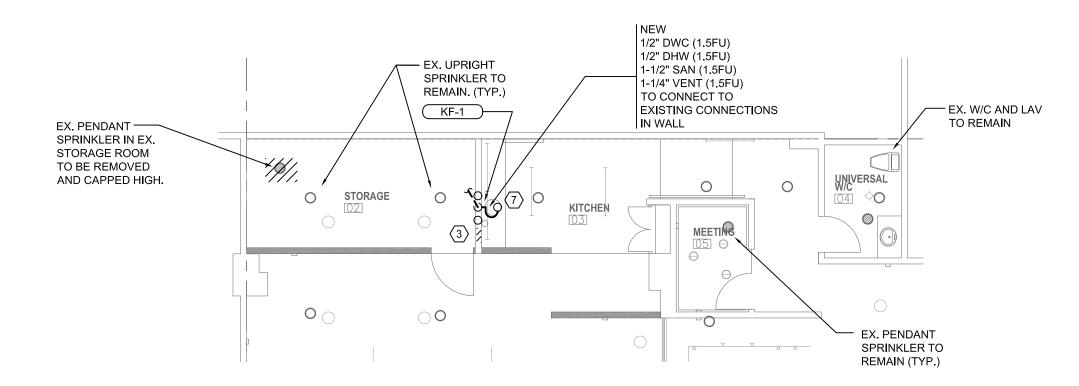
2018 AUG 14

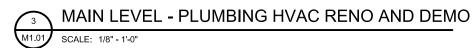
2018 JAN 10

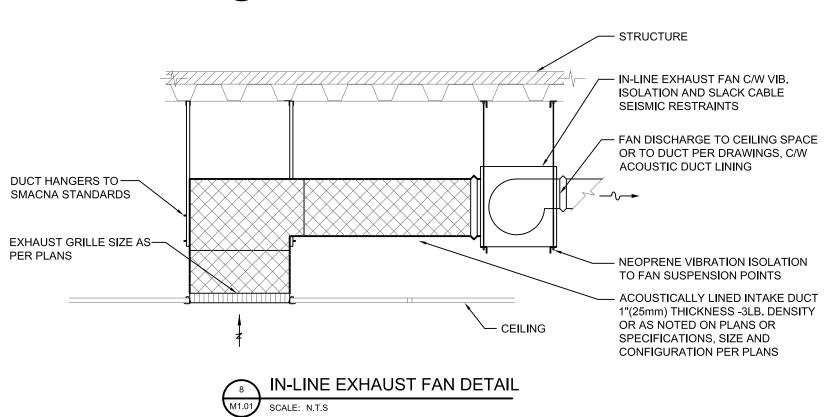
2017 JUN 02

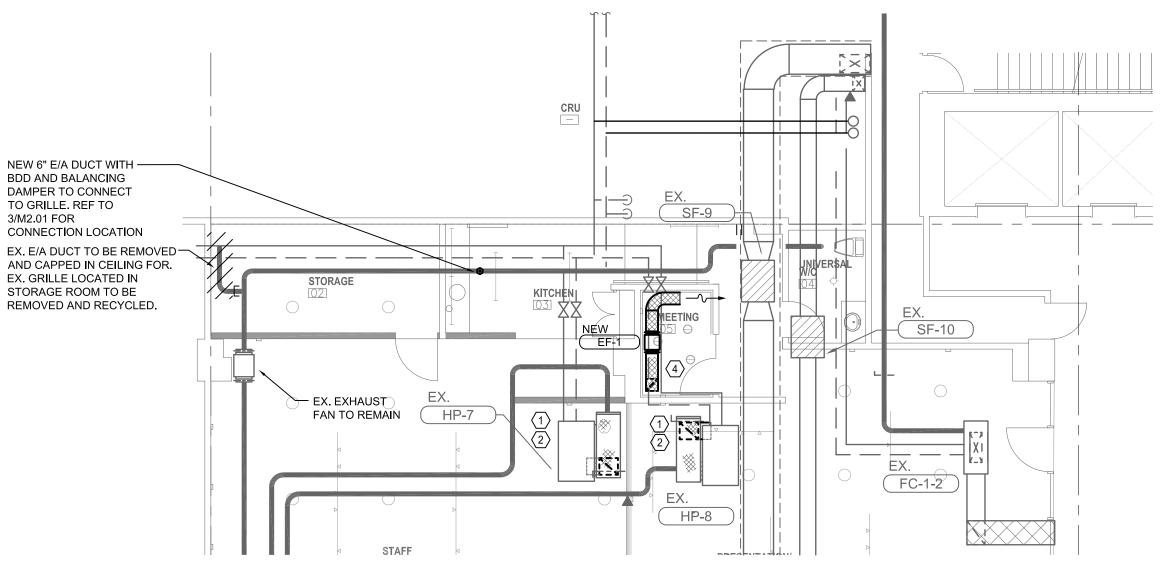


MAIN LEVEL - LOWER HVAC RENO AND DEMO





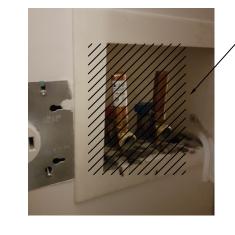




MAIN LEVEL - UPPER HVAC RENO AND DEMO

KEY NOTES

- CONTRACTOR TO REMOVE, REINSTALL AND RECONNECT EX. HP IN ORDER TO WRAP IN ACOUSTIC INSULATION. ENSURE ACCESS PANELS FOR HP MAINTENANCE IS APPROPRIATE FOR THE INSULATION, SUCH AS VIBRO SONIC (OR EQUIVALENT THEREOF), AND IS INSTALLED AS PER MANUFACTURER'S REQUIREMENTS. CONTRACTOR TO RE-COMISSION AND RE-BALANCE HP AFTER REINSTALLATION.
- DOWN TURN ELBOW WITH INSULATION AND TURNING VANES TO BE ADDED TO R/A DUCT OPENING ON HP-7 AND HP-8. SIZE TO MATCH EX. R/A OPENING. REF TO 4/M2.01 FOR DETAILS.
- EX. WASHING MACHINE CONNECTION INCLUDING SANITARY, DCW/DHW AND WATER HAMMER ARRESTOR WITH BOX ENCLOSURE TO BE REMOVED AND CAPPED BACK TO THE SOURCE. REF TO 2/M1.01 FOR MORE DETAILS
- NEW 12"X12" E/A DUCT FROM NEW EF-1 TO CONNECT TO 12"X12" GRILLE LOCATED IN MEETING ROOM
- NEW REVERSE ACTING THERMOSTAT TO CONNECT TO NEW EF-1. REF TO 1/M1.01 FOR LOCATION OF EXHAUST FAN
- LOCATE TRANSFER GRILLE ABOVE DOORWAY. COORDINATE EXACT LOCATION WITH ARCH
- CONTRACTOR TO UTILIZE EX. SINK SUPPLIED BY OWNER



EX. WASHING MACHINE CONNECTION INCLUDING SANITARY (HOSE CONNECTION), DCW/DHW AND WATER HAMMER ARRESTOR WITH BOX ENCASING TO BE REMOVED AND CAPPED BACK TO THE

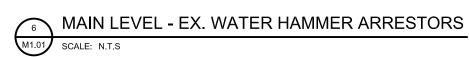
NEW 6" E/A DUCT WORK TO CONNECT TO EXISTING E/A MAIN WITH BDD AND BALANCING DAMPER.

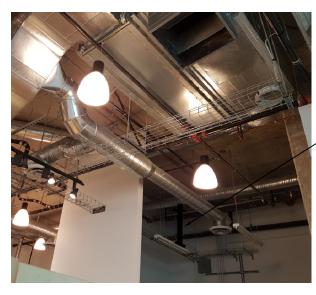
GRILLE TO BE LOCATED

FOR EXACT LOCATION

AND HEIGHT

AT APPROX. SAME HEIGHT AS LIGHT. REF TO ARCH





MAIN LEVEL - NEW E/A FOR KITCHEN

SCALE: N.T.S

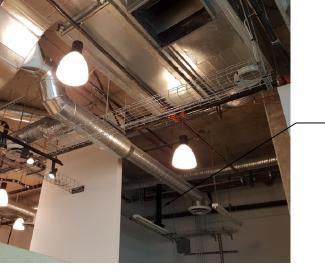


EX. HEAT PUMPS TO BE INSULATED. CONTRACTOR TO ENSURE ACCESS PANEL THROUGH INSULATION IS PROVIDED FOR MAINTENANCE PURPOSES

CONTRACTOR TO COORDINATE LOCATION OF DOWN TURN ELBOW WITH EX. WALLS, SPRINKLERS, CABLE TRAYS, AND LIGHTS.

MAIN LEVEL - EX. HEAT PUMPS

SCALE: N.T.S



REMOVE AND DISCARD EX. E/A

DUCT TO STORAGE

ROOM AND CAPPED

HIGH AT MAIN DUCT

— EX. UPRIGHT SPRINKLER HEAD TO REMAIN - REMOVE PENDANT SPRINKLER HEAD LOCATED IN EX. STORAGE ROOM AND CAP UP HIGH

MAIN LEVEL - EX. STORAGE ROOM

SCALE: N.T.S



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ISSUED FOR TENDER 2018 SEP 21 ISSUED FOR BUILDING PERMIT 2018 AUG 14 ISSUED FOR TENDER REVIEW 2018 JAN 10 CHANGE OF USE BUILDING PERMIT 2017 JUN 02

REVISIONS

Carscadden

COV ENGAGEMENT VENUE

SHEET TITLE

MAIN LEVEL DEMOLITION AND RENOVATION

511 WEST BROADWAY

CHECKED KS JOB NO. DATE DECEMBER 2017 040B-047-17

1/8"=1'0"

GENERAL 1.1 Intent .1 The intent of this specification and the drawings is to provide a complete and fully operating mechanical system in complete accord with applicable codes. The Mechanical Contractor shall make provisions for labour, material, and equipment necessary to complete the mechanical work. .2 Drawings and specifications are complementary to each other and what is called for in one is binding as if called for by both. Should any discrepancy appear between drawings and specifications which leaves doubt as to the true intent and meaning, obtain a ruling from the Consultant ten (10) days before submitting tender. Failing this, allow for most expensive alternative. Contract documents are diagrammatic only. They are to establish scope, material and quality. They are not detailed installation drawings. Minor details usually not shown or specified and any incidental accessories required for proper installation of the system are to be included in the work. .4 Contractor is to ensure that all intended equipment will fit within given spaces. Make reference to the electrical, mechanical, architectural and structural drawings, when setting out work and before ordering equipment. .5 The Contractor shall visit the site prior to tender and verify existing conditions. New piping, ductwork and insulation standards shall at least match the existing installation or be higher if specified herein. .6 Consultant is defined as the AME Representative administering the project. 1.2 Code Compliance .1 All work shall conform to current edition of National, Provincial and Municipal Codes, Standards and Acts; and will meet the requirements of Authorities having jurisdiction.

.1 Assume responsibility for layout of work; and for any damage caused to the Owner or other Tenants by improper execution

Give notices, obtain permits and approvals, and pay fees so work specified may be carried out. Furnish certificates if

.1 All work shall be co-ordinated with other trades especially that related to cutting and patching of required openings; and

.1 All equipment installed on this project shall comply with the 1992 performance recommendations of ASHRAE Standard 90.1

.3 Take responsibility for condition of materials and equipment supplied and protect until work is completed and accepted.

requested, as evidence that work conforms with laws and regulations of the authorities having jurisdiction.

(latest edition) and to comply with the City of Vancouver Building By-Law Energy Utilization Requirements.

mechanical trade as equal to that specified does not relieve the mechanical trade of any responsibility.

contract price will be considered to accommodate the use of equipment other than that specified.

Do not order equipment or materials until Consultant has reviewed shop drawings.

.2 Materials shall be new and of uniform pattern throughout, unless noted otherwise.

place, and installing to make these items completely operational.

made available on a weekly basis for review by the Consultant.

.2 Revisions required to adapt accepted equals and alternatives shall be included in the contract price. No increase in the

the need to have a consistent type or source of maintenance. Refer to specific clauses in this specification.

Certain items of equipment and items of work (such as balancing, water treatment) may not have an approved equal due to

Submit four (4) sets of shop drawings to Consultant for all equipment specified in the specification or drawings for review.

.1 Provide the Owner with a written guarantee that the equipment installed and work performed shall remain in serviceable condition for a period of one (1) year from the date of final acceptance by the Owner. The warranty shall cover material as

.1 Make and quality of materials used are subject to approval by the Consultant. Remove unacceptable materials and install

.3 Employ only tradesmen properly licensed to perform the specific work. The Consultant may perform spot checks for trade

.1 Following items of mechanical equipment is available from the Owner's stock. Prior to submitting the tender price, review

.2 Where equipment is removed and not re-used it shall be handed over to the Owner, or disposed of if directed by the Owner.

.2 Upon completion of work, submit final record drawings to the Consultant. These must be submitted within two (2) weeks

.3 The cost of transferring as-builts onto reproducible media and AutoCAD files are this contractor's responsibility.

Contractor to include all costs for disposal of all materials to be demolished and removed as indicated in these documents.

after acceptance of work. Failure to submit drawings will result in the work being done by the Owner and the cost deducted

.4 If the contractor chooses to retain this consultant to produce as-builts, allow \$300/sheet to cover costs of drafting and printing

.2 All deficiencies shall be completed within two (2) weeks after substantial completion and letter submitted to Consultant within

.3 The following shall be an outline checklist of the minimum requirements to be met by the contractor prior to the Consultants'

□ Controls Commissioning, Checklist and 15 day trend logs for all major equipment (AHU's, Chiller/Boiler Plants, etc.)

Major equipment - suppliers start-up test sheets and letters certifying start up. (boilers, chillers, packaged equipment)

.1 This project involves renovations to existing building, therefore, examine the site and local conditions to determine the

difficulties in carrying out the work indicated and specified prior to submitting final price. Extras will not be considered based

□ Seismic Engineers inspection of all Seismic restraints and schedule C letters of assurance

□ Sprinkler Contractors Engineer of record inspection and Schedule C letter of assurance

that time advising that the work is complete. Failure to complete work will result in work being done by the Owner and the

these items to ensure their usability for the project. The tender price shall include the cost of cleansing, servicing, moving in

locations and installation of sleeves, inserts, support, curbs, frames and access doors.

.2 Obtain approval from structural and electrical engineers before drilling and coring of existing structure.

1.3 Liability

.2 Protect finished and unfinished work from damage.

Cutting And Patching

1.6 Compliance with Energy By-Law

1.7 Alternative Materials And Equipment

1.10 Standard Of Materials And Workmanship

suitable materials in their place.

tickets and accreditation.

Shop Drawings

1.9 Guarantee

1.11 Owner's Stock

as-builts.

Inspection:

1.14 Examination of Work

Substantial Completion Inspection

costs deducted from final payment.

□ Complete Balancing Reports

Substantial Performance by the contractor.

□ Complete Commissioning Checklists

☐ Fire alarm test certificate (via DIV.16)

□ Fire stopping and Fire Damper test letter

□ Sound level tests reports (as required)

☐ Final As-Built Drawings ready for review

on the grounds of differences on site

□ Vibration isolation supplier's inspection report

☐ Final Sprinkler Materials and Test Certificate

☐ Final Plumbing Inspection Certificate from local plumbing inspector

☐ Final Backflow Prevention test reports for all backflow devices

□ Potable water main's flushing and chlorination test certificate

□ Maintenance and operation manuals, ready for review

deficiencies should be noted to the Consultant.

Coordinate deliveries with the general contractor.

- 1.15 Coordination With Electrical Division .1 Contractor shall review all equipment requiring electrical hook-up with Electrical Contractor and electrical drawings prior to ordering equipment. Ensure proper electrical characteristics are determined for all affected and related work. This is part of the contractors shop drawing review and no extras will be considered for Div. 16/16 power mismatches.
- Coordination of Services
- .1 Coordinate with proper utilities for services such as water, sewer, natural gas, and assume all charges. .2 Coordinate with the owner to shutdown, disconnect, reroute, or make connection to existing services. Provide written 24 hour notice for all service shutdowns.
- .1 Operate each mechanical system after mechanical and electrical work has been completed, to demonstrate that each system fulfills the requirements of the contract and operates satisfactorily. These are performance tests and must be completed before work can be finally accepted. Coordinate with packaged equipment suppliers and the commissioning
- 1.18 Operation and Maintenance Manuals .1 Provide four (4) copies of manuals prepared by qualified and experienced personnel for use by Owner. Manuals form part of the contract and must be delivered to the Consultant before work will be considered complete. Each manual shall provide
 - .1 Layman's description of all mechanical systems including operating maintenance and lubrication instructions,
 - .2 Certification of all equipment where required by local codes and authorities, .3 Shop drawings and maintenance bulletins,
- .4 List address and telephone numbers of all equipment suppliers and contractors. .5 Performance details for all equipment including curves for fans and pumps with actual operating points noted. .2 Provide this maintenance manual in electronic format documents, scanned drawings, AutoCAD files, Microsoft
- powerpoint...etc. 1.19 Balancing.
- .1 The approved balancing agencies are: Western Mechanical; K.D. Engineering.
- Where outlet quantities are not indicated, divide box capacity equally among all outlets .3 Completely balance the hydronic system including pumps, terminal devices, boilers, heat exchangers, etc .4 Submit two (2) copies of the report to Engineer within two (2) weeks after substantial completion. Failure to submit the

.2 Balance terminal boxes, exhaust fans, and air outlets to air quantities indicated on the drawings and in this specification.

- report within the specified time will result in the work being done by the Owner and the costs deducted from final payment. .5 Balancing shall be performed to the following accuracies:
- Air-Terminal Outlets ±10% Air-Central Equipment ± 5% Hydronic-Terminals ±10% Hydronic-Pumps and Central Equipment ± 5%

1.17 Performance Tests

- .6 Provide a drop test of all fire dampers and a letter/certificate attesting to this work.
- .1 Contract price shall be based on materials and equipment specified. Approval by Consultant of equipment submitted by the 1.20 Cooperate with the Balancing Agency as follows:
 - .1 Make any corrections as required by Balancing Agency. .2 Allow Balancing Agency free access to site during construction phase. Inform Balancing Agency of any major changes made to systems during construction and provide a complete set of record drawings and specifications for their use.
 - .3 Operate automatic control system and verify set points during balancing. .4 Provide and install balancing valves, dampers, and other materials requested by the Balancing Agency and/or necessary to
 - properly adjust or correct the systems to design flows, without additional cost to Owner. .5 Provide and install pulleys and sheaves for rotating equipment, as required to properly balance the systems to design flows, without additional cost to Owner.
 - .6 Allow in the contract price shaving of impellers as required to balance the pumps to design flow at operating condition. System Cleaning and Chemical Treatment .1 Employ services of the firm which currently performs water treatment in the building or if there isn't any, then a firm
 - specializing in pipe cleaning and hydronic system chemical treatment. This firm shall submit a schedule of work to be performed, chemical types and quantity to be used. At the completion of the chemical treatment a report shall be submitted to outline the work performed, quality of water before and after the chemical treatment, amount and types of chemicals added. The report shall also include the details of procedures to be used by the building operator for water quality testing and chemical treatment
 - .2 Provide test kits as required along with adequate chemicals and reagents for one year of testing. Appropriate test kits will be provided to properly test each system installed under this contract.
 - .3 Flush and disinfect all domestic cold, hot and recirculation water systems, provide a certificate for this work. 1.22 Painting and Identification
 - .1 Paint all exposed ducts and pipes with colours to match interior finishes or in colours as directed by the Architect. .2 Identify piping with labels and flow arrows. Provide identification at 50 ft. 15 m maximum intervals, before and after pipes and B-350 for insulated pipes
 - .3 Provide 3/4" 20 mm diameter brass tags, secure to valve stems with key chain. Provide typed valve directories at all mechanical rooms in addition to computer copy as integrated into controls .4 Identify electric starting switches, thermostats controlling motors and equipment supplied under this division with lamacoid
- plates having 1/4" 6 mm minimum letter size. .1 Keep on site an extra set of white prints and specifications, recording changes and deviations daily. These drawings shall be 1.23 Fire-Stopping
 - .1 Fire-stop all pipe and duct penetrations through floors and walls, designated as fire and/or smoke separations. .2 Fire-stopping materials to meet ULC CAN 2S115. Acceptable Materials: by "Tremco" or "National Firestopping". .3 Preparation of surfaces and installation of fire-stopping materials shall be carried out as per manufacturer's instructions.
 - 1.24 Flashing and Roof Curbs
- .1 Provide curbs, flash and counter flash where mechanical equipment passes through weather or waterproofed walls, floors and roofs. Install roof mounted equipment on factory supplied roof curbs. Seismic Control .1 Advise Consultant five (5) days prior to the date inspection is desired. All systems to be fully operational and any
 - .1 Provide seismic restraint on all piping, ductwork and equipment to satisfy all codes and authorities having jurisdiction. .2 Submit shop drawings of all seismic restraint details prepared and sealed by a professional engineer. Prior to substantial completion, this professional engineer for seismic design shall visit the site to verify seismic restraint installation and provide a letter of conformance in accordance with the applicable Building Code.
 - .3 Piping ductwork and equipment shall be restrained in accordance with the latest edition of the Seismic Restraints Manual for Mechanical Systems produced by SMACNA, and the latest edition of the ASHRAE Application Handbook Chapter 49, Seismic Restraints. .4 The contractor shall obtain approval for the location of all restraint fixing points from the structural engineer, on site, prior to
 - .5 Where equipment is mounted on spring or R.I.S. mounts for vibration isolation it shall be the responsibility of the manufacturer of the mount to incorporate seismic restraint. These restraints shall be multi-directional as described in the guidelines specified above. Provide steel frame bases where necessary to achieve this and also avoid overturning. The manufacturer shall supply certificates, signed by a Professional Engineer registered within the jurisdiction, verifying the design of the seismic restraints in accordance with this section.
 - .6 Where equipment is located without vibration isolation fittings all such equipment shall be rigidly fixed with holding down bolts of sufficient strength to restrain seismic action. Holding down bolts shall be packed within slots to prevent movement prior to restraint commencing. Bolts shall be of sufficient strength to withstand overturning of the equipment during seismic 1.27 Non-Specific Date/Time Compliance
 - .1 All equipment, hardware, software and firmware (for the purposes of this clause #, the "Product") delivered or deliverables resulting from any services provided are fully Date Compliant and the Product will not adversely or materially effect the daily business operations as a result of a date related computer problem (for the purposes of this clause #, the "Warranty"). Date Compliant means that the Product accurately and correctly processes and stores date/time data (including, but not limited to, calculating, comparing, displaying, recording and sequencing operations) including year, century and leap year calculations.
 - .2 Provide documentary proof of Date Compliance prior to substantial completion listing all equipment and certifying their compliance. .3 Notwithstanding any other remedy available under this agreement or at law for breach of the Warranty, any Product that is not Date Compliant shall, within twenty-four (24) hours of receipt of notice of the breach, be repaired or replaced at the Contractors sole cost and expense, including parts, labour, transportation and insurance, so as to correct any failure to meet 5.
 - the Warranty. DUCTWORK AND ACCESSORIES
 - 2.1 General
 - .1 Fabricate ductwork in accordance with SMACNA Duct Manual and ASHRAE Handbooks. Ductwork shall meet the requirements of NFPA 90A and 90B and conform to applicable codes. Kitchen exhaust ductwork shall conform to NFPA 96.
 - .2 Prior to fabrication of ductwork, check all ceiling spaces and heights and conflicts with other trades.

.3 Duct sizes indicated are inside clear dimensions. For acoustically lined or internally insulated ducts maintains size inside .4 Provide fire dampers where ducts cross fire separations. Fire dampers shall be ULC listed and constructed in accordance with ULC Standard S112 "Fire Dampers". Fusible links shall be constructed to ULC Standard S505.

.5 Provide balancing dampers where indicated on drawings and at points on low pressure supply, return and exhaust ducts where branches are taken from larger ducts. .6 Provide adequately sized access panels for dampers, equipment, fire dampers, valves, radiation valves, and any other

equipment requiring servicing.

.7 Provide return air openings and/or insulated sound traps where indicated.

.8 Provide acoustical seal around ducts and sound traps at penetration through sound baffles.

.9 Modify ceiling system where required to accommodate grilles and diffusers. .10 Size round ducts, installed in place of rectangular ducts, from ASHRAE table of equivalent rectangular and round ducts. No

variation of duct configuration or sizes permitted except by permission from Engineer. .11 Exposed round ductwork to be spiral lock seam type only.

.12 Provide duct hangers and supports in accordance with SMACNA manuals. .13 Identify ductwork as per the base building standards. Confirm these prior to submitting tender 2.2 Low Velocity Ductwork

.1 Ductwork shall be galvanized steel. The minimum sheet metal thickness for ducts including fittings, access doors, and other accessories shall be as per SMACNA duct manual for Low Velocity Ductwork.

.2 Low velocity insulated flexible ductwork shall be equal to Thermaflex Type M-KC. .3 Connect diffusers or troffer boots to low pressure ducts with 36" 900 mm maximum length of stretched flexible duct. Hold in 5.2 Piping Insulation

place with caulking compound and strap or clamp. Do not use flexible duct to change directions. .4 Where low pressure ducts are connected to fan equipment, terminal boxes or any other apparatus, a screwed or bolted flexible gasketed joint shall be provided between the ductwork and the equipment, minimum 2" (50mm) wide. Kitchen and Dishwasher Exhaust Ducts

.1 Kitchen Exhaust: Minimum 16 gauge 1.52 mm carbon steel, welded at seams and joints.

.2 Dishwasher Exhaust: Minimum 18 gauge 1.22 mm stainless steel, welded at seams and joints. .3 Protect ductwork exposed to outside elements by painting or coating with suitable weather resistant material or by aluminum

.4 Provide residue traps at base of vertical risers with provisions for cleanout. provide access doors for duct cleaning at every change of direction and every 20 ft. 6 m

.1 Ductwork shall comply with NFPA 96, latest edition.

2.4 Duct Sealing

.1 All supply, return and exhaust duct joints, longitudinal as well as transverse, shall be sealed using,

Slip Joints: Apply heavy brush-on high pressure duct sealant. Apply second application after the first application has completely dried out. Where metal clearance exceeds 1/16" 1.5 mm use heavy mastic type sealant. Flanged Joints: Soft elastomer butyl or extruded form of sealant between flanges followed by an application of heavy brush-on high pressure duct sealant. Other Joints: Heavy mastic type sealant.

.2 Duct tapes as sealing method are not permitted, except on residential ductwork - minimum 2 wraps of 2" wide (50mm)

.3 Surfaces to receive sealant should be free from oil, dust, dirt, moisture, rust and other substances that inhibit or prevent

.4 Do not insulate any section of the ductwork until it has been inspected and approved of duct sealant application, by the Consultant.

3.1 Pipe Material

.1 Service: Sanitary and Storm Drainage, and Vent (above grade). Material: DWV Copper; Cast Iron

.2 Service: Sanitary and Storm Drainage and Vent (below grade inside building). Material: Cast Iron; PVC-DWV.

.3 Service: Sanitary and Storm Drain (outside service).

Material: Cast Iron; PVC SDR-35 to 12" 300 mm; Concrete over 12" 300 mm. .4 Service: Domestic Water (above grade inside building).

Material: Type "L" Hard Copper; Cast Steel for cold water main size 4" 100 mm and larger. No steel piping permitted for Domestic Hot Water. All domestic hot water shall be type 'K' hard copper

.5 Service: Domestic Water (buried, inside building). Material: Type "K" Soft Copper.

.6 Service: Domestic Water Service (below ground, outside building).

Material: Type "K" Soft Copper; PVC class 150. .7 Service: Hot Water Heating; Glycol Heating; Chilled Water.

Material: Steel Schedule 40, A53 Grade B; Type "L" Hard Copper; Type "K" Soft Copper buried. Service: Condensate: Pumped Condensate.

.9 Service: Equipment drains and overflows. Material: Steel Schedule 40. Galvanized. A120.

Material: Steel Schedule 80, A120,

10 Service: Fire Protection Material: Per latest edition NFPA 13 for Sprinkler Systems; per latest edition NFPA 14 for Standpipe Systems.

3.2 Pipe Connections

.1 Screwed joint steel piping up to and including 11/2" 40 mm. Weld piping 21/2" 65 mm and larger including branch connections. Screw 2" 50 mm piping for liquid systems, weld 2" 50 mm piping for air or gas systems. Use dielectric type couplings when joining dissimilar metal pipes.

.2 Use lead free solder for soldering domestic water copper pipe. 3.3 Pipe Hangers And Supports

.1 All piping shall be firmly supported and securely braced. Provide copper plated hangers and supports for copper piping and galvanized hangers and supports for galvanized piping.

.2 Use of perforated straps is not permitted for pipe hangers.

.3 Provide ring type hangers for piping up to 1½" 40 mm and clevis type hangers for piping over 1½" 40 mm. 3.4 Pipe Support Spacing

Rod Diameter Spacing (in.) (mm) (in.) (ft.) (m) 3/4 to 11/2 20-40 3/8 9 8 2.4 2 to 2½ 50-65 3/8 9 10 3.0 3 to 4 75-100 12 3.6

7/8 22

VALVES

6 to 12

Domestic Hot And Cold Water System Valves

150-300

.1 Ball valves up to 2" 50 mm; bronze body, chrome plated, bronze ball, threaded or solder ends, TFE seat and packing. 600 psi 4134 kPa non shock W.O.G. rating, Toyo/Red & White 5044A/5049A.

14 4.3

.2 Gate valves up to 2" 50 mm shall be bonze, solid wedge, rising spindle, 200 psi 1378 kPa W.O.G., threaded endsToyo/Red & White 293. Solder ends Fig. 299.

.3 Globe valves up to 2" 50 mm shall be bronze composition disc type fitted with No. 294-S disc for cold water; and No. 110 disc for hot water service. toyo/Red & White 221 for threaded ends; and Fig. 212 for solder ends. .4 Inside hose bibbs shall be bronze body, globe valve, renewable disc, garden hose outlet, 300 psi 2070 kPa rating.

.5 Outside hose bibb shall be non-freeze type with bronze recessed box and polished bronze cover, hose thread spout vacuum breaker, removable key. ROTO-TECH-SMITH-RS-5500VB.

INSULATION

5.1 Duct And Breeching Insulation

.1 Exposed Rectangular Ducts: Rigid fibrous glass insulation, 'K' value at 75°F (24°C) maximum 0.24 Btu.in/ft²hr°F (0.035 W/m°C) with factory applied reinforced aluminum foil vapour barrier.

.2 Round Ducts and Concealed Rectangular Ducts: Flexible fibrous glass insulation, 'K' value 75°F (24°C) maximum 0.24 Btu.in/ft²hr°F (0.035 W/m°C) with factory applied reinforced aluminum foil vapour barrier. .3 Acoustic Lining: Fibrous insulation with 'K' value at 75°F (24°C) maximum 0.24 Btu.in/ft²hr°F (0.035 W/m°C) absolute roughness of exposed surface not to exceed 0.023 in (0.58 mm) coated to prevent fibre erosion at air velocities up to 5000 fpm (254 m/s), 1.5 lb/ft³ (24 kg/m³) minimum density for ductwork and 4.7 lb/ft³ (75 kg/m³) for plenums.

.4 Breeching Insulation: Semi-rigid mineral fibre, insulation with glass mat, 'K' value 0.24 Btu.in/ft²hr°F (0.035 W/m°C) maximum at 75°F (24°C). Service temperature 150°F to 850°F (65°C to 450°C).

.5 Recovery Jackets: ULC labelled thermocanvas.

.6 Ensure surface and insulation is clean and dry prior to and during installation. .7 Ensure insulation is continuous through inside partitions.

.8 Finish and seal insulation neatly at hangers, supports, access doors, fire dampers and other protrusions.

.9 Recover all insulation except in ceiling spaces, crawl spaces, and mechanical shafts. .10 Insulation Installation Thickness Schedule

Insulation Thickness Duct & Equipment Outside Air Intake, Combustion Air, and Relief Duct Exhaust Ducts within 10 ft 3000mm of 1 25 Exterior Walls or Openings 1 25 Supply Ducts 1 25 Acoustic Lining (where indicated)

.1 All cold piping to be insulated with fine fibrous glass insulation with factory applied vapour barrier jacket, moulded to conform to piping, "K" value at 75°F24°C maximum 0.24 btu.in/ft² hr.°F0.035 w/m °C. Recover with ULC labelled thermocanvas.

.2 All hot piping to be insulated with fine fibrous glass insulation with factory applied general purpose jacket, moulded to conform to piping, "K" value at 75°F24°C maximum 0.24 btu.in/ft² hr°F0.035 w/m°C. Recover with ULC labelled thermocanvas

Dining to be Insulated	Dina Ciza	Inculation Thickness	
Piping to be Insulated	Pipe Size	Insulation Thickness	
(in) (mm)			
Chilled Water	All Sizes	1 25	
Domestic Cold Water	to 1½" 40 mm 2" 50mm & Over	1/2 15 1 25	
Domestic Hot and Recirc	to 1½" 40mm 2" 50mm & Over	1 25 1½ 40	
Vents within 10 linear feet 3 linear metres and Roof Outlet	All Sizes	1 25	
Condensate drains from indoor air conditioning and heat pump units	All Sizes	½ 12	
Heat pump loop supply return	All Sizes	0	
Pressure discharge from water-cooled air conditioning and heat pump units	All Sizes	0	

PLUMBING

6.1 Plumbing General

.1 Bury outside sewer and water piping minimum 8 ft2.5 m.

.2 Install vacuum breakers, trap primers and backflow preventers on plumbing lines as required by code.

.3 Check invert elevations prior to sanitary and drainage connections.

.4 Grade drainage lines 2% per foot, unless noted otherwise.

.5 Provide heat trap loop in domestic hot water supply piping at the domestic hot water storage tank.

FIRE PROTECTION

7.1 Sprinkler System

.1 Relocate existing sprinkler heads as shown on the drawing.

.2 Provide new heads where indicated of building standard type.

.3 Modify existing sprinkler system to suite new layout and to ensure compliance with codes. CONTROLS

8.1 All controls work is to be done by the base building contractor

.1 Examination of Existing System: This project involves renovation to an existing control system. The contractor shall inspect the system prior to tender close and include in his bid all control components required to rovide a fully operational system including replacement of existing defective components where noted in the project documents.

8.2 Thermostats

.1 Relocate and reconnect existing thermostats as shown the drawings.

.2 Provide new thermostats where indicated of building standard type. Ensure operating characteristics are compatible with control components (ie direct/reverse acting).

.3 All thermostats to be wall or column mounted at normal mounting height unless specifically noted otherwise. .4 All thermostats, existing and new, are to be calibrated prior to air balancing. Contact building owner if an existing thermostat

.5 Contractor to review with owner's maintenance staff thermostat connections to equipment and control air lines. 8.3 Control Components

.1 Control valves and dampers shall be equal to base building standard type unless noted otherwise. 8.4 Control Sequence

Reverse acting thermostat for EF-1 to be set at 75 degrees. EF-1 on when set temperature is reached. EF-1

9.1 Exhaust Fans

Equipment

.1 Provide exhaust fans in the ceiling space where indicated on the drawings, in accordance with the following schedule. Fans shall be Loren Cook, Greencheck In-Line complete with speed control switch. Speed control switch supplied by Mechanical Contractor and installed under Electrical Contract. Refer to schedule for model, CFM, and in. w.c.

END OF SECTION

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ISSUED FOR TENDER ISSUED FOR BUILDING PERMIT ISSUED FOR TENDER REVIEW CHANGE OF USE BUILDING PERMIT

Carscadden

COV ENGAGEMENT VENUE 511 WEST BROADWAY

2018 SEP 21

2018 AUG 14

2018 JAN 10

2017 JUN 02

SHEET TITLE

REVISIONS

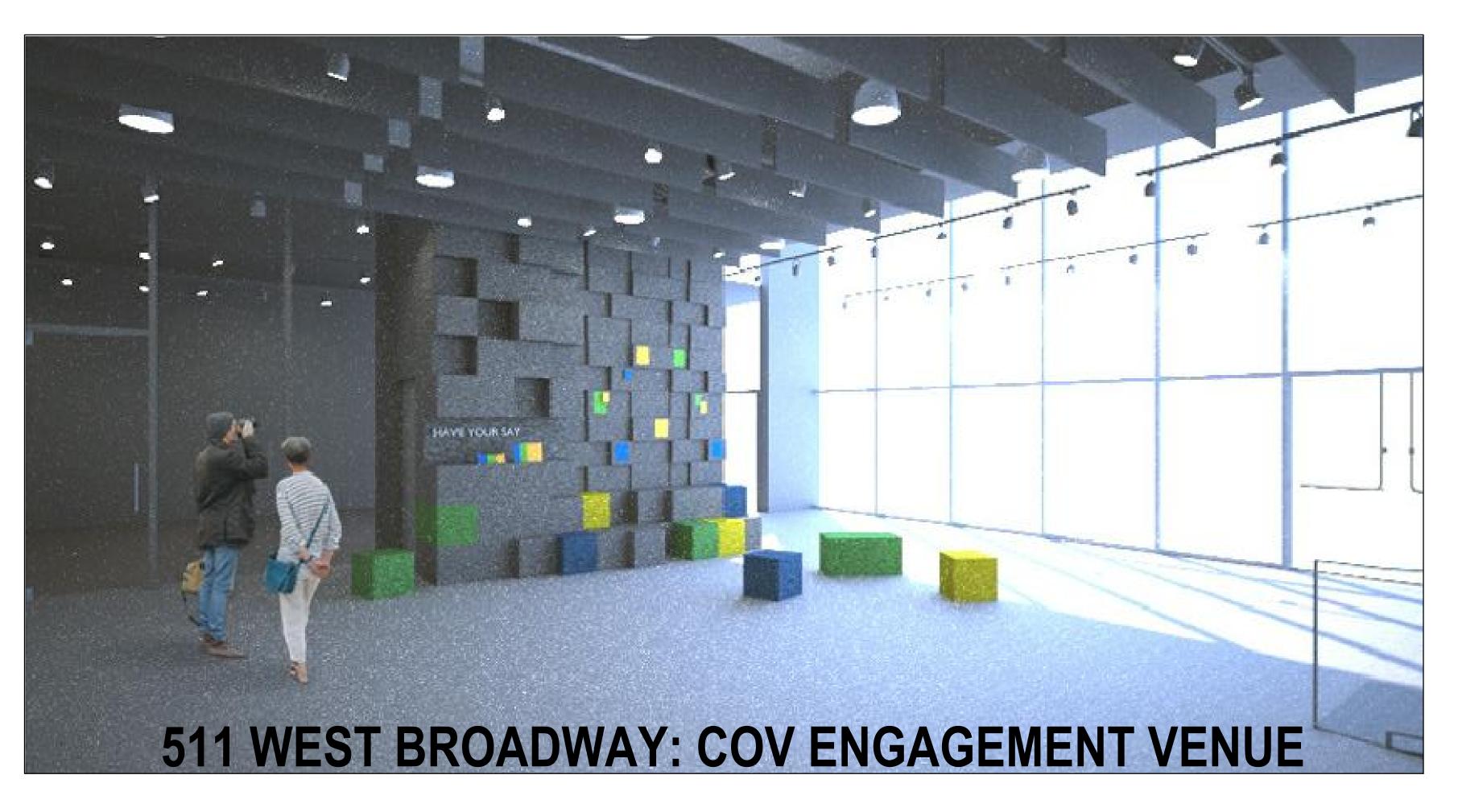
SPECIFICATIONS

CHECKED KS JOB NO. 040B-047-17 DECEMBER 2017

N.T.S

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ELECTRICAL SYMBOL											
LIGHTING	POWER	COMMUNICATIONS	FIRE ALARM	ABBREVIATIONS							
EMERGENCY/NIGHT LIGHT LUMINAIRE		▼ CATV OUTLET		NOTE EQUIPMENT SHOWN DOTTED IS EXISTING AND TO REMAIN UNLESS INDICATED OTHERWISE							
SURFACE MOUNTED LUMINAIRE	FOUR PLEX RECEPTACLE	▼ COMBINATION TELEPHONE AND DATA OUTLET WALL	▼ THERMAL DETECTOR	AC ABOVE COUNTER							
CEILING RECESSED LUMINAIRE		→ WIRELESS ACCESS POINT	FIRE ALARM HORN (W/STROBE)	D INDICATES CIRCUIT TO BE DEDICATED							
© © CEILING SUSPENDED LINEAR LUMINAIRE	→ ABOVE COUNTER FOUR PLEX RECEPTACLE		F FIRE ALARM PULL STATION	R EXISTING DEVICE TO BE REMOVED							
FLUORESCENT STRIP LIGHT	5-20R DUPLEX RECEPTACLE (T-SLOT)	© CEILING MOUNTED SPEAKER	F FIRE ALARM BELL	RR EXISTING DEVICE TO BE REMOVED AND RELOCATED							
SURFACE MOUNTED LUMINAIRE	ABOVE COUNTER 5-20R DUPLEX RECEPTACLE (T-SLOT)	© WALL MOUNTED SPEAKER	© CEILING MOUNTED FIRE ALARM SPEAKER	RE EXISTING DEVICE IN NEW RELOCATED POSITION							
RECESSED DOWN LIGHT	GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE	SECURITY	FAP FIRE ALARM PANEL	RP EXISTING DEVICE TO BE REPLACED WITH NEW							
☐ WALL MOUNTED DOWN LIGHT		<u> </u>	SINGLE LINE	WP WEATHER PROOF							
\$3 THREE WAY TOGGLE SWITCH	FLOOR MOUNTED FOUR PLEX RECEPTACLE	DOOR CONTACT	⊶ BREAKER	HK HOUSE KEEPING							
	① JUNCTION BOX	☑ CARD READER	→ GANG OPERATED DISCONNECT SWITCH	E EXISTING TO REMAIN							
♦ OCCUPANCY SENSOR, CEILING MOUNTED		ES ELECTRIC STRIKE	□ FUSE	RI ROUGH-IN ONLY							
D DIMMER SWITCH	MECHANICAL MOTOR CONNECTION	KEY PAD	≡ GROUND								
EMERGENCY BATTERY PACK	☐ DISCONNECT SWITCH	REX REQUEST TO EXIT SENSOR	E METERING TRANSFORMER								
DUAL REMOTE EMERGENCY HEADS, CEILING MOUNTED	GROUND BUS		SERVICE PROVIDER METER								
DUAL REMOTE EMERGENCY HEADS, WALL MOUNTED	PANEL BOARD		TRANSFORMER (DRY TYPE)								
EXIT SIGN - ARROWS AS INDICATED			GENERATOR								
EXIT SIGN - SINGLE SIDED			TRANSFER SWITCH								

	DRAWING LIST
DWG NO.	DESCRIPTION
E0.0	COVER SHEET, SYMBOL LEGEND & DRAWING LIST
E0.1	DEMOLITION PLAN
E1.0	POWER AND LOW TENSION PLAN
E2.0	LIGHTING PLAN
E3.0	SCHEDULES & DETAILS
E4.0	SPECIFICATION

CIVIC ADDRESS:

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3. ISSUED FOR 100% COORDINATION

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2017 DEC 15 2017 DEC 13

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 ISSUED FOR 50% COORDINATION

REVISIONS

Carscadden

JOB TITLE

COV ENGAGEMENT VENUE 511 WEST BROADWAY

SHEET

COVER SHEET, SYMBOL LEGEND AND DRAWING LIST

DRAWN CHECKED
BOY
BOY

SCALE AS NOTED

2-17-114

JOB NO.

AS NOTED

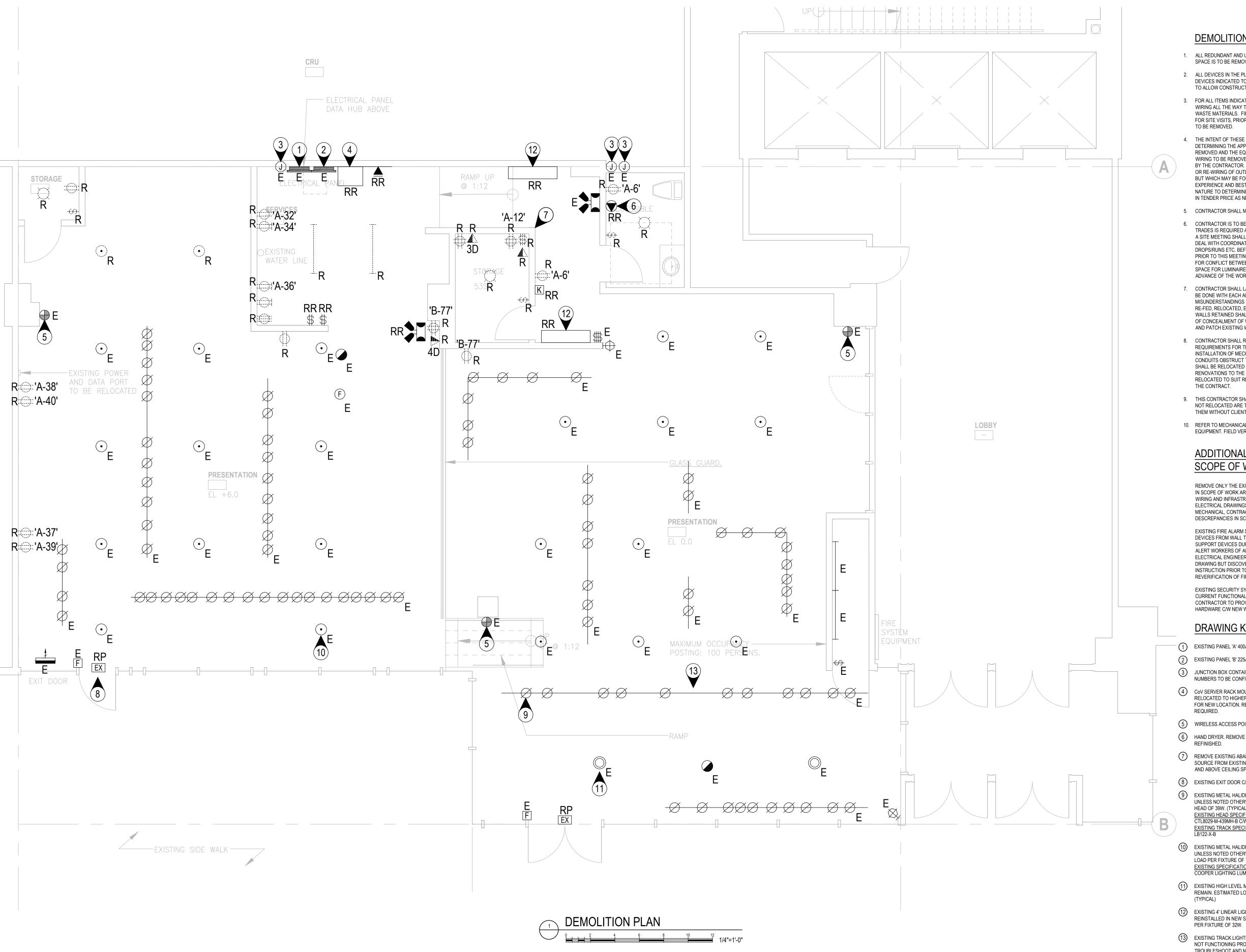
SHEET

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DATE

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- 1. ALL REDUNDANT AND UNUSED WIRING INCLUDING ANY WIRING IN THE CEILING SPACE IS TO BE REMOVED BACK TO THE SOURCE BY THIS CONTRACTOR.
- 2. ALL DEVICES IN THE PLAN ARE TO BE REMOVED AS NOTED. FOR ALL EXISTING DEVICES INDICATED TO REMAIN, OR NOT INDICATED TO BE REMOVED, REINSTALL TO ALLOW CONSTRUCTION AS NECESSARY.
- 3. FOR ALL ITEMS INDICATED AS REMOVE, REMOVE ITEMS INCLUDING CONDUIT AND WIRING ALL THE WAY TO THE SOURCE AND MAKE IT SAFE. DISPOSE OF ALL WASTE MATERIALS. FIRE STOP ALL OPENINGS. THE CONTRACTOR IS TO ALLOW FOR SITE VISITS, PRIOR TO SUBMITTING TENDER, TO VERIFY ALL ITEMS THAT ARE
- 4. THE INTENT OF THESE DRAWINGS IS TO AID BIDDING CONTRACTORS IN DETERMINING THE APPROXIMATE EXTENT OF THE EXISTING EQUIPMENT TO BE REMOVED AND THE EQUIPMENT TO BE RE-USED. EXACT COUNTS AND EXTENT OF WIRING TO BE REMOVED, RE-USED, RELOCATED IS TO BE DETERMINED ON SITE BY THE CONTRACTOR. CONTRACTOR SHALL ALLOW FOR REMOVAL, RELOCATION, OR RE-WIRING OF OUTLETS AND DEVICES WHICH ARE NOT SHOWN ON DRAWINGS BUT WHICH MAY BE FOUND AS WORK PROCEEDS. CONTRACTOR TO USE HIS EXPERIENCE AND BEST JUDGMENT FROM SITE VISIT AND WORK OF A SIMILAR NATURE TO DETERMINE HOW MUCH WORK THIS WILL ENTAIL. MAKE ALLOWANCE IN TENDER PRICE AS NECESSARY.
- 5. CONTRACTOR SHALL MAKE ALLOWANCE FOR SITE VISITS AS REQUIRED.
- 6. CONTRACTOR IS TO BE AWARE THAT CONSIDERABLE COORDINATION WITH OTHER TRADES IS REQUIRED AND TO THAT END PRIOR TO COMMENCE WORK IN AN AREA, A SITE MEETING SHALL BE HELD ATTENDED BY ALL MAJOR TRADES TOGETHER TO DEAL WITH COORDINATION, CEILING HEIGHTS, STRUCTURE, WALL TYPES, DUCT DROPS/RUNS ETC. BEFORE THEY BECOME AN ISSUE AT TIME OF INSTALLATION. PRIOR TO THIS MEETING, CONTRACTOR IS TO CHECK AVAILABLE CEILING SPACE FOR CONFLICT BETWEEN SERVICES REQUIRED TO BE INSTALLED AND AVAILABLE SPACE FOR LUMINAIRES, DUCTS, ETC. & INFORM THE GENERAL CONTRACTOR IN ADVANCE OF THE WORK OF OTHER TRADES.
- 7. CONTRACTOR SHALL LAY OUT CAREFULLY FOR TRADESMAN ON SITE, WHAT IS TO BE DONE WITH EACH AND EVERY EXISTING OUTLET, DEVICE, ETC. TO PRECLUDE MISUNDERSTANDINGS REGARDING EQUIPMENT TO BE RETAINED IN OPERATION, RE-FED, RELOCATED, ETC. FURTHER, OUTLETS TO BE INSTALLED IN EXISTING WALLS RETAINED SHALL BE INDICATED TO ENSURE COMPLETE UNDERSTANDING OF CONCEALMENT OF WIRING ETC., PER SPECIFICATION AND THE NEED TO CUT AND PATCH EXISTING WALLS.
- 8. CONTRACTOR SHALL REVIEW THE MECHANICAL DRAWINGS & BE AWARE OF REQUIREMENTS FOR THE REVISED LAYOUT ESPECIALLY WITH REGARD TO INSTALLATION OF MECHANICAL DUCTS IN CEILING SPACES. WHERE EXISTING CONDUITS OBSTRUCT THE PROPOSED ROUTING THESE OBSTRUCTING CONDUITS SHALL BE RELOCATED IF IT IS DESIRED TO RE-USE THEM. THAT IS, LAYOUTS FOR RENOVATIONS TO THE AREA SHALL GOVERN AND EXISTING CONDUITS SHALL BE RELOCATED TO SUIT RENOVATIONS. THIS WORK SHOULD BE ALLOWED FOR IN
- 9. THIS CONTRACTOR SHALL VERIFY IF EXISTING LUMINAIRES BEING REMOVED AND NOT RELOCATED ARE TO BE HANDED OVER TO THE CLIENT. DO NOT DISPOSE OF THEM WITHOUT CLIENT'S WRITTEN APPROVAL.
- 10. REFER TO MECHANICAL DEMO PLANS FOR LOCATION OF MECHANICAL EQUIPMENT. FIELD VERIFY EXACT LOCATIONS.

ADDITIONAL DEMOLITION & SCOPE OF WORK NOTES:

REMOVE ONLY THE EXISTING LUMINAIRES, RECEPTACLES, COMMUNICATIONS OUTLETS IN SCOPE OF WORK AREA TAGGED FOR REMOVAL. CONTRACTOR TO REMOVE ALL WIRING AND INFRASTRUCTURE FROM DEVICE BACK TO SOURCE. ELECTRICAL DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND MECHANICAL, CONTRACTOR TO NOTIFY ELECTRICAL ENGINEER OF ANY DESCREPANCIES IN SCOPE OF AREAS BEING MODIFIED.

EXISTING FIRE ALARM SYSTEM TO REMAIN AS-IS. REMOVE EXISTING FIRE ALARM DEVICES FROM WALL TO ALLOW FOR CONSTRUCTION AS NEEDED. TEMPORARILY SUPPORT DEVICES DURING CONSTRUCTION WHILE MAINTAINING FUNCTIONALITY TO ALERT WORKERS OF AN ALARM SITUATION. REINSTALL POST CONSTRUCTION. NOTIFY ELECTRICAL ENGINEER OF ANY FIRE ALARM DEVICES NOT APPEARING ON THIS DRAWING BUT DISCOVERED DURING THE DEMOLITION PROCESS AND AWAIT WRITTEN INSTRUCTION PRIOR TO PROCEEDING AND RELOCATE IF REQUIRED. ALLOW FOR THE REVERIFICATION OF FIRE ALARM DEVICES AS NEEDED.

EXISTING SECURITY SYSTEM INCLUDING INTRUSION DETECTORS AND TO MAINTAIN CURRENT FUNCTIONALITY. RELOCATE KEYPAD PER LOCATIONS SHOWN ON DRAWINGS. CONTRACTOR TO PROVIDE A COMPLETE AND OPERABLE SYSTEM UTILIZING EXISTING HARDWARE C/W NEW WIRING WHERE REQUIRED.

DRAWING KEY NOTES:

- 1) EXISTING PANEL 'A' 400A-208V-3PH-4W CCTS 1-42
- 2 EXISTING PANEL 'B' 225A-208V-3PH-4W CCTS 43-84
- 3) JUNCTION BOX CONTAINING LOCAL CIRCUITS, CIRCUIT NUMBERS TO BE CONFIRMED ON SITE.
- (4) Cov Server rack mounted to bics backboard. To be RELOCATED TO HIGHER ELEVATION. SEE ARCHITECTURAL FOR NEW LOCATION. REROUTE EXISTING DATA CABLES AS
- (5) WIRELESS ACCESS POINTS MOUNTED AT HIGH-LEVEL.
- 6 HAND DRYER. REMOVE AND RE-INSTALL ONCE WALL
- 7) REMOVE EXISTING ABANDONED DATA CABLING BACK TO SOURCE FROM EXISTING STORAGE ROOM CEILING, WALL AND ABOVE CEILING SPACE.
- (8) EXISTING EXIT DOOR C/W PANIC ALARM BAR TO REMAIN.
- 9 EXISTING METAL HALIDE TRACK + HEADS TO REMAIN UNLESS NOTED OTHERWISE. ESTIMATED LOAD PER TRACK HEAD OF 39W. (TYPICAL) EXISTING HEAD SPECIFICATION: CONTECH LIGHTING CTL8029-M-439MH-B C/W G8.5 BALLAST EXISTING TRACK SPECIFICATION: CONTECH LIGHTING
- (10) EXISTING METAL HALIDE PENDANT FIXTURE TO REMAIN UNLESS NOTED OTHERWISE. LOAD PER FIXTURE OF 70W. (TYPICAL) EXISTING SPECIFICATION: AIM-70-MP-MT-AC14-W-I-SC-BK COOPER LIGHTING LUMARK 14" HIGH-BAY.
- (11) EXISTING HIGH LEVEL METAL HALIDE DOWNLIGHT TO REMAIN. ESTIMATED LOAD PER DOWNLIGHT OF 39W.
- (12) EXISTING 4' LINEAR LIGHT TO BE REMOVED AND REINSTALLED IN NEW STORAGE ROOM. ESTIMATED LOAD
- (13) EXISTING TRACK LIGHTING SEGMENT HAS BEEN NOTED AS NOT FUNCTIONING PROPERLY. CONTRACTOR TO TROUBLESHOOT AND MAKE FUNCTIONAL.



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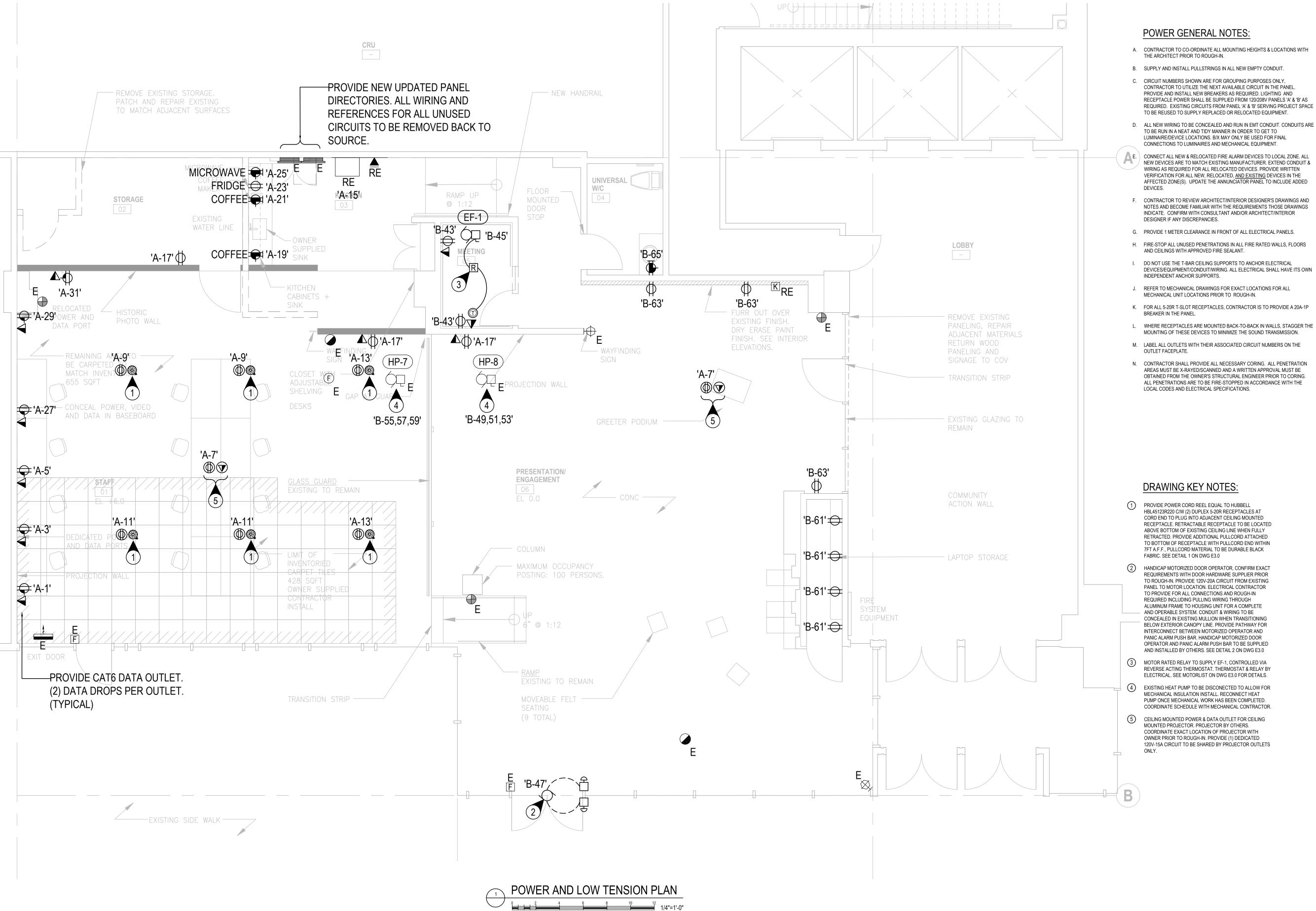
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DEMOLITION PLAN

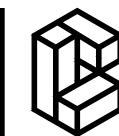
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SCALE

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- DEVICES/EQUIPMENT/CONDUIT/WIRING. ALL ELECTRICAL SHALL HAVE ITS OWN



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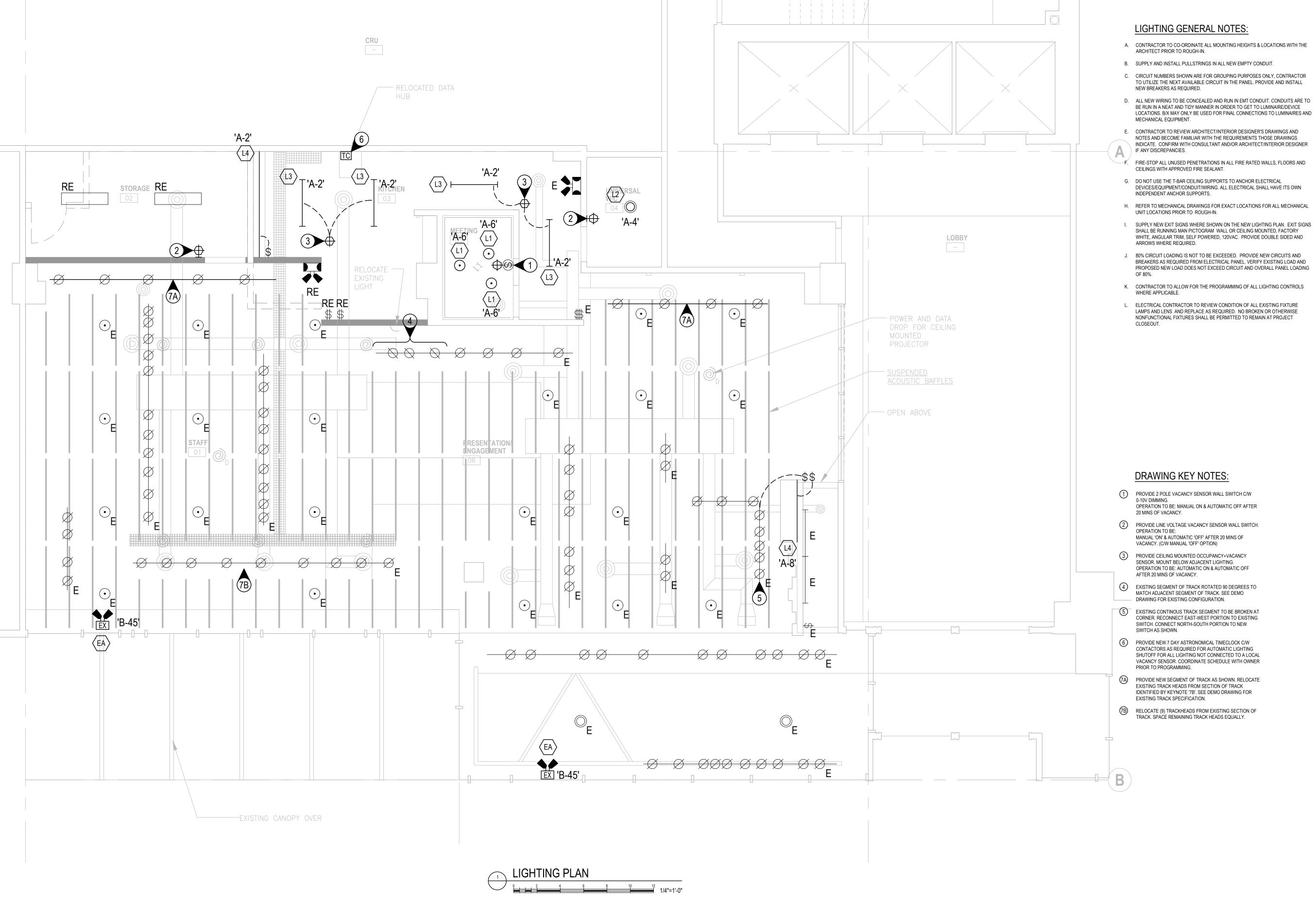
POWER AND LOW TENSION PLAN

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SCALE AS NOTED

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- D. ALL NEW WIRING TO BE CONCEALED AND RUN IN EMT CONDUIT. CONDUITS ARE TO BE RUN IN A NEAT AND TIDY MANNER IN ORDER TO GET TO LUMINAIRE/DEVICE LOCATIONS. B/X MAY ONLY BE USED FOR FINAL CONNECTIONS TO LUMINAIRES AND
- NOTES AND BECOME FAMILIAR WITH THE REQUIREMENTS THOSE DRAWINGS INDICATE. CONFIRM WITH CONSULTANT AND/OR ARCHITECT/INTERIOR DESIGNER
- DEVICES/EQUIPMENT/CONDUIT/WIRING. ALL ELECTRICAL SHALL HAVE ITS OWN
- SHALL BE RUNNING MAN PICTOGRAM WALL OR CEILING MOUNTED, FACTORY WHITE, ANGULAR TRIM, SELF POWERED, 120VAC. PROVIDE DOUBLE SIDED AND
- BREAKERS AS REQUIRED FROM ELECTRICAL PANEL. VERIFY EXISTING LOAD AND PROPOSED NEW LOAD DOES NOT EXCEED CIRCUIT AND OVERALL PANEL LOADING

SHEET TITLE

LIGHTING PLAN

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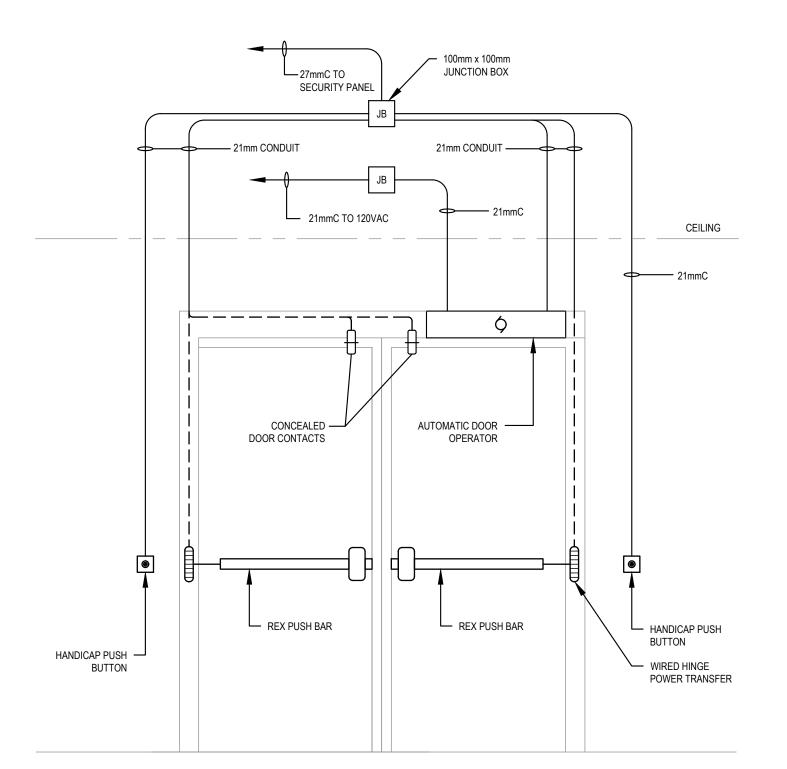
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TYPE DESCRIPTION		PRE-APPROVED PRODUCTS	MOUNTING			LAMP			BALLAST/DRIVE	B VOLTAGE	REMARKS	NOTES	
	TYPE DESCRIPTION	TRE-ALL ROVED L RODOCTO		WATTS (W)	TYPE	LED LUMENS	COLOUR	MIN CRI QT	Y DALLAS I/DINIVE	NVOLIAGE	NEWANNO	INOTE,	
	L1 LED PENDANT LUMINAIRE	SISTEMALUX BOLLA MEDIUM LED 1934-835-UNV-01-D10	PENDANT	22.5	LED	1551	3500K	80	0-10V	120			
	L2 LED CEILING MOUNTED	EUREKA ELROY 4765-NPL-LED.14-35-120-DV-WH	SURFACE	18	LED	990	3500K	80	0-10V	120			
	L3 LED LINEAR DOWNLIGHT 4'	FLUXWERX PROFILE 100 DN PF1-F-B-B-35-W-04-S-F2-M-12	SUSPENDED	23	LED	2550	3500K	80	N/A	120			
		DIFFUSION SL3-IN-XX-24V-3400K C/W SLC-002S CHANNEL + LENS AND REMOTE DRIVER.	COVE	3	LED	263	3400K	91+	N/A	120	WATTS/LUMENS PER 1 FOOT SECTION.		
	EA LED EXIT SIGN	BEGHELLI SL-RM-SP-L-2-0LR (ADD R INDICATOR PER DWGS)-M-90SP-AT (2 WIRES)	SURFACE	2	LED	N/A	N/A	N/A	N/A	120	AUTO TEST.		

- 1. LUMINAIRES TO BE COMPLETE WITH INTEGRAL DAYLIGHT SENSORS.
- 2. LUMINAIRES TO BE COMPLETE WITH INTEGRAL OCCUPANCY SENSORS.

- A. DUE TO CONSTANT CHANGES IN CATALOGUE NUMBERS, ALL NUMBERS INDICATED MUST BE VERIFIED WITH THE MANUFACTURER PRIOR TO ORDERING.
- B. ALL LUMINAIRE FINISHES TO BE APPROVED BY ARCHITECT PRIOR TO ORDERING.
- C. TYPE OF CONSTRUCTION FOR ALL CEILINGS TO BE COORDINATED WITH ARCHITECTURAL DRAWINGS PRIOR TO ORDERING MOUNTING KITS. CONTRACTOR TO OBTAIN A SET OF IFC ARCHITECTURAL DRAWINGS AND COORDINATE MOUNTING KITS. CONTRACTOR TO OBTAIN A SET OF IFC ARCHITECTURAL DRAWINGS AND COORDINATE MOUNTING KITS. CONTRACTOR TO OBTAIN A SET OF IFC ARCHITECTURAL DRAWINGS AND COORDINATE MOUNTING WITH CEILING TYPES SHOWN. ON ARCHITECTURAL PLANS. MOUNTING HEIGHT OF ALL SUSPENDED LUMINAIRES TO BE ADJUSTABLE ON SITE, AND CONTRACTOR TO COORDINATE ON SITE UNDER DIRECTION OF CONSULTANT.
- D. CONTRACTOR TO ALLOW A MINIMUM 2 WEEKS FOR INITIAL REVIEW OF ENTIRE LIGHTING SHOP DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE LUMINAIRES ARE DELIVERED IN A TIMELY MANNER TO THE SITE. NO EXTRAS WILL BE
- E. ALL CONTROLS INTEGRATED WITH LUMINAIRES TO BE COMMISSIONED ON SITE AFTER INSTALL. CONTRACTOR TO ENSURE THAT ALLOWANCE IS MADE FOR ADJUSTING AND COMMISSIONING OF ALL CONTROLS AS REQUIRED. F. COORDINATE MOUNTING HEIGHT OF ALL WALL MOUNTED LUMINAIRES WITH ARCHITECT PRIOR TO ROUGH-IN. COORDINATE SUSPENSION HEIGHT OF ALL SUSPENDED LUMINAIRES WITH ARCHITECT PRIOR TO INSTALLATION.
- G. ALL JUNCTION BOXES FOR SURFACE MOUNT LUMINAIRES SHALL NOT BE WIDER THAN THE LUMINAIRE MOUNTING PLATE.
- H. ALL LED LUMINAIRES ARE BE INCLUDED WITH CONSTANT CURRENT DRIVERS UNLESS SPECIFIED.
- I. ALL LUMINAIRES SHALL BE APPROVED AS DEFINED IN CURRENT CANADIAN ELECTRICAL CODE (CEC)

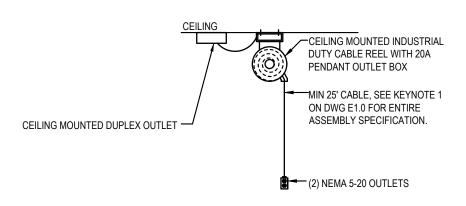




NOTES:

- 1. ALL WIRING SHALL BE CONCEALED IN CONDUIT UNLESS OTHERWISE INDICATED.
- 2. ALL DOOR CONTACTS SHALL BE RECESS. SURFACE MOUNTED CONTACTS ARE NOT ACCEPTABLE. 3. DOOR HARDWARE AND WIRING SHALL BE SUPPLIED AND INSTALLED BY COV SECURITY DEPARTMENT.





RETRACTABLE RECEPTACLE DETAIL

UNIT No. UNIT DESCRIPTION LOCATION V Ph HP (A) (VA) Breaker Fe der Conduit Panel & Circuit Pan													STA	RTER		ISC.	CONT	TROL	DEVIC	<u> </u>
No. UNIT DESCRIPTION LOCATION V Ph HP (A) (VA) Breaker Feeder Conduit Circuit # Circui													Y P E	U N S P T A L E D E	I U P P L I E E	N I S R T E A D L L E	Y P E	U P L I E	N I S F T E A C L L E	R N E O T E
EF-1 EXHAUST FAN MEETING ROOM 05 115 1 FRAC 3 345 15 2c 12 3/4" PANEL B MRR E E E M M E RT E E E E M E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E E M E M E E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E M E M E E E E E M E M E E E E E M E M E E E E E M E M E E E E E M E M E E E E E M E E E E E M E E E E E M E E E E E M E E E E E M E E E E E M E E E E E M E E E E M E E E E M E E E E E M E E E E E M E E E E E M E E E E E M E E E E E M E E E E E M E E E E E M E E E E E M E E E E M E E E E E M E E E E E M E E E E M E E E E E M E E E E E M E E E E E M E E E E E M E E E E E M E E E E E M E E E E E M E E		UNIT DESCRIPTION	LOCATION	V	Ph	НР	(A)	(VA)	Breaker	Feeder	Conduit									
	EXHAUST FAN 8	CEILING FAN		1		1					1					1 1	1			
	EF-1	EXHAUST FAN	MEETING ROOM 05	115	1	FRAC	3	345	15	2c 12	3/4"	PANEL B	MRR	EE	E M	ME	RT	E	E F	:
	OENEDAL NOTE																			

(c) Control Device:

IL = Interlocked with -

TC = 7 - Day Time Clock

PT = 7 - Day Programmable Thermostat

SC = Solid State Variable speed controller

INTT = Integral thermostat c/w Unit

RT = Reverse Acting Thermostat

- A. CONTRACTOR TO OBTAIN AND REVIEW MECHANICAL DRAWINGS AND SCHEDULES DURING TENDER TO ENSURE ALL SCOPE REQUIRED FOR ELECTRICAL CONNECTION TO MECHANICAL UNITS HAS BEEN ALLOWED FOR. NO EXTRAS WILL BE ALLOWED FOR STARTERS, DISCONNECTS, OR ANY OTHER EQUIPMENT IF IT IS SHOWN ON THE MECHANICAL TENDER DRAWINGS TO BE SUPPLIED BY ELECTRICAL.
- 3. CONTRACTOR TO REVIEW MECH SHOP DRAWINGS AND CONFIRM ALL EQUIPMENT LOADS, OVERCURRENT PROTECTION, WIRE AND CONDUIT SIZES AND MOUNTING HEIGHTS PRIOR TO ROUGH-IN.
- CONTRACTOR TO INSPECT ALL MECH EQUIPMENT LABELS ON SITE PRIOR TO INSTALLATION AND INFORM THE CONSULTANT OF ANY DISCREPANCIES. FOLLOW THE MECH LABELS FOR FINAL SIZE OF THE BREAKERS AS PER C.E.C.
- D. ALL MOTORS LOCATED OUTSIDE TO BE C/W WEATHER PROOF DISCONNECT SWITCHES & RAIN TIGHT CONNECTIONS.

MECH MOTOR SCHEDULE ABBREVIATIONS: (a) Supplied By:

(b) Starter Type: PCS = Packaged Control System E = Electrical Contractor M = Mechanical Contractor

INT = Integral to Unit

MRR = Motor Rated Relay C/W 24VAL Coil , HOA switch, and Motor

Protection Switch

VFD = Variable Frequency Drive Complete with Bypass and HOA

Magnetic Starter.

MG = Magnetic Starter Complete with HOA switch and aux status contact

MECHANICAL MOTORLIST

NTS



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SCHEDULES AND DETAILS

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SCALE

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ELECTRICAL SPECIFICATION

- .1 GENERAL REQUIREMENTS, INSTRUCTIONS TO BIDDERS, THIS SPECIFICATION AND ANY ADDENDA HERETO FORM PART OF THE CONTRACT DOCUMENTS AND SHALL BE READ IN CONJUNCTION WITH THEM. WORK TO INCLUDE THE FURNISHING OF ALL LABOR AND MATERIALS, UNLESS SPECIFIED OTHERWISE, TO COMPLETE AND PUT INTO OPERATING CONDITION ALL ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.
- .2 IT IS THE INTENT OF THE WORK TO PROVIDE COMPLETE, NEATLY FINISHED, AND OPERATIONAL SYSTEMS AND ANY LABOR, MATERIAL PERMITS, LICENSES, APPROVALS AND INSPECTIONS REQUIRED FOR COMPLETION OF THE WORK, WHETHER SPECIFICALLY MENTIONED IN THE DRAWINGS OR SPECIFICATIONS OR NOT. ARE TO BE INCLUDED IN THE TENDERED PRICE.
- .3 RESPONSIBILITY AS TO WHICH TRADE PROVIDES REQUIRED ARTICLES OR MATERIALS RESTS SOLELY WITH THE GENERAL CONTRACT TRADE. EXTRAS WILL NOT BE CONSIDERED BASED ON GROUNDS OF DIFFERENCE OF INTERPRETATION OF SPECIFICATIONS AS TO WHICH TRADE INVOLVED SHALL PROVIDE CERTAIN SPECIALTIES OR MATERIALS.
- .4 THE DRAWINGS AND SPECIFICATIONS FOR THE COMPLETE WORKS, INCLUDING ALL OF THOSE RELATED TO OTHER TRADES ARE TO BE EXAMINED BEFORE SUBMITTING TENDERS. ALL ELECTRICAL AND COMMUNICATIONS REQUIREMENTS INDICATED ARE TO BE INCLUDED
- .5 CLEAN UP AND REMOVE ALL UNUSED WIRING AND CONDUITS.
- .6 REMOVE AND REINSTALL EXISTING DEVICES TO FACILITATE CONSTRUCTION AS REQUIRED.
- .7 CONFIRM OUTLET LOCATIONS AND MOUNTING HEIGHT WITH PROJECT COORDINATOR ON SITE PRIOR TO INSTALLATION.
- .8 FIRE PROOF ALL FIRE RATED PENETRATIONS AFTER INSTALLATION AS PER SECTION 39.
- .9 COORDINATE WITH AND GET APPROVAL FROM LANDLORD FOR ALL DRILLING. CORING AND CUTTING OF BUILDING STRUCTURE COORDINATE LOCATIONS ON SITE PRIOR TO CARRYING OUT THE WORK. ALLOW FOR ALL COSTS FOR X-RAYING/SCANNING. CONTRACTOR MUST OBTAIN WRITTEN APPROVAL FROM THE LANDLORD STRUCTURAL ENGINEER PRIOR TO COMMENCEMENT OF THE
- .10 PROVIDE ALL NECESSARY TEMPORARY POWER AND LIGHTING.
- .11 WHERE TENANT SPACES ARE OCCUPIED BY THE CLIENT, ALL NOISY WORK SUCH AS (BUT NOT RESTRICTED TO) WIRING AND CABLING PULLING, INSTALLATION OF CONDUIT SHALL BE DONE AFTER HOURS. WIRING CONNECTIONS TO SYSTEMS FURNITURE TO BE DONE ON WEEKEND, INCLUDING CABLING TERMINATIONS
- DRAWINGS AND SPECIFICATIONS
 - .1 DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO EACH OTHER AND WHAT IS CALLED FOR BY ONE IS TO BE BINDING AS IF CALLED FOR BY BOTH
 - .2 SHOULD ANY DISCREPANCY APPEAR BETWEEN DRAWINGS AND SPECIFICATIONS THAT LEAVES THE ELECTRICAL TRADE IN DOUBT AS TO TRUE INTENT AND MEANING, OBTAIN RULING FROM THE ENGINEER BEFORE SUBMITTING TENDER, OR ALLOW FOR THE MOST
- 3. EXAMINATION OF OTHER DRAWINGS
 - .1 THE ELECTRICAL CONTRACTOR IS TO EXAMINE CAREFULLY STRUCTURAL, ARCHITECTURAL AND MECHANICAL DRAWINGS, AND THE WORK OF OTHER TRADES AND SATISFY HIMSELF THAT THE WORK UNDER THIS CONTRACT CAN BE SATISFACTORILY CARRIED OUT WITHOUT CHANGES TO THE BUILDING AS SHOWN ON THE PLANS. SHOULD ANY DIFFICULTY ARISE SHOWING CONFLICT WITH, OR REQUIRING ADDITIONAL WORK BEYOND THE WORK OF THESE DRAWINGS, BRING THIS MATTER TO THE ATTENTION OF THE ENGINEER BEFORE SUBMITTING TENDER
- UNIFORMITY OF EQUIPMENT
- .1 UNLESS OTHERWISE SPECIFIED, UNIFORMITY OF MANUFACTURE IS TO BE MAINTAINED FOR ANY PARTICULAR ITEM THROUGHOUT.
- STANDARDS OF MATERIAL AND WORKMANSHIP
 - .1 ALL MATERIALS ARE TO BE NEW AND OF THE QUALITY SPECIFIED, AND SHALL BE APPROVED BY CSA OR EQUIVALENT AGENCY
- .2 ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER BY QUALIFIED TRADESMEN. THE ELECTRICAL CONTRACTOR SHALL KEEP A COMPETENT FOREMAN AND NECESSARY ASSISTANTS ON THE SITE DURING THE PROGRESS OF THE WORK.
- .3 ALL MATERIAL AND INSTALLATION SHALL MATCH BUILDING STANDARD UNLESS IT IS NOTED OTHERWISE ON THE DRAWINGS.
- RECORD PLANS & MAINTENANCE MANUALS
- .1 THE ENGINEER WILL FURNISH TO THE ELECTRICAL TRADE ONE SET OF DRAWINGS TO BE USED FOR RECORD PURPOSES. THE ELECTRICAL TRADE IS TO ACCURATELY RECORD ON THESE PRINTS ALL REVISIONS TO THE ORIGINAL PLANS THAT ARE MADE ON SITE
- .2 THE ELECTRICAL TRADE IS TO PRODUCE AT HIS OWN EXPENSE A SET OF RED LINE MARK-UP DRAWINGS, INCLUDING ALL CHANGES TO THE ORIGINAL TENDER DRAWINGS COVERED BY ADDENDA, CHANGE ORDERS, FIELD CHANGES, AND JOB CONDITIONS. AND TURN THESE OVER TO THE ENGINEER IN HARD COPY FORM. COMPLETED RECORD DRAWINGS ARE TO BE CLEARLY MARKED "RECORD
- .3 THIS CONTRACTOR SHALL ALLOW FOR A COST OF \$350 PER DRAWING FOR TRANSFERRING RED LINE MARK-UPS TO ELECTRONIC AUTOCAD RECORD DRAWINGS AND THIS AMOUNT SHALL INCLUDED IN THE TENDER BID. CONTRACTOR MAY HIRE AES TO PRODUCE THE RECORD CAD DRAWINGS IF DESIRED
- .4 THIS CONTRACTOR SHALL PROVIDE 3 THREE-RING BINDERS FOR MAINTENANCE MANUALS. MANUALS SHALL CONTAIN ALL WARRANTIES, SHOP DRAWINGS, INSPECTION LETTERS, PANEL SCHEDULES, ETC.
- SHOP DRAWINGS
- .1 THE ELECTRICAL CONTRACTOR IS TO SUBMIT TO THE ENGINEER, FOR REVIEW, SHOP DRAWINGS OF MAJOR ELECTRICAL EQUIPMENT SUCH EQUIPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO SWITCHGEAR, PANELBOARDS, SERIES-RATED BREAKER COMBINATIONS, FIXTURES AND FITTINGS NOT PROVIDED BY THE OWNER.
- .2 ALL DRAWINGS ARE TO BE SUBMITTED IN TRIPLICATE AND TWO COPIES WILL BE RETURNED TO THE ELECTRICAL TRADE. SUBMIT ADDITIONAL COPIES FOR APPROVAL AS MAY BE REQUIRED.
- .3 THE ENGINEER'S REVIEW OF SHOP DRAWINGS IS TO BE FOR GENERAL DESIGN ONLY AND WILL NOT RELIEVE THE ELECTRICAL TRADE OR SUPPLIERS FROM RESPONSIBILITY FOR FRRORS, PROPER FITTING, CONSTRUCTION OF WORK, AND FURNISHING OF MATERIALS. REVIEW WILL NOT BE CONSTRUED AS APPROVING DEPARTURES FROM CONTRACT DOCUMENT REQUIREMENTS IF SUCH DEPARTURES ARE NOT SPECIFICALLY NOTED. THE ELECTRICAL TRADE IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS.
- .4 DEVIATIONS FROM THE SPECIFIED LUMINAIRE AND CONTROL PACKAGE WILL REQUIRE ASHRAE 90.1-2010 COMPLIANCE FORMS TO BE REVISED AND RESUBMITTED TO THE AUTHORITY HAVING JURISDICTION BY THE ELECTRICAL ENGINEER OF RECORD FOR THE PROJECT, THE COST OF REVISING AND RESUBMITTING THESE FORMS WILL BE AT THE EXPENSE OF THE CONTRACTOR, ALLOW FOR THE FOLLOWING TO BE PAYABLE TO THE ELECTRICAL CONSULTANT, FOR THE WORK TO BE COMPLETED: - \$5,000 PER ALTERNATE PACKAGE SUBMISSION TO REVIEW AND ENSURE ENERGY AND CONTROL TARGETS ARE NOT DEVIATED FROM. - \$8.000 TO COMPLETE THE COMPLIANCE FORMS WITH THE ACCEPTED ALTERNATE LUMINAIRES/CONTROL PACKAGE.
- GUARANTEE WARRANTY
- .1 THE ELECTRICAL TRADE SHALL FURNISH A WRITTEN GUARANTEE WARRANTY, SIGNED BY AUTHORIZED PERSONNEL, STATING:
- .1 THAT ALL WORK EXECUTED UNDER THIS CONTRACT WILL BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP FOR A
- PERIOD OF 1 YEAR FROM DATE OF FINAL ACCEPTANCE. THE ABOVE PARTIES FURTHER AGREE TO, AT THEIR OWN EXPENSE, REPAIR AND REPLACE ALL SUCH DEFECTIVE WORK, AND OTHER WORK DAMAGED THEREBY, WHICH FAILS OR BECOMES DEFECTIVE DURING THE TERM OF THE GUARANTEE WARRANTY PROVIDED THAT SUCH FAILURE IS NOT DUE TO IMPROPER USAGE.
- .3 THE PERIOD OF THE GUARANTEE SPECIFIED WILL IN NO WAY SUPPLANT ANY OTHER GUARANTEE OF A LONGER PERIOD BUT BE BINDING ON WORK NOT OTHERWISE COVERED.
- SETTING OUT OF THE WORK
- .1 THE ELECTRICAL TRADE IS RESPONSIBLE FOR CORRECTING ALL WORK COMPLETED CONTRARY TO THE INTENT OF DRAWINGS AND SPECIFICATIONS AND SHALL BEAR ALL COSTS INVOLVED IN MAKING THE CORRECTIONS. WHERE INTENT OF DRAWINGS AND SPECIFICATIONS IS NOT CLEAR, OBTAIN CLARIFICATION FROM THE ENGINEER BEFORE PROCEEDING WITH WORK.
- .2 THE ELECTRICAL TRADE IS TO GIVE WORK HIS PERSONAL SUPERVISION, LAY OUT HIS OWN WORK, DO ALL NECESSARY LEVELING AND MEASURING OR EMPLOY A COMPETENT ENGINEER TO DO SO. FIGURES, FULL SIZE AND DETAIL DRAWINGS TO TAKE PRECEDENCE OVER SCALE MEASUREMENTS
- .3 THE ELECTRICAL TRADE SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO THE OWNER OR ANY OTHER TRADE BY IMPROPER LOCATION OR CARRYING OUT OF HIS WORK.
- .4 THE ELECTRICAL TRADE, IN THE SETTING OUT OF HIS WORK, IS TO MAKE REFERENCE TO ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS. HE SHALL CONSULT WITH ALL RELEVANT TRADES IN SETTING OUT LOCATIONS FOR CONDUIT RUNS, LIGHTING FIXTURES, PANEL ASSEMBLIES, AND ALL OTHER ELECTRICAL EQUIPMENT, SO THAT CONFLICTS ARE AVOIDED AND SYMMETRICAL SPACING IS MAINTAINED.
- .5 THE ELECTRICAL TRADE SHALL CONFIRM OUTLET LOCATIONS AND MOUNTING HEIGHTS WITH THE PROJECT COORDINATOR ON SITE PRIOR TO INSTALLATION.
- MOUNTING HEIGHTS ARE TO BE COORDINATED WITH THE BUILT-IN UNITS. REFER TO ARCHITECTURAL DETAILS. WHERE RECEPTACLES OCCUR IN OUTSIDE WALLS WHERE HEATING UNITS ALSO OCCUR, RECEPTACLE HEIGHT TO BE ADJUSTED TO COORDINATE WITH THE

.6 WHERE RECEPTACLES ARE MOUNTED ABOVE COUNTERS, BENCHES, SPLASHBACKS, OR OTHER FIXTURES, THEIR LOCATIONS AND

- .7 SWITCH MOUNTING HEIGHTS ARE TO BE COORDINATED WITH ARCHITECTURAL DETAILS AND SHALL BE ADJUSTED, IF REQUIRED, TO COORDINATE WITH PANELING, DADOS, MASONRY COURSE LINES, OR OTHER RELEVANT BUILDING FEATURES.
- .8 WHERE OUTLET BOXES OCCUR IN EXTERIOR WALLS, THE ELECTRICAL TRADE IS TO ENSURE THAT THERE IS INSULATION BEHIND THE OUTLET BOXES TO PREVENT CONDENSATION THROUGH THE BOXES.
- .9 ALLOW FOR WORK AFTER HOURS AS REQUIRED AND COORDINATE WITH OWNER/TENANTS IF APPLICABLE.
- .10 CONTRACTOR TO COORDINATE ANY INTERRUPTIONS TO ADJOINING TENANTS IN ORDER TO AVOID ANY INCONVENIENCES TO SAID TENANT, IF NECESSARY CONTRACTOR TO DO ANY REQUIRED CONNECTIONS ON OFF HOURS

10. EXAMINATION OF THE SITE

- .1 PRIOR TO SUBMITTING TENDER, THE ELECTRICAL TRADE SHALL CAREFULLY EXAMINE THE SITE AND ASCERTAIN ALL CONDITIONS WHICH MAY AFFECT HIS TRADE, NO ADDITIONAL MONEY WILL BE ALLOWED FOR WORK RESULTING FROM CONDITIONS THAT SHOULD HAVE BEEN NOTICED AND ACCOUNTED FOR DURING A THOROUGH EXAMINATION OF THE SITE.CUTTING AND PATCHING.
- .2 THE GENERAL TRADE WILL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR ELECTRICAL INSTALLATION. STRUCTURAL MEMBERS MUST NOT BE CUT WITHOUT CONSENT OF THE ENGINEER.
- .3 WHERE WORK DONE BY THE ELECTRICAL TRADE DAMAGES THE WORK OF OTHER TRADES, THE ELECTRICAL TRADE SHALL REPAIR AND MAKE GOOD SUCH DAMAGE TO THE SATISFACTION OF EACH TRADE CONCERNED AND THE ENGINEER.
- .4 ALL PENETRATIONS SHALL BE SEALED WITH APPROVED FIRE STOP MATERIAL.

- .1 THE ELECTRICAL TRADE AND HIS SUB-TRADES ARE TO KEEP THE SITE FREE DURING CONSTRUCTION OF DEBRIS, BOXES, PACKING, AND OTHER MATERIALS ASSOCIATED WITH THE WORK OF THIS TRADE. ALL WASTE MATERIAL IS TO BE DISPOSED OF IN A SAFE AND ENVIRONMENTALLY RESPONSIBLE MANNER.
- .2 UPON COMPLETION OF WORK, THE ELECTRICAL INSTALLATION SHALL BE LEFT IN A CLEAN AND FINISHED CONDITION TO THE SATISFACTION OF THE ENGINEER.

12. ACCESS DOORS

- .1 THE ELECTRICAL TRADE IS TO SUPPLY AND INSTALL ACCESS DOORS AS REQUIRED FOR PROPER SERVICING OF ALL ELECTRICAL WORK. ACCESS DOORS SHALL BE COMPLETE WITH NECESSARY FRAMES AND HINGED DOORS HELD CLOSED WITH CAPTIVE STUDS. ACCESS PANEL TO BE OF NOT LESS THAN 14 GAUGE STEEL, PRIME COAT FINISHED AND PAINTED ON THE JOB TO MATCH THE WALL OR
- .2 THE NUMBER OF ACCESS DOORS SHALL BE KEPT TO A MINIMUM.
- .3 THE ELECTRICAL TRADE SHALL PROVIDE ACCESS PANELS IN THE DRYWALL CEILINGS FOR ALL ELECTRICAL JUNCTION BOXES AND
- 13. CODES, PERMITS AND INSPECTION
 - .1 THE ENTIRE INSTALLATION, INCLUSIVE OF MATERIAL AND LABOR, IS TO COMPLY WITH ALL THE REQUIREMENTS OF ALL BUILDING CODES AND AUTHORITIES HAVING JURISDICTION, THE CANADIAN ELECTRICAL CODE, AND REGULATIONS OF THE LOCAL INSPECTION
- .2 THE ELECTRICAL TRADE IS TO OBTAIN ALL PERMITS REQUIRED FOR EACH STAGE OF WORK, AND AFTER COMPLETION OF THE ENTIRE INSTALLATION FURNISH TO THE ENGINEER A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE ELECTRICAL INSPECTION DEPARTMENT OF THE LOCAL AUTHORITY.
- 14. MECHANICAL EQUIPMENT
- .1 UNLESS SPECIFIED OTHERWISE, THE ELECTRICAL CONTRACTOR IS TO SUPPLY AND INSTALL ALL REQUIRED CONDUIT, WIRING, ELECTRICAL FITTINGS AND CONNECTIONS FOR ALL MOTORS AND OTHER ELECTRICAL EQUIPMENT, EVEN THOUGH SUCH MOTORS AND OTHER ELECTRICAL EQUIPMENT MAY BE SUPPLIED BY OTHERS. WHERE REQUIRED BY THE DRAWINGS OR APPLICABLE REGULATIONS, DISCONNECT SWITCHES, STARTERS, OVERLOAD RELAYS AND OTHER NECESSARY PROTECTIVE DEVICES ARE TO BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. MOTORS AND CONTROLS SHALL BE FURNISHED BY THE SUPPLIER OF THE DRIVEN EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL INCLUDE ALL WORK AND CONNECTIONS REQUIRED TO MAKE THE SYSTEM COMPLETE AND OPERATIONAL.
- 2 THE ELECTRICAL EQUIPMENT MAY INCLUDE BUT NOT BE LIMITED TO SUCH ITEMS AS GRILLE MOTORS AND INTERLOCKS, STOREFRONT AND INTERIOR SIGNAGE, STARTING DEVICES, MOTOR CONTROLLERS, FLOAT SWITCHES, ALARM DEVICES OR SYSTEMS, PUSH BUTTONS, EXHAUST FANS, DATA SYSTEMS, INTERCOMS AND STEREO SYSTEMS.
- .3 THE ELECTRICAL CONTRACTOR IS TO CONFIRM MOTOR (OR OTHER EQUIPMENT) LOCATION AND SIZES WITH THE TRADE SUPPLYING THE MOTOR (OR OTHER EQUIPMENT) BEFORE COMMENCING ANY ASSOCIATED ELECTRICAL WORK.

- .1 ALL PORTIONS OF ELECTRICAL WORK ARE TO BE TESTED FOR SATISFACTORY OPERATION.
- .2 BEFORE ENERGIZING ANY PORTION OF THE ELECTRICAL SYSTEM, THE ELECTRICAL TRADE SHALL PERFORM MEGGER TESTS ON ALL FEEDERS AND BRANCH CIRCUITS. ANY PROBLEMS DISCOVERED BY SUCH TESTING ARE TO BE CORRECTED BY THE ELECTRICAL TRADE AND THE CIRCUITS IN QUESTION RETESTED. THE RESULTS OF ALL FINAL TESTING SHALL BE PROVIDED TO THE ENGINEER IN
- .3 UPON PROJECT COMPLETION, AND IMMEDIATELY PRIOR TO FINAL INSPECTION AND TAKEOVER, THE ELECTRICAL TRADE SHALL CHECK THE LOAD BALANCE ON ALL FEEDERS AND AT DISTRIBUTION CENTRES, LOAD CENTRES, AND PANELS. THESE CHECKS ARE TO BE CARRIED OUT BY TURNING ON ALL LOADS AND CHECKING LOAD CURRENT BALANCE. IF LOAD UNBALANCE EXCEEDS 15 %, THE CIRCUITS ARE TO BE RECONFIGURED AS NECESSARY TO BALANCE THE LOADS.

- .1 ALL ELECTRICAL FITTINGS, SUPPORTS, HANGER RODS, PULLBOXES, CHANNEL FRAMES, CONDUIT RACKS, OUTLET BOXES, BRACKETS, AND CLAMPS ARE TO HAVE A GALVANIZED FINISH OR A PAINT FINISH OVER CORROSION-RESISTANT PRIMER.
- .2 ALL PANELS ARE TO BE FACTORY-FINISHED WITH SPRAY-ON AIR DRY ENAMEL. ALL ENAMEL TO BE APPLIED OVER CORROSION-RESISTANT PRIMER. MATTE OR FLAT TYPE FINISH PAINT WILL NOT BE ACCEPTED. ALL PANELS OR SIMILAR FACTORY-FINISHED UNITS THAT ARE SCRATCHED OR MARKED DURING INSTALLATION ARE TO BE TOUCHED UP WITH MATCHING SPRAY-ON AIR DRY LACQUER AND, IF REQUIRED TO PROVIDE A SATISFACTORY JOB, TO BE COMPLETELY REFINISHED.
- .3 ALL 120/208 V PANELBOARDS, PULLBOXES, AND OTHER ELECTRICAL CABINETS AND BOXES ARE TO BE FINISHED IN GRAY ENAMEL

- .1 WHERE REQUIRED BY THE CANADIAN ELECTRICAL CODE, ALL WIRE AND CABLE IS TO BE INSTALLED IN EMT CONDUIT.
- .2 UNLESS OTHERWISE NOTED, EMT CONDUIT ARE TO BE CONCEALED IN ALL FINISHED AREAS. IN SERVICE AREAS, CONDUIT AND EMT SHALL BE RUN ON SURFACE UNLESS INDICATED OTHERWISE.
- RUNS. THEY SHALL BE CONCENTRIC. .4 RACEWAYS ARE TO BE INSTALLED FREE FROM DENTS AND BRUISES AND SHALL HAVE THEIR ENDS CAPPED, PLUGGED, OR SEALED AS

.3 SURFACE MOUNTED EMT CONDUIT ARE TO BE INSTALLED PARALLEL TO STRUCTURAL LINES, AND, WHERE BENDS OCCUR IN PARALLEL

- NECESSARY TO PREVENT ENTRANCE OF DIRT OR MOISTURE.
- .5 IN ALL AREAS SUBJECT TO MOISTURE, WATERTIGHT FITTINGS MUST BE USED.
- .6 ALL RACEWAY, EXCEPT WHERE OTHERWISE INDICATED, SHALL BE SIZED IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE.
- .7 TECK90 OR SEAL TIGHT FLEXIBLE CONDUIT IS BE UTILIZED FOR CONNECTIONS TO MOTORS AND MOTOR CONTROLLERS.
- .8 ALL UNDERGROUND CONDUIT SYSTEMS ARE TO BE OF APPROVED RPVC SCHEDULE 40 CONDUIT, COMPLETE WITH INSTALLED BONDING CONDUCTOR, AND INSTALLED AT OR BELOW THE DEPTH REQUIRED BY CODE. PROVIDE 150mm CLEAN SAND BEDDING ABOVE AND 75mm BELOW CONDUITS AND CONTINUOUS MARKING TAPE 300mm BELOW GRADE. PROVIDE SUITABLE BACKFILL AND

18. EXPANSION JOINTS

- .1 WHERE CONDUITS ARE INSTALLED IN CONCRETE SLABS OR CROSS STRUCTURAL EXPANSION JOINTS, AN APPROVED EXPANSION
- 19. WIRE AND CABLE
- .1 ALL BUILDING WIRING IS TO BE RW90, 600V, COPPER, EXCEPT WHERE NOTED OTHERWISE.
- .2 A MINIMUM CONDUCTOR SIZE OF #12 AWG COPPER IS TO BE USED, EXCEPT WHERE NOTED OTHERWISE
- .3 ALL CONDUCTORS ARE TO BE COLOR CODED THROUGHOUT THE INSTALLATION AS FOLLOWS: EQUIPMENT GROUNDING CONDUCTOR - GREEN
- NEUTRAL CONDUCTOR WHITE
- 120/208V PHASE WIRES RED, BLACK, AND BLUE 347/600V PHASE WIRES - RED, BLACK, AND BLUE
- .4 ALL WIRING AND CABLING IN EXPOSED OR OPEN CEILING AREAS IS TO BE INSTALLED IN EMT CONDUIT.
- 21. WIRING DEVICES & BOXES
- .1 ALIGN ALL DEVICES AND PLATES PLUMB AND LEVEL WITH BUILDING STRUCTURAL LINES.
- .2 ALL OUTLET BOXES ARE TO BE FLUSH MOUNTED EXCEPT WHERE SPECIFIED OTHERWISE.
- .3 ALL JUNCTION BOXES ARE TO HAVE VISIBLE P-TOUCH LABELS INDICATING THE CIRCUIT NUMBERS UTILIZED; PEN OR FELT IS NOT
- .4 SUPPLY AND INSTALL BLANK COVER PLATES FOR ALL UNUSED JUNCTION BOXES, INCLUDING EXISTING.

LOCATION OF OUTLETS

- .1 THE ENGINEER RESERVES THE RIGHT TO CHANGE THE LOCATION OF OUTLETS TO WITHIN 3 M OF POINTS INDICATED ON PLANS WITHOUT EXTRA CHARGE, PROVIDED THE ELECTRICAL CONTRACTOR IS ADVISED BEFORE INSTALLATION IS MADE.
- .2 ELECTRICAL TRADE TO REFER TO ARCHITECTURAL ROOM ELEVATIONS FOR POSITIONS, AND MOUNTING HEIGHTS OF ALL OUTLETS, SWITCHES, INTERCOMMUNICATION, TELEPHONES, SPEAKERS, CLOCKS, ETC. POSITIONS SHOWN ON ARCHITECTURAL PLANS TO TAKE PRECEDENCE OVER POSITIONS OR MOUNTING HEIGHTS SHOWN ON ELECTRICAL PLANS.
- PULL BOXES
- .1 THE ELECTRICAL TRADE SHALL SUPPLY AND INSTALL PULLBOXES AS REQUIRED TO SUIT JOB CONDITIONS. PULLBOXES SHALL CONFORM TO CANADIAN ELECTRICAL CODE REQUIREMENTS. PULLBOXES TO BE BE FINISHED IN ENAMEL OVER

CORROSION-RESISTANT PRIMER WITH SCREW-ON OR HINGED COVER. IN REMOVABLE CEILING AREAS, PULLBOXES ARE TO BE INSTALLED ABOVE THE CEILING.

24. SWITCHES AND RECEPTACLES

- ALL SWITCHES AND RECEPTACLES SHALL BE COMMERCIAL GRADE. MATCH EXISTING STANDARD WHERE STANDARD IS PRESENT. WHERE NO STANDARD IS PRESENT, PROVIDE WHITE DECORA SWITCHES AND RECEPTACLES AND WHITE DECORA FACEPLATES.
- .2 PROVIDE P-TOUCH LABELS FOR ALL RECEPTACLE LABELS.
- .3 FOR ALL RECEPTACLES OTHER THAN STANDARD 15A DUPLEX RECEPTACLES, PROVIDE LAMACOID NAMETAGS GIVING AMP RATING,
- .4 GROUND FAULT CIRCUIT INTERRUPTING (GFI) DUPLEX RECEPTACLES SHALL BE COMMERCIAL GRADE.
- 5 ISOLATED GROUND (IG) RECEPTACLES SHALL BE COMMERCIAL GRADE

- .1 ALL CONDUIT, RACEWAYS, AND OTHER ELECTRICAL EQUIPMENT SHALL BE SECURELY AND ADEQUATELY SUPPORTED, IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE.
- WHERE INSERTS ARE REQUIRED IN CONCRETE, EXPANSION INSERTS, LEAD INSERTS OR PLASTIC INSERTS ARE TO BE USED IN DRILLED HOLES. SHOT DRIVEN PINS MAY BE USED IN STRUCTURAL CONCRETE ONLY WITH THE PERMISSION OF THE ENGINEER.

- A COMPLETE GROUNDING AND BONDING SYSTEM SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE AND THE ELECTRICAL INSPECTION DEPARTMENT.
- ALL METAL PARTS NOT CARRYING CURRENT, INCLUDING BUT NOT LIMITED TO, SECONDARY FEEDER CIRCUITS, EQUIPMENT AND PANELBOARD ENCLOSURES, METAL RACEWAYS, PULL AND JUNCTION BOXES, SHALL BE PROPERLY GROUNDED. METAL RACEWAYS SHALL UTILIZE DOUBLE LOCKNUTS AND OTHER FITTINGS WHERE NECESSARY TO PROVIDE GROUND CONTINUITY
- A SEPARATE GROUND CONDUCTOR SHALL BE INSTALLED IN ALL RACEWAY FEEDER RUNS, FLEXIBLE CONDUIT, AND IN CONDUIT INSTALLED IN SLAB OR UNDERGROUND.
- .4 THIS CONTRACTOR IS RESPONSIBLE FOR THE GROUNDING OF ALL THE EQUIPMENT RACKS IN THE SERVER ROOM, THE CABLE TRAY, ELECTRICAL EQUIPMENT AND ANY CONDUIT. ALL GROUNDING OF SERVER RACKS MUST BE IN ACCORDANCE TO MANUFACTURERS

PANELS

- PROVIDE COMPLETE PANELBOARDS. UNLESS OTHERWISE INDICATED PANELBOARDS ARE TO BE 120/208V, 3PH, 4W OR 347/600V, 3Ø, 4W SOLID NEUTRAL DESIGN WITH SEQUENCE STYLE BUSSING AND FULL CAPACITY NEUTRAL WITH BOLT-ON CIRCUIT BREAKERS. WHERE DOUBLE NEUTRALS ARE INDICATED ON THE SINGLE LINE DIAGRAM, PROVIDE 200% RATED NEUTRAL PANELBOARDS.
- .2 PROVIDE ALL CIRCUIT BREAKERS INDICATED PLUS A MINIMUM OF 2x15A 1P SPARES IN EACH PANEL. CIRCUIT BREAKERS TO BE RATED MINIMUM 25kA I.C. UNLESS OTHERWISE INDICATED AND BE SERIES RATED. PANELS ARE TO BE FLUSH MOUNTED IN PUBLIC AREAS AND SURFACE MOUNTED IN SERVICE ROOMS, ALL COMPLETE WITH ALL TRIM,
- LOCKABLE DOORS AND INSTALLATION HARDWARE. PROVIDE DRIP SHIELDS IN AREAS WITH SPRINKLERS. .4 UPDATED TYPEWRITTEN PANEL DIRECTORIES SHALL BE PROVIDED FOR ALL PANELS.
- UTILIZE EXISTING PANELBOARDS AS INDICATED ON THE DRAWING. REUSE EXISTING BREAKERS WHERE POSSIBLE. PROVIDE NEW

.6 BALANCE PANEL LOAD FOR EACH PHASE A, B, & C. ALLOW FOR RELOCATING CIRCUITS WITHIN PANEL BOARD TO BALANCE THE LOAD.

- PROVIDE A NEW LIGHTING SYSTEM, COMPLETE AND FULLY OPERATIONAL AND IN CONFORMANCE WITH CODE AND ULC LISTING REQUIREMENTS. UNLESS NOTED OTHERWISE, ALL FIXTURES AND LAMPS ARE TO BE SUPPLIED AND INSTALLED BY THE
- CONTRACTOR AS SPECIFIED IN THE DRAWINGS. .2 ELECTRICAL TRADE TO INSTALL ALL LIGHTING LUMINAIRES COMPLETE WITH LAMPS, MOUNTING BRACKETS, BALLASTS AND ALL
- NECESSARY ACCESSORIES IN ACCORDANCE WITH THE LUMINAIRE TYPES SHOWN ON THE DRAWINGS, OR OTHERWISE SPECIFIED. ALL LUMINAIRES SHALL BE ALIGNED, AS APPROPRIATE, WITH ONE ANOTHER AND WITH STRUCTURAL LINES.
- .4 ALL LUMINAIRES SHALL BE CLEANED AND LAMPED UPON COMPLETION OF WORK AND PRIOR TO FINAL ACCEPTANCE. UTILIZE MANUFACTURER'S APPROVED OR RECOMMENDED CLEANING SOLUTIONS.
- WHERE NO SWITCH IS INDICATED ON THE DRAWINGS FOR LIGHTING IN PUBLIC AREAS OF THE BUILDING, THE LUMINAIRES SHALL BE SWITCHED FROM THE PANEL. BREAKERS USED FOR SUCH SWITCHING SHALL BE SWITCH RATED.
- .6 SWITCHES SHALL HAVE A CURRENT RATING NOT LESS THAN THAT OF THE CIRCUIT TO WHICH THEY ARE CONNECTED.
- ELECTRICAL TRADE TO SUPPLY AND INSTALL ALL LIGHTING CONTROLS WITH LINE VOLTAGE SWITCHES, DIMMER SWITCHES (RATED 1500W), LOW VOLTAGE SWITCHES, LIGHTING RELAYS, BARRIER AND ALL CONTROL WIRING AND COMPONENTS TO SUIT THE LAYOUT ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATION OF THE MANUFACTURER AND COMPLY
- LOW VOLTAGE MASTER SWITCHES AND BUILDING LIGHTING CONTROL SHALL HAVE THE CAPABILITY TO TURN ON AND OFF ALL LIGHTING (120 AND 347 VOLT) WITH THE EXCEPTION OF LUMINAIRES ON EMERGENCY LIGHTING CIRCUITS OR UNSWITCHED NIGHT
- .9 COORDINATE LIGHTING CONTROL PROGRAMMING WITH THE BUILDING SUPERVISOR.
- 10 ALL NEW AND RELOCATED FLUORESCENT LUMINAIRES SHALL BE COMPLETE WITH A FLUORESCENT DISCONNECT SWITCH AS PER CEC RULE 30-308(4). FLUORESCENT DISCONNECT SWITCH SHALL BE THOMAS AND BETTS MARRETTE FLUORESCENT LUMINARE DISCONNECT LD2C AND LD3C OR APPROVED FOUAL FLUORESCENT DISCONNECT SWITCH SHALL BE FACTORY INSTALLED AND CSA

29. EXIT LIGHTING AND EMERGENCY LIGHTING

LIGHT CIRCUITS.

28. LIGHTING LUMINAIRES AND LIGHTING CONTROLS

- EMERGENCY BATTERY PACKS SHALL BE LOADED SUCH THAT THE LOAD MAY BE OPERATED BY THE BATTERY PACK FOR AT LEAST 2
- AFTER INSTALLATION OF EACH BATTERY PACK AND ALL OF ITS ASSOCIATED REMOTE HEADS, THE VOLTAGE AT EACH REMOTE HEAD AND AT THE BATTERY PACK IS TO BE MEASURED. WHERE THE VOLTAGE DROP FROM THE BATTERY TO A REMOTE HEAD EXCEEDS 5% OF THE NOMINAL BATTERY VOLTAGE, THE CIRCUITING OF LIGHTS AND THE SIZE OF WIRE IS TO BE RECONFIGURED TO REDUCE THE
- .3 ALL EXIT AND EMERGENCY LIGHTING IS TO OPERATE AUTOMATICALLY AND IMMEDIATELY UPON FAILURE OF
- PROVIDE NEW EXIT LIGHTS MATCHING BUILDING STANDARD, EMERGENCY BATTERY UNITS, EMERGENCY REMOTE HEADS AND

CONNECT LUMINAIRES TO EMERGENCY LIGHTING CIRCUIT AS SHOWN ON THE DRAWINGS.

- .1 THE ELECTRICAL TRADE SHALL FURNISH ALL LABOR, SERVICES, AND MATERIALS NECESSARY TO PROVIDE AND INSTALL A COMPLETE, FUNCTIONAL LIFE SAFETY FIRE SYSTEM. THE SYSTEM SHALL COMPLY IN EVERY RESPECT WITH ALL PERTINENT CODES. RULES, AND REGULATIONS, AND WITH THE LAWS OF THE LOCAL AUTHORITIES HAVING JURISDICTION. THE SYSTEM SHALL COMPLY IN ALL RESPECTS WITH THE REQUIREMENTS OF THESE DRAWINGS, THIS SPECIFICATION, THE MANUFACTURER'S RECOMMENDATIONS,
- AND UNDERWRITER'S LABORATORIES CANADA (ULC) LISTINGS. .2 THE SYSTEM SHALL INCLUDE, BUT NOT BE LIMITED TO:
 - FIRE ALARM CONTROL PANEL
 - AUTOMATIC AND MANUALLY ACTIVATED ALARM INITIATING AND MONITORING DEVICES. AUDIBLE NOTIFICATION APPLIANCES AND PERIPHERALS
 - STANDBY POWER SUPPLY
 - SYSTEM PROGRAMMING AND COMMISSIONING CONDUIT, WIRE, AND ALL OTHER ACCESSORIES REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL LIFE SAFETY
- .3 DETAILED SHOP DRAWINGS OF THE SYSTEM ARE TO BE PROVIDED TO THE ENGINEER FOR APPROVAL BEFORE INSTALLATION
- .4 THE SYSTEM SHALL BE SUPERVISED AND ADDRESSABLE.

PROVIDE THE NEW GRAPHIC.

- .5 THE SYSTEM SHALL BE BY THE SAME MANUFACTURER AS BASE BUILDING.
- .6 UPON COMPLETION OF FIRE ALARM SYSTEM INSTALLATION, THE MANUFACTURER AND ELECTRICAL CONTRACTOR ARE TO PERFORM COMPLETE SYSTEM VERIFICATION TESTING. THE CONTRACTOR SHALL CORRECT, AT HIS OWN COST, ALL DEFICIENCIES AND PROVIDE FINAL VERIFICATION REPORT TO THE ENGINEER.
- THE FIRE ALARM SYSTEM SHALL BE INSTALLED SO AS TO FACILITATE FUTURE EXPANSION OF THE SYSTEM. THE SYSTEM MUST BE CAPABLE OF SERVING AT LEAST 6 SEPARATE TENANT SPACES

NEW DEVICES SHALL BE CONNECTED TO EXISTING ZONES AND NEW ZONES SHALL BE PROVIDED AS REQUIRED. PROVIDE AND INSTALL NEW NECESSARY CARDS AND AMPLIFIERS AND EQUIPMENT AS REQUIRED TO ACHIEVE A FULLY OPERATIONAL FIRE ALARM

.11 PROVIDE NEW FIRE ALARM GRAPHIC FOR NEW ANNUNCIATOR WHERE SYSTEM IS NEW. UPDATE EXISTING FIRE ALARM GRAPHIC FOR

EXISTING ANNUNCIATOR WHERE REQUIRED. ALLOW FOR ALL COSTS ASSOCIATED WITH HIRING THE GRAPHIC MANUFACTURER TO

- WHERE FIRE ALARM SYSTEM IS EXISTING WITHIN THE BUILDING. THIS CONTRACTOR SHALL PROVIDE AND INSTALL ALL NEW DEVICES AS SHOWN ON THE DRAWINGS. NEW DEVICES SHALL BE THE SAME MANUFACTURER AND BE COMPATIBLE AS THE EXISTING FIRE
- SYSTEM. VERIFY ALL DEVICES AND ZONES AS PER NOTE 6. .10 THE FIRE ALARM SYSTEM SHALL REMAIN SUPERVISED AND MONITORED.

- SEISMIC PROTECTION
 - .1 THE ELECTRICAL TRADE SHALL PROVIDE SEISMIC RESTRAINT AND ANCHORAGE FOR ALL EQUIPMENT AND SERVICES IN ACCORDANCE WITH THE CURRENT EDITION OF THE B.C. BUILDING CODE, AND ALL APPLICABLE BUILDING BYLAWS.
 - .2 IF REQUESTED PROVIDE CERTIFIED PROFESSIONALLY SEALED SHOP AND PLACEMENT DRAWINGS WHERE APPLICABLE FOR ALL ELECTRICAL EQUIPMENT AND EQUIPMENT ASSEMBLIES SHOWING THE METHODS OF ATTACHMENT TO THE PARTICULAR STRUCTURE FOR EACH PIECE OF EQUIPMENT AND ASSEMBLY AND PROVIDE ANCHORAGE/ATTACHMENT DETAILS APPROVED AND SEALED BY A B.C
 - .3 INCLUDE IN THE TENDERED PRICE ALL SERVICES OF A PROFESSIONAL ENGINEER INCLUDING BUT NOT LIMITED TO PROVIDING LETTERS OF ASSURANCE FOR THE PROJECT IN RESPECT OF THE SEISMIC RESTRAINT OF ALL ELECTRICAL MATERIALS AND EQUIPMENT, CONDUCTING THE NECESSARY SITE REVIEWS AND PROVIDING A LETTER AT THE CONCLUSION OF THE PROJECT, CONFIRMING THAT ALL SEISMIC RESTRAINTS FOR THE ELECTRICAL WORKS HAVE BEEN INSTALLED IN ACCORDANCE WITH THE ENGINEER'S INSTRUCTIONS. PAY ALL ASSOCIATED FEES AS REQUIRED. APPROVED SEISMIC ENGINEERS ARE LEON BELL OF BELL ENGINEERING, CLINT LOW OF BBP, AND AMIR MOHSENI OF PARADIGM ENGINEERING INC. SEISMIC ENGINEER SHALL PROVIDE PROOF
- 32. COMMUNICATIONS (VOICE, DATA & TV) & SECURITY ROUGH-IN

OF INSURANCE AND CREDENTIALS IF REQUESTED.

- .1 NO CONDUIT RUN SHALL EXCEED TWO 90 DEGREE BENDS AND ONE 45 DEGREE SWEEPING BEND.
- .2 ALL COMMUNICATION BACKBOARDS ARE TO BE 21mm THICK, G1S, AND PAINTED WITH FIRE RETARDANT PAINT TO MATCH COLOR OF
- .3 THE INSTALLATION OF COMMUNICATIONS EQUIPMENT, AND CONDUIT TO BE USED FOR COMMUNICATION WIRES, SHALL COMPLY IN ALL RESPECTS WITH THE REQUIREMENTS OF TELUS AND SHAW AND TO EIA/TIA TELECOMMUNICATION STANDARDS.
- .4 PROVIDE DOUBLE GANG BOX C/W SINGLE GANG MUD RING, OUTLET BOXES AND EMPTY CONDUITS C/W PULL STRING FOR COMMUNICATIONS OUTLETS AS SHOWN ON THE DRAWINGS.

.5 INSTALL 3/4" EMT CONDUITS FROM EACH WALL OR FLOOR MOUNTED COMMUNICATION OUTLET (UNLESS NOTED OTHERWISE) TO THE

- 33. IDENTIFICATION
 - .1 IDENTIFY ALL MAJOR PIECES OF EQUIPMENT, INCLUDING BUT NOT LIMITED TO PANELBOARDS, ELECTRICAL CABINETS, AND BREAKERS IN PANELBOARDS WITH ENGRAVED LAMACOID LABELS, BLACK LETTERING ON WHITE BACKGROUND.
 - .2 PROVIDE TYPEWRITTEN DIRECTORIES IN ALL PANELS.
 - .3 PROVIDE LAMACOID NAMEPLATE ON EACH PANEL COVER TO IDENTIFY PANEL NAME, NUMBER OF PHASES, VOLTAGE, CURRENT RATING AND SOURCE OF FEEDER.
 - .4 IDENTIFY BRANCH CIRCUIT WIRES TO MEET CODE REQUIREMENTS.
- .5 FIRE ALARM BREAKER TO BE PAINTED RED AND CLEARLY IDENTIFIED.

ACCESSIBLE CEILING SPACE ABOVE C/W BUSHING AT BOTH ENDS.

- .1 ALL REQUESTS FOR ALTERNATES SHALL BE SUBMITTED TO THE ENGINEER NOT LESS THEN 5 DAYS PRIOR TO THE CLOSE OF TENDER.
- THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ENSURING THAT ALTERNATE PRODUCTS MEET ALL SPACE, WEIGHT, CONNECTION, POWER, WIRING, AND PERFORMANCE REQUIREMENTS.
- 35. POWER DISTRIBUTION
- 36. COMMUNICATION CABLING

.1 CAT 6 UTP CABLE SHALL BE FOUR PAIR, UNSHIELDED, TWISTED, 22 AWG TO 24 AWG, 100 OHM FT4, SOLID COPPER BY PANDUIT OR APPROVED EQUAL. TRANSMISSION REQUIREMENTS SHALL MEET OR EXCEED ALL REQUIREMENTS OF TIA/EIA-568-B.2 FOR CATEGORY 6

INSTALL A COMPLETE POWER DISTRIBUTION SYSTEM INCLUDING UNDERSLAB CONDUIT, SERVICE CONNECTIONS, GROUNDING,

- CABLING AND COMPONENTS. .2 CAT 5E UTP CABLE SHALL BE FOUR PAIR, UNSHIELDED, TWISTED, 22 AWG TO 24 AWG, 100 OHM FT4, SOLID COPPER BY PANDUIT OR APPROVED EQUAL: TRANSMISSION REQUIREMENTS SHALL MEET OR EXCEED ALL REQUIREMENTS OF TIA/EIA-568-B:2 FOR CATEGORY
- .3 PATCH PANELS SHALL BE MODULAR PATCH PANEL. 24-PORT OR 48-PORT, HIGH DENSITY INDIVIDUAL CUT-OUTS FOR SNAP IN TYPE
- .4 FREE STANDING EQUIPMENT RACKS (QUANTITY REQUIRED AS PER DRAWINGS): FREE STANDING 2133.6MM (84") HIGH RACK UNITS; GANGABLE: MUST PROVIDE 482:6MM (19") RACK MOUNTED CAPABILITY FOR RACK MOUNTABLE COMPONENTS: MUST PROVI 1955.8MM (77") OF VERTICAL MOUNTING SPACE. MUST HAVE THREADED MOUNTING HOLES (EIA) FRONT AND REAR. MUST BE SEISMIC
- .5 CAT 3 SHALL BE 24 AWG, SOLID COPPER, CAT. 3, FT4.

DISTRIBUTION EQUIPMENT, AND PANELBOARDS.

- .1 SECURITY DEVICES & CONTROL PANEL SHALL BE FROM SAME MANUFACTURER. GE SECURITY OR APPROVED EQUAL. SECURITY PANEL MUST HAVE MINIMUM NUMBER OF INPUTS FOR DEVICES AS SHOWN ON DRAWING WITH 20% SPARE CAPACITY. PANEL MUST BE CAPABLE OF INTERFACE WITH VISUAL ALARM DEVICES, AUDIBLE ALARM DEVICES, KEYPAD DEVICE, DOOR CONTACTORS. ALARM PUSHBUTTON, & MOTION DETECTORS. PANEL MUST BE EQUIPPED WITH A SILENCE ALARM FEATURE AND BE ABLE TO SEND ALARM NOTIFICATION TO OFFSITE SECURITY LOCATION. PANEL MUST BE CAPABLE OF MONITORING FOR FAULT OR TAMPERING.
- EXACT SECURITY PANEL OPERATION SEQUENCE TO BE ESTABLISHED WITH BUILDING MANAGER AND PROGRAMMEI
- .3 MOTION DETECTORS TO BE PASSIVE INFRARED, CEILING MOUNTED, WIDE BEAM ANGLE TYPE OR APPROVED EQUALS.
- 38. PUBLIC ADDRESS (NOT APPLICABLE) .1 TO BE INTERFACED WITH TELEPHONE SYSTEM AND C/W NECESSARY MODULES/EQUIPMENT FOR THIS PURPOSE
- .2 PROVIDE HEAD END UNIT CAPABLE OF SUPPORTING A MINIMUM OF FOUR SEPARATE PA ZONES. MUST INCLUDE ALL MODULES/EQUIPMENT NECESSARY FOR TALKBACK OPERATION. MUST BE C/W MODULES/EQUIPMENT NECESSARY TO SUPPORT
- .3 PROVIDE WALL MOUNTED SPEAKERS AS INDICATED ON DRAWING. SPEAKERS TO HAVE BUILT-IN MICROPHONE, BUILT-IN PUSHBUTTON,

.4 EQUIPMENT BY BOGAN OR APPROVED EQUAL.

- FIRE STOP .1 AFTER INSTALLATION OF THE ELECTRICAL, ALL PENETRATIONS OF FIRE ZONES FOR CONDUITS, SLEEVES, CABLE TRAYS, POKETHRU'S ETC. SHALL BE SEALED USING MATERIAL AND METHODS THAT MEET THE REQUIREMENTS OF ULC STANDARDS CAN/ULC-S115 AND INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. THE FIRE STOP MATERIAL SHALL ALLOW FOR RE-ENTERABLE ACCESS, CSA T530 APPENDIX B SHALL BE USED AS A GUIDE, BEFORE INSTALLATION, CONTRACTOR SHALL IDENTIFY A FIRE STOPPING SYSTEM SUITABLE FOR THE INSTALLATION. CONTRACTOR SHALL OBTAIN SHOP DRAWINGS OF THE FIRE STOP SYSTEM FROM MANUFACTURER AND SHOULD ON SITE, UPON REQUEST, BE ABLE TO PRODUCE FIRE STOP SHOP DRAWINGS FOR CONSULTANT.
 - ALLOW FOR 2% DESTRUCTIVE TESTING OF THE FIRE STOPPING INSTALLATION. .2 LABEL FIRE STOP PENETRATIONS WITH PRODUCT USED AND CUL SYSTEM NUMBER WITH STICKER.



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5. ISSUED FOR TENDER 4. BUILDING PERMIT #4 3. ISSUED FOR 100% COORDINATION

2. ISSUED FOR 75% COORDINATION

1. ISSUED FOR 50% COORDINATION

2018 AUG 14

2018 JAN 10

2017 DEC 15

2017 DEC 13

Carscadden

REVISIONS

COV ENGAGEMENT VENUE 511 WEST BROADWAY

SPECIFICATION

CHECKED

DATE

DEC 2017

2-17-114

BOY

JOB NO.

SCALE

AS NOTED