SYMBOLS LEGEND

NORTH ARROW

8' 4' 0 8' 16'
SCALE IN FEET
BAR SCALE

A
M04-AEEXX
EXTERIOR ELEVATION

1
1 A101 1
1
INTERIOR ELEVATION

A A
XXX-XXXXX XXX-XXXXX
BUILDING SECTION

A
XXX-XXXXX
WALL SECTION

1 SIM
A101
DETAIL

0
GRID TAG

XX
SPOT ELEVATION

NAME
ELEVATION
LEVEL

ROOM NAME
101
ROOM TAG

1i
DOOR TAG

1t
WINDOW /
CURTAIN WALL
TAG

P3
A
WALL ASSEMBLY TAG

R1
ROOF ASSEMBLY TAG

F1
FLOOR ASSEMBLY TAG

C-1
1'-0" AFF
CEILING ASSEMBLY TAG

1
REVISION TAG

℄
CENTERLINE

Ø
DIAMETER

FD
FLOOR DRAIN

FE
FIRE EXTINGUISHER

FEC
FIRE EXTINGUISHER
IN CABINET

FIRE SPRINKLER

H
HEAT DETECTOR

SMOKE DETECTOR

EXIT SIGN

CAMERA

FALL ARREST SYSTEM STANDOFF

PEDESTRIAN MARKINGS

RECESSED LIGHT FIXTURE

ROUND RECESSED
LIGHT FIXTURE

LINEAR LIGHT FIXTURE

LINEAR LIGHT FIXTURE

PENDANT LIGHT FIXTURE

GWB ON MTL STUD

SUSPENDED ACT

AIR CIRCULATING FAN

UNIT HEATER

HVAC GRILLE

HVAC GRILLE

HVAC UNIT

ABBREVIATIONS:

@	AT
ACT	ACOUSTICAL CEILING TILE
ACS	ACCESS CONTROL SYSTEM
ADDL	ADDITIONAL
ADJ	ADJUST
AFF	ABOVE FINISHED FLOOR
AL, ALUM	ALUMINUM
ANOD	ANODIZED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ASPH	ASPHALT
AT	ALUMINUM THRESHOLD
AVE	AVENUE
AVG	AVERAGE
BLDG	BUILDING
BF	BOTTOM FACE
BOT	BOTTOM
B.O.	BOTTOM OF
BR	BRICK
BRSSF	BRUSHED STAINLESS STEEL FINISH
BTWN	BETWEEN
CAB	CABINET
CB	CATCH BASIN
CFMF	COLD FORMED METAL FRAMING
CJ	CONTROL JOINT
CL, C/L	CENTER LINE
CLR	CLEAR
C-C	CENTER TO CENTER
CG	CORNER GUARD
CLR	CLEAR
CLR ANOD	CLEAR ANODIZED
COL	COLUMN
CONC	CONCRETE
COND	CONDITION
CONN	CONNECT
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CORR	CORRIDOR
CPBD	CUPBOARD
CTR	CENTER, CENTERED
CU FT	CUBIC FEET
CU YD	CUBIC YARD
C/W	COMPLETE WITH
C&G	CURB AND GUTTER
DEMO	DEMOLITION
DF	DRINKING FOUNTAIN
DIAM	DIAMETER
DISP	DISPENSER
DIST	DISTANCE
DS	DOWNSPOUT
DTL	DETAIL
DWG	DRAWING
DWGS	DRAWINGS
DWY	DRIVEWAY
EA	EACH
EEH	EMERGENCY EXIT HARDWARE
EH	EXIT HARDWARE
EL	ELEVATION
ELEV	ELEVATOR
ENCL	ENCLOSURE
ELECT	ELECTRICAL
EOC	END OF CURB
EQ	EQUAL
EX	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FCFN	FACE OF FINISH
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FG	FINISH GRADE
FF	FINISH FLOOR
FRP	FIBER REINFORCED PLASTIC
FRR	FIRE RESISTANCE RATING
FLR	FLOOR
FN	FINISH
FT	FOOT, FEET
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GEN	GENERAL
GL	GLAZING, GLAZED
GR	GRADE
GND	GROUND
GWB	GYPSUM WALL BOARD
H	HIGH
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HPC	HIGH PERFORMANCE COATING
HT	HEIGHT
HVAC	HEATING, VENTILATION, AIR CONDITIONING
IDS	INTRUSION DETECTION SYSTEM
IGU	INSULATED GLAZED UNIT
IHM	INSULATED HOLLOW METAL
IMWP	INSULATED METAL WALL PANEL
IMRP	INSULATED METAL ROOF PANEL
IN	INCH/INCHES
IND	INDUSTRIAL
INSUL	INSULATION
INT	INTERIOR
JT	JOINT
LAV	LAVATORY
LBA	LOT BOUNDARY ASSESMENT
LBS	POUNDS
LT	LEFT
LF	LINEAL FEET
LOC	LOCATION, LOCATE
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MEP	MECH, ELECT, PLUM
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MTD	MOUNTED
MTL	METAL
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NOM	NOMINAL
NRH	NON-REMOVABLE HINGE PINS
NTS	NOT TO SCALE
NO.	NUMBER
OC	ON CENTER
OCC	OCCUPANCY/OCCUPANCIES
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OH	OVERHEAD
OHDC	OVERHEAD DOOR CLOSERS ON INACTIVE LEAVES
OPER	OPERABLE
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
O/	OVER
PAV	PAVEMENT
PL	PLATE
PLAM	PLASTIC LAMINATE
PLUM	PLUMBING
PLWD	PLYWOOD
PREFIN	PREFINISHED
PREMAN	PREMANUFACTURED
PROP	PROPOSED
PS	PRESSED STEEL
PSI	POUNDS PER SQUARE INCH
PT	PAINT
QTY	QUANTITY
R	RADIUS
RECEPT	RECEPTACLE
REF	REFER/REFERENCE
REINF	REINFORCE
RELOC	RELOCATE
REM	REMOVE
R&R	REMOVE AND REPLACE
REPL	REPLACE
REQ'D	REQUIRED
REQ'S	REQUIREMENTS
R.O.	ROUGH OPENING
RT	RIGHT
RD	ROOF DRAIN
RWL	RAIN WATER LEADER
SAM	SELF ADHERED MEMBRANE
SBO	SUPPLIED BY OWNER
SCHED	SCHEDULE
SECT	SECTION
SF	SQUARE FOOTAGE
SHGC	SOLAR HEAT GAIN COEFFICIENT
SHT	SHEET
SIM	SIMILAR
SL	SLOPE
SOG	SLAB ON GRADE
SPECS	SPECIFICATIONS
SQ	SQUARE
SS, S.S.	STAINLESS STEEL
STD	STANDARD
STL	STEEL
ST	SOUND TRANSIT, STREET
STOR	STORAGE
STRUC	STRUCTURAL
TBD	TO BE DETERMINED
TG	TEMPERED GLASS
TEMP	TEMPORARY
TF	TOP FACE
TH	THRESHOLD
T.O.	TOP OF
T.O.S.	TOP OF STRUCTURE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
U/S	UNDER SIDE
V, VAR	VARIABLE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VT	VISIBLE (LIGHT) TRANSMITTANCE
W/	WITH
WC	WATERCLOSET
WD	WOOD
W/IN	WITHIN
W/O	WITHOUT
WS	WEATHERSTRIPPING

GENERAL NOTES:

1. THE CONTRACT DOCUMENTS INCLUDE THESE DRAWINGS, ALL OTHER DISCIPLINE DRAWINGS, AND THE PROJECT MANUAL (SPECIFICATIONS). THE CONTRACT DOCUMENTS ARE COMPLEMENTARY; WHAT IS REQUIRED BY ONE IS AS REQUIRED BY ALL.
2. DESIGN BUILDER SHALL REVIEW ALL DOCUMENTS, VERIFY ALL SITE DIMENSIONS, GRADES AND CONDITIONS PRIOR TO COMMENCING THE WORK, AND SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT IN WRITING. NO DEVIATION FROM CONTRACT DRAWINGS AND SPECIFICATIONS SHALL BE MADE WITHOUT WRITTEN APPROVAL OF THE DESIGN BUILDER.
3. WHERE A COMPLEX ASSEMBLY INVOLVING SEVERAL TRADES IS REQUIRED BY THE DRAWINGS, DESIGN BUILDER SHALL SUBMIT COMPOSITE SHOP DRAWINGS SHOWING ALL RELATED ELEMENTS FOR ARCHITECT'S REVIEW.
4. EXCEPT WHERE SHOWN IN DIMENSIONAL DETAIL, OR AS REQUIRED BY CODE, THE LOCATIONS OF MECHANICAL, ELECTRICAL, AND PLUMBING EQUIPMENT SUCH AS DUCTS, PIPING, AND FITTINGS ARE APPROXIMATE. EXACT LOCATIONS SHALL BE DETERMINED BY THE DESIGN BUILDER.
5. TOP OF FINISHED FLOOR AT GROUND LEVEL IS 154'-8 1/2" AND CORRESPONDS TO GRADES INDICATED ON THE CIVIL DRAWINGS (NO GRADE TO FINISH FLOOR CONVERSIONS ARE NECESSARY).
6. DO NOT SCALE THE DRAWINGS.
7. HORIZONTAL DIMENSIONS ARE TO BUILDING GRID LINES, CENTERLINES OF STRUCTURAL FRAMING, FACE OF METAL STUDS AT PARTITION ASSEMBLIES, AND FACE OF CONCRETE AND CMU AT CONCRETE AND CMU ASSEMBLIES, UNLESS NOTED OTHERWISE.
8. VERTICAL DIMENSIONS AT LEVELS ONE AND TWO ARE TO TOP OF SLAB. ALL OTHER VERTICAL DIMENSIONS ARE AS INDICATED ON THE DRAWINGS.
9. GLAZING SYSTEM DIMENSIONS ARE TO OUTSIDE OF ROUGH OPENING, UNLESS NOTED OTHERWISE.
10. DOORS AND FRAMED OPENINGS INDICATED ADJACENT TO WALL INTERSECTIONS SHALL BE LOCATED WITH THE EDGE OF ROUGH OPENING SIX INCHES FROM FINISHED FACE OF THE ADJACENT WALL UNLESS OTHERWISE INDICATED. ALL OTHER DOORS AND FRAMED OPENINGS SHALL BE CENTERED BETWEEN NEAREST ADJACENT WALL INTERSECTIONS, UNLESS OTHERWISE DIMENSIONED.
11. 'ALIGN' MEANS TO ACCURATELY LOCATE FINISHED FACES IN SAME PLANE (FLUSH WITH ONE ANOTHER).
12. WHEN CONSTRUCTION DETAILS ARE NOT SHOWN OR NOTED, DETAILS SHALL BE THE SAME AS FOR OTHER TYPICAL OR SIMILAR WORK. REPETITIVE FEATURES NOT SHOWN IN DRAWINGS SHALL BE COMPLETELY PROVIDED AS IF DRAWN IN FULL.
13. DESIGN BUILDER SHALL COORDINATE SIZES AND LOCATIONS OF FLOOR AND WALL OPENINGS, PENETRATIONS, AND SLEEVE LOCATIONS NECESSARY FOR UTILITIES TO PASS THROUGH. ALL PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE SEALED SO AS TO MAINTAIN THE REQUIRED RATING.
14. INSTALL FIRESTOPPING IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE (WITH CITY OF BELLEVUE AMENDMENTS), WITH DOCUMENTED AND FIRE TESTED WALL, FLOOR/CEILING OR ROOF/CEILING ASSEMBLIES, AND WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS AND REQUIREMENTS.
15. INSTALL FIRE EXTINGUISHERS AT LOCATIONS INDICATED, UNLESS OTHERWISE REQUIRED BY THE AUTHORITY HAVING JURISDICTION. PROMPTLY NOTIFY THE ARCHITECT AND OWNER IN WRITING OF DISCREPANCIES.
16. DESIGN BUILDER SHALL LOCATE ACCESS PANELS TO ALIGN WITH AND FIT WITHIN NEW CONSTRUCTION. VERIFY ACCESS TO UTILITIES SERVED.
17. CEILING HEIGHT DIMENSIONS ARE TO FINISHED SURFACES.
18. DESIGN BUILDER SHALL PROVIDE TEMPORARY EXIT SIGNS TO ENSURE MEANS OF EGRESS THROUGHOUT CONSTRUCTION.
19. DESIGN BUILDER SHALL VERIFY SIZES AND LOCATIONS OF ALL MECHANICAL, ELECTRICAL AND PLUMBING EQUIPMENT PADS AND BASES; AND POWER, WATER AND DRAIN INSTALLATIONS; WITH EQUIPMENT MANUFACTURERS BEFORE PROCEEDING WITH THE WORK. NOTIFY THE ARCHITECT OF REQUIRED ADJUSTEMENTS IN WRITING.
20. DESIGN BUILDER SHALL VERIFY SIZE AND LOCATION OF ALL MECHANICAL OPENINGS THROUGH THE ROOF WITH MECHANICAL EQUIPMENT MANUFACTURERS.
21. DESIGN BUILDER SHALL PROVIDE AND INSTALL ALL STIFFENERS, SEISMIC AND OTHER BRACING, NON-COMBUSTIBLE BLOCKING, PLATES, AND SUPPORTING BRACKETS REQUIRED FOR THE INSTALLATION OF CASEWORK, TOILET ROOM ACCESSORIES, FIXTURES, AND PARTITIONS, AND ALL WALL MOUNTED OR SUSPENDED MECHANICAL, ELECTRICAL OR MISCELLANEOUS EQUIPMENT AND FURNISHINGS.
22. ALL BLOCKING WITHIN WALLS MUST BE NON-COMBUSTIBLE.
23. MECHANICAL SUPPLY AND RETURN AIR SHAFTS SHALL BE AIRTIGHT AND SEALED.
24. CMU CONTROL JOINTS SHALL BE AT 24' OC MAX UNO. SEE 12 / M04-AED015

DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: S. McDONALD
APPROVED BY: J. YOUNG

7888 REGISTERED ARCHITECT Alan Hart STATE OF WASHINGTON 09/19/2018

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Karen Kiest | Landscape Architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY: RICHARD LEWIS
DATE: 2018.09.19
REVIEWED BY: BILL FERRIS
DATE: 2018.09.19

SCALE: NTS
FILENAME: M200-M04-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

GENERAL
SYMBOLS LEGEND, ABBREVIATIONS, GENERAL NOTES

DRAWING NO.: GEN-AZN001
FACILITY ID: Y02, M04, M05
SHEET No.: 9
REV: 0

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TECHNICAL NOMENCLATURE SCHEDULE

KEY	ITEM	SPEC SECTION	COLOR	REMARKS
ALUMINUM WINDOW SYSTEMS				
AW-1	RIBBON WINDOWS	08 41 13	TO MATCH KINGSPAN - DOVE GRAY	
AW-2	CURTAIN WALL GLAZING SYSTEM	08 44 13	TO MATCH KINGSPAN - REGAL BLUE	
AW-3	STOREFRONT	08 41 13	TO MATCH KINGSPAN - DOVE GRAY	
CEILINGS *				
CLG-1	ACOUSTIC LAY-IN	09 51 23	WHITE - ULTIMA 1910HRC	ARMSTRONG
CLG-2	PAINTED GWB-4 ON CFMF	09 29 00	MATCH: PPG, MAGNOLIA BLOSSUM	PPG
CLG-3	PAINTED GWB-3 ON CFMF	09 29 00	MATCH: PPG, MAGNOLIA BLOSSUM	PPG
CLG-4	APPLIED FIREPROOFING	07 81 00	UL D759	
CMU				
CMU-1	CONCRETE MASONRY UNIT EXTERIOR	04 22 00		
CMU-2	CONCRETE MASONRY UNIT INTERIOR	04 22 00		
CONCRETE				
CONC-1	ARCHITECTURAL CONCRETE	03 33 00		
CONC-2	CIP CONCRETE - PITS	03 30 00		
CONC-3	CIP CONCRETE	03 30 00		
COUNTER FINISHES				
CT-1	KITCHEN / MEDIA / BREAK ROOM COUNTERS - SOLID SURFACE	12 36 00	TERRA COLLECTION - SILVER BIRCH	CORIAN
CT-2	BATHROOM COUNTERS - SOLID SURFACE	12 36 00	TERRA COLLECTION - SAHARA	CORIAN
CT-3	NOT USED			
CT-4	WINDOW SILLS - SOLID SURFACE	12 36 00	CARBON CONCRETE	CORIAN
EXPANSION JOINTS				
EJS-1	FOAM SEAL	07 91 00		
FIBERGLASS-SANDWICH-PANEL				
FSPA-1	FIBERGLASS-SANDWICH-PANEL ASSEMBLIES	08 45 23	CRYSTAL PANEL W/ CLEAR ANODIZED FRAME	
FLOOR FINISHES				
CPT-1	CARPET TILES - OFFICES	09 68 13	SEW STRAIGHT & PRIMARY STITCH 102418 BRAID	INTERFACE
CPT-2	CARPET TILES - COMMON SPACES	09 68 13	GLOBAL CHANGE - PROGRESSION II, 1005505 DESERT SHADOW	INTERFACE
CPT-3	CARPET TILES - COMMON SPACES	09 68 13	GLOBAL CHANGE - GLAZING,1005547 DESERT SHADOW	INTERFACE
CPT-4	CARPET TILES - ENTRY WALK-OFF	96 68 00	RECOURSE II, BOULEVARD BLUE 3517, 24" X 24"	MANNINGTON COMM
GLAZING				
GL-1.1	IGU	08 80 00		
GL-1.2	TG IGU	08 80 00		
GL-2	SPANDREL IGU	08 80 00		
GL-3	SINGLE PANE CLEAR GLASS	08 80 00		
WALL FINISHES				
GWB-1	INTERIOR GYPSUM WALL BOARD	09 29 00		
GWB-1.1	INTERIOR GYPSUM WALL BOARD - TYPE X	09 29 00		
GWB-2	ABUSE RESISTANT GYPSUM WALL BOARD	09 29 00		
GWB-3	CEILING GYPSUM WALL BOARD	09 29 00		
GWB-4	MOISTURE-RESISTANT CEILING GYPSUM BOARD	09 29 00		
GWB-5	EXTERIOR SHEATHING	06 16 00 07 54 23		
GWB-6	TILE BACKER BOARD	09 29 00		
GWB-7	NOISE-REDUCING GYPSUM WALL BOARD	09 29 00		
HIGH PERFORMANCE COATINGS				
HPC-1	HIGH PERFORMANCE COATING - ON CONCRETE	09 96 00		
HPC-2.1	HIGH PERFORMANCE COATING - EXPOSED STEEL	09 96 00	ST PENCIL YELLOW	
HPC-2.2	HIGH PERFORMANCE COATING - EXPOSED STEEL	09 96 00	TO MATCH BENJAMIN MOORE OC-66 SNOW WHITE	
HPC-2.3	HIGH PERFORMANCE COATING - EXPOSED STEEL	09 96 00	ST LIGHT GRAY	
HPC-2.4	HIGH PERFORMANCE COATING - EXPOSED STEEL	09 96 00	TO MATCH KINGSPAN - DOVE GRAY	
HPC-2.5	HIGH PERFORMANCE COATING - EXPOSED STEEL	09 96 00	TO MATCH KINGSPAN REGAL BLUE	
HPC-2.6	HIGH PERFORMANCE COATING - EXPOSED STEEL	09 96 00	ST DARK BLUE	
INSULATION				
INSUL-1	EPS RIGID INSULATION (ROOF) - R5 PER INCH	07 54 23		
INSUL-2	MINERAL FIBER BATT - R19	07 21 00		
INSUL-3	EPS RIGID INSULATION - R5 PER INCH	07 21 00		
INSUL-4	GLASS FIBER ACOUSTIC BATT	07 21 00		
INSUL-5	UNDERSLAB GEOFOAM - R3.5 PER INCH	07 21 00		
INSUL-6	SPRAY POLYURETHANE FOAM - R6.5 PER INCH	07 21 19		
LOCKERS				
LKR-1	METAL LOCKERS WITH INTEGRAL BENCH	10 51 13		
LKR-2	METAL LOCKERS	10 51 13		
LKR-3	METAL LOCKERS	10 51 13		
LKR-4	PLASTIC GEAR LOCKERS	10 51 13		
LKR-5	UNIFORM EXCHANGE METAL LOCKERS	10 51 13		VENDOR PROVIDED, OFOI
METAL PANELS				
MP-1.1	EXTERIOR METAL PANEL CLADDING	07 42 13.19	KINGSPAN - ASCOT WHITE	
MP-1.2	EXTERIOR METAL PANEL CLADDING	07 42 13.19	KINGSPAN - DRIFTWOOD	
MP-1.3	EXTERIOR METAL PANEL CLADDING	07 42 13.19	KINGSPAN - DOVE GRAY	
MP-1.4	EXTERIOR METAL PANEL CLADDING	07 42 13.19	KINGSPAN - ZINC GRAY	
MP-1.5	EXTERIOR METAL PANEL CLADDING	07 42 13.19	KINGSPAN - REGAL BLUE	
MP-2.1	PERFORATED METAL PANEL	05 50 00	MORIN F-12-S - ASCOT WHITE	
MP-2.2	PERFORATED METAL PANEL	05 50 00	MORIN F-12-S - DRIFTWOOD	
MP-2.3	PERFORATED METAL PANEL	05 50 00	MORIN F-12-S - DOVE GRAY	
MP-3	METAL PANEL SOFFIT	07 42 13.19	TO MATCH KINGSPAN - REGAL BLUE	
MP-4	PREFINISHED METAL TRIM	07 42 13.19	AS NOTED	
MP-5	PREFINISHED METAL FLASHING	07 62 00	AS NOTED	
MP-6	STAINLESS STEEL PANEL	10 26 00		
MP-7	PREFINISHED METAL COUNTERFLASHING	07 71 00	AS NOTED	
MP-8	PREFINISHED SHEET METAL	07 62 00	AS NOTED	

KEY	ITEM	SPEC SECTION	COLOR	REMARKS
ACOUSTIC TREATMENT				
MTC-1	SOUND BARRIER MULLION TRIM CAPS	09 84 53		
BAR GRATING				
MTL-1	BAR GRATING INFILL PANELS	05 53 13		
MTL-2	BAR GRATING - WASH PITS	05 53 13		
MTL-3	BAR GRATING - WALKWAY	05 53 13		
PAINT				
PT-1	WALL PAINT - MAIN FIELD	09 90 00	MAGNOLIA BLOSSOM - PPG1090-1	PPG
PT-2	METAL DOOR PAINT	09 90 00	SIMMERING SMOKE - PPG1019-4	PPG
PT-3	METAL DOOR FRAME PAINT	09 90 00	WILD WILDERNESS - PPG1019-5	PPG
PT-4	WALL PAINT - ACCENT WALL	09 90 00	AMERICANA - PPG1152-4	PPG
PT-5	WALL PAINT - ACCENT WALL	09 90 00	CELESTIAL BLUE - PPG1156-7	PPG
PLASTIC LAMINATE				
PLAM-1	CASEWORK FINISH	06 06 20	LAMINATE, NATURAL MAPLE, MATTE FINISH, 756-58	FORMICA
PLAM-2	UPPER CASEWORK FINISH	09 90 00	LAMINATE, MICRO DOT, WHITE, MATTE FINISH, 949-MC	
PLYWOOD **				
PLY-1	INTERIOR FINISH PLYWOOD (VISIBLE)	06 10 53 09 90 00	ST LIGHT GRAY	
PLY-2	INTERIOR PLYWOOD (NON-VISIBLE)	06 10 53		
RESILIENT FLOOR TILE				
RTF-1	RUBBER FLOOR TILE - MAIN	09 65 19	ENDURA, FLECKSIBLES - SIDELINE, 033	BURKE FLOORING
RTF-2	RUBBER FLOOR TILE - FITNESS	09 65 19	ECO FITNESS - FLECKSIBLES, BLUE	BURKE FLOORING
RTF-3	STATIC DISSIPATIVE RESILIENT FLOORING	09 65 36	FOSSIL GREY - 51956	
RTF-4	RUBBER FLOOR TILE - ACCENT	09 65 19	ENDURA, FLECKSIBLES - BACKSTROKE, 035	BURKE FLOORING
ROOFING				
RFG-1	TPO ROOFING	07 54 23		
RFG-2	METAL ROOF PANELS	07 41 16		
RFG-3	ROOF DECKING	05 31 00	TO MATCH KINGSPAN REGAL BLUE	
RFG-4	TPO SHEET FLASHING	07 54 23		
RUBBER BASE				
RB-1	4" RUBBER COVE BASE	09 65 13	PINNACLE, 110 BROWN	ROPPE
SEALER				
SEAL-1	WATER REPELLENT / ANTI-GRAFFITI COATING	09 96 23		
SEAL-2	CONCRETE FLOOR AND SLAB TREATMENT; SEALER	03 30 00		
TILE				
TILE-1	FIELD WALL TILE	09 30 13	CERAMIC - IVORY, QH24, 12" X 12"	DAL-TILE
TILE-2	FLOOR TILE	09 30 13	PORCELAIN - CHESTNUT BROWN, IP08, 12" X 12"	DAL-TILE
TILE-3	TILE COVE BASE W/ FLAT TOP	09 30 13	CERAMIC - IVORY, QH24, 6" X 12"	DAL-TILE
TILE-4	ACCENT WALL TILE	09 30 13	CERAMIC - PACIFIC, QH61, 6" X 6"	DAL-TILE
TILE-5	NOT USED			
TILE-6	ACCENT WALL TILE	09 30 13	CERAMIC - ICEBERG, QH82, 6" X 6"	DAL-TILE
TOILET AND BATH ACCESSORIES				
TA-1	TOILET PAPER DISPENSER	10 28 00		
TA-2	WASTE RECEPTACLE	10 28 00		
TA-3	LIQUID SOAP DISPENSER	10 28 00		
TA-4	GRAB BARS	10 28 00		
TA-5	SANITARY NAPKIN DISPOSAL	10 28 00		
TA-6	SEAT COVER DISPENSER	10 28 00		
TA-7	TAMPON DISPENSER	10 28 00		
TA-8	SHOWER CURTAIN ROD	10 28 00		
TA-9	SHOWER CURTAIN AND HOOKS	10 28 00		
TA-10	SOAP DISH	10 28 00		
TA-11	COAT/ROBE HOOK	10 28 00		
TA-12	FOLDING SHOWER SEAT	10 28 00		
TA-13	UNDERLAVATORY GUARD	10 28 00		
TA-14	NOT USED	10 28 00		
TA-15	ELECTRIC HAND DRYER	10 28 00		
TA-16	COMBINATION UTILITY SHELF/MOP & BROOM HOLDER	10 28 00		
WEATHER RESISTANT BARRIER				
WRB-1	SELF-ADHERED SHEET	07 13 26		
WATERPROOFING MEMBRANE				
WP-1	WATERPROOF MEMBRANE	07 13 26		
WP-2	SHEET WATERPROOFING	07 13 26		
VAPOR BARRIER				
VB-1	SHEET MEMBRANE	03 30 00		
VB-2	FLUID-APPLIED BARRIER	07 11 13		
VB-3	MEMBRANE BARRIER (ROOF)	07 54 23		

*** CEILING SUPPORT SYSTEM IS A DEFERRED SUBMITTAL:**
PER IBC SECTION 107.3.4.1, DRAWINGS AND CALCULATIONS FOR THE DESIGN AND FABRICATION OF CEILING SUPPORT SYSTEMS THAT ARE DESIGNED BY OTHERS SHALL BEAR THE SEAL AND SIGNATURE OF THE WASHINGTON STATE REGISTERED PROFESSIONAL ENGINEER WHO IS RESPONSIBLE FOR THE DESIGN AND SHALL BE SUBMITTED TO THE ENGINEER OF RECORD AND THE AUTHORITY HAVING JURISDICTION FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND INSTALLATION.

**** INTERIOR PLYWOOD:**
PER IBC SECTION 803.11, PLYWOOD SHALL HAVE A FLAME SPREAD INDEX NOT GREATER THAN CLASS 'C'.

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DP4A IFC

No.	DATE	DSN	CHK	APP	REVISION
C	2020.02.02	BP	DN	JY	DB 0022
B	2019.08.28	BP	SM	JY	CB#061
A	2019.01.30	BP	SM	JY	CB#004
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: D. NELSON
APPROVED BY: J. YOUNG

7693 REGISTERED ARCHITECT Steven McDonald STATE OF WASHINGTON 02/02/2020

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Karen Kiest Landscape Architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS--CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

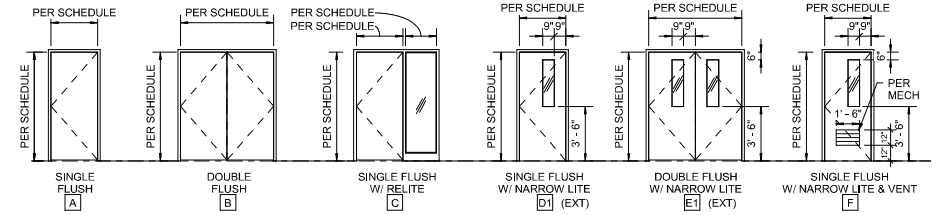
SUBMITTED BY: RICHARD LEWIS | DATE: 2018.07.10 | REVIEWED BY: BILL FERRIS | DATE: 2018.07.10

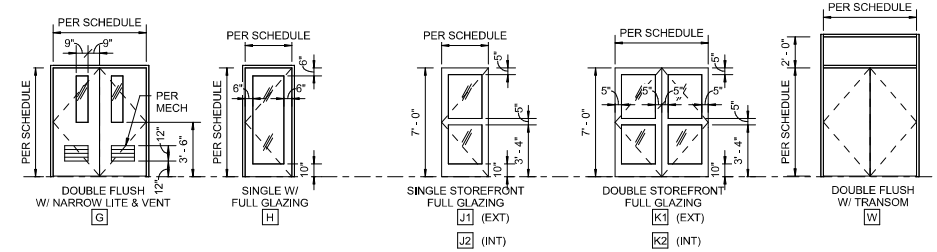
SCALE: NTS
FILENAME: M200-Y02e-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.07.10

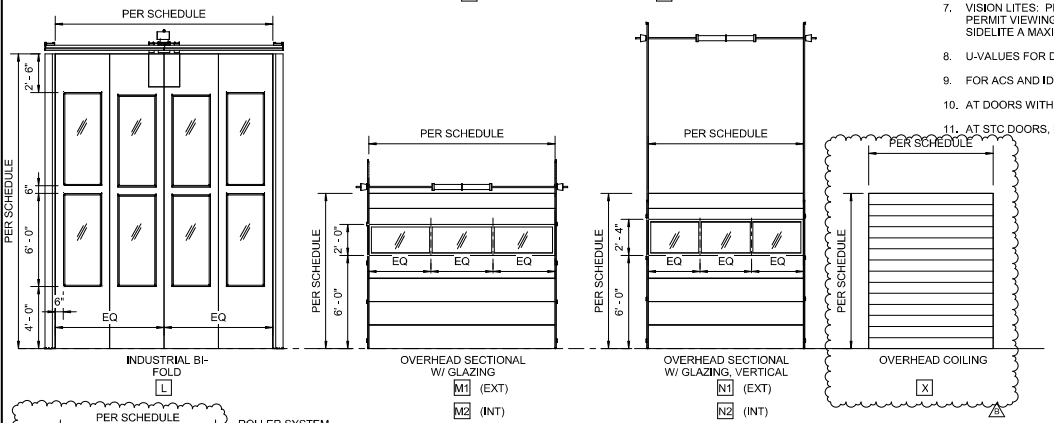
LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

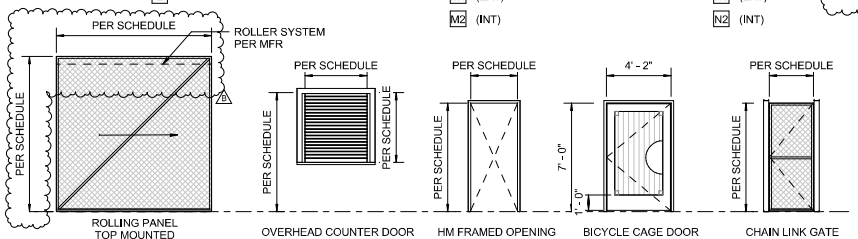
GENERAL
TECHNICAL NOMENCLATURE

DRAWING NO.: **GEN-AZN002**
FACILITY ID: Y02, M04, M05
SHEET No: REV: E









DOOR ASSEMBLY REQUIREMENTS

1. DOOR OPENING FORCE: PROVIDE IN ACCORDANCE WITH IBC 2015 SECTION 1010.1.3 AND ICC A117.1-2009 SECTION 404.2.8. THE FORCE FOR PUSHING OR PULLING OPEN DOORS OTHER THAN FIRE DOORS SHALL BE AS FOLLOWS: THE FORCE FOR PUSHING OR PULLING OPEN INTERIOR WINGING EGRESS DOORS, OTHER THAN FIRE DOORS, SHALL NOT EXCEED 5 POUNDS (22 N). THESE FORCES DO NOT APPLY TO THE FORCE REQUIRED TO RETRACT LATCH BOLTS OR DISENGAGE OTHER DEVICES THAT HOLD THE DOOR IN A CLOSED POSITION. FOR OTHER DOORS, THE DOOR LATCH SHALL RELEASE WHEN SUBJECTED TO A 15-POUND (67 N) FORCE. THE DOOR SHALL BE SET IN MOTION WHEN SUBJECTED TO A 30-POUND (133 N) FORCE. THE DOOR SHALL SWING TO A FULL-OPEN POSITION WHEN SUBJECTED TO A 15-POUND (67 N) FORCE.
2. POWER-OPERATED DOORS: PROVIDE IN ACCORDANCE WITH IBC 2015 SECTION 1010.1.4.2 AND ICC A117.1-2009 SECTION 404.3.
   IN THE EVENT OF POWER FAILURE, THE DOOR MUST BE CAPABLE OF BEING OPENED MANUALLY TO PERMIT MEANS OF EGRESS TRAVEL. THE FORCES REQUIRED TO OPEN THESE DOORS MANUALLY SHALL NOT EXCEED THOSE SPECIFIED IN SECTION 1010.1.3, EXCEPT THAT THE FORCE TO SET THE DOOR IN MOTION SHALL NOT EXCEED 50 POUNDS (220 N). THE DOOR SHALL BE CAPABLE OF SWINGING OPEN FROM ANY POSITION TO THE FULL WIDTH OF THE OPENING IN WHICH SUCH DOOR IS INSTALLED WHEN A FORCE IS APPLIED TO THE DOOR ON THE SIDE FROM WHICH EGRESS IS MADE.

   POWER-OPERATED SWINGING DOORS SHALL COMPLY WITH BHMA A156.10. POWER-ASSISTED SWINGING DOORS SHALL COMPLY WITH BHMA A156.19.

   MANUALLY OPERATED CONTROL SWITCHES SHALL BE LOCATED IN ACCORDANCE WITH CLEARANCE REACH REQUIREMENTS INDICATED IN SECTION 309 OF ICC-A117.1-2009.
3. DOOR OPERATIONS: PROVIDE IN ACCORDANCE WITH IBC 2015 SECTION 1010.1.9 AND ICC A117.1-2009 SECTION 404.2.6:
   HARDWARE: DOOR HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES ON DOORS REQUIRED TO BE ACCESSIBLE SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE.

   HARDWARE HEIGHT. DOOR HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES SHALL BE INSTALLED 34 INCHES (864 MM) MINIMUM AND 48 INCHES (1219 MM) MAXIMUM ABOVE THE FINISHED FLOOR. LOCKS USED ONLY FOR SECURITY PURPOSES AND NOT USED FOR NORMAL OPERATION ARE PERMITTED AT ANY HEIGHT.
4. CLOSING SPEED: PROVIDE IN ACCORDANCE WITH ICC A117.1-2009 SECTION 404.2.7.

   CLOSERS SHALL BE ADJUSTED SO THAT FROM OPEN POSITION OF 90-DEGREES THE TIME REQ'D TO MOVE THE DOOR TO AN OPEN POSITION OF 12-DEGREES SHALL BE 5 SECONDS MIN

   SPRING HINGES SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 70-DEGREES, THE DOOR SHALL MOVE TO THE CLOSED POSITION IN 1.5 SECONDS MINIMUM.
5. PANIC OR FIRE EXIT HARDWARE INSTALLATION: IN ACCORDANCE WITH IBC 2015 SECTION 1010.1.10.1.
   WHERE INSTALLED, SHALL COMPLY WITH THE FOLLOWING:
   1. PANIC HARDWARE SHALL BE LISTED IN ACCORDANCE WITH UL 305.
   2. FIRE EXIT HARDWARE SHALL BE LISTED IN ACCORDANCE WITH UL 10C AND UL 305.
   3. THE ACTUATING PORTION OF THE RELEASING DEVICE SHALL EXTEND NOT LESS THAN ONE-HALF OF THE DOOR LEAF WIDTH.
   4. THE MAXIMUM UNLATCHING FORCE SHALL NOT EXCEED 15 POUNDS (67 N).
6. DOOR GLAZING: PROVIDE IN ACCORDANCE WITH IBC 2015 CHAPTER 24 GLASS AND GLAZING.
7. VISION LITES: PROVIDE IN ACCORDANCE WITH ICC A117.1-2009 SECTION 404.2.10. DOORS AND SIDELITES ADJACENT TO DOORS CONTAINING ONE OR MORE GLAZING PANELS THAT PERMIT VIEWING THROUGH THE PANELS SHALL HAVE THE BOTTOM OF AT LEAST ONE PANEL ON EITHER THE DOOR AN ADJACENT SIDELITE A MAXIMUM OF 43 INCHES (1090 MM) ABOVE THE FLOOR.
8. U-VALUES FOR DOORS ARE INDICATED ON THE DOOR SCHEDULE.
9. FOR ACS AND IDS FUNCTIONS SEE SECURITY AND ELECTRICAL DRAWINGS.
10. AT DOORS WITHOUT A REQUIRED STC RATING, DESIGN BUILDER SHALL UNDERCUT DOORS TO CLEAR TOP OF FLOOR FINISHES BY 1/4 INCH, UNLESS OTHERWISE NOTED.
11. AT STC DOORS, DESIGN BUILDER SHALL COORDINATE SOUND GASKETS AT BASES OF DOORS TO ACHIEVE REQUIRED STC RATINGS.

EXTERIOR DOOR TYPE DETAIL SCHEDULE

DOOR TYPE	DETAILS			
		JAMB		
	HEAD	METAL PANEL	CONCRETE	SILL
D1	2 / M04-ADD001	6 / M04-ADD001	10 / M04-ADD001	6 / M04-AED002
E1	2 / M04-ADD001	6 / M04-ADD001	10 / M04-ADD001	6 / M04-AED002
J1	1 / M04-ADD001	5 / M04-ADD001		10 / M04-AED002
K1	1 / M04-ADD001	5 / M04-ADD001		10 / M04-AED002
L	3 / M04-ADD001	7 / M04-ADD001	11 / M04-ADD001	3 / M04-AED002
M1	4 / M04-ADD001	8 / M04-ADD001	10 / M04-ADD011	7 / M04-AED002
N1	4 / M04-ADD001	8 / M04-ADD001	10 / M04-ADD011	7 / M04-AED002
T	4 / Y02f-AED001	7 / Y02f-AED001		

INTERIOR DOOR TYPE DETAIL SCHEDULE

DOOR TYPE	DETAILS			
	HEAD/JAMB @ FRAMING	HEAD @ CMU	JAMB @ CMU	SILL
A	7 / M04-ADD002	3 / M04-ADD002	3 / M04-ADD002	12 / M04-ADD002
B	7 / M04-ADD002	3 / M04-ADD002	3 / M04-ADD002	12 / M04-ADD002
C	7 / M04-ADD002	3 / M04-ADD002	3 / M04-ADD002	12 / M04-ADD002
D2	7 / M04-ADD002	3 / M04-ADD002	3 / M04-ADD002	12 / M04-ADD002
E2	7 / M04-ADD002	3 / M04-ADD002	3 / M04-ADD002	12 / M04-ADD002
F	7 / M04-ADD002	3 / M04-ADD002	3 / M04-ADD002	12 / M04-ADD002
G	7 / M04-ADD002	3 / M04-ADD002	3 / M04-ADD002	12 / M04-ADD002
H	7 / M04-ADD002	3 / M04-ADD002	3 / M04-ADD002	12 / M04-ADD002
J2	7 / M04-ADD002			12 / M04-ADD002
K2	3 / M04-ADD033			10 / M04-ADD033
N2		2 / M04-ADD002	1 / M04-ADD002	
Q				
R		5 / M04-ADD002	11 / M04-ADD002	9 / M04-ADD002
S	8 / M04-ADD002	4 / M04-ADD002	4 / M04-ADD002	
V				
W	7 / M04-ADD002			12 / M04-ADD002
X	2 / M04-ADD002SIM1 / M04-ADD002 SIM			

DOOR SCHEDULE KEY

ACS	ACCESS CONTROL SYSTEM
CO	CASED OPENING
CLR	CLEAR
CLR ANOD	CLEAR ANODIZED (ALUMINUM FINISH)
CTD CL	COATED CHAIN LINK
EH	EXIT HARDWARE
FF	FACTORY FINISH
GL	GLAZING
HM	HOLLOW METAL
HPC	HIGH PERFORMANCE COATING
INSUL	INSULATED
IHM	INSULATED HOLLOW METAL (STEEL)
IDS	INTRUSION DETECTION SYSTEM
NR	NOT (FIRE) RATED
NRH	NON-REMOVABLE HINGE PINS
EEH	EMERGENCY EGRESS HARDWARE
HDWR	HARDWARE
PF	PRE-FINISHED
PTD	PAINTED
SCWD	SOLID CORE WOOD DOOR
SG	SAFETY GLASS
S.S.	STAINLESS STEEL
ST	SOUND TRANSIT
STL	STEEL
TH	THRESHOLD
WD	WOOD
VP	VISION PANEL
WS	WEATHERSTRIPPING

FRAME TYPE KEY

1 HOLLOW METAL (HM) FRAME
2 HM FRAME W/ ELECTRIFIED HARDWARE
3 ALUMINUM (ALUM) FRAME
4 ALUM FRAME W/ ELECTRIFIED HARDWARE
5 HM FRAME W/ RELITE
6 HM FRAME W/ RELITE & ELECTRIFIED
7 HARDWARE
8 HM FRAMED OPENING
9 FIBER REINFORCED PLASTIC FRAME
FRAME PER MFR

DP4A IFC

No.	DATE	DSN	CHK	APP	REVISION
B	2020.05.15	BP	DN	JY	DB 0010
A	2019.10.18	BP	SM	JY	DB 029
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: D. NELSON
APPROVED BY: J. YOUNG

7693 REGISTERED ARCHITECT Steven McDonald STATE OF WASHINGTON 06/05/2020

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LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST
GENERAL
DOOR TYPES

DRAWING NO.: GEN-ADS001
FACILITY ID: Y02, M04, M05
SHEET No: REV: B

6/5/2020 9:10:56 AM
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M04 DOOR SCHEDULE - TABLE 1

MARK	ROOM NAME	ROOM #	DOOR							RELITE		FRAME			FIRE RATING	U-VALUE	HARDWARE			STC DOOR	COMMENTS
			SIZE			TYPE	MATERIAL	FINISH	GLAZING	WIDTH	HEIGHT	TYPE	MATERIAL	FINISH			EEH	HW GROUP	CLOSER		
			WIDTH	HEIGHT	PANEL THICKNESS																
LEVEL 1																					
M04ST03-A	STAIR	M04ST03	3' - 0"	7' - 0"	0' - 1 3/8"	J1	GL AL	CLR ANOD	SG			4	AL	CLR ANOD	NR	0.27	YES	10	YES		
M04ST04	STAIR	M04ST04	3' - 0"	7' - 0"	0' - 1 3/4"	D1	IHM	HPC-2.3	SG			1	IHM	HPC-2.3	NR	0.37	YES	10	YES		
M04101-A	MAIN ENTRY VESTIBULE	M04101	6' - 0"	8' - 0"	0' - 1 3/4"	K1	GL AL	CLR ANOD	SG			4	AL	CLR ANOD				21A	YES		
M04101-B	MAIN ENTRY VESTIBULE	M04101	6' - 0"	8' - 0"	0' - 1 3/4"	K2	GL AL	CLR ANOD	SG			3	AL	CLR ANOD	NR			20	YES		
M04103-A	VESTIBULE	M04103	6' - 0"	7' - 0"	0' - 1 3/4"	K1	GL AL	CLR ANOD	SG			4	AL	CLR ANOD	NR	0.27	YES	20	YES		
M04103-B	VESTIBULE	M04103	3' - 0"	7' - 0"	0' - 1 3/8"	J2	GL AL	CLR ANOD	SG			3	AL	CLR ANOD	NR			31	YES		
M04104-A	VESTIBULE	M04104	6' - 0"	7' - 0"	0' - 1 3/4"	K1	GL AL	CLR ANOD	SG			4	AL	CLR ANOD	NR	0.27	YES	20	YES		
M04104-B	VESTIBULE	M04104	6' - 0"	7' - 0"	0' - 1 3/4"	K2	GL AL	CLR ANOD	SG			3	AL	CLR ANOD	NR			21	YES		
M04105-A	HALLWAY	M04105	3' - 6"	7' - 0"	0' - 1 3/4"	D2	IHM	PF	SG			1	IHM	PF	NR			02	YES		
M04105-B	HALLWAY	M04105	3' - 0"	7' - 0"	0' - 1 3/4"	D2	IHM	PF	SG			1	IHM	PF	NR			02	YES		
M04106	ELEV MACH RM	M04106	3' - 0"	7' - 0"	0' - 1 3/4"	A	IHM	PF				2	IHM	PF	NR			15	YES	35	
M04107	LOCKERS	M04107	3' - 0"	7' - 0"	0' - 1 3/4"	A	IHM	FF				1	IHM	FF	NR			06			
M04108-A	DISPATCH OFFICE	M04108	3' - 0"	7' - 0"	0' - 1 3/4"	H	SCWD	CLR	SG			5	IHM	PF	NR			32	YES		FACTORY FINISHED - SEE SPECIFICATIONS
M04108-B	DISPATCH OFFICE	M04108	6' - 0"	6' - 9 1/2"		R	S.S.	S.S.				7	S.S.	S.S.	NR			09			
M04109	OPERATORS ROOM	M04109	3' - 0"	7' - 0"	0' - 1 3/4"	H	SCWD	CLR	SG			5	IHM	PF	NR			30			FACTORY FINISHED - SEE SPECIFICATIONS
M04110	QUIET ROOM	M04110	3' - 0"	7' - 0"	0' - 1 3/4"	C	SCWD	CLR	SG	3' - 0"	6' - 6"	5	IHM	PF	NR			06		35	FACTORY FINISHED - SEE SPECIFICATIONS
M04111-A	LUNCH ROOM	M04111	3' - 0"	7' - 0"	0' - 1 3/4"	C	SCWD	CLR	SG	2' - 0"	6' - 6"	5	IHM	PF	NR		YES	23			FACTORY FINISHED - SEE SPECIFICATIONS
M04111-B	LUNCH ROOM	M04111	3' - 0"	7' - 0"	0' - 1 3/4"	C	SCWD	CLR	SG	2' - 0"	6' - 6"	5	IHM	PF	NR		YES	23			FACTORY FINISHED - SEE SPECIFICATIONS
M04113	COPY ROOM	M04113	3' - 0"	7' - 0"		S						8	HM	PF							
M04114	MAINTENANCE CHIEF	M04114	3' - 0"	7' - 0"	0' - 1 3/4"	C	SCWD	CLR	SG	3' - 0"	6' - 6"	5	IHM	PF	NR			03			FACTORY FINISHED - SEE SPECIFICATIONS
M04115	MAINTENANCE LIBRARY	M04115	3' - 0"	7' - 0"	0' - 1 3/4"	D2	IHM	PF	SG			1	IHM	PF	NR			15	YES	35	
M04116	MEN'S RR/ SHOWER/ LOCKERS	M04116	3' - 0"	7' - 0"	0' - 1 3/4"	A	IHM	PF				1	IHM	PF	NR			06A	YES	35	
M04117	WOMEN'S RR/ SHOWER/ LOCKERS	M04117	3' - 0"	7' - 0"	0' - 1 3/4"	A	IHM	PF				1	IHM	PF	NR			06A	YES	35	
M04118	CONF	M04118	3' - 0"	7' - 0"	0' - 1 3/4"	C	SCWD	CLR	SG	3' - 0"	6' - 6"	5	IHM	PF	NR			06		35	FACTORY FINISHED - SEE SPECIFICATIONS
M04119	WOMEN'S RR/ SHOWER	M04119	3' - 0"	7' - 0"	0' - 1 3/4"	A	IHM	PF				1	IHM	PF	NR			06A	YES	35	
M04120	MENS RR/ SHOWER	M04120	3' - 0"	7' - 0"	0' - 1 3/4"	A	IHM	PF				1	IHM	PF	NR			06A	YES	35	
M04121	BMS WORK STATION	M04121	3' - 0"	7' - 0"	0' - 1 3/4"	C	IHM	PF	SG	2' - 0"	6' - 6"	1	IHM	PF	NR			05B	YES		
M04122	FACILITY MAINT STOR (CUSTODIAL)	M04122	3' - 0"	7' - 0"	0' - 1 3/4"	A	IHM	PF				1	IHM	PF	NR			08			
M04123	FITNESS CENTER	M04123	3' - 0"	7' - 0"	0' - 1 3/4"	C	SCWD	CLR	SG	3' - 0"	6' - 6"	5	IHM	PF	NR			06		41	FACTORY FINISHED - SEE SPECIFICATIONS
M04124-A	SPRINKLER VALVE ROOM	M04124	3' - 0"	7' - 0"	0' - 1 3/4"	A	IHM	PF				1	IHM	PF	NR			38	YES		
M04124-B	SPRINKLER VALVE ROOM	M04124	6' - 0"	7' - 0"	0' - 1 3/4"	E1	IHM	HPC-2.3	SG			1	IHM	HPC-2.3	NR	0.37		13	YES		
M04125-A	UPS	M04125	3' - 0"	7' - 0"	0' - 1 3/4"	A	IHM	PF				1	IHM	PF	3/4 HR			41	YES		
M04125-B	UPS	M04125	6' - 0"	7' - 0"	0' - 1 3/4"	E1	IHM	HPC-2.3	SG			2	IHM	HPC-2.3	NR	0.37		13	YES		
M04126-A	ELEC MAIN	M04126	3' - 0"	7' - 0"	0' - 1 3/4"	D2	IHM	PF	SG			1	IHM	PF	NR		YES	39	YES		
M04126-B	ELEC MAIN	M04126	6' - 0"	7' - 0"	0' - 1 3/4"	E1	IHM	HPC-2,3	SG			1	IHM	HPC-2,3	NR	0,37	YES	40	YES		
M04127	MPOE	M04127	3' - 0"	7' - 0"	0' - 1 3/4"	A	IHM	PF				2	IHM	PF	NR			15	YES		
M04128	IDF / IT ROOM	M04128	3' - 0"	7' - 0"	0' - 1 3/4"	A	IHM	PF				2	IHM	PF	NR			15	YES		
M04129	FAC MAINT SHOP/ STORAGE	M04129	4' - 0"	7' - 0"	0' - 1 3/4"	A	IHM	PF				1	IHM	PF	NR			15	YES		
M04130	STORAGE	M04130	3' - 0"	7' - 0"	0' - 1 3/4"	A	SCWD	CLR				1	HM	PF	NR			19			FACTORY FINISHED - SEE SPECIFICATIONS
M04131	ELECTRONICS REPAIR SHOP	M04131	6' - 0"	7' - 0"	0' - 1 3/4"	E2	IHM	PF	SG			1	IHM	PF	NR			33			
M04133-A	BRAKE/COUPLER SHOP	M04133	10' - 0"	10' - 0"	0' - 2"	X		PF				7		HPC-2.3				09			
M04133-B	BRAKE/COUPLER SHOP	M04133	3' - 0"	7' - 0"	0' - 1 3/4"	D2	IHM	PF	SG			1	IHM	PF	NR			35			
M04134	TOOL BOX STORAGE	M04134	3' - 6"	7' - 0"	0' - 1 3/4"	D2	IHM	PF	SG			1	IHM	PF	NR			02	YES	41	
M04137	ELEC SUB ROOM	M04137	3' - 6"	7' - 0"	0' - 1 3/4"	D2	IHM	PF	SG			1	IHM	PF	NR			29	YES		
M04138-A	AISLE	M04138	3' - 0"	7' - 0"	0' - 1 3/4"	D1	IHM	HPC-2.3	SG			1	IHM	HPC-2.3	NR	0.37	YES	10	YES		
M04138-B	AISLE	M04138	14' - 0"	19' - 0"		L		HPC-2.1	SG			7	HSS	HPC-2.5	NR			09			
M04138-C	AISLE	M04138	14' - 0"	19' - 0"		L		HPC-2.1	SG			7	HSS	HPC-2.5	NR			09			
M04138-D	AISLE	M04138	14' - 0"	19' - 0"		L		HPC-2.1	SG			7	HSS	HPC-2.5	NR			09			
M04138-E	AISLE	M04138	3' - 0"	7' - 0"	0' - 1 3/4"	D1	IHM	HPC-2.3	SG			1	IHM	HPC-2.3	NR	0.37		10	YES		
M04138-F	AISLE	M04138	14' - 0"	19' - 0"		L		HPC-2,1	SG			7	HSS	HPC-2,5	NR			09			
M04138-G	AISLE	M04138	14' - 0"	19' - 0"		L		HPC-2.1	SG			7	HSS	HPC-2.5	NR			09			
M04138-H	AISLE	M04138	3' - 0"	7' - 0"	0' - 1 3/4"	D1	IHM	HPC-2.3	SG			1	IHM	HPC-2.3	NR	0.37		10	YES		
M04138-I	AISLE	M04138	14' - 0"	19' - 0"		L		HPC-2.1	SG			7	HSS	HPC-2.5	NR			09			
M04138-J	AISLE	M04138	14' - 0"	19' - 0"		L		HPC-2.1	SG			7	HSS	HPC-2.5	NR			09			
M04138-K	AISLE	M04138	3' - 0"	7' - 0"	0' - 1 3/4"	D1	IHM	HPC-2.3	SG			1	IHM	HPC-2.3	NR	0.37		10	YES		
M04138-L	AISLE	M04138	10' - 0"	12' - 0"	0' - 2"	N1		HPC-2	SG			7		HPC-2	NR	0,28		09			
M04138-M	AISLE	M04138	14' - 0"	19' - 0"		L		HPC-2.1	SG			7	HSS	HPC-2.5	NR			09			
M04138-N	AISLE	M04138	14' - 0"	19' - 0"		L		HPC-2.1	SG			7	HSS	HPC-2,5	NR			09			
M04138-O	AISLE	M04138	3' - 0"	7' - 0"	0' - 1 3/4"	D1	IHM	HPC-2.3	SG			1	IHM	HPC-2.3	NR	0.37		10	YES		
M04138-P	AISLE	M04138	14' - 0"	19' - 0"		L		HPC-2.1	SG			7	HSS	HPC-2.5	NR			09			
M04138-Q	AISLE	M04138	14' - 0"	19' - 0"		L		HPC-2.1	SG			7	HSS	HPC-2.5	NR			09			
M04138-R	AISLE	M04138	14' - 0"	19' - 0"		L		HPC-2.1	SG			7	HSS	HPC-2.5	NR			09			
M04138-S	AISLE	M04138	3' - 0"	7' - 0"	0' - 1 3/4"	D1	IHM	HPC-2.3	SG			1	IHM	HPC-2.3	NR	0.37	YES	10	YES		

DOOR SCHEDULE GENERAL NOTES

1. FOR DOOR ABBREVIATIONS, ASSEMBLY NOTES, TYPES, FRAME TYPES, LIFE SAFETY PERFORMANCE REQUIREMENTS FOR HDWR, SEE SHEET GEN-ADS001.
2. FOR ACS AND IDS FUNCTIONS SEE SECURITY AND ELECTRICAL DRAWINGS.

DP4A IFC

No.	DATE	DSN	CHK	APP	REVISION
C	2020.05.15	BP	DN	JY	DB 0010
B	2019.05.29	BP	SM	JY	CB#042
A	2019.01.30	BP	SM	JY	CB#004
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: D. NELSON
APPROVED BY: J. YOUNG

7693 REGISTERED ARCHITECT Steven McDonald STATE OF WASHINGTON 06/05/2020

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects | Stantec | VIA | kpff | Karen Kiest Landscape Architects | ELCON ASSOCIATES, INC. ENGINEERS--CONSULTANTS

LINE IS 1" AT FULL SCALE

SUBMITTED BY: RICHARD LEWIS | DATE: 2018.07.10 | REVIEWED BY: BILL FERRIS | DATE: 2018.07.10

SOUNDTRANSIT

SCALE: NTS
FILENAME: M200-Y02e-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.07.10

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
DOOR SCHEDULE - TABLE 1

DRAWING NO.: M04-ADS001
FACILITY ID: M04
SHEET No: REV: C

6/5/2020 9:11:01 AM
C:\Users\bpeterson\Documents\M200-M04-A-v2017_bpeterson@via-architecture.com.rvt

CONCRETE MASONRY UNITS

		FIRE RATING	STC RATING	THERMAL RATING	ASSEMBLY LISTING
P1 A	CMU-2 (GROUT FILLED)	NR	60		
P1 B	8" CMU-2 (HOLLOW) 6" METAL STUD W/ 5 1/2" INSUL-4 5/8" GWB-1	NR	60		
P1 C	CMU-2 (GROUT FILLED) 1-1/2" METAL HAT CHANNEL 5/8" GWB-1	NR	60		
P1 D	8" CMU-2 (HOLLOW) GROUTED JOINT (BOTH SIDES)	NR	55		
P1 E	GROUTED JOINT (BOTH SIDES) CMU-2 (GROUT FILLED) PORCELAIN CERAMIC TILE	NR	55		

COLD FORMED METAL FRAMING

		FIRE RATING	STC RATING	THERMAL RATING	ASSEMBLY LISTING
P2 A	5/8" GWB-1 6" METAL STUD W/ 6" INSUL-4 5/8" GWB-2	NR	45 (MIN)		NGC 2018017
P2 B	5/8" TYPE X GWB-7.1 6" METAL STUD W/ 6" INSUL-4 5/8" TYPE X GWB-7.1 SEE DETAIL 5/M04-AID011	1 HR	50 (MIN)		OL17-0305
P2 C	5/8" GWB-1 6" METAL STUD W/ 3 1/2" INSUL-4 5/8" GWB-6 PORCELAIN CERAMIC TILE	NR	45 (MIN)		
P2 D	PORCELAIN CERAMIC TILE 5/8" GWB-6 6" METAL STUD W/ 3 1/2" INSUL-4 5/8" GWB-6 PORCELAIN CERAMIC TILE	NR	45 (MIN)		
P2 E	6" METAL STUD W/ 5 1/2" INSUL-4 5/8" GWB-6 PORCELAIN CERAMIC TILE	NR	45 (NET)		

COLD FORMED METAL FRAMING (CONTINUED)

		FIRE RATING	STC RATING	THERMAL RATING	ASSEMBLY LISTING
P2 F	6" METAL STUD MP-1.0	NR	45		
P2 G	1/2" PLY-1 3 5/8" METAL STUD 1/2" PLY-1	NR			
P2 H	5/8" GWB-1 6" METAL STUD 5/8" GWB-1 SMOKE PARTITION, SEE DETAIL 5/M04-AID011	NR			
P2 J	5/8" GWB-7 6" METAL STUD W/ 6" INSUL-4 5/8" GWB-7 SEE DETAIL 5/M04-AID011	NR	50 (MIN)		OL17-0305
P2 K	6" METAL STUD W/ 3 1/2" INSUL-4 5/8" GWB-1	NR	45 (NET)		
P2 L	3 5/8" METAL STUD W/ 3 1/2" INSUL-4 5/8" GWB-1	NR	45 (NET)		
P2 M	3 5/8" METAL STUD W/ 3 1/2" INSUL-4 5/8" GWB-6 PORCELAIN CERAMIC TILE	NR	45 (NET)		
P2 N	PORCELAIN CERAMIC TILE 5/8" GWB-6 8" METAL STUD W/ 3 1/2" INSUL-4 5/8" GWB-6 PORCELAIN CERAMIC TILE	NR	45 (MIN)		
P2 P	5/8" GWB-1 8" METAL STUD W/ 3 1/2" INSUL-4 5/8" GWB-6 PORCELAIN CERAMIC TILE	NR	45 (MIN)		
P2 Q	5/8" GWB-7 6" METAL STUD W/ 6" INSUL-4 5/8" GWB-7 SEE DETAIL 5/M04-AID011	NR	50 (MIN)		OL17-0305

		FIRE RATING	STC RATING	THERMAL RATING	ASSEMBLY LISTING
P2 R	CONT SYNTHETIC SOUND BARRIER LINER 5/8" GWB-1 5/8" GWB-1 6" METAL STUD W/ 5 1/2" INSUL-4 5/8" GWB-1 5/8" GWB-1 SEE DETAIL 5/M04-AID011	NR	60 (MIN)		
P2 S	5/8" GWB-7 6" METAL STUD W/ 6" INSUL-4 5/8" GWB-6 PORCELAIN CERAMIC TILE SEE DETAIL 5/M04-AID011	NR	50 (MIN)		
P2 T	5/8" GWB-1 3 5/8" METAL STUD W/ 3 1/2" INSUL-4 5/8" GWB-1	NR			
P2 U	5/8" GWB-1 A 6" METAL STUD 5/8" GWB-1	NR			

FURRING ASSEMBLIES

		FIRE RATING	STC RATING	THERMAL RATING	ASSEMBLY LISTING
P3 A	ADJACENT WALL ASSEMBLY - SEE PLANS & SECTIONS FOR TYPE 6" METAL FURRING CHANNEL W/ 5 1/2" INSUL-4 5/8" GWB-1 SEE DETAIL 5/M04-AID011	NR	50 (NET)		
P3 B	ADJACENT WALL ASSEMBLY - SEE PLANS & SECTIONS FOR TYPE 1-1/2" METAL HAT CHANNEL 5/8" GWB-1	NR	N/A		
P3 C	ADJACENT WALL ASSEMBLY - SEE PLANS & SECTIONS FOR TYPE 1-1/2" METAL HAT CHANNEL 5/8" GWB-6 PORCELAIN CERAMIC TILE	NR	N/A		
P3 D	ADJACENT WALL ASSEMBLY - SEE PLANS & SECTIONS FOR TYPE 7/8" METAL HAT CHANNEL 5/8" GWB-1	NR	N/A		
P3 E	ADJACENT WALL ASSEMBLY - SEE PLANS & SECTIONS FOR TYPE 7/8" METAL HAT CHANNEL 5/8" GWB-6 PORCELAIN CERAMIC TILE	NR	N/A		

MISCELLANEOUS INTERIOR PARTITION ASSEMBLIES

		FIRE RATING	STC RATING	THERMAL RATING	ASSEMBLY LISTING
P4 A	COATED CHAIN LINK FENCING	NR	N/A		

WALL ASSEMBLY TAG

WALL TYPE — CORE TYPE

P 2 A

ASSEMBLY VARIANT

WALL TYPE:

W = EXTERIOR WALL
P = INTERIOR PARTITION

CORE TYPE:

0 = CIP CONCRETE
1 = CMU
2 = METAL STUD FRAMING
3 = FURRING CHANNEL
4 = CHAIN LINK FENCING

ASSEMBLY

1. FIRE RATED ASSEMBLIES ARE BASED ON IBC, UL, ICC, OR US GYPSUM ASSOCIATION (GA) TEST DATA & ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TESTING AGENCIES. REFER TO SPECIFIC TEST REPORTS INDICATED FOR REQUIRED COMPONENTS & ASSEMBLIES.
2. EXTENTS OF ASSEMBLIES ARE SHOWN ON THE PLANS & SECTIONS.
3. REFER TO TECHNICAL NOMENCLATURE SCHEDULE ON SHEET GEN-AZN002 FOR ASSEMBLY ABBREVIATIONS.
4. FIRE RATED ASSEMBLIES FORM A SEPARATION THAT SHALL BE CONTINUOUS FROM FLOOR TO STRUCTURE ABOVE WITH NO BREAKS AT COLUMNS, WALL TRANSITIONS, OR OTHER OBSTRUCTIONS.
5. ALL PENETRATIONS IN FIRE RATED ASSEMBLIES REQUIRED TO HAVE PROTECTED OPENINGS SHALL BE FIRESTOPPED OR PROVIDED WITH APPROVED SMOKE AND/OR FIRE DAMPERS.
6. SUBSTITUTE WATER RESISTANT GWB AT TOILET ROOMS, SHOWER ROOMS, JANITOR ROOMS & SIM USES.
7. SUBSTITUTE TILE BACKER BOARD AT CERAMIC TILE FINISHES.
8. BLOCKING IS REQUIRED AT THE FOLLOWING LOCATIONS: CASEWORK, SHELVING & PANELING; ACCESSORIES & EQUIPMENT; DOOR HARDWARE; TOILET PARTITIONS & ACCESSORIES; ACOUSTICAL PANELS; OTHER LOCATIONS WHERE REQUIRED PER MANUFACTURER'S RECOMMENDATIONS OR INDUSTRY STANDARDS.
9. FIRE BARRIERS AND PARTITIONS MAY HAVE OPENINGS FOR STEEL ELECTRICAL BOXES PER IBC 714.3.2.
10. ALL ROOFING SYSTEMS TO COMPLY WITH CLASS B SYSTEM REQUIREMENTS
11. ALL EXPOSED INSULATION AND PLASTIC FACED BATT INSULATION SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 450 PER IBC 720.3.
12. INTERIOR WALL FINISHES TO MEET MINIMUM CLASS C WITH FLAME SPREAD INDEX 76-200 AND SMOKE DEVELOPED INDEX 0-450 AS DEFINED IN IBC 803.1.1 AND TABLE 803.11
13. FLOOR ASSEMBLIES PER STRUCTURAL. FLOOR FINISHES PER FINISH SCHEDULE; SEE INTERIORS.
14. SEE REFLECTED CEILING PLANS & TECHNICAL NOMENCLATURE FOR CEILING TYPES.
15. FOR AIR BARRIER NOTES, REFER TO SHEET GEN-AZN011.
16. UNO STC RATINGS ARE PER ACOUSTICAL ANALYSIS
17. STC RATINGS INDICATED AS 'NET' ARE ACHIEVED USING BOTH ADJACENT PARTITIONS CUMULATIVELY A

2/20/2020 6:44:11 PM
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DP4A IFC

No.	DATE	DSN	CHK	APP	REVISION
A	2020.02.20	BP	DN	JY	CB#020
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: D NELSON
APPROVED BY: J. YOUNG

7693 REGISTERED ARCHITECT Steven McDonald STATE OF WASHINGTON 02/20/2020

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Stantec | VIA | kpff | Karen Kiest | Landscape Architects | ELCON ASSOCIATES, INC. ENGINEERS—CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

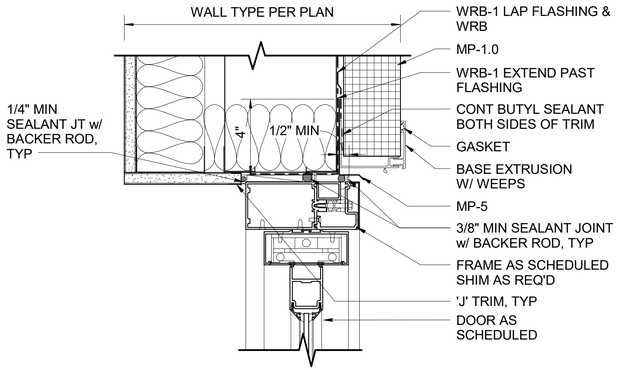
SUBMITTED BY: RICHARD LEWIS
DATE: 2018.07.10
REVIEWED BY: BILL FERRIS
DATE: 2018.07.10
SUBMITTAL DATE: 2018.07.10

SCALE: NTS
FILENAME: M200-Y02e-A-v2017
CONTRACT No.: RTA/CN 0020-16

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

GENERAL
INTERIOR WALL ASSEMBLIES

DRAWING NO.: **GEN-AZN012**
FACILITY ID: Y02, M04, M05
SHEET No: REV: A

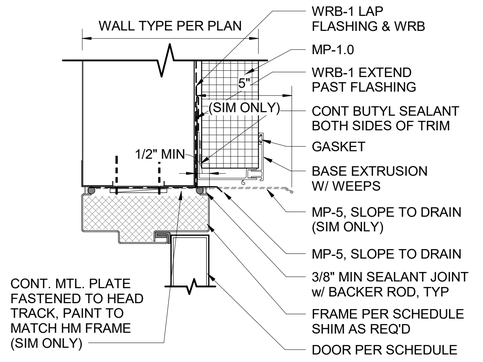


AW-2 DOOR HEAD AT MP-1.0

1

SCALE: 3" = 1'-0"

M04-AYX002

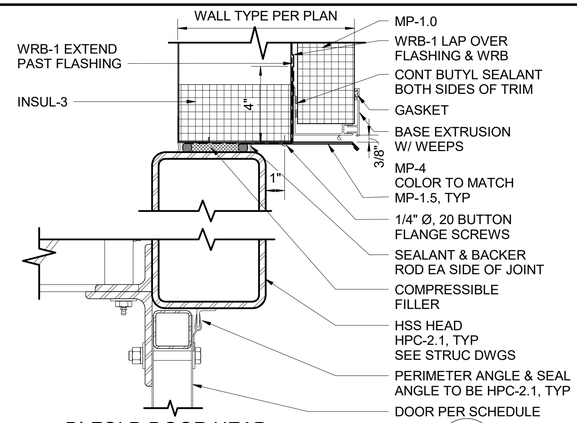


HM DOOR HEAD AT MP-1.0

2

SCALE: 3" = 1'-0"

M04-AYX001

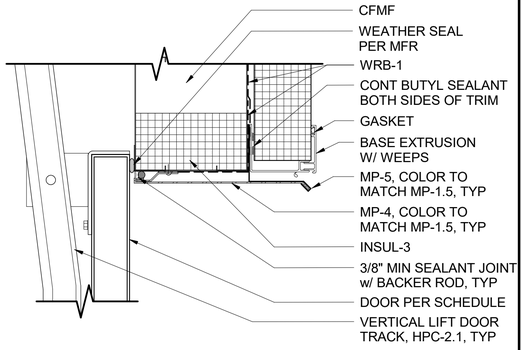


BI-FOLD DOOR HEAD

3

SCALE: 3" = 1'-0"

M04-AYX001

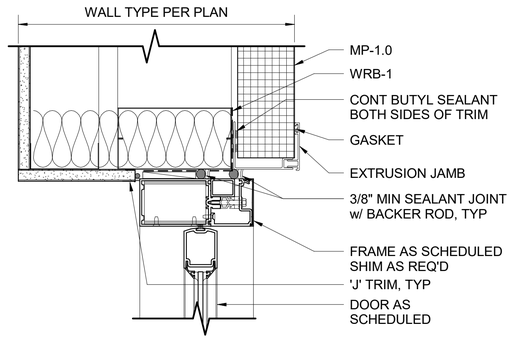


OH DOOR HEAD

4

SCALE: 3" = 1'-0"

M04-AYX001

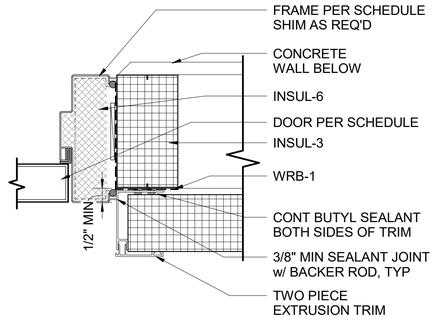


AW-2 DOOR JAMB AT MP-1.0

5

SCALE: 3" = 1'-0"
SEE 10/M04-AED002 FOR SILL DETAIL

M04-APD154

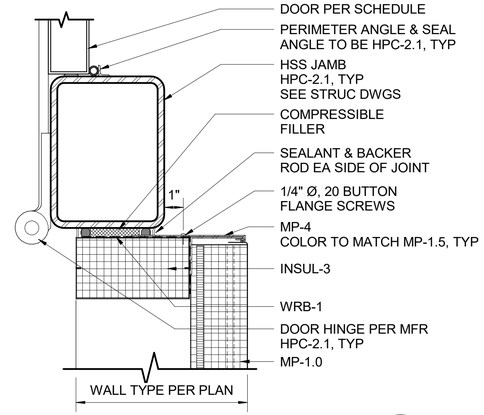


HM DOOR JAMB AT MP-1.0

6

SCALE: 3" = 1'-0"

M04-APP111

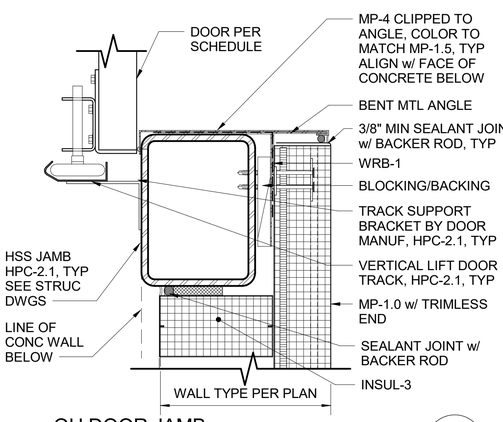


BI-FOLD DOOR JAMB AT MP-1.0

7

SCALE: 3" = 1'-0"

M04-AYX001

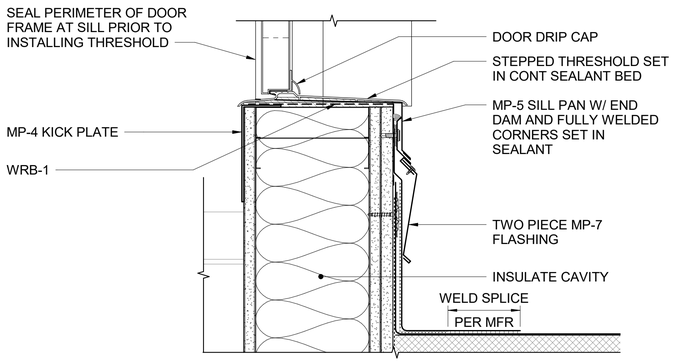


OH DOOR JAMB

8

SCALE: 3" = 1'-0"
SEE 7/M04-AED002 FOR SILL DETAILS

GEN-ADS001

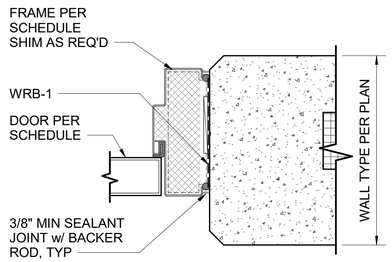


DOOR THRESHOLD @ ROOF

9

SCALE: 3" = 1'-0"

M04-ATP003

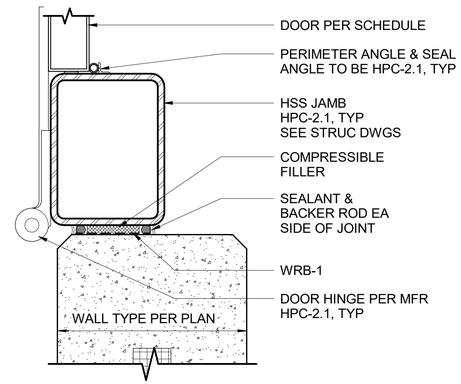


HM DOOR JAMB AT CONC-1

10

SCALE: 3" = 1'-0"
SEE 6/M04-AED002 FOR SILL DETAIL

M04-AYX001

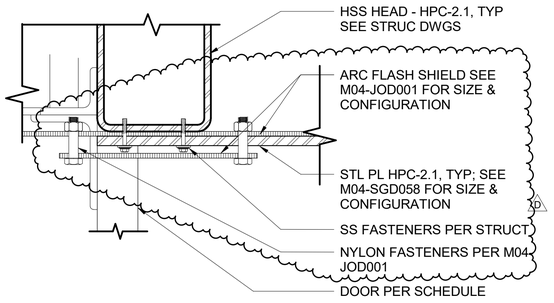


BI-FOLD DOOR JAMB AT CONC-1

11

SCALE: 3" = 1'-0"
SEE 3/M04-AED002 FOR SILL DETAIL

M04-AYX001



BI-FOLD DOOR HEAD AT ARC SHIELD

12

SCALE: 3" = 1'-0"

M04-AYX001

DP4A IFC

No.	DATE	DSN	CHK	APP	REVISION
D	2020.03.04	BP	DN	JY	DB 0063
C	2019.10.18	BP	SM	JY	DB 029
B	2020.02.20	BP	DN	JY	CB#020
A	2019.01.30	BP	SM	JY	CB#004
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: A. ROMAN
CHECKED BY: D NELSON
APPROVED BY: J. YOUNG

7693 REGISTERED ARCHITECT Steven McDonald STATE OF WASHINGTON
03/07/2020

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Karen Kiest | Landscape Architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY: RICHARD LEWIS | DATE: 2018.07.10
REVIEWED BY: BILL FERRIS | DATE: 2018.07.10
SUBMITTAL DATE: 2018.07.10

SCALE: 3" = 1'-0"
FILENAME: M200-Y02e-A-v2017
CONTRACT No.: RTA/CN 0020-16

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
DOOR DETAILS

DRAWING NO.: **M04-ADD001**
FACILITY ID: M04
SHEET No: REV: C

6/18/2020 8:21:29 AM
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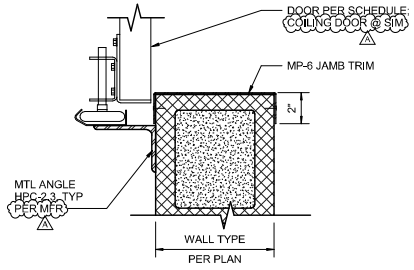
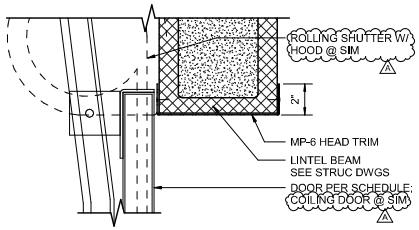


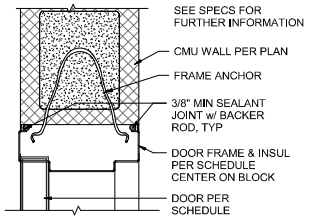
INT SECTIONAL DOOR JAMB — 1 GEN-ADS001

SCALE: 3" = 1'-0"



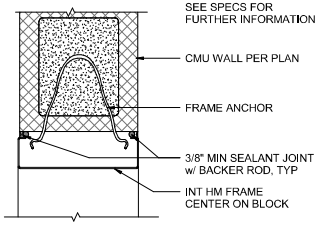
INT SECTIONAL DOOR HEAD — 2 GEN-ADS001

SCALE: 3" = 1'-0"



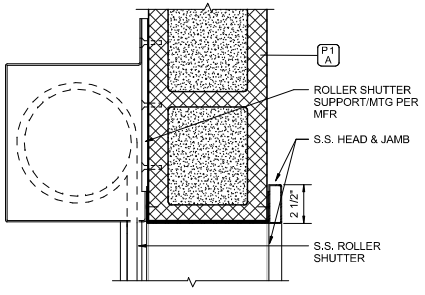
INT HM DOOR HEAD/JAMB @ CMU — 3 GEN-ADS001

SCALE: 3" = 1'-0"



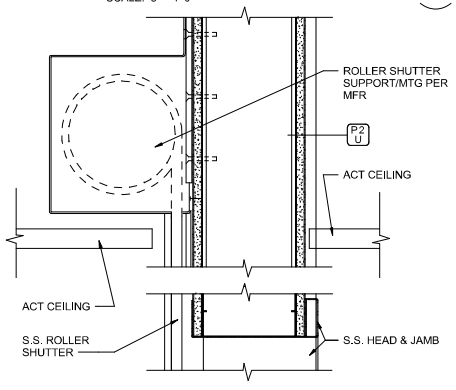
CASED OPENING HEAD AT CMU (JAMB SIM) — 4 GEN-ADS001

SCALE: 3" = 1'-0"



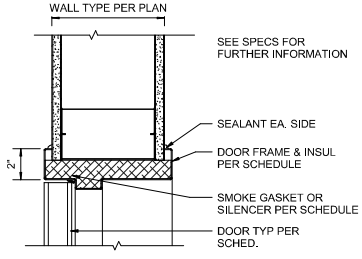
PARTS ISSUE OVERHEAD COUNTER DOOR - HEAD — 5 GEN-ADS001

SCALE: 3" = 1'-0"



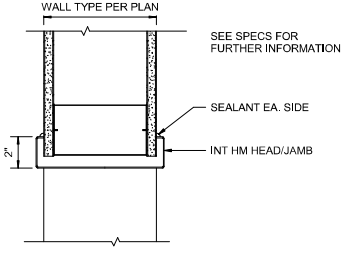
DISPATCH PASSTHROUGH WINDOW - HEAD — 6 M04-ACP113

SCALE: 3" = 1'-0"



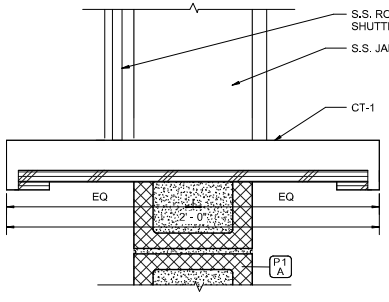
INT HM DOOR HEAD/JAMB @ FRAMING — 7 GEN-ADS001

SCALE: 3" = 1'-0"



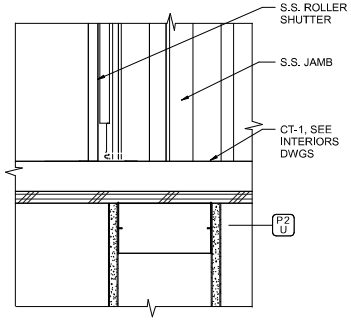
CASED OPENING HD @ MTL FRAMING (JAMB SIM) — 8 GEN-ADS001

SCALE: 3" = 1'-0"



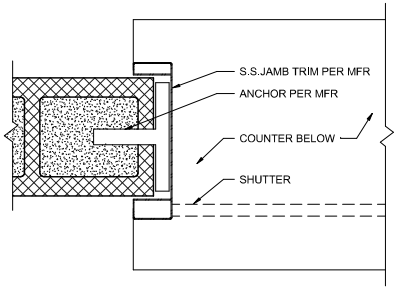
PARTS ISSUE OVERHEAD COUNTER DOOR - SILL — 9 GEN-ADS001

SCALE: 3" = 1'-0"



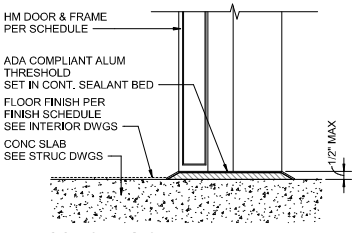
DISPATCH PASSTHROUGH WINDOW - SILL — 10 GEN-ADS001

SCALE: 3" = 1'-0"



PARTS ISSUE OVERHEAD COUNTER DOOR - JAMB — 11 GEN-ADS001

SCALE: 3" = 1'-0"



INT HM DOOR SILL @ SLAB — 12 GEN-ADS001

SCALE: 3" = 1'-0"

6/5/2020 9:10:58 AM
C:\Users\bpeterson\Documents\M200-M04-A-v2017_bpeterson@via-architecture.com.rvt

DP4A IFC

No.	DATE	DSN	CHK	APP	REVISION
A	2020.05.15	BP	DN	JY	DB 0010
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: D. NELSON
APPROVED BY: J. YOUNG

7693 REGISTERED ARCHITECT Steven McDonald STATE OF WASHINGTON 06/05/2020

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects | Karen Kiest Landscape Architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS--CONSULTANTS

LINE IS 1" AT FULL SCALE

SUBMITTED BY: RICHARD LEWIS — DATE: 2018.07.10
REVIEWED BY: BILL FERRIS — DATE: 2018.07.10

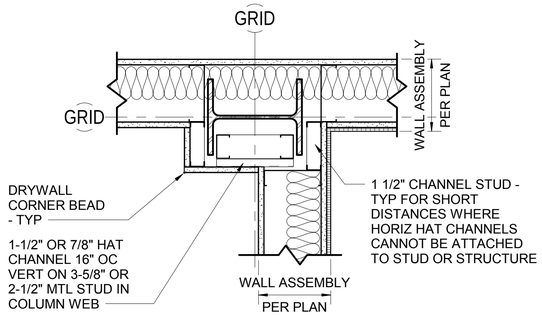
SOUNDTRANSIT

SCALE: 3" = 1'-0"
FILENAME: M200-Y02e-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.07.10

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
DOOR DETAILS

DRAWING NO.: **M04-ADD002**
FACILITY ID: M04
SHEET No: REV: A

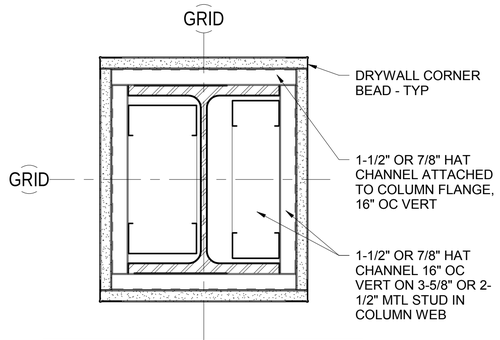


THIS DETAIL TYPICAL AT SIMILAR CONDITIONS IN ALL FINISHED OFFICE SPACES.

COLUMN PROTECTION CONDITION 1

SCALE: 1 1/2" = 1'-0"

M04-APD151

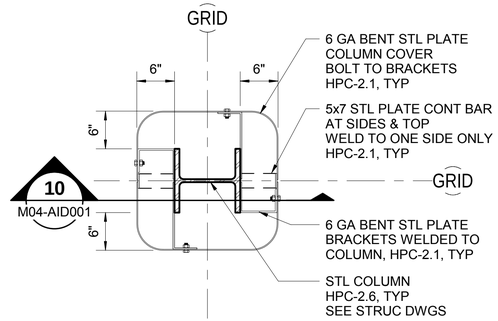


THIS DETAIL TYPICAL AT SIMILAR CONDITIONS IN ALL FINISHED OFFICE SPACES.

SINGLE COLUMN PROTECTION 2

SCALE: 3" = 1'-0"

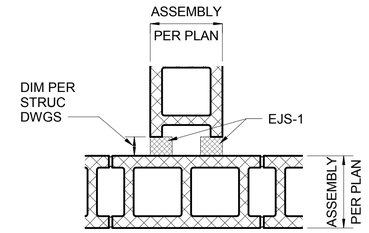
M04-APP213



COLUMN PROTECTION PLAN 3

SCALE: 1" = 1'-0"

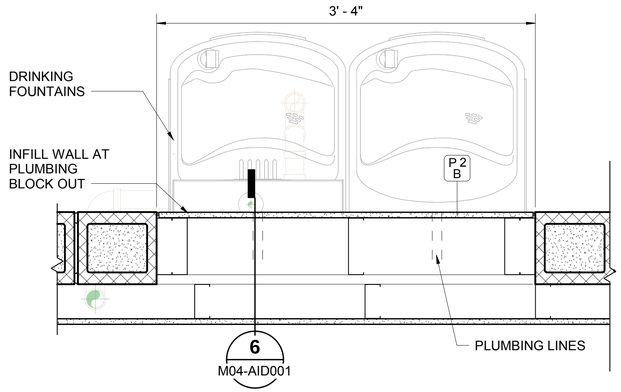
M04-APP111



TYP CMU JOINT 4

SCALE: 1 1/2" = 1'-0"

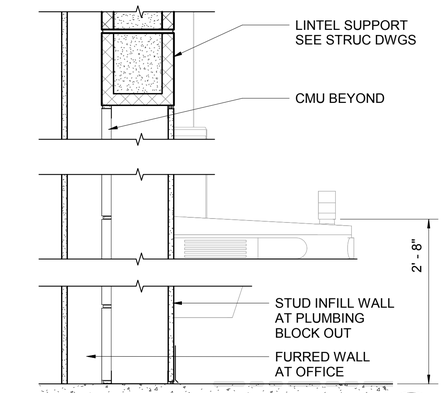
-



DRINKING FOUNTAIN MOUNTING PLAN 5

SCALE: 1 1/2" = 1'-0"

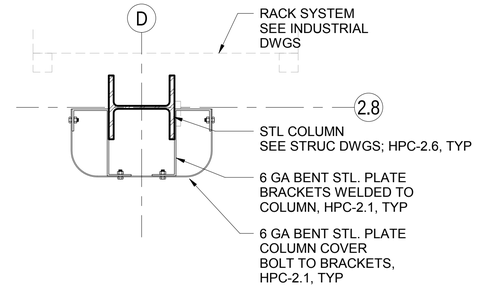
M04-APP117



DRINKING FOUNTAIN @ CMU 6

SCALE: 1 1/2" = 1'-0"

M04-AID001



HALF COLUMN PROTECTION AT GRID D-2.8 7

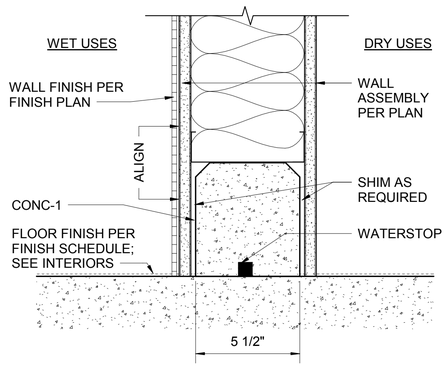
SCALE: 1" = 1'-0"

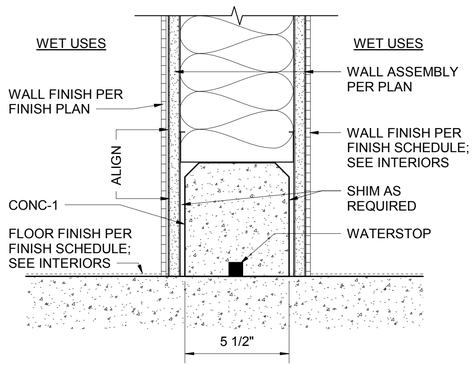
M04-APP111

COLUMN PROTECTION SECTION 10

SCALE: 1" = 1'-0"

M04-AID001

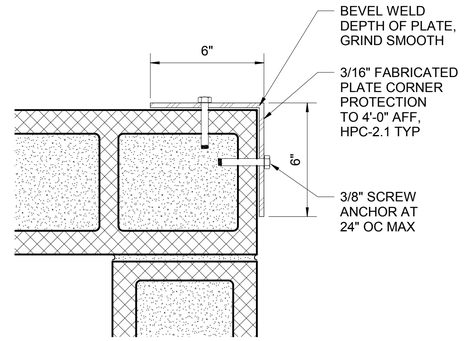




CURB @ FRAMED WALLS 11

SCALE: 3" = 1'-0"

M04-AYX005



CMU CORNER PROTECTION 12

SCALE: 3" = 1'-0"

M04-APP111

10/17/2018 6:50:34 AM
C:\Users\bpeterson\Documents\M200-M04-A-v2017_bpeterson.rvt

DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: S. McDONALD
APPROVED BY: J. YOUNG

7888 REGISTERED ARCHITECT Alan Hart STATE OF WASHINGTON 09/19/2018

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Karen Kiest Landscape Architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS—CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

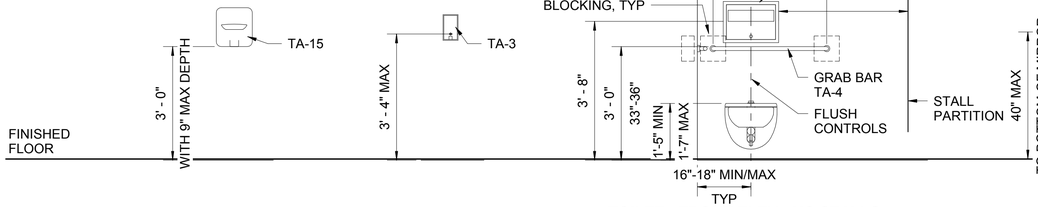
SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:	SUBMITTAL DATE:
RICHARD LEWIS	2018.09.19	BILL FERRIS	2018.09.19	2018.09.19

SCALE: AS NOTED
FILENAME: M200-M04-A-v2017
CONTRACT No.: RTA/CN 0020-16

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
INTERIOR DETAILS

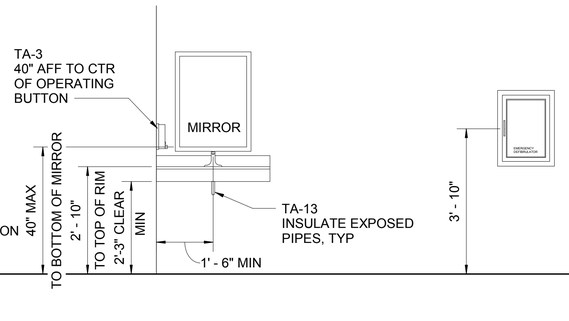
DRAWING NO.: **M04-AID001**
FACILITY ID: M04
SHEET No: 117
REV: 0



HAND DRYER - FRONT ELEV

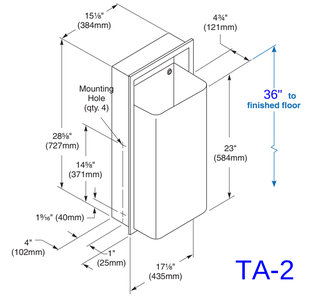
SOAP DISPENSER - FRONT ELEV

TOILET - FRONT ELEV - HC STALLS



LAVATORY - FRONT ELEV

DEFIBRILLATOR - FRONT ELEV



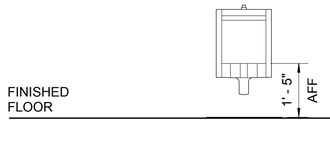
TA-2

GENERAL NOTES:

1. SEE GEN-AZN002 FOR TECHNICAL NOMENCLATURE & TOILET ACCESSORIES SCHEDULE.

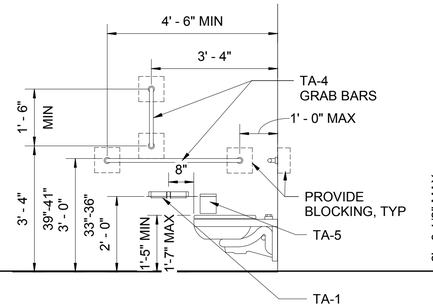
TA-2 Typical Mounting Height: 3'-0" (finish floor to top lip)

(2) See CB 0483 for toilet accessory layout clarifications

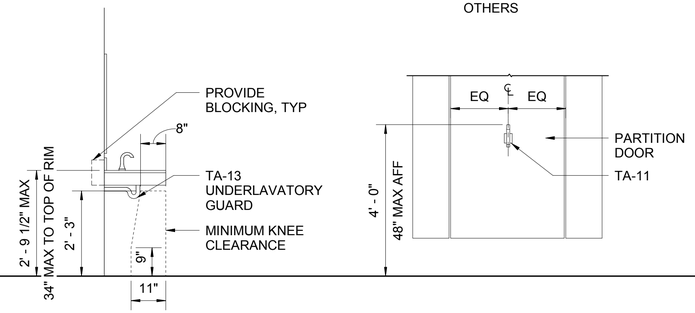


URINAL - FRONT ELEV

NAPKIN DISPENSER - FRONT ELEV

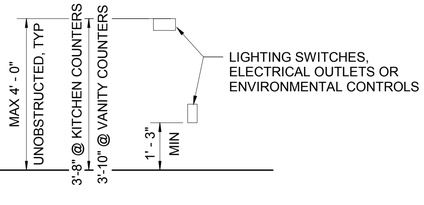


TOILET - SIDE ELEV

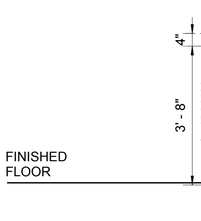


LAVATORY - SIDE ELEV

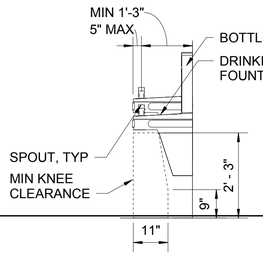
TOILET PARTITION DOOR



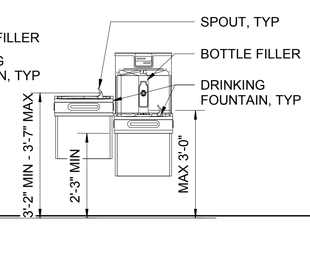
CONTROLS ELEVATIONS



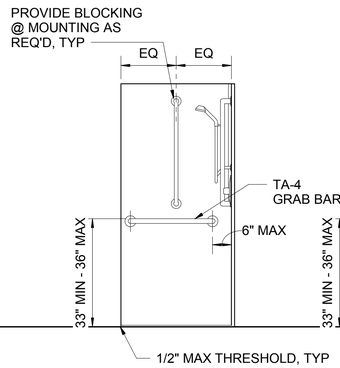
FEC - FRONT ELEV



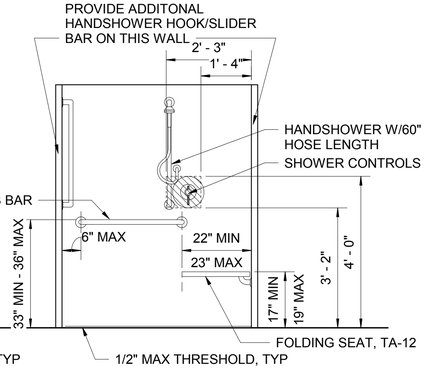
WATER FOUNTAIN - SIDE ELEV



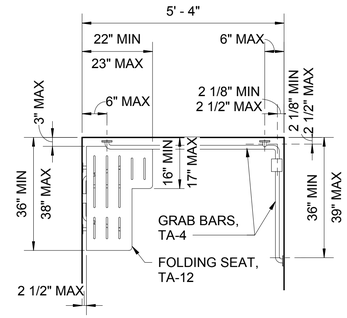
WATER FOUNTAIN - FRONT ELEV



ROLL-IN SHOWER - SIDE ELEVATION



ROLL-IN SHOWER - FRONT ELEVATION



ROLL-IN SHOWER - FLOOR PLAN

TYPICAL MOUNTING HEIGHTS

SCALE: 1/2" = 1'-0"

1 / -

10/17/2018 6:43:15 AM
C:\Users\bpeterson\Documents\M200-M04-A-v2017_bpeterson.rvt

DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
A	2019.11.08				CB 0125
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: S. McDONALD
APPROVED BY: J. YOUNG

7888 REGISTERED ARCHITECT Alan Hart STATE OF WASHINGTON 09/19/2018

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Karen Kiest Landscape Architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SUBMITTED BY: RICHARD LEWIS | DATE: 2018.09.19
REVIEWED BY: BILL FERRIS | DATE: 2018.09.19

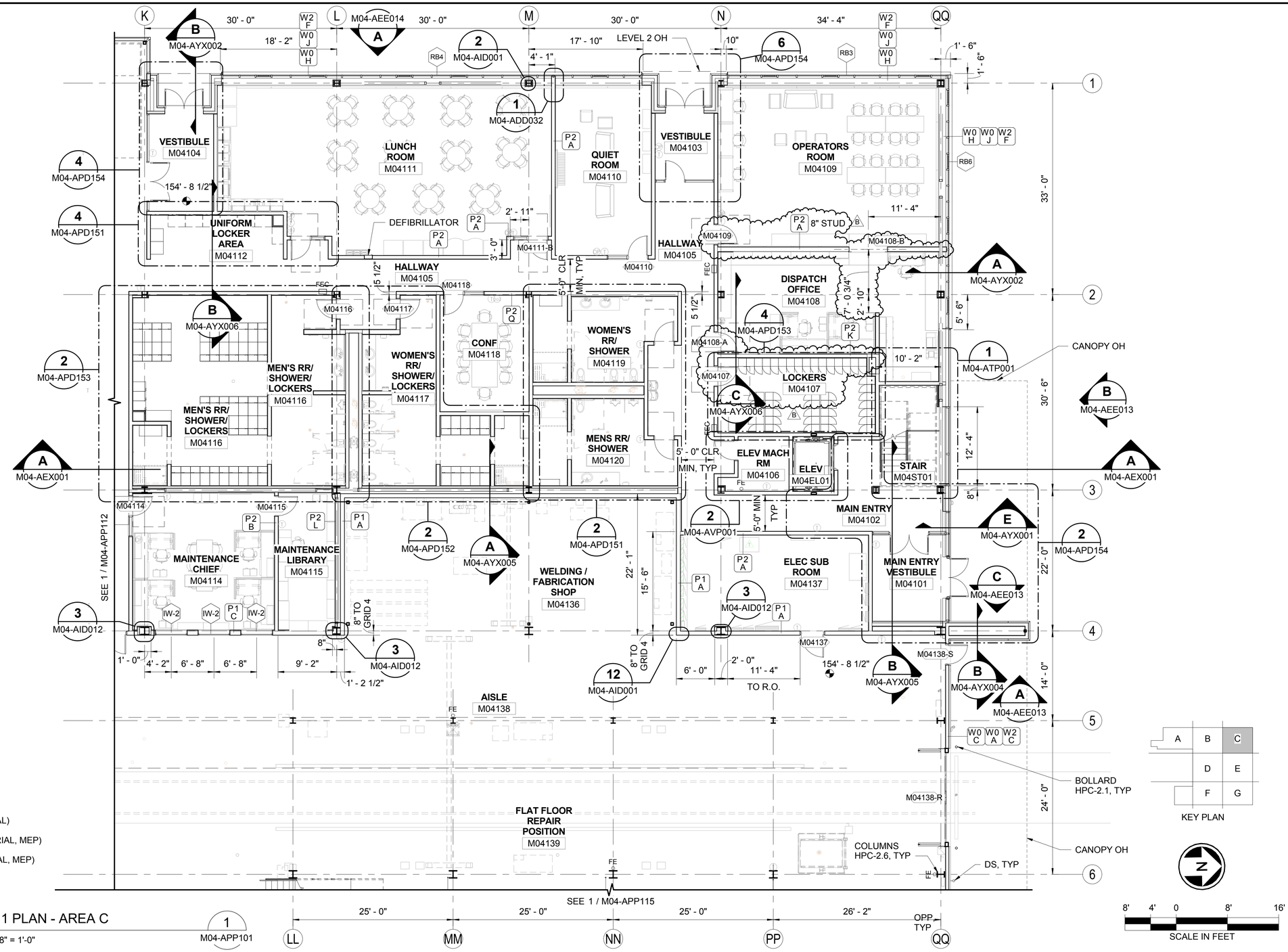
SOUNDTRANSIT

SCALE: 1/2" = 1'-0"
FILENAME: M200-M04-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

GENERAL
TYPICAL MOUNTING HEIGHTS

DRAWING NO.: GEN-AIE001
FACILITY ID: Y02, M04, M05
SHEET No.: 108
REV.: B



GRAPHIC

- MOVEABLE EQUIPMENT (SEE INDUSTRIAL)
- STATIONARY EQUIPMENT (SEE INDUSTRIAL, MEP)
- EQUIPMENT OVERHEAD (SEE INDUSTRIAL, MEP)
- PIT / OPEN TO BELOW
- CANOPY ABOVE

LEVEL 1 PLAN - AREA C

SCALE: 1/8" = 1'-0"

NOTE: ALL CMU OUTSIDE CORNERS TO BE BULLNOSE UNO

DP4A - IFC

No.	DATE	DSN	CHK	APP	REVISION
B	2019.08.02	BP	SM	JY	CB#034
A	2019.05.03	BP	SM	JY	CB#025
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: S. McDONALD
APPROVED BY: J. YOUNG

7888 REGISTERED ARCHITECT Alan Hart STATE OF WASHINGTON 08/02/2019

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Karen Kiest Landscape Architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
RICHARD LEWIS	2018.07.10	BILL FERRIS	2018.07.10

SCALE: 1/8" = 1'-0"
FILENAME: M200-Y02e-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.07.10

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
FIRST FLOOR - AREA C PLAN

DRAWING NO.: **M04-APP113**
FACILITY ID: M04
SHEET No: REV: H

8/2/2019 10:39:50 AM
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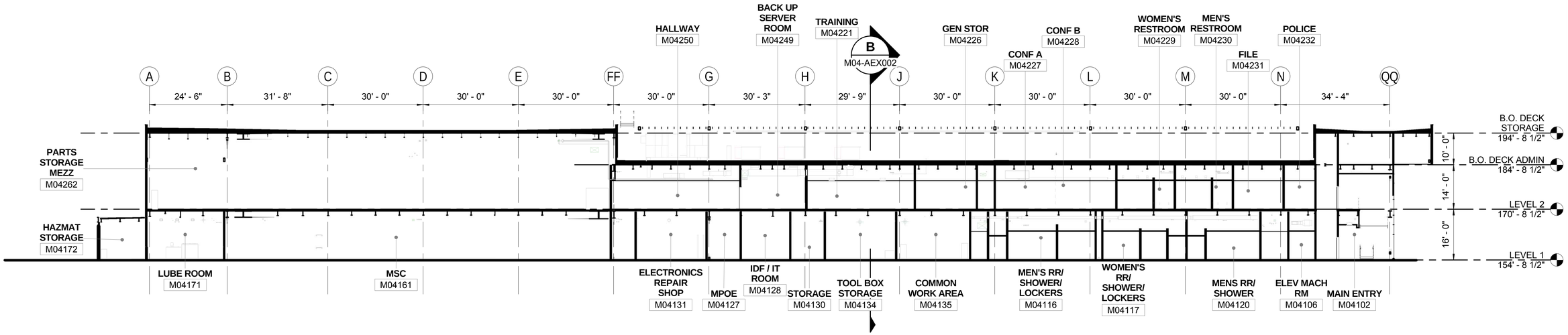
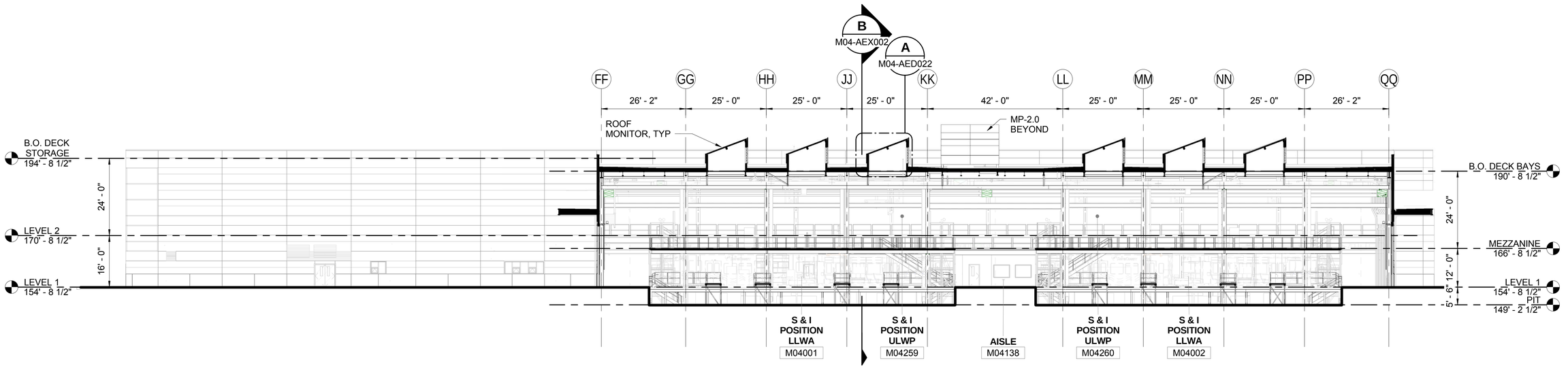


BUILDING SECTION - E/W THRU AREA A, B & C — A M04-AEE001

SCALE: 1/16" = 1'-0"



BUILDING SECTION - E/W THRU AREA D & E — B M04-AEE001

SCALE: 1/16" = 1'-0"

16' 8' 0 16' 32'

SCALE IN FEET

10/17/2018 6:50:11 AM
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DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: S. McDONALD
APPROVED BY: J. YOUNG

7888 REGISTERED ARCHITECT Alan Hart STATE OF WASHINGTON 09/19/2018

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Karen Kiest | Landscape Architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

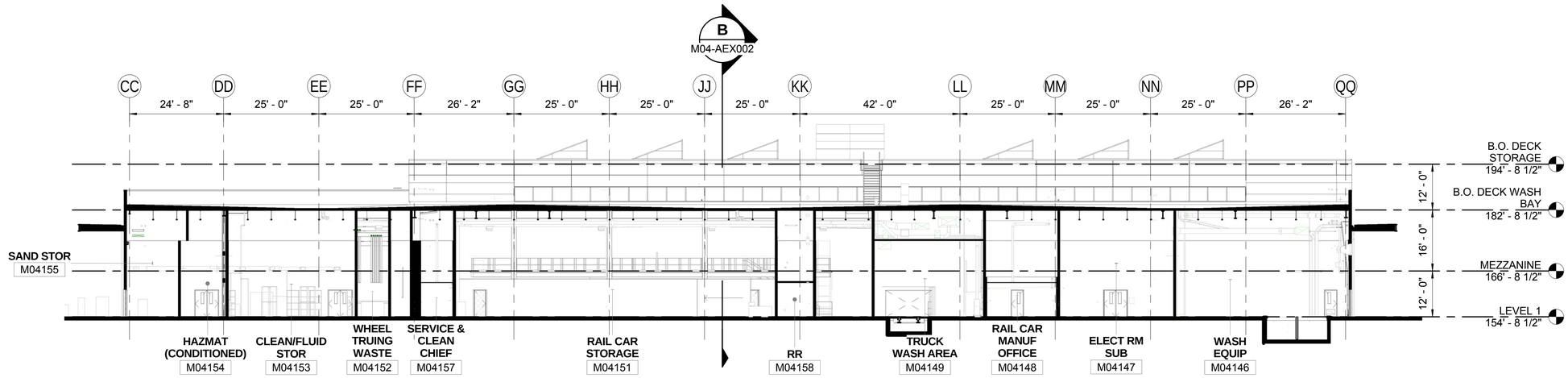
SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
RICHARD LEWIS	2018.09.19	BILL FERRIS	2018.09.19

SCALE: 1/16" = 1'-0"
FILENAME: M200-M04-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
OVERALL BUILDING SECTIONS

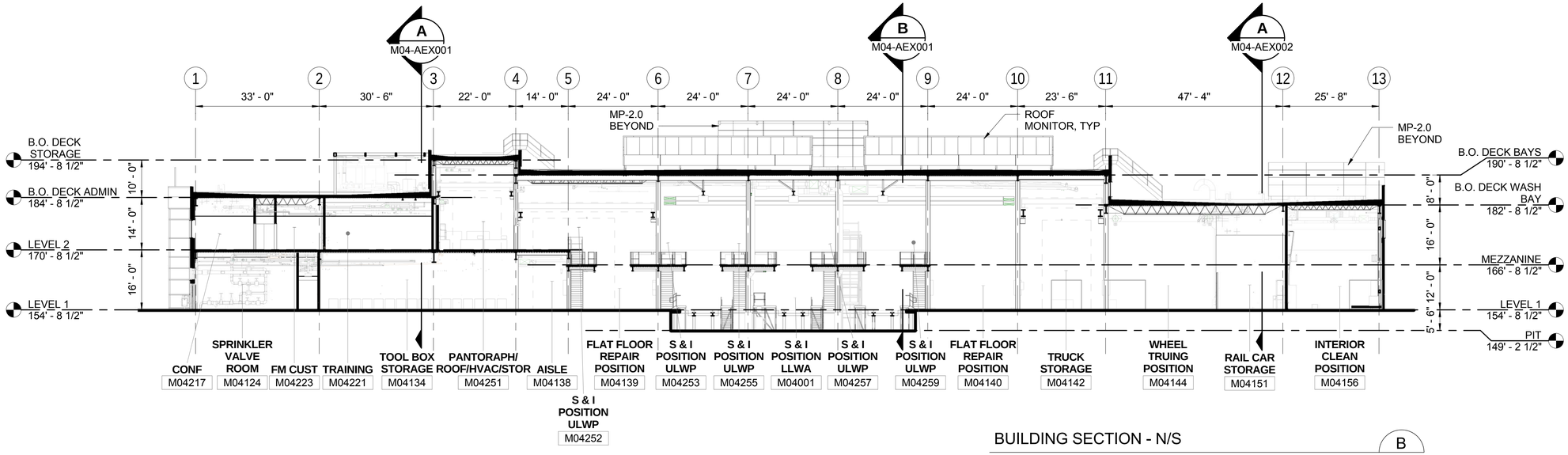
DRAWING NO.: **M04-AEX001**
FACILITY ID: M04
SHEET No.: 67
REV.: 0



BUILDING SECTION - E/W THRU AREA F & G

SCALE: 1/16" = 1'-0"

A
M04-AEE001



BUILDING SECTION - N/S

SCALE: 1/16" = 1'-0"

B
M04-AEE001

16' 8' 0 16' 32'

SCALE IN FEET

10/17/2018 6:50:27 AM
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DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: S. McDONALD
APPROVED BY: J. YOUNG

7888 REGISTERED ARCHITECT Alan Hart STATE OF WASHINGTON 09/19/2018

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Stantec | VIA | kpff | Karen Kiest Landscape Architects | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

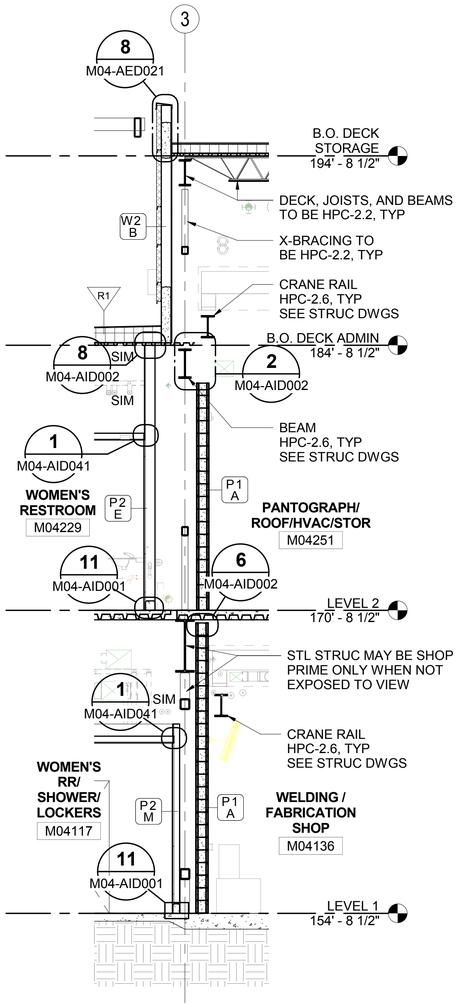
SUBMITTED BY: RICHARD LEWIS
DATE: 2018.09.19
REVIEWED BY: BILL FERRIS
DATE: 2018.09.19

SCALE: 1/16" = 1'-0"
FILENAME: M200-M04-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

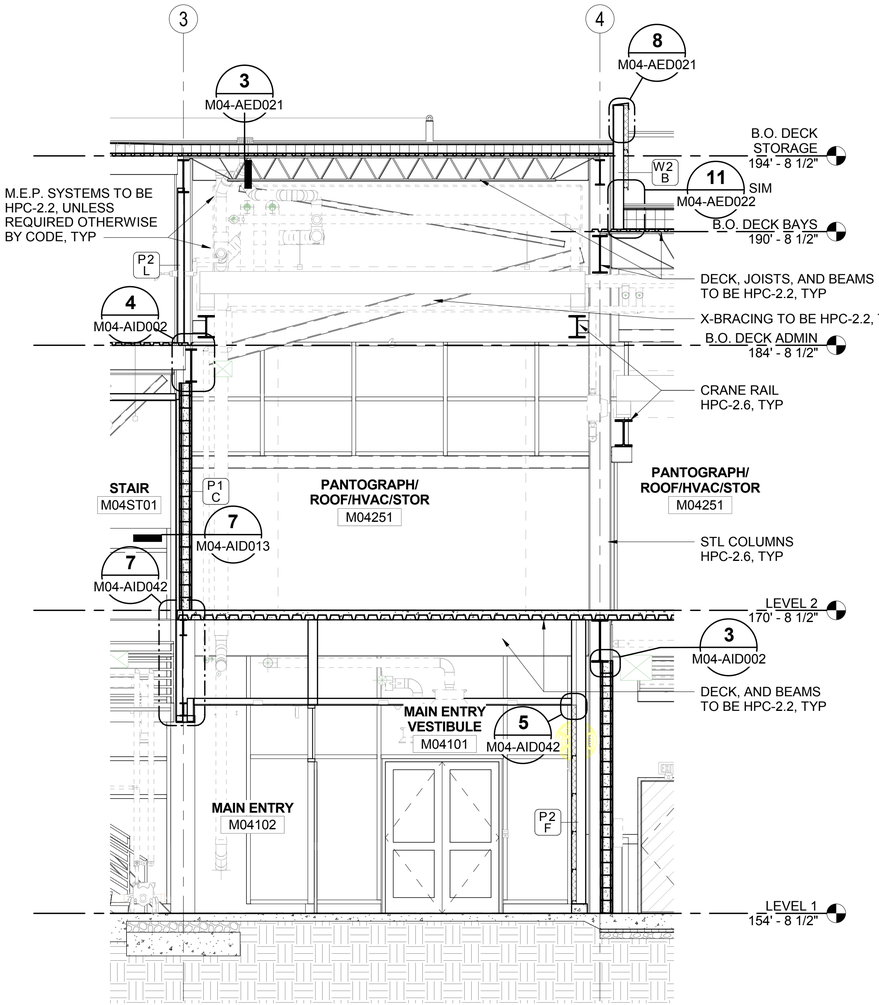
OMF EAST BUILDING
OVERALL BUILDING SECTIONS

DRAWING NO.: **M04-AEX002**
FACILITY ID: M04
SHEET No: 68
REV: 0



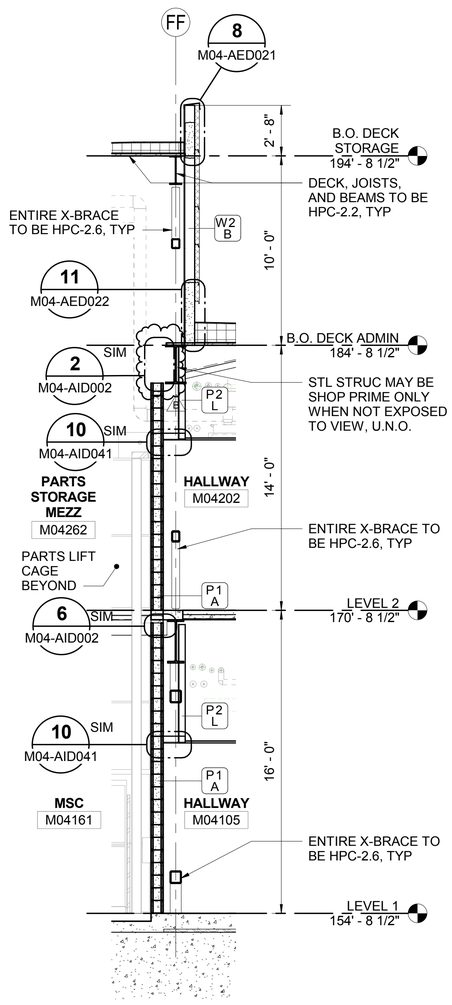
INT WS - GRID 3 AT M04251 (A, M04-APP113)

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



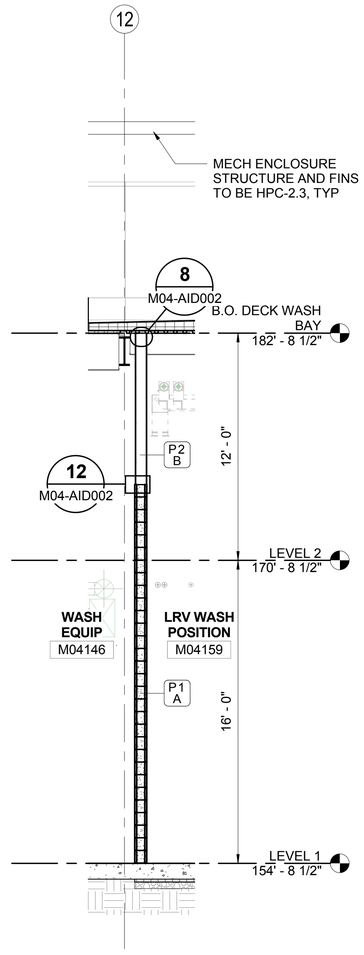
INT WS - E-W AT MAIN ENTRY (B, M04-APP113)

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



WS - PARTS LIFT AT GRID FF (C, M04-APP111)

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



INT WS - GRID 12 AT M04159 (D, M04-APP117)

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

WALL SECTION GENERAL

1. SEE STRUCTURAL FOR FLOOR ASSEMBLIES
2. SEE RCP FOR CEILING TYPES
3. FINISHES PER FINISH SCHEDULE, SEE INTERIOR DWGS

8/20/2019 3:17:03 PM
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DP4A - IFC

No.	DATE	DSN	CHK	APP	REVISION
C	2019.12.03				CB 0129
B	2019.08.01	BP	SM	JY	DB RFI 000467 CB036
A	2019.05.03	BP	SM	JY	CB#025
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: S. McDONALD
APPROVED BY: J. YOUNG

7888 REGISTERED ARCHITECT Alan Hart STATE OF WASHINGTON 08/02/2019

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Karen Kiest | Landscape Architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS—CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY: RICHARD LEWIS | DATE: 2018.07.10
REVIEWED BY: BILL FERRIS | DATE: 2018.07.10

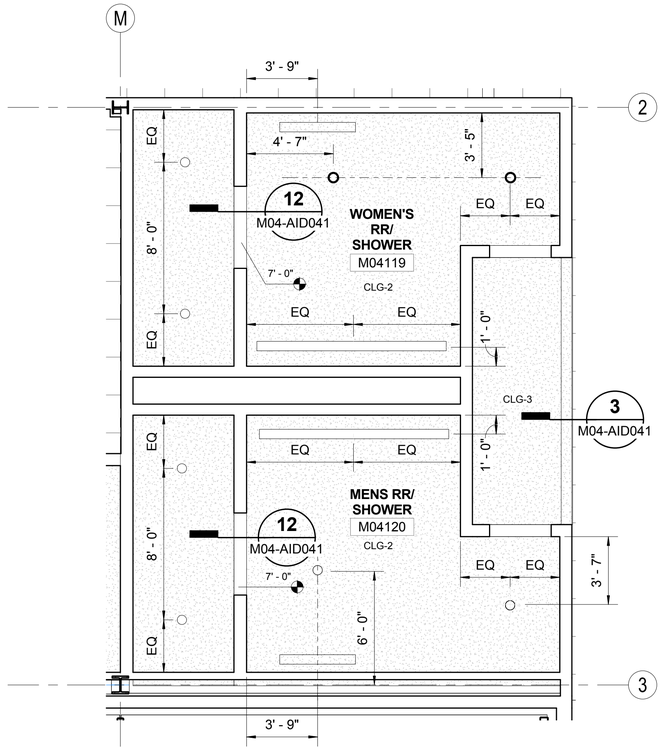
SCALE: 1/4" = 1'-0"
FILENAME: M200-Y02e-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.07.10

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
WALL SECTIONS

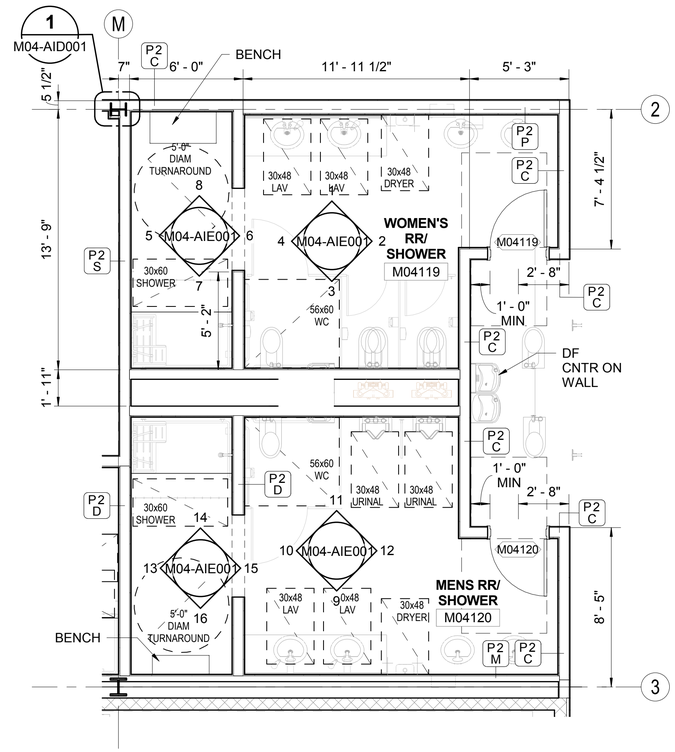
DRAWING NO.: M04-AYX005
FACILITY ID: M04
SHEET No.: 559
REV.: C

CONFORMED 2019.08.01



LEVEL 1 RCP - M04119 / M04120 (1 / M04-ACP113)

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



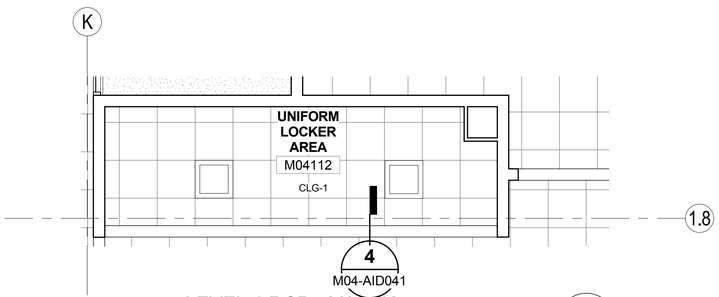
LEVEL 1 PLAN - M04119 / M04120 (2 / M04-APP113)

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

NOTE: SEE 1 / GEN-AIE001 FOR TYPICAL MOUNTING HEIGHTS.

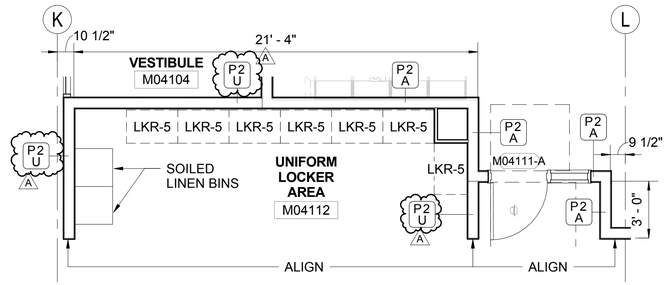
REFLECTED CEILING PLAN GENERAL

1. SEE GEN-AZN001 FOR CEILING LEGEND & SYMBOLS.
2. OPEN TO STRUCTURAL DECK ABOVE, U.N.O.
3. ALL CEILINGS AT 9'-0" U.N.O.
4. ALL UNDERSIDE OF HEADERS AT 8'-0" U.N.O.
5. SEE INTERIORS FOR WALL, FLOOR & CEILING FINISHES.
6. EXPOSED STRUCTURAL DECK, BEAMS, JOISTS, AND M.E.P. SYSTEMS TO BE HPC-2.2, UNLESS REQUIRED OTHERWISE BY CODE OR U.N.O.



LEVEL 1 RCP - M04112 (3 / M04-ACP113)

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



LEVEL 1 PLAN - M04112 (4 / M04-APP111)

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

4' 2' 0 4' 8'

SCALE IN FEET

8/28/2019 9:16:13 AM
C:\Users\bpeterson\Documents\M200-M04-A-v2017_bpeterson@via-architecture.com.rvt

DP4A - IFC

No.	DATE	DSN	CHK	APP	REVISION
C	2020.06.25				CB 0483
B	2019.11.08				CB 0125
A	2019.08.28	BP	SM	JY	CB#061
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: S. McDONALD
APPROVED BY: J. YOUNG

7888 REGISTERED ARCHITECT Alan Hart STATE OF WASHINGTON 08/28/2019

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Stantec | VIA | kpff | Karen Kiest | Landscape Architects | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

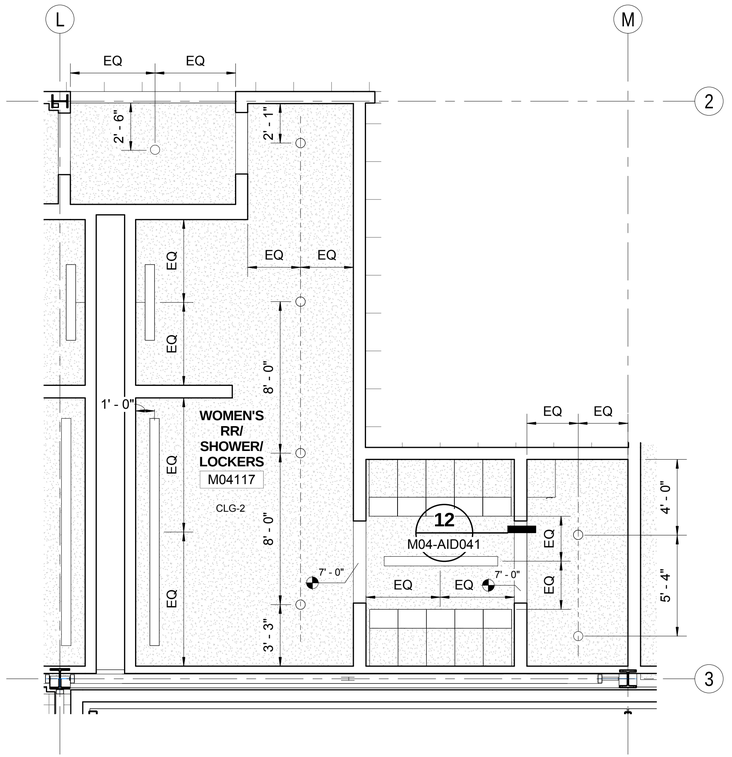
SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
RICHARD LEWIS	2018.07.10	BILL FERRIS	2018.07.10

SCALE: 1/4" = 1'-0"
FILENAME: M200-Y02e-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.07.10

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

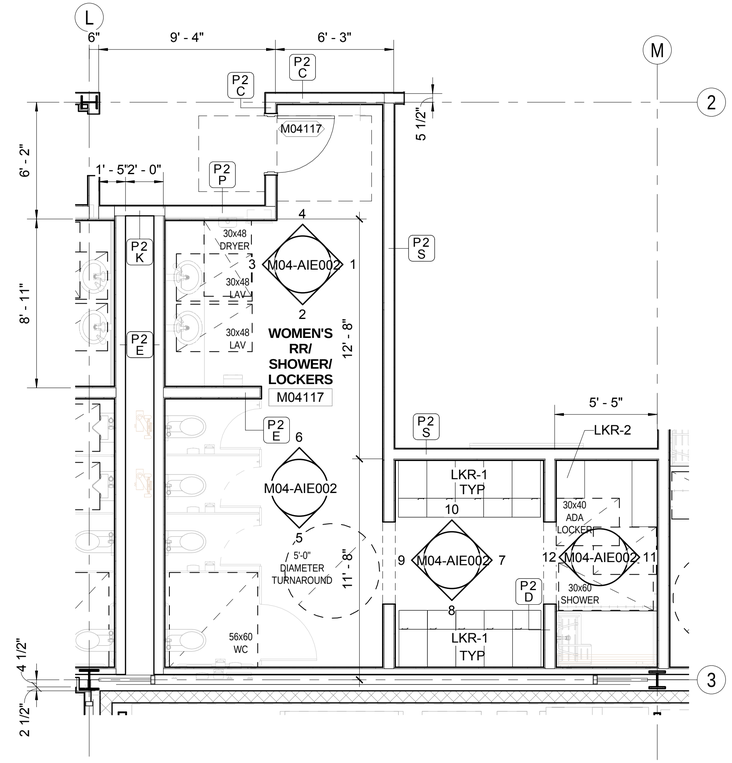
OMF EAST BUILDING
LEVEL 1 ENLARGED FLOOR PLANS

DRAWING NO.: **M04-APD151**
FACILITY ID: M04
SHEET No: REV: C



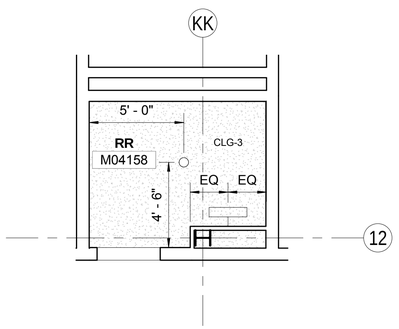
LEVEL 1 - RCP - M04117 (1 / M04-ACP113)

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



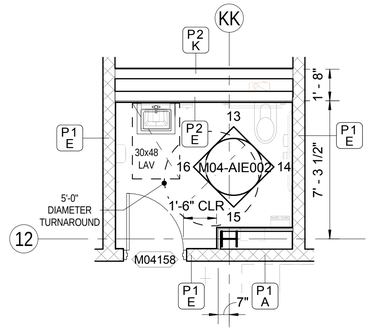
LEVEL 1 - PLAN - M04117 (2 / M04-APP113)

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



LEVEL 1 RCP - M04158 (3 / M04-ACP116)

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



LEVEL 1 PLAN - M04158 (4 / M04-APP116)

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

4' 2' 0 4' 8'

SCALE IN FEET

NOTE: SEE 1 / GEN-AIE001 FOR TYPICAL MOUNTING HEIGHTS.

REFLECTED CEILING PLAN GENERAL NOTES:

1. SEE GEN-AZN001 FOR CEILING LEGEND & SYMBOLS.
2. OPEN TO STRUCTURAL DECK ABOVE, U.N.O.
3. ALL CEILINGS AT 9'-0" U.N.O.
4. ALL UNDERSIDE OF HEADERS AT 8'-0" U.N.O.
5. SEE INTERIORS FOR WALL, FLOOR & CEILING FINISHES.
6. EXPOSED STRUCTURAL DECK, BEAMS, JOISTS, AND M.E.P. SYSTEMS TO BE HPC-2.2, UNLESS REQUIRED OTHERWISE BY CODE OR U.N.O.

10/17/2018 6:53:42 AM
C:\Users\bpeterson\Documents\M200-M04-A-v2017_bpeterson.rvt

DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
C	2020.06.25				CB 0483
B	2019.11.08				CB 0125
A	2019.11.08				CB 0167
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: S. McDONALD
APPROVED BY: J. YOUNG

7888 REGISTERED ARCHITECT Alan Hart STATE OF WASHINGTON 09/19/2018

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Stantec | VIA | kpff | Karen Kiest | Landscape Architects | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

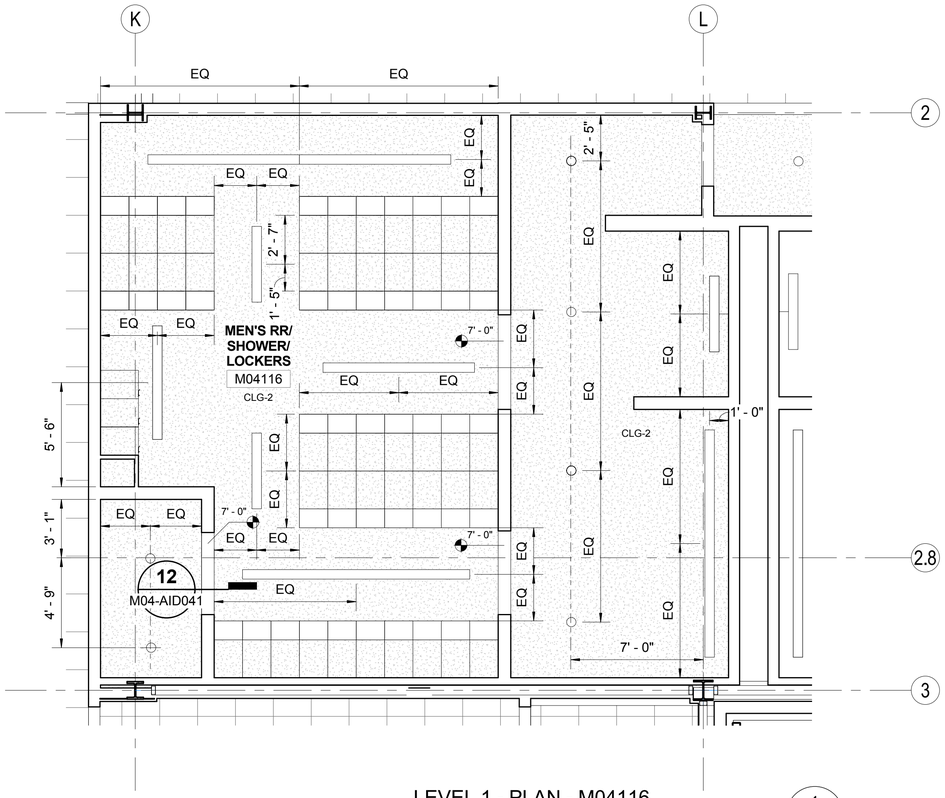
SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
RICHARD LEWIS	2018.09.19	BILL FERRIS	2018.09.19

SCALE: 1/4" = 1'-0"
FILENAME: M200-M04-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
LEVEL 1 ENLARGED FLOOR PLANS

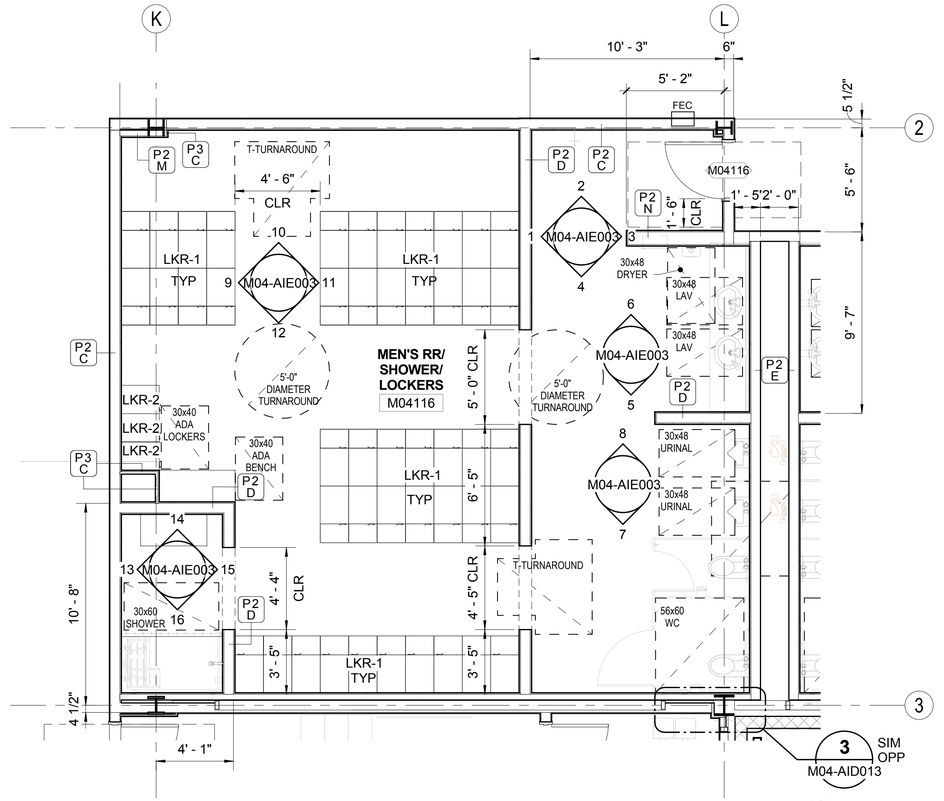
DRAWING NO.: **M04-APD152**
FACILITY ID: M04
SHEET No.: 91
REV.: C



LEVEL 1 - PLAN - M04116

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

1 M04-ACP113



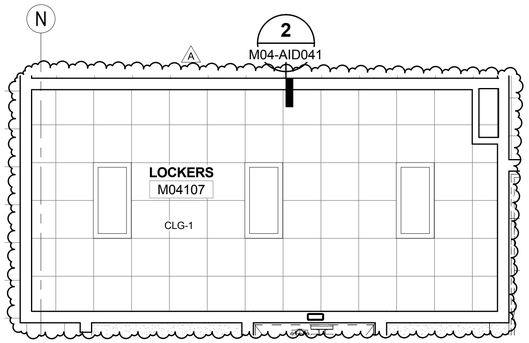
LEVEL 1 - PLAN - M04116

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

2 M04-APP113

REFLECTED CEILING PLAN GENERAL

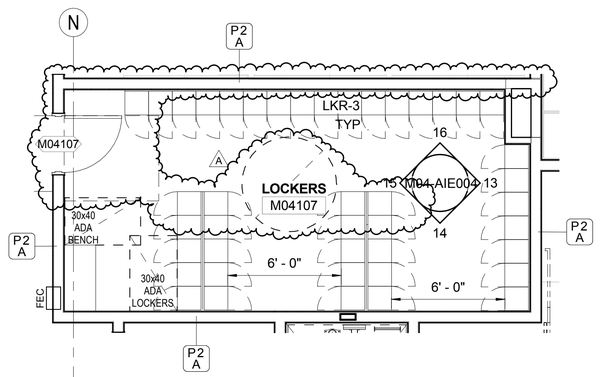
1. SEE GEN-AZN001 FOR CEILING LEGEND & SYMBOLS.
2. OPEN TO STRUCTURAL DECK ABOVE, U.N.O.
3. ALL CEILINGS AT 9'-0" U.N.O.
4. ALL UNDERSIDE OF HEADERS AT 8'-0" U.N.O.
5. SEE INTERIORS FOR WALL, FLOOR & CEILING FINISHES.
6. EXPOSED STRUCTURAL DECK, BEAMS, JOISTS, AND M.E.P. SYSTEMS TO BE HPC-2.2, UNLESS REQUIRED OTHERWISE BY CODE OR U.N.O.



LEVEL 1 - RCP - M04107

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

3 M04-ACP113



LEVEL 1 - PLAN - M04107

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

4 M04-APP113

NOTE: SEE 1 / GEN-AIE001 FOR TYPICAL MOUNTING HEIGHTS.

5

8/2/2019 10:39:39 AM
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DP4A - IFC

No.	DATE	DSN	CHK	APP	REVISION
D	2020.06.XX				CB 0483
C	2020.01.09				CB 0259
B	2019.11.08				CB 0125
A	2019.08.02	BP	SM	JY	CB#034
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: S. McDONALD
APPROVED BY: J. YOUNG

7888 REGISTERED ARCHITECT Alan Hart STATE OF WASHINGTON 08/02/2019

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Stantec | VIA | kpff | Karen Kiest Landscape Architects | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

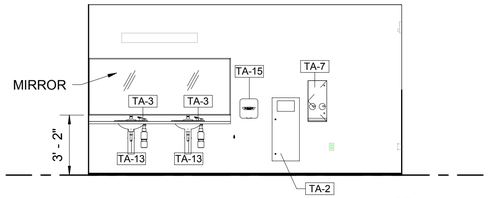
SOUNDTRANSIT

SUBMITTED BY: RICHARD LEWIS
DATE: 2018.07.10
REVIEWED BY: BILL FERRIS
DATE: 2018.07.10
SCALE: 1/4" = 1'-0"
FILENAME: M200-Y02e-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.07.10

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
LEVEL 1 ENLARGED FLOOR PLANS

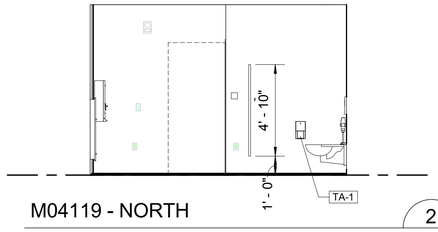
DRAWING NO.: M04-APD153
FACILITY ID: M04
SHEET No: REV: D



M04119 - WEST

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

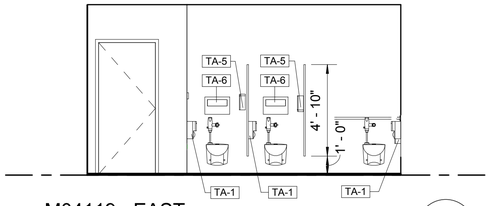
1 M04-APD151



M04119 - NORTH

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

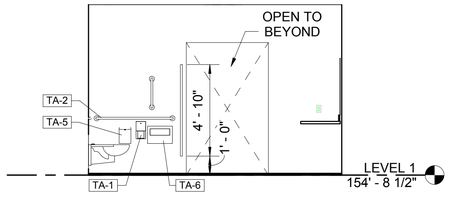
2 M04-APD151



M04119 - EAST

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

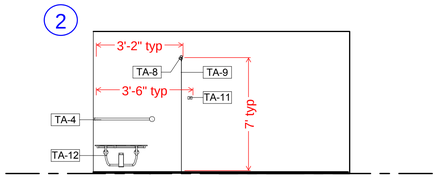
3 M04-APD151



M04119 - SOUTH

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

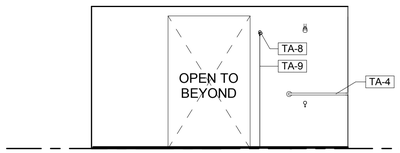
4 M04-APD151



M04119 - SOUTH

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

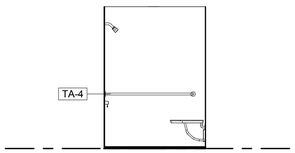
5 M04-APD151



M04119 - NORTH

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

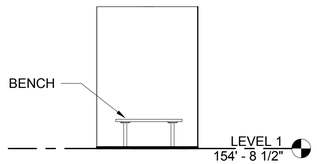
6 M04-APD151



M04119 - EAST

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

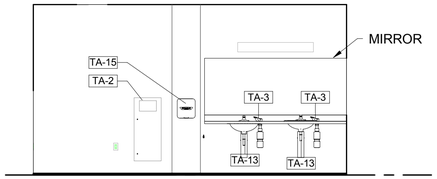
7 M04-APD151



M04119 - WEST

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

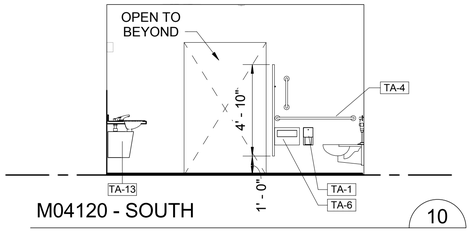
8 M04-APD151



M04120 - EAST

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

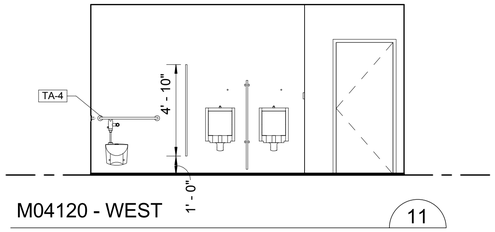
9 M04-APD151



M04120 - SOUTH

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

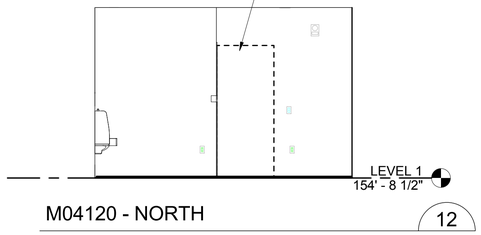
10 M04-APD151



M04120 - WEST

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

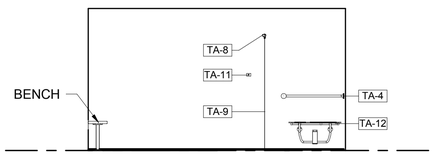
11 M04-APD151



M04120 - NORTH

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

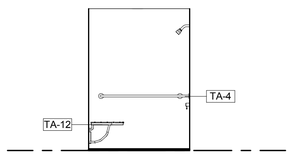
12 M04-APD151



M04120 - SOUTH

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

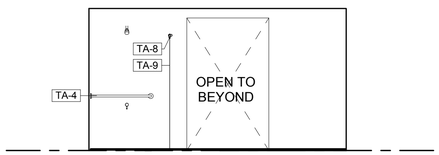
13 M04-APD151



M04120 - WEST

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

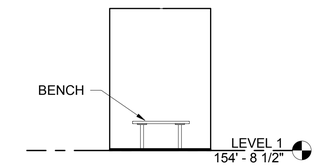
14 M04-APD151



M04120 - NORTH

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

15 M04-APD151



M04120 - EAST

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

16 M04-APD151

GENERAL NOTES

1. SEE GEN-AIE001 FOR MOUNTING HEIGHTS & TYPICAL PLAN LAYOUTS
2. SEE GEN-AZN002 FOR TECHNICAL NOMENCLATURE & TOILET ACCESSORIES SCHEDULE.
3. SEE INTERIORS FOR WALL, FLOOR AND CEILING FINISHES.

1

1	CB 0125
2	CB 0483
3	0000

DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
B	2020.06.25				CB 0483
A	2019.11.08				CB 0125
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: S. McDONALD
APPROVED BY: J. YOUNG

7888 REGISTERED ARCHITECT Alan Hart STATE OF WASHINGTON 09/19/2018

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Stantec | VIA | kpff | Karen Kiest | Landscape Architects | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY: RICHARD LEWIS
DATE: 2018.09.19
REVIEWED BY: BILL FERRIS
DATE: 2018.09.19

SCALE: 1/4" = 1'-0"
FILENAME: M200-M04-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
LEVEL 1 INTERIOR ELEVATIONS

DRAWING NO.: **M04-AIE001**
FACILITY ID: M04
SHEET No: 109
REV: B

10/17/2018 6:51:53 AM
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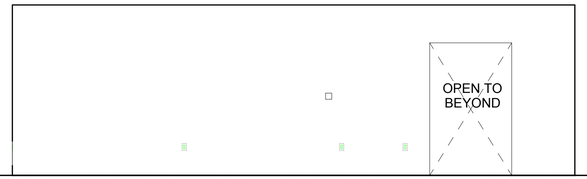
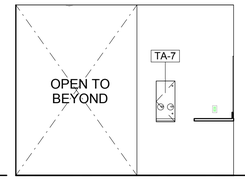


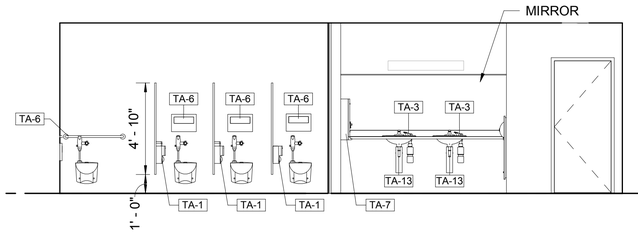
M04117 - NORTH 1 M04-APD152

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



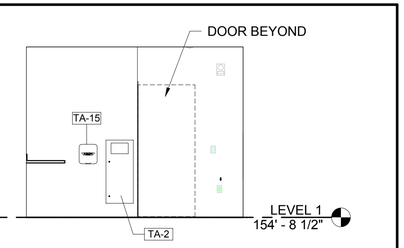
M04117 - EAST 2 M04-APD152

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



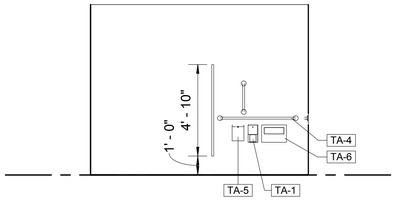
M04117 - SOUTH 3 M04-APD152

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



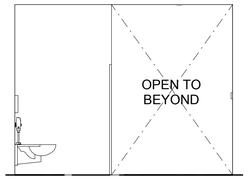
M04117 - WEST 4 M04-APD152

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



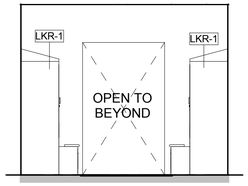
M04117 - EAST 5 M04-APD152

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



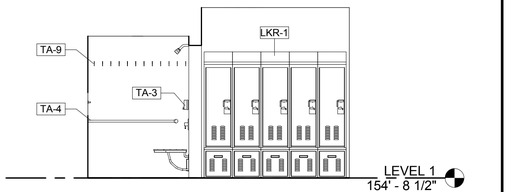
M04117 - WEST 6 M04-APD152

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



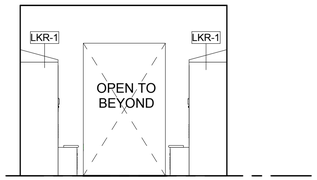
M04117 - NORTH 7 M04-APD152

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



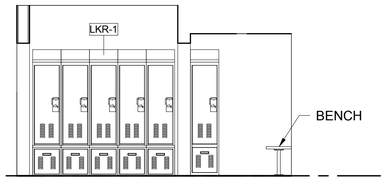
M04117 - EAST 8 M04-APD152

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



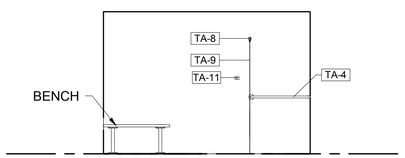
M04117 - SOUTH 9 M04-APD152

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



M04117 - WEST 10 M04-APD152

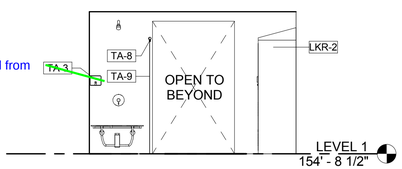
SCALE: 1/4" = 1'-0"



M04117 - NORTH 11 M04-APD152

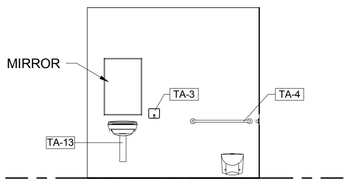
SCALE: 1/4" = 1'-0"

2 TA-3 removed from showers



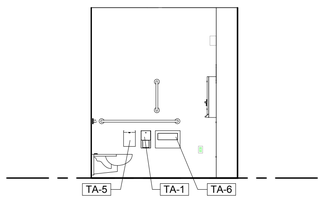
M04117 - SOUTH 12 M04-APD152

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



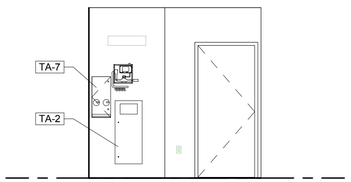
M04158 - WEST 13 M04-APD152

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



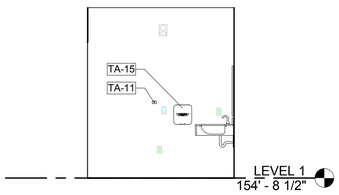
M04158 - NORTH 14 M04-APD152

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



M04158 - EAST 15 M04-APD152

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



M04158 - SOUTH 16 M04-APD152

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

GENERAL NOTES

1. SEE GEN-AIE001 FOR MOUNTING HEIGHTS & TYPICAL PLAN LAYOUTS (1)
2. SEE GEN-AZN002 FOR TECHNICAL NOMENCLATURE & TOILET ACCESSORIES SCHEDULE.
3. SEE INTERIORS FOR WALL, FLOOR AND CEILING FINISHES.

(1) CB 0125
(2) CB 0483
(3) 0000

DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
B	2020.06.25				CB 0483
A	2019.11.08				CB 0125
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: S. McDONALD
APPROVED BY: J. YOUNG

7888 REGISTERED ARCHITECT Alan Hart STATE OF WASHINGTON 09/19/2018

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Stantec | VIA | kpff | Karen Kiest | Landscape Architects | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY: RICHARD LEWIS
DATE: 2018.09.19
REVIEWED BY: BILL FERRIS
DATE: 2018.09.19

SCALE: 1/4" = 1'-0"
FILENAME: M200-M04-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
LEVEL 1 INTERIOR ELEVATIONS

DRAWING NO.: **M04-AIE002**
FACILITY ID: M04
SHEET No: 110
REV: B

10/17/2018 6:52:07 AM
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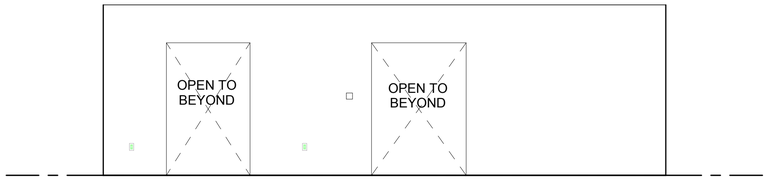
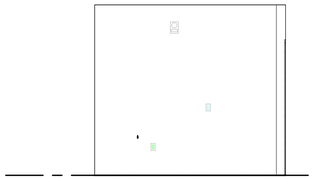


M04116 - SOUTH

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

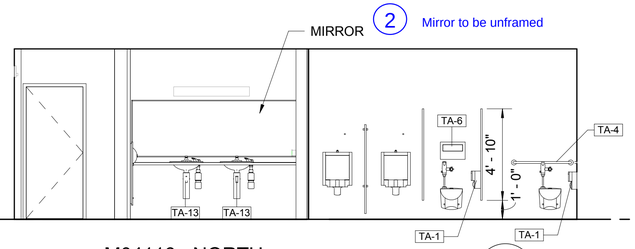
1 M04-APD153



M04116 - WEST

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

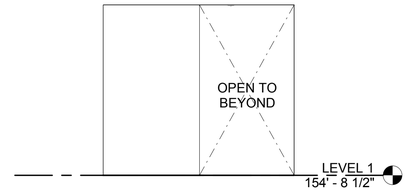
2 M04-APD153



M04116 - NORTH

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

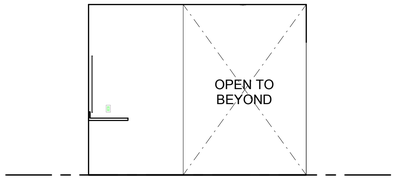
3 M04-APD153



M04116 - EAST

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

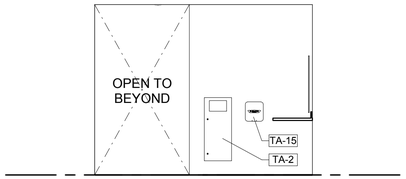
4 M04-APD153



M04116 - EAST

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

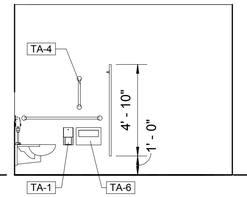
5 M04-APD153



M04116 - WEST

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

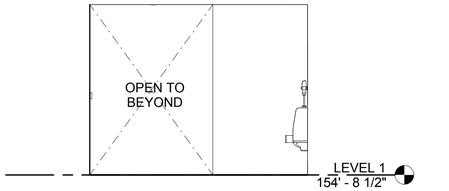
6 M04-APD153



M04116 - EAST

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

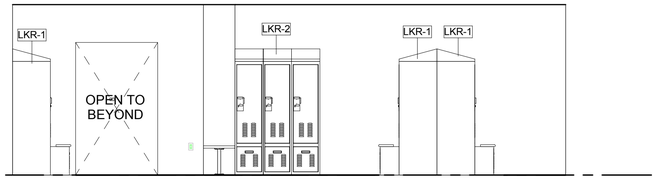
7 M04-APD153



M04116 - WEST

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

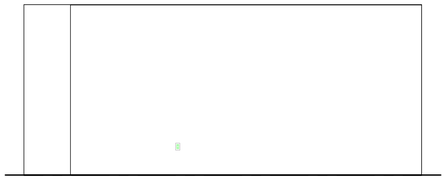
8 M04-APD153



M04116 - SOUTH

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

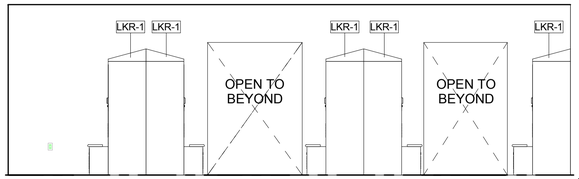
9 M04-APD153



M04116 - WEST

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

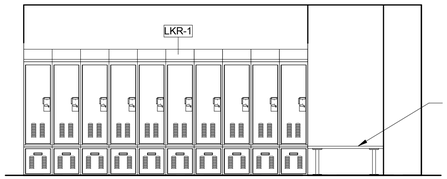
10 M04-APD153



M04116 - NORTH

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

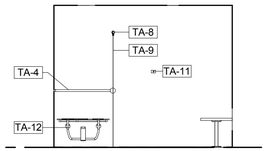
11 M04-APD153



M04116 - EAST

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

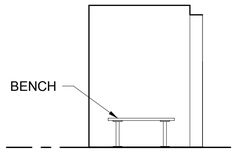
12 M04-APD153



M04116 - SOUTH

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

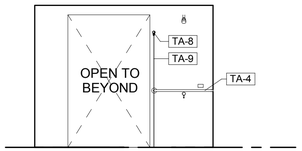
13 M04-APD153



M04116 - WEST

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

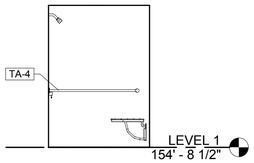
14 M04-APD153



M04116 - NORTH

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

15 M04-APD153



M04116 - EAST

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

16 M04-APD153

1 CB 0125
2 CB 0296
3 0000

GENERAL NOTES

1. SEE GEN-AIE001 FOR MOUNTING HEIGHTS & TYPICAL PLAN LAYOUTS 1
2. SEE GEN-AZN002 FOR TECHNICAL NOMENCLATURE & TOILET ACCESSORIES SCHEDULE.
3. SEE INTERIORS FOR WALL, FLOOR AND CEILING FINISHES.

DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
B	2020.02.11				CB 0296
A	2019.11.08				CB 0125
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: S. McDONALD
APPROVED BY: J. YOUNG

7888 REGISTERED ARCHITECT Alan Hart STATE OF WASHINGTON 09/19/2018

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Stantec | VIA | kpff | Karen Kiest | Landscape Architects | ELCON ASSOCIATES, INC. ENGINEERS—CONSULTANTS

LINE IS 1" AT FULL SCALE

SUBMITTED BY: RICHARD LEWIS
DATE: 2018.09.19
REVIEWED BY: BILL FERRIS
DATE: 2018.09.19

SOUNDTRANSIT

SCALE: 1/4" = 1'-0"
FILENAME: M200-M04-A-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
LEVEL 1 INTERIOR ELEVATIONS

DRAWING NO.: **M04-AIE003**
FACILITY ID: M04
SHEET No: 111
REV: A

10/17/2018 6:52:21 AM
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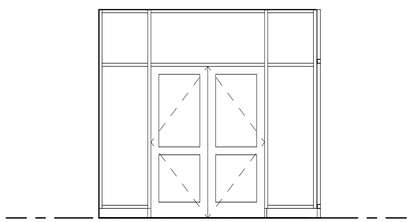
M04101 - SOUTH

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

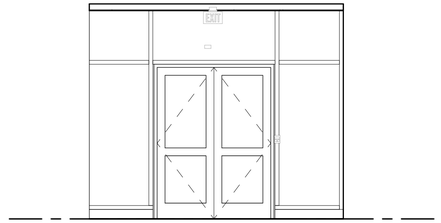
1 M04-APD154



M04101 - WEST

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

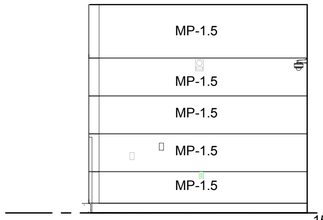
2 M04-APD154



M04101 - NORTH

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

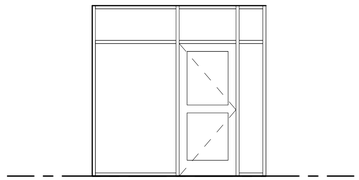
3 M04-APD154



M04101 - EAST

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

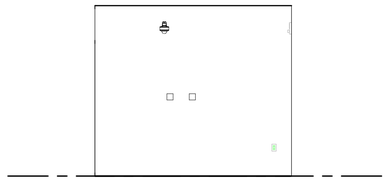
4 M04-APD154



M04103 - EAST

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

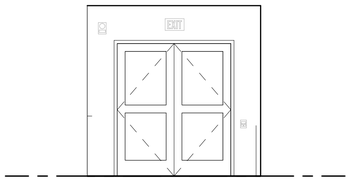
5 M04-APD154



M04103 - SOUTH

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

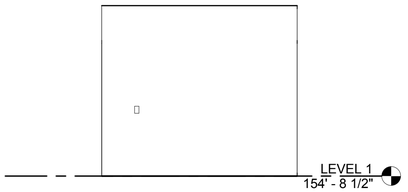
6 M04-APD154



M04103 - WEST

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

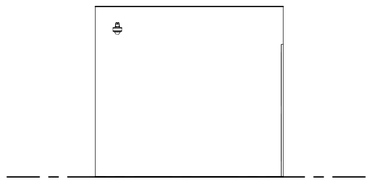
7 M04-APD154



M04103 - NORTH

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

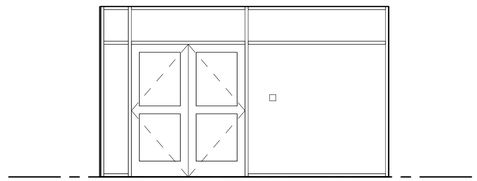
8 M04-APD154



M04104 - EAST

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

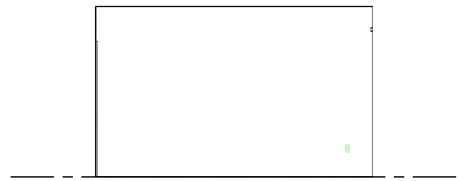
9 M04-APD154



M04104 - SOUTH

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

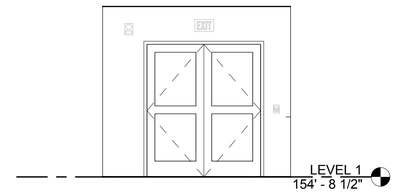
10 M04-APD154



M04104 - NORTH

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

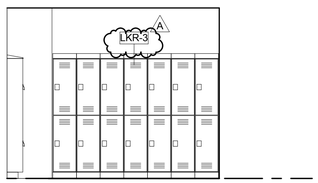
11 M04-APD154



M04104 - WEST

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

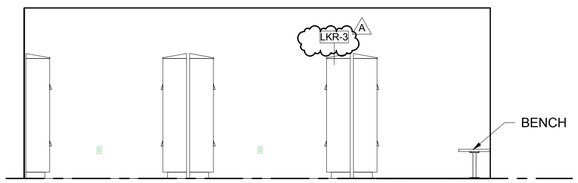
12 M04-APD154



M04107 - NORTH

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

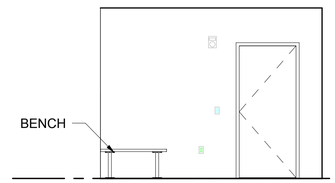
13 M04-APD153



M04107 - EAST

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

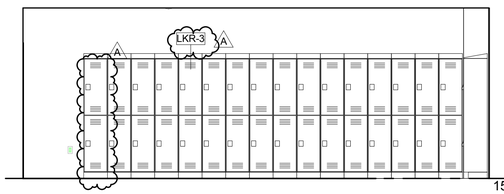
14 M04-APD153



M04107 - SOUTH

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

15 M04-APD153



M04107 - WEST

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

16 M04-APD153

GENERAL NOTES

1. SEE GEN-AIE001 FOR MOUNTING HEIGHTS. & TYPICAL PLAN LAYOUTS (2)
2. SEE GEN-AZN002 FOR TECHNICAL NOMENCLATURE & TOILET ACCESSORIES SCHEDULE.
3. SEE INTERIORS FOR WALL, FLOOR AND CEILING FINISHES.

1	CB 0125
2	0000
3	0000

DP4A - IFC

No.	DATE	DSN	CHK	APP	REVISION
B	2019.11.08				CB 0125
A	2019.08.02	BP	SM	JY	CB#034
0	2018.09.19	BP	SM	JY	ISSUED FOR CONSTRUCTION

DESIGNED BY: B. PETERSON
DRAWN BY: T. WEST
CHECKED BY: S. McDONALD
APPROVED BY: J. YOUNG

7888 REGISTERED ARCHITECT Alan Hart STATE OF WASHINGTON
08/02/2019

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Stantec | VIA | kpff | Karen Kiest | Landscape Architects | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY:	RICHARD LEWIS
DATE:	2018.07.10
REVIEWED BY:	BILL FERRIS
DATE:	2018.07.10
SCALE:	1/4" = 1'-0"
FILENAME:	M200-Y02e-A-v2017
CONTRACT No.:	RTA/CN 0020-16
SUBMITTAL DATE:	2018.07.10

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
LEVEL 1 INTERIOR ELEVATIONS

DRAWING NO.: **M04-AIE004**
FACILITY ID: M04
SHEET No: REV: A

8/2/2019 10:39:21 AM
C:\Users\bpeterson\Documents\M200-M04-A-v2017_bpeterson@via-architecture.com.rvt

AIR COOLED CHILLER SCHEDULE

UNIT IDENTIFICATION			CAPACITY AND PERFORMANCE							EVAPORATOR						COMPRESSOR				CONDENSERS					ELECTRICAL				PHYSICAL CHARACTERISTICS				MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	AREA/UNIT SERVED	UNIT CAPACITY (TONS)	EER	PATH	KW/TON	IPLV	REFRIG TYPE	REFRIG CHARGE (LBS)	FLUID TYPE	FLUID (GPM)	EWT (F)	LWT (F)	MAX WPD (FT)	FOULING FACTOR	TYPE	NO OF COMP	NO OF CIRCUITS	NO OF STAGES	NO OF FANS	AIRFLOW PER FAN (CFM)	FAN HP	AMBIENT DESIGN TEMP (F)	MIN AMBIENT TEMP (F)	VOLTS	PHASE	MCA	MOP	OPERATING WEIGHT (LBS)	DIMENSIONS HEIGHT (IN)	DIMENSIONS WIDTH (IN)	DIMENSIONS LENGTH (IN)			
M04-CH	1	AHU-9	35.0	12.63	A	-	15.38	R410A	35	25% GLYCOL	96.00	60.0	50.0	24.4	0.0001	SCROLL	2	1	2	3	8,143	5.13	85	24	460	3	78.9	110	2,630	84.7	50.4	149.8	TRANE	CGAM 35	1,2,3,4,5,6,7,8,9,10,11,12,13

NOTES:

1 PERFORMANCE BASED ON WATER, 25% PROPYLENE GLYCOL
2 PROVIDE SINGLE ELECTRICAL CONNECTION.
3 PROVIDE MICROCHANNEL FIN MATERIAL COPPER TUBE CONDENSER COILS
4 FACTORY INSULATED EVAPORATOR
5 PROVIDE CHILLER HEATER
6 PROVIDE CONTROLS TRANSFORMER
7 HAIL GUARDS
8 PROVIDE LOW AMBIENT CONTROLS TO 0F
9 PATH "A" SELECTION FROM WSEC
10 PROVIDE UNIT MOUNTED STARTER
11 R410A REFRIGERANT
12 UNIT COMPLETE WITH SOUND ATTENUATOR PACKAGE
13 REFER TO ELEC DRAWINGS FOR MOTOR STARTER AND DISCONNECT SWITCH

CEILING FAN SCHEDULE

UNIT IDENTIFICATION			MAX AIRFLOW (CFM)	CONTROL	FAN		FAN MOTOR			ELECTRICAL		WEIGHT (LB)	MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	UNIT/AREA SERVED			SPEED (RPM)	SIZE (FT)	BHP	HP	MOTOR TYPE	VOLTS	PHASE				
M04-CF	1	FLAT FLOOR REPAIR POSITION M04139	158,000	LOCAL CONTROL	90	16	-	1.05	EC MOTOR	460	3	188	MACROAIR	AVD-550	1,2,3,4,6,7
M04-CF	2	FLAT FLOOR REPAIR POSITION M04139	158,000	LOCAL CONTROL	90	16	-	1.05	EC MOTOR	460	3	188	MACROAIR	AVD-550	1,2,3,4,6,7
M04-CF	3	FLAT FLOOR REPAIR POSITION M04139	158,000	LOCAL CONTROL	90	16	-	1.05	EC MOTOR	460	3	188	MACROAIR	AVD-550	1,2,3,4,6,7
M04-CF	4	FLAT FLOOR REPAIR POSITION M04140	158,000	LOCAL CONTROL	90	16	-	1.05	EC MOTOR	460	3	188	MACROAIR	AVD-550	1,2,3,4,6,7
M04-CF	5	LIFT REPAIR POSITION M04141	158,000	LOCAL CONTROL	90	16	-	1.05	EC MOTOR	460	3	188	MACROAIR	AVD-550	1,2,3,4,6,7
M04-CF	6	WHEEL TRUING POSITION M04144	158,000	LOCAL CONTROL	90	16	-	1.05	EC MOTOR	460	3	188	MACROAIR	AVD-550	1,2,3,4,6,7
M04-CF	7	WHEEL TRUING POSITION M04144	158,000	LOCAL CONTROL	90	16	-	1.05	EC MOTOR	460	3	188	MACROAIR	AVD-550	1,2,3,4,6,7
M04-CF	8	LIFT REPAIR POSITION M04145	158,000	LOCAL CONTROL	90	16	-	1.05	EC MOTOR	460	3	188	MACROAIR	AVD-550	1,2,3,4,6,7
M04-CF	9	RAIL CAR STORAGE M04151	53,000	LOCAL CONTROL	220	8	-	1.05	EC MOTOR	460	3	150	MACROAIR	AVD-550	1,2,3,4,6,7
M04-CF	10	PANTOGRAPH PREP/MINOR M04251	53,000	LOCAL CONTROL	220	8	-	1.05	EC MOTOR	460	3	150	MACROAIR	AVD-550	1,2,3,4,6,7
M04-CF	11	PANTOGRAPH PREP/MINOR M04251	53,000	LOCAL CONTROL	220	8	-	1.05	EC MOTOR	460	3	150	MACROAIR	AVD-550	1,2,3,4,6,7
M04-CF	12	BRAKE/COUPLER SHOP M04133	53,000	LOCAL CONTROL	220	8	-	1.05	EC MOTOR	460	3	150	MACROAIR	AVD-550	1,2,3,4,6,7
M04-CF	13	COMMON WORK AREA M04135	53,000	LOCAL CONTROL	220	8	-	1.05	EC MOTOR	460	3	150	MACROAIR	AVD-550	1,2,3,4,6,7
M04-CF	14	WELDINGSHOP M04136	-	LOCAL CONTROL	1,290	2	-	1/3	EC MOTOR	120	1	38	BIG ASS FAN	AIREYE	1,5,6,7
M04-CF	15	WELDINGSHOP M04136	-	LOCAL CONTROL	1,290	2	-	1/3	EC MOTOR	120	1	38	BIG ASS FAN	AIREYE	1,5,6,7
M04-CF	16	WELDINGSHOP M04136	-	LOCAL CONTROL	1,290	2	-	1/3	EC MOTOR	120	1	38	BIG ASS FAN	AIREYE	1,5,6,7

NOTES:

1 C/W MOUNTING KIT
2 DIGITAL CONTROLLER
3 PROVIDE EXTENSION TUBE (ACTUAL TUBE LENGTH TO BE COMFIRM ON SITE)
4 PROVIDE GUY WIRES AND ALL OTHER SAFETY HARDWARES FOR SEISMIC ZONE
5 18' CORD PLUGS INTO STANDARD WALL OUTLET
6. ALL CEILING FAN MOTOR SHALL BE VFD TYPE
7. REFER TO ELEC DRAWINGS FOR MOTOR STARTER AND DISCONNECT SWITCH
8. Height of fans can be adjusted +/- 12"
9. Where multiple fans are in a room, ensure all are mounted at the same height
10. Adhere to min and max provided by manufacturer

2

CF-1=31'-6" from the bottom of fan to the surface of level 1.
CF-3=31'-6" from the bottom of fan to the surface of level 1.
CF-5=32'-5" from the bottom of fan to the surface of level 1.
CF-7=23'-5" from the bottom of fan to the surface of level 1.
CF-9=23'-5" from the bottom of fan to the surface of level 1.
CF-11=20'-6" from the bottom of fan to the surface of level 2.
CF-13=12'-0" from the bottom of fan to the surface of level 1.
CF-15=9'-0" from the bottom of the mounting hardware which attached to the wall or column to the surface of level 1.
CF-16=9'-0" from the bottom of the mounting hardware which attached to the wall or column to the surface of level 1.

CF-2=31'-6" from the bottom of fan to the surface of level 1.
CF-4=32'-5" from the bottom of fan to the surface of level 1.
CF-6=23'-5" from the bottom of fan to the surface of level 1.
CF-8=23'-5" from the bottom of fan to the surface of level 1.
CF-10=20'-6" from the bottom of fan to the surface of level 2.
CF-12=12'-0" from the bottom of fan to the surface of level 1.
CF-14=9'-0" from the bottom of the mounting hardware which attached to the wall or column to the surface of level 1.

NOISE CONTROL SCHEDULE

MARK	NOISE PATH	DESCRIPTION	NOTE
AHU-1	SUPPLY DUCTBORNE	-	-
	SUPPLY BREAKOUT	-	-
		-	-
AHU-2	SUPPLY DUCTBORNE	-	-
AHU-6	SUPPLY BREAKOUT	PROVIDE 1 INCH THICK INSULATION AND 2 LAYER 5/8" GYPSUM BOARD OVER THE HALLWAY	-
AHU-7	SUPPLY DUCTBORNE	-	-
	RETURN BREAKOUT	CONSTRUCT ALL MAIN DUCTWORK WITH MIN. 18 GAUGE SHEET METAL OVER THE CONF A M04227	-
AHU-8	SUPPLY DUCTBORNE	PROVIDE SOUND ATTENUATOR AS PER SCHEDULE	-
	SUPPLY BREAKOUT	-	-
	RETURN DUCTBORNE	PROVIDE SOUND ATTENUATOR AS PER SCHEDULE	-
	RETURN BREAKOUT	CONSTRUCT ALL RECTANGULAR DUCTWORK WITH MIN. 18 GAUGE SHEET METAL OVER THE FILE M04231 AND POLICE M04232	-
AHU-9	SUPPLY DUCTBORNE	PROVIDE SOUND ATTENUATOR AS PER SCHEDULE	-
		PROVIDE MIN. 3 FT OF ACOUSTIC TYPE FLEXIBLE DUCT(THERMAFLEX M-KE) FOR ALL CHILLED BEAMS AT OPERATIONS TRAINING M04236	-
	SUPPLY BREAKOUT	CONSTRUCT THE RECTANGULAR DUCTWORK BEFORE THE ATTENUATOR WITH MIN. OF 20 GAUGE SHEET METAL	-
	RETURN DUCTBORNE	PROVIDE SOUND ATTENUATOR AS PER SCHEDULE	-
FCU-1	SUPPLY DUCTBORNE	PROVIDE 1 INCH THICK ELASTOMERIC DUCT LINER DOWN TO THE LAST DIFFUSER BEFORE THE FLEXIBLE DUCTWORK.	-
		PROVIDE MIN. OF 6' ACOUSTIC FLEXIBLE DUCTWORKS BEFORE THE DIFFUSERS.	-
	RETURN DUCTBORNE	PROVIDE 1INCH THICK ELASTOMERIC DUCT LINER FOR ALL RETURN AIR DUCTWORK	-
FCU-2	SUPPLY DUCTBORNE	PROVIDE 1 INCH THICK ELASTOMERIC DUCT LINER DOWN TO THE LAST DIFFUSER BEFORE THE FLEXIBLE DUCTWORK.	-
		PROVIDE ACOUSTIC FLEXIBLE DUCTWORKS BEFORE THE DIFFUSERS.	-
		PROVIDE SOUND ATTENUATOR WITHIN THE 16X14 DUCT BETWEEN THE MITERED ELBOW AND THE FIRST BRANCH POINT AS PER SCHEDULE	-
	RETURN DUCTBORNE	PROVIDE 1 INCH THICK ELASTOMERIC DUCT LINER FOR ALL RETURN AIR DUCTWORK	-
FCU-7	SUPPLY DUCTBORNE	PROVIDE 1 INCH THICK ELASTOMERIC DUCT LINER FOR ALL SUPPLY AIR DUCTWORK	-
	RETURN DUCTBORNE	PROVIDE 1 INCH THICK ELASTOMERIC DUCT LINER FOR ALL RETURN AIR DUCTWORK	-
FCU-8	SUPPLY DUCTBORNE	PROVIDE 1 INCH THICK ELASTOMERIC DUCT LINER FOR ALL SUPPLY AIR DUCTWORK	-
FCU-9	SUPPLY DUCTBORNE	PROVIDE 1 INCH THICK ELASTOMERIC DUCT LINER FOR ALL SUPPLY AIR DUCTWORK	-
	RETURN DUCTBORNE	PROVIDE 1 INCH THICK ELASTOMERIC DUCT LINER FOR ALL RETURN AIR DUCTWORK	-
FCU-10	SUPPLY DUCTBORNE	PROVIDE ACOUSTIC FLEXIBLE DUCTWORKS BEFORE THE DIFFUSERS.	-
	RETURN DUCTBORNE	PROVIDE 1 INCH THICK ELASTOMERIC DUCT LINER FOR ALL RETURN AIR DUCTWORK	-
PAC-4A	SUPPLY DUCTBORNE	PROVIDE 1 INCH THICK ELASTOMERIC DUCT LINER FOR ALL SUPPLY AIR DUCTWORK	-

NOTES:

1

DB RFI 00636: Thermaflex M-KE flexible insulation is acceptable to use for all insulated flexible duct.

C

HVAC CIRCULATION PUMP SCHEDULE

UNIT IDENTIFICATION				PUMP TYPE	COUPLING TYPE	CONTROL	PERFORMANCE					PUMP MOTOR			ELECTRICAL		MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	SYSTEM SERVED	REDUNDANT				FLUID TYPE	FLUID TEMP (F)	FLOW (GPM)	PUMP HEAD (FT)	MIN EFFICIENCY (%)	BHP	HP	SPEED (RPM)	VOLTS	PHASE			
M04-P	1	GLYCOL CHILLED WATER	-	IN-LINE CENTRIFUGAL	SPLIT COUPLED	VFD	25% GLCYOL	50	100.0	85	89.5	3.75	5	1,800	460	3	BELL & GOSSETT	E-80SC-2X2X9.5C	1,2,3
M04-P	2	GLYCOL CHILLED WATER	YES	IN-LINE CENTRIFUGAL	SPLIT COUPLED	VFD	25% GLCYOL	50	100.0	85	89.5	3.75	5	1,800	460	3	BELL & GOSSETT	E-80SC-2X2X9.5C	1,2,3
M04-P	3	CHILLED WATER LOOP	-	IN-LINE CENTRIFUGAL	SPLIT COUPLED	VFD	WATER	52	90.0	100	91.7	4.84	10	1,800	460	3	BELL & GOSSETT	E-80SC-3X3X11B	1,2,3
M04-P	4	CHILLED WATER LOOP	YES	IN-LINE CENTRIFUGAL	SPLIT COUPLED	VFD	WATER	52	90.0	100	91.7	4.84	10	1,800	460	3	BELL & GOSSETT	E-80SC-3X3X11B	1,2,3
M04-P	5	HEATING WATER LOOP	-	IN-LINE CENTRIFUGAL	SPLIT COUPLED	VFD	WATER	145	390.0	45	91	6.00	7.5	1,800	460	3	BELL & GOSSETT	E-80SC-4X4X9.5B	1,2,3
M04-P	6	HEATING WATER LOOP	YES	IN-LINE CENTRIFUGAL	SPLIT COUPLED	VFD	WATER	145	390.0	45	91	6.00	7.5	1,800	460	3	BELL & GOSSETT	E-80SC-4X4X9.5B	1,2,3
M04-P	7	GLYCOL HEATING WATER	-	IN-LINE CENTRIFUGAL	SPLIT COUPLED	VFD	25% GLCYOL	140	420.0	100	93.6	15.10	25	1,800	460	3	BELL & GOSSETT	E-80SC-5X5X13.5	1,2,3
M04-P	8	GLYCOL HEATING WATER	YES	IN-LINE CENTRIFUGAL	SPLIT COUPLED	VFD	25% GLCYOL	140	420.0	100	93.6	15.10	25	1,800	460	3	BELL & GOSSETT	E-80SC-5X5X13.5	1,2,3
M04-P	9	HEATING CHILLED BEAM LOOP	-	IN-LINE CENTRIFUGAL	SPLIT COUPLED	VFD	WATER	110	60.0	50	89.5	1.37	3	1,800	460	3	BELL & GOSSETT	E-80SC-2X2X7B	1,2,3
M04-P	10	HEATING CHILLED BEAM LOOP	YES	IN-LINE CENTRIFUGAL	SPLIT COUPLED	VFD	WATER	110	60.0	50	89.5	1.37	3	1,800	460	3	BELL & GOSSETT	E-80SC-2X2X7B	1,2,3
M04-P	11	CHILLED WATER CHILLED BEAM LOOP	-	IN-LINE CENTRIFUGAL	SPLIT COUPLED	VFD	WATER	58	140.0	80	91	4.50	7.5	1,800	460	3	BELL & GOSSETT	E-80SC-2.5X2.5X9.5C	1,2,3
M04-P	12	CHILLED WATER CHILLED BEAM LOOP	YES	IN-LINE CENTRIFUGAL	SPLIT COUPLED	VFD	WATER	58	140.0	80	91	4.50	7.5	1,800	460	3	BELL & GOSSETT	E-80SC-2.5X2.5X9.5C	1,2,3
M04-P	13	RADIANT SLAB RECIRC. PUMP RM-1.0	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	13.5	25	70	-	0.40	3,300	120	1	BELL & GOSSETT	PL-55	2,3
M04-P	14	RADIANT SLAB RECIRC. PUMP RM-2.0	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	11.4	25	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-45	2,3
M04-P	15	RADIANT SLAB RECIRC. PUMP RM-2.1	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	6.6	20	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-45	2,3
M04-P	16	RADIANT SLAB RECIRC. PUMP RM-2.2	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	6.6	20	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-45	2,3
M04-P	17	RADIANT SLAB RECIRC. PUMP RM-2.3	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	12.1	20	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-45	2,3
M04-P	18	RADIANT SLAB RECIRC. PUMP RM-2.4	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	17.4	40	70	-	0.40	3,300	120	1	BELL & GOSSETT	PL-55	2,3
M04-P	19	RADIANT SLAB RECIRC. PUMP RM-3.0	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	7.3	35	70	-	0.40	3,300	120	1	BELL & GOSSETT	PL-55	2,3
M04-P	20	RADIANT SLAB RECIRC. PUMP RM-4.0	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	4.4	20	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-36	2,3
M04-P	21	RADIANT SLAB RECIRC. PUMP RM-5.0	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	11.4	25	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-45	2,3
M04-P	22	RADIANT SLAB RECIRC. PUMP RM-5.1	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	6.6	30	70	-	0.40	3,300	120	1	BELL & GOSSETT	PL-55	2,3
M04-P	23	RADIANT SLAB RECIRC. PUMP RM-5.2	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	6.9	20	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-45	2,3
M04-P	24	RADIANT SLAB RECIRC. PUMP RM-6.0	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	5.7	20	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-45	2,3
M04-P	25	RADIANT SLAB RECIRC. PUMP RM-7.0	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	14.5	20	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-45	2,3
M04-P	26	RADIANT SLAB RECIRC. PUMP RM-7.1	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	14.5	20	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-45	2,3
M04-P	27	RADIANT SLAB RECIRC. PUMP RM-8.0	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	14.5	20	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-45	2,3
M04-P	28	RADIANT SLAB RECIRC. PUMP RM-8.1	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	14.5	20	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-45	2,3
M04-P	29A	NOT USED																	
M04-P	29B	NOT USED																	
M04-P	29C	NOT USED																	
M04-P	29D	NOT USED																	
M04-P	30	RADIANT SLAB RECIRC. PUMP RM-2.5	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	9.6	20	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-45	2,3
M04-P	31	RADIANT SLAB RECIRC. PUMP RM-3.1	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	6.7	30	70	-	0.40	3,300	120	1	BELL & GOSSETT	PL-55	2,3
M04-P	32	RADIANT SLAB RECIRC. PUMP RM-4.1	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	4.8	20	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-36	2,3
M04-P	33	RADIANT SLAB RECIRC. PUMP RM-5.3	-	CLOSE COUPLED CIRCULATOR	CLOSE COUPLED	CONSTANT	25% GLCYOL	140	6.6	20	70	-	0.17	3,300	120	1	BELL & GOSSETT	PL-45	2,3

NOTES:

1 INVERTOR DUTY MOTOR WITH CLASS "F" INSULATION. SUITABLE FOR VFD DRIVE.
2 APPROVED EQUAL FROM OTHER MANUFACTURER SHALL BE ACCEPTABLE
3 REFER TO ELEC DRAWINGS FOR MOTOR STARTER AND DISCONNECT SWITCH
4. SUITABLE FOR OUTDOOR APPLICATION

1 DB RFI 00636
2 CB 0101
3 CB 0077.1

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DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
C	2019.11.13	SC	MG	VJ	DB#035
B	2019.09.12	SC	MG	VJ	DB012
A	2019.08.2106	SC	MG	VJ	CB#0101 Ceiling Fan Mounting Height
0	2018.09.19	VJ	MG	VJ	ISSUED FOR CONSTRUCTION

DESIGNED BY: V. JOSHI
DRAWN BY: S. CHUNG
CHECKED BY: M. GUO
APPROVED BY: V. JOSHI

RANDALL C. WILKINSON — STATE OF WASHINGTON — 35360 — REGISTERED PROFESSIONAL ENGINEER
2019.11.13

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Karen Kiest Landscape Architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS—CONSULTANTS

SUBMITTED BY: RICHARD LEWIS | DATE: 2018.09.19 | REVIEWED BY: BILL FERRIS | DATE: 2018.09.19

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SCALE: NTS
FILENAME: M200-M04-M-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
MECHANICAL SCHEDULE

DRAWING NO.: M04-MHS013
FACILITY ID: M04
SHEET No: REV: A

3

CONTROL VALVE

UNIT IDENTIFICATION				CAPACITY (GPM)	MEDIUM	DEISGN PD (PSI)	PIPELINE SIZE (IN)	VALVE SIZE (IN)	Cv	NOTES
MARK	NUMBER	TYPE	SERVICE							
M04-CV	1	2-WAY PICCV	UH-1	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	2	2-WAY PICCV	UH-2	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	3	2-WAY PICCV	UH-3	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	4	2-WAY PICCV	UH-4	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	5	2-WAY PICCV	UH-5	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	6	2-WAY PICCV	UH-6	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	7	2-WAY PICCV	UH-7	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	8	2-WAY PICCV	UH-8	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	9	2-WAY PICCV	UH-9	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	10	2-WAY PICCV	UH-10	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	11	2-WAY PICCV	UH-11	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	12	2-WAY PICCV	UH-12	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	13	2-WAY PICCV	UH-13	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	14	2-WAY PICCV	UH-14	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	15	2-WAY PICCV	UH-15	10.80	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	16	NOT USED								
M04-CV	17	2-WAY PICCV	UH-17	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	18	2-WAY PICCV	UH-18	9.70	25% PG	4.00	1.25	1.25	-	1,3,4
M04-CV	19	2-WAY PICCV	UH-19	6.40	25% PG	4.00	1	1	-	1,3,4
M04-CV	20	2-WAY PICCV	UH-20	6.40	25% PG	4.00	1	1	-	1,3,4
M04-CV	21	2-WAY PICCV	UH-21	6.40	25% PG	4.00	1	1	-	1,3,4
M04-CV	22	2-WAY PICCV	UH-22	0.60	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	23	2-WAY PICCV	UH-23	0.60	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	24	2-WAY PICCV	UH-24	0.60	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	25	2-WAY PICCV	UH-25	0.60	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	26	2-WAY PICCV	UH-26	6.40	25% PG	4.00	1	1	-	1,3,4
M04-CV	27	2-WAY PICCV	UH-27	6.40	25% PG	4.00	1	1	-	1,3,4
M04-CV	28	2-WAY PICCV	UH-28	1.30	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	29	2-WAY PICCV	UH-29	1.30	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	30	2-WAY PICCV	UH-30	1.30	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	31	2-WAY PICCV	UH-31	1.30	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	32	2-WAY PICCV	UH-32	1.30	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	33	2-WAY PICCV	UH-33	1.30	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	34	2-WAY PICCV	UH-34	1.30	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	35	2-WAY PICCV	UH-35	1.30	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	36	2-WAY PICCV	UH-36	1.30	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	37	2-WAY PICCV	UH-37	0.60	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	38	2-WAY PICCV	UH-38	1.30	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	39	2-WAY PICCV	UH-39	1.30	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	40	2-WAY PICCV	UH-40	6.40	25% PG	4.00	1	1	-	1,3,4
M04-CV	41	2-WAY PICCV	UH-41	6.40	25% PG	4.00	1	1	-	1,3,4
M04-CV	42	2-WAY PICCV	UH-42	1.30	25% PG	4.00	0.75	0.75	-	1,3,4
M04-CV	43	2-WAY MOD.	RM-1.0	3.19	25% PG	4.00	0.75	0.5	1.84	1,4
M04-CV	44	2-WAY MOD.	RM-2.0	2.71	25% PG	4.00	0.75	0.5	1.56	1,4
M04-CV	45	2-WAY MOD.	RM-2.1	1.57	25% PG	4.00	0.75	0.5	0.91	1,4
M04-CV	46	2-WAY MOD.	RM-2.2	1.57	25% PG	4.00	0.75	0.5	0.91	1,4
M04-CV	47	2-WAY MOD.	RM-2.3	2.88	25% PG	4.00	0.75	0.5	1.66	1,4
M04-CV	48	2-WAY MOD.	RM-2.4	4.12	25% PG	4.00	0.75	0.5	2.38	1,4
M04-CV	49	2-WAY MOD.	RM-3.0	1.73	25% PG	4.00	0.75	0.5	1.00	1,4
M04-CV	50	2-WAY MOD.	RM-4.0	1.05	25% PG	4.00	0.75	0.5	0.61	1,4
M04-CV	51	2-WAY MOD.	RM-5.0	2.70	25% PG	4.00	0.75	0.5	1.56	1,4
M04-CV	52	2-WAY MOD.	RM-5.1	1.55	25% PG	4.00	0.75	0.5	0.89	1,4
M04-CV	53	2-WAY MOD.	RM-5.2	1.64	25% PG	4.00	0.75	0.5	0.95	1,4
M04-CV	54	2-WAY MOD.	RM-6.0	1.36	25% PG	4.00	0.75	0.5	0.79	1,4
M04-CV	55	2-WAY MOD.	RM-7.0	3.44	25% PG	4.00	0.75	0.5	1.99	1,4
M04-CV	56	2-WAY MOD.	RM-7.1	3.44	25% PG	4.00	0.75	0.5	1.99	1,4
M04-CV	57	2-WAY MOD.	RM-8.0	3.44	25% PG	4.00	0.75	0.5	1.99	1,4
M04-CV	58	2-WAY MOD.	RM-8.1	3.44	25% PG	4.00	0.75	0.5	1.99	1,4
M04-CV	59	NOT USED								
M04-CV	60	2-WAY MOD.	FCU-1	1.72	WATER - HOT	4.00	0.75	0.5	0.99	1,4
M04-CV	61	2-WAY MOD.	FCU-1	3.88	WATER - CHILLED	4.00	0.75	0.5	2.24	1,4
M04-CV	62	2-WAY MOD.	FCU-2	1.94	WATER - HOT	4.00	0.75	0.5	1.12	1,4
M04-CV	63	2-WAY MOD.	FCU-2	4.74	WATER - CHILLED	4.00	0.75	0.5	2.74	1,4
M04-CV	64	2-WAY MOD.	FCU-3	1.60	WATER - CHILLED	4.00	0.75	0.5	0.92	1,4
M04-CV	65	2-WAY MOD.	FCU-4	1.60	WATER - CHILLED	4.00	0.75	0.5	0.92	1,4
M04-CV	66	2-WAY MOD.	FCU-5	1.40	WATER - HOT	4.00	0.75	0.5	0.81	1,4
M04-CV	67	2-WAY MOD.	FCU-6	1.40	WATER - HOT	4.00	0.75	0.5	0.81	1,4
M04-CV	68	2-WAY MOD.	FCU-7	1.18	WATER - HOT	4.00	0.75	0.5	0.68	1,4
M04-CV	69	2-WAY MOD.	FCU-7	3.22	WATER - CHILLED	4.00	0.75	0.5	1.86	1,4
M04-CV	70	2-WAY MOD.	FCU-8	1.18	WATER - HOT	4.00	0.75	0.5	0.68	1,4
M04-CV	71	2-WAY MOD.	FCU-8	3.22	WATER - CHILLED	4.00	0.75	0.5	1.86	1,4
M04-CV	72	2-WAY MOD.	FCU-9	1.68	WATER - HOT	4.00	0.75	0.5	0.97	1,4
M04-CV	73	2-WAY MOD.	FCU-9	3.35	WATER - CHILLED	4.00	0.75	0.5	1.93	1,4
M04-CV	74	2-WAY MOD.	FCU-10	1.72	WATER - HOT	4.00	0.75	0.5	0.99	1,4
M04-CV	75	2-WAY MOD.	FCU-10	3.88	WATER - CHILLED	4.00	0.75	0.5	2.24	1,4
M04-CV	76	2-WAY MOD.	FCU-11	1.60	WATER - CHILLED	4.00	0.75	0.5	0.92	1,4
M04-CV	77	2-WAY MOD.	AHU-1	44.21	25% PG	3.00	2.5	1.25	25.52	1,4
M04-CV	78	2-WAY MOD.	AHU-2	9.41	25% PG	3.00	1.25	0.75	5.43	1,4
M04-CV	79	2-WAY MOD.	AHU-3	4.18	25% PG	3.00	0.75	0.5	2.41	1,4
M04-CV	80	2-WAY MOD.	AHU-4	36.58	25% PG	3.00	2	1.25	21.12	1,4
M04-CV	81	2-WAY MOD.	AHU-6	6.27	25% PG	3.00	1	0.5	3.62	1,4
M04-CV	82	2-WAY MOD.	AHU-7	10.45	25% PG	3.00	1.25	0.75	6.03	1,4
M04-CV	83	2-WAY MOD.	AHU-8	10.30	25% PG	3.00	1.25	0.75	5.95	1,4
M04-CV	84	2-WAY MOD.	AHU-9	10.60	25% PG	3.00	1.25	0.75	6.12	1,4
M04-CV	136	2-WAY MOD.	RM-2.5	2.27	25% PG	4.00	0.75	0.5	1.31	1,4
M04-CV	137	2-WAY MOD.	RM-3.1	1.58	25% PG	4.00	0.75	0.5	0.91	1,4
M04-CV	138	2-WAY MOD.	RM-4.1	1.13	25% PG	4.00	0.75	0.5	0.65	1,4
M04-CV	139	2-WAY MOD.	RM-5.3	1.56	25% PG	4.00	0.75	0.5	0.90	1,4

B

1	DB RFI 00381
2	DB RFI 00450
3	CB 0437

CONTROL VALVE

UNIT IDENTIFICATION				CAPACITY (GPM)	MEDIUM	DEISGN PD (PSI)	PIPELINE SIZE (IN)	VALVE SIZE (IN)	Cv	NOTES
MARK	NUMBER	TYPE	SERVICE							
M04-CV	85	6-WAY MOD.	CB-1	10.00	WATER - CHIILED	6.00	1	0.75	4.08	1,4,5
				2.00	WATER - HOT	2.00	0.75		1.41	
M04-CV	86	6-WAY MOD.	CB-1	6.25	WATER - CHIILED	6.00	1	0.75	2.55	1,4,5
				1.50	WATER - HOT	2.00	0.75		1.06	
M04-CV	87	6-WAY MOD.	CB-1	5.00	WATER - CHIILED	6.00	1	0.75	2.04	1,4,5
				1.00	WATER - HOT	2.00	0.75		0.71	
M04-CV	88	6-WAY MOD.	CB-1	5.00	WATER - CHIILED	6.00	1	0.75	2.04	1,4,5
				1.00	WATER - HOT	2.00	0.75		0.71	
M04-CV	89	6-WAY MOD.	CB-1	2.50	WATER - CHIILED	6.00	0.75	0.50	1.02	1,4,5
				0.50	WATER - HOT	2.00	0.75		0.35	
M04-CV	90	6-WAY MOD.	CB-1	1.20	WATER - CHIILED	6.00	0.75	0.50	0.49	1,4,5
				1.00	WATER - HOT	4.00	0.75		0.50	
M04-CV	91	6-WAY MOD.	CB-1	1.20	WATER - CHIILED	6.00	0.75	0.50	0.49	1,4,5
				1.00	WATER - HOT	4.00	0.75		0.50	
M04-CV	92	6-WAY MOD.	CB-1	5.00	WATER - CHIILED	6.00	1	0.75	2.04	1,4,5
				1.00	WATER - HOT	2.00	0.75		0.71	
M04-CV	93	6-WAY MOD.	CB-1	1.00	WATER - CHIILED	5.00	0.75	0.50	0.45	1,4,5
				0.50	WATER - HOT	2.00	0.75		0.35	
M04-CV	94	6-WAY MOD.	CB-1	6.50	WATER - CHIILED	6.00	1	0.75	2.65	1,4,5
				1.50	WATER - HOT	2.00	0.75		1.06	
M04-CV	95	6-WAY MOD.	CB-1	1.25	WATER - CHIILED	5.00	0.75	0.50	0.56	1,4,5
				0.50	WATER - HOT	2.00	0.75		0.35	
M04-CV	96	6-WAY MOD.	CB-1	6.75	WATER - CHIILED	6.00	1	0.75	2.76	1,4,5
				1.50	WATER - HOT	2.00	0.75		1.06	
M04-CV	97	6-WAY MOD.	CB-1	1.00	WATER - CHIILED	5.00	0.75	0.50	0.45	1,4,5
				0.50	WATER - HOT	2.00	0.75		0.35	
M04-CV	98	6-WAY MOD.	CB-1	7.00	WATER - CHIILED	6.00	1	0.75	2.86	1,4,5
				1.50	WATER - HOT	2.00	0.75		1.06	
M04-CV	99	6-WAY MOD.	CB-1	1.00	WATER - CHIILED	5.00	0.75	0.50	0.45	1,4,5
				1.00	WATER - HOT	2.00	0.75		0.71	
M04-CV	100	6-WAY MOD.	CB-1	1.00	WATER - CHIILED	5.00	0.75	0.50	0.45	1,4,5
				1.00	WATER - HOT	2.00	0.75		0.71	
M04-CV	101	6-WAY MOD.	CB-1	5.00	WATER - CHIILED	6.00	1	0.75	2.04	1,4,5
				1.50	WATER - HOT	2.00	0.75		1.06	
M04-CV	102	6-WAY MOD.	CB-1	3.50	WATER - CHIILED	6.00	0.75	0.50	1.43	1,4,5
				1.10	WATER - HOT	2.00	0.75		0.78	
M04-CV	103	6-WAY MOD.	CB-1	1.00	WATER - CHIILED	6.00	0.75	0.50	0.41	1,4,5
				0.50	WATER - HOT	3.00	0.75		0.29	
M04-CV	104	6-WAY MOD.	CB-1	1.00	WATER - CHIILED	5.00	0.75	0.50	0.45	1,4,5
				1.50	WATER - HOT	3.00	0.75		0.87	
M04-CV	105	6-WAY MOD.	CB-1	2.50	WATER - CHIILED	6.00	0.75	0.50	1.02	1,4,5
				1.00	WATER - HOT	2.00	0.75		0.71	
M04-CV	106	6-WAY MOD.	CB-1	3.50	WATER - CHIILED	6.00	0.75	0.50	1.43	1,4,5
				1.00	WATER - HOT	2.00	0.75		0.71	
M04-CV	107	6-WAY MOD.	CB-1	1.00	WATER - CHIILED	6.00	0.75	0.50	0.41	1,4,5
				1.00	WATER - HOT	2.00	0.75		0.71	
M04-CV	108	6-WAY MOD.	CB-1	1.00	WATER - CHIILED	6.00	0.75	0.50	0.41	1,4,5
				1.00	WATER - HOT	2.00	0.75		0.71	
M04-CV	109	6-WAY MOD.	CB-1	2.50	WATER - CHIILED	6.00	0.75	0.50	1.02	1,4,5
				0.50	WATER - HOT	2.00	0.75		0.35	
M04-CV	110	6-WAY MOD.	CB-1	1.00	WATER - CHIILED	6.00	0.75	0.50	0.41	1,4,5
				1.25	WATER - HOT	2.00	0.75		0.88	
M04-CV	111	6-WAY MOD.	CB-1	1.25	WATER - CHIILED	6.00	0.75	0.50	0.51	1,4,5
				1.30	WATER - HOT	2.00	0.75		0.92	
M04-CV	112	6-WAY MOD.	CB-1	4.00	WATER - CHIILED	6.00	0.75	0.50	1.63	1,4,5
				2.00	WATER - HOT	2.00	0.75		1.41	
M04-CV	113	6-WAY MOD.	CB-1	6.00	WATER - CHIILED	5.00	1	0.75	2.68	1,4,5
				2.00	WATER - HOT	2.00	0.75		1.41	
M04-CV	114	6-WAY MOD.	CB-1	10.00	WATER - CHIILED	6.00	1	0.75	4.08	1,4,5
				2.40	WATER - HOT	2.00	0.75		1.70	
M04-CV	115	6-WAY MOD.	CB-1	1.75	WATER - CHIILED	6.00	0.75	0.50	0.71	1,4,5
				0.50	WATER - HOT	2.00	0.75		0.35	
M04-CV	116	6-WAY MOD.	CB-1	1.75	WATER - CHIILED	6.00	0.75	0.50	0.71	1,4,5
				0.50	WATER - HOT	2.00	0.75		0.35	
M04-CV	117	6-WAY MOD.	CB-1	7.50	WATER - CHIILED	6.00	1	0.75	3.06	1,4,5
				1.50	WATER - HOT	2.00	0.75		1.06	
M04-CV	118	6-WAY MOD.	CB-1	1.00	WATER - CHIILED	6.00	0.75	0.50	0.41	1,4,5
				1.00	WATER - HOT	2.00	0.75		0.71	
M04-CV	119	6-WAY MOD.	CB-1	7.50	WATER - CHIILED	6.00	1	0.75	3.06	1,4,5
				1.50	WATER - HOT	2.00	0.75		1.06	
M04-CV	120	DELETED								
M04-CV	121	6-WAY MOD.	CB-1	5.00	WATER - CHIILED	6.00	1	0.75	2.04	1,4,5
				1.00	WATER - HOT	2.00	0.75		0.71	
M04-CV	122	6-WAY MOD.	CB-1	2.00	WATER - CHIILED	5.00	0.75	0.50	0.89	1,4,5
				1.00	WATER - HOT	2.00	0.75		0.71	
M04-CV	123	6-WAY MOD.	CB-1	0.75	WATER - CHIILED	6.00	0.75	0.50	0.31	1,4,5
				0.50	WATER - HOT	2.00	0.75		0.35	
M04-CV	124	6-WAY MOD.	CB-1	1.30	WATER - CHIILED	6.00	0.75	0.50	0.53	1,4,5
				1.00	WATER - HOT	2.00	0.75		0.71	
M04-CV	125	2-WAY MOD.	HX-1	99.00	WATER - CHIILED	3.00	4	2.50	50.00	1,4
M04-CV	126	ON / OFF	BYPASS	28.00	WATER - CHIILED	4.00	1.5	1.50	-	1,2,4
M04-CV	127	2-WAY MOD.	P-11,12	60.00	WATER - CHIILED	4.00	4	2.00	30.00	1,4
M04-CV	128	ON / OFF	BYPASS	42.00	WATER - CHIILED	4.00	1.5	1.50	-	1,2,4
M04-CV	129	ON / OFF	B-1	235.00	WATER - HOT	4.00	6	6.00	-	1,2,4
M04-CV	130	ON / OFF	B-2	235.00	WATER - HOT	4.00	6	6.00	-	1,2,4
M04-CV	131	2-WAY MOD.	P-9,10	22.00	WATER - HOT	3.00	3	1.50	1.50	1,4
M04-CV	132	2-WAY MOD.	HX-2	380.00	WATER - HOT	4.00	6	4.00	190.00	1,4
M04-CV	133	ON / OFF	BYPASS	18.00	WATER - HOT	4.00	1	1.00	-	1,2,4
M04-CV	134	ON / OFF	BYPASS	125.00	WATER - HOT	4.00	4	4.00	-	1,2,4
M04-CV	135	ON / OFF	BYPASS	120.00	WATER - HOT	4.00	4	4.00	-	1,2,4

NOTES:
1. CONTROL SUPPLIER TO SIZE CONTROL VALVE BASED ON GIVEN FLOW RATES AND THE DESIGN PRESSURE DROP FOR OPEN VALVE. THE CONTROL VALVE MUST PROVIDE A MINIMUM OF VALVE AUTHORITY OF 0.5.
2. 2-WAY 2-POSITION ON/OFF VALVES SHALL BE LINE SIZE.
3. PRESSURE INDEPENDENT 2-WAY MODULATING CONTROL VALVES SHALL BE LINE SIZE.
4. VOLTAGE TO BE 24V, READ CONTROL VALVE SCHEDULE IN CONJUNCTION WITH FLOOR PLANS AND SCHEMATICS BEFORE ORDERING.
5. 6 WAY CHARACTERIZED CONTROL VALVES TYPE

CONTROL DAMPER

UNIT IDENTIFICATION				CAPACITY AND PERFORMANCE		ELECTRICAL			PHYSICAL CHARACTERISTICS			NOTES
									DIMENSIONS			
MARK	NUMBER	SERVICE	LOCATION	FLOW CFM	MEDIUM	NORMAL POSITION	ACTUATOR	POWER SUPPLY	WIDTH (IN)	HEIGHT (IN)	DIAMETER (IN)	
M04-MDPR	1	AHU-1 O/A INTAKE	INSIDE OF AHU-1	17,071	OUTSIDE AIR	CLOSE	ON/OFF	-	-	-	-	2,5,6.7,8
M04-MDPR	2	AHU-1 EXHAUST AIR FROM DUCT	INSIDE OF AHU-1	17,071	EXHAUST AIR	OPEN	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	3	AHU-1 EXHAUST AIR OUTLET	INSIDE OF AHU-1	17,071	EXHAUST AIR	CLOSE	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	4	AHU-1 PLATE HX BYPASS	INSIDE OF AHU-1	17,071	OUTSIDE AIR	CLOSE	MOD.	-	-	-	-	2,5.7,8
M04-MDPR	5	AHU-1 PLATE HX FACE	INSIDE OF AHU-1	17,071	OUTSIDE AIR	OPEN	MOD.	-	-	-	-	2,5.7,8
M04-MDPR	6	AHU-2 O/A INTAKE	INSIDE OF AHU-2	7,150	OUTSIDE AIR	CLOSE	ON/OFF	-	-	-	-	2,5,6.7,8
M04-MDPR	7	AHU-2 EXHAUST AIR FROM DUCT	INSIDE OF AHU-2	7,150	EXHAUST AIR	OPEN	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	8	AHU-2 EXHAUST AIR OUTLET	INSIDE OF AHU-2	7,150	EXHAUST AIR	CLOSE	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	9	AHU-2 PLATE HX BYPASS	INSIDE OF AHU-2	7,150	OUTSIDE AIR	CLOSE	MOD.	-	-	-	-	2,5.7,8
M04-MDPR	10	AHU-2 PLATE HX FACE	INSIDE OF AHU-2	7,150	OUTSIDE AIR	OPEN	MOD.	-	-	-	-	2,5.7,8
M04-MDPR	11	AHU-3 O/A INTAKE	INSIDE OF AHU-3	3,160	OUTSIDE AIR	CLOSE	ON/OFF	-	-	-	-	2,5,6.7,8
M04-MDPR	12	AHU-3 EXHAUST AIR FROM DUCT	INSIDE OF AHU-3	3,160	EXHAUST AIR	OPEN	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	13	AHU-3 EXHAUST AIR OUTLET	INSIDE OF AHU-3	3,160	EXHAUST AIR	CLOSE	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	14	AHU-3 PLATE HX BYPASS	INSIDE OF AHU-3	3,160	OUTSIDE AIR	CLOSE	MOD.	-	-	-	-	2,5.7,8
M04-MDPR	15	AHU-3 PLATE HX FACE	INSIDE OF AHU-3	3,160	OUTSIDE AIR	OPEN	MOD.	-	-	-	-	2,5.7,8
M04-MDPR	16	AHU-4 O/A INTAKE	INSIDE OF AHU-4	16,640	OUTSIDE AIR	CLOSE	ON/OFF	-	-	-	-	2,5,6.7,8
M04-MDPR	17	AHU-4 EXHAUST AIR FROM DUCT	INSIDE OF AHU-4	16,640	EXHAUST AIR	OPEN	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	18	AHU-4 EXHAUST AIR OUTLET	INSIDE OF AHU-4	16,640	EXHAUST AIR	CLOSE	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	19	AHU-4 RETURN	INSIDE OF AHU-4	16,640	EXHAUST AIR	OPEN	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	20	AHU-6 O/A INTAKE	INSIDE OF AHU-6	4,900	OUTSIDE AIR	CLOSE	ON/OFF	-	-	-	-	2,5,6.7,8
M04-MDPR	21	AHU-6 EXHAUST AIR FROM DUCT	INSIDE OF AHU-6	4,250	EXHAUST AIR	OPEN	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	22	AHU-6 EXHAUST AIR OUTLET	INSIDE OF AHU-6	4,250	EXHAUST AIR	CLOSE	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	23	AHU-6 PLATE HX BYPASS	INSIDE OF AHU-6	4,900	OUTSIDE AIR	CLOSE	MOD.	-	-	-	-	2,5.7,8
M04-MDPR	24	AHU-6 PLATE HX FACE	INSIDE OF AHU-6	4,250	OUTSIDE AIR	OPEN	MOD.	-	-	-	-	2,5.7,8
M04-MDPR	25	AHU-7 O/A INTAKE	INSIDE OF AHU-7	8,200	OUTSIDE AIR	CLOSE	ON/OFF	-	-	-	-	2,5,6.7,8
M04-MDPR	26	AHU-7 EXHAUST AIR FROM DUCT	INSIDE OF AHU-7	8,200	EXHAUST AIR	OPEN	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	27	AHU-7 EXHAUST AIR OUTLET	INSIDE OF AHU-7	8,200	EXHAUST AIR	CLOSE	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	28	AHU-7 PLATE HX BYPASS	INSIDE OF AHU-7	8,200	OUTSIDE AIR	CLOSE	MOD.	-	-	-	-	2,5.7,8
M04-MDPR	29	AHU-7 PLATE HX FACE	INSIDE OF AHU-7	8,200	OUTSIDE AIR	OPEN	MOD.	-	-	-	-	2,5.7,8
M04-MDPR	30	AHU-8 O/A INTAKE	INSIDE OF AHU-8	2,970	OUTSIDE AIR	CLOSE	ON/OFF	-	-	-	-	2,5,6.7,8
M04-MDPR	31	AHU-8 EXHAUST AIR FROM DUCT	INSIDE OF AHU-8	3,265	EXHAUST AIR	OPEN	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	32	AHU-8 EXHAUST AIR OUTLET	INSIDE OF AHU-8	3,265	EXHAUST AIR	CLOSE	ON/OFF	-	-	-	-	2,5.7,8
M04-MDPR	33	AHU-8 PLATE HX BYPASS	INSIDE OF AHU-8	2,970	OUTSIDE AIR	CLOSE	MOD.	-	-	-	-	2,5.7,8
M04-MDPR	34	AHU-8 PLATE HX FACE	INSIDE OF AHU-8	2,970	OUTSIDE AIR	OPEN	MOD.	-	-	-	-	2,5.7,8
M04-MDPR	35	AHU-9 O/A INTAKE	INSIDE OF AHU-9	5,550	OUTSIDE AIR	CLOSE	MOD.	-	-	-	-	2,5,6.7,8
M04-MDPR	36	AHU-9 O/A REGEN	INSIDE OF AHU-9	6,536	OUTSIDE AIR	CLOSE	ON/OFF	-	-	-	-	2,5,6,7,8
M04-MDPR	37	AHU-9 E/A REGEN	INSIDE OF AHU-9	6,536	EXHAUST AIR	CLOSE	ON/OFF	-	-	-	-	2,5,7,8
M04-MDPR	38	AHU-9 EXHAUST AIR OUTLET	INSIDE OF AHU-9	5,500	EXHAUST AIR	CLOSE	MOD.	-	-	-	-	2,5,7,8
M04-MDPR	39	NOT USED	-	-	-	-	-	-	-	-	-	-
M04-MDPR	40	AIR COMPRESSOR INTAKE	COMPRESSOR ROOM M04167	3,500	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	30	24	-	2,7,8,9
M04-MDPR	41	AIR COMPRESSOR EXHAUST	COMPRESSOR ROOM M04167	3,500	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	30	20	-	2,7,8
M04-MDPR	42	AIR COMPRESSOR ROOM COOLING SUPPLY	COMPRESSOR ROOM M04167	3,500	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	18	24	-	2,7,8,9
M04-MDPR	43	AIR COMPRESSOR ROOM RELIEF	COMPRESSOR ROOM M04167	3,500	RELIEF AIR	CLOSE	ON/OFF	24V/1PH/60HZ	30	32	-	2,7,8
M04-MDPR	44	LUBE ROOM EXHAUST	LUBE ROOM M04171	360	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	12	12	-	2,7,8
M04-MDPR	45	ELECTRICAL ROOM RELIEF	ELECTRICAL M04168	700	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	14	14	-	2,7,8
M04-MDPR	46	ELECTRICAL ROOM COOLING SUPPLY	ELECTRICAL M04168	700	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	14	14	-	2,7,8
M04-MDPR	47	ELECTRICAL ROOM RELIEF	ELECTRICAL MAIN M04126	4,200	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	38	32	-	2.7,8
M04-MDPR	48	ELECTRICAL ROOM COOLING SUPPLY	ELECTRICAL MAIN M04126	4,200	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	24	20	-	2,7,8,9
M04-MDPR	49	SPRINKLER VENTILATION INTAKE	SPRINKLER VALVE ROOM...	250	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	24	12	-	2,7,8,9
M04-MDPR	50	SPRINKLER VENTILATION EXHAUST	SPRINKLER VALVE ROOM...	250	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	10	10	-	2,7,8
M04-MDPR	51	ELECTRICAL ROOM RELIEF	ELECTRICAL SUB ROOM M04137	3,000	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	36	24	-	2,7,8
M04-MDPR	52	ELECTRICAL ROOM COOLING SUPPLY	ELECTRICAL SUB ROOM M04137	3,000	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	24	16	-	2,7,8,9
M04-MDPR	53	ELECTRICAL ROOM RELIEF	ELECTRICAL ROOM SUB M04147	3,000	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	24	16	-	2,7,8
M04-MDPR	54	ELECTRICAL ROOM COOLING SUPPLY	ELECTRICAL ROOM SUB M04147	3,000	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	24	16	-	2,7,8,9
M04-MDPR	55	SAND STOR VENTILATION EXHAUST	SAND STOR M04155	174	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	12	12	-	2,7,8
M04-MDPR	56	CLEAN SUPPLIES VENTILATION EXHAUST	SAND STOR M04155	870	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	12	12	-	2,7,8
M04-MDPR	57	BATTERY ROOM VENTILATION EXHAUST	BATTERY ROOM M04170	300	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	10	8	-	2,7,8
M04-MDPR	58	MECHANICAL ROOM VENTILATION SUPPLY	MECHAINCAL ROOM M04263	1,000	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	16	10	-	2,7,8,9
M04-MDPR	59	MECHANICAL ROOM VENTILATION RELIEF	MECHAINCAL ROOM M04263	1,000	SUPPLY AIR	CLOSE	ON/OFF	24V/1PH/60HZ	24	24	-	2,7,8
M04-MDPR	60	RESTROOM ROOM VENTILATION EXHAUST	RR M04158	75	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	-	-	6	2,7,8
M04-MDPR	61	ECONOMIZER RELIEF	ELEC SUB ROOM M04244	3,000	EXHAUST AIR	CLOSE	MOD.	24V/1PH/60HZ	24	16	-	2,7,8
M04-MDPR	62	ECONOMIZER O/A INTAKE	HALLWAY M04250	3,000	OUTSIDE AIR	CLOSE	MOD.	24V/1PH/60HZ	24	16	-	2,7,8,9
M04-MDPR	63	RETURN AIR ISOLATION	COMM DISTRIBUTION M04248	3,000	RETURN AIR	CLOSE	MOD.	24V/1PH/60HZ	24	16	-	2.7,8
M04-MDPR	64	ECONOMIZER RELIEF	ELEC MAIN M04126	1,800	EXHAUST AIR	CLOSE	MOD.	24V/1PH/60HZ	16	16	-	2.7,8
M04-MDPR	65	ECONOMIZER O/A INTAKE	ELEC MAIN M04126	1,800	OUTSIDE AIR	CLOSE	MOD.	24V/1PH/60HZ	14	18	-	2,7,8,9
M04-MDPR	66	RETURN AIR ISOLATION	MPOE M04127	1,800	RETURN AIR	CLOSE	MOD.	24V/1PH/60HZ	18	14	-	2.7,8
M04-MDPR	67	ELECTRICAL ROOM RELIEF	ELECTRICAL SUB ROOM M04244	3,000	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	36	36	-	2.7,8
M04-MDPR	68	ELECTRICAL ROOM COOLING SUPPLY	ELECTRICAL SUB ROOM M04244	3,000	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	24	16	-	2,7,8,9
M04-MDPR	69	ELECTRICAL ROOM RELIEF	ELECTRICAL M04242	700	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	14	14	-	2.7,8
M04-MDPR	70	ELECTRICAL ROOM COOLING SUPPLY	ELECTRICAL M04242	700	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	14	14	-	2,7,8
M04-MDPR	71	HAZMAT SA111	SAND STOR M04155	300	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	12	12	-	2,7,8
M04-MDPR	72	ECONOMIZER RELIEF	ELEC MAIN M04126	3,000	EXHAUST AIR	CLOSE	MOD.	24V/1PH/60HZ	20	18	-	2,7,8
M04-MDPR	73	ECONOMIZER O/A INTAKE	ELEC MAIN M04126	3,000	OUTSIDE AIR	CLOSE	MOD.	24V/1PH/60HZ	24	16	-	2,7,8,9
M04-MDPR	74	RETURN AIR ISOLATION	IDF/IT ROOM M04128	3,000	RETURN AIR	CLOSE	MOD.	24V/1PH/60HZ	24	16	-	2,7,8
M04-MDPR	75	EMERGENCY EXHAUST AIR TRANSFER	MSC M04161	2,050	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	30	14	-	2,7,8
M04-MDPR	76	EXHAUST AIR ISOLATION	PARTS STORAGE MEZZ M04262	1,025	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	30	16	-	2,7,8
M04-MDPR	77	EXHAUST AIR ISOLATION	PARTS STORAGE MEZZ M04262	1,025	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	30	16	-	2,7,8
M04-MDPR	78	EXHAUST AIR ISOLATION (SOLDERING)	ELEC MAIN M04126	350	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	-	-	8	2.7.8
M04-MDPR	79	EXHAUST AIR (HYDROGEN)	UPS M04125	425	EXHAUST AIR	OPEN	ON/OFF	24V/1PH/60HZ	12	10		2.7.8
M04-MDPR	80	MAKE-UP AIR	UPS M04125	425	OUTSIDE AIR	CLOSE	ON/OFF	24V/1PH/60HZ	24	12	-	2,7,8,9
M04-MDPR	81	LEVEL1 & 2 ISOLATION	DISPATCH OFFICE M04108	-	RETURN AIR	OPEN	ON/OFF	24V/1PH/60HZ	20	14	-	2,7,8
M04-MDPR	82	LEVEL1 & 2 ISOLATION	DISPATCH OFFICE M04108	-	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	20	14	-	2,7,8
M04-MDPR	83	LEVEL1 & 2 ISOLATION	UNIFORM LOCKER M04112	-	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	22	14	OVAL	2,7,8
M04-MDPR	84	LEVEL1 & 2 ISOLATION	UNIFORM LOCKER M04112	-	RETURN AIR	OPEN	ON/OFF	24V/1PH/60HZ	20	12	-	2,7,8
M04-MDPR	85	PAC-1A SUPPLY AIR	TRAINING M04221	6,500	SUPPLY AIR	CLOSE	ON/OFF	24V/1PH/60HZ	30	22	-	2,3,7,8
M04-MDPR	86	PAC-1A RETURN AIR	TRAINING M04221	6,500	RETURN AIR	CLOSE	ON/OFF	24V/1PH/60HZ	30	22	-	2,3,7,8
M04-MDPR	87	PAC-1A O/A INTAKE	INSIDE OF PAC-1A	6,500	OUTSIDE AIR	CLOSE	MOD.	-	-	-	-	2,5,7,8,9
M04-MDPR	88	PAC-1A EXHAUST AIR OUTLET	INSIDE OF PAC-1A	6,500	EXHAUST AIR	CLOSE	MOD.	-	-	-	-	2,5,7,8
M04-MDPR	89	PAC-1A RECIRCULTION	INSIDE OF PAC-1A	6,500	RETURN AIR	OPEN	MOD.	-	-	-	-	2,5,7,8
M04-MDPR	90	PAC-2A O/A INTAKE	INSIDE OF PAC-2A	6,500	OUTSIDE AIR	CLOSE	MOD.	-	-	-	-	2,5,7,8,9
M04-MDPR	91	PAC-2A EXHAUST AIR OUTLET	INSIDE OF PAC-2A	6,500	EXHAUST AIR	CLOSE	MOD.	-	-	-	-	2,5,7,8
M04-MDPR	92	PAC-2A RECIRCULTION	INSIDE OF PAC-2A	6,500	RETURN AIR	OPEN	MOD.	-	-	-	-	2,5,7,8
M04-MDPR	93	PAC-3A O/A INTAKE	INSIDE OF PAC-3A	6,500	OUTSIDE AIR	CLOSE	MOD.	-	-	-	-	2,5,7,8,9
M04-MDPR	94	PAC-3A EXHAUST AIR OUTLET	INSIDE OF PAC-3A	6,500	EXHAUST AIR	CLOSE	MOD.	-	-	-	-	2,5,7,8
M04-MDPR	95	PAC-3A RECIRCULTION	INSIDE OF PAC-3A	6,500	RETURN AIR	OPEN	MOD.	-	-	-	-	2,5,7,8
M04-MDPR	96	PAC-2A SUPPLY AIR EMERGENCY ISOLATION	BACKUP SERVER M04249	6,500	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	24	28	-	2,7,8
M04-MDPR	97	PAC-3A SUPPLY AIR EMERGENCY ISOLATION	BACKUP SERVER M04249	6,500	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	24	28	-	2,7,8
M04-MDPR	98	PAC RETURN AIR EMERGENCY ISOLATION	BACKUP SERVER M04249	6,500	RETURN AIR	OPEN	ON/OFF	24V/1PH/60HZ	50	26	-	2,7,8
M04-MDPR	99	ACU-1A RETURN AIR EMERGENCY ISOLATION	COMM DISTRIBUTION M04248	3,000	RETURN AIR	OPEN	ON/OFF	24V/1PH/60HZ	24	16	-	2,7,8
M04-MDPR	100	ACU-1A SUPPLY AIR EMERGENCY ISOLATION	COMM DISTRIBUTION M04248	3,000	SUPPLY AIR	OPEN	ON/OFF	24V/1PH/60HZ	24	16	-	2,7,8
M04-MDPR	101	EFAN-7 EXHAUST AIR	LIFT REPAIR M04145	3,380	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	24	18	-	2,7,8
M04-MDPR	102	EFAN-6 EXHAUST AIR	WASH EQUIP M04146	445	EXHAUST AIR	CLOSE	ON/OFF	24V/1PH/60HZ	-	-	12	2,7,8

NOTES:
1 NOT USED
2 CONTROL DAMPERS SHALL BE SPRING RETURN UNLESS NOTED OTHERWISE
3 PROVIDED WITH EMERGENCY POWER SUPPLY
4 DAMPER AND ACTUATOR PROVIDED WITH SPECIFIED FANS (SEE FAN SCHEDULE)
5 DAMPER COME COMPLETE WITH AIR HANDLING UNIT, SIZE DEPENDENT TO UNIT
6 PROVIDE 304 STAINLESS STEEL DAMPER
7 PROVIDE END SWTICH
8 MAXIMUM LEAKAGE RATE OF 4CFM/FT2 AT 1.0 INCH WATER GAUGE
9 SS STEEL DAMPER

1 Note 1 and 6 no longer apply for AHU (M04-MDPR-1 through 30. Please see RFI 381 for outside air intake damper requirements.

2 Per DB RFI 00450, non-insulated dampers are acceptable

11/29/2019 2:24:40 PM
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DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
C	2020.05.08				CB 0437
B	2019.11.26	SC	MG	VJ	CB#051
A	2019.06.17	VJ	MG	VJ	CB#019
0	2018.09.19	VJ	MG	VJ	ISSUED FOR CONSTRUCTION

DESIGNED BY: V. JOSHI
DRAWN BY: S. CHUNG
CHECKED BY: M. GUO
APPROVED BY: V. JOSHI

RANDALL C. WILKINSON, STATE OF WASHINGTON, 35360, REGISTERED PROFESSIONAL ENGINEER
2019.11.26
2018.09.19

HENSEL PHELPS Plan. Build. Manage.
coterra ENGINEERING
TRES WEST ENGINEERS
rolluda architects architecture planning interior design
Karen Kiest | Landscape Architects
Stantec
VIA
kpff
ELCON ASSOCIATES, INC. ENGINEERS—CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY: RICHARD LEWIS
DATE: 2018.09.19
REVIEWED BY: BILL FERRIS
DATE: 2018.09.19

SCALE: NTS
FILENAME: M200-M04-M-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
MECHANICAL SCHEDULE

DRAWING NO.: **M04-MHS014**
FACILITY ID: M04
SHEET No:
REV: C

1 CB 0587A

FAN SCHEDULE

UNIT IDENTIFICATION							FAN WHEEL					FAN MOTOR					ELECTRICAL				
MARK	NUMBER	UNIT/AREA SERVED	MAX AIRFLOW (CFM)	MIN AIRFLOW (CFM)	ESP (IN-WG)	CONTROL	TYPE	FAN CONTRUCTION	ARRANGEMENT	SPEED (RPM)	MIN WHEEL DIA (IN)	BHP	HP	SPEED (RPM)	MOTOR TYPE	MIN. MOTOR EFFICIENCY	VOLTS	PHASE	MANUFACTURER	MODEL NUMBER	NOTES
M04-SFAN	1	ELEC MAIN M04126	4,200	0	0.80	TEMP. SENSOR	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,645	-	1.60	2	1,725	EC MOTOR	85	208	1	GREENHECK	SQ-160-VG	2,3,4,7
M04-SFAN	2	ELEC ROOM M04137	3,000	0	0.80	TEMP. SENSOR	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,309	-	0.83	2	1,725	EC MOTOR	85	208	1	GREENHECK	SQ-160-VG	2,3,4,7
M04-SFAN	3	MECH ROOM M04263	1,000	0	0.75	TEMP. SENSOR	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,666	-	0.22	0.25	1,725	EC MOTOR	85	115	1	GREENHECK	SQ-100-VG	2,3,4,7
M04-SFAN	4	COMPRESSOR RM M04167	3,500	0	0.75	TEMP. SENSOR	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,426	-	1.05	2	1,725	EC MOTOR	85	208	1	GREENHECK	SQ-160-VG	2,3,4,7
M04-SFAN	5	ELEC ROOM M04147	3,000	0	1.20	TEMP. SENSOR	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,437	-	1.13	2	1,725	EC MOTOR	85	208	1	GREENHECK	SQ-160-VG	2,3,4,7
M04-SFAN	6	ELEC ROOM M04151	3,000	0	0.90	TEMP. SENSOR	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,342	-	0.91	2	1,725	EC MOTOR	85	208	1	GREENHECK	SQ-160-VG	2,3,4,7
M04-SFAN	7	ELEC ROOM M04242	700	0	0.75	TEMP. SENSOR	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	2,149	-	0.42	0.75	2,200	EC MOTOR	85	208	1	GREENHECK	SQ-98-VG	2,3,4,7
M04-SFAN	8	ELEC ROOM M04168	700	0	0.75	TEMP. SENSOR	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	2,149	-	0.42	0.75	2,200	EC MOTOR	85	208	1	GREENHECK	SQ-98-VG	2,3,4,7
M04-EFAN	1	BATTERY RM M04170	300	300	1.0	BMS	CENTRIFUGAL INLINE (BELT)	ALUM. WHEEL AND HOUSING	BACKWARD INCLINED	1,715	-	0.22	0.33	1,725	EXP. PROOF	70	115	1	GREENHECK	BSQ-80-3	2,3,4,5,6,12
M04-EFAN	2	SPRINKLER RM M04124	250	0	0.75	TEMP. SENSOR	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,899	-	0.22	0.5	2,500	EC MOTOR	85	115	1	GREENHECK	SQ-97-VG	2,3,4,7
M04-EFAN	3	SAND STOR M04155	170	0	0.50	BMS	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,447	-	0.10	0.25	1,725	EC MOTOR	85	115	1	GREENHECK	SQ-97-VG	2,3,4,8
M04-EFAN	4	LUBE RM M04171	360	0	0.50	BMS	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,721	-	0.08	0.1	1,725	EC MOTOR	85	115	1	GREENHECK	SQ-85-VG	2,3,4,8
M04-EFAN	5	CLEAN SUPPLIES M04153	870	0	0.50	BMS	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,790	-	0.31	0.75	2,200	EC MOTOR	85	208	1	GREENHECK	SQ-99-VG	2,3,4,8
M04-EFAN	6	WASH EQUIP. M04146	445	0	0.65	BMS	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,428	-	0.14	0.25	1,725	EC MOTOR	85	115	1	GREENHECK	SQ-99-VG	2,3,4,8
M04-EFAN	7	TRUCK WASH M04149	3,380	0	0.65	LOCAL ON/OFF	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,487	-	1.23	2	1,725	EC MOTOR	85	208	1	GREENHECK	SQ-160-VG	2,3,4,9
M04-EFAN	8	RR M04158	75	0	0.50	INTERLOCK	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,725	-	0.03	0.1	1,725	EC MOTOR	85	115	1	GREENHECK	SQ-70-VG	2,3,4,10
M04-EFAN	9	BATTERY RM M04170	300	300	1.0	BMS	CENTRIFUGAL INLINE (BELT)	ALUM. WHEEL AND HOUSING	BACKWARD INCLINED	1,715	-	0.22	0.33	1,725	EXP. PROOF	70	115	1	GREENHECK	BSQ-80-3	2,3,4,5,6,12
M04-EFAN	10	WELDING SHOP M04136	800	600	-	LOCAL ON/OFF	DIRECT DRIVE BLOWER	-	-	-	-	-	1.5	-	-	-	115	1	AIRFLOW SYSTEM	PCH-1	1
M04-EFAN	11	HVAC REPAIR M04251	800	600	-	LOCAL ON/OFF	DIRECT DRIVE BLOWER	-	-	-	-	-	1.5	-	-	-	115	1	AIRFLOW SYSTEM	PCH-1	1
M04-EFAN	12	ELECT. REPAIR M04131	350	0	2.5	LOCAL ON/OFF	CENTRIFUGAL INLINE (BELT)	ALUM. WHEEL AND HOUSING	BACKWARD INCLINED	2,608	-	0.65	1	1,725	EXP. PROOF	70	208	1	GREENHECK	BSQ-80-10	2,3,4,5,9
M04-EFAN	13	HAZMAT M04154	300	0	0.5	BMS	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,296	-	0.10	0.25	1,725	EC MOTOR	85	115	1	GREENHECK	SQ-98-VG	2,3,4,8
M04-EFAN	14	COMM DISTRIBUTION M04248	3,000	0	0.75	BMS	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,292	-	0.80	1	1,300	EC MOTOR	85	208	1	GREENHECK	SQ-160-VG	2,3,4,8,11
M04-EFAN	15	IDF/IT ROOM M04128	3,000	0	0.75	BMS	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,292	-	0.80	1	1,300	EC MOTOR	85	208/115	1	GREENHECK	SQ-160-VG	2,3,4,8,11
M04-EFAN	16	MPOE M04127	1,800	0	0.75	BMS	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,312	-	0.45	0.75	1,500	EC MOTOR	85	208/115	1	GREENHECK	SQ-140-VG	2,3,4,8,11
M04-EFAN	17	UPS M04125	425	0	0.65	BMS	CENTRIFUGAL INLINE (DIRECT)	-	BACKWARD INCLINED	1,605	-	0.20	0.25	1,725	EC MOTOR	85	115	1	GREENHECK	BSQ-80-4	2,3,4,8

NOTES:
1 PORTABLE TYPE WELDING SMOKE EXHAUST SYSTEM, C/W SPARK RESISTANT TYPE FILTER, HEPA FILTER, PRESSURE GAUGE KIT, SILENCER.
2 REFER TO ELEC DRAWINGS FOR MOTOR STARTER AND DISCONNECT SWITCH
3 FANS SHALL HAVE MINIMUM PERFORMANCE AT SPECIFIED RATING CONDITIONS NOT LESS THAN THE VALUES INDICATED OF THE LATEST WSEC.
4 REFER TO DAMPER SCHEDULE FOR CONTROL DAMPER ACTUATOR TYPE
5 SPARK PROOF CONSTRUCTION AND MOTOR OUT OF AIR STREAM
6 INTERLOCK WITH BATTERY CHARGING SYSTEM AND BMS SHALL MONITOR
7 FAN'S CONTROL BY LOCAL THERMOSTAT
8 CONTROL AND MONITOR BY BMS SYSTEM
9 CONTROL BY LOCAL ON/OFF SWITCH
10 EXHAUST FAN INTERLOCK WITH LIGHTING SWITCH
11 EXHAUST FAN INTERLOCK WITH ACU UNIT DURING ECONOMIZER MODE
12 COMPETE WITH BACK DRAFT DAMPER

ELECTRIC DOOR AIR CURTAIN SCHEDULE

UNIT IDENTIFICATION			FANS			HEATING COIL					PHYSICAL CHARACTERISTICS					ELECTRICAL				
MARK	NUMBER	ROOM SERVED	AIRFLOW (CFM)	NO. OF FANS	HP (EACH)	CAPACITY (MBH)	EDB (F)	LDB (F)	KW	NO OF STAGES	MOUNTING	WEIGHT (LBS)	HEIGHT (IN)	WIDTH (IN)	LENGTH (IN)	VOLTS	PHASE	MANUFACTURER	MODEL NUMBER	NOTES
M04-ACT	1	LRV WASH POSITION M04159	19,100	1	15	-	-	-	-	-	22'	835	21	147	32.3	480	3	BERNER	IDC20-1144A	1,2,3,4,5
M04-ACT	2	LRV WASH POSITION M04159	19,100	1	15	-	-	-	-	-	22'	835	21	147	32.3	480	3	BERNER	IDC20-1144A	1,2,3,4,5

NOTES:
1 FRONT INTAKE
2 NEMA 4X CONTROL PANEL ENCLOSURE
3 ALUMINIZED STEEL CABINET WITH A GRAY ZINC EPOXY PRIMER AND TOP COAT ON THE INTERNAL AND EXTERNAL CABINET
4 STAINLESS STEEL BLOWER SHAFTS, GALVANIZED STEEL FAN WHEELS AND HOUSINGS & WATERPROOF JUNCTION BOXES
5 UNIT SUITABLE FOR WET ENVIRONMENT

IT/SERVER ROOM ROOF TOP UNIT SCHEDULE - PART A

UNIT IDENTIFICATION					AIRFLOW						GENERAL				SUPPLY SIDE FILTER			
												MAXIMUM UNIT DIMENSIONS						
MARK	NUMBER	TYPE	LOCATION	AREA SERVED	MAX SUPPLY AIR (CFM)	MIN SUPPLY AIR (CFM)	MAX RETURN AIR (CFM)	MIN RETURN AIR (CFM)	DESIGN OUTSIDE AIR (CFM)	MIN OUTSIDE AIR (CFM)	UNIT OPERATING WEIGHT (LBS)	HEIGHT (IN)	WIDTH (IN)	LENGTH (IN)	FILTER TYPE	MERV RATING	MAX APD (IN-WG)	LENGTH (IN)
M04-PAC	1A	COMPUTER ROOM AIR HANDLING UNIT	ROOF	BACKUP SERVER ROOM M04249	6,500	0	6,500	0	850	850	5,000	48	72	286	PLEATED	8	0.50	4
M04-PAC	2A	COMPUTER ROOM AIR HANDLING UNIT	ROOF	BACKUP SERVER ROOM M04249	6,500	0	6,500	0	850	850	5,000	48	72	286	PLEATED	8	0.50	4
M04-PAC	3A	COMPUTER ROOM AIR HANDLING UNIT	ROOF	BACKUP SERVER ROOM M04249	6,500	0	6,500	0	850	850	5,000	48	72	286	PLEATED	8	0.50	4
M04-PAC	4A	COMPUTER ROOM AIR HANDLING UNIT	ROOF	SCADA M04247	9,500	0	9,500	0	0	0	6,000	59	80	295	PLEATED	8	0.50	4

A

IT/SERVER ROOM ROOF TOP UNIT SCHEDULE - PART B

UNIT IDENTIFICATION		COMPONENTS							CONDENSER SECTION				HUMIDIFIER	FANS														ELECTRICAL AIR HANDLING UNIT					UNIT IDENTIFICATION		CAPACITY AND PERFORMANCE				ELECTRICAL CONDENSING UNIT					MOUNTING SUPPORT STYLE	MANUFACTURER	NOTES
		DX COOLING COIL							COMPRESSORS			FANS	CAPACITY	SUPPLY						RETURN																										
MARK	NUMBER	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	EDB (F)	EWB (F)	LDB (F)	LWB (F)	MAX APD (IN-WG)	NO. OF COMP.	NO. OF STAGES	TYPE OF COMP.	NO. OF FANS	LB/HR	ESP (IN-WG)	TSP (IN-WG)	QUANTITY	BHP	HP	SPEED (RPM)	ESP (IN-WG)	TSP (IN-WG)	QUANTITY	BHP	HP	SPEED (RPM)	VOLTS	PHASE	MCA	MOP	115V SERVICE REQUIRED	MARK	NUMBER	NOMINAL CAPACITY (TONS)	EER	REFRIG TYPE	REFRIG CHARGE	VOLTS	PHASE	MCA	MOP	115V SERVICE REQUIRED			
M04-PAC	1A	162.0	160.0	70.0	57.0	47.0	47.0	0.72	2	2	SCROLL	2	-	0.75	2.73	1.0	4.31	5	1,556	0.5	1.55	1.0	2.80	3	1,358	460	3	15.0	-	YES	M04-PAC	1B	15.0	12.7	R410A	12	460	3	32.0	-	NO	ROOF CURB	TRANE	1 TO 19
M04-PAC	2A	162.0	160.0	70.0	57.0	47.0	47.0	0.72	2	2	SCROLL	2	-	0.75	2.73	1.0	4.31	5	1,556	0.5	1.55	1.0	2.80	3	1,358	460	3	15.0	-	YES	M04-PAC	2B	15.0	12.7	R410A	12	460	3	32.0	-	NO	ROOF CURB	TRANE	1 TO 17,19
M04-PAC	3A	162.0	160.0	70.0	57.0	47.0	47.0	0.72	2	2	SCROLL	2	-	0.75	2.73	1.0	4.31	5	1,556	0.5	1.55	1.0	2.80	3	1,358	460	3	15.0	-	YES	M04-PAC	3B	15.0	12.7	R410A	12	460	3	32.0	-	NO	ROOF CURB	TRANE	1 TO 17,19
M04-PAC	3A	240.0	235.0	70.0	57.0	47.0	47.0	0.68	2	2	SCROLL	2	-	0.8	2.68	1.0	6.2	7.5	1,514	0.5	1.43	1.0	3.78	5	1,337	460	3	22.0	-	YES	M04-PAC	4B	25.0	11.7	R410A	30	460	3	49.0	-	NO	ROOF CURB	TRANE	1 TO 17,19

NOTES
1 FILTERS ARE TO BE PROVIDED WITH MERV 8 FILTER. MAXIMUM PRESSURE DROP SHALL BE BASED ON TOTAL PRESSURE DROP ACROSS THE FILTER BANK WITH DIRTY FILTERS.
2 REFER TO MECHANICAL DETAILS FOR CURB FILLING MATERIAL REQUIREMENTS.
3 ACTUAL EQUIPMENT SIZE TO BE DETERMINED AFTER IT EQUIPMENT LOAD ARE FINALIZED.
4 DX CONDENSING UNIT TO BE SPERATE FROM THE AIR HANDLING UNIT.
5 PROVIDE MICROCHANNEL FIN MATERIAL FOR CONDENSING UNIT
6 MIN. 1" REIGID INSULATION FOR WALL CONSTRUCTION
7 HINGED ACCESS DOORS
8 STAINLESS STEEL CONDENSATE DRAIN PAN
9 REFER TO ELEC DRAWINGS FOR MOTOR STARTER AND DISCONNECT SWITCH
10 CLASS 2 FANS
11 ELECTRONICALLY COMMUTATED FAN WHERE AVAILABLE
12 VSD FOR SUPPLY AND EXHAUST FANS
13 PROVIDE ROOF CURB WHICH SHALL BE MIN. OF 14" HIGH AND 6" ABOVE THE ROOF INSULATION.
14 NOT USED
15 LED ACCESS LIGHT
16 PROVIDE 120V OUTLET
17 PROVIDE 316 STAINLESS STEEL DAMPERS FOR AIR WHICH PROCESS OUTDOOR AIR.
18 STANDBY UNIT.
19 UNIT C/W OUTDOOR,MIXING AND EXHAUST AIR DAMPER

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DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
B	2020.08.18				CB 0587A
A	2019.09.12	SC	MG	VJ	DB012
0	2018.09.19	VJ	MG	VJ	ISSUED FOR CONSTRUCTION

DESIGNED BY: V. JOSHI
DRAWN BY: S. CHUNG
CHECKED BY: M. GUO
APPROVED BY: V. JOSHI
2018.09.19

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS | Karen Kiest Landscape Architects

SUBMITTED BY: RICHARD LEWIS
DATE: 2018.09.19
REVIEWED BY: BILL FERRIS
DATE: 2018.09.19

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SCALE: NTS
FILENAME: M200-M04-M-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
MECHANICAL SCHEDULE

DRAWING NO.: M04-MHS015
FACILITY ID: M04
SHEET No: REV: B

HVAC EXPANSION TANK SCHEDULE

UNIT IDENTIFICATION			TANK							SYSTEM						MANUFACTURER	MODEL NUMBER	NOTES
												OPERATING TEMPERATURE		OPERATING PRESSURE				
MARK	NUMBER	SYSTEM SERVED	TYPE	ASME CONSTRUCTION	TANK VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	DIAMETER (IN)	HEIGHT (IN)	WEIGHT (LBS)	ESTIMATED SYSTEM VOLUME (GAL)	FLUID TYPE	MIN TEMP (F)	MAX TEMP (F)	MIN PRESS (PSIG)	MAX PRESS (PSIG)			
M04-ET	1	GLYCOL HEATING WATER	DIAPHRAGM	SECTION 8, DIV 1	211.0	84.0	30	82	590	3,000	25% GYLCOL	8	150	15.0	30.0	AMTROL	AX-280V	1,2
M04-ET	2	HEATING WATER	DIAPHRAGM	SECTION 8, DIV 1	132.0	46.0	30	58	401	800	WATER	8	150	15.0	30.0	AMTROL	AX-240V	1,2
M04-ET	3	GLYCOL CHILLED WATER	DIAPHRAGM	SECTION 8, DIV 1	10.9	2.4	12	27	47	200	25% GYLCOL	50	80	15.0	30.0	AMTROL	AX-20V	1,2
M04-ET	4	CHILLED WATER	DIAPHRAGM	SECTION 8, DIV 1	21.7	11.3	16	30	76	1,100	WATER	50	80	15.0	30.0	AMTROL	AX-40V	1,2

NOTES:

1 SUITABLE FOR MAXIMUM WORKING PRESSURE OF 125PSIG AND MAXIMUM WORKING TEMPERATURE OF 240F
2 ASME RATED C/W SIGHT GLASS AND SEISMIC RESTRAINTS.

WATER TO WATER HEAT EXCHANGER SCHEDULE

UNIT IDENTIFICATION			TYPE	CAPACITY (MBH)	SOURCE SIDE					GENERATION SIDE					DIMENSIONS				MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	AREA / SYSTEM SERVED			FLUID	FLOW (GPM)	EWT (F)	LWT (F)	MAX WPD (PSI)	FLUID	FLOW (GPM)	EWT (F)	LWT (F)	WPD (PSI)	WIDTH / DIAMETER (IN)	LENGTH (IN)	HEIGHT (IN)	OPERATING WEIGHT (LBS)			
M04-HX	1	CHILLED WATER	PLATE TYPE	473.0	25% GLYCOL	99.0	50.0	50.0	7.25	WATER	88.0	62.8	52.0	7.25	5	12	21	210	SWEP	B28H	1
M04-HX	2	HEATING WATER	PLATE TYPE	5,702.0	WATER	380.0	115.0	145.0	7.25	25% GLYCOL	420.0	111.0	140.0	7.25	12	37	39	1,660	SWEP	B439M	1

NOTES:

1 BRAZED PLATE HEAT EXCHANGER

DUCT SILENCER SCHEDULE

UNIT IDENTIFICATION			AIRFLOW INFORMATION				PHYSICAL PROPERTIES							DYNAMIC INSERTION LOSSES DB								MANUFACTURER	MODEL NUMBER	NOTES
										DUCT DIMENSIONS		CASING DIMENSIONS												
MARK	NUMBER	UNIT/AREA SERVED	AIRFLOW (CFM)	DEVICE APD (IN-WG)	MAX APD W/ SYSTEM EFFECT (IN-WG)	VELOCITY (FPM)	TYPE	CASING GAUGE	FILL	HEIGHT (IN)	WIDTH (IN)	HEIGHT (IN)	WIDTH (IN)	LENGTH (IN)	63	125	250	500	1K	2K	4K	8K			
M04-ATTN	1	AHU-8-S	2,972	0.17	-	1,091	PERFORATED	22	GLASS FIBER	16	24	16	24	36	2	6	13	20	24	24	14	8	KINETIC NOISE NONTROL	KCRS	-
M04-ATTN	2	AHU-8-R	3,269	0.21	-	1,204	PERFORATED	22	GLASS FIBER	16	24	16	24	42	2	7	15	27	34	30	18	10	KINETIC NOISE NONTROL	KCRS	
M04-ATTN	3	AHU-9-S	5,300	0.20	-	1,409	PERFORATED	20 (2) A	GLASS FIBER	18	30	18	30	30	1	5	10	13	10	9	8	4	KINETIC NOISE NONTROL	KCRS	(2) A
M04-ATTN	4	AHU-9-R	5,300	0.16	-	1,409	PERFORATED	22	GLASS FIBER	18	30	18	30	60	8	12	18	27	22	15	13	7	KINETIC NOISE NONTROL	KCRS	
M04-ATTN	5	FCU-2-S	900	0.11	-	579	-	-	-	14	16	14	16	36	0	7	0	0	0	0	0	0	VIBRO-ACOUSTICS	RD-LV-F8	1 A

NOTES:

1 NOT USED
2 PROVIDE MIN. OF 20 GAUGE OUTER CASING (A)

HOT WATER UNIT HEATER SCHEDULE

UNIT IDENTIFICATION			TYPE	NOMINAL CAPACITY (MBH)	DESIGN CAPACITY (MBH)	FAN		AIR			HOT WATER					ELECTRICAL		CONTROL TYPE	MOUNT HEIGHT (FT) BOTTOM	MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	ROOM SERVED				SPEED (RPM)	HP	AIRFLOW (CFM)	EDB (F)	LDB (F)	FLUID TYPE	FLOW (GPM)	EWT (F)	LWT (F)	MAX WPD (FT)	VOLTS	PHASE					
M04-HTR	1	M04139 - FLAT FLOOR REPAIR POSITION	HORIZONTAL	201.95	92.7	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	19'-6"	MODINE	HSB258SB04SA	1
M04-HTR	2	M04001 - S & I POSITION	HORIZONTAL	201.95	92.7	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	19'-6"	MODINE	HSB258SB04SA	1
M04-HTR	3	M04001 - S & I POSITION	HORIZONTAL	201.95	92.7	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	19'-6"	MODINE	HSB258SB04SA	1
M04-HTR	4	M04001 - S & I POSITION	HORIZONTAL	201.95	92.7	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	19'-6"	MODINE	HSB258SB04SA	1
M04-HTR	5	M04140 - FLAT FLOOR REPAIR POSITION	HORIZONTAL	201.95	92.7	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	19'-6"	MODINE	HSB258SB04SA	1
M04-HTR	6	M04139 - FLAT FLOOR REPAIR POSITION	HORIZONTAL	201.95	92.7	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	19'-6"	MODINE	HSB258SB04SA	1
M04-HTR	7	M04002 - S & I POSITION	HORIZONTAL	201.95	92.7	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	19'-6"	MODINE	HSB258SB04SA	1
M04-HTR	8	M04002 - S & I POSITION	HORIZONTAL	201.95	92.7	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	19'-6"	MODINE	HSB258SB04SA	1
M04-HTR	9	M04002 - S & I POSITION	HORIZONTAL	201.95	92.7	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	19'-6"	MODINE	HSB258SB04SA	1
M04-HTR	10	M04141 - LIFT REPAIR POSITION	HORIZONTAL	201.95	86.7	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	19'-6"	MODINE	HSB258SB04SA	1
M04-HTR	11	M04144 - WHEEL TRUING WASTE	HORIZONTAL	201.95	86.7	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	19'-6"	MODINE	HSB258SB04SA	1
M04-HTR	12	M04145 - LIFT REPAIR POSITION	HORIZONTAL	201.95	86.7	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	19'-6"	MODINE	HSB258SB04SA	1
M04-HTR	13	M04142 - TRUCK STORAGE	HORIZONTAL	201.95	86.7	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	19'-6"	MODINE	HSB258SB04SA	1
M04-HTR	14	M04143 - TRUCK SHOP	HORIZONTAL	201.95	92.7	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	15'-6"	MODINE	HSB258SB04SA	1
M04-HTR	15	M04156 - INTERIOR CLEAN POSITION	HORIZONTAL	238.48	107.3	1,140	3/4	5,980	60.0	76.0	25% PG	10.8	140.0	120.0	0.1	208	3	2 WAY-PICCV	19'-6"	MODINE	PT333SB04SA	1
M04-HTR	16	NOT USED																				
M04-HTR	17	M04161 - MSC	HORIZONTAL	201.95	82.4	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	11'-0"	MODINE	HSB258SB04SA	1
M04-HTR	18	M04161 - MSC	HORIZONTAL	201.95	82.4	1,140	1/2	4,560	60.0	78.0	25% PG	9.7	140.0	120.0	1.4	208	3	2 WAY-PICCV	11'-0"	MODINE	HSB258SB04SA	1
M04-HTR	19	M04262 - PARTS STORAGE MEZZ	HORIZONTAL	130.94	51.6	1,075	1/3	3,240	60.0	77.0	25% PG	6.4	140.0	120.0	2.2	115	1	2 WAY-PICCV	13'-0"	MODINE	HSB165SB01SA	1
M04-HTR	20	M04262 - PARTS STORAGE MEZZ	HORIZONTAL	130.94	51.6	1,075	1/3	3,240	60.0	77.0	25% PG	6.4	140.0	120.0	2.2	115	1	2 WAY-PICCV	13'-0"	MODINE	HSB165SB01SA	1
M04-HTR	21	M04262 - PARTS STORAGE MEZZ	HORIZONTAL	130.94	51.6	1,075	1/3	3,240	60.0	77.0	25% PG	6.4	140.0	120.0	2.2	115	1	2 WAY-PICCV	13'-0"	MODINE	HSB165SB01SA	1
M04-HTR	22	M04171 - LUBE ROOM	HORIZONTAL	12.56	5.0	1,550	1/60	340	60.0	75.0	25% PG	0.6	140.0	120.0	0.1	115	1	2 WAY-PICCV	9-0"	MODINE	HSB18SB01SA	1
M04-HTR	23	M04244 - ELEC SUB ROOM	HORIZONTAL	12.56	5.0	1,550	1/60	340	60.0	75.0	25% PG	0.6	140.0	120.0	0.1	115	1	2 WAY-PICCV	9-0"	MODINE	HSB18SB01SA	1
M04-HTR	24	M04167 - COMPRESSOR	HORIZONTAL	12.56	5.0	1,550	1/60	340	60.0	75.0	25% PG	0.6	140.0	120.0	0.1	115	1	2 WAY-PICCV	9'-0"	MODINE	HSB18SB01SA	1
M04-HTR	25	M04163 - TOOL STORAGE	HORIZONTAL	12.56	5.0	1,550	1/60	340	60.0	75.0	25% PG	0.6	140.0	120.0	0.1	115	1	2 WAY-PICCV	9'-0"	MODINE	HSB18SB01SA	1
M04-HTR	26	M04139 - FLAT FLOOR REPAIR POSITION	HORIZONTAL	130.94	61.3	1,075	1/3	3,240	60.0	77.0	25% PG	6.4	140.0	120.0	2.2	115	1	2 WAY-PICCV	10'-10"	MODINE	HSB165SB01SA	1
M04-HTR	27	M04139 - FLAT FLOOR REPAIR POSITION	HORIZONTAL	130.94	61.3	1,075	1/3	3,240	60.0	77.0	25% PG	6.4	140.0	120.0	2.2	115	1	2 WAY-PICCV	9'-5"	MODINE	HSB165SB01SA	1
M04-HTR	28	M04251 - PANTOGRAPH/ROOF/HVAC/STOR	HORIZONTAL	30.94	12.8	1,600	1/12	730	60.0	76.0	25% PG	1.3	140.0	120.0	0.1	115	1	2 WAY-PICCV	10'-0"	MODINE	HSB47SB01SA	1
M04-HTR	29	M04251 - PANTOGRAPH/ROOF/HVAC/STOR	HORIZONTAL	30.94	12.8	1,600	1/12	730	60.0	76.0	25% PG	1.3	140.0	120.0	0.1	115	1	2 WAY-PICCV	10'-0"	MODINE	HSB47SB01SA	1
M04-HTR	30	M04251 - PANTOGRAPH/ROOF/HVAC/STOR	HORIZONTAL	30.94	12.8	1,600	1/12	730	60.0	76.0	25% PG	1.3	140.0	120.0	0.1	115	1	2 WAY-PICCV	10'-0"	MODINE	HSB47SB01SA	1
M04-HTR	31	M04251 - PANTOGRAPH/ROOF/HVAC/STOR	HORIZONTAL	30.94	12.8	1,600	1/12	730	60.0	76.0	25% PG	1.3	140.0	120.0	0.1	115	1	2 WAY-PICCV	10'-0"	MODINE	HSB47SB01SA	1
M04-HTR	32	M04251 - PANTOGRAPH/ROOF/HVAC/STOR	HORIZONTAL	30.94	12.8	1,600	1/12	730	60.0	76.0	25% PG	1.3	140.0	120.0	0.1	115	1	2 WAY-PICCV	10'-0"	MODINE	HSB47SB01SA	1
M04-HTR	33	M04251 - PANTOGRAPH/ROOF/HVAC/STOR	HORIZONTAL	30.94	12.8	1,600	1/12	730	60.0	76.0	25% PG	1.3	140.0	120.0	0.1	115	1	2 WAY-PICCV	10'-0"	MODINE	HSB47SB01SA	1
M04-HTR	34	M04125 - SPRINKLER VALVE ROOM	HORIZONTAL	30.94	12.8	1,600	1/12	730	60.0	76.0	25% PG	1.3	140.0	120.0	0.1	115	1	2 WAY-PICCV	10'-0"	MODINE	HSB47SB01SA	1
M04-HTR	35	M04146 - WASH EQUIP	HORIZONTAL	30.94	12.8	1,600	1/12	730	60.0	76.0	25% PG	1.3	140.0	120.0	0.1	115	1	2 WAY-PICCV	13'-0"	MODINE	HSB47SB01SA	1
M04-HTR	36	M04146 - WASH EQUIP	HORIZONTAL	30.94	12.8	1,600	1/12	730	60.0	76.0	25% PG	1.3	140.0	120.0	0.1	115	1	2 WAY-PICCV	13'-0"	MODINE	HSB47SB01SA	1
M04-HTR	37	M04155 - SAND STOR	HORIZONTAL	12.56	5.5	1,550	1/60	340	60.0	75.0	25% PG	0.6	140.0	120.0	0.1	115	1	2 WAY-PICCV	9'-0"	MODINE	HSB18SB01SA	1
M04-HTR	38	M04263 - MECH	HORIZONTAL	30.94	12.8	1,600	1/12	730	60.0	76.0	25% PG	1.3	140.0	120.0	0.1	115	1	2 WAY-PICCV	15'-0"	MODINE	HSB47SB01SA	1
M04-HTR	39	M04263 - MECH	HORIZONTAL	30.94	12.8	1,600	1/12	730	60.0	76.0	25% PG	1.3	140.0	120.0	0.1	115	1	2 WAY-PICCV	15'-0"	MODINE	HSB47SB01SA	1
M04-HTR	40	M04138 - AISLE	HORIZONTAL	130.94	61.3	1,075	1/3	3,240	60.0	77.0	25% PG	6.4	140.0	120.0	2.2	115	1	2 WAY-PICCV	11'-0"	MODINE	HSB165SB01SA	1
M04-HTR	41	M04138 - AISLE	HORIZONTAL	130.94	61.3	1,075	1/3	3,240	60.0	77.0	25% PG	6.4	140.0	120.0	2.2	115	1	2 WAY-PICCV	11'-0"	MODINE	HSB165SB01SA	1
M04-HTR	42	M04126 - ELEC MAIN	HORIZONTAL	30.94	12.8	1,600	1/12	730	60.0	76.0	25% PG	1.3	140.0	120.0	0.1	115	1	2 WAY-PICCV	13'-0"	MODINE	HSB47SB01SA	1

NOTES:

1 REFER TO ELEC DRAWINGS FOR MOTOR STARTER AND DISCONNECT SWITCH

11/13/2019 4:42:34 PM
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DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
A	2019.11.13	SC	MG	VJ	DB#035
0	2018.09.19	VJ	MG	VJ	ISSUED FOR CONSTRUCTION

DESIGNED BY: V. JOSHI
DRAWN BY: S. CHUNG
CHECKED BY: M. GUO
APPROVED BY: V. JOSHI

RANDALL C. WILKINSON, STATE OF WASHINGTON, 35360, REGISTERED PROFESSIONAL ENGINEER
2019.11.13
2018.09.19

HENSEL PHELPS Plan. Build. Manage.
coterra ENGINEERING
Stantec
VIA
kpff
rolluda architects architecture planning interior design
Karen Kiest | Landscape Architects
ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY: RICHARD LEWIS
DATE: 2018.09.19
REVIEWED BY: BILL FERRIS
DATE: 2018.09.19

SCALE: NTS
FILENAME: M200-M04-M-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
MECHANICAL SCHEDULE

DRAWING NO.: M04-MHS016
FACILITY ID: M04
SHEET No: REV: A

CHILLED BEAM SCHEDULE

UNIT IDENTIFICATION					BEAM CHARACTERISTICS (EACH)						COOLING (EACH)									HEATING (EACH)										
MARK	NUMBER	SYSTEM	ROOM(S) SERVED	LEVEL	NUMBER OF BEAMS	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	NOZZLE SIZE	CIRCUIT	AIRFLOW (CFM)	FLOW PATTERN	MAX APD (IN-WG)	COOLING CAPACITY (BTUH)	FLUID TYPE	FLUID FLOW (GPM)	EWT (F)	LWT (F)	MAX WPD (FT)	AIRFLOW (CFM)	FLOW PATTERN	MAX APD (IN-WG)	HEATING CAPACITY (BTUH)	FLUID TYPE	FLUID FLOW (GPM)	EWT (F)	LWT (F)	MAX WPD (FT)	CONTROL VALVE TYPE	MANUFACTURER	MODEL NUMBER	NOTES
M04-CB	1	AHU-9	HALLWAY M04105	1	4	48	24	-	35	Single	40	2-WAY	0.46	3,392	WATER	1.5	58.0	61.4	5.2	40	2-WAY	0.46	3,483	WATER	0.5	110.0	92.7	0.7	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	2	AHU-9	QUIET ROOM M04110	1	1	96	24	-	30	Dual	84	2-WAY	0.74	7,115	WATER	1.8	58.0	64.1	2.6	84	2-WAY	0.74	6,120	WATER	0.5	110.0	78.6	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	3	AHU-9	FITNESS CENTER M04123	1	2	96	24	-	50	Dual	150	2-WAY	0.61	9,746	WATER	2.5	58.0	63.3	5.2	150	2-WAY	0.61	5,504	WATER	0.5	110.0	76.1	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	4	AHU-9	LUNCH ROOM M04111	1	6	96	24	-	40	Dual	115	2-WAY	0.56	8,404	WATER	2.5	58.0	62.8	5.2	115	2-WAY	0.56	5,632	WATER	0.5	110.0	78.3	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	5	AHU-9	DISPATCH OFFICE M04108	1	2	96	24	-	10	Single	50	2-WAY	0.65	4,948	WATER	1.0	58.0	65.9	4.5	50	2-WAY	0.65	5,677	WATER	0.5	110.0	83.0	1.3	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	6	AHU-9	OPERATORS RM. M04109	1	4	96	24	-	30	Dual	75	2-WAY	0.60	6,823	WATER	2.5	58.0	62.2	5.2	75	2-WAY	0.60	6,547	WATER	0.6	110.0	83.0	0.3	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	7	AHU-9	CONF. M04118	1	2	96	24	-	10	Single	45	2-WAY	0.54	3,743	WATER	0.5	58.0	69.2	1.3	45	2-WAY	0.54	5,358	WATER	0.5	110.0	84.7	1.3	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	8	AHU-9	MAIN ENTRY M04102	1	1	96	24	-	35	Single	90	2-WAY	0.52	6,394	WATER	1.0	58.0	67.0	4.5	90	2-WAY	0.52	8,989	WATER	1.25	110.0	92.6	6.7	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	9	AHU-9	MAINTENANCE LIB. M04115	1	1	96	24	-	35	Single	39	2-WAY	0.44	3,004	WATER	0.75	58.0	63.8	1.5	39	2-WAY	0.44	5,439	WATER	0.5	110.0	93.0	0.7	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	10	AHU-9	MAINTENANCE CHIEF M04114	1	2	96	24	-	10	Single	50	2-WAY	0.65	4,464	WATER	0.65	58.0	68.6	2.0	50	2-WAY	0.65	5,678	WATER	0.5	110.0	83.0	1.3	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	11	AHU-9	VESTIBULE M04103	1	1	48	24	-	40	Single	60	2-WAY	0.56	4,457	WATER	1.75	58.0	61.7	6.9	60	2-WAY	0.56	3,831	WATER	0.5	110.0	89.8	0.7	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	12	AHU-9	MAIN ENTRY VEST. M04101	1	1	96	24	-	20	Single	63	2-WAY	0.56	5,752	WATER	1.25	58.0	65.1	6.7	63	2-WAY	0.56	8,777	WATER	1.3	110.0	94.4	7.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	13	AHU-9	BMS WORK STATION M04121	1	1	24	24	-	30	Single	15	2-WAY	0.56	1,392	WATER	1.00	58.0	60.2	1.4	15	2-WAY	0.56	1,767	WATER	0.5	110.0	101.6	0.4	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	14	AHU-9	COPY ROOM M04113	1	1	24	24	-	30	Single	15	2-WAY	0.56	1,392	WATER	1.00	58.0	60.2	1.4	15	2-WAY	0.56	1,767	WATER	0.5	110.0	101.6	0.4	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	15	AHU-9	HALLWAY M04202	2	4	48	24	-	60	Dual	80	2-WAY	0.55	4,996	WATER	2.5	58.0	60.6	3.4	80	2-WAY	0.55	3,519	WATER	0.5	110.0	89.5	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	16	AHU-9	SCADA CHIEF M04219	2	1	96	24	-	30	Dual	74	2-WAY	0.58	6,747	WATER	2.5	58.0	62.2	5.2	74	2-WAY	0.58	5,793	WATER	0.5	110.0	80.7	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	17	AHU-9	CONF. M04217	2	2	96	24	-	35	Dual	93	2-WAY	0.55	7,559	WATER	2.5	58.0	62.5	5.2	93	2-WAY	0.55	5,806	WATER	0.5	110.0	79.3	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	18	AHU-9	VM TECH. TRAINER M04218	2	1	96	24	-	30	Dual	75	2-WAY	0.60	6,823	WATER	2.5	58.0	62.2	5.2	75	2-WAY	0.60	5,832	WATER	0.5	110.0	80.5	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	19	AHU-9	VM ASST. SUPER M04216	2	1	96	24	-	30	Dual	75	2-WAY	0.60	6,823	WATER	2.5	58.0	62.2	5.2	75	2-WAY	0.60	5,832	WATER	0.5	110.0	80.5	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	20	AHU-9	ADMIN M04215	2	2	96	24	-	30	Dual	70	2-WAY	0.52	6,438	WATER	2.5	58.0	62.0	5.2	70	2-WAY	0.52	5,650	WATER	0.5	110.0	81.6	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	21.1 21 21.2	AHU-9	TRAINING M04221	2	4	96	24	-	35	Single	103	2-WAY	0.67	6,117	WATER	0.6	58.0	71.1	1.8	103	2-WAY	0.67	5,910	WATER	0.5	110.0	78.0	1.3	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	22	AHU-9	FURN/ AV STOR. M04222	2	1	48	24	-	10	Single	15	2-WAY	0.29	1,818	WATER	1.5	58.0	60.0	5.2	15	2-WAY	0.29	2,421	WATER	0.5	110.0	99.0	0.7	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	23	AHU-9	MEDIA M04220	2	1	48	24	-	20	Dual	25	2-WAY	0.48	2,649	WATER	2.3	58.0	59.9	2.8	25	2-WAY	0.48	3,163	WATER	0.5	110.0	95.2	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	24	AHU-9	ST LINK MGR. M04214	2	1	96	24	-	10	Dual	50	2-WAY	0.65	5,527	WATER	2.0	58.0	62.5	3.4	50	2-WAY	0.65	5,813	WATER	0.5	110.0	82.5	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	25	AHU-9	ST LINK MAINT MGR. M04213	2	1	96	24	-	20	Dual	60	2-WAY	0.58	5,965	WATER	2.3	58.0	62.2	4.2	60	2-WAY	0.58	5,690	WATER	0.5	110.0	82.2	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	26	AHU-9	ST LINK SUPER M04210	2	1	96	24	-	10	Dual	52	2-WAY	0.70	5,809	WATER	2.3	58.0	62.2	4.2	52	2-WAY	0.70	5,941	WATER	0.5	110.0	81.8	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	27	AHU-9	ST LINK TRANS SUPER M04211	2	1	96	24	-	10	Dual	52	2-WAY	0.70	5,809	WATER	2.3	58.0	62.2	4.2	52	2-WAY	0.70	5,941	WATER	0.5	110.0	81.8	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	28	AHU-9	ST LINK MAINT SUPER M04212	2	1	96	24	-	10	Dual	52	2-WAY	0.70	5,809	WATER	2.3	58.0	62.2	4.2	52	2-WAY	0.70	5,941	WATER	0.5	110.0	81.8	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	29	AHU-9	ST LINK MAINT SUPER M04209	2	1	96	24	-	10	Dual	52	2-WAY	0.70	5,809	WATER	2.3	58.0	62.2	4.2	52	2-WAY	0.70	5,941	WATER	0.5	110.0	81.8	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	30	AHU-9	SPARE OFFICE M04206	2	1	96	24	-	10	Dual	52	2-WAY	0.70	5,809	WATER	2.3	58.0	62.2	4.2	52	2-WAY	0.70	5,941	WATER	0.5	110.0	81.8	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	31	AHU-9	TECH. TRAINER M04208	2	1	96	24	-	10	Dual	52	2-WAY	0.70	5,809	WATER	2.3	58.0	62.2	4.2	52	2-WAY	0.70	5,941	WATER	0.5	110.0	81.8	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	32	AHU-9	OPER ASST M04207	2	1	96	24	-	30	Dual	75	2-WAY	0.60	6,823	WATER	2.5	58.0	62.2	5.2	35	2-WAY	0.63	5,832	WATER	0.5	110.0	80.5	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	33	AHU-9	SAFETY OFFICER M04203	2	1	96	24	-	20	Dual	60	2-WAY	0.58	5,874	WATER	2.0	58.0	62.6	3.4	60	2-WAY	0.58	5,690	WATER	0.5	110.0	82.2	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	34	AHU-9	OPER CHIEF M04205	2	2	96	24	-	30	Dual	75	2-WAY	0.60	6,823	WATER	2.5	58.0	62.2	5.2	75	2-WAY	0.60	7,358	WATER	0.8	110.0	86.2	0.5	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	35	AHU-9	GEN STOR M04226	2	1	48	24	-	30	Dual	35	2-WAY	0.63	3,349	WATER	2.5	58.0	60.1	3.4	35	2-WAY	0.63	3,594	WATER	0.5	110.0	92.7	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	36	AHU-9	ENTRY RECEPT M04240	2	1	48	24	-	10	Single	20	2-WAY	0.50	2,239	WATER	1.0	58.0	61.7	2.5	20	2-WAY	0.50	3,007	WATER	0.5	110.0	96.2	0.7	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	37	AHU-9	ST CONF. M04239	2	1	96	24	-	35	Single	90	2-WAY	0.52	6,705	WATER	1.3	58.0	65.7	6.7	90	2-WAY	0.52	5,677	WATER	0.5	110.0	80.0	1.3	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	38	AHU-9	BREAK RM M04238	2	1	48	24	-	30	Single	37	2-WAY	0.56	2,922	WATER	1.0	58.0	62.5	2.5	37	2-WAY	0.56	3,408	WATER	0.5	110.0	93.6	0.7	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	39	AHU-9	OPERATION TRAIN. M04236	2	4	96	24	-	40	Single	117	2-WAY	0.58	6,083	WATER	0.5	58.0	72.3	1.3	117	2-WAY	0.58	5,716	WATER	0.5	110.0	77.8	1.3	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	40	AHU-9	FURN STOR M04237	2	1	24	24	-	10	Single	15	2-WAY	0.29	1,743	WATER	1.0	58.0	60.9	2.5	15	2-WAY	0.29	2,421	WATER	0.5	110.0	99.0	0.7	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	41																			NOT USED												
M04-CB	42	AHU-9	OPER. BASE CHIEF M04204	2	1	96	24	-	20	Single	55	2-WAY	0.49	5,361	WATER	1.5	58.0	63.6	9.3	55	2-WAY	0.49	6,032	WATER	0.6	110.0	86.0	1.8	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	43	AHU-9	ADMIN. M04234	2	1	48	24	-	10	Single	20	2-WAY	0.50	2,239	WATER	1.0	58.0	61.7	2.5	20	2-WAY	0.50	3,007	WATER	0.5	110.0	96.2	0.7	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	44	AHU-9	LOBBY M04201	2	2	96	24	-	35	Single	100	2-WAY	0.63	5,631	WATER	0.5	58.0	72.0	1.3	100	2-WAY	0.63	8,320	WATER	0.9	110.0	86.9	3.7	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	45	AHU-9	POLICE M04232	2	1	48	24	-	20	Single	25	2-WAY	0.48	2,624	WATER	1.5	58.0	60.8	5.2	25	2-WAY	0.48	3,138	WATER	0.5	110.0	95.3	0.7	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	46	AHU-9	CONF. A M04227	2	2	96	24	-	10	Single	50	2-WAY	0.65	4,038	WATER	0.5	58.0	70.0	1.3	50	2-WAY	0.65	5,678	WATER	0.5	110.0	83.0	1.3	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	47	AHU-9	CONF. B M04228	2	2	96	24	-	10	Single	50	2-WAY	0.65	4,038	WATER	0.5	58.0	70.0	1.3	50	2-WAY	0.65	5,678	WATER	0.5	110.0	83.0	1.3	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	48	AHU-9	MEDIA ROOM M04243	2	1	48	24	-	50	Dual	70	2-WAY	0.63	4,809	WATER	2.5	58.0	60.7	3.4	70	2-WAY	0.63	3,765	WATER	0.5	110.0	89.3	0.2	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	49	AHU-9	FILE M04231	2	1	48	24	-	35	Single	50	2-WAY	0.70	3,794	WATER	1.0	58.0	63.5	2.5	50	2-WAY	0.70	3,889	WATER	0.5	110.0	90.3	0.7	6-WAY	PRICE	ACBL-HE24-2W	1 TO 11
M04-CB	50	AHU-9	SCADA REMOTE ACCESS RM M04246	2	1	48	24	-	35	Dual	50	2-WAY	0.70	4,221	WATER	2.5	58.0	60.5	3.4	50	2-WAY	0.70	3,995	WATER	0.5	110.0	89.9	0.2	6-WAY	PRICE	A2BL-HE24-2W	1 TO 11

NOTES:
1. ALL BEAM SELECTIONS BASED ON 55 DEG F PRIMARY AIR TEMPERATURE, 58 DEG F CHILLED WATER EWT AND 110 DEG F HEATING EWT.
2. HEATING CAPACITIES SHOWNS BASED ON 72F ROOM DESIGN AIR TEMPERATURE.
3. COOLING CAPCAITIES SHOWNS BAESED ON 75F ROOM DESIGN AIR TEMPERATURE.
4. ALL ACTIVE BEAMS C/W SEISMIS ATTACHEMENT POINTS.
5. PROVIDE 18" LONG STAINLESS STEEL FLEXIBLE CONNECTIONS W/ COMPRESSION FITTING, TYPICAL FOR HEATING/CHILLED WATER PIPING CONNECTION TO BEAMS
6. ALL BEAMS ARE 2 PIPES COIL TYPE
7. REFER TO ACTIVE CHILLED BEAM PIPING SCHEMATIC FOR VALVE ARRANGEMENT.
8. COLOR BY...
9. ALL BEAMS ARE TOP PRIMARY AIR INLET.
10. COOLING AND HEATING CAPACITY IS COMBINATION OF PRIMARY AIR AND WATER LOAD
11. COOLING AND HEATING CAPACITY SHOWS ON DRAWING (TAGGING) ARE REPRESENT SPACE LOAD ONLY
12. Where multiple chilled beam units are used. Please add an alphabetic suffix (A, B, C...) to distinguish the multiple chilled beam units.
13. Confirmed. The short length of pipes from the 6-way valves to the chilled beam may be labeled as you have suggested.

1. CB 0146
2. CB 0436
3. CB 0445
4. CB 0475

AIR SEPARATOR SCHEDULE

UNIT IDENTIFICATION			TYPE	CONNECTION SIZE (IN)	DIAMETER (IN)	HEIGHT (IN)	WEIGHT (LBS)	FLOW (GPM)	MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	SYSTEM SERVED									
M04-AS	1	HEATING WATER	AIR CONTROL	6	21.25	44	564	390.0	BELL & GOSSETT	RL-6F	1
M04-AS	2	GLYCOL HEATING WATER	AIR CONTROL	6	21.25	44	564	420.0	BELL & GOSSETT	RL-6F	1
M04-AS	3	CHILLED WATER	AIR CONTROL	4	16	32	263	88.0	BELL & GOSSETT	RL-4F	1
M04-AS	4	GLYCOL CHILLED WATER	AIR CONTROL	4	16	32	263	96.0	BELL & GOSSETT	RL-4F	1

NOTES:
1. DESIGNED AND CONSTRUCTED PER ASME SECTION 8 & DIV 1

RADIANT SLAB MANIFOLD SCHEDULE

UNIT IDENTIFICATION								WATER						
MARK	NUMBER	ZONE	AREA SERVED (FT²)	HEATING OUTPUT (BTU/H)	NO. OF CIRCUITS	MAXIMUM LENGTH/CIRCUIT (FT)	HEATING FLUID	FLOW RATE PER LOOP (USGPM)	SUPPLY TEMP. (F)	RETURN TEMP. (F)	TUBE DIA. (IN.)	MAX PRSSURE DROP/LOOP (ft H20)	TUBE SPACING (IN)	TUBE PATTERN	NOTES
M04-RM	1.0	1	3100	62,000	10	330	25% PROPYLENE GLYCOL	1.3	110	100	5/8	12.6	12	COUNTER FLOW	
M04-RM	2.0	2	2632	52,640	8	330	25% PROPYLENE GLYCOL	1.4	110	100	5/8	13.9	12	COUNTER FLOW	
M04-RM	2.1	2	1520	30,400	5	335	25% PROPYLENE GLYCOL	1.3	110	100	5/8	12.4	12	COUNTER FLOW	
M04-RM	2.2	2	1519	30,380	7	395	25% PROPYLENE GLYCOL	0.9	110	100	5/8	8.1	12	COUNTER FLOW	
M04-RM	2.3	2	2790	55,800	10	360	25% PROPYLENE GLYCOL	1.2	110	100	5/8	11.5	12	COUNTER FLOW	
M04-RM	2.4	2	4000	80,000	10	515	25% PROPYLENE GLYCOL	1.7	110	100	5/8	30.3	12	COUNTER FLOW	
M04-RM	3.0	3	1680	33,600	4	450	25% PROPYLENE GLYCOL	1.8	110	100	5/8	28.8	12	COUNTER FLOW	
M04-RM	4.0	4	1017	20,340	3	350	25% PROPYLENE GLYCOL	1.5	110	100	5/8	15.5	12	COUNTER FLOW	
M04-RM	5.0	5	2616	52,320	8	355	25% PROPYLENE GLYCOL	1.4	110	100	5/8	14.8	12	COUNTER FLOW	
M04-RM	5.1	5	1508	30,160	4	430	25% PROPYLENE GLYCOL	1.6	110	100	5/8	22.9	12	COUNTER FLOW	
M04-RM	5.2	5	1590	31,800	5	330	25% PROPYLENE GLYCOL	1.4	110	100	5/8	13.1	12	COUNTER FLOW	
M04-RM	6.0	6	1315	26,300	5	345	25% PROPYLENE GLYCOL	1.1	110	100	5/8	10	12	COUNTER FLOW	
M04-RM	7.0	7	3333	66,660	11	330	25% PROPYLENE GLYCOL	1.3	110	100	5/8	12.1	12	COUNTER FLOW	
M04-RM	7.1	7	3333	66,660	11	330	25% PROPYLENE GLYCOL	1.3	110	100	5/8	12.1	12	COUNTER FLOW	
M04-RM	8.0	8	3333	66,660	11	330	25% PROPYLENE GLYCOL	1.3	110	100	5/8	12.1	12	COUNTER FLOW	
M04-RM	8.1	8	3333	66,660	11	330	25% PROPYLENE GLYCOL	1.3	110	100	5/8	12.1	12	COUNTER FLOW	
M04-RM	2.5	2	2208	44,160	8	300	25% PROPYLENE GLYCOL	1.2	110	100	5/8	9.4	12	COUNTER FLOW	
M04-RM	3.1	3	1544	30,880	4	400	25% PROPYLENE GLYCOL	1.7	110	100	5/8	23	12	COUNTER FLOW	
M04-RM	4.1	4	1100	22,000	4	300	25% PROPYLENE GLYCOL	1.2	110	100	5/8	9.3	12	COUNTER FLOW	
M04-RM	5.3	5	1524	30,480	6	320	25% PROPYLENE GLYCOL	1.1	110	100	5/8	8.7	12	COUNTER FLOW	

FUEL FIRED HOT WATER BOILER SCHEDULE

UNIT IDENTIFICATION			BURNER			FUEL					FLUID					PHYSICAL DIMENSIONS				ELECTRICAL		MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	AREA SERVED	CONTROL	MIN TURN DOWN	FAN HP	TYPE	PRESSURE RANGE (IN-WG)	FIRING RATE INPUT (MBH)	FIRING RATE OUTPUT (MBH)	BOILER EFFICIENCY AT DESIGN	FLUID TYPE	FLOW (GPM)	EWT (F)	LWT (F)	MAX WPD (FT)	WEIGHT (LBS)	HEIGHT (IN)	WIDTH (IN)	LENGTH (IN)	VOLTS	PHASE			
M04-B	1	OMFE	INTEGRATED	5 TO 1	5.0	NATUAL GAS	14	4,000.0	3,640.0	91.0	WATER	235.0	114.0	145.0	2.5	7,450	89	45	118	460	3	CLEAVERBROOKS	CFLC 4000	1,2,3,4,5,6
M04-B	2	OMFE	INTEGRATED	5 TO 1	5.0	NATUAL GAS	14	4,000.0	3,640.0	91.0	WATER	235.0	114.0	145.0	2.5	7,450	89	45	118	460	3	CLEAVERBROOKS	CFLC 4000	1,2,3,4,5,6

NOTES:
1. NEUTRALIZING TANK
2. BACNet COMPATIBLE ELECTRONIC CONTROL PANEL
3. FULL MODULATING BURNER
4. LOW NOX EMISSIONS
5. PROVIDE 5 TO 1 TURNDOWN
6. STAINLESS STEEL HEAT EXCHANGER

11/29/2019 2:24:46 PM
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DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
E	2020.05.11				CB 0435
D	2020.05.26				CB 0445
C	2020.05.18				CB 0436
B	2020.05.05				CB 0146
A	2019.11.26	SC	MG	VJ	CB#051
0	2018.09.19	VJ	MG	VJ	ISSUED FOR CONSTRUCTION

DESIGNED BY: V. JOSHI
DRAWN BY: S. CHUNG
CHECKED BY: M. GUO
APPROVED BY: V. JOSHI

RANDAL C. WILKINSON — STATE OF WASHINGTON — 35360 — REGISTERED PROFESSIONAL ENGINEER
2019.11.26
2018.09.19

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | Stantec | VIA | kpff | rolluda architects architecture planning interior design | Karen Kiest Landscape Architects | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:	SUBMITTAL DATE:
RICHARD LEWIS	2018.09.19	BILL FERRIS	2018.09.19	2018.09.19

SCALE: NTS
FILENAME: M200-M04-M-v2017
CONTRACT No.: RTA/CN 0020-16

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
MECHANICAL SCHEDULE

DRAWING NO.: M04-MHS017
FACILITY ID: M04
SHEET No: REV: E

1 2 3

CB 0444

VOLUME FLOW RATE CONTROLLER SCHEDULE

UNIT IDENTIFICATION				BOX CHARACTERISTICS			AIRFLOW				MAXIMUM RADIATED SOUND POWER LEVELS (dB)						MAXIMUM DISCHARGE SOUND POWER LEVELS (dB)						CONTROL OPTIONS				NOTES
MARK	NUMBER	SYSTEM	ROOM(S) SERVED	BOX INLET (IN)	TOTAL BOX APD (IN-WG)	INTEGRAL SOUND ATTEN	MAX PRIMARY (CFM)	HEATING (CFM)	MIN (CFM)	STANDBY MIN (CFM)	125	250	500	1K	2K	4K	125	250	500	1K	2K	4K	OCCUPANCY SENSOR (ON/OFF)	DEMAND CONTROL (VARIABLE)	PUSH BUTTON OVERRIDE	CONTROL DAMPER TYPE	
M04-VAV	1	AHU-9	DISPATCH OFFICE M04108	5	0.01	NO	276	0	0	0	55	47	36	29	25	23	69	62	51	46	39	35	YES	YES	NO	DIGITAL	1,2,3,4
M04-VAV	2	AHU-9	OPERATORS RM. M04109	5	0.01	NO	260	0	0	0	54	46	35	28	25	23	67	61	50	45	38	35	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	3	AHU-9	QUIET RM. M04110	4	0.01	NO	84	0	0	0	45	37	-	-	-	17	62	54	40	36	32	29	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	4	AHU-9	LUNCH RM. M04111	8	0.01	NO	690	0	0	0	54	44	34	31	25	19	68	58	49	49	40	35	YES	YES	NO	DIGITAL	1,2,3,4
M04-VAV	5	AHU-9	FITNESS CENTER M04123	5	0.01	NO	300	0	0	0	56	49	37	30	26	24	69	64	52	47	40	36	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	6	AHU-9	CONF. M04118	4	0.01	NO	90	0	0	0	46	38	-	-	19	18	63	56	41	37	32	30	YES	YES	NO	DIGITAL	1,2,3,4
M04-VAV	7	AHU-9	OFFICE M04114, 115	4	0.01	NO	139	0	0	0	52	46	31	27	23	21	70	64	47	43	38	35	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	8	AHU-9	OFFICE M04218, 219	4	0.01	NO	149	0	0	0	53	47	32	27	24	22	71	65	48	44	39	35	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	9	AHU-9	CONF. M04217	4	0.01	NO	150	0	0	0	53	48	32	27	24	22	71	65	48	44	39	35	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	10	AHU-9	VM ASST. SUPER M04216	4	0.01	NO	70	0	0	0	43	44	-	-	-	-	59	51	37	33	29	27	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	11	AHU-9	OFFICE M04215	4	0.01	NO	140	0	0	0	53	46	31	27	23	21	70	64	47	43	38	35	YES	YES	NO	DIGITAL	1,2,3,4
M04-VAV	12	AHU-9	TRAINING M04221	5	0.01	NO	206	0	0	0	50	42	32	25	22	21	64	58	47	42	36	32	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	13	AHU-9	TRAINING M04221	5	0.01	NO	206	0	0	0	50	42	32	25	22	21	64	58	47	42	36	32	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	14	AHU-9	OFFICE M04212, 213, 214	4	0.01	NO	162	0	0	0	55	48	33	28	25	22	72	66	50	45	40	36	YES	YES	NO	DIGITAL	1,2,3,4
M04-VAV	15	AHU-9	OFFICE M04209, 210, 211	4	0.01	NO	156	0	0	0	54	48	33	28	24	22	72	66	49	45	39	36	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	16	AHU-9	OFFICE M04206, 207, 208	4	0.01	NO	179	0	0	0	56	50	35	30	26	23	74	68	51	47	41	37	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	17	AHU-9	OPER. CHIEF M04205	4	0.01	NO	150	0	0	0	53	47	32	27	24	22	71	65	48	44	39	35	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	18	AHU-9	OPER. BASE CHIEF M04204	4	0.01	NO	115	0	0	0	50	43	28	24	21	20	67	60	44	40	36	32	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	19	AHU-9	OPER. TRAIN. M04236	5	0.01	NO	234	0	0	0	52	45	34	27	23	22	65	60	49	44	37	34	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	20	AHU-9	OPER. TRAIN. M04236	5	0.01	NO	234	0	0	0	52	45	34	27	23	22	65	60	49	44	37	34	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	21	AHU-9	ST. CONF. M04239	4	0.01	NO	90	0	0	0	46	38	-	-	19	18	63	56	41	37	32	30	YES	NO	NO	DIGITAL	1,2,3,4
M04-VAV	22	AHU-9	CONF. A M04227	4	0.01	NO	100	0	0	0	48	40	26	23	20	19	65	58	42	38	34	31	YES	YES	NO	DIGITAL	1,2,3,4
M04-VAV	23	AHU-9	CONF. B M04228	4	0.01	NO	100	0	0	0	48	40	26	23	20	19	65	58	42	38	34	31	YES	YES	NO	DIGITAL	1,2,3,4
M04-VAV	24	AHU-9	OFFICE M04231, 232	4	0.01	NO	125	0	0	0	51	44	29	25	22	20	68	62	46	42	37	33	YES	YES	NO	DIGITAL	1,2,3,4
M04-VAV	25	AHU-9	SCADA REMOTE M04246	4	0.01	NO	50	0	0	0	38	29	-	-	-	-	53	45	32	28	25	23	YES	YES	NO	DIGITAL	1,2,3,4

NOTES:
1 BOXES TO BE PROVIDED WITH INTEGRAL ACCESS PANEL.
2 COMPLETE WITH 1/2" ELASTOMERIC INTERNAL INSULATION.
3 PRESSURE INDEPENDENT CONTROL DAMPER
4 DASHED (-) INDICATED NC VALUES LESS THAN 20.

DESICCANT WHEEL (DEHUMIDIFIER) SCHEDULE

UNIT IDENTIFICATION			TYPE	PROCESS SIDE								REGEN SIDE										HEATING OUTPUT	MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	UNIT SERVED		TOTAL AIRFLOW (CFM)	FACE VELOCITY (FPM)	EDB (F)	EWB (F)	GR/LB	LDB (F)	LWB (F)	GR/LB	MAX APD (IN-WG)	TOTAL AIRFLOW (CFM)	FACE VELOCITY (FPM)	EDB (F)	EWB (F)	GR/LB	LDB (HEATER) (F)	LDB (OUTLET) (F)	LWB (F)	GR/LB	MAX APD (IN-WG)	BTU/H			
M04-DEH	1	AHU-9	DESICCANT WHEEL	5,550	576	55.0	55.0	64.3	81.4	58.8	37.9	0.58	6,536	678	86.0	66.8	67.4	115.0	92.6	72.9	89.8	0.73	204,708	NOVEL AIRE	PART OF AHU	1,2,3,4

NOTES:
1 DESICCANT MATERIAL SHALL EXHIBIT A TYPE 3 ISOTHERM
2 LITHIUM CHLORIDE SHALL NOT BE USED
3 DESICCANT MATERIAL SHALL BE ABLE TO MAINTAIN A MINIMUM OF 90% OF ITS ADSORPTION CAPACTIY AFTER 10 YEAR OF SERVICE LIFE
4 WHEEL CASSETTE SHALL BE FABRICATED OF HEAVY DUTY REINFORCED MINIMUM 14 GAUGE GALVANIZED STEEL

SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE

UNIT IDENTIFICATION			PERFORMANCE				INDOOR UNIT								ELECTRICAL					OUTDOOR UNIT			ELECTRICAL					MANUFACTURER	NOTES
MARK	NUMBER	ROOM SERVED	SEER	REFRIG TYPE	REFRIG CHARGE (OZ)	HUMIDIFIER (LBS/HR)	TOTAL COOLING CAPACITY (BTU/H)	SENSIBLE COOLING CAPACITY (BTU/H)	HEATING CAPACITY (BTU/H)	AIRFLOW (CFM)	ESP (" WG)	FILTER RATING (MERV)	MOUNTING	CONDENSATE PUMP REQUIRED	VOLTS	PHASE	MCA	MOP	MODEL NUMBER	NO. OF COMP	AMBIENT DESIGN TEMP (F)	MINIMUM AMBIENT TEMP (F)	VOLTS	PHASE	MCA	MOP	MODEL NUMBER		
M04-HPMP	1A/1B	SERVICE & CLEAN CHIEF M04157	30.5	R410A	49.00	-	12,000.0	10,000.0	12,200.0	500	N/A	WASHABLE	WALL MOUNT (NON-DUCTED)	YES	POWER SUPPLIED FROM OUTDOOR UNIT				4MXW3812A10N	1	0.0	115.0	208	1	9.0	-	4TXK3812A10N	TRANE	1,2,3,4,5,6,7,9,10,13,14
M04-HPMP	2A/2B	RAIL CAR MANUF. OFFICE M04148	24.5	R410A	70.60	-	18,000.0	14,000.0	18,000.0	740	N/A	WASHABLE	WALL MOUNT (NON-DUCTED)	YES	POWER SUPPLIED FROM OUTDOOR UNIT				4MXW3818A10N	1	0.0	115.0	208	1	22.0	-	4TXK3818A10N	TRANE	1,2,3,4,5,6,7,9,10,13,14
M04-HPMP	3A/3B	COMM M04150	30.5	R410A	49.00	-	12,000.0	10,000.0	12,200.0	500	N/A	WASHABLE	WALL MOUNT (NON-DUCTED)	YES	POWER SUPPLIED FROM OUTDOOR UNIT				4MXW3812A10N	1	0.0	115.0	208	1	9.0	-	4TXK3812A10N	TRANE	1,2,3,4,5,6,7,9,10,13,14
M04-HPMP	4A/4B	ELECTRONIC REPAIR SHOP M04131	N/A	R410A	N/A	5.00	24,500.0	21,900.0	13,652.0	1,000	0.5	MERV 8	CEILING CONCEAL (DUCTED)	YES	208	1	30.0	-	DAMA-0212-AO	1	0.0	115.0	208	1	24.5	-	DRCU-0312-2-LD	DATAAIRE	1,2,3,4,5,7,8,9,10,13,14
M04-HPMP	5A/5B	UPS M04125	24.5	R410A	70.60	-	18,000.0	14,000.0	18,000.0	740	N/A	WASHABLE	WALL MOUNT (NON-DUCTED)	YES	POWER SUPPLIED FROM OUTDOOR UNIT				4MXW3818A10N	1	0.0	115.0	208	1	22.0	-	4TXK3818A10N	TRANE	1,2,3,4,5,6,7,9,10,13,14
M04-HPMP	6A/6B	UPS M04125	24.5	R410A	70.60	-	18,000.0	14,000.0	18,000.0	740	N/A	WASHABLE	WALL MOUNT (NON-DUCTED)	YES	POWER SUPPLIED FROM OUTDOOR UNIT				4MXW3818A10N	1	0.0	115.0	208	1	22.0	-	4TXK3818A10N	TRANE	1,2,3,4,5,6,7,9,10,13,14
M04-ACU	1A/1B	COMM DIST. M04248	12.5	R410A	155.00	-	85,240.0	78,700.0	N/A	3,000	0.8	MERV 8	CEILING CONCEAL (DUCTED)	YES	460	3	4.0	-	TWE090	1	0.0	115.0	460	3	17.0	-	TTA09044A	TRANE	1,2,3,4,5,7,9,10,11,12,13,14
M04-ACU	2A/2B	MPOE M04127	14.0	R410A	121.00	-	53,490.0	45,274.0	N/A	1,800	0.8	MERV 8	CEILING CONCEAL (DUCTED)	YES	208	1	10.0	-	GAM5A0C60M51SA	1	0.0	115.0	460	3	9.0	-	4TTA4060A4000A	TRANE	1,2,3,4,5,7,9,10,11,12,13,14
M04-ACU	3A/3B	IDF/IT ROOM M04128	12.5	R410A	155.00	-	85,240.0	78,700.0	N/A	3,000	0.8	MERV 8	CEILING CONCEAL (DUCTED)	YES	460	3	4.0	-	TWE090	1	0.0	115.0	460	3	17.0	-	TTA09044A	TRANE	1,2,3,4,5,7,9,10,11,12,13,14

NOTES:
1 PROVIDE ALL INTERCONNECTING WIRING BETWEEN THE INDOOR AND OUTDOOR UNITS.
2 PROVIDE PIPE PORTAL AT ALL ROOF PENETRATIONS.
3 OUTDOOR UNIT TO BE MOUNTED ON ROOF CURB RAILS.
4 SPEED BASED ON [HIGH] SPEED
5 LOW AMBIENT KIT
6 CONDENSING UNIT WIND BAFFLE
7 CONDENSING UNIT OTUDOOR PAD
8 UNIT IS FOR HUMIDIFICATION AND DEHUMIDICATION PROCESS
9 CONDENSATION PUMP KIT
10 CONFIRM PIPING SIZE AND LENGTH PRIOR TO ORDERING
11 UNIT TO BE SUITABLE FOR COMPUTER ROOM APPLICATION
12 UNIT TO BE SUITABLE FOR ECONOMIZER APPLICATION
13 REFER TO ELEC DRAWINGS FOR MOTOR STARTER AND DISCONNECT SWITCH
14 CONDENSING UNIT SHALL HAVE MINIMUM PERFORMANCE AT SPECIFIED RATING CONDITIONS NOT LESS THAN THE VALUES INDICATED OF THE LATEST WSEC.

1

FUME EXTRACTION ARM SCHEDULE

UNIT IDENTIFICATION				FLOW RATE (CFM)	ARM SIZE (IN)	TOTAL ARTICULATING LENGTH (FT)	MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	SERVICE	LOCATION						
M04-ARM	1	FUME EXHAUST	ELECTRONICS REPAIR SHOP M04131	350	2.5	6	AIR FLOW SYSTEMS	E-Z ARM 2.5	1,2,3,4

NOTES:
1 SUITABLE FOR SOLDERING
2 C/W CAPTURE HOOD
3 WALL MOUNTED BRACKET
4 ALUM. CONSTUCTION

FAN COIL UNIT SCHEDULE

UNIT IDENTIFICATION				AIRFLOW		FAN		HEATING COIL									COOLING COIL										PHYSICAL CHARACTERISTICS				ELECTRICAL		MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	ROOM SERVED	UNIT CONFIGURATION	AIRFLOW (CFM)	ESP (IN-WG)	HP	SPEED (RPM)	CAPACITY (MBH)	EDB (F)	LDB (F)	MAX APD (IN-WG)	FLUID TYPE	FLOW (GPM)	EWT (F)	LWT (F)	MAX WPD (FT)	TOTAL CAPACITY (MBH)	EDB (F)	EWB (F)	LDB (F)	LWB (F)	MAX APD (IN-WG)	FLUID TYPE	FLOW (GPM)	EWT (F)	LWT (F)	MAX WPD (FT)	WEIGHT (LBS)	HEIGHT (IN)	WIDTH (IN)	LENGTH (IN)	VOLTS	PHASE			
M04-FCU	1	MSC WORKERS WAREHOUSE M04162	HORIZONTAL	700	0.25	0.5	-	12.89	68.0	85.0	-	WATER	1.72	110.0	95.0	2.49	19.47	80.0	67.0	58.5	58.3	-	WATER	3.88	52.0	62.0	2.85	120	18	28	33	208	1	TRANE	BCHD0241B1	1,3,4,5,7
M04-FCU	2	MSC CHIEF M04164, 165, 166	HORIZONTAL	900	0.25	0.5	-	14.54	68.0	85.0	-	WATER	1.94	110.0	95.0	3.11	23.75	80.0	67.0	59.0	58.7	-	WATER	4.74	52.0	62.0	4.06	120	18	28	33	208	1	TRANE	BCHD0241B1	1,3,4,5,7
M04-FCU	3	FREIGHT ELEV. ROOM M04169	HORIZONTAL	710	0.20	0.5	-	-	-	-	-	-	-	-	-	-	8.0	70.0	60.0	59.7	56.0	-	WATER	1.60	52.0	62.0	0.60	145	18	28	33	208	1	TRANE	BCHD0241B1	1,3,4,5,7
M04-FCU	4	BATTERY ROOM M04170	HORIZONTAL	300	0.20	0.13	-	-	-	-	-	-	-	-	-	-	9.7	87.0	68.0	58.5	57.6	-	WATER	1.98	52.0	62.0	7.76	103	10	25	38	208	1	TRANE	FCCB04	1,3,4,7
M04-FCU	5	STAIR M04ST04 LEVEL 1	VERTICAL	245	-	0.25	-	10.48	55.0	95.0	-	WATER	1.40	110.0	95.0	0.82	-	-	-	-	-	-	-	-	-	-	-	155	25	10	48	208	1	TRANE	FFBB06	2,3,6
M04-FCU	6	STAIR M04ST04 LEVEL 2	VERTICAL	245	-	0.25	-	10.48	55.0	95.0	-	WATER	1.40	110.0	95.0	0.82	-	-	-	-	-	-	-	-	-	-	-	155	25	10	48	208	1	TRANE	FFBB06	2,3,6
M04-FCU	7	STAIR M04ST03 LEVEL 1	HORIZONTAL	684	0.25	0.25	-	8.79	68.0	80.5	-	WATER	1.18	110.0	95.0	0.60	15.51	80.0	67.0	60.3	59.6	-	WATER	3.22	52.0	62.0	5.43	140	10	25	56	208	1	TRANE	FCC-08	1,3,4,5,7
M04-FCU	8	STAIR M04ST03 LEVEL 2	HORIZONTAL	684	0.25	0.25	-	8.79	68.0	80.5	-	WATER	1.18	110.0	95.0	0.60	15.51	80.0	67.0	60.3	59.6	-	WATER	3.22	52.0	62.0	5.43	140	10	25	56	208	1	TRANE	FCC-08	1,3,4,5,7
M04-FCU	9	STAIR M04ST02 LEVEL 1	HORIZONTAL	900	0.25	0.5	-	14.54	68.0	85.0	-	WATER	1.94	110.0	95.0	3.11	23.75	80.0	67.0	59.0	58.7	-	WATER	4.74	52.0	62.0	4.06	120	18	28	33	208	1	TRANE	BCHD0241B1	1,3,4,5,7
M04-FCU	10	STAIR M04ST02 LEVEL 2	HORIZONTAL	700	0.25	0.5	-	12.89	68.0	85.0	-	WATER	1.72	110.0	95.0	2.49	19.47	80.0	67.0	58.5	58.3	-	WATER	3.88	52.0	62.0	2.85	120	18	28	33	208	1	TRANE	BCHD0241B1	1,3,4,5,7
M04-FCU	11	ELEV MACH RM. M04106	HORIZONTAL	710	0.20	0.5	-	-	-	-	-	-	-	-	-	-	8000.0	70.0	60.0	59.7	56.0	-	WATER	1.60	52.0	62.0	0.60	145	18	28	33	208	1	TRANE	BCHD0241B1	1,3,4,5,7

NOTES:
1 PROVIDE 2" PLEATED MERV 8 FILTER
2 PROVIDE 1" THROWAWAY FILTER
3 ECM TYPE FAN MOTOR
4 FRONT SUPPLY AND BACK RETURN
5 CONCEALED CEILING TYPE
6 BOTTOM INLET AND TOP OUTLET
7 PROVIDE CONDENSATION PUMP KIT

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DP4A - IFC

No.	DATE	DSN	CHK	APP	REVISION
A	2020.05.26				CB 0444
0	2018.09.19	VJ	MG	VJ	ISSUED FOR CONSTRUCTION

DESIGNED BY: V. JOSHI
DRAWN BY: S. CHUNG
CHECKED BY: M. GUO
APPROVED BY: V. JOSHI

RANDALL C. WILKINSON — STATE OF WASHINGTON — 35360 — REGISTERED PROFESSIONAL ENGINEER — 2018.09.19

HENSEL PHELPS — Plan. Build. Manage.
Stantec
coterra ENGINEERING
VIA
kpff
rolluda architects — architecture planning interior design
Karen Kiest | Landscape Architects
ELCON ASSOCIATES, INC. — ENGINEERS—CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY: RICHARD LEWIS | DATE: 2018.09.19
REVIEWED BY: BILL FERRIS | DATE: 2018.09.19
SUBMITTAL DATE: 2018.09.19

SCALE: NTS
FILENAME: M200-M04-M-v2017
CONTRACT No.: RTA/CN 0020-16

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
MECHANICAL SCHEDULE

DRAWING NO.: **M04-MHS018**
FACILITY ID: M04
SHEET No: 502
REV: A

AIR HANDLING UNIT COMPONENT SCHEDULE

UNIT IDENTIFICATION					AIRFLOW					GENERAL				COMPONENTS													
MARK	NUMBER	TYPE	LOCATION	AREA SERVED	MAX SUPPLY AIR (CFM)	MIN SUPPLY AIR (CFM)	DESIGN OUTSIDE AIR (CFM)	MIN OUTSIDE AIR (CFM)	MAX EXHAUST AIR (CFM)	UNIT OPERATING WEIGHT (LBS)	MAX UNIT DIMENSIONS HEIGHT (IN)	WIDTH (IN)	LENGTH (IN)	POSITION NUMBER 1	POSITION NUMBER 2	POSITION NUMBER 3	POSITION NUMBER 4	POSITION NUMBER 5	POSITION NUMBER 6	POSITION NUMBER 7	POSITION NUMBER 8	POSITION NUMBER 9	POSITION NUMBER 10	POSITION NUMBER 11	POSITION NUMBER 12	MANUFACTURER	MODEL NUMBER	NOTES
M04-AHU	1	OUTDOOR	MAINT. ROOF	S & I POSITION	17,071	0	17,071	0	17,071	12,575	140.9	100.0	288.4	EXHAUST AIR HOOD	SUPPLY FAN (BELOW)	EXHAUST FAN (ABOVE)	HEATING COIL (BELOW)	HEAT EXCHANGER	CONTROL (BELOW)	CONTROL (BELOW)	FILTER RETURN AIR SECTION (BELOW)	FILTER SUPPLY AIR SECTION (ABOVE)	OUTDOOR AIR PLENUM (ABOVE)	OUTDOOR AIR HOOD (ABOVE)	ROOF CURB	TRANE	CSAA	1,2,3,4,5,8,9,10
M04-AHU	2	OUTDOOR	MAINT. ROOF	TRUCK STORAGE	7,150	0	7,150	0	7,150	6,265	89.4	72.0	234.3	EXHAUST AIR HOOD	SUPPLY FAN (BELOW)	EXHAUST FAN (ABOVE)	HEATING COIL (BELOW)	HEAT EXCHANGER	CONTROL (BELOW)	CONTROL (BELOW)	FILTER RETURN AIR SECTION (BELOW)	FILTER SUPPLY AIR SECTION (ABOVE)	OUTDOOR AIR PLENUM (ABOVE)	OUTDOOR AIR HOOD (ABOVE)	ROOF CURB	TRANE	CSAA	1,2,3,4,5,8,9,10
M04-AHU	3	OUTDOOR	MAINT. ROOF	INTERIOR CLEAN	3,160	0	3,160	0	3,160	4,657	81.6	50.5	222.3	EXHAUST AIR HOOD	SUPPLY FAN (BELOW)	EXHAUST FAN (ABOVE)	HEATING COIL (BELOW)	HEAT EXCHANGER	CONTROL (BELOW)	CONTROL (BELOW)	FILTER RETURN AIR SECTION (BELOW)	FILTER SUPPLY AIR SECTION (ABOVE)	OUTDOOR AIR PLENUM (ABOVE)	OUTDOOR AIR HOOD (ABOVE)	ROOF CURB	TRANE	CSAA	1,2,3,4,5,8,9,10
M04-AHU	4	OUTDOOR	MAINT. ROOF	LRV WASH	16,640	0	16,640	0	16,640	8,667	73.4	100.0	329.0	SUPPLY FAN	HEATING COIL (BELOW)	FILTER SUPPLY AIR SECTION	OUTDOOR AIR PLENUM	OUTDOOR AIR HOOD	CONTROL	RETURN AIR SECTION	EXHAUST FAN	CONTROL	EXHAUST AIR PLENUM	EXHAUST AIR HOOD	ROOF CURB	TRANE	CSAA	1,2,3,4,5,8,9,10
M04-AHU	5	OUTDOOR	NOT USED																								
M04-AHU	6	OUTDOOR	ADMIN ROOF	PARTS STORAGE	4,900	0	4,900	0	4,900	5,919	89.4	66.5	234.3	OUTDOOR AIR HOOD	SUPPLY FAN (BELOW)	EXHAUST FAN (ABOVE)	HEATING COIL (BELOW)	HEAT EXCHANGER	CONTROL (BELOW)	CONTROL (BELOW)	FILTER RETURN AIR SECTION (BELOW)	FILTER SUPPLY AIR SECTION (ABOVE)	OUTDOOR AIR PLENUM (ABOVE)	OUTDOOR AIR HOOD (ABOVE)	ROOF CURB	TRANE	CSAA	1,2,3,4,5,8,9,10
M04-AHU	7	OUTDOOR	ADMIN ROOF	SHOPS	8,136	0	8,136	0	8,136	7,240	104.4	72.0	259.3	OUTDOOR AIR HOOD	SUPPLY FAN (BELOW)	EXHAUST FAN (ABOVE)	HEATING COIL (BELOW)	HEAT EXCHANGER	CONTROL (BELOW)	CONTROL (BELOW)	FILTER RETURN AIR SECTION (BELOW)	FILTER SUPPLY AIR SECTION (ABOVE)	OUTDOOR AIR PLENUM (ABOVE)	OUTDOOR AIR HOOD (ABOVE)	ROOF CURB	TRANE	CSAA	1,2,3,4,5,8,9,10
M04-AHU	8	OUTDOOR	ADMIN ROOF	RESTROOM	2,972	0	7,972	0	3,269	10,560	95.0	58.0	378.0	CONDENSING UNIT	EXHAUST AIR HOOD (ABOVE)	SUPPLY FAN (BELOW)	EXHAUST FAN (BELOW)	CONTROL PANEL	HEATING COIL (BELOW)	HEAT EXCHANGER	FILTER RETURN AIR SECTION (BELOW)	FILTER SUPPLY AIR SECTION (ABOVE)	OUTDOOR AIR PLENUM (ABOVE)	OUTDOOR AIR HOOD (ABOVE)	ROOF CURB	HAAKON	CUSTOM	2,4,6,7,8,10
M04-AHU	9	OUTDOOR	ADMIN ROOF	OFFICE	5,550	0	5,550	0	5,550	10,000	84.0	81.0	272.0	EXHAUST AIR HOOD	EXHAUST FAN (RIGHT)	ENERGY RECOVERY WHEEL	FILTER RETURN AIR SECTION (RIGHT)	RETURN AIR PLENUM (RIGHT)	REGEN FAN (RIGHT)	DESICCANT WHEEL	REGEN COMPRESSOR (RIGHT)	REGEN CONDENSER COIL (RIGHT)	REGEN FILTER SECTION (RIGHT)	REGEN O/A PLENUM (RIGHT)	REGEN O/A HOOD (RIGHT)	Semco NOVEL AIRE	6000-DES-DX-ERV HWS02C05-54.00X42.00R	2,4,6,7,8,10
														OUTDOOR AIR HOOD	OUTDOOR AIR PLENUM SECTION (LEFT)	OUTDOOR AIR FILTER (LEFT)	ENERGY RECOVERY WHEEL	BYPASS DAMPER (LEFT)	SUPPLY FAN (LEFT)	REGEN EVAPORATOR COIL (LEFT)	DESICCANT WHEEL	DX. AND HEATING WATER COIL (LEFT)	SUPPLY AIR PLENUM (LEFT)	CONTROL PANEL (LEFT)	ROOF CURB			

(2)

NOTES:

1 UNIT SHALL BE PROVIDED WITH 18" GAGE GALVANIZED STEEL DOUBLE WALL CASING
2 UNIT SHALL BE MOUNTED FACTORY SUPPLIED INSULATED ROOF CURB (MIN. HEIGHT=14")
3 UNIT SHALL BE INSULATED WITH MIN. R-12 RIGID INSULATION
4 PROVIDE LED LIGHT IN ALL ACESS SECTIONS
5 PROVIDE MINIMUM 6" BASE RAIL
6 UNIT SHALL BE PROVIDED WITH MINIMUM 1" RIGID INSULATION
7 PROVIDE STAINLESS STEEL HEATING WATER COIL
8 HINGED ACCESS DOORS SHALL BE PROVIDED IN EVERY SECTION
9 PROVIDE WINDOW FOR FAN SECTIONS
10 REFER TO ELEC DRAWINGS FOR MOTOR STARTER AND DISCONNECT SWITCH

AIR FILTER SCHEDULE

UNIT IDENTIFICATION				FILTER					FILTER MEDIA				LOADING ARRANGE-MENT	MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	UNIT SERVED	FUNCTION	FILTER TYPE	TOTAL AIRFLOW (CFM)	TOTAL MEDIA AREA (SQ-FT)	AIR PRESSURE DROP INITIAL (IN-WG)	AIR PRESSURE DROP FINAL (IN-WG)	EFFICIENCY (MERV)	QUANTITY	WIDTH (IN)	HEIGHT (IN)	DEPTH (IN)				
M04-AF	1	AHU-1	SUPPLY FILTER	BAG	17,071	-	0.50	1.00	13	-	-	-	22	SIDE LOAD	CAMFIL	HI-FLO ES	1,2,3,4
M04-AF	2	AHU-1	RETURN FILTER	PLEATED	17,071	63.33	0.25	0.50	8	6 18	16 16	20 25	2	SIDE LOAD	CAMFIL	-	1,2,3,4
M04-AF	3	AHU-2	SUPPLY FILTER	BAG	7,150	-	0.50	1.00	13	-	-	-	22	SIDE LOAD	CAMFIL	HI-FLO ES	1,2,3,4
M04-AF	4	AHU-2	RETURN FILTER	PLEATED	7,150	18.06	0.25	0.50	8	4 2	20 20	20 25	2	SIDE LOAD	CAMFIL	-	1,2,3,4
M04-AF	5	AHU-3	SUPPLY FILTER	BAG	3,160	-	0.50	1.00	13	-	-	-	22	SIDE LOAD	CAMFIL	HI-FLO ES	1,2,3,4
M04-AF	6	AHU-3	RETURN FILTER	PLEATED	3,160	11.10	0.25	0.50	8	4	20	20	2	SIDE LOAD	CAMFIL	-	1,2,3,4
M04-AF	7	AHU-4	SUPPLY FILTER	BAG	16,640	-	0.50	1.00	13	-	-	-	22	SIDE LOAD	CAMFIL	HI-FLO ES	1,2,3,4
M04-AF	8	AHU-6	SUPPLY FILTER	BAG	4,900	-	0.50	1.00	13	-	-	-	22	SIDE LOAD	CAMFIL	HI-FLO ES	1,2,3,4
M04-AF	9	AHU-6	RETURN FILTER	PLEATED	4,900	16.67	0.25	0.50	8	6	20	20	2	SIDE LOAD	CAMFIL	-	1,2,3,4
M04-AF	10	AHU-7	SUPPLY FILTER	BAG	8,136	-	0.50	1.00	13	-	-	-	22	SIDE LOAD	CAMFIL	HI-FLO ES	1,2,3,4
M04-AF	11	AHU-7	RETURN FILTER	PLEATED	8,136	28.89	0.25	0.50	8	4	16	25	2	SIDE LOAD	CAMFIL	-	1,2,3,4
M04-AF	12	AHU-8	SUPPLY FILTER	BAG	2,972	-	0.50	1.00	13	1 2	24 24	24 12	22	SIDE LOAD	CAMFIL	HI-FLO ES	1,2,3,4
M04-AF	13	AHU-8	RETURN FILTER	PLEATED	3,269	-	0.25	0.50	8	1 2	24 24	24 12	2	SIDE LOAD	CAMFIL	-	1,2,3,4
M04-AF	14	AHU-9	PRE-FILTER	PLEATED	5,550	-	0.25	0.50	8	-	-	-	2	SIDE LOAD	AAF	PREPLEAT LPD SC	1,2,3,4
M04-AF	15	AHU-9	FINAL FILTER	PLEATED	5,550	-	0.50	1.00	13	-	-	-	4	SIDE LOAD	AAF	PREPLEAT M13	1,2,3,4
M04-AF	16	AHU-9	REGEN FILTER	PLEATED	6,536	-	0.25	0.50	8	-	-	-	2	SIDE LOAD	AAF	PREPLEAT LPD SC	1,2,3,4
M04-AF	17	AHU-9	RETURN FILTER	PLEATED	5,550	-	0.25	0.50	8	-	-	-	2	SIDE LOAD	AAF	PREPLEAT LPD SC	1,2,3,4

NOTES:

1 PROVIDE FILTER RACKS FOR FILTER INSTALLATION.
2 PROVIDE A MAGNEHELIC PRESSURE GAGE ACROSS EACH FILTER BANK UNLESS OTHERWISE NOTED.
3 FINAL AIR PRESSURE DROPS ARE BASED ON DIRTY FILTERS.
4 USE DIRTY FILTER APD FOR VARIABLE VOLUME SYSTEMS AND MID-LIFE APD FOR CONSTANT VOLUME SYSTEMS.

AIR TERMINAL SCHEDULE

UNIT IDENTIFICATION		TYPE	SIZE	CORE STYLE	BORDER STYLE	BLADE ORIENTATION	FINISH	MAKE	MODEL	NOTES
MARK	NUMBER									
M04-SG	1	SUPPLY GRLLE	SEE DRAWINGS	DOUBLE DEFLECTION REGISTER	SURFACE	L	WHITE	EH PRICE	520D	1,5,6
M04-SG	2	SUPPLY GRLLE	SEE DRAWINGS	DRUM LOUVER	SURFACE	-	WHITE	EH PRICE	HCD2	1,4
M04-SG	3	SUPPLY GRLLE	SEE DRAWINGS	ALUMINUM DOUBLE DEFLECTION REGISTER	SURFACE	L	WHITE	EH PRICE	620DAL	1,5,6
M04-SD	1	SUPPLY DIFFUSER	24X24 / NECK AS NOTED ON DRAWINGS	3 CONE SQUARE DIFFUSER	T-BAR	-	WHITE	EH PRICE	SCDA	1
M04-SD	2	SUPPLY DIFFUSER	24X24 / NECK AS NOTED ON DRAWINGS	4 CONE SQUARE DIFFUSER	SURFACE	-	WHITE	EH PRICE	SCDA	1
M04-SD	3	JET SLOT	4 FT LENGTH/1 IN SLOT/8 IN INLET (50% OPEN)	CUSTOM FLOW LINEAR	SURFACE	-	-	EH PRICE	JS C/W JSP	1,2,9
M04-EG	1	EXHAUST GRLLE	SEE DRAWINGS	FIXED LOUVER -45 DEGREE, 0.75 BLADE SPACING	SURFACE	L	WHITE	EH PRICE	530D	1,5,6
M04-EG	2	EXHAUST GRLLE	SEE DRAWINGS	ALUMINUM FIXED LOUVER -45 DEGREE, 0.75 BLADE SPACING	SURFACE	L	WHITE	EH PRICE	630DAL	1,5,6
M04-L	1	EXHAUST LOUVER	SEE DRAWINGS	EXTRUDED ALUMINUM BLADE LOUVER	-	L	BAKED ENAMEL	-	-	3,6
M04-L	2	SUPPLY LOUVER	SEE DRAWINGS	EXTRUDED ALUMINUM BLADE LOUVER	-	L	BAKED ENAMEL	-	-	3,6
M04-RCD	1	ROUND DIFFUSER	10 IN / NECK AS NOTED ON DRAWINGS	4 CONE ROUND DIFFUSER	SURFACE	-	WHITE	EH PRICE	RCD	1
M04-DG	1	DOOR GRILLE	SEE DRAWINGS	HEAVY DUTY DOOR GRILLE	FLAT BORDER	L	ALUMINUM	EH PRICE	STG1	1,6
M04-RD	1	RETURN GRILLE	AS NOTED	EGG CRATE	T-BAR	-	WHITE	EH PRICE	80	1,5

NOTES:

1 COORDINATE W/ARCHITECT THE REQUIRED BORDER TYPE, END CAP, AND FINISH PRIOR TO ORDERING
2 INTERNAL INSULATED
3 C/W BIRD SCREEN
4 POLE OPERATOR BRACKET
5 TO BE COMPLETE WITH BLADE DAMPER
6 L=FRONT BLADES PARALLEL TO LONG DIMENSION
9 50% SLOT OPENING

BALANCING

(1)

(1) CB 0226
(2) CB 0146

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DP4A - IFC

No.	DATE	DSN	CHK	APP	REVISION
B	2020.05.05				CB 0146
A	2020.03.03				CB 0226
0	2018.09.19	VJ	MG	VJ	ISSUED FOR CONSTRUCTION

DESIGNED BY: V. JOSHI
DRAWN BY: S. CHUNG
CHECKED BY: M. GUO
APPROVED BY: V. JOSHI

RANDALL C. WILKINSON STATE OF WASHINGTON 35360 REGISTERED PROFESSIONAL ENGINEER 2018.09.19

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Stantec | VIA | kpff | Karen Kiest Landscape Architects | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY: RICHARD LEWIS
DATE: 2018.09.19
REVIEWED BY: BILL FERRIS
DATE: 2018.09.19

SCALE: NTS
FILENAME: M200-M04-M-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
MECHANICAL SCHEDULE

DRAWING NO.: M04-MHS019
FACILITY ID: M04
SHEET No: 503
REV: 0

DIRECT EXPANSION COOLING COIL SCHEDULE

UNIT IDENTIFICATION			COIL					AIR							REFRIGERANT			MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	UNIT SERVED	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	NUMBER OF ROWS	FINS PER FOOT	FIN TYPE	TOTAL AIRFLOW (CFM)	EDB (F)	EWB (F)	LDB (F)	LWB (F)	FACE VELOCITY (FPM)	MAX APD (IN-WG)	REFRIG TYPE	SUCTION TEMP (F)	COIL SPLIT			
M04-CC	1	AHU-8	140.0	110.0	6	120	-	2,972	86.0	67.0	51.7	51.5	296	0.26	R410A	-	-	TRANE	PART OF AHU	1,2
M04-CC	2	AHU-9	159.8	159.8	4	144	-	5,550	86.0	67.0	55.0	48.0	-	-	R410A	-	-	NOVEL AIRE	PART OF AHU	1,2

NOTES:
1 PROVIDE STAINLESS STEEL DRAIN PAN
2 PROVIDE COATING TO PROTECT SALT AIR CORROSION

AIR HANDLING UNIT FAN SCHEDULE

UNIT IDENTIFICATION			SYSTEM						FAN WHEEL (EACH)							FAN MOTOR (EACH)				ELECTRICAL			MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	UNIT SERVED	MAX AIRFLOW (CFM)	MIN AIRFLOW (CFM)	TSP (IN-WG)	ESP (IN-WG)	CONTROL	FEG	TOTAL NO OF FANS	FAN TYPE	MAX AIRFLOW (CFM)	MIN AIRFLOW (CFM)	FAN CLASS	ARRANGEMENT	FAN SPEED (RPM)	FAN MIN WHEEL DIA (IN)	BHP	HP	SPEED (RPM)	DRIVE TYPE	SYSTEM POWER (MCA)	VOLTS	PHASE			
M04-SF	1	AHU-1	17,071	0	4.83	1.75	VFD	85	2	PLENUM	17,071	0	MID. PRESSURE	N/A	1,738	24.5	9.04	9.5	1,800	DIRECT	54.75	460	3	TRANE	PART OF AHU	1,2,3,4
M04-EF	1	AHU-1	17,071	0	3.33	0.75	VFD	85	2	PLENUM	17,071	0	MID. PRESSURE	N/A	1,722	24.5	6.84	8	1,200	DIRECT		460	3	TRANE	PART OF AHU	1,2,3,4
M04-SF	2	AHU-2	7,150	0	4.23	1.25	VFD	80	1	PLENUM	7,150	0	MID. PRESSURE	N/A	1,839	22.25	7.08	8.0	1,800	DIRECT	21.95	460	3	TRANE	PART OF AHU	1,2,3,4
M04-EF	2	AHU-2	7,150	0	3.22	0.50	VFD	80	1	PLENUM	7,150	0	MID. PRESSURE	N/A	1,702	22.25	5.64	6.0	1,800	DIRECT		460	3	TRANE	PART OF AHU	1,2,3,4
M04-SF	3	AHU-3	3,160	0	3.95	1.75	VFD	80	1	PLENUM	3,160	0	MID. PRESSURE	N/A	2,095	18.25	3.04	3.5	1,800	DIRECT	10.8	460	3	TRANE	PART OF AHU	1,2,3,4
M04-EF	3	AHU-3	3,160	0	2.42	0.50	VFD	80	1	PLENUM	3,160	0	MID. PRESSURE	N/A	1,647	18.25	1.85	2.5	1,800	DIRECT		460	3	TRANE	PART OF AHU	1,2,3,4
M04-SF	4	AHU-4	16,640	0	2.81	1.00	VFD	85	2	PLENUM	16,640	0	MID. PRESSURE	N/A	1,635	24.5	5.78	8.0	1,800	DIRECT	40.25	460	3	TRANE	PART OF AHU	1,2,3,4
M04-EF	4	AHU-4	16,640	0	1.74	0.75	VFD	85	2	PLENUM	16,640	0	MID. PRESSURE	N/A	1,300	24.5	3.61	4.0	1,200	DIRECT		460	3	TRANE	PART OF AHU	1,2,3,4
M04-SF	5	NOTUSED																								
M04-EF	5	NOTUSED																								
M04-SF	6	AHU-6	4,900	0	3.67	1.50	VFD	80	1	PLENUM	4,900	0	MID. PRESSURE	N/A	1,661	22.25	4.14	4.5	1,800	DIRECT	18.45	460	3	TRANE	PART OF AHU	1,2,3,4
M04-EF	6	AHU-6	4,900	0	2.88	1.00	VFD	80	1	PLENUM	4,900	0	MID. PRESSURE	N/A	1,539	22.25	3.32	3.5	1,800	DIRECT		460	3	TRANE	PART OF AHU	1,2,3,4
M04-SF	7	AHU-7	8,136	0	4.25	1.50	VFD	85	1	PLENUM	8,136	0	MID. PRESSURE	N/A	1,766	24.5	8.32	8.5	1,800	DIRECT	24.75	460	3	TRANE	PART OF AHU	1,2,3,4
M04-EF	7	AHU-7	8,136	0	3.02	0.50	VFD	85	1	PLENUM	8,136	0	MID. PRESSURE	N/A	1,615	24.5	6.00	8.0	1,800	DIRECT		460	3	TRANE	PART OF AHU	1,2,3,4
M04-SF	8	AHU-8	2,972	0	4.00	1.75	VFD	75	1	PLENUM	2,972	0	MID. PRESSURE	N/A	3,500	-	3.60	5.0	3,500	DIRECT	42	460	3	HAAKON	PART OF AHU	1,2,3,4,5
M04-EF	8	AHU-8	3,269	0	3.20	1.75	VFD	75	1	PLENUM	3,269	0	MID. PRESSURE	N/A	3,500	-	3.10	5.0	3,500	DIRECT		460	3	HAAKON	PART OF AHU	1,2,3,4,5
M04-SF	9	AHU-9	5,550	0	6.62	2.39	VFD	80	2	PLENUM	5,550	0	MID. PRESSURE	N/A	3,571	-	4.14	5.0	4,500	DIRECT	71.6	460	3	COMEFRI	PART OF AHU	1,2,3,4,5
M04-EF	9	AHU-9	5,550	0	2.54	0.98	VFD	80	1	PLENUM	5,550	0	MID. PRESSURE	N/A	1,551	-	3.27	5.0	2,850	DIRECT		460	3	COMEFRI	PART OF AHU	1,2,3,4,5
M04-REGF	9	AHU-9	6,536	0	2.37	0.0	VFD	80	1	PLENUM	6,536	0	MID. PRESSURE	N/A	1,655	-	3.92	7.5	2,850	DIRECT		460	3	COMEFRI	PART OF AHU	1,2,3,4,5

NOTES:
1 FAN SHALL HAVE INLET AIRFLOW PROBE.
2 FAN ARRAY APPLICATIONS SHALL HAVE FANS WIRED TO A FACTORY INSTALLED CONTROL PANEL. EACH FAN SHALL HAVE MANUAL MOTOR PROTECTION AND FUSING.
3 AIR HANDLING UNIT GREATER THAN 10000 CFM SHALL USE AT LEAST TWO FANS
4 MINIMUM CLASS 2 FAN CONSTRUCTION
5 PROVIDE ELECTRONICALLY COMMUTATED FAN MOTORS WHERE AVAILABLE

AIR TO AIR HEAT EXCHANGER SCHEDULE

UNIT IDENTIFICATION			TYPE	WINTER OPERATION													SUMMER OPERATION													CONTROLS				MANUFACTURER	MODEL NUMBER	NOTES
				CAPACITY		SUPPLY						EXHAUST						CAPACITY		SUPPLY						EXHAUST											
MARK	NUMBER	UNIT SERVED		TOTAL CAPACITY (MBH)	MIN EFFECTIVE (%)	TOTAL AIRFLOW (CFM)	EDB (F)	EWB (F)	LDB (F)	LWB (F)	MAX APD (IN-WG)	TOTAL AIRFLOW (CFM)	EDB (F)	EWB (F)	LDB (F)	LWB (F)	MAX APD (IN-WG)	TOTAL CAPACITY (MBH)	MIN EFFECTIVE (%)	TOTAL AIRFLOW (CFM)	EDB (F)	EWB (F)	LDB (F)	LWB (F)	MAX APD (IN-WG)	TOTAL AIRFLOW (CFM)	EDB (F)	EWB (F)	LDB (F)	LWB (F)	MAX APD (IN-WG)	FROST CONTROL	PURGE	ECONO BYPASS	RECIRC DAMPER			
M04-HX	1	AHU-1	PLATE	439.59	66.15	17071	24.0	24.0	47.8	38.0	0.76	17,071	65.0	64.0	41.8	37.6	0.88	-	-	-	-	-	-	-	-	-	-	-	-	-	YES	NO	YES	NO	TRANE	PART OF AHU	1,4
M04-HX	2	AHU-2	PLATE	180.17	60.40	7150	24.0	24.0	47.3	37.7	0.61	7,150	65.0	64.0	41.8	37.9	0.71	-	-	-	-	-	-	-	-	-	-	-	-	-	YES	NO	YES	NO	TRANE	PART OF AHU	1,4
M04-HX	3	AHU-3	PLATE	79.39	60.92	3,160	24.0	24.0	47.2	37.7	0.37	3,160	65.0	64.0	41.8	37.9	0.43	-	-	-	-	-	-	-	-	-	-	-	-	-	YES	NO	YES	NO	TRANE	PART OF AHU	1,4
M04-HX	4	AHU-4	PLATE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M04-HX	5	NOT USED																																			
M04-HX	6	AHU-6	PLATE	123.01	61.63	4,900	24.0	24.0	47.2	37.7	0.36	4,900	65.0	64.0	41.8	37.9	0.42	-	-	-	-	-	-	-	-	-	-	-	-	-	YES	NO	YES	NO	TRANE	PART OF AHU	1,4
M04-HX	7	AHU-7	PLATE	210.01	67.22	8,136	24.0	24.0	47.9	38.0	0.68	8,136	65.0	64.0	41.8	37.6	0.79	-	-	-	-	-	-	-	-	-	-	-	-	-	YES	NO	YES	NO	TRANE	PART OF AHU	1,4
M04-HX	8	AHU-8	PLATE	109.00	62.00	2,972	24.0	24.0	56.2	-	0.51	3,269	65.0	61.0	48.1	48.0	0.53	12.0	65.0	2,972	86.0	68.0	82.1	65.6	0.37	3,269	80.0	72.0	83.5	72.0	0.49	YES	NO	YES	NO	HAAKON	PART OF AHU	1,4
M04-HX	9	AHU-9	TOTAL ENERGY WHEEL	255.0	71.60	5,550	24.0	23.9	57.5	47.2	0.78	5,550	70.0	54.4	36.5	33.9	0.80	54,220.0	71.1	5,550	86.0	66.8	78.1	63.9	0.81	5,550	75.0	62.7	82.9	65.6	0.81	YES	NO	NO	NO	NOVEL AIRE	PART OF AHU	1,2,3

NOTES:
1 THE ENERGY RECOVERY SYSTEM SHALL HAVE TH CAPABILITY TO PROVIDE A CHANGE IN ENTHALPY OF THE OUTDOOR AIR SUPPLY OF NOT LESS THAN 50 PERCENT OF THE DIFFERENCE BETWEEN THE OUTDOOR AND RETURN AIR ENTHALPIES, AT DESIGN CONDITIONS.
2 THE DESICCANT MATERIAL SHALL BE A MOLECULAR SIEVE. AND SPECIFICALLY A 4A OR SMALLER MOLECULAR SIEVE TO MINIMIZE CROSS CONTAMINATION
3 WHEEL CASSETTE SHALL BE FABRICATED OF HEAVY DUTY REINFORCED GALVANIZED STEEL
4 PLATE HEAT EXCHANGER COMPLETE WITH FACE AND CENTER BYPASS DAMPER FOR OUTDOOR AIR

HOT WATER HEATING COIL SCHEDULE

UNIT IDENTIFICATION			COIL				AIR						FLUID						CONTROL VALVE MAX PD (PSI)	MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	UNIT SERVED	TOTAL CAPACITY (MBH)	NUMBER OF ROWS	FINS PER FOOT	FIN TYPE	TOTAL AIRFLOW (CFM)	HEATING AIRFLOW (CFM)	EDB (F)	LDB (F)	FACE VELOCITY (FPM)	MAX APD (IN-WG)	FLUID TYPE	FLUID FLOW (GPM)	EWT (F)	LWT (F)	TUBE VELOCITY (FPS)	FOULING FACTOR	MAX WPD (FT)			
M04-HC	1	AHU-1	845.9	2	162	ALUMINUM	17071	17071	24	69.7	489	0.23	GLYCOL 25%	44.21	140	100	1.69	0.00025	1.25	5	TRANE	PART OF AHU	1,3
M04-HC	2	AHU-2	180.0	1	106	ALUMINUM	7150	7150	24	47.21	572	0.115	GLYCOL 25%	9.41	140	100	1.04	0.00025	0.95	5	TRANE	PART OF AHU	1,3,4
M04-HC	3	AHU-3	80.0	1	115	ALUMINUM	3160	3160	24	47.34	432	0.069	GLYCOL 25%	4.18	140	100	0.51	0.00025	0.45	5	TRANE	PART OF AHU	1,3,4
M04-HC	4	AHU-4	700.0	2	81	ALUMINUM	16640	16640	24	62.79	476	0.129	GLYCOL 25%	36.58	140	100	1.39	0.00025	2.06	5	TRANE	PART OF AHU	1,3
M04-HC	5	NOT USED																					
M04-HC	6	AHU-6	120.0	1	89	ALUMINUM	4900	4900	24	46.58	405	0.055	GLYCOL 25%	6.27	140	100	1.25	0.00025	1.71	5	TRANE	PART OF AHU	1,3,4
M04-HC	7	AHU-7	200.0	1	107	ALUMINUM	8136	8136	24	46.67	542	0.098	GLYCOL 25%	10.45	140	100	0.96	0.00025	0.91	5	TRANE	PART OF AHU	1,3,4
M04-HC	8	AHU-8	197.1	2	144	ALUMINUM	2,972	2,972	24.0	85.20	296	0.09	GLYCOL 25%	10.3	140.0	100.0	2.7	-	5.2	5	HAAKON	PART OF AHU	1,2,3
M04-HC	9	AHU-9	204.0	3	144	ALUMINUM	5,550	5,550	24.0	55.0	-	-	GLYCOL 25%	10.6	140.0	100.0	-	-	0.2	5	NOVEL AIRE	PART OF AHU	1,2,3

NOTES:
1 HYDRONIC COILS SHALL BE AHRI RATED
2 STAINLESS STEEL HEATING WATER COIL
3 COIL TO HAVE COATING TO PROTECT AGAINST SALT AIR CORROSION
4 PERFORMANCE OF HEATING COIL BASED ON RECOVERED ENERGY FROM PLATE EXCHANGER

AIR COOLED CONDENSING UNIT

UNIT IDENTIFICATION					COMPRESSORS					CONDENSER FAN			DIMENSIONS				ELECTRICAL				MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	UNIT SERVED	CAPACITY (MBH)	EER	TYPE	NO OF CIRCUITS	NO OF STAGES	SUCTION TEMP (F)	REFRIG TYPE	AIRFLOW (CFM)	NO OF FANS	HP (EACH)	HEIGHT (IN)	WIDTH (IN)	LENGTH (IN)	OPERATING WEIGHT (LBS)	VOLTS	PHASE	MCA	MOP			
M04-AHU	8B	AHU-8	150,000.0	12.0	SCROLL	2	2	-	R410A	-	1	-	50	40	52	450	460	3	26.0	-	TRANE	TTA15044D	1,2,3,4
M04-AHU	9B	AHU-9	248,000.0	12.1	SCROLL	2	2	-	R410A	15,500	2	1	46	46	96	800	460	3	47.0	-	TRANE	TTA240H4	1,2,3,4

NOTES:
1 MICRO CHANNEL CONDENSER COILS
2 ELECTRONICALLY COMMUTATED CONDENSER FANS
3 CONDENSING UNIT SHALL HAVE MINIMUM PERFORMANCE AT SPECIFIED RATING CONDITIONS NOT LESS THAN THE VALUES INDICATED OF THE LATEST WSEC.
4 REFER TO ELEC DRAWINGS FOR MOTOR STARTER AND DISCONNECT SWITCH

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DP4A - IFC

No.	DATE	DSN	CHK	APP	REVISION
0	2018.09.19	VJ	MG	VJ	ISSUED FOR CONSTRUCTION

DESIGNED BY: V. JOSHI
DRAWN BY: S. CHUNG
CHECKED BY: M. GUO
APPROVED BY: V. JOSHI

RANDALL C. WILKINSON — STATE OF WASHINGTON — 35360 — REGISTERED PROFESSIONAL ENGINEER — 2018.09.19

HENSEL PHELPS — Plan. Build. Manage. | coterra ENGINEERING | rolluda architects | Karen Kiest Landscape Architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS—CONSULTANTS

SUBMITTED BY: RICHARD LEWIS | DATE: 2018.09.19 | REVIEWED BY: BILL FERRIS | DATE: 2018.09.19

LINE IS 1" AT FULL SCALE

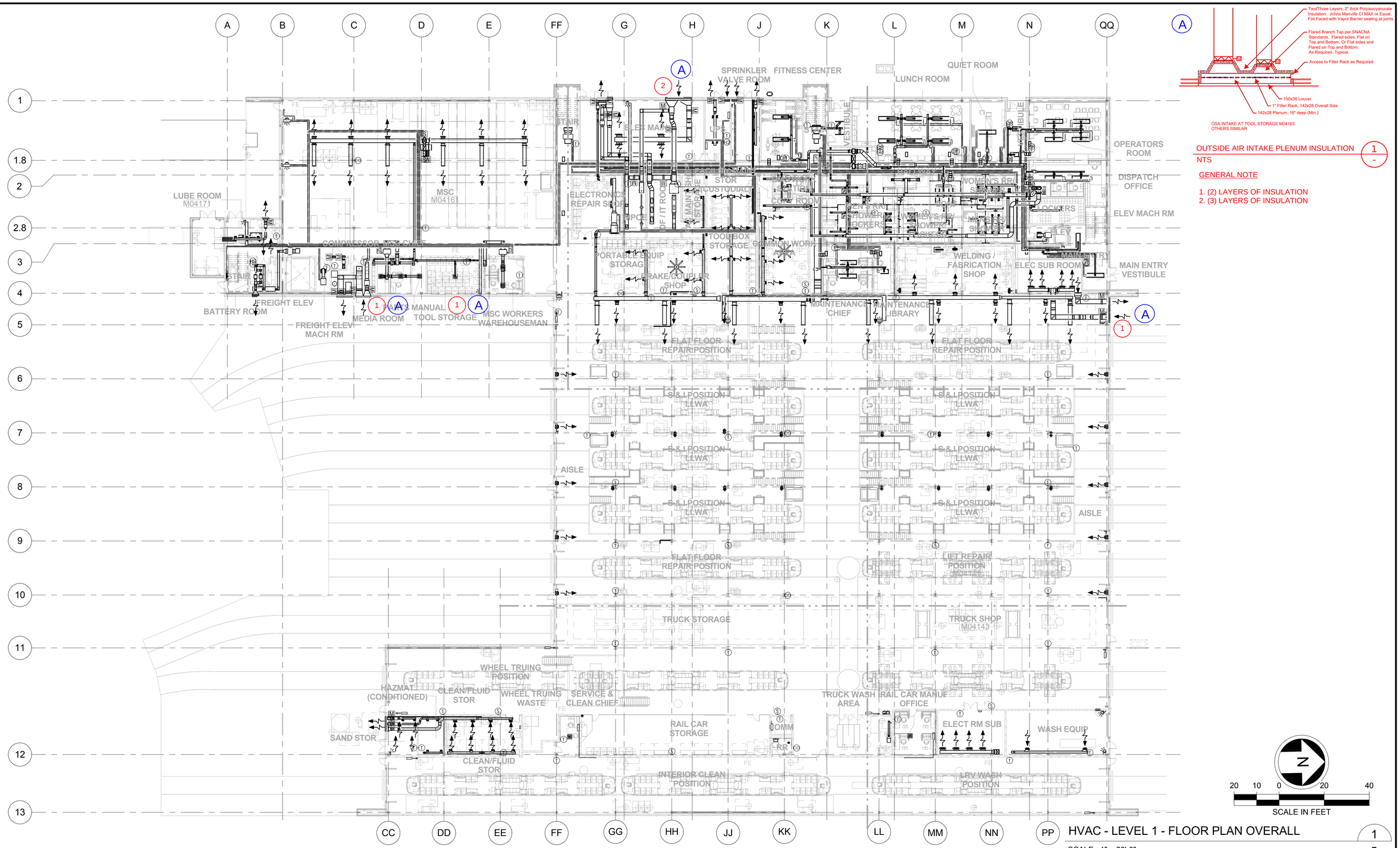
SOUNDTRANSIT

SCALE: NTS
FILENAME: M200-M04-M-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
MECHANICAL SCHEDULE

DRAWING NO.: M04-MHS020
FACILITY ID: M04
SHEET No.: 504
REV.: 0



OUTSIDE AIR INTAKE PLENUM INSULATION

NTS

GENERAL NOTE

1. (2) LAYERS OF INSULATION
2. (3) LAYERS OF INSULATION

SCALE IN FEET

HVAC - LEVEL 1 - FLOOR PLAN OVERALL

SCALE: 1" = 20'-0"

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DP4A - IFC

No.	DATE	DSN	CHK	APP	REVISION
A	2020.03.09				CB 0270
0	2018.09.19	VJ	MG	VJ	ISSUED FOR CONSTRUCTION

DESIGNED BY: V. JOSHI
DRAWN BY: S. CHUNG
CHECKED BY: M. GUO
APPROVED BY: V. JOSHI

RANDALL C. WILKINSON — STATE OF WASHINGTON — 35360 — REGISTERED PROFESSIONAL ENGINEER — 2018.09.19

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Stantec | VIA | kpff | Karen Kiest | Landscape Architects | ELCON ASSOCIATES, INC. ENGINEERS—CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:	SUBMITTAL DATE:
RICHARD LEWIS	2018.09.19	BILL FERRIS	2018.09.19	2018.09.19

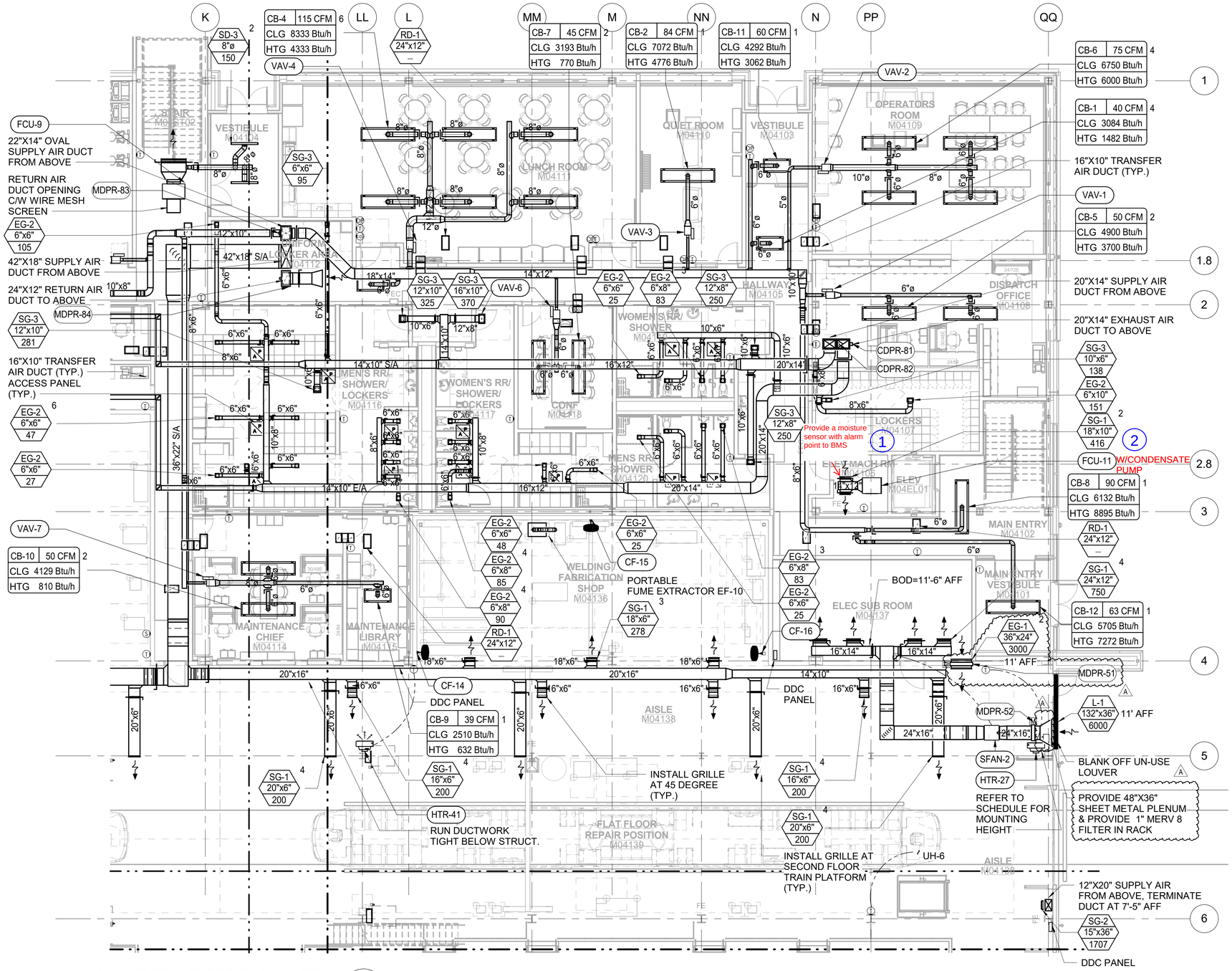
SCALE: AS NOTED
FILENAME: M200-M04-M-v2017
CONTRACT No.: RTA/CN 0020-16

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
HVAC - LEVEL 1 FLOOR PLAN OVERALL

DRAWING NO.: **M04-MHP101**
FACILITY ID: M04
SHEET No.: 407
REV: A

1 **CB 0441**
2 **CB 0569**



NOTES:
1. ISOLATION VALVE SHALL BE PROVIDED ON BRANCHES SERVING WITH ONE OR MORE SPACES.
2. AIR CONDITIONING FOR PERIMETER OFFICES WITH OPERABLE WINDOWS SHALL BE TURNED OFF VIA DEW POINT SENSOR.
3. FOR CEILING PLENUM RETURN AIR SYSTEM, AIR VOLUME THRU RA/EA GRILLE IS NOT REQUIRED TO BE BALANCED AND THEREFORE THE AIR FLOW IS NOT INDICATED FOR RA/EA GRILLES WHICH SHOULD CLOSELY MATCH SUPPLY AIR FLOW.
4. ALL RETURN AIR/TRANSFER AIR DUCT TO BE 16"X10" AND GRILLES ARE 24"X12" FOR OFFICE AREA. ALL RETURN/TRANSFER AIR DUCT ARE ABOVE THE DROP CEILING. THE DIMENSION OF GRILLE AND TRANSFER AIR DUCT IS SIMILAR TO ROOM M04114 ON DRAWING MHP112.

HVAC - LEVEL 1 FLOOR PLAN - AREA C (1)

SCALE: 1/8" = 1'-0"

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DP4A-IFC

No.	DATE	DSN	CHK	APP	REVISION
C	2020.08.19				CB 0569
B	2020.06.23				CB 0441
A	2019.06.17	VJ	MG	VJ	CB#019
0	2018.09.19	VJ	MG	VJ	ISSUED FOR CONSTRUCTION

DESIGNED BY: V. JOSHI
DRAWN BY: S. CHUNG
CHECKED BY: M. GUO
APPROVED BY: V. JOSHI

RANDALL C. WILKINSON — STATE OF WASHINGTON — 35360 — REGISTERED PROFESSIONAL ENGINEER
2018.09.19

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Stantec | VIA | kpff | Karen Kiest Landscape Architects | ELCON ASSOCIATES, INC. ENGINEERS—CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY: RICHARD LEWIS
DATE: 2018.09.19
REVIEWED BY: BILL FERRIS
DATE: 2019.09.19
SUBMITTAL DATE: 2018.09.19

SCALE: AS NOTED
FILENAME: M200-M04-M-v2017
CONTRACT No.: RTA/CN 0020-16

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST
OMF EAST BUILDING
HVAC - LEVEL 1 FLOOR PLAN AREA C

DRAWING NO.: **M04-MHP113a**
FACILITY ID: M04
SHEET No: REV: C

LIGHTING FIXTURES

TYPE	DESCRIPTION	MANUFACTURER	MODEL	ALTERNATE MANUFACTURERS	Lamp Code	Input Watts	Input Volts	Driver/Control	Comments	ST Type
L03	LED WALL PACK, NOMINAL 6-3/8" HIGH X 13-3/4" WIDE X 10" PROJECTION FROM WALL. DIE-CAST ALUMINUM HOUSING. IP65.	LITHONIA	D-SERIES WALL		NOMINAL 1355 LUMEN OUTPUT, 4000K, ASYMMETRIC DIFFUSE OPTICS	15 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LU
L03A	SAME AS L03, EXCEPT HIGHER LUMEN OUTPUT AND TYPE III DISTRIBUTION.	LITHONIA	D-SERIES WALL		NOMINAL 3800 LUMEN OUTPUT, TYPE III IES DISTRIBUTION, 4000K	40 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LU
L05	LINEAR LED STRIPLIGHT, NOMINAL 4'-0" LONG X 3" WIDE X 3" HIGH. CRS HOUSING. DIFFUSE FROSTED SNAP-IN ACRYLIC LENS. SYMMETRIC DISTRIBUTION.	LITHONIA	ZL1N SERIES		NOMINAL 5000 LUMEN OUTPUT, 3500K	34 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LA
L06	SURFACE MOUNTED LENSED LED WITH HIGH IMPACT ACRYLIC DIFFUSER, NOMINAL 8.25" WIDE X 5-1/2" DEEP X 54" LONG. IMPACT-RESISTANT, UV-RESISTANT FIBERGLASS REINFORCED POLYESTER HOUSING. HIGH IMPACT RESISTANT FROSTED ACRYLIC DIFFUSER SECURED TO FULLY GASKETED HOUSING BY CAPTIVE, CORROSION AND TAMPER-RESISTANT LATCHES. UL LISTED FOR WET LOCATION. NSF SPLASH ZONE RATED.	LITHONIA	VAPLED SERIES		NOMINAL 6000 LUMEN OUTPUT, 3500K, MEDIUM DISTRIBUTION	62 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LB
L06A	SAME AS L06, EXCEPT NOMINAL 12000 LUMEN OUTPUT.	LITHONIA	VAPLED SERIES		NOMINAL 12000 LUMEN OUTPUT, 3500K 5000	107 W 49	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LB
L06B	SAME AS L06, EXCEPT NOMINAL 12000 LUMEN OUTPUT AND WALL MOUNTED.	LITHONIA	~~VAPLED SERIES~~ XVML Series	(1)	NOMINAL ~~12000~~ LUMEN OUTPUT, ~~3500K~~ 4000K	~~107~~ W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LB
L07	RECESSED LED 2X2 LENSED TROFFER, NOMINAL 2'-0" LONG X 2'-0" WIDE X 2-11/16" RECESS DEPTH, STEEL HOUSING. ~~DUAL FROSTED~~ DIFFUSE OPAL ~~ACRYLIC CURVED LENSES~~. WHITE LENSE POWDERCOAT PAINT FINISH.	PHILIPS	PHILIPS DUALED 2X2 SERIES	CREE BETA SERIES	NOMINAL 2100 LUMEN OUTPUT, 3500K	19 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LM
L07A	SAME AS L07, EXCEPT NOMINAL 2'-0" WIDE X 4'-0" LONG.	PHILIPS	PHILIPS DUALED 2X4 SERIES	CREE BETA SERIES	NOMINAL 4900 LUMEN OUTPUT, 3500K 2000	38 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LM
L08	RECESSED LED ROUND APERTURE DOWNLIGHT, NOMINAL 6" DIAMETER. NOMINAL 7.5" RECESS DEPTH. COLD-ROLLED STEEL HOUSING. SELF-FLANGED, CLEAR, SEMI-SPECULAR ALZAK LOWER CONE REFLECTOR PROVIDES NOMINAL 50-DEGREE VISUAL CUTOFF TO LIGHTSOURCE. UL LISTED FOR DAMP LOCATIONS. STANDARD MANUFACTURER'S TRIM FINISH AS SELECTED BY ARCHITECT.	~~PHILIPS~~ SIGNIFY	~~OM6LED SERIES~~ LIGHTOLIER C6RDL	(1)	NOMINAL ~~1700~~ LUMEN OUTPUT, 3500K	~~27 W~~ 19 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LL1
L09-4	WALL MOUNTED DIRECT/INDIRECT LINEAR LED, NOMINAL 4'-0" LONG. EXTRUDED ALUMINUM HOUSING. UL DAMP LOCATION RATED.	PHILIPS	DORMLYTE LED SERIES		NOMINAL 3300 LUMEN OUTPUT, 3500K	31 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LE-1
L10-2	LINEAR LED WALL MOUNTED VANITY LIGHT, NOMINAL ~~4'-0"~~ 2'-0" LONG X 3.25" HIGH X 3.25" WIDE. FROSTED ACRYLIC THREE-SIDED LENS.	BIRCHWOOD	NOLAN LED SERIES		NOMINAL 350 LUMEN OUTPUT PER FOOT, 3500K	6 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		NEW
L10-4	SAME AS L10-2, EXCEPT NOMINAL 4'-0" LONG.	BIRCHWOOD	NOLAN LED SERIES		NOMINAL 350 LUMEN OUTPUT PER FOOT, 3500K	12 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		NEW
L10A-2	SIMILAR TO TYPE L10-2, EXCEPT 120V.	BIRCHWOOD	NOLAN LED SERIES		NOMINAL 350 LUMEN OUTPUT PER FOOT, 3500K	6 W	120 V	INTEGRAL 0-10V DIMMING DRIVER, DIMMABLE TO 10%		NEW
L11	SUSPENDED LINEAR LENSED STRIPLIGHT, NOMINAL 3" WIDE X 3" HIGH X 4'-0" LONG. FIXTURES MOUNTED END TO END TO BE TANDEM MOUNTED. HIGH-GLOSS, BAKED WHITE ENAMEL FINISH. DIFFUSE ACRYLIC LENS.	LITHONIA	ZL1N SERIES		NOMINAL 7000 LUMEN OUTPUT, 3500K	52 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LA
L11-2	SIMILAR TO TYPE L11, EXCEPT NOMINAL 2'-0" LONG.	LITHONIA	ZL1N SERIES		NOMINAL 3500 LUMEN OUTPUT, 3500K	31 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LA

LIGHTING FIXTURES

TYPE	DESCRIPTION	MANUFACTURER	MODEL	ALTERNATE MANUFACTURERS	Lamp Code	Input Watts	Input Volts	Driver/Control	Comments	ST Type
L12-4	LINEAR RECESSED LED WALL WASHER, NOMINAL 4'-0" LONG X 3.5" WIDE X 3.5" RECESS DEPTH. DIFFUSING ACRYLIC LENS. ASYMMETRIC WALL WASH DISTRIBUTION. EXTRUDED ALUMINUM HOUSING. MANUFACTURER'S STANDARD FINISH AS SELECTED BY ARCHITECT.	ALIGHT	ACL7 SERIES		NOMINAL 375 LUMEN OUTPUT PER FOOT, 3500K	20 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LA
L13-3	LINEAR RECESSED LED DOWNLIGHT, NOMINAL 3.5" WIDE X 3.5" HIGH X 3'-0" LONG. EXTRUDED ALUMINUM HOUSING. DIFFUSE ACRYLIC LENS. MANUFACTURER'S STANDARD FINISH AS SELECTED BY ARCHITECT.	ALIGHT	D5 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 375 LUMEN OUTPUT PER FOOT, 3500K	15 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI, RECESSED
L13-4	SAME AS L13-3, EXCEPT NOMINAL 4'-0" LONG.	ALIGHT	D5 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 375 LUMEN OUTPUT PER FOOT, 3500K	20 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI, RECESSED
L13-5	SAME AS L13-3, EXCEPT NOMINAL 5'-0" LONG.	ALIGHT	D5 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 375 LUMEN OUTPUT PER FOOT, 3500K	25 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI, RECESSED
L13-6	SAME AS L13-3, EXCEPT NOMINAL 6'-0" LONG.	ALIGHT	D5 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 375 LUMEN OUTPUT PER FOOT, 3500K	30 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI, RECESSED
L13-7	SAME AS L13-3, EXCEPT NOMINAL 7'-0" LONG.	ALIGHT	D5 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 375 LUMEN OUTPUT PER FOOT, 3500K	35 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI, RECESSED
L13-8	SAME AS L13-3, EXCEPT NOMINAL 8'-0" LONG.	ALIGHT	D5 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 375 LUMEN OUTPUT PER FOOT, 3500K	40 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI, RECESSED
L13-10	SAME AS L13-3, EXCEPT NOMINAL 10'-0" LONG. CONTINUOUS LENS APPEARANCE.	ALIGHT	D5 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 375 LUMEN OUTPUT PER FOOT, 3500K	50 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI, RECESSED
L13-11	SAME AS L13-3, EXCEPT NOMINAL 11'-0" LONG. CONTINUOUS LENS APPEARANCE.	ALIGHT	D5 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 350 LUMEN OUTPUT PER FOOT, 3500K	55 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI, RECESSED
L13-12	SAME AS L13-3, EXCEPT NOMINAL 12'-0" LONG. CONTINUOUS LENS APPEARANCE.	ALIGHT	D5 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 375 LUMEN OUTPUT PER FOOT, 3500K	60 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI, RECESSED
L13A-4	SAME AS L13-4, EXCEPT UL WET LOCATION RATED AND 4000K.	ALIGHT	D5 WET SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 375 LUMEN OUTPUT PER FOOT,4000K	20 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI, RECESSED
L13A-8 (1) L13A-9	SAME AS L13-8, EXCEPT UL WET LOCATION RATED AND 4000K. SAME AS L13A-12, EXCEPT NOMINAL 9'-0" LONG.	ALIGHT	D5 WET SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 375 LUMEN OUTPUT PER FOOT,4000K	40 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI, RECESSED
L13A-9				LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES		60 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI, RECESSED
L13A-12	SAME AS L13-12, EXCEPT UL WET LOCATION RATED AND 4000K.	ALIGHT	D5 WET SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 375 LUMEN OUTPUT PER FOOT, 4000K	60 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI, RECESSED
L13B-4	SIMILAR TO TYPE L13-4, EXCEPT NOMINAL 829 LUMEN OUTPUT PER FOOT.	ALIGHT	D5 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	INTEGRAL LED, NOMINAL 829 LUMEN OUTPUT PER FOOT, 3500K	40 W	120 V	INTEGRAL 0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI, RECESSED
L14	SHOWER RATED RECESSED LED DOWNLIGHT, NOMINAL 6" APERTURE X 8" RECESS DEPTH. GALVANIZED STEEL HOUSING. OPAL ACRYLIC FLAT REGRESSED LENS. NON-CONDUCTIVE/DEAD FRONT TRIM FOR SHOWER USE. UL WET LOCATION RATED.	GOTHAM	EVO SHOWER		NOMINAL 1500 LUMEN OUTPUT, 3500K	10 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LL1
L15	LINEAR SURFACE MOUNTED LED, NOMINAL 4'-0" LONG X 1.85" HIGH X 1.75" WIDE. EXTRUDED ALUMINUM HOUSING. FIXED MOUNTING.	WINONA LED	WINLINE SURFACE LINEAR 308 SERIES		NOMINAL 900 LUMEN OUTPUT PER FOOT, 3500K, 100-DEGREE BEAMSPREAD	64 W	277 V	REMOTE DRIVER. DIMMING NOT REQUIRED. (C)		LD

1 **CB 0105**
2 **CB 0000**
3

GENERAL NOTES

1. ALL LED SOURCES ARE INTEGRAL TO FIXTURES UNLESS OTHERWISE NOTED.
2. ALL DRIVERS ARE INTEGRAL TO FIXTURE UNLESS OTHERWISE NOTED.

DP4A - IFC

No.	DATE	DSN	CHK	APP	REVISION
D	2019.09.23				CB 0105 Light Fixture Types
C	2019.08.01	AJF	DBF	JD	RFI 00174
B	2019.06.04	AJF	DBF	JD	CB#029
0	2018.09.19	AJF	DBF	DAW	ISSUED FOR CONSTRUCTION

DESIGNED BY: A. FIEDLER
DRAWN BY: A. FIEDLER
CHECKED BY: D. FONG
APPROVED BY: J. DEERKOP

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2018.09.19
8/13/2019

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Karen Kiest Landscape Architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS—CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY: RICHARD LEWIS | DATE: 2018.09.19
REVIEWED BY: BILL FERRIS | DATE: 2018.09.19

SCALE: AS NOTED
FILENAME: M200-M04-E-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
LIGHTING FIXTURE SCHEDULE

DRAWING NO.: **M04-ELS001**
FACILITY ID: M04
SHEET No: REV: D

8/1/2019 2:17:05 PM
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LIGHTING FIXTURES

TYPE	DESCRIPTION	MANUFACTURER	MODEL	ALTERNATE MANUFACTURERS	Lamp Code	Input Watts	Input Volts	Driver/Control	Comments	ST Type
L15	LINEAR SURFACE MOUNTED LED, NOMINAL 4'-0" LONG X 1.85" HIGH X 1.75" WIDE. EXTRUDED ALUMINUM HOUSING. FIXED MOUNTING.	WINONA LED	WINLINE SURFACE LINEAR 308 SERIES		NOMINAL 900 LUMEN OUTPUT PER FOOT, 3500K, 100-DEGREE BEAMSPREAD	64 W	277 V	REMOTE DRIVER. DIMMING NOT REQUIRED.		LD
L16	LINEAR SURFACE MOUNTED LED, NOMINAL 4'-0" LONG X 1.2" HIGH X 1.2" WIDE. EXTRUDED ALUMINUM HOUSING. FROSTED ACRYLIC LENS. ADJUSTABLE MOUNTING FOR 200-DEGREES OF CONTINUOUS ROTATION.	WINONA LED	WINLINE SURFACE LINEAR 106 SERIES		NOMINAL 344 LUMEN OUTPUT PER FOOT, 3500K, 100-DEGREE BEAMSPREAD	25 W	277 V	REMOTE DRIVER. DIMMING NOT REQUIRED.		LD
L16A	SIMILAR TO L16, EXCEPT WALL MOUNTED.	WINONA LED	WINLINE SURFACE LINEAR 106 SERIES		NOMINAL 344 LUMEN OUTPUT PER FOOT, 3500K, 100-DEGREE BEAMSPREAD	25 W	277 V	REMOTE DRIVER. DIMMING NOT REQUIRED.		LD
L20-8	SURFACE MOUNTED LINEAR LED, NOMINAL 8'-0" LONG X 4" WIDE X 4" HIGH. EXTRUDED ALUMINUM HOUSING. FROSTED ACRYLIC LENS.	ALIGHT	D3 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 829 LUMEN OUTPUT PER FOOT, 3500K	76 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI
L20B-8	SIMILAR TO L20-8, EXCEPT WALL MOUNTED AND UL WET LOCATION RATED.	ALIGHT	D3 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	INTEGRAL LED, NOMINAL 829 LUMEN OUTPUT PER FOOT, 3500K	12 W	120 V	INTEGRAL 0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI
L20C-8	SAME AS L20-8, EXCEPT WALL MOUNTED.	ALIGHT	D3 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 829 LUMEN OUTPUT PER FOOT, 3500K	76 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI
L20D-4	SAME AS L20-8, EXCEPT NOMINAL 4'-0" LONG, WALL MOUNTED, AND WET LOCATION RATED.	ALIGHT	D3 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 415 LUMEN OUTPUT PER FOOT, 3500K	20 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI
L20E-8	SAME AS L20-8, EXCEPT NOMINAL 415 LUMEN OUTPUT PER FOOT AND WET LOCATION RATED.	ALIGHT	D3 SERIES	LITECONTROL LED MOD44 SERIES; PHILIPS CELINO LED SERIES; OR PINNACLE EDGE EX4A SERIES	NOMINAL 415 LUMEN OUTPUT PER FOOT, 3500K	40 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI
L21-8	PENDANT MOUNTED LINEAR LED, NOMINAL 8'-0" LONG X 4" WIDE X 4" HIGH. EXTRUDED ALUMINUM HOUSING. FROSTED ACRYLIC LENS.	ALIGHT	D3 SERIES		NOMINAL 829 LUMEN OUTPUT PER FOOT, 3500K	76 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LI
L22A	PENDANT MOUNTED HIGH-BAY ROUND APERTURE LED DOWNLIGHT, NOMINAL 14.6" DIAMETER. NOMINAL 14.4" RECESSED DEPTH. CLEAR ARCYLIC REFLECTOR.	CREE	CXB SERIES		NOMINAL 24000 LUMEN OUTPUT 3500K	240 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%	PROVIDE MODIFICATION FOR 3500K.	ST PREFERRED
L23-8	LINEAR WALL MOUNTED LED SIGN LIGHT, NOMINAL 8'-0" LONG X 6-7/8" HIGH X 18" PROJECTION ARM. FIXTURE RUN CONSISTS OF TWO NOMINAL 4'-0" SEGMENTS. EXTRUDED ALUMINUM HOUSING. CLEAR GLASS LENS. ASYMMETRIC WALL WASH DISTRIBUTION. DIE-CAST END CAPS. STAINLESS STEEL HARDWARE. POWDERCOAT PAINT FINISH. STANDARD FINISH AS SELECTED BY ARCHITECT. UL WET LOCATION RATED, IP66.	WINONA LED	801L SERIES		NOMINAL 580 LUMEN OUTPUT PER FOOT, 4000K	40 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LJ SUBSTITUTE
L23-38	SIMILAR TO TYPE L23-8, EXCEPT NOMINAL 38'-0" LONG FIXTURE RUN AND HIGH OUTPUT. RUN CONSISTS OF 9 NOMINAL 4'-0" SEGMENTS AND ONE 2'-0" SEGMENT.	WINONA LED	801L SERIES		NOMINAL 1100 LUMEN OUTPUT PER FOOT, 4000K	390 W	277 V	0-10V DIMMING DRIVER, DIMMABLE TO 10%		LJ SUBSTITUTE
L24	POLE MOUNTED LED PARKING AREA LUMINAIRE, NOMINAL 36-3/4" LONG X 25" WIDE X 4-1/8" HIGH FIXTURE HEAD. MOUNTED TO 30'-0" TALL TAPERED STEEL POLE. 7.5" DIAMETER POLE AT BASE X 3.3" AT TOP. IP66. FLAT POLYCARBONATE LENS. FULL CUTOFF OPTIC. MANUFACTURER'S STANDARD FINISH AS SELECTED BY ARCHITECT.	KIM LIGHTING	ALTITUDE 240 LED SERIES	KIM STL-LED	INTEGRAL LED, NOMINAL 41,250 LUMEN OUTPUT, TYPE III NFO IES DISTRIBUTION, 4000K, 80 CRI		277 V		PROVIDE MODIFICATION FOR 80 CRI.	LO
X01A	DOUBLE FACE CEILING MOUNTED EDGE-LIT LED EXIT SIGN. EXTRUDED ALUMINUM HOUSING WITH UNIVERSAL ARROWS. POLISHED MIRROR ACRYLIC PANEL WITH EVENLY ILLUMINATED LETTERS. DIE-CAST FIXTURE FRAME ASSEMBLY USING REINFORCED PLASTIC OR METALLIC CLIPS. SHALL MEET UL STANDARD 924.	BARRON	EXITRONIX 900E SERIES		INTEGRAL GREEN LEDS		277 V	INTEGRAL DRIVER	3 WATTS	LW
X02	WALL MOUNTED SINGLE FACE LED EXIT SIGN. IMPACT RESISTANT 1/8" POLYCARBONATE SHIELD. DIE-CAST ALUMINUM HOUSING. FIELD SELECTABLE DIRECTIONAL CHEVRONS. IP66. WET LOCATION RATED. WHITE FACE WITH GREEN LED.	BARRON	NAV SERIES		INTEGRAL GREEN LEDS			INTEGRAL DRIVER	3 WATTS	LX
X02A	SAME AS X02, EXCEPT DOUBLE FACE AND CEILING MOUNTED.	BARRON	NAV SERIES		INTEGRAL GREEN LEDS		277 V	INTEGRAL DRIVER	3 WATTS	LX
X02B	SAME AS X02, EXCEPT DOUBLE FACE AND END WALL MOUNTED	BARRON	NAV SERIES		INTEGRAL GREEN LEDS		277 V	INTEGRAL DRIVER	3 WATTS	LX

1 CB 0124
2 CB 0105
3 RFI 00000

GENERAL NOTES

1. ALL LED SOURCES ARE INTEGRAL TO FIXTURES UNLESS OTHERWISE NOTED.
2. ALL DRIVERS ARE INTEGRAL TO FIXTURE UNLESS OTHERWISE NOTED.

DESIGN PACKAGE 4 - IFC

No.	DATE	DSN	CHK	APP	REVISION
C	2020.03.27	AF	DF	JD	DB054
B	2020.03.23	AF	DF	JD	DB052
A	2020.01.17	AF	DF	JD	DB020
0	2018.09.19	AF	DF	JD	ISSUED FOR CONSTRUCTION

CB 2105 Light Fixture Types
CB 2024 L23 Light Fixture

DESIGNED BY: A. FIEDLER
DRAWN BY: A. FIEDLER
CHECKED BY: D. FONG
APPROVED BY: J. DEERKOP

3/27/2020

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Karen Kiest | Landscape Architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

SUBMITTED BY: RICHARD LEWIS
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LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SCALE: AS NOTED
FILENAME: M200-M04-E-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
LIGHTING FIXTURE SCHEDULE

DRAWING NO.: M04-ELS002
FACILITY ID: M04
SHEET No: REV: A

3/27/2020 9:49:59 AM
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1	CB 0223.1
2	ST RFI 00184
3	00000

PANEL NAME: **M04-LCP-001**

LOCATION:

CKT	AREA OF CONTROL	CIRCUIT#	SWITCH#	CONTROL
R1	CONTROLS MSCM04161	M04-PB4-121L:1	a	OS, TIMECLOCK
R2	CONTROLS PARTS ISSUED WINDOW M04160	M04-PB4-121L:3	b	TIMECLOCK
R3	CONTROLS LEVEL 1 HALLWAY M04105	M04-PB4-121L:13	c	TIMECLOCK
R4	CONTROLS LEVEL 1 HALLWAY M04105	M04-PB4-221L:1	c	TIMECLOCK
R5	CONTROLS ELECTRONICS REPAIR SHOP M04131	M04-PB4-121L:17	d	OS, TIMECLOCK
R6	CONTROLS MPOE M04127	M04-PB4-121L:19	e	OS, TIMECLOCK
R7	CONTROLS PORTABLE EQUIP STORAGE M04132	M04-PB4-121L:23	f	OS, TIMECLOCK
R8	CONTROLS BRAKE/COUPLER SHOP M04133	M04-PB4-121L:25	g	OS, TIMECLOCK
R9	CONTROLS TOOL BOX STORAGE M04134	M04-PB4-121L:27	h	OS, TIMECLOCK
R10	CONTROLS COMMON WORK AREA M04135	M04-PB4-121L:31	k	OS, TIMECLOCK
R11	CONTROLS WELDING / FABRICATION SHOP M04136	M04-PB4-221L:9	m	OS, TIMECLOCK
R12	CONTROLS AISLE M04138	M04-PB4-221L:11	n	TIMECLOCK
R13	CONTROLS PARTS STORAGE MEZZ M04262	M04-PB4-421L:7	a2	OS, TIMECLOCK
R14	CONTROLS PARTS STORAGE MEZZ M04262	M04-PB4-421L:3	b2	OS, TIMECLOCK
R15	CONTROLS PARTS STORAGE MEZZ M04262	M04-PB4-421L:5	c2	OS, TIMECLOCK
R16	CONTROLS SCADA REMOTE ACCESS RM M04246	M04-PB4-421L:13	d2	OS,TIMECLOCK
R17	CONTROLS LEVEL 2 OFFICE HALLWAY	M04-PB4-421L:9	e2	TIMECLOCK
R18	CONTROLS LEVEL 2 OFFICE HALLWAY	M04-PB4-422L:1	e2	TIMECLOCK
R19	CONTROLS PANTORAPH/ROOF/HVAC/STO M04251	M04-PB4-421L:19	f2	TIMECLOCK
R20	CONTROLS PANTORAPH/ROOF/HVAC/STO M04251	M04-PB4-421L:21	g2	TIMECLOCK
R21	CONTROLS PANTORAPH/ROOF/HVAC/STO M04251	M04-PB4-421L:23	h2	TIMECLOCK
R22	CONTROLS PANTORAPH/ROOF/HVAC/STO M04251	M04-PB4-422L:13	k2	TIMECLOCK
R23	CONTROLS PANTORAPH/ROOF/HVAC/STOR M04251	M04-PB4-421L:25	m2	TIMECLOCK
R24	CONTROLS S & I POSITION ROOF M04257	M04-PB4-421L:31	o	TIMECLOCK
R25	CONTROLS S & I POSITION ROOF M04255	M04-PB4-421L:33	o	TIMECLOCK
R26	CONTROLS S & I POSITION ROOF M04258	M04-PB4-422L:25	p	TIMECLOCK
R27	CONTROLS S & I POSITION ROOF M04258	M04-PB4-422L:27	p	TIMECLOCK
R28	CONTROLS FLAT FLOOR REPAIR PLAT. M04252	M04-PB4-422L:19	q	TIMECLOCK
R29	CONTROLS FLAT FLOOR REPAIR PLAT. M04252	M04-PB4-422L:21	q	TIMECLOCK
R30	CONTROLS FLAT FLOOR REPAIR PLAT. M04252	M04-PB4-422L:23	q	TIMECLOCK
R31	CONTROLS WHEEL TRUING POSITION M04144	M04-PB4-321L:13	r	TIMECLOCK
R32	CONTROLS WHEEL TRUING POSITION M04144	M04-PB4-321L:15	r1	TIMECLOCK
R33	CONTROLS WHEEL TRUING POSITION M04144	M04-PB4-321L:17	s	TIMECLOCK
R34	CONTROLS INTERIOR CLEAN POSITION M04156	M04-PB4-321L:23	t	TIMECLOCK
R35	CONTROLS INTERIOR CLEAN POSITION M04156	M04-PB4-321L:25	u	TIMECLOCK
R36	CONTROLS INTERIOR CLEAN POSITION M04156	M04-PB4-321L:27	v	TIMECLOCK
R37	CONTROLS INTERIOR CLEAN POSITION M04260	M04-PB4-321L:19	w	TIMECLOCK
R38	CONTROLS WHEEL TRUING POSITION M04144	M04-PB4-321L:21	x	TIMECLOCK
R39	Space			
R40	Space			
R41	CONTROLS M04139 SOUTH - CATWALK	M04-PB4-221L:19	z1	TIMECLOCK
R42	CONTROLS M04139 NORTH - CATWALK	M04-PB4-221L:21	z2	TIMECLOCK
R43	CONTROLS M04001 SOUTH WEST - PIT	M04-PB4-221L:33	y3	TIMECLOCK
R44	CONTROLS M04001 SOUTH WEST - CATWALK	M04-PB4-221L:31	z3	TIMECLOCK
R45	CONTROLS M04001 SOUTH MIDDLE - PIT	M04-PB4-221L:37	y4	TIMECLOCK
R46	CONTROLS M04001 SOUTH MIDDLE- CATWALK	M04-PB4-221L:39	z4	TIMECLOCK
R47	CONTROLS M04001 SOUTH EAST - PIT	M04-PB4-321L:04	y5	TIMECLOCK
R48	CONTROLS M04001 SOUTH EAST - CATWALK	M04-PB4-321L:02	z5	TIMECLOCK
R49	CONTROLS M04001 NORTH WEST - PIT	M04-PB4-221L:04	y6	TIMECLOCK
R50	CONTROLS M04001 NORTH WEST - CATWALK	M04-PB4-221L:02	z6	TIMECLOCK
R51	CONTROLS M04001 NORTH MIDDLE - PIT	M04-PB4-221L:10	y7	TIMECLOCK
R52	CONTROLS M04001 NORTH MIDDLE - CATWALK	M04-PB4-221L:08	z7	TIMECLOCK
R53	CONTROLS M04001 NORTH EAST - PIT	M04-PB4-321L:10	y8	TIMECLOCK
R54	CONTROLS M04001 NORTH EAST - CATWALK	M04-PB4-321L:08	z8	TIMECLOCK
R55	Space			1
R56	CONTROLS RECEIVING - EXTERIOR	M04-PB4-121L:41		PS, *TIMECLOCK
R57	CONTROLS EXTERIOR - SOUTH	M04-PB4-421L:2		PS, *TIMECLOCK
R58	CONTROLS EXTERIOR - NORTH	M04-PB4-422L:2		PS, *TIMECLOCK
R59	CONTROLS EXTERIOR - WEST	M04-PB4-121L:39		PS, *TIMECLOCK
R60	CONTROLS EXTERIOR - EAST	M04-PB4-321L:16		PS, *TIMECLOCK
R61	CONTROLS EXTERIOR NORTH - SIGNAGE	M04-PB4-221L:18		TIMECLOCK
R62	CONTROLS EXTERIOR EAST- SIGNAGE	M04-PB4-321L:14		TIMECLOCK
R63	CONTROLS M04161 - EM LIGHTING	M04-PB4-161L:3		TIMECLOCK
R64	CONTROLS HALLWAY - EM LIGHTING	M04-PB4-161L:5		TIMECLOCK
R65	CONTROLS M04131 - EM LIGHTING	M04-PB4-161L:7		TIMECLOCK
R66	CONTROLS M04151- EM LIGHTING	M04-PB4-361L:5		TIMECLOCK
R67	CONTROLS EXTERIOR SOUTH - EM LIGHTING	M04-PB4-161L:4		TIMECLOCK
R68	CONTROLS EXTERIOR WEST - EM LIGHTING	M04-PB4-161L:2		TIMECLOCK
R69	CONTROLS PARTS STORAGE MEZZ M04262 - EM...	M04-PB4-161L:13		TIMECLOCK
R70	CONTROLS OFFICE AREA - EM LIGHITNG	M04-PB4-161L:15		TIMECLOCK
R71	CONTROLS PANTORAPH/ROO/HVAC/STOR M04251 ...	M04-PB4-161L:17		TIMECLOCK
R72	CONTROLS WHEEL TRUING POSITION M04144 - EM...	M04-PB4-161L:19		TIMECLOCK
R73	CONTROLS S & I POSITION ROOF M04258 - EM...	M04-PB4-161L:21		TIMECLOCK
R74	CONTROLS INTERIOR CLEAN POSITION M04156 - E...	M04-PB4-361L:3		TIMECLOCK
R75	CONTROLS BIKE ENCLOSURE - EM LIGHTING	M04-PB4-161L:23		OS, TIMECLOCK
R76	Space			
R77	CONTROLS M04255 - FUTURE PIT LIGHTING	M04-PB4-221L:35		TIMECLOCK
R78	CONTROLS M04257 - FUTURE PIT LIGHTING	M04-PB4-221L:41		TIMECLOCK
R79	CONTROLS M04256 - FUTURE PIT LIGHTING	M04-PB4-221L:6		TIMECLOCK
R80	CONTROLS M04258 - FUTURE PIT LIGHTING	M04-PB4-221L:12		TIMECLOCK

NOTES:
R = RELAY, * = ASTRONOMICAL TIMECLOCK, PS = PHOTOCELL SENSOR, OS = OCCUPANCY SENSOR
1

PANEL NAME: **M04-LCP-002**

LOCATION:

CKT	AREA OF CONTROL	CIRCUIT#	SWITCH#	CONTROL 1
R1	ROADWAY	M04-PB4-121L:20		PS, *TIMECLOCK
R2	ROADWAY	M04-PB4-121L:22		PS, *TIMECLOCK
R3	ROADWAY	M04-PB4-121L:24		PS, *TIMECLOCK
R4	RAILYARD - SOUTH	M04-PB4-121L:2		PS, *TIMECLOCK
R5	RAILYARD - SOUTH	M04-PB4-121L:4		PS, *TIMECLOCK
R6	RAILYARD - SOUTH	M04-PB4-121L:6		PS, *TIMECLOCK
R7	RAILYARD - MIDDLE	M04-PB4-121L:8		PS, *TIMECLOCK
R8	RAILYARD - MIDDLE	M04-PB4-121L:10		PS, *TIMECLOCK
R9	RAILYARD - MIDDLE	M04-PB4-121L:12		PS, *TIMECLOCK
R10	RAILYARD - NORTH	M04-PB4-121L:14		PS, *TIMECLOCK
R11	RAILYARD - NORTH	M04-PB4-121L:16		PS, *TIMECLOCK
R12	RAILYARD - NORTH	M04-PB4-121L:18		PS, *TIMECLOCK
R13	OMF PARKING	M04-PB4-221L:20		PS, *TIMECLOCK
R14	OMF PARKING	M04-PB4-221L:22		PS, *TIMECLOCK
R15	OMF PARKING	M04-PB4-221L:24		PS, *TIMECLOCK
R16	ENTRY/EXIT TRAIL	M04-PB4-321L:20		PS, *TIMECLOCK
R17	ENTRY/EXIT TRAIL	M04-PB4-321L:22		PS, *TIMECLOCK
R18	ENTRY/EXIT TRAIL	M04-PB4-321L:24		PS, *TIMECLOCK
R19				
R20				
R21				
R22				
R23				
R24				
R25				
R26				
R27				
R28				
R29				
R30				

NOTES:
R = RELAY, * = ASTRONOMICAL TIMECLOCK, PS = Photocell Sensor
1

GENERAL NOTES

1. LIGHTING CONTROL WIRING SHALL BE MIN. SIZE #12 - 3/4" CONDUIT

2 2. R5-R11 and R13-R16 - Program these areas per the contract documents as these areas have OS or PC that will keep the lights off as no one will be in these areas.

3. R1, R2, R19-R54 - Please have these areas programmed for 7am-5pm.

4. R3, R4, R12, R17, R18, R63-75 - These lights should be programmed for 24/7 operation as all these lights appear to be egress lights.

DP4A - IFC

No.	DATE	DSN	CHK	APP	REVISION
C	2020.10.12				Sound Transit RFI 00184 Lighting Control Programing Schedule
B	2019.04.16				CB 0223.1 Central Photocell Control for Exterior Lights
A	2019.06.04	AJF	DBF	JD	CB#029
0	2018.09.19	RT	JD	DW	ISSUED FOR CONSTRUCTION

DESIGNED BY: R. TOH
DRAWN BY: A. GONG
CHECKED BY: J. DEERKOP
APPROVED BY: J. DEERKOP

DAROLD A. WOODWARD STATE OF WASHINGTON 31898 REGISTERED PROFESSIONAL ENGINEER
[illegible]
6/25/2(2018.09.19

HENSEL PHELPS Plan. Build. Manage. coterra ENGINEERING TRES WEST ENGINEERS rolluda architects architecture planning interior design Karen Kiest Landscape Architects Stantec VIA kpff ELCON ASSOCIATES, INC. ENGINEERS–CONSULTANTS

LINE IS 1" AT FULL SCALE

SUBMITTED BY: RICHARD LEWIS
DATE: 2018.09.19
REVIEWED BY: BILL FERRIS
SOUNDTRANSIT
DATE: 2018.09.19

SCALE: AS NOTED
FILENAME: M200-M04-E-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
LIGHTING CONTROL SCHEDULE

DRAWING NO.: **M04-ELS003**
FACILITY ID: M04
SHEET No:
REV: B

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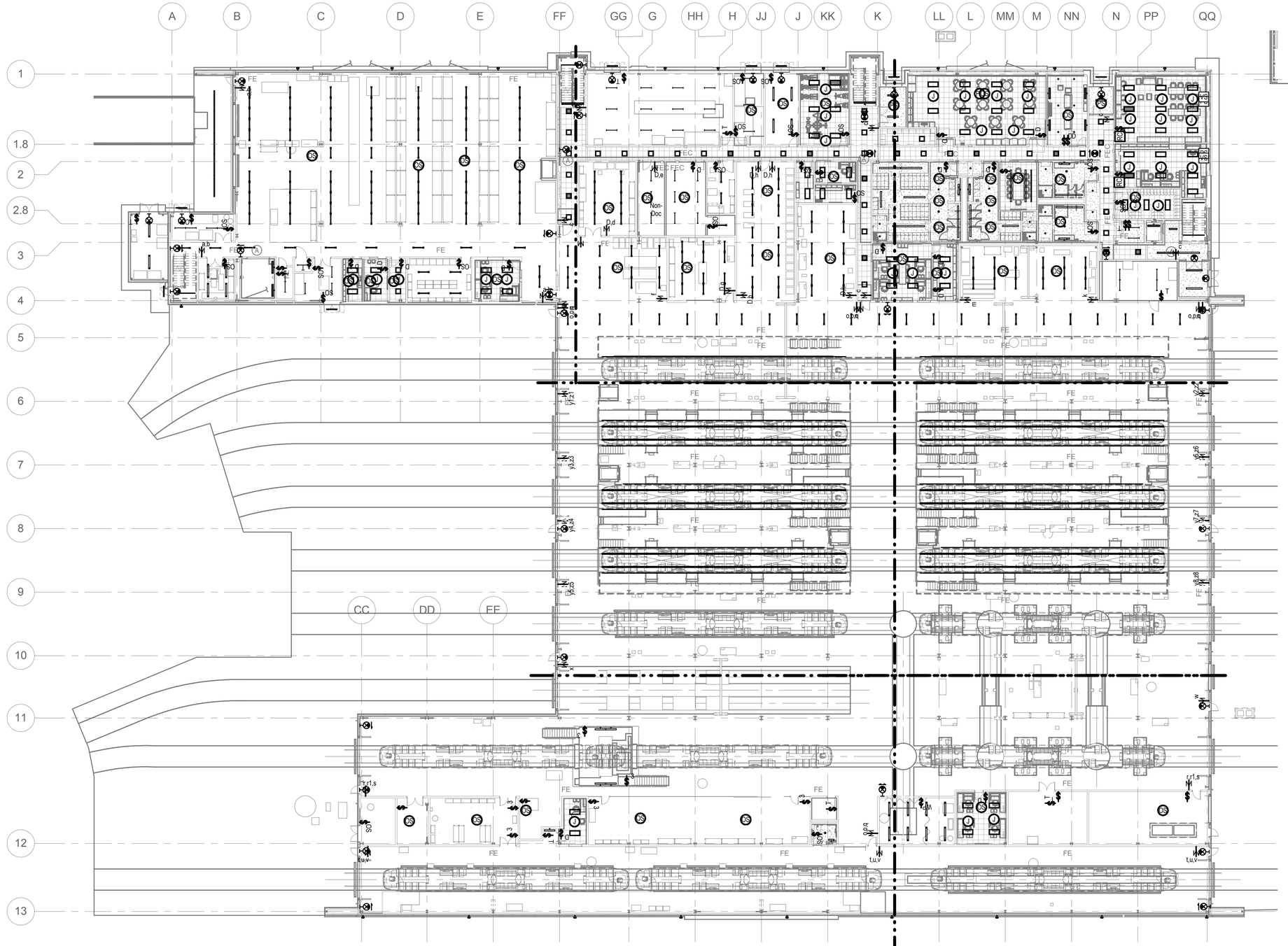
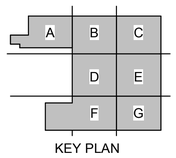


1 CB 0605

CONSTRUCTION NOTES

1. DAYLIGHT HARVESTING ROOM CONTROLLER - SEE 2-ZONES DETAIL ON SHEET GEN-ELD-002 FOR WIRING DIAGRAM.
2. DAYLIGHT HARVESTING ROOM CONTROLLER SEE 3-ZONES/EGRESS LIGHTING DETAIL ON SHEET GEN-ELD002 FOR WIRING DIAGRAM.
3. STAND-ALONE SINGLE ZONE DAYLIGHT HARVESTING ROOM CONTROLLER. SEE SINGLE ZONE DETAIL ON SHEET GEN-ELD002 FOR WIRING DIAGRAM.
4. ROUTE LIGHTING CIRCUIT THROUGH THE LIGHTING CONTROL PANEL M04-LCP-001 AND M04-LCP-002. SEE SHEET M04-ELS002 FOR SCHEDULE. PROVIDE UNSWITCHED CIRCUIT TO ALL EXIT SIGN FIXTURES.
5. LEVEL 1 EXIT SIGNS TO BE WIRED TO M04-PB4-161L:1
6. LEVEL 2 EXIT SIGNS TO BE WIRED TO M04-PB4-161L:11

A 7. INSTALL STATUS LED LIGHTS BELOW EACH DUCT DETECTOR. COORDINATE WITH FIRE ALARM FOR DUCT DETECTOR LOCATIONS.



LIGHTING PLAN - LEVEL 1

SCALE: 1" = 20'-0"

1 -

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DP4A - IFC

No.	DATE	DSN	CHK	APP	REVISION
A	2020.09.02				CB 0605
0	2018.09.19	AJF	DBF	DAW	ISSUED FOR CONSTRUCTION

DESIGNED BY: A. FIEDLER
DRAWN BY: A. FIEDLER
CHECKED BY: D. FONG
APPROVED BY: D. WOODWARD

2018.09.19

HENSEL PHELPS Plan. Build. Manage. | coterra ENGINEERING | rolluda architects architecture planning interior design | Karen Kiest | Landscape Architects | Stantec | VIA | kpff | ELCON ASSOCIATES, INC. ENGINEERS—CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

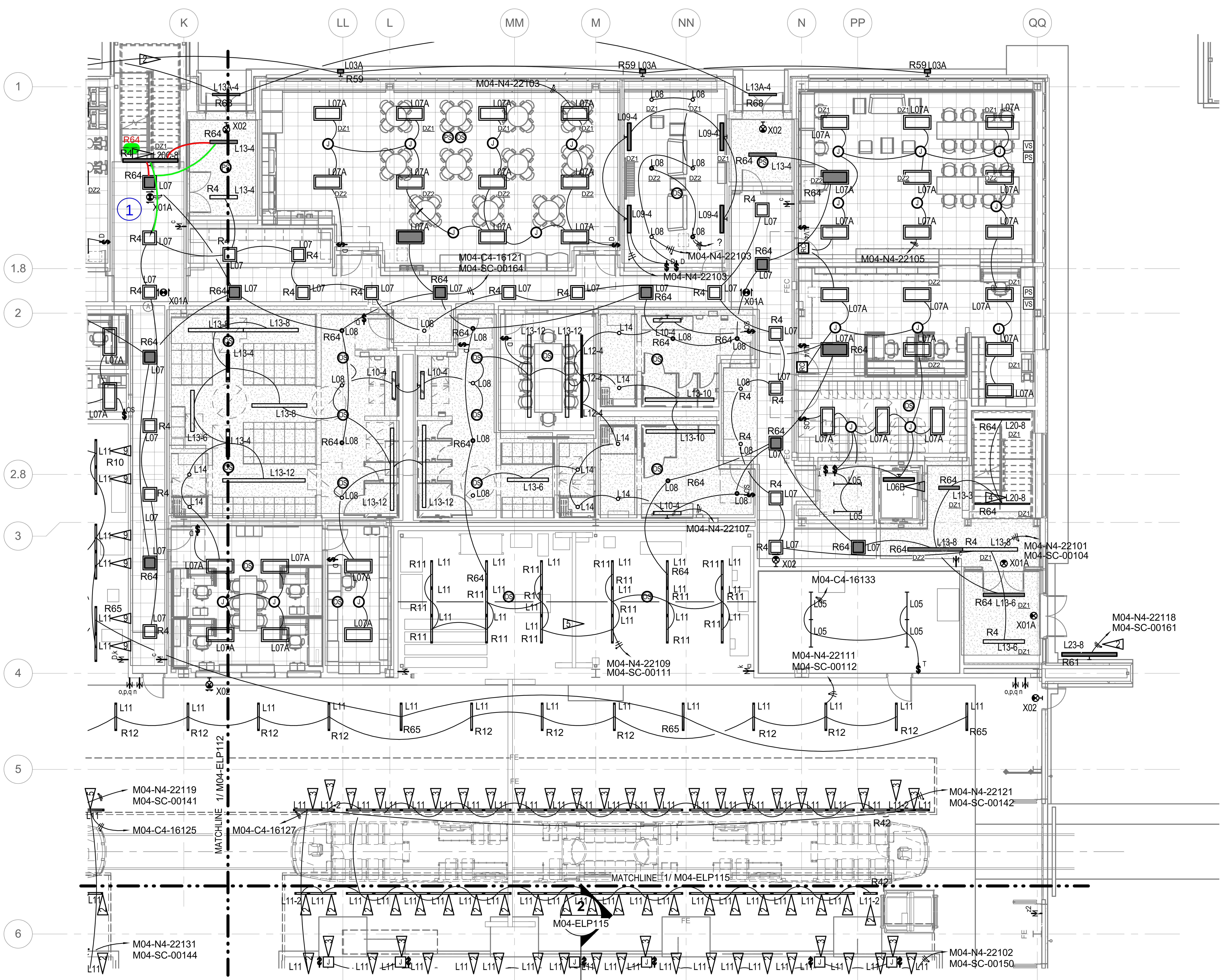
SUBMITTED BY: RICHARD LEWIS | DATE: 2018.09.19 | REVIEWED BY: BILL FERRIS | DATE: 2018.09.19

SCALE: AS NOTED
FILENAME: M200-M04-E-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
LIGHTING PLAN - LEVEL 1

DRAWING NO.: **M04-ELP101**
FACILITY ID: M04
SHEET No: 578
REV: A



LIGHTING PLAN - LEVEL 1 - AREA C

SCALE: 1/8" = 1'-0"

GENERAL NOTES - LEVEL 1

1. ENERGY USAGE FOR ENTIRE PROJECT:
   - A. ALLOWED: 0.95 W/SF (Workshop), 0.65 W/SF (Office Building)
   - B. DESIGNED, L15 & L16 EXEMPT: 0.88 W/SF (Workshop), 0.45 W/SF (Office Building)
2. L03A FIXTURES MOUNTED 12'-3" AFF TO BOTTOM OF FIXTURE.
3. L05 FIXTURES SUSPENDED 12'-0" AFF TO BOTTOM OF FIXTURE UNLESS OTHERWISE NOTED.
4. MOUNT ALL L10 FIXTURES AT VANITIES 7'-2" AFF TO BOTTOM OF FIXTURE.
5. L11 FIXTURES SUSPENDED 13'-2" AFF TO BOTTOM OF FIXTURE UNLESS OTHERWISE NOTED.
6. NOT USED.
7. L16 FIXTURES MOUNTED TO SIDE OF RAIL TRACK TO LIGHT LRV PIT TRUCK AREAS, APPROXIMATELY 6" BELOW LEVEL 1, ORIENTED TOWARD UNDERSIDE OF TRUCKS. L15 FIXTURES MOUNTED TO WIDE FLANGE, ORIENTED TOWARD PIT FLOOR. REFER TO SECTION DETAIL 2/ELP115.
8. OCCUPANCY SENSOR LOCATIONS AND QUANTITIES ARE APPROXIMATE. COORDINATE FINAL LOCATIONS AND VERIFY QUANTITIES OF OCCUPANCY PROVIDE COVERAGE OF ROOMS PER SPECIFICATION SECION 26 09 23.
9. PORTABLE TASKLIGHTS PROVIDE ADDITIONAL LIGHTING AT WORKSTATIONS. REFER TO FF&E PACKAGE.

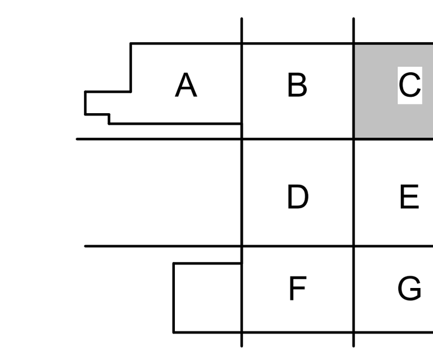
Flag Notes ELP113

#	FLAG NOTES
1	FIXTURE MOUNTED IN ELEVATOR PIT, WALL MOUNTED 2'-0" ABOVE BOTTOM OF PIT.
2	TOP OF FIXTURE MOUNTED 9" ABOVE TOP OF SIGNAGE. REFER TO ARCHITECTURAL DRAWING M04-AEE013 FOR SIGNAGE LOCATIONS. CONFIRM FINAL LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
3	FIXTURES SUSPENDED BELOW UNDERSIDE OF LRV CATWALK, APPROXIMATELY 10'-7 1/2" ABOVE LEVEL 1. REFER TO SECTION DETAIL 2/ELP115.
4	FIXTURE MOUNTED TO UNDERSIDE OF LANDING.
5	ALL L11 FIXTURES IN ROOM SUSPENDED 14'-2 1/4" AFF TO BOTTOM OF FIXTURE.

E

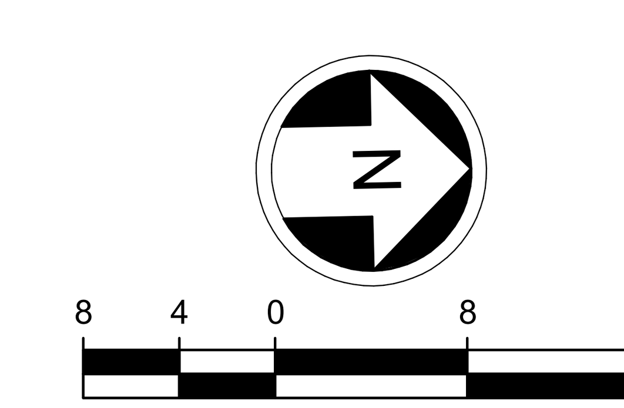
LIGHTING CONTROL NOTE

1. IN M04110 FIXTURES L09-4 AND L08 TO BE ON SEPERATE DIMMER SWITCH



KEY PLAN

① CB 0147
② RFI 00000
③ RFI 00000



SCALE IN FEET

DESIGN PACKAGE 4 - IFC

No.	DATE	DSN	CHK	APP	REVISION
E	2020.03.27	AF	DF	JD	DB054
D	2020.03.20	AF	DF	JD	DB052
C	2019.08.30	RT	JD	JD	CB#034
B	2019.10.01	AF	DF	JD	CB#041
0	2018.09.19	AJF	DBF	DAW	ISSUED FOR CONSTRUCTION

D 2019.12.28 CB#0147

DESIGNED BY: A. FIEDLER
DRAWN BY: A. FIEDLER
CHECKED BY: D. FONG
APPROVED BY: J. DEERKOP

DAROLD A. WOODWARD — STATE OF WASHINGTON — 31898 — REGISTERED PROFESSIONAL ENGINEER
2018.09.19
3/27/2020

HENSEL PHELPS — Plan. Build. Manage.
coterra ENGINEERING
TRES WEST ENGINEERS
rolluda architects — architecture planning interior design
Karen Kiest | Landscape Architects
Stantec
VIA
kpff
ELCON ASSOCIATES, INC. ENGINEERS—CONSULTANTS

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT

SUBMITTED BY: RICHARD LEWIS
DATE: 2018.09.19
REVIEWED BY: BILL FERRIS
DATE: 2018.09.19

SCALE: AS NOTED
FILENAME: M200-M04-E-v2017
CONTRACT No.: RTA/CN 0020-16
SUBMITTAL DATE: 2018.09.19

LINK OPERATIONS & MAINTENANCE FACILITY: EAST
CONTRACT M200
OMF EAST

OMF EAST BUILDING
LIGHTING PLAN - LEVEL 1 - AREA C

DRAWING NO.: **M04-ELP113**
FACILITY ID: M04
SHEET No:
REV: D

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SECTION 10 11 00

VISUAL DISPLAY UNITS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
1. Markerboard panels.
2. Display rails.
3. Tackboard panels.

B. Related Requirements:
1. Section 01 81 13 “Sustainable Design Requirements”

1.02 ACTION SUBMITTALS

A. Product Data: For each type of product.
1. Include construction details, material descriptions, dimensions of individual components and profiles, finishes, and accessories for visual display units.
2. Include electrical characteristics for motorized units.

B. Sustainable Design Submittals:
1. LEED Submittals: For components of this section, submit in compliance with Section 01 81 13 Sustainable Design Requirements.

C. Shop Drawings: For visual display units.
1. Include plans, elevations, sections, details, and attachment to other work.
2. Include sections of typical trim members.

D. Schedule: For visual display units.

1.03 INFORMATIONAL SUBMITTALS

A. Sample Warranties: For special warranties.

1.04 CLOSEOUT SUBMITTALS

A. Maintenance Data: For visual display units to include in maintenance manuals.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver factory-fabricated visual display units completely assembled in one piece. If dimensions exceed maximum manufactured unit size, or if unit size is impracticable to ship in one piece, provide two or more pieces with joints in locations indicated on approved Shop Drawings.

1.06 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install visual display units until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, work above ceilings is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1.07 WARRANTY

A. Special Warranty for Porcelain-Enamel Face Sheets: Manufacturer agrees to repair or replace porcelain-enamel face sheets that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Surfaces lose original writing and erasing qualities.
      b. Surfaces exhibit crazing, cracking, or flaking.
   2. Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 LEED COMPLIANCE

A. LEED Compliance: Refer to Section 01 81 13 Sustainable Design Requirements for all components within this Section.

2.02 MANUFACTURERS

A. Source Limitations: Obtain each type of visual display unit from single source from single manufacturer. Basis of design in ~~"ghent", a GMI company.~~ Claridge Products & Equipment, Inc. 1

2.03 PERFORMANCE REQUIREMENTS

A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   1. Flame-Spread Index: 25 or less.
   2. Smoke-Developed Index: 50 or less.

2.04 VISUAL DISPLAY BOARDS 1 7/16"

A. Markerboard Panel: Magnetic Porcelain-enamel-faced markerboard panel on ~~3/8"~~ backing core. Locations and sizes indicated on drawings.
   1. Color: White with Satin anodized aluminum frame.

B. Tackboard Panel: Natural-cork tackboard panel on manufacturers standard core.
   1. Frame: Satin anodized aluminum frame.

C. Satin anodized Aluminum Frames and Trim: Fabricated from not less than 0.062-inch- (1.57-mm-) thick, extruded aluminum; standard size and shape.

D. Joints: Make joints only where total length exceeds maximum manufactured length. Fabricate with minimum number of joints, balanced around center of board, as approved on Shop Drawings.

E. Combination Assemblies: Provide hidden between abutting sections of visual display panels where applicable.

F. Chalk tray: Manufacturer's standard; continuous and detachable, at Markerboards only.
   1. Solid Type: Extruded aluminum with ribbed section and smoothly curved exposed ends.

2.05 MARKERBOARD PANELS

A. Porcelain-Enamel Markerboard Panels: Balanced, high-pressure, factory-laminated markerboard assembly of three-ply construction, consisting of moisture-barrier backing, core material, and 28 - gauge porcelain-enamel face sheet with low-gloss finish. Laminate panels under heat and pressure with manufacturer's standard, flexible waterproof adhesive.

1. ~~Hardboard Core: 3/8 inch (6 mm) thick backing.~~ Particle Board: 7/16" thick backing
2. Laminating Adhesive: Manufacturer's standard moisture-resistant thermoplastic type.
3. Sizes: As indicated on the drawings; installed singly or in combination, as indicated on Drawings.

1

2.06 TACKBOARD PANELS

A. Tackboard Panels:

1. Facing: 1/4-inch- thick] natural cork ~~with burlap backing~~.
2. Core: Manufacturer's standard.
3. Sizes: As indicated on drawings.

1

Burlap backing not typical practice by manufacturer.

2.07 MATERIALS

A. Natural-Cork Sheet: Seamless, single-layer, compressed fine-grain cork sheet; bulletin board quality; face sanded for natural finish.

B. Hardboard: ANSI A135.4, tempered.

C. Extruded Aluminum: ASTM B 221 (ASTM B 221M), Alloy 6063.

D. Adhesives for Field Application: Mildew-resistant, nonstaining adhesive for use with specific type of panels, sheets, or assemblies; and for substrate application; as recommended in writing by visual display unit manufacturer.

2.08 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.09 ALUMINUM FINISHES

A. Satin Anodic Finish: AAMA 611, AA-M12C22A31, Class II, 0.010 mm or thicker.

PART 3 - EXECUTION

3.01 COORDINATION

A. Coordinate wall framing and blocking, in locations designated for visual display unit installation, and for capacities necessary to support anticipated loads.

3.02 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances, surface conditions of wall, and other conditions affecting performance of the Work.

B. Examine walls and partitions for proper preparation and backing for visual display units.

C. Examine walls and partitions for suitable framing depth where sliding visual display units will be installed.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.03 PREPARATION

A. Comply with manufacturer's written instructions for surface preparation.

B. Clean substrates of substances, such as dirt, mold, and mildew, that could impair the performance of and affect the smooth, finished surfaces of visual display boards.

C. Prepare surfaces to achieve a smooth, dry, clean surface free of flaking, unsound coatings, cracks, defects, projections, depressions, and substances that will impair bond between visual display units and wall surfaces.

D. Prepare recesses for sliding visual display units as required by type and size of unit.

3.04 INSTALLATION

A. General: Install visual display surfaces in locations and at mounting heights indicated on Drawings, or if not indicated, at heights indicated below. Keep perimeter lines straight, level, and plumb. Provide grounds, clips, backing materials, adhesives, brackets, anchors, trim, and accessories necessary for complete installation.

B. Field-Assembled Visual Display Board Assemblies: Coordinate field-assembled units with grounds, trim, and accessories indicated. Join parts with a neat, precision fit.
   1. Make joints only where total length exceeds maximum manufactured length. Fabricate with minimum number of joints, balanced around center of board as indicated on approved Shop Drawings.
   2. Where size of visual display board assemblies or other conditions require support in addition to normal trim, provide structural supports or modify trim as indicated or as selected by Architect from manufacturer's standard structural support accessories to suit conditions indicated.

C. Visual Display Board Assembly Mounting Heights: Install visual display units at mounting heights indicated on Drawings, or if not indicated, at heights indicated below.
   1. Mounting Height **36 inches** above finished floor to top of chalk tray.

3.05 CLEANING AND PROTECTION

A. Clean visual display units according to manufacturer's written instructions. Attach one removable cleaning instructions label to visual display unit in each room.

B. Touch up factory-applied finishes to restore damaged or soiled areas.

C. Cover and protect visual display units after installation and cleaning.

END OF SECTION

SECTION 10 14 00

BUILDING SIGNAGE

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes:

1. Room and door signs.
2. Code and regulatory signs.

B. Related Requirements:

1. Section 01 81 13 “Sustainable Design Requirements.”
2. Section 10 14 14 “Sound Transit Site Signage.”
3. Division 23 Sections addressing labels, tags and nameplates for mechanical equipment.
4. Division 26 Sections addressing labels, tags and nameplates for electrical equipment.
5. Other signage such as illuminated exit signage as specified in Division 26.

1.02 REFERENCES

A. Referenced Codes, Regulations and Standards: Design, installation, testing and maintenance of signs shall comply with the following latest statutory Codes, Rules and Regulations.

B. ANSI 117.1: Accessible and Usable Buildings and Facilities, International Code Council.

C. USDOT/ADAAG: Americans with Disabilities Act (ADA) Standards for Transportation Facilities.

1.03 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:

1. LEED Submittals: For components of this section, submit in compliance with Section 01 81 13 Sustainable Design Requirements.

C. Shop Drawings: For room-identification signs.

1. Include fabrication and installation details and attachments to other work.
2. Show sign mounting heights, locations of supplementary supports to be provided by other installers, and accessories.
3. Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for each sign.

D. Samples for Verification: For each type of sign assembly showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows. Submit samples showing colors specified.

1. Room Identification Signs: Full-size Sample.
2. Regulatory Signs: Full-size Sample.
3. Full-size Samples, if approved, will be returned to Contractor for use in Project.

E. Product Schedule: For room-identification signs. Use same designations indicated on Drawings or specified.

1.04 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Sample Warranty: For special warranty.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Source Limitations: Obtain each sign type indicated from a single manufacturer.

1.06 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Deterioration of finishes beyond normal weathering.
b. Deterioration of embedded graphic image.
c. Separation or delamination of sheet materials and components.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 LEED COMPLIANCE

A. Refer to Section 01 81 13 “Sustainable Design Requirements” for all components within this Section.

2.02 PERFORMANCE REQUIREMENTS

A. Accessibility Compliance: All signs are required to comply with ADAAG and ANSI A117.1 and applicable building codes, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.

2.03 SIGNS, GENERAL

A. Refer to sign type illustrations in this Section for sign types, colors, and configurations.

2.04 ROOM AND DOOR SIGNS

A. Room and Door Signs: Panel signs with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:

1. Tactile Signage: Exterior Grade Photopolymer
   a. ~~Acrylic Sheet: Polycast Acrylic, Solid color acrylic,~~ 1/8 thick, non-glare, UV resistant, colorfast.
   b. Edge condition: Square cut corners and edges.
   c. Type: unframed.
   d. Copy process: ~~Tactile and Braille, photo-etched plastic and laminated to the insert face in one piece.~~ Individually applied characters and Braille strips are expressly disallowed. Characters are made on a film negative, placed on a photosensitive sheet of polymer, then exposed to UV light to form shapes and characters.
2. Non-Tactile Signage:
   a. Engraved panel signs: Laminated colored plastic, engraved through face to expose core as background color, non-glare:
      1) Total Thickness: 1/16-inch.
      2) Edge condition: Square cut.
      3) Laminate color: To be selected by Architect from Manufacturer's standard range.
      4) Core color: To be selected by Architect from Manufacturer's standard range.

3. Mounting:
   a. In Shop Areas: Mechanically surface mounted to wall or door using concealed anchors.
   b. In Office Areas: Surface mounted to wall or door using adhesive.

4. Components:
   a. Typography shall comply with code requirements. All lettering shall be executed in such a manner that all edges and corners of the letter forms are correctly spaced, true, clean and photographically precise and must accurately reproduce the letter form.

   b. Tactile Signage: Unless otherwise indicated:
      1) Letter spacing: Tracking = 25. Letters to be raised a minimum of 1/32-inch.
      2) Braille to be Grade 2 (Contracted) with inset round glass bead:
      3) Dot height: .025" - .032"
      4) Dot diameter: 0.59" - .063"
      5) Interdot spacing: .090" - .100"
      6) Horizontal cell separation: .241" - .300"
      7) Vertical cell separation: .395" - .400"

   c. Background color: Refer Figure 9-2 appended to this specification section.

   d. Lettering color:
      1) White on black background signs.
      2) White on red background signs.
      3) Black on yellow background signs.

   e. Character height: Refer signage graphics appended to this specification section.

5. Interior Room and Door Signs: Provide Tactile Signage at every room entrance per Signage Schedule.
   a. Typeface: Humanist 777 Bold condensed, upper case only
   b. Mounting: Wall-mounted with double-faced tape.

c. Sign size: 8-inches by 10-inches, or as noted.

6. Exterior Room and Door Signs: Provide Tactile Signage at every room entrance per Signage Schedule.
   a. Typeface: Humanist 777 Bold condensed, upper case only
   b. Mounting: Surface mounted with concealed fasteners. Manufacturer's standard anchors for substrates encountered.
   c. Sign size: Per Signage Schedule

2.05 CODE AND REGULATORY SIGNS

A. Regulatory and Code Signs: Provide Non-Tactile Signage per Signage Schedule or as required by Jurisdiction Having Authority.

1. Typeface: Helvetica, Arial or other sans serif font, upper case only.
2. Mounting: Double-faced tape at interior conditions, mechanically fastened at exterior conditions.
3. Sign size: Per Signage Schedule
4. Character height: Minimum 5/8-inch.

2.06 MATERIALS

A. Acrylic Sheet: ASTM D 4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).

B. Vinyl Film: UV-resistant vinyl film with pressure-sensitive, permanent adhesive; die cut to form characters or images as indicated on Drawings and suitable for exterior applications.

C. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.

2.07 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following:

1. Use concealed fasteners and anchors unless indicated to be exposed.
2. For exterior exposure, furnish nonferrous-metal devices unless otherwise indicated.

3. Sign Mounting Fasteners:

   a. Concealed Studs: Concealed (blind), threaded studs welded or brazed to back of sign material or screwed into back of sign assembly unless otherwise indicated.

B. Adhesive: As recommended by sign manufacturer.

2.08 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.

1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
3. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
4. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.

B. Subsurface-Applied Graphics: Apply graphics to back face of clear face-sheet material to produce precisely formed image. Image shall be free of rough edges.

C. Signs with Changeable Message Capability: Fabricate signs to allow insertion of changeable messages as follows:

1. For slide-in changeable inserts, fabricate slot without burrs or constrictions that inhibit function. Furnish initial changeable insert. Furnish two blank inserts for each sign for Owner's use.

2.09 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.01 INSTALLATION

A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.

1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
2. Install signs so they do not protrude or obstruct according to the accessibility standard.
3. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.

B. Accessibility: Install signs in locations on walls as indicated on Drawings and according to the accessibility standard.

C. Mounting Methods:

1. Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.

a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place sign in position and push until flush to surface, embedding studs in holes. Temporarily support sign in position until adhesive fully sets.
b. Thin or Hollow Surfaces: Place sign in position and flush to surface, install washers and nuts on studs projecting through opposite side of surface, and tighten.

2. Through Fasteners: Drill holes in substrate using predrilled holes in sign as template. Countersink holes in sign if required. Place sign in position and flush to surface. Install through fasteners and tighten.
3. Adhesive: Clean bond-breaking materials from substrate surface and remove loose debris. Apply linear beads or spots of adhesive symmetrically to back of sign and of suitable quantity to support weight of sign after cure without slippage. Keep adhesive away from edges to prevent adhesive extrusion as sign is applied and to prevent visibility of cured adhesive at sign edges. Place sign in position and push to engage adhesive. Temporarily support sign in position until adhesive fully sets.

3.02 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

3.03 SIGN TYPES GRAPHICS

A. Next pages.

Sign Type J1.0
Code Room ID (8x10)
3/4" and 1/2" copy + Braille

Sign Type J2.0
Code Room ID (8x10)
3/4" and 1" copy + Braille
(Background color TBD)

Sign Type J3.0
Restroom ID (8x10)
3/4" copy + Braille

Sign Type J3.1
Restroom ID (8x10)
3/4" copy + Braille

Sign Type J3.2
Restroom ID (8x10)
3/4" copy + Braille

Sign Type J4.0
Stair ID (8x10)
3/4" and 1" copy + Braille

Sign Type J4.1.0
Exit Stair ID (8x10)
3/4" and 1" copy + Braille

Sign Type J5.0
Not an Exit / ID (8x10)
3/4" and 1/2" copy + Braille

Sign Type J6.0
Not an Exit (8x10)
1" copy + Braille

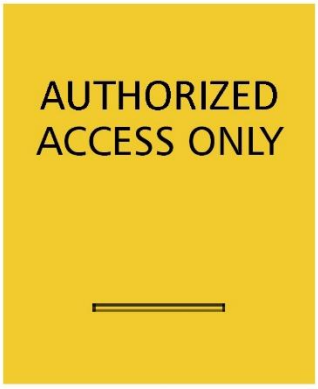
Sign Type J6.1
Exit ID (8x10)
1" copy + Braille

Sign Type J6.2
Standpipe ID (8x6)
3/4" copy

Sign Type J6.3
Sprinkler ID (8x6)
3/4" copy

Sign Type J6.4
No Smoking (8x10)
3/4" copy + Braille

Sign Type J6.5
Door to Remain Open (8x10)
1/2" copy + Braille



Sign Type J6.6
Authorized Only ID (8x10)
3/4" and 1/2" copy + Braille

Sign Type J7.1
Floor Load (8x6)
3/4" copy

Sign Type J10.0
Interior Stairwell Landing ID (12x12)
1" and 5" copy + Braille

Sign Type J6.0
Not an Exit (8x10)
1" copy + Braille

Sign Type J6.1
Exit ID (8x10)
1" copy + Braille

Sign Type J6.2
Standpipe ID (8x6)
3/4" copy

Sign Type J6.3
Sprinkler ID (8x6)
3/4" copy

Sign Type J6.4
No Smoking (8x10)
3/4" copy + Braille

Sign Type J6.5
Door to Remain Open (8x10)
1/2" copy + Braille

Sign Type J6.6
Authorized Only ID (8x10)
3/4" and 1/2" copy + Braille

Sign Type J7.1
Floor Load (8x6)
3/4" copy

Sign Type J8.0
Future Installation of EV (8x10)
1" copy + Braille

END OF SECTION

SECTION 10 14 14

~~STATION CUSTOMER~~SITE SIGNAGE

PART 1 - GENERAL

1.01 SUMMARY

A. This Work shall consist of furnishing and installing permanent signs utilizing Sound Transit provided sign face graphic designs in accordance with the Sound Transit Customer Signage Design Manual, the Signage Production Drawings in Chapter 4 of the manual, the Sound Transit Link Design Criteria Manual (DCM), the International Building Code (IBC) with local jurisdictional amendments, ~~layout drawings, Specifications, and the codes of Jurisdictional Authorities.~~ accessibility requirements, the sign details on the Architectural Drawings and these Specifications. The site signage system, as designed, provides ~~a seamless, regional, customer-focused way-finding program and is consistent in Sound Transit services: commuter rail (Sounder), light rail (Link), and regional express bus (ST Express).~~ wayfinding for staff, visitors, and deliveries to the OMFE.

B. The scope of Work of this Section includes the sign types ~~attached in Exhibit A~~, quantities, examples of messages, and dimensions. Sound Transit will provide the Contractor with production-ready artwork files to be used for the sign face graphic designs. Contractor shall provide necessary materials, equipment, labor, and accessories to form the completed sign in an operational condition.

C. It is the Contractor's responsibility to determine the brackets, footings, anchor bolts, and other items necessary for proper and complete installation of signs. Contractor shall coordinate preparation or correction of adjacent or interfacing conditions as needed, to make suitable for signage installation.

1.02 RELATED REQUIREMENTS

~~A. The requirements of this Section shall be coordinated and integrated into the Construction Documents by the Designer of Record.~~

A. Contract Drawings including Architectural, Systems, and Civil Drawings.

B. Sound Transit Link Design Criteria Manual including Signage Production Drawings.

C. Sound Transit Design Criteria Manual.

D. Section 10 14 00 "Signage" for room, door, code and regulatory signs.

E. Section 10 14 19 "Dimensional Character Signage" for exterior building-mounted dimensional letter signs.

F. Section 10 14 23 "Panel Signage" for exterior building-mounted logo signs.

1.03 REFERENCES

A. Reference Codes, Regulations and Standards: Design, installation, testing and maintenance of signs shall comply with the following latest statutory Codes, Rules and Regulations:

1. Aluminum Association (AA)

a. AA ADM 1 Aluminum Design Manual

2. American Institute of Steel Construction (AISC)

    a. ANSI/AISC 360-10 Specification for Structural Steel for Buildings

3. American National Standards Institute (ANSI)

4. American Society of Civil Engineers/Structural Engineering Institute (ASCE/SEI)

    a. ASCE/SEI 7-10 Minimum Design Loads for Buildings and Other Structures

5. American Society for Testing and Measurement International (ASTM)

    a. ASTM A36/A36M Standard Specification for Carbon Structural Steel

    b. ASTM A424/A424M Standard Specification for Steel, Sheet, for Porcelain Enameling

    c. ASTM A307 Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60000 Tensile Strength

    d. ASTM A325 Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 KSI Minimum Tensile Strength

    e. ASTM A500/A500M Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes

    f. ASTM B209 Standard Specification for Aluminum-Alloy Sheet and Plate

    g. ASTM B221 or B308 Extruded Aluminum Shapes and Tubes

    h. ASTM B308/B308M Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Profiles

    i. ASTM C920 Standard Specification for Elastomeric Joint Sealants

6. American Welding Society (AWS)

    a. AWS D1.1/D1.1M Structural Welding Code – Steel

7. Americans with Disabilities Act (ADA)

8. American National Standards Institute / International Code Council

    a. ANSI/ICC A117.1 Accessible and Usable Buildings and Facilities

~~8.~~9. National Electrical Code (NEC)

~~9.~~10. Porcelain Enamel Institute (PEI)

~~10.~~11. Sound Transit (ST)

    a. Customer Signage Design Manual

        1) Signage Production Drawings in Chapter 4

~~11.~~12. Transportation Research Board (TRB)

    a. TRB Guidelines for Transit Facility Signing and Graphics (Transit Cooperative Research Program Report 12)

1.04 QUALIFICATIONS/EXPERIENCE

A. Qualifications of Contractor shall meet the following standards:

1. Be regularly engaged in the business of manufacturing and installing the type of sign construction described in the Contract Documents.

2. Minimum of 5 consecutive years of documented, successful experience in using the same materials being used under this Work and in manufacturing, installing, and maintaining similar sign types and programs.

3. Manufacture major exterior sign components (such as free standing and building mounted non-illuminated identification signs, vehicular directional signs, signs incorporating porcelain enamel message panels, and signs incorporating transit information) and furnish remaining components manufactured by reputable and reliable Suppliers.

4. Furnish factory qualified, competent and experienced supervisory personnel.

B. Qualifications

1. Sign graphics shall be executed by technicians skilled in specific production methods. Technicians must be able to accurately execute graphics layouts as provided in digital artwork files.

2. Sign fabrication shall be performed by personnel skilled in the construction and welding of steel and aluminum sign panels and structures.

3. The painting of sign components shall be performed only by craftsmen skilled in painting and experienced in producing quality Work.

4. A minimum of one field quality control person trained and experienced in the installation of the signs shall be present at all times in the construction area to direct installation at all locations.

5. Personnel must be familiar with component-based sign programs and experienced in complex sign program installations.

1.05 SUBMITTALS

A. Submittals shall be reviewed by both Sound Transit and the Designer of Record. Sound Transit shall have review and approval authority for all Submittals in this Section.

B. Final Sign Location Plan: Submit with the Issue for Construction Submittal. Notify Sound Transit 90 days before Sound Transit-provided message schedule and production-ready artwork needs to be complete for fabrication. The artwork for all signs will be provided at this time.

C. Manufacturer's Literature:

1. Include manufacturer's unit assembly number or component part number as it appears in submitted literature. Cross-reference hardware components with sign location numbers.

2. Modify manufacturer's standard drawings to clearly identify what is proposed for this Contract. Supplement standard information with additional information applicable to this Contract.

3. Modify manufacturer's standard catalog cuts, brochures, diagrams, scheduled performance charts, illustrations, calculations, and other descriptive data with deleted information not applicable to the Contract. Indicate dimensions, clearances, and performance statistics.

4. Modify manufacturer's printed installation, erection, application, and placing instruction. Delete information not applicable to the Contract.

D. Samples:

1. Supply Samples to Resident Engineer and Designer of Record for review and concurrence prior to fabrication and installation.

2. Sound Transit's review of Samples will be for color and finish only. Compliance with all other requirements shall be the exclusive responsibility of the Contractor.

3. Provide Samples for approval of the following materials and assemblies prior to proceeding with Work:

a. Paint showing exact color match for each color and finish (minimum 8-inch by 10-inch plate)

b. Porcelain enamel material (minimum 8 inch by 10 inch Sample, all colors)

c. Digital color print vinyl adhesive showing exact color match for each color and messages

d. Sample or minimum 1-foot by 2-foot portion of each sign type, showing at least three letters including one capital letter, featuring complete extrusion and final finishes, showing construction methods and connections for all indicated sign types.

e. The approved Sample will be used as a standard for other fabrication of that sign type and returned to Contractor for incorporation into the completed Work. Sound Transit reserves the right to waive required Samples.

4. Provide Samples for approval of the following sign face graphic designs from artwork provided by Sound Transit, prior to proceeding with Work.

a. Sign Face Patterns: Submit one (1) representative full-size sign face drawing for each sign type scheduled at full scale showing the relationship between typography, symbols, line weights and other graphic elements. Scheduled sign types may include:

1) Etched and painted zinc

2) Porcelain Enamel Panel

3) Painted aluminum panel, digitally printed 3M adhesive vinyl with overlam

4) Aluminum panel, digitally printed 3M adhesive vinyl with overlam

5) Digitally printed 3M adhesive vinyl with overlam

6) Painted aluminum, cut vinyl graphic

E. Shop Drawings:

1. Supply shop drawings reviewed by the Designer of Record to the Resident Engineer for review and concurrence prior to fabrication and installation. The Contractor shall be responsible for structural integrity of the recommended structural design and support systems.

2. Ensure that shop drawings are consistent with and conform to Contract Documents.

3. Include information and dimensions necessary for manufacture and installation not covered in or at variance with information in manufacture's literature. Include the following:

    a. Contract title and number

    b. Relation to adjacent structure or materials

    c. Applicable standards, such as ASTM or Federal Specification number

    d. Identification of known deviations from the Contract Documents

    e. Contractor's stamp, initialed or signed, certifying compliance with the Contract requirements

    f. Verification of field measurements

    g. Compatibility of the Work shown thereon with that of affected trades

    h. Respective master sign numbers

    i. Structural drawings signed and stamped by a currently licensed Structural Engineer registered in the State of Washington.

F. Test Reports: Manufacturer's report on durability, resistance to wear and corrosion and performance characteristics under variable lighting and environmental conditions.

G. Maintenance Data: Submit bound volumes providing data on and operation of maintenance procedures for all finishes, material, and equipment for signs installed on the Project. Include the following:

1. Index

2. Name, address, and telephone numbers of sign contractor, suppliers, and installers

3. Name, address, and telephone numbers of manufacturer's nearest service representative

4. Name, address, and telephone number of nearest parts vendors

5. Copy of guarantees and warranties issued to and executed in the name of Sound Transit

6. Two copies of final As-Built Drawing PDF and CAD files and updated sign Schedule PDF and hardcopy reduced to 8-1/2 inches by 11-inches. Note changes made during construction and installation in red.

7. Inspection and adjustment procedures

8. List of special tools and equipment required for the maintenance, adjustment, and repair of the equipment.

9. Scale and corrosion control procedures, where applicable.

10. Information concerning all facets of maintenance and repair procedures for all sign types within the scope of this Contract.

11. Recommended cleaning procedures and products for each material and finish.

H. Final Structural Calculation: Submit signed and sealed structural design calculations for all sign anchorages and supports. Calculations shall reference applicable shop drawings, demonstrating compliance with structural requirements specified.

I. Manufacturers Identification, Date, Sign Number: Provide for freestanding signs requiring permitting, a label showing the manufacturers name, date of manufacture, and numbers of the sign as shown on the plan (sign location number and elevation number) in 1/4-inch letters. Label shall be clear material with black letters and be inconspicuously placed on the sign. Maximum label size shall be 1 inch by 3 inches.

1.06 DELIVERY, STORAGE AND HANDLING

A. Delivery:

1. Deliver and install materials designated under this Contract.

B. Shipment:

1. Ship signage assemblies and components in sections capable of being readily assembled and connected on Site. Clearly show split sections and interconnections on the drawings submitted for approval.

2. Carefully protect each item for shipment in a manner to preclude damage. Protect the signs and associated assemblies and parts until Acceptance of facility.

C. Storage:

1. During storage provide security and preservation of the signs in accordance with the best industrial storage practices until required at the Work Site.

2. Store signs in areas protected from the weather and all other hazards. Do not store sign in contact with the ground. Prevent condensation on signs while in storage. Assume responsibility for sign insurance coverage protection while in storage for any reason, and for safe handling and transportation to storage and the Site.

1.07 SOUND TRANSIT PROVIDED ARTWORK

A. Production-ready artwork will be provided by Sound Transit for scheduled sign face graphic designs.

B. Production-ready artwork will be provided as vector (outline) files saved in either EPS or Adobe Illustrator format. All fonts (text) will be converted to curves or outline. Colors shall be as indicated in the artwork provided by Sound Transit and in accordance with Sound Transit Customer Signage Design Manual.

C. Artwork for Maps and “How to Ride” panels will be provided as PDFs.

D. Signage message schedule will be provided as PDF.

1.08 SIGNAGE INSPECTION

A. Sound Transit may conduct observation visits at the manufacturing facility. Observation does not constitute approval of deviations, if any, from the approved Sample unless Sound Transit's approval is specifically noted in writing. Signs that are observed by Sound Transit that do not comply with Contract requirements will require re-observation by Sound Transit after necessary corrections or repairs have been made. Corrections and repairs shall be paid for by the Contractor.

B. Observation in the fabrication shop is intended to be a means of facilitating the work and avoiding errors as much as possible. It is expressly understood that shop observation does not relieve the Contractor from responsibility for material or fabrication defects or errors and the necessity for replacement or correction of rejected materials and workmanship.

C. The Contractor shall be responsible for damage during installation and satisfactory operation of the signs after installation.

1.09 SITE CONDITIONS

A. Note that the dimensions given on the layout drawings are approximate and the Contractor shall be responsible for final verification of dimensions and actual Site conditions.

1.10 PERMITS, FEES AND NOTICES

A. Attend public meetings and meetings with individual city representatives and present required materials as needed to these and other interested parties in order to obtain the necessary permitting for installation of all signs described in this and attached documentation.

B. Obtain all necessary permits and licenses, pay all charges and fees, comply with all permit conditions, and give all notices necessary for the Work. Be fully liable to Sound Transit and any permit-issuing authority, for all failures to obtain a permit, and for all failures to comply with the terms of any permit. Maintain at the Work Site, copies of all permits, licenses, certificates, and other documentation required for all applicable statutes, regulations, and ordinances. Provide copies of such documentation to Sound Transit promptly, upon request.

1.11 WARRANTY

A. Warrant signs against defects in finish, paint, structural integrity, operations, and general appearance for a period of 1 year following the date of Acceptance of each facility. Provide originals of warranty documents from material or subsystem equipment Suppliers to Sound Transit for review before Acceptance.

B. Porcelain Enamel Finish: Minimum of 20 years.

C. Etched and Painted Zinc Finish: Minimum of 10 years.

D. Urethane Paint Finish on Aluminum: Minimum of 7 years.

E. Digital Color Print Adhesive Vinyl: Minimum of 3 years against fading, cracking, chipping and peeling for exterior use.

PART 2 - PRODUCTS

2.01 PERFORMANCE/DESIGN CRITERIA

A. Structural Elements: Signs shall be securely fastened in a fashion that provides for repair, replacement and routine maintenance without destruction of, or dismantling, the sign or surrounding structure(s). Sign components shall be manufactured to allow for complete interchangeability of brackets, sign panels, bases, and other structural elements, as described in the Contract Documents. Construct jigs, patterns, locking, and other necessary items to assure manufacturing consistency of sign components.

B. Provide anchorage, support framing and bracing as necessary to meet loading requirements and building conditions. No additional connections shall be visible in finished construction. Anchorages and metal support systems shown on the Signage Production Drawings are suggestive only, and are intended to be used as a guideline to clarify intent of the specifications, functional and bracing requirements and coordination necessary to meet loading requirements and building conditions.

C. Structural Calculations: Employ the services of a structural engineer registered in the State of Washington to prepare structural calculations necessary to design the support systems and anchorages for all sign types. Structural member sizing, anchorage withdrawal calculations, bending calculations, fastener design and other related structural analyses are required to ensure all signs are securely anchored and safe for use and that they meet all applicable codes.

D. Comply with requirements of Federal Specification, ASTM Designation, or ANSI Specification for design, spacing and quantity of anchorages.

E. Provide all necessary design, construction, and engineering documentation required for sign permitting and obtain all permits required for erection of signs.

F. Materials and finishes shall be resistant to corrosion, fading, and weathering. Dissimilar metals shall be isolated to prevent galvanic corrosion.

G. Sign structures, finishes and mounting systems must withstand pressure washing and biodegradable cleaning products. Signs shall be cleanable with methyl ethyl ketone (MEK), soap detergents, and other similar non-abrasive cleaners without damage to the sign surface.

2.02 MATERIALS

A. Material shall be the products of manufacturers or Suppliers of established good reputations, regularly engaged in the furnishing of such materials. Components and subsystems shall be manufactured items that have been in successful regular operation under comparable conditions. No parts, components, fixtures, accessories, or appurtenances shall contain or be constructed with materials containing PCBs or toxic compositions that would represent a hazard to the public.

B. Aluminum Extrusions, Structural Shapes and Castings: Fabricate extrusions in accordance sizes and configurations shown on Signage Production Drawings. Extrusions shall meet the following standards:

1. Alloy and Temper: 6063-T5 or as recommended by fabricator appropriate for color.

2. Extruded Shapes and Tubes: ASTM B221 or ASTM B308/B308M (6061-T6)

3. Plate and Sheet: ASTM B209

4. Edges: Ease exposed extrusion edges to 1/32-inch radius.

5. Aluminum Castings: Provide Sand Cast Aluminum Bases, brackets as shown in Signage Production Drawings.

C. Steel: Shall be provided complying with the following:

1. Carbon Grade Steel: For all-purpose bolted or welded construction; ASTM A36/A36M.

2. Structural Tubing: ASTM A500/A500M Grade B.

3. Bolts and nuts other than high strength: ASTM A307, Grade A.

4. Welding Electrodes and Rods: AWS D1.1/D1.1M.

5. High Tensile Strength Bolts: ASTM A325, Type 1 or 2.

D. Fastenings:

1. Fasteners and Screws: Provide 304 stainless steel bolts, nuts, screws, and lock washers. Unless otherwise indicated, use concealed fasteners painted as noted. Screws shall be recessed and tamper-resistant where exposed to contact by the public. Samples shall be submitted for Acceptance prior to final fabrication of sign components.

2. Anchors and Inserts: Use corrosion-resistant anchors and inserts as required.

3. Brackets: Fabricate brackets and fittings for bracket-mounted signs from extruded aluminum, to suit sign panel construction and mounting conditions, where indicated.

4. Separation: Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials by complying with requirements specified under paragraph ‘Dissimilar Materials” in the Appendix B of AAMA/NWWDA 101/I.S. 2-97.

E. Glue and Tape: Adhesives must be appropriate for exterior applications with ambient temperatures ranging from minus 20 degrees to plus 120 degrees Fahrenheit.

1. Very High Bond (VHB) Adhesive: 3M Company, product as recommended by manufacturer for type of use, materials, and fabrication; or approved equal.

F. Aluminum Composite Sign Panels: Construction shall be of a combination aluminum sheet mechanically fastened to an aluminum internal frame of such dimension and thickness as to provide rigid panel support and connection to the post. Provide in the sizes and configurations specified.

G. Grout: Non-shrink epoxy grout, 5,000 PSI minimum.

H. Sealant: One part elastomeric sealant, ASTM C-920, non-sag, manufacturer’s standard dark grey. Provide primer as recommended by manufacturer of sealant.

I. Silicone: DAP - 08641, 100% silicone rubber sealant, DAP Products or approved equal.

2.03 GRAPHIC PROCESSES

A. Etched Zinc Tactile Signs:

1. Material: Etched zinc, photocast, manufactured by Braille-Tac division of Advance Corporation, or approved equal.

2. Thickness: As indicated in Signage Production Drawings

3. Size: As indicated in Signage Production Drawings

4. Braille Message: Photochemically etch to provide 1/32-inch raised copy and Grade II Braille.

5. Color: As indicated in Signage Production Drawings and Sound Transit Customer Signage Design Manual. Match control color.

B. Vinyl Adhesive Letters:

1. Material: 3M pressure sensitive vinyl sheeting or approved equal.

2. Cutting: Cut with a smooth beveled edge of between 15 to 45 degrees on the perimeter (including inner edges) of the letter form.

3. Color: As indicated in Signage Production Drawings and Sound Transit Customer Signage Design Manual. Match control color.

4. Reflective Vinyl: Required for bus stop signs (E series sign types), guide signs (G series sign types) and regulatory signs (R series sign types); white 510-10 reflective vinyl.

C. Digital Color Print Adhesive Vinyl:

1. Material: High resolution on Arlon 4560 GTX self-adhesive premium white vinyl with Neschen PC 5 polycarb laminate or approved equal.

2. Printing: Solvent based, six color, CMYK + Lt. Magetna + Lt. Cyan, 720 by 720 dpi or better.

D. Porcelain Enamel Sign Panels:

1. Steel: For purposes of this specification, steel is special purpose “vitreous or enameling iron or steel” as defined by ASTM A424/A424M type 1, and tensioned leveled and especially manufactured for the purpose of porcelain enameling with total additions of copper no greater than 0.035 percent and aluminum no greater than 0.085 percent of material composition. Provide documentation of use of this material for Project herein. Gauges of base metal shall be as required, to meet the tolerances specified.

2. Frits/Glazes/Oxides: Only specially formulated porcelain enamel frits, glazes, and oxides as supplied by Ferro, Chivit, APEX or Cerdek, or approved equal. These materials, when combined and processed in final form, shall be acid resistant in order to achieve an A or AA acid resistance rating.

3. Porcelain Enamel Panel Fabrication:

a. Metal Fabrication: Work done shall be machine fabricated in accordance with approved shop drawings with straight lines, square corners, and smooth blends, free from twists, kinks, warps, dents, and other imperfections that may affect appearance or serviceability. Curved sections shall be formed to smooth and even radii.

b. Flatness: Panels of 36 inches or greater shall be flat within 1/32 inch over the concave surface in all directions. Panels shall not be more than 1/32 inch out of square when measured over the diagonal in total surface area over 9 square feet and within 1/64 inch of the diagonal panels under 9 square feet.

c. Welding: Welds shall be clean, sound, and solid, free from defects and gas bubbles and ground sanded smooth to 3/16 inch to match the 3/16 inch radii of the break-formed edges and corners. Welds shall be executed using hand oxyacetylene fusion technique with no additions of foreign material.

d. Holes and Cutouts: Necessary holes and cutouts shall be drilled or punched and welded in advance of enameling.

e. Forming: Forming shall be mechanical and done in advance of welding.

4. Metal Preparation and Cleaning:

a. Degreasing: Degrease panels by immersion in an approved degreasing fluid. Then rinse panels in a heated water bath.

b. Acid etching: After the first rinse, sulfuric acid etch panels, such that weight loss shall not be less that 35 to 40 GG/M2. Surfaces shall be rinsed again.

c. Neutralizing: After the third rinse, neutralize the chemical action in a soda ash solution and then dry rapidly.

5. Porcelain Enameling:

a. Ground Coat: Apply a porcelain enamel ground coat to all areas of each unit, including backside and flanges by spraying methods recognized by Porcelain Enameling Institute and Vitreous Enamel Development Council. Apply at least one additional separately fired cover-coating to the face side and flanges to each unit. For corrosion protection and flatness, apply one additional coating to the backside of each panel and fire simultaneously with the finish coat for panels over 3 square feet in surface area.

b. Continuity of Coating: Visually inspect each unit, allowing no visible breaks, gas bubbles, scumming, hairlines, stresslines or surface defects in the cover coat.

c. Finish and background Color Control: Match the color and finish of a color Sample previously submitted by the Contractor and reviewed by the Designer of Record and Resident Engineer. Match within 1 NBS unit (1-2 NBS unit variation is barely perceptible to the human eye).

d. Ground and Overcoat Thickness: Apply ground and overcoat thickness in accordance with PEI recommendations to a thickness range between 0.004 inch to 0.002 inch, as required to suit the intended use.

e. Firing: Fire panels in a furnace, custom-designed for the purpose, at temperatures above 1400 degrees Fahrenheit. After firing, visually inspect every panel for color consistency against the approved control panel, as reviewed by the Designer of Record and Resident Engineer.

f. Colors: Match control color, as indicated in Signage Production Drawings and Sound Transit Customer Signage Design Manual.

6. Porcelain Enamel Sign Artwork and Screening:

a. Artwork Preparation: Produce film positives and negatives as required from digital production-ready artwork, provided by Sound Transit.

b. Films: Neatly package and deliver film negatives or positives used for production of the final screens to Sound Transit at the end of the Project to facilitate future sign revisions or replacement.

c. Screen porcelain enamel line art/messages over background colors. The quality of the screen image shall be of high resolution with no ragged edges. Screen line art over the background colors, so that characters are not obscured by the application color. Accurately print line art resolution at a standard that accepts, as a minimum, 1/2 point line thickness, and the type in sizes as small as 4 points. Four color process imaging shall be in perfect register in a resolution of not less than 75 lines per inch. Provide black and white photographic imaging at a resolution of up to 200 lines per inch. Indicate these specifications on tracing paper overlay. Use glasses that are acid-resistant and screen mesh that is between 205 and 405 in this process.

d. Screen Glazes: Use acid-resistant and opaque glazes in the screening process. Use corrosion-proof, UV-proof, and vandal-resistant glasses. Mill screen glass to a 400 mesh particle size.

e. Technical Proficiency: Must be proficient in the following imaging techniques and be able to demonstrate capabilities to the Resident Engineer: Reproduction of photographs by halftone and continuous tone methods, including hand tinting, stencil brushing, spraying textures, and air brushing.

f. Color Matching: Supplier shall be able to match control color Samples approved by Sound Transit. Color Samples shall be provided at no extra charge.

2.04 TYPOGRAPHY AND SYMBOLS

A. Execute all graphics, including text, symbols, and arrows in such a manner that all edges and corners are true and clean.

B. Typography: Precisely replicate the typeface, type size and letter, word, and line spaces of all signs, as indicated in production-ready artwork provided by Sound Transit.

C. Symbols: Match production-ready artwork provided by Sound Transit.

D. Arrows: Match production-ready artwork provided by Sound Transit.

E. Artwork: Do not alter in any way, production-ready artwork files provided by Sound Transit, unless approved in writing.

2.05 SIGN PANELS

A. General: Signage Production Drawings indicate material, thicknesses, finishes, color, designs, shapes, sizes, and details of construction.

B. Requirements: Materials and fabrication shall meet the following requirements:

1. Sign sizes, material, color, and finish as shown in the Sound Transit Customer Signage Design Manual and Signage Production Drawings, unless exception approved in writing by Sound Transit.

C. Removability: Ensure sign faces are removable and replaceable without damage to the faces or the sign support structure.

D. Pendants: Size aluminum pipe, attachment plates and escutcheon plates to meet structural requirements and painted as noted.

E. Mounting: Signs shall be pendant hung, flush ceiling mounted, wall mounted, projecting, fascia mounted, or free standing. Accessibility: Provide for easy access, repair and installation of sign faces and components by maintenance crews.

2.06 SIGN COMPONENT PAINTING

A. General: Paint steel and aluminum, and sign faces, where approved, with Urethane Enamel by Sherwin Williams, AkzoNobel, Matthews Paint, or approved equal unless noted otherwise. Paint systems shall be compatible with all exterior applications.

B. Single Source:

1. To the maximum extent practicable, select a single manufacturer to provide all materials required by this Section using additional manufacturers to provide systems not offered by the selected principal manufacturer.

2. For each individual system, provide primer and other undercoat paint produced by same manufacturer as finish coat. Use only thinners approved by paint manufacturer and use only within recommended limits.

C. Conform to the manufacturer's recommended surface preparation for each material specified.

PART 3 - EXECUTION

3.01 SIGN PANELS

A. Fabrication:

1. Fabricate all sign faces in a uniform, workmanlike manner. Provide all joints and seams in exposed surfaces as precise and tight fitting, with no uneven seams. Paint exposed edges to match the color and texture of the exposed face.

2. Fabricate and finish assemblies as much as possible in the shop. Neatly cut components and weld continuously in accordance with ASTM and AWS recommendations. Grind welds flush, smooth, and regular to blend with adjacent surfaces. Cut, drill and tap as required for field assembly and installation.

3. Coordinate with building structural system and mechanical and electrical appurtenances and equipment for exact location and fabrication of support system.

4. Additional Special Framing: Provide additional aluminum sign support framework, plates, or brackets as required for special conditions encountered on-Site, to ensure structural integrity of signs and satisfy performance requirements.

B. Expansion/Contraction: Provide for expansion and contraction of the sign face without bowing or warping to a range of ambient temperatures from plus 95 degrees to minus 10 degrees Fahrenheit.

3.02 SIGN COMPONENT PAINTING

A. Shop conditions of the sign manufacturer shall be clean, free of dust, with temperatures conforming to manufacturer's recommendations.

B. Sharply cut paint masking lines.

C. Spray apply shop painting, except where inaccessible surfaces require brushing. Protect adjoining or adjacent surface against discoloration.

D. Touch-up and finish damaged surfaces of signs to match adjoining surfaces after erection.

E. Properly label areas of painting and touch-up in the field to protect the public from contact with wet paint.

F. Color: Match colors as indicated in Signage Production Drawings and Sound Transit Customer Signage Design Manual. Color shall match control color.

3.03 INSPECTION

A. Dimensions/Tolerance: Verify construction Site details prior to scheduling Work in the field.

B. Flatness/Plumb: Verify surface conditions for flatness, curvature, and plumbness.

3.04 PREPARATION

A. Field measurements: Examine the substrates and conditions under which the signs are to be installed and verify that all such Work is complete for proper installation of the signs.

B. Protection: Protect structure, equipment, fixtures and surfaces adjacent to or nearby the Work area in such a manner that damage or discoloration is prevented.

3.05 INSTALLATION/APPLICATION/ERECTION

A. Install sign units and components securely. Verify clearances and anchorage methods and final location of each sign before installation. Field verify for obstructions of light fixtures, CCTV, VMS, air ducts, fire alarm, speakers, and other items that may obstruct mounting of signs and sign viewing.

B. Signs shall be mounted using concealed fasteners, unless otherwise shown on the Shop Drawings.

C. Install level, plumb, and at the proper height. Caulk as shown and required. Cooperate with other trades for installation of sign units to finish surface. Repair or replace damaged units as directed by the Construction Quality Assurance Manager and the Resident Engineer.

3.06 FIELD QUALITY CONTROL

A. Provide a field quality control individual who:

1. Has responsibility for coordinating and providing quality control of the Work.

2. Has unquestionable authority to direct the installation forces in the performance of the Work in order to provide a quality installation.

3. Has responsibility to ensure consistent quality of installation and adherence to specifications throughout the job.

4. Has the responsibility to coordinate tests and inspections required including manufacture's field service groups and to complete documentation of the tests and inspections.

3.07 ADJUSTING AND CLEANING

A. Cleaning:

1. On completion of sign installation, examine painted surfaces and carefully touch-up and repair marred or damaged spots, rework surfaces that have been repaired by other trades, clean off misplaced paint and leave the entire Work in first class conditions, acceptable to the Construction Quality Assurance Manager and the Resident Engineer. Properly label areas of painting and touch up to protect the public from contact with wet paint.

2. Restore damage or discoloration to the building or related equipment caused by the Contractor to condition acceptable to the Construction Quality Assurance Manager and the Resident Engineer and at no additional cost to Sound Transit.

3. Clean signs under this Contract after installation to the satisfaction of Sound Transit. Do not use cleaning solvents that would be harmful to the sign finish.

B. Adjustments:

1. Provide final leveling and other minor adjustments prior to turnover and Acceptance by the Construction Quality Assurance Manager and the Resident Engineer.

C. Protection: Protect installed Work to Facility Acceptance.

3.08 SIGN SCHEDULES

A. Schedule Examples:

~~1. List of Sign Types and Component Materials (Exhibit A)~~

~~2.~~1. Sound Transit Customer Signage Design Manual

B. List of sign types, component materials, and sign details are indicated on the Architectural Drawings.

END OF SECTION

SECTION 10 14 19

DIMENSIONAL CHARACTER SIGNAGE

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Custom fabricated exterior building-mounted dimensional character signs.

1. ~~Non-illuminated, f~~Opaque face, fabricated channel dimensional characters (Drawing Designations Z1-Custom and Z-4-Custom ~~and Z-6-Custom~~).
2. ~~Illuminated~~Translucent face, fabricated channel dimensional characters (Drawing Designation ~~Z1-Custom and~~ Z-3-Custom ~~1 through 8.~~)

B. Related Requirements:

1. Section 01 81 13 “Sustainable Design Requirements.”
2. Section 07 42 13.19 “Insulated Metal Wall Panels” for mounting surfaces and coordination of penetrations for power to illuminated signage.
3. Section 10 14 00 “Signage” for room, door, code and regulatory signs.
4. Section 10 14 14 “Sound Transit Site Signage” for site signs.
5. Section 10 14 23 “Panel Signage” for exterior building-mounted logo signs.

1.02 DEFINITIONS

A. Character: Indicates a letter or a number, as indicated on the Drawings.

~~B. Concealed Raceway: Electrical raceway providing power to the sign is concealed from view.~~

~~C. Backlighted: Illuminated by a light source concealed behind each aluminum-faced character and producing a halo lighting effect.~~

~~D. Frontlighted: Illuminated by a light source concealed within each sign unit, behind a translucent character face, that produces an internally illuminated effect.~~

~~E.~~B. Pin-Mounted: Individual anchor attachments for each character (no exposed structural frames).

1.03 JURISDICTIONAL REQUIREMENTS

A. Provide signs in accordance with Chapter 22B.10 Sign Code, Bellevue City Code, City of Bellevue, Washington.

1.04 COORDINATION

A. Furnish templates for placement of mounting fasteners and electrical service embedded in permanent construction by other installers.

1.05 ACTION SUBMITTALS

A. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.

B. Sustainable Design Submittals:

1. LEED Submittals: For components of this section, submit in compliance with Section 01 81 13 "Sustainable Design Requirements."

C. Shop Drawings: For dimensional letter signs.

1. Provide typestyles, layout, and dimensions for each sign.
2. Include fabrication and installation details and attachments to other work.
3. Show sign mounting heights, attachment details, accessories.
4. ~~Show locations and pathways of electrical service connections for backlit signs.~~
5. ~~Include diagrams for power, signal, and control wiring for backlit signs.~~

D. Samples for Verification: For each type of sign assembly showing all components, typefaces, and finishes.

E. Product Schedule: Use same designations indicated on the Drawings.

F. Delegated Design Submittal: For panel signs. Include analysis data prepared, signed and sealed by the qualified professional engineer responsible for their preparation.

1. Include structural analysis calculations for signs indicating compliance with design loads indicated on the Structural Drawings.

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Evaluation Reports: For post-installed anchors and power-actuated fasteners, from ICC-ES or other qualified testing agency acceptable to authorities having jurisdiction.

C. Sample Warranty: For special warranty.

1.07 CLOSEOUT SUBMITTALS

A. Maintenance Data: For signs to include in maintenance manuals.

1.08 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with minimum three years of documented experience.

B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

C. Source Limitations: Obtain each sign type indicated from a single manufacturer.

1.09 FIELD CONDITIONS

A. Field Measurements: Verify locations of anchorage devices ~~and electrical service~~ embedded in permanent construction by other installers by field measurements before fabrication and indicate measurements on Shop Drawings.

1.010 COORDINATION

A. For signs supported by or anchored to permanent construction, advise installers of anchorage devices about specific requirements for placement of anchorage devices and similar items to be used for attaching signs. Furnish templates for installation of anchorage devices.

B. Coordinate installation with adjacent finish materials in a manner not to damage adjacent surfaces.

1.011 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Deterioration of finishes beyond normal weathering.
b. Separation or delamination of sheet materials and components.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 LEED COMPLIANCE

A. Refer to Section 01 81 13 “Sustainable Design Requirements” for all components within this Section.

~~B. Luminance Limits Per Sign: Do not exceed a luminance of 200 cd/m2 (nits) during nighttime hours and 2000 cd/m2 (nits) during daytime hours.~~

2.02 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, currently licensed in the State of Washington, to design sign structure and anchorage of illuminated panel sign type(s) in accordance with structural performance requirements indicated on the Drawings.

B. Structural Performance: Signs and supporting elements shall withstand the effects of gravity and other loads within limits and under conditions indicated.

1. Uniform Wind Load: As indicated on Drawings.
2. Concentrated Horizontal Load: As indicated on Drawings.
3. Other Design Load: As indicated on Drawings.
4. Uniform and concentrated loads need not be assumed to act concurrently.

C. Thermal Movements: For exterior signage, allow for thermal movements from ambient and surface temperature changes.

2.03 DIMENSIONAL CHARACTER SIGNS

A. Fabricated Channel Characters: formed free from warp and distortion; with uniform faces, sharp corners, and precisely formed lines and profiles; internally braced for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners; and as follows.

1. ~~Non-illuminated~~Opaque Face ~~-~~Characters: Aluminum face and side returns (Z1-Custom and Z-4-Custom ~~and Z-6-Custom~~).

2. ~~Illuminated~~ Translucent Face Characters:

~~a. Backlighted: Aluminum face and side returns (Z1-Custom).~~
~~b.~~a. ~~Frontlighted:~~ Translucent face with metal side returns (Z-3-Custom~~-1 through 8~~).

~~3. Illumination: Illuminate with fluorescent tube, LED, or neon tube lighting, including transformers, insulators, and other accessories for operability, with provision for servicing and concealing connections to building electrical system. Use tight or sealed joint construction to prevent unintentional light leakage. Space lamps apart from each other and away from sign surfaces as needed to illuminate evenly.~~

~~4. Power: As indicated on the Electrical Drawings.~~

~~5. Raceways:~~

~~a. Provide concealed raceways, completely hidden from view.~~
~~b. Locate raceways on the interior of the building. Coordinate building penetrations with cladding subcontractor to achieve weathertight assemblies in compliance with building envelope requirements for air and moisture resistance.~~

~~6.~~3. Weeps: Provide weep holes to drain water at lowest part of exterior characters.

~~7.~~4. Aluminum Thickness: Manufacturer's standard for size and design of character.

~~8.~~5. Translucent Face Sheet: Acrylic sheet with integral color ~~as selected by Architect from manufacturer's full range~~to match ST Ferrari Red.
a. Sheet Thickness: Manufacturer's standard thickness for size of character.

~~9.~~6. Character Height & Width: As indicated on the Drawings.

~~10.~~7. Character Depth: ~~As indicated on the Drawings~~1 ½".

~~11.~~8. Typeface: As indicated on the Drawings.

~~12.~~9. Integral Aluminum Finish: Clear anodized.

~~13.~~10. Mounting:

a. Pin-mount each character.
b. Hold characters at a distance from wall surface as selected by Architect.
c. No exposed back bars.
d. Provide stainless steel mounting components.

2.04 DIMENSIONAL CHARACTER MATERIALS

A. Aluminum Castings: ASTM B 26/B 26M, alloy and temper recommended by sign manufacturer for casting process used and for type of use and finish indicated.

B. Aluminum Sheet and Plate: ASTM B 209 (ASTM B 209M), alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

C. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

D. Acrylic Sheet: ASTM D 4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).

E. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.

2.05 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, non-corrosive, and compatible with each material joined, and complying with the following:

1. Use concealed fasteners and anchors: welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.
2. For exterior exposure, provide stainless steel devices.

B. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

2.06 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.

1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
3. Comply with AWS for recommended practices in welding and brazing. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.
4. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
5. Internally brace dimensional characters for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners.
6. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.

B. Brackets: Fabricate brackets, fittings, and hardware for bracket-mounted signs to suit sign construction and mounting conditions indicated. Modify manufacturer's standard brackets as required.

1. Stainless steel Brackets: Factory finish brackets with No. 4 finish unless otherwise indicated.

2.07 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.08 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611, Class I, 0.018 mm or thicker.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.

~~C. Verify that electrical service is correctly sized and located to accommodate illuminated signs.~~

~~D.~~C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.

1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
2. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
3. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with dissimilar metals with a heavy coat of bituminous paint. Protect exterior wall surface from coating.

B. Mounting:

1. Through Fasteners: Create holes in substrate using approved templates and in accordance with insulated metal wall panel manufacturer’s written instructions.

2. Place sign in position at required distance from surface.
3. Adjust mounting to ensure level alignment of characters.

3.03 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed characters and signs that do not comply with specified requirements. Replace characters with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION

SECTION 10 14 23

PANEL SIGNAGE

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Custom fabricated exterior building-mounted logo signs.

1. ~~Non-illuminated p~~Panel signs (Drawing Designation Z-2-Custom and Z-5-Custom).
~~2. Illuminated panel sign (Drawing Designation Z-5-Custom).~~

B. Related Requirements:

1. Section 01 81 13 “Sustainable Design Requirements.”
2. Section 07 42 13.19 “Insulated Metal Wall Panels” for mounting surfaces and coordination of penetrations for power to illuminated signage.
3. Section 10 14 00 “Signage” for room, door, code and regulatory signs.
4. Section 10 14 14 “Sound Transit Site Signage” for site signs.
5. Section 10 14 19 “Dimensional Character Signage” for exterior building-mounted dimensional letter signs.

1.02 DEFINITIONS

~~A. Concealed Raceway: Electrical raceway providing power to the sign is concealed from view.~~

~~B. Internally Illuminated: Illuminated by a light source concealed within each sign unit.~~

~~C.~~A. Pin-Mounted: Individual anchor attachments (no exposed structural frames).

1.03 JURISDICTIONAL REQUIREMENTS

A. Provide signs in accordance with Chapter 22B.10 Sign Code, Bellevue City Code, City of Bellevue, Washington.

1.04 COORDINATION

A. Furnish templates for placement of sign-anchorage devices embedded in permanent construction by other installers.

~~B. Furnish templates for placement of electrical service embedded in permanent construction by other installers.~~

1.05 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:

1. LEED Submittals: For components of this section, submit in compliance with Section 01 81 13 “Sustainable Design Requirements.”

C. Shop Drawings: For panel signs.

1. Include fabrication and installation details and attachments to other work.
2. Show sign mounting heights, attachment details, accessories.
3. Show message list, typestyles, graphic elements, dimensions, and layout for each sign.
4. ~~Show locations and pathways of electrical service connections.~~
5. ~~Include diagrams for power, signal, and control wiring.~~

D. Samples for Initial Selection: For each type of sign assembly and exposed finish.

1. Include production-ready artwork samples of available typestyles and graphic symbols.

E. Samples for Verification: For each type of sign assembly showing all components and finishes:

F. Product Schedule: Use same designations indicated on Drawings or specified.

G. Delegated Design Submittal: For panel signs. Include analysis data prepared, signed and sealed by the qualified professional engineer responsible for their preparation.

1. Include structural analysis calculations for signs indicating compliance with design loads indicated on the Structural Drawings.

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Evaluation Reports: For post-installed anchors and power-actuated fasteners, from ICC-ES or other qualified testing agency acceptable to authorities having jurisdiction.

C. Sample Warranty: For special warranty.

1.07 CLOSEOUT SUBMITTALS

A. Maintenance Data: For signs to include in maintenance manuals.

1.08 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with minimum three years of documented experience.

B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

C. Source Limitations: Obtain each sign type indicated from a single manufacturer.

1.09 FIELD CONDITIONS

A. Field Measurements: Verify locations of anchorage devices ~~and electrical service~~ embedded in permanent construction by other installers by field measurements before fabrication and indicate measurements on Shop Drawings.

1.10 COORDINATION

A. For signs supported by or anchored to permanent construction, advise installers of anchorage devices about specific requirements for placement of anchorage devices and similar items to be used for attaching signs. Furnish templates for installation of anchorage devices.

B. Coordinate installation with adjacent finish materials in a manner not to damage adjacent surfaces.

1.11 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Deterioration of finishes beyond normal weathering.
b. Deterioration of embedded graphic image.
c. Separation or delamination of sheet materials and components.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 LEED COMPLIANCE

A. Refer to Section 01 81 13 “Sustainable Design Requirements” for all components within this Section.

~~B. Luminance Limits Per Sign: Do not exceed a luminance of 200 cd/m2 (nits) during nighttime hours and 2000 cd/m2 (nits) during daytime hours.~~

2.02 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, currently licensed in the State of Washington, to design sign structure and anchorage of illuminated panel sign type(s) in accordance with structural performance requirements indicated on the Drawings.

B. Structural Performance: Signs and supporting elements shall withstand the effects of gravity and other loads within limits and under conditions indicated.

1. Uniform Wind Load: As indicated on Drawings.
2. Concentrated Horizontal Load: As indicated on Drawings.
3. Other Design Load: As indicated on Drawings.

4. Uniform and concentrated loads need not be assumed to act concurrently.

C. Thermal Movements: For exterior signs, allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

~~D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.~~

2.03 PANEL SIGNS

A. Custom logo signs fabricated from production-ready artwork with smooth, uniform surfaces, precisely formed lines and profiles, and as follows:

B. ~~Non-Illuminated~~ Solid-Sheet Signs (Z-2-Custom and Z-5-Custom): Acrylic face sheet with aluminum returns and backs. Finish specified in "Surface Finish and Applied Graphics" Subparagraph and as follows:

1. Thickness: Manufacturer's standard for size of sign.
2. Surface-Applied, Flat Graphics: Applied vinyl film.
3. Surface-Applied, Raised Graphics: Applied polymer characters.
4. Etched and Filled Graphics: Sign face etched or routed to receive enamel-paint infill.
5. Inset, Cutout Characters: Sign face routed to receive push-through acrylic graphics slightly projecting from the sign panel.

~~C. Illuminated Panel Sign (Z-5-Custom): Internally illuminated construction with fluorescent tube, LED, or neon tube lighting, including transformers, insulators, and other accessories for operability, with provision for servicing and concealing connections to building electrical system. Use tight or sealed joint construction to prevent unintentional light leakage. Space lamps apart from each other and away from sign surfaces as needed to illuminate evenly.~~

~~1. Power: As indicated on the Electrical Drawings.~~

~~2. Raceways:~~
~~a. Provide concealed raceways, completely hidden from view.~~
~~b. Locate raceways on the interior of the building. Coordinate building penetrations with cladding subcontractor to achieve weathertight assemblies in compliance with building envelope requirements for air and moisture resistance.~~

~~3.~~6. Weeps: Provide weep holes to drain water at lowest part of exterior signs. Equip weeps with permanent baffles to block light leakage without inhibiting drainage.

~~4.~~7. Sign Panel Perimeter: Finish edges smooth.

~~5.~~8. Frame: Entire perimeter, contoured to edge of artwork.

a. Material: Aluminum.
b. Material Thickness: Manufacturer's standard for size of sign.
c. Frame Depth: ~~As indicated on the Drawings.~~
1) Z-2 Custom: 2 ½”
~~c.~~2) Z-5 Custom: 1 ½”
d. Profile: As indicated on the Drawings.

e. Finish and Color: Metallic Silver per ST Sign Manual (Matthews Paint, MP25129) ~~As selected by Architect from manufacturer's full range~~.

~~6.~~9. Mounting:
   a. Pin-mounted.
   b. No exposed back bars.
   c. Provide stainless steel mounting components.

~~7.~~10. Surface Finish and Applied Graphics:

   a. Integral Aluminum Finish: Clear anodized.
   b. Integral Acrylic Sheet Color: White per ST Sign Manual (Matthews Paint, MP-N202) ~~Match Architect's samples.~~
   c. Overcoat: Manufacturer's standard baked-on clear coating.

~~8.~~11. Artwork: logo and typefaces matching Owner's production-ready artwork and variable content indicated on the Drawings.

~~9.~~12. Flatness Tolerance: Sign shall remain flat or uniformly curved under installed conditions as indicated on Drawings and within a tolerance of plus or minus 1/16 inch (1.5 mm) measured diagonally from corner to corner.

2.04 PANEL SIGN MATERIALS

A. Aluminum Sheet and Plate: ASTM B 209 (ASTM B 209M), alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

B. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

C. Acrylic Sheet: ASTM D 4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).

D. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.

2.05 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, non-corrosive, and compatible with each material joined, and complying with the following:

   1. Use concealed fasteners and anchors: welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.
   2. For exterior exposure, provide stainless steel devices.

B. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

2.06 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.

1. Preassemble signs in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
3. Comply with AWS for recommended practices in welding and brazing. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.
4. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
5. Internally brace signs for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners.
6. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.

B. Subsurface-Applied Graphics: Apply graphics to back face of clear face-sheet material to produce precisely formed image. Image shall be free of rough edges.

C. Shop- and Subsurface-Applied Vinyl: Align vinyl film in final position and apply to surface. Firmly press film from the middle outward to obtain good bond without blisters or fishmouths.

D. Brackets: Fabricate brackets, fittings, and hardware for bracket-mounted signs to suit sign construction and mounting conditions indicated. Modify manufacturer's standard brackets as required.

1. Stainless Steel Brackets: Factory finish brackets to match sign background finish unless otherwise indicated.

2.07 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.08 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611, Class I, 0.018 mm or thicker.

B. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils (0.04 mm). Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.

C. Verify that anchorage devices embedded in permanent construction are correctly sized and located to accommodate signs.

D. Verify that electrical service is correctly sized and located to accommodate signs.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.

1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
2. Install signs so they do not protrude or obstruct according to the accessibility standard.
3. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
4. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with dissimilar metals with a heavy coat of bituminous paint. Protect exterior wall surface from coating.

A. Mounting:

1. Through Fasteners: Create holes in substrate using approved templates and in accordance with insulated metal wall panel manufacturer’s written instructions.
2. Place sign in position at required distance from surface.
3. Adjust mounting to ensure level alignment of characters.

3.03 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION

SECTION 10 14 53

TRAFFIC SIGNAGE

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes requirements for furnishing, installing, and relocating traffic signs and/or posts; and removing and salvaging existing signs and/or posts, as indicated.

1.02 REFERENCES

A. This Section incorporates by reference the latest revisions of the following documents.

1. City of Bellevue (Bellevue)

a. Bellevue Transportation Department Design Manual

b. Bellevue Transportation Department Design Manual Standard Drawings

2. Washington State Department of Transportation (WSDOT)

a. WSDOT Standard Specifications for Road, Bridge, and Municipal Construction, M41-10

b. WSDOT Standard Plans, M21-01

c. WSDOT Sign Fabrication Manual, M55-05

d. Manual on Uniform Traffic Control Devices (MUTCD) – Washington State Modifications

3. Federal Highway Administration (FHWA)

a. Manual on Uniform Traffic Control Devices (MUTCD)

1.03 SUBMITTALS

A. Product Data: Manufacturers' product data for signage materials.

1.04 WARRANTY

A. Written warranty for five-year period stating that manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Deterioration of finishes beyond normal weathering

b. Deterioration of embedded graphic image

c. Separation or delamination of sheet materials and components

PART 2 - PRODUCTS

2.01 MATERIALS – GENERAL

A. For roadway signage on Sound Transit owned streets, roadways, and parking lots, use materials, including posts, as indicated on the Contract Drawings and conform to the applicable provisions of WSDOT Standard Specifications Section 8-21, unless specified otherwise.

B. For roadway signage on streets, roadways, and parking areas that will be owned or maintained by the City of Bellevue, use materials that conform to Bellevue Transportation Department Design Manual Standard Drawings, and conform to applicable provisions of WSDOT Standard Specifications Section 8-21, unless specified otherwise.

2.02 CITY OF BELLEVE SIGNAGE MATERIALS

A. The third paragraph of WSDOT Standard Specifications Section 9-28.1 is revised to read as follows:

1. The following signs shall use Type XI reflective sheeting:

a. Regulatory: Stop (R1-1), Yield (R1-2), Keep Right (R4-7), Turn Restriction (R3-1, R3-2, R3-3, R3-4)

b. Warning: Large Arrow (W1-6, W1-7), Chevron (W1-8), Curve/Turn Warning (W1-1, W1-2, W1-3, W1-4, W1-5), Pedestrian & Advance Pedestrian Crossing (W11-2, W11A-2), School & Advance School Crossing (S1-1, S2-1), Stop/Yield/Signal Ahead (W3-1A, W3-2A, W3-3)

c. Object Marking: Object Markers (OM-3L, OM-3R), End of Road Marker

d. Guide: All Street Name Signs, mast arm and post mount

e. Overhead Mounted: All Mast Arm and Overhead Mounted signs, regardless of type.

2. All other signs shall use Type IV reflective sheeting.

PART 3 - EXECUTION

3.01 CONSTRUCTION – GENERAL

A. For roadway signage on Sound Transit owned streets, roadways, and parking lots, perform work described in this Section in accordance with the applicable provisions of WSDOT Standard Specifications Section 8-21, unless specified otherwise.

B. For roadway signage on streets, roadways and parking areas that will be owned or maintained by City of Bellevue, perform work described in this Section in accordance with Bellevue Transportation Department Design Manual Standard Drawings, and applicable provisions of WSDOT Standard Specifications Section 8-21, unless specified otherwise.

C. Location of Signs: The following sentence is added after the second sentence of WSDOT Standard Specifications Section 8-21.3(1):

1. The Contractor shall mark the location of all signs for verification by the Engineer of Record a minimum of ten (10) days in advance of sign installation.

3.02 CITY OF BELLEVUE CONSTRUCTION REQUIREMENTS

A. Placement of Signs

1. The first sentence of WSDOT Standard Specifications Section 8-21.3(2) is revised to read as follows:

a. All reflectorized signs located within 25 feet of the edge of the lane shall be turned 3 degrees out, those more than 25 feet from the edge of the lane shall be turned 3 degrees in.

2. WSDOT Standard Specifications Section 8-21.3(2) is supplemented with the following:

a. A one-foot diameter sleeve shall be installed for post installations in asphalt or concrete.

END OF SECTION

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SECTION 10 21 13

TOILET AND SHOWER COMPARTMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
1. Delegated design of ceiling mounted partitions.
2. Stainless steel toilet compartments.
3. Stainless steel urinal screens.
4. Stainless steel shower and dressing compartments.

B. Related Requirements:
1. 01 81 13 – Sustainable Design Requirements
2. 05 50 00 - Metal Fabrications: for concealed steel support members.
3. 06 10 53 – Miscellaneous Rough Carpentry: for blocking and supports.
4. 10 28 00 - Toilet Accessories: for accessories mounted on compartments and related accessories including shower curtains and rods.

1.02 SUBMITTALS

A. Qualification Data: For Design engineer.

B. Delegated-Design Submittal: For assemblies indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

C. Product Data: Provide data on panel construction, hardware, and accessories.

D. Sustainable Design Submittals:
1. LEED Submittals: For components of this section, submit in compliance with Section 01 81 13 Sustainable Design Requirements.

E. Shop Drawings: Indicate partition plan, elevation views, dimensions, details of ceiling supports and door swings.
1. Provide template layouts and installation instructions for anchorage devices built into other work

F. Samples:
1. Submit two samples of partition panels in manufacturer's standard size illustrating panel finish, color, and sheen.
2. Submit one sample of full set of hardware illustrating operation and finish.

G. Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

H. Maintenance Data: For user’s operation and maintenance of system including:
1. Methods for maintaining system's materials and finishes.
2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.

1.03 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Door Hinges: **One** door hinge(s) with associated fasteners.
   2. Latch and Keeper: **One** latch(es) and keeper(s) with associated fasteners.
   3. Clothing Hook: **One** clothing hook(s) with associated fasteners.
   4. Door Bumper: **One** door bumper(s) with associated fasteners.
   5. Door Pull: **One** door pull(s) with associated fasteners.
   6. Fasteners: Ten fasteners of each size and type.
   7. Curtain Rod: **One** curtain rod(s) with associated fasteners.
   8. Curtain Hooks: **Five** curtain hooks.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualification: Company specializing in the manufacture of Work specified in this section with minimum 5 years of experience.

B. Designer Qualifications: Company specializing in performing the design work of this section with minimum 2 years of experience licensed in the location of the project.

1.05 DELIVERY, STORAGE, AND HANDLING

A. As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

PART 2 - PRODUCTS

2.01 LEED COMPLIANCE

A. Refer to Section 01 81 13 Sustainable Design Requirements for all components within this Section.

2.02 DESCRIPTION

A. Doors, panels, screens, and pilasters assembled into complete compartment system, with cutouts and drilled holes to receive hardware as indicated; processed and fabricated in accordance with industry standards.

2.03 PERFORMANCE AND DESIGN CRITERIA

A. Comply with ANSI/ICC A117.1, Americans with Disabilities Act (ADA).

B. Design attachment system as required to transfer loading of toilet partitions to structure and provide attachment points required by compartment manufacturer.

2.04 MANUFACTURERS

A. Basis of design Manufacturer: Subject to compliance with requirements, provide products of The Mills Company, Marion, OH 43302. Contact Information: (800) 272-3539. Email info@bradleycorp.com

B. Other acceptable manufacturers are the indicated below. Obtain toilet and shower compartments from a single source in a matching style and configuration: Basis of design is Bradley Corporation.
   1. Acceptable manufacturers:
      a. Hadrian
      b. General Partitions
      c. Global Steel Products
      d. Ampco

2.05 MATERIALS

A. General:
   1. Panel and Pilaster Construction: Seamless stainless-steel facing sheets, pressure laminated to core material, with continuous, interlocking molding strip or lapped-and-formed edge closures and with corners secured by welding or clips and exposed welds ground smooth. Exposed surfaces shall be free of pitting, seam marks, roller marks, stains, discolorations, telegraphing of core material, or other imperfections.
      a. Core Material: Manufacturer's standard, sound-deadening honeycomb of resin-impregnated kraft paper in thickness required to provide finished thickness of 1 inch for panels and 1-1/4 inches for pilasters.
      b. Grab-Bar and Seat Reinforcement: Concealed internal reinforcement for grab bars and seats mounted on compartments of size and material adequate for panel to withstand required grab-bar or seat loading without deformation of panel.
      c. Tapping Reinforcement: Concealed reinforcement for tapping (threading) at locations where machine screws are used for attaching items to compartments.
   2. Stainless Steel Sheet: ASTM A167, Type 304, finish: #4 Satin.
      a. Stainless Steel Sheet Thickness:
         1) Doors and Panels: 22 gauge, minimum.
         2) Pilasters: 18 gauge, minimum (headrail braced, floor to ceiling).
         3) Pilasters: 18 gauge , minimum (floor mounted, ceiling hung).

B. Stainless Steel Toilet Compartments:
   1. Configuration: As indicated on Drawings.
   2. Enclosure Style: Overhead braced, ceiling hung.
      a. Doors and Panels: Minimum 1 inch thick with formed edges welded together and interlocked. Mechanical corner fastenings not acceptable.
      b. Pilaster Thickness: 1-1/4 inch.
      c. Pilaster Width: As required to fit space, minimum 3 inches.
      d. Pilaster Shoes and Caps: Formed from stainless-steel sheet, not less than 0.031-inchnominal thickness and 3 incheshigh, finished to match hardware.
      e. Anchoring assembly: Manufacturer standard corrosion resistant with caps and sleeves to conceal anchorage.
      f. Features:
         1) No sight gaps on hinge side or lock side of door.
         2) All fasteners and reinforcing concealed from view from outside compartment.
         3) Hardware:
            a) Including: Brackets, hinges, latch and keeper, coat hook/bumper, and door pull.
            b) Material: Manufacturer's standard stainless steel.
            c) Hinges to be wraparound gravity type, stainless steel screws and fasteners typical.

C. Stainless Steel Urinal Screens

1. Urinal-Screen Style: Integral-Flange, Wall-Hung Urinal Screen.
2. Urinal-Screen Construction:
   a. Integral-Flange, Wall-Hung Urinal Screen: Similar to panel construction, with integral full-height flanges for wall attachment, and maximum 1-1/4 inches thick.
   b. Panel thickness and construction to match toilet compartments.

D. Stainless Steel Shower and Dressing Compartments:
1. Configuration: As indicated on Drawings.
2. Enclosure Style: Overhead braced, ceiling hung
   a. Panels: Minimum 1 inch thick with formed edges welded together and interlocked. Mechanical corner fastenings not acceptable.
   b. Pilaster Thickness: 1-1/4 inch.
   c. Pilaster Width: As required to fit space, minimum 3 inches.
   d. Pilaster Shoes and Caps: Formed from stainless-steel sheet, not less than 0.031-inchnominal thickness and 3 incheshigh, finished to match hardware.
3. Brackets (Fittings):
   a. Dressing-Compartment Brackets: Match toilet compartment brackets.

2.06 ACCESSORIES

A. All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify existing conditions meet the manufacturer's requirements before starting work.

3.02 PREPARATION

A. Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.03 INSTALLATION

A. General: Install all materials in accordance with manufacturer's instructions based on conditions present.

3.04 ADJUSTING

A. Adjust and lubricate hardware for proper operation. Set hinges on in-swing doors to hold open approximately 30 degrees from closed position when unlatched. Set hinges on out-swing doors (and entrance swing doors) to return to fully closed position.

3.05 PROTECTION

A. Protect installed work as required by the manufacturer to maintain product performance, design criteria and warranty.

END OF SECTION

SECTION 10 22 39

FOLDING PANEL PARTITIONS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Manually operated, acoustical panel partitions.

1.02 RELATED REQUIREMENTS:

1. Section 01 81 13 “Sustainable Design Requirements.”
2. Section 05 50 00 “Metal Fabrications" for supports that attach supporting tracks to overhead structural system.
3. Section 10 82 00 “Seismic Bracing of Non-Structural Components.”

1.03 DEFINITIONS

A. NIC: Noise Isolation Class.

B. NRC: Noise Reduction Coefficient.

C. STC: Sound Transmission Class.

1.04 ~~ACTION~~ SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:

1. LEED Submittals: For components of this section, submit in compliance with Section 01 81 13 Sustainable Design Requirements.

C. Shop Drawings: For operable panel partitions.

1. Include plans, elevations, sections, attachment details.
2. Indicate stacking and operating clearances. Indicate location and installation requirements for hardware and track, blocking, and direction of travel.

D. Samples for Verification: For each type of exposed material, finish, covering, or facing, prepared on Samples of size indicated below:

1. Panel Facing Material: Manufacturer's standard-size unit, not less than 3 inches (75 mm) square.
2. Panel Edge Material: Not less than 3 inches (75 mm) long.
3. Hardware: One of each exposed door-operating device.

E. Delegated-Design Submittal: For operable panel partitions.

1. Include design calculations for seismic restraints that brace tracks to structure above.

~~1.05 INFORMATIONAL SUBMITTALS~~

~~A.~~F. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

1. Partition track, track supports and bracing, switches, turning space, and storage layout.
2. Suspended ceiling components.
3. Structural members to which suspension systems will be attached.
4. Size and location of initial access modules for acoustical tile.
5. Items penetrating finished ceiling including the following:

a. Lighting fixtures.
b. HVAC ductwork, outlets, and inlets.
c. Speakers.
d. Sprinklers.
e. Smoke detectors.
f. Access panels.

~~B.~~G. Seismic Qualification Certificates: For operable panel partitions, tracks, accessories, and components, from manufacturer. Include seismic capacity of partition assemblies to remain in vertical position during a seismic event and the following:

1. Basis for Certification: Indicate whether certification is based on analysis, testing, or experience data, according to ASCE/SEI 7.
2. Detailed description of partition anchorage devices on which the certification is based and their installation requirements.

~~C.~~H. Product Certificates: For each type of operable panel partition, confirming STC rating of each partition as tested by a qualified acoustic testing agency~~.~~

~~1. Include approval letter signed by manufacturer acknowledging Owner-furnished panel facing material complies with requirements.~~

~~D. Product Test Reports: For each operable panel partition, for tests performed by a qualified testing agency.~~

~~E.~~I. Sample Warranty: For manufacturer's special warranty.

~~1.06~~1.05 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For operable panel partitions to include in maintenance manuals.

1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:

a. Panel finish facings and finishes for exposed trim and accessories. Include precautions for cleaning materials and methods that could be detrimental to finishes and performance.

b. Seals, hardware, track, track switches, carriers, and other operating components.
c. Electric operator and controls.

~~1.07~~1.06 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same production run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Panel Finish-Facing Material: Furnish full width in quantity to cover both sides of two panels when installed.

~~1.08~~1.07 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

~~1.09~~1.08 DELIVERY, STORAGE, AND HANDLING

A. Protectively package and sequence panels in order for installation. Clearly mark packages and panels with numbering system used on Shop Drawings. Do not use permanent markings on panels.

~~1.010~~1.09 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of operable panel partitions that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Faulty operation of operable panel partitions.
b. Deterioration of metals, metal finishes, and other materials beyond normal use.

2. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 LEED COMPLIANCE

A. LEED Compliance: Refer to Section 01 81 13 Sustainable Design Requirements for all components within this Section.

2.02 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Division 1 Section "Quality Requirements," to design seismic bracing of tracks to structure above.

B. Seismic Performance: Operable panel partitions shall withstand the effects of earthquake motions determined according to ASCE/SEI 7 and in accordance with requirements indicated on the Structural Drawings.

C. Acoustical Performance: Provide operable panel partitions tested by a qualified testing agency for the following acoustical properties according to test methods indicated:

1. Sound-Transmission Requirements: Operable panel partition assembly tested for laboratory sound-transmission loss performance according to ASTM E 90, determined by ASTM E 413, and rated for not less than the STC indicated.

D. Fire-Test-Response Characteristics: Provide panels with finishes complying with one of the following as determined by testing identical products by a testing and inspecting agency acceptable to authorities having jurisdiction:

1. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

a. Flame-Spread Index: 25 or less.
b. Smoke-Developed Index: 450 or less.

2. Fire Growth Contribution: Complying with acceptance criteria of local code and authorities having jurisdiction when tested according to NFPA 286.

2.03 OPERABLE ACOUSTICAL PANELS

A. Operable Acoustical Panels: Partition system, including panels, seals, finish facing, suspension system, operators, and accessories.

1. Basis of Design Product: Subject to compliance with requirements, provide:

a. Moduflex Model 510PP by Panelfold. Inc.

2. Or equal product by one of the following:

a. Moderco.
b. Modernfold.
c. Kwik-Wall

B. Panel Operation: Manually operated, paired panels.

C. Panel Construction: As required to support panel from suspension components and with reinforcement for hardware attachment. Fabricate panels with tight hairline joints and concealed fasteners. Fabricate panels so finished in-place partition is rigid; level; plumb; aligned, with tight joints and uniform appearance; and free of bow, warp, twist, deformation, and surface and finish irregularities.

D. Dimensions: Fabricate operable acoustical panel partitions to form an assembled system of dimensions indicated and verified by field measurements.

1. Panel Width: Standard widths.

E. STC: Not less than 52.

F. Panel Thickness: Nominal dimension between 3 inches and 3-1/2 inches.

G. Panel Materials:
1. Steel Frame: Steel sheet, 16-gauge nominal minimum thickness for uncoated steel.
2. Steel Face/Liner Sheets: Continuous tension-leveled steel sheet, 20 gauge minimum nominal thickness for uncoated steel.
   a. Frame Reinforcement: Manufacturer's standard steel or aluminum.
3. Particleboard: ANSI A208.1.
4. Medium-Density Fiberboard: ANSI A208.2.
5. Plywood: DOC PS 1.

H. Panel Closure: Manufacturer's standard unless otherwise indicated.

I. Hardware: Manufacturer's standard as required to operate operable panel partition and accessories; with decorative, protective finish.

J. Finish Facing: As selected by Architect from manufacturer’s full range.

2.04 SEALS

A. Description: Seals that produce operable panel partitions complying with performance requirements and the following:

1. Manufacturer's standard seals unless otherwise indicated.
2. Seals made from materials and in profiles that minimize sound leakage.
3. Seals fitting tight at contact surfaces and sealing continuously between adjacent panels and between operable panel partition perimeter and adjacent surfaces, when operable panel partition is extended and closed.

B. Vertical Seals: Deep-nesting, interlocking astragals mounted on each edge of panel, with continuous, resilient acoustical seal.

C. Horizontal Top Seals: Continuous-contact, resilient seal exerting uniform constant pressure on track.

D. Horizontal Bottom Seals: Resilient, mechanical, retractable, constant-force-contact seal exerting uniform constant pressure on floor when extended, ensuring horizontal and vertical sealing and resisting panel movement.

1. Mechanically Operated for Acoustical Panels: Extension and retraction of bottom seal by operating handle or built-in operating mechanism, with operating range not less than **2 inches** between retracted seal and floor finish.

2.05 PANEL FINISH FACINGS

A. Description: Finish facings for panels that comply with indicated fire-test-response characteristics and that are factory applied to operable panel partitions with appropriate backing, using mildew-resistant nonstaining adhesive as recommended by facing manufacturer's written instructions.

1. Apply one-piece, seamless facings free of air bubbles, wrinkles, blisters, and other defects, with no gaps or overlaps. Horizontal seams are not permitted. Tightly secure and conceal raw and selvage edges of facing for finished appearance.

B. Vinyl-Coated Fabric Wall Covering: Manufacturer's standard, mildew-resistant, washable, vinyl-coated fabric wall covering; complying with WA-101, Type II-Medium Duty; Class A.

1. Color/Pattern: As selected by Architect from manufacturer's full range.

C. Fabric Wall Covering: Manufacturer's standard fabric, from same dye lot, treated to resist stains.

1. Color/Pattern: As selected by Architect from manufacturer's full range.

D. High-Pressure Decorative Laminate: NEMA LD 3, Horizontal grade.

1. Color/Pattern: As selected by Architect from manufacturer's full range.

E. Cap-Trimmed Edges: Protective perimeter-edge trim with tight hairline joints concealing edges of panel and finish facing, finished as follows:

1. Aluminum: Finished with manufacturer's standard clear anodic finish.

2.06 SUSPENSION SYSTEMS

A. Tracks: Steel or aluminum mounted directly to overhead structural support, designed for operation, size, and weight of operable panel partition indicated. Size track to support partition operation and storage without damage to suspension system, operable panel partitions, or adjacent construction. Limit track deflection to no more than 0.10 inch (2.54 mm) between bracket supports. Provide a continuous system of track sections and accessories to accommodate configuration and layout indicated for partition operation and storage.

1. Panel Guide: Aluminum guide on both sides of the track to facilitate straightening of the panels; finished with factory-applied, decorative, protective finish.
2. Head Closure Trim: As required for acoustical performance; with factory-applied, decorative, protective finish.

B. Carriers: Trolley system as required for configuration type, size, and weight of partition and for easy operation; with ball-bearing wheels.

C. Aluminum Finish: Mill finish or manufacturer's standard, factory-applied, decorative finish unless otherwise indicated.

D. Steel Finish: Manufacturer's standard, factory-applied, corrosion-resistant, protective coating unless otherwise indicated.

2.07 ACCESSORIES

A. Storage Pocket Door: Full height at end of partition runs to conceal stacked partition; of same materials, finish, construction, thickness, and acoustical qualities as panels; complete with operating hardware. Hinges in finish to match other exposed hardware.

1. Manufacturer's standard method to secure storage pocket door in closed position.

PART 3 - EXECUTION

3.01 INSTALLATION

A. General: Install operable panel partitions in strict compliance with manufacturer's written instructions in order to achieve the sound control performance criteria specified.

~~A.~~B. Install operable panel partitions and accessories after other finishing operations, including painting, have been completed in area of partition installation.

~~B.~~C. Install panels in numbered sequence indicated on Shop Drawings.

~~C.~~D. Broken, cracked, chipped, deformed, or unmatched panels are not acceptable.

~~D.~~E. Broken, cracked, deformed, or unmatched gasketing or gasketing with gaps at butted ends is not acceptable.

~~E.~~F. Light-Leakage Test: Illuminate one side of partition installation and observe vertical joints and top and bottom seals for voids. Adjust partitions for alignment and full closure of vertical joints and full closure along top and bottom seals.

~~3.02 FIELD QUALITY CONTROL~~

~~A. NIC Testing: Engage a qualified testing agency to perform tests and inspections.~~

~~1. Testing Extent: Testing agency shall randomly select one operable panel partition installation(s) for testing.~~
~~2. Testing Methodology: Perform testing of installed operable panel partition for noise isolation according to ASTM E 336, determined by ASTM E 413, and rated for not less than NIC indicated. Adjust and fit partitions to comply with NIC test method requirements.~~

~~B. An operable panel partition installation will be considered defective if it does not pass tests and inspections.~~

~~C. Prepare test and inspection reports.~~

~~3.03~~3.02 ADJUSTING

A. Adjust operable panel partitions, hardware, and other moving parts to function smoothly, and lubricate as recommended by manufacturer.

B. Adjust storage pocket doors to operate smoothly and easily, without binding or warping.

C. Verify that safety devices are properly functioning.

~~3.04~~3.03 DEMONSTRATION

A. Engage a factory authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain operable panel partitions.

END OF SECTION

SECTION 10 26 00

WALL AND DOOR PROTECTION

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Corner guards.
2. End-wall guards.
3. Wall protection (Drawing Designation MP-6)

B. Related Requirements:

1. Section 01 81 13 “Sustainable Design Requirements.”
2. Section 08 71 00 “Door Hardware” for metal door armor, kick, mop, and push plates.

1.02 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Sustainable Design Submittals:

1. LEED Submittals: For components of this section, submit in compliance with Section 01 81 13 “Sustainable Design Requirements.”

C. Shop Drawings: Include sections, details, and attachments to other work.

D. Samples: For each type of unit and for each color and texture required.

PART 2 - PRODUCTS

2.01 LEED COMPLIANCE

A. Refer to Section 01 81 13 Sustainable Design Requirements for all components within this Section.

2.02 CORNER GUARDS

A. Surface-Mounted, Metal Corner Guards: Fabricated from 1-piece, formed metal with formed edges; with 90-degree turn or to match wall condition.

1. Available Manufacturers:

a. Construction Specialties, Inc.
b. IPC Door and Wall Protection Systems; Division of InPro Corporation.
c. JL Industries.
d. Koroseal Wall Protection Systems.
e. Pawling Corporation.

2. Material: Stainless steel, Type 316.

a. Thickness: Minimum 0.0500-inch.
b. Finish: Satin, No. 4.

3. Wing Size: Nominal 3 by 3-inches.

4. Corner Radius: 1/8-inch.

5. Height: 48-inches, mounted from top of rubber base.

6. Mounting: Flat-head, countersunk, stainless steel screws through beveled, factory-drilled mounting holes.

2.03 END-WALL GUARDS

A. Surface-Mounted, Metal End-Wall Guards: Fabricated from 1-piece, formed metal with formed edges; with 180-degree turn.

1. Available Manufacturers:

a. Construction Specialties, Inc.
b. IPC Door and Wall Protection Systems; Division of InPro Corporation.
c. JL Industries.
d. Koroseal Wall Protection Systems.
e. Pawling Corporation.

2. Material: Stainless steel, Type 316.

a. Thickness: Minimum 0.0500-inch.
b. Finish: Satin, No. 4.

3. Wing Size: Nominal 3 by 3-inches.

4. Width: To match exposed wall end.

5. Corner Radius: 1/8-inch.

6. Height: 48-inches, mounted from top of rubber base.

7. Mounting: Flat-head, countersunk, stainless steel screws through beveled, factory-drilled mounting holes.

2.04 WALL PROTECTION

A. Metal Wall Panels:

1. Material: Stainless steel, Type 316.

a. Thickness: Minimum 0.0500-inch.
b. Finish: Satin, No. 4.
c. Edge: Hemmed.

2. Dimensions: As indicated on drawings. Maximize panel size for installation location.

3. Mounting: Flat-head, countersunk, stainless steel screws through beveled, factory-drilled mounting holes.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install corner guards at all exterior corners of interior walls. Install end-wall guards at all exposed wall ends of interior walls.

B. Install wall protection at locations indicated on drawings.

C. Complete finishing operations, including painting, before installing guards and wall protection.

D. Place guard in position. Attach with screws provided, alternating sides and positions to avoid bowing.

3.02 CLEANING

A. Use a soft cloth and a metal cleaner recommended by the corner guard manufacturer, to clean the installed corner guards.

END OF SECTION

SECTION 10 26 41

BULLET RESISTANT PANELS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Bullet-resistant fiberglass sheet for use in wall assemblies.

1.02 RELATED REQUIREMENTS:

1. Section 01 81 13 “Sustainable Design Requirements.”
2. Section 05 40 00 “Cold Formed Steel Framing" for metal studs supporting bullet resistant panels and wall finishes.
3. Section 09 29 00 “Gypsum Board” for wall finishes over bullet resistant panels.

1.03 REFERENCES

A. ASTM International (ASTM) E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

B. Underwriters Laboratories (UL) 752 - Bullet Resisting Equipment.

1.04 SUBMITTALS

A. Product Data: Include product description for bullet resistant sheet including bullet-resistant ratings.

B. Sustainable Design Submittals:

1. LEED Submittals: For components of this section, submit in compliance with Section 01 81 13 Sustainable Design Requirements.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.06 WARRANTY

A. Provide manufacturer’s 2 year warranty providing coverage against defects in materials and workmanship.

PART 2 - PRODUCTS

2.01 LEED COMPLIANCE

A. LEED Compliance: Refer to Section 01 81 13 Sustainable Design Requirements for all components within this Section.

2.02 PERFORMANCE REQUIREMENTS

A. System Description: Provide bullet-resistant sheet of “non-ricochet type" intended to permit capture and retention of attacking projectile, lessening potential of random injury or lateral penetration.

2.03 MANUFACTURERS

A. Basis of Design Product: Subject to compliance with requirements, provide Opaque Fiberglass Bullet-Resistant Sheet by Armortex, or the equivalent product by one of the following:
   1. ArmorCore
   2. Strongwell

2.04 MATERIALS

A. Bullet-Resistant Fiberglass Sheet:
   1. Description: Manufactured from multiple layers of woven roving ballistic grade fiberglass cloth impregnated with thermoset polyester resin, compressed into flat rigid sheets.
   2. Ballistic Level: 2, tested to UL 752.
   3. Fire rating: 1 hour, tested to ASTM E 119.

B. Adhesives and Fasteners: Type recommended by bullet-resistant sheet manufacturer for specific application.

PART 3 - EXECUTION

3.01 INSTALLATION

A. General: Install bullet resistant panels in accordance with manufacturer’s written instructions in order to achieve the performance criteria specified.

B. Cut panels to fit at perimeter and around penetrations.

C. Reinforce joints between sheets with minimum 4 inch wide backup layer of bullet-resistant sheet, centered on joint. Bullet-resistance of reinforced joint at least equal to ballistic level of panel.

D. Fasten or adhere panels to supports in manner to maintain bullet-resistive rating at perimeter, junctures with other materials, and penetrations.

END OF SECTION

SECTION 10 28 00

TOILET AND BATH ACCESSORIES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Toilet room accessories.
2. Janitor room accessories.

B. Related Requirements:

1. Section 01 81 13 “Sustainable Design Requirements.”
2. Section 08 80 00 “Glazing” for custom-fabricated wall mirrors.
3. Section 10 21 13 Toilet and Shower Compartments” for coat hook/bumper units.
4. Division 26 “Electrical” sections for electrical connections to hand dryers and soap dispensers.

1.02 SUBMITTALS

A. Sustainable Design Submittals:

1. LEED Submittals: For components of this section, submit in compliance with Section 01 81 13 “Sustainable Design Requirements.”

B. Product Data: Provide data on accessories describing size, finish, details of function, attachment methods.

C. Schedule: Submit schedule indicating products and locations.

D. Sample: Submit 1 sample of each accessory, illustrating color and finish.

E. Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

F. Maintenance Data: For operation and maintenance of system including:

1. Methods for maintaining system's materials and finishes.

2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.

1.03 MAINTENANCE MATERIAL

A. Keys: Provide 3 keys for accessories to Contracting Agency; master key all lockable accessories.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

PART 2 - PRODUCTS

2.01 LEED COMPLIANCE

A. Refer to Section 01 81 13 “Sustainable Design Requirements” for all components within this Section.

2.02 MANUFACTURERS

A. Specification is based on products listed.

1. Comparable products by one of the following are also acceptable:

a. Bradley Corporation: www.bradleycorp.com .

b. American Specialties, Inc: www.americanspecialties.com .

c. A & J Washroom Accessories, Inc.

d. Tubular Specialties Manufacturing, Inc.

2.03 DESCRIPTION

A. Accessories to be installed in toilet, bath, and janitorial rooms.

2.04 PERFORMANCE AND DESIGN CRITERIA

A. Comply with ANSI/ICC A117.1, Americans with Disabilities Act (ADA).

B. Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.

2.05 MATERIALS

A. Stainless Steel Sheet: ASTM A666, Type 304.

B. Stainless Steel Tubing: ASTM A269, Type 304 or 316.

C. Back paint, in accordance with Section 09 90 00.10 “Painting and Coating” where contact is made with building finishes to prevent electrolysis.

D. Fasteners, Screws, and Bolts: Stainless Steel, tamper-proof, security type.

E. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.06 ACCESSORIES

A. Toilet Room Accessories:

1. (TA-1) Toilet Paper Dispenser:

   a. Product: Model B-2888, by Bobrick Washroom Equipment, Inc.
   b. Mounting: Surface.
   c. Features: one-piece seamless construction.
   d. Material: Type 304 stainless steel
   e. Capacity: 2 rolls.

2. (TA-2) Waste receptacle:

   a. Product: Model 344, by Bradley Corporation.
   b. Mounting: Recessed.
   c. Features: Seamless beveled flange. Removable leak-proof waste bin.
   d. Cabinet and Waste Container Material: 22-gauge stainless steel, satin finish
   e. Liner: Heavy-duty stitched vinyl-coated nylon
   f. Capacity: 12-gal.

3. (TA-2a) Waste receptacle:

   a. Product: Model 357, by Bradley Corporation.
   b. Mounting: Surface.
   c. Features: Seamless beveled flange. Removable leak-proof waste bin.
   d. Material: 22-gauge stainless steel, satin finish
   e. Liner: Heavy-duty stitched vinyl-coated nylon
   f. Capacity: 6.5-gal.

4. (TA-3) Liquid Soap Dispenser:

   a. Product: Model B-828, by Bobrick Washroom Equipment, Inc.
   b. Mounting: Above-Counter.
   c. Features: Valve dispenses all-purpose foam hand soaps. Electronic air pump, sensor activation.
   d. Material: Chrome-plated ABS plastic spout.
   e. Capacity: 34 fl oz. soap bottle
   f. Controls: Automatic, activated by infrared optical sensor.

5. (TA-3a) Liquid Soap Dispenser:

   a. Product: Model B-4112, by Bobrick Washroom Equipment, Inc.
   b. Mounting: Wall, with concealed stainless steel mounting bracket.
   c. Features: Soap refill indicator window and locked, hinged stainless steel lid for top filling.
   d. Material: Type 304 stainless steel.
   e. Capacity: 40 fl oz.

6. (TA-4) Grab Bars:

   a. Product: Model B-6806, by Bobrick Washroom Equipment, Inc.
   b. Mounting: Surface.
   c. Features: 1-1/2-inches outside diameter, constructed of, with concealed flange mounting. 1-1/2-inches clearance between wall and inside of grab bar.
   d. Material: 18-gauge, type 304 satin-finish stainless steel.
   e. Length and configuration: As indicated on drawings.

7. (TA-5) Sanitary Napkin Disposal:

a. Product: Model ~~B-351390~~473-1A, by ~~Bobrick Washroom Equipment~~American Specialties, Inc.
b. Mounting: Surface.
c. Features: Seamless edge and lid, door with ~~magnet catch~~lock.
d. Material: Type 304 stainless steel.

8. (TA-6) Seat Cover Dispenser:

a. Product: Model B-221, by Bobrick Washroom Equipment, Inc.
b. Mounting: Surface.
c. Material: Type 304 stainless steel
d. Capacity: 250 toilet seat covers.

9. (TA-7) Tampon Dispenser:

a. Product: Model B-2706 50 Classic Series, by Bobrick Washroom Equipment, Inc.
b. Mounting: Recess.
c. Features: Napkin/tampon vendor shall combine two dispensing mechanisms in one cabinet to provide sanitary napkins and tampons at user's option. Mechanical operations; no batteries or electricity required.
d. Material: Type 304 stainless steel

10. (TA-8) Shower Curtain Rod:

a. Product: Model B-207, by Bobrick Washroom Equipment, Inc.
b. Mounting: Concealed wall brackets.
c. Diameter: 1-inch.
d. Length: To suit openings in locations indicated on drawings.
e. Material: Type 304 stainless steel

11. (TA-9) Shower Curtain and Hooks:

a. Shower Curtain: Models B-204-2 and B-204-3, by Bobrick Washroom Equipment, Inc.

1) Width: To suit openings in locations indicated on drawings.
2) Length: 72-inches
3) Material: Opaque, matte white vinyl, .008" (0.2mm) thick, contains antibacterial and flame retardant agents. Hemmed bottom and sides.
4) Accessories: Nickel-plated brass grommets along top, one every 6" (150mm).

b. Shower Curtain Hooks: Model 9536 by Bradley Corporation.

1) Stainless steel springwire with snap fastener.
2) Provide one hook per grommet on shower curtains.

12. (TA-10) Soap Dish:

a. Product: Model 9014, by Bradley Corporation.
b. Style: Surface- mounted with drain holes.
c. Material: Type 304 stainless steel, satin finish.

13. (TA-11) Coat/Robe Hook:

a. Product: Model 9114, by Bradley Corporation.
b. Style: Surface- mounted with concealed mounting, single hook.
c. Material: Chrome-plated brass.

14. (TA-12) Folding Shower Seat:

    a. Product: Model B-5181, by Bobrick Washroom Equipment, Inc.
    b. Style: Surface-mounted, with self-locking mechanism.
    c. Material: Solid phenolic,1/2-inch thick, with type 304 stainless steel frame and mounting brackets.
    d. Capacity: 360 lbs.

15. (TA-13) Underlavatory Guard:

    a. Product: Lav Guard 2by Truebro, Inc./IPS Corporation
    b. Mounting: grip fasteners.
    c. Antimicrobial molded closed cell vinyl covers. 1/8-inch nominal wall thickness; 60-70 Shore A hardness.
    d. Finish: Smooth, high gloss;
    e. Color: White.

16. (TA-14) - not used.

17. (TA-15) Electric Hand Dryer:

    a. Product: Xlerator XL-SB by Excel Dryer
    b. Mounting: Surface, ADA compliant
    c. Color: Brushed Stainless Steel cover
    d. Voltage: to suit power supply
    e. Features: Automatic sensor

B. Janitorial Room Accessories

1. (TA-16) Combination Utility Shelf/Mop and Broom Holder:

    a. Product: Model B-239 x 34, by Bobrick Washroom Equipment, Inc.
    b. Mounting: Surface.
    c. Length: 34-inches.
    d. Features: Hooks: 4, stainless steel hooks at shelf front. Mop/broom holders: 3 spring-loaded rubber cam holders at shelf front.
    e. Material: Type 304 stainless steel

2.07 ACCESSORIES

A. All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify existing conditions meet the manufacturer's requirements before starting work.

3.02 COORDINATION

A. Coordinate wall framing and blocking, in locations designated for toilet, bath and janitorial accessory installation, and for capacities necessary to support anticipated loads.

3.03 PREPARATION

A. Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.04 INSTALLATION

A. General: Install all materials in accordance with manufacturer's instructions based on conditions present.

B. Install plumb and level, securely and rigidly anchored to substrate.

C. Mounting Heights and Locations: As required by accessibility regulations and as indicated on drawings.

3.05 TOLERANCES

A. Maximum Variation from True Position: 1/4-inch.

B. Maximum Variation from Plumb: 1/8-inch.

3.06 ADJUSTING

A. Adjust and lubricate hardware for proper operation.

3.07 PROTECTION

A. Protect installed work as required by the manufacturer to maintain product performance, design criteria and warranty.

END OF SECTION

SECTION 10 44 00

FIRE PROTECTION SPECIALTIES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Fire extinguishers.
2. Fire extinguisher cabinets.
3. Defibrillator and cabinets.

B. Related Requirements:

1. Section 01 81 13 “Sustainable Design Requirements.”
2. Section 05 40 00 “Cold Formed Steel Framing” and Section 09 22 16 “Non-Structural Metal Framing” for interior wall framing at recessed cabinets.
3. Section 09 29 00 “Gypsum Board” for interior wall finishing at cabinets and brackets.

1.02 REFERENCE STANDARDS

A. NFPA 10 “Standard for Portable Fire Extinguishers,” current edition.

B. UL (FPED) “Fire Protection Equipment Directory; Underwriters Laboratories Inc,” current edition.

1.03 SUBMITTALS

A. Sustainable Design Submittals:

1. LEED Submittals: For components of this section, submit in compliance with Section 01 81 13 “Sustainable Design Requirements.”

B. Product Data: For each type of product.

1. Fire Extinguishers: Include rating and classification, material descriptions, dimensions of individual components and profiles, finishes, and mounting details.

2. Cabinets: Show door hardware, cabinet type, trim style, and panel style. Include rough-in dimensions and details showing semi-recessed mounting method and relationships of box and trim to surrounding construction.

C. Shop Drawings: For each type of cabinet.

1. Include plans, elevations, sections, details, and attachments to other work.

D. Samples: For exposed cabinet finishes.

E. Product Schedule: For fire extinguishers, brackets, and cabinets.

1. Ensure proper fit and function.
2. Use same designations indicated on Drawings.

F. Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.

G. Maintenance Data: For user’s operation and maintenance of system including:

1. Test, refill or recharge schedules and re-certification requirements.
2. Methods for maintaining system's materials and finishes.
3. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualification: Company specializing in the manufacture of work specified in this section with minimum 5 years of experience.

1.05 COORDINATION

A. Coordinate sizes and locations of fire protection cabinets with wall depths and assembly types.

B. Coordinate cabinet recesses and support backing for all products with wall framing and finishing trades.

1.06 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace fire extinguishers that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Failure of hydrostatic test according to NFPA 10.
b. Faulty operation of valves or release levers.

2. Warranty Period: Six years from date of Substantial Completion.

1.07 DELIVERY, STORAGE, AND HANDLING

A. As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

PART 2 - PRODUCTS

2.01 LEED COMPLIANCE

A. Refer to Section 01 81 13 “Sustainable Design Requirements” for all components within this Section.

B. PERFORMANCE AND DESIGN CRITERIA

C. Provide portable fire extinguishers in accordance with most current editions of NFPA 10 and applicable life safety codes. Most stringent requirement governs.

1. Fire extinguishers must be listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

2.02 SOURCE LIMITATIONS

A. Obtain fire extinguishers, brackets, cabinets, and accessories from a single source from a single manufacturer.

2.03 PORTABLE FIRE EXTINGUISHERS

A. Provide portable fire extinguishers in types, size, capacity and at locations indicated on the Drawings, and as required by the local fire authority having jurisdiction.

B. Multipurpose Dry-Chemical Type in Steel Container: UL-rated, nominal capacity, with monoammonium phosphate-based dry chemical in enameled steel container.

1. Where indicated on the drawings:

a. 2-A:10-B:C, 5-lb (2.3-kg)
b. 3-A:40-B:C, 5-lb (2.3-kg)
c. 4-A:60-B:C, 10-lb (4.5-kg)

C. Carbon Dioxide Type: UL-rated, nominal capacity, with carbon dioxide in manufacturer's standard enameled steel container.

1. Where indicated on the drawings: 5-B:C, 5-lb (2.3-kg)

D. Manufacturers: Subject to compliance with requirements, provide:

1. Basis-of-Design: MP Series by Larsen's Manufacturing Co.

2. Or approved equal, by one of the following.

a. Ansul, Inc.
b. Guardian Fire Protection Services.
c. JL Industries, Inc.

E. Container Color: Red

2.04 FIRE EXTINGUISHER BRACKETS:

A. Extinguisher Brackets: Wall mounted, formed steel, galvanized and enamel finished.

2.05 FIRE EXTINGUISHER CABINETS:

A. Provide semi-recessed cabinets at all wall types.

B. Cabinet Type: Suitable for each type and capacity of fire extinguisher indicated.

C. Cabinet Construction: Nonrated.

D. Cabinet Material: Stainless steel ASTM A 666, Type 304, No.4 directional satin finish.

1. Shelf: Same metal and finish as cabinet.

E. Semi-recessed Cabinet: One-piece combination trim and perimeter door frame overlapping surrounding wall surface, with exposed trim face and wall return at outer edge (backbend).

1. Square-Edge Trim: 1-1/4- to 1-1/2-inch backbend depth.

F. Door Style: Center glass panel with frame.

G. Door Glazing: Tempered break glass, clear.

H. Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated.

I. Accessories:
1. Mounting Brackets: Manufacturer's standard steel, designed to secure fire extinguisher to fire-protection cabinet, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-enamel finish.
2. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location.
3. Signage: Provide code compliant signage identifying fire extinguisher locations.

J. Manufacturers: Subject to compliance with requirements, provide:

1. Basis-of-Design: Architectural Series SS2712-RL/RK Cabinet by Larsen's Manufacturing Co.

2. Or approved equal, by one of the following:

a. Ansul, Inc.
b. Guardian Fire Equipment, Inc.
c. JL Industries, Inc.
d. Nystrom

K. Finish Requirements:

1. Comply with NAAMM's AMP 500, "Metal Finishes Manual for Architectural and Metal Products," for recommendations for applying and designating finishes.

2. Protect mechanical finishes on exposed surfaces of fire-protection cabinets from damage by applying a strippable, temporary protective covering before shipping.

3. Finish cabinets after assembly.

4. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.

2.06 DEFIBRILLATOR AND CABINET:

A. Basis-of-Design Defibrillator Product: Subject to compliance with requirements provide:

1. HeartStart model no. M5066A heart defibrillator, as manufactured by Phillips Heathcare.

2. Or a comparable product by one of the following:

a. Defibtech
b. Cardiac Science
c. HeartSine

B. Basis of Design Cabinet Product: Subject to compliance with requirements provide:

1. JL Industries Defibrillator Cabinet, semi-recessed, stainless steel, size to suit defibrillator.

2. Or a comparable product by one of the following:

a. Defibtech
b. AED Brands

2.07 ACCESSORIES, GENERAL

A. All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine fire extinguishers for proper charging and tagging.

1. Remove and replace damaged, defective, or undercharged fire extinguishers.

B. Verify existing conditions meet the manufacturer's requirements before starting work. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.03 INSTALLATION

A. General: Install all components in accordance with manufacturer's written instructions for each type.

B. Install in locations indicated on the Drawings and in accordance with authorities having jurisdiction.

C. Mounting Heights:

1. Fire Extinguisher Mounting Brackets: Top of fire extinguisher to be at 42 inches (1067 mm) above finished floor.

2. Fire Extinguisher Cabinets: As indicated on the Drawings.

3. Defibrillator Cabinets: As indicated on the Drawings.

D. Coordinate cabinet recesses and support backing with wall framing and finishing trades.

E. Mounting Brackets: Fasten mounting brackets to surfaces, square and plumb, at locations indicated.

F. Identification: Shop apply vinyl lettering.

3.04 ADJUSTING

A. Remove temporary protective coverings and strippable films, unless otherwise indicated in manufacturer's written installation instructions.

B. Adjust cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.

C. Touch up marred finishes or replace fire-protection cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by fire-protection cabinet and mounting bracket manufacturers.

D. Replace cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

E. Adjust and lubricate hardware for proper operation.

3.05 PROTECTION

A. Protect installed work as required by the manufacturer to maintain product performance, design criteria and warranty.

END OF SECTION

SECTION 10 51 13

LOCKERS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
1. Heavy-duty metal lockers with integral benches (Drawing Designation LKR-1).
2. Heavy-duty metal lockers without integral benches (Drawing Designation LKR-2).
3. Heavy-duty metal lockers (Drawing Designation LKR-3).
4. Uniform Exchange metal lockers (Drawing Designation LKR-5).
5. Solid Plastic gear lockers (Drawing Designation LKR-4).
6. Locker benches.

B. Related Requirements:
1. Section 01 81 13 “Sustainable Design Requirements”

1.02 SUBMITTALS

A. Product Data: For each type of product indicated.
1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of locker and bench.

B. Sustainable Design Submittals:
1. LEED Submittals: For components of this section, submit in compliance with Section 01 81 13 Sustainable Design Requirements.

C. Shop Drawings:
1. Include plans, elevations, sections, details, and attachments to other work.
2. Show locker trim and accessories.
3. Include locker identification system and numbering sequence.

D. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available.

1.03 COORDINATION

A. Field Measurements: Verify actual dimensions of recessed openings by field measurements before fabrication.

B. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of work specified in other Sections to ensure that lockers can be supported and installed as indicated.

1.04 QUALITY ASSURANCE

A. Regulatory Requirements: Where lockers are indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities".

1.05 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of lockers that fail in materials or workmanship, excluding finish, within

specified warranty period.
1. Warranty Period for Metal Lockers: Lifetime from date of Substantial Completion.
2. Warranty Period for Plastic Lockers: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 LEED COMPLIANCE

A. Refer to Section 01 81 13 Sustainable Design Requirements for all components within this Section.

2.02 HEAVY-DUTY METAL LOCKERS (LKR-1 and LKR-2)

A. Basis-of-Design Product: Subject to compliance with requirements, provide: FreeStyle Personal Storage Locker by Southwest Solutions Group, or approved equal, by one of the following:
1. Debourgh
2. Lyon
3. Republic

B. Locker Arrangement:
1. Single tier with integral bench over lower drawer.
2. Single tier.

C. Sizes:
1. 18” w. x 24” d. x 72” h for base locker, with additional 18” w x 12” d x 18” h integrated bench and lower drawer in locations and configurations as indicated on drawings.
2. 18” w x 24” d. x 72” h without integral bench.

2.03 HEAVY-DUTY METAL LOCKERS (LKR-3)

A. Basis-of-Design Product: Subject to compliance with requirements, provide All American Corridor Locker by Debourgh, or approved equal, by one of the following:
1. Lyon
2. Republic

B. Locker Configurations:
1. 15” w. x 15” d. x 36” h, double tier.
2. Accessible locker locations and configurations as indicated on drawings.

2.04 UNIFORM EXCHANGE METAL LOCKERS (LKR-5)

A. Basis-of-Design Product: Subject to compliance with requirements, provide Hallowell HUE214-8P-HG Uniform Exchange Locker, or approved equal, by one of the following:
1. Penco
2. Southwest Solutions

B. Locker Configuration:

1. 33” w x 21” d x 84” h, 8-locker, double tier.

C. Locker Features:
1. Individual locker compartments with coat rod and keyed locks.
2. Hinged master door providing access to banks of 8 lockers with a single lock.

D. Construction:

1. Body: minimum 24 gauge steel
2. Frame: minimum 16 gauge steel
3. Doors: minimum 20 gauge steel.
4. Hinges: 5 knuckle.
5. Back panel: Perforated for ventilation
6. Base: Galvannealed steel.

2.05 METAL LOCKER CONSTRUCTION, GENERAL

A. Body: Assembled by riveting or bolting body components together. Fabricate from unperforated minimum 18 gauge nominal-thickness cold-rolled steel sheet unless noted otherwise.

B. Top: Continuous sloped metal surface to match lockers, unless indicated otherwise on drawings.

C. Frames: Channel formed; fabricated from 0.060-inch nominal-thickness steel sheet; lapped and factory welded at corners; with top and bottom main frames factory welded into vertical main frames. Form continuous, integral door strike full height on vertical main frames.

D. Doors: One piece; fabricated from minimum14 gauge nominal-thickness steel sheet unless noted otherwise; formed into channel shape with double bend at vertical edges and with right-angle single bend at horizontal edges.
1. Reinforcement: Manufacturer's standard reinforcing angles, channels, or stiffeners for doors more than 15-inches wide; welded to inner face of doors.
2. Stiffeners: Manufacturer's standard full-height stiffener fabricated from 0.048-inchnominal-thickness steel sheet; welded to inner face of doors.
3. Sound-Dampening Panels: Manufacturer's standard, designed to stiffen doors and reduce sound levels when doors are closed, of die-formed metal with full perimeter flange and sound-dampening material; welded to inner face of doors.
4. Door Style: Louvered vents on door face.
5. Drawer Style: Louvered vents on drawer face.

E. Hinges: Welded to door and attached to door frame with no fewer than two factory-installed rivets per hinge that are completely concealed and tamper resistant when door is closed; fabricated to swing 180 degrees.
1. ~~Continuous~~ Five Knuckle Hinges: Manufacturer's standard, steel~~, full height~~.

F. ~~Single~~Three-Point Latching: Nonmoving latch hook with steel padlock loop that projects through recessed cup and is finished to match metal locker body.

G. Equipment: Equip each metal locker with the following unless otherwise indicated:
1. Hooks: Manufacturer's standard ball-pointed type, aluminum or steel; zinc plated.
2. Identification Plates: Manufacturer's standard, etched, embossed, or stamped aluminum plates, with numbers and letters at least 3/8-inch high.
3. Shelves: Provide a single shelf in each locker.
4. Coat Rods: Provide a full-width coat road in each locker.

H. Finish: ~~Baked enamel~~Powder Coat,
1. Color to be selected by Architect from manufacturer’s standard range.

2.06 SOLID PLASTIC GEAR LOCKERS (LKR-4)

A. Basis-of-Design Product: Subject to compliance with requirements, provide Lenox Gear Locker by Bradley Corporation, or approved equal, by one of the following:
1. Global Industrial
2. Salsbury Industries

B. Locker Configuration: 24" w x 24" d x 72" h, single tier with cubby benches, unless noted otherwise on drawings.

C. Material: Solid high density polyethylene (HDPE):
1. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
2. Flame-Spread Index: 100 or less.
3. Smoke-Developed Index: 450 or less.

D. Construction:
1. Sides, Tops, Bottoms, Dividers and Shelves: 3/8-inch thick HDPE plastic with smooth finish.
2. Bench Top: 1-inch thick HDPE plastic, with matte textured finish.
3. Locker Shelves: 3/8-inch thick HDPE plastic, mortised into sides and back.
4. Locker Tops: ~~Slope top~~Flat Top
5. Doors and Frame: 1/2-inch thick HDPE plastic with matte texture finish; ventilation slots with cross-hatch pattern.
6. Logo on Door: Indicate accessible lockers.
7. Handle: ADA/ABA compliant handle fabricated from injection molded plastic.
8. Single-Point Latching: Nonmoving latch hook with steel padlock loop that projects through recessed cup and is finished to match metal locker body.
9. Hinges: Continuous piano hinges, .05-inch/18 gauge (1.27 mm) thick type 304 stainless steel fabricated to wrap around edges of door and frame and attached with stainless steel tamper-resistant screws. Powder coat finish to match color of locker.
10. Latch bar: Full-height latch bar constructed of 1/2-inch (13 mm) HDPE plastic secured to locker with stainless steel tamper-resistant screws.
11. Foot Locker:
12. Hinged Bench Seat: Fabricated from 1-inch (26 mm) thick HDPE plastic.
13. Hinge: Full length piano hinge made of .05-inch/18 gauge (1.27 mm) thick, type 304 stainless steel attached to bench seat and frame with stainless steel tamper-resistant screws and fabricated to wrap around edges of bench seat and frame.
14. Safe Closing Device: Soft-Down Stay closing device.
15. Front: 1/2-inch (13 mm) thick HDPE plastic with ventilation slots.
16. Lock: standard hasp.
17. Accessories:
18. Coat Hooks: Black polycarbonate double hook.
19. End Panels: 3/8-inch thick, with color and finish matching locker body.
20. Filler Panels: 1/2-inch HDPE filler panel, with color and finish matching locker body, attached with 3/8-inch thick HDPE solid plastic angle bracket.
21. Wall Hooks: Black powder coated, cast zinc hook two per locker.
22. Number Plate: White acrylic with black film coating, laser etched with number specified. Provide one per locker.
23. Coat Rod: Stainless steel rod, 1-inch diameter, with stainless steel flanges and stainless steel tamper-resistant screw.
~~24. Locker Base: 6-inches high, steel reinforced.~~
~~25.~~24. Color: As selected by Architect from manufacturer's full range

2.07 LOCKER BENCHES

A. General: Provide locker benches in locations and configuration as shown on drawings.

B. Bench Tops: Manufacturer's standard 1-piece units, of the following material:
1. Dimensions:

2. Standard benches: minimum 9-1/2-inches wide by 1-1/4-inches thick, with rounded corners and edges.
3. ADA compliant benches: minimum 12-inches wide by 1-1/4-inches thick, with rounded corners and edges.
4. Length: as indicated on drawings.
5. Solid hardwood with one coat of clear sealer on all surfaces, and one coat of clear lacquer on top and sides.
6. Freestanding Pedestals: Manufacturer's standard supports, with predrilled fastener holes for attaching bench top, complete with fasteners, and as follows:
7. Aluminum: 1/8-inch-thick by 3-inch-wide channel or 1/4-inch-thick by 3-inch-wide bar stock, shaped into trapezoidal form; with nonskid pads at bottom.
8. Finish: Powder coated.
9. Color: As selected by Architect from manufacturer's full range.

2.08 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B, suitable for exposed applications.

B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with A60 zinc-iron, alloy (galvannealed) coating designation.

C. Stainless Steel Sheet: ASTM A 666, Type 304.

D. Extruded Aluminum: ASTM B 221, alloy and temper recommended by aluminum producer and manufacturer for type of use and finish indicated.

E. Steel Tube: ASTM A 500, cold rolled.

F. HDPE: High Density Polyethylene, ½" thick, homogeneous color, matte textured finish. Minimum 30 percent pre-consumer recycled content.

G. Wood Bench: Solid butcher block maple.

H. Fasteners: Zinc- or nickel-plated steel, slotless-type, exposed bolt heads; with self-locking nuts or lock washers for nuts on moving parts.

I. Anchors: Material, type, and size required for secure anchorage to each substrate.
1. Provide nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls, and elsewhere as indicated, for corrosion resistance.
2. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.

2.09 FABRICATION

A. Fabricate lockers square, rigid, and without warp and with faces flat and free of dents, distortion, or imperfections. Make exposed metal edges safe to touch and free of sharp edges and burrs.
1. Form body panels, doors, shelves, and accessories from one-piece steel sheet unless otherwise indicated.
2. Provide fasteners, filler plates, supports, clips, and closures as required for complete installation.

B. Fabricate each metal locker with an individual door and frame; individual top, bottom, and back; and common intermediate uprights separating compartments. Factory weld frame members of each metal locker together to form a rigid, one-piece assembly.

C. All-Welded Construction: Factory pre-assemble metal lockers by welding all joints, seams, and connections; with no bolts, nuts, screws, or rivets used in assembly of main locker groups.

Factory weld main locker groups into one-piece structures. Grind exposed welds flush.

D. Accessible Lockers - Fabricate as follows:
1. Locate bottom shelf no lower than 15-inches above the floor.
2. Where hooks, coat rods, or additional shelves are provided, locate no higher than 48-inches above the floor.

E. Filler Panels: Fabricated in an unequal leg angle shape; finished to match lockers. Provide slip-joint filler angle formed to receive filler panel.

F. Finished End Panels: Designed for concealing unused penetrations and fasteners, except for perimeter fasteners, at exposed ends of nonrecessed lockers; finished to match lockers.

2.010 STEEL SHEET FINISHES

A. ~~Baked Enamel~~Powder Coat Finish: Immediately after cleaning, pretreating, and phosphatizing, apply manufacturer's standard ~~thermosetting baked-enamel~~powder coat finish. Comply with paint manufacturer's written instructions for application, powder coating~~baking~~, and minimum dry film thickness.

PART 3 - EXECUTION

3.01 INSTALLATION

A. General: Install level, plumb, and true; shim as required, using concealed shims.

1. Anchor locker runs at ends and at intervals recommended by manufacturer, but not more than 36-inches o.c. Using concealed fasteners, install anchors through backup reinforcing plates, channels, or blocking as required to prevent distortion.
2. Anchor single rows of lockers to walls near top and bottom of lockers.
3. Anchor back-to-back lockers to floor.

B. Welded Lockers: Connect groups together with manufacturer's standard fasteners, with no exposed fasteners on face frames.

C. Equipment and Accessories: Fit exposed connections of trim, fillers, and closures accurately together to form tight, hairline joints, with concealed fasteners and splice plates.
1. Attach hooks with at least two fasteners.
2. Identification Plates: Identify lockers with identification indicated on Drawings, or if not indicated, provide numbering per the approved shop drawings.
a. Attach plates to each locker door, near top, centered, with at least two aluminum rivets.
3. Attach filler panels with concealed fasteners. Locate filler panels where indicated on Drawings.
4. Attach finished end panels with fasteners only at perimeter to conceal exposed ends of non-recessed lockers.

D. Movable Benches: Place benches in locations indicated on Drawings.

3.02 ADJUSTING

A. Clean, lubricate, and adjust hardware. Adjust doors and latches to operate easily without binding.

3.03 PROTECTION

A. Protect metal lockers from damage, abuse, dust, dirt, stain, or paint. Do not permit use during construction.

B. Touch up marred finishes or replace metal lockers that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by locker manufacturer.

END OF SECTION

SECTION 10 56 13

METAL STORAGE SHELVING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Provided complete shelving and racking system design, supply, delivery, installation, and anchorage for:
   1. Post – and – beam metal storage shelving
   2. Post – and – beam metal storage pallet racking

1.02 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
   1. Industrial drawing (s) for racking and shelving elevations
      a. GEN – QEE001 – GENERAL RACKING & SHELVING ELEVATIONS – SHEET A
      b. GEN – QEE002 – GENERAL RACKING & SHELVING ELEVATIONS – SHEET B
   2. Industrial drawing(s) for floor plans
      a. M04 – QEP111 – OMF EAST BUILDING EQUIPMENT LAYOUT – LEVEL 1- AREA A
      b. M04 – QEP211 – OMF EAST BUILDING EQUIPMENT LAYOUT – LEVEL 2 – AREA A
      c. M04 – QEP212 – OMF EAST BUILDING EQUIPMENT LAYOUT – LEVEL 2 – AREA B
      d. M04 – QEP213 – OMF EAST BUILDING EQUIPMENT LAYOUT – LEVEL 2 – AREA C
      e. M05 – QEP111 – MAINTENANCE OF WAY BUILDING EQUIPMENT LAYOUT – AREA A

1.03 RELATED SECTIONS

A. Division 01: General Requirements

B. Division 03: Concrete

C. Division 05: Metal

D. Project Requirement V2-02.01: Facility Program

1.04 COORDINATION

A. Coordinate sizes and locations of blocking and backing required for installation of metal storage shelving attached to wall assemblies.

B. Coordinate locations and installation of metal storage shelving that may interfere with ceiling systems including but not limited to lighting, HVAC, speakers, sprinklers, access panels, electrical switches or outlets, and floor drains.

1.05 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at the Owner's project site at 1899 120th Ave NE, Bellevue, WA.

1.06 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include rated capacities, construction details, material descriptions, dimensions of individual components and profiles, and finishes for metal storage shelving.

B. Shop Drawings: For metal storage shelving and pallet rack
   1. Include plans, elevations, sections, and attachment details.
   2. Include installation details of connectors, lateral bracing, and special bracing.
   3. Include seismic connection details for the rack / shelving.
   4. The final shop drawings and letters of assurance shall be sealed and signed by a Professional Engineer registered in the State of Washington and shall be available to be submitted to City of Bellevue for Building Permit requirements.

C. Samples: For each type of metal storage shelving / pallet racking and for each color specified, in the following sizes:
   1. Vertical Supports: 12 inches tall.
   2. Shelves: Full size, but not more than 24 inches wide by 12 inches deep (Only for metal storage shelves).
   3. Wire Decking: 24 inches by 12 inches deep (Only for pallet racks)
   4. Connectors: Full size.
   5. Shelf-Label Holders: Full size.
   6. Pallet rack base plates.

D. Samples for Initial Selection: For each type of metal storage shelving and pallet racking with factory-applied color finishes.
   1. Include Samples of accessories involving color selection.

E. Product Schedule: For metal storage shelving and pallet racks use same designations indicated on QEE Series Drawings.

F. Delegated-Design Submittal: For seismic restraint of metal storage shelving and pallet racking

1.07 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Seismic Qualification Certificates: For metal storage shelving and pallet racks, accessories, and components, from manufacturer.

C. Product Certificates: For each type of metal storage shelving and pallet racks.

1.08 CLOSEOUT SUBMITTALS

A. Maintenance Data: For metal storage shelving to include in maintenance manuals.

1.09 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Shelves: Full-size units equal to 10 percent of amount installed for each type indicated, but no fewer than three shelves.
   2. Shelf-to-Post Connectors: Full-size units equal to 10 percent of amount installed for each type indicated, but no fewer than three connectors.
   3. Shelf-Label Holders: Full-size units equal to 10 percent of amount installed for each type indicated, but no fewer than 10 holders.

1.10 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

1.11 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install metal storage shelving until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at levels intended for building occupants during the remainder of the construction period.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design metal storage shelving, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

B. Seismic Performance: Seismic restraint shall not be connected to building structure except for concrete floor. Metal storage shelving shall withstand the effects of earthquake motions determined according to ASCE/SEI 7
   1. Seismic loads shall be considered as per 2015 International Building Code with any Washington State, amendment.

2.02 FOUR-POST METAL STORAGE SHELVING (SH-03-L2 & 1688)

A. Closed Four-Post Metal Storage Shelving (SH-03-L2 & 1688): Complying with MH 28.1 and field assembled from factory-formed components. Shelves span between supporting corner posts that allow shelf-height adjustment over full height of shelving unit. Provide fixed top and bottom shelves, adjustable intermediate shelves, and accessories indicated. Provide the Starter and Add-On units based on the floor plan shown on QEP series drawings for M04 and M05 Building.
   1. Equipment ID: SH-03-L2
      a. Load-Carrying Capacity per Shelf: Indicated on contract drawings.

      b. Posts: Fabricated from hot-rolled steel; in manufacturer's standard shape; with perforations at 1-1/2 inches o.c. to receive shelf-to-post connectors.
         1) Unit Configuration: Configure shelving units as individual, freestanding assemblies.
         2) Post Base: Adjustable steel floor plate.

      c. Bracing: Manufacturer's standard, single or double diagonal cross bracing.
         1) Location: At unit ends as required for stability, load-carrying capacity of shelves, and number of shelves indicated.

      d. Solid-Type Shelves:
         1) Metallic-Coated Steel Sheet: Nominal thickness as required for load-carrying capacity per shelf indicated on contract drawings.
         2) Slots or Holes for Shelf Dividers: 3 inches o.c.
         3) Fabricate fronts and backs of shelves with box-formed edges, with corners lapped and welded.
         4) Provide metal backing and side panels for every shelf and end panels for aisles.

e. Shelf Quantity: Four shelves per shelving unit including top and bottom shelf. Configuration as shown on contract drawings.
f. Shelf-to-Post Connectors: Mechanical fasteners (nuts and bolts).
g. Base: Closed, with base strips fabricated from same material and with same finish as shelving.
h. Accessories:
1) Shelf-Label Holders: Clear plastic, designed to clip onto front edge of shelf.
i. Steel Finish: Powder coat.
1) Color and Gloss: As selected by Hensel Phelps' representative from manufacturer's full range.
2) All load beams and shelves shall be permanently labelled with load rating and capacity visible.
j. Provide kick plate at the bottom of each shelf

2. Equipment ID: 1688
a. Approved Manufacturer: Equipto
b. Model: 773-8
c. Load capacity per shelf: 1170 lbs
d. Provide Starter and Add-on units based on the shelving arrangement shown on QEP Series drawing
e. Provide standard reflective white back and end panels, regardless of shelf color.

2.03 POST-AND-BEAM METAL STORAGE SHELVING (PALLET RACKS) PR-08-L1; PR-09-L1; PR-10-L1; PR-10-L2; PR-09-L2; 1545; and 1455.

A. Post-and-Beam Metal Shelving: Complying with MH 28.2; field-assembled from factory-formed components. Shelves are supported by beams that span between supporting corner posts that allow beam-height adjustment over full height of shelving unit. Provide fixed top and bottom beams, adjustable intermediate beams, and accessories indicated. The pallet racks should be free standing.

B. Load-Carrying Capacity per Shelf: As indicated on Drawing: GEN-QEE001, and GEN-QEE002, uniformly distributed.

C. Posts: Fabricated from cold-rolled steel; in manufacturer's standard angle or open-box with perforations at 4 inches o.c. to receive beam-to-post connectors.
1. Unit Configuration: Configure shelving units as individual, freestanding and starter- and add-on unit assemblies based on the layouts shown on contract drawings.
2. Steel Thickness, Nominal: As required for load-carrying capacity per shelf and number of shelves.
a. Add-On Shelf Posts: Fabricated from hot-rolled steel, T-shape; perforated to match main posts and of same thickness.
3. Post Base: Cold-rolled steel floor plate, drilled for floor anchors.
4. For Rack Type Equip ID: 1545, approved manufacturer is Lyon Workspace Products.
a. Uprights: 42" x 192"
5. For Rack Type Equip ID 1455, approved manufacturer is Equipto. Model # 1028D62S starter and 1028D62A add-on.

D. Beams: Fabricated from cold-rolled steel; in channel or flanged shape. Provide beam at each side of each shelf, with center supports as required for load-carrying capacity of shelf.
1. Steel Thickness, Nominal, as required for load-carrying capacity per shelf.
2. Beam-to-Post Connectors: Projecting tab or manufacturer's standard at each end that engage posts.
a. Top and Bottom Shelf Beams: Provide with single beam-to-post connectors.
b. Intermediate Shelf Beams: Provide with single beam-to-post connectors.

3. Beam Quantity: As required for number of shelves indicated on drawing GEN-QEP001 and GEN-QEP002 per shelving unit.
4. For Rack Type Equip ID: 1545, approved manufacturer is Lyon Workspace Products.
   a. Beams: N108
5. For Rack Type Equip ID 1455, approved manufacturer is Equipto. Model # 1028D62S starter and 1028D62A add-on.

E. Wire Decking: Welded steel wire; with 2- by 4-inch openings. Provide waterfall edge.
1. For Rack Type Equip ID: 1545, approved manufacturer is Lyon Workspace Products.
   a. Decking: WD5242L

F. Shelf Quantity: Provide shelves per shelving unit in addition to top and bottom shelf as shown on drawing GEN - QEE001 and GEN – QEE002.

G. Overall Unit Width: As shown on drawing(s) GEN-QEE001, and GEN-QEEE002 exclusive of two end posts.

H. Overall Unit Depth: 42 inches as shown on drawings GEN-QEE001, and GEN-QEE002.

I. Overall Unit Height: As indicated on drawing(s) GEN-QEE001, and GEN-QEEE002

J. Accessories:
1. Tie Plates: Cold-rolled steel, finished to match posts; designed for joining posts of adjacent shelving units.
2. Tied bars for wire mesh decking
3. Supports: Back-to-back type that bolt to posts; as required for shelving unit stability.

K. Steel Finish: Powder coat.
1. Color and Gloss: As selected by Hensel Phelps’ representative from manufacturer's full range.

2.04 SHELVING (EQUIP ID: 1621)

A. Provide shelving units with double rivet posts, and top & bottom perimeter beams

B. Intermediate beams shall be of double rivet construction

C. Shelf capacity of 1000 lbs.

D. Approved Manufacturer: Penco Products Inc.

E. Model: 46W24H starter and 46W26H add-on unit

F. Refer drawing M04 QEP series drawing for rack quantity and floor plan arrangement.

2.05 ANCHORS

A. Floor Anchors: In accordance with drawing structural drawings. Provide number per unit recommended by manufacturer unless additional anchors are indicated in calculations.

B. Wall Anchors: As applicable based on the racking and shelving layout shown on QEP series drawings.

2.06 FABRICATION

A. Fabricate metal storage shelving and pallet rack components to provide field-assembled units that are square and rigid, with posts plumb and true and shelves flat and free of dents or distortion. Fabricate connections to form a rigid structure, free of buckling and warping.
   1. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Locate joints where least conspicuous.
   2. Build in straps, plates, brackets, and other reinforcements as needed to support shelf loading.
   3. Cut, reinforce, drill, and tap metal fabrications to receive hardware, fasteners, and similar items.

B. Form metal in maximum lengths to minimize joints. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing the Work.

C. Form edges and corners free of sharp edges or rough areas. Fold back and crimp exposed edges of unsupported sheet metal to form a hem on the concealed side; ease edges of metal plate to radius of approximately 1/32-inch. Shear and punch metals cleanly and accurately. Remove burrs.

D. Weld corners and seams continuously to develop strength, minimize distortion, and maintain the corrosion resistance of base metals. At exposed locations, finish welds and surfaces smooth and blended so surface is smooth after finishing and contour of welded surface matches that of adjacent surface. Weld before finishing components to greatest extent possible. Remove weld spatter and welding oxides from exposed surfaces before finishing.

2.07 FOR QUANTITIES AND ARRANGEMENT REFER M04 AND M05 QEP SERIES DRAWINGS.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine floors for suitable conditions where metal storage shelving will be installed.

C. Examine walls to which metal storage shelving will be attached for properly located blocking, grounds, or other solid backing for attachment of support fasteners.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Vacuum and clean finished floor over which metal storage shelving is to be installed.

3.03 INSTALLATION

A. Install metal storage shelving and pallet racks level, plumb, square, rigid, true, and with shelves flat and free of dents or distortion. Make connections to form a rigid structure, free of buckling and warping.
   1. Install exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible.
   2. Install braces, straps, plates, brackets, and other reinforcements as needed to support shelf loading and as required for stability.

3. Adjust post-base bolt leveler to achieve level and plumb installation.
4. Anchor shelving units to floor with floor anchors through floor plate. Shim floor plate to achieve level and plumb installation.
5. Install seismic restraints.
6. Connect side-to-side and back-to-back shelving units together.
7. Install shelves in each shelving unit at spacing indicated on QEP Series drawings for M04 and M05 Buildings.
    a. Case-Type Metal Storage Shelving: Install adjustable shelf clips at front and back of each shelf.
    b. Four-Post Metal Storage Shelving: Install four clips, one at each post, for support of each shelf; with clips fully engaged in post perforations.
    c. Post-and-Beam Metal Storage Shelving: Install beams with beam-to-post connectors fully engaged in post perforations.

B. Accessories:
1. Install finished end panels and trim at exposed ends of shelving units.
2. Shelf – Label Holder: Install two on each shelf at equal distance

3.04 ERECTION TOLERANCES

A. Erect four-post metal storage shelving and pallet racks to a maximum tolerance from vertical of 1/2-inch in up to 10 feet of height, not exceeding 1-inch for heights taller than 10 feet.

B. Erect post-and-beam metal storage shelving to a maximum tolerance from vertical of 1/4-inch in 84 inches of height.

3.05 ADJUSTING

A. Adjust metal storage shelving so that connectors and other components engage accurately and securely.

B. Adjust and lubricate operable components to operate smoothly and easily, without binding or warping. Check and readjust operating hardware.

C. Touch up marred finishes or replace metal storage shelving that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by metal storage shelving manufacturer.

D. Replace metal storage shelving components that have been damaged beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 10 75 16

GROUND-SET FLAGPOLES

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes ground-set flagpoles made from aluminum.

B. Flags

1.02 RELATED SECTIONS

A. Divisions 03 and 05 for structural supports and attachments.

B. Division 26 for site lighting including flagpole lighting.

C. Division 32 for concrete paving.

1.03 SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, operating characteristics, fittings, accessories, and finishes for flagpoles.

B. Shop Drawings: For flagpoles.

1. Include plans, elevations, and attachment details. Show general arrangement, jointing, fittings, accessories, grounding, anchoring, and support.
2. Include section, and details of foundation system.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Spiral wrap flagpoles with heavy paper and enclose in a hard fiber tube or other protective container.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Source Limitations: Obtain flagpoles as complete units, including fittings, accessories, bases, and anchorage devices, from single source from single manufacturer.

2.02 WARRANTY

A. Provide manufacturer's five (5) year written warranty against defects in materials and workmanship. Beginning at date of substantial completion.

2.03 PERFORMANCE REQUIREMENTS

A. Structural Performance: Flagpole assemblies, including anchorages and supports, shall withstand design loads indicated per maximum wind load and soil conditions.
   1. Base flagpole design on polyester flags of maximum standard size (5'X8') suitable for use with flagpole or flag size indicated, whichever is more stringent.

2.04 ALUMINUM FLAGPOLES

A. Aluminum Flagpoles: Entasis-tapered flagpoles fabricated from seamless extruded tubing complying with ASTM B 241/B 241M, Alloy 6063, with a minimum wall thickness of .156".

   Groundset Aluminum Flagpole, manufactured by L. Ph. Bolander and Sons, 1355 Evans Avenue, San Francisco, CA 94124 Tel: 800 434-5611, http://bolanderflagpole.com.

   Other pole manufacturers are allowed as approved by the Engineer of Record~~Other pole manufacturers are allowed as approved by the Engineer of Record~~.

B. Exposed Height: 35'.

C. Shop fabricate, construct flagpoles in one piece. Metal Foundation Tube: Manufacturer's standard corrugated-steel foundation tube, 0.060-inch (1.52-mm) wall thickness with 3/16-inch (4.8-mm) steel bottom plate and support plate; 3/4-inch- (19-mm-) diameter, steel ground spike; and steel centering wedges welded together. Galvanize foundation tube after assembly. Furnish loose hardwood wedges at top of foundation tube for plumbing pole.

   1. Flashing Collar: Same material and finish as flagpole.

D. Ground sleeve for Aluminum Flagpole: For casting into concrete foundation. Fabricated from #16 ga. Galvanized steel, whose square dimension is two inches larger than the sleeve diameter. All steel wedges, base plate, support plate and lightning ground rod shall be welded of dimensions as detailed by manufacturer. Galvanized ground sleeve.

   1. Flashing Collar: Same material and finish as flagpole.

2.05 FITTINGS

A. Finial Ball: Flush-seam ball, sized as indicated or, if not indicated, to match flagpole-butt diameter.

   1. 0.063-inch (1.6-mm) spun aluminum finished to match flag pole.

B. Internal Halyard, Cam Cleat System: 5/15-inch-(8mm) diameter, polyester halyard; cam cleat; and concealed revolving truck assembly with plastic-coated counterweight and sling. Furnish flush access door secured with cylinder lock. Finish truck assembly to match flagpole.

1. Halyard Flag Snaps: Bronze swivel snaps with white vinyl cover. Furnish two per halyard.

2.06 MISCELLANEOUS MATERIALS

A. Sand: ASTM C 33/C 33M, fine aggregate.

2.07 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611

2.08 ACCESSORIES

A. Provide (1) 5'x8' United States flag, (1) 5'x8' Sound Transit Flag, and (1) Washington State flag.

PART 3 - EXECUTION

3.01 PREPARATION

A. Prepare uncoated metal flagpoles that are set in foundation tubes by painting below-grade portions with a heavy coat of bituminous paint.

B. Foundation Excavation: Excavate to neat clean lines in undisturbed soil. Remove loose soil and foreign matter from excavation and moisten earth before placing concrete. Place and compact drainage material at excavation bottom.

C. Provide forms where required due to unstable soil conditions and for perimeter of flagpole base at grade. Secure and brace forms to prevent displacement during concreting.

D. Foundation Tube: Place foundation tube, center, and brace to prevent displacement during concreting. Place concrete. Plumb and level foundation tube and allow concrete to cure.

E. Sleeves: Locate and secure sleeves in forms by bracing to reinforcement and forms.

F. Anchor Bolts: Locate and secure anchor bolts in forms with templates and by tying to reinforcement.

G. Place concrete, as specified in 033000 "Cast-in-Place Concrete." Compact concrete in place by using vibrators. Moist-cure exposed concrete for no fewer than seven days or use nonstaining curing compound.

H. Trowel exposed concrete surfaces to a smooth, dense finish, free of trowel marks, and uniform in texture and appearance. Provide positive slope for water runoff to perimeter of concrete base.

3.02 FLAGPOLE INSTALLATION

A. General: Install flagpoles where indicated and according to manufacturer's written instructions.

B. Foundation Tube: Place flagpole in tube, seated on bottom plate between steel centering wedges, and install hardwood wedges to secure flagpole in place. Place and compact sand in foundation tube and remove hardwood wedges. Seal top of foundation tube with a 3-inch (76-mm) layer of non-shrink grout and cover with flashing collar.

END OF SECTION

SECTION 10 81 00

ATTACHMENTS TO STRUCTURE

PART 1 - GENERAL

1.01 SUMMARY

A. Attachments to structure shall be compatible with the structural design as described in this section and in conformance with the building code.

B. This section includes requirements for all design/build attachments to structure.

C. Work in this section includes structural engineering design as required to demonstrate that the attachment of design/build nonstructural components to the building structure will be compatible with the design of the building structure and in conformance with the building code.

D. Definitions:

1. Building Official: As defined in IBC Section 202. Where ASCE 7-10 uses the term Authority Having Jurisdiction this should be considered to have the same meaning as Building Official.

2. Registered Design Professional: As defined in IBC Section 202.

3. Protected Zone: Structural members or portions of structural members indicated as “Protected Zone” on the Structural Drawings.

1.02 RELATED SECTIONS

A. Coordinate and comply with the requirements of the following:

1. Section 03 30 00 Cast-in-Place Concrete

2. Section 03 45 00 Precast Architectural Concrete

3. Section 05 12 00 Structural Steel Framing

4. Section 05 21 00 Steel Joist Framing

5. Section 05 31 00 Steel Decking

6. Section 05 40 00 Cold-Formed Steel Framing

7. Section 05 50 00 Metal Fabrications

8. Section 08 41 13 Aluminum-Framed Entrances and Storefronts

9. Section 08 44 13 Glazed Aluminum Curtain Walls

10. Section 09 22 16 Non-Structural Metal Framing

11. Section 09 51 23 Acoustical Tile Ceilings

12. Section 10 82 00 Seismic Design Requirements For Nonstructural Components

13. Section 11 11 26 Vehicle-Washing Equipment

14. Section 21 05 29 Hangers and Supports for Fire-Suppression Piping and Equipment

15. Section 21 05 48 Vibration and Seismic Controls for Fire-Suppression Piping and Equipment

16. Section 22 05 29 Hangers and Supports for Plumbing Piping and Equipment

17. Section 22 05 48 Vibration and Seismic Controls for Plumbing Piping and Equipment

18. Section 23 05 29 Hangers and Supports for HVAC Piping and Equipment

19. Section 22 05 48 Vibration and Seismic Controls for Plumbing Piping and Equipment

20. Section 23 05 29 Hangers and Supports for HVAC Piping and Equipment

21. Section 23 05 48 Vibration and Seismic Controls for HVAC

22. Section 26 05 29 Hangers and Supports for Electrical Systems

23. Section 26 05 48.16 Seismic Controls for Electrical Systems

24. Section 27 05 29 Hangers and Supports for Communications Systems

25. Section 27 05 48.16 Seismic Controls for Communications Systems

1.03 DESIGN CRITERIA

A. Seismic Forces and Relative Displacements: As noted on the Structural Drawings and in Specification Section 10 82 00.

B. Other Forces: As required by the building code, using the parameters provided in the structural notes on the contract documents.

C. Relative Vertical Displacements: Systems attached to structure shall accommodate the vertical live load movements indicated in the Structural Drawings.

D. Horizontal Displacements: Systems attached to structure shall accommodate the horizontal movements indicated in the Structural Drawings.

1.04 DETAILED SYSTEM REQUIREMENTS

A. Loads applied by the attachments of non-structural systems to the building structure shown on the structural drawings shall not exceed the following service loads, unless calculations are provided to demonstrate that the building structure has adequate capacity to resist the imposed loads:

1. Cast-in-Place Concrete:

a. Slabs, including slab-on-deck: Loading not to exceed 2,000 pounds vertically and 4,000 pounds horizontally.

b. Walls: Loading not to exceed 4,000 pounds.

2. Masonry walls

a. Horizontal:

1) Loading in plane of wall: Loading shall not exceed 1,000 pounds.

2) Loading out of plane of wall: Loading shall not exceed 500 pounds.

b. Vertical: Loading shall not exceed 1,000 pounds.

3. Structural Steel Framing:

a. Wide flange members:

1) Beams:

a) Horizontal:

i) Loading parallel to beam: Attachment shall be centered on beam web and loading shall not exceed 2,000 pounds.

ii) Loading perpendicular to beam: Attachment shall be within top 1/3 of beam and loading shall not exceed 1,000 pounds

b) Vertical

i) Attachment centered on beam web: 500 pounds.

ii) Attachment not more than 6” eccentric from center of beam: 100 pounds.

2) Columns: Loading not to exceed 2,000 pounds.

b. Hollow structural shapes and pipes: Loading not to exceed 1,000 pounds.

c. Channels:

1) Horizontal:

a) Loading parallel to beam: Attachment shall be centered on beam web and loading shall not exceed 500 pounds.

b) Loading perpendicular to beam: Attachment shall be within top 1/3 of beam and loading shall not exceed 250 pounds.

2) Vertical:

a) Attachment to channel web: 250 pounds.

b) Attachment not more than 3” eccentric from channel web: 50 pounds.

d. Angles: Loading applied to horizontal or vertical leg not to exceed 100 pounds.

4. Steel joists

a. Horizontal: Attachment shall be to top chord only and shall not exceed 500 lbs.

b. Vertical: See the Structural Drawings for load limitations.

5. Roof deck:

a. Loading shall not exceed 50 pounds.

b. Loading perpendicular to roof deck is subject to the following additional requirements:

1) Only one attachment imposing vertical load is permitted in any given flute in the span of the deck between supporting beams or joists.

2) Minimum spacing between flutes with attachments supporting vertical loads is 1’-6”.

B. Additional limitations on loads applied to the building structure may be indicated on the structural drawings.

C. Design of attachments to cast-in-place concrete shall assume that the concrete is cracked.

1.05 SUBMITTALS

A. These submittal requirements are in addition to other submittal requirements stated elsewhere in the contract documents.

B. Anchors and fasteners:

1. Submit an ICC-ES report valid for the 2015 IBC for the following anchor types:

a. For attachment to structural concrete:

1) Mechanical anchors.

2) Adhesive anchors.

3) Power-driven fasteners.

b. For attachment to structural masonry:

1) Expansion anchors

2) Screw Anchors

3) Power-driven fasteners

c. For attachment to structural steel:

1) Self drilling fasteners

2) Expansion bolts

3) Power-driven fasteners

2. Submit documentation demonstrating listing by Underwriter's Laboratory or Approval by Factory Mutual for the following anchor types:

a. For attachment to structural concrete:

1) Drop-in Anchors

2) Spot Inserts

b. Beam clamps for attachment to structural steel

c. Expansion anchors for attachment to roof deck

C. Structural Calculations: Submit calculations sealed and signed by the registered design professional responsible for their preparation.

D. Repair Grout: Submit material certificate.

1.06 QUALITY ASSURANCE

A. The registered design professional responsible for the design of attachments of non-structural components to the building structure shall be a Professional Engineer licensed to practice in Washington State.

B. Welders shall be qualified by AWS or WABO for the type of welding being performed.

PART 2 - PRODUCTS

2.01 ATTACHMENTS TO CAST-IN-PLACE CONCRETE

A. Embedded plates

1. Plate: ASTM A36

2. Anchorage to concrete shall be made using one of the following anchors:

a. ASTM A108 welded headed studs installed in accordance with Section 05 12 00.

b. ASTM A706 reinforcing steel welded to the embed plate in accordance with Section 03 30 00.

3. Where exposed to weather in the completed structure, hot-dip galvanize assembly after fabrication in accordance with ASTM A 153.

B. Post-installed mechanical and adhesive anchors:

1. Anchors shall have ICC-ES reports demonstrating compliance with the 2015 IBC for use in cracked concrete.

2. Adhesive anchors shall not be used to resist pullout forces in overhead and wall installations unless proper consideration is given to creep effects and fire conditions. Consult with manufacturer's engineer.

C. Concrete Inserts:

1. Other Inserts

   a. If anchor capacity is determined using ACI Chapter 17, inserts shall be positively anchored to the concrete by means of headed or hooked element that conforms to ACI 318-14 Section 17.1.3 and 26.7.1(a).

   b. Insert shall be either listed by Underwriter's Laboratory in accordance with the UL 203 standard or Approved by Factory Mutual in accordance with "Approval Standard for Pipe Hanger Components for Automatic Sprinkler Systems: Class Number 1951, 1952, and 1953."

2. Hardware used with the insert shall be fully compatible with the insert.

D. Post-Installed Shallow Anchors:

1. Shallow anchors may only be used to resist sustained tension loads or seismic forces when used for the support of acoustical or lay-in panel suspended ceiling applications and distributed systems where the service load on any individual fastener does not exceed 90 pounds.

2. Power-Driven Fasteners: Fasteners shall have ICC-ES reports demonstrating compliance with the 2015 IBC.

3. Drop-In Anchors shall meet either of the following:

   a. Listed by Underwriter's Laboratory in accordance with the UL 203 standard.

   b. Approved by Factory Mutual in accordance with "Approval Standard for Pipe Hanger Components for Automatic Sprinkler Systems: Class Number 1951, 1952, and 1953."

2.02 ATTACHMENTS TO MASONRY

A. Anchor Bolts: Conform to TMS 402 provisions for anchor bolts.

B. Post-installed mechanical, screw, and power-driven anchors: Anchors shall have ICC-ES reports demonstrating compliance with the 2015 IBC. Where anchors resist seismic loads, the ICC ESR shall indicate approval for seismic loads.

2.03 ATTACHMENTS TO STRUCTURAL STEEL FRAMING

A. Welds, Bolts: Conform to Specification Section 05 12 00.

B. Self-drilling fasteners and Expansion Bolts: Anchors shall have ICC-ES reports demonstrating compliance with the 2015 IBC.

C. Power-Driven Fasteners

1. Power-driven fasteners may only be used to resist sustained tension loads or seismic forces when the service load on any individual fastener does not exceed 250 pounds.

2. Fasteners shall have ICC-ES reports demonstrating compliance with the 2015 IBC.

D. Beam Clamps: Shall meet either of the following:

1. Listed by Underwriter's Laboratory in accordance with the UL 203 standard.

2. Approved by Factory Mutual in accordance with "Approval Standard for Pipe Hanger Components for Automatic Sprinkler Systems: Class Number 1951, 1952, and 1953."

2.04 ATTACHMENTS TO STEEL JOISTS

A. Methods of attachment to steel joists are subject to the approval of the registered design professional responsible for the design of the joists.

2.05 ATTACHMENTS TO ROOF DECK

A. Welding Electrodes: Comply with AWS standards.

B. Screws: Corrosion-resistant-coated, self-drilling, self-threading steel drill screws.

1. Head Type: Low profile head beneath sheathing, manufacturer's standard elsewhere.

C. Through Bolts: ASTM A307

D. Expansion Anchors: Shall have been tested in roof deck and shall meet either of the following:

1. Listed by Underwriter's Laboratory in accordance with the UL 203 standard.

2. Approved by Factory Mutual in accordance with "Approval Standard for Pipe Hanger Components for Automatic Sprinkler Systems: Class Number 1951, 1952, and 1953."

2.06 CORROSION PROTECTION

A. Where exposed to weather in the completed structure, anchors shall comply with the following:

1. Stainless steel: Manufacture from ASTM A303, A304, or A306 stainless steel.

B. Where not exposed to weather in the completed structure, anchors and fasteners shall comply with the following:

1. Carbon steel:

a. Hot-dip galvanize in accordance with ASTM A 153.

PART 3 - EXECUTION

3.01 INSTALLATION OF ATTACHMENTS TO CAST-IN-PLACE CONCRETE

A. The following installation requirements are in addition to any that may be required by the registered design professional responsible for the design of the attachments.

B. Embedded Plates: Install in accordance with Section 03 30 00.

C. Post-installed mechanical and adhesive anchors:

1. Install in accordance with the manufacturers written instructions and the ICC-ES report.

2. Where anchors may conflict with embedded items such as reinforcing steel or post-tensioning tendons, locate embedded items prior to anchor installation. Adjust anchor locations as required to miss embedded items. If adjusted location of anchor conflicts with attachment detail, coordinate any revisions of the attachment details with the registered design professional responsible for the attachment.

3. Stop installation immediately if reinforcing steel is encountered. Relocate anchor as required to miss reinforcing steel.

   a. Notify Architect if reinforcing steel is damaged during anchor installation.

      1) Submit proposed repair procedure for review and approval. Proposed repair procedure to be stamped by a structural engineer licensed in the State of Washington.

      2) Repair structure in accordance with the approved repair procedure.

   b. Grout any holes not used with specified repair grout.

D. Shallow Anchors:

1. Where embedment depth is less than the minimum concrete cover, including consideration of permissible construction tolerances, install in accordance with the manufacturers written instructions and, for power-driven fasteners, the ICC-ES report.

2. Where embedment depth exceeds the minimum concrete cover, including consideration of permissible construction tolerances, install in accordance with requirements for post-installed mechanical and adhesive anchors above.

3.02 ATTACHMENTS TO MASONRY

A. Anchor Bolts: Install in accordance with the TMS 402 provisions for anchor bolts.

B. Post-installed mechanical, screw, and power-driven anchors: Install in accordance with the manufacturer’s written instructions and the ICC-ES report.

3.03 ATTACHMENTS TO STRUCTURAL STEEL FRAMING

A. Attachment to the Protected Zones is not permitted.

B. Welds, Bolts: Install in accordance with Section 05 12 00.

C. Power-Driven Fasteners, Self-drilling fasteners and Expansion Bolts: Install in accordance with the manufacturer’s written instructions and the ICC-ES report.

D. Beam clamps: Install in accordance with the manufacturer’s written instructions.

3.04 ATTACHMENTS TO STEEL JOISTS

A. Installation methods of attachments to steel joists are subject to the approval of the registered design professional responsible for the design of the joists.

3.05 ATTACHMENTS TO ROOF DECK

A. Welding: Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.

B. Screws: Coordinate screw length to prevent damage to other installed materials and install according to manufacturer's written instructions, with screw penetrating roof deck by not less than three exposed screw threads.

C. Through Bolts: Drill holes as required. Provide plate washers as required to achieve minimum bearing area.

D. Expansion Anchors: Install in accordance with the manufacturer's written instructions.

END OF SECTION

SECTION 10 82 00

SEISMIC DESIGN REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Nonstructural components and their attachments to the structure shall meet all requirements of the contract documents, including the governing seismic design code as specified in the contract documents, which includes the requirements of ASCE 7-10, Chapter 13.

B. Work in this section includes structural engineering design and manufacturer's certifications as required to demonstrate that the installation of design/build nonstructural components will comply with the seismic provisions of the building code.

C. Definitions:

1. Building Official: As defined in IBC Section 202. Where ASCE 7-10 uses the term Authority Having Jurisdiction this should be considered to have the same meaning as Building Official.

2. Designated Seismic Systems: As defined in IBC Section 202. The following systems require a Designated Seismic System;

a. Precast stair treads

b. Metal stairs

c. Fire protection sprinkler system

d. Emergency egress signage

e. Emergency power

f. Emergency lighting

3. Registered Design Professional: As defined in IBC Section 202.

1.02 RELATED SECTIONS

A. Coordinate and comply with the requirements of the following:

1. Section 03 30 00 Cast-in-Place Concrete

2. Section 03 45 00 Precast Architectural Concrete

3. Section 05 40 00 Cold-Formed Metal Framing

4. Section 08 41 13 Aluminum-Framed Entrances and Storefronts

5. Section 08 44 13 Glazed Aluminum Curtain Walls

6. Section 09 22 16 Non-Structural Metal Framing

7. Section 09 51 23 Acoustical Tile Ceilings

8. Section 10 81 00 Attachments to Structure

9. Section 11 11 26 Vehicle-Washing Equipment

10. Section 21 05 29 Hangers and Supports for Fire-Suppression Piping and Equipment

11. Section 21 05 48 Vibration and Seismic Controls for Fire-Suppression Piping and Equipment

12. Section 22 05 29 Hangers and Supports for Plumbing Piping and Equipment

13. Section 22 05 48 Vibration and Seismic Controls for Plumbing Piping and Equipment

14. Section 23 05 29 Hangers and Supports for HVAC Piping and Equipment

15. Section 22 05 48 Vibration and Seismic Controls for Plumbing Piping and Equipment

16. Section 23 05 29 Hangers and Supports for HVAC Piping and Equipment

17. Section 23 05 48 Vibration and Seismic Controls for HVAC

18. Section 26 05 29 Hangers and Supports for Electrical Systems

19. Section 26 05 48.16 Seismic Controls for Electrical Systems

20. Section 27 05 29 Hangers and Supports for Communications Systems

21. Section 27 05 48.16 Seismic Controls for Communications Systems

1.03 DESIGN CRITERIA

A. Seismic Forces: SEI/ASCE 7-10, "Minimum Design Loads for Buildings and Other Structures," Chapter 13, using the parameters indicated on the Structural Drawings.

B. Loading imposed on supporting elements is subject to the following requirements:

1. Primary building structure: See Section 10 81 00 for limitations.

2. Other building components: Contractor is responsible for coordinating work between design / build trades.

C. Seismic Relative Lateral Displacements: Calculate seismic relative displacements based on the maximum interstory drifts indicated on the Structural Drawings.

D. Relative Vertical Displacements: The vertical relative movement between floors due to live load is indicated on the Structural Drawings.

1.04 SUBMITTALS

A. These submittal requirements are in addition to other submittal requirements stated elsewhere in the contract documents.

B. Construction Documents: Prepare in accordance with ASCE 7-10 Section 13.2.7, sealed and signed by the registered design professional responsible for their preparation.

C. Component Certification:

1. For systems not requiring a Designated Seismic System, component certifications may be submitted in lieu of an engineered design as permitted by ASCE 7-10 Section 13.2.1.2. Such submittals shall include review and approval by a registered design professional.

2. For systems requiring a Designated Seismic System, submit certificates conforming to the requirements of ASCE 7-10, Section 13.2.2, including review and approval by a registered design professional prior to submission. If a particular component has no manufacturer available that has been evaluated and listed by an accredited inspection body agency, then qualification must be by analysis performed be a professional engineer registered in the jurisdiction where the Project is located. Professional engineer must be approved by the Building Official and experienced in providing engineering services of the kind indicated. Analysis must include an evaluation of stress and deflection developed through the entire load path from the center of applied seismic load to the equipment anchorage. Analysis must consider dynamic characteristics and the response spectrum required by code.

D. Structural Calculations: Submit calculations sealed and signed by the registered design professional responsible for their preparation.

E. Contractor's Statement of Responsibility: Submit in accordance with the International Building Code 1704.4.

1.05 QUALITY ASSURANCE

A. The registered design professional responsible for the design of structural elements of non-structural components shall be a Professional Engineer licensed to practice in Washington State.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION