HEATING, VENTILATING & AIR CONDITIONING SYMBOL LIST

DUCTWORK LEGEND

	CEILING DIFFUSER (4-WAY)
	CEILING DIFFUSER (3-WAY)
	CEILING DIFFUSER (2-WAY)
	CEILING DIFFUSER (1-WAY)
	DOUBLE-SIDED AIR LIGHT TROFFER
	SINGLED-SIDED AIR LIGHT TROFFER
	LINEAR DIFFUSER — ACTIVE SECTION (SUPPLY) — INACTIVE SECTION (RETURN)
	RETURN REGISTER OR GRILLE
CD-A (100)	DIFFUSER TAG — CFM
	SUPPLY ARROW
	RETURN OR EXISTING ARROW
	SUPPLY TOP REGISTER
	RETURN OR EXHAUST TOP REGISTER OR GRILLE
	ELBOW WITH TURNING VANES
	DUCT SPLIT
	BRANCH TAKEOFF
	RADIUS ELBOW (LONG RADIUS UNLESS OTHERWISE NOTED)
	FIRE RATED ENCASED DUCT
	SUPPLY DUCT UP (DISCHARGE SIDE OF FAN)
	SUPPLY AIR RISER UP AND DOWN
	SUPPLY DUCT DOWN (DISCHARGE SIDE OF FAN)
	RETURN OR EXHAUST DUCT UP (SUCTION SIDE OF FAN)
	RETURN OR EXHAUST AIR RISER UP AND DOWN
	RETURN OR EXHAUST DUCT DOWN (SUCTION SIDE OF FAN)
	SUPPY ROUND DUCT SECTION UP
	SUPPY ROUND DUCT SECTION DN
	SUPPY ROUND DUCT RISER UP AND DOWN
	RETURN/EXHAUST ROUND DUCT SECTION UP
	RETURN/EXHAUST ROUND DUCT SECTION DN
	RETURN/EXHAUST ROUND DUCT SECTION UP AND DOWN
	SLOPING RISE IN DUCTWORK
	SLOPING DROP IN DUCTWORK
AD	ACCESS DOOR IN DUCT
18 x 12 / 18 x 12	DUCT SIZE (CLEAR INSIDE DIMENSION) FIRST FIGURE INDICATES PLAN SIZE
18"ø / 18"ø	ROUND DUCT DIAMETER SIZE (CLEAR INSIDE DIMENSION)
	ACOUSTIC LINING IN DUCT (DUCT SIZE NOTED INDICATES INSIDE DIMENSIONS)
	FIRE RATED DUCT (DUCT SIZE NOTED INDICATES INSIDE DIMENSIONS)
	FLEXIBLE CONNECTION
VD / VD	VOLUME DAMPER
FD (S0) (FS0) / FD (S0) (FS0)	FUSIBLE LINK FIRE DAMPER W/DUCT ACCESS DOOR OR (SMOKE DAMPER) (COMBINATION FIRE/SMOKE DAMPER)
	IN-LINE FAN
	PROPELLER FAN
	ROOF VENTILATOR
	ROOF VENTILATOR
	VERTICAL UNIT HEATER
	HORIZONTAL UNIT HEATER
	CABINET UNIT HEATER

DUCTWORK LEGEND (CONTINUED)

ALD / ALD	AUTOMATIC LOUVER DAMPER (MOTORIZED)
MLD / MLD	MANUAL LOUVER DAMPER
HC / HC	COIL — HC = HEATING COIL; CC = COOLING COIL; PHC = PREHEAT COIL; EHC = ELECTRICAL HEATING COIL
VAV "A" (500/150)	VAV BOX — VAV "DESIGNATION" (MAX. CFM/MIN. CFM)
VAV "A"-HW (500/150)	VAV BOX WITH HOT WATER REHEAT
VAV "A"-E (500/150) *5 KW*	VAV BOX WITH ELECTRICAL REHEAT *5 KW* = SIZE OF REHEAT COIL
FPB "A" (1050/1000/300)	FAN POWERED BOX — FPB "DESIGNATION" (TOTAL CFM/MAX. CFM/MIN. CFM)
FPB "A"-HW (1050/1000/300)	FAN POWERED VAV BOX WITH HOT WATER REHEAT
FPB "A"-E (1050/1000/300) *5 KW*	FAN POWERED VAV BOX WITH ELECTRICAL REHEAT *5 KW* = SIZE OF REHEAT COIL
TR.G.	TRANSFER GRILLES ON BOTH SIDES OF PARTITION OR WALL
WO (12 x12)	OPENING IN WALL ABOVE HUNG CEILING (SIZE)
	DUCT BREAK (SQUARE)
	DUCT BREAK (ROUND)/PIPE BREAK
(Ø) L	DOOR LOUVER (SIZE)
U	UNDERCUT DOOR
Ø	SQUARE FEET
ø	DIAMETER

PIPING LEGEND (CONTINUED)

CWS / CWS	CONDENSER WATER SUPPLY
CWR / CWR	CONDENSER WATER RETURN
CHS / CHS	CHILLED WATER SUPPLY
CHR / CHR	CHILLED WATER RETURN
GS / GS	GLYCOL SUPPLY
GR / GR	GLYCOL RETURN
HTHS / HTHS	HIGH TEMPERATURE HOT WATER SUPPLY
HTHR / HTHR	HIGH TEMPERATURE HOT WATER RETURN
MTHS / MTHS	MEDIUM TEMPERATURE HOT WATER SUPPLY
MTHR / MTHR	MEDIUM TEMPERATURE HOT WATER RETURN
HWS / HWS	HOT WATER SUPPLY
HWR / HWR	HOT WATER RETURN
SWS(Z) / SWS(Z)	SECONDARY WATER SUPPLY (ZONE)
SWR(Z) / SWR(Z)	SECONDARY WATER RETURN (ZONE)
RL / RL	REFRIGERANT LIQUID PIPING
RS / RS	REFRIGERANT SUCTION PIPING
R-SV / R-SV	REFRIGERANT-SAFETY VALVE RELIEF LINE
HG / HG	HOT GAS PIPING
FOV / FOV	FUEL OIL VENT
FOS / FOS	FUEL OIL SUPPLY
FOR / FOR	FUEL OIL RETURN
FOG / FOG	FUEL OIL-GAUGE LINE
FOF / FOF	FUEL OIL FILL
CW / CW	DOMESTIC COLD WATER MAKE-UP
D / D	DRAIN LINE
PD / PD	PUMP DISCHARGE
	ARROW INDICATES DIRECTION OF FLOW
	PITCH PIPE DOWN IN DIRECTION OF ARROW
V / V	VENT LINE
	PIPE ANCHOR
	PIPE GUIDE
EC / EC	EXPANSION COMPENSATOR
(3'-0" x 6'-0") (3'-0" x 6'-0") W H	EXPANSION LOOP (SIZE W x H)
	FLEXIBLE BALL JOINT EXPANSION COMPENSATOR
	CONCENTRIC REDUCER (INCREASER)
	ECCENTRIC REDUCER (INCREASER)
	UNION
	CAPPED PIPE
	DIRT POCKET
	"Y" TYPE STRAINER
	BASKET TYPE STRAINER

PIPING LEGEND

	DUPLEX STRAINER
	ELBOW TURNED UP
	ELBOW TURNED DOWN
	BOTTOM PIPE CONNECTION
	TOP PIPE CONNECTION
	SLOPED CHANGE IN PIPE ELEVATION
	FLEXIBLE CONNECTION
	ISOLATION VALVE (SEE SPECIFICATION)
	BALANCING VALVE (SEE SPECIFICATION)
	CHECK VALVE
	AUTOMATIC THREE WAY CONTROL VALVE
	AUTOMATIC TWO-WAY CONTROL VALVE
	RELIEF VALVE
	ANGLE RELIEF VALVE
	PRESSURE REDUCING VALVE (PRV)
	BALANCING VALVES (SEE SPEC)
	AUTOMATIC ISOLATION VALVE
	BUTTERFLY VALVE (MANUAL)
	BUTTERFLY VALVE (MOTORIZED)
	BALL VALVE
	NEEDLE VALVE
	REFRIGERANT EXPANSION VALVE
	ANGLED GATE VALVE
	ANGLED GLOBE VALVE
	PRESSURE REDUCER – SELF CONTAINED
	PRESSURE REDUCER – EXTERNAL
	PRESSURE REDUCER – DIFFERENTIAL
	QUICK OPENING
	STRAINER WITH BLOW-OFF
	WATER TRAP
	Y-PATTERN GLOBE STYLE BALANCING VALVE WITH PRESSURE DIFFERENTIAL METERING PORTS (SEE SPECIFICATIONS)
	PUMP
	REFRIGERANT EXPANSION VALVE
	SIGHT GLASS
	HOSE BIBB
	VALVE IN VERTICAL
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	THERMOMETER
	PIPE WELL
	PRESSURE GAUGE AND COCK
	FLOW BALANCING STATION
G	NATURAL GAS
A	COMPRESSED AIR
	INSULATED HEAT TRACED PIPING
	SLEEVE
	AUTO FLOW CONTROL VALVE (SEE SPECIFICATIONS)

CONTROLS LEGEND

T	THERMOSTAT
H	HUMIDISTAT
S	SMOKE DETECTOR
E	EMERGENCY BREAK GLASS SWITCH FOR EQUIP. SHUT-DOWN
T	TEMPERATURE SENSOR
H	HUMIDITY SENSOR
CO	CARBON MONOXIDE SENSOR
CO_2	CARBONE DIOXIDE SENSOR

MISCELLANEOUS

	NEW WORK
	EXISTING WORK
	EXISTING WORK TO BE REMOVED
	POINT OF NEW CONNECTION TO EXISTING WORK
X DETAIL NO. / X DRAWING NO.	STANDARD DETAIL NO. DESIGNATION
NO	DETAIL NO. DESIGNATION
SEC. / DWG.	SECTION NUMBER / DRAWING NUMBER
NOTES	REFER TO NOTES ON DRAWING
	CENTER LINE
	DISCONNECT SWITCH
	BEAM PENETRATION (SIZE)
	SELF-BALANCING DAMPER
	FIRE-SMOKE DAMPER
	FIRE DAMPER

ABBREVIATIONS

ABV.	ABOVE
AC	AIR CONDITIONING
ACS	AIR CONDITIONING SUPPLY
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AL	ACOUSTICAL LINING
ALD	AUTOMATIC LOUVER DAMPER (MOTORIZED)
ATC	AUTOMATIC TEMPERATURE CONTROL
AV	APARTMENT VENTILATION
B	BOILER
B.D.D.	BACK DRAFT DAMPER
B.G.	BOTTOM GRILLE
BMS	BUILDING MANAGEMENT SYSTEM
BO	BLANK OFF
B.R.	BOTTOM REGISTER
B.H.P.	BRAKE HORSE POWER
BTU	BRITISH THERMAL UNIT
CC	COOLING COIL
C.D.	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
C.G.	CEILING GRILLE
CH	CABINET HEATER
C.O.	CLEAN OUT
CONV.	CONVECTOR
C.R.	CEILING REGISTER
CT	COOLING TOWER
CV	COORIDOR VENTILATION
DN	DOWN
DX	DIRECT EXPANSION
E.A.T.	ENTERING AIR TEMPERATURE
E.C.H.	ELECTRIC CABINET HEATER
E.C.X.	ELECTRIC CLOSET EXHAUST
EF	EXHAUST FAN
EH	ENTRANCE HEATER
EHC	ELECTRIC HEATING COIL
ES	EQUAL SPLIT
EUH	ELECTRIC UNIT HEATER
E.W.T.	ENTERING WATER TEMPERATURE
FC	FLEXIBLE CONNECTION
FCC	FIRE COMMAND CENTER
FCU	FAN COIL UNIT
FD	1 1/2 HR FUSIBLE LINK FIRE DAMPER W/DUCT ACCESS DOOR
FD-3	3 HR FUSIBLE LINK FIRE DAMPER
FDC	CEILING RADIATION DAMPER
FDH	1 1/2 HR FIRE DAMPER WITH HEAT SENSOR
FDH-3	3 HR FIRE DAMPER WITH HEAT SENSOR
FHX	FUME HOOD EXHAUST
FL.	FLOOR
F.L.A.	FULL LOAD AMPS
FLR	FUSIBLE LINK REGISTER
FPB	FAN POWERED BOX
FPI	FINS PER INCH
FSD-FL	COMBINATION FIRE/SMOKE DAMPER WITH FUSIBLE LINK
FSD	1 1/2 HR COMB. FIRE/SMOKE DAMPER SINGLE HEAT SENSOR
FSD-3	3 HR COMB. FIRE/SMOKE DAMPER SINGLE HEAT SENSOR
FSD-HS	1 1/2 HR COMB. FIRE/SMOKE DAMPER DUAL HEAT SENSOR
FSD-HS3	3 HR COMB. FIRE/SMOKE DAMPER DUAL HEAT SENSOR
FSD-RA	COMBINATION FIRE/SMOKE DAMPER (REVERSE ACTING)
FTR	FIN TUBE RADIATOR
GPM	GALLONS PER MINUTE
GX	GENERAL EXHAUST
HC	HEATING COIL
HTP	HEAT PUMP
HP	HORSE POWER
HSD	COMBINATION HEAT/SMOKE DAMPER
HX	HEAT EXCHANGER (SHELL & TUBE)
I.D.	INSIDE DIMENSION
KW	KILOWATT
KWH	KILOWATT HOURS
KX	KITCHEN EXHAUST
KRHX	KITCHEN RANGE HOOD EXHAUST
L.A.T.	LEAVING AIR TEMPERATURE
LD	LINEAR DIFFUSER (CEILING, WALL, SILL, OR FLOOR)
L.R.A.	LOCK ROTOR AMPS
LWS	LOUVER WITH WIRE SCREEN
L.W.T.	LEAVING WATER TEMPERATURE
M.A.T.	MIXED AIR TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MIN.	MINIMUM
MLD	MANUAL LOUVER DAMPER
MO (WO)	MASONRY OPENING (WALL OPENING)
N.C.	NORMALLY CLOSED
NFA	NET FREE AREA
N.I.C.	NOT IN THIS CONTRACT
NK	NECK
N.O.	NORMALLY OPEN
N.T.S.	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
O.D.	OUTSIDE DIMENSION
P	PUMP
P.A.	PRIMARY AIR
PD	PUMPED DISCHARGE
PHC	PRE-HEAT COIL
PHX	PLATE HEAT EXCHANGE
P.R.V.	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH (GAUGE)
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
RA	RETURN AIR
RF	RETURN FAN
RHC	REHEAT COIL
RM	REFRIGERATION MACHINE
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SBD	SELF-BALANCING DAMPER
SD	SMOKE DAMPER
SF	SUPPLY FAN
SM	SHEET METAL
SP	STATIC PRESSURE
ST	SOUND TRAP
SX	SMOKE EXHAUST
TF	TRANSFER FAN
T.G.	TOP GRILLE
T.R.	TOP REGISTER
TR.D.	TRANSFER DUCT
TR.G.	TRANSFER GRILLE
TX	TOILET EXHAUST
UH	UNIT HEATER
UHE	UNIT HEATER (ELECTRIC)
U.O.N.	UNLESS OTHERWISE NOTED
VAR.	VARIABLE
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
WC	WATER CHILLER
WMS	WIRE MESH SCREEN
(300)	CUBIC FEET OF AIR PER MINUTE OR GALLONS PER MINUTE

	THERMOSTATIC TRAP
	THERMO DYNAMIC TRAP
	HEAVY DUTY FLOAT TRAP

MECHANICAL DRAWING LIST

	DRAWING NUMBER	DRAWING TITLE	SCALE	100% DESIGN DEVELOPMENT SET 07.17.15	50% CD - PROGRESS SET 11.13.15	MEP BID SET 02.15.16	100% DD BELOW GRADE AMENITY (MEP) 03.21.16	REVISED MEP BID SET 04.15.16	REVISED MEP BID SET 07.22.16	90% CD - SUBMISSION 09.09.16	95% CD - SUBMISSION 12.02.16	ISSUED FOR CONSTRUCTION 04.14.17	BULLETIN #1 05.24.17
1	M-001.00	HVAC DRAWING LIST, SYMBOLS AND ABBREVIATIONS	N.T.S.	●	●	●	●	●	●	●	●	●	●
2	M-002.00	HVAC SCOPE OF WORK	NONE	●	●	●		●	●	●	●	●	
3	M-003.00	HVAC GENERAL NOTES	NONE			●		●	●	●	●	●	
4	M-299.00	HVAC SUB CELLAR LEVEL FLOOR PLAN	1/8"=1'-0"	●	●	●	●	●	●	●	●	●	
5	M-300.00	HVAC CELLAR LEVEL FLOOR PLAN	1/8"=1'-0"	●	●	●	●	●	●	●	●	●	●
6	M-301.00	HVAC 1ST FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	
7	M-302.00	HVAC 2ND FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	
8	M-201.00	HVAC 2ND FLOOR PIPING PLAN	1/8"=1'-0"			●		●	●	●	●	●	
9	M-202.00	HVAC 2ND FLOOR DISTRIBUTION PLAN	1/8"=1'-0"			●		●	●	●	●	●	
10	M-303.00	HVAC 3RD FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	
11	M-304.00	HVAC 4TH FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	
12	M-305.00	HVAC 5TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
13	M-306.00	HVAC 6TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
14	M-307.00	HVAC 7TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
15	M-308.00	HVAC 8TH FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	
16	M-309.00	HVAC 9TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
17	M-310.00	HVAC 10TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
18	M-311.00	HVAC 11TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
19	M-312.00	HVAC 12TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
20	M-313.00	HVAC 13TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
21	M-314.00	HVAC 14TH FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	
22	M-315.00	HVAC 15TH FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	
23	M-316.00	HVAC 16TH FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	
24	M-317.00	HVAC 17TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
25	M-318.00	HVAC 18TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
26	M-319.00	HVAC 19TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
27	M-320.00	HVAC 20TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
28	M-321.00	HVAC 21ST FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
29	M-322.00	HVAC 22ND FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
30	M-323.00	HVAC 23RD FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	
31	M-324.00	HVAC 24TH FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	
32	M-325.00	HVAC 25TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
33	M-326.00	HVAC 26TH FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	
34	M-327.00	HVAC 27TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	
35	M-328.00	HVAC 28TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	●
36	M-329.00	HVAC 29TH FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	●
37	M-330.00	HVAC 30TH FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	●
38	M-331.00	HVAC 31ST FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	●
39	M-332.00	HVAC 32ND FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	●
40	M-333.00	HVAC 33RD FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	●
41	M-334.00	HVAC 34TH FLOOR PLAN	1/8"=1'-0"		●	●		●	●	●	●	●	●
42	M-335.00	HVAC 35TH FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	●
43	M-336.00	HVAC 36TH FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	●
44	M-337.00	HVAC 37TH FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	●
45	M-338.00	HVAC 38TH FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	
46	M-339.00	HVAC 39TH FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	
47	M-340.00	HVAC ROOF FLOOR PLAN	1/8"=1'-0"	●	●	●		●	●	●	●	●	
48	M-401.00	HVAC SECTION PLANS SHEET NO. 1	AS NOTED		●	●		●	●	●	●	●	
49	M-501.00	HVAC AIR RISER DIAGRAM SHEET NO. 1	N.T.S.	●	●	●		●	●	●	●	●	
50	M-502.00	HVAC AIR RISER DIAGRAM SHEET NO. 2	N.T.S.	●	●	●		●	●	●	●	●	●
51	M-503.00	HVAC WATER RISER DIAGRAM SHEET NO. 1	N.T.S.	●	●	●		●	●	●	●	●	
52	M-504.00	HVAC WATER RISER DIAGRAM SHEET NO. 2	N.T.S.	●	●	●		●	●	●	●	●	
53	M-505.00	HVAC FUEL OIL DIAGRAM	N.T.S.							●	●	●	
54	M-601.00	HVAC SCHEDULES SHEET NO. 1	NONE	●	●	●	●	●	●	●	●	●	
55	M-602.00	HVAC SCHEDULES SHEET NO. 2	NONE	●	●	●	●	●	●	●	●	●	●
56	M-603.00	HVAC SCHEDULES SHEET NO. 3	NONE	●	●	●	●	●	●	●	●	●	●
57	M-604.00	HVAC SCHEDULES SHEET NO. 4	NONE								●	●	
58	M-605.00	HVAC SCHEDULES SHEET NO. 5	NONE								●	●	
59	M-701.00	HVAC DETAILS SHEET NO. 1	N.T.S.	●	●	●		●	●	●	●	●	
60	M-702.00	HVAC DETAILS SHEET NO. 2	N.T.S.	●	●	●		●	●	●	●	●	
61	M-703.00	HVAC DETAILS SHEET NO. 3	N.T.S.	●	●	●		●	●	●	●	●	
62	M-704.00	HVAC DETAILS SHEET NO. 4	N.T.S.	●	●	●		●	●	●	●	●	
63	M-705.00	HVAC DETAILS SHEET NO. 5	N.T.S.	●	●	●		●	●			●	
64	M-706.00	HVAC DETAILS SHEET NO. 6	N.T.S.	●	●	●		●	●			●	
65	M-707.00	HVAC DETAILS SHEET NO. 7	N.T.S.	●	●	●		●	●			●	
66	M-801.00	HVAC CONTROL DIAGRAM SHEET NO. 1	NONE			●		●	●	●	●	●	
67	M-802.00	HVAC CONTROL DIAGRAM SHEET NO. 2	NONE			●		●	●	●	●	●	
68	M-803.00	HVAC CONTROL DIAGRAM SHEET NO. 3	NONE			●		●	●	●	●	●	
69	M-804.00	HVAC CONTROL DIAGRAM SHEET NO. 4	NONE			●		●	●	●	●	●	
70	M-805.00	HVAC CONTROL DIAGRAM SHEET NO. 5	NONE			●		●	●	●	●	●	
71	M-806.00	HVAC CONTROL DIAGRAM SHEET NO. 6	NONE			●		●	●	●	●	●	
72	M-807.00	HVAC CONTROL DIAGRAM SHEET NO. 7	NONE			●		●	●	●	●	●	
73	M-808.00	HVAC CONTROL DIAGRAM SHEET NO. 8	NONE			●		●	●	●	●	●	
74	M-809.00	HVAC CONTROL DIAGRAM SHEET NO. 9	NONE			●		●	●	●	●	●	

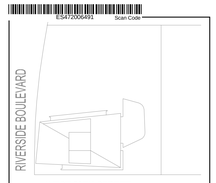
HVAC FLOW/RISER DIAGRAM LEGEND

C E	CHILLERS
	CONDENSATE PUMP (DUPLEX)
C C	COOLING COIL
H C	HEATING COIL
	COOLING TOWERS (INDUCED DRAFT)
	COOLING TOWERS (FORCED DRAFT)
	DRY COOLER
	EVAPORATIVE CONDENSER
	EMERGENCY GENERATOR
	EXPANSION TANK (HORIZONTAL)
	EXPANSION TANK (VERTICAL)
	FAN
	DEARATOR W/FEEDWATER PUMPS
FCU	FAN COIL UNIT
FT	FINNED TUBE RADIATOR
	LOUVERED PENTHOUSE
	PLATE & FRAME HEAT EXCHANGER
	PUMP
	RETURN/EXHAUST AIR DIRECTION
AC	AIR CONDITIONING UNIT
	SHELL & TUBE HEAT EXCHANGER
	SUPPLY AIR FLOW
	WATER FILTER
	LOUVER
	UNIT HEATER
HWS 3	RISER DESIGNATION — RISER SERVICE; RISER NUMBER
PRV	PRESSURE REDUCING VALVE RIG

STEAM PIPING LEGEND

HPS / HPS	HIGH PRESSURE STEAM SUPPLY
MPS / MPS	MEDIUM PRESSURE STEAM SUPPLY
HPR / HPR	HIGH PRESSURE STEAM RETURN
MPR / MPR	MEDIUM PRESSURE STEAM RETURN
LPS / LPS	LOW PRESSURE STEAM SUPPLY
LPR / LPR	LOW PRESSURE STEAM RETURN
	STEAM TRAP – FLOAT AND THERMOSTATIC
	STEAM TRAP – INVERTED BUCKET
	LOW PRESSURE STEAM TRAP RIG
	MEDIUM OR HIGH PRESSURE STEAM TRAP RIG

DEPT OF BUILDINGS 3123008976 Job Number
E-547-20080495 Scan Code



KEY PLAN

Number	Date	Revision
9	05/24/17	BULLETIN #1
8	04/14/17	ISSUED FOR CONSTUCTION
7	12/02/16	95% CD - SUBMISSION
6	09/09/16	90% CD - SUBMISSION
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

DESIGN ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:

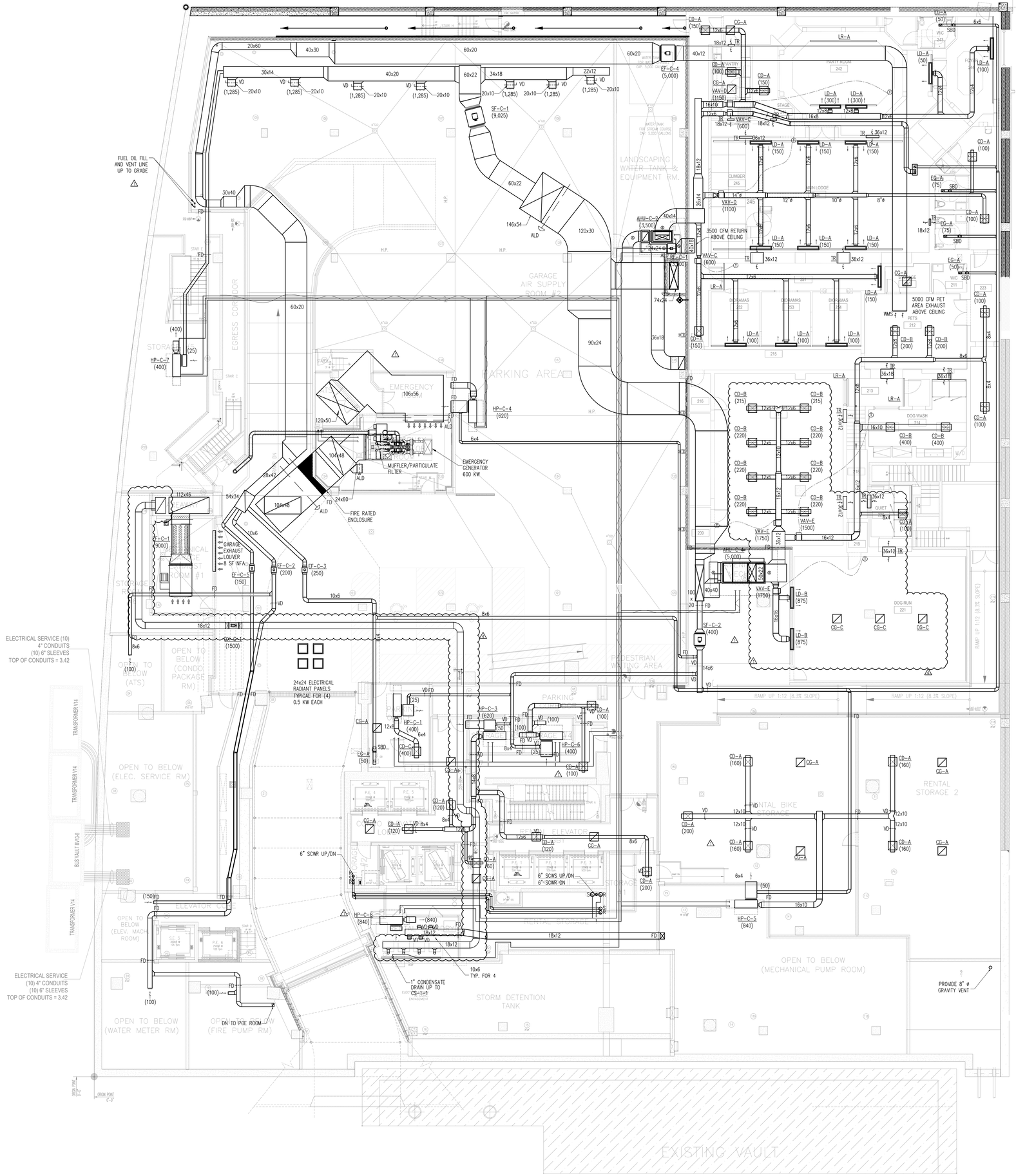
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
HVAC
DRAWING LIST

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE: 03/21/2016
PROJECT #: N14.08690.00
SCALE: NONE
DWG NO.: M-001.01

M001



RIVERSIDE BOULEVARD

WEST 59TH STREET

KEY PLAN

Number	Date	Revision
9	05/24/17	BULLETIN #1
8	04/14/17	ISSUED FOR CONSTRUCTION
7	12/02/16	95% CD - SUBMISSION
6	09/09/16	90% CD - SUBMISSION
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

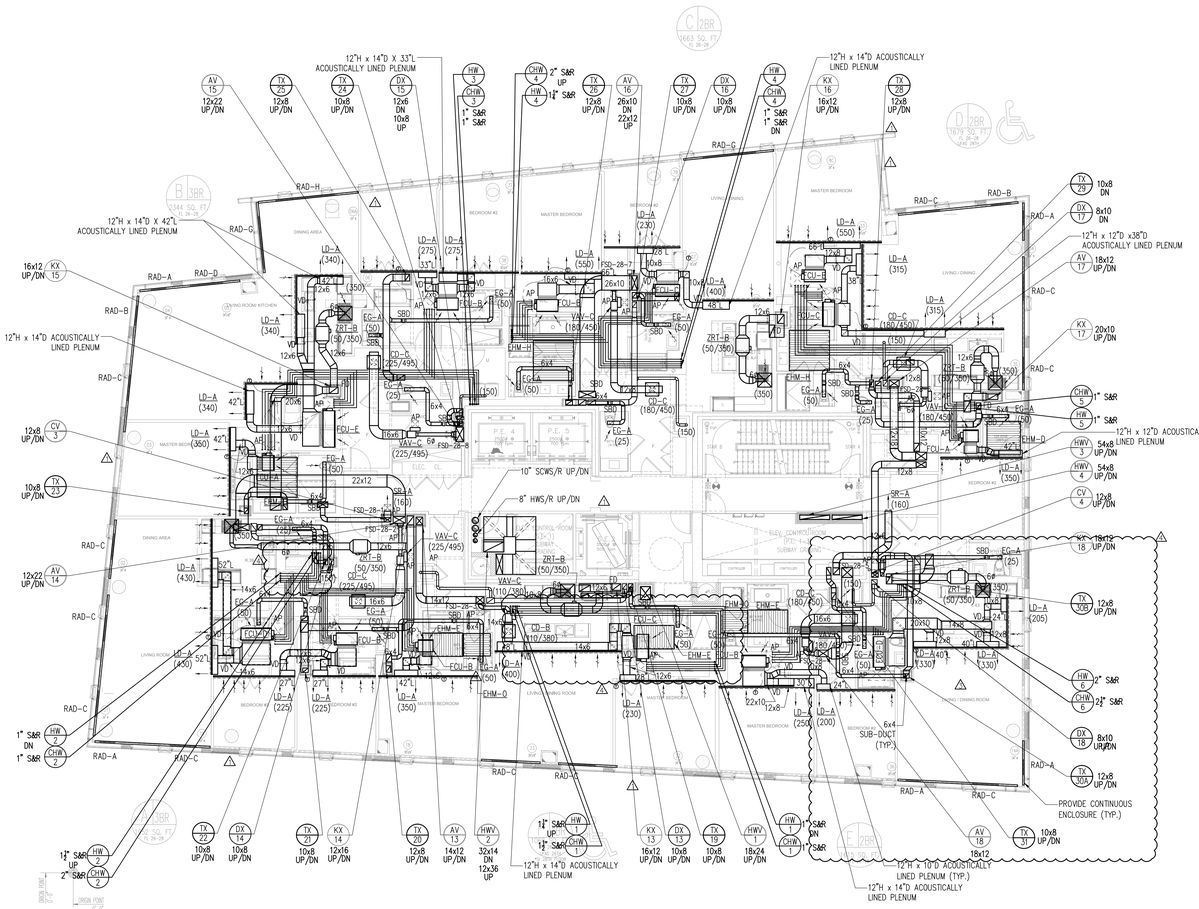
DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
HVAC CELLAR LEVEL FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE: 11/06/2015
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: M-300.01

M300



RIVERSIDE BOULEVARD

WEST 59TH STREET

N

KEY PLAN

Number	Date	Revision
9	05/24/17	BULLETIN #1 △1
8	04/14/17	ISSUED FOR CONSTUCTION △1
7	12/02/16	95% CD - SUBMISSION
6	09/09/16	90% CD - SUBMISSION △1
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

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WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

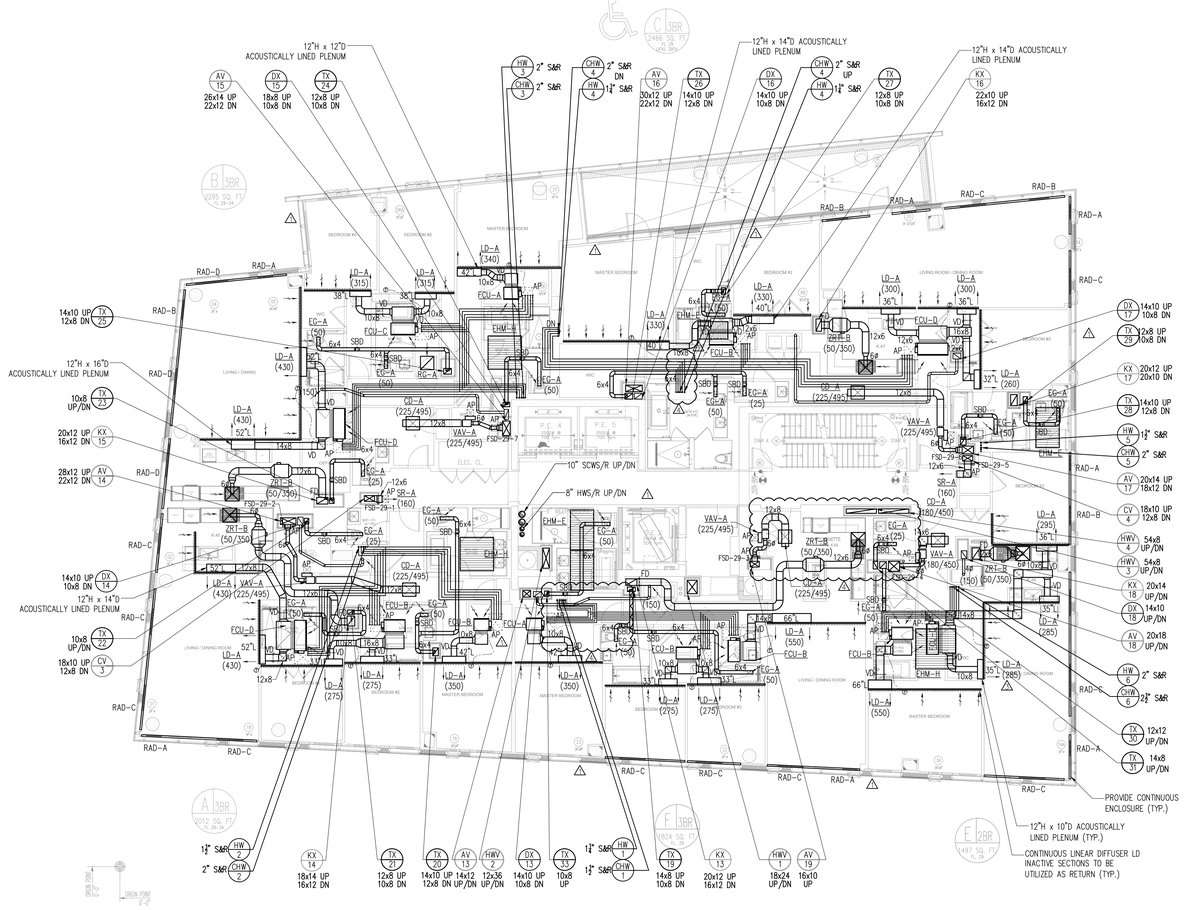
DOB STAMPS & SIGNATURES:
Victor Daza
ES
APPROVED
Under Directive 2 of s27c
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

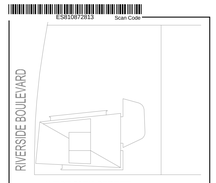
DWG TITLE:
HVAC 28TH FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARA · 077463 · LICENSED PROFESSIONAL ENGINEER

DATE: 11/06/2015
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: M-328.01

M328





KEY PLAN

Number	Date	Revision
9	05/24/17	BULLETIN #1
8	04/14/17	ISSUED FOR CONSTUCTION
7	12/02/16	95% CD - SUBMISSION
6	09/09/16	90% CD - SUBMISSION
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

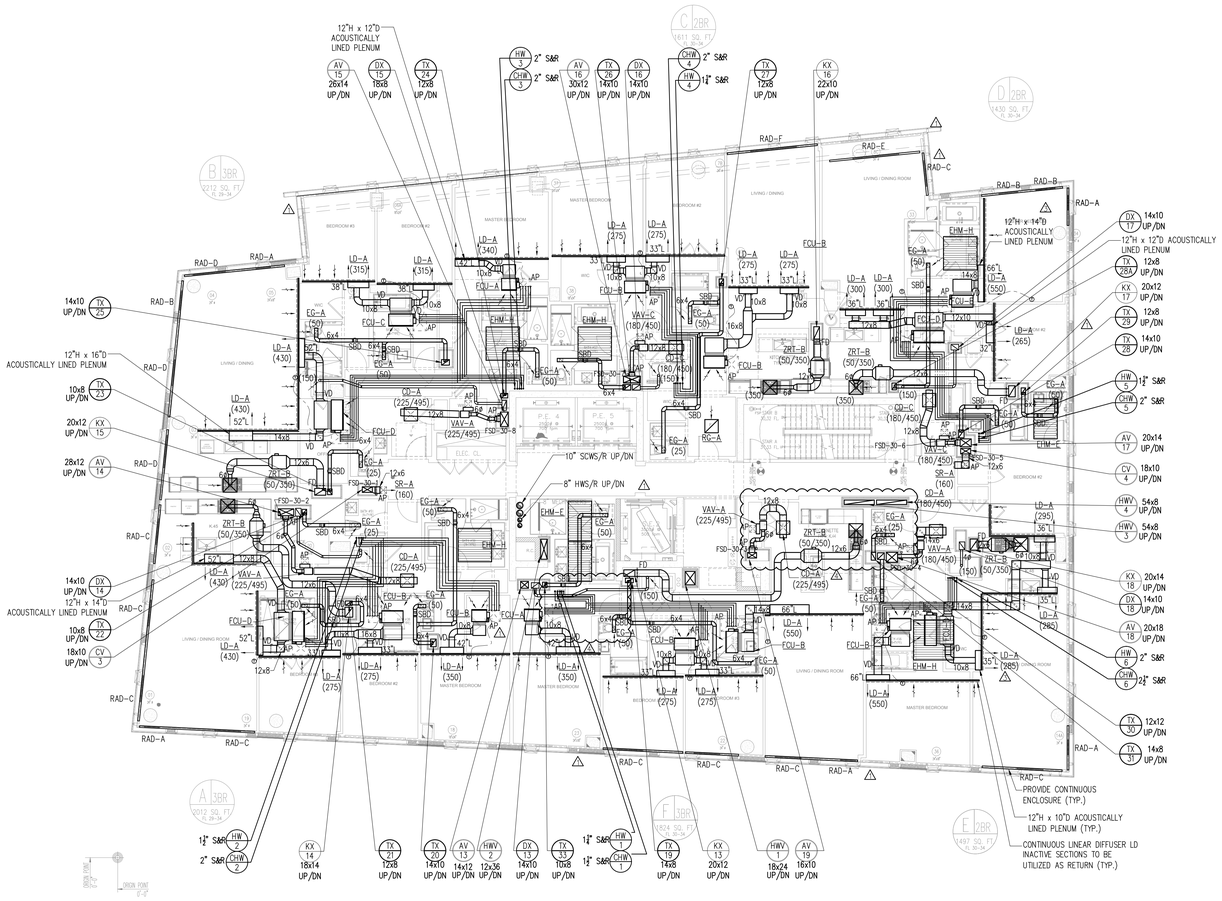
DWG TITLE:
HVAC 29TH FLOOR PLAN

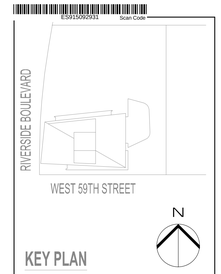
SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE: 11/06/2015
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: M-329.01

M329

DEPT OF BLDGS 121300976 Job Number
E391505053 Scan Code





KEY PLAN

Number	Date	Revision
9	05/24/17	BULLETIN #1 △1
8	04/14/17	ISSUED FOR CONSTUCTION △1
7	12/02/16	95% CD - SUBMISSION
6	09/09/16	90% CD - SUBMISSION △1
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

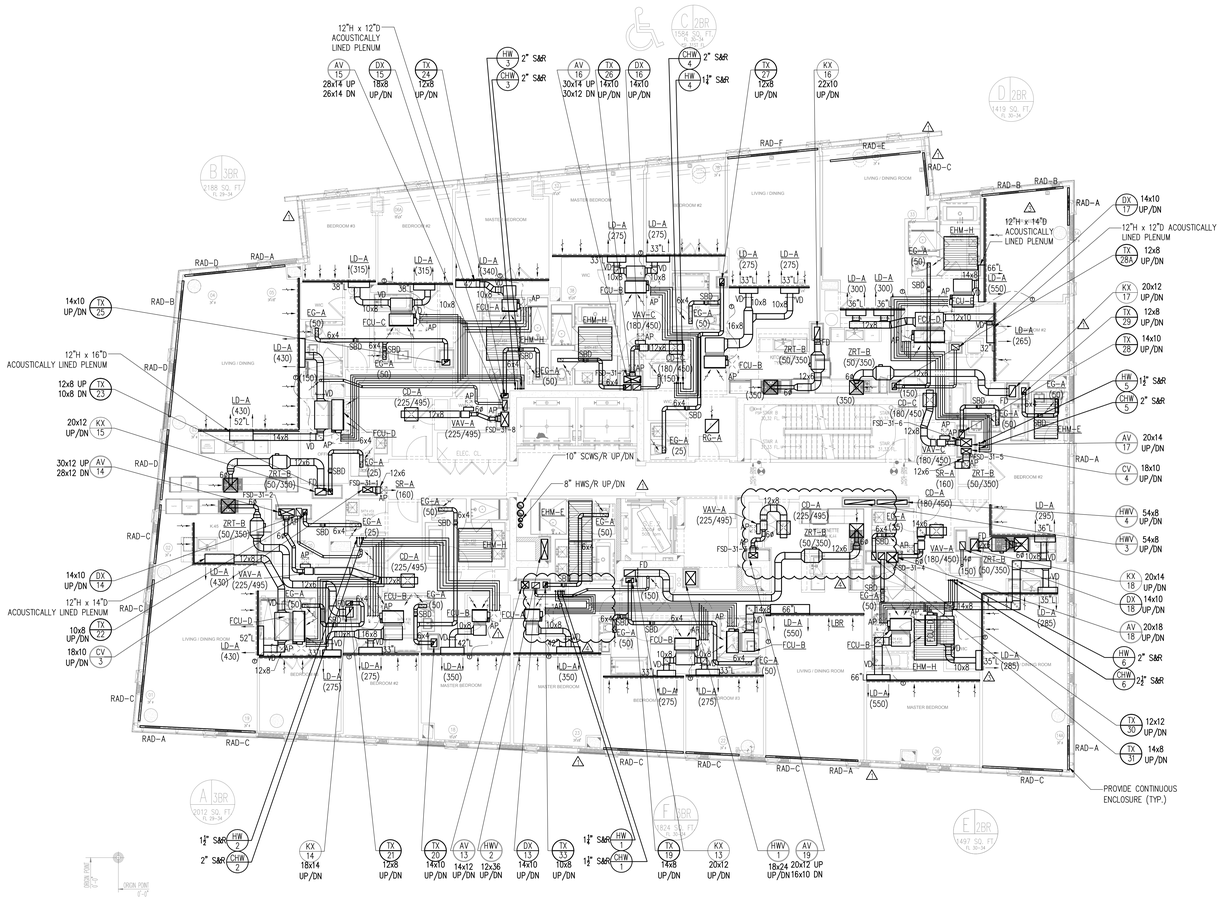
DWG TITLE:
HVAC 30TH FLOOR PLAN

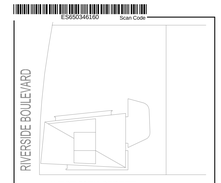
SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE: 11/06/2015
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: M-330.01

M330

PART OF BLOCK 1213 LOT 75 Job Number
E390536481B5 Scan Code





KEY PLAN

Number	Date	Revision
9	05/24/17	BULLETIN #1 △1
8	04/14/17	ISSUED FOR CONSTUCTION △1
7	12/02/16	95% CD - SUBMISSION
6	09/09/16	90% CD - SUBMISSION △1
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

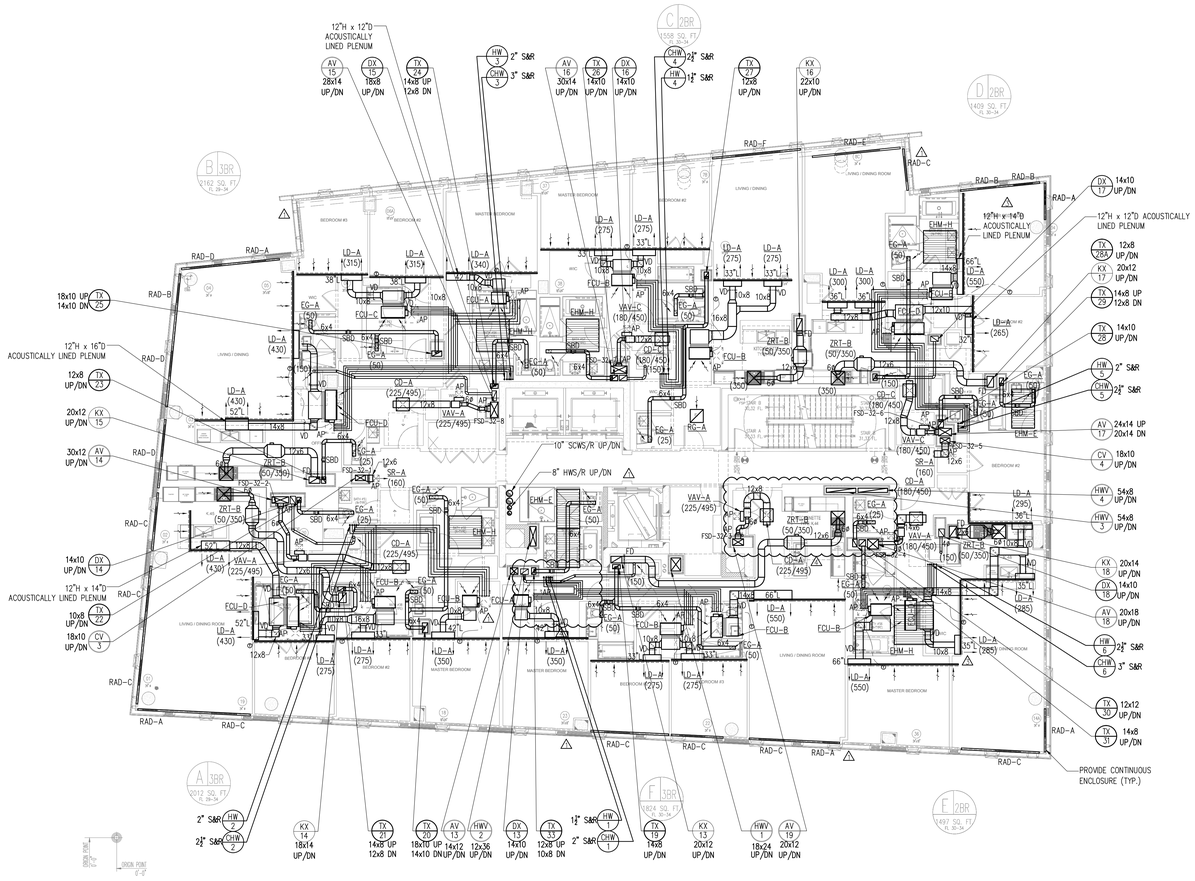
DWG TITLE:
HVAC 31ST FLOOR PLAN

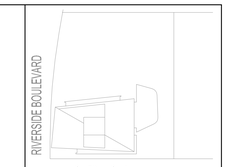
SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE: 11/06/2015
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: M-331.01

M331

DEPT OF BLDGS 121300976 Job Number
E358763O000 Scan Code





KEY PLAN

N

Number	Date	Revision
9	05/24/17	BULLETIN #1
8	04/14/17	ISSUED FOR CONSTRUCTION
7	12/02/16	95% CD - SUBMISSION
6	09/09/16	90% CD - SUBMISSION
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:

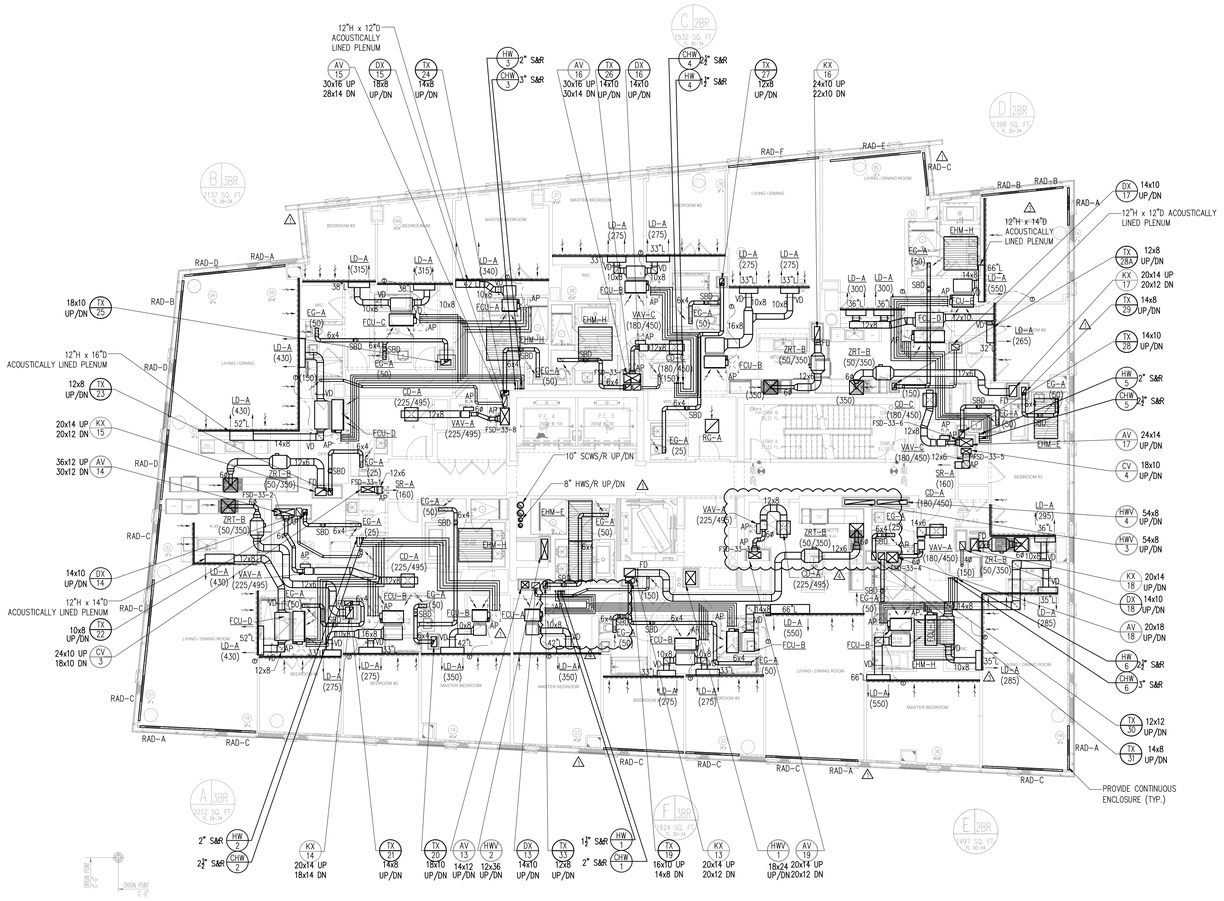
Victor Daza
Es
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

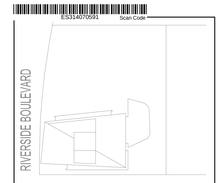
DWG TITLE:
HVAC 32ND FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK
FRANK MUSCARA
77462
LICENSED PROFESSIONAL ENGINEER

DATE: 11/06/2015
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: M-332.01

121172 Job Number
E321457095 Scan Code





KEY PLAN

Number	Date	Revision
9	05/24/17	BULLETIN #1 △1
8	04/14/17	ISSUED FOR CONSTUCTION △1
7	12/02/16	95% CD - SUBMISSION
6	09/09/16	90% CD - SUBMISSION △1
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

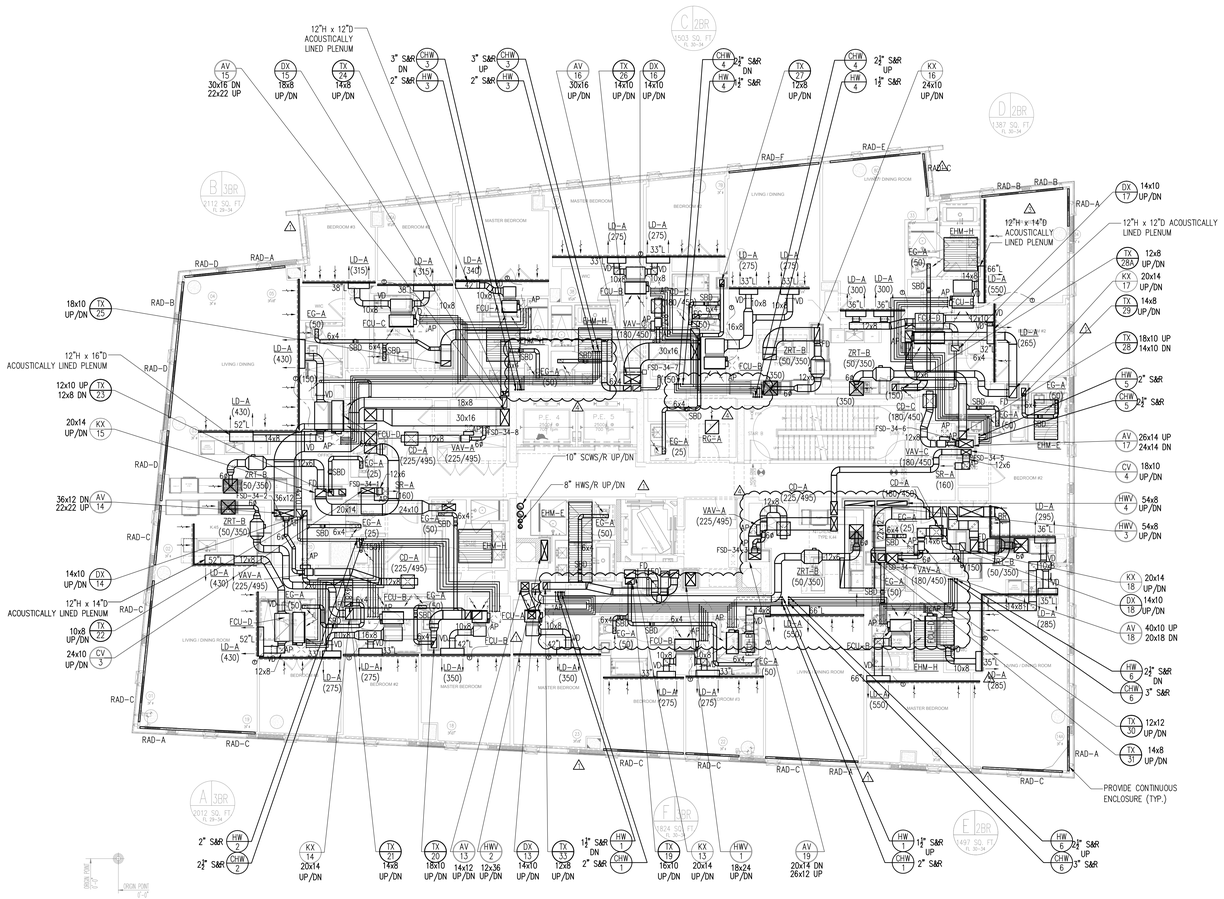
DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 2535
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

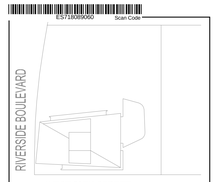
DWG TITLE:
HVAC 33RD FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE: 11/06/2015
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: M-333.01

PART OF BLOCK 1213 LOT 75 Job Number
K5012809090 Scan Code





KEY PLAN

Number	Date	Revision
9	05/24/17	BULLETIN #1
8	04/14/17	ISSUED FOR CONSTUCTION
7	12/02/16	95% CD - SUBMISSION
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5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

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WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Direction of sgs
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

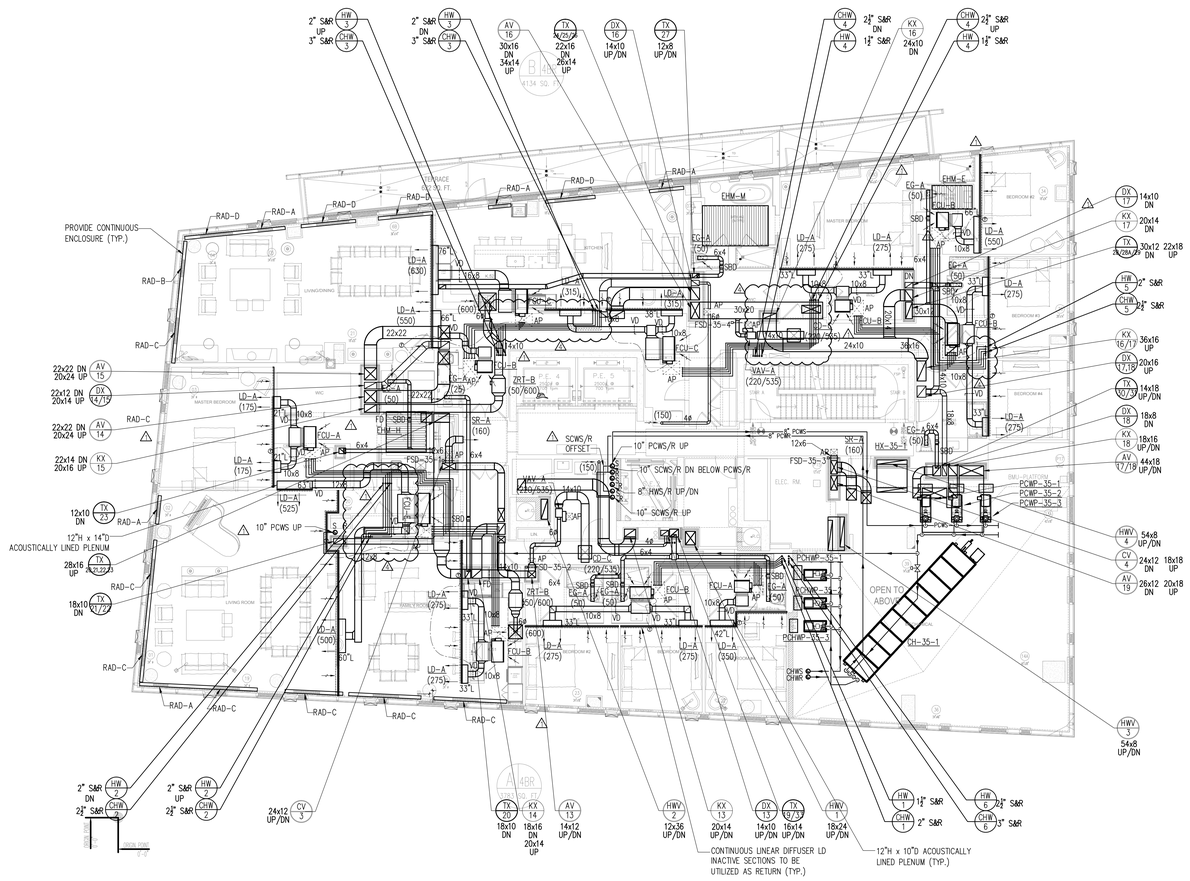
DWG TITLE:
HVAC 34TH FLOOR PLAN

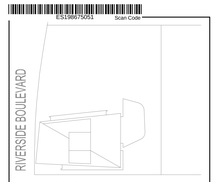
SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE: 11/06/2015
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: M-334.01

M334

121300976 Job Number
E301995750US Scan Code





KEY PLAN

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9	05/24/17	BULLETIN #1
8	04/14/17	ISSUED FOR CONSTUCTION
7	12/02/16	95% CD - SUBMISSION
6	09/09/16	90% CD - SUBMISSION
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

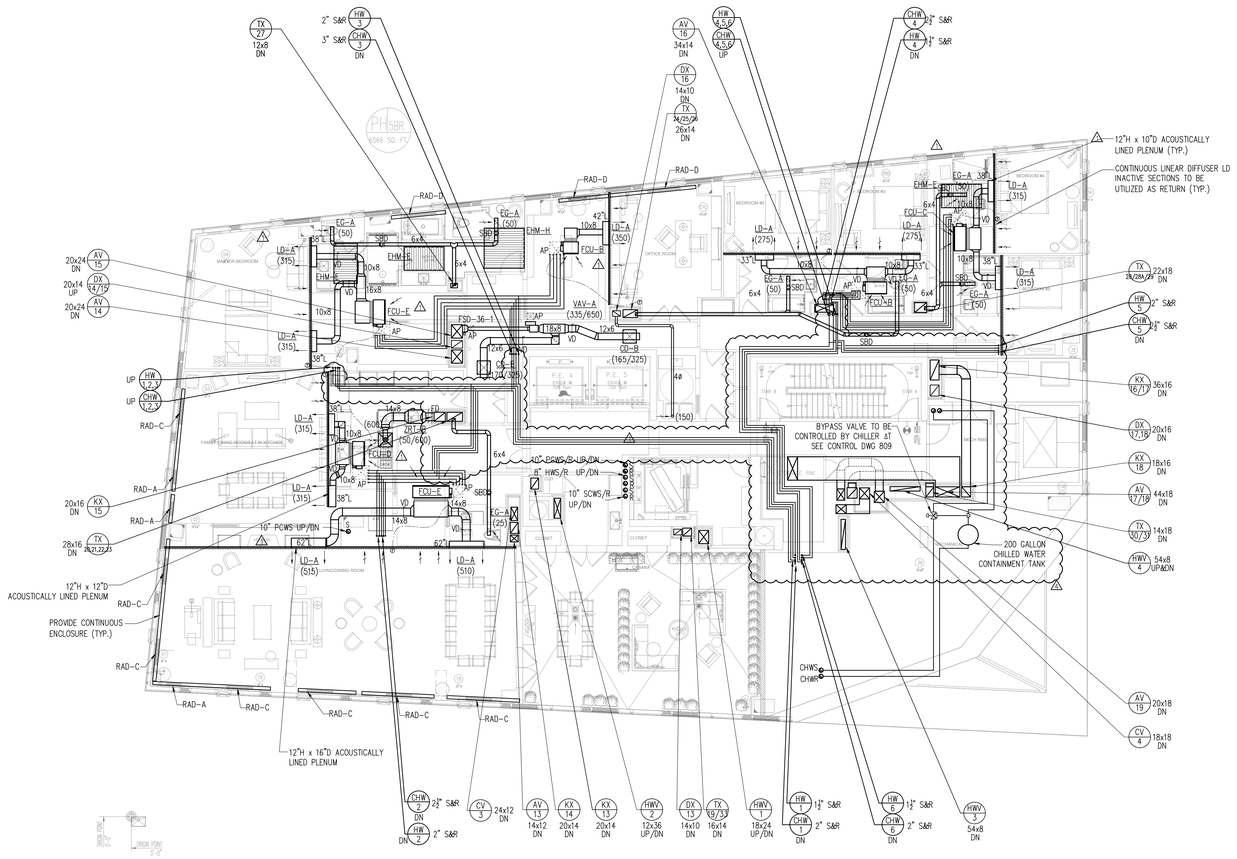
DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
HVAC 35TH FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARA · 074462 · LICENSED PROFESSIONAL ENGINEER

DATE: 11/06/2015
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO.: M-335.01

M335



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HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

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New York, NY 10004
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Under Directive 2 of 1975
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Date: 02/06/2018
NYC Development Hub

DWG TITLE:
HVAC 36TH FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 077462 · LICENSED PROFESSIONAL ENGINEER

DATE: 11/06/2015
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: M-336.01

M336

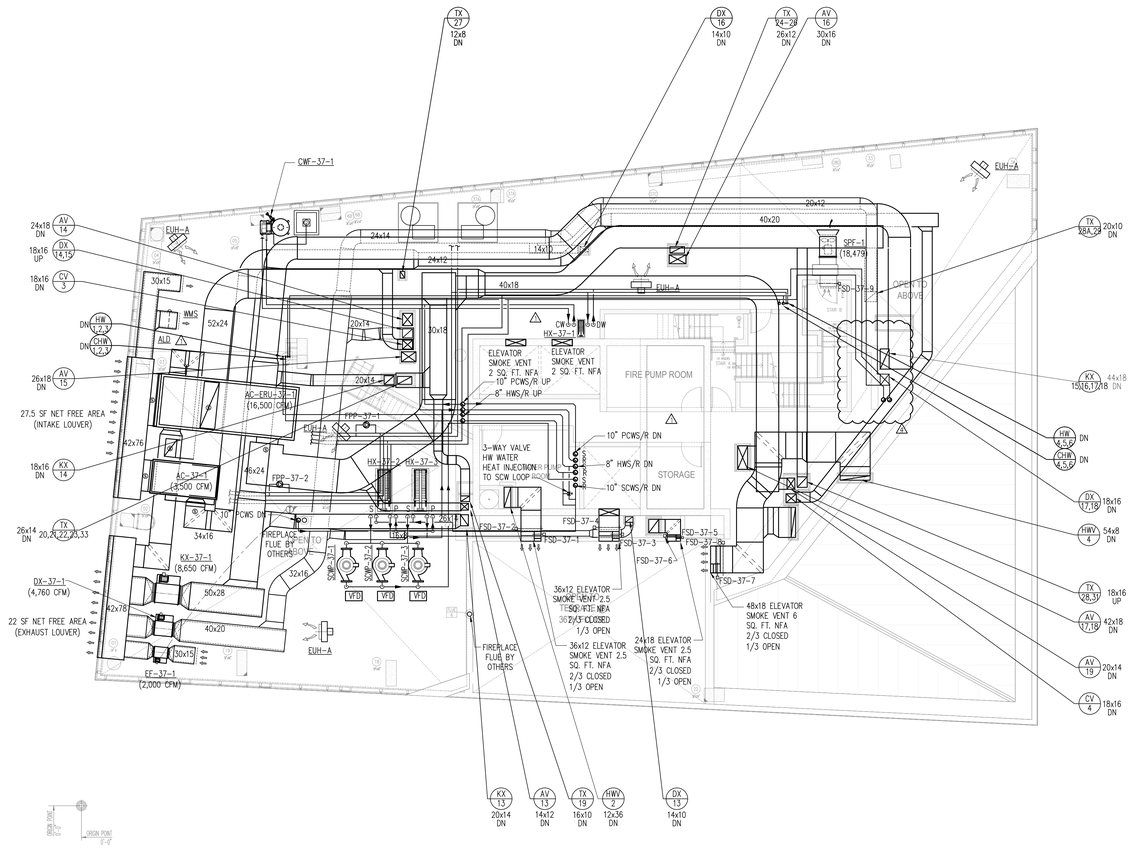
MECHANICAL CONSTRUCTION NOTES:

1. UNITS AC-ERU-37-1 AND AC-37-1 SHALL BE INSTALLED ON METAL FRAMES TO ALLOW FOR BOTTOM DISCHARGE OF DUCTWORK ALONG THE FLOOR. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND COORDINATING THE HEIGHT/STRUCTURAL REQUIREMENTS FOR THE UNITS WITH THE STRUCTURAL ENGINEER AND MANUFACTURER. PROVIDE ALL VIBRATION ISOLATORS IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS AND AS REQUIRED BY THE SOUND CONSULTANT.

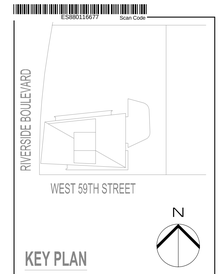
2. PROVIDE ALL STEEL FRAMES AND SUPPORTS TO ALLOW FOR THE INSTALLATION OF DUCTWORK AND PIPING BEING DISTRIBUTED ALONG THE FLOOR.

3. ALL FANS SHALL BE INSTALLED ON METAL FRAMES TO ALLOW FOR DUCTWORK DISTRIBUTION ALONG THE FLOOR. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND COORDINATING HEIGHT AND STRUCTURAL REQUIREMENTS FOR ALL FANS WITH THE STRUCTURAL ENGINEER AND MANUFACTURER. PROVIDE ALL VIBRATION ISOLATORS IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS AND AS REQUIRED BY THE SOUND CONSULTANT.

4. CONTRACTOR TO COORDINATE AND PROVIDE ALL METAL PLATFORMS, WALK WAYS (W/HANDRAILS), SHIP LADDERS WITH SAFETY CAGES REQUIRED FOR ACCESS, SERVICE AND MAINTENANCE OF THE HVAC, ELECTRICAL AND PLUMPING SYSTEMS INCLUDING BUT NOT LIMITED TO AC UNITS, FANS, VALVES, UNIT HEATERS, PUMPS, RISER VENTS, COOLING TOWER FILTER, PLUMBING EQUIPMENT, ELECTRICAL EQUIPMENT, ETC.



37TH FLOOR



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HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

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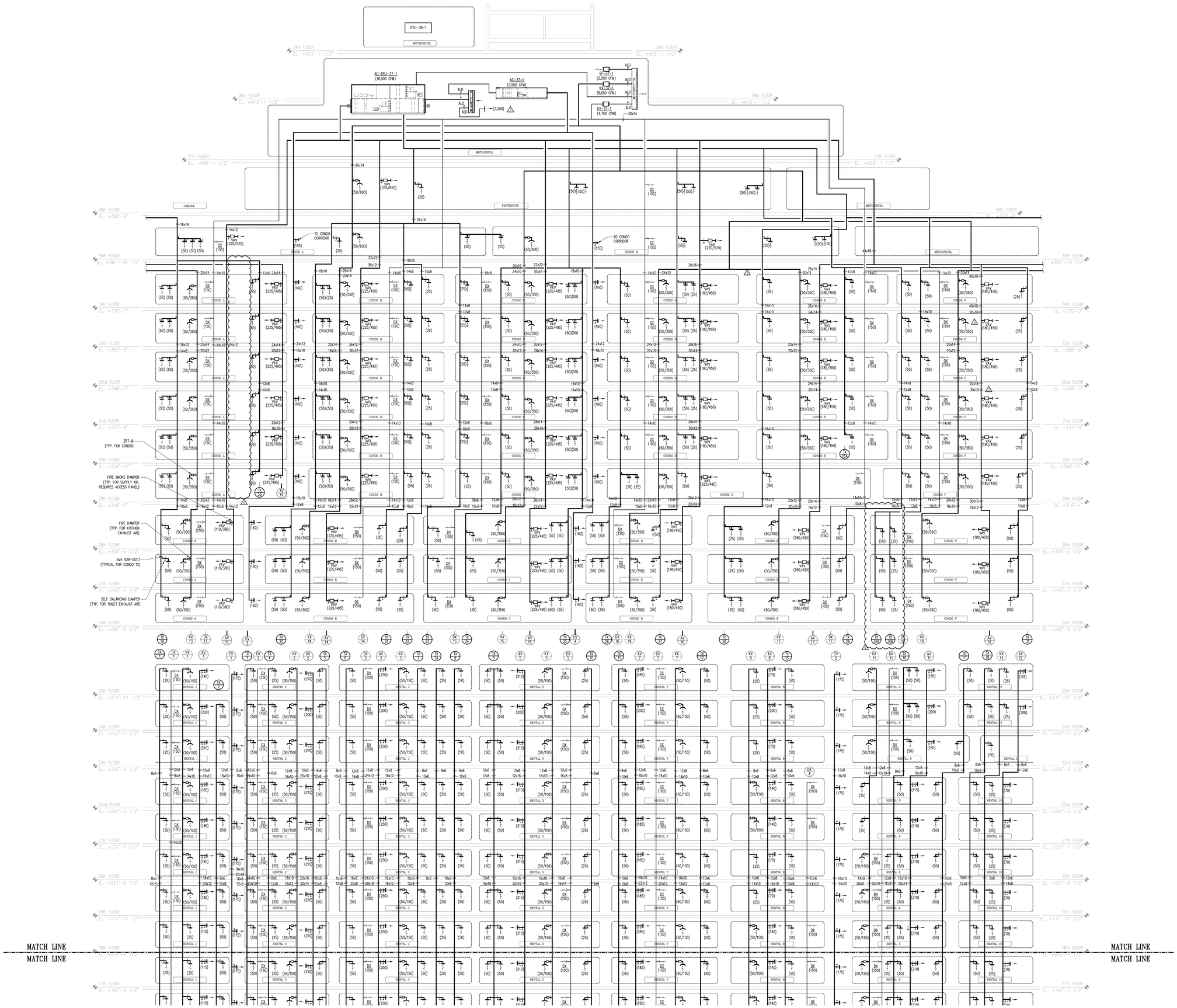
DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

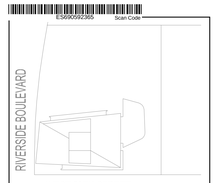
DWG TITLE:
HVAC 37TH FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCOLINO · 77463 · NEW YORK PROFESSIONAL ENGINEER

DATE: 11/06/2015
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO.: M-337.01

M337





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HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

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Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
HVAC AIR RISER DIAGRAM
SHEET NO. 2

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MURDOCCA · 077463 · LICENSED PROFESSIONAL ENGINEER

DATE: 11/06/2015
PROJECT #: N14.08690.00
SCALE: N.T.S.
DWG NO: M-502.01

M502

PLATE AND FRAME HEAT EXCHANGER (ARMSTRONG AS STANDARD)

DESIGNATION	SERVICE	LOCATION	COLD WATER SIDE FLOW RATE (GPM)	COLD WATER SIDE ENT. TEMP. (DEGREES F)	COLD WATER SIDE LVG. TEMP. (DEGREES F)	COLD WATER SIDE LOAD (MBH)	COLD WATER SIDE MAX. P.D. (PSI)	COLD WATER SIDE MAX. WORKING PRESSURE (PSI)	COLD WATER SIDE SURFACE AREA (SQ. FT.)	COLD WATER SIDE FOULING FACTOR	WARM WATER SIDE FLOW RATE (GPM)	WARM WATER SIDE ENT. TEMP. (DEGREES F)	WARM WATER SIDE LVG. TEMP. (DEGREES F)	WARM WATER SIDE LOAD (MBH)	WARM WATER SIDE MAX. P.D. (PSI)	WARM WATER SIDE MAX. WORKING PRESSURE (PSI)	WARM WATER SIDE SURFACE AREA (SQ. FT.)	WARM WATER SIDE FOULING FACTOR	PLATE TYPE / SIZE (MM)	DIMENSIONS OVERALL FRAME SIZE (INCHES) HEIGHT	LENGTH	WIDTH	OPERATING WEIGHT (LBS.)	VIBRATION ISOLATION SPECIFICATION TYPE	STATIC DEFLECTION (INCHES)	MODEL NUMBER	EFFICIENCY REQUIREMENTS CATEGORY (TABLE 6.8.1G)	MINIMUM EFFICIENCY REQUIRED	PROPOSED RATED EFFICIENCY	REMARKS	DRAWING NO.
HX-37-2,3	CONDENSER WATER	37TH FLOOR	750	85	100	6,000	4.75	300	1,677	-	880	102	87	-	6.36	300	1,677	-	AISI 304 / 0.6	92.75	77.13	29.0	8,394	A	1	A-96-2000-193	PLATE & FRAME	NR	NR	-	
HX-SC-6,7	DOMESTIC WATER PREHEAT	SUB-CELLAR	40	40	85	898	5.67	300	54	-	40	102	57	-	5.53	300	54	-	AISI 316L / 0.7	34.63	20.13	9.13	314	A	1	S-M9-350-45	PLATE & FRAME	NR	NR	HX-SC-6 WILL SERVE ZONE 1 HX-SC-7 WILL SERVE ZONE 2	
HX-SC-8,9,10	DOMESTIC WATER PREHEAT	SUB-CELLAR	12	40	85	270	2.67	300	18	-	12	102	57	-	3.25	300	18	-	AISI 316L / 0.7	34.63	15.25	9.13	237	A	1	S-M9-200-16	PLATE & FRAME	NR	NR	HX-SC-8 WILL SERVE ZONE 4 HX-SC-9 WILL SERVE ZONE 5 HX#SC-10 WILL SERVE ZONE 6	
HX-37-1	DOMESTIC WATER PREHEAT	37TH FLOOR	20	40	85	450	2.74	150	33	-	20	100	55	-	2.99	150	33	-	AISI 316L / 0.5	34.63	15	8.25	193	A	1	A-76X-1250-181	PLATE & FRAME	NR	NR	HX-35-2 WILL SERVE ZONE 3	

ELECTRIC UNIT HEATERS

DESIGNATION	HEATING CAPACITY (BTUH)	ELECTRICAL DATA INPUT (KW)	VOLTS/PHASE	AMPS	ENT. AIR TEMPERATURE (DEGREES F)	ENCLOSURE DATA TYPE	DIMENSIONS (INCHES) HOUSING L x W x D	GRILLE L x H x D	MANUFACTURER/MODEL	REMARKS
EDUH-A	10239	3	208/1	15.4	-		33x25x9	-	MARKEL/63-33-D	SEMI-RECESSED
EUH-A	10.236	3.0	277/1	11.0	-	-	16x14x7.5	-	Q-MARK,MUH03-71	PROVIDE CEILING HUNG MOUNTING BRACKET

NOTES:
1. PROVIDE INTEGRAL DISCONNECT SWITCH.

ELECTRIC HEATING MATS (NUHEAT AS STD)

DESIGNATION	DIMENSIONS (INCHES)	OHMS	AMPS	WATTS	MODEL NUMBER	REMARKS
EHM-A	40x27	160	0.8	90	F1006	-
EHM-B	48x24	150	0.8	96	F1206	-
EHM-C	48x48	75	1.6	192	F1212	-
EHM-D	60x60	48	2.5	300	F1515	-
EHM-E	72x42	57	2.1	252	F1810	-
EHM-F	72x48	50	2.4	288	F1812	-
EHM-G	72x60	40	3.0	360	F1815	-
EHM-H	72x72	33	3.6	432	F1818	-
EHM-I	84x60	34	3.5	420	F2115	-
EHM-J	108x60	27	4.5	540	F2715	-
EHM-K	118x48	31	3.9	472	F3012	-
EHM-L	118x60	24	4.9	590	F3015	-
EHM-M	118x72	20	5.9	708	F3018	-
EHM-O	40x48	90	1.3	160	F1012	-

SUPPLY RETURN AND EXHAUST AIR FANS (GREENHECK AS STANDARD)

DESIGNATION	SERVICE	LOCATION	CFM	EXTERNAL STATIC PRESSURE (INCHES OF WATER)	MAX FAN SPEED (RPM)	MAXIMUM OUTLET VELOCITY (FPM)	FAN TYPE	WHEEL DIAMETER (INCHES)	CLASS	DISCHARGE DIRECTION	MOTOR BHP	MOTOR HP	MOTOR RPM	VOLTS/PHASE	MODEL	VIBRATION ISOLATION SPECIFICATION TYPE	STATIC DEFLECTION (INCHES)	EMERGENCY POWER	VFD	REMARKS	DRAWING NO.
KX-2-1	RENTAL KITCHEN EXHAUST	2ND FLOOR	13,650	2.0	1,725	7,263	CENTRIFUGAL INLINE	47	-	-	8.71	10	1725	460/3	BSQ-360-100	-	-	NO	YES	-	
DX-2-1	RENTAL DRYER EXHAUST	2ND FLOOR	12,750	2.0	760	7,160	CENTRIFUGAL INLINE	47	-	-	8.08	10	1725	460/3	BSQ-360-100	-	-	NO	YES	-	
RF-2-1,2	LOBBY RETURN FAN	2ND FLOOR	3,000	1.25	1,934	7,406	CENTRIFUGAL INLINE	19	-	-	1.6	2	1725	208/3	BSQ-140-20	-	-	NO	YES	-	
KX-37-1	TOWER KITCHEN EXHAUST	37TH FLOOR	8,650	2.0	1,561	10,014	CENTRIFUGAL INLINE	34	-	-	7.3	10	1725	460/3	BSQ-240HP-75	-	-	NO	YES	-	
DX-37-1	TOWER DRYER EXHAUST	37TH FLOOR	4,760	2.0	1,630	7,894	CENTRIFUGAL INLINE	23	-	-	3.18	5	1725	460/3	BSQ-180-50	-	-	NO	YES	-	
RF-2-3	RENTAL AMENITY RETURN FAN	2ND FLOOR	3,500	1.25	2,004	8,722	CENTRIFUGAL INLINE	22	-	-	2.05	2	1725	208/1	BSQ-160HP-20	-	-	NO	YES	-	
EF-SC-1	GARAGE EXHAUST FAN	SUB CELLAR	12,000	1.0	1,304	1,218	CENTRIFUGAL INLINE	-	-	-	7.35	10	1725	460/3	TCB-2-24-75	-	-	YES	YES	-	
EF-C-5	BELOW GRADE EMR	CELLAR	150	1.25	1,992	1,218	CENTRIFUGAL INLINE	11	-	-	0.23	0.5	2500	208/1	SQ-97-VG	-	-	YES	YES	-	
SF-SC-1	GARAGE SUPPLY FAN	SUB CELLAR	12,050	1.5	939	8,850	CENTRIFUGAL INLINE	47	-	-	8.03	10	2500	460/3	BSQ-360HP-100	-	-	YES	YES	-	
SF-C-2	CELLAR BOH	CELLAR	410	2.56	2,492	8,559	CENTRIFUGAL INLINE	-	-	-	1.65	2.0	2492	208/1	BSQ-120-20	-	-	-	-	-	
SF-C-1	GARAGE SUPPLY FAN	CELLAR	9,025	1.5	1,548	9,932	CENTRIFUGAL INLINE	34	-	-	6.93	10	1725	460/3	BSQ-240HP-75	-	-	YES	YES	-	
EF-C-3	CELLAR TX	CELLAR	200	1.5	2,267	6,641	CENTRIFUGAL INLINE	11	-	-	.39	1/2	1725	460/3	BSQ-70-5	-	-	NO	NO	-	
EF-C-1	GARAGE EXHAUST FAN	CELLAR	9,000	1.0	1,184	914	CENTRIFUGAL INLINE	-	-	-	4.38	5	1725	460/3	TCB-1-24-50	-	-	YES	YES	-	
EF-SC-2	BOH TX	SUB CELLAR	200	1.25	2,113	6,188	CENTRIFUGAL INLINE	11	-	-	.29	1/2	2500	115/1	SQ-97-VG	-	-	NO	NO	-	
EF-SC-3	SHARED AMENITY TX	SUB CELLAR	300	1.5	2,500	7,323	CENTRIFUGAL INLINE	11	-	-	0.5	3/4	2500	208/1	SQ-97-VG	-	-	NO	NO	-	
EF-SC-4	TRASH ROOM EXHAUST	SUB CELLAR	1,200	1.25	1,950	6,700	CENTRIFUGAL INLINE	17	-	-	0.54	3/4	1950	208/1	SQ-130HP-VG	-	-	NO	NO	-	
EF-SC-5	FO TANK RM	SUB CELLAR	375	1.5	1955	-	CENTRIFUGAL INLINE	-	-	-	0.81	1.0	1725	208/1	BSQ-120-10	-	-	NO	NO	-	
RF-SC-1	AMENITY RETURN FAN	SUB CELLAR	5,000	1.5	1,584	8,861	CENTRIFUGAL INLINE	31	-	-	3.12	3	1725	460/3	BSQ-200HP-30	-	-	NO	YES	-	
EF-C-4	AMENITY DOG RUN EXHAUST	CELLAR	5,000	1.75	1,118	7,171	CENTRIFUGAL INLINE	38	-	-	2.74	3	1725	460/3	BSQ-240HP-30	-	-	NO	YES	-	
EF-C-2	BOH GENERAL EXHAUST FAN	CELLAR	2,500	1.5	1,684	7,329	CENTRIFUGAL INLINE	26	-	-	1.27	1.5	1725	460/3	BSQ-160HP-15	-	-	NO	YES	-	
RF-C-1	AMENITY RETURN FAN	SUB CELLAR	3,500	1.5	1,574	7,822	CENTRIFUGAL INLINE	27	-	-	1.82	2	1725	460/3	BSQ-180HP-20	-	-	NO	YES	-	
SPF-1	REVERSIBLE FAN	ROOF	18,479	4.2	1,770	1,711	DIRECT DRIVE AXIAL	-	-	-	28.82	40	1725	460/3	AX-113-533-1207-A400	-	-	YES	YES	-	
SPF-2	REVERSIBLE FAN	ROOF	18,479	4.2	1,770	1,711	DIRECT DRIVE AXIAL	-	-	-	28.82	40	1725	460/3	AX-113-533-1207-A400	-	-	YES	YES	-	
DX-C-1	RENTAL COMMERCIAL DRYER	CELLAR	1,500	1.0	1,725	-	CENTRIFUGAL INLINE	15.9	-	-	0.62	0.75	1725	208/3	BSQ-120-7	-	-	NO	YES	-	
DX-SC-1	CONDO COMMERCIAL DRYER	SUB-CELLAR	1,125	1.0	1,725	-	CENTRIFUGAL INLINE	15.9	-	-	0.41	0.5	1725	208/3	BSQ-120-5	-	-	NO	YES	-	
EF-1-1	RETAIL TX	1ST FLOOR	150	1.25	1,992	1,218	CENTRIFUGAL INLINE	11	-	-	0.23	0.5	2500	208/1	SQ-97-VG	-	-	NO	NO	-	
EF-SC-6	CONDO PACKAGE	SUB CELLAR	150	1.25	1,992	1,218	CENTRIFUGAL INLINE	11	-	-	0.23	0.5	2500	208/1	SQ-97-VG	-	-	NO	NO	-	
EF-2-1	MECH ROOM VENTILATION	2ND FLOOR	2,000	0.5	1,268	4,856	CENTRIFUGAL INLINE	-	-	-	0.46	0.5	1725	460/3	BSQ-140-5	-	-	NO	YES	-	
EF-37-1	MECH ROOM VENTILATION	37TH FLOOR	2,000	0.5	1,268	4,856	CENTRIFUGAL INLINE	-	-	-	0.46	0.5	1725	460/3	BSQ-140-5	-	-	NO	YES	-	
SX-1-1	REVERSIBLE FAN	1ST	42,751	3.5	1,770	3,958	DIRECT DRIVE AXIAL	-	-	-	50.37	60	1770	460/3	AX-113-533-0821-A600	-	-	YES	YES	-	
TF-20-1	TRANSFER FAN	20TH FLOOR	250	0.25																	

NOTES:
1. MAXIMUM PRESSURE DROP INDICATED IS BASED ON PROJECT AIR DENSITY OF 0.086 POUNDS PER CUBIC FOOT.
2. MINIMUM DYNAMIC INSERTION LOSS VALUES ARE FOR REVERSE FLOW (NOISE AND AIRMOVING IN OPPOSITE DIRECTIONS).
3. SPF-1/2 IS A REVERSIBLE FAN: ACTUAL FAN PERFORMANCE IS 15,000 CFM @ 3.0 in wg ESP, AND 24.5 BHP.

HORIZONTAL FAN COIL UNITS (HTS AS STD)

DESIGNATION	AIR QUANTITY (CFM)	EXTERNAL STATIC PRESSURE (INCHES OF WATER)	COOLING COIL DATA AT 76 DEG. E.A.T. WATER FLOW RATE (GPM)	ENT. WATER TEMPERATURE (DEGREES F)	LVG. WATER TEMPERATURE (DEGREES F)	ENT. AIR TEMPERATURE (DEGREES F)	LVG. AIR TEMPERATURE (DEGREES F)	TOTAL C.L.G. CAPACITY (MBH)	SENSIBLE C.L.G. CAPACITY (MBH)	HOT WATER HEATING COIL AT 70 DEG. E.A.T. WATER FLOW RATE (GPM)	ENT. WATER TEMP. (DEG. F)	LVG. AIR TEMPERATURE (DEGREES F)	HTG. CAPACITY (MBH)	PRESSURE DROP (FT.)	FAN MOTOR DATA MINIMUM FAN POWER	VOLTS/PHASE	VIBRATION ISOLATION SPECIFICATION TYPE	STATIC DEFLECTION (INCHES)	MODEL NUMBER	SYSTEM METERING CONNECTION	EMERGENCY POWER	VFD	REMARKS
A	350	0.25	1.2	42	54	57.0	56.0	7.2	6.8	0.5	8.3	150	130	91.8	0.8	1.9	1/3 HP	115/1	NH	1/4	HTS-HH104	CONDO	NO	-	-
B	550	0.25	2.3	42	54	55.9	54.7	13.6	11.5	2.1	12.8	150	130	91.2	1.3	5.3	1/3 HP	115/1	NH	1/4	HTS-HH106	CONDO	NO	-	-
C	630	0.25	2.8	42	54	55.0	53.9	16.8	13.8	3.4	14.6	150	130	91.2	1.5	7.0	1/3 HP	115/1	NH	1/4	HTS-HH108	CONDO	NO	-	-
D	865	0.25	3.9	42	54	54.5	53.7	23.7	19.4	3.6	22.8	150	130	94.2	2.3	9.8	1/3 HP	115/1	NH	1/4	HTS-HH110	CONDO	NO	-	-
E	1,025	0.25	5.0	42	54	53.6	52.9	30.0	24.0	6.4	26.6	150	130	93.7	2.7	9.1	1/3 HP	115/1	NH	1/4	HTS-HH112	CONDO	NO	-	-
FCU-14-1	1,000	1.25	8.4	42	52.5	54.4	53.4	44.2	31.3	7.0	40.7	150	131	82.2	4.4	2.7	2 HP	208/1	NH	1/4	HTS-AH003A	CONDO	NO	-	-
FCU-14-2	1,000	1.25	8.4	42	52.5	54.4	53.4	44.2	31.3	7.0	40.7	150	131	82.2	4.4	2.7	2 HP	208/1	NH	1/4	HTS-AH003A	CONDO	NO	-	-
FCU-14-3	1,000	1.25	8.4	42	52.5	54.4	53.4	44.2	31.3	7.0	40.7	150	131	82.2	4.4	2.7	2 HP	208/1	NH	1/4	HTS-AH003A	CONDO	NO	-	-
FCU-14-4	1,000	1.25	8.4	42	52.5	54.4	53.4	44.2	31.3	7.0	40.7	150	131	82.2	4.4	2.7	2 HP	208/1	NH	1/4	HTS-AH005A	CONDO	NO	-	-
FCU-27-1	2,350	1.0	13.2	42	52.6	53.6	52.5	70.1	55.0	9.8	-	-	-	-	-	-	2 HP	208/1	NH	1/4	HTS-AH005A	RENTAL	YES	-	PROVIDE A CIRCULATOR PUMP ON EM POWER
FCU-27-2	900	1.0	5.0	42	51.6	54.8	53.6	24.2	19.9	3.1	-	-	-	-	-	-	2 HP	208/1	NH	1/4	HTS-AH002A	RENTAL	YES	-	PROVIDE A CIRCULATOR PUMP ON EM POWER

NOTES:
1. ALL DIRECT DRIVE FAN COIL UNITS TO BE PROVIDED WITH ECM MOTORS.
2. FAN COIL UNITS TO BE PROVIDED WITH LOW STATIC (0.2") MERV 13 FILTERS AND ASSOCIATED FILTER RACK AS REQUIRED.
3. SEE SPECS AND DETAILS FOR VIBRATION ISOLATOR TYPE.

WATER FILTERING UNIT (AMERIWATER AS STD)

TYPE DESIGNATION	SERVICE	LOCATION	FLOW RATE (GPM)	CONNECTION SIZE (INCHES) INLET	OUTLET	ELECTRICAL PUMP (HP)	POWER	VIBRATION ISOLATION SPECIFICATION TYPE	STATIC DEFLECTION (INCHES)	MODEL NUMBER	REMARKS	SYSTEM METERING CONNECTION	DRAWING NO.
CWF-37-1	CONDENSER WATER	37TH FLOOR	15	1½	1½	1.0	460/3Ø	-	-	CW116H	-	COMMON	M-337

EXPANSION TANKS (BELL & GOSSETT AS STD)

DESIGNATION	SERVICE	LOCATION	SYSTEM VOLUME (GALLONS)	TEMPERATURE (DEGREES F) COLD TEMP.	HOT TEMP.	PRESSURE (PSIG) FILL	OPERATING	TANK VOLUME (GALLONS) ACCEPTANCE	TOTAL	TANK SIZE (INCHES) HEIGHT	DIAMETER	MODEL NUMBER	SHIPPING WEIGHT (LBS)	REMARKS
ET-37-1	CONDENSER WATER	37TH FLOOR	4600	40	102	8	60	-	53	38-3/8	24	B-200	204	
ET-39-1	HOT WATER	39TH FLOOR	4200	40	150	180	50	-	158	65-1/8	-	B-600	550	
ET-35-1	CHILLED WATER	35TH FLOOR	2205	40	80	30	40	-	72	50-7/8	24	B-300	268	

AIR COOLED AIR CONDITIONING UNITS (HTS AS STD)

DESIGNATION	SERVICE	LOCATION	TOTAL AIR QUANTITY (CFM)	OUTSIDE AIR QUANTITY (CFM)	FILTER SPECIFICATION TYPE	MIN. EFFICIENCY %	AIR FRICTION (IN. OF WTR) CLEAN	REPLACE	REFRIGERATION TOTAL C.L.G. CAPACITY (MBH)	SENSIBLE C.L.G. CAPACITY (MBH)	EVAPORATOR COIL ENTERING AIR TEMP. DRY BULB (DEG. F)	WET BULB (DEG. F)	LEAVING AIR TEMP. DRY BULB (DEG. F)	WET BULB (DEG. F)	CONDENSER AIR QUANTITY (CFM)	AMBIENT AIR TEMPERATURE (DEGREES F)	MIN. OPERATING AMBIENT (DEGREES F)	CONDENSER FAN NO. OF FANS	HP/ FAN	COMPRESSOR NUMBER OF COMPRESSORS	TOTAL EER (BTU/H)	NOMINAL HORSEPOWER	HEATING COIL DESIGNATION (HOT WATER, GAS, SPECIFIC)	SUPPLY FAN TOTAL STATIC PRESSURE (IN. OF WATER)	STATIC PRESSURE DROP ACROSS COOLING (IN. OF WATER)	MAX. FAN SPEED (RPM)	OUTLET VELOCITY (FPM)	WHEEL DIAMETER (INCHES)	TYPE	CLASS	MOTOR MOTOR BHP	MINIMUM MOTOR HP	MOTOR RPM	VOLTS/PHASE	EMERGENCY POWER	VFD	REMARKS	SYSTEM METERING CONNECTION
AC-SC-1	UNDERGROUND EMR	SEE PLANS	2400	-	-	-	-	-	94	52	85	63	-	-	6100	-	-	1	3	2	-	-		-	-	1	-	-	-	-	-	-	3.0	-	208/3	-	-	HTS-DSH-0968	COMMON
AC-SC-2	TELECOM RM	SEE PLANS	2400	-	-	-	-	-	94	52	85	63	-	-	6100	-	-	1	3	2	-	-		-	-	1	-	-	-	-	-	-	3.0	-	208/3	-	-	HTS-DSH-0968	COMMON
RTU-38-1	38TH FL EMR	SEE PLANS	2630	-	-	-	-	-	84	61	80	67	59	57	2630	-	-	2	1.4A	2	88000	26.2A		-	-	1	-	-	15	-	-	-	2.0	-	460/3	-	-	HTS-RTU-090	TOWER

COOLING TOWERS (BAC AS STD)

DESIGNATION	LOCATION	TYPE	TOTAL FLOW RATE (GPM)	ENT. WATER TEMPERATURE (DEGREES F)	LVG. WATER TEMPERATURE (DEGREES F)	AMBIENT AIR TEMP (DEGREES F. W.B.)	GPM PER CELL	NUMBER OF CELLS	FAN MOTOR DATA NUMBER OF FAN MOTORS	HP PER FAN MOTOR	RPM	VOLTS/PHASE	MODEL NUMBER	EFFICIENCY REQUIREMENTS (GPM/HP) CATEGORY (TABLE 6.8.1C)	MINIMUM EFFICIENCY REQUIRED	PROPOSED RATED EFFICIENCY	OPERATING WEIGHT W/O STEEL SUPPORT (LBS)	BASIN HEATER NO. & KW	VIBRATION ISOLATION SPECIFICATION TYPE	STATIC DEFLECTION (INCHES)	EMERGENCY POWER	VFD	SYSTEM METERING CONNECTION	REMARKS	DRAWING NO.
CT-1	ROOF	INDUCED DRAFT	1,090	100	85	78	1,090	1	1	30	-	-	SZE-1020-070	AXIAL FAN	>38.2	36.3	20,370	(2) 12	8	4	NO	YES	COMMON	-	-
CT-2	ROOF	INDUCED DRAFT	1,090	100	85	78	1,090	1	1	30	-	-	SZE-1020-070	AXIAL FAN	>38.2	36.3	20,370	(2) 12	8	4	NO	YES	COMMON	-	-

CONSTANT AIR REGULATOR SCHEDULE (AMERICAN ALDES AS STD.)

DESIGNATION	SERVICE	CFM	ELEMENT SIZE DIAMETER (INCHES)	MIN. STATIC PRESSURE	MODEL NUMBER	REMARKS
SBD-A	SUPPLY OR EXHAUST	20-80	5"	0.1"	CAR-LP-II 5x5	PART NUMBER: 19 134LP (6x6 DUCT SIZE)
SBD-B	SUPPLY OR EXHAUST	80-190	8"	0.1"	CAR-LP-II 8x8	PART NUMBER: 19 138LP (8x8 DUCT SIZE)
SBD-C	SUPPLY OR EXHAUST	190-300	10"	0.1"	CAR-LP-II 10x10	PART NUMBER: 19 143LP (10x10 DUCT SIZE)

NOTES: 1. CAR UNIT SHALL BE UL-2043 SAFETY LISTED AND LABELED FOR FLAME AND SMOKE GENERATION.
2. PROVIDE V-GASKET AT FRONT OF ASSEMEBLY IN ORDER TO PREVENT DUCT LEAKAGE.

WATER COOLED AIR CONDITIONING UNITS (LIEBERT AS STANDARD)

DESIGNATION	SERVICE	LOCATION	TOTAL AIR QUANTITY (CFM)	OUTSIDE AIR QUANTITY (CFM)	FILTER SPECIFICATION TYPE	MINIMUM EFFICIENCY %	AIR FRICTION (IN. OF WTR.) CLEAN	REPLACE	REFRIGERATION SYSTEM CAPACITY TOTAL C.L.C. CAPACITY (MBH)	SENSIBLE C.L.C. CAPACITY (MBH)	EVAPORATOR COIL ENTERING AIR TEMP. DRY BULB (DEG. F)	WET BULB (DEG. F)	LEAVING AIR TEMP. DRY BULB (DEG. F)	WET BULB (DEG. F)	AIR FRICTION (IN. OF WTR)	CONDENSER WATER FLOW RATE (GPM)	ENT. WATER TEMPERATURE (DEGREES F)	LVG. WATER TEMPERATURE (DEGREES F)	WATER P.D. (FEET OF WATER)	WORKING PRESSURE (PSIG)	COMPRESSOR TYPE	QUANTITY	ELECTRICAL CHARACTERISTIC NOMINAL TONNAGE	VOLTS/PHASE	POWER KW	MOTOR LRA (EA)	FANS TOTAL STATIC PRESSURE (INCHES OF WTR)	STATIC PRESSURE DROP (INCHES OF WTR)	OUTLET VELOCITY (FPM)	NUMBER OF FANS	FAN RPM	FAN MOTOR MOTOR BHP	MOTOR HP	MOTOR POWER KW	VOLTS/PHASE	TOTAL OPERATING WEIGHT (LBS)	MODEL NUMBER	MANUFACTURER	EMERGENCY POWER	VFD	REMARKS	SYSTEM METERING CONNECTION
AC-SC-3	ELEC SERVICE RM	SUB CELLAR	8000	-	MERV 8	-	-	-	196.7	183.3	75	60	53.6	50.8	-	33.9	87	102	7	-	DIGITAL	2	-	460/3	13.92	-	-	-	-	-	-	-	-	2.31	460/3	-	LIEBERT DS DS053WD	-			-	COMMON

HOT WATER BOILER (BENCHMARK AS STD)

DESIGNATION	SERVICE	LOCATION	BOILER H.P.	GROSS OUTPUT (MBH)	NET OUTPUT (MBH)	MINIMUM STARTING SUPPLY PRESSURE (PRESSURE) (SQ. FT.)	DISPLACEMENT VOLUME (CU. FT.)	PASS ARRANGEMENT	MAX OPERATING PRESSURE (PSIG)	RELIEF VALVE SET POINT (PSIG)	MINIMUM EFFICIENCY RATED LOAD (%)	HOT WATER DATA FLOW RATE (GPM)	ENT. TEMP (DEGREES F)	LVG. TEMP (DEGREES F)	PRESS. DROP (FT. OF WATER)	GAS BURNER DATA GAS TYPE	GAS HEAT CONTEN (BTU/CFT)	PROPOSED RATED LOAD (%)	GAS INLET PRESSURE (INCHES W.C.)	DRAFT BLOWER DATA AIR QUANTITY (CFM)	FLUE OUTLET SIZE (IN.)	MOTOR HP	VOLTS/PHASE	FULL LOAD AMPS	MODEL NUMBER	EFFICIENCY REQUIREMENTS CATEGORY (TABLE 6.8.1F)	MINIMUM EFFICIENCY REQUIRED	PROPOSED RATED EFFICIENCY	OPERATING WEIGHT (LBS)	VIBRATION ISOLATION SPECIFICATION TYPE	STATIC DEFLECTION (INCHES)	UL NUMBER	REMARKS
B-39-1	HOT WATER	39TH FLOOR	-	5670	400	-	-	-	150	-	87	-	-	-	-	NG	-	-	14"				460/3	12	BMK 6000	>2,500 MBH	82% Ec	87% Ec	3,920	-	-	-	-
B-39-2	HOT WATER	39TH FLOOR	-	5670	400	-	-	-	150	-	87	-	-	-	-	NG	-	-	14"				460/3	12	BMK 6000	>2,500 MBH	82% Ec	87% Ec	3,920	-	-	-	-
B-39-3	HOT WATER	39TH FLOOR	-	5670	400	-	-	-	150	-	87	-	-	-	-	NG	-	-	14"				460/3	12	BMK 6000	>2,500 MBH	82% Ec	87% Ec	3,920	-	-	-	-
B-39-4	HOT WATER	39TH FLOOR	-	5670	400	-	-	-	150	-	87	-	-	-	-	NG	-	-	14"				460/3	12	BMK 6000	>2,500 MBH	82% Ec	87% Ec	3,920	-	-	-	-

FUEL OIL PUMPS (PREFERRED UTILITIES AS STD)

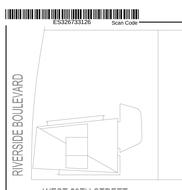
DESIGNATION	SERVICE	LOCATION	FLOW RATE (GPM)	TOTAL PUMP HEAD (PSI)	STATIC HEAD (FT. OF WATER)	CASING PRESSURE (PSIG)	MINIMUM PUMP EFFICIENCY (%)	MOTOR DATA BRAKE HP	MINIMUM MOTOR HP	RPM	VOLTS/PHASE	MODEL NUMBER	PUMP TYPE	FUEL TYPE	VIBRATION ISOLATION SPECIFICATION TYPE	STATIC DEFLECTION (INCHES)	EMERGENCY POWER	REMARKS
FOP-SC-1	EMERGENCY GENERATOR	CELLAR 3	340	50	-	-	-	-	1/2	1,140	208/3	ATPSF-210-208-50	AUTOMATIC DUPLEX	NO. 2	A, B-1	2	YES	-

NOTES:
1. PROVIDE DISCONNECT SWITCH.
2. PROVIDE CONTROLLER ASSEMBLY WITH POWER FEED FOR EACH MOTOR.

FUEL OIL TANK (CARDINAL TANKS AS STD)

DESIGNATION	SERVICE	LOCATION	TANK SIZE CAPACITY (GAL)	LENGTH - SHELL	LENGTH - OVERALL	DIAMETER	MATERIAL	SADDLES	REMARKS
FOT-SC-1	EMERGENCY GENERATOR FUEL OIL	CELLAR 3	1,080	11'-0"	12'-0"	48"	CARBON STEEL	2	-

NOTES:
1. FIELD FABRICATED CARBON STEEL FUEL OIL TANK COMPLIANT WITH NYC MECHCANICAL CODE SECTION 1305.14 – ALTERNATE TANK DESIGN.



KEY PLAN

Number	Date	Revision
9	05/24/17	BULLETIN # 1
8	04/14/17	ISSUED FOR CONSTUCTION
7	12/02/16	95% CD - SUBMISSION
6	09/09/16	90% CD - SUBMISSION
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein

WATER COOLED AIR HEAT PUMPS SCHEDULE - HTS AS STD

HEAT PUMP DESIGNATION	SERVICE	LOCATION	TOTAL AIR QUANTITY (CFM)	OUTSIDE AIR QUANTITY (CFM)	FILTER: SPECIFICATION TYPE	FILTER: MINIMUM EFFICIENCY %	FILTER: AIR FRICTION (IN. OF WTR.): CLEAN	FILTER: AIR FRICTION (IN. OF WTR.): REPLACE	SYSTEM CAPACITY: TOTAL O.C. CAPACITY (MBH)	SYSTEM CAPACITY: SENSIBLE O.C. CAPACITY (MBH)	EVAPORATOR COIL (R-410): ENTERING AIR TEMP.: DRY BULB (DEG. F)	EVAPORATOR COIL: ENTERING AIR TEMP.: WET BULB (DEG. F)	EVAPORATOR COIL: LEAVING AIR TEMP.: DRY BULB (DEG. F)	EVAPORATOR COIL: LEAVING AIR TEMP.: WET BULB (DEG. F)	EXTERNAL STATIC (IN. OF WATER)	REFRIGERATION (R-410a): HEATING: COAXIAL HEATING CAPACITY (MBH)	HEATING: ENTERING AIR TEMP. (DEG. F)	HEATING: LEAVING AIR TEMP. (DEG. F)	CONDENSER: WATER FLOW RATE (GPM)	CONDENSER: ENT. WATER TEMPERATURE (DEGREES F)	CONDENSER: LVG. WATER TEMPERATURE (DEGREES F)	CONDENSER: WATER P.D. (FT. OF WATER)	CONDENSER: WORKING PRESSURE (PSIG)	ELECTRICAL DATA: ELECTRICAL CHARACTERISTIC: FLA AMP	MCA AMP	MAX FUSE AMP	VOLTS/PHASE	MANUFACTURER	MODEL NUMBER	EFFICIENCY REQUIREMENTS: CATEGORY (TABLE 6.8.1D): EER	MINIMUM EFFICIENCY REQUIRED: COP	PROPOSED EFFICIENCY: EER	PROPOSED EFFICIENCY: COP	MEA #	REMARKS	SYSTEM METERING CONNECTION
A	RESIDENCE	SEE PLAN	310	–	–	–	–	–	8.8	6.4	75	63	56.0	–	0.1	12.9	70	108.4	1.6	87	102	3.6	–	1.0	5.6	–	208/1	HTS	HRPX030	<65 MBH	9.0	3.0	14.0	4.4		SEE NOTES	RENTAL
B	RESIDENCE	SEE PLAN	405	–	–	–	–	–	11.1	7.6	75	63	57.7	–	0.1	15.1	70	104.4	2.0	87	102	5.7	–	1.0	6.9	–	208/1	HTS	HRPX040	<65 MBH	9.0	3.0	14.0	4.4		SEE NOTES	RENTAL
C	RESIDENCE	SEE PLAN	600	–	–	–	–	–	15.7	12.5	75	63	55.8	–	0.1	20.1	70	100.9	3.0	87	102	5.2	–	1.5	10.8	–	208/1	HTS	HRPX060	<65 MBH	9.0	3.0	14.2	4.7		SEE NOTES	RENTAL
D	RESIDENCE	SEE PLAN	815	–	–	–	–	–	21.2	16.9	75	63	55.9	–	0.1	30.7	70	104.6	4.0	87	102	5.4	–	2.1	19.0	–	208/1	HTS	HRPX080	<65 MBH	9.0	3.0	14.7	4.9		SEE NOTES	RENTAL
E	RESIDENCE	SEE PLAN	975	–	–	–	–	–	24.9	19.4	75	63	56.7	–	0.1	37.4	70	105.4	5.0	87	102	9.0	–	2.6	20.0	–	208/1	HTS	HRPX100	<65 MBH	9.0	3.0	14.0	4.4		SEE NOTES	RENTAL
F	RESIDENCE	SEE PLAN	1035	–	–	–	–	–	29.9	21.3	75	63	56.0	–	0.1	39.3	70	105.0	6.0	87	102	8.3	–	3.0	23.9	–	208/1	HTS	HRPX120	<65 MBH	9.0	3.0	14.0	4.4		SEE NOTES	RENTAL
HP-C-1	PARKING OFFICE	CELLAR	400	25	–	–	–	–	14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9	–	6.6	8.0	–	208/1	HTS	HTS-FUD-H-015	<65 MBH	9.0	3.0	12.9	4.7			
HP-C-2	BIKE STORAGE	CELLAR	840	50	–	–	–	–	27.4	19.1	76	63	55	51.8	0.8	28.4	67	107	4.6	87	102	2.14	–	15.8	19.3	–	208/1	HTS	HTS-FUD-H-030	<65 MBH	9.0	3.0	13.0	4.6			
HP-C-3	ELEV LOBBY / CORR	CELLAR	620	50	–	–	–	–	19.4	15.4	77	64	53.4	52.6	0.6	19.2	65	102	3.34	87	102	3.2	–	8.2	9.8	–	208/1	HTS	HTS-FUD-H-019	<65 MBH	9.0	3.0	11.8	4.6			
HP-C-4	EMERGENCY GEN RM	CELLAR	620	50	–	–	–	–	19.4	15.4	77	64	53.4	52.6	0.6	19.2	65	102	3.34	87	102	3.2	–	8.2	9.8	–	208/1	HTS	HTS-FUD-H-019	<65 MBH	9.0	3.0	11.8	4.6			
HP-C-5	RENTAL/ BLD STORAGE	CELLAR	840	50	–	–	–	–	27.4	19.1	76	63	55	51.8	0.8	28.4	67	107	4.6	87	102	2.14	–	15.8	19.3	–	208/1	HTS	HTS-FUD-H-030	<65 MBH	9.0	3.0	13.0	4.6			
HP-C-6	STORAGE	CELLAR	400	25	–	–	–	–	14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9	–	6.6	8.0	–	208/1	HTS	HTS-FUD-H-015	<65 MBH	9.0	3.0	12.9	4.7			
HP-C-7	STORAGE	CELLAR	400	25	–	–	–	–	14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9	–	6.6	8.0	–	208/1	HTS	HTS-FUD-H-015	<65 MBH	9.0	3.0	12.9	4.7			
HP-SC-1	RENTAL COMPACTOR	SUB CELLAR	840	–	–	–	–	–	27.4	19.1	76	63	55	51.8	0.8	28.4	67	107	4.6	87	102	2.14	–	15.8	19.3	–	208/1	HTS	HTS-FUD-H-030	<65 MBH	9.0	3.0	13.0	4.6			
HP-SC-2	CONDO COMPACTOR	SUB CELLAR	840	–	–	–	–	–	27.4	19.1	76	63	55	51.8	0.8	28.4	67	107	4.6	87	102	2.14	–	15.8	20	–	208/1	HTS	HTS-FUD-H-030	<65 MBH	9.0	3.0	13.0	4.6			
HP-SC-3	ELEV LOBBY/ CORR	SUB CELLAR	620	50	–	–	–	–	19.4	15.4	77	64	53.4	52.6	0.6	19.2	65	102	3.34	87	102	3.2	–	8.2	9.8	–	208/1	HTS	HTS-FUD-H-019	<65 MBH	9.0	3.0	11.8	4.6			
HP-SC-4	AMENITY CORR 1	SUB CELLAR	400	25	–	–	–	–	14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9	–	6.6	8.0	–	208/1	HTS	HTS-FUD-H-015	<65 MBH	9.0	3.0	12.9	4.7			
HP-SC-5	AMENITY CORR 2	SUB CELLAR	400	25	–	–	–	–	14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9	–	6.6	8.0	–	208/1	HTS	HTS-FUD-H-015	<65 MBH	9.0	3.0	12.9	4.7			
HP-SC-6	BIKE ROOM	SUB CELLAR	840	50	–	–	–	–	27.4	19.1	76	63	55	51.8	0.8	28.4	67	107	4.6	87	102	2.14	–	15.8	19.3	–	208/1	HTS	HTS-FUD-H-030	<65 MBH	9.0	3.0	13.0	4.6			
HP-SC-7	WORKSHOP	SUB CELLAR	1250	50	–	–	–	–	39.2	29.1	76	63	54.1	51.9	0.7	39.3	69	105.9	6.7	87	102	2.2	–	23.3	28.2	–	208/1	HTS	HTS-FUD-H-042	<65 MBH	9.0	3.0	12.5	4.5			
HP-SC-8	STAFF RM/SUPER'S	SUB CELLAR	1250	50	–	–	–	–	39.2	29.1	76	63	54.1	51.9	0.7	39.3	69	105.9	6.7	87	102	2.2	–	23.3	28.2	–	208/1	HTS	HTS-FUD-H-042	<65 MBH	9.0	3.0	12.5	4.5			
HP-SC-9	CARPARK ELEC /DOG WASH	SUB CELLAR	620	50	–	–	–	–	19.4	15.4	77	64	53.4	52.6	0.6	19.2	65	102	3.34	87	102	3.2	–	8.2	9.8	–	208/1	HTS	HTS-FUD-H-019	<65 MBH	9.0	3.0	11.8	4.6			
HP-SC-10	CONDO PACKAGE/ATS	SUB CELLAR	620	50	–	–	–	–	19.4	15.4	77	64	53.4	52.6	0.6	19.2	65	102	3.34	87	102	3.2	–	8.2	9.8	–	208/1	HTS	HTS-FUD-H-019	<65 MBH	9.0	3.0	11.8	4.6			
HP-SC-11	CONDO STORAGE	SUB CELLAR	400	25	–	–	–	–	14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9	–	6.6	8.0	–	208/1	HTS	HTS-FUD-H-015	<65 MBH	9.0	3.0	12.9	4.7			
HP-SC-12	EM. ELEC RM.	SUB CELLAR	400	25	–	–	–	–	14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9	–	6.6	8.0	–	208/1	HTS	HTS-FUD-H-015	<65 MBH	9.0	3.0	12.9	4.7			
HP-1-1	1ST FLOOR	1ST FLOOR	550	–	–	–	–	–	17.6	13.2	75	63	53.1	51.8	0.69	22.4	72	108.8	3.1	87	101.3	3.7	–	8.30	9.90	15	208/1	HTS	HTSCH018	<65 MBH	9.0	3.0	13.4	4.6			
HP-1-2	1ST FLOOR	1ST FLOOR	550	–	–	–	–	–	17.6	13.2	75	63	53.1	51.8	0.69	22.4	72	108.8	3.1	87	101.3	3.7	–	8.30	9.90	15	208/1	HTS	HTSCH018	<65 MBH	9.0	3.0	13.4	4.6			
HP-C-8	RENTAL LAUNDRY	CELLAR	840	–	–	–	–	–	27.4	19.1	76	63	55	51.8	0.8	28.4	67	107	4.6	87	102	2.14	–	15.8	19.3	–	208/1	HTS	HTS-FUD-H-030	<65 MBH	9.0	3.0	13.0	4.6			
HP-SC-13	CONDO LAUNDRY	SUB CELLAR	840	–	–	–	–	–	27.4	19.1	76	63	55	51.8	0.8	28.4	67	107	4.6	87	102	2.14	–	15.8	19.3	–	208/1	HTS	HTS-FUD-H-030	<65 MBH	9.0	3.0	13.0	4.6			
HP-C-9	STORAGE	CELLAR	400	25	–	–	–	–	14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9	–	6.6	8.0	–	208/1	HTS	HTS-FUD-H-015	<65 MBH	9.0	3.0	12.9	4.7			

VERTICAL-STACKED UNIT NOTES (HP-A THRU F, RENTAL APARTMENTS):
1. SEE MECHANICAL SPECIFICATIONS FOR UNIT CONSTRUCTION AND REQUIRED ACCESSORIES.
2. 1-INCH ACOUSTIC CABINET INSULATION
3. CUSTOM BASE STAND BASE STAND REQUIRED TO ACCOMMODATE RETURN-AIR GRILLE AND ARCHITECTURAL BASEBOARD MOLDING (9" MINIMUM)
4. ADJUSTABLE CABINET HEIGHT REQUIRED FOR OPTIMAL SOUND PERFORMANCE IN ELEVATED CEILING SPACES (FIELD BASE STANDS OR PLENUMS NOT ACCEPTABLE)
5. FACTORY-INSTALLED NON-FUSED DISCONNECT SWITCH
6. DIGITAL PROGRAMMABLE THERMOSTAT
7. UNIT-MOUNTED FAN SPEED SWITCH
8. AUTOMATIC WATER FLOW REGULATING VALVE FOR SELF BALANCING
9. AUTOMATIC WATER SHUT-OFF VALVE (NORMALLY CLOSED)
10. SUPPLY/RETURN 2000PSIG-RATED HOSE KITS WITH MANUAL SHUTOFF VALVES
11. FACTORY-INSTALLED CONDENSATE OVERFLOW SWITCH
12. EXTRA SET OF FILTERS BY UNIT MANUFACTURER-REFER TO TCC RIDER A
13. RETURN-AIR/CHASSIS-ACCESS PANEL PROVIDING FULL ACCESS TO REMOVABLE CHASSIS WHILE INSTALLED. PANEL SHALL BE STEEL WHITE-FLUSH MOUNTED ACOUSTICAL HINGE DOOR.
14. DOUBLE-DEFLECTIONS SUPPLY GRILLES W/ OPPOSED-BLADE DAMPERS (AS REQUIRED)
15. SIGHT BAFFLE W/ ACOUSTICAL LINING ON ALL UNIT SERVING ADJACENT SPACES
16. NC-35 PERFORMANCE SOUND PACKAGE
17. STAINLESS STEEL SECONDARY DRAIN PAN
18. CHASSIS-TO-CABINET INTEGRAL VIBRATION ISOLATION
19. FIELD-CONFIGURABLE PIPING AND DISCHARGE LOCATIONS
20. REMOTE-MOUNTED PROGRAMMABLE THERMOSTAT BY UNIT MANUFACTURER
21. ALL FIELD DUCT CONNECTIONS MUST BE ISOLATED FROM UNIT DISCHARGE VIA FLEX CONNECTION. DUCTWORK SHALL BE PROVIDED WITH 1" ACOUSTIC LINING.
22. INSTALLATION SUPERVISION AND START-UP BY UNIT MANUFACTURER
23. EXTENDED 2-YEAR WHOLE-UNIT PARTS AND 5-YEAR COMPRESSOR PARTS WARRANTY.
24. REFER TO RIDER A FOR AMOUNT OF UNITS, T-STATS, FILTERS, ETC. TO BE PURCHASED IN RIDER A. (TO BE COVERED BY TCC)

FREEZE PROTECTION PUMPS (ARMSTRONG)

DESIGNATION	SERVICE	LOCATION	FLOW RATE (GPM)	TOTAL PUMP HEAD (FT. OF WATER)	STATIC HEAD (FT. OF WATER)	CASING PRESSURE (PSIG)	MINIMUM PUMP EFFICIENCY (%)	MOTOR DATA: BRAKE HP	MOTOR DATA: MINIMUM MOTOR HP	MOTOR DATA: RPM	MOTOR DATA: VOLTS/PHASE	MODEL NUMBER	PUMP TYPE	MANUFACTURER	VIBRATION ISOLATION: SPECIFICATION TYPE	VIBRATION ISOLATION: STATIC DEFLECTION (INCHES)	REMARKS
FPP-5C-1	HV-5C-1	SUB CELLAR	17.4	30	–	300					115/1	SERIES 4380-2x2x6-1 FRAME 143JM ENCLOSURE ODP	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP-C-1	HV-C-1	CELLAR	3	10	–	300					115/1	SERIES 4380-3x3x5-0 FRAME 56C ENCLOSURE ODP	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP-2-1	HWC-2-1	2ND FLOOR	20	30	–	300	46.35	.33	1/2	1760	115/1	SERIES 4380-1.5x1.5x6-0.5 FRAME 56C ENCLOSURE ODP	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP-2-2	HWC-2-2	2ND FLOOR	20	30	–	300	46.35	.33	1/2	1760	115/1	SERIES 4380-1.5x1.5x6-0.5 FRAME 56C ENCLOSURE ODP	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP-37-1	AC-37-1 CONDO CORRIDOR AC-DBI-37-1 RESIDENTIAL	37TH FLOOR	.30	30	–	300	41.88	.54	1	1800	115/1	SERIES 4380-2x2x6-1 FRAME 143JM ENCLOSURE ODP	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP-37-2		37TH FLOOR	1.35	30	–	300	67.82	1.51	2	1200	115/1	SERIES 4380-3x3x10-2 FRAME 184JM ENCLOSURE ODP	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP-C-2	HV-C-2	CELLAR	14.8	10	–	300	–	–	–	–	115/1	–	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP-5C-2	HV-C-3	SUB-CELLAR	14.8	10	–	300	–	–	–	–	115/1	–	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP-39-1	HV-39-1	35TH FLOOR	65.6	30	–	300	–	–	–	–	208/1	–	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	

AIR OUTLETS AND INLETS

DESIGNATION	SERVICE	SPECIFICATION TYPE	MAX CFM OR CFM/FT	FACE SIZE (INCHES)	NECK SIZE (INCHES)	SLOT SIZE (INCHES)	MODEL NUMBER	MANUFACTURER	REMARKS
CD-A	SUPPLY AIR	CEILING DIFFUSER	250	12x12	8ø	–	OMNI	TITUS	–
CD-B	SUPPLY AIR	CEILING DIFFUSER	251-375	24x24	10ø	–	OMNI	TITUS	–
CD-C	SUPPLY AIR	CEILING DIFFUSER	375-500	24X24	12ø	–	OMNI	TITUS	–
CD-D	SUPPLY AIR	CEILING DIFFUSER	501+	24X24	15ø	–	OMNI	TITUS	–
CD-E	SUPPLY AIR	CEILING DIFFUSER	150	12X12	6ø	–	OMNI	TITUS	–
CG-A	RETURN AIR	CEILING DIFFUSER	150	24X24 12X12	6ø	–	OMNI	TITUS	–
CG-B	RETURN AIR	CEILING DIFFUSER	151-350	24X24 12X12	8ø	–	OMNI	TITUS	–
CG-C	RETURN AIR	CEILING DIFFUSER	351-600	24X24	14ø	–	OMNI	TITUS	–
SR-A	SUPPLY AIR	TOP REGISTER	150-250	12x8	10x6	–	301 FL	TITUS	–
SR-B	SUPPLY AIR	TOP REGISTER	251-450	20x8	18x6	–	301 FL	TITUS	–
LBG	SUPPLY AIR	LINEAR BAR DIFFUSER	169	–	–	–	CT-581	TITUS	SIDE WALL DIFFUSER ¾" BARS 15° DEFLECTION
LBR	RETURN AIR	LINEAR BAR DIFFUSER	169	–	–	–	CT-581	TITUS	SIDE WALL DIFFUSER ¾" BARS 15° DEFLECTION
EG-A	RETURN/EXHAUST AIR	EXHAUST GRILLE	100	8x8	6x6	–	350RL	TITUS	–
LD-A	SUPPLY AIR	LINEAR DIFFUSER	100	–	–	(1) 2"	FL-15-HT	TITUS	–
LR-A	RETURN AIR	LINEAR DIFFUSER	100	–	–	(1) 2"	FL-15-HT	TITUS	–
LD-B	SUPPLY AIR	LINEAR DIFFUSER	210	–	–	(2) 2"	FL-30-HT	TITUS	–

NOTES:
1. THE COLOR AND FRAME OF ALL AIR OUTLETS AND INLETS ARE TO BE SPECIFIED AND APPROVED BY THE ARCHITECT. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. SEE ARCHITECTURAL DRAWINGS FOR TOTAL LENGTHS REQUIRED FOR SUPPLY AND RETURN LINEARS. ALL INACTIVE SECTIONS ARE TO BE PROVIDED WITH LIGHT SHIELDS.
3. PROVIDE CABLE OPERATED DAMPERS FOR ALL LINEAR DIFFUSERS AND ANY VOLUME DAMPERS LOCATED ABOVE INACCESSABLE CEILINGS.

FACTORY ASSEMBLED H & V SYSTEMS (HTS AS STD)

DESIGNATION	SERVICE	LOCATION	TOTAL AIR QUANTITY (CFM)	OUTSIDE AIR QUANTITY (CFM)	FILTER: SPECIFICATION TYPE	FILTER: MINIMUM EFFICIENCY	FILTER: AIR FRICTION (IN. OF WTR.): INITIAL	FILTER: AIR FRICTION (IN. OF WTR.): REPLACE	FILTER: TOTAL FACE AREA (SQ. FT.)	HOT WATER HEATING COIL: AIR SIDE: ENT. AIR TEMPERATURE (DEGREES F)	AIR SIDE: LVG. AIR TEMPERATURE (DEGREES)	AIR SIDE: MAXIMUM AIR FRICTION (IN. OF WATER)	WATER SIDE: FLOW RATE (GPM)	WATER SIDE: ENT. WATER TEMPERATURE (DEGREES F)	WATER SIDE: LVG. WATER TEMPERATURE (DEGREES F)	WATER SIDE: MAXIMUM PRESSURE DROP (FT. OF WATER)	HEATING CAPACITY (MBH)	FACE AREA (SQ. FT.)	FACE VELOCITY (FPM)	SERIES SURFACE AND TUBES (FPI/ROWS)	ELECTRIC HEATING COIL: ENT. AIR TEMPERATURE (DEGREES F)	LVG. AIR TEMPERATURE (DEGREES)	HEATING CAPACITY (MBH)	MAXIMUM AIR FRICTION (IN. OF WATER)	INPUT (KW)	VOLTS/PHASE	NO. OF STEPS	FACE VELOCITY (FPM)	TOTAL STATIC PRESSURE (IN. OF WATER)	FAN: TOTAL STATIC PRESSURE EXT. OF CASING (IN. OF WATER)	MAX. FAN SPEED (RPM)	MAXIMUM OUTLET VELOCITY (FPM)	CLASS	TYPE	SIZE	MOTOR: MOTOR BHP	MOTOR: MINIMUM MOTOR HP	MOTOR: MOTOR RPM	MOTOR: VOLTS/PHASE	VIBRATION ISOLATION: SPECIFICATION TYPE	VIBRATION ISOLATION: STATIC DEFLECTION (INCHES)	MODEL NUMBER	REMARKS
HV-5C-1	SUB-CELLAR BOH	SUB CELLAR	4550	4550	MERV 8	–	–	–	7.6	0.0	56.3	.07	17.4	150	129.5	8.7	178.4	7.3	–	12/1	–	–	–	–	–	–	–	2.69	2.0	1432	2000	1	–	–	2.87	5.0	1432	208/3	SPRING	1	HTS-AH007A	–
HV-C-2	RENTAL LAUNDRY RM	CELLAR	1500	1500	MERV 8	–	–	–	2.8	0.0	82.4	0.2	10.9	150	125.2	8.9	135.2	3.0	–	12/2	–	–	–	–	–	–	–	1.88	1.0	1646	1786	1	–	–	1.19	1.5	2064	208/3	SPRING	1	HTS-AH003A	–
HV-SC-2	CONDO LAUNDRY RM	SUB CELLAR	1125	1125	MERV 8	–	–	–	2.6	0.0	78.6	0.23	8.0	150	125.8	5.5	96.6	2.0	–	12/2	–	–	–	–	–	–	–	1.87	1.0	2316	2045	1	–	–	1.1	1.5	2064	208/3	SPRING	1	HTS-AH002A	–
HV-39-1	BOILER ROOM	39TH FLOOR	10000	10000	MERV 8	–	–	–	22.8	0	78.0	.22	65.6	150	124	5.2	853	20.3	–	12/2	–	–	–	–	–	–	–	1.86	1.0	1371	3448	1	–	–	10.03	15	1371	480/3	–	–	HTS-AH020A	–

FILTER BOX WITH HOT WATER COIL ASSEMBLY (HTS AS STD)

DESIGNATION	SERVICE	LOCATION	TOTAL AIR QUANTITY (CFM)	OUTSIDE AIR QUANTITY (CFM)	FILTER: SPECIFICATION TYPE	FILTER: MINIMUM EFFICIENCY	FILTER: AIR FRICTION (IN. OF WTR.): INITIAL	FILTER: AIR FRICTION (IN. OF WTR.): REPLACE	FILTER: TOTAL FACE AREA (SQ. FT.)	HOT WATER HEATING COIL: AIR SIDE: ENT. AIR TEMPERATURE (DEGREES F)	AIR SIDE: LVG. AIR TEMPERATURE (DEGREES)	AIR SIDE: MAXIMUM AIR FRICTION (IN. OF WATER)	WATER SIDE: FLOW RATE (GPM)	WATER SIDE: ENT. WATER TEMPERATURE (DEGREES F)	WATER SIDE: LVG. WATER TEMPERATURE (DEGREES F)	WATER SIDE: MAXIMUM PRESSURE DROP (FT. OF WATER)	HEATING CAPACITY (MBH)	FACE AREA (SQ. FT.)	FACE VELOCITY (FPM)	SERIES SURFACE AND TUBES (FPI/ROWS)	ELECTRIC HEATING COIL: ENT. AIR TEMPERATURE (DEGREES F)	LVG. AIR TEMPERATURE (DEGREES)	HEATING CAPACITY (MBH)	MAXIMUM AIR FRICTION (IN. OF WATER)	INPUT (KW)	VOLTS/PHASE	NO. OF STEPS	FACE VELOCITY (FPM)	VIBRATION ISOLATION: SPECIFICATION TYPE	VIBRATION ISOLATION: STATIC DEFLECTION (INCHES)	MODEL NUMBER	REMARKS
HWC-2-1	OA PREHEAT FOR AHU-2-1	2ND FLOOR	3000	3000	MERV 8	–	–	–	7.6	0.0	55.6	0.25	18.0	150	129.8	9.3	182.5	7.3	–	12/1	–	–	–	–	–	–	–	SPRING	1	–	–
HWC-2-2	OA PREHEAT FOR AHU-2-2	2ND FLOOR	3000	3000	MERV 8	–	–	–	7.6	0.0	55.6	0.25	18.0	150	129.8	9.3	182.5	7.3	–	12/1	–	–	–	–	–	–	–	SPRING	1	–	–

ZONE CONTROL TERMINALS SCHEDULE (ALDES AS STANDARD)

TAG	SERVICE	MODEL	GRILLE SIZE L/WH	EXHAUST BOX DIMENSIONS L/WH	ACTUATOR DIMENSIONS (ADD TO WIDTH)	NECK(INLET) SIZE INCH	CAR DIMENSIONS	AIRFLOW RANGE MIN/MAX CFM	BALANCING TOLERANCE	DIFFERENTIAL PRESSURE RANGE IN. WG.	NC MINIMUM @ 0.4 IN WG.	ELECTRICAL VOLTS/PHASE	REMARKS
ZRT-A	KITCHEN EXHAUST	ZRT-P0IL-12x6-120-50/150	NA	12" x 6"	3-1/8"	12" x 6"	4"/8"	50/150	+/-15%	0.2-0.8; 0.6-2.5	36	120/1	–
ZRT-B	KITCHEN EXHAUST	ZRT-P0IL-16x8-120-50/350	NA	16" x 8"	3-1/8"	16" x 8"	4"/8"	50/350	+/-15%	0.2-0.8; 0.6-2.5	36	120/1	–
ZRT-C	KITCHEN EXHAUST	ZRT-3FTIL-28x10-120-50/600	NA	14" x 16" x 8"	6-1/2"	16" x 8"	4"/8"/10"	50/600	+/-15%	0.2-0.8; 0.6-2.5	36	120/1	–

NOTES:
1. ALL DUCTWORK AND ASSOCIATED RISERS CONTAINING CONSTANT AIR REGULATING DEVICES SHALL BE CONSTRUCTED AND SEALED TO MINIMIZE LEAKAGE TO NO GREATER THAN 5%. DUCT LEAKAGE TESTING SHALL BE CONDUCTED DURING PHASE OF CONSTRUCTION WHERE FULL ACCESS TO RISERS ARE AVAILABLE AND LEAKAGE TESTING CAN BE 100%%% COMPLETED PRIOR TO SHEETROCKING THE WALLS. ZRT ASSEMBLIES SHALL BE PROVIDED WITH 1"/2" INSULATION FOR ACOUSTICAL NOISE REDUCTION.
2. ZRT AND CAR ASSEMBLIES SHALL BE INSTALLED AND SEALED TO AVOID LEAKAGE. ZRT HEIGHTS AND LOCATIONS SHALL BE COORDINATED WITH CEILING CONTRACTOR TO ENSURE A FLUSH INSTALLATION WITH SHEETROCK CEILING.
3. ZRT SHALL BE PROVIDED WITH LINE VOLTAGE SPRING RETURN ACTUATOR. UPON POWERING UP VIA LIGHT SWITCH OR OTHER POWER SOURCE THE ACTUATOR SHALL MODULATE THE MINIMUM CAR-II OUT OF THE AIRSTREAM ALLOWING THE MAXIMUM CAR-II TO BALANCE TO MAXIMUN CFM. UPON LOSS OF POWER OR THE LIGHT SWITCH TURNING OFF THE DAMPER SPRING RETURN SHALL CLOSE THE DAMPER ALLOWING THE MINUMUN CAR-II TO MAINTAIN MINUMUN CFM SETPOINT.
4. ZRT ASSEMBLIES SHALL BE CAPABLE OF POWERING UP TRACKING DEVICES SUCH AS ZRT'S USED ON THE SUPPLY FOR MAKE UP AIR APPLICATIONS.
5. PROVIDE ALDES BDD BACK DRAFT DAMPERS FOR ALL TERMINALS TO BE INSTALLED IN ROUND DUCTWORK CONNECTING TO INLET OF ZRT ASSEMBLY.
6. SUBMIT DIFFUSER AND GRILLES NC RATINGS FOR APPROVAL.
7. COORDINATE FINISH WITH ARCHITECT.

COLD STORAGE (AS STD)

DESIGNATION	SERVICE	LOCATION	CAPACITY (BTU/HR)	DIMENSIONS: LENGTH (INCHES)	DIMENSIONS: WIDTH (INCHES)	DIMENSIONS: HEIGHT (INCHES)	CONDENSER UNIT: VOLTAGE (V)	PHASE	FREQUENCY (HZ)	MAX FUSE SIZE	MCA	FLA	FLOW RATE (GPM)	PRESSURE DROP (PSI)	MODEL #	EVAPORATOR: VOLTAGE (V)	PHASE	AIR FLOW (CFM)	FREQUENCY (HZ)	MAX FUSE SIZE	MCA	FLA	WATTS	MODEL #	MANUFACTURER
CS-5C-1	COLD STORAGE ROOM	SUB CELLAR	9,818	192	108	103	208/230	3	60	15	7.1	5.7	1.7	1.7	–	115	1,540	1	60	15	1.8	1.6	94	–	–
CS-1-1	COLD STORAGE ROOM	1ST FLOOR	9

RIVERSIDE CENTER – BUILDING 3

PLUMBING DRAWING LIST

	DRAWING NUMBER	DRAWING TITLE	SCALE	100% DESIGN DEVELOPMENT SET 07.17.15	50% CD-PROGRESS SET 11.13.15	MEP BID 02.15.16	ISSUED FOR FILING 02.15.16	100% DD BELOW GRADE AMENITY 03.21.16	REVISED BID SET 04.15.16	REVISED MEP BID SET 07.22.16	REVISED MEP BID SET 09.09.16	ISSUED TO DOB 09.22.16	80% CD BELOW GRADE AMENITY 04.07.17	ISSUED FOR CONSTRUCTION 04.14.17	BULLETIN #1 05.19.17
1	P-001.00	PLUMBING DRAWING LIST, SYMBOLS AND ABBREVIATIONS	N.T.S.	●	●	●	●	●	●	●	●	●	●	●	●
2	P-002.00	PLUMBING SCOPE OF WORK	N.T.S.	●	●	●	●		●	●	●			●	
3	P-299.00	PLUMBING SUB-CELLAR FLOOR PLAN	1/8"=1'-0"	●	●	●	●	●	●	●	●		●	●	
4	P-300.00	PLUMBING CELLAR FLOOR PLAN	1/8"=1'-0"	●	●	●	●	●	●	●	●		●	●	
5	P-301.00	PLUMBING 1ST FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●	●			●	
6	P-302.00	PLUMBING 2ND FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
7	P-303.00	PLUMBING 3RD FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●	●			●	
8	P-304.00	PLUMBING 4TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
9	P-305.00	PLUMBING 5TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
10	P-306.00	PLUMBING 6TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
11	P-307.00	PLUMBING 7TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
12	P-308.00	PLUMBING 8TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
13	P-309.00	PLUMBING 9TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
14	P-310.00	PLUMBING 10TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
15	P-311.00	PLUMBING 11TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
16	P-312.00	PLUMBING 12TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
17	P-313.00	PLUMBING 13TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
18	P-314.00	PLUMBING 14TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●	●			●	
19	P-315.00	PLUMBING 15TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
20	P-316.00	PLUMBING 16TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
21	P-317.00	PLUMBING 17TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
22	P-318.00	PLUMBING 18TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
23	P-319.00	PLUMBING 19TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
24	P-320.00	PLUMBING 20TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
25	P-321.00	PLUMBING 21ST FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
26	P-322.00	PLUMBING 22ND FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
27	P-323.00	PLUMBING 23RD FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
28	P-324.00	PLUMBING 24TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
29	P-325.00	PLUMBING 25TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
30	P-326.00	PLUMBING 26TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
31	P-327.00	PLUMBING 27TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	
32	P-328.00	PLUMBING 28TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	●
33	P-329.00	PLUMBING 29TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	●
34	P-330.00	PLUMBING 30TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	●
35	P-331.00	PLUMBING 31ST FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	●
36	P-332.00	PLUMBING 32ND FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	●
37	P-333.00	PLUMBING 33RD FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	●
38	P-334.00	PLUMBING 34TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●				●	●
39	P-335.00	PLUMBING 35TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●	●			●	●
40	P-336.00	PLUMBING 36TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●	●			●	●
41	P-337.00	PLUMBING 37TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●	●			●	
42	P-338.00	PLUMBING 38TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●	●			●	●
43	P-339.00	PLUMBING 39TH FLOOR PLAN	1/8"=1'-0"	●	●	●	●		●	●	●	●		●	●
44	P-340.00	PLUMBING ROOF PLAN	1/8"=1'-0"		●	●	●		●	●				●	
45	P-500.00	PLUMBING WATER RISER DIAGRAM SHEET 1 OF 6	N.T.S.	●	●	●	●		●	●	●			●	●
46	P-501.00	PLUMBING WATER RISER DIAGRAM SHEET 2 OF 6	N.T.S.	●	●	●	●		●	●	●			●	●
47	P-502.00	PLUMBING WATER RISER DIAGRAM SHEET 3 OF 6	N.T.S.	●	●	●	●		●	●				●	●
48	P-503.00	PLUMBING WATER RISER DIAGRAM SHEET 4 OF 6	N.T.S.	●	●	●	●		●	●				●	●
49	P-504.00	PLUMBING WATER RISER DIAGRAM SHEET 5 OF 6	N.T.S.	●	●	●	●		●	●	●			●	●
50	P-505.00	PLUMBING WATER RISER DIAGRAM SHEET 6 OF 6	N.T.S.	●	●	●	●		●	●	●			●	●
51	P-510.00	PLUMBING SANITARY RISER DIAGRAM SHEET 1 OF 9	N.T.S.	●	●	●	●		●	●				●	●
52	P-511.00	PLUMBING SANITARY RISER DIAGRAM SHEET 2 OF 9	N.T.S.	●	●	●	●		●	●	●			●	●
53	P-512.00	PLUMBING SANITARY RISER DIAGRAM SHEET 3 OF 9	N.T.S.	●	●	●	●		●	●	●			●	●
54	P-513.00	PLUMBING SANITARY RISER DIAGRAM SHEET 4 OF 9	N.T.S.	●	●	●	●		●	●				●	
55	P-514.00	PLUMBING SANITARY RISER DIAGRAM SHEET 5 OF 9	N.T.S.	●	●	●	●		●	●				●	
56	P-515.00	PLUMBING SANITARY RISER DIAGRAM SHEET 6 OF 9	N.T.S.	●	●	●	●		●	●				●	
57	P-516.00	PLUMBING SANITARY RISER DIAGRAM SHEET 7 OF 9	N.T.S.			●	●		●	●				●	
58	P-517.00	PLUMBING SANITARY RISER DIAGRAM SHEET 8 OF 9	N.T.S.			●	●		●	●				●	●
59	P-518.00	PLUMBING SANITARY RISER DIAGRAM SHEET 9 OF 9	N.T.S.			●	●		●	●				●	
60	P-520.00	PLUMBING STORM RISER DIAGRAM SHEET 1 OF 2	N.T.S.	●	●	●	●		●	●	●			●	
61	P-521.00	PLUMBING STORM RISER DIAGRAM SHEET 2 OF 2	N.T.S.	●	●	●	●		●	●	●			●	
62	P-530.00	PLUMBING GAS RISER DIAGRAM SHEET 1 OF 3	N.T.S.	●	●	●	●		●	●	●	●		●	
63	P-531.00	PLUMBING GAS RISER DIAGRAM SHEET 2 OF 3	N.T.S.	●	●	●	●		●	●		●		●	
64	P-532.00	PLUMBING GAS RISER DIAGRAM SHEET 3 OF 3	N.T.S.	●	●	●	●		●	●		●		●	
65	P-600.00	PLUMBING SCHEDULES	N.T.S.	●	●	●	●	●	●	●	●			●	
66	P-700.00	PLUMBING DETAILS SHEET 1 OF 3	N.T.S.	●	●	●	●		●	●				●	
67	P-701.00	PLUMBING DETAILS SHEET 2 OF 3	N.T.S.	●	●	●	●		●	●				●	
68	P-702.00	PLUMBING DETAILS SHEET 3 OF 3							●	●				●	

PLUMBING

ABBREVIATIONS

ABD	AUTOMATIC BALL DRIP
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
BLDG	BUILDING
BOP	BOTTOM OF PIPE
CO	CLEANOUT
CODP	CLEANOUT DECK PLATE
CV	CHECK VALVE
CW	COLD WATER
CLG	CEILING
CONN	CONNECT
CONT	CONTINUATION
DIA	DIAMETER
DN	DOWN (PENETRATES FLOOR SLAB)
DR	DRAIN
DWG	DRAWING
ED	EJECTOR DISCHARGE
EL	ELEVATION
ESP	ELEVATOR SUMP PUMP
EWC	ELECTRIC WATER COOLER
F-#	PLUMBING FIXTURE TYPE (SEE SPECIFICATION)
FAI	FRESH AIR INLET
FD	FLOOR DRAIN
FU	FIXTURE UNIT
FL	FLOOR
FT	FEET
G	GAS
GC	GENERAL CONTRACTOR
GD	GARAGE DRAIN
GPM	GALLONS PER MINUTE
GAL	GALLONS
GW	GARAGE WASTE
HB	HOSE BIBB
H.CLG	HUNG CEILING
HW	HOT WATER
HWR	HOT WATER RETURN
ID	INSIDE DIAMETER
IW	INDIRECT WASTE
IN	INCH
LAV	LAVATORY
MR	MOP RECEPTOR
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
NC	NORMALLY CLOSED
NIC	NOT IN THIS CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
OS&Y	OUTSIDE SCREW & YOKE GATE VALVE
PD	PUMP DISCHARGE
PRV	PRESSURE REDUCING VALVE
PSIA	POUNDS PER SQUARE INCH (ABSOLUTE)
PSI	POUNDS PER SQUARE INCH (GAUGE)
RT	RUNNING TRAP
SA	SHOCK ABSORBER
SAN	SANITARY
SPD	SUMP PUMP DISCHARGE
SS	SLOP SINK

ABBREVIATIONS (CONTINUED)

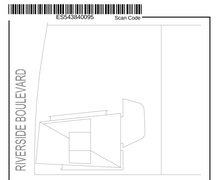
SQ FT	SQUARE FOOT
ST	STORM
TYP.	TYPICAL
UON	UNLESS OTHERWISE NOTED
UP	UP (PENETRATES FLOOR SLAB)
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WH	WALL HYDRANT

LEGENDS

	SANITARY PIPING
	VENT PIPING (SANITARY)
ST	STORM PIPING
	PIPING BURIED (SERVICE NOTED)
PD	PUMP DISCHARGE PIPING
GW	GREASE WASTE PIPING
AV	ACID VENT PIPING
LW	LAB WASTE PIPING
LV	LAB VENT PIPING
IW	INDIRECT WASTE PIPING
E.J	EJECTOR DISCHARGE PIPING
SD	SUMP DISCHARGE PIPING
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
	DOMESTIC HOT WATER CIRCULATION PIPING
(ST)	DOMESTIC COLD WATER (STREET PRESSURE)
(ST)	DOMESTIC HOT WATER (STREET PRESSURE)
(Z-#)	DOMESTIC COLD WATER ZONE PIPING
(Z-#)	DOMESTIC HOT WATER ZONE PIPING
(Z-#)	DOMESTIC HOT WATER CIRCULATION ZONE PIPING
DE	DEIONIZED WATER PIPING
DI	DISTILLED WATER PIPING
NPW	NON-POTABLE WATER
G	GAS PIPING
MA	COMPRESSED AIR PIPING (MEDICAL)
CA	COMPRESSED AIR PIPING (INDUSTRIAL)
IRR	IRRIGATION PIPING
V	VACUUM PIPING
N_2	NITROGEN PIPING
NO	NITROUS OXIDE PIPING
O	OXYGEN PIPING
H	HYDROGEN PIPING
WAGD	WASTE ANESTHESIA GAS DISPOSAL
℄	CENTER LINE
	EXISTING PIPING TO REMAIN
	EXISTING PIPING TO BE REMOVED
	EXISTING PIPING TO BE ABANDONED
	INSULATED AND HEAT TRACED PIPING
	SLOPED CHANGE IN PIPE ELEVATION
	ARROW INDICATES DIRECTION OF FLOW
	PITCH PIPE DOWN IN DIRECTION OF ARROW
	POINT OF NEW CONNECTION TO EXISTING WORK

LEGENDS (CONTINUED)

	SHOCK ABSORBER
	ANCHOR
	FLEXIBLE CONNECTION
(H) (L)	EXPANSION LOOP SIZE
	HOSE BIBB
	WALL HYDRANT
	FRESH AIR INLET
	CLEAN-OUT / PLUG OUTLET
	CLEAN-OUT DECK PLATE
	"P" TRAP
	CAP
	RUNNING TRAP
	DUPLEX STRAINER
	BASKET STRAINER
	Y STRAINER WITH BLOW OFF VALVE
	VACUUM BREAKER
M	MANUAL AIR VENT
A	AUTOMATIC AIR VENT
	BOTTOM PIPE CONNECTION
	TOP PIPE CONNECTION
	ELBOW TURNED DOWN
	ELBOW TURNED UP / CONN. TO VERTICAL LINE
	VALVE IN VERTICAL
	VALVE (SEE SCHEDULE)
	CHECK VALVE
	SOLENOID VALVE
	PRESSURE REDUCING VALVE (P.R.V.)
	OS&Y (OUTSIDE SCREW & YOKE) VALVE
	CHECK VALVE WITH A.B.D.
	FLOAT VALVE
	RELIEF VALVE
	MIXING VALVE
	ANGLE RELIEF VALVE
BFA	BACKFLOW PREVENTER ASSEMBLY
PRV	PRV STATION
	UNION
	REDUCER
	ECCENTRIC REDUCER (E.R.)
	WATER PROOF SLEEVE
	SLEEVE
	PRESSURE GAUGE AND COCK
	THERMOMETER
	DRAIN
	OVERFLOW DRAIN
	PUMP
M	METER
? ?	RISER DESIGNATION — RISER SERVICE / RISER NUMBER
? ?	DETAIL DESIGNATION — DETAIL # / DRAWING #



KEY PLAN

Number	Date	Revision
10	05/19/17	BULLETIN #1
9	04/14/17	ISSUED FOR CONSTRUCTION
8	04/07/17	80% CD BELOW GRADE AMENITY
7	09/22/16	ISSUED TO DOB
6	09/09/16	REVISED MEP BID SET
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

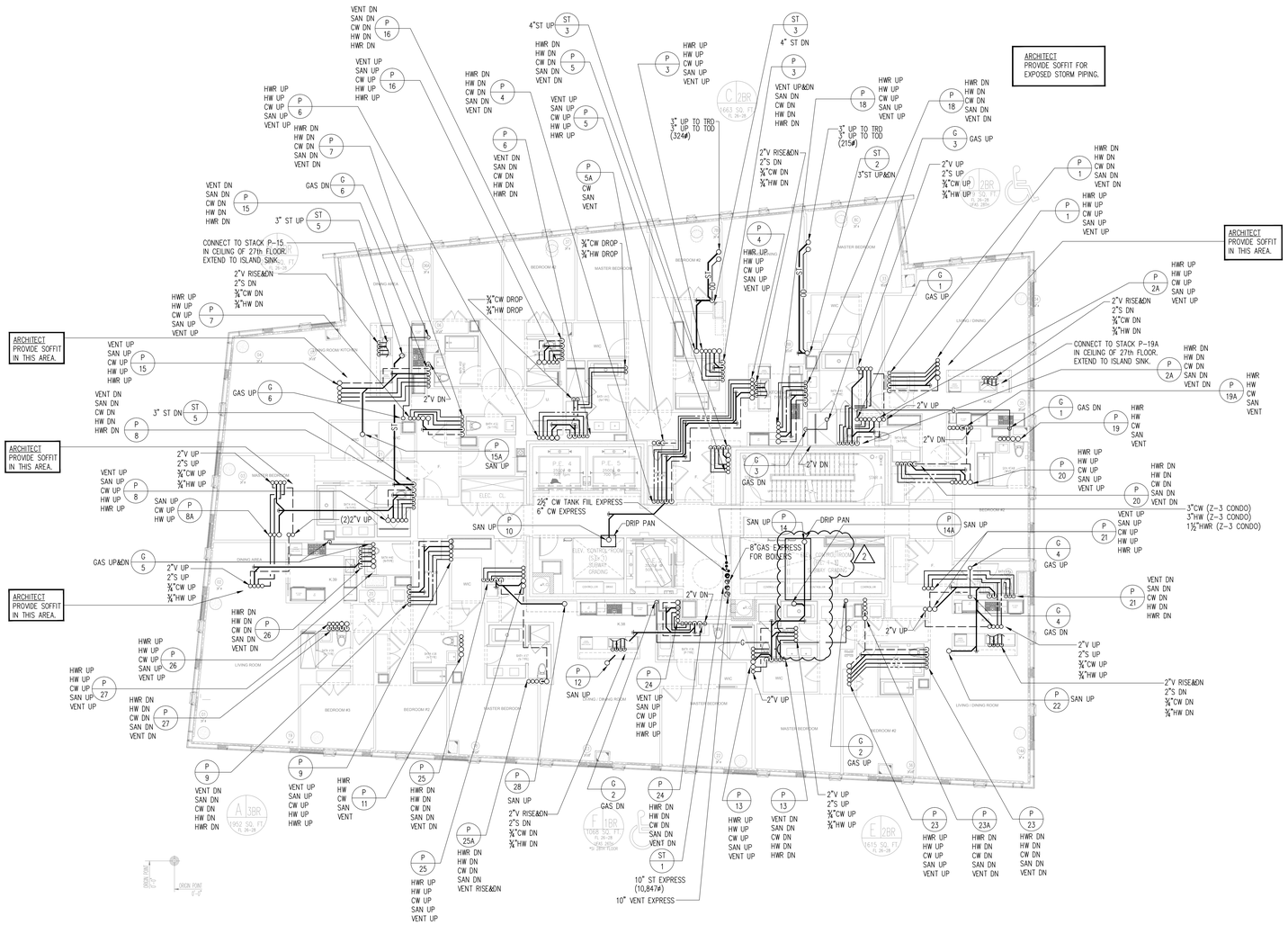
DOB STAMPS & SIGNATURES:
Victor Daza
EX. A
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

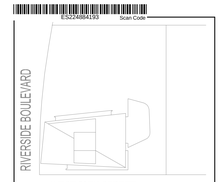
DWG TITLE:
PLUMBING
DRAWING LIST, SYMBOLS
AND ABBREVIATION

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARA · 27463 · LICENSED PROFESSIONAL ENGINEER

DATE:
PROJECT #:
SCALE: 1/8"=1'-0"

P-001.01
DWG NO.





KEY PLAN

N

Number	Date	Description
7	05/19/17	BULLETIN #1 △1
6	04/14/17	ISSUED FOR CONSTRUCTION △1
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
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1	09/24/15	100% DD DOB SUBMISSION

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512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
EXTENDED APPROVAL
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
PLUMBING
28TH FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARDIN · 77465 · LICENSED PROFESSIONAL ENGINEER

DATE:
PROJECT #:
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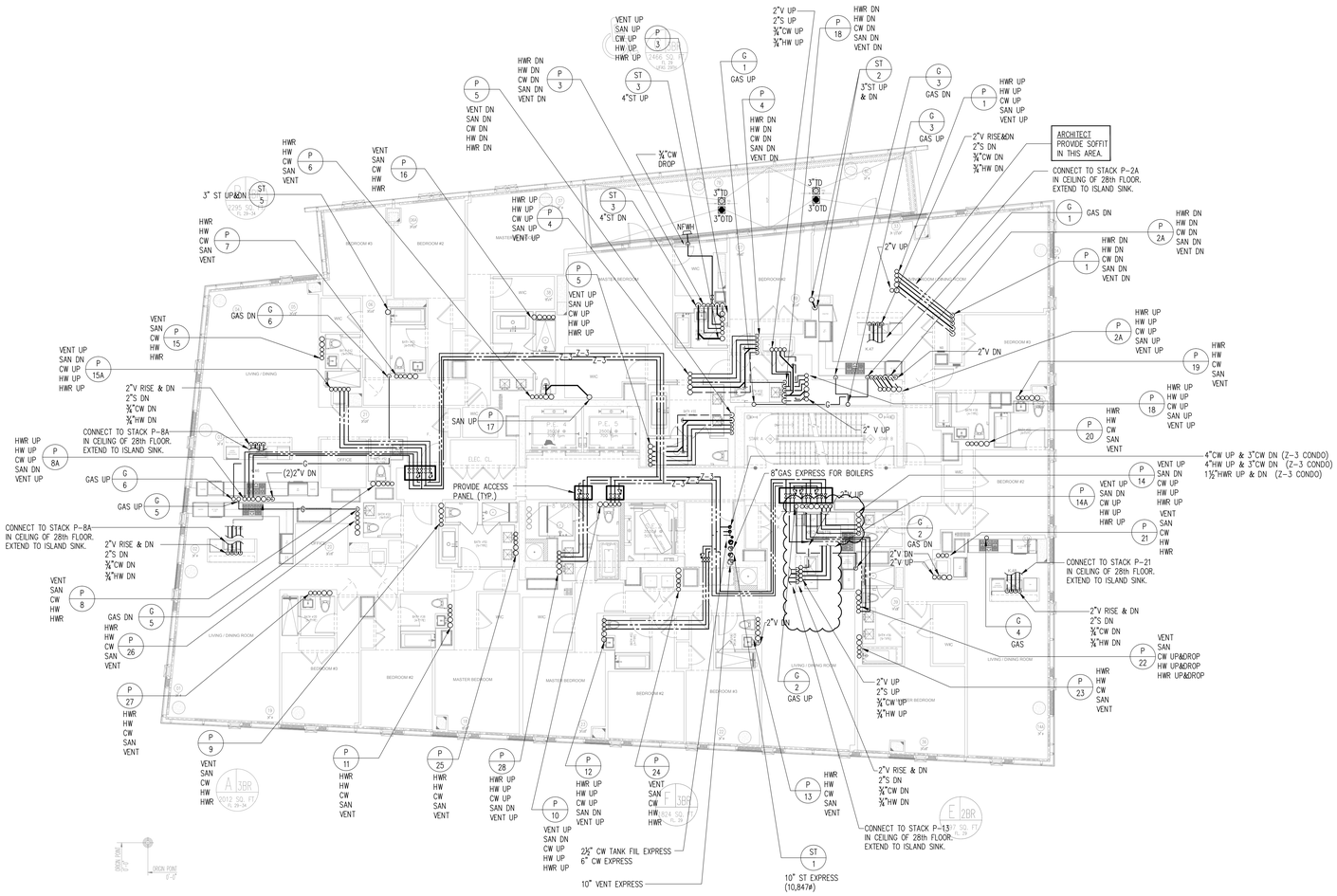

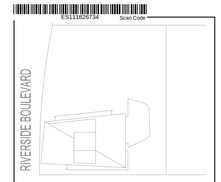

KEY PLAN

N

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7	05/19/17	BULLETIN #1 △1
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CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 14 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
PLUMBING
29TH FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK
FRANK MUSCARDIN
077462
LICENSED PROFESSIONAL ENGINEER

DATE:
PROJECT #:
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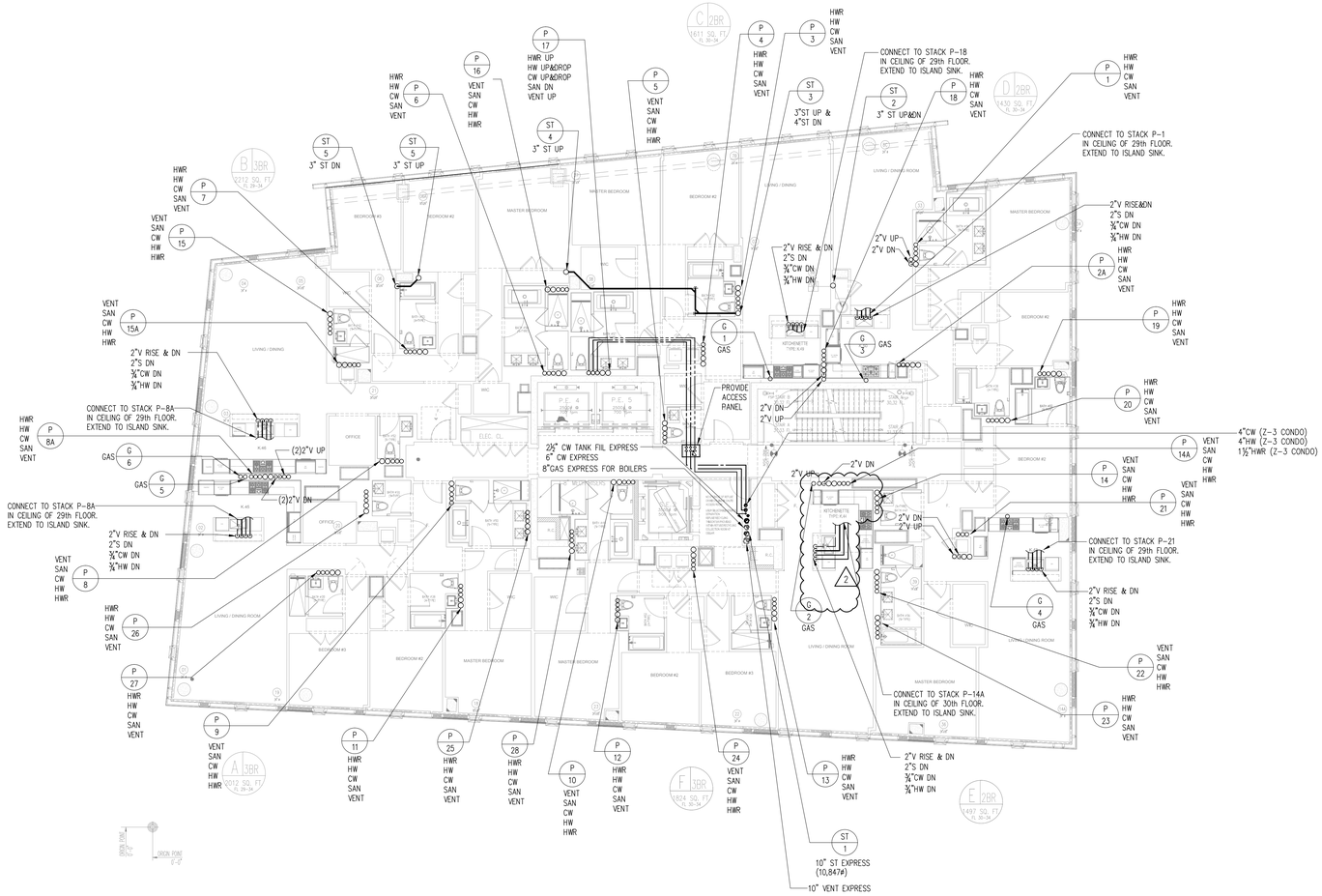
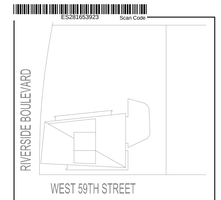
DWG NO.
P-329.01





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HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

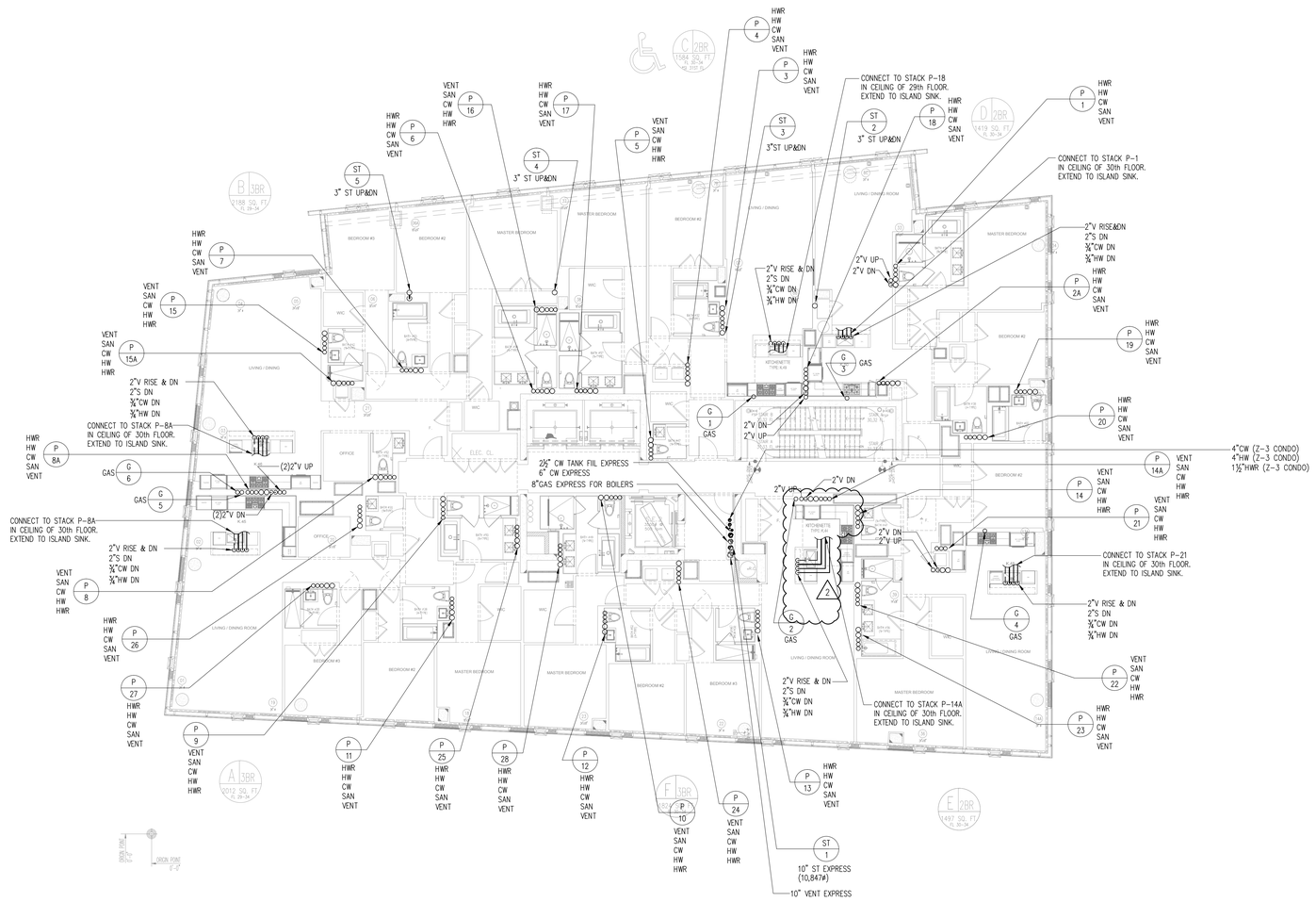
DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

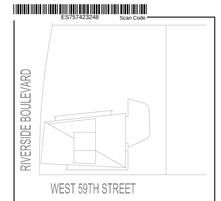
DWG TITLE:
PLUMBING
30TH FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK
FRANK MUSCARA
27463
LICENSED PROFESSIONAL ENGINEER

DATE:
PROJECT #:
SCALE: 1/8"=1'-0"

DWG NO.
P-330.01





KEY PLAN

Number	Date	Revision
7	05/19/17	BULLETIN #1 △1
6	04/14/17	ISSUED FOR CONSTRUCTION △1
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

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RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

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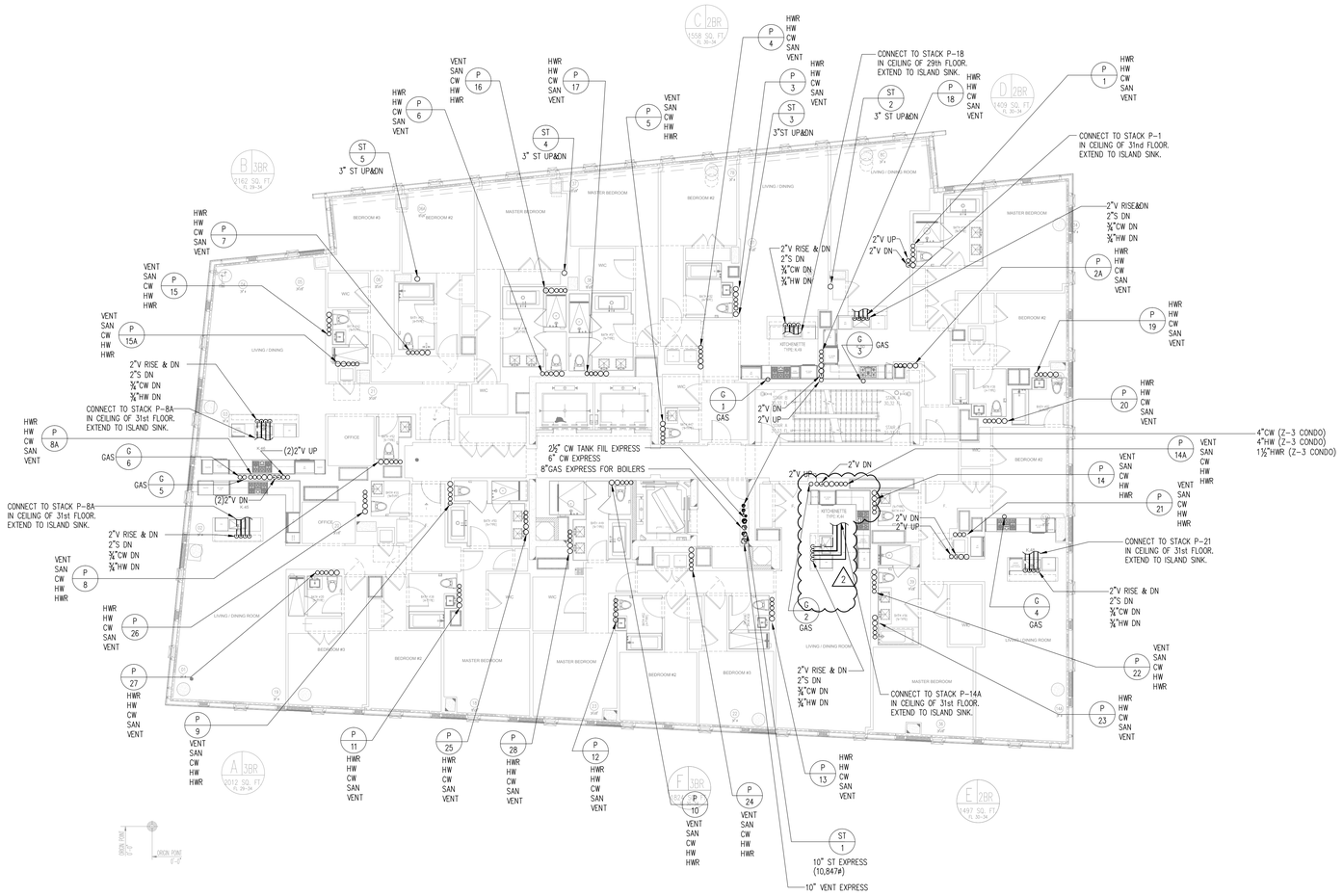
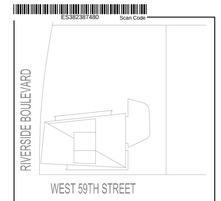
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
PLUMBING
31ST FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE:
PROJECT #:
SCALE: 1/8"=1'-0"
DWG NO. P-331.01





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1	09/24/15	100% DD DOB SUBMISSION

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CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
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DWG TITLE:
PLUMBING
32ND FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MARCHESE · 72463 · LICENSED PROFESSIONAL ENGINEER

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

P-332.01
DWG NO.

DEPT OF BLDGS 121300976 Job Number

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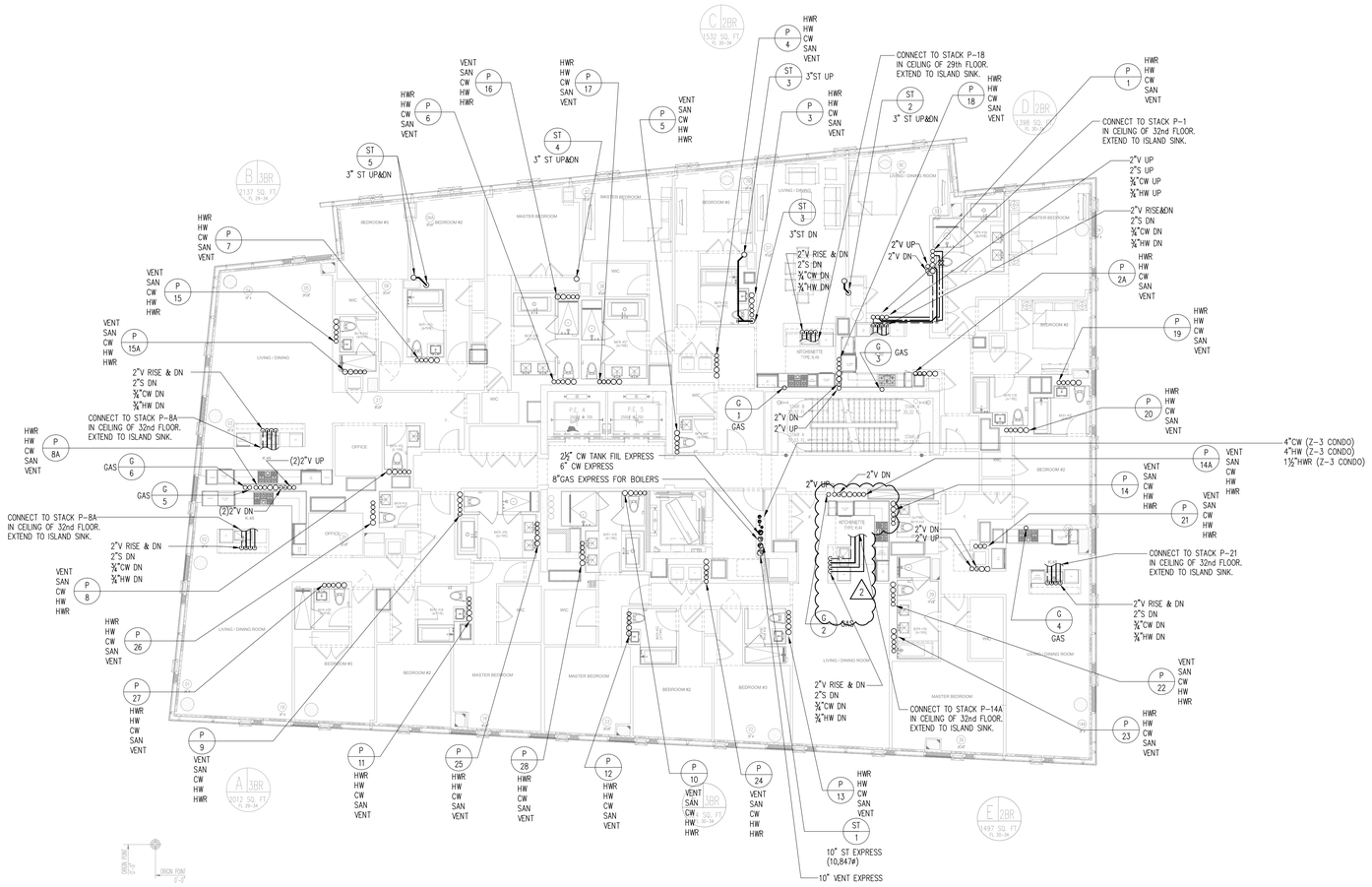

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NYC Development Hub

DWG TITLE:
PLUMBING
33TH FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MURCIANO · 72463 · LICENSED PROFESSIONAL ENGINEER

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PROJECT #:
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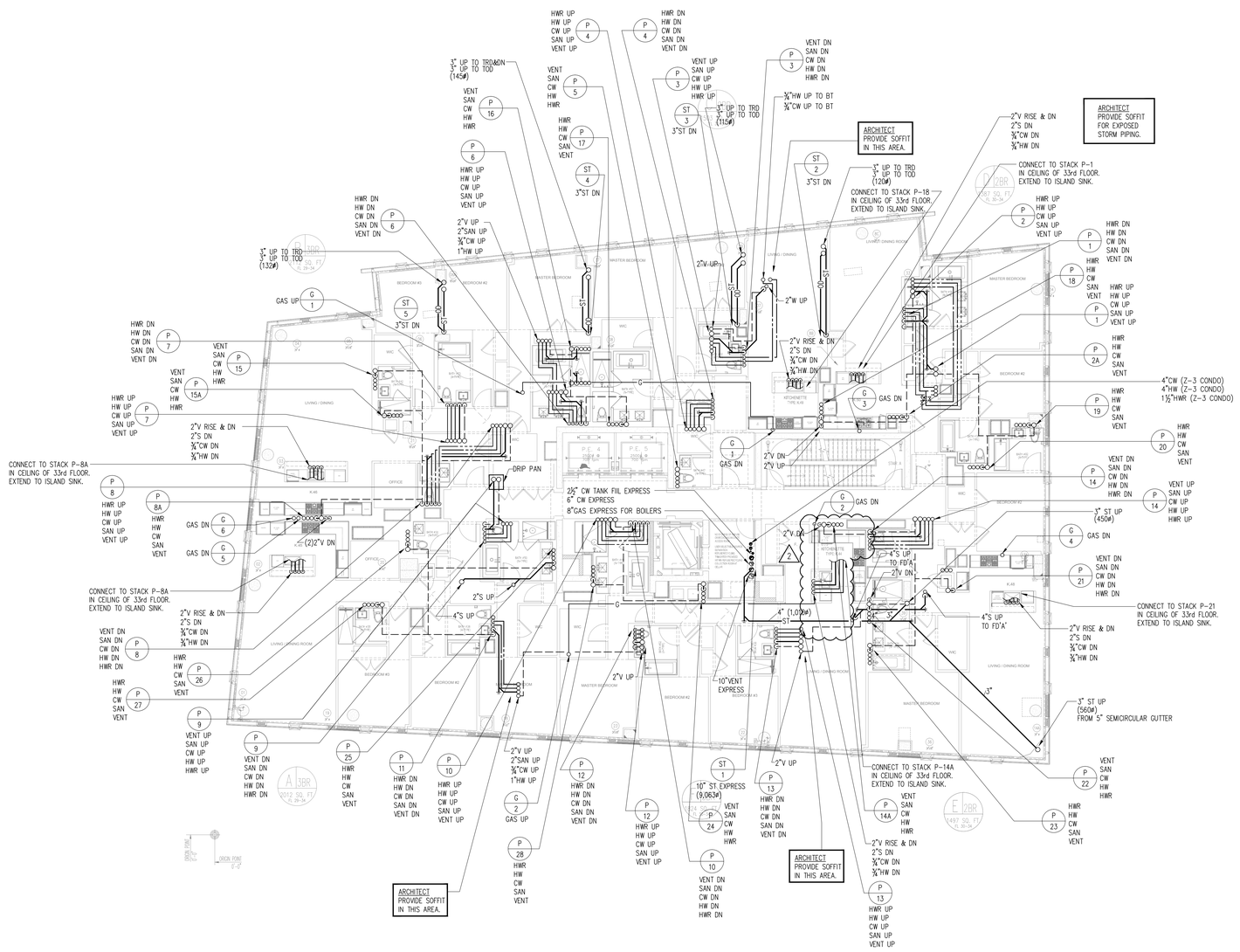
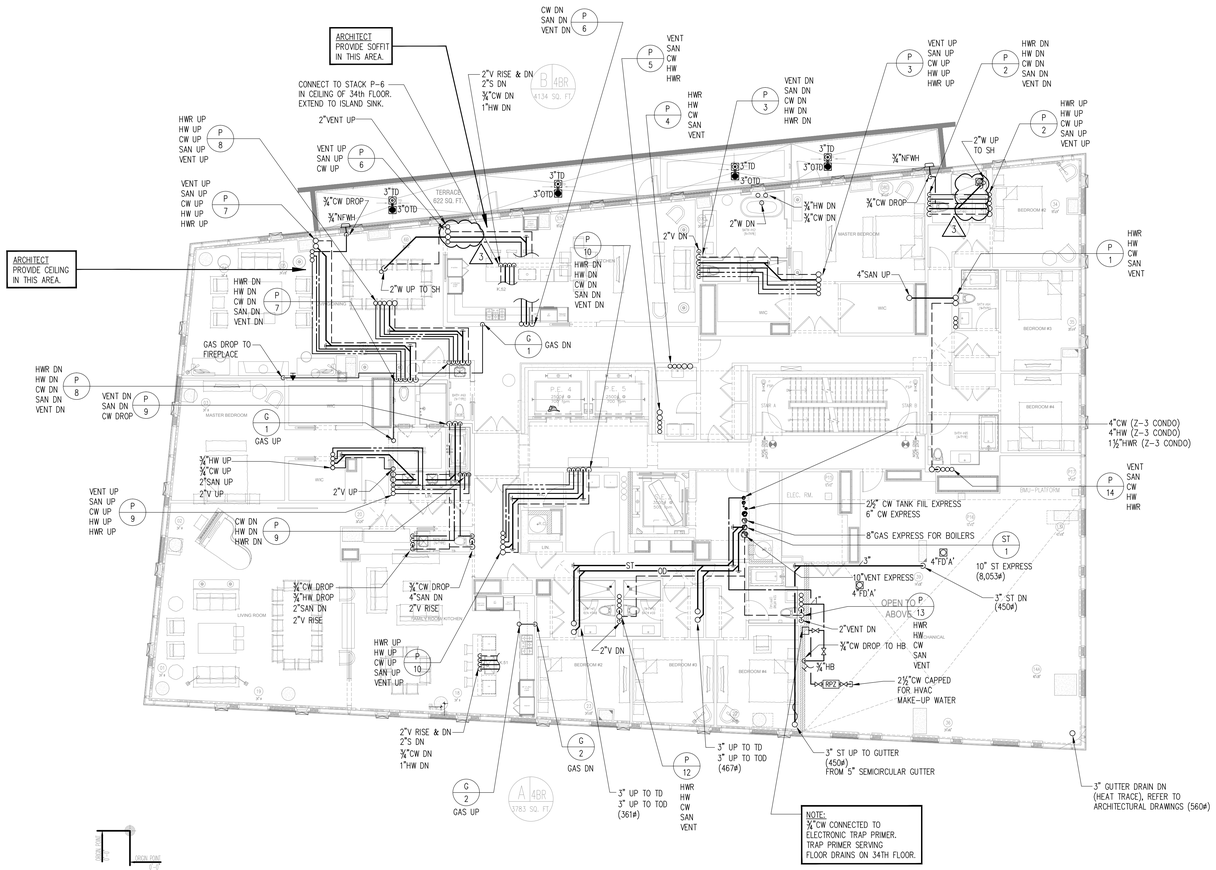
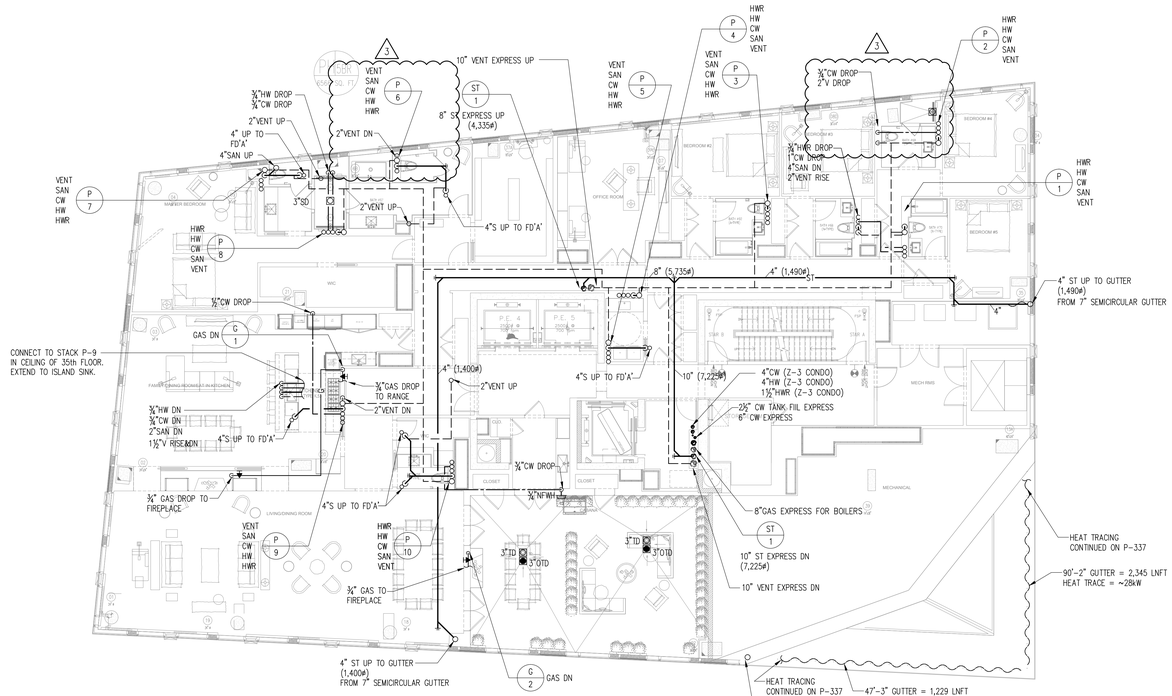
P-333.01
DWG NO.


ARCHITECT PROVIDE SOFFIT IN THIS AREA.
ARCHITECT PROVIDE SOFFIT FOR EXPOSED STORM PIPING.
CONNECT TO STACK P-1 IN CEILING OF 33rd FLOOR. EXTEND TO ISLAND SINK.
CONNECT TO STACK P-18 IN CEILING OF 33rd FLOOR. EXTEND TO ISLAND SINK.
CONNECT TO STACK P-8A IN CEILING OF 33rd FLOOR. EXTEND TO ISLAND SINK.
CONNECT TO STACK P-21 IN CEILING OF 33rd FLOOR. EXTEND TO ISLAND SINK.
CONNECT TO STACK P-14A IN CEILING OF 33rd FLOOR. EXTEND TO ISLAND SINK.
2½" CW TANK FILL EXPRESS
6" CW EXPRESS
8"GAS EXPRESS FOR BOILERS
10" ST. EXPRESS (9,063#)
10"VENT EXPRESS
4" (1,029#)
4"CW (Z-3 CONDO)
4"HW (Z-3 CONDO)
1½"HWR (Z-3 CONDO)
3" ST UP (450#)
3" ST UP (560#) FROM 5" SEMICIRCULAR GUTTER
DRIP PAN
(2)2"V DN
2"V UP
2"V DN
2"W UP
2"V-UP
4"S UP TO FD'A'
4"S UP
2"S UP
3" UP TO TRD
3" UP TO TOD (120#)
3" UP TO TRD&ON
3" UP TO TOD (145#)
3" UP TO TRD
3" UP TO TOD (115#)
3" UP TO TRD
3" UP TO TOD (130#)
¾"HW UP TO BT
¾"CW UP TO BT
GAS UP
GAS DN
2"V RISE & DN
2"S DN
¾"CW DN
¾"HW DN
2"V UP
2"SAN UP
¾"CW UP
1"HW UP
HWR UP
HW UP
CW UP
SAN UP
VENT UP
HWR DN
HW DN
CW DN
SAN DN
VENT DN
VENT
SAN
CW
HW
HWR
HWR
HW
CW
SAN
VENT
3"ST DN
3"ST UP
3"ST DN
3"ST DN
3"ST DN

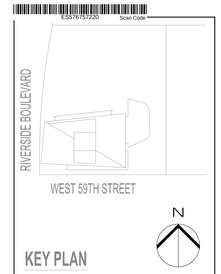

ARCHITECT
PROVIDE SOFFIT IN THIS AREA.
ARCHITECT
PROVIDE CEILING IN THIS AREA.
CONNECT TO STACK P-6 IN CEILING OF 34th FLOOR. EXTEND TO ISLAND SINK.
2"VENT UP
2"V RISE & DN
2"S DN
¾"CW DN
1"HW DN
CW DN
SAN DN
VENT DN
P 6
VENT
SAN
CW
HW
HWR
P 5
HWR
HW
CW
SAN
VENT
P 4
VENT DN
SAN DN
CW DN
HW DN
HWR DN
P 3
VENT UP
SAN UP
CW UP
HW UP
HWR UP
P 3
HWR DN
HW DN
CW DN
SAN DN
VENT DN
P 2
HWR UP
HW UP
CW UP
SAN UP
VENT UP
P 2
HWR UP
HW UP
CW UP
SAN UP
VENT UP
P 8
VENT UP
SAN UP
CW UP
P 6
VENT UP
SAN UP
CW UP
HW UP
HWR UP
P 7
¾"CW DROP
¾"NFWH
3"TD
3"OTD
TERRACE
622 SQ. FT.
2"W UP TO SH
HWR DN
HW DN
CW DN
SAN DN
VENT DN
P 7
GAS DROP TO FIREPLACE
HWR DN
HW DN
CW DN
SAN DN
VENT DN
P 8
VENT DN
SAN DN
CW DROP
P 9
G 1
GAS UP
¾"HW UP
¾"CW UP
2"SAN UP
2"V UP
2"V UP
VENT UP
SAN UP
CW UP
HW UP
HWR UP
P 9
CW DN
HW DN
HWR DN
P 9
¾"CW DROP
¾"HW DROP
2"SAN DN
2"V RISE
¾"CW DROP
4"SAN DN
2"V RISE
HWR UP
HW UP
CW UP
SAN UP
VENT UP
P 10
2"V RISE & DN
2"S DN
¾"CW DN
1"HW DN
G 2
GAS UP
A 4BR
3783 SQ. FT.
B 4BR
4134 SQ. FT.
P 10
HWR DN
HW DN
CW DN
SAN DN
VENT DN
G 1
GAS DN
G 2
GAS DN
3" UP TO TD
3" UP TO TOD
(361ø)
P 12
HWR
HW
CW
SAN
VENT
3" UP TO TD
3" UP TO TOD
(467ø)
2"V DN
2"V DN
2"V DN
¾"HW DN
¾"CW DN
¾"CW DROP
4"SAN UP
P 1
HWR
HW
CW
SAN
VENT
4"CW (Z-3 CONDO)
4"HW (Z-3 CONDO)
1½"HWR (Z-3 CONDO)
P 14
VENT
SAN
CW
HW
HWR
2½" CW TANK FIL EXPRESS
6" CW EXPRESS
8"GAS EXPRESS FOR BOILERS
3"
4"FD A'
ST 1
10" ST EXPRESS
(8,053ø)
10"VENT EXPRESS
4"FD A'
3" ST DN
(450ø)
OPEN TO ABOVE
P 13
HWR
HW
CW
SAN
VENT
2"VENT DN
¾"CW DROP TO HB
¾"HB
RP2
2½"CW CAPPED FOR HVAC MAKE-UP WATER
3" ST UP TO GUTTER
(450ø)
FROM 5" SEMICIRCULAR GUTTER
3" GUTTER DRAIN DN
(HEAT TRACE), REFER TO
ARCHITECTURAL DRAWINGS (560ø)
NOTE:
¾"CW CONNECTED TO ELECTRONIC TRAP PRIMER. TRAP PRIMER SERVING FLOOR DRAINS ON 34TH FLOOR.
MASTER BEDROOM
LIVING ROOM
KITCHEN
BEDROOM #2
BEDROOM #3
BEDROOM #4
BEDROOM #5
MASTER BEDROOM
WIC
ELEC. RM.
BMS PLATFORM
STAIR 4
STAIR 5
ST 1
P.E. 4
P.E. 5
P.E. 6
P.E. 7
P.E. 8
P.E. 9
P.E. 10
P.E. 11
P.E. 12
P.E. 13
P.E. 14
P.E. 15
P.E. 16
P.E. 17
P.E. 18
P.E. 19
P.E. 20
P.E. 21
P.E. 22
P.E. 23
P.E.



NOTE:

ROOF HEAT TRACED GUTTER – BASED ON STATED ASSUMPTIONS
– 26 LNFT PER LINEAR FOOT OF GUTTER TO ACCOMPLISH MELTING OF SNOW.

ASSUMPTIONS:
– GUTTER IS ASSUMED TO BE 16" OPENING WIDTH AND 30" DEEP.
– HEAT TRACE IS SECURED WITHIN 11 STANDARD ALUMINUM EXTRUSIONS AND ONE ROOF EDGE ALUMINUM EXTRUSION COVERING 12" OF ROOF SURFACE TO BASE OF ICE/SNOW BARRIER. ALUMINUM EXTRUSIONS SPACED APPROX. 6" O.C. ON ALL THREE GUTTER SURFACES.
– ADDITIONAL 2 LNFT OF HEAT TRACE PER LINEAL FOOT OF DRAIN PIPE, TO BE PROVIDED WITHIN DRAINS AND DRAIN PIPES UNTIL A MINIMUM OF 12" PAST THERMAL INSULATION OF INTERIOR SPACE.



KEY PLAN

Number	Date	Revision
8	05/19/17	BULLETIN #1
7	04/14/17	ISSUED FOR CONSTRUCTION
6	03/09/16	REVISED MEP BID SET
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DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
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DWG TITLE:
PLUMBING
36TH FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK
FRANK MUSCARA
27463
LICENSED PROFESSIONAL ENGINEER

DATE:
PROJECT #:
SCALE: 1/8"=1'-0"
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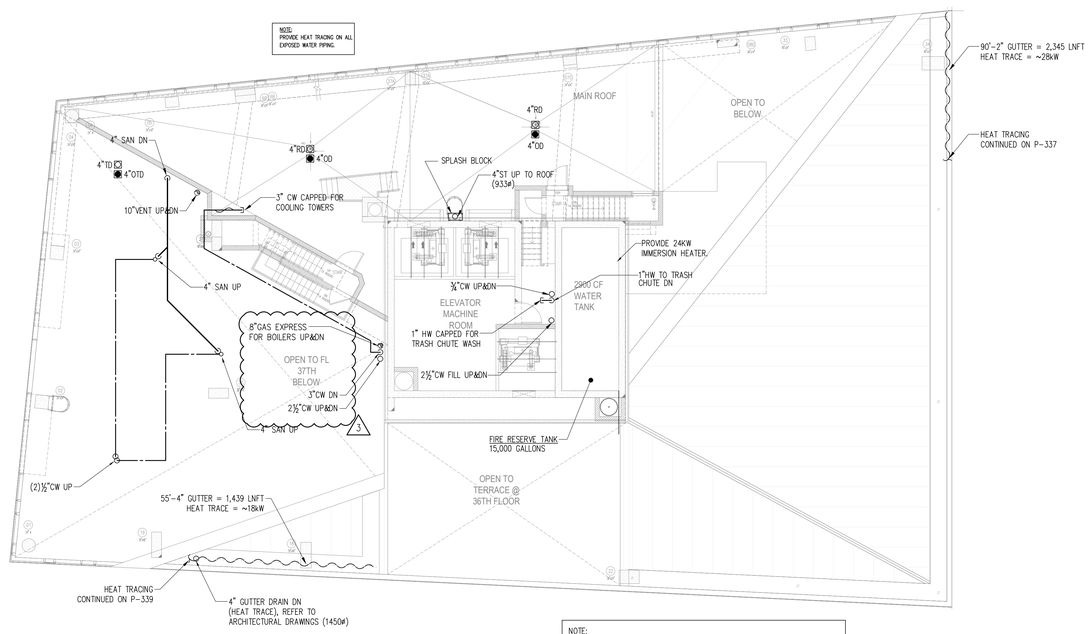

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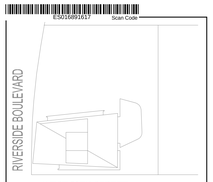

KEY PLAN

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Number	Date	Revision
8	05/19/17	BULLETIN #1 △1
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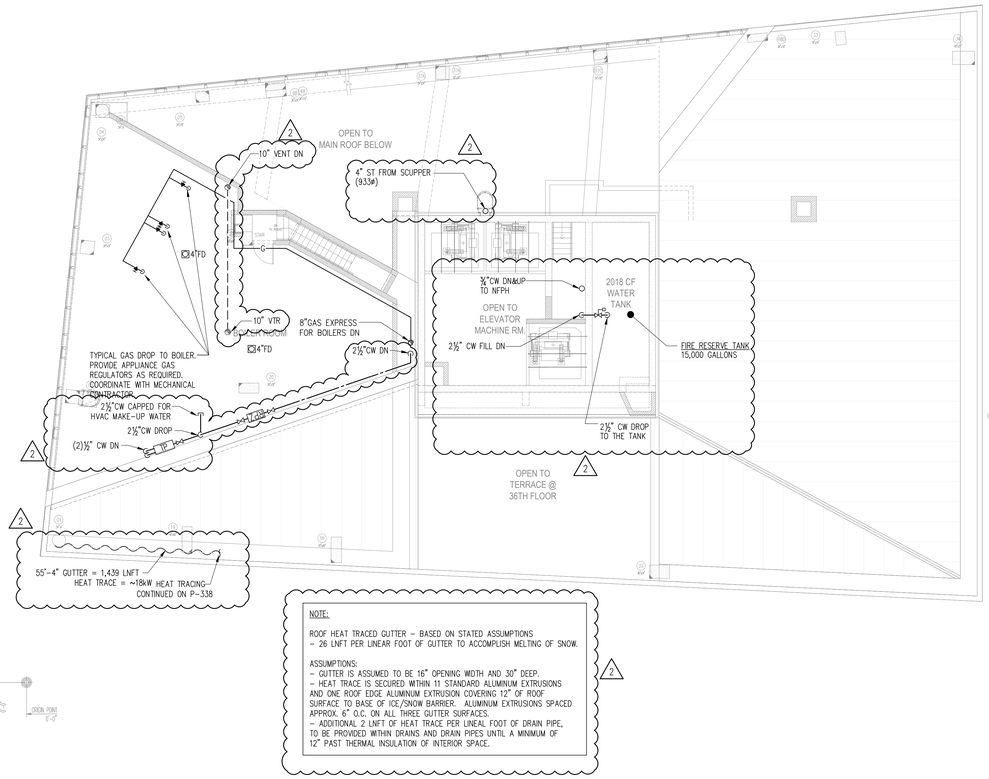

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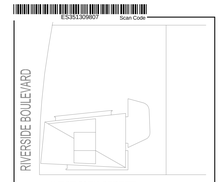

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7	09/22/16	ISSUED TO DOB
6	09/09/16	REVISED MEP BID SET △1
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

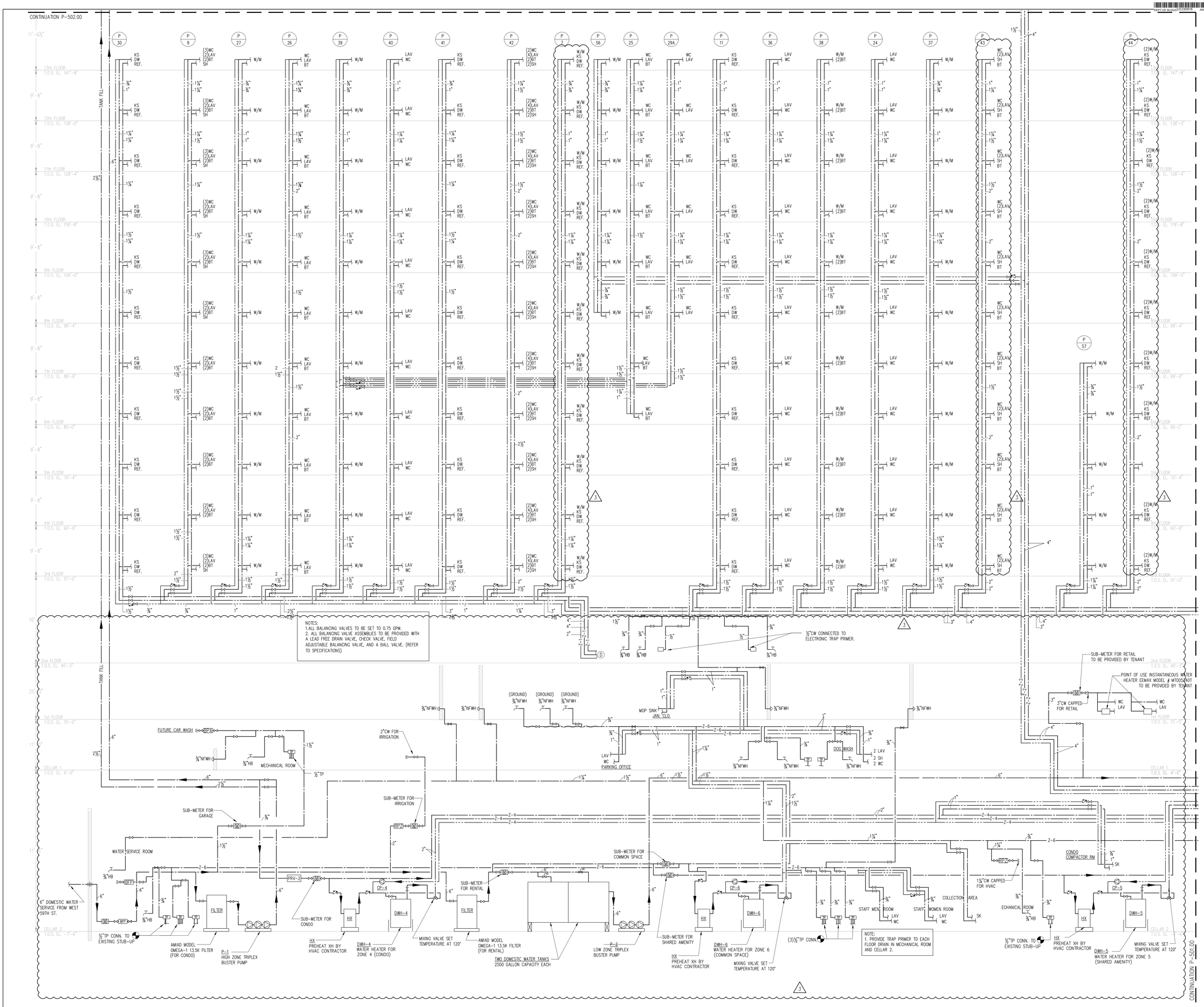
MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

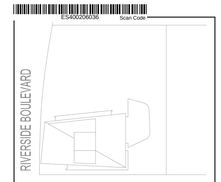
DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of bp's
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
PLUMBING
39TH FLOOR PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK
FRANK IAUSCARELLA
077462
LICENSED PROFESSIONAL ENGINEER

DATE:
PROJECT #:
SCALE: 1/8"=1'-0"
DWG NO.: P-339.01





KEY PLAN

Number	Date	Revision
8	05/19/17	BULLETIN #7
7	04/14/17	ISSUED FOR CONSTRUCTION
6	09/09/16	REVISED MEP BID SET
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
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WSP BUILDING STRUCTURES
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Tel: (212) 687-9888 Fax: (646) 487-5501

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CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED EXCEPTIONS
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
PLUMBING
WATER RISER DIAGRAM
SHEET 1 OF 6

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 077462 · LICENSED PROFESSIONAL ENGINEER

DATE:
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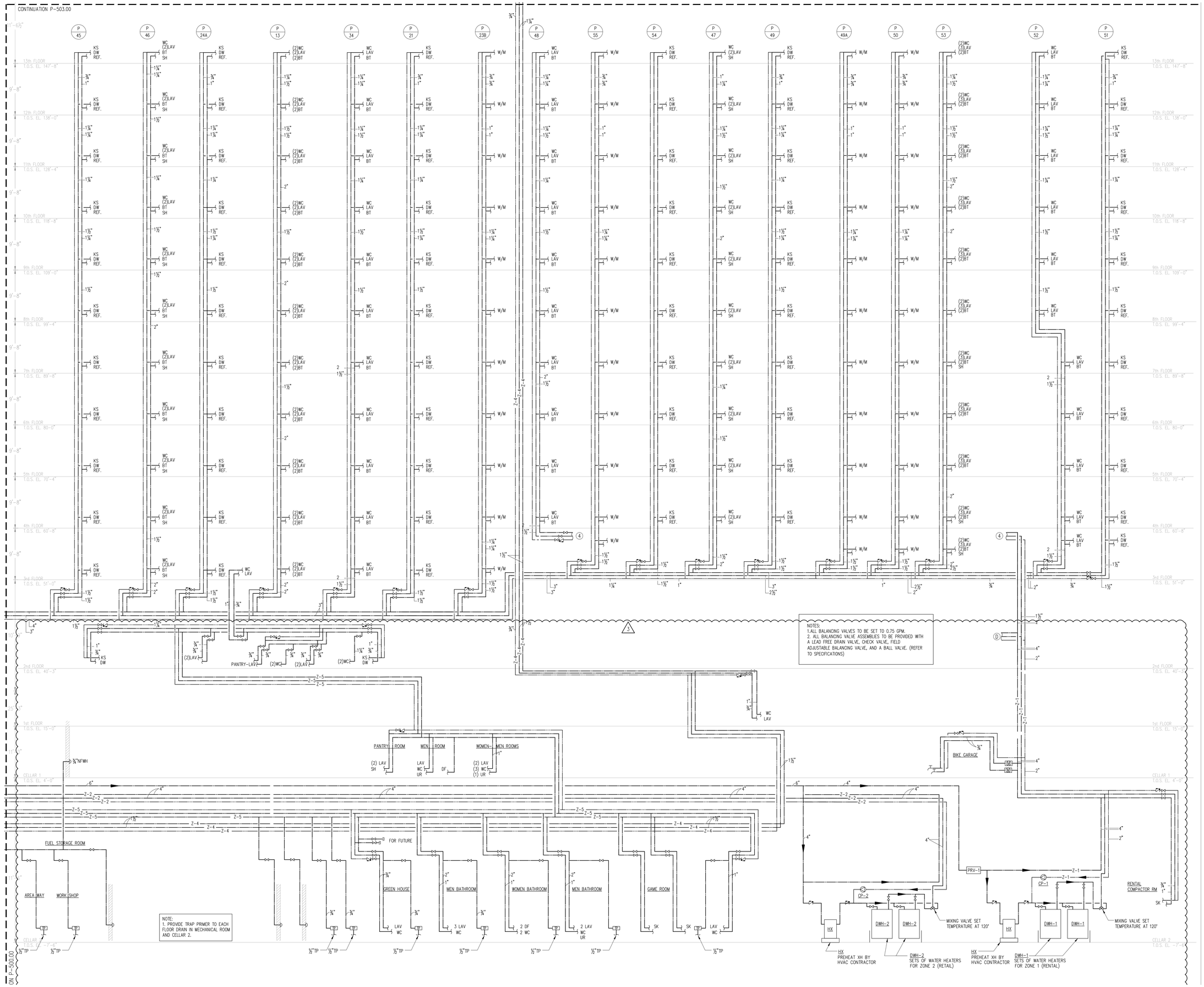
P-500.01



KEY PLAN

Number	Date	Revision
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2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

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11 Broadway, Suite 1700
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CONSULTING ENGINEERS
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New York, NY 10018
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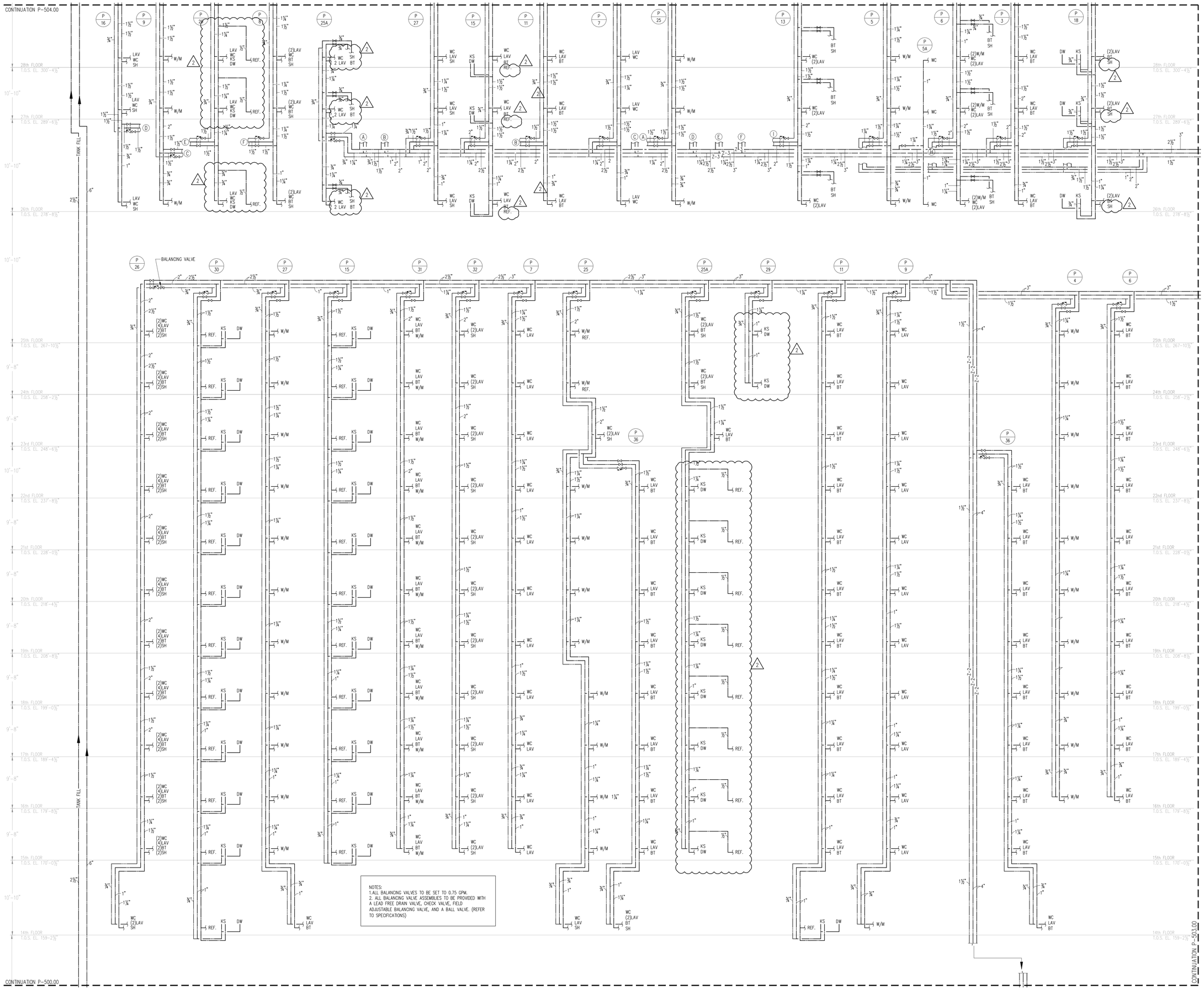
SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARA · 077462 · LICENSED PROFESSIONAL ENGINEER

DWG TITLE:
PLUMBING
WATER RISER DIAGRAM
SHEET 2 OF 6

DATE:
PROJECT #:
SCALE: 1/8"=1'-0"
DWG NO: P-501.01



NOTES:
1.ALL BALANCING VALVES TO BE SET TO 0.75 GPM.
2. ALL BALANCING VALVE ASSEMBLIES TO BE PROVIDED WITH A LEAD FREE DRAIN VALVE, CHECK VALVE, FIELD ADJUSTABLE BALANCING VALVE, AND A BALL VALVE. (REFER TO SPECIFICATIONS)

KEY PLAN

Number	Date	Revision
7	05/19/17	BULLETIN #1 △1
6	04/14/17	ISSUED FOR CONSTRUCTION △1
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
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2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
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10 RIVERSIDE BOULEVARD, NEW YORK, NY

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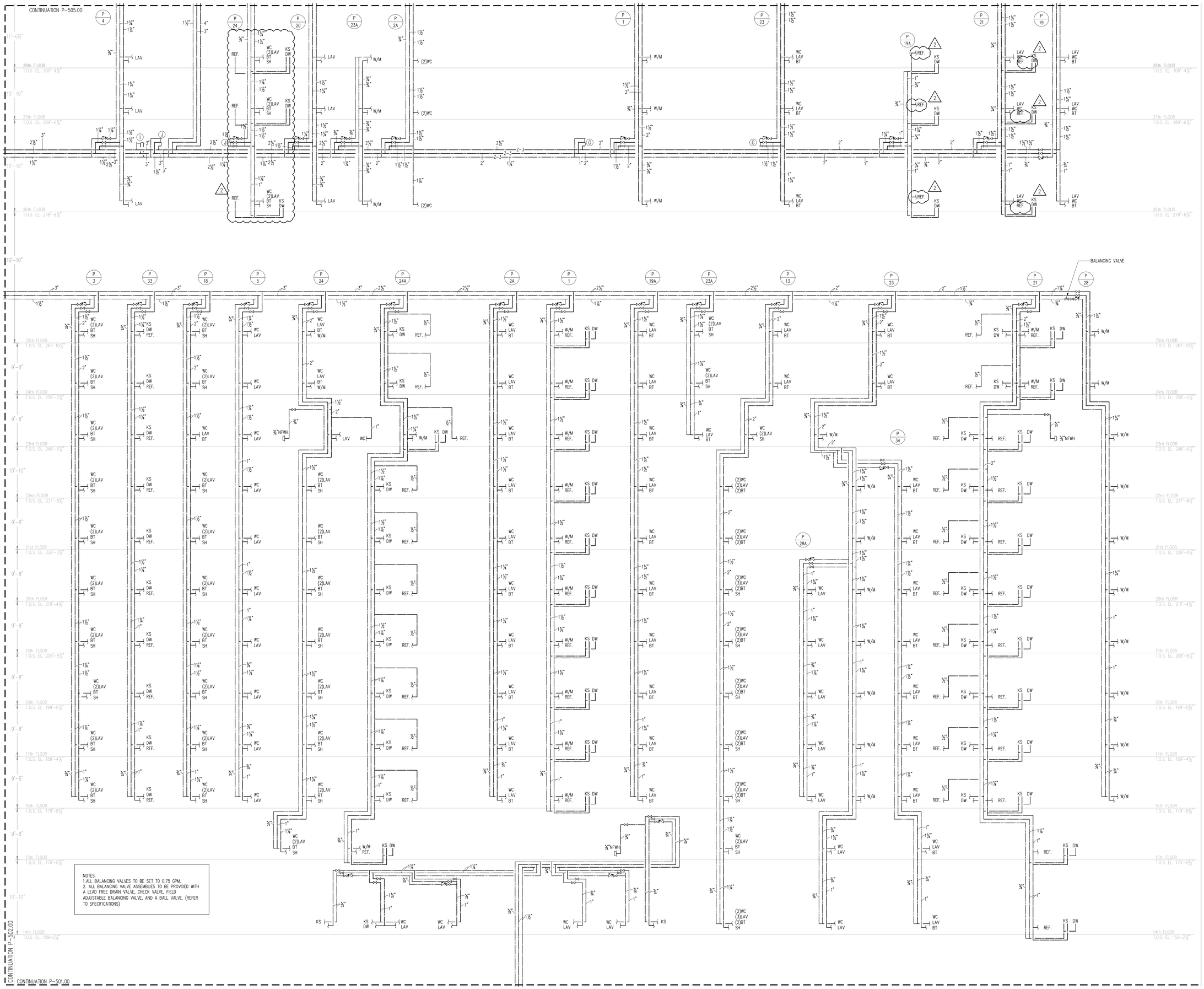
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
PLUMBING
WATER RISER DIAGRAM
SHEET 3 OF 6

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE:
PROJECT #:
SCALE: 1/8"=1'-0"
DWG NO.: P-502.01



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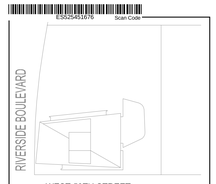

KEY PLAN

Number	Date	Revision
7	05/19/17	BULLETIN #7 △1
6	04/14/17	ISSUED FOR CONSTRUCTION △1
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

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ARCHITECTS, LLP
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New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

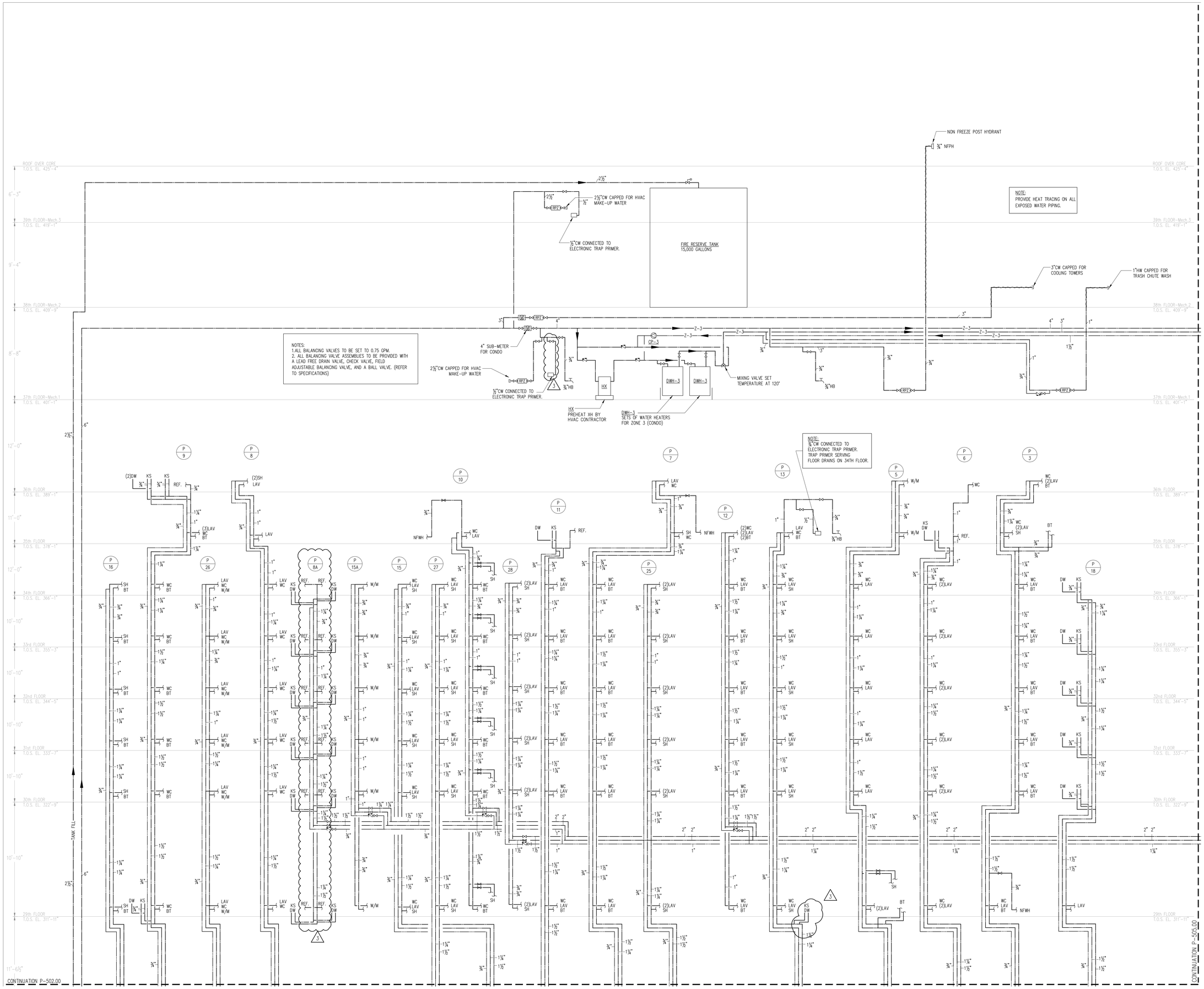
MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

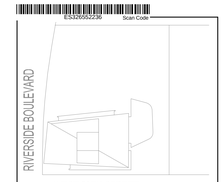
DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
PLUMBING
WATER RISER DIAGRAM
SHEET 4 OF 6

SEAL & SIGNATURE:
STATE OF NEW YORK
FRANK MUSCARELLA
077462
LICENSED PROFESSIONAL ENGINEER

DATE:
PROJECT #:
SCALE: 1/8"=1'-0"
DWG NO: P-503.01





KEY PLAN

N

Number	Date	Revision
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7	04/14/17	ISSUED FOR CONSTRUCTION
6	09/09/16	REVISED MEP BID SET
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
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228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
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CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
PLUMBING
WATER RISER DIAGRAM
SHEET 5 OF 6

SEAL & SIGNATURE:
STATE OF NEW YORK
FRANK MUSCARELLA
077462
LICENSED PROFESSIONAL ENGINEER

DATE:
PROJECT #:
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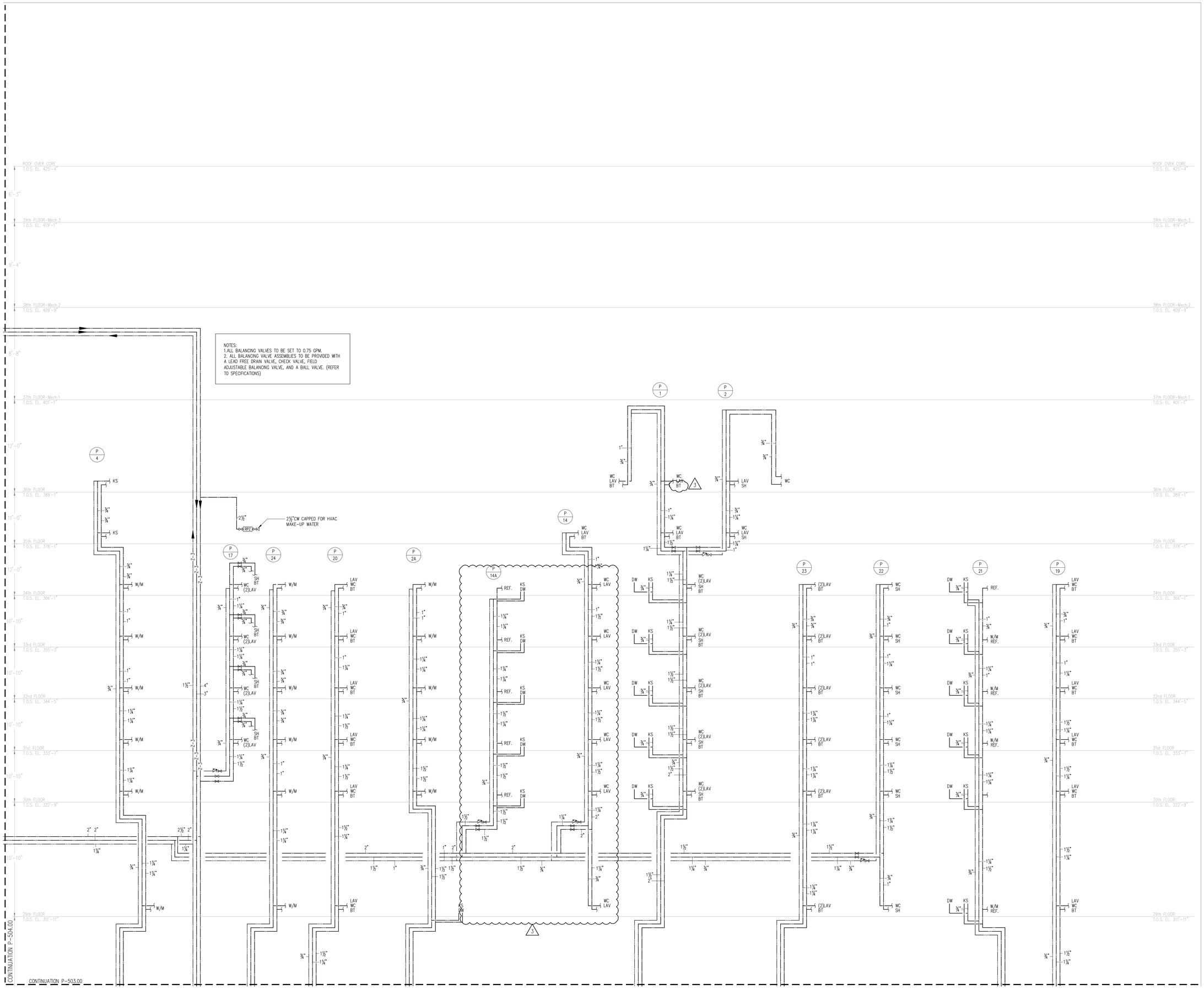
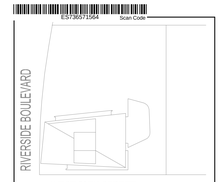
P-504.01
DWG NO.





KEY PLAN

N

Number	Date	Revision
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5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
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Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
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CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
PLUMBING
WATER RISER DIAGRAM
SHEET 6 OF 6

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 077462 · LICENSED PROFESSIONAL ENGINEER

DATE:
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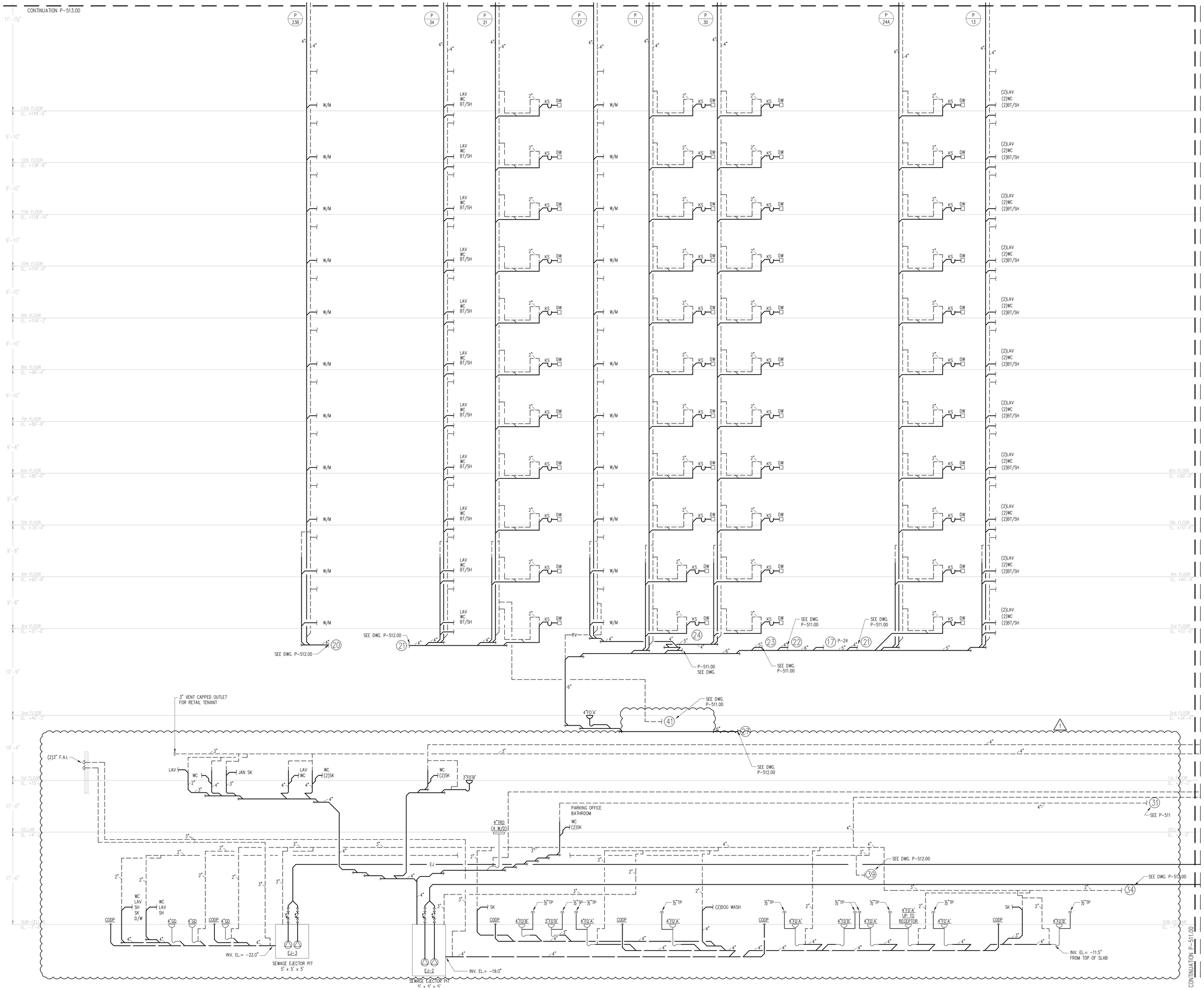

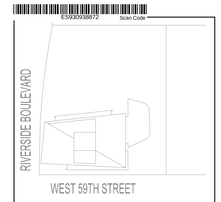

KEY PLAN

Number	Date	Revision
7	05/19/17	BULLETIN #7
6	04/14/17	ISSUED FOR CONSTRUCTION
5	07/22/16	REVISED MEP BID SET
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3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
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RICHARD MEIER & PARTNERS
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CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
EX. 774462
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
PLUMBING
SANITARY RISER DIAGRAM
SHEET 1 OF 9

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCOLINO · 774462 · LICENSED PROFESSIONAL ENGINEER

DATE:
PROJECT #:
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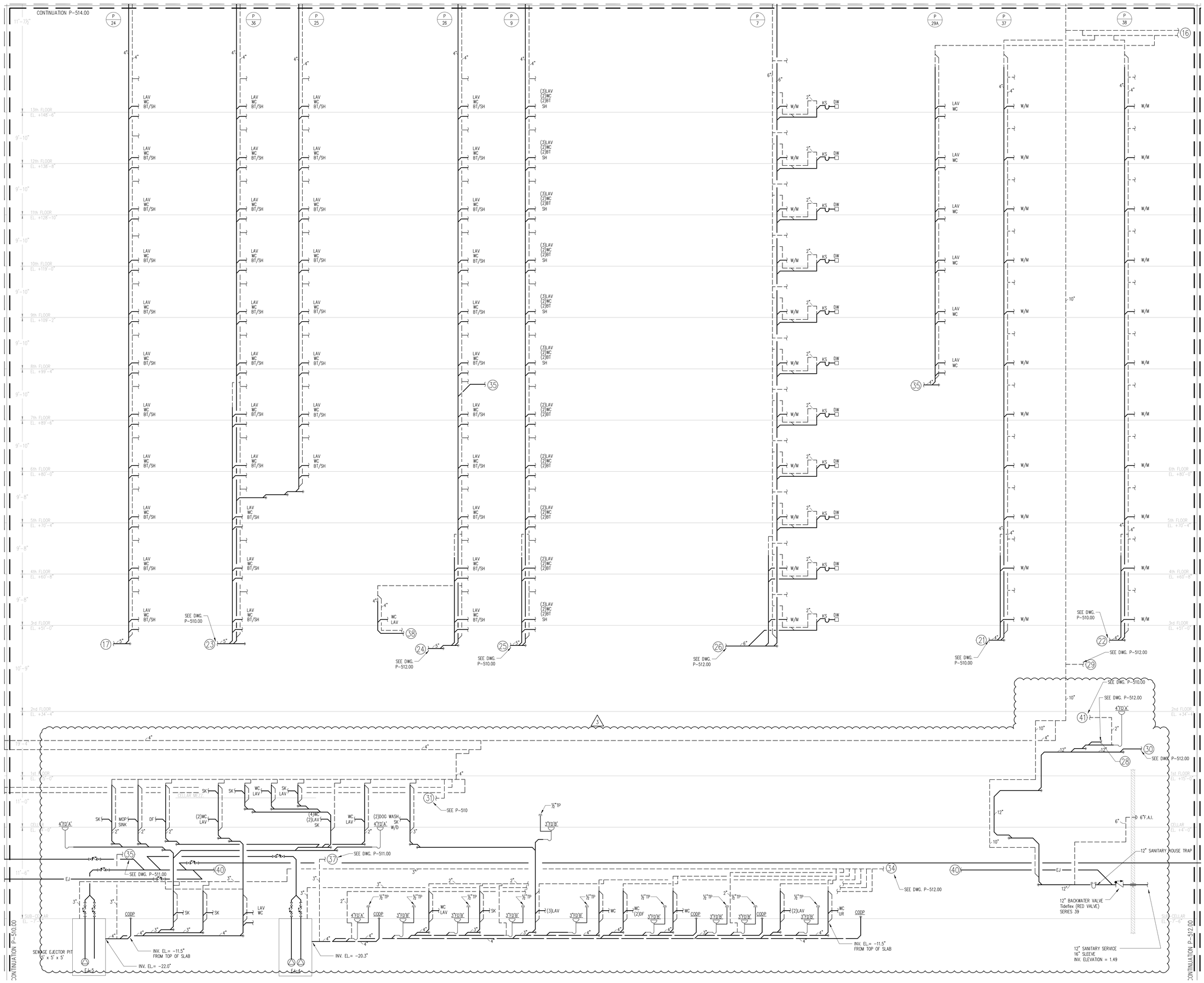
P-510.01
DWG NO.



RIVERSIDE BOULEVARD

WEST 59TH STREET

KEY PLAN

N

Number	Date	Revision
8	05/19/17	BULLETIN #1
7	04/14/17	ISSUED FOR CONSTRUCTION
6	09/09/16	REVISED MEP BID SET
5	07/22/16	REVISED MEP BID SET
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1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
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10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
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NYC Development Hub

DWG TITLE:
PLUMBING
SANITARY RISER DIAGRAM
SHEET 2 OF 9

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCIANO · 27463 · LICENSED PROFESSIONAL ENGINEER

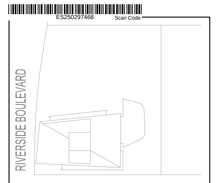
DATE:

PROJECT #:

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

P-511.01

DWG NO.



KEY PLAN

Number	Date	Revision
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OWNER:
GID DEVELOPMENT
125 HIGH STREET
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BOSTON, MA 02110

PROJECT:
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NYC Development Hub

DWG TITLE:
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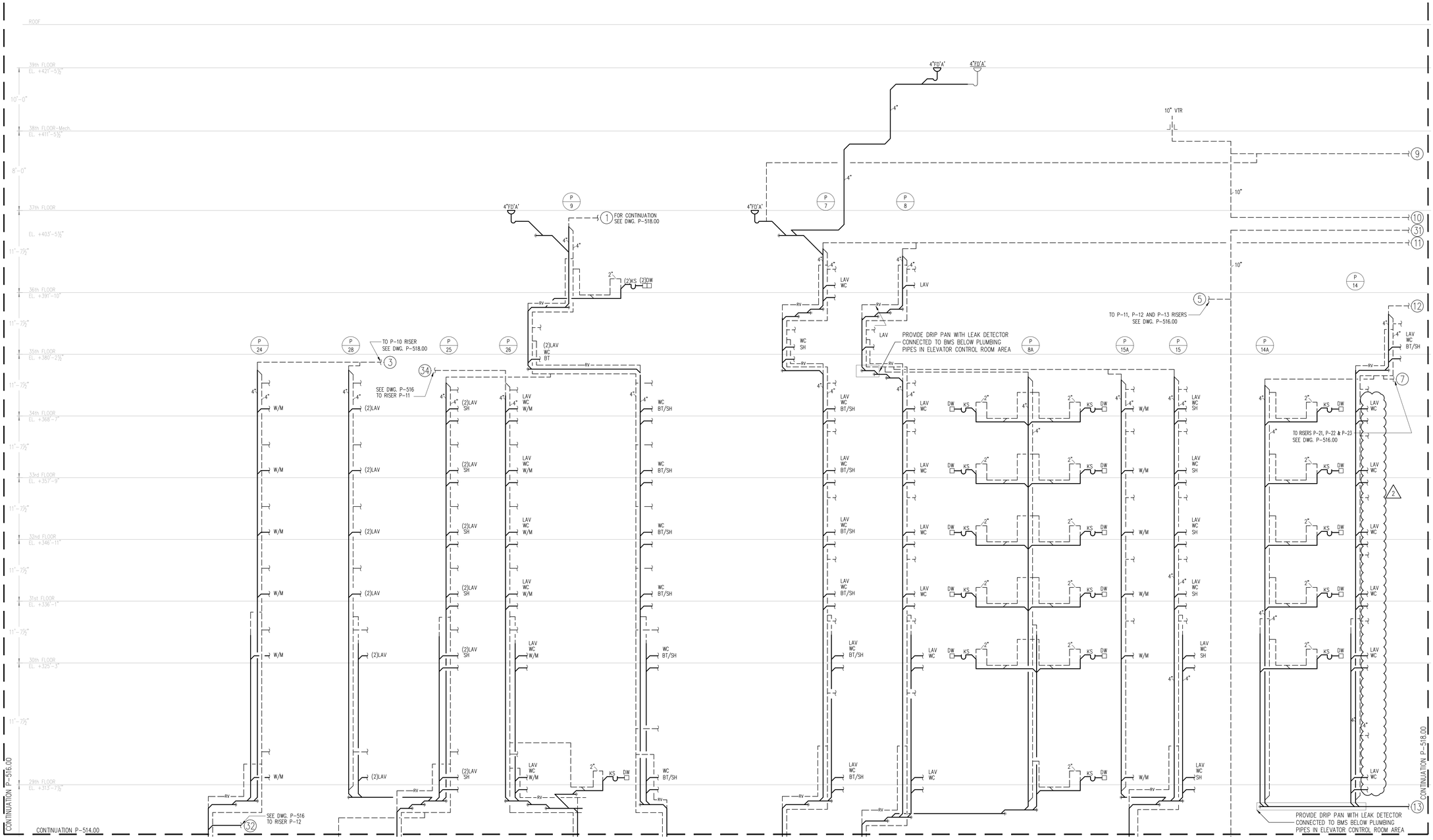
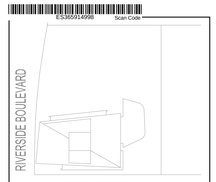
SANITARY RISER DIAGRAM
SHEET 3 OF 9

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77463 · LICENSED PROFESSIONAL ENGINEER

DATE:
PROJECT #:
SCALE: 1/8"=1'-0"

P-512.01
DWG NO.





KEY PLAN

N

Number:	Date:	Revision:
7	05/19/17	BULLETIN #1
6	04/14/17	ISSUED FOR CONSTRUCTION
5	07/22/16	REVISED MEP BID SET
4	04/15/16	REVISED MEP BID
3	02/15/16	ISSUED FOR FILING
2	02/15/16	MEP BID
1	09/24/15	100% DD DOB SUBMISSION

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
PLUMBING
SANITARY RISER DIAGRAM
SHEET 8 OF 9

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE:
PROJECT #:
SCALE: 1/8"=1'-0"
DWG NO.: P-517.01

DEPT OF BUILDINGS 421300976 Job Number

E3455303522 Scan Code

NYC Buildings

Do not submit separately. Must be incorporated in the drawing set

EN1: Energy Cost Budget Worksheet

Must be typewritten

1 Location Information

House No(s) 10	Street Name RIVERSIDE BOULEVARD			
Borough NEW YORK	Block	Lot	BIN	CB No.
Work on Floor(s)			Apt/Condos No(s)	

2 Applicant Information

Last Name MUSCARELLA	First Name FRANK	Middle Initial
Business Name WSP	Business Telephone (212) 532-9600	
Business Address 512 7TH AVENUE	Business Fax	
City NEW YORK State NY Zip 10018	Mobile Telephone	
Email FRANK.MUSCARELLA@WSPGROUP.COM	License Number 77462	

DESIGN COMPLIES WITH NYCECC-2014 PERFORMANCE BASELINE IS ASHRAE 90.1-2010, APPENDIX G

3 Energy Modeling Information

Energy Modeling Protocol (check one): ☐Section 11 ECB ☒Appendix G PRM

Modeling Software & version: eQuest v3.65 Weather File: TMY2/NEW-YORK

Total Modeled Square Feet: 504928 Conditioned Square Feet: 504928

Proposed Unmet Load Hours: 128 Baseline Unmet Load Hours: 250

Proposed Site EUI (kBtu/sf): 65.7 Baseline Site EUI (kBtu/sf): 94.1

4 Purchased Energy Rates

Fuel	Utility Rate Provider/ Rate Structure (i.e ConEd)	Virtual Utility Rate ($/unit)	Baseline Design Total Charge ($)	Virtual Utility Rate ($/unit)	Proposed Design Total Charge ($)	Supporting Doc. Location	Model Output Report
Electric	ConEd - SC-9	0.22	1,146,152	0.21	1,276,343		ES-D
Gas	ConEd - PSC-9	1.23	381,671	1.23	165,737		
Steam							ES-D
Other:							
TOTAL			1,527,823		1,442,080		

☐This project contains on-site generation.

☐☐e☐d☐☐ e☐er☐☐o☐t ☐☐☐☐☐☐e☐☐☐ to 5☐☐

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5 Energy Modeling Usage Summary

	Baseline Model			Proposed Model			
	Electric Usage (kwh)	Gas/Steam Usage (MMBTU)	Other Usage (i.e. chilled water) (indicate units)	Electric Usage (kwh)	Gas/Steam Usage (MMBTU)	Other Usage (i.e. chilled water) (indicate units)	Model Output Location (Report)
Interior Lighting	701,218			662,399			PS-E
Misc. Equip.	2,676,977			2,676,977			PS-E
Space Heat		15870.4		228231	3660.4		PS-E
Space Cool	941164			797502			PS-E
Heat Rejection				19489			PS-E
Pumps & Misc	39251			919289			PS-E
Vent Fans	808123			731694			PS-E
Dom. Hot Water		11358.4			5978.4		PS-E
Exterior Lighting	42,486			21418			
Exterior Misc.		3760.1			3760.1		
TOTAL	5,209,222	30,988.9		6,057,005	13,398.9		

6 Energy Inputs and Supporting Documentation Index

a Above-Grade Wall & Fenestration Areas

	Orientation	Baseline Case: Window + Wall Area (sf)	Baseline Case: Vertical Glazing Area (sf)	Baseline Case: %	Proposed Case: Window + Wall Area (sf)	Proposed Case: Vertical Glazing Area (sf)	Proposed Case: %	Supporting Doc. Location	Model Output Report
Above-Grade Wall & Vertical Glazing Area by Orientation	North	54422	21225	39.0	54422	40948	75		LV-D
	East	36233	15523	40.6	38233	19816	52		LV-D
	South	55775	22868	41.0	55775	30548	55		LV-D
	West	36059	15001	41.6	36059	23739	66		LV-D
	Total	184,489	74615	40	184,489	115,051	62		
Roof & Skylight Area	Roof + Skylight Area (ft²)	Skylight Area (ft²)	(%)		Roof + Skylight Area (ft²)	Skylight Area (ft²)	(%)	Supporting Doc. Location	Model Output Report
	Total	8547	0	0	8547	0	0		

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b Vertical Fenestration

Model Input Parameter	Category (Res/Non-Res)	Baseline Case: Assembly U-factor/ C-factor/ SHGC	Proposed Case: Assembly U-factor/ C-factor/ SHGC	Supporting Doc. Location	Model Output Report
Vertical Glazing	Res	1 Curtain wall 0.5 0.4 0.7	EWS-01-A 0.43 0.28 0.7	EN-104.01	LV-D
Vertical Glazing		2	EWS-02-A 0.44 0.28 0.7	EN-104.01	
Vertical Glazing		3	EWS-03-A 0.41 0.28 0.7	EN-104.01	
Vertical Glazing		4	EWS-04-A 0.45 0.28 0.7	EN-104.01	
Vertical Glazing		5	EWS-06-A 0.40 0.28 0.7	EN-105.01	
Vertical Glazing		6			
Vertical Glazing		7			
Skylights		1			
Skylights		2			
Shading Devices		☐No shading projections, manual shading devices, or self-shading have been modeled. ☒Any shading by adjacent structures has been modeled identically to the proposed case.	List any permanent or auto-controlled shading devices:		

How were the Proposed case framed assembly fenestration U-factors determined? (Choose one)

☐NFRC testing for site-assembled fenestration

☐NFRC testing for manufactured fenestration assemblies

☐Table A8.2 (windows) and Table A8.1 (skylights)

☒LBNL Window 5 or Window 6 calculations

☐Energy simulation includes separate frame and glazing

☐Other (Describe)_____

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c Envelope Assembly

☐Check if additional envelope descriptions are attached (Please use the EN-1c).

☒All proposed roofs, above-grade exterior walls, below-grade exterior walls, exposed floors, slab-on-grade floors, and opaque doors were modeled as-designed and with assembly U-factors/F-factors consistent with ASHRAES 90.1 Appendix A values.

Model Input Parameter	Space Conditioning Category (Res/Non-Res)	Item	Baseline Case: Description	Baseline Case: Assembly U-factor/ C-factor/ F-factor	Proposed Case: Description	Proposed Case: Assembly U-factor/ C-factor/ F-factor	Supporting Doc. Location	Model Output Report
Roof Construction	Res	1	Insulation entirely above deck	0.048	EWS-05-ROOF	0.037	EN-105	0.037, LV-D Report
			Solar Reflectance	SR =	Solar Reflectance	SR =		
		2						
			Solar Reflectance	SR =	Solar Reflectance	SR =		
Above-Grade Exterior Wall Construction	Res	1	Steel Building	0.064	EWS-01-B EWS-01-C	0.097 0.112	EN-104, Tower	0.105, LV-D
		2			EWS-02-B EWS-02-C	0.132 0.122	EN-104, Shield	0.130, LV-D
		3			EWS-03-B EWS-03-C	0.097 0.122	EN-104, Sail	0.119, LV-D
		4			EWS-04-B EWS-04-C	0.050 0.097	EN-104, Anchor	0.050, LV-D
		5			EWS-06-B EWS-06-C	0.074 0.116	EN-105, Storefront	0.071, LV-D
		6			EWS-06-D	0.050	EN-105, Storefront	0.071, LV-D
		7						
		8						
Below-Grade Exterior Wall Construction	Res	1	Below Grade Wall	U=0.065 (C=0.119)	Below Grade Wall	U=0.065 (C=0.119)		LV-D
		2						
Exposed Floor Construction		1						
Slab-On-Grade Floors		1						
Opaque Doors		1						
		2						

Calculated opaque facade weighted average U value.
Input for Proposed model wall U values.

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d Interior Lighting Power

☐Check if additional lighting power forms are attached (Please use the EN-1d).

The lighting power is calculated using the (check one) ☒space by space method or ☐building area method.

Space Type (Table 9.6.1 or Building Area Type - Table 9.5.1)	Total Area (sq.ft.)	Baseline Case: Auto Controls (Yes/No)	Baseline Case: Daylight Calc. (Yes/No)	Baseline Case: Modified LPD (W/sf)	Proposed Case: Auto Controls (Yes/No)	Proposed Case: Daylight Calc. (Yes/No)	Proposed Case: Modified LPD (W/sf)	Supporting Doc. Location	Model Output Report
Residential	389868	No	No	0.60	No	No	0.60		PS-E
Amenity	14823	No	No	0.73	No	No	0.83		
Corridor	26275	No	No	0.66	No	No	0.43		
Mechanical	24463	No	No	0.95	No	No	0.65		
Lobby	4088	No	No	0.90	No	No	0.31		
Garage	33079	No	No	0.19	No	No	0.14		
Stair	12332	No	No	0.69	No	No	0.69		
Total									

Baseline lighting power densities are based on Space-by-space, Table 9.6.1 of ASHRAE 90.1-2010. Lighting control credit for proposed model is excluded from the analysis.

e Exterior Lighting Power

	Baseline Design	Proposed Design	Supporting Doc. Location	Model Output Report
Tradeoff Lighting Power	8142	3780	PS-E	
Non-Tradeoff Lighting Power	1113	1113		
TBC Allowance	407			
Total Lighting Power	9719	4893		

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f Process/Receptacle Equipment

Space Type (or Equipment Type)	Space Area (or # Equip.)	Equipment Power Density (W/SF) or Consumption (kW)	Modeling Parameters/ Schedule	Baseline Design Total Consumption (kWh/yr)	Supporting Doc. Location	Model Output Report
Residential	330854	1.0 W/SF	Schedule	Yes		PS-E
Amenity	14823	1.0 W/SF	Schedule	Yes		PS-E
Mechanical	24463	0.5 W/SF	Schedule	Yes		PS-E
Elevator		178 kW		Yes		PS-E
IT Rooms		54 kW		Yes		PS-E
TOTAL						

g Service Hot Water Systems

Model Input Parameter	Service Hot Water Heaters: Baseline Design	Units	Proposed Design	Units	Supporting Doc. Location	Model Output Report
System Type & Fuel	Hot Water Storage Heater		Condensing Boiler (Storage type Heater)			PV-A
Input Rating	1141	MBtu/h	1141	MBtu/h		
Efficiency	80	%	93	%		
Storage Volume	430	Gal	430	Gal		
Storage Temperature	120	°F	120	°F		
Peak HW Demand	55.22	GPM	35.56	GPM		
Number of Primary DHW pumps	6	#	6	#		
Primary DHW Pump Power	4.97	kW	4.97	kW		
Primary DHW Pump Control	Constant		Constant			

h HVAC Narrative. Please provide a brief narrative of the building's HVAC systems.

Cooling will be generated by two (1) 268 ton modular refrigeration machines. The system will be designed for a 12 °F. differential temperature (42 °F /54 °F). Condenser water system includes two (2) 600 ton induced draft cooling tower located on the roof of the building. The condenser water system is designed for a 15 °F. differential temperature (85 °F /100 °F on primary side and 87 deg/102 deg. Secondary side). Four (4) 6000 MBH condensing boilers provides the heating needs of the project.

Apartment and condo ventilation is provided by water cooled heat pump DOAS systems with heat recovery. Condo apartments shall be provided with fan coil units and rental portion of the building with water source heat pump systems. Lobby, Amenity and Retail portion of the building shall be provided with water source heat pump system.

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i Air-Side HVAC

Each individual system may be entered separately, or multiple systems may be grouped together if all input parameters identified with an (*) are similar.

☒Check if additional Air-Side HVAC forms are attached (Please use the EN-1i).

Model Input Parameter	HVAC System / Group (BASELINE DESIGN): Description	Units	HVAC System / Group (PROPOSED DESIGN): Description	Units	Supporting Doc. Location	Model Output Report
Air Side HVAC Systems						
System Description	Baseline System Description & System #: System 1: Packaged Terminal Air Conditioners		Water Source Heat Pumps & Apartment Ventilation System			SV-A
System Designation(s)	Rental PTAC System		AC-ERU-2-1,2, AHU-2-4, HPs			
# of Similar Systems	564		2,1, 564			
Total Cooling Capacity	7200	kBtu	8752.3	kBtu		
*Table 6.8.1 Unitary Cooling Capacity Range	>17000 Btu/h and <65000 Btu/h		>17000 Btu/h and <65000 Btu/h			
*Unitary Cooling Eff. (EER or SEER)	9.3 - 11	EER	14.5,14.9,14.3, 14 to 14.7	EER	M-601, 603	
*Unitary Cooling Part-load Eff. (if applicable)						
Total Heating Capacity	9222	kBtu	9244.2	kBtu		
*Table 6.8.1 Unitary Heating Capacity Range	<135000 Btu/h		<135000 Btu/h			
*Unitary Heating Efficiency	N/A		5.6, 5.7, 6.3, 4.4 to 4.9	COP		
*Fan Control	Constant		Cycling, ECM Motors			
Supply Airflow	170,411	cfm	271,833	cfm		
Outdoor Airflow	41000	cfm	41000	cfm		
*Demand Control Ventilation	N/A		N/A			
*Economizer High-Limit Shutoff (°F)	N/A		N/A			
Exhaust Air Energy Recovery Systems	N/A		Yes			
*Exhaust Air Energy Recovery Effectiveness	N/A		Enthalpy Wheel, 75%			
Supply Fan Power		kW		kW		
Return/Relief Fan Power		kW		kW		
Exhaust Fan Power		kW		kW		
System Fan Power	51.44	kW	72.07	kW		SV-A
Allowed Fan Power:		kW		kW		
Other (describe)						
Other (describe)						
Other (describe)						
Other (describe)						

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j Water-Side HVAC – Chilled Water

☐Check if additional Chiller HVAC forms are attached (Please use the EN-1j).

Model Input Parameter	HVAC System / Group (BASELINE DESIGN): Description	Units	HVAC System / Group (PROPOSED DESIGN): Description	Units	Supporting Doc. Location	Model Output Report
Chilled Water						
# and Type of Chillers *(and capacity of chiller if more than 1 type or size)*	N/A		One (1) 268 Ton Modular Chiller			PV-A
Total Chiller Capacity			268	Ton		
Chiller Efficiency - Full Load			4.2	COP		
Chiller Efficiency - Part Load						
Chilled Water (CHW) Supply Temp		°F	42	°F		
CHW ΔT		°F	12	°F		
CHW Supply Temp Reset Parameters						
CHW Loop Configuration			Primary Only			
Number of Primary CHW Pumps		#	2	#		
Primary CHW Pump Power			15	HP		
Primary CHW Pump Flow		gpm	270	gpm		
Primary CHW Pump Control			Variable Volume			
Number of Secondary CHW Pumps		#		#		
Secondary CHW Pump Power						
Secondary CHW Pump Flow		gpm		gpm		
Secondary CHW Pump Control						
Water-Side Economizer			N/A			
Water-Side Energy Recovery			N/A			
Other (describe)						
Other (describe)						
Other (describe)						
Other (describe)						

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k Water-Side HVAC – Cooling Tower & Condenser Water

☒Check if additional Cooling Tower & Condenser Water forms are attached (Please use the EN-1k).

Model Input Parameter	HVAC System / Group (BASELINE DESIGN): Description	Units	HVAC System / Group (PROPOSED DESIGN): Description	Units	Supporting Doc. Location	Model Output Report
Cooling Tower & Condenser Water						
Number of Cooling Towers / Fluid Coolers	N/A		Two (2) 1,090 gpm open cell cooling tower		M-601	PV-A
Cooling Tower Fan Power			30	HP		
Cooling Tower Fan Control			Variable Speed			
Condenser Water (CW) Leaving Temp		°F	85	°F		
CW ΔT		°F	15	°F		
CW Loop Temp Reset Parameters						
Number of CW Pumps		#	4	#		
CW Pump Power			2@40 HP, 2@50 HP			
CW Pump Flow		gpm	3800	gpm		
CW Pump Control			Variable Speed			
Other (describe)						
Other (describe)						
Other (describe)						
Other (describe)						

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l Water-Side HVAC – Hot Water/Steam

☐Check if additional Hot Water/Steam forms are attached (Please use the EN-1l).

Model Input Parameter	HVAC System / Group (BASELINE DESIGN): Description	Units	HVAC System / Group (PROPOSED DESIGN): Description	Units	Supporting Doc. Location	Model Output Report
Hot Water/Steam						
Number and Type of Boilers	(2) Gas fired hot water boilers,		(4) Gas fired hot water boilers,			PV-A
Total Boiler Capacity	10,600	MBH	24,000 (6000 MBH Each)	MBH		
Boiler Efficiency	80	%	87	%		
Hot Water or Steam (HWH) Supply Temp	180	°F	150	°F		
HHW ΔT	50	°F	20	°F		
HHW Temp Reset Parameters	Per Section 6.5.4.1		Load Reset			
HHW Loop Configuration	Primary Only		Primary Only			
Number of Primary HHW Pumps	1	#	2	#		
Primary HHW Pump Power	19 W/gpm		50	HP		
Primary HHW Pump Flow	575	gpm	450 Each	gpm		
Primary HHW Pump Control	Variable Speed		Variable Speed			
Number of Secondary HHW Pumps		#		#		
Secondary HHW Pump Power						
Secondary HHW Pump Flow		gpm		gpm		
Secondary HHW Pump Control						
Other (describe)						
Other (describe)						
Other (describe)						
Other (describe)						

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m Geothermal System

Model Input Parameter	HVAC System / Group (BASELINE DESIGN): Description	HVAC System / Group (PROPOSED DESIGN): Description	Units	Supporting Doc. Location	Model Output Report
Geothermal Systems					
Type of Geothermal system	N/A				
Soil Conductivity (if applicable)	N/A				
Geothermal source design temperature - summer	N/A		°F		
Geothermal source design temperature - winter	N/A		°F		
Geoexchange loop design fluid supply temperature - cooling	N/A		°F		
Geoexchange loop design fluid supply temperature -heating	N/A		°F		
Geoexchange loop - operating temperature	N/A				
Geothermal energy transfer effect	N/A				
Geothermal Loop Pumping Configuration	N/A				
Number of Geothermal Loop Pumps	N/A		#		
Geothermal Loop Pump Control	N/A				
Geothermal Pump Power	N/A		W/gpm		
Geothermal Loop Flow	N/A		gpm		
Geothermal Air-side Efficiency curves	N/A				
Other (describe)					
Other (describe)					
Other (describe)					

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n Combined Heat & Power Systems

Model Input Parameter	HVAC System / Group (BASELINE DESIGN): Description	HVAC System / Group (PROPOSED DESIGN): Description	Units	Supporting Doc. Location	Model Output Report
Combined Heat & Power Systems					
CHP: Type of generator	N/A				
Quantity of CHP generators	N/A				
Total capacity of CHP generators (kW) at design conditions	N/A		kW		
CHP: Thermal efficiency (%) at design conditions	N/A		%		
CHP: Electrical efficiency (%) at design conditions	N/A		%		
CHP: Controls / Schedule	N/A				
CHP: Fuel Source	N/A				
CHP: Where is the recovered heat used? (e.g. gas absorption chillers, hot water distribution loop, etc.)	N/A				
CHP: Backup heat source when waste heat from CHP is unavailable? (e.g. fossil fuel boilers)	N/A				
CHP: Parasitic losses (e.g. air handling unit to cool the intake air)	N/A				
Other (describe)					
Other (describe)					
Other (describe)					
Other (describe)					

Falsification of any statement is a misdemeanor under the NYC Administrative Building Code and is punishable by a fine or imprisonment, or both. It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by imprisonment or fine or both.

Name (please print)

Signature | Date

P.E. / R.A. Seal (apply seal, then sign and date over seal)

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EN1 Supplemental Form Page 3

EN-1i Form – Additional Air-side HVAC Systems

Model Input Parameter	HVAC System / Group (BASELINE DESIGN): Description	Units	HVAC System / Group (PROPOSED DESIGN): Description	Units	Supporting Doc. Location	Model Output Report
Air Side HVAC Systems						
System Description	Baseline System Description & System #: System 5: Packaged VAV System		Amenity HP Systems		M-603	SV-A
System Designation(s)	Amenity PVAV System		AHU-C-1, 2, AHU-SC-1 AHU-2-3			
# of Similar Systems	1		4			
Total Cooling Capacity	924	MBH	1043	MBH		
*Table 6.8.1 Unitary Cooling Capacity Range	>760,000	Btu/hr	<760,000	Btu/hr		
*Unitary Cooling Eff. (EER or SEER)	9.5	EER	14.5, 11.9, 12.7, 13.8	EER		
*Unitary Cooling Part-load Eff. (if applicable)						
Total Heating Capacity	1013	MBH	1331	MBH		
*Table 6.8.1 Unitary Heating Capacity Range	>740,000	Btu/hr	>740,000	Btu/hr		
*Unitary Heating Efficiency	N/A		5.9, 5.75, 5.53, 5.2	COP		
*Fan Control	Variable		Variable, ECM Motors			
Supply Airflow	17,000	cfm	16,000	cfm		
Outdoor Airflow	7,600	cfm	7,600	cfm		
*Demand Control Ventilation	N/A		N/A			
*Economizer High-Limit Shutoff (°F)	N/A		N/A			
Exhaust Air Energy Recovery Systems	N/A		N/A			
*Exhaust Air Energy Recovery Effectiveness						
Supply Fan Power		kW		kW		
Return/Relief Fan Power		kW		kW		
Exhaust Fan Power		kW		kW		
System Fan Power	23.29	kW	23.85	kW		

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EN-1i Form – Additional Air-side HVAC Systems

Model Input Parameter	HVAC System / Group (BASELINE DESIGN): Description	Units	HVAC System / Group (PROPOSED DESIGN): Description	Units	Supporting Doc. Location	Model Output Report
Air Side HVAC Systems						
System Description	Baseline System Description & System #: System 5: Packaged VAV System		Sub-Cellar & Cellar BOH HP Systems		M-603	SV-A
System Designation(s)	BOH PVAV System		HP-C-1 to 7 HP-SC-1 to 11			
# of Similar Systems	1		18			
Total Cooling Capacity	648	MBH	532.2	MBH		
*Table 6.8.1 Unitary Cooling Capacity Range	>240,000 & <760,000	Btu/hr	<65,000	Btu/hr		
*Unitary Cooling Eff. (EER or SEER)	9.8	EER	11.8, 12.5, 12.9, 13.0	EER		
*Unitary Cooling Part-load Eff. (if applicable)						
Total Heating Capacity	784	MBH	534	MBH		
*Table 6.8.1 Unitary Heating Capacity Range	>740,000	Btu/hr	<65,000	Btu/hr		
*Unitary Heating Efficiency	N/A		4.6, 4.7	COP		
*Fan Control	Variable		Constant, ECM Motors			
Supply Airflow	9462	cfm	17,900	cfm		
Outdoor Airflow	691	cfm	691	cfm		
*Demand Control Ventilation	N/A		N/A			
*Economizer High-Limit Shutoff (°F)	N/A		N/A			
Exhaust Air Energy Recovery Systems	N/A		N/A			
*Exhaust Air Energy Recovery Effectiveness						
Supply Fan Power		kW		kW		
Return/Relief Fan Power		kW		kW		
Exhaust Fan Power		kW		kW		
System Fan Power	10.31	kW	10.74	kW		

EN1 Supplemental Form Page 3

EN-1i Form – Additional Air-side HVAC Systems

Model Input Parameter	HVAC System / Group (BASELINE DESIGN): Description	Units	HVAC System / Group (PROPOSED DESIGN): Description	Units	Supporting Doc. Location	Model Output Report
Air Side HVAC Systems						
System Description	Baseline System Description & System #: System 1: Packaged Terminal Air Conditioners		Residential Condo Fan Coil System with Condo Ventilation System		M-602	SV-A
System Designation(s)	Condo PTAC Systems		AC-ERU-37-1, AC-37-1 Condo Fan Coils			
# of Similar Systems	200		2, 1, 200			
Total Cooling Capacity	3,204	MBH	4,508.9	MBH		
*Table 6.8.1 Unitary Cooling Capacity Range	<65,000		<65,000	Btu/hr		
*Unitary Cooling Eff. (EER or SEER)	9.3 - 11	EER	N/A			
*Unitary Cooling Part-load Eff. (if applicable)			N/A			
Total Heating Capacity	4135	MBH	5,511	MBH		
*Table 6.8.1 Unitary Heating Capacity Range			<65,000	Btu/hr		
*Unitary Heating Efficiency	N/A		N/A			
*Fan Control	Constant		Constant, ECM Motors			
Supply Airflow	71,466	cfm	97,328	cfm		
Outdoor Airflow	20,000	cfm	20,000	cfm		
*Demand Control Ventilation	N/A		N/A			
*Economizer High-Limit Shutoff (°F)	N/A		N/A			
Exhaust Air Energy Recovery Systems	N/A		N/A			
*Exhaust Air Energy Recovery Effectiveness						
Supply Fan Power		kW		kW		
Return/Relief Fan Power		kW		kW		
Exhaust Fan Power		kW		kW		
System Fan Power	21.54	kW	57.15	kW		

RIVERSIDE BOULEVARD

WEST 59TH STREET

KEY PLAN

N

Number	Date	Revision
2	05/19/2017	EN DRAWING PAA △
1	02/15/2016	ISSUED FOR FILING

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

SEAL STAMPS & SIGNATURES

Victor Daza
APPROVED
Under Directive 2 of 2/25
AMENDED APPLICATION
Date: 03/06/2018
NYC Development Hub

DWG TITLE:

E☐ER☐☐ C☐☐E
C☐M☐☐☐☐CE

SEAL & SIGNATURE

STATE OF NEW YORK · FRANK MUSCARELLA · 077462 · LICENSED PROFESSIONAL ENGINEER

DATE: 5☐☐☐7

PROJECT #: ☐☐☐0☐☐0 00

SCALE: ☐TS

E☐00☐0☐

DWG NO: ☐☐☐2

COMMERCIAL BUILDINGS. THE PROGRESS INSPECTIONS AND TESTS DESCRIBED IN TABLE II SHALL BE PERFORMED FOR BUILDINGS REGULATED BY EITHER ECC CHAPTERS C2 THROUGH C5 OR ASHRAE 90.1 AS APPLICABLE.

TABLE II – PROGRESS INSPECTIONS FOR ENERGY CODE COMPLIANCE – COMMERCIAL BUILDINGS

	INSPECTION/TEST	PERIODIC (MINIMUM)	REFERENCE STANDARD (SEE ECC CHAPTER 6) OR OTHER CRITERIA	ECC OR OTHER CITATION
IIB	MECHANICAL AND SERVICE WATER HEATING INSPECTIONS			APR. 2015
IIB2	SHUTOFF DAMPERS: DAMPERS FOR STAIR AND ELEVATOR SHAFT VENTS AND OTHER OUTDOOR AIR INTAKES AND EXHAUST OPENINGS INTEGRAL TO THE BUILDING ENVELOPE SHALL BE VISUALLY INSPECTED TO VERIFY THAT SUCH DAMPERS, EXCEPT WHERE PERMITTED TO BE GRAVITY DAMPERS, COMPLY WITH APPROVED CONSTRUCTION DRAWINGS. MANUFACTURER'S LITERATURE SHALL BE REVIEWED TO VERIFY THAT THE PRODUCT HAS BEEN TESTED AND FOUND TO MEET THE STANDARD.	AS REQUIRED DURING INSTALLATION	APPROVED CONSTRUCTION DOCUMENTS; AMCA 500D	C403.2.4.4; ASHRAE 90.1 – 6.4.3.4
IIB3	HVAC AND SERVICE WATER HEATING EQUIPMENT: EQUIPMENT SIZING, EFFICIENCIES AND OTHER PERFORMANCE FACTORS OF ALL MAJOR EQUIPMENT UNITS, AS DETERMINED BY THE APPLICANT OF RECORD, AND NO LESS THAN 15% OF MINOR EQUIPMENT UNITS, SHALL BE VERIFIED BY VISUAL INSPECTION AND, WHERE NECESSARY, REVIEW OF MANUFACTURER'S DATA. POOL HEATERS AND COVERS SHALL BE VERIFIED BY VISUAL INSPECTION.	PRIOR TO FINAL PLUMBING AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C403.2, C404.2, C404.7, C406.2; ASHRAE 90.1 – 6.3, 6.4.1, 6.4.2, 6.8; 7.4, 7.8
IIA	ENVELOPE INSPECTIONS			APR. 2015
IIA1	PROTECTION OF EXPOSED FOUNDATION INSULATION: INSULATION SHALL BE VISUALLY INSPECTED TO VERIFY PROPER PROTECTION WHERE APPLIED TO THE EXTERIOR OF BASEMENT OR CELLAR WALLS, CRAWL-SPACE WALLS AND/OR THE PERIMETER OF SLAB-ON-GRADE FLOORS.	AS REQUIRED DURING FOUNDATION WORK AND PRIOR TO BACKFILL	APPROVED CONSTRUCTION DOCUMENTS	C303.2.1; ASHRAE 90.1–5.8.1.7
IIA2	INSULATION PLACEMENT AND R-VALUES: INSTALLED INSULATION FOR EACH COMPONENT OF THE CONDITIONED SPACE ENVELOPE AND AT JUNCTIONS BETWEEN COMPONENTS SHALL BE VISUALLY INSPECTED TO ENSURE THAT THE R-VALUES ARE MARKED, THAT SUCH R-VALUES CONFORM TO THE R-VALUES IDENTIFIED IN THE CONSTRUCTION DOCUMENTS AND THAT THE INSULATION IS PROPERLY INSTALLED. CERTIFICATIONS FOR UNMARKED INSULATION SHALL BE SIMILARLY VISUALLY INSPECTED.	AS REQUIRED TO VERIFY CONTINUOUS ENCLOSURE WHILE WALLS, CEILINGS AND FLOORS ARE OPEN	APPROVED CONSTRUCTION DOCUMENTS	C303.1, C303.1.1, C303.1.2, C402.1, C402.2; ASHRAE 90.1 – 5.5, 5.6 OR 11; 5.8.1
IIA3	FENESTRATION U-FACTOR AND PRODUCT RATINGS: U-FACTORS, SHGC AND VT VALUES OF INSTALLED FENESTRATION SHALL BE VISUALLY INSPECTED FOR CONFORMANCE WITH THE U-FACTORS, SHGC AND VT VALUES IDENTIFIED IN THE CONSTRUCTION DRAWINGS BY VERIFYING THE MANUFACTURER'S NFRC LABELS OR, WHERE NOT LABELED, USING THE RATINGS IN ECC TABLES C303.1.3(1), (2) AND (3).	AS REQUIRED DURING INSTALLATION	APPROVED CONSTRUCTION DOCUMENTS; NFRC 100, NFRC 200	C303.1, C303.1.3, C402.3; ASHRAE 90.1 – 5.5, 5.6 OR 11; 5.8.2
IIA4	FENESTRATION AIR LEAKAGE: WINDOWS AND SLIDING OR SWINGING DOOR ASSEMBLIES, EXCEPT SITE-BUILT WINDOWS AND/OR DOORS, SHALL BE VISUALLY INSPECTED TO VERIFY THAT INSTALLED ASSEMBLIES ARE LISTED AND LABELED BY THE MANUFACTURER TO THE REFERENCED STANDARD. FOR CURTAIN WALL, STOREFRONT GLAZING, COMMERCIAL ENTRANCE DOORS AND REVOLVING DOORS, THE TESTING REPORTS SHALL BE REVIEWED TO VERIFY THAT THE INSTALLED ASSEMBLY COMPLIES WITH THE STANDARD CITED IN THE APPROVED PLANS.	AS REQUIRED DURING INSTALLATION; PRIOR TO FINAL CONSTRUCTION INSPECTION	NFRC 400, AAMA/WDMA/CSA 101/ I.S.2/ A440, ASTM E283; ANSI/DASMA 105	C402.4.3; ASHRAE 90.1 – 5.4.3.2
IIA5	FENESTRATION AREAS: DIMENSIONS OF WINDOWS, DOORS AND SKYLIGHTS SHALL BE VERIFIED BY VISUAL INSPECTION.	PRIOR TO FINAL CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C402.3; ASHRAE 90.1 – 5.5.4.2, 5.6 OR 11
IIA6	AIR SEALING AND INSULATION – VISUAL INSPECTION: OPENINGS AND PENETRATIONS IN THE BUILDING ENVELOPE, INCLUDING SITE-BUILT FENESTRATION AND DOORS, SHALL BE VISUALLY INSPECTED TO VERIFY THAT A CONTINUOUS AIR BARRIER AROUND THE ENVELOPE FORMS AN AIR-TIGHT ENCLOSURE. THE PROGRESS INSPECTOR SHALL VISUALLY INSPECT TO VERIFY THAT MATERIALS AND/OR ASSEMBLIES HAVE BEEN TESTED AND MEET THE REQUIREMENTS OF THE RESPECTIVE STANDARDS, OR THAT THE BUILDING IS TESTED AND MEETS THE REQUIREMENTS OF THE STANDARD, IN ACCORDANCE WITH THE STANDARD(S) CITED IN THE APPROVED PLANS.	AS REQUIRED DURING CONSTRUCTION	APPROVED CONSTRUCTION DOCUMENTS; ASTM E2178, ASTM E2357, ASTM E1677, ASTM E779, ASTM E283	C402.4; ASHRAE 90.1 – 5.4.3.1

TABLE II – PROGRESS INSPECTIONS FOR ENERGY CODE COMPLIANCE – COMMERCIAL BUILDINGS

	INSPECTION/TEST	PERIODIC (MINIMUM)	REFERENCE STANDARD (SEE ECC CHAPTER 10) OR OTHER CRITERIA	ECC OR OTHER CITATION
	MECHANICAL AND SERVICE WATER HEATING INSPECTIONS			APR. 2015
IIB4	HVAC AND SERVICE WATER HEATING SYSTEM CONTROLS: NO LESS THAN 20% OF EACH TYPE OF REQUIRED CONTROLS AND ECONOMIZERS SHALL BE VERIFIED BY VISUAL INSPECTION AND TESTED FOR FUNCTIONALITY AND PROPER OPERATION. SUCH CONTROLS SHALL INCLUDE, BUT ARE NOT LIMITED TO: • THERMOSTATIC • SET POINT OVERLAP RESTRICTION • OFF-HOUR • SHUTOFF DAMPER • SNOW-MELT SYSTEM • DEMAND CONTROL SYSTEMS • OUTDOOR HEATING SYSTEMS • ZONES • ECONOMIZERS • AIR SYSTEMS • VARIABLE AIR VOLUME FAN • SINGLE ZONE COOLING SYSTEMS • HYDRONIC SYSTEMS • HEAT REJECTION EQUIPMENT FAN SPEED • COMPLEX MECHANICAL SYSTEMS SERVING MULTIPLE ZONES • VENTILATION • ENERGY RECOVERY SYSTEMS • HOT GAS BYPASS LIMITATION • TEMPERATURE • SERVICE WATER HEATING • HOT WATER SYSTEM • POOL HEATER AND TIME SWITCHES • EXHAUST HOODS • RADIANT HEATING SYSTEMS. • HVAC CONTROL IN GROUP R-1 SLEEPING ROOMS CONTROLS WITH SEASONALLY DEPENDENT FUNCTIONALITY: CONTROLS WHOSE COMPLETE OPERATION CANNOT BE DEMONSTRATED DUE TO PREVAILING WEATHER CONDITIONS TYPICAL OF THE SEASON DURING WHICH PROGRESS INSPECTIONS WILL BE PERFORMED SHALL BE PERMITTED TO BE SIGNED OFF FOR THE PURPOSE OF A TEMPORARY CERTIFICATE OF OCCUPANCY WITH ONLY A VISUAL INSPECTION, PROVIDED, HOWEVER, THAT THE PROGRESS INSPECTOR SHALL PERFORM A SUPPLEMENTAL INSPECTION WHERE THE CONTROLS ARE VISUALLY INSPECTED AND TESTED FOR FUNCTIONALITY AND PROPER OPERATION DURING THE NEXT IMMEDIATE SEASON THEREAFTER. THE OWNER SHALL PROVIDE FULL ACCESS TO THE PROGRESS INSPECTOR WITHIN TWO WEEKS OF THE PROGRESS INSPECTOR'S REQUEST FOR SUCH ACCESS TO PERFORM THE PROGRESS INSPECTION. FOR SUCH SUPPLEMENTAL INSPECTIONS, THE DEPARTMENT SHALL BE NOTIFIED BY THE APPROVED PROGRESS INSPECTION AGENCY OF ANY UNRESOLVED DEFICIENCIES IN THE INSTALLED WORK WITHIN 180 DAYS OF SUCH SUPPLEMENTAL INSPECTION.	AFTER INSTALLATION AND PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION, EXCEPT THAT FOR CONTROLS WITH SEASONALLY DEPENDENT FUNCTIONALITY, SUCH TESTING SHALL BE PERFORMED BEFORE SIGN-OFF OR ISSUANCE OF A FINAL CERTIFICATE OF OCCUPANCY	APPROVED CONSTRUCTION DOCUMENTS, INCLUDING CONTROL SYSTEM NARRATIVES; ASHRAE GUIDELINE 1: THE HVAC COMMISSIONING PROCESS WHERE APPLICABLE	C403.2.4, C403.2.5.1, C403.2.11, C403.3, C403.4, C404.3, C404.6, C404.7; ASHRAE 90.1 – 6.3, 6.4, 6.5, 7.4.4, 7.4.5
IIB5	HVAC INSULATION AND SEALING: INSTALLED DUCT AND PIPING INSULATION SHALL BE VISUALLY INSPECTED TO VERIFY PROPER INSULATION PLACEMENT AND VALUES. JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS AND CONNECTIONS IN DUCTWORK SHALL BE VISUALLY INSPECTED FOR PROPER SEALING.	AFTER INSTALLATION AND PRIOR TO CLOSING SHAFTS, CEILINGS AND WALLS	APPROVED CONSTRUCTION DOCUMENTS; SMACNA DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE	C403.2.7, C403.2.8, C404.5, MC 603.9; ASHRAE 90.1 – 6.3, 6.4.4, 6.8.2, 6.8.3; 7.4.3
IIB6	DUCT LEAKAGE TESTING: FOR DUCT SYSTEMS DESIGNED TO OPERATE AT STATIC PRESSURES IN EXCESS OF 3 INCHES W.G. (746 PA), REPRESENTATIVE SECTIONS, AS DETERMINED BY THE PROGRESS INSPECTOR, TOTALING AT LEAST 25% OF THE DUCT AREA, PER ECC C403.2.7.1.3, SHALL BE TESTED TO VERIFY THAT ACTUAL AIR LEAKAGE IS BELOW ALLOWABLE AMOUNTS.	AFTER INSTALLATION AND SEALING AND PRIOR TO CLOSING SHAFTS, CEILINGS AND WALLS	APPROVED CONSTRUCTION DOCUMENTS; SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL	C403.2.7.1.3; ASHRAE 90.1 – 6.4.4.2.2
IIC	ELECTRICAL POWER AND LIGHTING SYSTEMS			APR. 2015
IIC1	ELECTRICAL ENERGY CONSUMPTION: THE PRESENCE AND OPERATION OF INDIVIDUAL METERS OR OTHER MEANS OF MONITORING INDIVIDUAL APARTMENTS SHALL BE VERIFIED BY VISUAL INSPECTION FOR ALL APARTMENTS AND WHERE REQUIRED IN A COVERED TENANT SPACE.	PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C405.7
IIC2	LIGHTING IN DWELLING UNITS: LAMPS IN PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL BE VISUALLY INSPECTED TO VERIFY COMPLIANCE WITH HIGH-EFFICACY REQUIREMENTS.	PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C405.1; ASHRAE 90.1 – 9.1.1
IIC3	INTERIOR LIGHTING POWER: INSTALLED LIGHTING SHALL BE VERIFIED FOR COMPLIANCE WITH THE LIGHTING POWER ALLOWANCE BY VISUAL INSPECTION OF FIXTURES, LAMPS, BALLASTS AND TRANSFORMERS.	PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C405.5, C406.3; ASHRAE 90.1 – 9.1, 9.2, 9.5, 9.6; 1RCNY §101-07 (c)(3)(v)(C)4
IIC4	EXTERIOR LIGHTING POWER: INSTALLED LIGHTING SHALL BE VERIFIED FOR COMPLIANCE WITH SOURCE EFFICACY AND/OR THE LIGHTING POWER ALLOWANCE BY VISUAL INSPECTION OF FIXTURES, LAMPS, BALLASTS AND RELEVANT TRANSFORMERS.	PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C405.6; ASHRAE 90.1 – 9.4.3; 1RCNY §101-07 (c)(3)(v)(C)4
IIC5	LIGHTING CONTROLS: EACH TYPE OF REQUIRED LIGHTING CONTROLS, INCLUDING: • OCCUPANT SENSORS • MANUAL INTERIOR LIGHTING CONTROLS • LIGHT-REDUCTION CONTROLS • AUTOMATIC LIGHTING SHUT-OFF • DAYLIGHT ZONE CONTROLS • SLEEPING UNIT CONTROLS • EXTERIOR LIGHTING CONTROLS SHALL BE VERIFIED BY VISUAL INSPECTION AND TESTED FOR FUNCTIONALITY AND PROPER OPERATION.	PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS, INCLUDING CONTROL SYSTEM NARRATIVES	C405.2; ASHRAE 90.1 – 9.4.1 (AS MODIFIED BY SECTION ECC A102)
IIC6	EXIT SIGNS: INSTALLED EXIT SIGNS SHALL BE VISUALLY INSPECTED TO VERIFY THAT THE LABEL INDICATES THAT THEY DO NOT EXCEED MAXIMUM PERMITTED WATTAGE.	PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C405.4; ASHRAE 90.1 – 9.4.2
IIC7	ELECTRIC MOTORS (INCLUDING BUT NOT LIMITED TO FAN MOTORS): WHERE REQUIRED BY THE CONSTRUCTION DOCUMENTS FOR ENERGY CODE COMPLIANCE, MOTOR LISTING OR LABELS SHALL BE VISUALLY INSPECTED TO VERIFY THAT THEY COMPLY WITH THE RESPECTIVE ENERGY REQUIREMENTS IN THE CONSTRUCTION DOCUMENTS.	PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C403.2.10; ASHRAE 90.1 – 10.4
IID	OTHER			APR. 2015
IID1	MAINTENANCE INFORMATION: MAINTENANCE MANUALS FOR MECHANICAL, SERVICE HOT WATER AND ELECTRICAL EQUIPMENT AND SYSTEMS REQUIRING PREVENTIVE MAINTENANCE SHALL BE REVIEWED FOR APPLICABILITY TO INSTALLED EQUIPMENT AND SYSTEMS BEFORE SUCH MANUALS ARE PROVIDED TO THE OWNER. LABELS REQUIRED FOR SUCH EQUIPMENT OR SYSTEMS SHALL BE INSPECTED FOR ACCURACY AND COMPLETENESS.	PRIOR TO SIGN-OFF OR ISSUANCE OF FINAL CERTIFICATE OF OCCUPANCY	APPROVED CONSTRUCTION DOCUMENTS, INCLUDING ELECTRICAL DRAWINGS WHERE APPLICABLE; ASHRAE GUIDELINE 4: PREPARATION OF OPERATING AND MAINTENANCE DOCUMENTATION FOR BUILDING SYSTEMS	C303.3, C408.2.5.2; ASHRAE 90.1 – 4.2.2.3, 6.7.2.2, 8.7.2, 9.7.2.2

EN1 Supplemental Form Page 3

EN-1i Form – Additional Air-side HVAC Systems

Model Input Parameter	HVAC System / Group (BASELINE DESIGN) Description	Units	HVAC System / Group (PROPOSED DESIGN) Description	Units	Supporting Data Location	Model Output Report
Air Side HVAC Systems						
System Description	Baseline System Description & System #: System 3: Packaged Single Zone System		IT Room Systems		M-603	SV-A
System Designation(s)	IT System		AHU-SC-3,			
# of Similar Systems	1		1			
Total Cooling Capacity	240	MBH	196.7	MBH		
*Table 6.8.1 Unitary Cooling Capacity Range		Btu/hr		Btu/hr		
*Unitary Cooling Eff. (EER or SEER)	9.8	EER	12	EER		
*Unitary Cooling Part-load Eff. (if applicable)						
Total Heating Capacity	N/A	MBH	N/A			
*Table 6.8.1 Unitary Heating Capacity Range		Btu/hr				
*Unitary Heating Efficiency						
*Fan Control	Constant		Constant			
Supply Airflow	7,894	cfm	8,000	cfm		
Outdoor Airflow	0	cfm	0	cfm		
*Demand Control Ventilation	N/A		N/A			
*Economizer High-Limit Shutoff (°F)	N/A		N/A			
Exhaust Air Energy Recovery Systems	N/A		N/A			
*Exhaust Air Energy Recovery Effectiveness						
Supply Fan Power		kW		kW		
Return/Relief Fan Power		kW		kW		
Exhaust Fan Power		kW		kW		
System Fan Power	7.6	kW	2.31	kW		

EN1 Supplemental Form Page 3

EN-1i Form – Additional Air-side HVAC Systems

Model Input Parameter	HVAC System / Group (BASELINE DESIGN) Description	Units	HVAC System / Group (PROPOSED DESIGN) Description	Units	Supporting Data Location	Model Output Report
Air Side HVAC Systems						
System Description	Baseline System Description & System #: System 5: Packaged VAV System		Lobby Systems		M-603	SV-A
System Designation(s)	Lobby PVAV System		AHU-2-1, 2			
# of Similar Systems	1		2			
Total Cooling Capacity	252	MBH	232.80	MBH		
*Table 6.8.1 Unitary Cooling Capacity Range	<760,000	Btu/hr	>65,000 & <135,000	Btu/hr		
*Unitary Cooling Eff. (EER or SEER)	9.8	EER	14.5	EER		
*Unitary Cooling Part-load Eff. (if applicable)						
Total Heating Capacity	225	MBH	331.8	MBH		
*Table 6.8.1 Unitary Heating Capacity Range	>135,000 & <240,000	Btu/hr	>135,000 & <240,000	Btu/hr		
*Unitary Heating Efficiency	N/A		4.5	COP		
*Fan Control	Variable		Variable, ECM Motors			
Supply Airflow	5,738	cfm	6,000	cfm		
Outdoor Airflow	1,000	cfm	1,000	cfm		
*Demand Control Ventilation	N/A		N/A			
*Economizer High-Limit Shutoff (°F)	N/A		N/A			
Exhaust Air Energy Recovery Systems	N/A		N/A			
*Exhaust Air Energy Recovery Effectiveness						
Supply Fan Power		kW		kW		
Return/Relief Fan Power		kW		kW		
Exhaust Fan Power		kW		kW		
System Fan Power	8.03	kW	5.12	kW		

DUCTWORK INSULATION R-VALUE MINIMUM REQUIREMENTS (TABLE 6.8.2A TO B)

SERVICE	EXTERIOR	VENTILATED ATTIC	UNVENTED ATTIC ABOVE INSULATED CEILING	UNVENTED ATTIC WITH ROOF INSULATION	UNCONDITIONED SPACE	INDIRECTLY CONDITIONED SPACE	BURIED
HEATING ONLY SUPPLY DUCTWORK	R-3.5	–	–	–	–	–	–
COOLING ONLY SUPPLY DUCTWORK	R-3.5	R-3.5	R-6	R-1.9	R-1.9	–	–
COMBINED HEATING AND COOLING SUPPLY DUCTWORK	R-6	R-6	R-6	R-3.5	R-3.5	–	R-3.5
RETURN DUCTWORK	R-3.5	R-3.5	R-3.5	–	–	–	–

PIPING INSULATION R-VALUE MINIMUM REQUIREMENTS (TABLE 6.8.3A)

SERVICE	INSULATION CONDUCTIVITY	PIPE SIZE				
		<1"	1" – <1 ½"	1 ½" – <4"	4" – <8"	>/= 8"
> 350°F	0.32 – 0.34	4.5	5.0	5.0	5.0	5.0
251°F – 350°F	0.29 – 0.32	3.0	4.0	4.5	4.5	4.5
201°F – 250°F	0.27 – 0.30	2.5	2.5	2.5	3.0	3.0
141°F – 200°F	0.25 – 0.29	1.5	1.5	2.0	2.0	2.0
105°F – 140°F	0.22 – 0.28	1.0	1.0	1.5	1.5	1.5
40°F – 60°F	0.21 – 0.27	0.5	0.5	1.0	1.0	1.0
< 40°F	0.20 – 0.26	0.5	1.0	1.0	1.0	1.5

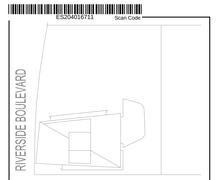
MINIMUM AS PER 2014 NYCECC BY APPLICATION OF ASHRAE 90.1 2010

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGMENT THIS APPLICATION IS IN COMPLIANCE WITH THE 2014 NYCECC (BY APPLICATION OF ASHRAE 90.1–2010) AS AMENDED BY APPENDIX A.

COOLING AND HEATING CALCULATIONS HAVE BEEN PERFORMED AS PER ASHRAE/ACCA 183. ALL EQUIPMENT SIZING AND SELECTION HAS BEEN COORDINATED WITH ASHRAE/ACCA 183.

COMMISSIONING REQUIRED.
COMMISSIONING WILL FULLY COMPLY WITH 2014 NEW YORK CITY ENERGY CONSERVATION CODE STANDARDS PER C408 FOR BUILDING MECHANICAL SYSTEMS, SERVICE WATER HEATING SYSTEMS AND ELECTRICAL POWER AND LIGHTING SYSTEMS.

NYCECC NOTES
1. ALL DUCTS AND PLENUMS TO BE INSULATED IN ACCORDANCE WITH 2014 NYCECC BY APPLICATION OF ASHRAE 90.1 2010 SECTION 6.4.4.1.2
2. ALL PIPING TO BE INSULATED IN ACCORDANCE WITH 2014 NYCECC BY APPLICATION OF ASHRAE 90.1 2010 SECTION 6.4.4.1.3
3. ALL DUCTS AND PLENUMS TO BE SEALED IN ACCORDANCE WITH 2014 NYCECC BY APPLICATION OF ASHRAE 90.1 2010 SECTION 6.4.4.2.1



KEY PLAN

Number	Date	Revision
2	05/19/2017	EN DRAWING PAA △1
1	02/15/2016	ISSUED FOR FILING

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

SEAL AND SIGNATURE STAMPS & SIGNATURES:

Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
E□ER□□ C□□E
C□M□□□□CE

SEAL & SIGNATURE: STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE: 7/3□/20/5
PROJECT #: □□□0□□0 00
SCALE: □TS
DWG NO.: E□002/0□
2□□2

LIGHTING SCOPE OF WORK

SCOPE OF WORK

RES□E□T□□ □□HT□□□

1. TYPE R7 UNDERCABINET TASKLIGHT IN KITCHENS SHOWN IN TYPICAL LENGTH. PROVIDE LENGTHS AS SHOWN PER ARCHITECTURAL ELEVATIONS (TYPICAL).
2. LIGHT SWITCH AND DIMMER LOCATIONS ARE DIAGRAMMATIC. LOCATE SWITCHES PER ARCHITECTURAL ELEVATIONS. DIMMER SWITCHES TO BE GANGED ON ONE FACEPLATE (TYPICAL).

□□HT□□ C□□TR□□

1. THE LIGHTING CONTROL SYSTEM SHALL CONSIST OF INDIVIDUAL DIMMER CONTROLS AND DIMMER CONTROL CABINETS WITH PROGRAMMABLE INPUTS. PROGRAMMING THE SYSTEM IS ACHIEVED THROUGH CONTROL SOFTWARE. AREAS WHICH ARE CONTROLLED BY THE LIGHTING SYSTEM ARE THE LOBBY AND AMENITY SPACES. LIGHTING NOT CONTROLLED BY THIS SYSTEM ARE THOSE "BACK OF HOUSE" SPACES WHICH CONTAIN LOCAL SWITCHING AND/OR OCCUPANCY SENSORS. THE SOFTWARE FOR THE CONTROL SYSTEM WILL HAVE A GRAPHICS INTERFACE, MENU DRIVEN, USING TOUCH-SCREEN OR MOUSE INPUT.
2. THE HOUSE LIGHTING CONTROL SYSTEM AT A MINIMUM SHALL COMPLY WITH THE MANDATORY PROVISIONS IN CHAPTER 9 OF ASHRAE 90.1-2007.
3. EXTERIOR LIGHTING CONTROL FOR NON-EMERGENCY APPLICATION SHALL HAVE AUTOMATIC CONTROLS CAPABLE OF TURNING OFF EXTERIOR LIGHTING WHEN SUFFICIENT DAYLIGHT IS AVAILABLE OR WHEN NOT REQUIRED DURING NIGHTTIME HOURS.

□□STR□CT□□ M□R□□□ □□□ □□HT□□□

1. PROVIDE A COMPLETE AIRCRAFT WARNING LIGHTING SYSTEM. AIRCRAFT WARNING LIGHTING SYSTEM SHALL COMPLY WITH THE UNITED STATES DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR AL 70/7460-1K.
2. LIGHT UNITS SHOULD BE PLACED TO ENSURE THAT THE LIGHT IS VISIBLE TO A PILOT APPROACHING FROM ANY DIRECTION. STEADY BURNING RED OBSTRUCTION LIGHT SHALL BE INSTALLED ON THE HIGHEST POINT AT EACH END. ONE SUCH LIGHT SHALL BE DISPLAYED AT EACH OUTSIDE CORNER ON EACH LEVEL WITH THE REMAINING LIGHTS EVENLY SPACED BETWEEN THE CORNER LIGHTS.

WORK NOT SHOWN ON THIS SET

1. DAY 2 LIGHTING CONTROLS BASED ON LUTRON RADIO RA SYSTEM.
2. FINAL COORDINATION AND LOCATIONS ON PLANS AND COORDINATION ARCHITECTURAL RCP'S.

FINAL COORDINATION WITH ALL TRADES

FINAL COORDINATION WITH ALL TRADES

TOTAL LIGHTING FIXTURE WATTAGE COUNT

FIXTURE TYPE	FIXTURE WATTS	AMENITIES QTY	AMENITIES TOTAL WATTS	GARAGE QTY	GARAGE TOTAL WATTS	MECHANICAL QTY	MECHANICAL TOTAL WATTS	LOBBY QTY	LOBBY TOTAL WATTS	CORRIDOR QTY	CORRIDOR TOTAL WATTS	EXTERIOR QTY	EXTERIOR TOTAL WATTS
F1A	2.8		0		0		0		0		0		0
F1B	4.5		0		0		0		0	68	306		0
F1C	2.7		0		0		0		0		0		0
F1D	25		0		0		0		0		0		0
F2A	1.5		0		0		0		0		0		0
F2B	3		0		0		0		0		0		0
F3A	30		0		0	459	13770		0	68	2040		0
F4A	41		0		0		0		0		0		0
F5A	64		0		0		0		0		0		0
F6A	20		0		0		0		0		0		0
F7A	104		0	45	4680		0		0		0		0
F8A	21		0		0		0		0		0		0
F9A	55		0		0		0		0		0		0
F10A	56		0		0	49	2744		0		0		0
F11A	116		0		0		0		0		0		0
F1A	2.8		0		0		0		0		0		0
F1B	4.5		0		0		0		0		0		0
F1C	2.7		0		0		0		0		0		0
F1D	25		0		0		0		0		0		0
F2A	3		0		0		0		0		0		0
F2B	3		0		0		0		0		0		0
F3A	30		0		0		0		0		0		0
F4A	41		0		0		0		0		0		0
F5A	32		0		0		0		0		0		0
F6A	20		0		0		0		0		0		0
F7A	104		0		0		0		0		0		0
F8A	21		0		0		0		0		0		0
F9A	55		0		0		0		0		0		0
F10A	56		0		0		0		0		0		0
F11A	116		0		0		0		0		0		0
EL1	6		0		0		0		0		0	138	828
EL2	23		0		0		0		0		0	8	184
EL3	6		0		0		0		0		0	42	252
EL3A	15.3		0		0		0		0		0		0
EL4	15		0		0		0		0		0	36	540
EL5	29		0		0		0		0		0	4	116
EL7	8		0		0		0		0		0	19	152
EL8	7		0		0		0		0		0	20	140
EL9	20		0		0		0		0		0	3	60
EL10	21.5		0		0		0		0		0	44	946
EL11	3		0		0		0		0		0	12	36
EL12	26		0		0		0		0		0	5	130
EL13	9		0		0		0		0		0	12	108
EL14	18		0		0		0		0		0	8	144
EL15	8		0		0		0		0		0	18	144
L1	20	32	640		0		0	22	440		0		0
L2	20	6	120		0		0		0		0		0
L3	5	18	90		0		0	19	95		0		0
L4	6.5	43	279.5		0	7	45.5	24	156	29	188.5		0
L5/L5A	5		0		0		0	20	100		0		0
L6	2.4	76	185.8		0		0	70	171.1	1010	2468.6		0
L7	3.2		0		0		0	25	80		0		0
L8	5.8	24	139.2		0		0	16	92.8		0		0
L9	8.5	25	212.5		0		0		0	11	93.5		0
L10	10	6	60		0		0		0		0		0
L11	6.8		0		0		0	20	136		0		0
L12	50		0		0		0		0		0		0
Dx	10	64	640		0		0		0		0		0
R1	10		0		0		0		0	388	3880		0
R2	10		0		0		0		0	213	2130		0
R3	10		0		0		0		0		0		0
R4	10		0		0		0		0		0		0
R5	6.5		0		0		0		0		0		0
R7	3.2	24	76.8		0		0		0	25	80		0
R8	6		0		0		0		0		0		0
R9/R9A	6.5		0		0		0		0		0		0
R10	3		0		0		0		0		0		0
R11	5		0		0		0		0		0		0
RD1	30		0		0		0		0		0		0
RD2	30		0		0		0		0		0		0
RD3	30		0		0		0		0		0		0
RD4	30		0		0		0		0		0		0
RD5	30		0		0		0		0		0		0
RD6			0		0		0		0		0		0
R11			0		0		0		0		0		0
AA	25		0		0		0		0		0		0
AB	55		0		0		0		0		0		0
AC	55		0		0		0		0		0		0
AD	55		0		0		0		0		0		0
BA	15		0		0		0		0		0		0
CA	32		0		0		0		0		0		0
CB	32		0		0		0		0		0		0
CC	32		0		0		0		0		0		0
CC-3	21		0		0		0		0		0		0
CD	8		0		0		0		0		0		0
CE	40		0		0		0		0		0		0
CF	40		0		0		0		0		0		0
C1LT	600		0		0		0		0		0		0
C2LT	600	2	1200		0		0		0		0		0
C3LT	600		0		0		0		0		0		0
C3LT01	200		0		0		0		0		0		0
C3LT02	200		0		0		0		0		0		0
C3LT03	200		0		0		0		0		0		0
C3LT04	100		0		0		0		0		0		0
C3LT05	100		0		0		0		0		0		0
C3LT14	800	1	800		0		0		0		0		0
C3LT16	800	3	2400		0		0		0		0		0
GA	20		0		0		0		0		0		0
GB	50		0		0		0		0		0		0
GC	50		0		0		0		0		0		0
GD	20		0		0		0		0		0		0
GE	20		0		0		0		0		0		0
JA	55		0		0		0		0		0		0
LA	4		0		0		0		0		0		0
LB	3		0		0		0		0		0		0
LC	15		0		0		0		0		0		0
LD	20		0		0		0		0		0		0
LE	3		0		0		0		0		0		0
LF	6		0		0		0		0		0		0
LG	6		0		0		0		0		0		0
LH	15		0		0		0		0		0		0
LJ	3		0		0		0		0		0		0
LK	10	260	2600		0		0		0		0		0
LL	4		0		0		0		0		0		0
LM	20		0		0		0		0		0		0
LN	2		0		0		0		0		0		0
LP	2		0		0		0		0		0		0
MA	55	5	275		0		0		0		0		0
MB	110	23	2530		0		0		0		0		0
NA	13		0		0		0		0		0		0
TA	5		0		0		0		0		0		0
TB	20		0		0		0		0		0		0
WA	15		0		0		0		0		0		0
ALLOW	800		0		0		0		0		0		0
TOTAL WATTAGE PER CATEGORY			12,249		4,680		16,560		1,271		11,187		3,780
ZONE SF			14,823		33,079		24,463		4,088		26,275		
TOTAL OVERALL WATTS/SF			0.83		0.14		0.68		0.31		0.43		#DIV/0!

EXTERIOR

FIXTURE TYPE	FIXTURE WATTS	MAIN DRIVE CANOPY QTY	MAIN DRIVE CANOPY TOTAL WATTS	MAIN DRIVE STAIRS QTY	MAIN DRIVE STAIRS TOTAL WATTS	REAR STAIR / RAMP QTY	REAR STAIR / RAMP TOTAL WATTS	GARAGE ENTRY DOOR QTY	GARAGE ENTRY DOOR TOTAL WATTS	MAIN DRIVE RAMP QTY	MAIN DRIVE RAMP TOTAL WATTS	SIDE CANOPY QTY	SIDE CANOPY TOTAL WATTS	GARAGE ENTRY QTY	GARAGE ENTRY TOTAL WATTS	RETAIL ENTRY DOOR QTY	RETAIL ENTRY DOOR TOTAL WATTS	2ND FL AMENITY TERRACE QTY	2ND FL AMENITY TERRACE TOTAL WATTS	14TH FL AMENITY TERRACES QTY	14TH FL AMENITY TERRACES TOTAL WATTS	23RD FL AMENITY TERRACES QTY	23RD FL AMENITY TERRACES TOTAL WATTS	29TH FL AMENITY TERRACES QTY	29TH FL AMENITY TERRACES TOTAL WATTS
EL1	6				0		0		0	138	828		0		0		0		0		0		0		0
EL2	23	8	184		0		0		0		0		0		0		0		0		0		0		0
EL3	6	42	252		0		0		0		0		0		0		0		0		0		0		0
EL3A	15.3		0		0		0		0		0		0		0		0		0		0		0		0
EL4	15	36	540		0		0		0		0		0		0		0		0		0		0		0
EL5	29		0	4	116		0		0		0		0		0		0		0		0		0		0
EL7	8		0		0		0		0		0		0		0		0		0	4	32		0	11	88	4	32
EL8	7		0		0		0		0		0		0	20	140		0		0		0		0		0		0
EL9	20		0		0		0		0		0		0	3	60		0		0		0		0		0		0
EL10	21.5		0		0		0		0		0		0		0		0		0		0	44	946		0		0
EL11	3		0		0		0		0		0		0		0		0		0		0	12	36		0		0
EL12	26		0		0		0	4	104		0		0		0	1	26		0		0		0		0		0
EL13	9		0		0	12	108		0		0		0		0		0		0		0		0		0		0
EL14	18		0		0		0		0		0	8	144		0		0		0		0		0		0		0
EL15	8		0		0		0		0		0		0		0		0		0		0	18	144		0		0
TOTAL WATTAGE PER CATEGORY			976		116		108		104		828		144		200		26		32		1,128		88		32
ZONE SF			3,528		625		1,731		9		1,204		408		404		6		417		3,295		909		603
TOTAL OVERALL WATTS/SF			0.28		0.19		0.06		11.56		0.68		0.35		0.50		4.33		0.08		0.34		0.10		0.05

EXTERIOR LIGHTING COMPLIES WITH EFFICIENCY AND ALLOWANCE LIMITS AS PER ASHRAE 90.1 SECTION 9.4.3

INDIVIDUAL WORKSPACES - INDIVIDUAL CONTROLS

Space ID	Individual Workspace Type	Lighting Control Type	# of Workspaces with Individual Controls
Residential Unit	Bedrooms	Local Dimmer Switch	507
Residential Unit	Living Rooms	Local Dimmer Switch	274
Residential Unit	Kitchens	Local Dimmer Switch	274
Residential Unit	Dining Rooms	Local Dimmer Switch	274
2nd Floor Amenities	Manager's Office	Local Dimmer Switch w/ VS	1
Total Number of Workspaces with Controls			1,330
Percentage of Workspaces with Controls			100%

SHARED MULTI-OCCUPANT SPACES - SHARED CONTROLS

Space ID	Individual Workspace Type	Lighting Control Type	# of Workspaces with Individual Controls
1st Floor Amenities	Lobby : Rental	Dimmable Preset Controls	1
1st Floor Amenities	Mailroom : Rental	Dimmable Preset Controls	1
1st Floor Amenities	Elevator Vestibule : Rental	Dimmable Preset Controls	1
1st Floor Amenities	General Corridor : Rental	Dimmable Preset Controls	1
1st Floor Amenities	Lobby : Condo	Dimmable Preset Controls	1
1st Floor Amenities	Mailroom : Condo	Dimmable Preset Controls	1
1st Floor Amenities	Elevator Vestibule : Condo	Dimmable Preset Controls	1
1st Floor Amenities	Back of House	Dimmable Preset Controls	1
1st Floor Amenities	Storage : Condo	Dimmable Local Switch w/ VS	1
1st Floor Amenities	Restroom : Condo	Dimmable Local Switch w/ OS	1
Public Corridor	Public Corridor	24/7 On, Controls at Circuit Breaker Level Only	35
2nd Floor Amenities	Party Room	Dimmable Preset Controls	1
2nd Floor Amenities	Private Dining	Dimmable Preset Controls	2
2nd Floor Amenities	Study	Dimmable Preset Controls	1
2nd Floor Amenities	Restrooms	Dimmable Local Switch w/ OS	2
2nd Floor Amenities	Kitchen	Dimmable Local Switch w/ VS	1
2nd Floor Amenities	Closing Room	Dimmable Local Switch w/ VS	1
2nd Floor Amenities	Reception	Dimmable Local Switch w/ VS	1
2nd Floor Amenities	Copy Room / Kitchenette	Dimmable Local Switch w/ VS	1
14th Floor Amenities	Party Room	Dimmable Preset Controls	1
14th Floor Amenities	Kitchen	Dimmable Preset Controls	1
14th Floor Amenities	Private Dining	Dimmable Preset Controls	1
14th Floor Amenities	Study	Dimmable Preset Controls	1
14th Floor Amenities	Game Room	Dimmable Preset Controls	1
14th Floor Amenities	Restrooms	Dimmable Local Switch w/ OS	4
14th Floor Amenities	Party Room Kitchen	Dimmable Local Switch w/ VS	1
14th Floor Amenities	Corridor	Dimmable Local Switch w/ OS	1
14th Floor Amenities	Walk-In Closet	Dimmable Local Switch w/ VS	1
Cellar: Super's Office	Office	Dimmable Local Switch w/ VS	1
Cellar: Parking Office	Office	Dimmable Local Switch w/ VS	1
Cellar: Staff Lockers	Locker Room	Dimmable Local Switch w/ VS	1
Cellar: Restrooms	Restroom	Dimmable Local Switch w/ OS	2
Cellar: Bike Storage / Rental Storage #2	Big Storage	Dimmable Local Switch w/ OS	2
Cellar: Elevator Lobbies	Lobby	24/7 On, Controls at Circuit Breaker Level Only	4
Cellar: Corridors	Corridor	24/7 On, Controls at Circuit Breaker Level Only	6
Cellar: Rental Laundry	Laundry Room	Dimmable Local Switch w/ OS	1
Cellar: Storages	Small Storae	Dimmable Local Switch w/ VS	4
Cellar: Mech / Elec / Equip Rooms	Mechanical Room	Manual Switch	4
Cellar: Emergency Generator Room	Mechanical Room	Manual Switch	1
Cellar: Amenity Spaces	Various Amenities	Dimmable Preset Controls	1
Cellar: Stairs	Stairs	24/7 On w/ 50% Reduction based on OS	3
Cellar: Parking Area	Parking	Time Clock On/Off	1
SubCellar: Elevator Lobby	Lobby	24/7 On, Controls at Circuit Breaker Level Only	4
SubCellar: Corridors	Corridor	24/7 On, Controls at Circuit Breaker Level Only	4
SubCellar: Bike Room	Bike Repair / Storage	Manual Switch	1
SubCellar: Super's Office	Office	Dimmable Local Switch w/ VS	1
SubCellar: Storages	Storage	Manual Switch	4
SubCellar: Mech / Elec / Equip Rooms	Mechanical Room	Manual Switch	14
SubCellar: Compactor Room	Compactor Room	Manual Switch	2
SubCellar: Telecom Room	Telecom Room	Manual Switch	1
SubCellar: Staff Room	Lounge	Dimmable Local Switch w/ OS	1
SubCellar: Restrooms	Restroom	Dimmable Local Switch w/ OS	2
SubCellar: Workshop	Workspace	Manual Switch	1
SubCellar: Condo Cold Storage	Cold Room	Manual Switch	1
SubCellar: Condo Packaging Room	Packaging Room	Dimmable Local Switch w/ VS	1
SubCellar: Common Washing	Washing Room	Dimmable Local Switch w/ VS	1
SubCellar: Amenity Spaces	Various Amenities	Dimmable Preset Controls	1
SubCellar: Stairs	Stairs	24/7 On w/ 50% Reduction based on OS	3
SubCellar: Parking Area	Parking	Time Clock On/Off	1
Total Number of Workspaces with Controls			142
Percentage of Workspaces with Controls			100%

*SEPT OF BLDGS 121320976 Job Number
ES0.0A04055 Scan Code

KEY PLAN

Number	Date	Revision
2	05/19/2017	EN DRAWING PAA
1	02/15/2016	ISSUED FOR FILING

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:

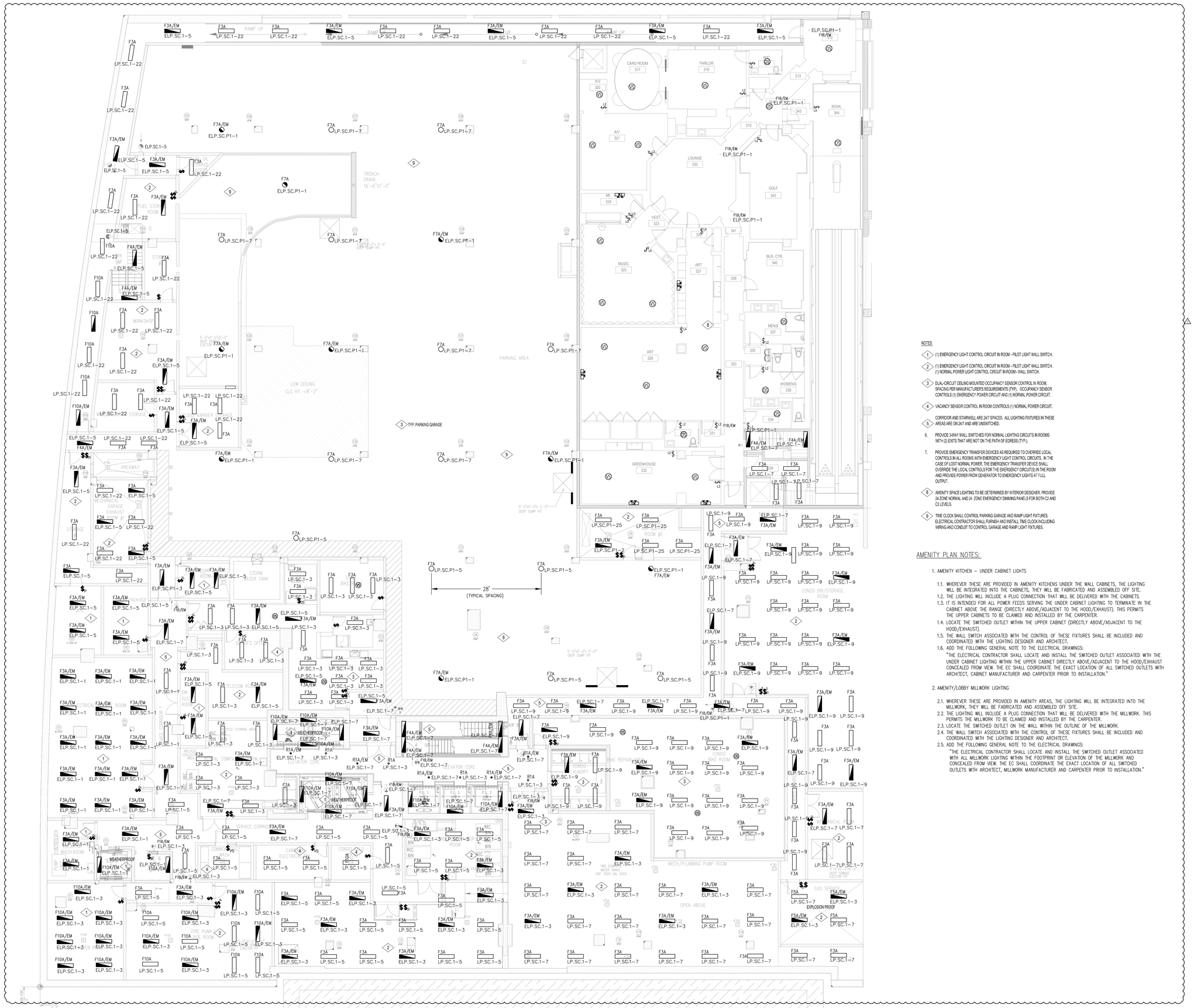
Victor Daza
EX. A
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
LIGHTING
SCOPE OF WORK

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARNERA · 74463 · LICENSED PROFESSIONAL ENGINEER

DATE:	5/19/17
PROJECT #:	N14.08690.00
SCALE:	NTS
DWG NO:	EN-005.01

E003



NOTES:

1. (1) EMERGENCY LIGHT CONTROL CIRCUIT IN ROOM - PILOT LIGHT WALL SWITCH.
2. (1) EMERGENCY LIGHT CONTROL CIRCUIT IN ROOM - PILOT LIGHT WALL SWITCH. (1) NORMAL POWER LIGHT CONTROL CIRCUIT IN ROOM - WALL SWITCH.
3. DUAL-CIRCUIT CEILING MOUNTED OCCUPANCY SENSOR CONTROL IN ROOM, SPACING PER MANUFACTURER'S REQUIREMENTS (TYP). OCCUPANCY SENSOR CONTROLS (1) EMERGENCY POWER CIRCUIT AND (1) NORMAL POWER CIRCUIT.
4. VACANCY SENSOR CONTROL IN ROOM CONTROLS (1) NORMAL POWER CIRCUIT.
5. CORRIDOR AND STAIRWELL ARE 24/7 SPACES. ALL LIGHTING FIXTURES IN THESE AREAS ARE ON 24/7 AND ARE UNSWITCHED.
6. PROVIDE 3-WAY WALL SWITCHES FOR NORMAL LIGHTING CIRCUITS IN ROOMS WITH (2) EXITS THAT ARE NOT ON THE PATH OF EGRESS (TYP.).
7. PROVIDE EMERGENCY TRANSFER DEVICES AS REQUIRED TO OVERRIDE LOCAL CONTROLS IN ALL ROOMS WITH EMERGENCY LIGHT CONTROL CIRCUITS. IN THE CASE OF LOST NORMAL POWER, THE EMERGENCY TRANSFER DEVICE SHALL OVERRIDE THE LOCAL CONTROLS FOR THE EMERGENCY CIRCUIT(S) IN THE ROOM AND PROVIDE POWER FROM GENERATOR TO EMERGENCY LIGHTS AT FULL OUTPUT.
8. AMENITY SPACE LIGHTING TO BE DETERMINED BY INTERIOR DESIGNER. PROVIDE 24 ZONE NORMAL AND 24 ZONE EMERGENCY DIMMING PANELS FOR BOTH C2 AND C3 LEVELS.
9. TIME CLOCK SHALL CONTROL PARKING GARAGE AND RAMP LIGHT FIXTURES. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL TIME CLOCK INCLUDING WIRING AND CONDUIT TO CONTROL GARAGE AND RAMP LIGHT FIXTURES.

AMENITY PLAN NOTES:

1. AMENITY KITCHEN – UNDER CABINET LIGHTS
   - 1.1. WHEREVER THESE ARE PROVIDED IN AMENITY KITCHENS UNDER THE WALL CABINETS, THE LIGHTING WILL BE INTEGRATED INTO THE CABINETS, THEY WILL BE FABRICATED AND ASSEMBLED OFF SITE.
   - 1.2. THE LIGHTING WILL INCLUDE A PLUG CONNECTION THAT WILL BE DELIVERED WITH THE CABINETS.
   - 1.3. IT IS INTENDED FOR ALL POWER FEEDS SERVING THE UNDER CABINET LIGHTING TO TERMINATE IN THE CABINET ABOVE THE RANGE (DIRECTLY ABOVE/ADJACENT TO THE HOOD/EXHAUST). THIS PERMITS THE UPPER CABINETS TO BE CLAIMED AND INSTALLED BY THE CARPENTER.
   - 1.4. LOCATE THE SWITCHED OUTLET WITHIN THE UPPER CABINET (DIRECTLY ABOVE/ADJACENT TO THE HOOD/EXHAUST).
   - 1.5. THE WALL SWITCH ASSOCIATED WITH THE CONTROL OF THESE FIXTURES SHALL BE INCLUDED AND COORDINATED WITH THE LIGHTING DESIGNER AND ARCHITECT.
   - 1.6. ADD THE FOLLOWING GENERAL NOTE TO THE ELECTRICAL DRAWINGS:
     "THE ELECTRICAL CONTRACTOR SHALL LOCATE AND INSTALL THE SWITCHED OUTLET ASSOCIATED WITH THE UNDER CABINET LIGHTING WITHIN THE UPPER CABINET DIRECTLY ABOVE/ADJACENT TO THE HOOD/EXHAUST CONCEALED FROM VIEW. THE EC SHALL COORDINATE THE EXACT LOCATION OF ALL SWITCHED OUTLETS WITH ARCHITECT, CABINET MANUFACTURER AND CARPENTER PRIOR TO INSTALLATION."
2. AMENITY/LOBBY MILLWORK LIGHTING
   - 2.1. WHEREVER THESE ARE PROVIDED IN AMENITY AREAS, THE LIGHTING WILL BE INTEGRATED INTO THE MILLWORK, THEY WILL BE FABRICATED AND ASSEMBLED OFF SITE.
   - 2.2. THE LIGHTING WILL INCLUDE A PLUG CONNECTION THAT WILL BE DELIVERED WITH THE MILLWORK. THIS PERMITS THE MILLWORK TO BE CLAIMED AND INSTALLED BY THE CARPENTER.
   - 2.3. LOCATE THE SWITCHED OUTLET ON THE WALL WITHIN THE OUTLINE OF THE MILLWORK.
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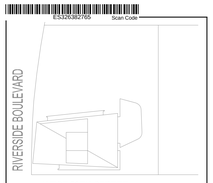

KEY PLAN

Number:	Date:	Revision:
2	05/19/2017	EN DRAWING PAA
1	02/15/2016	ISSUED FOR FILING

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWVER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
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New York, NY 10018
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512 Seventh Avenue
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Tel: (212) 532-9600

SUB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 2/25
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

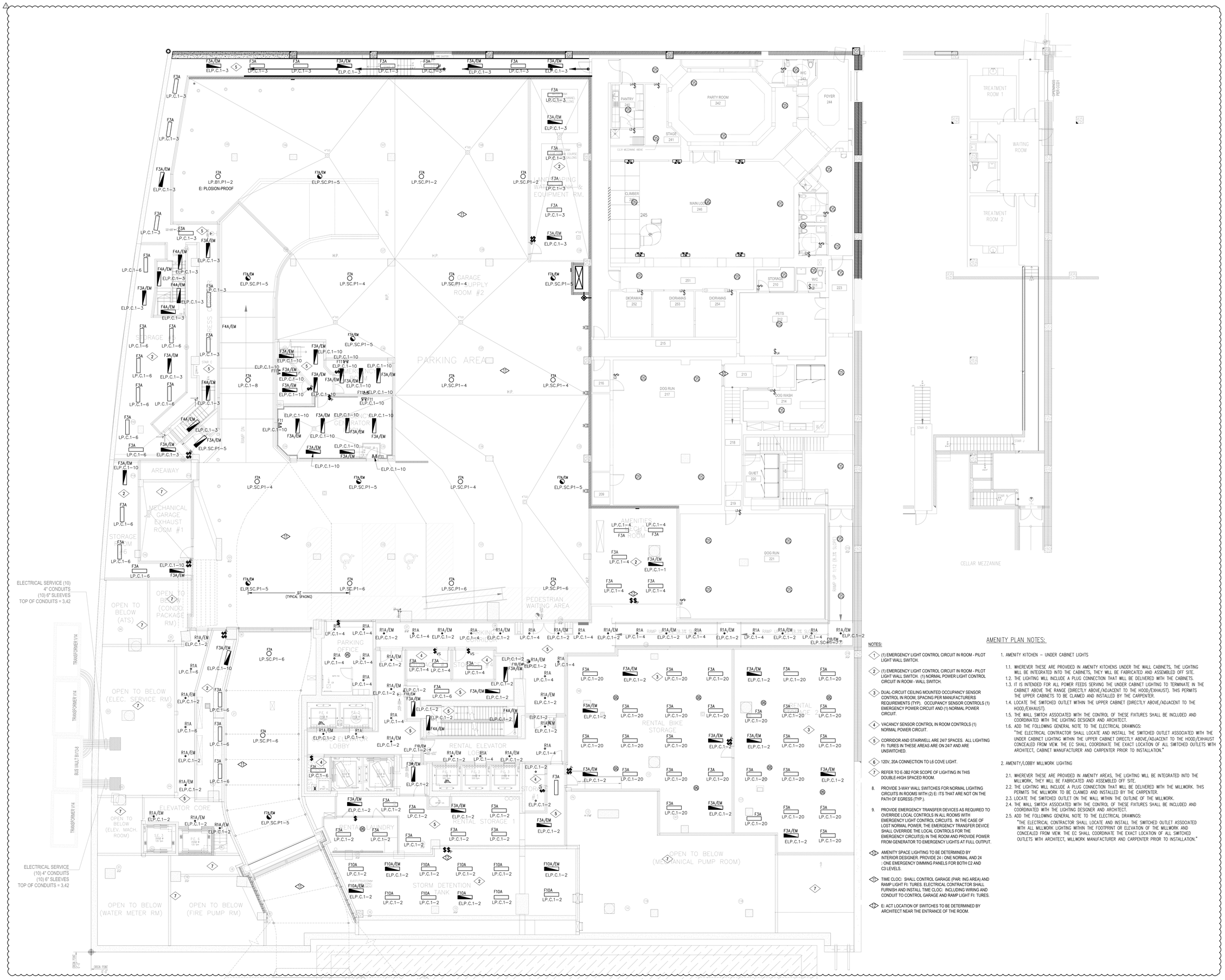
DWG TITLE:
ELECTRICAL SUB-CELLAR
LIGHTING PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE: 5/19/17
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: EN-006.01

E3B2

Sheet 5 of 02



AMENITY PLAN NOTES:

NOTES:

1. (1) EMERGENCY LIGHT CONTROL CIRCUIT IN ROOM - PILOT LIGHT WALL SWITCH.
2. (1) EMERGENCY LIGHT CONTROL CIRCUIT IN ROOM - PILOT LIGHT WALL SWITCH. (1) NORMAL POWER LIGHT CONTROL CIRCUIT IN ROOM - WALL SWITCH.
3. DUAL-CIRCUIT CEILING MOUNTED OCCUPANCY SENSOR CONTROL IN ROOM, SPACING PER MANUFACTURERS REQUIREMENTS (TYP). OCCUPANCY SENSOR CONTROLS (1) EMERGENCY POWER CIRCUIT AND (1) NORMAL POWER CIRCUIT.
4. VACANCY SENSOR CONTROL IN ROOM CONTROLS (1) NORMAL POWER CIRCUIT.
5. CORRIDOR AND STAIRWELL ARE 24/7 SPACES. ALL LIGHTING FI: TURES IN THESE AREAS ARE ON 24/7 AND ARE UNSWITCHED.
6. 120V, 20A CONNECTION TO L6 COVE LIGHT.
7. REFER TO E-3B2 FOR SCOPE OF LIGHTING IN THIS DOUBLE-HIGH SPACED ROOM.
8. PROVIDE 3-WAY WALL SWITCHES FOR NORMAL LIGHTING CIRCUITS IN ROOMS WITH (2) E: ITS THAT ARE NOT ON THE PATH OF EGRESS (TYP.).
9. PROVIDE EMERGENCY TRANSFER DEVICES AS REQUIRED TO OVERRIDE LOCAL CONTROLS IN ALL ROOMS WITH EMERGENCY LIGHT CONTROL CIRCUITS . IN THE CASE OF LOST NORMAL POWER, THE EMERGENCY TRANSFER DEVICE SHALL OVERRIDE THE LOCAL CONTROLS FOR THE EMERGENCY CIRCUIT(S) IN THE ROOM AND PROVIDE POWER FROM GENERATOR TO EMERGENCY LIGHTS AT FULL OUTPUT.

10 AMENITY SPACE LIGHTING TO BE DETERMINED BY INTERIOR DESIGNER. PROVIDE 24 : ONE NORMAL AND 24 : ONE EMERGENCY DIMMING PANELS FOR BOTH C2 AND C3 LEVELS.

11 TIME CLOC: SHALL CONTROL GARAGE (PAR: ING AREA) AND RAMP LIGHT FI: TURES. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL TIME CLOC: INCLUDING WIRING AND CONDUIT TO CONTROL GARAGE AND RAMP LIGHT FI: TURES.

12 E: ACT LOCATION OF SWITCHES TO BE DETERMINED BY ARCHITECT NEAR THE ENTRANCE OF THE ROOM.

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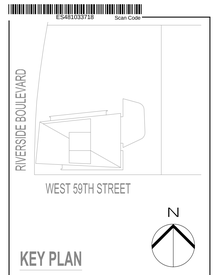

KEY PLAN

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2	05/19/2017	EN DRAWING PAA
1	02/15/2016	ISSUED FOR FILING

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
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Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

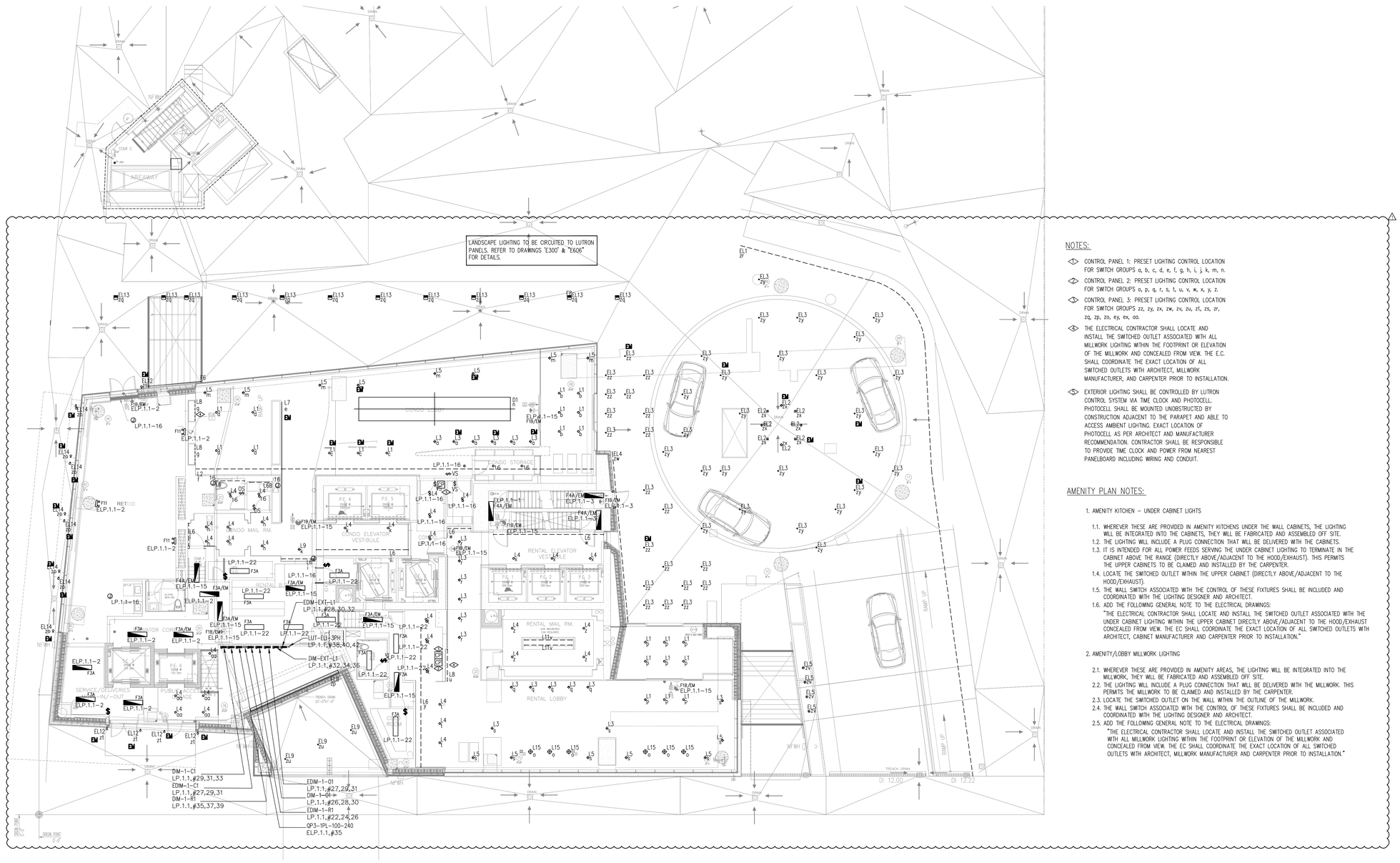
DWG TITLE:
ELECTRICAL CELLAR LIGHTING PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE	5/19/17
PROJECT #	N14.08690.00
SCALE	1/8"=1'-0"
DWG NO	EN-007.01

E3B1

Sheet 00 of 00



NOTES:

1. CONTROL PANEL 1: PRESET LIGHTING CONTROL LOCATION FOR SWITCH GROUPS a, b, c, d, e, f, g, h, i, j, k, m, n.
2. CONTROL PANEL 2: PRESET LIGHTING CONTROL LOCATION FOR SWITCH GROUPS o, p, q, r, s, t, u, v, w, x, y, z.
3. CONTROL PANEL 3: PRESET LIGHTING CONTROL LOCATION FOR SWITCH GROUPS zz, zy, zx, zw, zv, zu, zt, zs, zr, zq, zp, zo, ey, ex, oo.
4. THE ELECTRICAL CONTRACTOR SHALL LOCATE AND INSTALL THE SWITCHED OUTLET ASSOCIATED WITH ALL MILLWORK LIGHTING WITHIN THE FOOTPRINT OR ELEVATION OF THE MILLWORK AND CONCEALED FROM VIEW. THE E.C. SHALL COORDINATE THE EXACT LOCATION OF ALL SWITCHED OUTLETS WITH ARCHITECT, MILLWORK MANUFACTURER, AND CARPENTER PRIOR TO INSTALLATION.
5. EXTERIOR LIGHTING SHALL BE CONTROLLED BY LUTRON CONTROL SYSTEM VIA TIME CLOCK AND PHOTOCELL. PHOTOCELL SHALL BE MOUNTED UNOBSTRUCTED BY CONSTRUCTION ADJACENT TO THE PARAPET AND ABLE TO ACCESS AMBIENT LIGHTING. EXACT LOCATION OF PHOTOCELL AS PER ARCHITECT AND MANUFACTURER RECOMMENDATION. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TIME CLOCK AND POWER FROM NEAREST PANELBOARD INCLUDING WIRING AND CONDUIT.

AMENITY PLAN NOTES:

1. AMENITY KITCHEN – UNDER CABINET LIGHTS

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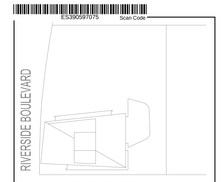
WEST 59TH STREET



KEY PLAN

Number	Date	Description
2	05/19/2017	EN DRAWING PAA
1	02/15/2016	ISSUED FOR FILING

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

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WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED AMP LOCATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
ELECTRICAL 1ST FLOOR
LIGHTING PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARA · 77465 · PROFESSIONAL ENGINEER

DATE: 5/19/17
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: EN-008.01

E301

Sheet : 7 of : 02

NOTES:

1. CONTROL PANEL 4: PRESET LIGHTING CONTROL LOCATION FOR SWITCH GROUPS c, e, f, ob.
2. CONTROL PANEL 5: PRESET LIGHTING CONTROL LOCATION FOR SWITCH GROUPS g, i, j, k, oa, oc.
3. CONTROL PANEL 6: PRESET LIGHTING CONTROL LOCATION FOR SWITCH GROUPS m, n, o, p, q, r, s, t, oj, zz.
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5. THE ELECTRICAL CONTRACTOR SHALL PROVIDE SWITCHED OUTLET FOR DECORATIVE LAMP BY INTERIOR DESIGNER, CONTROL ZONE AS INDICATED.

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125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
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Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

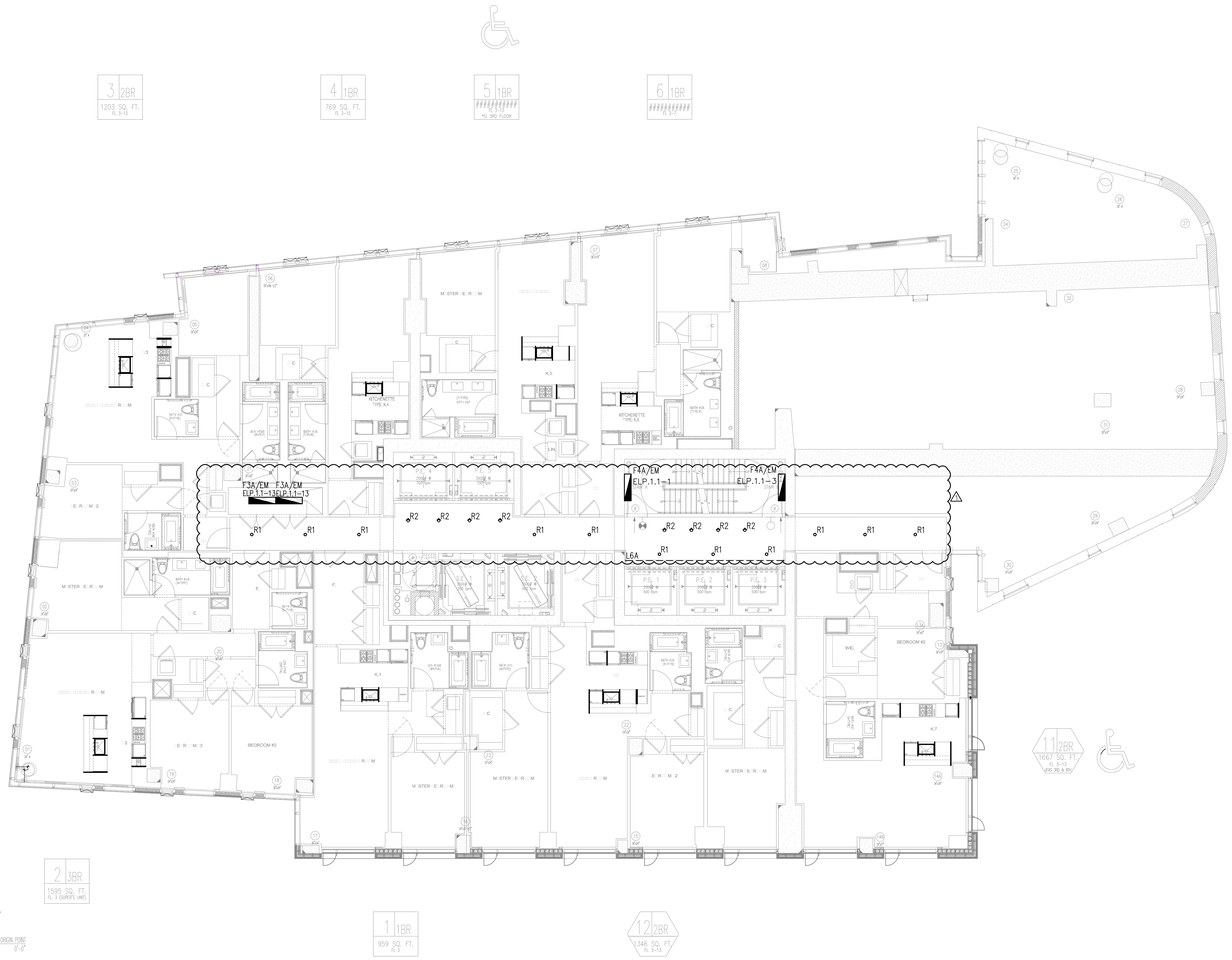
DWG TITLE:
ELECTRICAL 2ND FLOOR
LIGHTING PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE: 5/19/17
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: EN-009.01

E302

Sheet 1 of 1 02



LIGHTING NOTE:

1. SEE SHEETS E-340.00, E-341.00, AND E-342.00 FOR TYPICAL UNIT LIGHTING LAYOUTS AND TO CONFIRM LIGHT FIXTURE TYPES USED IN THE UNITS.
2. LIGHTING SWITCHES AND DIMMER SWITCHES TO BE GANGED. SEE SHEETS E-340.00, E-341.00 AND E-342.00 FOR GANGED SWITCH CONFIGURATION DIAGRAMS PER TYPICAL LIGHTING LAYOUTS.
3. CONTRACTOR TO COORDINATE WITH ARCHITECT & WINDOW SHADE CONSULTANT FOR COMPLETE MOTORIZED WINDOW SHADE AND ITS CONTROL SWITCHES INSTALLATION. PROVIDE ALL WIRING AND CONDUITS AS REQUIRED.

NOTES:

1. NOT USED.
2. ARCHITECT TO CONFIRM SPACE FOR FUTURE LIGHTING CONTROL PANEL.

1 PROVIDE 1" CONDUIT BETWEEN EACH PERIMETER JUNCTION BOX AND BLANKED OFF WALL SWITCH FOR FUTURE SHADE CONTROLS. ARCHITECT TO CONFIRM LOCATION.

2 PROVIDE JUNCTION BOX FOR FUTURE POCKET SHADE CONTROLS. PROVIDE 1" CONDUIT BETWEEN EACH PERIMETER JUNCTION BOX AND TO FUTURE SHADE CONTROL PANEL TO BE LOCATED BY ARCHITECT.

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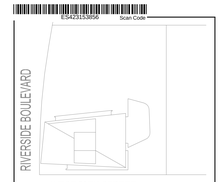

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DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 14 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
ELECTRICAL 3RD FLOOR
LIGHTING PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE:	5/19/17
PROJECT #:	N14.08690.00
SCALE:	1/8"=1'-0"
DWG NO:	EN-010.01

E303

Sheet 01 of 02

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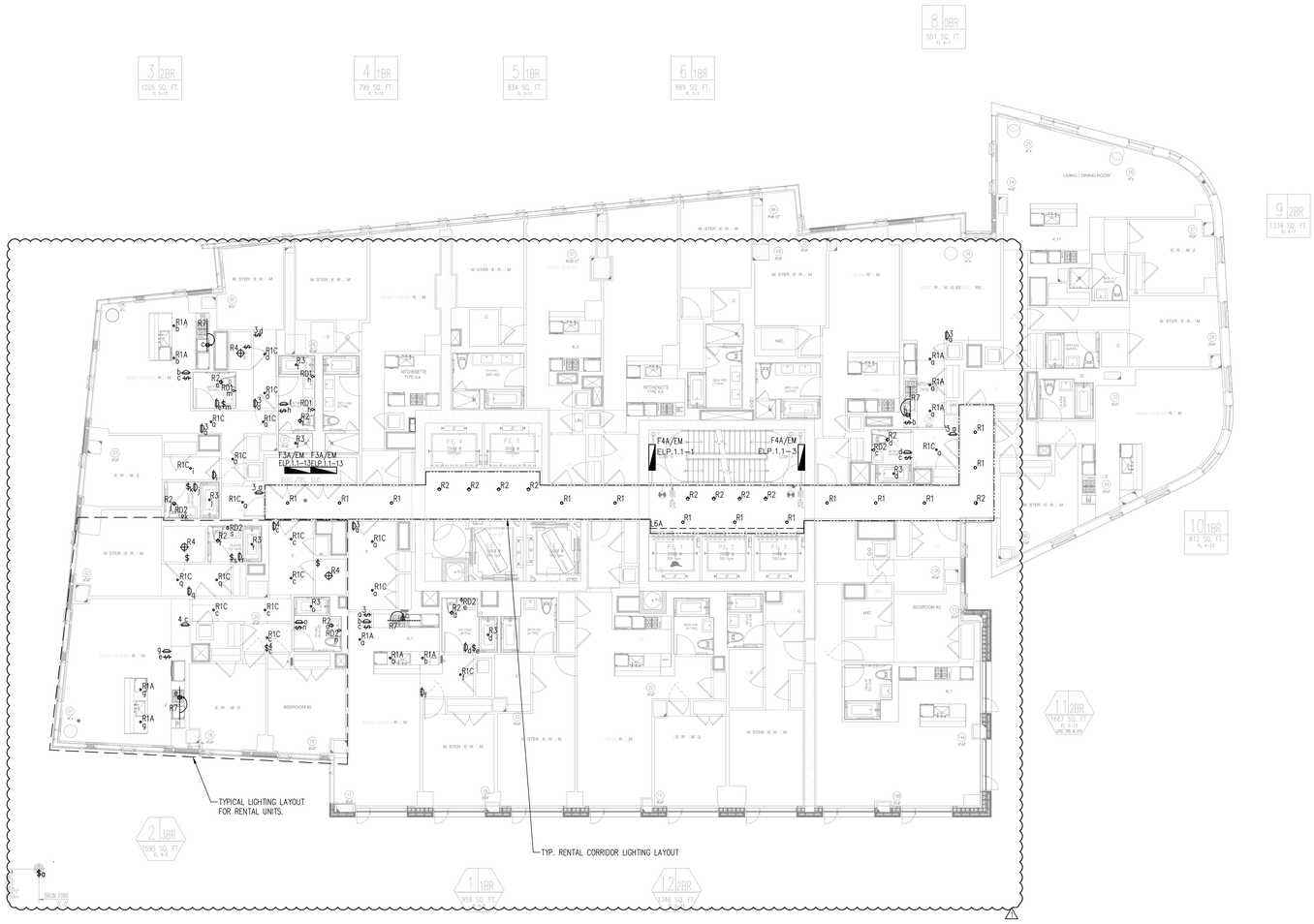
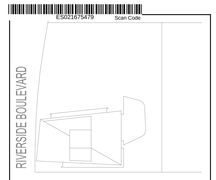


LIGHTING NOTE:

1. SEE SHEETS E-340.00, E-341.00, AND E-342.00 FOR TYPICAL UNIT LIGHTING LAYOUTS AND TO CONFIRM LIGHT FIXTURE TYPES USED IN THE UNITS.
2. LIGHTING SWITCHES AND DIMMER SWITCHES TO BE GANGED. SEE SHEETS E-340.00, E-341.00 AND E-342.00 FOR GANGED SWITCH CONFIGURATION DIAGRAMS PER TYPICAL LIGHTING LAYOUTS.
3. CONTRACTOR TO COORDINATE WITH ARCHITECT & WINDOW SHADE CONSULTANT FOR COMPLETE MOTORIZED WINDOW SHADE AND ITS CONTROL SWITCHES INSTALLATION. PROVIDE ALL WIRING AND CONDUITS AS REQUIRED.



KEY PLAN

N

Number	Date	Revision
2	05/19/2017	EN DRAWING PAA
1	02/15/2016	ISSUED FOR FILING

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

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MEP/FP ENGINEER:
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CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

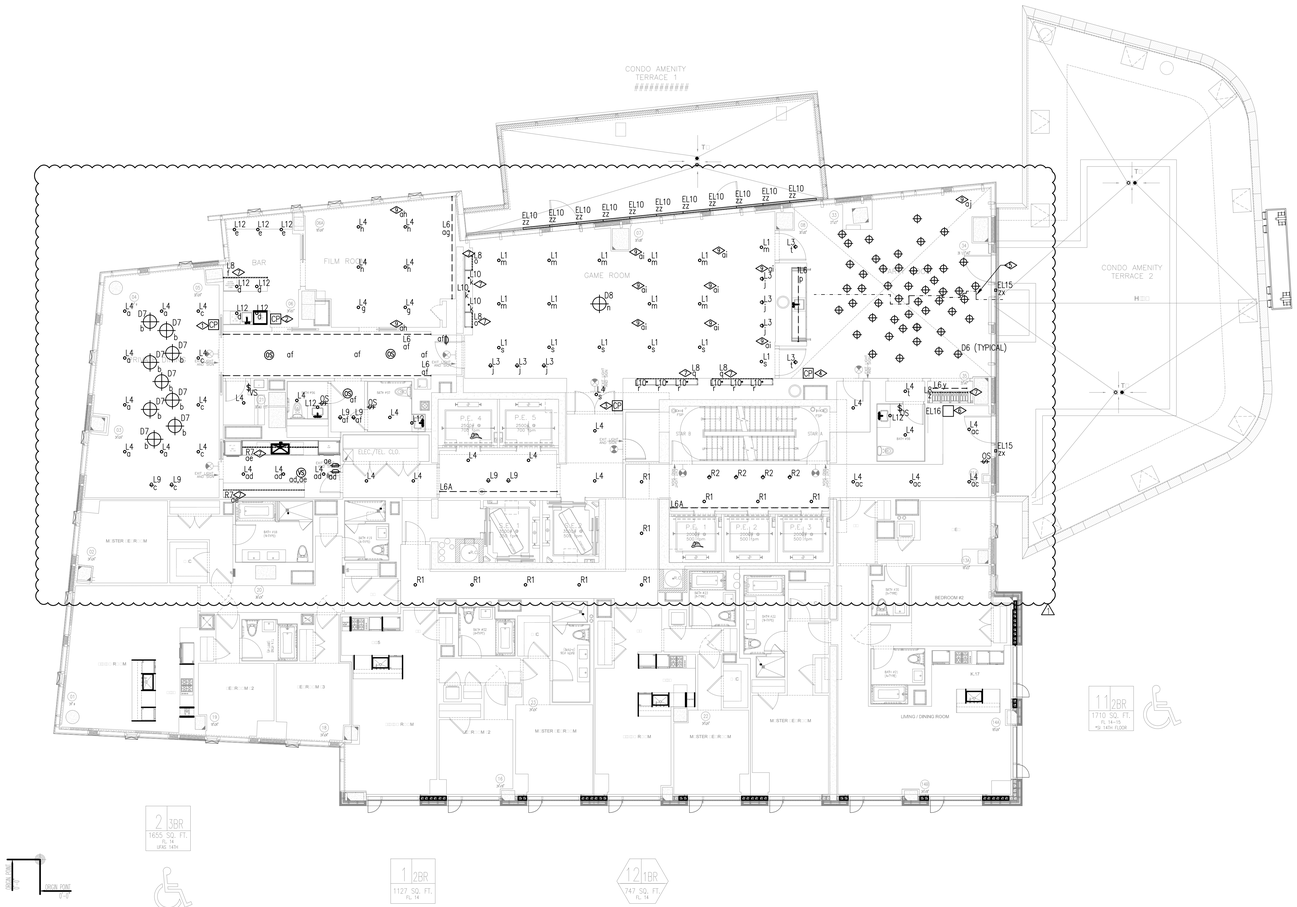
DOB STAMPS & SIGNATURES:
Victor Daza
E3 A
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 03/06/2018
NYC Development Hub

DWG TITLE:
ELECTRICAL 4TH FLOOR
LIGHTING PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE: 5/19/17
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: EN-011.01

E304

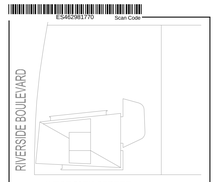


LIGHTING LISTING NOTE:

1. SEE SHEETS E-340.00, E-341.00, AND E-342.00 FOR TYPICAL UNIT LIGHTING LAYOUTS AND TO CONFIRM LIGHT FIXTURE TYPES USED IN THE UNITS.
2. LIGHTING SWITCHES AND DIMMER SWITCHES TO BE GANGED. SEE SHEETS E-340.00, E-341.00 AND E-342.00 FOR GANGED SWITCH CONFIGURATION DIAGRAMS PER TYPICAL LIGHTING LAYOUTS.
3. CONTRACTOR TO COORDINATE WITH ARCHITECT & WINDOW SHADE CONSULTANT FOR COMPLETE MOTORIZED WINDOW SHADE AND ITS CONTROL SWITCHES INSTALLATION. PROVIDE ALL WIRING AND CONDUITS AS REQUIRED.

NOTES:

1. CONTROL PANEL 7: PRESET LIGHTING CONTROL LOCATION FOR SWITCH GROUPS a, b, c.
2. CONTROL PANEL 8: PRESET LIGHTING CONTROL LOCATION FOR SWITCH GROUPS d, e, f, g, h, og, oh.
3. CONTROL PANEL 9: PRESET LIGHTING CONTROL LOCATION FOR SWITCH GROUPS j, k, m, n, o, q, r, s, oi, zz
4. CONTROL PANEL 10: PRESET LIGHTING CONTROL LOCATION FOR SWITCH GROUPS p, t, w, y, z, oj, zx.
5. ALL D6 FIXTURES MORE THAN 15' FROM WINDOW (BELOW LINE) TO BE CONTROLLED BY SWITCH GROUP v. ALL D6 FIXTURES LESS THAN 15' FROM WINDOW (ABOVE LINE) TO BE CONTROLLED BY SWITCH GROUP w.
6. MOUNTING LOCATION FOR EL16 CHARGING DOCK.
7. THE ELECTRICAL CONTRACTOR SHALL LOCATE AND INSTALL THE SWITCHED OUTLET ASSOCIATED WITH ALL MILLWORK LIGHTING WITHIN THE FOOTPRINT OR ELEVATION OF THE MILLWORK AND CONCEALED FROM VIEW. THE E.C. SHALL COORDINATE THE EXACT LOCATION OF ALL SWITCHED OUTLETS WITH ARCHITECT, MILLWORK MANUFACTURER, AND CARPENTER PRIOR TO INSTALLATION.
8. NOT USED.
9. THE ELECTRICAL CONTRACTOR SHALL PROVIDE SWITCHED OUTLET FOR DECORATIVE LAMP BY INTERIOR DESIGNER, CONTROL ZONE AS INDICATED.



KEY PLAN

N

Number	Date	Revision
2	05/19/2017	EN DRAWING PAA
1	02/15/2016	ISSUED FOR FILING

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
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New York, NY 10018
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New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
E1 Exp. 12/31/2018
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

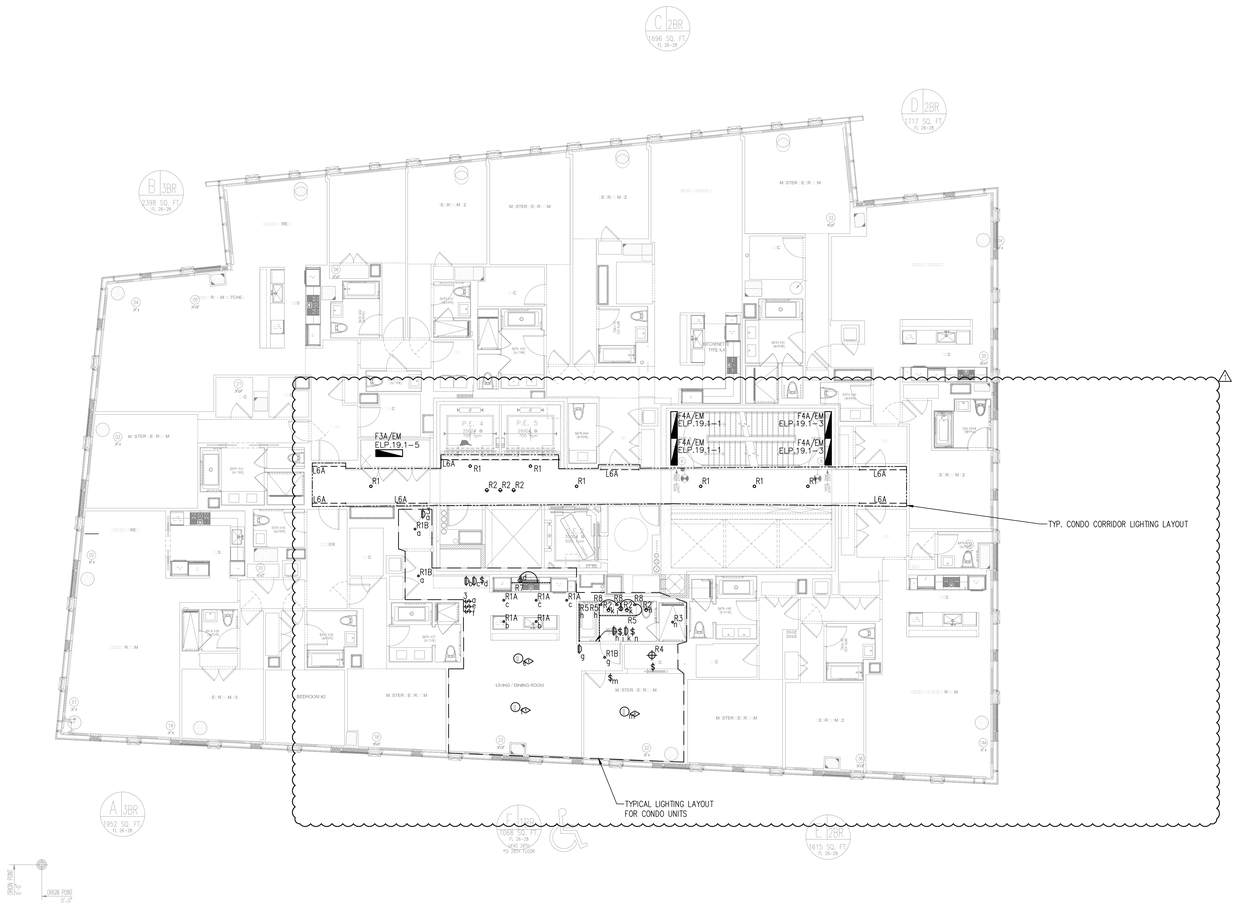
DWG TITLE:
ELECTRICAL 14TH FLOOR
LIGHTING PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARA · 27463 · LICENSED PROFESSIONAL ENGINEER

DATE: 5/19/17
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: EN-012.01

E314

Sheet : 0 of : 02



LIGHTING NOTE:

1. SEE SHEETS E-340.00, E-341.00, AND E-342.00 FOR TYPICAL UNIT LIGHTING LAYOUTS AND TO CONFIRM LIGHT FIXTURE TYPES USED IN THE UNITS.
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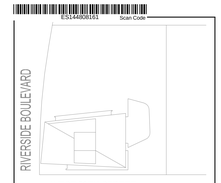

KEY PLAN

N

Number:	Date:	Revision:
2	05/19/2017	EN DRAWING PAA
1	02/15/2016	ISSUED FOR FILING

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

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Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
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CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive of sqs
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
ELECTRICAL 26TH FLOOR
LIGHTING PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE: 5/19/17
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: EN-013.01

E326

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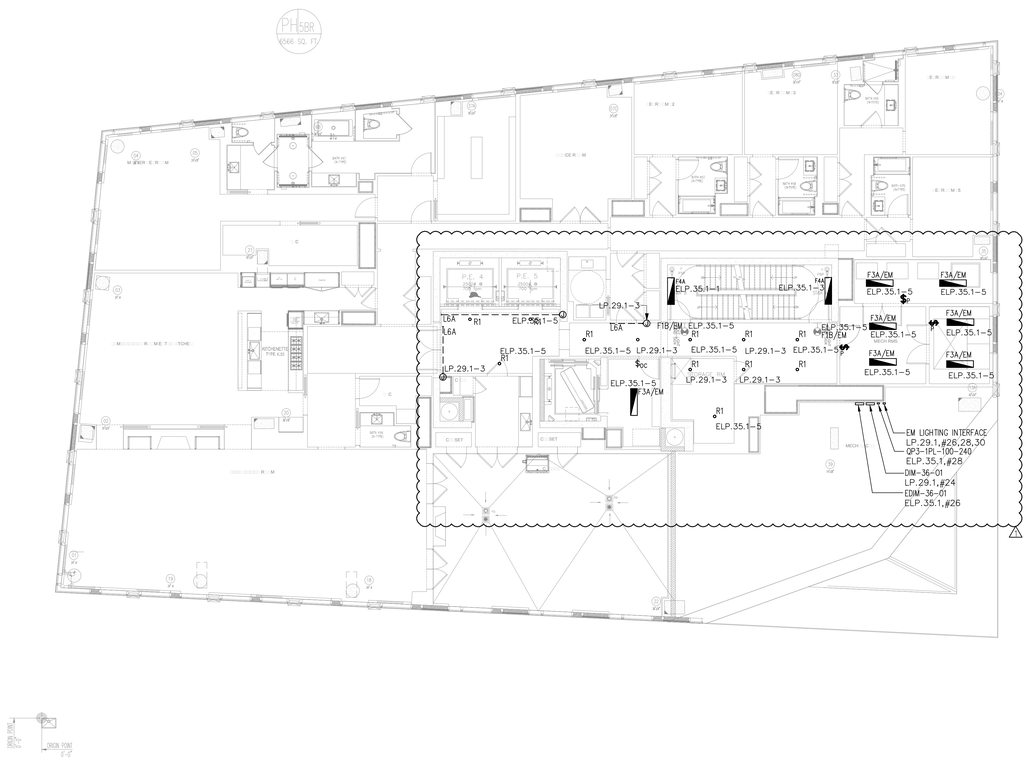

APARTMENT PLAN NOTES:

1. RESIDENTIAL APARTMENTS – MEDICINE CABINETS

   1.1. WHEREVER THESE ARE PROVIDED WITH INTEGRATED LIGHT FIXTURES, THEY WILL BE FABRICATED AND ASSEMBLED OFF SITE. THE CABINET LIGHTING WILL INCLUDE A PLUG CONNECTION THAT WILL BE DELIVERED WITH THE CABINET. THIS PERMITS THE CABINET TO BE CLAIMED AND INSTALLED BY THE CARPENTER.
   1.2. LOCATE THE SWITCHED OUTLET DIRECTLY BEHIND THE MEDICINE CABINET.
   1.3. THE WALL SWITCH ASSOCIATED WITH THE CONTROL OF THESE FIXTURES SHALL BE INCLUDED AND COORDINATED WITH THE LIGHTING DESIGNER AND ARCHITECT.
   1.4. ADD THE FOLLOWING GENERAL NOTE TO THE ELECTRICAL DRAWINGS:
   "THE ELECTRICAL CONTRACTOR SHALL LOCATE AND INSTALL THE SWITCHED OUTLET ASSOCIATED WITH THE MEDICINE CABINET LIGHTING DIRECTLY BEHIND THE UNIT CONCEALED FROM VIEW. THE EC SHALL COORDINATE THE EXACT LOCATION OF ALL MEDICINE CABINET SWITCHED OUTLETS WITH ARCHITECT, CABINET MANUFACTURER AND CARPENTER PRIOR TO INSTALLATION."

2. RESIDENTIAL APARTMENTS – ILLUMINATED MIRRORS

   2.1. WHEREVER THESE ARE PROVIDED WITH INTEGRATED LIGHT FIXTURES, THEY WILL BE FABRICATED AND ASSEMBLED OFF SITE.
   2.2. THE MIRROR LIGHTING WILL INCLUDE A PLUG CONNECTION THAT WILL BE DELIVERED WITH THE MIRROR. THIS PERMITS THE MIRROR TO BE CLAIMED AND INSTALLED BY THE CARPENTER.
   2.3. LOCATE THE SWITCHED OUTLET DIRECTLY BEHIND THE MIRROR.
   2.4. THE WALL SWITCH ASSOCIATED WITH THE CONTROL OF THESE FIXTURES SHALL BE INCLUDED AND COORDINATED WITH THE LIGHTING DESIGNER AND ARCHITECT.
   2.5. ADD THE FOLLOWING GENERAL NOTE TO THE ELECTRICAL DRAWINGS:
   "THE ELECTRICAL CONTRACTOR SHALL LOCATE AND INSTALL THE SWITCHED OUTLET ASSOCIATED WITH THE MIRROR LIGHTING DIRECTLY BEHIND THE UNIT CONCEALED FROM VIEW. THE EC SHALL COORDINATE THE EXACT LOCATION OF ALL MIRROR SWITCHED OUTLETS WITH ARCHITECT, MANUFACTURER AND CARPENTER PRIOR TO INSTALLATION."

3. RESIDENTIAL KITCHEN – UNDER CABINET LIGHTS

   3.1. WHEREVER THESE ARE PROVIDED IN KITCHENS UNDER THE WALL CABINETS, THE LIGHTING WILL BE INTEGRATED INTO THE CABINETS, THEY WILL BE FABRICATED AND ASSEMBLED OFF SITE.
   3.2. THE LIGHTING WILL INCLUDE A PLUG CONNECTION THAT WILL BE DELIVERED WITH THE CABINETS.
   3.3. IT IS INTENDED FOR ALL POWER FEEDS SERVING THE UNDER CABINET LIGHTING TO TERMINATE IN THE CABINET ABOVE THE RANGE (DIRECTLY ABOVE/ADJACENT TO THE HOOD/EXHAUST). THIS PERMITS THE UPPER CABINETS TO BE CLAIMED AND INSTALLED BY THE CARPENTER.
   3.4. LOCATE THE SWITCHED OUTLET WITHIN THE UPPER CABINET (DIRECTLY ABOVE/ADJACENT TO THE HOOD/EXHAUST).
   3.5. THE WALL SWITCH ASSOCIATED WITH THE CONTROL OF THESE FIXTURES SHALL BE INCLUDED AND COORDINATED WITH THE LIGHTING DESIGNER AND ARCHITECT.
   3.6. ADD THE FOLLOWING GENERAL NOTE TO THE ELECTRICAL DRAWINGS:
   "THE ELECTRICAL CONTRACTOR SHALL LOCATE AND INSTALL THE SWITCHED OUTLET ASSOCIATED WITH THE UNDER CABINET LIGHTING WITHIN THE UPPER CABINET DIRECTLY ABOVE/ADJACENT TO THE HOOD/EXHAUST CONCEALED FROM VIEW. THE EC SHALL COORDINATE THE EXACT LOCATION OF ALL SWITCHED OUTLETS WITH ARCHITECT, CABINET MANUFACTURER AND CARPENTER PRIOR TO INSTALLATION."

LIGHTING NOTE:

1. SEE SHEETS E-340.00, E-341.00, AND E-342.00 FOR TYPICAL UNIT LIGHTING LAYOUTS AND TO CONFIRM LIGHT FIXTURE TYPES USED IN THE UNITS.

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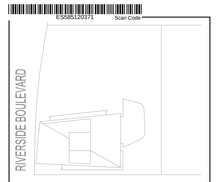

KEY PLAN

Number	Date	Revision
2	05/19/2017	EN DRAWING PAA
1	02/15/2016	ISSUED FOR FILING

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

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Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

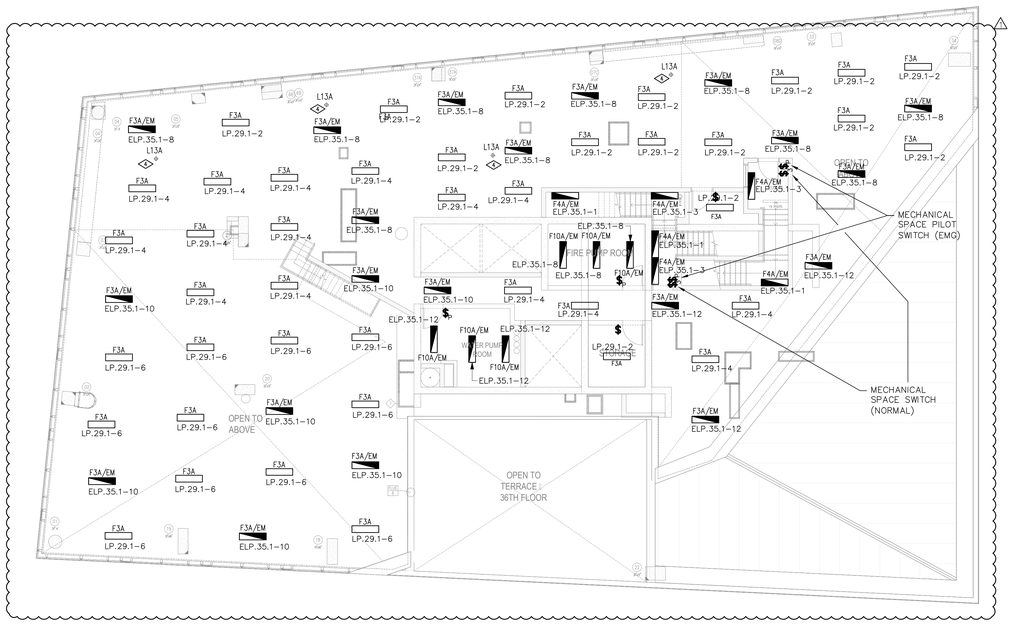
DWG TITLE:
ELECTRICAL 36TH FLOOR
LIGHTING PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77462 · LICENSED PROFESSIONAL ENGINEER

DATE: 5/19/17
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO: EN-014.01

E336

Sheet : 2 of : 02



37TH FLOOR

LIGHTING NOTE:

1. SEE SHEETS E-340.00, E-341.00, AND E-342.00 FOR TYPICAL UNIT LIGHTING LAYOUTS AND TO CONFIRM LIGHT FIXTURE TYPES USED IN THE UNITS.
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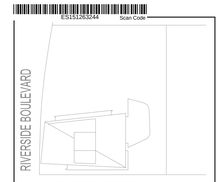
3. CONTRACTOR TO COORDINATE WITH ARCHITECT & WINDOW SHADE CONSULTANT FOR COMPLETE MOTORIZED WINDOW SHADE AND ITS CONTROL SWITCHES INSTALLATION. PROVIDE ALL WIRING AND CONDUITS AS REQUIRED.

<S> AUTOMATIC BUILDING TIMECLOCK CONTROL.

5. CONTRACTOR SHALL FURNISH AND INSTALL TIME CLOCK TO NEAREST ELECTRICAL/IT CLOSET AND PROVIDE POWER INCLUDING WIRING AND CONDUIT.



KEY PLAN

Number	Date	Revision
2	05/19/2017	EN DRAWING PAA
1	02/15/2016	ISSUED FOR FILING

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
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Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

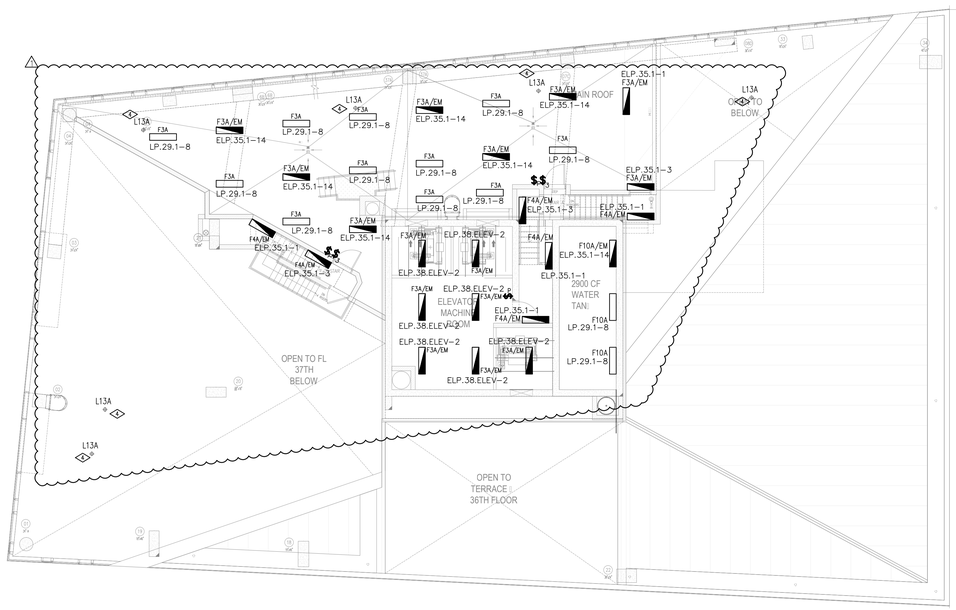
TITLE:
ELECTRICAL 37TH FLOOR
LIGHTING PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77452 · LICENSED PROFESSIONAL ENGINEER

DATE:	5/19/17
PROJECT #:	N14.08690.00
SCALE:	1/8"=1'-0"
DWG NO:	EN-015.01

E337

Sheet :3 of : 02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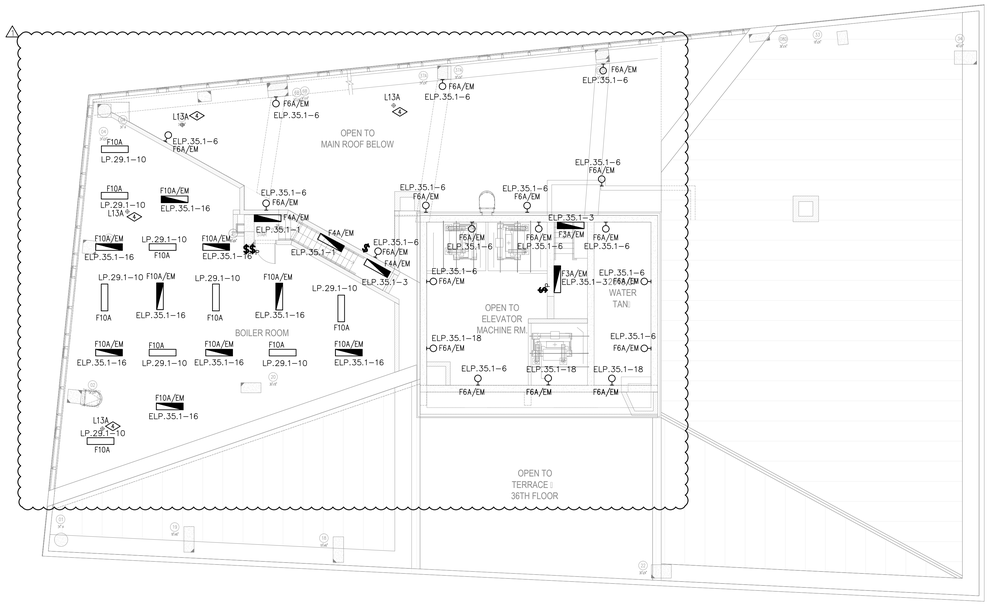
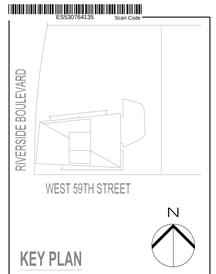


LIGHTING NOTE:

1. SEE SHEETS E-340.00, E-341.00, AND E-342.00 FOR TYPICAL UNIT LIGHTING LAYOUTS AND TO CONFIRM LIGHT FIXTURE TYPES USED IN THE UNITS.
2. LIGHTING SWITCHES AND DIMMER SWITCHES TO BE GANGED. SEE SHEETS E-340.00, E-341.00 AND E-342.00 FOR GANGED SWITCH CONFIGURATION DIAGRAMS PER TYPICAL LIGHTING LAYOUTS.
3. CONTRACTOR TO COORDINATE WITH ARCHITECT & WINDOW SHADE CONSULTANT FOR COMPLETE MOTORIZED WINDOW SHADE AND ITS CONTROL SWITCHES INSTALLATION. PROVIDE ALL WIRING AND CONDUITS AS REQUIRED.
4. AUTOMATIC BUILDING TIMECLOCK CONTROL.
5. CONTRACTOR SHALL FURNISH AND INSTALL TIME CLOCK TO NEAREST ELECTRICAL/IT CLOSET AND PROVIDE POWER INCLUDING WIRING AND CONDUIT.



KEY PLAN

Number	Date	Revision
2	05/19/2017	EN DRAWING PAA
1	02/15/2016	ISSUED FOR FILING

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS
ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES
CONSULTING ENGINEERS
228 East 45th St, 3rd Floor
New York, NY 10017
Tel: (212) 687-9888 Fax: (646) 487-5501

MEP/FP ENGINEER:
WSP BUILDING SYSTEMS
CONSULTING ENGINEERS
512 Seventh Avenue
New York, NY 10018
Tel: (212) 532-9600

DOB STAMPS & SIGNATURES:
Victor Daza
EN
APPROVED
Under Directive 2 of 1975
AMENDED APPLICATION
Date: 02/06/2018
NYC Development Hub

DWG TITLE:
ELECTRICAL 39TH FLOOR
LIGHTING PLAN

SEAL & SIGNATURE:
STATE OF NEW YORK · FRANK MUSCARELLA · 77463 · LICENSED PROFESSIONAL ENGINEER

DATE: 5/19/17
PROJECT #: N14.08690.00
SCALE: 1/8"=1'-0"
DWG NO.: EN-017.01

E339

Sheet 5 of 02

FACTORY ASSEMBLED HVAC SYSTEMS – (DX COOLING W/ HEAT RECOVERY HTS AS STD)

| DESIGNATION | SERVICE | LOCATION | TOTAL AIR QUANTITY (CFM) | OUTSIDE AIR QUANTITY (CFM) | FILTER SUPPLY PRE-FILTER FILTER TYPE | FILTER SUPPLY PRE-FILTER APD (IN.) | FILTER SUPPLY FINAL FILTER FILTER TYPE | FILTER SUPPLY FINAL FILTER APD (IN.) | FILTER EXHAUST FILTER TYPE | FILTER EXHAUST APD (IN.) | DX COOLING COIL (R-410a) AIR SIDE ENT. TEMP. DRY BULB (DEGREES F) | ENT. TEMP. WET BULB (DEGREES F) | LVG. TEMP. DRY BULB (DEGREES F) | LVG. TEMP. WET BULB (DEGREES F) | MAXIMUM AIR FRICTION (IN. OF WATER) | TOTAL COOLING CAPACITY (MBH) | SENSIBLE COOLING CAPACITY (MBH) | FACE AREA (SQ. FT.) | FACE VELOCITY (FPM) | SERIES SURFACE (FPI) AND ROWS | HEAT RECOVERY WHEEL WARMER SECTION (SUMMER) AIR QUANTITY (CFM) | WARMER SECTION (SUMMER) ENT. AIR TEMPERATURE (DEGREES F) | WARMER SECTION (SUMMER) LVG. AIR TEMPERATURE (DEGREES F) | COLDER SECTION (SUMMER) AIR QUANTITY (CFM) | COLDER SECTION (SUMMER) ENT. AIR TEMPERATURE (DEGREES F) | COLDER SECTION (SUMMER) LVG. AIR TEMPERATURE (DEGREES F) | WARMER SECTION (WINTER) AIR QUANTITY (CFM) | WARMER SECTION (WINTER) ENT. AIR TEMPERATURE (DEGREES F) | WARMER SECTION (WINTER) LVG. AIR TEMPERATURE (DEGREES F) | COLDER SECTION (WINTER) AIR QUANTITY (CFM) | COLDER SECTION (WINTER) ENT. AIR TEMPERATURE (DEGREES F) | COLDER SECTION (WINTER) LVG. AIR TEMPERATURE (DEGREES F) | STEAM HEATING ENT. AIR TEMP (DEGREES F) | STEAM HEATING LVG. AIR TEMP (DEGREES F) | STEAM HEATING STEAM PRESSURE (PSI) | HEAT PUMP SECTION AIR SIDE ENT. AIR TEMPERATURE (DEGREES F) | AIR SIDE LVG. AIR TEMPERATURE (DEGREES F) | AIR SIDE MAXIMUM AIR FRICTION (IN. OF WATER) | REFRIGERANT (R-410a) ENT. REF. TEMPERATURE (DEGREES F) | REFRIGERANT (R-410a) LVG. REF. TEMPERATURE (DEGREES F) | REFRIGERANT (R-410a) TONNAGE | WATER SIDE FLOW RATE (GPM) | WATER SIDE WINTER ENT. WATER TEMPERATURE (DEGREES F) | WATER SIDE WINTER LVG. WATER TEMPERATURE (DEGREES F) | WATER SIDE SUMMER ENT. WATER TEMPERATURE (DEGREES F) | WATER SIDE SUMMER LVG. WATER TEMPERATURE (DEGREES F) | WATER SIDE MAXIMUM PRESSURE DROP (FT. OF WATER) | HEATING CAPACITY (MBH) | EER | COP | FAN TOTAL STATIC PRESSURE (IN. OF WATER) SUPPLY | FAN TOTAL STATIC PRESSURE (IN. OF WATER) DIRECT | FAN STATIC PRESSURE EXT. OF CASING (IN. OF WATER) SUPPLY | FAN STATIC PRESSURE EXT. OF CASING (IN. OF WATER) DIRECT | FAN MAX. FAN SPEED (RPM) SUPPLY | FAN MAX. FAN SPEED (RPM) DIRECT | FAN CLASS | FAN TYPE | FAN SIZE SUPPLY | FAN SIZE DIRECT | FAN MOTOR BHP SUPPLY | FAN MOTOR BHP DIRECT | FAN MINIMUM MOTOR HP SUPPLY | FAN MINIMUM MOTOR HP DIRECT | FAN MOTOR RPM | FAN VOLTS/PHASE | VIBRATION ISOLATION SPECIFICATION TYPE | VIBRATION ISOLATION STATIC DEFLECTION (INCHES) | EMERGENCY POWER | MODEL NUMBER | EER SIZE CATEGORY (TABLE 6.8.1A) | EER MINIMUM EFFICIENCY REQUIRED | EER PROPOSED PVHP/HSPF RATED EFFICIENCY | MANUFACTURER | REMARKS | DRAWING NO. |
|---|---|---

PLATE AND FRAME HEAT EXCHANGER (ARMSTRONG AS STANDARD)

DESIGNATION	SERVICE	LOCATION	COLD WATER SIDE: FLOW RATE (GPM)	INLET TEMP (DEGREES F)	OUTLET TEMP (DEGREES F)	LOAD (MBH)	MAX. P.D. (PSI)	MAX. WORKING PRESSURE (PSI)	SURFACE AREA (SQ. FT.)	FOULING FACTOR	WARM WATER SIDE: FLOW RATE (GPM)	INLET TEMP (DEGREES F)	OUTLET TEMP (DEGREES F)	LOAD (MBH)	MAX. P.D. (PSI)	MAX. WORKING PRESSURE (PSI)	SURFACE AREA (SQ. FT.)	FOULING FACTOR	PLATE TYPE / SIZE (MM)	DIMENSIONS OVERALL FRAME SIZE (INCHES): HEIGHT	LENGTH	WIDTH	OPERATING WEIGHT (LBS)	VIBRATION ISOLATION: SPECIFICATION TYPE	STATIC DEFLECTION (INCHES)	MODEL NUMBER	EFFICIENCY REQUIREMENTS: CATEGORY (TABLE 6.8.1H)	MINIMUM EFFICIENCY REQUIRED	PROPOSED RATED EFFICIENCY	REMARKS	DRAWING NO.
HX-37-2,3	CONDENSER WATER	37TH FLOOR	750	85	100	6,000	4.75	300	1,677	–	880	102	87	–	6.36	300	1,677	–	ANSI 304 / 0.6	92.75	77.13	29.0	8,394	A	1	A-96-2000-193	PLATE & FRAME	NR	NR	–	
HX-SC-6,7	DOMESTIC WATER PREHEAT	SUB-CELLAR	40	40	85	898	5.67	300	54	–	40	102	57	–	5.53	300	54	–	ANSI 316L / 0.7	34.63	20.13	9.13	314	A	1	S-M9-350-45	PLATE & FRAME	NR	NR	HX-SC-6 WILL SERVE ZONE 1 HX-SC-7 WILL SERVE ZONE 2	
HX-SC-8,9,10	DOMESTIC WATER PREHEAT	SUB-CELLAR	12	40	85	270	2.67	300	18	–	12	102	57	–	3.25	300	18	–	ANSI 316L / 0.7	34.63	15.25	9.13	237	A	1	S-M9-200-16	PLATE & FRAME	NR	NR	HX-SC-8 WILL SERVE ZONE 4 HX-SC-9 WILL SERVE ZONE 5 HX-SC-10 WILL SERVE ZONE 6	
HX-37-1	DOMESTIC WATER PREHEAT	37TH FLOOR	20	40	85	450	2.74	150	.33	–	20	100	55	–	2.99	150	.33	–	ANSI 316L / 0.5	34.63	15	8.25	193	A	1	A-7EK-1250-181	PLATE & FRAME	NR	NR	HX-35-2 WILL SERVE ZONE 3	

ELECTRIC UNIT HEATERS

DESIGNATION	HEATING CAPACITY (BTUH)	ELECTRICAL DATA: INPUT (KW)	VOLTS/PHASE	AMPS	ENT. AIR TEMPERATURE (DEGREES F)	ENCLOSURE DATA: TYPE	DIMENSIONS (INCHES): HEATING L x W x D	GRILLE L x H x D	MANUFACTURER/MODEL	REMARKS
EDUH-A	10239	.3	208/1	15.4	–		33x25x9	–	MARKEL/63-33-0	SEMI-RECESSED
EUH-A	10,236	3.0	277/1	11.0	–	–	16x14x7.5	–	Q-MARK/MUH03-71	PROVIDE CEILING HUNG MOUNTING BRACKET

NOTES:
1. PROVIDE INTEGRAL DISCONNECT SWITCH.

ELECTRIC HEATING MATS (NUHEAT AS STD)

DESIGNATION	DIMENSIONS (INCHES)	OHMS	AMPS	WATTS	MODEL NUMBER	REMARKS
EHM-A	40x27	160	0.8	90	F1006	–
EHM-B	48x24	150	0.8	96	F1206	–
EHM-C	48x48	75	1.6	192	F1212	–
EHM-D	60x60	48	2.5	300	F1515	–
EHM-E	72x42	57	2.1	252	F1810	–
EHM-F	72x48	50	2.4	288	F1812	–
EHM-G	72x60	40	3.0	360	F1815	–
EHM-H	72x72	33	3.6	432	F1818	–
EHM-I	84x60	34	3.5	420	F2115	–
EHM-J	108x60	27	4.5	540	F2715	–
EHM-K	118x48	31	3.9	472	F3012	–
EHM-L	118x60	24	4.9	590	F3015	–
EHM-M	118x72	20	5.9	708	F3018	–
EHM-O	40x48	90	1.3	160	F1012	–

SUPPLY RETURN AND EXHAUST AIR FANS (GREENHECK AS STANDARD)

DESIGNATION	SERVICE	LOCATION	CFM	EXTERNAL STATIC PRESSURE (INCHES OF WATER)	MAX FAN SPEED (RPM)	MAXIMUM OUTLET VELOCITY (FPM)	FAN TYPE	WHEEL DIAMETER (INCHES)	CLASS	DISCHARGE DIRECTION	MOTOR: MOTOR BHP	MOTOR HP	MOTOR RPM	VOLTS/PHASE	MODEL	VIBRATION ISOLATION: SPECIFICATION TYPE	STATIC DEFLECTION (INCHES)	EMERGENCY POWER	VFD	REMARKS	DRAWING NO.
KX-2-1	RENTAL KITCHEN EXHAUST	2ND FLOOR	13,650	2.0	1,725	7,263	CENTRIFUGAL INLINE	47	–	–	8.71	10	1725	460/3	BSQ-360-100	–	–	NO	YES	–	
DX-2-1	RENTAL DRYER EXHAUST	2ND FLOOR	12,750	2.0	760	7,160	CENTRIFUGAL INLINE	47	–	–	8.08	10	1725	460/3	BSQ-360-100	–	–	NO	YES	–	
RF-2-1,2	LOBBY RETURN FAN	2ND FLOOR	3,000	1.25	1,934	7,406	CENTRIFUGAL INLINE	19	–	–	1.6	2	1725	208/3	BSQ-140-20	–	–	NO	YES	–	
KX-37-1	TOWER KITCHEN EXHAUST	37TH FLOOR	8,650	2.0	1,561	10,014	CENTRIFUGAL INLINE	34	–	–	7.3	10	1725	460/3	BSQ-240HP-75	–	–	NO	YES	–	
DX-37-1	TOWER DRYER EXHAUST	37TH FLOOR	4,760	2.0	1,630	7,894	CENTRIFUGAL INLINE	23	–	–	3.18	5	1725	460/3	BSQ-180-50	–	–	NO	YES	–	
RF-2-3	RENTAL AMENITY RETURN FAN	2ND FLOOR	3,500	1.25	2,004	8,722	CENTRIFUGAL INLINE	22	–	–	2.05	2	1725	208/1	BSQ-160HP-20	–	–	NO	YES	–	
EF-SC-1	GARAGE EXHAUST FAN	SUB CELLAR	12,000	1.0	1,304	1,218	CENTRIFUGAL INLINE	–	–	–	7.35	10	1725	460/3	TCB-2-24-75	–	–	YES	YES	–	△
EF-C-5	BELOW GRADE EMR	CELLAR	150	1.25	1,992	1,218	CENTRIFUGAL INLINE	11	–	–	0.23	0.5	2500	208/1	SQ-97-VG	–	–	YES	YES	–	
SF-SC-1	GARAGE SUPPLY FAN	SUB CELLAR	12,000	1.5	938	9,800	CENTRIFUGAL INLINE	40	–	–	8.93	10	1500	460/3	BSQ-360HP-100	–	–	YES	YES	–	△
SF-C-2	CELLAR BOH	CELLAR	410	2.56	2,492	8,559	CENTRIFUGAL INLINE	–	–	–	1.65	2.0	2492	208/1	BSQ-120-20	–	–	–	–	–	
SF-C-1	GARAGE SUPPLY FAN	CELLAR	9,025	1.5	1,548	9,932	CENTRIFUGAL INLINE	34	–	–	6.93	10	1725	460/3	BSQ-240HP-75	–	–	YES	YES	–	
EF-C-3	CELLAR TX	CELLAR	200	1.5	2,267	6,641	CENTRIFUGAL INLINE	11	–	–	.39	1/2	1725	460/3	BSQ-70-5	–	–	NO	NO	–	
EF-C-1	GARAGE EXHAUST FAN	CELLAR	9,000	1.0	1,184	914	CENTRIFUGAL INLINE	–	–	–	4.38	5	1725	460/3	TCB-1-24-50	–	–	YES	YES	–	△
EF-SC-2	BOH TX	SUB CELLAR	200	1.25	2,113	6,188	CENTRIFUGAL INLINE	11	–	–	.29	1/2	2500	115/1	SQ-97-VG	–	–	NO	NO	–	
EF-SC-3	SHARED AMENITY TX	SUB CELLAR	500	1.5	2,500	7,323	CENTRIFUGAL INLINE	11	–	–	0.5	3/4	2500	208/1	SQ-97-VG	–	–	NO	NO	–	
EF-SC-4	TRASH ROOM EXHAUST	SUB CELLAR	1,200	1.25	1,950	6,700	CENTRIFUGAL INLINE	17	–	–	0.54	3/4	1950	208/1	SQ-130HP-VG	–	–	NO	NO	–	
EF-SC-5	FO TANK RM	SUB CELLAR	375	1.5	1955	–	CENTRIFUGAL INLINE	–	–	–	0.81	1.0	1725	208/1	BSQ-120-10	–	–	NO	NO	–	
RF-SC-1	AMENITY RETURN FAN	SUB CELLAR	5,000	1.5	1,584	8,861	CENTRIFUGAL INLINE	31	–	–	3.12	3	1725	460/3	BSQ-200HP-30	–	–	NO	YES	–	
EF-C-4	AMENITY DOG RUN EXHAUST	CELLAR	5,000	1.75	1,118	7,171	CENTRIFUGAL INLINE	38	–	–	2.74	3	1725	460/3	BSQ-240HP-30	–	–	NO	YES	–	
EF-C-2	BOH GENERAL EXHAUST FAN	CELLAR	2,500	1.5	1,684	7,329	CENTRIFUGAL INLINE	26	–	–	1.27	1.5	1725	460/3	BSQ-160HP-15	–	–	NO	YES	–	△
RF-C-1	AMENITY RETURN FAN	SUB CELLAR	3,500	1.5	1,574	7,622	CENTRIFUGAL INLINE	27	–	–	1.82	2	1725	460/3	BSQ-180HP-20	–	–	NO	YES	–	
SPF-1	REVERSIBLE FAN	ROOF	18,479	4.2	1,770	1,711	DIRECT DRIVE AXIAL	–	–	–	28.82	40	1725	460/3	AX-113-533-1207-A600	–	–	YES	YES	–	
SPF-2	REVERSIBLE FAN	ROOF	18,479	4.2	1,770	1,711	DIRECT DRIVE AXIAL	–	–	–	28.82	40	1725	460/3	AX-113-533-1207-A600	–	–	YES	YES	–	△
DX-C-1	RENTAL COMMERCIAL DRYER	CELLAR	1,500	1.0	1,725	–	CENTRIFUGAL INLINE	15.9	–	–	0.62	0.75	1725	208/3	BSQ-120-7	–	–	NO	YES	–	
DX-SC-1	CONDO COMMERCIAL DRYER	SUB-CELLAR	1,125	1.0	1,725	–	CENTRIFUGAL INLINE	15.9	–	–	0.41	0.5	1725	208/3	BSQ-120-5	–	–	NO	YES	–	
EF-1-1	RETAIL TX	1ST FLOOR	150	1.25	1,992	1,218	CENTRIFUGAL INLINE	11	–	–	0.23	0.5	2500	208/1	SQ-97-VG	–	–	NO	NO	–	
EF-SC-6	CONDO PACKAGE	SUB CELLAR	150	1.25	1,992	1,218	CENTRIFUGAL INLINE	11	–	–	0.23	0.5	2500	208/1	SQ-97-VG	–	–	NO	NO	–	
EF-2-1	MECH ROOM VENTILATION	2ND FLOOR	2,000	0.5	1,268	4,856	CENTRIFUGAL INLINE	–	–	–	0.46	0.5	1725	460/3	BSQ-140-5	–	–	NO	NO	–	
EF-37-1	MECH ROOM VENTILATION	37TH FLOOR	2,000	0.5	1,268	4,856	CENTRIFUGAL INLINE	–	–	–	0.46	0.5	1725	460/3	BSQ-140-5	–	–	NO	YES	–	
SX-1-1	REVERSIBLE FAN	1ST	42,751	3.5	1,770	3,958	DIRECT DRIVE AXIAL	–	–	–	50.37	60	1770	460/3	AX-113-533-0821-A600	–	–	YES	YES	–	
TF-20-1	TRANSFER FAN	20TH FLOOR	250	0.25																	

NOTES:
1. MAXIMUM PRESSURE DROP INDICATED IS BASED ON PROJECT AIR DENSITY OF 0.086 POUNDS PER CUBIC FOOT.
2. MINIMUM DYNAMIC INSERTION LOSS VALUES ARE FOR REVERSE FLOW (NOISE AND AIRMOVING IN OPPOSITE DIRECTIONS).
3. SPF-1/2 IS A REVERSIBLE FAN. ACTUAL FAN PERFORMANCE IS 15,000 CFM @ 3.0 in wg ESP, AND 24.5 BHP.

HORIZONTAL FAN COIL UNITS (HTS AS STD)

DESIGNATION	AIR QUANTITY (CFM)	EXTERNAL STATIC PRESSURE (INCHES OF WATER)	COOLING COIL DATA AT 76 DEG. E.A.T.: WATER FLOW RATE (GPM)	ENT. WATER TEMPERATURE (DEGREES F)	LVG. WATER TEMPERATURE (DEGREES F)	LVG. AIR TEMPERATURE (DEGREES F)	ENT. AIR WB TEMPERATURE (DEGREES F)	TOTAL CLG. CAPACITY (MBH)	SENSIBLE CLG. CAPACITY (MBH)	HOT WATER HEATING COIL AT 70 DEG. E.A.T.: HTG. CAPACITY (MBH)	ENT. WATER TEMP (DEG F)	LVG. WATER TEMP (DEG F)	LVG. AIR TEMPERATURE (DEGREES F)	FAN MOTOR DATA: WATER FLOW RATE (GPM)	PRESSURE DROP (FT.)	VOLTS/PHASE	VIBRATION ISOLATION: SPECIFICATION TYPE	STATIC DEFLECTION (INCHES)	MODEL NUMBER	SYSTEM METERING CONNECTION	EMERGENCY POWER	VFD	REMARKS
A	350	0.25	1.2	42	54	57.0	56.0	7.2	6.8	0.5	8.3	150	130	91.8	0.8	1.9	1/3 HP	115/1	NH	1/4	HTS-HH104	CONDO	NO	–	–
B	550	0.25	2.3	42	54	55.9	54.7	13.6	11.5	2.1	12.8	150	130	91.2	1.3	5.3	1/3 HP	115/1	NH	1/4	HTS-HH106	CONDO	NO	–	–
C	630	0.25	2.8	42	54	55.0	53.9	16.8	13.8	3.4	14.6	150	130	91.2	1.5	7.0	1/3 HP	115/1	NH	1/4	HTS-HH108	CONDO	NO	–	–
D	865	0.25	3.9	42	54	54.5	53.7	23.7	19.4	3.6	22.8	150	130	94.2	2.3	9.8	1/3 HP	115/1	NH	1/4	HTS-HH110	CONDO	NO	–	–
E	1,025	0.25	5.0	42	54	53.6	52.9	30.0	24.0	6.4	26.6	150	130	93.7	2.7	9.1	1/3 HP	115/1	NH	1/4	HTS-HH112	CONDO	NO	–	–
FCU-14-1	1,000	1.25	8.4	42	52.5	54.4	53.4	44.2	31.3	7.0	40.7	150	131	82.2	4.4	2.7	2 HP	208/1	NH	1/4	HTS-AH003A	CONDO	NO	–	–
FCU-14-2	1,000	1.25	8.4	42	52.5	54.4	53.4	44.2	31.3	7.0	40.7	150	131	82.2	4.4	2.7	2 HP	208/1	NH	1/4	HTS-AH003A	CONDO	NO	–	–
FCU-14-3	1,000	1.25	8.4	42	52.5	54.4	53.4	44.2	31.3	7.0	40.7	150	131	82.2	4.4	2.7	2 HP	208/1	NH	1/4	HTS-AH003A	CONDO	NO	–	–
FCU-14-4	1,000	1.25	8.4	42	52.5	54.4	53.4	44.2	31.3	7.0	40.7	150	131	82.2	4.4	2.7	2 HP	208/1	NH	1/4	HTS-AH005A	CONDO	NO	–	– △
FCU-27-1	2,350	1.0	13.2	42	52.6	53.6	52.5	70.1	55.0	9.8	–	–	–	–	–	–	2 HP	208/1	NH	1/4	HTS-AH005A	RENTAL	YES	–	PROVIDE A CIRCULATOR PUMP ON EM POWER
FCU-27-2	900	1.0	5.0	42	51.6	54.8	53.6	24.2	19.9	3.1	–	–	–	–	–	–	2 HP	208/1	NH	1/4	HTS-AH002A	RENTAL	YES	–	PROVIDE A CIRCULATOR PUMP ON EM POWER

NOTES:
1. ALL DIRECT DRIVE FAN COIL UNITS TO BE PROVIDED WITH ECM MOTORS.
2. FAN COIL UNITS TO BE PROVIDED WITH LOW STATIC (0.2") MERV 13 FILTERS AND ASSOCIATED FILTER RACK AS REQUIRED.
3. SEE SPECS AND DETAILS FOR VIBRATION ISOLATOR TYPE.

WATER FILTERING UNIT (AMERIWATER AS STD)

TYPE DESIGNATION	SERVICE	LOCATION	FLOW RATE (GPM)	CONNECTION SIZE (INCHES): INLET	OUTLET	ELECTRICAL: PUMP (HP)	POWER	VIBRATION ISOLATION: SPECIFICATION TYPE	STATIC DEFLECTION (INCHES)	MODEL NUMBER	REMARKS	SYSTEM METERING CONNECTION	DRAWING NO.
CWF-37-1	CONDENSER WATER	37TH FLOOR	15	1½	1½	1/2	460/5Ø	–	–	CW116H	–	COMMON	M-337

EXPANSION TANKS (BELL & GOSSETT AS STD)

DESIGNATION	SERVICE	LOCATION	SYSTEM VOLUME (GALLONS)	TEMPERATURE (DEGREES F): COLD TEMP.	HOT TEMP.	PRESSURE (PSIG): FILL	OPERATING	TANK VOLUME (GALLONS): ACCEPTANCE	TOTAL	TANK SIZE (INCHES): HEIGHT	DIAMETER	MODEL NUMBER	SHIPPING WEIGHT (MLBS)	REMARKS
ET-37-1	CONDENSER WATER	37TH FLOOR	4600	40	102	8	60	–	53	38-1/8	24	B-200	204	
ET-39-1	HOT WATER	39TH FLOOR	4200	40	150	180	50	–	158	65-1/8	–	B-600	550	
ET-35-1	CHILLED WATER	35TH FLOOR	2205	40	80	30	40	–	72	50-7/8	24	B-300	268	

AIR COOLED AIR CONDITIONING UNITS (HTS AS STD)

DESIGNATION	SERVICE	LOCATION	TOTAL AIR QUANTITY (CFM)	OUTSIDE AIR QUANTITY (CFM)	FILTER: SPECIFICATION TYPE	MIN. EFFICIENCY %	AIR FRICTION (IN. OF WTR): CLEAN	REPLACE	REFRIGERATION: TOTAL CLG. CAPACITY (MBH)	SENSIBLE CLG. CAPACITY (MBH)	EVAPORATOR COIL: ENTERING AIR TEMP.: DRY BULB (DEG. F)	WET BULB (DEG. F)	LEAVING AIR TEMP.: DRY BULB (DEG. F)	WET BULB (DEG. F)	CONDENSER: AIR QUANTITY (CFM)	AMBIENT AIR TEMPERATURE (DEGREES F)	MIN. OPERATING AMBIENT (DEGREES F)	CONDENSER FAN: NO. OF FANS	HP/FAN	COMPRESSOR: NUMBER OF COMPRESSORS	TOTAL RLA (AMPS)	TOTAL RCPT (BTU/h)	NOMINAL TONNAGE	HEATING COIL DESCRIPTION (IF REQUIRED)	SUPPLY FAN: TOTAL STATIC PRESSURE (IN. OF WATER)	STATIC PRESSURE DROP (IN. OF WATER)	MAX. FAN SPEED (RPM)	OUTLET VELOCITY (FPM)	WHEEL DIAMETER (INCHES)	TYPE	CLASS	MOTOR: MOTOR BHP	MINIMUM MOTOR HP	MOTOR RPM	VOLTS/PHASE	EMERGENCY POWER	VFD	REMARKS	SYSTEM METERING CONNECTION
AC-SC-1	UNDERGROUND EMR	SEE PLANS	2400	–	–	–	–	–	94	52	85	63	–	–	6100	–	–	1	3	2	–	–	–	–	–	–	1	–	–	–	–	–	–	3.0	–	208/3	–	–	HTS-DSH-096B	COMMON
AC-SC-2	TELECOM RM	SEE PLANS	2400	–	–	–	–	–	94	52	85	63	–	–	6100	–	–	1	3	2	–	–	–	–	–	–	1	–	–	–	–	–	–	3.0	–	208/3	–	–	HTS-DSH-096B	COMMON
RTU-38-1	38TH FL EMR	SEE PLANS	2630	–	–	–	–	–	84	61	80	67	59	57	2630	–	–	2	1.4A	2	88000	26.2A		–	–	1	–	–	15	–	–	–	2.0	–	460/3	–	–	HTS-RTU-090	TOWER

COOLING TOWERS (BAC AS STD)

DESIGNATION	LOCATION	TYPE	TOTAL FLOW RATE (GPM)	ENT. WATER TEMPERATURE (DEGREES F)	LVG. WATER TEMPERATURE (DEGREES F)	AMBIENT AIR TEMP (DEGREES F WB)	GPM PER CELL	NUMBER OF CELLS	FAN MOTOR DATA: NUMBER OF FAN/MOTORS	HP FOR FAN MOTOR	RPM	VOLTS/PHASE	MODEL NUMBER	EFFICIENCY REQUIREMENTS (GPM/HP): CATEGORY (TABLE 6.8.1G)	MINIMUM EFFICIENCY REQUIRED	SUGGESTED RATED EFFICIENCY	OPERATING WEIGHT W/O STEEL SUPPORT (LBS)	BASIN HEATER NO. & KW	VIBRATION ISOLATION: SPECIFICATION TYPE	STATIC DEFLECTION (INCHES)	EMERGENCY POWER	VFD	SYSTEM METERING CONNECTION	REMARKS	DRAWING NO.
CT-1	ROOF	INDUCED DRAFT	1,090	100	85	78	1,090	1	1	30	–	–	S3E-1020-070	AXIAL FAN	>38.2	36.3	20,370	(2) 12	8	4	NO	YES	COMMON	–	–
CT-2	ROOF	INDUCED DRAFT	1,090	100	85	78	1,090	1	1	30	–	–	S3E-1020-070	AXIAL FAN	>38.2	36.3	20,370	(2) 12	8	4	NO	YES	COMMON	–	–

CONSTANT AIR REGULATOR SCHEDULE (AMERICAN ALDES AS STD.)

DESIGNATION	SERVICE	CFM	ELEMENT SIZE DIAMETER (INCHES)	MIN. STATIC PRESSURE	MODEL NUMBER	REMARKS
SBD-A	SUPPLY OR EXHAUST	20-80	5"	0.1"	CAR-LP-II 5x5	PART NUMBER: 19 134LP (6x6 DUCT SIZE)
SBD-B	SUPPLY OR EXHAUST	80-190	8"	0.1"	CAR-LP-II 8x8	PART NUMBER: 19 138LP (8x8 DUCT SIZE)
SBD-C	SUPPLY OR EXHAUST	190-300	10"	0.1"	CAR-LP-II 10x10	PART NUMBER: 19 143LP (10x10 DUCT SIZE)

NOTES: 1. CAR UNIT SHALL BE UL-2043 SAFETY LISTED AND LABELED FOR FLAME AND SMOKE GENERATION.
2. PROVIDE V-GASKET AT FRONT OF ASSWEMBLY IN ORDER TO PREVENT DUCT LEAKAGE.

WATER COOLED AIR CONDITIONING UNITS (LIEBERT AS STANDARD)

DESIGNATION	SERVICE	LOCATION	TOTAL AIR QUANTITY (CFM)	OUTSIDE AIR QUANTITY (CFM)	FILTER: SPECIFICATION TYPE	MINIMUM EFFICIENCY %	AIR FRICTION (IN. OF WTR.): CLEAN	REPLACE	REFRIGERATION: SYSTEM CAPACITY: TOTAL CLG. CAPACITY (MBH)	SENSIBLE CLG. CAPACITY (MBH)	EVAPORATOR COIL: ENTERING AIR TEMP.: DRY BULB (DEG. F)	WET BULB (DEG. F)	LEAVING AIR TEMP.: DRY BULB (DEG. F)	WET BULB (DEG. F)	CONDENSER: AIR FRICTION (IN. OF WTR)	WATER FLOW RATE (GPM)	ENTERING WATER TEMPERATURE (DEGREES F)	LVG. WATER TEMPERATURE (DEGREES F)	WATER P.D. (FT. OF WATER)	WORKING PRESSURE (PSIG)	COMPRESSOR: TYPE	QUANTITY	ELECTRICAL CHARACTERISTIC: NOMINAL TONNAGE	VOLTS/PHASE	POWER KW	MOTOR LRA (EA)	FANS: TOTAL STATIC PRESSURE (INCHES OF WTR)	STATIC PRESSURE DROP (INCHES OF WTR)	OUTLET VELOCITY (FPM)	NUMBER OF FANS	FAN RPM	FAN MOTOR: MOTOR BHP	MOTOR HP	MOTOR POWER KW	VOLTS/PHASE	TOTAL OPERATING WEIGHT (LBS)	MODEL NUMBER	MANUFACTURER	EMERGENCY POWER	VFD	REMARKS	SYSTEM METERING CONNECTION
AC-SC-3	ELEC SERVICE RM	SUB CELLAR	8000	–	MERV 8	–	–	–	196.7	183.3	75	60	53.6	50.8	–	33.9	87	102	7	–	DIGITAL	2	–	460/3	13.92	–	–	–	–	–	–	–	–	–	–	–	–	LIEBERT DS 050SSWD	–			–	COMMON

HOT WATER BOILER (BENCHMARK AS STD)

DESIGNATION	SERVICE	LOCATION	BOILER H.P.	GROSS OUTPUT (MBH)	NET OUTPUT (MBH)	MINIMUM HEATING SURFACE (FIRESIDE) (SQ. FT.)	WATER CONTENT VOLUME (SQ. FT.)	ASME ARRANGEMENT	MAX OPERATING PRESSURE (PSIG)	RELIEF VALVE SET POINT (PSIG)	MINIMUM STACK TEMP. F.T. RATED LOAD (°F)	HOT WATER DATA: FLOW RATE (GPM)	ENT. TEMP (DEGREES F)	LVG. TEMP (DEGREES F)	PRESS. DROP (FT. OF WATER)	GAS BURNER DATA: GAS TYPE	GAS HEAT CONTERN (MBH)	FIRING RATE RATIO	GAS INLET PRESSURE (IN. W.C.)	DRAFT BLOWER DATA: AIR QUANTITY (CFM)	FLUE OUTLET SIZE (IN.)	MOTOR HP	VOLTS/PHASE	FULL LOAD AMPS	MODEL NUMBER	EFFICIENCY REQUIREMENTS: CATEGORY (TABLE 6.8.1F)	MINIMUM EFFICIENCY REQUIRED	PROPOSED RATED EFFICIENCY	OPERATING WEIGHT (LBS)	VIBRATION ISOLATION: SPECIFICATION TYPE	STATIC DEFLECTION (INCHES)	UL NUMBER	REMARKS
B-39-1	HOT WATER	39TH FLOOR	–	5670	400	–	–	–	150	–	87	–	–	–	–	NG	–	–	14"				460/3	12	BMK 6000	>2,500 MBH	82% Ec	87% Ec	3,920	–	–	–	–
B-39-2	HOT WATER	39TH FLOOR	–	5670	400	–	–	–	150	–	87	–	–	–	–	NG	–	–	14"				460/3	12	BMK 6000	>2,500 MBH	82% Ec	87% Ec	3,920	–	–	–	–
B-39-3	HOT WATER	39TH FLOOR	–	5670	400	–	–	–	150	–	87	–	–	–	–	NG	–	–	14"				460/3	12	BMK 6000	>2,500 MBH	82% Ec	87% Ec	3,920	–	–	–	–
B-39-4	HOT WATER	39TH FLOOR	–	5670	400	–	–	–	150	–	87	–	–	–	–	NG	–	–	14"				460/3	12	BMK 6000	>2,500 MBH	82% Ec	87% Ec	3,920	–	–	–	–

FUEL OIL PUMPS (PREFERRED UTILITIES AS STD)

DESIGNATION	SERVICE	LOCATION	FLOW RATE (GPM)	TOTAL PUMP HEAD (PSI)	STATIC HEAD (FT. OF WATER)	CASING PRESSURE (PSIG)	MINIMUM PUMP EFFICIENCY (%)	MOTOR DATA: BRAKE HP	MINIMUM MOTOR HP	RPM	VOLTS/PHASE	MODEL NUMBER	PUMP TYPE	FUEL TYPE	VIBRATION ISOLATION: SPECIFICATION TYPE	STATIC DEFLECTION (INCHES)	EMERGENCY POWER	REMARKS
FOP-SC-1	EMERGENCY GENERATOR	CELLAR 3	340	50	–	–	–	–	1/2	1,140	208/3	AIPSF-210-208-50	AUTOMATIC DUPLEX	NO. 2	A, B-1	2	YES	–

NOTES:
1. PROVIDE DISCONNECT SWITCH.
2. PROVIDE CONTROLLER ASSEMBLY WITH POWER FEED FOR EACH MOTOR.

FUEL OIL TANK (CARDINAL TANKS AS STD)

DESIGNATION	SERVICE	LOCATION	TANK SIZE: CAPACITY (GAL)	LENGTH - SHELL	LENGTH - OVERSIDE	DIAMETER	MATERIAL	SADDLES	REMARKS
FOT-SC-1	EMERGENCY GENERATOR FUEL OIL	CELLAR 3	1,080	11'-0"	12'-0"	48"	CARBON STEEL	2	–

NOTES:
1. FIELD FABRICATED CARBON STEEL FUEL OIL TANK COMPLIANT WITH NYC MECHCANICAL CODE SECTION 1305.14 – ALTERNATE TANK DESIGN.

KEY PLAN

Number	Date	Revision
2	05/19/2017	EN DRAWING PAA △
1	02/15/2016	ISSUED FOR FILING

OWNER:
GID DEVELOPMENT
125 HIGH STREET
HIGH STREET TOWER, 27TH FLOOR
BOSTON, MA 02110

PROJECT:
RIVERSIDE CENTER BUILDING 3
10 RIVERSIDE BOULEVARD, NEW YORK, NY

EXECUTIVE ARCHITECT:
GHWA
Goldstein, Hill & West Architects, LLP
11 Broadway, Suite 1700
New York, NY 10004
Tel (212) 213-8007 Fax (212) 686-1754

DESIGN ARCHITECT:
RICHARD MEIER & PARTNERS ARCHITECTS, LLP
475 Tenth Avenue
New York, NY 10018
Tel: (212) 967-6060

STRUCTURAL ENGINEER:
WSP BUILDING STRUCTURES CONSULTING ENGINEERS
228 East 45th St,

WATER COOLED AIR HEAT PUMPS SCHEDULE – HTS AS STD

HEAT PUMP DESIGNATION	SERVICE	LOCATION	TOTAL AIR QUANTITY (CFM)	OUTSIDE AIR QUANTITY (CFM)	FILTER: SPECIFICATION TYPE	FILTER: MINIMUM EFFICIENCY %	FILTER: AIR FRICTION (IN. OF WTR.): CLEAN	FILTER: AIR FRICTION (IN. OF WTR.): REPLACE	SYSTEM CAPACITY: TOTAL (BTU/HR)	SYSTEM CAPACITY: SENSIBLE (BTU/HR)	EVAPORATOR COIL (R-410): ENTERING AIR TEMP.: DRY BULB (DEG. F)	EVAPORATOR COIL: ENTERING AIR TEMP.: WET BULB (DEG. F)	EVAPORATOR COIL: LEAVING AIR TEMP.: DRY BULB (DEG. F)	EVAPORATOR COIL: LEAVING AIR TEMP.: WET BULB (DEG. F)	EXTERNAL STATIC (IN. OF WATER)	HEATING: CAPACITY (MBH)	HEATING: ENTERING AIR TEMP (DEG. F)	HEATING: LEAVING AIR TEMP (DEG. F)	CONDENSER: WATER FLOW RATE (GPM)	CONDENSER: ENT. WATER TEMPERATURE (DEGREES F)	CONDENSER: LVG. WATER TEMPERATURE (DEGREES F)	CONDENSER: WATER P.D. (FT. OF WATER)	CONDENSER: WORKING PRESSURE (PSIG)	ELECTRICAL DATA: ELECTRICAL CHARACTERISTIC: FLA AMP	MCA AMP	MAX FUSE AMP	VOLTS/PHASE	MANUFACTURER	MODEL NUMBER	EFFICIENCY REQUIREMENTS: CATEGORY (TABLE 8,10)	MINIMUM EFFICIENCY REQUIRED: EER	MINIMUM EFFICIENCY REQUIRED: COP	PROPOSED MINIMUM EFFICIENCY: EER	PROPOSED MINIMUM EFFICIENCY: COP	MEA #	REMARKS	SYSTEM METERING CONNECTION
A	RESIDENCE	SEE PLAN	310	–	–	–	–	–	8.8	6.4	75	63	56.0	–	0.1	12.9	70	108.4	1.6	87	102	3.6	–	1.0	5.6	–	208/1	HTS	HRPX030	<65 MBH	9.0	3.0	14.0	4.4		SEE NOTES	RENTAL
B	RESIDENCE	SEE PLAN	405	–	–	–	–	–	11.1	7.6	75	63	57.7	–	0.1	15.1	70	104.4	2.0	87	102	5.7	–	1.0	6.9	–	208/1	HTS	HRPX040	<65 MBH	9.0	3.0	14.0	4.4		SEE NOTES	RENTAL
C	RESIDENCE	SEE PLAN	600	–	–	–	–	–	15.7	12.5	75	63	55.8	–	0.1	20.1	70	100.9	3.0	87	102	5.2	–	1.5	10.8	–	208/1	HTS	HRPX060	<65 MBH	9.0	3.0	14.2	4.7		SEE NOTES	RENTAL
D	RESIDENCE	SEE PLAN	815	–	–	–	–	–	21.2	16.9	75	63	55.9	–	0.1	30.7	70	104.6	4.0	87	102	5.4	–	2.1	19.0	–	208/1	HTS	HRPX080	<65 MBH	9.0	3.0	14.7	4.9		SEE NOTES	RENTAL
E	RESIDENCE	SEE PLAN	975	–	–	–	–	–	24.9	19.4	75	63	56.7	–	0.1	37.4	70	105.4	5.0	87	102	9.0	–	2.6	20.0	–	208/1	HTS	HRPX100	<65 MBH	9.0	3.0	14.0	4.4		SEE NOTES	RENTAL
F	RESIDENCE	SEE PLAN	1035	–	–	–	–	–	29.9	21.3	75	63	56.0	–	0.1	39.3	70	105.0	6.0	87	102	8.3	–	3.0	23.9	–	208/1	HTS	HRPX120	<65 MBH	9.0	3.0	14.0	4.4		SEE NOTES	RENTAL
HP–C–1	PARKING OFFICE	CELLAR	400	25	–	–	–	–	14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9	–	6.6	8.0	–	208/1	HTS	HTS–FUD–H–015	<65 MBH	9.0	3.0	12.9	4.7	△			
HP–C–2	BIKE STORAGE	CELLAR	840	50					27.4	19.1	76	63	55	51.8	0.8	28.4	67	107	4.6	87	102	2.14		15.8	19.3		208/1	HTS	HTS–FUD–H–030	<65 MBH	9.0	3.0	13.0	4.6				
HP–C–3	ELEV LOBBY / CORR	CELLAR	620	50	–	–	–	–	19.4	15.4	77	64	53.4	52.6	0.6	19.2	65	102	3.34	87	102	3.2	–	8.2	9.8	–	208/1	HTS	HTS–FUD–H–019	<65 MBH	9.0	3.0	11.8	4.6				
HP–C–4	EMERGENCY GEN RM	CELLAR	620	50	–	–	–	–	19.4	15.4	77	64	53.4	52.6	0.6	19.2	65	102	3.34	87	102	3.2	–	8.2	9.8	–	208/1	HTS	HTS–FUD–H–019	<65 MBH	9.0	3.0	11.8	4.6				
HP–C–5	RENTAL/ BLD STORAGE	CELLAR	840	50	–	–	–	–	27.4	19.1	76	63	55	51.8	0.8	28.4	67	107	4.6	87	102	2.14	–	15.8	19.3	–	208/1	HTS	HTS–FUD–H–030	<65 MBH	9.0	3.0	13.0	4.6				
HP–C–6	STORAGE	CELLAR	400	25	–	–	–	–	14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9	–	6.6	8.0	–	208/1	HTS	HTS–FUD–H–015	<65 MBH	9.0	3.0	12.9	4.7				
HP–C–7	STORAGE	CELLAR	400	25	–	–	–	–	14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9	–	6.6	8.0	–	208/1	HTS	HTS–FUD–H–015	<65 MBH	9.0	3.0	12.9	4.7				
HP–SC–1	RENTAL COMPACTOR	SUB CELLAR	840	–	–	–	–	–	27.4	19.1	76	63	55	51.8	0.8	28.4	67	107	4.6	87	102	2.14	–	15.8	19.3	–	208/1	HTS	HTS–FUD–H–030	<65 MBH	9.0	3.0	13.0	4.6				
HP–SC–2	CONDO COMPACTOR	SUB CELLAR	840	–	–	–	–	–	27.4	19.1	76	63	55	51.8	0.8	28.4	67	107	4.6	87	102	2.14	–	15.8	20	–	208/1	HTS	HTS–FUD–H–030	<65 MBH	9.0	3.0	13.0	4.6				
HP–SC–3	ELEV LOBBY/ CORR	SUB CELLAR	620	50	–	–	–	–	19.4	15.4	77	64	53.4	52.6	0.6	19.2	65	102	3.34	87	102	3.2	–	8.2	9.8	–	208/1	HTS	HTS–FUD–H–019	<65 MBH	9.0	3.0	11.8	4.6	△			
HP–SC–4	AMENITY CORR 1	SUB CELLAR	400	25					14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9		6.6	8.0		208/1	HTS	HTS–FUD–H–015	<65 MBH	9.0	3.0	12.9	4.7				
HP–SC–5	AMENITY CORR 2	SUB CELLAR	400	25					14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9		6.6	8.0		208/1	HTS	HTS–FUD–H–015	<65 MBH	9.0	3.0	12.9	4.7				
HP–SC–6	BIKE ROOM	SUB CELLAR	840	50					27.4	19.1	76	63	55	51.8	0.8	28.4	67	107	4.6	87	102	2.14		15.8	19.3		208/1	HTS	HTS–FUD–H–030	<65 MBH	9.0	3.0	13.0	4.6				
HP–SC–7	WORKSHOP	SUB CELLAR	1250	50	–	–	–	–	39.2	29.1	76	63	54.1	51.9	0.7	39.3	69	105.9	6.7	87	102	2.2	–	23.3	28.2	–	208/1	HTS	HTS–FUD–H–042	<65 MBH	9.0	3.0	12.5	4.5				
HP–SC–8	STAFF RM/SUPER'S	SUB CELLAR	1250	50	–	–	–	–	39.2	29.1	76	63	54.1	51.9	0.7	39.3	69	105.9	6.7	87	102	2.2	–	23.3	28.2	–	208/1	HTS	HTS–FUD–H–042	<65 MBH	9.0	3.0	12.5	4.5				
HP–SC–9	CARPARK ELEC /DOG WASH	SUB CELLAR	620	50	–	–	–	–	19.4	15.4	77	64	53.4	52.6	0.6	19.2	65	102	3.34	87	102	3.2	–	8.2	9.8	–	208/1	HTS	HTS–FUD–H–019	<65 MBH	9.0	3.0	11.8	4.6				
HP–SC–10	CONDO PACKAGE/ATS	SUB CELLAR	620	50	–	–	–	–	19.4	15.4	77	64	53.4	52.6	0.6	19.2	65	102	3.34	87	102	3.2	–	8.2	9.8	–	208/1	HTS	HTS–FUD–H–019	<65 MBH	9.0	3.0	11.8	4.6				
HP–SC–11	CONDO STORAGE	SUB CELLAR	400	25	–	–	–	–	14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9	–	6.6	8.0	–	208/1	HTS	HTS–FUD–H–015	<65 MBH	9.0	3.0	12.9	4.7				
HP–SC–12	EM. ELEC RM.	SUB CELLAR	400	25	–	–	–	–	14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9	–	6.6	8.0	–	208/1	HTS	HTS–FUD–H–015	<65 MBH	9.0	3.0	12.9	4.7				
HP–1–1	1ST FLOOR	1ST FLOOR	550	–	–	–	–	–	17.6	13.2	75	63	53.1	51.8	0.69	22.4	72	108.8	3.1	87	101.3	3.7	–	8.30	9.90	15	208/1	HTS	HTSCH018	<65 MBH	9.0	3.0	13.4	4.6				
HP–1–2	1ST FLOOR	1ST FLOOR	550	–	–	–	–	–	17.6	13.2	75	63	53.1	51.8	0.69	22.4	72	108.8	3.1	87	101.3	3.7	–	8.30	9.90	15	208/1	HTS	HTSCH018	<65 MBH	9.0	3.0	13.4	4.6				
HP–C–8	RENTAL LAUNDRY	CELLAR	840	–	–	–	–	–	27.4	19.1	76	63	55	51.8	0.8	28.4	67	107	4.6	87	102	2.14	–	15.8	19.3	–	208/1	HTS	HTS–FUD–H–030	<65 MBH	9.0	3.0	13.0	4.6				
HP–SC–13	CONDO LAUNDRY	SUB CELLAR	840	–	–	–	–	–	27.4	19.1	76	63	55	51.8	0.8	28.4	67	107	4.6	87	102	2.14	–	15.8	19.3	–	208/1	HTS	HTS–FUD–H–030	<65 MBH	9.0	3.0	13.0	4.6	△			
HP–C–9	STORAGE	CELLAR	400	25					14.2	9.9	76	64	53.1	50.7	0.7	14.3	66	107.1	2.4	87	102	1.9		6.6	8.0		208/1	HTS	HTS–FUD–H–015	<65 MBH	9.0	3.0	12.9	4.7				

VERTICAL–STACKED UNIT NOTES (HP–A THRU F, RENTAL APARTMENTS):
1. SEE MECHANICAL SPECIFICATIONS FOR UNIT CONSTRUCTION AND REQUIRED ACCESSORIES.
2. 1–INCH ACOUSTIC CABINET INSULATION
3. CUSTOM BASE STAND BASE STAND REQUIRED TO ACCOMMODATE RETURN–AIR GRILLE AND ARCHITECTURAL BASEBOARD MOLDING (8" MINIMUM)
4. ADJUSTABLE CABINET HEIGHT REQUIRED FOR OPTIMAL SOUND PERFORMANCE IN ELEVATED CEILING SPACES (FIELD BASE STANDS OR PLENUMS NOT ACCEPTABLE)
5. FACTORY–INSTALLED NON–FUSED DISCONNECT SWITCH
6. DIGITAL PROGRAMMABLE THERMOSTAT
7. UNIT–MOUNTED FAN SPEED SWITCH
8. AUTOMATIC WATER FLOW REGULATING VALVE FOR SELF BALANCING
9. AUTOMATIC WATER SHUT–OFF VALVE (NORMALLY CLOSED)
10. SUPPLY/RETURN 2000PSIG–RATED HOSE KITS WITH MANUAL SHUTOFF VALVES
11. FACTORY–INSTALLED CONDENSATE OVERFLOW SWITCH
12. EXTRA SET OF FILTERS BY UNIT MANUFACTURER–REFER TO TCC RIDER A
13. RETURN–AIR/CHASSIS–ACCESS PANEL PROVIDING FULL ACCESS TO REMOVABLE CHASSIS WHILE INSTALLED. PANEL SHALL BE STEEL WHITE–FLUSH MOUNTED ACOUSTICAL HINGE DOOR.
14. DOUBLE–DEFLECTIONS SUPPLY GRILLES W/ OPPOSED–BLADE DAMPERS (AS REQUIRED)
15. SIGHT BAFFLE W/ ACOUSTICAL LINING ON ALL UNIT SERVING ADJACENT SPACES
16. NC–35 PERFORMANCE SOUND PACKAGE
17. STAINLESS STEEL SECONDARY DRAIN PAN
18. CHASSIS–TO–CABINET INTEGRAL VIBRATION ISOLATION
19. FIELD–CONFIGURABLE PIPING AND DISCHARGE LOCATIONS
20. REMOTE–MOUNTED PROGRAMMABLE THERMOSTAT BY UNIT MANUFACTURER
21. ALL FIELD DUCT CONNECTIONS MUST BE ISOLATED FROM UNIT DISCHARGE VIA FLEX CONNECTION. DUCTWORK SHALL BE PROVIDED WITH 1" ACOUSTIC LINING.
22. INSTALLATION SUPERVISION AND START–UP BY UNIT MANUFACTURER
23. EXTENDED 2–YEAR WHOLE–UNIT PARTS AND 5–YEAR COMPRESSOR PARTS WARRANTY.
24. REFER TO RIDER A FOR AMOUNT OF UNITS, T–STATS, FILTERS, ETC. TO BE PURCHASED IN RIDER A. (TO BE COVERED BY TCC)

FREEZE PROTECTION PUMPS (ARMSTRONG)

DESIGNATION	SERVICE	LOCATION	FLOW RATE (GPM)	TOTAL PUMP HEAD (FT. OF WATER)	STATIC HEAD (FT. OF WATER)	CASING PRESSURE (PSIG)	MINIMUM PUMP EFFICIENCY (%)	MOTOR DATA: BRAKE HP	MOTOR DATA: MIN MOTOR HP	MOTOR DATA: RPM	MOTOR DATA: VOLTS/PHASE	MODEL NUMBER	PUMP TYPE	MANUFACTURER	VIBRATION ISOLATION: SPECIFICATION TYPE	VIBRATION ISOLATION: STATIC DEFLECTION (INCHES)	REMARKS
FPP–SC–1	HV–SC–1	SUB CELLAR	17.4	30	–	300					115/1	SERIES 4380–2x2x6–1 FRAME 143JM ENCLOSURE ODP	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP–C–1	HV–C–1	CELLAR	.3	10	–	300					115/1	SERIES 4380–3x3x5–0 FRAME 56C ENCLOSURE ODP	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP–2–1	HWC–2–1	2ND FLOOR	.20	30	–	300	46.35	.33	1/2	1760	115/1	SERIES 4380–1.5x1.5x6–0.5 FRAME 56C ENCLOSURE ODP	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP–2–2	HWC–2–2	2ND FLOOR	.20	30	–	300	46.35	.33	1/2	1760	115/1	SERIES 4380–1.5x1.5x6–0.5 FRAME 56C ENCLOSURE ODP	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP–37–1	AC–37–1 CONDO CORRIDOR	37TH FLOOR	.30	30	–	300	41.88	.54	1	1800	115/1	SERIES 4380–2x2x6–1 FRAME 143JM ENCLOSURE ODP	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP–37–2	AC–(B)–37–1 RESIDENTIAL	37TH FLOOR	1.35	30	–	300	67.82	1.51	2	1200	115/1	SERIES 4380–3x3x10–2 FRAME 184JM ENCLOSURE ODP	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP–C–2	HV–C–2	CELLAR	14.8	10	–	300	–	–	–	–	115/1	–	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP–SC–2	HV–C–3	SUB–CELLAR	14.8	10	–	300	–	–	–	–	115/1	–	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	–
FPP–39–1	HV–39–1	35TH FLOOR	65.6	30	–	300	–	–	–	–	208/1	–	INLINE	ARMSTRONG	SEE SPEC	SEE SPEC	

AIR OUTLETS AND INLETS

DESIGNATION	SERVICE	SPECIFICATION TYPE	MAX CFM OR CFM/FT	FACE SIZE (INCHES)	NECK SIZE (INCHES)	SLOT SIZE (INCHES)	MODEL NUMBER	MANUFACTURER	REMARKS
CD–A	SUPPLY AIR	CEILING DIFFUSER	250	12x12	8#	–	OMNI	TITUS	–
CD–B	SUPPLY AIR	CEILING DIFFUSER	251–375	24x24	10#	–	OMNI	TITUS	–
CD–C	SUPPLY AIR	CEILING DIFFUSER	375–500	24X24	12#	–	OMNI	TITUS	–
CD–D	SUPPLY AIR	CEILING DIFFUSER	501+	24X24	15#	–	OMNI	TITUS	–
CD–E	SUPPLY AIR	CEILING DIFFUSER	150	12X12	6#	–	OMNI	TITUS	–
CC–A	RETURN AIR	CEILING DIFFUSER	150	24X24 12X12	6#	–	OMNI	TITUS	–
CC–B	RETURN AIR	CEILING DIFFUSER	151–350	24X24 12X12	8#	–	OMNI	TITUS	–
CC–C	RETURN AIR	CEILING DIFFUSER	351–600	24X24	14#	–	OMNI	TITUS	–
SR–A	SUPPLY AIR	TOP REGISTER	150–250	12x8	10x6	–	301 FL	TITUS	–
SR–B	SUPPLY AIR	TOP REGISTER	251–400	20x8	18x6	–	301 FL	TITUS	–
LBG	SUPPLY AIR	LINEAR BAR DIFFUSER	169	–	–	–	CT–581	TITUS	SIDE WALL DIFFUSER ¼" BARS 15° DEFLECTION
LBR	RETURN AIR	LINEAR BAR DIFFUSER	169	–	–	–	CT–581	TITUS	SIDE WALL DIFFUSER ¼" BARS 15° DEFLECTION
EG–A	RETURN/EXHAUST AIR	EXHAUST GRILLE	100	8x8	6x6	–	350RL	TITUS	–
LD–A	SUPPLY AIR	LINEAR DIFFUSER	100	–	–	(1) 2"	FL–15–HT	TITUS	–
LR–A	RETURN AIR	LINEAR DIFFUSER	100	–	–	(1) 2"	FL–15–HT	TITUS	–

NOTES:
1. THE COLOR AND FRAME OF ALL AIR OUTLETS AND INLETS ARE TO BE SPECIFIED AND APPROVED BY THE ARCHITECT. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. SEE ARCHITECTURAL DRAWINGS FOR TOTAL LENGTHS REQUIRED FOR SUPPLY AND RETURN LINEARS. ALL INACTIVE SECTIONS ARE TO BE PROVIDED WITH LIGHT SHIELDS.
3. PROVIDE CABLE OPERATED DAMPERS FOR ALL LINEAR DIFFUSERS AND ANY VOLUME DAMPERS LOCATED ABOVE INACCESSABLE CEILINGS.

FACTORY ASSEMBLED H & V SYSTEMS (HTS AS STD)

DESIGNATION	SERVICE	LOCATION	TOTAL AIR QUANTITY (CFM)	OUTSIDE AIR QUANTITY (CFM)	FILTER: SPECIFICATION TYPE	FILTER: MINIMUM EFFICIENCY	FILTER: AIR FRICTION (IN. OF WTR.): INITIAL	FILTER: AIR FRICTION (IN. OF WTR.): REPLACE	FILTER: TOTAL FACE AREA (SQ. FT.)	HOT WATER HEATING COIL: AIR SIDE: ENT. AIR TEMPERATURE (DEGREES F)	HOT WATER HEATING COIL: AIR SIDE: LVG. AIR TEMPERATURE (DEGREES F)	HOT WATER HEATING COIL: AIR SIDE: MAXIMUM AIR FRICTION (IN. OF WATER)	HOT WATER HEATING COIL: WATER SIDE: FLOW RATE (GPM)	HOT WATER HEATING COIL: WATER SIDE: ENT. WATER TEMPERATURE (DEGREES F)	HOT WATER HEATING COIL: WATER SIDE: LVG. WATER TEMPERATURE (DEGREES F)	HOT WATER HEATING COIL: WATER SIDE: MAXIMUM PRESSURE DROP (FT OF WATER)	HOT WATER HEATING COIL: HEATING CAPACITY (MBH)	HOT WATER HEATING COIL: FACE AREA (SQ. FT.)	HOT WATER HEATING COIL: FACE VELOCITY (FPM)	HOT WATER HEATING COIL: SERIES SURFACE AND TUBE (FT/FROWS)	ELECTRIC HEATING COIL: ENT. AIR TEMPERATURE (DEGREES F)	ELECTRIC HEATING COIL: LVG. AIR TEMPERATURE (DEGREES F)	ELECTRIC HEATING COIL: HEATING CAPACITY (MBH)	ELECTRIC HEATING COIL: MAXIMUM AIR FRICTION (IN. OF WATER)	ELECTRIC HEATING COIL: NPD1T (KW)	ELECTRIC HEATING COIL: VOLTS/PHASE	ELECTRIC HEATING COIL: NO. OF STEPS	ELECTRIC HEATING COIL: FACE VELOCITY (FPM)	FAN: TOTAL STATIC PRESSURE (IN. OF WATER)	FAN: STATIC PRESSURE EXT. OF CASING (IN. OF WATER)	FAN: MAX. FAN SPEED (RPM)	FAN: MAXIMUM OUTLET VELOCITY (FPM)	FAN: CLASS	FAN: TYPE	FAN: SIZE	FAN: MOTOR: MOTOR BHP	FAN: MOTOR: MINIMUM MOTOR HP	FAN: MOTOR: MOTOR RPM	FAN: MOTOR: VOLTS/PHASE	VIBRATION ISOLATION: SPECIFICATION TYPE	VIBRATION ISOLATION: STATIC DEFLECTION (INCHES)	MODEL NUMBER	REMARKS
HV–SC–1	SUB–CELLAR BOH	SUB CELLAR	4550	4550	MERV 8	–	–	–	7.6	0.0	56.3	.07	17.4	150	129.5	8.7	178.4	7.3	–	12/1	–	–	–	–	–	–	–	–	2.69	2.0	1432	2000	1	–	–	2.87	5.0	1432	208/3	SPRING	1	HTS–AH007A	–
HV–C–2	RENTAL LAUNDRY RM	CELLAR	1500	1500	MERV 8	–	–	–	2.8	0.0	82.4	0.2	10.9	150	125.2	8.9	135.2	3.0	–	12/2	–	–	–	–	–	–	–	–	1.88	1.0	1646	1786	1	–	–	1.19	1.5	2064	208/3	SPRING	1	HTS–AH003A	–
HV–SC–2	CONDO LAUNDRY RM	SUB CELLAR	1125	1125	MERV 8	–	–	–	2.6	0.0	78.6	0.23	8.0	150	125.8	5.5	96.6	2.0	–	12/2	–	–	–	–	–	–	–	–	1.87	1.0	2316	2045	1	–	–	1.1	1.5	2064	208/3	SPRING	1	HTS–AH002A	–
HV–39–1	BOILER ROOM	39TH FLOOR	10000	10000	MERV 8	–	–	–	22.8	0	78.0	.22	65.6	150	124	5.2	853	20.3	–	12/2	–	–	–	–	–	–	–	–	1.86	1.0	1371	3448	1	–	–	10.03	15	1371	480/3	–	–	HTS–AH020A	–

FILTER BOX WITH HOT WATER COIL ASSEMBLY (HTS AS STD)

DESIGNATION	SERVICE	LOCATION	TOTAL AIR QUANTITY (CFM)	OUTSIDE AIR QUANTITY (CFM)	FILTER: SPECIFICATION TYPE	FILTER: MINIMUM EFFICIENCY	FILTER: AIR FRICTION (IN. OF WTR.): INITIAL	FILTER: AIR FRICTION (IN. OF WTR.): REPLACE	FILTER: TOTAL FACE AREA (SQ. FT.)	HOT WATER HEATING COIL: AIR SIDE: ENT. AIR TEMPERATURE (DEGREES F)	HOT WATER HEATING COIL: AIR SIDE: LVG. AIR TEMPERATURE (DEGREES F)	HOT WATER HEATING COIL: AIR SIDE: MAXIMUM AIR FRICTION (IN. OF WATER)	HOT WATER HEATING COIL: WATER SIDE: FLOW RATE (GPM)	HOT WATER HEATING COIL: WATER SIDE: ENT. WATER TEMPERATURE (DEGREES F)	HOT WATER HEATING COIL: WATER SIDE: LVG. WATER TEMPERATURE (DEGREES F)	HOT WATER HEATING COIL: WATER SIDE: MAXIMUM PRESSURE DROP (FT OF WATER)	HOT WATER HEATING COIL: HEATING CAPACITY (MBH)	HOT WATER HEATING COIL: FACE AREA (SQ. FT.)	HOT WATER HEATING COIL: FACE VELOCITY (FPM)	HOT WATER HEATING COIL: SERIES SURFACE AND TUBE (FT/FROWS)	ELECTRIC HEATING COIL: ENT. AIR TEMPERATURE (DEGREES F)	ELECTRIC HEATING COIL: LVG. AIR TEMPERATURE (DEGREES)	ELECTRIC HEATING COIL: HEATING CAPACITY (MBH)	ELECTRIC HEATING COIL: MAXIMUM AIR FRICTION (IN. OF WATER)	ELECTRIC HEATING COIL: NPD1T (KW)	ELECTRIC HEATING COIL: VOLTS/PHASE	ELECTRIC HEATING COIL: NO. OF STEPS	ELECTRIC HEATING COIL: FACE VELOCITY (FPM)	VIBRATION ISOLATION: SPECIFICATION TYPE	VIBRATION ISOLATION: STATIC DEFLECTION (INCHES)	MODEL NUMBER	REMARKS
HWC–2–1	OA PREHEAT FOR AHU–2–1	2ND FLOOR	3000	3000	MERV 8	–	–	–	7.6	0.0	55.6	0.25	18.0	150	129.8	9.3	182.5	7.3	–	12/1	–	–	–	–	–	–	–	–	SPRING	1	–	–
HWC–2–2	OA PREHEAT FOR AHU–2–2	2ND FLOOR	3000	3000	MERV 8	–	–	–	7.6	0.0	55.6	0.25	18.0	150	129.8	9.3	182.5	7.3	–	12/1	–	–	–	–	–	–	–	–	SPRING	1	–	–

ZONE CONTROL TERMINALS SCHEDULE (ALDES AS STANDARD)

TAG	SERVICE	MODEL	GRILLE SIZE L/W	EXHAUST BOX DIMENSIONS L/WWH	ACTUATOR DIMENSIONS (ADD TO WIDTH)	NECK(DUCT) SIZE INCH	CAR DIMENSIONS	AIRFLOW RANGE MIN/MAX CFM	BALANCING TOLERANCE	DIFFERENTIAL PRESSURE RANGE IN. WG.	NC MINMAX @ 0.4 IN WG.	ELECTRICAL VOLTS/PHASE	REMARKS
ZRT–A	KITCHEN EXHAUST	ZRT–PDL–12x6–120–50/150	NA	12" x 6"	3–1/8"	12" x 6"	4"/8"	50/150	+/–15%	0.2–0.8; 0.6–2.5	36	120/1	–
ZRT–B	KITCHEN EXHAUST	ZRT–PDL–16x8–120–50/350	NA	16" x 8"	3–1/8"	16" x 8"	4"/8"	50/350	+/–15%	0.2–0.8; 0.6–2.5	36	120/1	–
ZRT–C	KITCHEN EXHAUST	ZRT–3FTL–26x10–120–50/600	NA	14" x 16" x 8"	6–1/2"	16" x 8"	4"/8"/10"	50/600	+/–15%	0.2–0.8; 0.6–2.5	36	120/1	–

NOTES:
1. ALL DUCTWORK AND ASSOCIATED RISERS CONTAINING CONSTANT AIR REGULATING DEVICES SHALL BE CONSTRUCTED AND SEALED TO MINIMIZE LEAKAGE TO NO GREATER THAN 5%. DUCT LEAKAGE TESTING SHALL BE CONDUCTED DURING PHASE OF CONSTRUCTION WHERE FULL ACCESS TO RISERS ARE AVAILABLE AND LEAKAGE TESTING CAN BE 100%%% COMPLETED PRIOR TO SHEETROCKING THE WALLS. ZRT ASSEMBLIES SHALL BE PROVIDED WITH 1/2" INSULATION FOR ACOUSTICAL NOISE REDUCTION.
2. ZRT AND CAR ASSEMBLIES SHALL BE INSTALLED AND SEALED TO AVOID LEAKAGE. ZRT HEIGHTS AND LOCATIONS SHALL BE COORDINATED WITH CEILING CONTRACTOR TO ENSURE A FLUSH INSTALLATION WITH SHEETROCK CEILING.
3. ZRT SHALL BE PROVIDED WITH LINE VOLTAGE SPRING RETURN ACTUATOR. UPON POWERING UP VIA LIGHT SWITCH OR OTHER POWER SOURCE THE ACTUATOR SHALL MODULATE THE MINMUM CAR–II OUT OF THE AIRSTREAM ALLOWING THE MAXIMUM CAR–II TO BALANCE TO MAXIMUN CFM. UPON LOSS OF POWER OR THE LIGHT SWITCH TURNING OFF THE DAMPER SPRING RETURN SHALL CLOSE THE DAMPER ALLOWING THE MINUMUN CAR–II TO MAINTAIN MINUMUN CFM SETPOINT.
4. ZRT ASSEMBLIES SHALL BE CAPABLE OF POWERING UP TRACKING DEVICES SUCH AS ZRT'S USED ON THE SUPPLY FOR MAKE UP AIR APPLICATIONS.
5. PROVIDE ALDES BDD BACK DRAFT DAMPERS FOR ALL TERMINALS TO BE INSTALLED IN ROUND DUCTWORK CONNECTING TO INLET OF ZRT ASSEMBLY.
6. SUBMIT DIFFUSER AND GRILLES NC RATINGS FOR APPROVAL.
7. COORDINATE FINISH WITH ARCHITECT.

COLD STORAGE (AS STD)

| DESIGNATION | SERVICE | LOCATION | CAPACITY (BTU/HR) | DIMENSIONS: LENGT